

Tagung der Alpenkonferenz
Réunion de la Conférence alpine
Sessione della Conferenza delle Alpi
Zasedanje Alpske konference

XIII

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ANLAGE/ANNEXE/ALLEGATO/PRILOGA

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Transport Group Activity Report (2013-2014)

Execution of the 2013-2014 mandate

General issues pertaining to the implementation of the Alpine Convention's Transport Protocol

Further elaboration of a reference document draft as described in article 15 of the Transport Protocol

The data sent by the states was collected; it was compiled using the methodology and questionnaire proposed by the group's Chair. Collation work was done per consistent sections (infrastructure characteristics, traffic, etc.) and led to drawing up a uniform presentation of the main Alpine infrastructures. Some missing data remains to be added.

These elements will form the reference document described in article 15. For easy reading, two interactive maps (rail and road) were compiled to visualise all the data (traffic, infrastructure characteristics, works, etc.) at various scales, from the largest map down to each sections, by using the zooming feature.

All related data and maps are to be updated every five years. See appended examples.

They will be posted on the Alpine Convention website and links will be made available to access other websites offering information relevant to the related topics.

Analysis of the enforcement of the "polluter pays" principle as applied to the transport of road freight in the Alpine countries (Article 14 of the Alpine Convention's Transport Protocol)

Work on this mandate's theme was co-led by the Austrian and Italian delegations (annexed document).

The mandate included two points:

Firstly, monitoring the measures adopted in the various Alpine countries, in particular following the adoption of the latest version of the Eurovignette Directive (2011)

that authorises taking into account a number of external costs when charging heavy goods vehicles (HGVs).

A questionnaire on this topic was sent to the Alpine Convention States to take stock of the various HVG charges levied in the Alps.

A summary document was drawn up and appended to this report, which highlights the diversity of situations in the various states and the reasons, why such regular monitoring would be useful.

Particularly noteworthy are the following points :

- tolls or user charges are quite widespread in all Alpine countries, in relation to the high costs of infrastructures (tunnels, viaducts ...) ;
- rates are highly variable from one infrastructure to another and difficult to compare between countries. Differentiation based on euro classes is increasing ;
- in general, income is allocated to transport infrastructure;
- the effects of these tolls on the modal split or rerouting are difficult to analyse; however, there has been a rationalisation of the use of HGV;
- except for Switzerland, the Member States of the Alpine Convention do not yet apply external charging.

The second point under this mandate theme was analysing the extent to which the “Eurovignette” Directive was adapted to the implementation of the Transport Protocol’s article 14 arrangements, which provides for the gradual introduction of charging systems in order to cover the real costs (infrastructure costs and external costs).

Let us bear in mind that this Directive, which creates no obligation to introduce tolls or usage charges, (a) only applies to the European Union Member States; (b) only refers to charging of HGVs, and does not apply to other categories of road users and other transport modes; and (c) the arrangements pertaining to charges for external costs only take into account air pollution and noise pollution and set maximum charging levels in both these cases.

This point of the mandate could not be adequately dealt with. For further work, to be done in the framework of the next mandate, a draft road map was outlined and has been appended.

It would be of the essence to try and answer whether (or not), in the Alpine context, the quantification of external costs by the Eurovignette Directive (2011) was appropriate, taking into account existing scientific knowledge available on the topic.

Sustainable mobility

Progress on the AlpInfoNet project

The project’s objective is to offer travellers information on sustainable transport modes in the Alps, in relation to tourist hotspots, and going beyond regional and national borders. The

project's objective is not to create a new Pan-Alpine information platform, but improving and interconnecting the existing tourist and transport information systems.

Following the preparatory work carried out during the previous mandate, the project was officially launched on July 1st, 2012, to last three years (until June 30th, 2015). It has connected 12 public partners – i.e. some national and some regional partners; one of them, namely the Bavarian Ministry of Transport, is in charge of coordinating the activities of all the partners.

The European Commission, under the “Alpine Space Programme”, also funds the project up to 76%.

At each of its meetings, the Transport Working Group, which instigated the project, had a progress report on its agenda.

The subject of the choice of transport modes to be taken into account and the identification of user needs and requirements in the areas of transport and tourism has been completed and a summary document has been produced.

The technical interoperability subject has also been covered.

The legal subject is in the process of being finalised (access right to data; legal framework in the various countries).

The last stage of the project involved implementation and testing in five pilot areas (cross-border) of the Alpine region, of methods and solutions developed during the preceding stages. The assessment drawn from these real implementation projects will lead to drafting a final summary document and to recommendations.

Sustainable mobility in Alpine sparsely populated and / or remote areas

The “Sustainable Mobility” subgroup met at each session of the “Transport” Working Group. One of the objectives set for the subgroup was to identify good practices and strategies implemented to develop alternatives for the use of private cars in sparsely populated and / or remote areas of the Alpine Convention region in order to draw lessons and recommendations to promote sustainable mobility in those regions.

The subgroup subsequently started by defining common methods to identify the geographic areas involved on the one hand, and on the other hand, to collect and present good practices. The subgroup developed a specific matrix for the joint presentation of best practices. It decided to present the examples identified in the Alps as well as the good practices featured outside the area, which could nevertheless be transferred and applied in the Alps easily.

Eventually each country presented the results of its research, which allowed standardising and structuring the subgroup's production into a synthetic document, with the technical support of the subgroup's chair. The work focused on joint drafting of the main lessons and recommendations deriving from the collection of all good practices.

More than 50 good practices have been retained and classified in four categories: micro or additional public transport, other mobility services (bike sharing, car pooling....), non-mobility solutions (delivery service, mobile shop....), organisation and mobility management (information on existing sustainable mobility, attractive pricing models, cooperation...).

The final document, annexed, specifies the sparsely populated and / or remote areas, features the best practices collected in the matter of sustainable mobility and drafts recommendations deriving from the analysis of these good practices.

Logistics and urban freight deliveries

The second objective set by the "Sustainable Mobility" subgroup focused on the issue of logistics and freight deliveries in Alpine cities. The subgroup was asked to focus specifically on the measures taken, or in the pipeline, on this matter, carried out by the Alpine cities in order to improve both the efficiency and the quality of life of urban dwellers. After having specified the objectives, defined the study's major stages and agreed on the methodology, the subgroup approved the document's general table of contents. It was specifically decided to focus on examples from the Alpine area and to include any other initiative if it was transferrable. A general consensus led to the exclusion of long-distance supply chains.

During the following meetings, each country submitted its contribution and the technical support team set up by the subgroup's chair and drew up a synthesis document. The work focused on the joint drafting of a chapter on the main lessons and recommendations deriving from the good practices identified.

The selected good practices illustrate the different measures aimed at improving urban freight deliveries and quality of life for residents: sustainable urban logistics charters, local rules and regulation, carbon-free deliveries development, urban spaces design taking into account deliveries, surveys and data collections about urban freight, preservation of non-road infrastructures and existing logistics areas, creation of urban logistic spaces.

The final document annexed presents the best recorded practices in urban freight deliveries in the Alps (as well as outside the scope of the Alpine Convention if these practices are transferrable) and draws lessons and recommendations on how to promote sustainable logistics in Alpine cities.

Other activities

Exchange of information with the Zurich Group

The Working Group was regularly informed of the work carried out by the Zurich Group. Good information and mutual coordination will remain necessary in the future to enrich the work of both these groups and avoid overlaps.

Macroregional Strategy for the Alps

The Working Group was not requested to study this subject as such; however, several of its members participated in meetings – as members of the Alpine Convention or of their respective countries; they were drafting meetings to draw up the documents which served as a basis for the ongoing consultation drafted by the European Commission on the Macroregional Strategy for the Alps, in particular in matters of transport (“second pillar”).

The Working Group has been kept informed and will go on monitoring this initiative.

Annex 1 ; Synthesis on the implementation of Article 14 of the Transport Protocol (with 3 sub-annexes))

Annex 2 ; Short summary, executive summary and report on sustainable mobility solutions in remote Alpine territories

Annex 3 ; Short summary, executive summary and report on Sustainable solutions for logistics and urban freight delivery in the Alpine region

The annex 1 and the short summaries are in your language, the executive summaries and the reports are in English.

Anhang 1

VERKEHRSPROTOKOLL BESTIMMUNGEN VON ARTIKEL 14

**Zusammenfassender Bericht für die XIII. Alpenkonferenz
Turin (19. – 21. November 2014)**

KAPITEL I – Artikel 14 und Wegekostenrichtlinie (Eurovignetten-Richtlinie)

A. Hintergrund

Artikel 14 - Kostenwahrheit¹⁾ ist das wichtigste gesetzliche Instrument des Verkehrsprotokolls auf dem Weg zur schrittweisen Einführung eines verkehrsspezifischen Abgabensystems, um die wahren Kosten der verschiedenen Verkehrsträger zu ermitteln.

Das Mandat 2013/2014 der Arbeitsgruppe Verkehr (WGT) der Alpenkonvention (Dok. PC 51/B4 vom 7. November 2012) befasst sich mit Artikel 14 des Verkehrsprotokolls.

In diesem Rahmen sollte analysiert werden, in wie weit die Eurovignetten-Richtlinie geeignet ist, die Bestimmungen von Artikel 14 des Verkehrsprotokolls im Bereich des Straßengüterverkehrs in den Alpenländern zu erfüllen.

¹⁾ **Artikel 14 – Kostenwahrheit**

Um auf Verkehrslenkungseffekte durch eine bessere Anrechnung der wahren Kosten der verschiedenen Verkehrsträger hinzuwirken, einigen sich die Vertragsparteien auf die Umsetzung des Verursacherprinzips und unterstützen die Entwicklung und Anwendung eines Berechnungssystems zur Ermittlung der Wegekosten und der externen Kosten.

Ziel ist es, schrittweise verkehrsspezifische Abgabensysteme einzuführen, die es erlauben, auf gerechte Weise die wahren Kosten zu decken. Dabei sollen Systeme eingeführt werden, die:

- (a) den Einsatz der umweltfreundlichsten Verkehrsträger und -mittel begünstigen;
- (b) zu einer ausgewogeneren Nutzung der Verkehrsinfrastruktur führen;
- (c) Anreize bieten, Potenziale ökologischer und sozioökonomischer Belastungsminderung mit strukturellen und raumordnerischen Maßnahmen der Verkehrsbeeinflussung vermehrt zu nutzen.

Mit Blick auf die umfassende Umsetzung des Verursacherprinzips im Straßengüterverkehr sollte die Arbeitsgruppe Verkehr (WGT) nach der kürzlichen Verabschiedung der überarbeiteten Wegekostenrichtlinie (2011/76/EU) in Zusammenarbeit mit dem Compliance-Ausschuss auch die Maßnahmen überwachen, die diesbezüglich in den verschiedenen Alpenländern ergriffen wurden.

Auf Grund der Komplexität dieser Aufgabe wurde es für notwendig befunden, die bereits begonnene Arbeit im Rahmen der nächsten Arbeitsmandate fortzuführen, die von der XIII. Alpenkonferenz in Turin gebilligt werden sollen.

Eine weitere Vertiefung sollte auch in Verbindung mit den folgenden Mandaten in Betracht gezogen werden.

Eine Sichtweise im Rahmen der Alpenkonvention und des Verkehrsprotokolls wäre, dass der Straßengüterverkehr in den Alpen eine Priorität für die Implementierung einer Gebührenpolitik darstellt, die die wahren Kosten decken muss (einschließlich externe Kosten²), um auf Verkehrslenkungseffekte hinzuwirken. Um aber dem allgemeinen Wortlaut von Artikel 14 des Protokolls Rechnung zu tragen, sollte auch berücksichtigt werden, dass die Implementierung der Bestimmungen dieses Artikels bedeutet, dass neben dem Güterverkehr auch andere Verkehrsmittel und der Personenverkehr in Betracht zu ziehen sind.

Unter Berücksichtigung der zur Verfügung stehenden relevanten wissenschaftlichen Arbeiten könnten anschließend verschiedene Themen in Bezug auf spezifische Methoden für die Ermittlung der wahren Kosten behandelt werden (Infrastrukturkosten und externe Kosten).

Und schließlich könnte unter Verwendung geeigneter Analyseinstrumente geprüft werden, ob die Einführung von Abgabensystemen, die die wahren Kosten decken, eventuell in Verbindung mit anderen Maßnahmen³, tatsächlich eine Erreichung der Ziele von Artikel 14 des Verkehrsprotokolls ermöglicht:

a) Begünstigung des Einsatzes der umweltfreundlichsten Verkehrsträger und -mittel;

² Die Definition für externe Kosten ist, je nach Text, unterschiedlich.

- In der Eurovignetten-Richtlinie beziehen sich die externen Kosten ausschließlich auf die durch den Verkehr verursachte Luftverschmutzung oder Lärm;

- Das Verkehrsprotokoll der Alpenkonvention sieht hingegen eine breitere Definition vor: „Kosten, die nicht vom Nutzer von Gütern oder Diensten getragen werden. Sie umfassen die Kosten für die Infrastruktur, wo diese nicht angelastet werden, die Kosten für Umweltverschmutzung, Lärm, verkehrsbedingte Personen- und Sachschäden.“

Während die im Protokoll genannte Einbeziehung der Kosten für die Infrastrukturnutzung in die externen Kosten in bestimmten Fällen diskutabel sein dürfte, erscheint das Ziel, in der Definition der Abgaben auch die Kosten für Infrastruktur oder externer Natur zu berücksichtigen, verständlich. Ferner sollten die in Betracht gezogenen externen Kosten im Gegensatz zu den derzeitigen Bestimmungen der Eurovignetten-Richtlinie nicht auf die Folgen von Luftverschmutzung und Lärm begrenzt werden.

³ Z.B. Verfügbarkeit der Infrastruktur und der Dienstleistungen, Koordination und Zuverlässigkeit des Service, Tarif usw.

- b) ausgewogenere Nutzung der Verkehrsinfrastrukturen;
- c) Minderung der ökologischen und sozioökonomischen Kosten durch strukturelle und raumordnerische Maßnahmen der Verkehrsbeeinflussung.

B. Wegekostenrichtlinie (Eurovignetten-Richtlinie)

Die Richtlinie 1999/62/EG, ersetzt durch die **Richtlinie 2006/38/EG** und die **Richtlinie 2011/76/EU**, gibt gemeinsame Regeln über die entfernungsabhängige und zeitbasierte Erhebung von Gebühren für die Benutzung bestimmter Verkehrswege durch schwere Nutzfahrzeuge über 3,5 Tonnen vor.

Die rechtlichen Rahmenbedingungen zielen auf die Einführung eines gerechteren Abgabensystems für die Nutzung von Verkehrsinfrastrukturen auf Basis des Verursacherprinzips ab mit der Möglichkeit, das Verursacherprinzip beispielsweise durch variable Nutzungsgebühren anzuwenden, um auch die Umweltleistung der Fahrzeuge zu berücksichtigen.

Obwohl die Einführung von Nutzungsgebühren und Vignetten für die Mitgliedstaaten nicht vorgeschrieben wird, sieht die Richtlinie bestimmte Regeln vor, die von den Mitgliedstaaten bei der Erhebung derartiger Gebühren eingehalten werden müssen. Gebühren müssen ausgehend von der zurückgelegten Entfernung und dem Fahrzeugtyp erhoben werden; Vignetten gelten für einen bestimmten Zeitraum, in dem die Infrastruktur genutzt wird, und für eine bestimmte Emissionsklasse.

Die Richtlinie lässt die gleichzeitige Erhebung von Mautgebühren und Vignetten für die Nutzung desselben Straßenabschnitts nicht zu. Nur ausnahmsweise können zusätzlich Nutzungsgebühren für Brücken, Tunnels und Passstraßen in Verkehrsnetzen erhoben werden, in denen bereits Vignettenpflicht herrscht.

Einzelstaatliche Nutzungsgebühren und Vignetten dürfen nicht diskriminierend sein, überhöhte Ermäßigungen sind verboten. Die Abgabensysteme sollten den Verkehrsfluss möglichst wenig behindern, Prüfungen an den Innengrenzen der EU sollten vermieden werden.

Die Richtlinie sieht ferner vor, dass die durchschnittlichen Höchstgebühren im Verhältnis zu den Kosten für Bau, Betrieb und Ausbau der betroffenen Infrastrukturen stehen müssen. Neue Abgabensysteme müssen bekannt gemacht werden. Die Einnahmen sollten vorrangig für die Entwicklung des transeuropäischen Verkehrsnetzes verwendet werden.

Richtlinie 2011/76/EU trat am 15. Oktober 2011 in Kraft. Ihr Ziel ist die Minderung der Umweltverschmutzung durch den Straßengüterverkehr durch die Einführung der Möglichkeit⁴ für die Mitgliedstaaten, die Kosten für durch den Verkehr verursachte Luftverschmutzung und Lärmbelästigung zusätzlich zu den vorstehend genannten Kosten für Bau, Betrieb und Ausbau von Infrastrukturen zu berücksichtigen.

C. Anwendung der Eurovignetten-Richtlinie 1999/62/EG, ersetzt durch die Richtlinie 2006/38/EG, in den Mitgliedstaaten der Alpenkonvention

Ein Aspekt des Mandats war die Überwachung der in den verschiedenen Alpenländern zur Umsetzung des Verursacherprinzips im Straßengüterverkehr ergriffenen Maßnahmen. Für die Durchführung dieser Analyse wurde von Österreich ein Fragebogen ausgearbeitet und die Mitgliedstaaten wurden in einem ersten Schritt gebeten, ihre Erfahrungen mit der Umsetzung der Eurovignetten-Richtlinie 1999/62/EG in der durch die Richtlinie 2006/38/EG geänderten Form anzugeben.⁵⁾

Umfrageergebnisse⁶⁾

Einzugsbereich

Da sich der internationale Straßenverkehr auf das transeuropäische Straßenverkehrsnetz konzentriert, finden die Rahmenbedingungen der EU folglich auf Fahrzeuge über 3,5 Tonnen Anwendung, die in diesem Straßennetz unterwegs sind. Im Einklang mit der Richtlinie steht es den Mitgliedstaaten frei, zusätzliche Maut- und/oder Nutzungsgebühren auch auf Straßen anzuwenden, die nicht zum transeuropäischen Straßennetz gehören, sofern dies im Einklang mit den Verträgen erfolgt.

Alle Länder, die Antworten vorgelegt haben, erheben Mautgebühren auf Fahrzeuge über 3,5 Tonnen (GER erst ab 12 Tonnen⁷⁾) zulässiges Gesamtgewicht (ZGG) auf allen oder den meisten

⁴ In Erwägungsgrund 16 heißt es dazu: „Die Mitgliedstaaten sollten die Möglichkeit haben, den nach dieser Richtlinie zulässigen Höchstbetrag der Infrastrukturkosten und der externen Kosten in Form von Mautgebühren zu erheben; sie sollten aber auch beschließen können, dass für eine oder beide dieser Kostenarten niedrigere oder gar keine Gebühren erhoben werden.“

⁵⁾ Ergänzende Hintergrundinformationen sind Anhang I zu entnehmen. Ein Überblick über die Hintergrundanalysen ist Anhang III zu entnehmen.

⁶⁾ AUT, FRA, GER, ITA und CH haben Antworten vorgelegt. Beim 30. Treffen der WGT am 12. Dezember 2013 in Wien wurden die wichtigsten Ergebnisse der Umfrage vorgestellt und besprochen. SLO legte im Mai 2014 eine kurze Zusammenfassung seines Mautsystems vor (Anhang II).

Ausbaustrecken (Autobahnen und Schnellstraßen). CH erhebt die leistungsgebundene Gebühr im gesamten Straßennetz. FRA zog die Einführung einer neuen Abgabe für einen Teil des Hauptstraßennetzes in Betracht, das derzeit mautfrei ist, aber das Projekt wurde zurückgezogen. In ITA wird über die Einführung von Mautgebühren auf mehreren „mautfreien Nebenstrecken“ nachgedacht (die von ANAS verwaltet werden).

Maut

Die Richtlinie in der Fassung von 2006 sieht die Berücksichtigung externer Kosten nicht vor und erfüllt diesbezüglich die Anforderungen von Art. 14 des Verkehrsprotokolls nicht.

Die Überarbeitung der Richtlinie 2011/76/EG wird die Möglichkeit vorsehen, bestimmte externe Kosten des Verkehrs durch einen spezifischen Mautrahmen abzudecken.

Laut Richtlinie 1999/62/EG, ersetzt durch Richtlinie 2006/38/EG, basieren Mautgebühren auf dem Grundsatz des Hereinholens von Infrastrukturkosten. Ungeachtet der gewichteten Durchschnittsmaut auf Basis der Infrastrukturkosten variieren die Mitgliedstaaten ihre Mautgebühren je nach EURO-Emissionsklasse eines Fahrzeugs und können die Mautgebühr je nach Umfang des Schadens variieren, der den Straßen zugefügt wird, sowie dem Ort, der Zeit und dem Umfang von Staus.

Um spezifische Projekte von europäischer Tragweite sicherzustellen, verleiht die Richtlinie in Ausnahmefällen und unter bestimmten Bedingungen das Recht, die Mautgebühren anderen Variationsformen zu unterwerfen. Beispielsweise können die Nutzer in Bergregionen gezwungen werden, einen Aufschlag in Verbindung mit den finanziellen Anforderungen eines bestimmten Projektes zu zahlen.

Differenzierung der Gebühren

AUT und GER differenzieren ihre aktuellen Mautgebühren ausgehend von Gewicht, Achsenzahl und EURO-Emissionsklasse. FRA differenziert seine aktuellen Mautgebühren ausgehend von Gewicht und Achsenzahl. Eine Differenzierung der Mautgebühren auf Basis der EURO-Emissionsklasse gibt es derzeit nur für den Mont Blanc- und den Fréjus-Tunnel und wird in einem Straßennetz umgesetzt, das unter eine neue Abgabe fällt. ITA differenziert ausgehend von Gewicht und Achsen, plant aber für bestimmte Autobahnen eine Differenzierung der Maut ausgehend von der EURO-Emissionsklasse, z.B. für die A22 Modena – Brenner (die einzige Autobahn in Italien, deren Konzession unlängst abgelaufen ist und erneuert werden muss). CH differenziert ausgehend von Gewicht und EURO-Emissionsklasse.

⁷⁾ Der aktuelle Koalitionsvertrag sieht jedoch eine Ausweitung der LKW-Maut auf Fahrzeuge zwischen 3,5 und 12 Tonnen vor.

(Höhere) Sondergebühren werden auf bestimmten alpenquerenden Autobahnen (in AUT) und in bestimmten Tunnels (Großer Sankt Bernhard in CH oder Mont-Blanc und Fréjus in FRA) erhoben.

GER und CH gewähren Ermäßigungen für „nachgerüstete“ EURO II und EURO III-Fahrzeuge mit Rußfiltern. Auf einer Autobahn in AUT variieren die Tarife ausgehend von der Tageszeit.

Preisvergleich

Eines der Hauptziele der Umfrage war ein Vergleich zwischen den Mautgebühren für LKWs mit vier oder mehr Achsen für die EURO Emissionsklassen III, V und VI. Da zwischen den Fahrzeugkategorien große Unterschiede bestehen und die Differenzierung nach EURO Emissionsklassen nicht in allen Mitgliedstaaten erfolgt, erwies sich dies als relativ schwierig.

Im Alpenraum konnte ein Spektrum mit durchschnittlichen Nettomautgebühren für LKWs, die in die beste EURO-Kategorie fallen, zwischen 15 € Ct/km (ITA) und 67 € Ct/km (CH) festgestellt werden.

Zuschläge

AUT ist das einzige Land, das bisher Zuschläge eingeführt hat. In FRA ist dies geplant. ITA erhebt eine Abgabe zur Querfinanzierung, allerdings nicht im Einklang mit den Bestimmungen der derzeit geltenden Eurovignetten-Richtlinie. Um den LKW-Verkehr von der Straße auf die Schiene zu verlegen, werden die zusätzlichen Einnahmen für die Querfinanzierung von Eisenbahntunnels verwendet (Brenner-Basis-Tunnel) oder sind für ausgewählte Eisenbahnprojekte geplant (Lyon-Turin).

Zweckbestimmung der Einnahmen

Es gibt in der Richtlinie keine Verpflichtung zur Zweckbestimmung der Einnahmen. Wenn jedoch Mitgliedstaaten Maut- oder Nutzungsgebühren für Straßen im transeuropäischen Straßennetz erheben, sollte den Straßen, die Gegenstand der Gebührenerhebung sind, angemessener Vorrang in den Instandhaltungsplänen der Mitgliedstaaten eingeräumt werden. Die Einnahmen aus Maut- oder Nutzungsgebühren sollten für die Instandhaltung der betroffenen Infrastrukturen und für den Verkehrssektor insgesamt im Interesse einer ausgewogenen und nachhaltigen Entwicklung der Verkehrsnetze verwendet werden.

Alle Länder haben geantwortet, dass alle oder die meisten Einnahmen aus Straßennutzungsgebühren für die Netzverwaltung oder die Planung, den Bau, die Instandhaltung und Refinanzierung der betreffenden Straßennetze verwendet werden.

Einige Länder übertragen alle oder zumindest einen Teil ihrer Einnahmen an nationale Ämter oder öffentliche Verkehrsfonds, um gezielte vorrangige Bahnprojekte sowie ausgewählte neue alpenquerende Eisenbahntunnels (z.B. Gotthard und Lötschberg) zu finanzieren (oder haben dies vor).

Auswirkung der Gebührenerhebung für Fahrzeuge über 3,5 Tonnen

Umleitung des LKW-Verkehrs

Die Umleitung des LKW-Verkehrs auf gebührenfreie Parallelstraßen scheint ein geringfügiges oder sogar gar kein Problem zu sein. Durch Gebühren verursachte Umleitungen sind zu beobachten, wenn die Ersatzwege nicht zu einem Zeitverlust führen. Erfolgreiche Maßnahmen in AUT (wie Geschwindigkeits- oder Gewichtsbegrenzungen sowie Fahrverbote für LKW) gelten als nützlich, um den Verkehr wieder vom parallelen Straßennetz wegzulenken.

Entwicklung der EURO-Emissionsklassen

Generell war in allen Ländern zu beobachten, dass der Anteil der EURO 0 bis IV-Fahrzeuge zwischen 2010 und 2012 rückläufig war. Der Anteil der EURO V, EEV und EURO VI Fahrzeuge nahm deutlich zu, EEVs (enhanced environmentally friendly vehicle) vor allem in AUT und GER. Die Einführung von EURO VI begann 2011.

Auswirkungen auf Verkehrsleistung, Ladungsumfang oder Leerfahrten sowie Modal Split

Alle Länder haben die Auswirkungen der Infrastrukturabgaben auf die Verkehrsleistung, die Effizienz des Ladungsumfangs und den Anteil der Leerfahrten bestätigt. Allerdings sind die Auswirkungen von Mautgebühren auf den Modal Split bisher gering. Auf Grund von Effizienzsteigerungen und einer konstanten Entwicklung hin zu besseren EURO-Emissionsklassen in der Zusammensetzung der LKW-Flotte kann von einem Rückgang der luftverschmutzenden Emissionen ausgegangen werden.

In CH wurde die Gewichtsgrenze parallel zur Einführung der LKW-Maut schrittweise von 28 auf 40 Tonnen angehoben. Die Speditionsunternehmen konnten durch Produktivitätssteigerungen die Auswirkungen der Gebühren mehr oder weniger aufheben. Der hohe Anteil der Schiene am Güterverkehr von rund 40%⁸ dürfte bestehen bleiben.

Zusätzliche Maßnahmen

AUT plant die Berücksichtigung der externen Kosten für Luftverschmutzung und Lärm gemäß Richtlinie 2011/76/EU. Die entsprechenden Arbeits- und Verwaltungsschritte wurden bereits eingeleitet. In GER wird ebenfalls an der Berücksichtigung der externen Kosten gearbeitet.

Im Rahmen des Bahnprojektes Lyon-Turin werden FRA und ITA die Implementierung der Preisvorschriften der „Eurovignetten“-Richtlinie auf alpenquerenden Straßen, durch den Mont Blanc- und den Fréjus-Tunnel oder auf der Achse von Ventimiglia prüfen. FRA wird auch die Bedingungen und die Möglichkeiten für die Umsetzung der Richtlinie 2011/76/EU prüfen.

ITA plant die mögliche Umsetzung eines Bonus-Malus-Systems auf Basis der EURO-Emissionsklassen. Dies würde zu höheren Gebühren zunächst für die niedrigen EURO-Klassen und einem Preisvorteil für EURO V und VI Fahrzeuge mit einem zulässigen Gesamtgewicht von über 12 Tonnen und auf dem TEN-T Brennerkorridor führen.

CH plant langfristig die Umsetzung einer auf Anreizen basierenden Politik. Im Rahmen dieser Preis- und Mobilitätspolitik könnten die Preise für Straße und Schiene je nach Standort, Tageszeit oder Angebotsqualität variieren.

D. Erste Ergebnisse

Nachdem in den ersten Fassungen der Eurovignetten-Richtlinie von 1999 und 2006 die Rückgewinnung der Infrastrukturkosten ermöglicht wurde, die nur zum Teil dem Ziel von Artikel 14 des Verkehrsprotokolls entsprach, ermöglicht die überarbeitete Fassung von 2011, die die Möglichkeit vorsieht, bestimmte externe Kosten zu decken, es jetzt den Mitgliedstaaten, die

⁸ 40% für den gesamten Schienenverkehr (Transit, Import, Export, Binnenverkehr), wobei der Anteil der Schiene im alpenquerenden Verkehr bei ca. 65% liegt.

wahren Kosten für den Straßengüterverkehr besser zu berücksichtigen, allerdings innerhalb der von der Richtlinie und ihren Anhängen vorgesehenen Grenzen.

Die wichtigste Herausforderung der Umfrage war die Analyse der in den verschiedenen Alpenländern ergriffenen Maßnahmen zur Erhebung einer LKW-Maut für die Nutzung des Straßennetzes (unter Bezugnahme auf die Eurovignetten-Richtlinie).

Unter Berücksichtigung des vorliegenden Mandats und der Tatsache, dass die Mitgliedstaaten der Alpenkonvention mit Ausnahme der Schweiz noch keine externen Kosten berücksichtigen, obwohl dies laut Richtlinie möglich ist, konnten nur einige der für eine solche Analyse relevanten Aspekte behandelt werden.

Daher sind im Rahmen künftiger Mandate weitere Analysen erforderlich, die sich auf die nachstehenden Aspekte von Artikel 14 des Verkehrsprotokolls konzentrieren müssen:

- bessere Berücksichtigung der wahren Kosten (Infrastruktur- und externe Kosten)
- Berücksichtigung der verschiedenen Verkehrsträger und -mittel
- Einfluss auf den Modal Split und die Nutzung unterschiedlicher Verkehrsträge
- Anreize für die Struktur- und Regionalplanung (wirtschaftlich, rechtlich, Planung).

Die nachstehende Roadmap enthält die wichtigsten nächsten Schritte, um die Umsetzung der Gebührenbestimmungen für den Güterverkehr im Rahmen der Arbeitsgruppe Verkehr der Alpenkonvention zu prüfen.

KAPITEL II – Roadmap für die Prüfung der Umsetzung der Gebührenbestimmungen für den Güterverkehr und weitere Möglichkeiten

Der Überblick und die Überwachung der Aktivitäten in Verbindung mit der Umsetzung der Eurovignetten-Richtlinie, die in Kapitel I erläutert wird, zeigen, dass das Thema Gebührenbestimmungen für den Güterverkehr auf dem Alpenstraßennetz untersucht werden muss.

Damit sie positive Auswirkungen auf die Nachhaltigkeit des Verkehrs im Alpenraum hat, muss diese Arbeit im Mandat 2015/16 bezogen auf drei Hauptthemen fortgesetzt werden:

1 / Analyse der konsolidierten Eurovignetten-Richtlinie: In wie weit gestattet sie die Berücksichtigung von externen Kosten, die durch den Straßengüterverkehr in den Alpen verursacht werden, in der Gebührenstruktur, die auf die Infrastrukturnutzung zur Anwendung kommt?

Diese Analyse sollte Antworten auf zwei grundsätzliche Fragen im Alpenkontext bieten:

1. Werden externe Effekte und Kosten von der konsolidierten Richtlinie ausreichend berücksichtigt, speziell in den Alpen? Müssen wir weitere Effekte berücksichtigen, die ebenso wichtig sind? Welche?
2. Tragen die angewandten Methoden und die maximalen Verschmutzungskosten im Anhang der Eurovignetten-Richtlinie der Kostenwahrheit im Alpenraum angemessen Rechnung?

Es gab bereits etliche Studien über die negativen Folgen des Verkehrs und die Kosten, die der Gemeinschaft dadurch entstehen. Um eine gemeinsame qualitative und quantitative Analyse durchzuführen, wird es erforderlich sein, diese Studien zu identifizieren, ihre wissenschaftliche Relevanz unter Berücksichtigung der Besonderheiten des Alpenraums zu bewerten, neuere Studien ausreichend zusammenzufassen, die als die wichtigsten und am besten geeigneten gelten, und schließlich die Ergebnisse dieser Analyse zusammenzufassen.

2 / Praktische Umsetzung, Erfahrungen der Mitgliedstaaten:

Auf Basis einer gründlichen Analyse des ersten Fragebogens könnten folgende Aspekte detaillierter geprüft werden:

- in jedem Mitgliedstaat bereits ergriffene Maßnahmen
 - Gebührenstruktur
 - weitere politische Maßnahmen und Bestimmungen für den Güterverkehr, z.B. Verkehrs- oder Geschwindigkeitsbeschränkungen)
- Auswirkungen dieser Maßnahmen

- Auswirkungen auf die Verkehrsverlagerung
- Auswirkungen auf wirtschaftliche/operative Tätigkeiten
- In jedem Mitgliedstaat geplante Maßnahmen
 - Erwartungen und Aussichten

Durch zusätzliche Fragen oder Interviews könnte versucht werden, die Schwierigkeiten zu erklären, die bei der Implementierung der Gebührenstrukturen auftreten, um die wahren Kosten zu decken, einschließlich der Eurovignetten-Richtlinie.

Schließlich können wir Beispielfälle identifizieren, die als Referenz dienen und detaillierter beschrieben werden könnten (z.B. Zielsetzungen, Bedingungen für die Entscheidungsfindung und Implementierung oder Feedback der Stakeholder), um festzustellen, welche Lehren gezogen werden können.


3 / Weitere Aussichten und Anregungen

Ausgehend von vorstehender Analyse könnten wir dann feststellen, welche potenziellen Ergebnisse aus der Anwendung der aktuellen Wegekostenrichtlinie zu erwarten sind, mit welchen Bedingungen und Schwierigkeiten ihre Umsetzung verbunden ist und welche zusätzlichen Maßnahmen langfristig ergriffen werden könnten, um alle bisher ungedeckten und externen Kosten vollständig zu berücksichtigen.

Annex I of Synthesis Report – Background Material

Austria

Toll rates 2014

Tolling after EURO emission classes Rates for motor vehicles about 3.5 t MPW from 1-1-2014			
	Category 2 2 axis	Category 3 3 axis	Category 4+ 4 a. more axis
A EURO-emission class EURO VI	0,162	0,2268	0,3402
B EURO-emission class EURO EEV	0,167	0,2338	0,3507
C EURO-emission class EURO IV a. V	0,185	0,2590	0,3885
D EURO-emission class EURO 0 to III	0,208	0,2912	0,4368

Rates in EUR pro km, exkl. 20% USt.

Toll Road Network



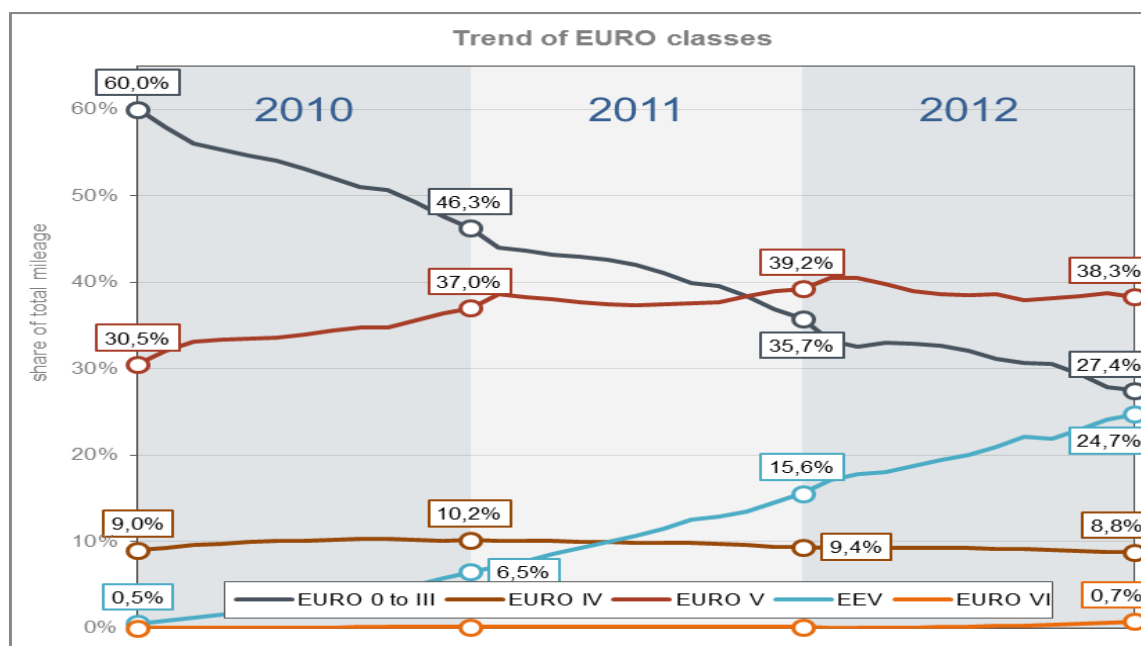
Trans European Road Network



Toll Road Network, not TERN




Some motorways or parts of motorways in or near urban areas (e.g. A22 or A3) and some express-ways (S3, S4, S5, S6, S31, S33, S34, S35, S36 and S37) are not part of TERN.

Development EURO-Emission Classes¹⁾



¹⁾ Data from ASFINAG (September 2013)

Toll Rates on Special Toll Routes

Tolling according to EURO emission classes rates for vehicles with a max. permissible gross weight of over 3.5t (as of 1 January 2013) Special toll routes A9, A10, A11, A13, S16					
Rate groups	Road section subject to tolling	km	Category 2 2 axles	Category 3 3 axles	Category 4+ 4 axles and more
A 9 Pyhrn Bosruck	SplTal/Pyhrn - Ardning	10			
A EURO emission class EURO VI			3,87	5,42	8,13
B EURO emission class EURO EEV			4,01	5,61	8,42
C EURO emission classes EURO IV & V			4,41	6,17	9,26
D EURO emission classes EURO 0 to III			4,99	6,99	10,48
A 9 Pyhrn Gleinalm	Kn. St. Michael – Übelbach	25			
A EURO emission class EURO VI			9,18	12,85	19,28
B EURO emission class EURO EEV			9,50	13,30	19,95
C EURO emission classes EURO IV & V			10,44	14,62	21,92
D EURO emission classes EURO 0 to III			11,81	16,53	24,80
A 10 Tauern	Flachau - Rennweg	47			
A EURO emission class EURO VI			13,13	18,37	27,57
B EURO emission class EURO EEV			13,59	19,03	28,54
C EURO emission classes EURO IV & V			14,94	20,91	31,37
D EURO emission classes EURO 0 to III			16,92	23,69	35,53




A 11 Karawanken *	St. Jakob/Rosental – Tunnel, Südportal	10			
A EURO emission class EURO VI			8,68	12,15	18,23
B EURO emission class EURO EEV			8,98	12,57	18,86
C EURO emission classes EURO IV & V			9,88	13,83	20,75
D EURO emission classes EURO 0 to III			11,18	15,65	23,48
A 13 Brenner **	Innsbruck Ambras – Brenner	35			
A EURO emission class EURO VI night-time rate			22,68	31,75	47,63 95,24
B EURO emission class EURO EEV night-time rate			23,46	32,84	49,27 98,54
C EURO emission classes EURO IV & V night-time rate			25,80	36,12	54,18 108,36
D EURO emission classes EURO 0 to III night-time rate			29,19	40,87	61,30 122,58
A 13 Brenner **	Innsbruck Wilten – Brenner	34			
A EURO emission class EURO VI night-time rate			22,00	30,80	46,20 92,40
B EURO emission class EURO EEV night-time rate			22,77	31,88	47,82 95,64
C EURO emission classes EURO IV & V night-time rate			25,02	35,03	52,54 105,08
D EURO emission classes EURO 0 to III night-time rate			28,32	39,65	59,47 118,92

S 16 Arlberg	St. Anton/Arlberg – Langen/Arlberg	16			
A EURO emission class EURO VI			8,39	11,75	17,62
B EURO emission class EURO EEV			8,68	12,15	18,23
C EURO emission classes EURO IV & V			9,56	13,38	20,08
D EURO emission classes EURO 0 to III			10,80	15,12	22,68
Rates in EUR, excl. 20% VAT					

Night-time rate: On the A13 motorway a night time rate applies for Category 4 trucks between 10:00 p.m. and 05:00 a.m.. The night rate is double the amount of the day rate.

A 12 INNTAL AUTOBAHN (BORDER KIEFERSFELDEN – INNSBRUCK AMRAS)

For the section on the A 12 between the state border near Kufstein and the junction Innsbruck-Amras, an increase in the basic kilometer tariff was defined by law and will take effect since 2012 onward in several stages. The surcharge in the amount of 15% to be collected by ASFINAG from 1 January 2013 onward is paid to the state and earmarked for financing the Brenner Base Tunnel.

Tolling according to EURO emission classes rates for vehicles with a max. permissible gross weight of over 3.5t (as of 1 January 2013) A 12					
Rate groups	Road section subject to tolling	km	Category 2 2 axles	Category 3 3 axles	Category 4+ 4 axles and more
A 12 Unterinntal	Border Kiefersfelden – Innsbruck Amras	74,8			
A EURO emission class EURO VI			12,80	17,93	26,90
B EURO emission class EURO EEV			13,32	18,68	27,99
C EURO emission classes EURO IV & V			14,61	20,47	30,71
D EURO emission class EURO 0 to III			16,59	23,25	34,84
Rates in EUR, excl. 20% VAT					

France

Alpine Toll Road Network



Green	Delegated Network (Concession with Tolls)
Blue	Non delegated Network (Presently free in the Alpine Area)

Tolls and Tarifs on Alpine Routes

Voie		Section			Tarification actuelle		
N° européen	Numéro national	De ...	A ...	distance	Type (1)	Tarif (2)	Tarif/km (2)
				... km	Oui /non	€	€ par km
E21 - E62	A 40	Bellegarde	Le Fayet	90	oui concession	37,00 €	0,41 €
E25	A40 puis RN 205	Le Fayet	entrée tunnel MB	24,5	Non	0 €	0 €
E712	A 41	St Julien en Genevois	Chambery-Nord	48,5	oui concession	35,70 €	0,74 €
E70	A410 et A43	Villy le Pelloux	Chambery-Nord	44	oui concession	19,00 €	0,43 €
E 70	RN201	Chambery nord	La Ravoire	5	Non	0 €	0 €
E 70	A43	La Ravoire	Le Freney	98	oui concession	43,90 €	0,45 €
E 70	A43	Le Freney	Entrée Tunnel Fréjus	5	Non	0 €	0 €
	A430	AITon	Gilly-sur-Isère	15	oui concession	5,70 €	0,38 €
E712	A41	Montmélian	Meylan	42	oui concession	12,80 €	0,30 €
E712	RN87	Meylan	Echirolles	10,5	Non	0 €	0 €
E711	A48	Rives	Saint-Egrève	20	oui concession	8,40 €	0,42 €
E711/E712	A480	Saint-Egrève	Claix	14	non	0 €	0 €
E712	A51	Claix	Monestier-de-Clermont	24	oui concession	9,20 €	0,38 €
	RN85	Pont-de-Claix	La Saulce	109	Non	0 €	0 €
	RN85	Vizille	Gap	86	Non	0 €	0 €
	RN85	Gap	La Saulce	15	Non	0 €	0 €
	A51	La Saulce	Saint-Paul-lez-Durance	95	oui concession	28,90 €	0,30 €
	A49	Voreppe	La Baume-d'Hostun	46	oui concession	16,00 €	0,35 €
	A8	Gorbio	Castellar (frontière)	10	non-concession non tarifée	0 €	0 €
E64	RD6204	Breil-sur-Roya (frontière)	Tende (frontière)	40	Non	0 €	0 €

Tolls and Tarifs (Tunnels Fréjus and Mont-Blanc)

Fréjus (12,9 km)



Poids lourds

En italique : tarifs sens Italie => France

Convois exceptionnels

Escortes matières dangereuses

Tarifs TTC en Euros

Classe	Sous classification Euro-polluant	Course Simple		Aller-Retour Validité 15 jours	
		France	Italie	France	Italie
3 Véhicule à deux essieux dont la hauteur totale est supérieure à 3m.	Euro 3-4-5-6	148,40	150,20	231,00	233,70
	Euro 0*-1-2	157,00	158,90	244,40	247,30
4 Véhicule à trois essieux ou plus dont la hauteur totale est supérieure à 3m.	Euro 3-4-5-6	298,20	301,70	468,40	473,90
	Euro 0*-1-2	315,50	319,20	495,70	501,50
Exceptionnels classe B	Euro 3-4-5-6	414,00	418,90		
	Euro 1-2	438,10	443,20		
Exceptionnels classe C	Euro 3-4-5-6	821,90	831,40		
	Euro 1-2	869,60	879,30		
Escortes matières dangereuses	Euro 3-4-5-6	120,10	121,50		
	Euro 1-2	127,10	128,60		
Escortes spécifique F <i>Transit entre 23h et 5h.</i>	MD de classification 1 (1.3C & 1.3G) et de classification 2	554,80	559,40		

0* : bus uniquement

Transit des matières dangereuses : arrêté préfectoral disponible au www.tunneldufrejus.com.

Transports exceptionnels : conditions particulières (renseignements auprès du Cesam)

Classe B : largeur comprise entre 2,81m et 3,50m









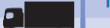





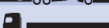
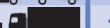
Classe C : largeur comprise entre 3,51m et 6m, ou longueur supérieure à 25m

Mont-Blanc (11,5 km)



GEIE du TUNNEL DU MONT BLANC
www.tunnelmb.com

TARIFS côté France au 1^{er} janvier 2013
(TVA 19,60% incluse)

						ABONNEMENTS				
CLASSE		TYPE DE VEHICULE		COURSE SIMPLE		ALLER-RETOUR (1)		10 PASSAGES (2)	20 PASSAGES (2)	FORFAIT 1 MOIS (3)
VEHICULES LEGRS	5	Moto, moto avec side-car, moto avec remorque				27,00	34,00	84,90	118,90	204,00
	1	Véhicule ou ensemble de véhicules dont la hauteur, au droit de l'essieu avant, est inférieure à 1,30 m et la hauteur totale est inférieure ou égale à 2 m		 		40,90	51,00	127,50	178,50	
	2	Véhicule ou ensemble de véhicules dont la hauteur totale est supérieure à 2 m et inférieure ou égale à 3 m		   		54,10	68,00	170,00	237,90	
POIDS LOURDS	3 euro: 4-5	Véhicule à deux essieux dont la hauteur totale est supérieure à 3 m		 		148,40	231,00	GEIE-TMB <i>Plate-forme Sud du Tunnel du Mont Blanc</i> 1-11013 Courmayeur (AO) Tél. : +39 0185 890411 Fax : +39 0185 890591 Tél. : +33 (0) 4 50 55 55 00 Fax : +33 (0) 4 50 55 38 91 Pour les classes 3 et 4 possibilité d'abonnement post-paiement		
	3 euro: 3			 		157,00	244,40			
	4 euro: 4-5	Véhicule à trois essieux ou plus dont la hauteur totale est supérieure à 3 m		  		298,20	468,40			
	4 euro: 3			 		315,50	495,70			

(1) Pour les classes 1, 2 et 5, le retour est valable jusqu'à 24 h du septième jour suivant celui d'émission.
Pour les classes 3 et 4, le retour est valable jusqu'à 24 h du quatrième jour suivant celui d'émission.

(2) Les abonnements donnent droit à 10 ou 20 passages pour une période de 24 mois consécutifs en plus du mois de validation.

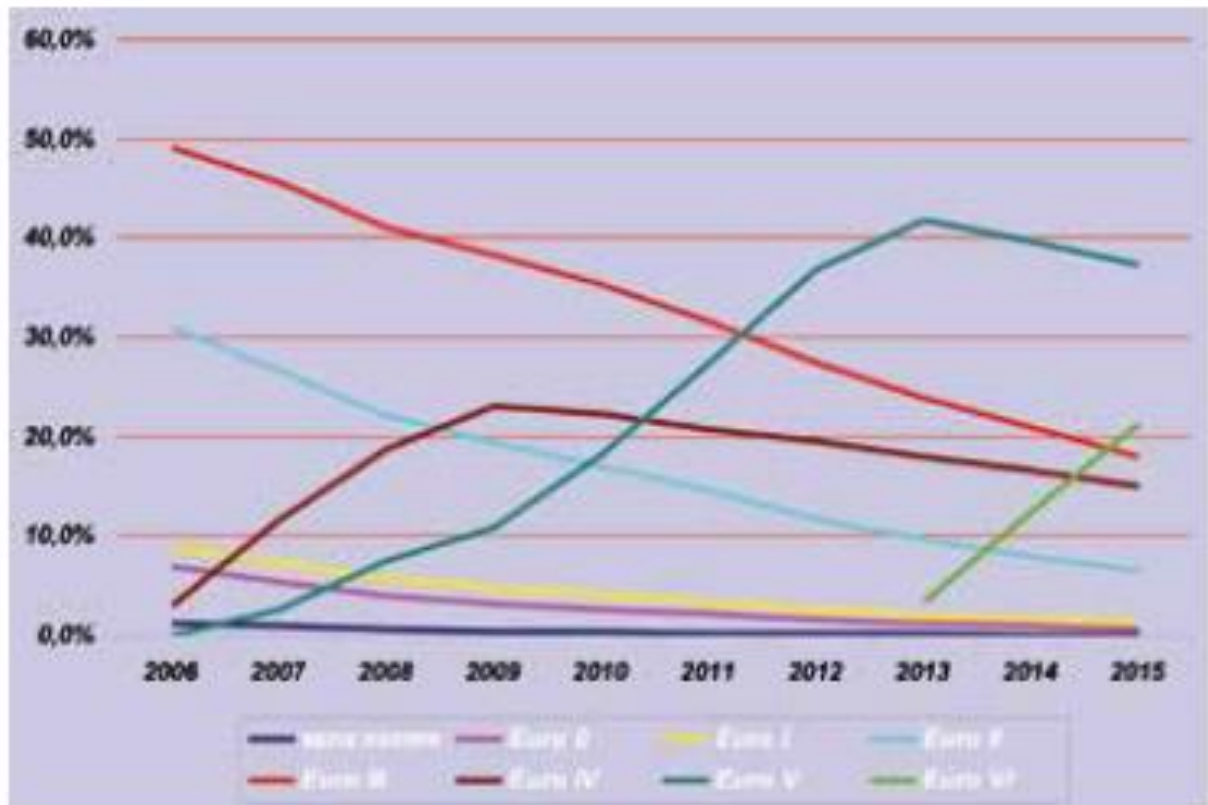
(3) L'abonnement forfait donne droit à 50 passages pour une période de 30 jours consécutifs en plus du jour de validation.

(1) Pour les classes 1, 2 et 5, le retour est valable jusqu'à 24 h du septième jour suivant celui d'émission. Pour les classes 3 et 4, le retour est valable jusqu'à 24 h du quinzième jour suivant celui d'émission.

(2) Les abonnements donnent droit à 10 ou 20 passages pour une période de 24 mois consécutifs en plus du mois de validation.

(3) L'abonnement forfait donne droit à 50 passages pour une période de 30 jours consécutifs en plus du jour de validation.

Development EURO-Emission Classes fleet



Source : projections réalisées par la DGITM sur la base des données du SOeS

Source: projections réalisées par la DGITM sur la base des données du SOeS

Development EURO-Emission Classes (Tunnels Fréjus and Mont-Blanc)

Fréjus (12,9 km)

Tipologia Typologie	Euro 0		Euro 1		Euro 2		Euro 3		Euro 4		Euro 5		Euro 6	
	Transiti 2013 Transits 2013	Diff. % 13/12	Transiti 2013 Transits 2013	Diff. % 13/12	Transiti 2013 Transits 2013	Diff. % 13/12	Transiti 2013 Transits 2013	Diff. % 13/12	Transiti 2013 Transits 2013	Diff. % 13/12	Transiti 2013 Transits 2013	Diff. % 13/12	Transiti 2013 Transits 2013	Diff. % 13/12
BUS	1	-80,00%	40	-33,30%	477	-30,47%	1.917	-0,00%	4.950	-48,16%	9.687	+282,28%	13	+
PL	0	-	549	-57,18%	7.671	-26,29%	118.963	-22,33%	96.575	-49,40%	438.440	+36,09%	795	+
PL + BUS	1	-80,00%	589	-56,11%	8.148	-26,55%	120.880	-22,06%	101.525	-49,34%	448.127	+38,02%	808	+
Peso – Poids % 2013	0,00%		0,09%		1,20%		17,77%		14,93%		65,89%		0,12%	
Peso – Poids % 2012	0,001%		0,19%		1,60%		22,39%		28,93%		46,88%		0,00%	

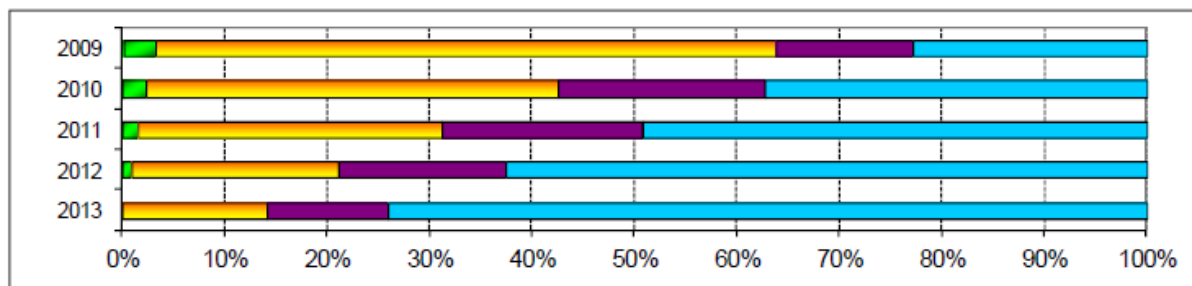
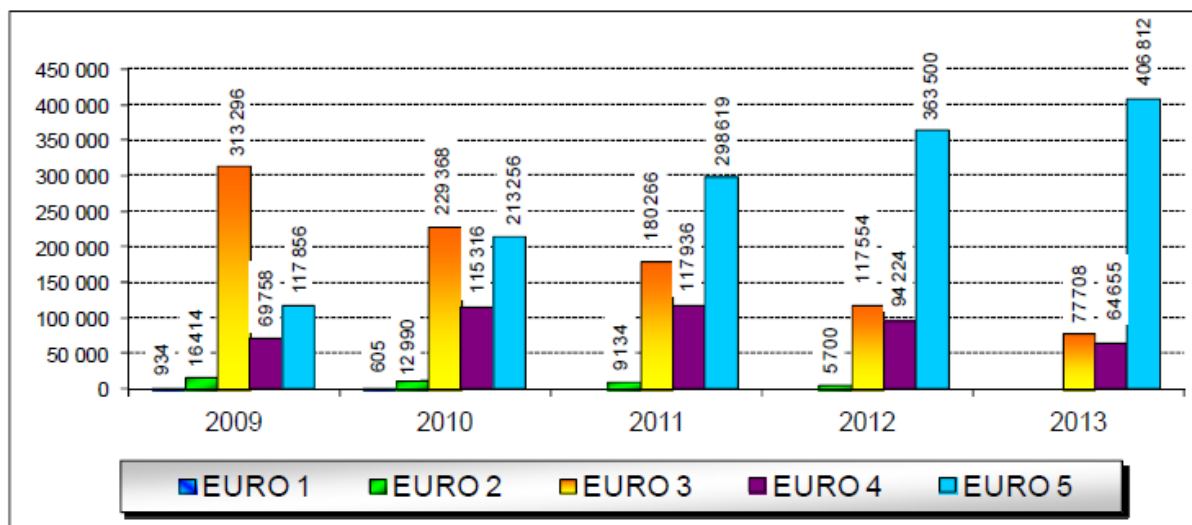
NB:

La classificazione Euro 6 è iniziata il 1° agosto 2013.
Precedentemente erano classificati con gli Euro 5

NB:

L'enregistrement des Euros 6 a commence le 1er aout 2013.
Auparavant ils étaient intégrés avec les Euros 5

Mont-Blanc (11,5 km)



Germany

Toll Rates

SEIT 01.01.2009 GELTENDE GEBÜHRENSTRUKTUR

(gemäß der Anlage zu § 14 des Bundesfernstraßenmautgesetzes)

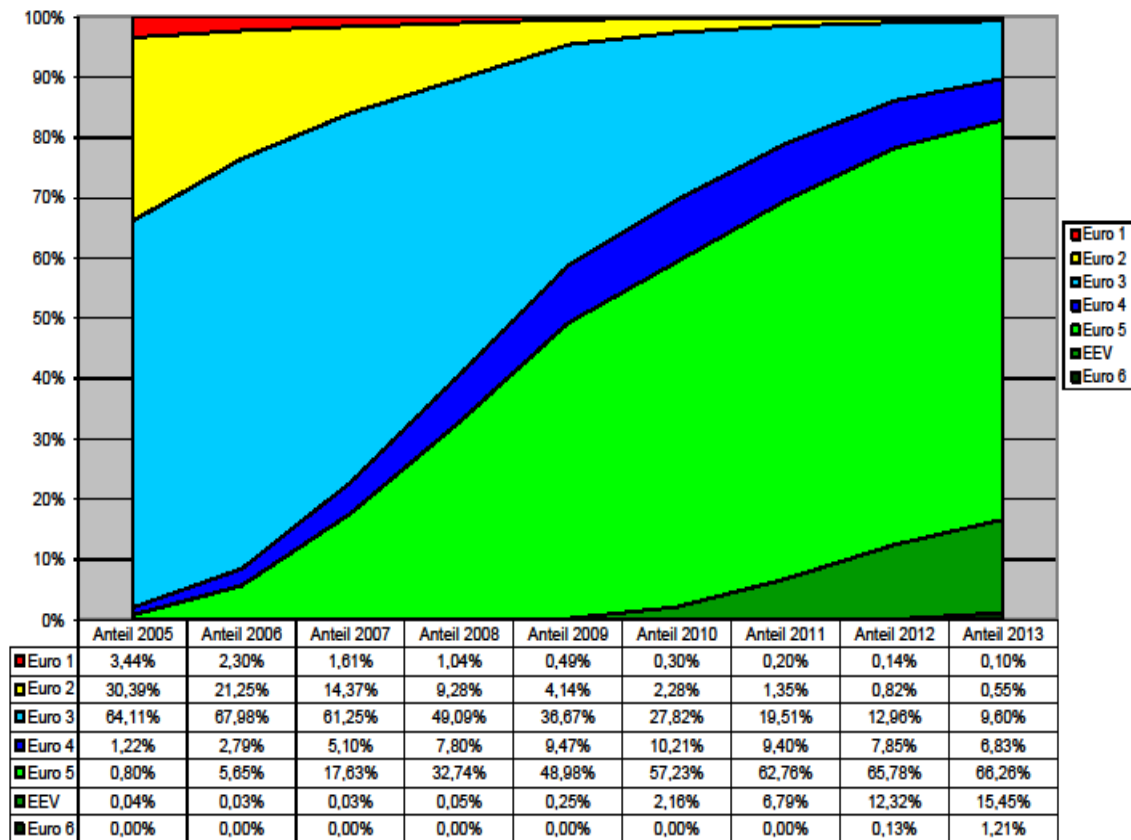
- SPREIZUNG 100 %, MIT PMK*
- VOLLSTÄNDIGE HARMONISIERUNG

Emissionsklasse	Mautkategorie	Maut seit 01.01.2009
EEV	Kategorie A	bis 3 Achsen: 14,1 Cent pro Kilometer ab 4 Achsen: 15,5 Cent pro Kilometer
Euro V	Kategorie A	bis 3 Achsen: 14,1 Cent pro Kilometer ab 4 Achsen: 15,5 Cent pro Kilometer
Euro IV oder Euro III mit PMK 2,3, oder 4	Kategorie B	bis 3 Achsen: 16,9 Cent pro Kilometer ab 4 Achsen: 18,3 Cent pro Kilometer
Euro III oder Euro II mit PMK 1,2,3 oder 4	Kategorie C	bis 3 Achsen: 19,0 Cent pro Kilometer ab 4 Achsen: 20,4 Cent pro Kilometer
Euro II	Kategorie D	bis 3 Achsen: 27,4 Cent pro Kilometer ab 4 Achsen: 28,8 Cent pro Kilometer
Euro I / Euro 0	Kategorie D	bis 3 Achsen: 27,4 Cent pro Kilometer ab 4 Achsen: 28,8 Cent pro Kilometer

* Bei den Partikelminderungsklassen (PMK) handelt es sich um Nachrüstungsstandards zur Senkung des Partikelaustrittes. PMK II erreicht den Partikelwert von Euro IV, PMK I jenen von Euro III. Die PMK II und I werden daher hinsichtlich der Mauthöhe den Emissionsklassen Euro IV bzw. Euro III gleich gestellt.

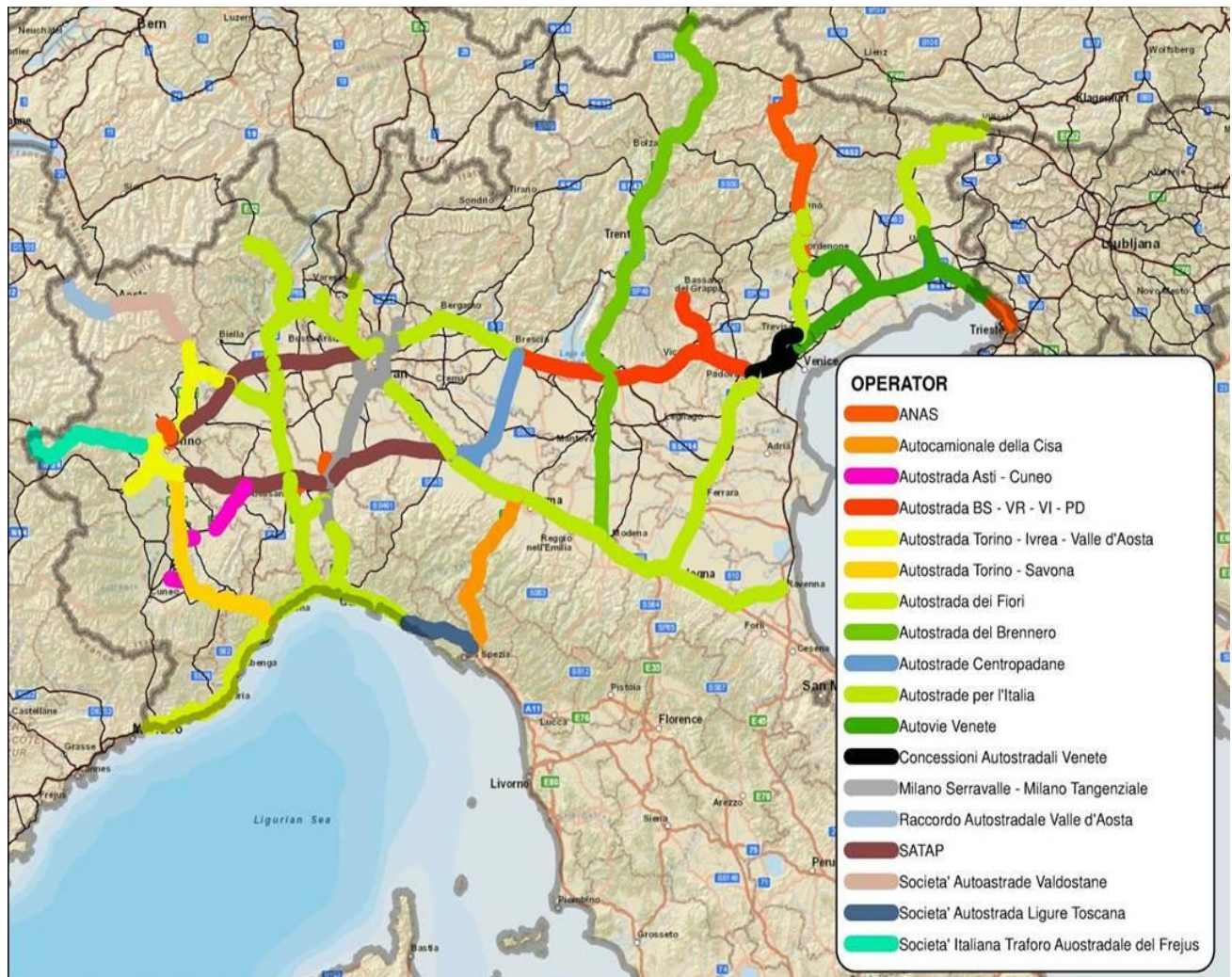
Development EURO-Emission Classes

Übersicht Lkw-Maut: Entwicklung der Fahrleistungsanteile nach Schadstoffklassen



Italy

Toll Road Network



Toll Rates 2014

AUTOSTRADE IN CONCESSIONE TARIFFE ALL'UTENZA IN VIGORE dall'1.1.2014 COMPRENSIVE DELL'INTEGRAZIONE DEL CANONE DI CONCESSIONE ANAS (Euro 0,008 + 0,018) E DELL'IVA (22%)						
ENTE		CLASSI DI PEDAGGIO				
		A	B	3	4	5
AUTOSTRADE PER L'ITALIA	A	0,08938	0,07097	0,09514	0,14286	0,16830
	B	0,08191	0,08383	0,10995	0,16731	0,19787
TORINO-MILANO						
Novara Est - Milano	A	0,10851	0,11109	0,14129	0,21915	0,26059
Torino - Novara Est	A	0,10579	0,10831	0,13806	0,21384	0,25419
ATIVA	A	0,08068	0,08253	0,11973	0,17993	0,20625
SITAF						
Barriera di Bruere	B	0,12908	0,15159	0,24909	0,32279	0,37292
Barriera di Avigliana	B	0,13563	0,15934	0,26023	0,33894	0,39179
Barriera di Salbertrand	B	0,13321	0,15647	0,25574	0,33297	0,38482
TORINO-SAVONA	B	0,08375	0,08572	0,12387	0,18655	0,21405
SATAP	A	0,08392	0,08591	0,11231	0,17130	0,20274
	B	0,09926	0,10165	0,13041	0,20114	0,23890
SERRAVALLE-MILANO						
Autostrada	A	0,05749	0,05873	0,08108	0,11967	0,14025
Tangenziale Est	A	0,12919	0,13231	0,16569	0,25945	0,30945
Tangenziale Ovest - Terrazzano	A	0,09767	0,09999	0,12860	0,19809	0,23514
Tangenziale Ovest - Milano Ghisolfi	A	0,11830	0,12116	0,15288	0,23821	0,28374
Tangenziale Ovest Ghisolfi	A	0,04388	0,04480	0,06504	0,09316	0,10817
Tangenziale Ovest Ghisolfi (utenza)	A	0,04815	0,04920	0,07011	0,10153	0,11827
Tangenziale Ovest - Milano (A7)	A	0,06002	0,06140	0,08416	0,12472	0,14635
Tangenziale Ovest - Milano Melegnano	A	0,05900	0,06034	0,08292	0,12265	0,14389
Tangenziale Nord	A	0,12649	0,12956	0,16254	0,25421	0,30311
BRESCIA-PADOVA	A	0,06471	0,06615	0,08961	0,13375	0,15727
CENTRO PADANE	A	0,06299	0,06442	0,08763	0,13048	0,15328
BRENNERO	A	0,06239	0,06385	0,08696	0,12938	0,15198
	B	0,07382	0,07555	0,10043	0,15156	0,17883
AUTOVIE VENETE	A	0,07520	0,07697	0,10204	0,15421	0,18209
CAV						
Autostrada	A	0,06060	0,06194	0,08479	0,12577	0,14763
Tangenziale	A	0,06259	0,06403	0,08717	0,12966	0,15233
Passante di Mestre	A	0,12073	0,12355	0,16374	0,24755	0,29228
SAV						
Autostrada	B	0,20528	0,21032	0,28581	0,44823	0,51932
Raccordo Gran S. Bernardo	B	0,20108	0,20606	0,28030	0,43930	0,50890
AUTOSTRADA DEI FIORI	B	0,12493	0,14601	0,23902	0,31142	0,35964
SALT	A	0,09405	0,09626	0,13759	0,20872	0,23985
	B	0,13740	0,14074	0,19538	0,30211	0,34879
SAT	B	0,13623	0,13952	0,19383	0,29961	0,34587
CISA	B	0,12305	0,12697	0,17746	0,27313	0,31502
STRADA DEI PARCHI	B	0,09865	0,10087	0,12961	0,19974	0,23718
AUTOSTRADE MERIDIONALI	A	0,05968	0,06009	0,11882	0,15085	0,17237
CONSORZIO AUTOSTRADE SICILIANE						
Messina - Catania	A	0,03831	0,04383	0,07914	0,09819	0,11092
	B	0,05379	0,06213	0,10774	0,13634	0,15540
Messina - Palermo	B	0,05761	0,05891	0,08129	0,11999	0,14061
RAV	B	0,17312	0,22941	0,31069	0,48838	0,56610
TANGENZIALE DI NAPOLI	A	0,43681	Euro per asse			
ASTI - CUNEO		0,12559	0,15643	0,25535	0,33312	0,38503

A = Tariffa di pianura B = Tariffa di montagna

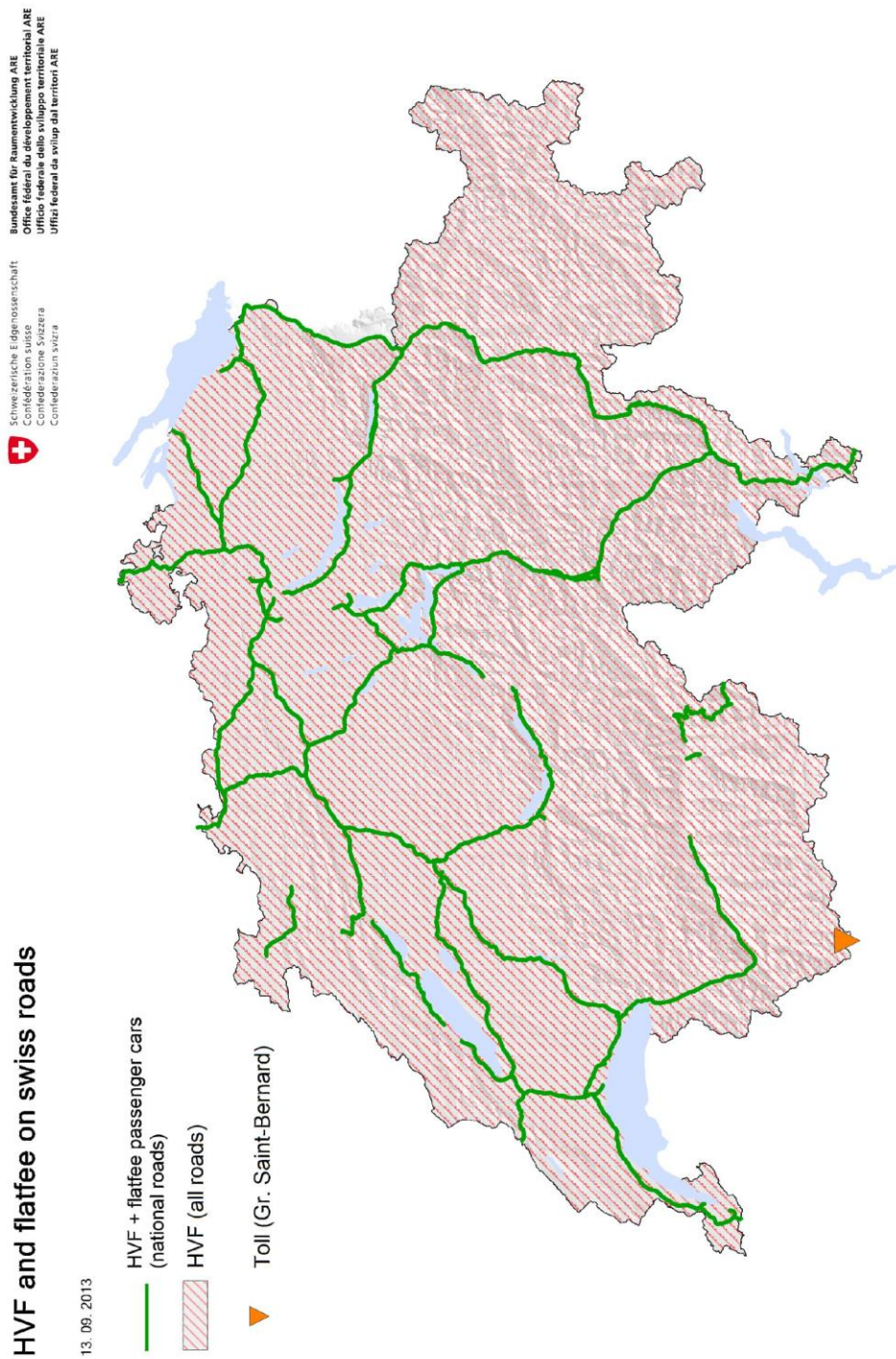
A = Plain Rate

B = Mountain Rate

Source: Ministero delle infrastrutture e dei trasporti. IVCA

Switzerland

Toll Road Network: The Heavy Vehicle Fee (HVF) is applied on the entire road network (all categories of roads) on Swiss territory = area tolling



Toll Rates 2014

HVC - General / Rates

The performance-related heavy vehicle charge is a federal tax levied on the basis of total weight, emission level and the kilometres driven in Switzerland and the principality of Liechtenstein.

It must be paid for all the vehicles and trailers which

- have a total weight of more than 3,5 tons,
- are used for the carriage of goods and
- are licensed in Switzerland and abroad and drive on Switzerland's public roads network.

Tax rates

Currently applied rates:

Tax category	Euro category	Rate
I	Euro 2*, 1 and 0	3.10 ct./tkm
II	Euro 3*	2.69 ct./tkm
III	Euro 4 and 5	2.28 ct./tkm

Discount rate:

III	Euro 6	2.05 ct./tkm
-----	--------	--------------

Relevant weight	18 t
Rate according to emission (Euro 5)	2.28 ct./tkm
Kilometres driven	100 km
Total	CHF 41.05

Calculation: $18 \times 2.28 \times 100 = 4105 \text{ ct.} = \text{CHF } 41.05$

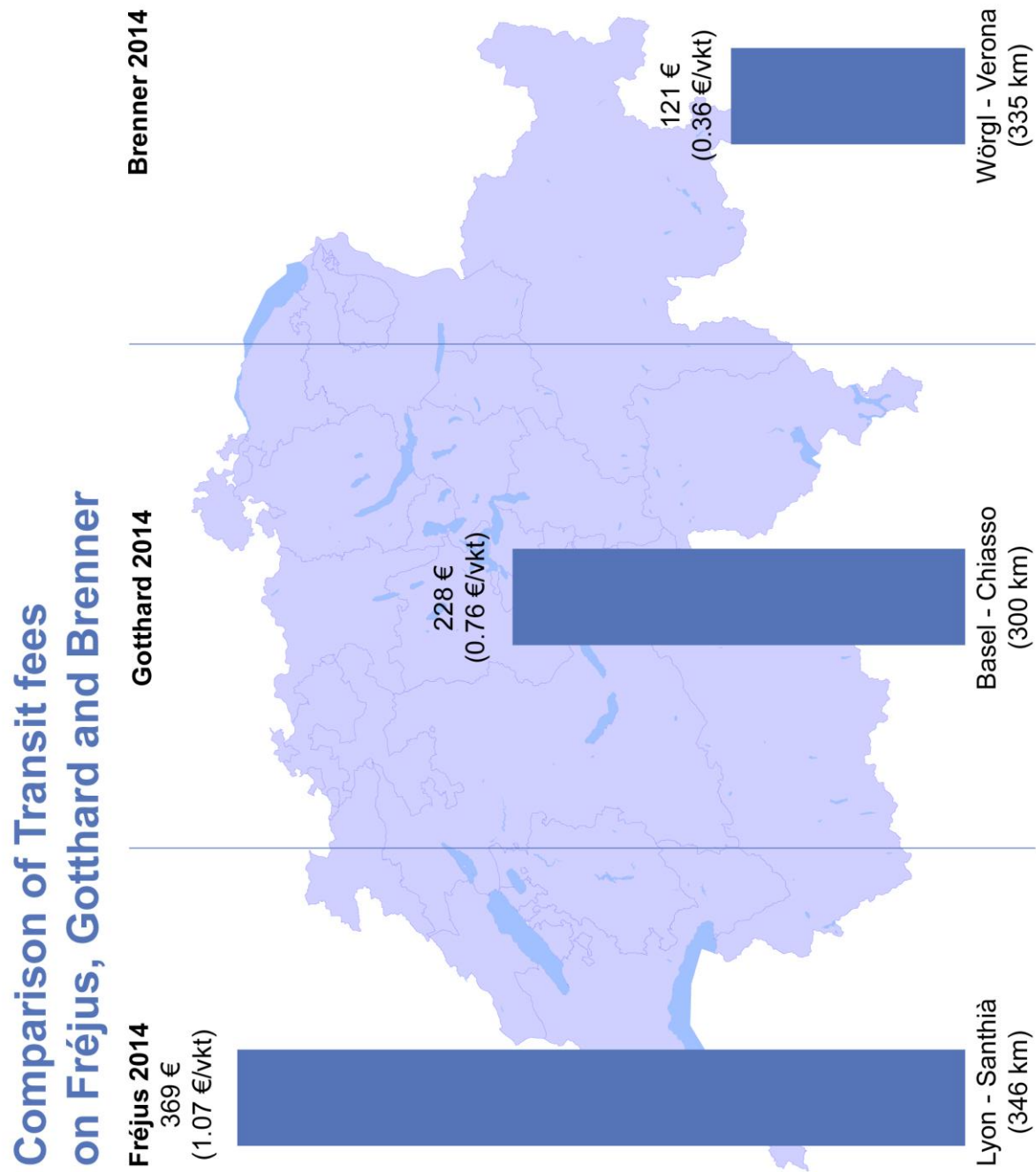
* 10% discount for vehicles retrofitted with particle filter systems which keeps the particle limit value euro 4 (0,02 g/kWh)

Calculation example:

Vehicle 40 t , emission class Euro 5, distance 300 km (reference trip for crossing Switzerland (north – south)

Relevant weight	40t
Rate according to emission class (Euro 5)	2.28 ct/tkm
Kilometers driven	300
Total (40 x 2.28 x 300 = 27360 cts.)	273.60 CHF

Comparison of Transit Fees on Fréjus (CH), Gotthard (CH) and Brenner (AUT)



Annex II of Synthesis Report – Slovenian Toll System

In this specific moment Slovenia has a so called ABC electronic tolling system (barrier based) combined with manual tolling for HGV for above 3,5 Tones. In current policy papers and action plans we have envisaged free flow tolling for trucks starting from 2012 on (this will be postponed to 2014 due to extended tender procedures). The future tolling systems and calculation of tolls include infrastructure costs, external costs as well as a possibility to include marking up for the alpine and sensitive regions.

The general design approach is to have a balanced basic tariff system which will allow differentiation based on EURO classifications of HGV, time of day as a duty where incomes will be (after costs remunerated to the operator) respectively be reinvested in mitigating measures as building of sound, snow and wind barriers and intelligent transport systems and services for safer, efficient and environmentally friendlier road transportation system.

Tolling system and roads

The following ways of collecting toll exist in Slovenia:

- vignette tolling system for vehicles weighing up to 3.500 kg
- open and closed tolling system for vehicles weighing over 3.500 kg

Toll for vehicles >3,5t is collected at 27 toll stations which consist of a total of 195 tolling lanes, including 62 lanes for vehicles using vignettes, 59 combined lanes (vignettes + cargo vehicles >3,5t), 60 regular lanes and 14 fast ABC lanes intended solely for vehicles with the maximum permissible weight over 3.5 tones. Six tolling lanes are intended for tolling of the Karavanke motorway tunnel at the Hrušica toll station.

The toll collection system is a modern, permanent, stable and long-term source for funding the management and maintenance of the motorways, for the construction of new motorways and repayment of loans. In both executive acts, the Government of the RS has implemented the guidelines of the EU on promoting of a fairer method of toll payment and subsequently reducing the flat rate method of payment. The guidelines of the EU on refunds for the use of toll roads stipulate that users should pay toll which depends on the actual number of covered length of the road and the damage to the road caused by their vehicles. Therefore, fair toll payment systems should be encouraged and flat rate tolling systems should be limited.

In accordance with the EU Directive and the new action plan adopted by the Government of the RS on 26 November 2009, we are planning to establish an electronic toll collection system in the free traffic flow on the entire motorway network.



Tolls and distances between toll stations

By clicking a point on the map, you can choose the **entry** and **exit** toll station you are going to drive through. To help you, information under the map appears with the first click. Vehicles weighing over 3.5 t pay a toll for the use of motorways in open and closed toll systems. To calculate the amount of toll between larger towns in Slovenia, we suggest using the application for planning the optimal route in Slovenia, which is available at Promet.si.

Toll classes

R3 (1 st toll class)		The vehicles with two or three axles whose maximum permissible weight is over 3,500 kg, and the groups of vehicles with two or three axles whose maximum permissible weight of their powered vehicle is over 3.500 kg.
R4 (2 nd toll class)		The vehicles with more than three axles whose maximum permissible weight is over 3,500 kg, and the groups of vehicles with more than three axles whose maximum permissible weight of their powered vehicle is over 3.500 kg.

Open tolling system for vehicles weighing over 3.500 kg

On the roads with open tolling systems, a toll station is simultaneously an entry and exit toll station, and the amount of toll depends on the calculated and not the actually covered distance. The user pays the toll only if he or she passes through a toll station. Toll roads in the open tolling system:

Toll road	Section	Toll station	Type of station	Distance
A1 Šentilj - Maribor	Šentilj - Maribor	Pesnica	lateral	18.0 km
A1 Maribor - Arja vas	Maribor - Arja vas	Tepanje	frontal	57.4 km
	Hoče - Slovenske Konjice	Slovenske Konjice	lateral	27.1 km
	Slovenske Konjice - Arja vas	Slovenske Konjice	lateral	27.1 km
A1 Arja vas – Trojane	Arja vas - Trojane	Vransko	frontal	27.5 km
A1 Trojane - Ljubljana	Trojane - Ljubljana	Kompolje	frontal	36.0 km
	Blagovica - Trojane	Blagovica	lateral	8.7 km
	Lukovica - Ljubljana	Lukovica	lateral	18.5 km
	Krtina - Ljubljana	Krtina	lateral	14.9 km
H4 Ajdovščina - Vrtojba	Ajdovščina - Vrtojba	Bazara	frontal	22.9 km
A2 Podtabor - Ljubljana (Koseze)	Podtabor - Ljubljana (Koseze)	Torovo	frontal	39.3 km
A2 Ljubljana - Novo mesto V	Ljubljana - Novo mesto V	Dob	frontal	61.6 km
A2 Novo mesto V (Lešnica)-Obrežje	N. mesto V (Lešnica)-Obrežje	Drnovo	frontal	46.3 km
	N. mesto V (Lešnica)-SCP Krško	Krško	lateral	26.0 km
	SCP Krško - Obrežje	Krško	lateral	20.3 km
A5 Maribor (Dragučova)-Lenart-Sv. Jurij ob Ščavnici-Vučja vas-Murska Sobota-Lendava (Pince)	Maribor (Dragučova)-Lenart-Sv. Jurij ob Ščavnici-Vučja vas-Murska Sobota-Lendava (Pince)	Dragotinci	frontal	79.6 km
A4 Maribor – Slivnica – Ptuj (Draženci)	Maribor – Slivnica – Ptuj (Draženci)	Prepolje	frontal	30.6 km

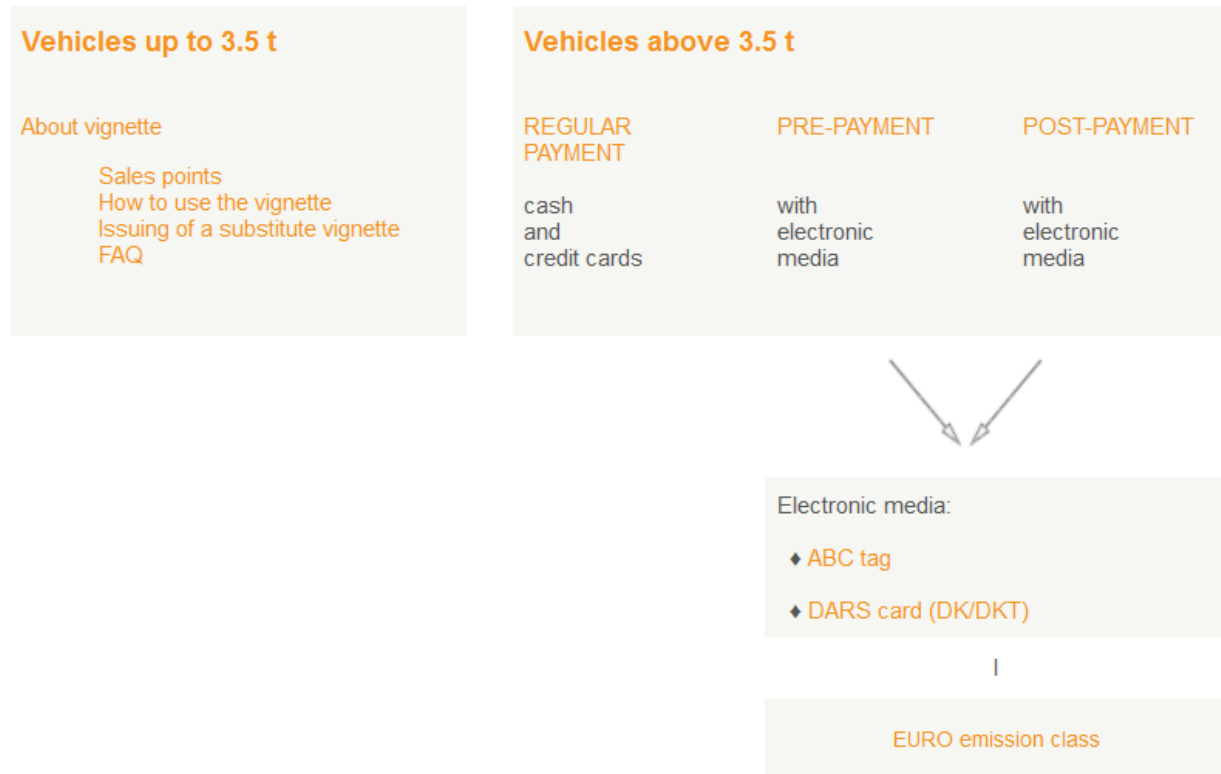
Closed tolling system for vehicles weighing over 3.500 kg

In the closed tolling system, users first enter the motorway system at a toll station, and then pay the toll upon leaving the motorway at an exit toll station. The difference between such system and the open tolling system is that the amount of toll depends more on the covered distance and that it has toll stations solely for entries and for exits. Toll roads in the closed tolling system:

Toll road	Section	Toll station	Type of station	Distance
A1 Ljubljana – Srmin (Koper)	Ljubljana - Srmin	Videž	frontal	98.7 km
	Ljubljana (Log) -Vrhnika	Vrhnika	lateral	18.7 km
	Ljubljana - Logatec	Logatec	lateral	27.0 km
	Ljubljana - Unec	Unec	lateral	37.4 km
	Ljubljana - Postojna	Postojna	lateral	48.8 km
	Ljubljana - Ajdovščina	Nanos	frontal	79.2 km
	Ljubljana - Senožeče	Senožeče	lateral	65.4 km
	Ljubljana - Divača	Divača	lateral	72.7 km
	Ljubljana - Kozina	Kozina	lateral	79.8 km
A1/A3 Ljubljana - Fernetiči	Ljubljana - Gabrk - Fernetiči	Dane	frontal	82.0 km

Methods of payment

Users of the Slovenian motorways can pay toll in different ways considering the vehicle category and the type of payment.



An exception is toll payment for the **Karavanke tunnel**, where DARS card can be used also for toll payment for vehicles with the maximum permissible weight up to 3.500 kg.

Pre-payment

The pre-paid mode is intended for users of electronic media of DARS d.d.:

- DARS card/DARS card Transporter and
- ABC tag.

Advantages of pre-paid toll payment

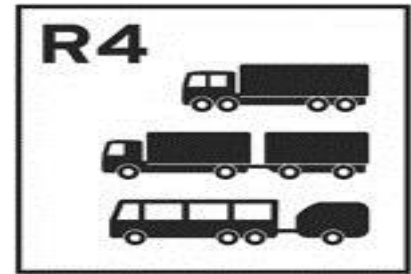
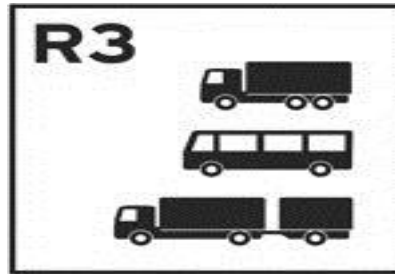
Toll paying with a DARS card, DARS card Transporter and ABC tag is also cheaper because we are offering you discounts for certain amounts of credit:

Amount of credit	Discount
from 60 EUR to 210 EUR	1%
from 210 EUR to 400 EUR	3%
400 EUR and more	5%

Direction: Karavanke tunnel – Ferneti (ITA)

Your calculation (EURO emission class)

Toll classes:

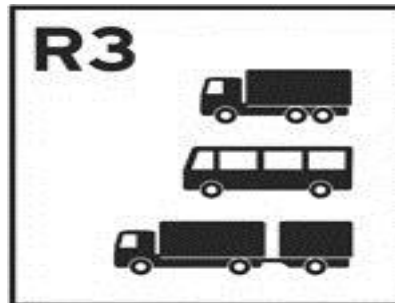


	E3	E4	E5+	E3	E4	E5+
A2 Ljubljana - Podtabor (39,30 km)						
Torovo	8,10	6,40	5,60	13,50	10,70	9,30
A1 Ljubljana - (Fernetiči) - Koper (82,00 km)						
Dane						
Log	16,90	13,30	11,60	28,30	22,30	19,40
Toll:	25,00	19,70	17,20	41,80	33,00	28,70
Length of chosen toll roads:	121,30 km					

Direction: Šentilj (AUT) – Ferneti (ITA)

Your calculation (EURO emission class)

Toll classes:



	E3	E4	E5+	E3	E4	E5+
A1 Šentilj - Maribor (18,00 km)						
Pesnica	3,70	2,90	2,50	6,20	4,90	4,30
A1 Ptujška c. (Maribor vzhod) - Arja vas (57,40 km)						
Tepanje	11,80	9,30	8,10	19,80	15,60	13,60
A1 Arja vas - Trojane (27,50 km)						
Vransko	5,70	4,50	3,90	9,50	7,50	6,50
A1 Trojane - Ljubljana (36,00 km)						
Kompolje	7,40	5,80	5,10	12,40	9,80	8,50
A1 Ljubljana - (Fernetiči) - Koper (82,00 km)						
Dane						
Log	16,90	13,30	11,60	28,30	22,30	19,40
Toll:	45,50	35,80	31,20	76,20	60,10	52,30
Length of chosen toll roads:	220,90 km					

Karavanke tunnel

The Karavanke road tunnel is excluded from toll payment with regards to the EURO emission class. Toll tariff for the use of Karavanke road tunnel:

CATEGORY	VEHICLE TYPE	EUR
category 1	Vehicles with the maximum mass not exceeding 3,500kg	7.00
category 2	Two-axle vehicles of which the maximum mass exceeds 3,500kg	10.50
category 3	Three-axle vehicles of which the maximum mass exceeds 3,500kg	15.00
category 4	Vehicles with more than three axles, of which the maximum mass exceeds 3,500kg	22.50

Point card

User frequently using Karavanke tunnel can get a discount for paying the toll for the first toll-rate category by purchasing the transferable point card with a value of 59.50 EUR and with a validity of one year after the date of issue, according to which each drive is charged in the amount of 4.25 EUR (14 drives).

Annex III of Synthesis Report– Background Studies

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Annex 2 Short summary, executive summary and report on sustainable mobility solutions in remote Alpine territories

Der Ständige Ausschuss der Alpenkonvention legt das Mandat der Arbeitsgruppe Verkehr alle zwei Jahre neu fest. 2012 wurde in Vorbereitung auf die Alpenkonferenz 2014 ein Überblick über Best Practices und geeignete Strategien für Verkehrslösungen in entlegenen Alpengebieten und die Ausarbeitung von Empfehlungen zur Förderung der Mobilität in diesen Regionen als eines der Themen für die Arbeitsgruppe Verkehr vorgesehen. Das vorliegende Dokument ist eine Zusammenfassung des Abschlussberichts der Arbeitsgruppe Verkehr vom Oktober 2014.

Identifikation entlegener Alpengebiete

Der erste Arbeitsschritt war die Identifikation der entlegenen Alpengebiete. Um vergleichbare Ergebnisse in allen Ländern der Alpenkonvention sicherzustellen, wurden diese Gebiete anhand bestimmter Merkmale identifiziert. Von den knapp 5.900 Gemeinden im Einzugsbereich der Alpenkonvention gelten demnach über 1.000 als „entlegene Gebiete“.

Zur Identifikation „entlegener“ Gemeinden wurden folgende Merkmale verwendet:

- Standort ohne städtischen Einfluss;
- begrenzter Arbeitsmarkt;
- Bevölkerungsrückgang;
- unterdurchschnittliche Bevölkerungsdichte;
- begrenztes öffentliches Verkehrsangebot;
- Fehlen von intensivem Tourismus.

Nachhaltige Verkehrslösungen in entlegenen Alpengebieten: eine Auswahl an Best Practices

Bei der Festlegung nachhaltiger Verkehrslösungen wurden speziell die Anforderungen entlegener Alpengebiete, wie vorstehend erläutert, berücksichtigt. Es wurden aber auch zusätzliche Initiativen außerhalb der betreffenden Gebiete erfasst, vorausgesetzt, sie waren auf entlegene Alpengebiete übertragbar.

Das Spektrum war dabei nicht nur auf Verkehrslösungen im eigentlichen Sinne begrenzt, sondern umfasst auch Ansätze, die den Zugang und die Zugänglichkeit verbessern, beispielsweise durch das Angebot bestimmter Serviceleistungen vor Ort oder durch den Erhalt örtlicher Einzelhandelsstrukturen. Zu den berücksichtigten Best Practices gehören alle Verkehrslösungen mit Ausnahme des individuell genutzten privaten PKW, sämtliche Mobilitätsmanagementmaßnahmen sowie Lösungen und Dienstleistungen, die zur Vermeidung individueller Mobilität beitragen.

Über **50 Best Practices** wurden erfasst. Obwohl die Teilnehmer der Untergruppe versucht haben, eine große Zahl relevanter Initiativen zu identifizieren, erhebt diese Auswahl keinen Anspruch auf Vollständigkeit. Die Best Practices wurden in vier Kategorien eingeteilt (siehe nachstehende Liste). De facto umfassen manche Best Practices mehr als einen dieser Ansätze.

Öffentliche Verkehrsdienste	→	Maßnahmen, die zusätzliche Angebote für öffentlichen Linien- oder On-Demand-Verkehr schaffen.	18 Best Practices
Andere Mobilitätsdienste	→	Maßnahmen, die zusätzliche Mobilitätsangebote schaffen, die über die Reichweite des öffentlichen Verkehrs hinausgehen , darunter Bike-Sharing, Carpooling und Mitfahrgelegenheiten.	12 Best Practices
Andere Serviceleistungen	→	Serviceleistungen, die zu einer Verringerung oder Vermeidung der Individualmobilität beitragen, darunter virtueller Zugang zu öffentlichen Behörden, mobile Geschäfte, Lieferservice, Home-Office, Videokonferenzen usw.	12 Best Practices
Organisation und Mobilitätsmanagement	→	Maßnahmen, die bereits bestehende Angebote verbessern oder sichtbar machen , ohne zusätzliche Mobilitätsangebote zu schaffen, wie Marketing, Kommunikation, Preisgestaltung, Kooperationsmaßnahmen, Mobilitätsinformationen und Schulungsinitiativen für nachhaltige Mobilität.	12 Best Practices

Hauptergebnisse

Die Hälfte der 50 erfassten Best Practices betreffen direkt die vorstehend erläuterten entlegenen Gemeinden. Obwohl die Versorgung dieser Gebiete mit den üblichen Verkehrsdiensten oft als besonders schwierig gilt (niedrige Bevölkerungsdichte, geringe touristische Attraktivität, weite Entfernungen, erhebliche klimatische und geografische Herausforderungen usw.), zeigt diese Auswahl, dass **die Umsetzung nachhaltiger Verkehrslösungen auch in entlegenen Alpengebieten möglich ist.**

Die meisten der ausgewählten ländlichen oder dünn besiedelten Alpengebiete sind mit ähnlichen Problemen und Trends konfrontiert: niedrige Bevölkerungsdichte auf Grund weiter Entfernungen zwischen den Dörfern und Entfernung zu Dienstleistungen, alternde Bevölkerung auf Grund fehlender Ausbildungs- und Arbeitsmöglichkeiten, unattraktive öffentliche Verkehrsdienste usw. Allerdings **ist das Spektrum der nachhaltigen Mobilitätsinitiativen und -lösungen, die von örtlichen Anbietern angeboten werden, ausgesprochen breit** und reicht von öffentlichen Verkehrsdiensten über Videokonferenz-Infrastrukturen bis hin zu Bike- und Car-Sharing, Mitfahrgelegenheiten, Informationsangeboten oder integrierten Tarifsystemen.

Eine große Herausforderung für nachhaltige Mobilitätsangebote, allen voran für öffentliche Verkehrsangebote in entlegenen oder dünn besiedelten Gebieten, ist die Schwäche der Nachfrage, da **viele Beteiligte die Anwesenheit von Touristen nutzen**, um Mobilitätsangebote einzurichten, die auch von den Einwohnern genutzt werden können.

Empfehlungen für die Förderung der Mobilität in entlegenen Alpengebieten

Mit Blick auf die wirtschaftlichen, sozialen und ökologischen Herausforderungen, die sich aus der aktuellen Mobilitätssituation mit einer hohen Abhängigkeit vom privaten PKW in entlegenen Gebieten ergeben, stellt sich die Frage, wie Mobilitätsangebote wirtschaftlich entwickelt werden können, die soziale und ökologische Anforderungen gleichermaßen erfüllen. Ausgehend vom Feedback zu den Best Practices formuliert der Abschlussbericht **vier Schlüsselempfehlungen** für die Verbesserung und Förderung nachhaltiger Mobilitätslösungen in diesen Gebieten.

Lokale Expertise und Berücksichtigung der Anforderungen der Nutzer

Mobilitätsdienste in entlegenen, dünn besiedelten ländlichen Gebieten können keine Kopie der Dienste in Stadtgebieten sein. Sie müssen vielmehr **auf die Bedürfnisse ihrer Anwender zugeschnitten** sein und erfordern spezifische Kenntnisse dieser Bedürfnisse. Örtliche Regierungen, gemeinnützige Organisationen und Gemeindemitglieder verfügen oft über **fundierte Kenntnisse der Mobilitätsbedürfnisse** und sollten daher in die Konfiguration der Serviceleistungen ebenso einbezogen werden wie in ihren späteren Betrieb.

Integrierte Ansätze und verbesserte Koordination


Die Verbesserung der Koordination zwischen den vorhandenen Diensten in funktionaler Hinsicht oder mit Blick auf die Preisstrukturen ist ein preisgünstiger Ansatz zur Verbesserung der generellen Mobilitätssituation dünn besiedelter Gebiete. Vor der Einführung neuer Mobilitätsangebote **sollten vorhandene Mobilitätsangebote integriert und allen Bevölkerungsgruppen zur Verfügung gestellt werden.** Ferner könnten die **Bereitstellung und Aufrechterhaltung von Dienstleistungen** in entlegenen Gebieten den Mobilitätsbedarf erheblich reduzieren. In vielen Fällen wären diese Lösungen effizienter als die Entwicklung zusätzlicher Mobilitätsangebote, obwohl sich diese beiden Ansätze ergänzen können.

Einfache und leicht verständliche Mobilitätsangebote

Die Transparenz von Mobilitätsangeboten ist für ihren Erfolg entscheidend und umfasst Kommunikation und Marketing in der gesamten Betriebsphase. Potenzielle Nutzer brauchen Zugang zu **zentralisierten, umfassenden und gezielten Informationen** über alle verfügbaren Serviceleistungen. Tarifstruktur, Preisgestaltung und Fahrkartenverkauf sollten so einfach und anwenderfreundlich wie möglich sein.

Langfristige Finanzierung

Da die Kosten pro Fahrt in entlegenen Alpengebieten besonders hoch sind, ist es in den meisten Fällen nicht möglich, kostendeckend zu operieren, so dass die Finanzierung nachhaltiger Mobilitätsangebote eine echte Herausforderung ist. Diverse Ansätze ermöglichen eine Kontrolle der Betriebskosten: **die Übernahme der Serviceleistungen aus anderen Gebieten** kann zu Skalenerträgen führen; die Bereitstellung von **Serviceleistungen** für alle Bevölkerungsgruppen kann den Wettbewerb reduzieren; durch



Die vorliegende Unterlage ist eine Zusammenfassung des Abschlussberichts der Arbeitsgruppe Verkehr. Die nachstehenden Experten haben an dieser Studie teilgenommen: Inga Ahrens (DE), Paolo Angelini (IT), Ueli Balmer (CH), Franziska Borer Blindenbacher (CH), David Caubel (FR), Daniel Chemin (FR, Koordinator), H  l  ne Denis (Club Arc Alpin, Beobachterin), David Dubois (FR, Bearbeiter), Wolfgang Grubert (AT), Veronika Holzer (AT), Ernst Lung (AT), Stefan Marzelli (DE), Stefanie Pf  ndler (CH), Zlatko Podgorski (SI), Christian Rankl (AT), Massimo Santori (IT), Florian Lintzmeyer (DE), Harry Seybert (DE), Raffaele Vergnani (IT).



Sustainable mobility solutions in remote alpine territories

Executive Summary

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Table of content

Background	1
Identification of remote territories	2
Sustainable mobility solutions	4
Micro public transport services.....	5
Other mobility services	6
Non-mobility solutions	7
Organisation and mobility management measures.....	8
Main lessons.....	10
Recommendations	12
Local expertise and monitoring of user needs.....	12
Integrated approaches and improved coordination	13
Simple and easily understandable mobility offers.....	14
The need for long-term funding.....	15
Conclusions	16

Background

Biannually, the Standing Committee of the Alpine Convention defines the mandate of the Working Group Transport. In 2012, in preparation for the upcoming Alpine Conference 2014, it has identified an overview of practices and strategies related to transport solutions in peripheral areas and the elaboration of recommendations for promoting mobility in these regions as one of the Working Group Transport's tasks. This synthesis report summarises the national contributions.

Under its French chair, the members of the Working Group Transport have agreed to consider the following three categories of transport and mobility solutions:

- Transport solutions except the individual use of private cars, including carpooling car- and bike-sharing, shared taxis and public transport including on-demand services.
- Mobility management measures for commuters or schools, mobility information and sustainable mobility education.
- Solutions or services that contribute to preventing individual mobility, including teleworking, e-commerce and goods delivery services, mobile shops or services as well as high-speed internet access.

The task of the soft mobility subgroup

The Working Groups Transport has structured its mandate into the following consecutive steps:

1. Identification of remote territories of the Alpine Regions and summary of national contributions by the French technical support team.
2. Collection of good practices and strategies in sustainable mobility within the previously identified remote territories and summary of national contributions by the French technical support team.
3. Recommendations for the development of sustainable mobility in the previously identified remote territories of the Alpine regions. and summary of national contributions by the French technical support team.

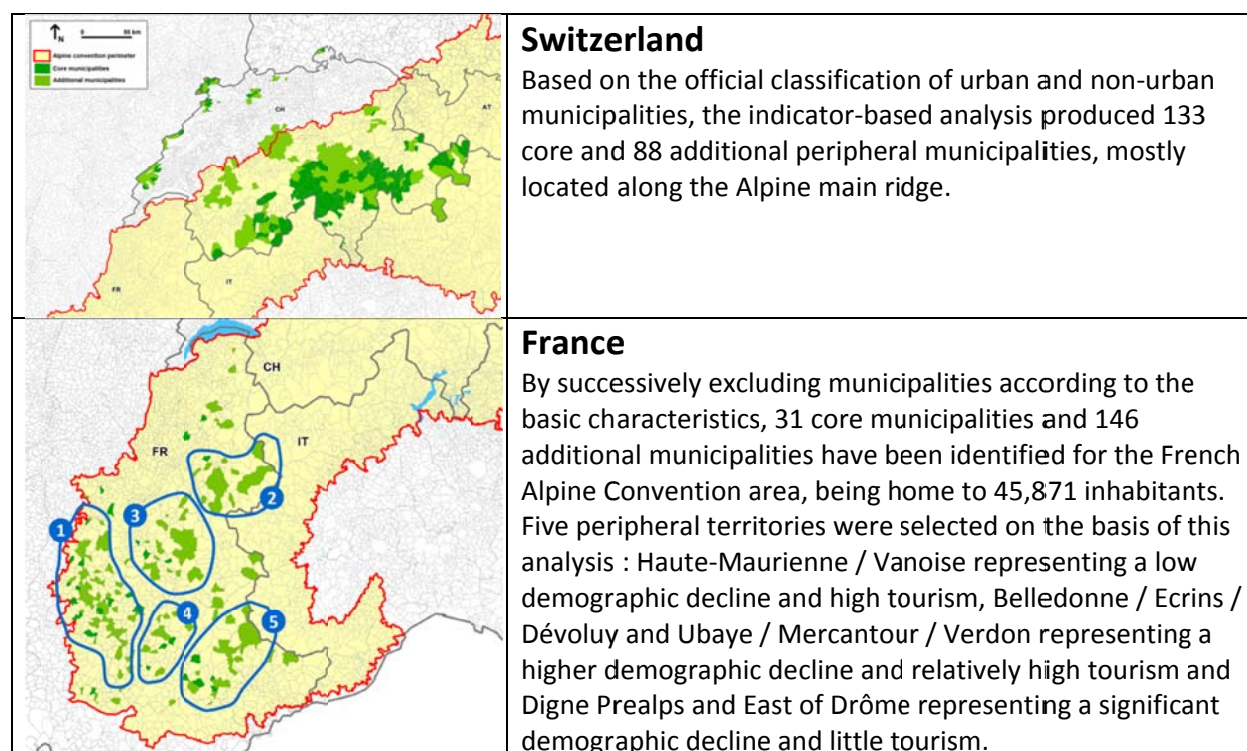
Identification of remote territories


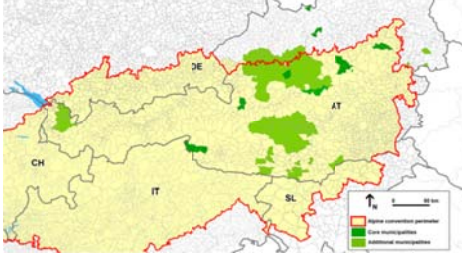
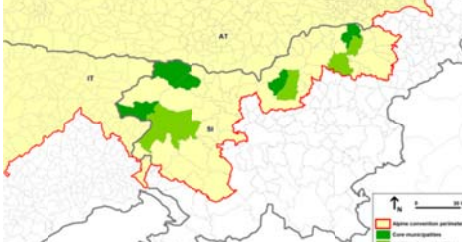
A basic set of characteristics was used to identify remote territories as displayed in figure .



Figure 1 Set of characteristics of remote territories in the Alps

In order to arrive at comprehensive peripheral territories, municipalities featuring different degrees of periphery – from core municipalities fulfilling a majority of indicators to supplementary municipalities fulfilling less than half of the indicators - were grouped together. The national analyses produced the following peripheral territories:



	<p>Germany</p> <p>An iterative method was used to identify remote German Alpine territories. In general, the German Alpine Convention area is a special case as it represents only a narrow band along the Northern Alpine foothills and most of its central area is strongly influenced by or even part of the Munich agglomeration.</p> <p>As tourism is particularly high in areas that otherwise qualify as remote, the absence of tourist hotspots has been excluded as a selection criteria. The following comparably peripheral areas have been identified:</p> <p>Oberallgäu/Hörnergruppe with the tourist hotspot of Oberstdorf, but otherwise low population numbers and densities, Ammergau/Halblech, Isarwinkel/Achenpaß representing a very sparsely populated area around the Sylvenstein reservoir, Achental/Kaiserwinkel representing a region with little access to the rail network and the southern Berchtesgadener Land characterised by its Alpine topography and limited settlement areas.</p>
	<p>Austria</p> <p>The Austrian contribution focussed directly on rural areas featuring innovative mobility solutions for non-motorized parts of the population, all in all a number of 254 municipalities.</p> <p>Contrasting these locations of innovative and flexible mobility solutions with the classification of population densities revealed that all of them are situated in sparsely populated municipalities, which make up most of the Austrian territory.</p>
	<p>Italy</p> <p>To be completed</p>
	<p>Slovenia</p> <p>The Slovenian contribution used population changes and densities to indicate remote Alpine municipalities, differentiating between core and additional municipalities, forming a total of 4 remote territories.</p>

Sustainable mobility solutions

The core task of identifying sustainable transport solutions in sparsely populated areas in a first step focussed on the remote territories outlined above. Nevertheless, additional initiatives implemented outside of this territory have also been collected, provided that they could be transferred to the Alpine territory. Nonetheless, this collection of **about 40** good practices – despite being based on extensive research – does not claim to be exhaustive. The good practice examples have been grouped into the following four categories.

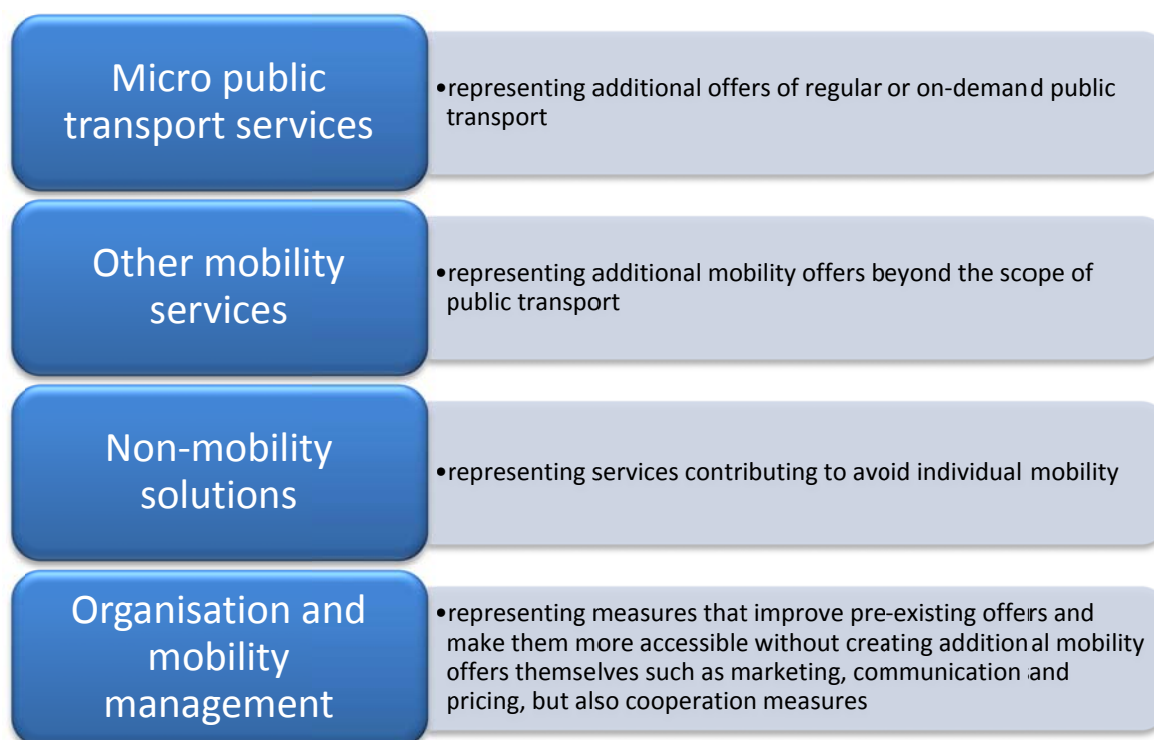


Figure 2 Overview of sustainable mobility categories for remot areas

In reality, good practices often combine various of these approaches. In order to avoid repetitions, they have been assigned to the most appropriate category.

Micro public transport services

Measures include 14 additional offers of regular or on-demand public transport on behalf of transport authorities as well as citizen buses operated by local volunteers and non-profit organisations. It turns out that while mostly tailored to the needs of residents, tourist demand can promote and sustain these services. In some cases, they have been specifically created to cater to tourist demand.

While accessible for residents as well, five of the good practices are mostly targeting tourist demand, with the downside that some of them are terminated during off-season:

Hiker's bus to the Karwendel	The Hiker's bus to the Karwendel mountain range, while connecting the train terminal stop and the Karwendel tourist hotspot of the Eng valley, also provides public transportation to otherwise poorly accessible municipalities of the German Alps. http://www.rvo-bus.de/rvo-de/start/freizeittipps/bergsteigerbus_eng.html
Bus Alpin	The Bus Alpin, operated by a non profit association in Switzerland, also provides access for tourists and residents alike to municipalities with less than 100 residents, which otherwise fall through the cracks of public transportation funding. The organization supports local stakeholders in establishing local bus services adapted to their specific needs. www.busalpin.ch
Gseispur	The Austrian Gseispur includes a variety of on demand transport modes such as shuttle and taxi services, rental e scooters and cars and mainly targets overnight visitors of the Gesäuse National Park. http://www.gseispur.at
Tälerbus Lungau	The Tälerbus Lungau particularly targets hikers by connecting trailheads and parking lots and is operated cooperatively by public transportation and taxi operators. http://www.taelerbus.at
Werfenweng Shuttle	One of the most widely known approaches to sustainable mobility in the Alps, the municipality of Werfenweng has established a shuttle, which is integrated into the Salzburg public transportation fare system and additionally provides free local shuttle services for holders of a guest card. http://www.werfenweng.org/de/shuttleplan-anshuttlezeiten/

Other services are clearly tailored to the needs of the resident population, providing year-round access to public and basic service facilities. Examples found in this study are presented here:

DEF-Mobil	The DEF-Mobil is operated by municipalities and connecting villages in the Austrian Defereggental valley. The service features a disproportionately high share of younger users compared to other on-demand services. http://www.defereggental.eu
Dorfmobil Klaus	The Dorfmobil Klaus is operated as a citizen-bus model (pre-booking of trips) through volunteers forming a private non-profit association. The tariff model encourages passengers to become members of the association. Local shops support the offer e.g. through compensating fares. http://www.gemeinde-klaus.at/gemeinde/DorfmobilWeb/Projekt.htm

Shopping bus Niederbüren	Local sponsorship is similarly crucial for the Einkaufsbus Niederbüren, offering free shuttle services to the next grocery store after the local store had to close temporarily. www.infowilplus.ch/ieu_write/artikel/2011/KW_15/Ober-Niederb%C3%BCren/Artikel_15606/
Stadtbus Kolbermoor: Flexible city bus	The flexible city bus in the town of Kolbermoor is providing flexible and adaptive bus services throughout the town's residential area, which still is a unique example among conventional public transportation operators in the German Alps. Demand-stops can directly be activated on a short notice. http://www.nahverkehrsberatung.de
Free Shuttle in the Ubaye Valley	The free shuttle in the French Ubaye valley is being operated by the municipality on a year-round basis, connecting villages as well as tourist installations. http://www.ccvu.fr/les-navettes-gratuites.html
Go-Mobil	The Austrian Go-Mobil is a national holding with local private non-profit organisations, formed by municipalities and companies, which finance the respective offers. As a supplement to conventional public transportation, local Go-Mobil taxi services are providing access to basic supply facilities as well as regular public transportation stops. http://www.gomobil-kaernten.at
Gmoa bus	The Gmoa bus, one of the first on-demand door-to-door transport systems in Austria, is operated by professional provider organisations established by the respective municipalities. http://www.b-mobil.info/projekte/dorfbus-projekte
Transport on demand for the elderly in Modane	French municipalities have established a transport on demand for the elderly, providing access to the nearby town of Modane with its supply facilities. A minimum age of 60 has been imposed for the service by the funding authority. www.canton-de-modane.com/transport-a-la-demande.htm
Transport on demand in rural areas of the Drôme	The French Drome Department is funding an on-demand service for rural areas that are not served by regular public transportation as part of its initiative to enhance the mobility and thus residential quality of its isolated municipalities. www.ladrome.fr

Other mobility services

This category includes **10 good practices**, most of them representing bike rental or car-sharing systems. Increasingly, these services include electric-mobility options.

A bike for my village, my village with a bike in Crévoux	The French initiative "A bike for my village, my village with a bike" in the Crévoux village offers rental e-bikes to residents and tourists alike and hopes to (re)establish the bike as local mode of transport. While popular among tourists, residents are not using the service to a degree they were expected to. www.crevoux.eu/
AutoSSS: Secure hitch-hiking service in Trièves	AutoSSS is a carpooling initiative of 27 municipalities in the French Isère department. Once registered and provided with identification material (logo as car sticker, bag with AutoSSS for passengers), car owners and passengers can arrange spontaneous rides. The project

	<p>emphasizes safety issues, e.g. by giving the option to communicate the names of drivers and passengers along the route. Occasional trips are free of charge, whereas carpoolers can either decide to use their vehicles alternately or share costs.</p> <p>http://dracnature.eklablog.fr/autosss-qu-est-ce-que-c-est-a3793175</p>
EMMA: Electric mobility with connectivity in Friedrichshafen	<p>The EMMA-project in the German county of Friedrichshafen is offering electric vehicles on a car-sharing basis to cover the last mile, often the missing link of public transportation. The offer is also incorporated into the Flinkster national car-sharing scheme. Still to be solved is how vehicles can be returned from remote to central areas. Focusing on handicapped and elderly, welfare organizations such as the Red Cross, Malteser or Johanniter organisations provide mobility services also in rural areas. Costs are regularly compensated by health insurances or social service providers.</p> <p>http://www.friedrichshafen.de/wirtschaft-verkehr/emma/</p>
Mobility management between Saas Fee and Visp	<p>In Switzerland, a mobility management between Saas Fee and Visp includes car-sharing and dissemination of mobility options and facilities and in general a more comprehensive approach to the region's transport and mobility planning. It is operated by an association, but receives support from various public institutions as well as local hotels.</p> <p>http://www.are.admin.ch/dienstleistungen/00908/03175/04266/index.html?lang=de&download=NHZLpZeg7t,lnp6lONTU042l2Z6ln1acy4Zn4Z2qZpnO2Y uq2Z6gpJCDe356hGym162epYbg2c_JjKbNoKSn6A</p>
Pedelec network in the Allgäu region	<p>A network of pedelecs – bicycles where the rider is assisted by an electric motor – has been established throughout the Allgäu region with 350 rental and 150 battery-charging stations. Tourists and residents alike can use this network mostly for recreational purposes.</p> <p>http://www.ee-tour.de/</p>

Non-mobility solutions

For some time now, technological solutions such as teleworking have been considered promising approaches to reduce commuter-related transport and make remote areas more attractive as places of work. Some of these expectations turned out to be exaggerated, but with improved technologies and with new approaches to conventional mobile services and shops, non-mobility solutions can still be an important element that particularly addresses the needs of the residential population.

ERIC internet resource centres Provence-Alpes-Côte d'Azur region	<p>The 160 ERIC internet resource centres located in rural areas in the French Alps provide high-speed internet access to all citizens as part of the Provence-Alpes-Côte d'Azur region's digital innovation strategy. With 300 trainers providing assistance, these centres are active in the fields of social inclusion, lifelong learning, cultural and leisure activities and sustainable development, often free of charge or at affordable rates.</p> <p>http://emergences-numeriques.regionpaca.fr/</p>
Informatics centre Vicosoprano	<p>The informatics centre in the Swiss Vicosoprano is a comparable initiative, providing infrastructure and assistance to schools, residents, farmers, apprentices and businesses to use and connect with online resources. In order to allow young apprentices to learn at their local businesses in a remote valley in Switzerland and still participate in online apprenticeship training courses, a study was conducted to assess the current state of apprenticeships in Swiss Alpine regions.</p>

<http://www.infocib.ch/>
<http://www.puntobregaglia.ch/>

Video-conferencing meeting points Hautes-Alpes

Video-conferencing meeting points provide virtual access to public agencies in 25 municipalities of the French Hautes-Alpes department. Without having to physically travel to public agencies, residents can receive information from administrations, employment and health insurance centers through confidential video-conference calls. Printing facilities and technical assistance can be provided if necessary.

<http://pointvisio.hautes-alpes.fr/>

<http://agenda21.cg05.fr/692-i1-mettre-en-place-des-points-visio.htm/>

Organisation and mobility management measures

Unlike establishing additional mobility offers, mobility management measures such as marketing, communication, education and pricing measures seek to make existing offers more accessible and attractive for users. Additionally, mobility management also includes cooperation among stakeholders during planning and implementation of mobility-related measures. **Nine respective** initiatives were identified in the study.

Alpentaxi

The Alpentaxi in Switzerland is closing the last-mile gap for hikers in the Swiss Alps. It has grown to currently around 300 operators, coordinated by Mountain Wilderness and co-financed by the Federal Department of the Environment, Transport, Energy and Communication, to provide on-demand transportation services under a common marketing label, thus creating awareness among users for their services. The specific conditions (on-demand 24/7 or only after previous reservation) are up to the individual provider and can be adapted to local preconditions and that way proves to be transferable to other framework conditions.

<http://alpentaxi.ch>.

Bürgerkarte Oberstdorf

The German Alpine city of Oberstdorf has included public transportation in its Bürgerkarte, a flat-fee card available to registered citizens that includes free access to local public transportation and discounts at various local facilities. Setting up this offer required an integrated fare system among several local service providers. With the introduction of the card, passengers volumes on local lines increased, which in return prompted operators to offer higher frequencies.

<http://www.markt-oberstdorf.de/themen/buergerkarte-2013.html>

e-GAP intermodal

The pilot project e-GAP intermodal in Garmisch-Partenkirchen provides registered users with access to a whole range of regional mobility options, from regular public transport to electric car-sharing vehicles, which are prominently displayed in the city center. Travel costs will automatically be charged across different fare systems and operators. The project includes a coordination of technological (in the form of a mobility app) and organizational task (integration of different operators). As many last-mile initiatives, the project still faces the challenge of how vehicles can be returned to the charging stations.

<http://www.e-gap.de/natur-mobil-erleben/>

Ilzer Land: Inter-municipal public transport concept

Remote areas are often characterized by sporadic public transportation offers, whereas student transport as a legal requirement is often provided on an area-wide basis, but underutilized in its capacity. The Ilzer Land, located outside the Alps but facing comparable challenges, has initiated a pilot project that closely coordinates student and public transport with the benefit of increasing offers for commuters, persons with mobility

	<p>restrictions, elderly and residents of small hamlets. http://www.nahverkehrsberatung.de</p>
Immer mobil: Individual transport services for elderly in rural areas	<p>The project immer mobil follows a similar approach, integrating regular public transportation services and sporadic services of social and private carriers (collective taxis, social services, citizen bus and carpooling) with a particular focus on residents with mobility restrictions and elderly. The project adopts a multi-channel approach to intuitively communicate available mobility choices. http://www.iml.fraunhofer.de/de/themengebiete/Projektzentrum_Verkehrslogistik_Prien/projekte/informationslogistik.html#tabpanel-3</p>
Jugendcard	<p>Particularly targeted at teenagers and young adults, the Jugendcard in the county of Berchtesgadener Land represents a discount fare system during weekend nights. It increases their individual mobility and at the same time addresses the problem of frequent accidents involving drunk driving. http://www.jugendcard.de</p>
MiFaZ: Regional promotion of the national carpooling internet platform	<p>Several German counties are regionally promoting the national carpooling internet platform MiFaZ, which offers a platform for negotiating rides among individuals and through a subdomain also for private enterprises. www.mifaz.de.</p>
MORECO: Mobility and residential costs	<p>Funded by the Alpine Space Programme, the MORECO project set out to increase the knowledge base for sound decision making on behalf of individuals as well as spatial planning authorities in regard to mobility and spatial planning decisions. It has produced several tools, e.g. a tool for assessing mobility costs related to residential choices. http://www.moreco-project.eu</p>
School transport by cable car in Venosc	<p>Through coordination between the local cable car and school bus operators, the Isère department and the municipality of Venosc, students living in the ski resort of Les Deux Alpes can use the cable car instead of a lengthy bus trip to reach school. The offer has also been extended to residents on a daily, monthly or annual fee basis, that way both increasing the utilization of the cable car during off-season and reducing individual motorized traffic. www.isere.fr</p>

Main lessons

What are the main lessons which can be drawn from the national analyses carried out in Austria, France, Germany, Italy, Slovenia and Switzerland ?



Figure 3 Overview of main lessons

Numerous good practices

The number of good practices, half of them coming directly from the peripheral study areas, implies that sustainable transport solutions can be realised even under adverse conditions commonly found in these areas. Local stakeholders often claim that local preconditions such as low population densities are crucial limitations to transport solutions beyond the private car – an argument that could at least partly be challenged when considering the range of good practices.

A wide range of measures

Despite having to deal with similar challenges such as low populations densities, demographic changes and poor public transportation services, local and regional stakeholders are coming up with a wide range of solutions, from public transport services to video-conferencing, bike- and car-sharing-schemes to information and integrated fare systems. This broad approach is necessary to address varying local preconditions such as financial resources and stakeholder and voluntary commitment.

- **Public transportation improvements** remain the most frequent approach, with a focus on demand-responsive services.
- **Other mobility service approaches** are somewhat less represented, with emphasize on rental and sharing-schemes. In this field, electric mobility is increasingly becoming a relevant part of the offer.
- **Non-mobility solutions** – most notably based on information and communication technologies - are the smallest category of collected initiatives. Private initiative is more relevant in this field, which is why the identified projects might be only a smaller proportion of what is actually being implemented on business level.

- **Organisational and mobility management initiatives** are enhancing the complementarity between mobility services e.g. through providing one-stop-solutions for various services or by developing unified payment and information systems.

Despite the wide range of measures, none of them is effectively addressing commuter transport or mobility behaviour through education. Additionally, mobility management measures seem to have an urban bias on densely populated areas while they could be just as useful under rural conditions in order to achieve a certain level of passenger demand necessary for sustainable transport modes.

Importance of tourism

As a lack of demand is the core challenge for sustainable mobility offers in remote areas, tourist demand can be the decisive trigger for innovative and attractive initiatives. If these services are to be targeted to tourists and residents alike, core challenges include their seasonality and service variations depending on weather conditions and public holidays.

Lacking evaluation and monitoring

EU- or nationally funded projects are usually monitored and results exist to assess their impact on transport and passenger volumes. For local initiatives, respective information is only sporadically available, which makes it difficult to assess the relevance and adequacy of individual measures. The report comes to the conclusion that stakeholders should be encouraged to carry out and exchange monitoring results in order to define suitable solutions more precisely.

Territorial transferability

The specific legal and regulatory framework of individual Alpine countries and the experimental status of pilot projects might pose a challenge for the transferability of some good practice examples. Adaptations and a thorough analysis of framework conditions might therefore often be necessary. On the other hand, the practical feasibility of approaches as proven by good practice examples is often an important argument for stakeholders elsewhere.

Recommendations

In the light of the economic, social and environmental problems generated by the present mobility situation car-dependency of peripheral, rural areas which mainly depend on private car transport, the question remains how to economically develop mobility offers that meet social and environmental needs alike.

The authors of this study have formulated **four key recommendations**.

Local expertise and monitoring of user needs

Mobility services in rural, remote and sparsely populated areas cannot simply replicate those in urban areas. They need to be customised to the needs of their users, requiring a specific knowledge of what these needs are.



Analyse mobility patterns:

When designing new mobility offers, the transport needs and specific mobility patterns of different target groups need to be identified. As generators of transport and passenger volumes, access to relevant points of interest, daily needs and local centers should be facilitated.

Involve local stakeholders:

Local governments, non-profit organisations and community members have an in-depth knowledge of relevant destinations and service times and should be involved in the configuration and scheduling of services as well as continually throughout their operation to apply necessary changes. Local knowledge, of course, also needs to be accompanied by professional know-how in regard to contract management, demand forecasting etc. held by regional transport authorities.

Monitor users' needs and expectations:

Adapting services to changing user needs and expectations is critical to the success of some good practice examples outlined in the report and increase customer satisfaction.

Integrated approaches and improved coordination

Improving the coordination among existing services in a functional or pricing perspective is a low-cost approach to improving the overall mobility situation of sparsely populated areas:



Integrate all mobility offers:

In rural area, public transportation, sustainable mobility and the delivery of services for specific target groups are fragmented among various operators and organisations, often rather leading to competition instead of complementarity. Before introducing new mobility offers, already existing mobility offers should be de-specialised and integrated, an approach that has been adopted by several good practices. On the other hand, de-specialization of all transport services is not sufficient to meet the needs of all users.

Bring or maintain services to remote territories:

The closure of public and basic service locations in remote areas has led to longer travel distances for people in order to satisfy their daily needs. However, when managing to bring products and services to people, private travels can be reduced while still maintaining a satisfactory access to these products and services. Sometimes, good practices combine bringing services to people and vice versa, e.g. the shopping buses connecting remote hamlets with local shop clusters.

Information and communication technologies can in many ways bridge physical barriers residents of peripheral areas have to face. Originally mainly used for teleworking, they are increasingly spreading into other areas such as e-learning, e-government etc. However, these approaches require both technological equipment as well as profound assistance to users.

Spatial integration and economies of scale:

Good practice examples, particularly pilot projects, are almost by definition often isolated initiatives that lack a critical mass on a regional scale to really have a significant impact on transport volumes and modal shares. Therefore, isolated approaches can profit substantially by duplicating them in bordering regions or making similar services available elsewhere.

Simple and easily understandable mobility offers

Making offers visible in the territory is a crucial factor of success and involves communication and marketing all along the operating phase:



Centralize, unify and develop information on mobility:

Potential user must have access to centralized, comprehensive and targeted information about all available services. Information services should integrate relevant territories as well as different modes of transport and provide basic and easy information on how to access services and about pricing schemes. Information need to be disseminated via several channels and technological solutions need to be accompanied by direct, personal communication through local stakeholders to reach specific target groups.

Integrate pricing and ticketing:

The multitude of fare structures, pricing rules, registration fees and ticketing systems increase the complexity of mobility services and functions as an access barrier to potential users. By reducing this complexity, integrated fare schemes, flat rates and mobile tickets can lower these access barriers. The crucial issue to be solved is how to allocate revenues among participating service operators.

The need for long-term funding

As costs per trip are particularly high in rural areas with their low population densities and long distances, financing conventional public transportation is a notorious challenge for rural areas, their municipalities and transport authorities. The problem is somewhat less pronounced for in areas with a significant number of tourist passengers.



Control operating costs:

Approaches to control operating costs include extending or duplicating services in other territories in order to generate economies of scale, de-specialising services to optimise the overall mobility offer, improve the degree of utilisation and to reduce competition among different services. Local platforms that negotiate mobility services and demand on a voluntary basis can be viable alternatives to conventional public transportation in peripheral areas. In the process of demographic changes, the capacities of volunteers can be capitalized on.

Secure long-term funds:

In order to improve the financial basis of mobility offers, raising fares would have a counterproductive effect, as it decreases their attractiveness and particularly jeopardizes the social inclusiveness of sustainable mobility. Consequently, direct profitability or even cost-coverage is in most cases not feasible for sustainable mobility offers.

Financial support from public authorities should therefore be secured on a long-term basis and reach beyond the start-up phase of initiatives. Several good practices also illustrate how additional stakeholders, usually public, but also private actors, can contribute to fund sustainable mobility offers.

Conclusions

This report is being summed up by highlighting the key findings extracted from the collected good practice examples:

- Understanding users' needs is key to appropriately support residents in their daily activities through mobility offers.
- However, no single “silver-bullet” emerges that solves the various and heterogeneous mobility problems rural areas are facing in the Alps.
- Individual measures will most likely only have limited effects, whereas a combination of different measures and approaches is able to create mutual benefits and create synergies in regard to local and regional mobility.
- Directly related to combining different measures is the need for joint efforts that involve different local stakeholders – that way ensuring tailor-made and widely accepted solutions.
- If measures ought to have a significant impact on the territory as a whole, it needs to spread beyond isolated initiatives and local implementation to cover larger geographical areas, producing economies of scale and improving its recognition and effectiveness.
- By preserving and re-establishing public and basic services as part of a rural development scheme, access to these services can be maintained for the local population without increasing physical mobility.

Sustainable mobility solutions in remote Alpine territories

Alpine Convention
Working Group
Transport
Soft Mobility
Subgroup



Final report



alpenkonvention · convention alpine
convenzione delle alpi · alpska konvencija

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Alpine Convention Working Group Transport
Soft Mobility Subgroup

Sustainable mobility solutions in remote Alpine territories

Final report

October 2014

Contents

A. Guidelines.....	8
A.1. Reminder of context: the promotion of sustainable transport solutions.....	9
A.2. Remote territories.....	9
A.3. The task of the Soft Mobility Subgroup.....	10
B. Identification of remote territories.....	11
B.1. Introduction.....	12
B.1.1. Two ways to define remote territories.....	12
B.1.2. Remoteness: a question of scale and individual perception.....	12
B.2. General methodology used to identify remote territories.....	13
B.3. Conclusions.....	15
C. Sustainable mobility solutions.....	16
C.1. Introduction.....	17
C.2. Analysis of good practices.....	18
C.2.1. Micro public transport services.....	20
C.2.2. Other mobility services.....	39
C.2.3. Non-mobility solutions.....	52
C.2.4. Organisation and mobility management measures.....	65
D. Main lessons and recommendations.....	78
D.1. First lessons learnt from good practices.....	79
D.1.1. A fairly high number of good practices	79
D.1.2. A very wide range of measures.....	79
D.1.3. The importance of tourism.....	81
D.1.4. A lack of evaluation and monitoring.....	81
D.1.5. Good practices transferability from one territory to another.....	82
D.2. Main recommendations.....	82
D.2.1. The need for local expertise and close monitoring of the users' needs.....	83
D.2.2. The need for integrated approaches and improved coordination.....	84
D.2.3. The need for a simple and easily understandable mobility offer.....	86
D.2.4. The need for long-term funding.....	87
D.3. Conclusions.....	89
E. Appendix.....	90
E.1. General mapping of identified remote areas per country.....	91
E.2. Detailed methodologies to identify remote areas per country.....	109
E.3. List of remote municipalities per country.....	120
E.4. Overview of collected good practices.....	141

Act of transmission

The Soft Mobility Subgroup has agreed the final text of the synthesis report on “Sustainable mobility solutions in remote and/or sparsely populated Alpine territories”, on the basis of the Mandate given to the Working Group Transport of the Alpine Convention.

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Mandate given by the Standing Committee and conduct of the study

During the 51st standing committee of the Alpine Convention, held in Milano on November 20-21, 2012, the mandate of the Working Group Transport for 2013-2014 was adopted.

The new mandate, to be accomplished before the 13th Alpine Conference, asked the Alpine delegations to further investigate on the issue of sustainable mobility solutions in remote and/or sparsely populated Alpine territories.

The text of the Mandate regarding the related point is here reported, as follows:

“Ahead of the XIII conference, the standing Working Group Transport will explore the following new issues. Reviewing practices and strategies of sustainable transport solutions in Alpine sparsely populated and/or remote areas and develop recommendations to promote mobility in these regions”.

The activities of the Soft Mobility Subgroup, regarding sustainable transport solutions in Alpine sparsely populated and/or remote areas, started in occasion of the 26th meeting of the Working Group “Transport” (February 5, 2013, Paris). The objectives were clarified, the key stages in the study were set out and the method to be used was agreed. During the second meeting (May 29, 2013, Paris), the guidelines were approved and a general road-map was commonly agreed. It was decided to focus on examples from the Alpine area, but not to overlook other initiatives if these can be transferred.

The third (December 12, 2013, Wien) and fourth (May 27, 2014, Paris) meetings were the occasion to present and discuss the case studies sent by the delegations of each country. During summer, each partner provided contributions to improve the conclusions and recommendations of the transnational report. The final draft was examined during the 30th meeting (September 8, 2014, Paris) of the Working Group Transport.

A. Guidelines

A.1. REMINDER OF CONTEXT: THE PROMOTION OF SUSTAINABLE TRANSPORT SOLUTIONS

The mandate given by the Standing Committee of the Alpine conference indicates: “Following the XIII conference, the standing Transport Working Group will review sustainable transport practices and strategies in remote Alpine territories and will develop recommendations to promote mobility in these regions”.

Let us first remember that the best way to promote sustainable mobility is to avoid unnecessary transport. This is possible by increasing e-services, e-commerce and telecommuting for example.

However, developing sustainable transport solutions in remote territories is an integral part of the sustainable development of such territories and is fundamental for the people living and travelling within them.

Three categories of sustainable transport solutions will be considered within the context of the present study:

- All transport solutions except the individual use of private cars: carpooling, car-sharing, bike-sharing, shared taxis, public transport including on-demand services, etc. Standard bus or coach services will receive limited attention, unless they concern an innovative or particularly relevant initiative.
- All mobility management measures for commuters or schools (e.g. walking or cycling and school buses), mobility information packages or sustainable mobility education initiatives.
- All solutions or services that can contribute to preventing individual mobility and that do not contribute to an increase in other kinds of polluting mobility, such as teleworking, e-commerce and goods delivery services¹, mobile shops or mobile services, including access to high-speed/broadband Internet.

The aim of the study is not to make a complete census of these solutions, but to highlight the most relevant initiatives.

A.2. REMOTE TERRITORIES

In the second draft report of the strategy-development for the Alpine Space², the Alpine Region is split into five types of territories. Based on functional patterns of interaction (e.g. functional urban areas) and some particularly significant patterns or trends (e.g. demographic decline, tourism hotspots), these five types of territory (metropolitan areas, Alpine cities, stable or growing rural areas, declining rural areas, tourist areas) have been described but have not been represented cartographically.

The description of the fourth type of territory seems to apply to remote territories. These territories are “situated beyond the main influence of Alpine metropolitan areas and cities and/or have few amenities.

¹ The effect of e-commerce on transport volumes is ambivalent. While in some cases it can help reduce shopping-related traffic on behalf of consumers, it generates considerable transport volumes on behalf of national and global delivery services. Particularly, return shipments create additional traffic.

² Alpine Space (2012), Strategy-development for the Alpine Space Programme: Second Draft Report. Available at: www.alpine-space.eu/fileadmin/media/Downloads_in_about_the_programme/Second_Draft_Report.pdf, accessed February 8, 2013

They can be located in lowlands, prealps or core Alpine areas, but do not have the necessary transport infrastructure to facilitate travel to urban centres and potential markets. For the most part, they therefore do not benefit from the employment opportunities of towns and cities”.

The Permanent Committee of the Alpine Conference has asked the Soft Mobility Subgroup to locate these remote territories in order to determine good practices and strategies in sustainable mobility.

A.3. THE TASK OF THE SOFT MOBILITY SUBGROUP

The Permanent Committee of the Alpine Conference mandated the Soft Mobility Subgroup:

- to identify good practices and strategies in sustainable transport in the Alpine regions;
- to issue recommendations in order to promote sustainable mobility in these regions.

The Soft Mobility Subgroup is chaired by France (General Council for the Environment and Sustainable Development – CGEDD) and the Alps and Pyrenees Mission of the Directorate General for Infrastructure, Transport and the Sea – DGITM). As chair of this Subgroup, France is responsible for conducting the present study which also involves partners from other countries (Austria, Germany, Italy, Switzerland and Slovenia).

The study conducted by the Soft Mobility Subgroup is divided into six steps:

- **Step 1:** Identification of remote territories of the Alpine Regions. Proposal of a method for collecting information on sustainable transport solutions. Each country contributes to this step.
- **Step 2:** Identification of remote territories of the Alpine Regions. Proposal of a method for collecting information on sustainable transport solutions. The French technical support team summarizes the work done by each partner.
- **Step 3:** Collection of good practices and strategies in sustainable mobility within the previously identified remote territories. Each country contributes to this common step.
- **Step 4:** Collection of good practices and strategies in sustainable mobility within the previously identified remote territories. The French technical support team summarizes the work done by each partner.
- **Step 5:** Recommendations for the development of sustainable mobility in the previously identified remote territories of the Alpine regions. Each country contributes to this common step.
- **Step 6:** Recommendations for the development of sustainable mobility in the previously identified remote territories of the Alpine regions. The French technical support team summarizes the work done by each partner.

B. Identification of remote territories

B.1. INTRODUCTION

This part of the document provides a summary of the main methodology and indicators used by the different European partners in the Alpine Convention to identify remote territories.

The remote territories identified within each country are presented on maps. These territories are generally characterized by their level of demographic decline, tourism and regular transport services.

B.1.1. Two ways to define remote territories

There are two approaches that can be used to define remote territories:

- A first method consists in defining indicators such as accessibility (distance and/or travel time to urban centres), population density, demographic decline (comparison of population density during a certain period), public transport offer, etc.
- Another method is to define all other regions according to specific indicators such as those mentioned above and to consider the remaining territories as remote. This elimination method ultimately leads to results that are similar to the first method. Remote territories can therefore be defined as territories displaying lower indicator values than all other defined regions.

B.1.2. Remoteness: a question of scale and individual perception

If we consider accessibility to mean “access to opportunities”, then it should be viewed according to the scale of the study. While global or European accessibility refers to access to global hubs, global cities and major transport corridors such as Trans- and Pan-European transport network³, this study focuses on regional accessibility. Regional accessibility is characterized by indicators that reflect regular needs of a broad share of the Alpine population, e.g. availability of urban amenities, accessibility of job opportunities, and access to health care amenities (Spiekermann and al. 2011)⁴.

One also needs to keep in mind that common accessibility indicators do not necessarily reflect the perception of the local population as a whole or of certain parts of the population. Motorized persons that are familiar with managing their everyday routines via online services and mobile devices and with access to high-speed Internet might perceive remoteness differently than a person without access to a private car and unfamiliar with modern communication technologies.

Moreover, we should be careful not to automatically interpret remoteness as something that should by all means be alleviated. Remoteness can be a specific spatial quality that provides services that other spatial entities can no longer provide such as opportunities for retreat, solitude, recreation etc.

In an economic sense, remoteness in a scenic landscape can be a selling point for regional tourism for example. Furthermore, remoteness can also be somewhat of a barrier against external influences, social competitiveness and pressures. In certain cases, research has been able to identify a positive effect of remoteness on endogenous economic development.

³ More information at: http://ec.europa.eu/transport/themes/infrastructure/index_en.htm, accessed august 28, 2013

⁴ Spiekermann, K., Wegener, M., Kveton, V., Marada, M., Schürmann, C., Biosca, O., Ulled Segui, A., Antikainen, H., Kotavaara, O., Rusanen, J., Bielanska, D., Fiorello, D., Komornicki, T., Rosik, P. (2011): Transport Accessibility at Regional/Local Scale and Patterns in Europe. Interim Report of ESPON TRACC. Dortmund: Spiekermann & Wegener Stadt- und Regionalforschung.

Of course, in a highly integrated Europe with a high degree of division of labour, positive effects of remoteness can only be one aspect of regional development, which is why Bätzing⁵ argues for a balanced dual development (“ausgewogene Doppelnutzung”) that combines elements of endogenous regional development with necessary external influences (Voll 2012)⁶.

Accessibility as an indicator of remoteness also depends on the scale at which a territory is assessed. At the European scale as displayed in the ESPON Atlas⁷, the whole Alpine area may be considered as a territory of average accessibility compared to the EU27 average. Moving down to the regional or even local level, however, spatial units with accessibility deficiencies can clearly be identified in various regions of the Alps.

B.2. GENERAL METHODOLOGY USED TO IDENTIFY REMOTE TERRITORIES

It was requested that the territories studied by each partner lie within by the Alpine Convention territory perimeter.

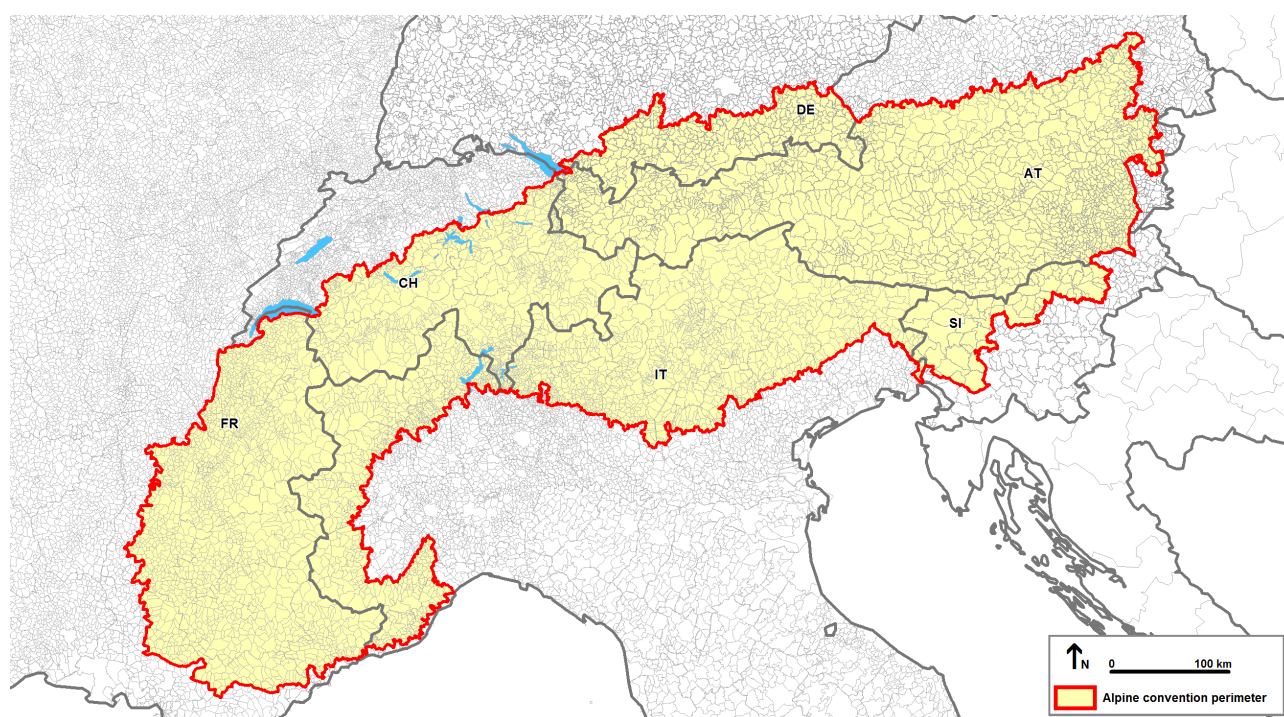


Illustration 1 – Alpine Convention perimeter

⁵ Bätzing, Werner (2003): Die Alpen. Munich, pg. 333ff

⁶ Voll, Frieder (2012): Die Bedeutung des Faktors “Erreichbarkeit” für den Alpenraum. PhD-Thesis presented at the University of Nürnberg-Erlangen. Erlangen.

⁷ ESPON (2006), ESPON Atlas: Mapping the structure of the European territory. Bonn. Available at: www.espon.eu/export/sites/default/Documents/Publications/ESPON2006Publications/ESPONAtlas/final-atlas_web.pdf, accessed August 28, 2013.

In order to ensure comparable results in the identification of remote territories, each partner was asked to refer to a basic set of characteristics or “features”, summarized in the table below. It was not essential to consider all the features. Each partner was then free to define its own indicators linked to these features (as it is easier to have common features than common indicators, due to the availability of databases and interpretation of indicators in each country).

Based on these features and indicators, remote municipalities were identified by each partner through an elimination process. The municipality level corresponds to LAU2 of the European nomenclature of territorial units for statistics. Remote territories were then identified by grouping municipalities together.

N°	Features	Example of associated indicators
1	Situated beyond the main influence of the metropolitan areas and Alpine cities	<ul style="list-style-type: none"> • Typology of municipalities, as defined by the national/federal statistical office (France, Switzerland) or the EU (Austria) • Accessibility of medium or large-sized town, valued in travel time (Germany)
2	Have a limited number of activities/amenities	<ul style="list-style-type: none"> • Typology of the labour markets (Germany) • Typology of municipalities, as defined by the national/federal statistical office (France, Switzerland)
3	Do not have the necessary transport infrastructure to facilitate travel to urban centres and potential markets	<ul style="list-style-type: none"> • Number of train stations and interurban bus stops (France) • Average number of interurban bus services a day (France) • Average number of train services a day (Germany) • Travel times to next medium- and larger-sized towns (Germany)
4	Outside tourist hotspots	<ul style="list-style-type: none"> • Typology of municipalities, as defined by the national/federal statistical office (Switzerland) • Average number of tourists on a typical day (France)
5	In demographic decline	<ul style="list-style-type: none"> • Population change during the last 5-10 years (Austria, France, Germany, Italy, Slovenia)
6	Sparsely populated	<ul style="list-style-type: none"> • Population density (Austria, France, Germany, Italy, Slovenia, Switzerland)

Table 1 – Features used to identify remote territories

Results were analysed by the Soft Mobility Subgroup in order to verify the homogeneity between the different countries. Differences in the identification of remote territories can be explained by territorial specificities.

Appendix E.2 presents for each country of the Alpine Convention:

- the indicators used to identify remote territories;
- a map showing the location of the identified remote municipalities and territories;
- the characteristics of the identified municipalities within these territories.

B.3. CONCLUSIONS

The first step of the Soft Mobility Subgroup is to identify “remote territories” of the Alpine Regions. This report presents the general purpose of the study and the overall method proposed by the Subgroup. The following Illustration 2 shows the entire geographic coverage area of remote territories within the Alpine Regions.

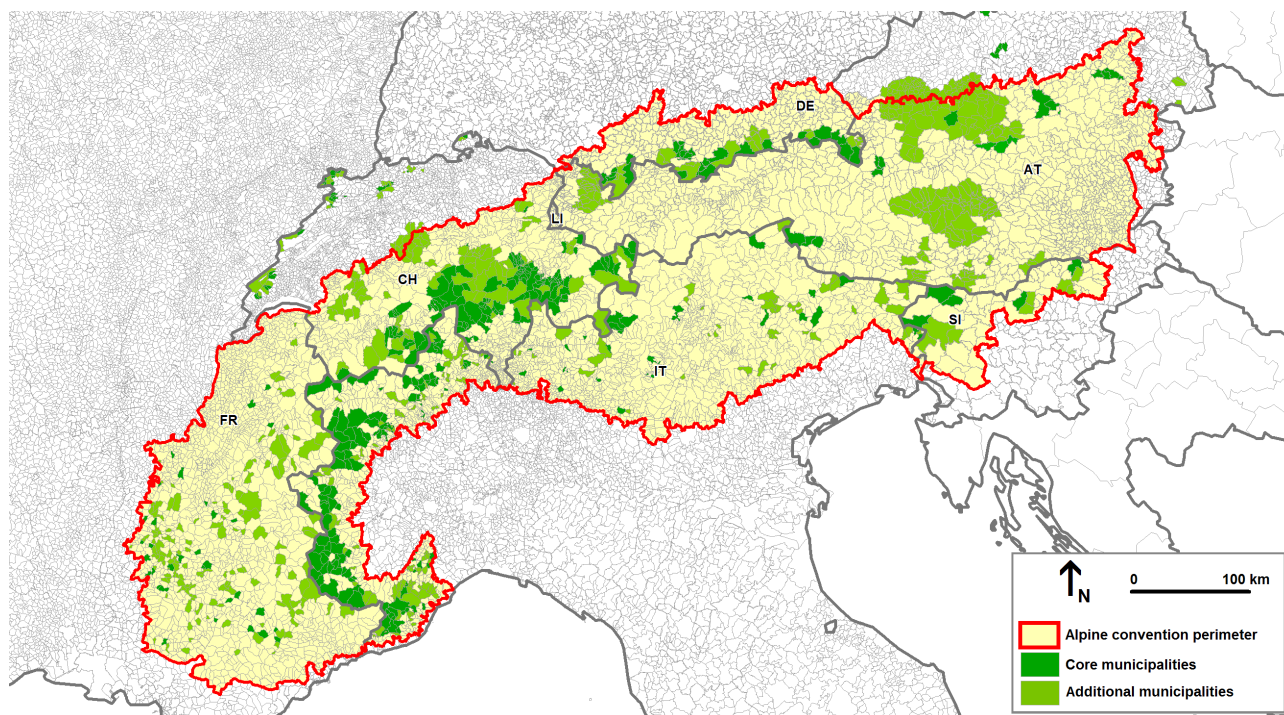


Illustration 2 – Remote territories in the Alpine Regions

Appendix E.1 and E.2 present the indicators used to identify remote territories by the different country partners of the Alpine Convention (Switzerland, Germany, Austria, France, Italy and Slovenia). Appendix E.3 details the list of municipalities considered as remote and their characteristics.

Thus, for the next steps of the Soft Mobility Subgroup project, identification of good practices and solutions in sustainable mobility should focus on these identified territories per country.

C. Sustainable mobility solutions

C.1. INTRODUCTION

This part of the document provides a summary of the sustainable transport solutions collected in each country by the different European partners in the Alpine Convention.

The scope of this report is not limited to transport solutions in a strict sense, but also includes approaches that improve access and accessibility by e.g. providing services to the customer or maintaining local retail structures. Thus, sustainable transport solutions that have been considered are:

- All transport solutions, except private car used individually: carpooling, car-sharing, bike-sharing, shared taxis, public transport including on-demand services, etc. Only regular or seasonal transport services have been considered. Standard regular bus or coach services have received a limited attention, unless innovative or particularly relevant initiative.
- All mobility management measures for commuters or schools (e.g. walking or cycling school buses), mobility information packages or sustainable mobility education initiatives.
- All solutions or services that can contribute to avoid individual mobility and that do not contribute to an increase of other kind of polluting mobility, such as teleworking, e-commerce and goods delivery services⁸, mobile shops or mobile services, including the access to high-speed/broadband Internet.

The main objective was to identify good practices primarily within the Alpine Convention territory, especially in “core municipalities” and “additional municipalities” as defined above. Nevertheless, additional initiatives implemented outside of this territory have also been collected, provided that they could be transferred to the Alpine territory.

Moreover, it is reminded that the aim of the study was to highlight the most relevant initiatives. Despite being based on extensive research, the compilation of good examples illustrated above does not claim to be exhaustive for the study areas. Thus, some interesting initiatives or projects implemented in Alpine areas may not appear in this document.

Each partner was free to define its own strategy to identify and analyse good practices. In order to homogenise the productions, partners were requested to collect, for each of the initiatives identified, the information listed in a common factsheet.

⁸ The effect of e-commerce on transport volumes is ambivalent. While in some cases it can help reduce shopping-related traffic on behalf of consumers, it generates considerable transport volumes on behalf of national and global delivery services. Particularly, return shipments create additional traffic.

C.2. ANALYSIS OF GOOD PRACTICES

More than 50 good practices have been collected. They have been grouped into 4 categories:

- **Micro public transport services:** this category concerns all measures, set up by transport authorities, that have created an additional offer of regular or on-demand public transport. This category also includes “citizen buses”, operated by local volunteers and non-profit associations, with licenses for passenger transport. Citizen buses are not, properly speaking, public transport offers but the service they provide is often very close to public transport services.
- **Other mobility services:** this category groups all initiatives that have lead to create an additional mobility offer based on any transport mode excepted public transport modes. It can concern bike sharing systems, carpooling, hitch-hiking or taxi services.
- **Non-mobility solutions:** this category includes all services that can contribute to avoid individual mobility and that do not contribute to an increase of other kind of polluting mobility. It concerns all mobile services, such as mobile citizen counter, mobile shops, delivery services, etc. It also concerns teleworking or video-conferencing infrastructures, and more generally all services using Information and communications technologies.
- **Organisation and mobility management measures:** this category groups all measures that do not create additional mobility offers, but improve pre-existing offers or make them more easily accessible for users. It concerns all marketing, communication and pricing measures, but also all cooperation measures among stakeholders during planning and implementation to create awareness for each other’s needs and constraints. It also includes all mobility information packages or sustainable mobility education initiatives.

Some of the good practices that have been collected combine various measures and could have appeared in several categories. Conventionally, theses measures have been sorted in the first category applicable, in the order above.

Within each category, the best practices appears in alphabetical order.

Appendix E.4 provides an overview of the collected good practices.








Country	Micro public transport services	Other mobility services	Non-mobility solutions	Organisation and mobility management measures
AT 	<ul style="list-style-type: none"> • DEF-Mobil • Dorfmobil Klaus • Gmoa Bus • Go-Mobil • Gseispur • Tälerbus Lungau • Werfenweng Shuttle 	<ul style="list-style-type: none"> • Electric vehicles in Eisenkappel • EMorail project • Next bike • Talente carpooling in Voralberg 	<ul style="list-style-type: none"> • Breitbandoffensive: investment offensive for high-speed Internet 	
CH 	<ul style="list-style-type: none"> • Bus Alpin • Einkaufsbus: shopping bus in Niederbüren 	<ul style="list-style-type: none"> • Mobility management between Saas-Fee and Visp 	<ul style="list-style-type: none"> • Broadband Internet access and shared office space • Informatics centre in Vicosoprano • InnoV-Net: Education in remote areas • Teleworking Alcatel 	<ul style="list-style-type: none"> • Alpentaxi
DE 	<ul style="list-style-type: none"> • Bergsteigerbus Eng: Hiker's bus in the Karwendel • Stadtbuss Kolbermoor: Flexible city bus 	<ul style="list-style-type: none"> • EMMA: Electric mobility with connectivity in Friedrichshafen • Malteser mobility services • Pedelec network in the Allgäu region 		<ul style="list-style-type: none"> • Bürgerkarte Oberstdorf • e-GAP intermodal • Ilzer Land: Inter-municipal public transport concept • Immer mobil: Individual transport services for elderly in rural areas • Jugendcard • MiFaZ: Regional promotion of the carpooling platform
FR 	<ul style="list-style-type: none"> • Free Shuttle in the Ubaye Valley • Transport on demand for the elderly in Modane • Transport on demand in the Drôme 	<ul style="list-style-type: none"> • A bike for my village, my village with a bike in Crévoux • AutoSSS: Secure hitch-hiking service in the Trièves 	<ul style="list-style-type: none"> • ERIC: Internet resource centres in PACA • Points visio rendez-vous: Video-conferencing meeting points in the Hautes-Alpes • Public services relay in the Ecrins area 	<ul style="list-style-type: none"> • Reorganization of shuttle services in the Queyras • School transport by cable car in Venosc
IT 	<ul style="list-style-type: none"> • Allô-Bus near Aosta • Elastibus in Val del Chiese • Nightliner • Provibus 	<ul style="list-style-type: none"> • Electric mobility in the Province of Belluno 	<ul style="list-style-type: none"> • Broadband project: Internet connectivity in Trentino • Optical fibres in Budoia • Supporting community shops in Trentino 	<ul style="list-style-type: none"> • Integrated public transport on Idro Lake
SI 		<ul style="list-style-type: none"> • Gorenjska Electro-Trip 		<ul style="list-style-type: none"> • Cycling training for pupils from primary schools in Maribor
Alpine space 			<ul style="list-style-type: none"> • ALIAS Project: hospitals networking for telemedicine 	<ul style="list-style-type: none"> • MORECO: Mobility and residential costs

Table 2 – List of good practices presented in the report

C.2.1. Micro public transport services

18 good practices referring to “Micro public transport services” have been collected. This category concerns all measures, set up by transport authorities, that have created an additional offer of regular or on-demand public transport. This category also includes “citizen buses”, operated by local volunteers and non-profit associations, with licenses for passenger transport. Citizen buses are not, properly speaking, public transport offers but the service they provide is often very close to public transport services.

Among the collected good practices, there are as many regular services and on-demand services. Conventional public transportation by bus and railway are being supplemented with “citizen buses” in several countries such as Austria, Germany or Switzerland.

Even if many of these services are tailored for residents, a large tourist presence is still a key element when launching this kind of service: some of them have been set up mainly to cope with tourists’ expectations.

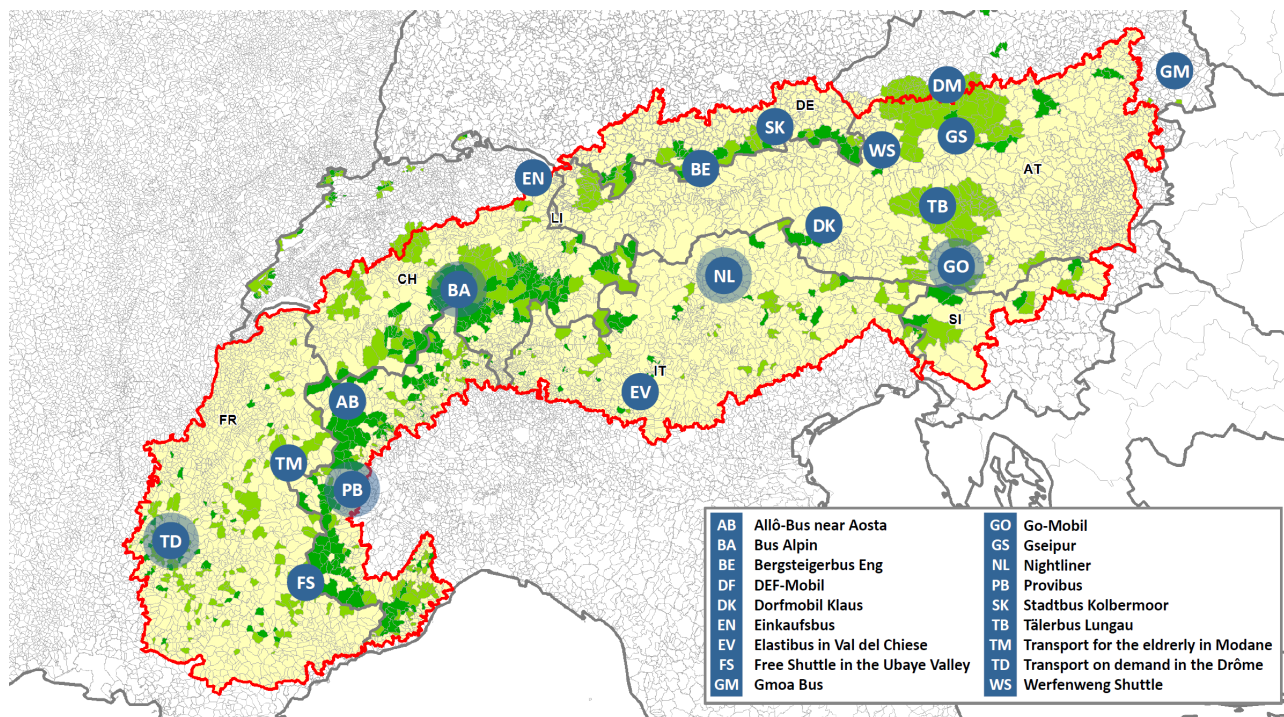






Illustration 3 – Best practices referring to the category “Micro public transport services”


Allô-Bus near Aosta		
Location	The hilly area surrounding Aosta, the municipalities of Gignod, Roisan, Saint-Christophe and Sarre, located in the Autonomous Region of Valle d'Aosta.	Alpine Convention municipalities
Category, mode of transport	Public transport – On-demand bus transport service.	
Service organizer, stakeholders	SVAP (Società Valdostana Autoservizi Pubblici), regional public transport company.	
Target groups, service users	Mostly residents.	
Problems to be solved, origin of the service	<p>The main objectives of the Allô-Bus service are the following ones:</p> <ul style="list-style-type: none"> • Satisfy the mobility needs of inhabitants living in hilly areas; • Connect a higher number of small settlements, until now excluded from public transport services; • Avoid empty rides; • Use manoeuvrable shuttle, more adapted to the areas to be connected. 	
Specification of initiative	<p>"Allô-Bus" is an innovative on-demand public transport service, providing the possibility to plan trips at times and routes, which may vary according to the users needs. This service is managed by a computerized system for the creation of the necessary rides. In short, the bus picks up the user at the scheduled time and identifies the shortest route for the requested trip, comfortably and safely.</p>	
Operation	<p>Reservations can be made by phone from Monday to Friday (from 08:30 to 12:30 and from 14:30 to 18:30) and on Saturday (from 08:30 to 12:30), highlighting the starting and ending point of the requested trip. The sooner the call, the better will be the service provided.</p> <p>Another similar initiative, called Allô-Nuit, was implemented after an experimentation started in April 2008, following the same objectives but operating at night. The concerned areas are more or less the same covered by the Allô-Bus service, i.e. the ones surrounding Aosta.</p>	
Communication, information and marketing	No data available.	
Evaluation, assessment	No data available.	
Conditions of success or failure, strong and weak points	No data available.	
Transfer possibilities and reproducibility	No data available.	
Contacts and sources	www.svap.it/it/28/allo-bus.php	


Bergsteigerbus Eng: Hiker's bus in the Karwendel		
Location	Isar and Ris valley, in the Karwendel range.	Core municipalities
Category, mode of transport	Public transport – Local bus service organised to provide a seamless transport chain with train and other bus services.	
Service organizer, stakeholders	Railway operators, regional bus operators, major user groups (German Alpine club, etc.).	
Target groups, service users	Hikers, tourists and residents.	
Problems to be solved, origin of the service	<p>Heavy traffic congestion during weekends and holidays and at the same time insufficient or non-existing public transport offers for villages along the route.</p> <p>The German Alpine Club, Section Munich, was one of the core initiators of the bus service and is promoting it heavily through its publications and public relation channels.</p>	
Specification of initiative	<p>The mobility services are organised to provide a seamless transport chain from the metropolitan area of Munich to one of the major tourist destinations in the German Alps.</p> <p>The bus service includes a coordination of bus and railway operators as well as an outreach to core user groups, organised in the German Alpine Club. South of Lenggries, regular year-round public transport services are thinning out or are non-existent. In this regard, the offer is providing basic public transport services (2-3 times a day) to several villages including Winkl, Fleck, Fall (several recreational resorts with considerable overnight stays) and Vorderris.</p>	
Operation	<p>During the hiking season (mid June to mid October), a bus service – initiated in 2001 – connects the terminal station of the railway Munich-Lenggries with the tourist hotspot Engboden (featuring considerable traffic volumes on weekends and holidays), a starting point for numerous hiking trails in the Karwendel nature park as well as an attraction itself with old-growth Alpine maple trees.</p> <p>Public transport operators (Bayerische Oberlandbahn – BOB, Regionalverkehr Oberbayern – RVO) are offering a single ticket, covering the train ride from Munich and the bus service for a fixed fee of EUR 26.</p>	
Communication, information and marketing	<p>Information is communicated on the website of the bus operator, of the railway operator, on public and private tourist websites as well as through channels of the German Alpine Club.</p> <p>No specific approach, information is made available on websites and schedules.</p> <p>The offer is promoted as environmentally friendly, cost-saving and smart, as it spares visitors the nuisance of traffic jams and crowded parking lots.</p>	
Evaluation, assessment	Not available.	
Conditions of success or failure, strong and weak points	<p>Success: Marketing through public relation channels of major user groups (German Alpine club, etc.), bike carriage.</p> <p>Failure: Depending on weather conditions, the Karwendel is also a popular destination in spring and late fall, times for which the service is not operating. Therefore, longer operation periods could be an improvement. For holders of a railway discount ticket (Bahncard 50 or 25), the combination ticket is not attractive.</p>	
Transfer possibilities and reproducibility	The approach can be transferred to sparsely populated regions, in which demand on behalf of the resident population is insufficient to economically offer public transport services.	
Contacts and sources	<p>www.rvo-bus.de/rvo-de/start/freizeitipps/bergsteigerbus_eng.html</p> <p>Regionalverkehr Oberbayern GmbH Niederlassung West Betrieb Tegernsee Bahnhofplatz 5 d – D-83684 Tegernsee Phone: +49 8022 18750 0</p>	


Bus Alpin		
Location	Bus alpin operates in 11 regions, generally in sparsely populated Alpine areas (less than 100 habitants), which are not connected to the regular public transport network. 7 regions are within the Alpine Convention area: Moosalp (Visp, Valais), Binntal (Goms, Valais), Greina (Grisons), Bergün (Val Tours, Grisons), Alp Flix (Oberhalbstein/Surses, Grisons), Gantrisch (Bern, Fribourg) and Habkern-Lombachalp (Interlaken/Brienz, Bern).	Core municipalities
Category, mode of transport	Operation of a bus system (on a regular schedule) in remote Alpine areas where regular bus service is not provided.	
Service organizer, stakeholders	The Bus alpin is operated by the non-profit association “Bus alpin” whose members are the member regions and supporting organizations. The managing board functions as the strategic head of the association, whereas the general assembly is its highest organ.	
Target groups, service users	Tourists and local population, community members.	
Problems to be solved, origin of the service	While the public transport system in Switzerland is very well developed, there are several regions in the remote Alpine areas where no service is provided. Communities of less than 100 habitants fall through the loopholes of regional transport funding and have to provide public transport systems themselves. “Bus alpin” helps to connect these regions by public transport in order to increase the regional creation of value and to encourage the use of environmentally friendly transport modes. The pilot project has been launched in 2006/2007 in four regions. Since 2008, more regions have been continuously included. In 2011, the association “Bus alpin” has been founded in order to expand the project to other regions.	
Specification of initiative	“Bus alpin” helps local stakeholders to implement a local bus service adapted to their specific needs. It provides services in planning and financing, acquisition of partners and sponsors as well as the operative implementation and the commercialization of the service. The operational costs are borne by the regional organizing institutions. The final service provided varies from region to region but the buses operate always on schedule and on fixed routes. Some projects are complemented by on-demand services.	
Operation	All regions operate during summer, a few bus lines also run during the winter season. The frequencies, lengths of trips, capacities, prices, potential package offers and operating partners differ for each region. The tickets cover for 30 to 90% of the operational costs and the service can hardly ever be run self-liquidating. All projects therefore depend on sponsors.	
Communication, information and marketing	Information, communication and marketing strategies are developed by “Bus alpin” in cooperation with their local partners. Coordination with marketing partners (tourist entities) is pursued. “Bus alpin” helps with public relations, advertisement and other measures for commercialization.	
Evaluation, assessment	The Pilot Project was evaluated and showed that the “Bus alpin” generated in 2006 and 2007 around CHF 1-2 million of additional value per year. 30 % of the passengers were using private cars before using the “Bus alpin” which means that the expense of 100 tons CO2 was saved every year. As more regions are added to the “Bus alpin” network, these numbers increase. Synergies between local government, public and private partners and the media are actively fostered.	
Conditions of success or failure, strong and weak points	So far, all implemented project work according to how they were planned. Not one had to be abandoned due to a lack of demand or poor operation. Positive is the local adaptability of the projects – each one is always customized to fit local needs. The biggest challenge the project face while being maintained in the long run is a financial one: the services are hardly ever run self-liquidating and all projects therefore depend constantly on sponsors.	
Transfer possibilities and reproducibility	Implementing the service in several regions beyond the pilot areas has already proved reproducibility. The specific projects are always adapted to local needs and demands and vary therefore one from another.	
Contacts and sources	www.busalpin.ch Bus alpin Quellenstrasse 27 – CH-8005 Zürich Samuel Bernhard – Committee’s office busalpin@busalpin.ch	

DEF-Mobil		
Location	In the Defereggental, a valley in East Tyrol, beginning in Huben, 20 km from the regional centre of Lienz and a length of 28 km up to the village of Erlbach.	Alpine Convention municipalities
Category, mode of transport	Micro public transport services. The DEF-Mobil is operated with minibuses (up to 9 persons including the driver)	
Service organizer, stakeholders	The paratransit system is operated by the 3 municipalities Hopfgarten, St. Jakob and St. Veit im Defereggental.	
Target groups, service users	<p>Target groups of the DEF-Mobil service are inhabitants of the remote region as well as tourists. For the DEF-Mobil an analysis of the users structure and of mobility patterns of the passengers (focus inhabitants, based on interviews in April 2012) was elaborated by Roman Klementsitz and Oliver Roider from the Institute for Transport Studies of the University of Natural Resources and Applied Life Sciences (BOKU) in Vienna, Austria.</p> <p>The share of people younger than 20 among the passengers is very high (61%). 26% of the users are between 20 and 60 years old. The share of people above 60 is low (13%) compared with other on-demand services. The trip purposes on working days are the following: Work: 38%; Education and training: 26%; Leisure and recreation: 21%; Shopping, health: 15%; Visit of persons: 1%</p>	
Problems to be solved, origin of the service	The service was introduced to improve mobility chances of people without own cars. DEF-Mobil is a useful complement to scheduled bus services. As the population in all 3 municipalities declined in the last years (-14,7% since the year 1981) the DEF-Mobil can be also considered as contribution to reduce migration, especially of young people out of the Defereggental valley.	
Specification of initiative	<p>The service is provided by the 3 municipalities Hopfgarten, St. Jakob and St. Veit im Defereggental. DEF-Mobil drivers are provided by a taxi company. It was discussed to work with voluntary drivers, but the current Austrian legislation allows such solutions only for domestic services in a municipality.</p> <p>The DEF-Mobile is financed by the 3 municipalities (together more than EUR 30,000 yearly); the state (Land of Tyrol (EUR 20,000 yearly and purchase of one minibus in the start phase); the Austrian national program for sustainable mobility "Klimaaktiv mobil" of the ministry for environment; and receive smaller contributions by the regional tourist board. Revenues from tickets of approximately EUR 10,000.</p>	
Operation	The DEF-Mobil operates according to a timetable and has fixed stops like a normal scheduled bus, but trip demands have to be ordered by phone at least 1 hour before the trip, desired trips in the early morning have to be announced by phone on the evening before.	
Communication, information and marketing	The DEF-Mobil service is well presented in local and regional media. The shareholder-municipalities and the tourist office introduced a marketing team to work out tourist packages that are always linked with the corresponding mobility options. "Romantic Winter" and hiking holiday packages are advertised. DEF-Mobil is an important part of these offers.	
Evaluation, assessment	The service DEF-Mobil is well assessed by experts of the University of Natural Resources and Applied Life Sciences (BOKU) in Vienna, Institute for Transport. The average number of passengers is about 500 every month, with summits up to more than 700 in the tourist seasons.	
Conditions of success or failure, strong and weak points	Main success factors are the good cooperation of the stakeholder-municipalities and the support by the regional government (State of Tyrol) and by the "Klimaaktiv mobil" program of the Austrian ministry for environment. Also the solid planning process of DEF-Mobil in the EU funded project An additional success factor are attractive tickets, a pass for one week costs EUR 10 and is therefore suitable also for tourists and for families a pass for one year costs only EUR 120. Possible improvements could be door-to-door services.	
Transfer possibilities and reproducibility	The DEF-Mobil concept is transferable; a problem could be limited budgets of public authorities.	
Contacts and sources	<p>www.defereggental.eu</p> <p>University of Natural Resources and Applied Life Sciences (BOKU), Vienna Institute for Transport Studies Roman Klementsitz, Oliver Roider Presentation on June 21, 2012 www.rali.boku.ac.at/verkehr/ and www.interreg4cflipper.eu/</p> <p>Municipality of St. Veit im Defereggental Vitus Monitzer – Mayor</p>	


Dorfmobil Klaus		
Location	Klaus is situated in a mountainous region in the south of Upper Austria, 60 km from Linz	Alpine Convention municipalities
Category, mode of transport	Micro public transport service. On-demand door-to-door service operated with vans and minibuses (up to 9 persons including the driver)	
Service organizer, stakeholders	The on-demand transport system Dorfmobil was organised by volunteers of a private non-profit association.	
Target groups, service users	The main objective of the system is to give inhabitants a possibility to reach basic supply (grocer, doctor, post office, etc.) and public transport stops independently from car availability.	
Problems to be solved, origin of the service	The municipality Klaus consists of three villages: Klaus, Steyrling and Kniewas. Because of the disperse settlement structure, people have to overcome long distances, up to 8 km to reach basic supply or public transport stops.	
Specification of initiative	The on-demand system Dorfmobil was organised by volunteers of a private non-profit association. For this new service the association has chosen the name Dorfmobil that consists of the words "Dorf" ("village") and "mobil" ("mobile"). The passengers are invited to join this association as members and pay an annual member fee of EUR 20. A single ticket costs EUR 1.80, a one-year pass (only for club-members) EUR 25.	
Operation	The Dorfmobil covers the settlement area of Klaus. The service operates on working days from Monday to Friday from 7:00 to 19:00. A ride has to be pre-booked by phone at least half an hour before it is wanted. The average duration of a trip will be about 10 minutes. The Dorfmobil does not operate when a bus is available at the same time. The Dorfmobil offers a door-to-door service with vans (maximum 5 passengers). Existing bus stops are included as meeting points. They are equipped with information boards where the service is described (working hours, phone number, etc.)	
Communication, information and marketing	The Dorfmobil service is well presented at the homepage and by other information media of the community Klaus.	
Evaluation, assessment	The Dorfmobil was evaluated in the frame of the EU-funded project ARTS (Actions on the integrations of rural transport services). This scientific evaluation and also local feed-back prove, that Dorfmobil strengthens the community life and protects the environment by reducing private rides. 3,000 to 4,000 passengers yearly use the Dorfmobil Klaus, the average occupancy is between 1.5 and 1.8 persons.	
Conditions of success or failure, strong and weak points	A core success factor is sponsoring by local partners (shops, craft-companies, restaurants, banks) and by the government of Upper Austria. If passengers of the Dorfmobil buy goods with a value of EUR 20 or more in the grocery, this shop pays the ticket. In addition to revenues from tickets, membership fees and sponsoring the regional government of Upper Austria gives a moderate contribution (few thousand Euros yearly) to cover the full costs of the service.	
Transfer possibilities and reproducibility	The transfer possibilities are good, because thanks the sponsoring the demand for support from public budgets is moderate.	
Contacts and sources	<p>The service Dorfmobil is well presented at the website: www.gemeinde-klaus.at/gemeinde/dorfmobilweb/projekt.htm</p> <p>Evaluation in the ARTS project: www.rural-transport.net/demo.phtml?site=demo&theme=theme_1_1</p>	


Einkaufsbus: shopping bus in Niederbüren		
Location	Niederbüren, in the Canton of St. Gallen.	Outside Alpine Convention
Category, mode of transport	Regular and free shuttle service.	
Service organizer, stakeholders	A community service with support of various sponsorship.	
Target groups, service users	All community members.	
Problems to be solved, origin of the service	The community grocery store had to be closed after a fire and until the new building was finished, the company wasn't able to provide their services. The community therefore organized a free shuttle service for its members to be able to run their errands in the next larger town without using their private cars.	
Specification of initiative	<p>The community wanted to offer a customer-friendly solution to the lack of grocery supply. They arranged a deal with a private bus company who agreed to run regular coaches at a good price from Niederbüren to Andwil so the community members wouldn't have to use their own cars to run their errands. It's a temporary service until the community grocery store would reopen.</p> <p>The community council found sponsorship opportunities within the community (private and public). Its main financial support comes from the local foundation "Stiftung Dorfmarkt Niederbüren".</p>	
Operation	The coach runs every Monday, Wednesday and Friday at 9:15 from the community centre. If there are people waiting it additionally stops at a second defined location within the community. There are special coaches in the event of public holidays that are announced by the community council. The service is free.	
Communication, information and marketing	The community council announces the service to its members by the help of local media.	
Evaluation, assessment	The project is a remarkable solution for a special situation which is not only an important service for people facing reduced mobility capabilities but also sensibly avoids additional private traffic.	
Conditions of success or failure, strong and weak points	The project was very well perceived and widely used. Its biggest challenge is probably the funding which would be especially a problem if maintained during a longer period. It's unknown if the service would work as well as it did in Niederbüren if the rides would be subject to a fee.	
Transfer possibilities and reproducibility	Even though the project was only temporary, it might be an interesting solution for remote communities, which don't dispose an own grocery store (anymore). By offering such a service, car use might be significantly avoided and an important service for elderly people or other persons facing mobility barriers would be provided. Nevertheless, such a project would depend on external funding.	
Contacts and sources	www.infowilplus.ch/_iu_write/artikel/2011/kw_15/ober-_niederb%c3%bcen/artikel_15606	


Elastibus in Val del Chiese		
Location	Valle del Chiese (between Bondone, Stono and Tione di Trento), located in the South-Western part of the Autonomous Province of Trento.	Core municipalities
Category, mode of transport	Public transport – On demand bus service.	
Service organizer, stakeholders	Provincial Department of Mobility of the Autonomous Province of Trento.	
Target groups, service users	Mostly residents.	
Problems to be solved, origin of the service	The service was activated thanks to European deriving from the European project “Gabriele” (2003), aimed at promoting innovative actions to peripheral areas. Despite the end of the project and the less financial resources available, which cause a decreasing of journeys, the service was not interrupted. In fact, the Autonomous Province of Trento, starting from September 2012, allowed the prosecution of such service, applying an extension of bus timetables. Regarding bookings, they can be made by calling the phone number 800 390 270, active from 08:00 to 17:00, from Monday to Friday. Requests can be made before 16:30 the day before the desired trip, while afternoon journeys may be booked before 12:00 of the same day.	
Specification of initiative	The public on-demand transport service is active on all the territory concerned, allowing inhabitants to travel from the bottom valley to Tione, main village of the valley.	
Operation	Two shuttle are operating every day: the first one is operating from 07:00 to 14:00, accessible to elderly people and users without car driving license; the second one from 09:15 to 12:00, from 13:45 to 15:30 and from 17:30 to 18:30, which can be used by students for sections not covered by public transport school services. Users can buy tickets on-board, at the same price of ordinary public transport fares. Thus, people who hold valid subscriptions do not have additional costs.	
Communication, information and marketing	No data available.	
Evaluation, assessment	The Elastibus service registered a consistent increase of the number of users, in 2013. More than 4.000 people made journeys, compared with the nearly 3.000 the year before (+30%). This amount would have been even more important if, in some occasions, nearly 400 bookings were refused by the call centre, as the two available buses were already complete.	
Conditions of success or failure, strong and weak points	No data available.	
Transfer possibilities and reproducibility	No data available.	
Contacts and sources	www.trasporti.provincia.tn.it/elastibus/	


Free Shuttle in the Ubaye Valley		
Location	14 municipalities of the Ubaye Valley, in the Hautes-Alpes department.	Additional municipalities
Category, mode of transport	Public transport – Free shuttle on a regular schedule.	
Service organizer, stakeholders	Community of Municipalities of the Ubaye valley and Alpes de Haute-Provence department.	
Target groups, service users	Inhabitants of the valley and tourists.	
Problems to be solved, origin of the service	<p>The Community of Municipalities of the Ubaye valley covers about 1,000 square km for a population density of about 7 inhabitants per square km. The community of municipalities includes 14 villages and ski resorts spread out linearly over 40 km.</p> <p>Since 1998, the Community of Municipalities of the Ubaye valley has tried to limit single passenger trips on its roads and encourages inhabitants and tourists to use the free shuttle connecting villages and serving ski resorts.</p>	
Specification of initiative	<p>Several lines are organized from Barcelonnette, the main municipality of the Valley (2,700 inhabitants). They serve the different villages and ski resorts of the valley.</p>	
Operation	<p>The free shuttle operates all year long with an increase in frequency during the winter and the summer tourist seasons. The schedules are tailored to allow transfer with the regular coach service to Gap, organized by the Provence-Alpes-Côte d'Azur Region.</p> <ul style="list-style-type: none"> • Outside the tourist season, 3 main lines operate from Monday to Saturday, with 2 round trips a day. 2 other lines only operate on Saturday, with 1 or 2 round trips. There is no service on Sundays. • During the tourist season, the offer is reinforced on the 3 main lines with up to 8 round trips every day, including Sundays. 	
Communication, information and marketing	Schedules are available on various media: flyers, Community of Municipalities and tourist information centre websites, bus stops, etc.	
Evaluation, assessment	<p>The shuttles are mainly used during the winter period.</p> <p>During the winter high season 2013 (from the end of December, 2012 to the end of April, 2013), an average of 686 trips a day were made (77,218 trips during the 4 months).</p> <p>During the summer high season 2013 (from the end of April to the end of August, 2013), an average of only 90 trips a day were made (5,881 passengers during the 4 months).</p> <p>Outside the tourist season, the service attracts approximately 1,000 travellers a month. This count does not make a distinction between local users and tourists.</p> <p>Every year, two meetings are organized with the operator to determine necessary modifications and adapt schedules to the users' expectations. Being attentive to the users' needs allows the community of municipalities to achieve good levels of customer satisfaction.</p>	
Conditions of success or failure, strong and weak points	The community of municipalities is attuned to users and studies all the proposals for new schedules or new stops. The main issue is to find the right balance between the clients' expectations, the protection of the environment and the service costs. The fact that the service is free is certainly one of the reasons of its success, but its main difficulty lies in its funding.	
Transfer possibilities and reproducibility	This initiative could be transferred to other territories. Funding this kind of project remains an issue.	
Contacts and sources	<p>www.ccvu.fr/les-navettes-gratuites.html</p> <p>Communauté de Communes Vallée de l'Ubaye Direction du tourisme 4 avenue des 3 Frères Arnaud – F-04400 Barcelonnette Eliane Dao-Lafont: edaolafont@ubaye.com – Phone: +33 4 92 82 01 14</p>	

Go-Mobil		
Location	The Go-Mobil operates in whole Carinthia, in southern Austria, which is an Alpine region. Go-Mobil services are provided in 31 communities that do not have sufficient or no public transport systems.	Alpine Convention municipalities
Category, mode of transport	Micro public transport system. Go-Mobil is working like a taxi system, and is operated with cars, vans and minibuses (up to 9 persons including the driver).	
Service organizer, stakeholders	On-demand “Go-Mobil” transport systems are organised in the communities by 20 private non-profit associations throughout Carinthia. All local associations are members of the holding organization GMZ (Go-Mobil Zertifizierung GmbH). Max Goritschnig, who developed the model of Go-Mobil, is the head of GMZ. Municipalities and local companies are members of local associations and its main financiers (annual membership fee).	
Target groups, service users	The main objective of the system is to give inhabitants a possibility to reach basic supply (grocer, doctor, post office, etc.) and public transport stops for regional and interregional public traffic, independently from car availability. But Go-Mobile also strengthens the community life, facilitates family life and protects the environment by reducing private rides.	
Problems to be solved, origin of the service	Some communities in Carinthia are not well accessible by public transport. The timetables are focused on the demand of schoolchildren. Therefore, the Go-Mobil services are a helpful complement to public transport to ensure mobility for inhabitants and guests without own car.	
Specification of initiative	Different to local mini-bus or taxi services, Go-Mobil is a country wide model: 20 non-profit associations provide services in 31 communities. The holding organization GMZ ensure the achievement of quality standards and is the owner of the rights to introduce new services under the brand Go-Mobil. GMZ supports new Go-Mobil organisations by know-how. The drivers are paid in the frame of minor employment contracts. Summed up Go-Mobil can be considered as a successful public-private partnership.	
Operation	Go-Mobil operates on working days from 8:00 to 24:00, on Saturday from 9:00 to 24:00 and on Sunday from 9:00 to 22:00. A ride has to be pre-booked by phone. Go-mobil is integrated in the public transport system in Carinthia. One ticket for one person (called “Go”) costs EUR 3.80 when bought in advance in Go-Mobil member companies (shops, hair dressers, restaurants, etc.). It costs EUR 5.20 in the vehicles.	
Communication, information and marketing	The Go-Mobil service is well communicated by the website www.gomobil-kaernten.at and by local information. Go-mobil is also included in the Internet-timetable information “Scotty” of the national railway company ÖBB.	
Evaluation, assessment	The 20 Go-Mobil associations have between 8,000 and 14,000 passengers yearly, all together approximately 160,000 passengers yearly with an upward trend. Between 70% and 100% of the costs are covered by tickets revenues and membership fees of companies (including also the national railway company ÖBB where the accessibility of a railway station is improved by Go-Mobil). According the public transport financing law, only the remaining costs are covered by municipalities, by the state of Carinthia and by national supports.	
Conditions of success or failure, strong and weak points	The municipalities and local companies are members of the local associations and its main financiers (annual membership fee). Go-mobil is also supported by the federal ministry for transport, innovation and technology (bmvit), based on the law for financing regional public transportation (Öffentlicher Personennah- und Regionalverkehrsgesetz 1999). Moreover, Go-Mobil is financed by the state (Land) of Carinthia.	
Transfer possibilities and reproducibility	The transfer possibilities are good, because with a rather moderate input from public budgets considerable improvements of accessibility in remote rural region could be achieved. The GMZ is interested to introduce new local/regional Go-Mobil services also in neighbour countries.	
Contacts and sources	www.gomobil-kaernten.at Go-Mobil Zertifizierung GmbH Max Goritschnig – Worked out the successful Go-Mobil model go-mobil@aon.at – Phone: +43 4272 83000, mobile: +43 664 6194500	


Gmoa Bus		
Location	Rural region of the lake Neusiedl, outside of the area of the Alpine Convention. The example was selected as a “good practice”, because the Gmoa Buses in Burgenland were among the first on-demand transport systems in Austria and are still successful.	Outside Alpine Convention
Category, mode of transport	Micro public transport systems. The Gmoa Buses in Breitenbrunn, Purbach and Mörbisch, as well as the pioneer system in Pötsching, are operated by minibuses (up to 9 persons including the driver) accessible for persons with wheelchairs.	
Service organizer, stakeholders	The Gmoa bus services are organised by professional provider organisations with club status. The provider organisations are established by the municipalities. The Federal Ministry for Transport, Innovation and Technology supported the introduction of the Gmoa Bus in Pötsching in the frame of a research program. The on-demand transport systems in Breitenbrunn, Mörbisch and Purbach were supported in the frame of European Territorial Cooperation projects.	
Target groups, service users	The target groups are all inhabitants with no possibility to use a private car or who like to reduce car-use. In the summer season, many tourists also benefit the on-demand Gmoa Buses, especially in the communities situated on the lake Neusiedl.	
Problems to be solved, origin of the service	All communities in Burgenland with on-demand Gmoa Bus systems cover a wide area and the distances to shops, services or railway stations are long. In the communities on the lake Neusiedl, the distance between the beach and the hills with vineyards is more than 2,5 km.	
Specification of initiative	All Gmoa Bus systems in Burgenland offer a door-to-door service. The buses have to be called by phone in advance, under certain conditions a call until only 10 minutes before desired starting time is possible.	
Operation	All Gmoa Bus systems offer attractive fares from a single ticket (EUR 1 or 1.50) to yearly passes (from EUR 150 in Breitenbrunn and Purbach, not personalized). The operating hours are the following: <ul style="list-style-type: none"> In Purbach: Monday to Friday, from early in the morning until 21:00, Saturday until 12:00. The service is extended in the evening and during the weekends in the summer tourist season. In Breitenbrunn: Monday to Friday, from early in the morning until 19:30, Saturday until 24:00. In Pötsching: Monday to Friday, from 6:00 to 18:00. 	
Communication, information and marketing	All Gmoa Bus systems in Burgenland are well presented at the websites of the communities. Moreover, the mobility service centre Burgenland (www.b-mobil.info/) provides information to the Gmoa Buses.	
Evaluation, assessment	<p>The Gmoa Bus systems in Burgenland were analysed in detail in some scientific projects, like the “Flipper” project (Flexible Transport Services and ICT platform for Eco-Mobility in urban and rural European areas) by the University of Natural Resources and Applied Life Sciences (BOKU) in Vienna, Institute for Transport Studies. They are also presented in a guidebook for on-demand public transport, published by the Austrian climate and energy funds.</p> <p>In the year 2011, the Gmoa Bus Pötsching had almost 30.000 passengers, 100 passengers every average working day. The ridership is similar in Purbach and a little lower in Breitenbrunn. A special case is Mörbisch where the demand during the year is lower than in the other Gmoa Bus systems, but with summits in the summer season due to the operetta festival.</p> <p>A description of the financial situation is available for the Gmoa bus in Pötsching: 20% revenues from tickets, 10% support by the Federal Ministry for Transport, Innovation and Technology (based on the public transport financing law ÖPNRV-Gesetz), 60% by the municipality and 10% by the state (Land) of Burgenland.</p>	
Conditions of success or failure, strong and weak points	An important success factor for the on-demand Gmoa Buses in Burgenland was their implementation in the frame of research projects (Pötsching in a national traffic research project with the background to improve the mobility chances of women and the services in Breitenbrunn, Purbach and Mörbisch in the frame of project in the European Territorial Cooperation program on sustainable mobility in ecologically sensible regions). A possible improvement can be the full integration of Gmoa Bus Services in the fare system of the East Region of Austria.	
Transfer possibilities and reproducibility	From the point of view of traffic planning and operation, the Gmoa buses model is transferable. A problem could be that further systems cannot benefit from financial start supports like the pilot implementations.	
Contacts and sources	www.b-mobil.info/projekte/dorfbus-projekte www.regionale-mobilitaet.at/praxisbeispiele/gmoabus-pottsching Study Purbach: www.interreg4cflipper.eu Mobilitätszentrale Burgenland b-mobil.info office@b-mobil.info – phone: +43 2682 21070	


Gseispur		
Location	The Gesäuse is a narrow valley of the river Enns situated in the north- west of Styria. On the upper end of the Gesäuse, Admont, with its famous abbey, is an important point of interest.	Alpine Convention municipalities
Category, mode of transport	Gseispur is a mobility offer including: <ul style="list-style-type: none"> • A shuttle service to the regional railway station Selzthal (“Gseishuttlespur”); • A taxi service (“Gseistaxispur”); • Electric powered scooters to rent (“Gseismopedspur”); • Cars to rent (“Gseisautospur”). 	
Service organizer, stakeholders	Gseispur was established by the “Nationalpark Gesäuse GmbH” (administration of the national park) in the frame of the EU territorial cooperation project “Access2Mountain” with the support of many partners (restaurants, tourism boards, Alpine club) and by the “Klimaaktiv mobil” funding program. Regional taxi operators provide the taxi services.	
Target groups, service users	The core target group of the Gseispur mobility offers are holiday guests who like to be mobile in the mountainous region without private car. In addition inhabitants benefit by more mobility offers	
Problems to be solved, origin of the service	In the sparsely populated, mountainous area, the rail service has been closed with exception of only one train in each direction on weekends. Bus services are, as usual in many rural areas, focused on schoolchildren mobility and therefore not sufficient for tourists.	
Specification of initiative	Gseispur services are focused on the tourists’ demand (hikers, mountaineers, etc.). All services are operated on demand. Reservation can be made by a conventional phone call or with a smartphone app. Providing high quality service exactly meeting the tourists’ requirements is the focus of Gseispur, not low prices.	
Operation	The operation of the services is based on preliminary registration by phone or using the smartphone app. The prices are lower than in normal taxis (for a trip up to 25 km, about EUR 7 with a guest card and EUR 10 without), but higher than in public transport.	
Communication, information and marketing	Gseispur is well presented at the website www.gseispur.at and at homepages of regional partners’ websites. Folders and brochures are also printed. Moreover, the regional partners of the national park (restaurants, hotels, etc.) recommend using Gseispur for safe mobility.	
Evaluation, assessment	In the first year of Gseispur, 1,638 passengers use the taxi service, with an average occupancy of almost 3.5 persons per trip.	
Conditions of success or failure, strong and weak points	A success factor is the clear focus on the requirements of holiday guests. The electric scooters benefit also from a “fun effect”. A possible improvement could be lower fees for groups who share a taxi ride.	
Transfer possibilities and reproducibility	The Gseispur model is suitable for all regions with tourists who accept a higher price for comfortable mobility without car in their holiday region. If the system should include also the every day mobility (for elderly people and youngsters, as shown in other examples of on-demand services), the financial support by public authorities must be increased.	
Contacts and sources	www.gseispur.at Nationalpark Gesäuse GmbH www.nationalpark.co.at Weng 2 A-8913 Weng im Gesäuse info@nationalpark.co.at – phone: +43 (3613) 21000	


Nightliner		
Location	Autonomous Province of Bolzano, South-Tyrol	Core municipalities
Category, mode of transport	Public transport – Complementary night service	
Service organizer, stakeholders	Provincial Department of Mobility of the Autonomous Province of Bolzano.	
Target groups, service users	Young and elderly people not only the possibility to travel at late hours.	
Problems to be solved, origin of the service	Nightliner allows young and elderly people not only the possibility to travel at late hours safely and for cheap prices, but favours an enhancement of cultural, sport and social life. The “Nighliner concept” contributes to reduce road accidents and “concerns” for families.	
Specification of initiative	“Nightliner” are bus lines operating at Saturday and Sunday nights. The service initially started as pilot project in some parts of South-Tyrol. Currently, the service includes Val Venosta – Burgraviato areas (4 lines), Val Pusteria – Valle Isarco (6 lines), Oltradige (1 line), Bassa Atesina (1 line) and Sciliar (1 line).	
Operation	The price of a single ticket is EUR 2.50; while the “one night” ticket is EUR 4.00. The service allows people to come back home safely by public transport even late during the night. This is particularly true during the winter season, when road conditions may be particular difficult and safety conditions are not often guaranteed.	
Communication, information and marketing	No data available.	
Evaluation, assessment	Nightliner progressively found the appreciation of local users and, for this reason, the services have been extended by the Mobility Department of the Autonomous Province of Bolzano to further areas and valleys (Oltradige, Bassa Atesina and Sciliar).	
Conditions of success or failure, strong and weak points	The added value of the service is certainly the possibility for users to use public transport even at late hours and at nights, where normally no transport public offers are available. However, this is certainly a service that is expected to meet more success and appreciation from users where mobility demand is high.	
Transfer possibilities and reproducibility	No data available.	
Contacts and sources	www.nightliner.bz.it/	


Provibus		
Location	Province of Turin, in the Piemonte region. The territory covered by the service is mainly hilly (but not exclusively) and characterized by narrow and curvy roads (average speed lower than 35 km/h).	Core municipalities
Category, mode of transport	Public transport – On-demand bus transport service. Improvement of the regional competitiveness, innovative solutions for providing services in sparsely populated areas.	
Service organizer, stakeholders	Province of Turin.	
Target groups, service users	Mostly residents.	
Problems to be solved, origin of the service	<p>Nowadays, in weak demand areas, peoples' mobility needs for occasional and regular trips are growing and more and more diversified. In these areas, the frequency and the scarcity of public transport services directly affects their quality of life.</p> <p>The objectives of Provibus are to:</p> <ul style="list-style-type: none"> • Strengthen connections between sparse settlements and their respective municipalities; • Strengthen connections between settlements and centres in which are located most important social, health, administrative, commercial and sport services; • Create connections to areas not reached by public transport means yet; • Strengthen integration between road and rail public transport along axes directed to Torino, Milano, Asti, Alessandria, Aosta; • Favour the offer of a service more calibrated on users needs, at the same prices of ordinary lines; • Improve accessibility and personalization of journeys. <p>The project was developed at the beginning of June 2006, initially in the Crescentino area. Following the growing interest of local users, the service was extended to other municipalities of the Province of Turin.</p>	
Specification of initiative	The Provibus service was started in the hills near Turin where many people leave, but work in the city. Furthermore, secondary schools and universities are located in Turin, so many young people must travel every day at different hours. The promising start of the service was followed by its confirmation in the following years, and now there are 10 areas served by this service, four of them located within the Alpine perimeter.	
Operation	Provibus is an on-demand transport service addressed to people living in areas affected by weak demand of transport, due to dispersion of settlements. It offers the opportunity to match the use of public transport means with people's needs, allowing organizing trips in specific time frames during the day. Each trip can be booked with a simple call, agreeing with the responsible operator time, starting and ending points, according to the stops foreseen within the specific link.	
Communication, information and marketing	No data available.	
Evaluation, assessment	<p>The population appreciates the Provibus service: 97% of users are satisfied of the service and 26% use Provibus every day.</p> <ul style="list-style-type: none"> • Wide coverage with respect to users needs, without overlaps to ordinary extra-urban operating lines. • Growing interest and commitment from local governments for the expansion, through different forms, in their territories of the Provibus service, especially where transport public service is lacking. • Moreover, schools took advantage of the Provibus service for educational, cultural and recreational outside activities in surrounding hilly areas. <p>A total of 195.584 passengers have been transported (average of 134 passengers transported every day, 28 passengers per hour). The average distance covered by each passenger is 5.8 km. On average, Provibus make 773 km everyday.</p>	
Conditions of success or failure, strong and weak points	Diffusion of such experience can be replicated in further Alpine and peri-Alpine areas, especially where commuting flows are occurring between Alpine valleys and metropolitan areas of Northern Italy.	
Transfer possibilities and reproducibility	No data available.	
Contacts and sources	www.provincia.torino.gov.it/trasporti/provibus/	

Stadtbus Kolbermoor: Flexible city bus 	
Location	City of Kolbermoor, in the district of Rosenheim. Alpine Convention municipalities
Category, mode of transport	Public transport – City buses, regional buses, regional railway, student transport.
Service organizer, stakeholders	Municipal authorities, bus operators.
Target groups, service users	Residents and guests of the city of Kolbermoor, particularly students, commuters, residents with restricted mobility and elderly, residents of smaller hamlets in the countryside.
Problems to be solved, origin of the service	Kolbermoor is a thriving small city and at the same time is experiencing the effects of demographic change. The city bus has been initiated by the municipality as a reaction to repeated requests on behalf of the population.
Specification of initiative	<p>The city is responsible and in charge of the implementation, supported by external consultants. A participatory planning approach, involving the general public and decision-makers, has been conducted. Two circular lines, operation of mini-buses every 30 minutes and integration of student transport enables a maximum of service provision. Areas with low demand and remote areas are covered by demand-stops that will be activated by pushing a button.</p> <p>Even though Kolbermoor is not a peripheral area, the service is covering the more sparsely hamlets surrounding Kolbermoor. It represents the only example in the German Alpine Convention area where routes of conventional public transport services are flexibly adaptive to passenger demand. Everywhere else, public transport companies reported that no comparable flexibilisation elements are being planned.</p>
Operation	<p>Connecting numerous neighbourhoods and hamlets outside of the city area to the Rosenheim city bus lines 8/9, to regional bus line 40 (Rosenheim – Bad Aibling), student transport and the Meridian railway line (Rosenheim – Holzkirchen – Munich). During the daytime, student transport is integrated in the city bus system; schedules are coordinated with railway schedules to suit commuter needs.</p> <p>Municipal authorities have adopted operatorship from district authorities and carry out the operation independently. The municipality directly employs bus drivers and control office, ensuring direct communication and decisions that closely reflect customers' needs.</p>
Communication, information and marketing	<p>Information is provided personally and by phone through municipal office and bus service staff, Internet presence and bulletins at stops.</p> <p>Simple, inexpensive and resilient technology: tickets are sold by the bus staff and the municipal office. Communication with demand-stops is made via mobile phone and SMS. There is no automated operations control system.</p> <p>Marketing through local leaflets, extra tours to municipal events, students as “multipliers”, cooperation with the local chamber of commerce, the municipal swimming pool and music school, etc.</p>
Evaluation, assessment	Demand meets expectations.
Conditions of success or failure, strong and weak points	Simple organisation and technical implementation, participatory planning.
Transfer possibilities and reproducibility	Applicable areas: Villages and regions of limited size with small centres (railway stop) and tendencies of urban sprawl, which at the same time would like to link smaller hamlets to the centres with demand-oriented solutions.
Contacts and sources	<p>www.nahverkehrsberatung.de</p> <p>City of Kolbermoor Nahverkehrs Beratung Sudwest Bergheimer Str. 102 – D-69115 Heidelberg Stephan Kroll kroll@nahverkehrsberatung.de – Phone: +49 6221 13 75 59-0</p>

Tälerbus Lungau		
Location	3 locations: Lungau in the state (Land) of Salzburg, Murau in the state of Styria and Nockberge in the state of Carinthia.	Alpine Convention municipalities
Category, mode of transport	The Tälerbus (“valley bus”) system is operated with minibuses, conventional buses and in one valley also with electric vehicles. The narrow gauge railway Murtalbahn is integrated in the Tälerbus system. The Tälerbus includes scheduled bus lines that operate the whole year and special services for tourists.	
Service organizer, stakeholders	An expert in the region has developed the Tälerbus model. It is a cooperation of public transport and taxi-service providers. Most of the lines are integrated in the public transport cooperation (“Verkehrsverbünde”) with their common fares systems.	
Target groups, service users	The main target group are tourists. They can benefit the Tälerbus starting and ending a hiking tour on different places (with a bus ride to come back to their parked cars) or riding by bus deeper in a valley where private cars circulation is forbidden. Of course, inhabitants of the served regions also benefit from the services.	
Problems to be solved, origin of the service	For holiday guests without private cars, it was difficult to go to points of interest and mountainous recreation areas, because the conventional bus lines were focused on the requirements of schoolchildren. With the Tälerbus system, many new connections, suitable for the demand of holiday guests (especially hikers) were established.	
Specification of initiative	An ambitious expert living in the Lungau region, Dr. Emil Hocevar, started the initiative. After many negotiations he succeeded in motivating public transport and taxi providers to work together in the system Tälerbus. The initiative now is also supported from public budgets (“Klimaaktiv mobil” program for example).	
Operation	The Tälerbus system is a combination of scheduled bus lines and special services for tourists.	
Communication, information and marketing	The Tälerbus is presented at the website www.taelerbus.at . Moreover, a brochure with all timetables and information on advantageous tickets is printed every season. The Tälerbus is also presented at the websites of the tourism boards of the regions.	
Evaluation, assessment	The system Tälerbus was already introduced in the year 1989 and got many awards for sustainable tourist mobility. Moreover, some scientific analyses of the project are available (see www.taelerbus.at under “Das Projekt Tälerbus”). In 23 summer seasons, 330,000 passengers used the Tälerbus. The bus line with the most passengers (217,000) in these 23 years leads in the car-free Rieding Tal.	
Conditions of success or failure, strong and weak points	<p>A big success factor was the initiative of the ambitious regional expert. Supported by the Austrian ministry for environment and the Austrian Traffic Club, Tälerbus is well known as example for “soft” mobility in tourism. A specific success factor is the closure of valley ends for private car traffic for environmental reasons.</p> <p>Due to technical problems with the electric vehicles (minibuses), the service in Twenger Lantschfeld is actually closed. An improvement of the Tälerbus could be network tickets for the whole system.</p>	
Transfer possibilities and reproducibility	The transfer possibilities in general are good, because with rather low budgets an attractive service for tourists could be introduced. Maybe it is difficult to find so ambitious regional experts as in Lungau.	
Contacts and sources	www.taelerbus.at Arbeitskreis öffentlicher Verkehr (working group public transport) A-5580 Tamsweg, Am Göra 5 Dr. Emil Hocevar, Mag. Karl Regner, Mag. Katrin Gudlaugsson regner.karl@gmx.at or katrin.gud@aon.at – phone: +43 (662) 643191	

Transport on demand for the elderly in Modane		
Location	Several municipalities around Modane in the Maurienne Valley, in the Savoie Departement.	Alpine Convention municipalities
Category, mode of transport	Public transport – Transport on demand.	
Service organizer, stakeholders	Association of municipalities of the Modane canton (SICM).	
Target groups, service users	The Association of municipalities of the Canton of Modane set up a system of on-demand transport for the over 60s.	
Problems to be solved, origin of the service	The Modane canton, in the Maurienne Valley, covers 230 square km. With about 6,800 inhabitants, its average density is below 30 inhabitants per square km. Even if the canton has many villages, most of the shops are located in the city of Modane (3,500 inhabitants). The Association of municipalities decided to set up a low fare public transport service to enable the elderly who live in these villages to have access to shops.	
Specification of initiative	<p>Two virtual lines (Aussois – Modane and La Praz – Modane) have been set up, linking different villages to the city of Modane. Stops and transit schedules are fixed.</p> <p>The minimum age required to use the service (60 years old) has been imposed by the Haute-Savoie Department, that partly funds the service.</p>	
Operation	<p>This service has existed since June 2009. It is available only on Thursday mornings, the market day in Modane, with one round trip per line. Since the year 2013, the fare has been EUR 1.50 per round trip. Previously, the fare was only EUR 1 per round trip but the Savoie Department recently requested an increase for its funding. Reservations must be made beforehand by telephone, before Wednesday noon. The service has a capacity of 7 people per trip.</p> <p>A taxi appointed by the SICM operates the service. The operator's remuneration is EUR 104 per day of operation, whatever the distance run or the number of passengers.</p>	
Communication, information and marketing	Flyers and posters were issued in 2009 to advertise the service. Locally, the information was provided via the municipalities and associations for the elderly. Advertising campaigns are conducted regularly but the service is mostly known by word of mouth.	
Evaluation, assessment	An assessment system has existed since the creation of the service. Use of the service doubled between 2009 and 2010 and has stabilized at around 300 travellers a year, with an average of 25 people transported a month. The Aussois – Modane line is the busiest service, with 74% of passengers in 2011 and 86% in 2013. This is due to a larger resident population served by this line (more than 1,550 inhabitants – only 600 for the La Praz – Modane line). Since 2009, women, who represent up to 75% of passengers, have mostly used the service. Since the beginning of the experiment, the village of Aussois has been the village that has met the biggest success, representing 55% of the users of the service. The majority of reservations are made in August, September and October. According to the Association of municipalities, the service has proved to be a real success.	
Conditions of success or failure, strong and weak points	The service provided remains limited. Service advertising seems to be an important factor, especially when the service targets the elderly.	
Transfer possibilities and reproducibility	Implementing various on-demand transport systems in many rural areas has already proved reproducibility of this kind of service.	
Contacts and sources	<p>www.canton-de-modane.com/transport-a-la-demande.htm</p> <p>Syndicat intercommunal du canton de Modane Maison cantonale – 9 place Sommelier – F-73500 Modane Danielle Flandin d.flandin@canton-de-modane.com – Phone: +33 4 79 05 57 92</p>	

Transport on demand in the Drôme		
Location	Large number of rural municipalities, in the Drôme Department.	Core municipalities
Category, mode of transport	Public transport service – Transport on demand.	
Service organizer, stakeholders	The service is established and funded by the Drôme Department. The service has existed since 2009.	
Target groups, service users	<p>The on-demand transport service is opened to all, except for pupils during their commutes to their school. The service is intended for all the residents or tourists in the backcountry of the Drôme department that is not served by the regular coach network.</p> <p>This service can be used to reach another municipality following fixed routes, or to reach specific cities, railway stations or regular coach line stops. A specific service is offered to the elderly (over 65s) and the disabled (with a disability of at least 80%).</p>	
Problems to be solved, origin of the service	<p>The Drôme department has about 480,000 inhabitants for an average density of about 74 inhabitants per square km. The eastern part of the department is mountainous and mostly rural. The problem of providing cost effective public transport in this area has long been a challenge.</p> <p>In 2009, the Drôme department decided to introduce a policy to open up the back-country of the department and to enhance the mobility of its inhabitants. This service allows them to travel more easily and at a low cost. The only constraint is that trips must be planned a little in advance.</p>	
Specification of initiative	<p>There are 3 different types of service:</p> <ul style="list-style-type: none"> • A “regular” on-demand service with predefined lines, stops, days and operating hours. This service costs EUR 2.5 (single) or EUR 5 (return), whatever the distance. Additional on-demand services are available to reach the municipalities that are served neither by regular coach services nor by regular on-demand services, usually two half-days a week. This service is more expensive : EUR 4 (single) or EUR 8 (return). For example, 3 routes serving 26 municipalities have been set up in the Baronnies region. 16 other municipalities can be reached with the additional transport service. These two services serve 14 municipalities identified as “remote or sparsely populated”. • A “feeder” on-demand service connecting several municipalities to the central municipalities of Luc-en-Diois and Châtillon-en-Diois. Stops are predefined, but the exact route and schedule depend on reservations. This service serves 4 municipalities identified as “remote or sparsely populated”. • A “connecting” on-demand service serving railway stations or coach stops of the regular lines of the department’s network. 	
Operation	<p>The trip needs to be booked at least 24 hours beforehand. If no reservation has been made, no vehicle will operate. Passengers can board only at predefined stops, usually in the centre of each village served. People over 65 and the disabled can board directly at their place of residence. The days of operation are also predefined.</p> <p>A large part of the isolated zones of the Drôme department is covered by these services.</p>	
Communication, information and marketing	<p>Since the creation of the service in 2009, the Drôme department has published information flyers. Information is also available on the Department website.</p>	
Evaluation, assessment	No information available.	
Conditions of success or failure, strong and weak points	<p>The transport on demand services offer a good coverage of rural areas of the Eastern Drôme department. Nevertheless, the presence of several services, each with different operating procedures, can affect the overall visibility and comprehensibility of the mobility offer.</p>	
Transfer possibilities and reproducibility	<p>The same operation is transposable to territories where local authorities have the ambition to collectively work together for sustainable mobility. The most important constraints are the costs that have to be supported by local authorities.</p>	
Contacts and sources	<p>www.ladrome.fr</p> <p>Département de la Drôme 26 Avenue du président Herriot – F-26026 Valence Cedex 9 Hymène Chouat: hchouat@ladrome.fr – Phone: +33 4 75 79 82 71</p>	

Werfenweng Shuttle		
Location	Municipality of Werfenweng, in the state (Land) of Salzburg. Werfenweng has 930 inhabitants and is a tourist village with approximately 2,000 guest beds. The Shuttle connects Werfenweng with Pfarwerfen (2,200 inhabitants, local train station) and Bischofshofen (10,400 inhabitants, intercity train station).	Alpine Convention municipalities
Category, mode of transport	Micro public transport system. Shuttles are operated by on-demand minibuses (up to 9 persons including the driver).	
Service organizer, stakeholders	The operator is a daughter company of the tourist board of Werfenweng. Financial contributions given by the 3 municipalities, the regional cooperation of municipalities for public transport (Regionalverband Pongautakt) and by the state of Salzburg.	
Target groups, service users	The main target group is tourists travelling to and from Werfenweng and for local excursions, but 25 % of the passengers are commuters from and to Werfenweng.	
Problems to be solved, origin of the service	Before the introduction of the “Werfenweng Shuttle”, only buses focused on the demand of schoolchildren and commuters served Werfenweng. Werfenweng has been involved in some projects to promote sustainable mobility in tourism and was also founder of the sustainable tourism network “Alpine Pearls”. As the municipality and the tourist board were seeking for a higher share of guests travelling by public transport, the “Werfenweng Shuttle” was introduced to improve the connections for the “last mile”. Moreover, the shuttle is also helpful for the mobility of inhabitants and commuters to Werfenweng.	
Specification of initiative	The operator is a daughter company of the Werfenweng tourist board with professional drivers. The service is also integrated in the public transport fare system of Salzburg (Salzburger Verkehrsverbund). For guests with the soft mobility guest card (price EUR 8) the shuttle service is free of charge.	
Operation	A timetable frame is provided. The shuttle circulates on demand by phone every 2 hours from 7:30 to 20:00 every day, including Sundays and public holidays. Although the timetable frame, door-to-door services are offered. In addition in Werfenweng, a local service with electric powered vehicles, called E-Lois, is offered	
Communication, information and marketing	The Werfenweng Shuttle is well presented in several websites, like www.werfenweng.org/de/shuttleplan-anshuttlezeiten/ . All hosts of the “soft mobility” group inform their guests actively to the service “Werfenweng Shuttle”. This service is also included in the time table information system “Scotty” of the Austrian national railway company, see www.oebb.at .	
Evaluation, assessment	The “Werfenweng Shuttle” is a real success with more than 18,000 passengers in the year 2012. The best results are more than 2,000 passengers monthly.	
Conditions of success or failure, strong and weak points	The main condition of success is the consensus of the stakeholders in Werfenweng and also in region for sustainable mobility in tourism.	
Transfer possibilities and reproducibility	The Werfenweng Shuttle system is transferable, especially to tourist regions. Tickets incomes cover about 30% of the total costs. Due to the support by financial support by regional authorities and all municipalities, the costs for one municipality are reasonable, for example EUR 13,800 in the year 2013 for Werfenweng.	
Contacts and sources	www.werfenweng.eu Werfenweng Tourist board tourismusverband@werfenweng.eu – Phone: +43 6466 4200	

C.2.2. Other mobility services

12 good practices are referring to the category “Other mobility services”. This category groups all initiatives that have lead to create an additional mobility offer based on any transport mode excepted public transport modes. It can concern bike sharing systems, carpooling, hitch-hiking or taxi services.

Most of the collected good practices refers to bike rental systems, often set up for a tourist use, or to car-sharing systems. Many of these good practices are based on electric mobility, for the rental of electric bikes (useful in mountainous regions) as well as for car-sharing services.

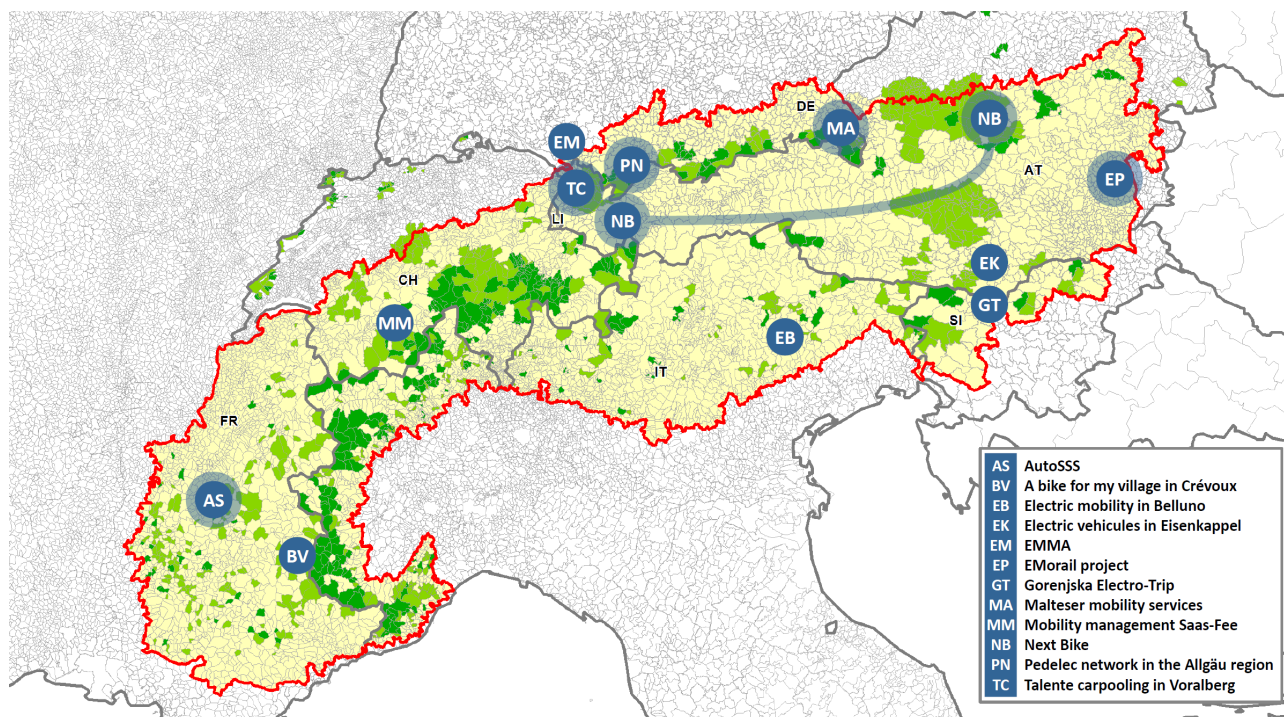






Illustration 4 – Best practices referring to the category “Other mobility services”


A bike for my village, my village with a bike in Crévoux		
Location	Crévoux, village of 150 inhabitants in the Hautes-Alpes department.	Alpine Convention municipalities
Category, mode of transport	Active modes – Electric bikes.	
Service organizer, stakeholders	Tourist information centre of the Crévoux valley.	
Target groups, service users	The initial target group is the 135 inhabitants of the 4 hamlets constituting the territory of the valley of Crévoux: Champrond, Parveyral, Chalp and Vière. The initiative will then concern tourists. The inhabitants then become ambassadors of their territory by accompanying tourists in the discovery of their favourite places.	
Problems to be solved, origin of the service	The municipality of Crévoux wished to reduce CO2 emissions by proposing an alternative, user-friendly and sustainable means of transport to its inhabitants. The municipality also hopes to help the inhabitants rediscover their territory. Geographically, the municipality of Crévoux is spread over 4 hamlets. The layout of the territory with a difference in level of about 500 meters makes the use of traditional bikes difficult, which is why it was decided to use electric mountain bikes.	
Specification of initiative	5 electric mountain bikes are available for rent at the tourist information centre in Crévoux. The service is free of charge.	
Operation	The project was launched in 2011. It received an award from the Alpine Convention (first prize in the category “municipalities of less than 500 inhabitants”), that encouraged the municipality to imagine a larger project than was initially envisaged. This larger project was estimated at EUR 50,000. As subsidies from the European Regional Development Fund, the “inter-regional operational” program for the Alps and the “valley spaces” program took longer than expected to come through, the implementation planned for summer 2012 was delayed. To speed up matters, the project was revised to its initial size with 5 mountain bikes. This operation amounted to EUR 10,000, including cycle maintenance. The service was launched in summer 2013.	
Communication, information and marketing	<p>Initially, an advertising campaign was realized in the whole Embrun area for the launch of the service in 2013, via the tourist information offices. The electric mountain bike service was presented as well as a mobility service and a tourist activity.</p> <p>Joint communication actions were conducted in September 2013 by the local authorities of the Embrun and Ubaye areas, 2 geographical regions connected by the Parpaillon route and its tunnel. On each side of the tunnel, local authority representatives travelled the distance that separated them from the tunnel by electric mountain bike. The journey is about 10 kilometres with a climb of 1 000 meters. This action proved to be an effective advertisement of the Crévoux initiative and electric bike use.</p> <p>The bikes were purchased from a local business (located about 20 km from Crévoux), which is also responsible for the regular maintenance of the material.</p>	
Evaluation, assessment	For the moment the number of mountain bikes is sufficient. Considering bike use over this first summer and the positive reaction to the service, it is likely to develop further over the next years.	
Conditions of success or failure, strong and weak points	Tourists really welcomed the service, which allow easier bike rides. The main difficulty will be to convince the inhabitants to use bikes for their trips between the different hamlets on a long-term basis. Young, non-motorized people are the primary target population.	
Transfer possibilities and reproducibility	Crévoux became an experimental site to place electric mountain bikes at the inhabitants’ disposal for short trips in a mountainous environment. This project has now been enlarged at the scale of the Serre Ponçon – Ubaye – Durance Community of Municipalities. We can imagine similar services being set up in numerous zones with the same geographical characteristics and population. However, without any subsidies to help funding, the municipality cannot purchase additional electric bikes.	
Contacts and sources	<p>www.crevoux.eu/ and http://adrets-asso.fr/IMG/pdf/Fiche_Experience_Crevoux.pdf/</p> <p>Office du tourisme de la Vallée de Crévoux Place de la Mairie – F-05200 Crévoux Thomas Loos: t.loos@crevoux.fr – Phone: +33 4 92 43 00 34</p> <p>Communauté de Communes de l’Embrunais 9 Rue de l’Archevêché – F-05200 Embrun Laurence Criuscolo: criuscolo@cc-embrunais.com – Phone: +33 4 92 43 76 25</p>	


AutoSSS: Secure hitch-hiking service in the Trièves area		
Location	About 50 municipalities in the Matheysine, Valbonnais, Beaumont and Trièves regions, in the south of the Isère department.	Alpine Convention municipalities
Category, mode of transport	Hitch-hiking or carpooling.	
Service organizer, stakeholders	The “Drac Nature association” manages the project. Drac Nature is a non-profit environmental protection association. The initiative is sponsored by the Isère department, the Rhône-Alpes region, the Ministry of Ecology and the Trièves community of Municipalities.	
Target groups, service users	Individuals who own or do not own a vehicle living in one of the 6 cantons of the south of the Isère department. Amongst the 47 municipalities of this territory, 27 municipalities are a partner of this initiative.	
Problems to be solved, origin of the service	<p>The south of the Isère department is a rural and landlocked territory, framed by the Vercors Mountains, the Dévoluy Moutain, the Drac valley and the Grenoble area. The territory is poorly served by public transport, with only one railway and few coach services (about 30% of the municipalities are not served by public transport). The Grenoble area has a strong appeal in the territory, which, however, is a coherent geographical and economical entity (about 70% of trips are made within the territory).</p> <p>The hitch-hiking and carpooling service has been set up to reduce greenhouse gas emissions and to reduce travel costs for the inhabitants. It relies on the particularly strong solidarity between the inhabitants of these rural mountainous zones.</p>	
Specification of initiative	The secure hitch-hiking initiative is a light vehicle carpooling system, which does not require prior meeting between users. It is mandatory to register before using the service. Registration is valid for one year. It is possible to register by mail, or in the city hall of one of the partner municipalities. Several documents have to be produced: passport photo, ID card, third-party insurance, parental consent for under 18s, driving licence and vehicle insurance for drivers. Registration costs are EUR 20 for drivers or passengers, but is free of charge for exclusive drivers.	
Operation	<p>This car-sharing system is very flexible. It requires no recording of a preliminary route. Passengers wait near a bus stop or a car park with the recognition bag showing the AutoSSS logo. They make a sign to the drivers of vehicles displaying the same logo. For increased passenger and driver safety, a text can be sent to indicate the names of the drivers and the passengers and to follow the route.</p> <p>Within the framework of an occasional use, travel costs are not shared between the driver and the passenger. Within the framework of a regular use, carpoolers can either agree to use their vehicles alternately, or to share costs (EUR 0.10 per km).</p>	
Communication, information and marketing	Advertising campaigns regularly take place on market days, or in supermarket car parks. Flyers describing the initiative are distributed in the city halls of the partner municipalities. Information about the service is also handed out via mailings and the local newspapers. The Drac Nature association is considering extend its advertising to high schools and business parks.	
Evaluation, assessment	<p>The service has existed since 2010. The association has not carried out any assessment of the initiative.</p> <p>Amongst the 47 municipalities of this territory, 27 municipalities are a partner of this initiative. Only 200 people are listed as carriers, 30 to 40 people are occasionally transported and only ten are transported more than once a week. The text system never been activated as yet.</p>	
Conditions of success or failure, strong and weak points	<p>One weak point could be the administrative aspects of the registration: users might have the impression of being under surveillance as they are requested to produce their ID, a photo, an insurance certificate, etc.</p> <p>The EUR 20 registration cost is another weak point as registration is free of charge in many other web carpooling services.</p>	
Transfer possibilities and reproducibility	Other hitch-hiking or carpooling initiatives have already been set up in other rural areas, such as the “Auto-stop participatif” (participatory hitch-hiking) in the Drome and Ardèche departments. However, these local initiatives have to face competition from national or international carpooling Internet websites.	
Contacts and sources	<p>http://dracnature.eklablog.fr/autosss-qu-est-ce-que-c-est-a3793175</p> <p>Association Drac Nature 2 bis rue du Jeu de quilles – F-38350 La Mure Corinne Valence – Coordinatrice de projets corinne.valence@dracnature.fr – Phone: +33 4 76 81 36 76</p>	


Electric vehicles in Eisenkappel		
Location	Eisenkappel is a municipality with 2.400 inhabitants, situated in the Alps (Karawanken), approximately 50 km in the south east of Klagenfurt.	Alpine Convention municipalities
Category, mode of transport	The community Eisenkappel provides intermodal services for sustainable mobility (see specification below). A focus is electric powered vehicles to rent	
Service organizer, stakeholders	The community provides 27 e-bikes and 1 electric car.	
Target groups, service users	The electric car is for inhabitants who had to pay a start contribution (EUR 300) and EUR 0.24 for every driven kilometre. The number of users for the electric car is limited to 10 persons. A user-friendly Internet booking system is available. The electric bikes can be rent also by guests. The target group of further traffic measures like improving the network for pedestrians and cyclists are inhabitants and guests as well. For tourists to the Obir Caves a bus shuttle is provided.	
Problems to be solved, origin of the service	Eisenkappel is a remote community with no train access and few bus connections; therefore the electric mobility is a considerable contribution to improve the mobility without conventional cars. Moreover, negative impacts of tourist traffic to the Obir Caves can be reduced by providing shuttle buses and attractive networks encourage walking and cycling.	
Specification of initiative	<p>The remote community in South Carinthia implements a comprehensive strategy for sustainable mobility, including measures to promote walking, cycling by attractive networks and providing a shuttle bus to the tourist- destination "Obir Caves" where the access by private cars is not allowed.</p> <p>A specific focus in Eisenkappel is the electric mobility with 1 car and 27 electric powered bicycles owned by the municipality, 2 for public services and 25 for renting.</p> <p>Moreover, the community of Eisenkappel supports young entrepreneurs (shops and crafts), also with the purpose to reduce traffic to working places and to shopping.</p>	
Operation	The operation of the electric mobility is done by the municipality, for the reservation of the electric car, an IT tool (calendar) is used. Also for the implementation of other measures to improve sustainable of mobility the municipality has the main responsibility. The electric bicycles can be rented from tourism enterprises.	
Communication, information and marketing	The community provides information- and motivation campaigns for sustainable mobility and for shopping in shops in the municipality.	
Evaluation, assessment	The mobility strategy in Eisenkappel is very successful, the electric car is frequently used by 10 private persons and if available by staff of the municipality. Approximately 12.000 km are driven with this car, more than expected before (10.000 km yearly). Also the shuttle bus to the Obir Caves is well used (approximately 40.000 passengers yearly). The demand for renting bicycles is also very high, often flexibility of the renting points is necessary to meet all requirements.	
Conditions of success or failure, strong and weak points	The comprehensive strategy of the community Eisenkappel is successful. A main success factor is awareness rising for sustainable mobility. A weaker point might be, that the electric mobility by the car and by e-bicycles is limited to persons who are able to drive a car or to ride bicycles also over longer distances.	
Transfer possibilities and reproducibility	The measures have good transfer possibilities, because the costs are moderate and in the case of the electric car, private contributions to the costs by inhabitants supported the implementation. Cooperation measures with Slovenian neighbour communities are already planned, may be a connection with electric powered buses.	
Contacts and sources	<p>www.bad-eisenkappel.info/782-0-elektroauto.html</p> <p>Municipality of Eisenkappel</p> <p>Contribution to Conference Mobilität im Ländlichen Raum, Baden, November 27, 2012</p> <p>Ferdinand Bevc: gemeideamt@bad-eisenkappel.info – Phone: 0043 4238 8311</p>	


Electric mobility in the Province of Belluno		
Location	Province of Belluno, Veneto region.	Additional municipalities
Category, mode of transport	Electric mobility – Electric van rental service.	
Service organizer, stakeholders	Province of Belluno, in close cooperation with Dolomiti Bus, local public transport company.	
Target groups, service users	Municipalities of the Province use the electric vans to meet the mobility demands of public officials and for the technical tasks.	
Problems to be solved, origin of the service	In close cooperation with Dolomiti Bus, the Province of Belluno rented eight electric vans, with a range of 75 kms each. The initiative was developed as a pilot project of CO2-NeuTrAlp, a transnational project developed in the framework of the EU INTERREG IV B Alpine Space Programme. The project was intended to make new solutions in the transport sector widely known and thus to spark a major shift in the transport sector from the fossil to the solar age.	
Specification of initiative	The reparation and maintenance of electric vehicles represents a new challenge. In consideration of the future need for skilled manpower, the professional school “Veneto ENAIP”, based in Longarone, started training activities addressed to the employees using the cars and to all students of automotive engineering in electric vehicle technology. For local authorities, the main limitation so far is the high cost of electric vehicles, albeit much lower operating costs will ensure cushioning throughout the life cycle of the vehicle.	
Operation	An electric vehicle has been granted to 23 Municipalities to be tested for six months for free. The municipalities use them to meet the mobility demands of public officials, and for the technical tasks (e.g. maintenance of public parks and roads). In return, recipients are asked to fill out questionnaires about their experience. Test drivers receive training before electric vehicles are delivered. Experience shows that the municipalities and the public service companies can fulfil their tasks most efficiently with electric vehicles, despite the limited range of electric vans.	
Communication, information and marketing	No information available.	
Evaluation, assessment	No information available.	
Conditions of success or failure, strong and weak points	No information available.	
Transfer possibilities and reproducibility	No information available.	
Contacts and sources	www.co2neutralp.net/	


EMMA: Electric mobility with connectivity in Friedrichshafen		
Location	County of Friedrichshafen, near the lake Constance.	Outside Alpine Convention
Category, mode of transport	Transport solutions – Electric mobility and car-sharing for the last mile.	
Service organizer, stakeholders	T-City Friedrichshafen (joint future lab of Deutsche Telekom and the city of Friedrichshafen), several municipalities, district authority, InnoZ (research and consulting company).	
Target groups, service users	Residents and guests of rural areas, people having problem bridging the last mile.	
Problems to be solved, origin of the service	Gap for last-mile mobility and low acceptance of electric mobility. County initiative.	
Specification of initiative	30 electric vehicles will be available across the district on a car-sharing basis incorporated into the German railway's Flinkster offer. Flinkster is a large car-sharing system available in 140 cities across Germany.	
Operation	Via an online and mobile platform (HAFAS-based), users can reserve, check-out and recharge vehicles. Several approaches for returning vehicles from remote areas will be tested.	
Communication, information and marketing	Dedicated website (www.friedrichshafen.de/wirtschaft-verkehr/emma/), media and regional platforms.	
Evaluation, assessment	Still in the piloting stage.	
Conditions of success or failure, strong and weak points	Modern design of vehicles, attractive website.	
Transfer possibilities and reproducibility	Considerable initial costs for vehicles and charging infrastructure. Business partners may help decrease these initial costs.	
Contacts and sources	T-City Friedrichshafen / FN-Dienste GmbH Karlstr. 17 – D-045 Friedrichshafen info@fn-dienste.de – Phone: +49 7541 603380	


EMorail project		
Location	Edlitz-Grimmenstein (Southern Lower Austria), Leibnitz and Kaindorf (Southern Styria) Wien, Salzburg and Graz, cooperation with the car rental service Flinkster in Germany.	Alpine Convention municipalities
Category, mode of transport	Passenger trains combined with electric cars and bicycles for the “last mile”.	
Service organizer, stakeholders	National railway company ÖBB with partners (car rental services, IT and traffic planning experts).	
Target groups, service users	Commuters: Mobility package (E-car + ÖBB-train ticket + Smartphone) to a reasonable price for the every-day mobility and business trips. In future also tourists should be addressed.	
Problems to be solved, origin of the service	Missing public transport links for the “last mile”, especially in rural regions are often the reason for using private cars for the whole trip. EMorail should close this bottleneck by using electric powered cars or bicycles.	
Specification of initiative	Case studies for the test phase in rather remote regions are Leibnitz and Kaindorf in southern Styria and the railway station of Edlitz-Grimmenstein in the Alps in the south of Lower Austria. The vehicles are shared, e.g. an electric car of a commuter can be used from another user for a business trip in rural region (origin of the commuter). Also some companies (post, energy suppliers) use the electric cars during the absence of the commuters.	
Operation	The operation is based on the cooperation of rental companies for cars and for electric bikes. It is supported by smart phone apps for ordering the vehicles and also for checking the range of battery loads. The electric power required will be generated by photovoltaic plants.	
Communication, information and marketing	The project has a website www.emorail.at	
Evaluation, assessment	<p>The pilot project which was successfully elaborated from 2010 until December 2013, the main goals were achieved, e.g:</p> <ul style="list-style-type: none"> • Design of an open, interoperable charging management system and a charging station. • Concept, design and technical development of the platform and the smartphone app Definition of business processes and derivation of the registration processes for all test users. • Completion of the necessary agreements with the test users and between the project partners to minimize risk. • Structural measures at the sites (including photovoltaic systems, charging options to the commuter residences). • Dissemination measures and publications. <p>The interest of commuters on the project was very high. In the south of Styria 56 persons were interested to join the test operation, for only 3 electric cars. After the successful pilot project in 8 commuter corridors 100 places for approximately 350 EMorail electric powered vehicles should be provided until the year 2020, a lot of them in Alpine regions (e.g. Vorarlberg, Tyrol, Carinthia and Salzburg).</p>	
Conditions of success or failure, strong and weak points	<p>A main success factor of EMorail is that for commuters the use of electric vehicles is not more expensive than using the private car. Moreover, commuters benefit from repair and cleaning services for the electric vehicles. The purchase of 2 or more cars by families can be avoided. A strong point of the EMorail concept is, that a high level of use the electric vehicles during the daytime is ensured by company users (Post, communities, energy suppliers).</p> <p>In the pilot project a weaker point was, that only people who are able to drive the electric vehicles could benefit from EMorail. Therefore in a follow up phase also shuttle services, based on car-pooling are introduced.</p>	
Transfer possibilities and reproducibility	As the plans for the implementation of the EMorail concept at 100 places with 350 electric powered vehicles show, good transfer possibilities are available thank to the efficient use of electric powered cars and bicycles.	
Contacts and sources	www.emorail.at ÖBB-Personenverkehrs- AG Helmut Wolf: office@emorail.oebb.at – Phone: +43 664 6173825	


Gorenjska Electro-Trip		
Location	Region of Gorenjska, municipalities of Jezersko, Preddvor, Bled, Bohinj and Kranjska Gora.	Core municipalities
Category, mode of transport	Charging stations for electric cars, electric bikes and electric scooters.	
Service organizer, stakeholders	<p>Project Gorenjska electro-trip (Gorenjsko Elektro potovanje) is prepared by following partners:</p> <ul style="list-style-type: none"> • Elektro Gorenjska d.d., the largest company for distribution of electric power in Gorenjska • Centre for sustainable rural development Kranj, a non-profit institute supporting activities for environmentally, economically and socially sustainable rural development of Gorenjska • Just EE d.o.o., a company for development of electric vehicle • Municipalities Jezersko, Preddvor, Bled, Bohinj, Kranjska Gora, as informal local partners <p>Project was selected at the 2010 call of Local Action Group (LAG) Gorenjska Košarica in September 2009 within the LEADER axis of the Rural development programme 2007-2013 and was co-funded by The European Agricultural Fund for Rural Development</p>	
Target groups, service users	Mostly tourists.	
Problems to be solved, origin of the service	<p>Tourism is one of the most important opportunities for Gorenjska region. But the fact is that the traffic pollution is also threatening to Gorenjska region, especially to sensitive green Alpine valleys and rural tourist destinations. Local population is facing with traffic pollution and also the flora and fauna are threatened.</p> <p>The objectives of the project are:</p> <ul style="list-style-type: none"> • To create interconnected route for electric vehicles with all infrastructure needed for electric vehicles to travel all around Gorenjska region and potentially also from direction of Austria and Italy. • To raise knowledge, awareness and motivation of both local people and foreign visitors to support and use electric vehicles. • To raise knowledge and motivation about green mobility as a sustainable development opportunity 	
Specification of initiative	With the project Gorenjska Electro-Trip, the first connected route for electric vehicles is established. Visiting natural attractions and rural tourist destinations in Gorenjska region is now possible in an environmentally friendly way. Within the project, 5 charging stations are placed on the route which links the natural and cultural attractions of Gorenjska region. Charging stations are intended to supply electric vehicles and they represent one of the incentives for “local green mobility”.	
Operation	During charging of the vehicle, tourists can spend time visiting of natural and cultural attractions. On the route for travelling with the electric vehicles is located 5 charging stations (Jezersko, Preddvor, Bled, Bohinj and Kranjska Gora). “Electric route” links natural and cultural attractions of the region of Gorenjska. Network of charging stations allows visiting all region of Gorenjska and allows connection to Italy (via Rateče) and Austria (via Gorenjska). Each of the charging stations has one triple-phase plug (3x16A) for larger vehicles and two one-phase plugs (16A) for smaller vehicles. Charging stations enable charging also for electric bikes and electric scooters.	
Communication, information and marketing	No information available.	
Evaluation, assessment	No information available.	
Conditions of success or failure, strong and weak points	No information available.	
Transfer possibilities and reproducibility	Initiative transferrable to other areas with tourist presence.	
Contacts and sources	www.elektro-gorenjska.si www.bled.si/en/files/default/banners/zgibanka%20A4%20elektricno%20potovanje%20ENG%20press.pdf www.euromontana.org/wp-content/uploads/2014/08/mog_good_practices_collection.pdf	

Malteser mobility services		
Location	Several municipalities in the German Alpine Convention area e.g. Bad Reichenhall.	Alpine Convention municipalities
Category, mode of transport	Individual mobility services for handicapped and elderly.	
Service organizer, stakeholders	Malteser Hilfsdienst e.V. (Malteser Assistance Services) in cooperation with health insurances and social service providers (Sozialeinrichtungen).	
Target groups, service users	Elderly, handicapped or injured persons.	
Problems to be solved, origin of the service	Mobility restrictions in areas without public transport or without handicapped-accessible public transport offers. Nationwide service of the Malteser organization.	
Specification of initiative	Mobility services include regular trips to schools, kindergarten, and rehabilitation centres as well as individual trips for handicapped individuals.	
Operation	A variety of vehicles caters to individual needs of passengers, e.g. wheelchair elevator, lowerable vehicles with ramps to transport one or several people in wheelchairs, wheelchair-accessible cars and several small buses for student transport. Operated with funding from health insurances.	
Communication, information and marketing	Communicated through health and social facilities.	
Evaluation, assessment	Main objective is to improve mobility and accessibility for non-mobile parts of the population. The approach has only marginal effects on traffic volumes.	
Conditions of success or failure, strong and weak points	Conditions of success: <ul style="list-style-type: none"> • Door-to-door supervision • Permanent hygienic inspection of vehicles • Long-standing experience in patient transport • Trained personnel for patient transport • Punctuality, reliability and overall customer-orientation 	
Transfer possibilities and reproducibility	Transport of handicapped or injured persons requires a prescription for special transport. Mobility services are also offered by other Welfare Service Organisations such as the Bavarian Red Cross (Bayerisches Rotes Kreuz BRZ, www.brk.de/angebote/fur-behinderte/fahrdienst).	
Contacts and sources	www.malteser-badreichenhall.de/dienste-undleistungen/leben-im-alter/fahrdienste.html Malteser Teisendorfer Straße 8 – D-83435 Bad Reichenhall Michael Soldanski : michael.soldanski@malteser.org – Phone: +49 08651-762607-0	

Mobility management between Saas-Fee and Visp		
Location	Between Saas-Fee and Visp, in the Canton of Valais.	Core municipalities
Category, mode of transport	Various measures including car-sharing, enhancement of information about public transport, cycle facilities, etc. The project mobility management Saas-Fee contents projects, concepts and ideas, leading to a shift of the modal split in favour of public transport in the valley. Another focus is awareness rising as well as the on-site mobility, which is strongly characterized by electric vehicles in the village itself.	
Service organizer, stakeholders	The association “Rundum mobil” is in charge of the project but is closely working together with the two communities Saas-Fee and Visp, as well as the canton, the confederation, the Swiss Federal Railways (SBB), PostBus Switzerland and the local hotel association.	
Target groups, service users	The project includes both measures that are mainly appointed to tourists as well as to the local population.	
Problems to be solved, origin of the service	<p>The opening of the New Railway Alp Transit Route has strengthened the public transport in the region of Saas-Fee and Visp. By several accompanying measures the project tries to further strengthen the use of public transport. The general goal is to achieve a more sustainable transport mode in the region of Saas-Fee and Visp. The mobility management plan includes several sub-projects and wants to provide an extensive understanding and planning of the region’s mobility.</p> <p>The projects that concern the local population are:</p> <ul style="list-style-type: none"> • Reduction of traffic flow between Saas-Fee and Visp, • Car-sharing services in Saas-Fee and Visp, • Reduction of two-car households, • Fostering and maintaining work in the field of public transport, • Better cost-efficiency ratio of public transport and a higher and more constant capacity utilization. 	
Specification of initiative	<p>Two car-sharing vehicles have been installed in Visp and one in Saas-Fee. There have been several informational events in order to raise awareness among the population about the traffic problem in the community. A “code of behaviour” has been elaborated with public participation. 5 terminals for bikes and e-bikes have been installed in Visp. This service is free for the local population.</p> <p>All measures are coordinated with the new train station in Visp and the bus terminal in Saas-Fee. Information about public transport offers and current connections have been harmonized and coordinated with the provider of the transport services, hotels, the community, car-sharing providers, etc.</p> <p>A Mobility Card has been launched in order to make public transport more attractive compared to private transport. All public transport can be used at a flat rate.</p>	
Operation	The project was coordinated by the association “Rundum mobil” and implemented by the partners named above. The work mostly involved coordination and awareness raising as well as project assistance with specific infrastructure projects (car-sharing, bike terminals, etc.).	
Communication, information and marketing	Especially about the car-sharing project there has been regular information in the local journal. Additionally there have been several informational meetings and a few events with information desks in the streets of the communities. The population was offered a good price to test the car-sharing.	
Evaluation, assessment	The measures themselves are not necessarily original but what is important in this project is the extensive planning throughout all areas of local public transport, the involvement of many relevant partners and the remarkable coordination of all activities as well as the participation of local population. Also, the project shows how measures for tourists and community members can be combined.	
Conditions of success or failure, strong and weak points	Measures to increase non-motorized traffic were one of the core goals of the project but the initiative to temporarily block certain streets for traffic was rejected by the population. No measures in this area could be implemented.	
Transfer possibilities and reproducibility	A holistic mobility management is eligible in most areas of the Alpine region. Especially where there is strong traffic flows between two or more destinations, it is desirable to coordinate the management efforts and to harmonize information systems about the public transport network, ticket prices and car-sharing or bike-rental systems not only between the communities but also in cooperation with other stakeholders such as hotels or service operators.	
Contacts and sources	www.are.admin.ch/dienstleistungen/00908/03175/04266/index.html?lang=de&download=NHZLpZeg7t,Inp6iONTU042I2Z6In1acy4Zn4Z2qZpnO2Y_uq2Z6gpJCDe356hGym162epYbg2c_JjKbNoKSn6A	

Next bike		
Location	Next Bike provides an automatic bicycle renting system. The activities are focused in the countries Niederösterreich (Lower Austria) and Burgenland. Some of the renting stations in Lower Austria are situated in Alpine regions. Bicycle renting companies are located in Oberösterreich (Upper Austria). Salzburg and Vorarlberg are working with the concept of Next Bike.	Alpine Convention municipalities
Category, mode of transport	Bicycles for rent are used especially by tourists but also by commuters.	
Service organizer, stakeholders	The service organizer in Lower Austria is the Energie- und Umweltagentur NÖ (Energy and Environment Agency) together with partners (Next Bike Burgenland), communities (e.g. to install bicycle stands) and advertising partners (The bicycle stands as well as the bicycles provide space for advertising, the advertising revenues are important for financing the system). Next Bike gets also public support e.g. from climate active mobile program of the Austrian Environment ministry and the government of Lower Austria	
Target groups, service users	A main target group are tourists, who use the rented bicycles as link from train stations to points of interest and to recreation areas. An important target group are also commuters or business travellers, who use the bicycles for the “last mile”. Many of them benefit from the offers free of charge for the first hour combined with public transport passes.	
Problems to be solved, origin of the service	In many cases people use their private cars, because for the “last mile” no public transport services are available. The bicycles for rent close these bottlenecks.	
Specification of initiative	Next Bike provides in Lower Austria and in Burgenland together almost 1.500 bicycles for rent at 295 stations in Lower Austria and 36 stations in Burgenland.	
Operation	After the registration via phone hotline, via app, or online for renting a nextbike the users have to contact Next bike by the phone hotline, by app or Internet, tell or write the number of the desired bike. Then they receive a code and can open the lock with this code and start their ride. The rented bikes can be returned at any official nextbike station. The users have to lock up the bike and to inform the Next Bike company about the station of the bike (again via smart phone app, hot-line or in the Internet). The price for renting “nextbikes” are moderate, EUR 1 for the first hour and EUR 8 for 24 hours. A lot of reduced renting fees are offered, e.g. for users with half price card of the national railway company, with yearly passes of the public transport system in Lower Austria and Burgenland and with the tourist pass Niederösterreich Card.	
Communication, information and marketing	Next Bike provides useful information on the homepage www.nextbike.at , moreover, information in print media is available, e.g. in tourism brochures.	
Evaluation, assessment	Next Bike is a successful system. During a year, in Lower Austria and in Burgenland together, approximately 40.000 rentals were registered. In the last 2 years an increase of rentals by 40% could be achieved.	
Conditions of success or failure, strong and weak points	Cycling is trendy in Austria. A strong point is the easy access to the nextbikes for rent. A success factor is also the support from public budgets based on policies to reduce green- house gas emissions.	
Transfer possibilities and reproducibility	The transfer possibilities are good as also the experience with the implementation of the Next Bike concept in other countries by other providers prove.	
Contacts and sources	www.nextbike.at Next Bike NÖ Energie- und Umweltagentur Betriebs GmbH 3100 St. Pölten info@nextbike.at – Phone: +43 2742 219 19	

Pedelec network in the Allgäu region		
Location	350 rental stations and 150 battery-changing stations throughout the Allgäu region.	Core municipalities
Category, mode of transport	Car-sharing with electric cars and area-wide electric bike rental system.	
Service organizer, stakeholders	Owners of hotels, guesthouses, campsites, tourist offices, energy supply companies in cooperation with the MOVELO company. Rental stations rent their bikes from MOVELO for a monthly fee, which also includes insurance and maintenance.	
Target groups, service users	Mostly visitors, but also residents for recreational purposes.	
Problems to be solved, origin of the service	<p>High share of motorised tourist traffic. Lacking attractiveness of cycling.</p> <p>Initiated in the framework of the EU project CO2NeutrAlp, the Allgäu having been one of its pilot regions.</p> <p>Part of the econnect pilot project addressing intermodal electric mobility.</p>	
Specification of initiative	<p>Providing easy access to e-bikes and the necessary infrastructure such as battery-changing stations.</p> <p>Attractive alternative for recreational trips and activities that would otherwise require taking a car.</p>	
Operation	Operated by individual service providers (hotel, guest houses, stores) in cooperation with the MOVELO company.	
Communication, information and marketing	Communicated through local tourism operators and regional tourism authorities as well as through communication channels of a dedicated EU project CO2NeutrAlp.	
Evaluation, assessment	<p>The promoters receive positive feedback from tourists as well as from residents. In the beginning, customers mostly included people aged 50 or older, but recently, rental stations are increasingly seeing younger customers and families.</p> <p>Particularly company recreation tours are frequent users. Effect on traffic-reduction has not been quantified, but a reduction effect on individual motorised traffic is very likely.</p>	
Conditions of success or failure, strong and weak points	Easy access to rental stations nearby, all-inclusive rental package for service providers.	
Transfer possibilities and reproducibility	<p>Generally, the approach can be transferred to every tourist destination with a considerable number of visitors as well as a tourist infrastructure that serves as nodes for rental and charging.</p> <p>The project raised awareness for electric mobility in general, an effect that lead to another project on electric car mobility: “eE-Tour”.</p>	
Contacts and sources	www.ee-tour.de/ www.eltis.org/index.php?id=13&lang1=en&study_id=2932	

Talente carpooling in Voralberg		
Location	Whole country of Vorarlberg.	Alpine Convention municipalities
Category, mode of transport	Car-pooling, but sometimes in combination with public transport use.	
Service organizer, stakeholders	Non-profit club “Talente Vorarlberg” in cooperation with many partners in the region e.g. the Austrian Automobile and Touring Club in Vorarlberg, organizers of events and others. The program Ways2Go of the Federal Ministry for Transport, Innovation and Technology supports the conception and monitoring study Give&Go.	
Target groups, service users	Whole population, especially in remote region, actually young people use TalenteMobil more than older generations.	
Problems to be solved, origin of the service	Frequently the occupancy rate of cars is low; often the driver is alone in his/her vehicle. So space for additional car-passengers is available. On the other hand for safety reasons many drivers don't like to carry passengers although their trips could meet the mobility demand of people without car or with interest on car-pooling.	
Specification of initiative	In Vorarlberg with the network “TalenteMobil” a solution for organized carpooling was implemented. Passengers and drivers get “TalenteMobil” identity cards to improve safety; moreover, new communication technologies (e.g. apps) are used to increase personal safety for drivers and passengers, e.g. it is recommended to send an SMS to persons (parents, friends) about the planned trip.	
Operation	Registered drivers and passengers have several possibilities to organize their common trips: via Internet, via smart phone applications, and with organized hitch-hiking. At events pin walls are provided, where trip demands (often written on the backside of a beermat) are picked up. In addition to the identity cards, members of TalenteMobil get also useful equipment, like reflecting yellow belts, which can be worn on the sleeve or and cards in form of a beermat. The drivers can ask for a financial contribution for the fuel (especially for longer trips), but no commercial fee for profit. It's also possible that passengers give “Talents” for their ride, like self- made cake, driving another time of helping in the garden.	
Communication, information and marketing	The homepages www.talentiart.at/mobil and www.talentemobil.net provide useful information. Moreover, brochures were provided. Both give useful information, how TalenteMobil works and what are the rules for participation.	
Evaluation, assessment	The final assessment report will be published soon. First experience shows that the main target group are young people, driving or riding to events and back home. Although young people are well skilled to use IT applications the beer mats are very liked to organise trips.	
Conditions of success or failure, strong and weak points	TalenteMobil contributes to improve solidarity within the society; helping each other can even create new friendships. With rather low costs bottlenecks in the mobility without own private car can be closed. A weaker point is, that not all trip demands can be met, the current most successful use of TalenteMobil are trips to events and back home.	
Transfer possibilities and reproducibility	The transfer possibilities are good, because the system works with moderate costs and meets well the demand, especially of young people. An enlargement in additional Alpine regions is planned.	
Contacts and sources	www.talentiart.at/mobil Monika Wanjek: monika.wanjek@tuwien.ac.at – Phone: +43 (1)58801-280514 Roland Alton: ras@osalliance.com – Phone: +43 (0)508020620	

C.2.3. Non-mobility solutions

12 good practices referring to “Non-mobility solutions” have been collected. One of them (Teleworking Alcatel) is no longer active.

This category includes all services that can contribute to avoid individual mobility and that do not contribute to an increase of other kind of polluting mobility. It concerns all mobile services, such as mobile citizen counter, mobile shops, delivery services, etc. It also concerns teleworking or video-conferencing infrastructures, and more generally all services using Information and communications technologies.

Unlike many mobility solutions, often targeting tourists, these measures are dedicated to residents. But the strong involvement of civil society actors alongside local authorities can again be highlighted.

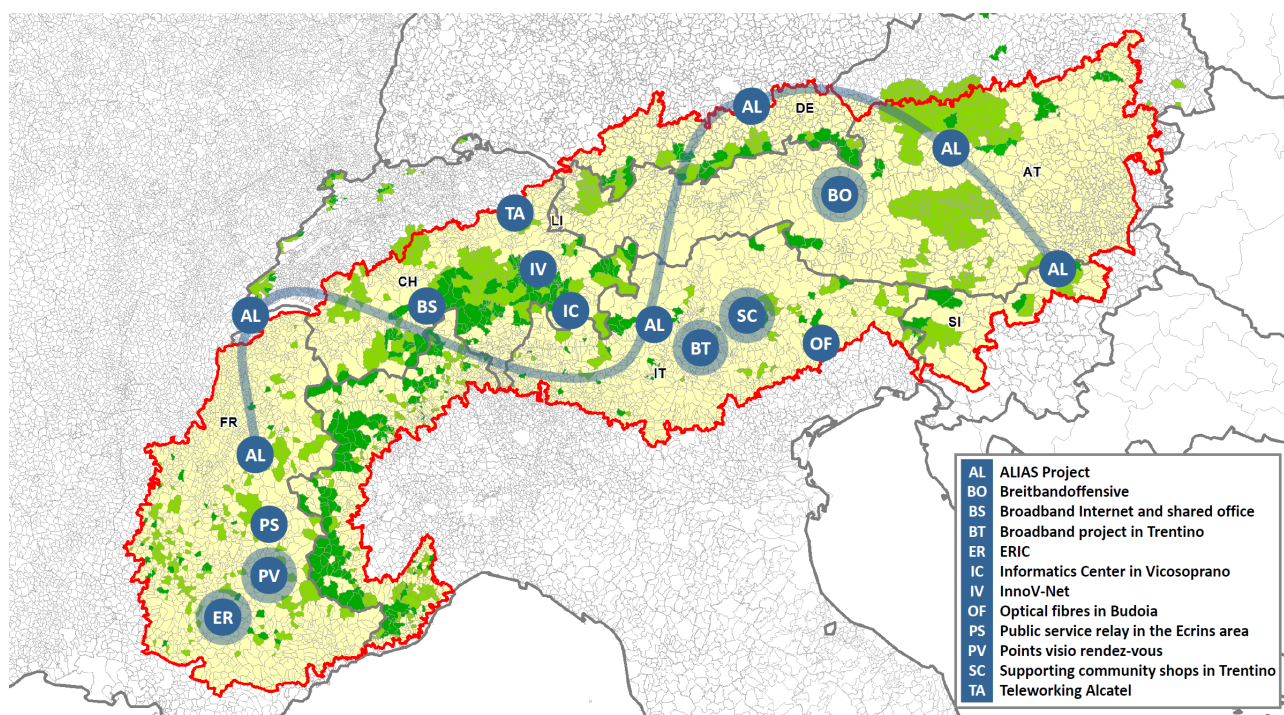







Illustration 5 – Best practices referring to the category “Non-mobility solutions”


ALIAS Project: hospitals networking for telemedicine 	
Location	<p>Lombardy Region and Friuli Venezia Giulia region. Rhône Alpes region in France, Carinthia state (Land) in Austria, Slovenia, state (Land) of Bavaria in Germany and Canton of Geneva in Switzerland were the other European areas involved in the ALIAS project.</p> <p>Alpine Convention municipalities</p>
Category, mode of transport	Innovative solutions for providing services in sparsely populated areas, increasing of the knowledge on the territorial dynamics and elaboration of a strategy for the development of the area and for the safeguard of the services.
Service organizer, stakeholders	No data available.
Target groups, service users	No data available.
Problems to be solved, origin of the service	Limited access to healthcare and quality of care are inextricably intertwined. Improving access to care in medically rather underserved areas and better professional interactions for local providers increase healthcare services quality in these areas. One way to address the accessibility issue is through the “redistribution” of specialists and clinical resources available in urban healthcare centres to these Alpine Space areas. Telemedicine (eHealth) allows this to take place without physical relocation of providers by eliminating the significance of time and distance between patient and providers.
Specification of initiative	<p>ALIAS project (July 2011 – October 2012) was aimed to offer ICT public services for citizens and professionals. The project enabled the creation of a network shaping the ALIAS Virtual Hospital, networking 12 pilot nodes, for sharing medical information and exchanging best clinical practices, to improve the efficiency of hospitals in remote Alpine areas. Two telemedicine services have been developed and piloted:</p> <ul style="list-style-type: none"> • Information provision allowing healthcare professionals of any ALIAS hospital network to access information about a patient coming from any (other) ALIAS region, upon his consent. • Advice querying allowing any healthcare professional of the ALIAS hospital network using telemedicine tools to require expert advice on a patient under treatment.
Operation	No data available.
Communication, information and marketing	No data available.
Evaluation, assessment	<p>At the end of the project, 12 pilot sites were in the position to run the ALIAS services. The principle that has guided the development of the ALIAS platform has been the enhancement of the community welfare in the Alpine Regions. In this light, if ALIAS was conceived as a first step of the cooperation between the Lombardy and Rhône-Alpes regions in the healthcare sector (a Memorandum was signed in 2008), during its implementation new opportunity of cooperation originated from the strong will of all the involved Regions to reinforce that kind of cooperation to neighbouring regions. With this prospect, during the ALIAS timeframe, the healthcare Ministry of Lombardy signed 2 letters of intent with Friuli Venezia Giulia Region (2010) and the Bavarian Ministry of Environment and Public Health (2012).</p> <p>Further initiatives have been also recently started by Lombardy region with local healthcare authorities in Slovenia and Austria. This policy framework promises to give coherence and continuity to a transnational initiative which has a strong policy commitment and a long-term vision for making its results sustainable and reusable. Finally, the ALIAS initiative has been included in the Strategic Plan for 2012 of Lombardy Region driving the implementation of healthcare policies.</p>
Conditions of success or failure, strong and weak points	No data available.
Transfer possibilities and reproducibility	Given the results achieved by the ALIAS operation and the positive experience gained through the deployed services, the project partners, enlarged to new actors, committed them to capitalize the work done escalating the ALIAS central platform to include new services directed towards both patients and Primary Care services. Under the framework of the Alpine Space Programme 2007-2013, the NATHCARE project (Networking Alpine Health for Continuity of Care) may be seen therefore as the natural evolution of the system ALIAS.
Contacts and sources	www.aliasproject.eu


Breitbandoffensive: investment offensive for high-speed Internet		
Location	All regions in Austria with slow Internet access, especially rural, remote regions.	Alpine Convention municipalities
Category, mode of transport	High-speed Internet access, measure to improve communication.	
Service organizer, stakeholders	Federal Ministry for transport, Innovation and Technology in cooperation with other stakeholders (EU support programs for rural areas, Ministry for Environment in its responsibility for the development of rural regions, communities and Internet providers).	
Target groups, service users	Almost all branches of economy benefit by a high-speed Internet access, also tourism. Moreover, private households have advantages thanks to better Internet function, e.g. for tele-learning, tele-working or tele-shopping. Currently 80% of the Austrian population use Internet.	
Problems to be solved, origin of the service	In the Next Generation Networks (NGA) with a download rate of at least 30 Mbit / sec, in Austria the supply rate is 69.5%. This value is above the EU average (53.8%) but significantly behind the leading European States with almost a full supply rate such as the Netherlands and Belgium. Especially in Alpine valleys the access to high-speed Internet communication is worse than in agglomerations, as looking at the interactive map www.breitbandatlas.info/map.php shows. Without public financial support on third of the Austria population would not be supplied by high-speed Internet access.	
Specification of initiative	<p>The Federal Ministry for transport, Innovation and Technology worked out a master plan to improve the accessibility to high-speed Internet (broadband).</p> <p>In autumn 2014, the financial support programs based on this master plan will be agreed with the European Union. The first call will start in 2015. From 2016 will be invested annually EUR 200 million for the widespread deployment of broadband networks to achieve in 2020 an approximately 100% coverage with ultra-fast Internet (100 Mbit / sec).</p>	
Operation	<p>The offensive for improving the access to high speed Internet in general will build up on 3 approaches:</p> <ul style="list-style-type: none"> • Infrastructure investments in rural regions: based on the experience with the previous funding program in the period from 2015 the new program "Breitband (broadband) Austria in 2020" will be implemented. In the frame of this program existing-broadband access networks will spatially extended and improved in quality, also existing island solutions (fixed and mobile communication) should be connected to the powerful communication networks. • Technical support of empty piping projects: empty pipes for future needs should be suitable for the requirements of high-speed Internet; therefore projects are supported in the frame of the "Breitband Offensive" for Austria. In cooperation with the largest installers and suppliers of communication networks the Federal Ministry for Transport, Innovation and Technology has elaborated a planning guideline for high speed Internet (broadband), which provides technical assistance for the implementation of infrastructure, which is helpful especially for municipalities, associations of municipalities, planners and developers. Supported measures must follow the requirements of the above-mentioned guideline. • User Support: the third approach to achieve better access to high speed Internet is the support of solutions for users, especially for small and medium enterprises. 	
Communication, information and marketing	The strategy for better access to high speed Internet is well communicated on the website of the Federal Ministry for Transport, Innovation and Technology www.bmvit.gv.at/telekommunikation/breitbandstrategie/index.html and by press releases. Moreover, e.g. the chamber of commerce inform companies to the strategy and measures.	
Evaluation, assessment	<p>As the strategy is under way, no ex-post evaluation is available, but the economic forecasts show positive impacts.</p> <p>A study of the Austrian Institute of Economic Research (WIFO) came to the result that an increase of 10% of the broadband (high speed Internet) leads to an increase in GDP of 1.2% (refers to a World Bank study). WIFO has also calculated that an investment of EUR 1 billion creates more than 40,000 jobs.</p>	
Conditions of success or failure, strong and weak points	It can be expected that the strategy to improve access to high speed Internet will be successful; a risk can be technological changes which lead to lost investments.	
Transfer possibilities and reproducibility	Strategies to improve the access to high speed Internet are in principle transferable and useful, especially for rural regions.	
Contacts and sources	www.bmvit.gv.at/telekommunikation/breitbandstrategie/index.html	


Broadband Internet access and shared office space		
Location	Blatten (canton of Valais)	Core municipalities
Category, mode of transport	Broadband Internet access and installation of shared office space in old farming-houses in the centre of the community (communal planning and promotion of economic development).	
Service organizer, stakeholders	<p>The community of Blatten came to an agreement with the Swiss Internet provider Swisscom to install a broadband Internet access for the community (fibre optic cable).</p> <p>At the same time, the community faces problems concerning the community planning: many farming-houses in the centre of the community are not in use anymore and have been abandoned due to heritages and fragmented ownerships. The community is planning to revitalize its dead village centre by finding new (common) use for some of the abandoned houses. One idea includes shared office space, using synergies between the goal of wanting to offer common space for the local population in the town centre and the new technology of broadband Internet as well as the will to find creative solutions for the long commuting trips to work of many inhabitants. There are only a very limited number of employment options in Blatten, so many inhabitants have to find work in distant towns.</p> <p>The town hopes to find partners among large firms in order to allow teleworking solutions for the employees who work in the IT sector or who have other occupations which allow teleworking during the week.</p>	
Target groups, service users	<p>Potential employees from the peripheral areas who do not want to commute every day to their far-away workplace. Since many mountain farmers only work part time on their original job and have a secondary employment on the side (often for a firm in the valley or next larger town and often computer-based jobs), there is expected to be a high potential and demand for such flexible solutions who help to easier coordinate those two employments .</p> <p>The project would help to cut the number of employees who commute many times a week to their distant workplace. It would also create social cohesion among the inhabitants who would receive a common working place with all infrastructure needed within their community.</p>	
Problems to be solved, origin of the service	<p>The municipality has to bear some of the costs of the broadband Internet service installation since the small number of Internet connections in the municipality proves not to be enough cost-effective for the Internet provider. The political stakeholders had a strong will to provide this service for the municipality and named especially the promotion of local economic development and the prevention of depopulation as their main objectives. The fragmented ownership of the houses in the community centre makes any agreement on the use of the buildings very complicated. So far, the community has not been able to come to an agreement with any inheritors or absent owners.</p> <p>In order to install a shared office space, the community needs partners among the employers of its population. It has to negotiate flexible working models and the possibility of teleworking/part time working, etc. While shared office spaces with common infrastructure for freelancers or employees of micro-firms are successful concepts in urban areas, the small number of potential workers in Alpine areas makes it essential to negotiate the demand for such an offer beforehand and to find interested partners among employers and employees.</p>	
Specification of initiative	The idea for the project comes from a student project who was launched by the town of Blatten, who asked students from the ETH Zurich (in collaboration with Prof. Gion A. Caminada) to come up with ideas for what to do with the abandoned houses in the town centre and how to foster the local economy. There are also other ideas to reuse the abandoned buildings in the town centre. Shared office spaces are only one option among others.	
Operation	The project is not yet in place. The broadband Internet access will be provided in 2014/2015. Any projects concerning shared office spaces have not been launched yet.	
Communication, information and marketing	No data available	
Evaluation, assessment	No data available	
Conditions of success or failure, strong and weak points	A very strong point of the idea is the simultaneous resolution of many problems: the project offers an important service for the municipality (Internet access), but it goes beyond that: it tackles the need of a revitalization of the community centre and offers at the same time a creative solution for the long commuting distances. It also helps to create work places within the community. Although it can be a strong point to have many partners, the project needs many supporters (owners of buildings, firms, community stakeholders, employees).	
Transfer possibilities and reproducibility	Generally, the idea is reproducible for other areas as long as there are businesses that are ready to invest in such a project. The particularity of the Alcatel example is the lack of competent employees. At the time, Alcatel was particularly interested in recruiting engineers from the Alpine area and was therefore ready to invest in a remote satellite.	
Contacts and sources	<p>www.blatten-vs.ch</p> <p>Mayor Lukas Kalbermatten info@blatten-vs.ch</p> <p>Radio broadcast on the project in Blatten in Swiss German: www.srf.ch/sendungen/doppelpunkt/das-leben-und-ueberleben-in-den-alpen-3</p>	


Broadband project: Internet connectivity in Trentino		
Location	Autonomous Province of Trento.	Core municipalities
Category, mode of transport	High-speed Internet access. Sustainable re-launching of the local/regional competitiveness, innovation as a driver of a sustainable development which preserve culture and population, creation of qualified employment dealing with the brain drain phenomena.	
Service organizer, stakeholders	Trentino Network is the public society created by the Autonomous Province of Trento in 2004 for the management of Trentino's telecommunication infrastructure and for the realization of new broadband networks.	
Target groups, service users	No data available.	
Problems to be solved, origin of the service	<p>Before the creation of "Trentino in Rete" project, two thirds of Trentino Municipalities (150 out of 223) were not covered by ADSL connection. The Internet access provided by national operators reached 65% of inhabitants living in Trentino, mainly concentrated in areas with higher population density. As a consequence, most peripheral and mountain areas found little or no interest for national operators. Since 2006, Trentino in Rete promoted a capillary diffusion of fast Internet connection in the whole Trentino through most innovative technologies available on the market.</p> <p>The project of the Autonomous Province of Trento, called "Trentino in Rete", was born to provide each citizen a fast, safe and reliable Internet connection, reducing the digital divide occurring in many areas of the Province. The territory of the Province is composed also by low-density areas and mountain areas difficult to reach. The Autonomous Province of Trento has developed a comprehensive strategy and has made an effective long-term programming. The overall goal is very ambitious: bring fast Internet connections to all the Trentino's households.</p>	
Specification of initiative	No data available.	
Operation	No data available.	
Communication, information and marketing	No data available.	
Evaluation, assessment	<p>The state-of-the-art and progress made can be detected on the website, regarding the specific typologies of Internet connections established. More specifically:</p> <ul style="list-style-type: none"> • Wireless network at 2,4 Ghz (wifi) www.trentinoinrete.it/it/quando/oggi/mappatura-della-rete • Network at 5,4 Ghz (Hiper.lan) www.trentinoinrete.it/it/quando/oggi/mappatura-della-rete • List of municipalities where it is possible to dispose of ADSL2+ technology (about 90% in 2013) www.trentinoinrete.it/it/quando/oggi/i-comuni-raggiunti-dalladsl2 	
Conditions of success or failure, strong and weak points	No data available.	
Transfer possibilities and reproducibility	A successful example of implementation and managed at regional scale, transferable to other Alpine provinces/regions and other Italian mountain areas (notably more scattered and depopulated areas along the Apennines).	
Contacts and sources	www.trentinoinrete.it/	


ERIC: Internet resource centres in PACA		
Location	About 160 locations in the Provence-Alpes-Côte d'Azur region, of which about a half are within the Alpine Convention area.	Core municipalities
Category, mode of transport	High-speed Internet access – New technologies.	
Service organizer, stakeholders	The Provence Alpes-Côte d'Azur region, in partnership with the European Union and central government, set up the ERIC program in 2001.	
Target groups, service users	ERIC centres are open to all citizens.	
Problems to be solved, origin of the service	To reduce social inequalities due to lack of Internet access, the Provence-Alpes-Côte d'Azur region put digital innovation at the heart of its priorities. In 2001, the Provence-Alpes-Côte d'Azur region created the ERIC resource centres (Espaces Régionaux Internet Citoyen – Internet Regional Responsible Spaces), allowing free (or low cost) Internet access and technical support. These centres were set up throughout the region. ERIC spaces were created to help citizens get to grips with information and communication technologies, and help to prevent exclusion from the information society. 10 years on, ERIC centres are now directed towards digital services in domains such as social insertion, further education, cultural and leisure activities, sustainable development, etc.	
Specification of initiative	ERIC centres are a network of 160 locations situated as closely as possible to citizens and spread throughout the region. About 35% of ERIC centres are located in rural areas. These centres are opened to all. 300 trainers provide assistance to users learning about new technologies. Trainers favour the grouping and the transfer of experiments as well as the exchange of know-how and best practices.	
Operation	ERIC is managed by local authorities (municipalities, community of municipalities, regional parks, etc.) as well as associations in charge of socio-educative, cultural or economical activities. Free Internet access, introduction to office automation, web-browsing, e-government are the essential services provided. Those services are generally coupled with employment support, especially in rural areas. ERIC centres also teach leisure activities such as digital photography. Services are often free of charge, or at very low rates.	
Communication, information and marketing	Initially, the Provence-Alpes-Côte d'Azur region was faced with advertising difficulties, as no specific funding had been assigned. Now, communication about the ERIC centres is organized through an association that is a driving force behind the experiment: the ARSENIC association, created at the initiative of the ERIC managers. The association organizes and operates numerous actions throughout the territory all year round.	
Evaluation, assessment	<p>74% of the ERIC centres have less than 800 users a year, and only 8% more than 1,600. Since 2008, attendance has been constant or has increased in more than 85% of the ERIC centres, even though household Internet access is increasingly widespread. Most users are retired (36%), unemployed people (29%) and schoolchildren (19%). Only 17% of users are working people. Impacts of the ERIC centres on travel practices have not been assessed.</p> <p>After 10 years of existence, the Provence-Alpes-Côte d'Azur region wishes the ERIC centres to become local centres for digital resources. This initiative was launched with a survey conducted over 2012 and 2013. Stemming from a partnership between the Provence-Alpes-Côte d'Azur region, the ARSENIC association and a social science research laboratory, this survey had two main objectives: conduct an inventory of the ERIC network (operating procedures of each centre, services provided, etc.) and favour reflections about the future of the ERIC program. The Provence-Alpes-Côte d'Azur region approved the new "ERIC, digital resource centre" plan in June 2013.</p>	
Conditions of success or failure, strong and weak points	The strong point is probably the human assistance that can be provided to users. The professionalism of the trainers in each ERIC centre should be highlighted: specific jobs have been created within the framework of regional employment contracts. Geographically, the ERIC network is dense and evenly spread out, offering good coverage of the whole territory. Impacts of this initiative on mobility patterns are indirect and remain difficult to assess. ERIC centres do not eliminate the trip, but only limit its length.	
Transfer possibilities and reproducibility	The number of ERIC centres and its continuous extension in the whole Provence-Alpes-Côte d'Azur region shows that this initiative is easily reproducible and transferable.	
Contacts and sources	<p>http://emergences-numeriques.regionpaca.fr/</p> <p>Région Provence-Alpes-Côte d'Azur Direction de l'Économie Régionale, de l'Innovation et de l'Enseignement Supérieur 27 place Jules Guesde – F-13481 Marseille cedex 20 Natacha Crimier – Chef de projet: ncrimier@regionpaca.fr – Phone: +33 4 91 57 53 88</p>	


Informatics centre in Vicosoprano		
Location	Village of Vicosoprano, Municipality of Val Bregaglia, in the canton of Grisons.	Alpine Convention municipalities
Category, mode of transport	Informatics infrastructure.	
Service organizer, stakeholders	Community of Vicosoprano, public entities of the canton of Grisons, in charge: association “Centro Infromatico Bregaglia (CIB)”.	
Target groups, service users	Local population, all ages.	
Problems to be solved, origin of the service	The Val Bregaglia is very remote and not all community members have access to Internet – or know how to use it. In the informatics centre in Vicosoprano, two classrooms display infrastructure for Internet and computer classes for adults as well as schools. There is also a conference room with video transmission and infrastructure for business presentations or workshops.	
Specification of initiative	<p>The general idea of the project is to get the Val Bregaglia “closer to the outside world” – at least virtually.</p> <p>Not all community members, local schools and businesses display the technological infrastructure to appropriately use computers and the Internet. In the Informatics centre, schools can use class rooms to educate youngsters, there are regular upgrade training courses for adults of the region and in the near future, there will be specific classes for mountain farmers which will be adapted to their specific computer needs. Apprentices from the region use the informatics centre to virtually participate in classes at their school in the neighbouring valley and local businesses can book the rooms for business presentation, conference calls or video transmissions.</p> <p>There are also regular events with transmissions of national or international presentations by representatives in the field of economics, politics or society. “Despite our remote location, our community members can thereby participate in high level cultural entertainment or education even though it’s actually happening in Zurich, Lugano or even outside of Switzerland”, explains the coordinator and director of the centre, Maurizio Michael.</p>	
Operation	Regular opening hours, open to the public, evening classes and special events, reservations possible. Financed by the help of the Swiss Mountain Aid (“Schweizer Berghilfe”).	
Communication, information and marketing	Regionally well known, information through schools and the community, classes and current offers regularly announced.	
Evaluation, assessment	The CIB shows a very successful way of “bringing the valley closer to the outside world” without physical mobility. The centre not only provides educational and cultural opportunities, it also helps local businesses, people and youngsters to participate in activities which normally imply to leave their home valley. The centre is a very modern, creative and innovative way to avoid mobility and to foster local economy and education at the same time.	
Conditions of success or failure, strong and weak points	Very well operated, works well and is frequently used.	
Transfer possibilities and reproducibility	Reproducible in areas with a sufficient amount of people in a certain catchment area.	
Contacts and sources	<p>www.infocib.ch/ www.puntobregaglia.ch/</p> <p>Regiosuisse PuntoBregaglia – Ufficio di sviluppo CH-7603 Vicosoprano Maurizio Michel – Coordinator and director maurizio.michael@regiosuisse.ch – Phone: +41 81 834 01 10</p>	


InnoV-Net: Education in remote areas		
Location	Surselva district in the canton of Grisons.	Core municipalities
Category, mode of transport	Education, local work opportunities.	
Service organizer, stakeholders	The small graphic design business “communicaziun.ch” and the association InnoV-Net.	
Target groups, service users	Young people of the community.	
Problems to be solved, origin of the service	In 2008, there have been only four graduates in graphic design from apprenticeship training in the canton of Grisons. Due to a lack of educational opportunities, young people are forced to move away or to commute daily to larger cities. The small, local graphic design business “communicaziun.ch” didn’t have the means to offer apprenticeship trainings to local youngsters. Together with the cantonal vocational advisor they approached the association “InnoV-Net” in order to be assisted.	
Specification of initiative	Communicaziun.ch wanted to offer apprenticeship in order to support local youngsters but didn’t have the means to do so. Realizing that several local businesses faced similar problems, they approached InnoV-Net and asked for assistance in order to elaborate a report on the current state of apprenticeships in the Alpine region. The report, so they hoped, would provide important information and a foundation for possible (financial) assistance.	
Operation	InnoV-Net approved the project and indeed, the report had immediate effects: The “Swiss Sponsorship of Alpine Regions” (Schweizer Patenschaft für Berggemeinden) was convinced by the claim of Communicaziun.ch and agreed to finance two apprenticeships during the next four years.	
Communication, information and marketing	There has been no specific marketing about the project besides the appearance in the newsletter of InnoV-Net and the publication of the actual apprenticeship openings.	
Evaluation, assessment	The project shows a good way to support both local businesses and local youngsters. Thereby it avoids the necessity of businesses to find more central locations and youngsters to either move away or commute daily to larger cities.	
Conditions of success or failure, strong and weak points	At the time, two youngsters are being trained to become graphic designers at communicaziun.ch. The two apprenticeships are secured for the next four years. Financial support will always be necessary.	
Transfer possibilities and reproducibility	The initiative in Surselva was taken by a specific business but It is imaginable that such a project to promote local apprenticeship could be offered by public entities or associations to local businesses.	
Contacts and sources	www.sab.ch/uploads/media/ST196_InnoVnet_02.09_de_fr.pdf	

Optical fibres in Budoia		
Location	The Municipality of Budoia is placed along the Alpine foothills not far from the urban area of Pordenone.	Alpine Convention municipalities
Category, mode of transport	High-speed Internet access. Innovation as a driver of a sustainable development, educational opportunities for mountain young people, innovative solutions for providing services in sparsely populated areas.	
Service organizer, stakeholders	NCS Group, private company who realized the wiring system.	
Target groups, service users	All inhabitants, firms and public bodies.	
Problems to be solved, origin of the service	Since two years ago Budoia was not served by fast Internet connections, making the territory unable to host public and private services needing the Internet connection.	
Specification of initiative	<p>Thanks to a public-private partnership between the Municipality of Budoia and NCS Group, Technologica Pole Polo of Pordenone and the Union of Industrials of Pordenone, the whole municipal territory has been wired up.</p> <p>Costs were up to the private, which used the public network of street lighting for the installation. The agreement includes free connection for the municipal buildings as well some open wifi areas in the municipal territory. Budoia is the first Italian community entirely wired up with FTTH optical fibres (Fibre To The Home).</p>	
Operation	No data available.	
Communication, information and marketing	No data available.	
Evaluation, assessment	<p>All the public buildings are now wired up; schools are wide and use interactive multimedia boards. Library is equipped with multimedia devices and an ICT room is used by the students and by elderly for ICT training. New services for tourists are accessible thanks to the public wifi areas and safety has been implemented with a video-surveillance system linked to the fibre-network. The new urban plan take into account the new services as well the new needs, including the spaces for the workers of this new ICT related economy.</p> <p>Thanks to all these enhancements, it is expected that the number of inhabitants living in Budoia may continue to grow (about 600 more residents came to Budoia in the last years, passing from 2000 to 2.600 overall units).</p>	
Conditions of success or failure, strong and weak points	No data available.	
Transfer possibilities and reproducibility	Other mountain municipalities (such as Polcenigo and Caneva) have taken as an example the project realized of Budoia.	
Contacts and sources	www.comune.budoia.pn.it/index.aspx	

Points visio rendez-vous: Video-conferencing meeting points in the Hautes-Alpes		
Location	About 25 municipalities in the Hautes-Alpes department.	Core municipalities
Category, mode of transport	New technologies – Video-conferencing system to contact several administrations or public bodies.	
Service organizer, stakeholders	Service managed by the Hautes-Alpes Department, with funding from the European Regional Development Fund, central government and the Provence-Alpes-Côte d'Azur region. The project is owned by central government (Hautes-Alpes department prefecture), as it is part of the national initiative "more services to the public" managed by the DATAR, the French agency in charge of territorial development.	
Target groups, service users	The aim is to limit the trips of anyone wishing to contact a public body.	
Problems to be solved, origin of the service	The Hautes-Alpes department (140,000 inhabitants, 24 inhabitants per square km) is located at the heart of the French Alps. It is characterized by significant travel difficulties, especially in winter. Journey times are significant, given the topography. As public bodies are usually located in the main cities, people living in remote areas are particularly penalized in terms of access to public services.	
Specification of initiative	<p>The "points visio rendez-vous" are video-conferencing meeting points, enabling users to get in direct touch with public bodies. Users requiring information from an administrative body, who do not wish to travel (or are unable to do so), can contact one or several administrations without wasting time on road travel or in queues at the counter.</p> <p>At the video-conference point, human technical assistance is provided if necessary for the functioning of the installation as well as a printer-scanner if necessary. All video conference calls are made in a specific room guaranteeing the confidentiality of the exchanges between the user and the public body.</p>	
Operation	<p>22 "points visio rendez-vous" are distributed on the Hautes-Alpes department. More than 25 public services bodies can be joined with this facility: general administration, employment centre, health insurance centre, chamber of commerce, social security centre, etc.</p> <p>There is no specific procedure for making a video-conference call. An appointment is organized at the closest video-conferencing meeting point. At the agreed day and time, the user sits in front of a screen with a webcam, which automatically turns on to get in touch with the public service employee. Most administrative tasks can be carried out during the appointment, through the use of a scanner printer (identity papers, forms etc. can be provided).</p> <p>The technical solution is intentionally flexible and lightweight to avoid significant investments in terminals. Video-conferencing meeting points operate with a web conference web camera, headset (public service side) or table microphone (user side) and a conventional computer with video software adapted for this purpose.</p>	
Communication, information and marketing	No information available.	
Evaluation, assessment	<p>After a first year marked by many difficulties (bankruptcy of the main provider, many technical problems, etc.) the first results appeared in 2012, following the commitment of the employment centre (with a large increase in the number of appointments made).</p> <p>Video-conferencing meeting points should be used as additional means of contacting public services. They do not systematically replace the face-to-face appointments, but provide the user with the choice of travelling to the service or conducting administrative tasks locally. The system is all the more interesting when it includes a large number of public services.</p>	
Conditions of success or failure, strong and weak points	<p>The use of video-conferencing meeting points now seems to be an efficient means of facilitating access to public services in rural areas. However, their use still raises some concerns from users who are generally unaccustomed to new technologies. In the Hautes-Alpes department, the video-conferencing meeting point ergonomics have been specially been studied for people with social problems.</p> <p>Major advertising and assistance is necessary to convince public bodies to join the initiative: this new system modifies work habits, both at the organizational level and at an individual level. Moreover, the video-conferencing meeting points do not eliminate the trip, but only limit its length.</p>	
Transfer possibilities and reproducibility	This system seems to be easily transferable. A total of 50 "points visio rendez-vous" is expected in the Hautes-Alpes department.	
Contacts and sources	<p>http://pointvisio.hautes-alpes.fr/ http://agenda21.cg05.fr/692-i1-mettre-en-place-des-points-visio.htm/</p> <p>Département des Hautes-Alpes Service informatique et projets innovants Place Saint Arnoux – CS 66005 – F-05008 Gap Christophe Lombard: c.lombard@cg05.fr – Phone: +33 4 92 40 39 25</p>	

Public services relay in the Ecrins area		
Location	The “public service relay” is located in L'Argentière-La Bessée (2,320 inhabitants) with a second office in Pelvoux (470 inhabitants), but benefits all the municipalities of the Community of municipalities.	Alpine Convention municipalities
Category, mode of transport	Versatile structures public reception to obtain information and perform administrative tasks under several administrations or public bodies.	
Service organizer, stakeholders	The “public service relay” has been set up by the Community of municipalities, with funding from the French central government, the European Union and the Provence-Alpes-Côte d'Azur region.	
Target groups, service users	All community members wishing to contact a public body.	
Problems to be solved, origin of the service	<p>The community of municipalities of the Ecrins area is located in a mountainous area. It covers 9 municipalities with a total of 6,600 inhabitants. The average population density is below 15 inhabitants per square km. Traffic conditions (a single road, adverse weather conditions), the isolation of some villages, the problem of mobility does not allow people to access public services and perform their administrative and social processes.</p> <p>Since 1996, the municipality of L'Argentière-La Bessée got involved in maintaining public services in its territory, with the creation of an “Employment and Training point”. The measure is extended to the whole community of municipalities in 2004, and obtained the “public service relay” in 2007. The second office opened in Pelvoux in 2011.</p> <p>The French central government introduced the “Public Services Relay” (“Relais Services Publics”) label in 2006 to reinforce the presence of public services in rural areas. This plan allows the state to be more involved and improves the quality of its public services. In any “Public Services Relay” in the whole country, an officer is present to guide the users in their administrative procedures. It is possible to see one person in one place, when gathering information and carrying out administrative procedures coming under several public organisations.</p>	
Specification of initiative	<p>The “public service relay” offers in one single place the ability to:</p> <ul style="list-style-type: none"> • Get government information and explanations for administrative correspondence; • Be supported in building a business and benefit from monitoring it; • Get an appointment and meet with public bodies: public services, associations, etc.; • Be supported when looking for employment; • Look at the documentary space: housing, public transport, youth information, etc. <p>The “public service relay” in L'Argentière-La Bessée is also a “Point visio rendez-vous” and an “ERIC” space (see corresponding good practices).</p>	
Operation	<p>The “public service relay” is open in L'Argentière-La Bessée from 09:00 to 12:00 and from 14:00 to 17:30 on Monday, Wednesday, Thursday and Friday; and from 09:00 to 12:00 on Saturday. A second office is open in Pelvoux (12 km from L'Argentière-La Bessée) every morning from Monday to Friday from 8:30 to 12:15.</p> <p>One officer is always present at the information desk. The officer is trained by the partners to welcome and help the users in their administrative procedures. More than 20 public bodies can be joined at the “public service relay”: job centre, health insurance, pension insurance, family allowance, justice council, Chamber of Commerce and Industry, etc.</p>	
Communication, information and marketing	A leaflet outlining the services provided and other practical information has been issued. This leaflet is common to several “public service relays” and other facilities. Moreover, information concerning the “public service relay” is available on the website of the Community of municipalities.	
Evaluation, assessment	The number of people contacting the “public service relay” is increasing: 3,700 in 2008, more than 5,500 in 2010 and more than 6200 in 2013 (approximately 5900 in L'Argenière and 300 in Pelvoux). The “public service relay” can significantly reduce the trip length to join public bodies (the administrative centres of Briançon and Gap are respectively 16 and 70 km from L'Argentière-La Bessée; 23 and 82 km from Pelvoux). Nevertheless, impacts of this initiative on mobility patterns have not been assessed.	
Conditions of success or failure, strong and weak points	One big change for public services involved in the “public service relay” initiative is the collaboration of people from different services, who are now able to work more efficiently together, thereby giving the users of public services a higher quality service. For the Community of municipalities, funding the “public service relay” probably remains the main issue.	
Transfer possibilities and reproducibility	This partnership can easily be applied to other situations and can be transposed in other Alpine remote or sparsely populated areas. Today, these “public service relays” are widespread in the whole French territory. More than 200 “public service relays” have been created between 2006 and 2010.	
Contacts and sources	<p>www.cc-paysdesecrins.com</p> <p>Communauté de communes du Pays des Ecrins 404 avenue du Général de Gaulle – BP 2 – F-05120 L'Argentière-La Bessée Stéphanie Davin-Poncelet: s.davinponcelet@cc-paysdesecrins.com – Phone : +33 4 92 23 07 83</p>	

Supporting community shops in Trentino		
Location	Autonomous Province of Trento.	Core municipalities
Category, mode of transport	Demographic upswing of a depopulated area, innovative solutions for providing services in sparsely populated areas.	
Service organizer, stakeholders	Provincial Department of Mobility of the Autonomous Province of Trento.	
Target groups, service users	People living in hamlets.	
Problems to be solved, origin of the service	The Autonomous Province of Trento has 217 municipalities with a total of 942 hamlets. According to data provided by the 2001 national census, 5,1% of the population lives outside hamlets (scattered houses); 7,9% in hamlets with less than 100 inhabitants; 5,3% in hamlets with 100-250 inhabitants. To maintain the vitality of the small hamlets it is crucial to have at least 1 shop.	
Specification of initiative	The scheme aims to help maintaining at least 1 shop in the hamlets with more than 100 inhabitants, considering that it is not viable for those with less inhabitants. At the time 61 hamlets over 100 inhabitants had no shop and 174 only one; as for bars and restaurants 72 had none and 83 only one. The scheme provides incentives for investments in the hamlets with no or only 1 shop and subsidies for shops, bar and restaurant operating in these conditions. In particular there are incentives for “multi-purpose” shops, that offer more services (photocopy, Internet, good delivery to residents, selling of additional products, etc.) beside their activity. A special logo is provided for these shops.	
Operation	Overall available funding grown up to EUR 1,400,000 in 2011 (183 subsidies).	
Communication, information and marketing	No data available.	
Evaluation, assessment	At the moment no numerical report is available but a positive feedback from the municipalities has been received.	
Conditions of success or failure, strong and weak points	No data available.	
Transfer possibilities and reproducibility	No data available.	
Contacts and sources	www.commercio.provincia.tn.it/multiservizi/ www.commercio.provincia.tn.it/binary/pat_commercio/multi_servizi/Servizi_periferia.1197545468.pdf	

Teleworking Alcatel		
Location	City of Mollis, in the canton of Glarus.	Alpine Convention municipalities
Category, mode of transport	Teleworking instead of commuting.	
Service organizer, stakeholders	Software developer firm Alcatel launched a teleworking project after its employee, electrical engineer Peter Kistler, had taken the initiative to avoid daily commuting between his home town Mollis and the office in Zürich (65 km).	
Target groups, service users	Potential employees from the peripheral areas who do not want to commute to Zurich.	
Problems to be solved, origin of the service	<p>The project is based on the idea of a single employee of the software developer firm Alcatel. In 1988, he asked for the creation of a “satellite” of the firm next in his home region. The firm had already opened a second office for 5 employees in Aadorf (between Winterthur and Frauenfeld, outside of the Alpine Convention area), and was interested in his idea. Because the firm was seeking highly educated engineers at the time, they hoped to increase their chances by offering more than just one central working place in Zurich.</p> <p>The project was finalized in 1989 and the office opened in 1990.</p>	
Specification of initiative	<p>The initiating employee helped to find office space and a team of local engineers who wanted to work for Alcatel but didn't want to move (or daily commute) to Zurich.</p> <p>For only CHF 46,000, the office was made ready for the new “satellite” firm and all infrastructures were installed (including a good telecom-technology for optimal contact between Zurich and Glarus). In may 1990, the first five employees start working in Mollis.</p>	
Operation	<p>During the next two years, the telecommunication technology is constantly enhanced (as broad-band Internet is not a regularity yet) and the local employees are able to combine their peripheral life style with office hours: one employee reduces to working 50% in order to be able to work on his family's farm the rest of the time. Alcatel communicates that “combining High-Tech and Agriculture” is a strong symbol for modern working methods of Switzerland's future.</p> <p>The office adapted the principle of “management by objectives” (MBO) with target agreements for every project as well as general goals. The instruments and technologies used in Mollis are the same as in Zurich.</p>	
Communication, information and marketing	Alcatel used the local knowledge of their employee to set up the new satellite and let him be in charge of the project in order to meet the potential employees' needs. They also let the employees adapt their work to their (Alpine) lifestyle, which differs significantly from the urban lifestyle of their employees in Zurich.	
Evaluation, assessment	The project was one of the only satellite working places in Switzerland, especially within the Alpine region. The flexibility of the employer and their sensitivity for the particular needs of the Alpine population is notably remarkable.	
Conditions of success or failure, strong and weak points	<p>During the first ten years of work, the personnel in Mollis changed very little, indicating satisfactory work quality. Alcatel intended originally to expand the new satellite but this never happened. In 2000, the office in Mollis was closed.</p> <p>It surely was an example of how to create work places in a remote area and to prevent long commuting of the Alpine population to their urban work place.</p> <p>In retrospective, the actual operation is somewhat hard to judge, as there is very little information available.</p>	
Transfer possibilities and reproducibility	Generally, the idea is reproducible for other areas as long as there are businesses who are ready to invest in such a project. The particularity of the Alcatel example is the lack of competent employees. At the time, Alcatel was particularly interested in recruiting engineers from the Alpine area and was therefore ready to invest in a remote satellite.	
Contacts and sources	http://mpira.ub.uni-muenchen.de/4443/1/MPRA_paper_4443.pdf (page 200)	

C.2.4. Organisation and mobility management measures

12 initiatives referring to the category “Organisation and mobility management measures” have been found. This category groups all measures that do not create additional mobility offers, but improve pre-existing offers or make them more easily accessible for users. It concerns all marketing, communication and pricing measures, but also all cooperation measures among stakeholders during planning and implementation to create awareness for each other’s needs and constraints. It also includes all mobility information packages or sustainable mobility education initiatives.

Good practices collected in this category are very miscellaneous. Some of them seek to enhance complementarity between various mobility services (public transport services, car-sharing, carpooling, taxis, etc.) within a given territory, first of all by providing a listing of these services (Alpentaxi, Immer mobil: Individual transport services for elderly in rural areas, etc.), sometimes by developing payment systems unified between different services (e-GAP intermodal, etc.).

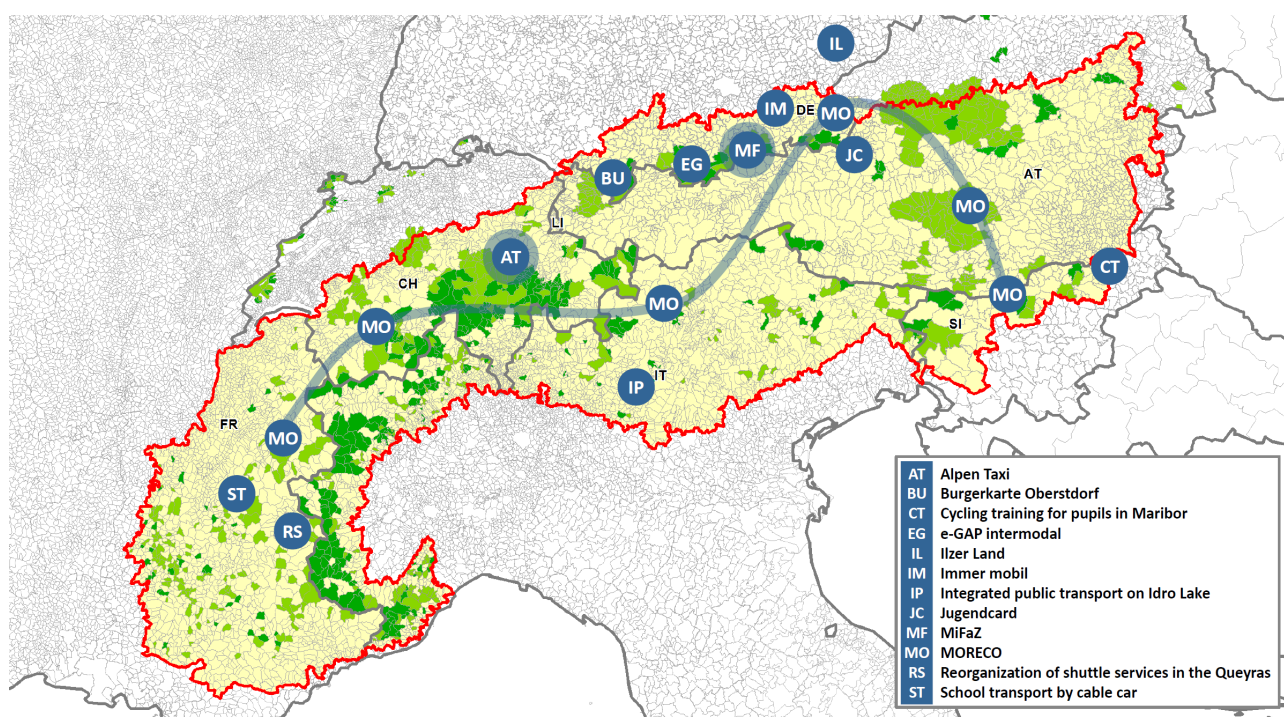






Illustration 6 – Best practices in the category “Organisation and mobility management measures”


Alpentaxi 	
Location	Over 300 locations in Switzerland, mostly within the Alpine Convention area. 
Category, mode of transport	Taxi service.
Service organizer, stakeholders	The association “Mountain Wilderness” coordinates the Alpentaxi operators who are mostly local individuals.
Target groups, service users	Mostly alpinists, hikers, tourists and holiday residence holders.
Problems to be solved, origin of the service	Even though urban centres in the Swiss alps are well connected by public transport, many alpinists, hikers, tourists or holiday residence holders are dependent on cars since the “last mile” is often not connected to the public transport network. The idea of Alpentaxi is to offer a solution for this last mile by extending the public transport network with a semi-public transport system.
Specification of initiative	<p>There are many Alpentaxi vehicles in over 3,000 locations in remote areas of Switzerland, from which some are regular taxis (cars) and others are on-demand buses or funiculars. They operate between the last station served by regular public transport and any destination of its clients. By offering a transport service on this “last mile”, the service provides an interesting alternative to private car use. It has also become an important source of income for local population, as the service operators are mostly local individuals.</p> <p>The project is co-financed by the service centre for innovative mobility of the Federal Department of the Environment, Transport, Energy and Communications (DETEC) and has been launched in 1996. At first there were about 30 Alpentaxi services, which have grown to around 300 providers today.</p>
Operation	All service providers are authorized, organized and coordinated by the association “Mountain Wilderness”, but operate independently. The individual offers are therefore unique and do not always function in the same way. Some providers work “on-demand” and at any time of the day. Others only operate after previous reservation. Information is available on the website of mountain wilderness or in their Alpentaxi brochure.
Communication, information and marketing	<p>Most communication is done by the website http://alpentaxi.ch. Clients can find information concerning all service providers for free on an interactive platform. Mountain Wilderness has many partners who help to promote the project, such as the popular platform SchweizMobil, the Swiss Alpine Club or the Alpine platform Bergportal, as well as numerous hiking guides and sport equipment stores.</p> <p>By uniting all individual service operators into a single body, the label “Alpentaxi” helps to promote the service, to be recognized by media and to help users to locate a convenient local provider.</p>
Evaluation, assessment	The continuous extension of the project might be the best proof of its successful operation. Between 1996 and 2010, the number of providers has grown from around 30 to around 300. The individual services have become important pillars of local economies.
Conditions of success or failure, strong and weak points	<p>The strongest point is probably the individuality of each service provider. While the label Alpentaxi allows to promote the services altogether in a very effective way, each project functions independently and is adapted to local circumstances and the needs of its clients as well as possibilities of the service provider.</p> <p>The experience of Alpentaxi shows that it is very much recommendable to unite as many service providers as possible into one single body in order to enhance name recognition and to facilitate coordination. It is important that clients can choose between the individual services within one single system (website, brochure, etc.)</p>
Transfer possibilities and reproducibility	The continuous extension shows that the project is very much reproducible. Especially the possibility of differently managed services allows for individual reproducibility according to local circumstances.
Contacts and sources	<p>http://alpentaxi.ch/</p> <p>Mountain Wilderness Sandrainstrasse 3 – CH-3007 Bern Patrick Jaeger – Project manager patrick.jaeger@mountainwilderness.ch – Phone: +41 31 372 30 00</p>


Bürgerkarte Oberstdorf		
Location	Oberstdorf and Kleinwalsertal, in the Oberallgäu district.	Additional municipalities
Category, mode of transport	Integrated fare system for municipal bus and cable cars (during summer season) giving additional discounts for recreational facilities (baths, etc.).	
Service organizer, stakeholders	Municipal administration, transport association, tourist association, local recreational facilities.	
Target groups, service users	Residents (those registered with their main residence).	
Problems to be solved, origin of the service	Lacking incentives for residents to use public transport. Heterogeneous annual income calculation base for transport operators.	
Specification of initiative	<p>Transport operators and other cooperation partners can calculate with fixed revenues from ticket sales. Tickets are sold by municipal authorities to registered citizens.</p> <p>Residents are entitled to obtain a flat-fee card allowing them free access to local public transports and discounts at various local facilities.</p>	
Operation	Annually validity for a flat fee of EUR 173 for adults or EUR 58 for children 14 years or younger.	
Communication, information and marketing	<p>Through local media and administrative information channels.</p> <p>Marketed as all-in-one-discount ticket for residents.</p>	
Evaluation, assessment	With its introduction, utilisation of existing public transport could be increased with the effect of attractive frequencies.	
Conditions of success or failure, strong and weak points	Transparency and simplicity, providing a basic fixed budget for transport operators.	
Transfer possibilities and reproducibility	Requires consensus between transport operators, municipal funding authorities and additional cooperation partners as well as a detailed feasibility study in regard to increased demand and capacities.	
Contacts and sources	www.markt-oberstdorf.de/themen/buergerkarte-2013.html	


Cycling training for pupils from primary schools in Maribor		
Location	City of Maribor (110 000 inhabitants).	Alpine Convention municipalities
Category, mode of transport	Cycling training for schoolchildren.	
Service organizer, stakeholders	Council for prevention and education in road traffic of Carinthia (Koroška) region, city of Maribor, elementary schools.	
Target groups, service users	Schoolchildren.	
Problems to be solved, origin of the service	<p>The pupils in primary school in Slovenia usually receive their cycling licence in fourth class. They get some basis bicycle skills but they don't have enough practical experiences for cycling in the city centre. It isn't enough to prepare a lesson in the class, but they should go to the cycling tour to the city centre. It is very important to cycling with technically faultless bicycles and wearing a helmet. Realizing of the cycling connections downtown is also important for reduction of number of traffic accidents.</p> <p>The objective of the initiative are:</p> <ul style="list-style-type: none"> • Increasing of number of cyclists in the city • Increasing the knowledge of cycling connections and cyclists safety • Increasing of usage of helmet 	
Specification of initiative	The council for prevention and education in road traffic prepared the plan of cycling route and check this route together with police and representatives from cycling club. The responsibility for cyclist's safety is on the police and municipal department for order. The size of pupils group from one school can't exceed 10 pupils. For each group there is a one teacher from school.	
Operation	<p>First campaign: "Cycle training in transport reality". Participants of the campaign had a class of safe bicycle riding. Those pupils who have positively completed their bicycle test have participated, since they have lots of knowledge and skills, and on the other side, they had the opportunity to get to know the bicycle traffic in the centre of the city. Before they go to the tour, special advisors had a short presentation about safety cycling, bikes, helmets and other cycle equipment. All participants from schools received the helmet. There were 138 pupils from 14 elementary schools.</p> <p>Second campaign: "Different way to school - To school with the bicycle". In autumn other cycling activities for pupils were organised in the frame of European Mobility Week. 180 cyclist from 15 primary schools from Maribor participated in the activity. A class of safe bicycle riding was carried out. A "Young cyclists" parcours was prepared for children from kindergartens. On stalls the eco-school and eco-kindergarten presented their activities. There were also presentations from Institute for Health, the Energy Agency and the Association of friends of youth. Participants could test special equipment for traffic safety. Also the police and ambulance participated with their vehicles.</p>	
Communication, information and marketing	No information available.	
Evaluation, assessment	138 participants/pupils from 14 elementary schools participated at the first campaign "cycling training in transport reality". Considering the number of participated schools we are very happy with the campaign. Schools found out that their cooperation in such activities also helps at education process in schools on theme Traffic Safety. In the second campaign carried out during the Mobility Week 180 cyclist from 15 primary schools from Maribor participated.	
Conditions of success or failure, strong and weak points	Main reason for the success of the initiative lies in the information of the schools of the planned activities and the topic itself which isn't only a lecture but more a learning for life.	
Transfer possibilities and reproducibility	Even if this initiative concerns a large city, it seems to be transferrable to remote and sparsely populated areas	
Contacts and sources	http://eltis.org/index.php?id=13&study_id=2106	


e-GAP intermodal		
Location	Municipality of Garmisch-Partenkirchen, in Oberbayern.	Additional municipalities
Category, mode of transport	Integrated fare system and information system for various mobility offers and vehicles (e-mobility, public transport, local tourist offers).	
Service organizer, stakeholders	Pilot project e-GAP (electromobility Garmisch-Partenkirchen), public transport operators, car-sharing operators, etc.	
Target groups, service users	Tourists, residents, business owners.	
Problems to be solved, origin of the service	<p>Access barriers such as in-transparent fares systems, waiting lines and cash payment at complicated vending machine.</p> <p>Local initiative as part of the pilot project e-GAP, member of the Pilot Regions Electric Mobility funding scheme of the Bavarian State Government (Modellregionen Elektromobilität)</p>	
Specification of initiative	Through a mobility card and a smartphone app, users will have access to the whole range of regional mobility options, from regular public transport to car-sharing, etc. Travel costs will be automatically charged across different fare systems. Enabling spontaneous and cash-free payments across tariff borders and different operators.	
Operation	Smartphone app provides direction to available mobility choices. Coordination of technological (smartphone app) and organisational tasks (between different operators). The envisaged integration of different fare has not been accomplished yet. Operated by pilot project e-GAP in cooperation with public transport.	
Communication, information and marketing	<p>Communicated as improving access to points of interest, bridging the last mile between train station and destination.</p> <p>Project carries out regional fairs targeted at residents to promote e-mobility (www.e-gap.de/natur-mobil-erleben/)</p> <p>Marketing aspects include an attractive display of rental stations at public transport nodes (train station Garmisch-Partenkirchen) as well as a modern corporate design of vehicles.</p>	
Evaluation, assessment	In progress, not yet evaluated. Currently no user statistics.	
Conditions of success or failure, strong and weak points	<p>Success: visibility of vehicles at public transport nodes</p> <p>Challenges: roaming in regard to charging stations in neighbouring e-mobility regions, e.g. Allgäu with e-connect. Currently, access to charging stations needs to be enabled for users coming from other e-mobility pilot regions and having different access permits (chip cards). During wintertime, charging slots need to be properly cleared of snow and illuminated, which is not yet the case.</p> <p>The downside of using the service for the last mile is that vehicles have to be returned to the charging station at the end of the rental period. For hikers or overnight guests, this would imply paying a daily fee for the car until the end of the rental. Currently, solutions are being discussed including incentives for returning the vehicle (free extra miles) or personnel picking up rental cars from hotels.</p>	
Transfer possibilities and reproducibility	Generally transferable, but requires appropriate offers (car-sharing availability) and cooperation of different transport operators and with neighbouring e-mobility regions in regard to their charging infrastructure. The approach depends largely on tourist demand; relying on residents alone would not generate enough demand. Therefore, it is mostly recommendable to regions with significant tourist volumes.	
Contacts and sources	<p>www.e-gap.de/intelligente-mobilitaet/</p> <p>Kompetenzzentrum Sport Gesundheit Technologie GmbH Hindenburgstr. 14 – 82467 Garmisch-Partenkirchen Dr. Christoph Ebert – Geschäftsführer: c.ebert@e-gap.de – Phone: +49 8821 943 03 22</p> <p>Innovationszentrum für Mobilität und gesellschaftlichen Wandel InnoZ Büro München Infanteriestraße 19/3 – D-80797 München Martin Sauer: martin.sauer@innoz.de – Phone: +49 89 189 17 19 72</p>	


Ilzer Land: Inter-municipal public transport concept		
Location	9 municipalities in the district of Niederbayern.	Outside Alpine Convention
Category, mode of transport	Coordination between public transport (railway “Waldbahn” Zwiesel – Grafenau, railway “Ilztalbahn” Passau – Freyung, student transport, regional bus lines) and car-sharing with electric vehicles (“E-Wald” state funding program).	
Service organizer, stakeholders	Close coordination between otherwise strictly separated organisational units such as “public transport” and “student transport” in favour of a comprehensive planning. Close involvement of tourist installations and accommodations.	
Target groups, service users	Residents and guests of the region, but particularly students, commuters, persons with mobility restrictions and elderly, residents of smaller hamlets that do not have access to adequate public transports.	
Problems to be solved, origin of the service	Insufficient mobility in low-demand regions and underutilised capacities in student transport. Initiated by the Association “Ilzer Land e.V.”.	
Specification of initiative	Improving public transport offers through inter-municipal and inter-district cooperation of all stakeholders, thus creating synergies e.g. in regard to student transport, which have hitherto not been realised due to territorial borders.	
Operation	Coordinated system of main and supplementary lines with integrated student transport. During the week, connections between railway and buses are ensured for commuters; during weekends and during the daytime the offer is tailored to regular passengers and tourists. Points of interest of daily supply and tourist destinations are accessed by public transports.	
Communication, information and marketing	Adoption of all digital media channels as far as feasible. At the same time, all offers and information are equally available for passengers without access to digital media, e.g. through contact persons.	
Evaluation, assessment	Still in the piloting phase.	
Conditions of success or failure, strong and weak points	<p>Organisation and technical implementation are in the hands of a few stakeholders (reduced coordination efforts); transport planning strongly takes into consideration user needs.</p> <p>Modern vehicles, wheelchair-accessible, highest environmental standards considering the sensitive recreational value of the Bavarian Forest.</p>	
Transfer possibilities and reproducibility	Applicable areas: villages and regions of limited size with small centres (railway stop) and tendencies of urban sprawl, which at the same time would like to link smaller hamlets to the centres with demand-oriented solutions.	
Contacts and sources	<p>www.nahverkehrsberatung.de</p> <p>Ilzer Land e.V. Unterer Markt 3 – D-94157 Perlesreut</p> <p>NahverkehrsBeratung Sudwest (consultancy) Bergheimer Str. 102 – D-69115 Heidelberg Stephan Kroll: kroll@nahverkehrsberatung.de – Phone: +49 6221 13 75 59-0</p>	

Immer mobil: Individual transport services for elderly in rural areas		
Location	Districts of Rosenheim and Traunstein, in Oberbayern.	Core municipalities
Category, mode of transport	Information system integrating regular public transport services (bus and rail) and sporadic services of social and private carriers (collective taxis, social services, citizen bus and carpooling).	
Service organizer, stakeholders	The project coordinates several institutions and stakeholders, including research, logistics, public transport carriers, state administrations, health insurances, regional authorities and taxi services.	
Target groups, service users	Residents with mobility restrictions, elderly.	
Problems to be solved, origin of the service	<p>Providing mobility to areas and residents that have mobility restrictions, improving information deficiencies in regard to mobility options.</p> <p>Project idea initiated by the Fraunhofer Institute with funding from the Federal Ministry for Education and Research.</p>	
Specification of initiative	Information, reservation and booking of rides are handled through an integrated information system that compares offers and searches and proposes appropriate rides. The pilot project received funding from the German Ministry of Economics and Technology.	
Operation	<p>The service is made available over the Internet, mobile devices and telephone.</p> <p>User interfaces are intuitive and simplistic to ensure a high level of usability.</p> <p>Technical services for those offering rides include an online-platform for convenient posting and handling of rides as well as an online application that allows to easily reply to requests, satellite-based positioning and navigation.</p>	
Communication, information and marketing	Multi-channel approach (face-to-face, print, phone, Internet, mobile devices) and intuitive communication of available mobility choices. The project is being marketed through various channels of the consortium.	
Evaluation, assessment	The prototype has been tested in the districts of Rosenheim and Traunstein. It provided easy access for an individual and spontaneous mobility, seamless mobility chains through process optimisation, real-time information and satellite navigation.	
Conditions of success or failure, strong and weak points	Conditions of success: Incorporation of various regular and irregular transport services. In the future, it needs to be extended towards flexible transport services and a billing and payment scheme needs to be established.	
Transfer possibilities and reproducibility	Concept is generally transferable to all regions that offer a multitude of regular and irregular transport services. The concept could also be extended to the needs of teenagers and generally people without access to a private vehicle.	
Contacts and sources	<p>www.iml.fraunhofer.de/de/themengebiete/Projektzentrum_Verkehrslogistik_Prien/projekte/informationslogistik.html#tabpanel-3</p> <p>Fraunhofer-Institut für Materialfluss und Logistik Projektzentrum Prien Joseph-von-Fraunhofer-Straße 9 – D-83209 Prien am Chiemsee Nicole Wagner: nicole.wagner@prien.iml.fraunhofer.de – Phone: +49 8051/901 - 113</p>	

Integrated public transport on Idro Lake		
Location	Idro Lake, mainly located within the Province of Brescia, Lombardy region, and a small part in the Autonomous Province of Trento.	Additional municipalities
Category, mode of transport	Innovative transport solutions, intermodality, technological solutions, renewable energy.	
Service organizer, stakeholders	This service was started thanks to an idea developed by the Transport Department of the Province of Brescia. Furthermore, the society Trasporti Brescia Nord and its associated Sia have been responsible for the implementation of the service.	
Target groups, service users	Both inhabitants and tourists.	
Problems to be solved, origin of the service	No data available.	
Specification of initiative	The route guarantees the local public transport service, integrated between buses and boats from Crone (municipality of Idro) to Ponte Caffaro (municipality of Bagolino), including stops in Anfo, Vantone, Vesta and Bontone (the latter village located in the Autonomous Province of Trento).	
Operation	Since years, the Province of Brescia is developing a comprehensive planning framework for transportation in mountain areas based on inter-modality (bus and boat), aligned schedules and innovative services including timetable, business plan and a communication strategy, aligned to the public bus services and easily accessible by pedestrians and cyclists.	
Communication, information and marketing	No data available.	
Evaluation, assessment	<p>The new integrated public transport service was highly appreciated both by inhabitants and tourists. In 2009, nearly 3600 passengers were transported; in 2010 the amount doubled (7400). The Province of Brescia, after two years of experimentation obtained the final green light from the Lombardy region to make operational the seasonal link on Idro lake, from July to September. This innovative initiative of the Province of Brescia paved the way to interesting follow-up activities, related to the CO2NeuTrAlp pilot project.</p> <ul style="list-style-type: none"> • Realization of a wide European study on existing technical solutions with reference to transport on lakes at zero emissions (boat types and propulsion technologies applied), aiming at developing in the future a hybrid boat (or a fully electric or solar one) to be used for navigation on Idro Lake. • The testing of a particulate system: Diesel Particulate Filter (DPF), a filter made of silicon carbide ceramic material resistant to thermal shock characterized by pore size of 20 -30 microns, followed by an oxidation catalyst. This system has been applied to the conventional diesel engine of the boat used for public transport. A test on filters showed that the application of the DPF device can reduce particulate emissions by 98%, carbon monoxide by 82%, unburned hydrocarbons by 75% and carbonyl compounds of 68%, even in the case of use of old engines. 	
Conditions of success or failure, strong and weak points	From the geographical point of view, the Alpine area is characterized by several lakes of different sizes. Generally, public transport services by boat and their interconnections with public transport means are rarely taken into consideration. The aims of such initiative may be further extended in other contexts, especially where connections between opposite lakesides are difficult and last long.	
Transfer possibilities and reproducibility	No data available.	
Contacts and sources	www.co2neutralalp.net/ http://trasportiweb.provincia.brescia.it/navigazioneidro/	

Jugendcard		
Location	Berchtesgadener Land district, in Oberbayern.	Core municipalities
Category, mode of transport	Fare system allowing reduced fares for public transport and taxi services during weekend nights for teenagers.	
Service organizer, stakeholders	District authority, private taxi services, youth association (Kreisjugendring), business cooperation partners (e.g. banks).	
Target groups, service users	Teenagers and young adults needing a ride during the night-time (e.g. after visiting a club).	
Problems to be solved, origin of the service	Mobility restrictions for teenagers and young adults without access to a car as well as frequent accidents involving drunk driving. District initiative.	
Specification of initiative	Teenagers aged 14-26 and residing in the district of Berchtesgadener Land are eligible for a youth pass (Jugendcard). Youth pass holders are entitled to use taxi services and regular buses for a reduced fee between 20:00 and 6:00 the next day during weekends.	
Operation	Operated in cooperation between carriers of public transport, taxi services and district authorities. District authorities issue passes and reimburse public grants. Taxi services and public transport carriers provide the mobility services. Local sponsors like local banks and are additionally funding the project.	
Communication, information and marketing	Dedicated website www.jugendcard.de and frequent promotional campaigns by public authorities and business partners.	
Evaluation, assessment	Currently the district authority is carrying out a market analysis and questionnaire. In general, it increases mobility for teenagers – particularly for those that do not own a car – and reduces the risk of drunk driving during night-time. Traffic reduction is not the main focus of the initiative.	
Conditions of success or failure, strong and weak points	Intensive marketing (dedicated website www.jugendcard.de) on behalf of local public authorities and other cooperation partners (banks, restaurants, pubs etc.).	
Transfer possibilities and reproducibility	Particularly for regions with sporadic public transport, but existing taxi services.	
Contacts and sources	Landratsamt Berchtesgadener Land Salzburger Straße 64 – D-83435 Bad Reichenhall Johann Wick: johann.wick@lra-bgl.de – Phone: +49 08651 773-518	

MiFaZ: Regional promotion of the carpooling platform		
Location	624 local administrative entities including Berchtesgadener Land (2/3 of Bavarian local administrations). Among the German Alpine Convention Area, particularly the middle and eastern part are covered, whereas gaps remain towards the west and Lake Constance.	Core municipalities
Category, mode of transport	Carpooling promotion.	
Service organizer, stakeholders	MiFaZ (private entrepreneur), district of Berchtesgadener Land.	
Target groups, service users	People offering and looking for rides.	
Problems to be solved, origin of the service	For a large share of trips with private vehicles, unused capacities exist. Private initiative, started in 2001.	
Specification of initiative	Registered users can either offer or search for rides using the online-platform www.mifaz.de . Through support on behalf of local administrations, the project is gaining credibility among users and the public in general. Local promotion campaigns additionally raise awareness for this mobility option. For example, the district of Berchtesgadener Land is promoting the platform through press articles and promotion leaflets. With the subdomain www.mitpendeln.de , private enterprises can establish internal platforms that prioritise offers and searches from staff members. Once successfully installed, enterprises can profit from carpooling by downsizing their cost-intensive parking lots. Communities and enterprises can incorporate the search engine into their own corporate design.	
Operation	Online-database with an extension for mobile devices http://mobile.mifaz.de . Currently, the database contains 4,600 entries, most of them regular rides. For the next 30 days, 102,900 rides are being offered. The number of registered users, shared rides and most-popular connections can be obtained via www.mifaz.de/statistiken.html . The platform is owner-operated.	
Communication, information and marketing	The service is being communicated and marketed by the operator (e.g. through website and smartphone app) as well as by regional and municipal authorities through their respective communication channels.	
Evaluation, assessment	Not available. Considering the above-mentioned numbers, a considerable amount of traffic is being avoided by sharing rides.	
Conditions of success or failure, strong and weak points	Conditions for success: <ul style="list-style-type: none"> • Cooperation (e.g. with projects and local administrations), • Connectivity (interfaces to blogs, Twitter, Facebook, widgets), • Adaptability (the platform can be integrated into individual websites and local/regional data (commuter parking lots etc.) can be edited. Failures: variety of platforms for carpooling (www.mitfahrgelegenheit.de , www.flinc.de , www.mitfahrzentrale.de , www.mifaz.de , etc.) can confuse users and cannibalise each other.	
Transfer possibilities and reproducibility	Technically transferable across national borders. Currently, the website is only available in German and English.	
Contacts and sources	www.mifaz.de MiFaZ Gellersstr. 20 – D-21337 Lüneburg Inna Janssen: info@mifaz.de – Phone: +49 89 20208562	

MORECO: Mobility and residential costs 	
Location	Alpine Space. Alpine Convention municipalities
Category, mode of transport	Information.
Service organizer, stakeholders	Research institutions, public administrations.
Target groups, service users	Stakeholders in the fields of public transport and spatial governance as well as potential home owners.
Problems to be solved, origin of the service	Missing consideration of interrelations between urban and transport development in spatial planning decisions and locational decisions. EU Alpine Space Programme.
Specification of initiative	<p>The main challenge of the MORECO partnership is to support public transport by influencing spatial governance from local to transnational level by:</p> <ul style="list-style-type: none"> • New institutional cooperation between spatial planning authorities and transport providers; • Methodological instruments for spatial planners and politicians for long term cost-impacts; • New instruments showing spatial potentials for transport actors; • New services for briefing house hunting households showing long term cost effects.
Operation	Among other tools, a calculation tool for assessing mobility costs related to residential choices is being developed. Currently operated by the project partnership.
Communication, information and marketing	Project website and communication channels of project partners.
Evaluation, assessment	Still ongoing. Through raising awareness for financial benefits of integrated housing areas, passenger numbers of public transport are expected to rise in the long run, while car traffic is expected to decrease. Effects on traffic reduction are not traceable yet, as they are a consequence of future residential choices therefore they will only be measurable in the long run. However, similar cost-calculation tools have been established in other German agglomerations such as Munich and Hamburg.
Conditions of success or failure, strong and weak points	Tailor-made information for stakeholder groups such as spatial planners, transport planners and providers, residents, politicians, administrative officials. Integration of spatial and transport development creates synergies.
Transfer possibilities and reproducibility	Increasing the transparency of costs related to residential choice and urban development projects can and should be applied as minimum standard of regional spatial governance in the Alps. The approach is generally transferable, but requires knowledge about cost calculation and regional cost structures.
Contacts and sources	www.moreco-project.eu Salzburg Institute for Regional Planning and Housing Schillerstrasse 25 / Stiege Nord – A-5020 Salzburg Daniela Bischof – Project manager: daniela.bischof@salzburg.gv.at – Phone: +43 662 623455-32

Reorganization of shuttle services in the Queyras		
Location	Community of Municipalities of the “Escarton du Queyras”, in the Hautes-Alpes department.	Additional municipalities
Category, mode of transport	Reorganization and optimisation of bus shuttle services.	
Service organizer, stakeholders	Initiative carried out by the Community of Municipalities of the Escarton du Queyras, with the Hautes-Alpes department and the Queyras regional natural park.	
Target groups, service users	Mostly tourists, but also the inhabitants.	
Problems to be solved, origin of the service	<p>The Community of municipalities of the “Escarton du Queyras” groups 8 municipalities, for only 2,400 inhabitants and a population density below 5 inhabitants per square km. Its perimeter almost corresponds to the Queyras regional natural, which includes 2 other municipalities. The community of municipalities host several ski resorts. Historically, tourist shuttle services linking the different villages have been developed independently in each of the 4 valleys of area, additionally to regular bus services set up by the Hautes-Alpes department. However, little attention has been paid to coordination between the different services.</p> <p>The lack of harmonization in the organization of public transport provision was detrimental to the development of soft mobility in the area. In 2013, the Community of Municipalities took charge of the organization of all tourist shuttle services. The project objective was to restructure the entire public transport scheme to provide better readability to customers (timetables, fare system, etc.).</p>	
Specification of initiative	<p>Various consultation meetings have been conducted with all stakeholders in the tourism sector (socio-professional stakeholders, tourist offices, elected officials, etc.) to define their expectations and needs transport. These meetings were used to determine the appropriate pricing and schedules as needed.</p> <p>Numerous meetings have been necessary in order to consult with the Hautes-Alpes department, which already organizes regular bus services in the territory, to make sure the two services effectively complement. The result is that the two services (regular bus service set up by the department and tourist shuttle service set up by the Community of municipalities) are now “unified” with a single timetable and the same fare system, so the customer is not aware of this organization.</p>	
Operation	The tourist shuttle service only operates during summer and winter season. 4 shuttles operate during the winter season (2 to 8 round trip a day, free of charge) and during the summer season (2 to 4 round trip a day, EUR 1 per trip). When the shuttle service operates, the same fare system is also applied to the bus services set up by the department (which is usually EUR 3 per trip) and the Community of municipalities pay back part of the shortfall to the department.	
Communication, information and marketing	Multi-channel communication (department and local tourist office websites, leaflets, etc.)	
Evaluation, assessment	<p>The project has cost about EUR 45,000 for the summer 2013 season (from July 5 to August 31). For winter 2013-2014 (December 21 to March 31), costs are approximately EUR 245,000. Before each season, about two months of preparation were needed for the project manager: budget management, meetings with elected officials and socio-professional stakeholders and tourist offices.</p> <p>The results account for about 4,000 users for the summer 2013 season and about 12,500 users for the winter 2013-2014 season. It is difficult to assess, given the prior dispersed organization, whether attendance has actually increased; however, it does not appear to have decreased.</p> <p>Customers have expressed positive opinions about the new organization of transport services. The EUR 1 fare during summer season seems to have generally been agreed. Free tickets during winter season has been very popular, but did not allow to count the number of users, because some operators have not issued free tickets for customers.</p>	
Conditions of success or failure, strong and weak points	Funding the shuttle service is the main issue for the Community of municipalities. Operating costs are very high and the Community of municipalities wish to study the feasibility of a carrying out the service directly by a local authority controlled company to try to lower prices.	
Transfer possibilities and reproducibility	This initiative is transferable to other territories.	
Contacts and sources	<p>www.escartondunqueyras.com www.queyras-montagne.com</p> <p>Communauté de communes du Queyras - L'Escarton du Queyras Maison du Queyras – F-05470 AIGUILLES energie.ccqueyras@orange.fr – Phone: +33 4 92 46 78 00</p>	

School transport by cable car in Venosc	
Location	Between Venosc and the ski resort of Les Deux Alpes, in the Isère department. Additional municipalities
Category, mode of transport	Public transport – Cable car.
Service organizer, stakeholders	Initiative carried out by the Isère department in partnership with the municipality of Venosc and the operators of the cable car and the school bus service.
Target groups, service users	The cable car can be used by schoolchildren of the primary school in Venosc and the secondary school in Bourg-d'Oisans, Transisère coach network users and tourists.
Problems to be solved, origin of the service	<p>The ski resort of Les Deux Alpes is linked to the village of Venosc by a 21 km long sinuous road. Since 1994, a cable car has also linked the village to the resort. However, its initial use was first limited to tourists with a ski pass or a single ticket, which was quite expensive (more than EUR 5). As there is no school in Les Deux Alpes, children living in the ski resort were obliged to take a coach to go the primary school in Venosc and the secondary school in Bourg-d'Oisans. For several years, the Venosc municipality wished to optimize the use of the cable car by extending its use to schoolchildren.</p> <p>In 2011, the Isère department, responsible for school transport, decided to enable schoolchildren to use the cable car instead of using regular Transisère coaches. The cable car is also available to other Transisère network users with a daily, monthly or annual pass. This cable car system was chosen for several reasons:</p> <ul style="list-style-type: none"> • To optimize the use of the cable car connecting the ski resort of Les Deux Alpes and the village of Venosc. • To avoid transporting numerous schoolchildren on a sinuous road during the winter in bad traffic conditions (congestion during the tourist season, bad weather conditions). • To save travel time: the trip is less than 10 minutes long with the cable car, but more than half an hour by the road (and often much more during the winter).
Specification of initiative	This service provides school commutes by cable car from December to April and a service during the summer holidays. During these periods, the school bus operator modifies its schedules and its routes to enable the transfer with the cable car (at 7:35 from Monday to Friday, at 17:07 on Mondays, Tuesdays, Thursdays and Fridays and at 12:47 on Wednesdays). Voluntarily aimed primarily as a school commuting service, the cable car also transports tourists and commuters who use the Transisère coach network. This experiment began in December 2010.
Operation	The cable car is used to replace a trip by coach between Venosc and Les Deux Alpes. Schoolchildren from Les Deux Alpes go to the secondary school in Bourg-d'Oisans.
Communication, information and marketing	Little advertising has been conducted.
Evaluation, assessment	Using the cable car reduces the travel time from about 45 minutes by coach to about 8 to 10 minutes. About 30 schoolchildren of the secondary school in Le Bourg-d'Oisans use the cable car every day. Since 2010, this initiative has been renewed every year.
Conditions of success or failure, strong and weak points	The success of the initiative is due to the reduced journey time, to the safety of the trip and also to its novelty and its ecological aspect. The weak point is that it is not in service all year long but only during the tourist periods, when holidaymakers and seasonal workers are numerous in the ski resort.
Transfer possibilities and reproducibility	As most French ski resorts are at high altitude, outside of existing cities or villages, the main obstacle for the reproducibility of such an initiative is the existence of cable cars connecting the ski resorts to the cities.
Contacts and sources	<p>www.isere.fr</p> <p>Communauté de Commune de l'Oisans 2 chemin Château Gagnière – F-38520 Bourg-d'Oisans Charline Marché – Chargée de mission Scot: scot@ccoisans.fr – Phone: +33 4 76 11 01 09</p> <p>Mairie de Venosc 5 rue du Cable – Le Couil – F-38520 Venosc Louissette Roussel – Directrice des services: mairiedevenosc@wanadoo.fr – +33 4 76 80 57 22</p>

D. Main lessons and recommendations

D.1. FIRST LESSONS LEARNT FROM GOOD PRACTICES

This chapter provides a brief comparative analysis of the good practices identified in the different countries of the Alpine Convention.

It is reminded that although Subgroup members have tried to collect a large number of relevant initiatives, collection could not be exhaustive. Despite efforts to collect as diverse solutions as possible, it is likely that the following elements provide only a partial overview of sustainable mobility solutions implemented in remote or sparsely populated Alpine areas.

D.1.1. A fairly high number of good practices

More than 50 good practices of sustainable mobility solutions have been collected and analysed in this study. Half of them directly concern the remote or sparsely populated municipalities (core or additional municipalities) that have been identified in Chapter B, even if these municipalities are often considered as the most difficult to serve with usual transports services (low population density, low tourist attractiveness, long distances, strong climatic and geographical constraints, etc.)

As the aim of the study was not to make a complete census of sustainable mobility solutions in remote or sparsely populated Alpine areas, many other interesting initiatives have been identified in some of these territories but not integrated in this report. Moreover, we can suppose that a large number of relevant initiatives set up in various rural mountainous territories could successfully be transferred to the remote or sparsely populated Alpine areas.

This collection shows that it is possible to implement sustainable transports solutions in remote Alpine territories, even though problems can be more important than in other territories. This can be the first lesson of our study, while many stakeholders may argue that low population density is the main barrier to develop mobility offers.

Particularly in peripheral areas, the awareness for mobility offers beyond the private car and their relevance for providing access to public services could be improved among authorities and in some cases even public transportation representatives.

D.1.2. A very wide range of measures

Most of the rural or sparsely populated Alpine areas selected have to face similar problems and trends :

- Low population density, resulting in long distances between villages, lacking cost-effectiveness of public transportation, remoteness to services and difficulties to maintain basic services in the territory ;
- Ageing population, as many young people leaving the territory due to the lack of education and job opportunities ;
- Unattractive public transport services with low frequencies and sometimes service disruption outside of the tourist season, etc.

However, sustainable mobility actions and solutions promoted by local stakeholders are not necessarily the same. The range of collected initiatives is extremely wide, from public transport services to video-conferencing infrastructures including bike and car-sharing, hitch-hiking, information measures or integrated fare systems.

- In most countries, public transport offers remain the most frequent solution. Due to low demand and the dispersion of the points of interest on the territory, about half of the good practices collected in this category are demand-responsive services (Allô-Bus near Aosta, DEF-Mobil, Dorfmobil Klaus, Elastibus in Val del Chiese, Free Shuttle in the Ubaye Valley, Gmoa Bus, Gseispur, Provibus, etc.). Some initiatives mix regular and on-demand services (Stadtbus Kolbermoor: Flexible city bus, Tälerbus Lungau, Werfenweng Shuttle). Most of the services are organised by local governments, but non-profit associations also manage some of them (Bus Alpin, Dorfmobil Klaus, Go-Mobil).
- Other mobility services seem to be less frequent than public transport offers. Most of these initiatives refer to bike rental systems (A bike for my village, my village with a bike in Crévoux, Next bike, Pedelec network in the Allgäu region, etc.), car-sharing systems (Electric mobility in the Province of Belluno, EMMA: Electric mobility with connectivity in Friedrichshafen, etc.) or both (Electric vehicules in Eisenkappel, EMorail project, Mobility management between Saas-Fee and Visp). The importance of electric mobility solutions has to be underlined: all car-sharing systems partly offer electric cars, and almost all bike renting systems use inter alia electric bikes. However, in most cases, electric mobility seems to be limited to tourist mobility. The main challenge for these solutions in rural areas is the remoteness between charging stations and the unsolved challenge of returning vehicles after one-way-trips.
- Almost all the collected good practices referring to the Non-mobility solutions are based on information and communications technologies (ERIC: Internet resource centres in PACA, Informatics centre in Vicosoprano, Points visio rendez-vous: Video-conferencing meeting points in the Hautes-Alpes, Teleworking Alcatel). However, these solutions may be more difficult to identify as many of them are organised by private companies (teleworking, etc.) or local retailers (mobile grocery shops, etc.) that do not necessarily communicate regarding their initiatives. Thus, it is very likely that a number of interesting measures has been missed.
- Most of the Organisation and mobility management initiatives seek to enhance complementarity between various mobility services (public transport services, car-sharing, carpooling, taxis, etc.) within a given territory. Some of them provide a listing of these services (Alpentaxi, Immer mobil: Individual transport services for elderly in rural areas, etc.). Others develop unified payment and information systems between different services (e-GAP intermodal, Integrated public transport on Idro Lake, etc.).

Nevertheless, only one good practice with regard to mobility management for commuters or schools or sustainable mobility education have been collected (Cycling training for pupils from primary schools in Maribor). Mobility Management is a concept to promote sustainable transport and manage the demand for car use by changing travellers' attitudes and behaviour⁹. Most of the examples of mobility management measures concentrate in densely populated urban areas, where traffic problems are obvious. But mobility management can be useful in rural areas as well¹⁰, as it contributes to a reduction of health and environmental impacts, improves the image and the social solidarity within a region and saves cost for municipalities and individuals.

D.1.3. The importance of tourism

A core challenge for sustainable mobility offers, and especially for public transport offers, in remote or sparsely populated areas is the lack of demand. Many residents balance the low public transport supply by a high car ownership rate, family or neighbourhood solidarity, or restrictions in mobility.

Tourists' presence can be the trigger for setting up sustainable transport initiatives, as several of them concern both tourists and residents (Free Shuttle in the Ubaye Valley, Integrated public transport on Idro Lake, Reorganization of shuttle services in the Queyras, Talerbus Lungau, Werfenweng Shuttle, etc.). These services operate all-year round for residents, but additional services complete the offer during the tourist season. Other sustainable mobility initiatives, focused on residents, are included in tourist packages (DEF-Mobil, etc.). Handling huge variations in recreational passenger volumes, depending on weather conditions and public holidays, is a real challenge for these mobility offers.

Even if the good practices collection has been focused on non-tourist areas, some of them target exclusively tourists (Alpentaxi, Bergsteigerbus Eng: Hiker's bus in the Karwendel, Bus Alpin, Gseispur, Pedelec network in the Allgau region, etc.). Residents could also benefit from these services, but sometimes only during the tourist season as no service is provided during off-tourist seasons.

D.1.4. A lack of evaluation and monitoring

Some of the collected good practices, particularly those involved in EU- or national-funded projects (DEF-Mobil, Dorfmobil Klaus, ERIC: Internet resource centres in PACA, Gmoa Bus, etc.), have been monitored and assessed. These assessments allow a good knowledge of the use and the costs of the service, but are usually not sufficient to estimate the impacts of the initiative on mobility (number and length of journeys by car avoided, for example).

Moreover, monitoring and, a fortiori, assessment is not available for many of the analysed initiatives. Sometimes, basic information such as the number of passengers or users is not known. This lack of data does not allow to analyse the relevance and adequacy of the measure.

Stakeholders should be encouraged to collect and share strategies, information, evaluation, so that suitable technical solutions can be defined more precisely.

⁹ EPOMM (2012): European Platform On Mobility Management, EPOMM brochure, Karl-Heinz Posch (Coordinator). Available at www.epomm.eu/docs/20110926_Folder_EPOMM_web.pdf, accessed june 26, 2014.

¹⁰ Sustramm (2012), Guidelines and recommendations on mobility management in rural areas and small cities: experiences from the Sustramm EU project, Technische Universitat Dresden (Coordinator). Available at: http://enercitee.eu/files/dokumente/Subprojects/SUSTRAMM/Sustramm_guidelines_en.pdf, accessed june 26, 2014.

D.1.5. Good practices transferability from one territory to another

Many good practices detailed in this study, such as on-demand transport services, carpooling or bike-sharing, are already implemented in various countries. These demonstrations show the transferability of these solutions.

Nevertheless, the transferability of some good practices collected in this study from one territory to another is not obvious at first¹¹. The transport market is often very regulated and legal and regulatory framework are not necessarily the same. What is legal in one country or in a specific territory could be forbidden in another one – or not taken into account in the regulation, as regulatory approaches often focus on conventional public transport services. For example, the Austrian legislation allows “citizen buses” with voluntary drivers for domestic services in a municipality (Dorfmobil Klaus), but not for services between two municipalities (DEF-Mobil).

Moreover, some good practices are implemented in an “experimental” legal environment, which makes it difficult to analyse their transferability. For any “unconventional” or innovative solution, the analysis of the existing legal and regulatory framework is an indispensable prerequisite before transferring this solutions to another legal framework.

D.2. MAIN RECOMMENDATIONS

In rural areas, at present cars remain the main transport mode. This preference is often due to the constraint, as sparsely populated areas do not – cannot ? – have conventional public transport services developed enough to meet the needs of the population. This situation creates economic and social problems: non-motorized citizens are disadvantaged in regard to access to employment and basic public services and costs of individual mobility are increasing. Environmental issues have also to be underlined. In a strained budgetary context, how to develop an environmentally friendly mobility offer adapted to the needs of people ?

This chapter summarizes four key recommendations to improve and promote sustainable mobility solutions in remote or sparsely populated areas. Each key recommendation is subdivided into several thematic recommendations. These recommendations are based on the feedback from the good practices identified in this study. They are not necessarily exhaustive and the order in which they appear does not correspond to a hierarchy of importance.

¹¹ The aim of the study was not to study the transferability of good practices in the legal and regulatory framework of each country of the Alpine Convention perimeter. ARTS project assess the potential for the application to a wide variety of rural transports solutions and formulate recommendations on how to overcome barriers to implementing these solution across various European countries. The ARTS demonstrations took place in 8 Europeans countries (Austria, Finland, Greece, Hungary, Ireland, Spain, Sweden, United Kingdom). Unfortunately, only one of them is in the Alpine Convention perimeter. See: www.rural-transport.net, accessed June 26, 2014.

D.2.1. The need for local expertise and close monitoring of the users' needs

In rural, remote and sparsely populated areas, mobility services should not be considered as usual urban “mass transit” services. Rural services, mostly involving a small number of passengers, must be “customized” to the needs of users, which implies that these are well known and characterize the actual transport demand.

D.2.1.1. Analyse mobility patterns

In rural areas, mobility needs remain, on the whole, misunderstood. Comparatively to urban areas, mobility data in rural areas are often less precise, sometimes even absent. Knowledge of mobility needs in the territory is, however, a key to success when designing a new service.

Identifying transports needs for different “target groups” is a critical step for designing a new mobility offer, even if few data are available. National statistical offices often provide data concerning the demographic and socio-economic profile of the population (age structure, unemployment rate, car ownership, etc.). But these statistics could not be sufficient to explain specific mobility patterns and specific surveys can be necessary to design the new service (DEF-Mobil, etc.)

To be efficient, the service should provide a specific access to local centres and points of interest useful for special needs of transport users. Some good practices collected in this study focus on serving one destination, only during selected days (Einkaufsbus: shopping bus in Niederbüren, Transport on demand for the elderly in Modane, etc.).

D.2.1.2. Involve local stakeholders

Local actors such as local government, non-profit local associations or community members possess knowledge of important factors such as significant local destinations or even of the days of the week when people are most likely to travel. Involving local actors to configure the service optimally to meet the needs of the territory is crucial. During the operational phase, these local actors will be able to adapt or reorient the service according to changing needs.

Many collected good practices involve local stakeholders (Bergsteigerbus Eng: Hiker's bus in the Karwendel, Free Shuttle in the Ubaye Valley, Jugendcard, Reorganization of shuttle services in the Queyras, etc.) and a large part of them has been launched (Tälerbus Lungau) or are still coordinated by associations or local experts (Alpentaxi, AutoSSS: Secure hitch-hiking service in the Trièves, Bus Alpin, Dorfmobil Klaus, Mobility management between Saas-Fee and Visp, InnoV-Net: Education in remote areas, etc.).

This local knowledge is important, but it is not, of its own, enough. Regional transport authorities have obvious know-how in terms of contract management, demand forecasting, timetabling, etc. Thus, transport authorities and municipalities remain major stakeholders for most good practices.

D.2.1.3. Monitor users' needs and expectations

Continuous monitoring of the action throughout the operational phase allows to check the adequacy of the proposed service and, if needed, to adapt it to meet with new expectations: new customers, new transport needs related to the changes in the service offer in the territory, etc. Thus, some good practices collected in this report have been or are regularly assessed (DEF-Mobil, Dorfmobil Klaus, Gmoa Bus, Tälerbus Lungau, etc.).

Being very attentive to users' needs may allow a high level of customer satisfaction. Some good practices (ERIC: Internet resource centres in PACA, Free Shuttle in the Ubaye Valley, etc.) place great importance in monitoring and in adapting to the users' needs.

D.2.2. The need for integrated approaches and improved coordination

More than a massive investment in expensive public transport services, looking for a better coordination of existing services would improve sustainable mobility in sparsely populated areas. The idea would be to take notice of the many local initiatives and improve their coordination in a functional and pricing perspective. Rural local authorities, non-profit associations or other stakeholders have already implemented solutions to meet citizens' needs, such as transport on demand or specific mobility services for schoolchildren or for people looking for a job. The people, in turn, share vehicles in a more or less informal way. A first improvement would be to facilitate these alternatives by making them visible and disseminate their opportunities.

D.2.2.1. Integrate all mobility offers

A key characteristic of rural areas is the large number of organisations involved in the delivery of public transport and sustainable mobility offers (regular bus lines, transport on demand services, taxis, etc.). Moreover, a complex mix of regional and local government, community organisations and volunteer groups are involved in the delivery of specific services for schoolchildren, elderly, people looking for a job, etc. In this context, there is a real risk that the services set up by the different structures compete against each other more than they complement each other.

Before trying to create a new mobility offer, the identification and de-specialization of pre-existing mobility offers can strengthen the supply accessible to the users. Instead of dedicating certain services to specific types of travellers, such as students, some good practices open these services to all travellers (Ilzer Land: Inter-municipal public transport concept, Stadtbuss Kolbermoor: Flexible city bus, etc.). Paradoxically, a cut in the mobility offer combined with the de-specialization of a service can even improve the service quality for users (School transport by cable car in Venosc).

De-specialization of all transport services, however, is not sufficient to meet the needs of all users: schoolchildren transport services, for example, will not necessarily be adapted to serve businesses or stores insofar as their opening hours do not coincide with schools hours.

D.2.2.2. Bring or maintain services in remote territories

The organization of daily life is primarily related to accessibility, that is to say the physical possibility for a person to receive a number of services (employment, shops, leisure, health, school, etc.) in reasonable conditions of costs and time duration. But personal service needs is a complex and poorly understood system, yet crucial to explain the needs of everyday mobility.

In sparsely populated Alpine areas, the lack of these services (disappearance of post offices, health services or retail shops, pooling of public services such as primary schools, etc.) contribute to a gradual increasing of travel time and create transport and mobility issues, particularly for youngsters, elderly and people without a car. But the accessibility to everyday life services does not necessarily imply physical movement: with service consolidation in local "clusters", home services or remote services, the organization of these activities could contribute to substantially reduce the need for travel. In many cases, these solutions could be more effective than the development of additional mobility offers, even though these two approaches can be complementary. For example, a local public transport service organized to serve a local shop cluster

(Dorfmobil Klaus, Einkaufsbus: shopping bus in Niederbüren, Transport on demand in the Drôme, etc.), a marketplace (, etc.) or an e-government centre could reinforce their use and sustain their activities. On the other hand, interview-based studies show that also elderly people prefer to be independent as long as possible and therefore to buy in traditional shops and supermarkets with a big assortment instead of the service of mobile shops with a smaller assortment¹². Therefore mobile services, like rolling shops are not always a welcomed solution.

Almost all good practices collected in this study are based on the use of information and communication technologies. They were first used in workplaces with teleworking (Teleworking Alcatel). They are now used for many other remote services to individuals, such as e-learning or e-government (ERIC: Internet resource centres in PACA, Informatics centre in Vicosoprano, Points visio rendez-vous: Video-conferencing meeting points in the Hautes-Alpes, Public services relay in the Ecrins area, etc.).

Unlike public transport solutions, that are mainly managed by regional and local authorities, these solutions may imply many stakeholders. Only partnership approaches, bringing together key actors in a collaborative environment, are best able to respond to the complex challenges and to find suitable solutions. A close coordination between all stakeholders can allow to implement innovative and really attractive features for users: shops engaged in the Dorfmobil Klaus partnership pay for the fares for travellers who spend more than a certain amount of money in their stores.

Only one good practice related to maintaining or creation of local services (shops, health centres, etc.) has been highlighted in this study (Supporting community shops in Trentino). Of course, this does not mean that this type of measure does not exist in other countries. Unfortunately, it is difficult to gather factual information about them.

D.2.2.3. Spatial integration and economies of scale

If we can notice a certain proliferation of initiatives to promote practical alternatives to private cars, such as car-sharing, bike-sharing, these initiatives are sometimes isolated, with no possibility to a significant change of scale. Even if small-scale experiments are necessary, only the deployment steps on a sufficiently large area will achieve a critical mass to make the service fully effective and recognizable.

Some collected good practices (Alpentaxi, Bus Alpin, ERIC: Internet resource centres in PACA, Go-Mobil, Pedelec network in the Allgäu region, Points visio rendez-vous: Video-conferencing meeting points in the Hautes-Alpes, etc.) are operating or available in multiple territories, creating a network effect necessary to become cost-effective. Other good practices, firstly implemented locally, are being duplicated in neighbouring territories (A bike for my village, my village with a bike in Crévoux, etc.).

¹² Compare MAKAN Research (2011): Der Überlebenskampf ländlicher Nahversorger, available at: www.makan.at/de/portfolio-allgemein/nahmobil, accessed August 21, 2014; and Tatjana Fischer (2013): So lange wie möglich zu Hause, Symposium Wohnen im Alter, 18. April 2013, St.Pölten

D.2.3. The need for a simple and easily understandable mobility offer

Many mobility offers may be implemented in rural areas, involving many stakeholders. However, it is sometimes not obvious that users really perceive and understand these offers, as they are not necessarily very “visible” in the territory. Communication and marketing play an important role all along the operating phase.

D.2.3.1. Centralize, unify and develop information on mobility

Potential users of the mobility service must be able to use it, that is why it is essential to provide complete and accessible information about the service. Nowadays, basic information about mobility services is almost always available, but some difficulties often arise:

- Sources of information are often scattered, each one focussing on only one particular service. From one region to another, information about public transport services can be integrated, even if this integration may be incomplete. But there is a “boundary” between information on public transport services and other mobility services, such as taxis, carpooling, car-sharing, etc. However, increasingly cross-modal information solutions are offered.
- The information on mobility services is sometimes incomplete or difficult to understand: no information on how to access the service, on how to purchase a ticket, etc.
- Moreover, the media used are sometimes not suitable, which does not allow to reach the potential customers. Non-users often have little knowledge about existing mobility services and it is important to make them aware that they can use these services.

The proliferation of information sources affects the overall understanding of the mobility system. Concerning carpooling, for example, many databases compete and can cannibalise each other (MiFaZ: Regional promotion of the carpooling platform).

The function of centralization and dissemination of information on transport and mobility solutions, for all modes and all services is a decisive incentive element for passengers. For users, the effectiveness of public transports, bike-sharing, car-sharing or any mobility system depends on its immediate legibility and on the completeness of information.

Many collected good practices pay attention to the information about the service. Several of them try to unite information on mobility services, by identifying all the offers available in a given territory (e-GAP intermodal, Immer mobil: Individual transport services for elderly in rural areas, etc.). Others seek to integrate the proposed service in a national multimodal information systems (Go-Mobil, Werfenweng Shuttle, etc.). More modestly, others try to gather all mobility services that are not included in public transports services (Alpentaxi). But only by uniting all individual service operators into a single body, the label “Alpentaxi” helps to promote mobility services, as it enhances name recognition and helps users to find a convenient local service provider.

To ensure the operational effectiveness and to the principle of functional continuity, the organization of “mobility centres” must meet some rules: their covered area must be broad to cover living areas with a minimum of border effects, and they should concentrate the information of all modes: all public transport services including on-demand services, social services, carpooling, car-sharing, bike-sharing, so as to maximize complementary use of services.

A single technological solution is not sufficient to effectively disseminate information. The dissemination of information by local actors (municipalities, grocery stores, community centres, tourism boards, local associations, etc.) is also a solution used by project managers to reach their target groups (Bus Alpin, Dorfmobil Klaus, etc.). Furthermore, human assistance can be provided, especially when the service targets the elderly (Immer mobil: Individual transport services for elderly in rural areas, Points visio rendez-vous: Video-conferencing meeting points in the Hautes-Alpes, Public services relay in the Ecrins area, etc.).

D.2.3.2. Integrate pricing and ticketing

The dissemination of comprehensive information is only one of the aspects to improve. The purchase of tickets is another difficulty that arises to potential travellers. The multiplicity of fare structures, pricing rules, registration fees or ticketing systems applying for each service increase the complexity of the mobility system, when each service defines its own fares independently. Administrative difficulties of access to certain services (registration fees, credentials, etc.) may partly explain the failure of these initiatives.

In several collected good practices, actions are engaged to reduce these difficulties: single tickets covering the whole trip including a transfer from train to bus or taxi (Bergsteigerbus Eng: Hiker's bus in the Karwendel), flat-free card giving access to all public transport system and other mobility offers for a fixed term (Bürgerkarte Oberstdorf, Mobility management between Saas-Fee and Visp), single smartphone application used to pay for the use of all mobility services (e-GAP intermodal, etc.). Without seeking to implement integrated pricing, other actions can be taken to make the simple pricing (weekly or monthly passes, etc.).

The main obstacle to integrated pricing is the definition of rules for allocating revenues among the transport authorities and, eventually, other partners. Once again, this argues for a strengthened partnership.

Moreover, some services are free of charge (A bike for my village, my village with a bike in Crévoux, Einkaufsbus: shopping bus in Niederbüren, Free Shuttle in the Ubaye Valley, etc.), which eliminates the difficulties associated with the purchase of tickets but reinforces the problem of financing the service.

D.2.4. The need for long-term funding

Funding the service is often the main issue for the sustainable mobility solutions collected in this study. Financing transport services is a particularly acute problem in remote and sparsely populated areas, as the demand is low and the distances covered are high. In rural areas, the cost per trip can be very high and transport services are hardly ever self-funded. Moreover, some transport services are free of charge, making them entirely dependant on external funding.

Mobility solutions dedicated to tourists generally face less funding problems, insofar as tourists are usually willing to pay higher fares (Gseispur, Pedelec network in the Allgäu region, etc.).

D.2.4.1. Control operating costs

Controlling, and if possible, reducing operating costs is a major issue for all sustainable mobility solutions identified in this study. Several "classical" options are being considered: an extension or a duplication of the service in other territories in order to achieve economies of scale, the de-specialisation of services to optimise the global mobility offer and to limit competition between different services, etc.

Considering the low population densities and disperse settlement patterns, particularly alternatives to conventional public transport systems appear to be promising approaches. Many non-profit organizations

already organise mobility services and could become a starting point for a local platforms to negotiate mobility demand and volunteering. Particularly in regions with an ageing population, the capacity of volunteers to supplement public offers can be capitalized on. However, only one “Citizen bus” driven by volunteers has been identified in remote Alpine territories, in Austria (Dorfmobil Klaus). Apart from the citizen bus Chiemsee, citizen buses have been discussed in other areas in Germany and Austria (Go-Mobil), but not implemented.

D.2.4.2. Secure funding in the long term

For many mobility solutions, due to the limited number of users, it is unlikely to provide a service without a strong financial intervention of the local authorities. High fare rises cannot be envisaged, in order to remain affordable for users. Mobility solutions dedicated to tourists may allow exceptions, as tourists are often willing to pay higher prices, but this is not the focus of this study. As a consequence, it is almost impossible to provide a profitable service, and even to guarantee a high level of cost coverage. This means that a financial support from public authorities must be secured for a long term.

Funding for rural transport and mobility initiatives may involve various stakeholders, in the foreground the local, regional, and sometimes national or federal authorities. Thus, many good practices collected in this study are funded by two or more public authorities, either directly (DEF-Mobil, Free Shuttle in the Ubaye Valley, etc.), or via public-funded associations (Bus Alpin, Go-Mobil, etc.). More rarely, tourist board or private actors are also involved in financing sustainable mobility solutions (Dorfmobil Klaus, etc.).

Time limit on public funding is another common problem. Some of the initiatives collected in this study have been set up in the frame of research programs or territorial cooperation projects (Elastibus in Val del Chiese, Gmoa Bus, Gseispur, Pedelec network in the Allgäu region, Points visio rendez-vous: Video-conferencing meeting points in the Hautes-Alpes, etc.). Thus, they receive funding that may be limited to a given period of time, sometimes only covering the start-up phase. Even if the case does not appear among the selected good practices, some demonstration projects could be endangered once the funds expire.

In sparsely populated and shrinking areas of Eastern Germany, the proposal of funding passengers (“Subjektförderung”) instead of public transportation services has been introduced into the discussion¹³. Instead of being allocated to public transport operators, public funds would be allocated to residents in the form of mobility vouchers. These vouchers can then be used for the whole range of mobility options, from regular public transport to taxi services and car-rental. The promoters of this approach argue that funds would thus be more targeted to actual and potential passengers and be spent more effectively than in the conventional system of funding services that are most of the time utilized well below their capacity. The concept would represent a change of philosophy of mobility funding – instead of funding an inflexible offer, it promotes a flexible support according the citizens’ needs. On the other hand, many open questions remain and an implementation of this still theoretical approach would require modifications e.g. of the legal framework.

¹³ Canzler, W., Karl, A. (2010): Mit der Subjektförderung zur Mobilitätssicherung? Chancen und Barrieren für einen innovativen Landverkehr. In: Informationen zur Raumentwicklung, Heft 7/2010, pg. 505-515

D.3. CONCLUSIONS

The analysis of the 54 collected good practices reveals some key points:

- The understanding of users' needs is essential. Local mobility is not an objective in itself, but a means to access activities of everyday life. As each territory generates its own activities, it is from the understanding of these activities that we can consider possible mobility solutions and assess their impacts in the mobility system.
- There is no single solution to the mobility problem in rural areas such as remote or sparsely populated areas of the Alpine Convention perimeter. Measures taken independently will probably have a limited effect on the local mobility system. In contrast, the combination of several measures (new or improved mobility services, integrated pricing, information, etc.) is likely to have a greater effect, as measures reinforce each other and are mutually beneficial. Thus, some of the collected good practices try to mix different measures.
- All new mobility solutions must be considered in a collaborative way between different local stakeholders: users, transport authorities, transport providers, local businesses, non-profit organizations, etc. The involvement of these actors and the appropriation of the new solutions by the users is a key aspect for its success, as collaboration and partnership between public and private actors can create added value. Of course, transport services traditionally managed by transport authorities can meet a certain success, but most of the particularly interesting good practices collected in this document also imply other actors – sometimes unexpected ones, from the local grocery stores to the tourism board. Also the engagement of private enterprises could be enforced by making sustainable mobility offers or solutions part of the company's corporate profile and marketing issue.
- The small-scale experiments can and should create a ripple effect. A demonstrator can produce training effects within an organization or a territory, and lead to a mobility chain diversification offering new solutions to users. But its development in a wider area will achieve economies of scale, provide better service recognition and is likely to improve its effectiveness.
- Paradoxically, the most relevant solutions in terms of mobility could be the "non-mobility solutions". Maintain or preserve essential services in a territory reinforces its attractiveness and reduces the need for constraint mobility. These policies do not only concern transport and mobility, but require an integrated approach to rural planning.

E. Appendix

E.1. GENERAL MAPPING OF IDENTIFIED REMOTE AREAS PER COUNTRY

This appendix summarizes; for each country:

- the indicators used to identify remote territories;
- a map showing the location of the identified remote municipalities and territories;
- the characteristics of the identified municipalities within these territories.

Appendix E.2 provides more detailed information on methodologies used in each country.

E.1.1. Austria

The Austrian partners did not refer to the proposed features to identify municipalities that could be considered as remote. Austria focused directly on interesting and flexible public transport mobility solutions for people without car. They then used indicators to characterize territories where these public transport mobility solutions have been implemented.

E.1.1.1. Feature used to identify remote municipalities

As a first step, rural, rather than remote regions were identified, where interesting mobility solutions were already implemented for people without private cars. The focus was on good practices, but less successful mobility measures were also discussed in order to identify the reason for their problems.

The definition of rural areas is based on the EU-document “the new degree of urbanisation”¹⁴. The degree of urbanisation (DEGURBA) creates a classification of all LAU2 into the following three categories:

- Densely populated area;
- Intermediate population density area;
- Sparsely populated area.

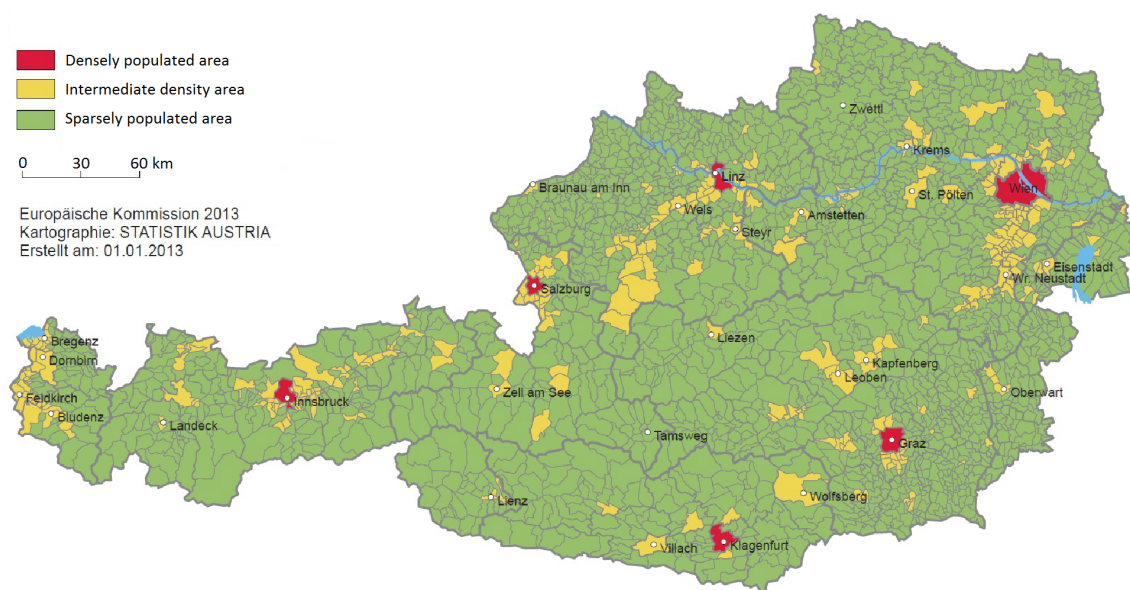


Illustration 7 – Degree of urbanisation per municipality in Austria

¹⁴ Available at: http://ec.europa.eu/eurostat/ramon/miscellaneous/index.cfm?TargetUrl=DSP_DEGURBA, accessed june 26, 2014.

Illustration 8 shows that all known Austrian case studies of mobility solutions for people without a car:

- are situated in rural, “sparsely” populated areas with a population density lower than 300 inhabitants per square kilometre;
- also have a population density of less than 150 inhabitants per square kilometre according to the OECD definition, at www.oecd.org/regional/regional-policy/42392595.pdf.

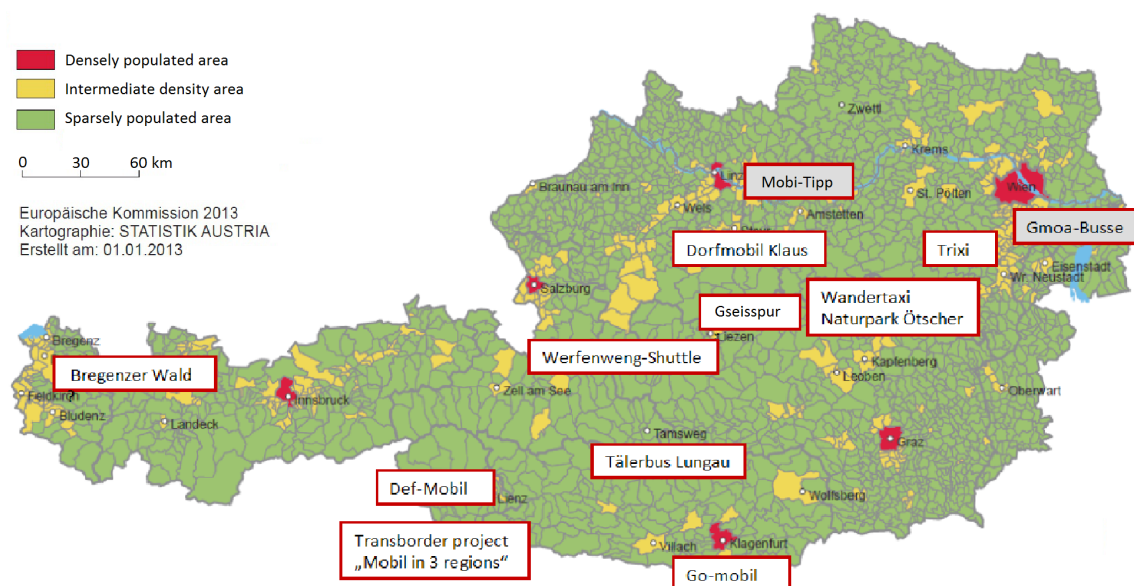


Illustration 8 – Known cases studies of mobility solutions for people without a car

E.1.1.2. Selected indicators to identify remote areas

Table 8 shows the list of Austrian indicators used to characterize territories where public transport mobility solutions have been implemented.

N°	Features	Associated indicators (Austria)
1	Situated beyond the main influence of the metropolitan areas and Alpine cities	
2	Have a limited number of activities/amenities	<ul style="list-style-type: none"> • Distance to well-equipped centres with working places, shopping, leisure and cultural facilities (ÖroK) • Available jobs (Statistics Austria)
3	Do not have the necessary transport infrastructure to facilitate travel to urban centres and potential markets	<ul style="list-style-type: none"> • Travel-time to bigger centres (by public transport) (ÖroK) • Description of the public transport system (timetable of scheduled buses) (ÖBB timetable information) • Inhabitants areas served by an on-demand public transport system (Statistics Austria, 2012)
4	Outside tourist hotspots	<ul style="list-style-type: none"> • Tourism intensity (overnight stays per capita) (Statistics Austria)
5	In demographic decline	<ul style="list-style-type: none"> • Demographic development (growing or shrinking population, etc.) (Statistics Austria)
6	Sparsely populated	<ul style="list-style-type: none"> • Population density in served regions (ÖroK)

Table 3 – List of Austrian indicators

For the purpose of the analysis, Austria selected regions within the Alpine space and the Alpine Convention area, but also selected interesting solutions outside the Alps in other remote regions in Austria if the know-how from the mobility solutions was useful for measures in Alpine regions.

Appendix E.2.1 provides details on the Austrian methodology.

E.1.1.3. The Austrian remote Alpine municipalities

As previously explained, the Austrian partners have focused on a regional model where sustainable mobility solutions for people without a car can be found.

Nevertheless in line with the other country partners, we have provided a map identifying around 254 municipalities with public transport mobility solutions. Illustration 9 shows the location of these municipalities. Dark green municipalities are the ones where our partners will carry out cases studies.

The entire list of municipalities is provided in Appendix E.3.1.

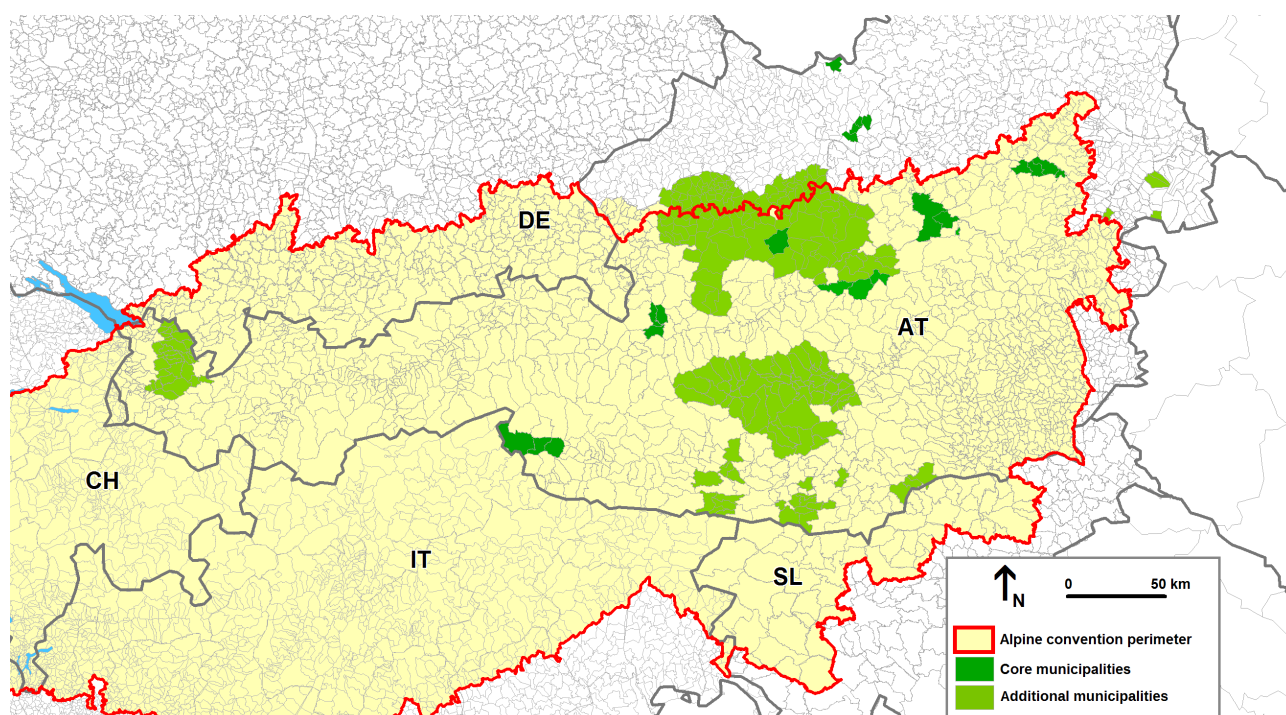


Illustration 9 – Municipalities with best practices in sustainable mobility systems

E.1.1.4. Characteristics of the Austrian remote areas

Austria did not develop specific characteristics of the identified territories.

E.1.2. France

An iterative method was used to identify municipalities that could be considered as remote: each indicator was successively analysed in order to gradually “exclude” municipalities.

E.1.2.1. Selected indicators to identify remote areas

All the indicators used by France can be calculated at a low-level administrative division, the French “commune” (level LAU2 of the European nomenclature of territorial units for statistics). Different territories were established by grouping together municipalities.

Table 4 shows the list of French indicators gradually implemented.

N°	Features	Associated indicators (France)
1	Situated beyond the main influence of the metropolitan areas and Alpine cities	<ul style="list-style-type: none"> Municipalities in a metropolitan area with more than 5,000 jobs (as defined by the French institute of statistics – INSEE)
2	Have a limited number of activities/amenities	<ul style="list-style-type: none"> Municipalities under the influence of urban areas with less than 5,000 jobs (INSEE)
3	Do not have the necessary transport infrastructure to facilitate travel to urban centres and potential markets	<ul style="list-style-type: none"> Number of railway stations / regional buses lines and stations Number of bus / coach stops Average number of buses / coaches per day as an indicator of the quality of service
4	Outside tourist hotspots	<ul style="list-style-type: none"> Average number of tourists on a typical day
5	In demographic decline	<ul style="list-style-type: none"> Demographic decline between 2006 and 2010 according to the national demographic survey (INSEE)
6	Sparsely populated	<ul style="list-style-type: none"> Average population density above 50 inhabitants per square km (INSEE)

Table 4 – List of the French indicators gradually implemented

Appendix E.2.2 provides details of the French methodology.

E.1.2.2. The French remote Alpine municipalities

We identified remote territories without considering the entire list of indicators. We gradually excluded non-selected municipalities without taking into account the two indicators: “tourist hotspots” and “regular bus line services operated by local authorities”.

Remote territories can therefore be:

- with or without tourist hotspots (throughout the year or seasonally);
- with or without regular bus line services.

The remote territories identified are composed of about 31 core municipalities (identified with the entire list of indicators) and 146 additional municipalities (identified without the two last indicators “tourist hotspots” and “regular bus line services operated by local authorities”). The entire list of municipalities provided in Appendix E.3.2 represents 10% of the French Alpine Convention.

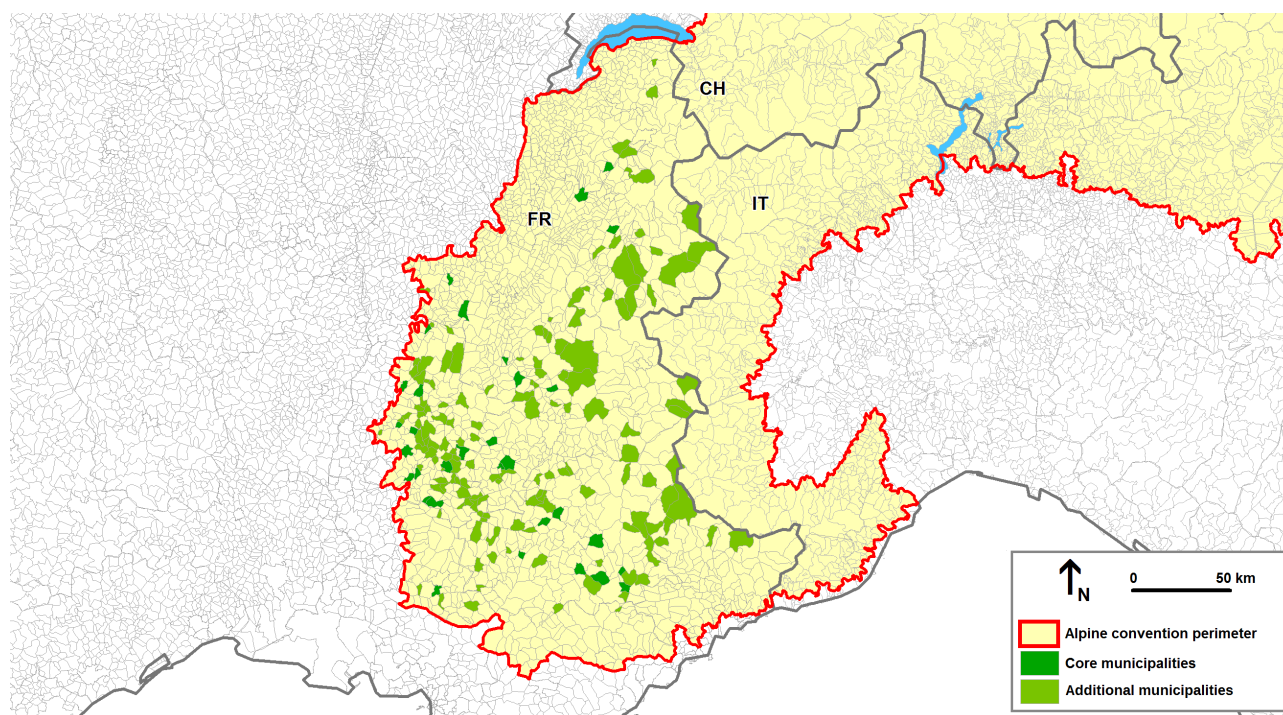


Illustration 10 – Remote territories in France
31 core municipalities (dark green) and 146 additional municipalities (green)

These 177 municipalities total around 45,871 inhabitants (2010 Census). This is around 1,7% of the French Alpine Convention territory population. 87% of the 177 municipalities are mainly located within five territories presented in Table 5 and Illustration 11. Almost 76% of the population of the 177 municipalities are located within these five territories.

N°	French territories	Number of remote municipalities	Population in 2010
1	East of Drôme	82 (46,3%)	10,636 (23,2%)
2	Haute-Maurienne/Vanoise	17 (9,6%)	11,806 (25,7%)
3	Belledonne/Ecrins/Dévoluy	21 (11,9%)	4,689 (10,2%)
4	Digne Prealps	11 (6,2%)	1,422 (3,1%)
5	Ubaye/Mercantour/Verdon	23 (13%)	6,281 (13,7%)
Total		154 (87%)	34,834 (75,9%)

Table 5 – List of the French remote territories

We could also mention certain remote municipalities in the Queyras area. There are 2,120 inhabitants in five municipalities (Abriès, Molines-en-Queyras, Les Orres, Saint-André-d'Embrun, Saint-Véran).

This brief analysis indicates that a wider geographical area covering the five identified territories would be more relevant to highlight good practices and strategies in sustainable mobility than the initial short list of 177 municipalities (even if we focus particularly on these municipalities).

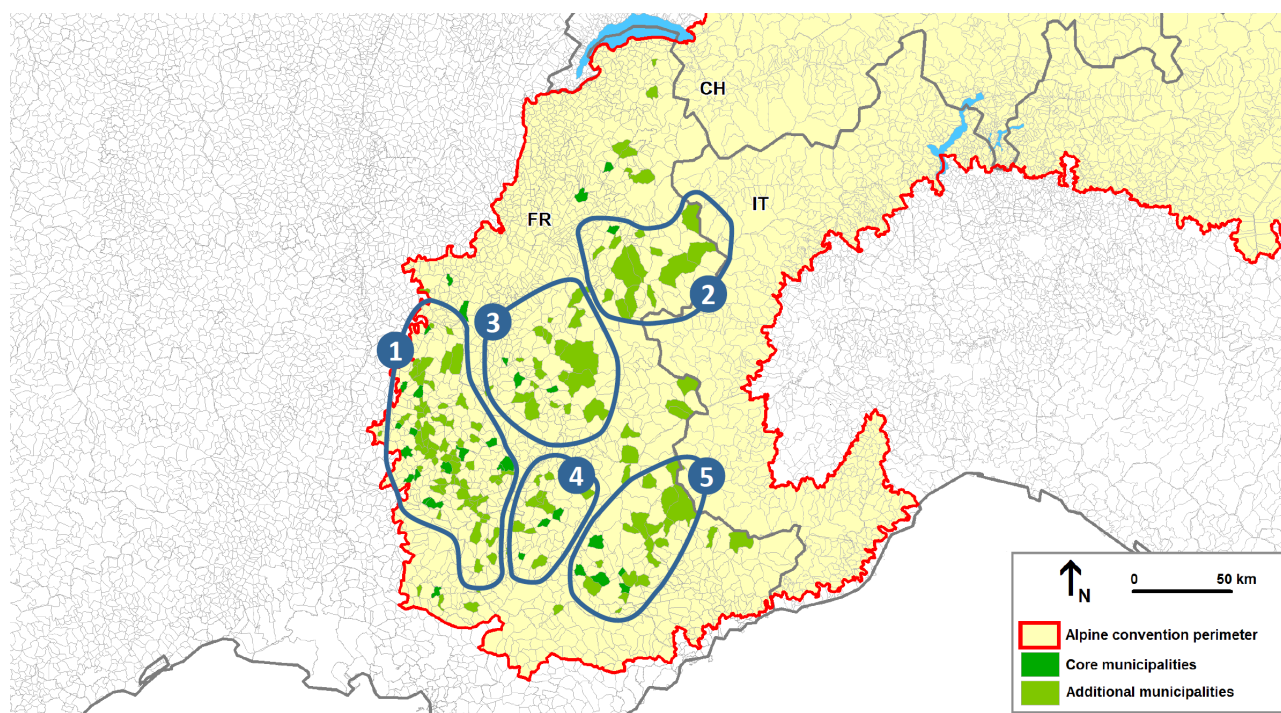


Illustration 11 – Five identified remote territories in France

- ① East of Drôme ② Haute-Maurienne/Vanoise ③ Belledonne/Ecrins/Dévoluy
 ④ Digne Prealps ⑤ Ubaye/Mercantour/Verdon

E.1.2.3. Characteristics of the French remote areas

This section presents the characteristics of the municipalities selected within the five territories previously identified (population density, level of demographic decline, tourism and regular bus line services). Three categories of territories are identified:

a) ② Haute-Maurienne/Vanoise: low demographic decline and high tourism

The 17 remote municipalities of this territory are characterized by a quite high population density with an average of 14,2 inhabitants per square km and a relatively low demographic decline between 2006 and 2010 (more than half of these municipalities lost less than 2,8% of their population).

However, these municipalities are considered tourist hotspots since the average tourist presence is more than twice the annual resident population (tourist presence: 276,5). Only 23% of the municipalities are not considered to attract tourists.

Lastly, 15 of the 17 municipalities have regular local authority bus line services. However, the level of service is not high since the majority (64%) of municipalities have a single bus line. Only one municipality has 3 bus lines (Sainte-Foy-Tarentaise).

In any case, we could not give more weight to transport services because of the lack of information on the daily frequency of each line.

b) ③ Belledonne/Ecrins/Dévoluy and ⑤ Ubaye/Mercantour/Verdon: higher demographic decline and relatively high tourism

This is the case of the two territories called Belledonne/Ecrins/Dévoluy and Ubaye/Mercantour/Verdon that respectively encompass 21 and 23 remote municipalities.

The only difference between the two territories is the higher population density for the Belledonne/Ecrins/Dévoluy territory (an average of 11,1 inhabitants per square km) than the Ubaye/Mercantour/Verdon territory (with an average of 5,5 inhabitants per square km).

All the other characteristics are fairly similar for both territories:

- A relatively high demographic decline between 2006 and 2010 (on average, 6,9% for the Belledonne/Ecrins/Dévoluy territory, and 4,1% for the Ubaye/Mercantour/Verdon territory). This is half of the remote municipalities that lost more than 3,4% of their population.
- A relatively high tourist presence. If the average presence is high (184,2 for the Belledonne/Ecrins/Dévoluy territory and 164,5 for the Ubaye/Mercantour/Verdon territory), it is lower than for the previously mentioned Haute-Maurienne/Vanoise territory. Municipalities remain attractive for tourists since 50% of them have a tourist presence over 12, which is 1,27 higher than the annual resident population. Only 23% of the municipalities are not considered to attract tourists (indicator below 100).
- Relatively few bus line services in these remote municipalities. Indeed, 52,3% of these municipalities have no local authority operated bus lines and 29,5% of municipalities have a single bus line service.

Even if there is a lack of information on bus line frequency, a relatively poor public transport supply can be noted. The next step of the project should focus on this area in order to see if there are good practices in terms of sustainable mobility (use of other transport modes than the car).

c) ① East of Drôme and ④ Digne Prealps: a significant demographic decline and little tourism

This is the case of the two territories called East of Drôme and Digne Prealps that respectively encompass 82 and 10 remote municipalities.

In comparison with the four other territories, these municipalities are characterized by a low population density with an average of 8 (East of Drôme) and 6,5 (Digne Prealps) inhabitants per square km. Moreover there is the highest demographic decline between 2006 and 2010 (on average, municipalities lost 6,7% of their population. More than half of the municipalities lost more than 4,5% of their population).

A significant difference with the previously analysed territories concerns tourism. The East of Drôme and Digne Prealps territories are characterized by low tourism. Indeed the average tourist presence is 100,7 and 92,0. Both these territories can be considered not to attract tourists as:

- 76% of identified municipalities has a tourist presence below 100 (respectively 77,5% for East of Drôme and 63,6% for Digne Prealps);
- and 50% of identified municipalities has a tourist presence below 88 (respectively 88,1% for East of Drôme and 82,1% for Digne Prealps).

This means that overall there are less tourists in the territory than the annual resident population. Thus, municipalities are not considered to be tourist attractions.

The last difference with previously analysed territories is the very low number of bus lines. Indeed, 49,5% of the municipalities have no local authority bus lines and 41,9% of municipalities only have a single bus line service.

As previously mentioned, bus frequency information could provide additional information on the quality of bus services. The next step of the project should also focus on this area in order to find good practices in sustainable mobility.

E.1.3. Germany

An iterative method was used to identify municipalities that could be considered as remote: each feature and associated indicator was successively analysed in order to gradually “exclude” municipalities.

E.1.3.1. Selected indicators to identify remote areas

Table 6 shows the indicators used by Germany:

N°	Features	Associated indicators (Germany)
1	Situated beyond the main influence of the metropolitan areas and Alpine cities	<ul style="list-style-type: none"> • Accessibility of medium-sized town • Accessibility of larger-sized town
2	Have a limited number of activities/amenities	<ul style="list-style-type: none"> • Within/outside DIAMONT labour market region
3	Do not have the necessary transport infrastructure to facilitate travel to urban centres and potential markets	<ul style="list-style-type: none"> • Existence of an hourly train service in municipality
4	Outside tourist hotspots	
5	In demographic decline	<ul style="list-style-type: none"> • Population change 2001-2011
6	Sparsely populated	<ul style="list-style-type: none"> • Population density

Table 6 – List of the German indicators gradually implemented

Appendix E.2.3 provides details on the German methodology (in particular on databases and indicator values for municipalities of the German Alpine Convention perimeter).

In the context of the German Alpine Convention area, the absence of tourist hotspots is not considered a feature of remote territories. On the contrary, tourism is particularly high in areas that otherwise qualify as remote when it comes to population density, decline and accessibility to urban centres (e.g. Berchtesgadener Land, Achental, southern Oberland, Isarwinkel and Oberallgäu). We therefore decided to exclude this feature.

Population density was considered for the identification of remote areas, but given the Alpine topography of the southernmost municipalities in the German Alpine Convention area, the informative value of this indicator is limited. Alpine municipalities with a small share of permanent settlement areas but a relatively large geographic coverage area generally have low population densities, e.g. the municipality of Oberstdorf, which has an urban nature, has 10 residents less per square km than the rural municipality of Bolsterlang.

E.1.3.2. The German remote Alpine municipalities

Not all municipalities in a region feature the same extent of remoteness, yet it is necessary to include less remote areas in the context of potential study areas. Therefore we suggested splitting municipalities into the following two categories:

- **Core municipality:** Municipalities that meet at least half of the remoteness indicators are defined as core municipalities.
- **Additional municipality:** Municipalities meeting some but less than half of the indicators are defined as additional municipalities. Whilst not remote in a strict sense, they are still taken into account within the regional perimeter of potential study areas.

The remote territories would then be composed of about 26 core municipalities and 19 additional municipalities. The entire list of municipalities is provided in Appendix E.3.3.

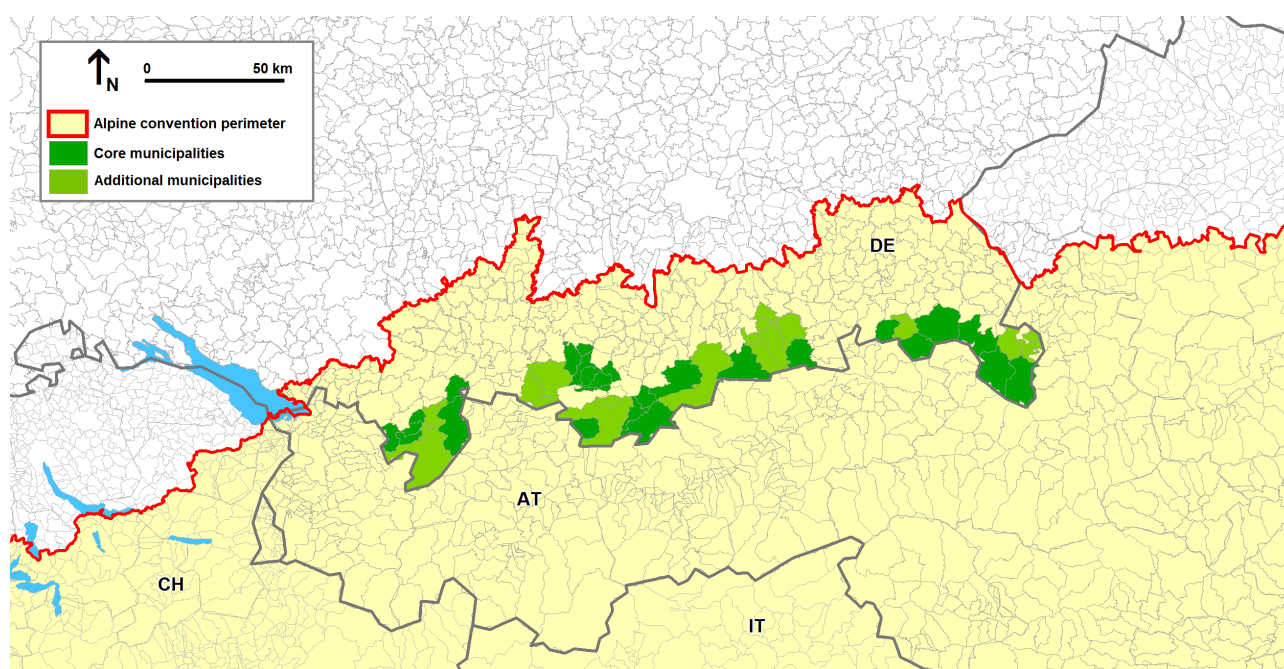


Illustration 12 – Remote territories in Germany
26 core municipalities (dark green) and 19 additional municipalities (green)

E.1.3.3. Characteristics of the German remote areas

We suggest differentiating between core municipalities, that fulfil at least three of the indicator thresholds outlined in appendix E.2.3.2, and additional municipalities, which respect a smaller number of indicators.

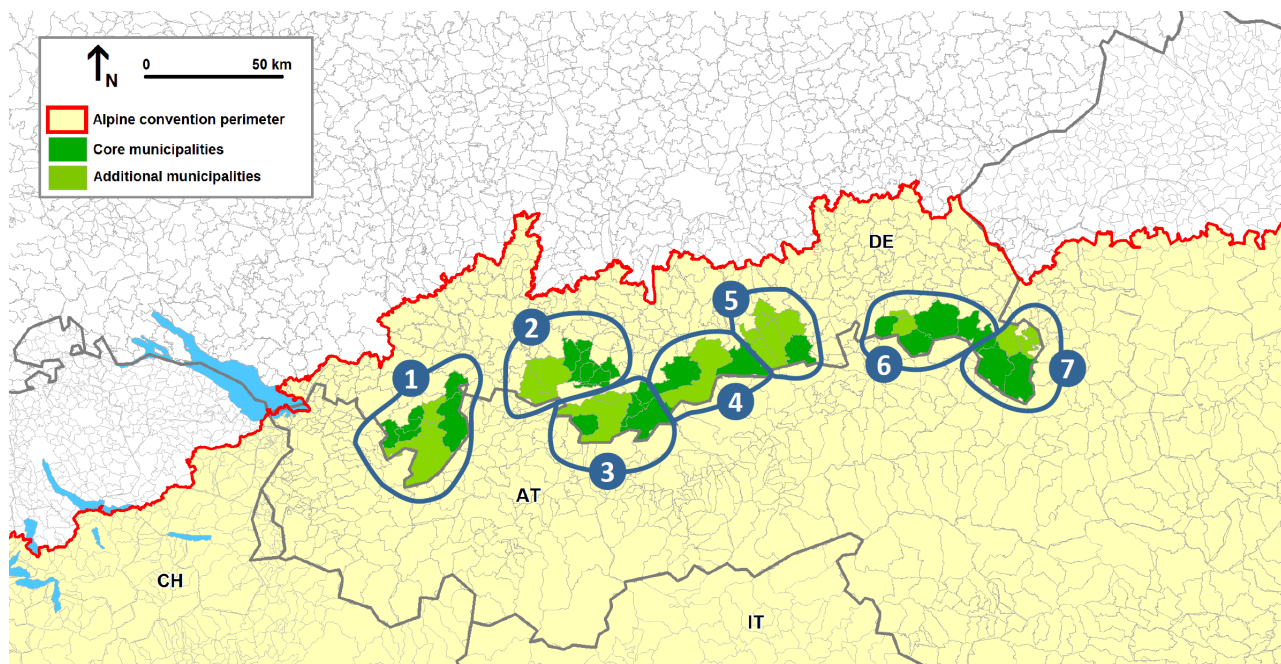


Illustration 13 – Seven identified remote territories in Germany

- ① Oberallgäu/Hörnergruppe ② Ammergau/Halblech ③ Werdenfelser Land ④ Isarwinkel/Achenpaß
 ⑤ Mangfallgebirge ⑥ Achenal/Kaiserwinkel ⑦ Südliches Berchtesgadener Land

a) ① Oberallgäu/Hörnergruppe

This southern part of the district of Oberallgäu is one of the tourist hotspots of the German Alpine Convention area and yet accessibility in its western and eastern municipalities is below standard. Oberstdorf and Sonthofen are urban cores of this area and have hourly train services to Munich and Lindau. Towards the south, the only cross-border road connections link the region with Bregenzerwald and Tannheimer Tal in Austria, themselves rather remote areas.

The municipalities of Fischen, Obermaiselstein, Balderschwang, Ofterschwang and Bolsterlang have formed an administrative cooperation (Verwaltungsgemeinschaft). Situated along the ascent from the Iller valley towards Bregenzerwald, the latter are particularly characterized by steep topographic conditions and low population.

b) ② Ammergau/Halblech

The region is delineated by the Ammer valley to the east and the Lech valley to the west and it encloses the German part of the Ammergau mountain range. It is cut off from the main A95 traffic corridor towards Garmisch-Partenkirchen by the Ettal mountain pass. The train line from Murnau to Oberammergau terminates in the Ammertal. West of Ettal, towards Austria, stretches a large area called “Ettaler Forst”, not included in the study.

c) 3 Werdenfelser Land

The population of this region is in decline, but given its two larger-sized cities of Garmisch-Partenkirchen with their central location in addition to Mittenwald, it qualifies only to a limited extent as a remote territory and has therefore been excluded from the in-depth analysis. Grainau is located along the Außerfernbahn, and has a twice-hourly train service from Garmisch-Partenkirchen to Kempten via Reutte (AT) that runs every two hours. The municipalities of Mittenwald and Grainau, have faced a considerable population decline over the last decade (-8,3 and -6,4% respectively).

d) 4 Isarwinkel/Achenpaß

This remote territory is composed of a small number of large municipalities. In its centre is the Sylvenstein reservoir, intercepting the upper and medium stretch of the Isar river on its way towards Munich. Connections to the south include a federal road towards Achensee and the Inn valley, a dead end road to the Eng valley and a toll road between Jachenau and Wallgau towards the upper Isar valley. Large shares of the region are Alpine slopes and ridges, with very few smaller settlements along the valley bottoms. The northern part of the municipality of Lenggries is more densely populated, Lenggries itself being the terminus of an hourly train service to Munich.

e) 5 Mangfallgebirge

With only Bayrischzell fulfilling a significant number of remote criteria and the rest of the territory featuring good accessibility and a rather stable demographic development, this territory similarly qualifies only to a limited extent as a remote territory and is therefore not part of the following in-depth analysis. Except Rottach-Egern, all municipalities feature an hourly train service to Munich. With ski resorts and Alpine lakes, the region is a popular tourist destination with a large share of day trippers from Munich. The town of Miesbach barely fails to fulfil DIAMONT core city criteria, which explains why the area as a whole is not part of a labour market area.

f) 6 Achental/Kaiserwinkel

The Achental is formed by the Tiroler Achen between the Austrian border and Lake Chiemsee. Bordering to the east is Reit im Winkl, the German part of the Kaiserwinkel, and its neighbouring municipality Ruhpolding.

Apart from Ruhpolding, the region is disconnected from the railroad network. While two main road connections exist towards Austria, the region is oriented towards Lake Chiemsee and the Traunstein area to the north with its motorway and national rail connections.

g) 7 Südliches Berchtesgadener Land

Immediately bordering to the east is the last remote territory of the southern Berchtesgadener Land with the National Park Berchtesgaden and the bordering biosphere reserve in its centre. The region is characterized by its Alpine territory and limited settlement areas in the valley bottoms. Train services exist only in the eastern municipalities with Berchtesgaden the terminus of the train line from Freilassing and the commuter train (S-Bahn) from Salzburg.

E.1.4. Italy

An iterative method was used to identify municipalities that could be considered as remote: each feature and associated indicator was successively analysed in order to gradually “exclude” municipalities.

E.1.4.1. Selected indicators to identify remote areas

Table 7 shows the indicators used by Italy:

N°	Features	Associated indicators (Italy)
1	Situated beyond the main influence of the metropolitan areas and Alpine cities	
2	Have a limited number of activities/amenities	
3	Do not have the necessary transport infrastructure to facilitate travel to urban centres and potential markets	
4	Outside tourist hotspots	
5	In demographic decline	• Population change 2001-2010
6	Sparsely populated	• Population density

Table 7 – List of the Italian indicators gradually implemented

The method used was a procedure of exclusion: a municipality is considered to be remote if its population density is less than 30 inhabitants per square km in 2010 and if its population has decreased between 2001 and 2010. Population density and population changes are given by the Italian statistical office.

E.1.4.2. The Italian remote Alpine municipalities

Italian remote Alpine municipalities have been divided into the following two categories:

- **Core municipality:** Municipalities with less than 15 inhabitants per square km, with a loss of population between 2001 and 2010.
- **Additional municipality:** Municipalities with more than 15 and less than 30 inhabitants per square km, with a loss of population between 2001 and 2010.

The remote territories would then be composed of about 194 core municipalities and 170 additional municipalities. The entire list of municipalities is provided in Appendix E.3.4.

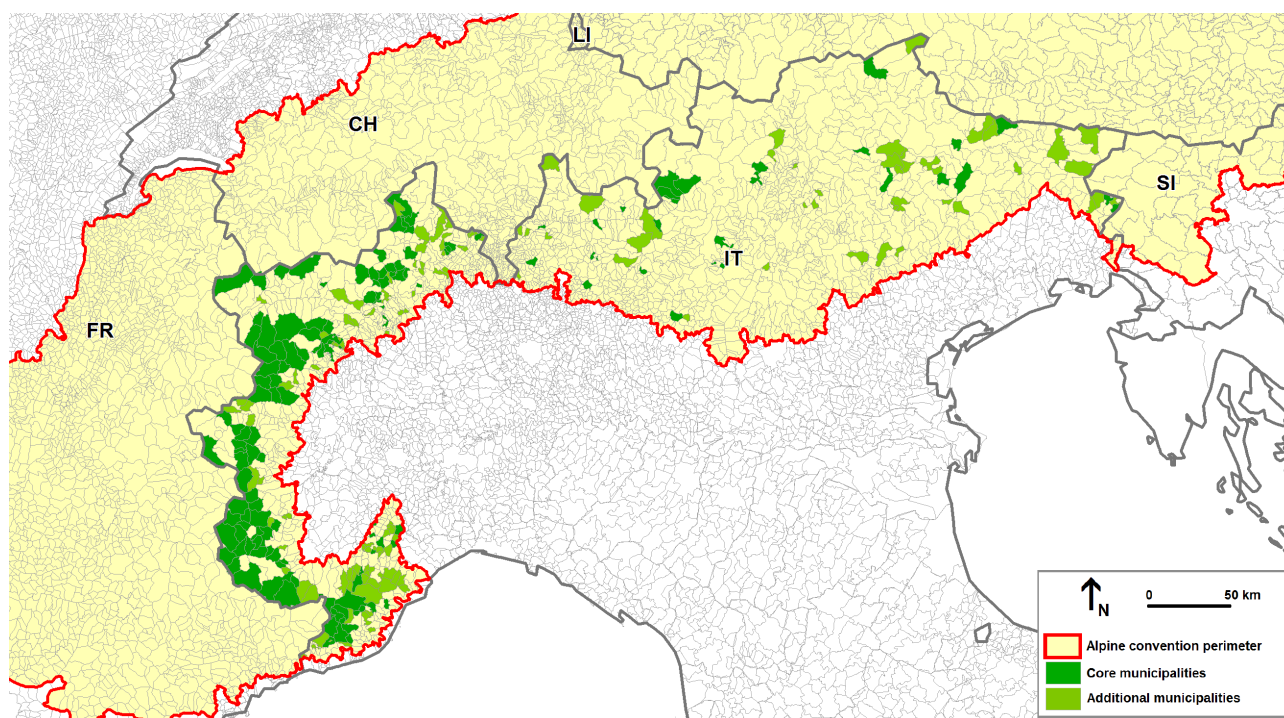


Illustration 14 – Remote territories in Italy
194 core municipalities (dark green) and 170 additional municipalities (green)

E.1.4.3. Characteristics of the Italian remote areas

The Italian Alpine arc extends over a total of six of the twenty Italian regions: Liguria, Piemonte, Lombardia, Veneto, Friuli-Venezia Giulia, the Autonomous region of Valle d'Aosta the Autonomous provinces of Bolzano and Trento.

In general, the municipalities with the highest population densities are concentrated along the lower outer perimeter of the Alps, at the foot of the mountains, along the main river dorsal and/or arterial roads, highways and railways (e.g., along the valley of Adige – and thus along the A22 motorway, in the low Valtellina, in the valley of Piave). At regional level, it can be said that Western Alps and North-Eastern Alps are the ones characterized by the lowest densities of population and the most consistent decrease of population. As the current work on the 5th Report of the State of the Alps on demography dynamics is showing, those areas are also characterized by other related phenomena, such as a high share of elderly population and high unemployment rates. Those areas are generally outside of tourist hotspots (as highlighted in the 4th Report of the State of the Alps) and often not (or only partially) reached by local railway lines.

From the geographical point of view, most of the municipalities and areas concerned lie in “closed valleys” (especially on the Western side) that do not allow communications by road or rail to the crossborder “mountainsides”. Usually, they are connected to the peri-Alpine areas only by narrow and curvy links. Some macroareas within the Italian Alps have been identified, and here summarised.

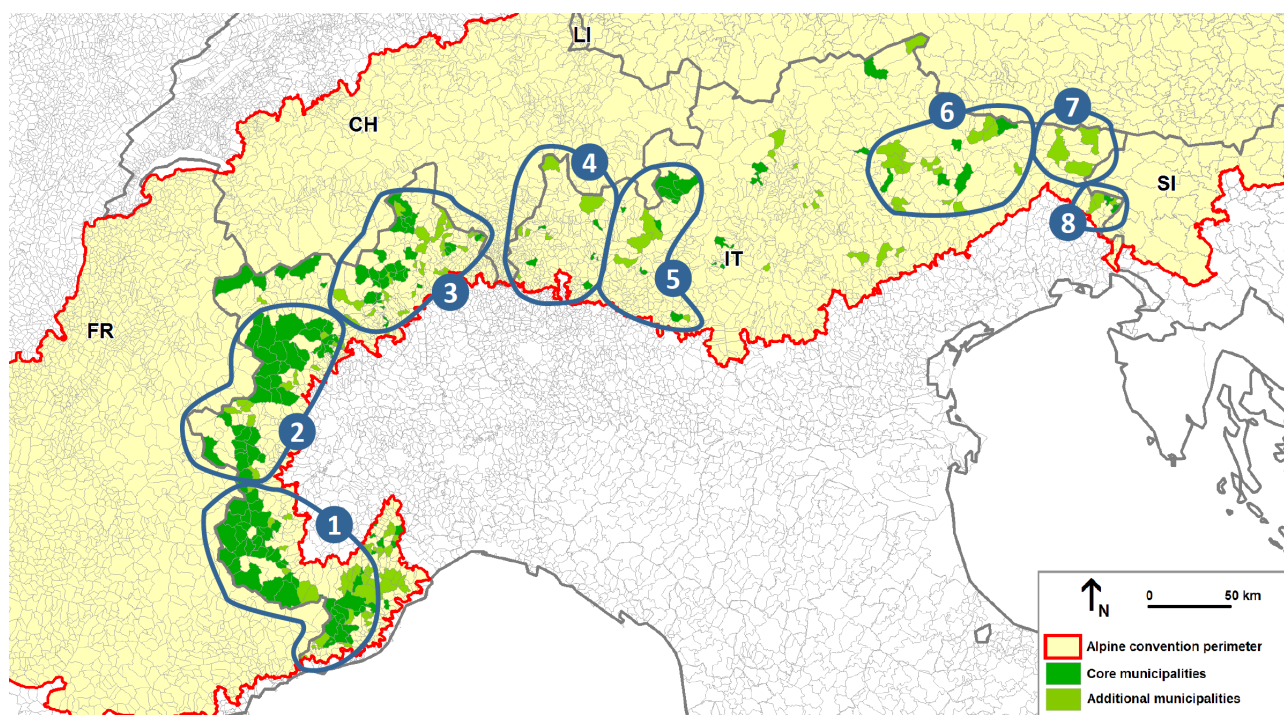


Illustration 15 – Eight identified remote territories in Italy

- 1 Provinces of Imperia and Cuneo 2 Upper Canavese 3 Province of Verbania-Cusio-Ossola
 4 Areas close to the Swiss border 5 Provinces of Brescia and Bergamo
 6 Upper Cadore 7 Upper Carnia 8 Valli del Natisone

a) Western area: 1 Provinces of Imperia and Cuneo, 2 Upper Canavese and 3 Province of Verbania-Cusio-Ossola

Most of the upper municipalities, located at the French border, are suffering population decline and quite negative socio-economic indicators (ageing of population, unemployment and long travel distances to relevant bottom urban centres). Three main zones have been identified:

- Areas located in the provinces of Imperia¹⁵ (Liguria) and Cuneo (Piemonte), particularly municipalities in the Maritime Alps, Valle Stura, valle Maira and valle Varaita.
- Upper Canavese, in the province of Turin, particularly Valle di Locana and Ronco Canavese.
- Western side of the Province of Verbania-Cusio-Ossola, particularly municipalities in the Valle Anzasca, valle Antrona and val Bognanco.

b) Central Alps: 4 Areas close to the Swiss border and 5 Provinces of Brescia and Bergamo

This is the less affected area, (only a few municipalities between the Autonomous Provinces of Bolzano and Trento are considered), as it is quite well infrastructured and most important Italian tourist resorts are situated here. In Lombardy, less accessible and most remote areas are scattered in different areas of the region, and above all located outside of main valleys. The most concerned areas are:

- Municipalities situated close to the Swiss border: valle di San Giacomo, Cavargna, Val Rezzo, Western side of the Lake of Como.
- Upper municipalities of provinces of Brescia and Bergamo, within the Orobic Alps.

¹⁵ Imperia is the least densely populated Alpine province (31 inhabitants per square km)

c) Eastern Alps: ⑥ Upper Cadore, ⑦ Upper Carnia and ⑧ Valli del Natisone

Existing conditions are similar to the Western side of Italian Alps, as well as difficult accessibility. Most isolated areas of the North-Eastern fringe, affected also by strong depopulation trends, are located in:

- Upper Cadore in the province of Belluno.
- Upper Carnia in the province of Pordenone, particularly municipalities of Forni di Sopra, Forni di Sotto, Prato Carnico and Forni Avoltri and Paluzza.
- Valli del Natisone in Julian Alps (Drenchia, Pulfero, Stregna).

E.1.5. Slovenia

An iterative method was used to identify municipalities that could be considered as remote: each feature and associated indicator was successively analysed in order to gradually “exclude” municipalities.

E.1.5.1. Selected indicators to identify remote areas

Table 8 shows the indicators used by Slovenia:

N°	Features	Associated indicators (Slovenia)
1	Situated beyond the main influence of the metropolitan areas and Alpine cities	
2	Have a limited number of activities/amenities	
3	Do not have the necessary transport infrastructure to facilitate travel to urban centres and potential markets	
4	Outside tourist hotspots	
5	In demographic decline	• Population change 2006-2012
6	Sparsely populated	• Population density

Table 8 – List of the Slovenian indicators gradually implemented

The method used was a procedure of exclusion: a municipality is considered to be remote if its population density is less than 50 inhabitants per square km in 2012 and if its population has decreased between 2006 and 2012. Population density and population changes are given by the Slovenian statistical office. They are available at www.stat.si.

E.1.5.2. The Slovenian remote Alpine municipalities

Slovenian remote Alpine municipalities have been divided into the following two categories:

- **Core municipality:** Municipalities with less than 25 inhabitants per square km, with a loss of population between 2006 and 2012.
- **Additional municipality:** Municipalities with more than 25 and less than 50 inhabitants per square km, with a loss of population between 2006 and 2012.

The remote territories would then be composed of about 5 core municipalities and 8 additional municipalities. The entire list of municipalities is provided in Appendix E.3.5.

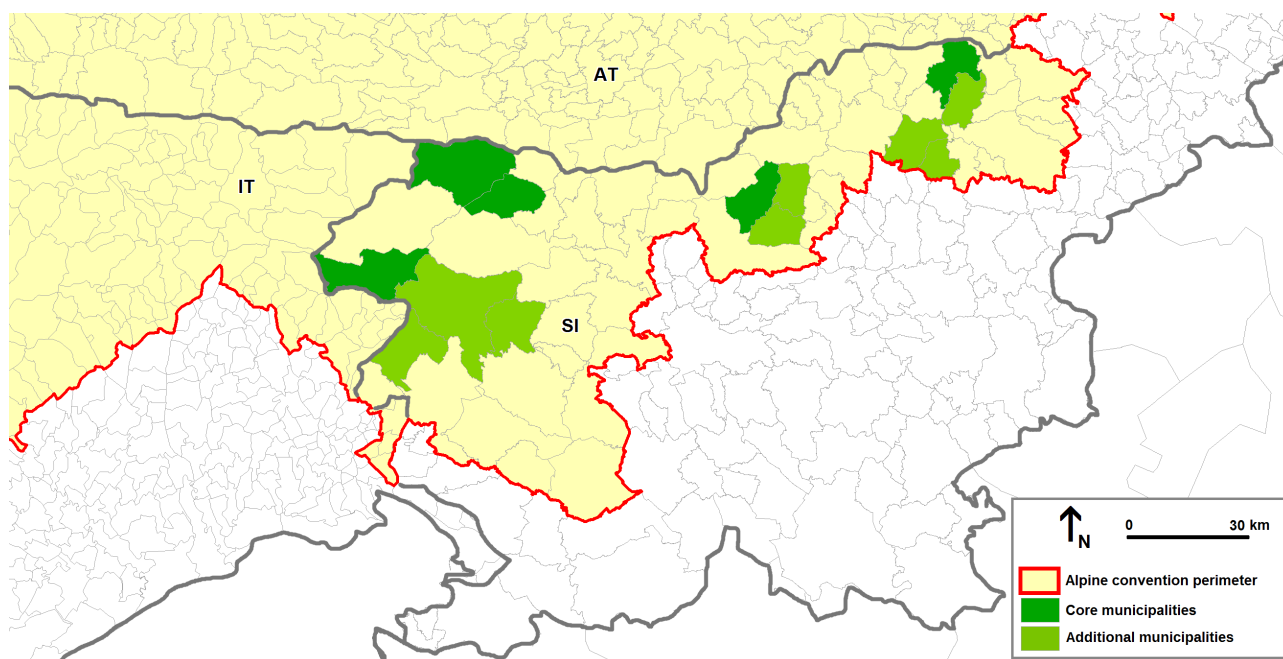


Illustration 16 – Remote territories in Slovenia
5 core municipalities (dark green) and 8 additional municipalities (green)

E.1.5.3. Characteristics of the Slovenian remote areas

Slovenia did not develop specific characteristics of the identified territories.

E.1.6. Switzerland

An iterative method was used to identify municipalities that could be considered as remote, with urban and non-urban municipalities as a starting point.

E.1.6.1. Selected indicators to identify remote areas

The starting point was the classification of urban and non-urban municipalities, used by the Federal Statistical Office (FSO). Urban municipalities consist of towns, cities and conurbations. The Swiss Federal Office for Spatial Development (ARE) has developed a typology for non-urban municipalities. Three different types are identified:

- Periurban rural municipalities;
- Alpine tourist resorts;
- Other rural municipalities.

The definition of “other rural municipalities” nearly fits the definition suggested in the guidelines of the Alpine Convention and corresponds best to its fourth category: “declining rural area”. However, as the term “declining rural area” sounds rather negative, this term is not used in Switzerland.

According to the Spatial Development report 2005, published by the Federal Office for Spatial Development¹⁶, rural municipalities are situated outside the catchment area of agglomerations as well as outside the densely populated area between Lake Geneva and Lake Constance. They consist of municipalities with 5 000 to 10 000 inhabitants, smaller municipalities with 2000 to 5000 inhabitants or 500 to 2000 inhabitants and sparsely populated communities with less than 500 inhabitants.

When the study was published in 2005, 387 municipalities (out of a total of about 2500) with a total of approximately 278 000 inhabitants and 99 000 jobs were considered part of remote territories. Some of these municipalities are situated in the Jura but most are part of the Alps and its foothills. They therefore lie within the Alpine Convention territory.

Table 9 shows the list of Swiss indicators gradually implemented.

N°	Features	Associated indicators (Switzerland)
1	Situated beyond the main influence of the metropolitan areas and Alpine cities	• Urban / non urban municipalities (Federal Statistical Office – FSO)
2	Have a limited number of activities/amenities	• Typology for non-urban municipalities (periurban, Alpine tourist resorts, other rural municipalities)
3	Do not have the necessary transport infrastructure to facilitate travel to urban centres and potential markets	
4	Outside tourist hotspots	• Typology for non-urban municipalities
5	In demographic decline	
6	Sparsely populated	• Population density

Table 9 – List of the Swiss indicators gradually implemented

E.1.6.2. The Swiss remote Alpine territories

We identified remote municipalities by gradually applying the entire list of indicators and excluding non-selected municipalities.

The remote territories identified are composed of about 133 core municipalities (identified with a population density that is below 500 inhabitants per municipality) and 88 additional municipalities (identified with a population density that is over 500 inhabitants per municipality). The entire list of municipalities is provided in Appendix E.3.6.

¹⁶ ARE (2005), Spatial Development Report 2005. ARE, Bern, march 2005. Available at: www.are.admin.ch/themen/raumplanung/00228/00275/index.html, accessed may 26, 2014.

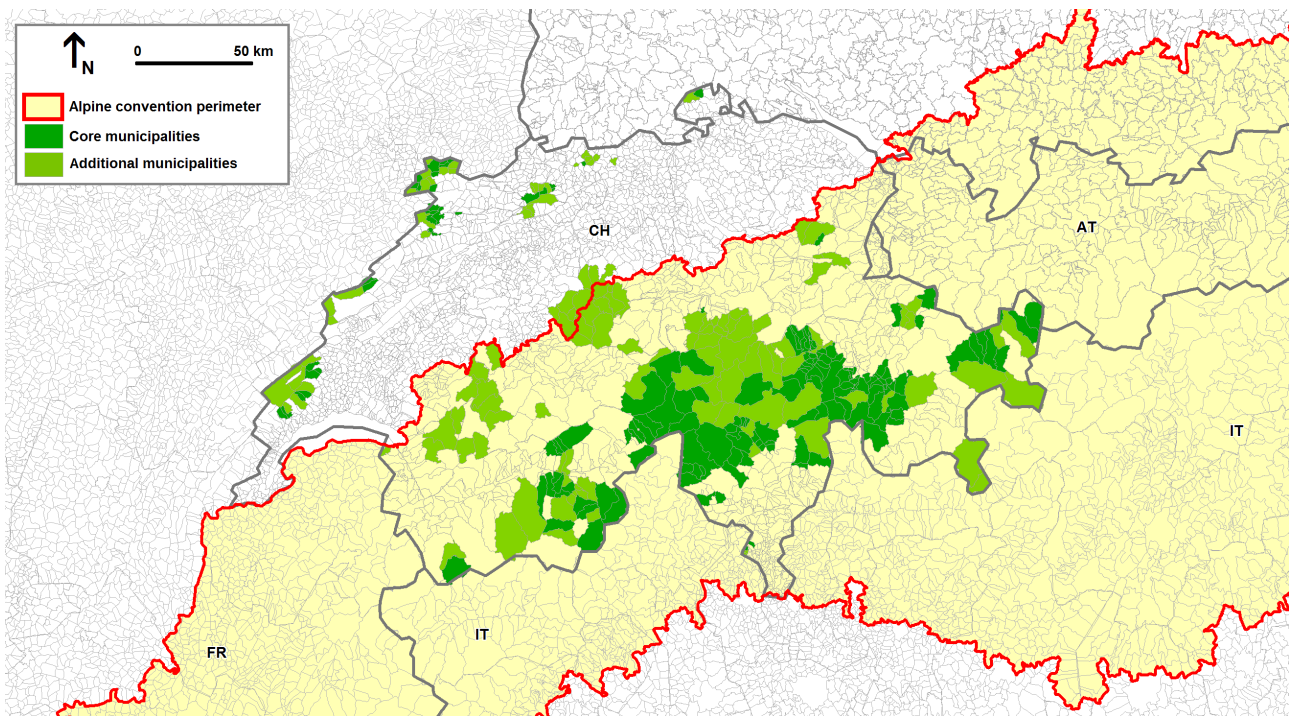


Illustration 17 – Remote territories in Switzerland
133 core municipalities (dark green) and 88 additional municipalities (green)

E.1.6.3. Characteristics of the Swiss remote areas

Switzerland did not develop specific characteristics of the identified territories. The method used was a procedure of exclusion: an area is considered to be remote if it is a non urban municipality, which is neither periurban nor is it an Alpine tourist resort.

E.2. DETAILED METHODOLOGIES TO IDENTIFY REMOTE AREAS PER COUNTRY

This appendix details the methodology developed by each country to identify remote areas.

E.2.1. Austria

The indicators used by Austria are the following:

- Inhabitants of territory served by on-demand public transport system;
- Population density in served regions;
- Importance of tourism;
- Accessibility of regions.

An excellent source for all relevant data of municipalities is “a view on the municipality” from Statistics Austria (www.statistik.at/blickgem/index.jsp). This data provides demographic development (e.g. growing or shrinking population, proportion of under 15 and elderly people over 65) and employment and jobs in the communities and commuter statistics.

Moreover, some websites of the municipalities provide relevant information.

E.2.1.1. Inhabitants of territory served by the on-demand public transport system

Statistics Austria (the national office for statistics) provides a table with the inhabitants of all Austrian municipalities, actual from January 1st, 2012)¹⁷. For our study it is interesting to consider the population outside a regional centre, where the public transport service to remote regions start, because the centres are more densely populated than the served remote municipalities.

E.2.1.2. Population density in served regions

The Austrian Conference on Spatial Planning – ÖROK a cooperation board of national and regional authorities provides many maps with regional indicators in the Internet, so a map to the population density is available. Two different variants of indicators are available:

- Inhabitants in the whole administrative territory;
- Inhabitants in the settlements of the territory.

In the Alpine Space, the administrative territories are much bigger than the geographic coverage of settlements, because the mountains are not suitable for settlements. Illustration 18 shows the example of East Tyrol, where some case studies are situated. Illustration 19 shows that the population density for the entire administrative area in the Alpine space is very low.

¹⁷ See www.statistik.at/web_de/klassifikationen/regionale_gliederungen/gemeinden/index.html, accessed August 28, 2013

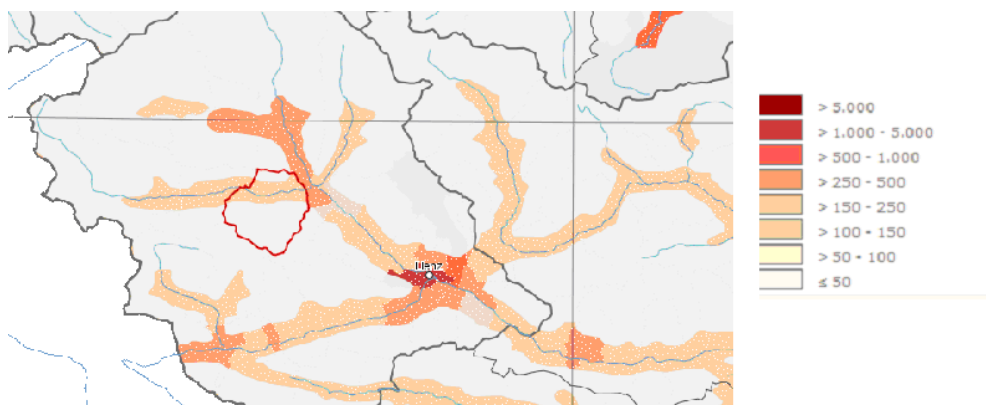


Illustration 18 – Population density in East Tyrol, settlement area of municipalities
(Inhabitants per square km in the year 2005) - Source: www.oerok-atlas.at/gui/map.php

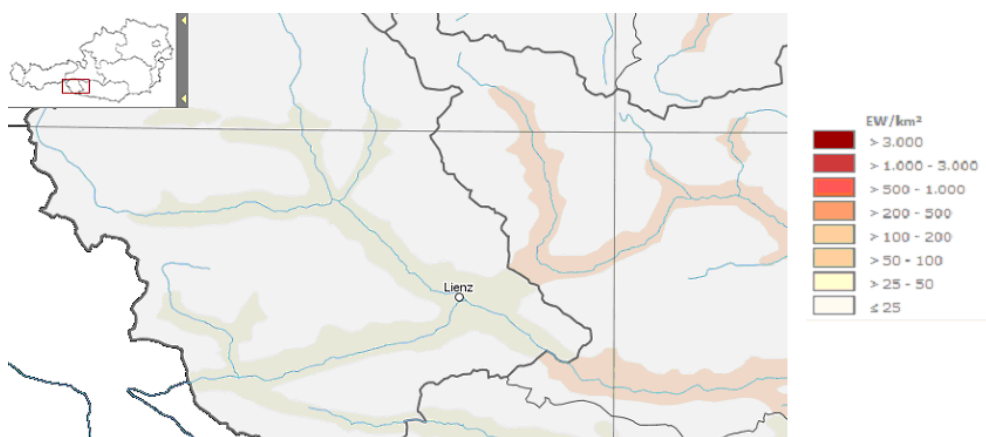


Illustration 19 – Population density in East Tyrol, administrative territory of municipalities
(Inhabitants per square km in the year 2005) - Source: www.oerok-atlas.at/gui/map.php

E.2.1.3. Importance of Tourism

Also tourism data are well documented in Austria. Statistics Austria provides interactive maps on arrivals, overnight stays, number of guest beds. A good overview of tourism gives the tourism intensity factor, meaning overnight stays per capita. This factor is shown in Illustration 20:

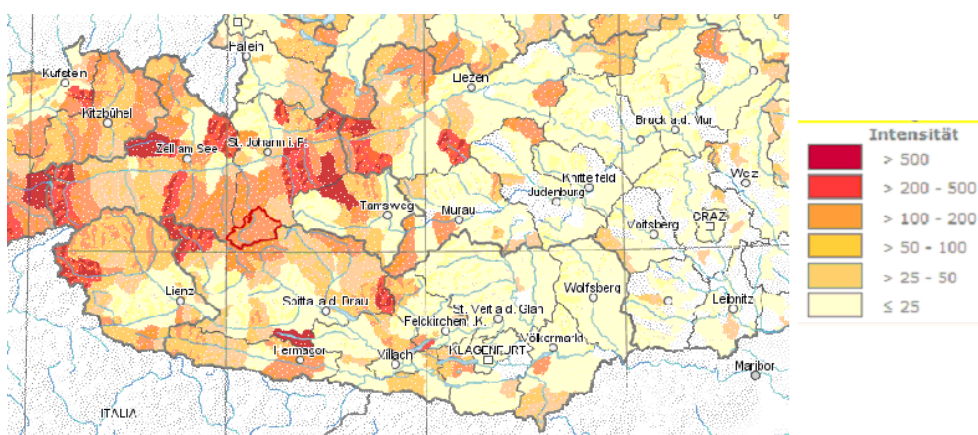


Illustration 20 – Overnight stays per capita in Austria
Source: www.oerok-atlas.at/gui/map.php

E.2.1.4. Accessibility of Regions

A main factor for the selection of case studies is accessibility, with a focus on public transport, because the road network in Austria is dense and in good condition almost everywhere. The Austrian Conference on Spatial Planning carried out an analysis on accessibility by public transport and by private cars. The currently available data are from the year 2005.

The accessibility analysis by ÖROK gives a first overview. For a more solid analysis, more detailed information is useful, therefore in the Austrian contribution for every case study region, the current timetables of scheduled buses and trains will be analysed. The results of these timetable-checks will show in many cases, how valuable on-demand public transport services are for the mobility of people without private cars and also for groups who cannot drive a car because of health or age. In some remote regions, there is no public transport by bus or train and on-demand public transport services are the only means of mobility for people who cannot use cars or bikes.

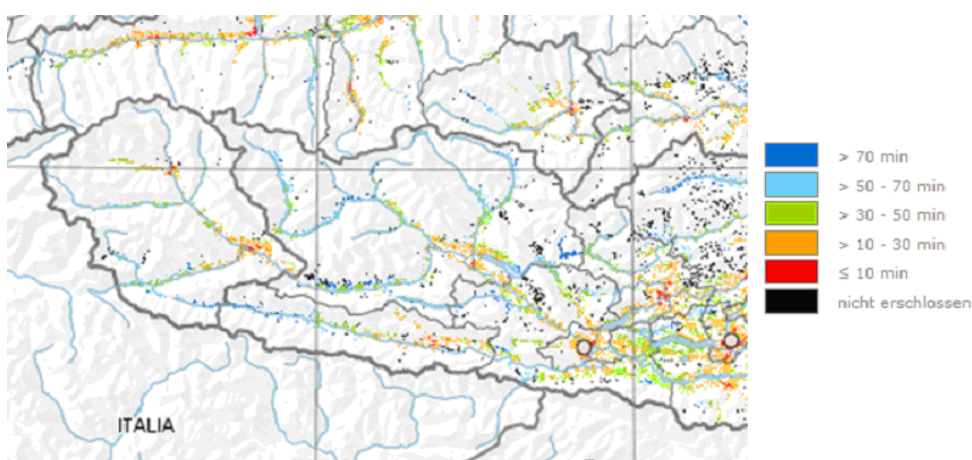


Illustration 21 – Accessibility by public transport in East Tyrol and Carinthia
(travel time to the next regional centre in minutes – black: communities without any public transport connections) - Source: www.oerok-atlas.at/gui/map.php

As an example for a timetable analysis in a rural, remote region, figure 4 shows the connections from the regional centre Lienz to the Defreggen Valley, where the minibus service “Def-mobil” is provided. Typical for rural bus services in remote, rural regions are many footnotes in the bus timetables, often an indicator that buses are focused on schoolchildren commuting (the shown case is not the worst case).

Lienz in Osttirol Bahnhof (Vorplatz) – St.Jakob in Defereggen Ort

Ab Zug	An Umsteigen	Ab Zug	An Dauer Verkehrstage
9:05 Bus 4412	9:29 Huben in Osttirol Ort	9:31 Bus 4414	10:04 0:59 Mo - Sa a
12:05 Bus 4412	12:29 Huben in Osttirol Ort	12:31 Bus 4414	13:04 0:59 Mo - Sa a
13:05 Bus 4412	13:29 Huben in Osttirol Ort	13:31 Bus 4414	14:04 0:59 Mo - Mi, Fr b
14:05 Bus 4412	14:33 Huben in Osttirol Ort	14:35 Bus 4414	15:08 1:03 Mo - Sa a
16:20 Bus 4410	16:40 Huben in Osttirol Ort	16:41 Bus 4414	17:14 0:54 Mo - Mi, Fr b
17:20 Bus 4410	17:40 Huben in Osttirol Ort	17:41 Bus 4414	18:14 0:54 Mo - Fr c
17:20 Bus 4412	17:44 Huben in Osttirol Ort	17:46 Bus 4414	18:19 0:59 So d

Index

- a = nicht 9., 20., 30. Mai, 15. Aug, 26. Okt, 1. Nov
- b = nicht 20., 21. Mai, 8. Jul bis 6. Sep, 1. Nov; auch 16., 23. Mai, 6., 13., 20., 27. Jun, 4. Jul, 12., 19., 26. Sep, 3., 10., 17., 24., 31. Okt, 7., 14., 21., 28. Nov, 5., 12. Dez
- c = nicht 9., 20., 30. Mai, 15. Aug, 1. Nov
- d = auch 9., 20., 30. Mai, 15. Aug, 26. Okt, 1. Nov

Illustration 22 – Typical timetable of scheduled buses in a remote and rural area in East Tyrol
Source: ÖBB timetable information “Scotty” at www.oebb.at

E.2.2. France

E.2.2.1. Databases and measures used

This section presents the databases used to measure each indicator.

a) Municipalities situated beyond the main influence of the metropolitan areas and Alpine cities

The indicator selected for this criterion enabled the identification of municipalities not under the influence of metropolitan areas with more than 5,000 jobs.

Databases were used from the French National Institute of Statistics and Economic Studies (INSEE), and in particular the latest French definition of urban areas from the year 2010¹⁸. We used the specific indicator called “Catégorie de la commune dans le zonage en aires urbaines 2010” (CATAEU2010, Municipality category in 2010 urban area classification).

Table 10 shows details of the urban area zoning:

id	Observations
111	Municipality belonging to a large metropolitan area (more than 10,000 jobs)
112	Municipality belonging to a suburb of a large metropolitan area
120	Commuter town belonging to a large metropolitan area
211	Municipality belonging to a medium sized metropolitan area (from 5,000 to 10,000 jobs)
212	Municipality belonging to the suburb of medium sized metropolitan area
221	Municipality in a small urban area (from 1,500 to 5,000 jobs)
222	Suburb of small sized urban area
300	Other commuter towns
400	Isolated municipality outside the influence of the urban area

Table 10 – Urban area classification in France
Identified territories are the municipalities with an “id” other than “111”, “112”, “120”, “211” and “212”.

b) Municipalities with limited activities/amenities

The indicator selected for this criteria enabled the identification of municipalities that are not under the influence of urban areas with less than 5,000 jobs.

INSEE databases were used, and in particular the last French definition of urban areas (from the year 2010)¹⁹. We used the specific indicator called “Type de commune” (“Type of municipality”). Here, each municipality is identified as either an “urban” municipality or a “rural” municipality.

Thus, identified territories include municipalities that are not under the influence of metropolitan areas of more than 5,000 jobs (see previous indicator) and that are characterized as “rural”.

¹⁸ Information is available at: www.insee.fr/fr/methodes/default.asp?page=zonages/aires_urbaines.htm

¹⁹ Available at: www.insee.fr/fr/methodes/default.asp?page=zonages/unites_urbaines.htm

c) Sparsely populated municipalities

The average population density of each municipality was calculated by using the INSEE database that provides the area (in square km) and the population of each municipality in the National General Population Census²⁰.

In order to identify sparsely populated municipalities, it was decided to select only municipalities with a density of less than 50 inhabitants per square km.

d) Municipalities without public transport infrastructure

In order to identify municipalities without public transport infrastructure, it was decided to focus on railway infrastructures, regional bus lines and stations, and other local bus lines operated by local authorities located in the Alpine Convention perimeter.

Railway infrastructures

Railway infrastructures were located on maps thanks to a database available on the dedicated SNCF open-data website (<http://test.data-sncf.com>). We focused on the list of passenger stations of the National Railway Network with detailed location coordinates (<http://test.data-sncf.com/index.php/gares-connexions.html>). Regional Express Train stations (TER) and regular Intercity Train stations were identified.

The database does not include:

- High speed train stations. This was not a real problem within the frame of our study, since in most cases, high speed train stations also provide Regional Express Train lines.
- Regional bus lines and stations that are identified like railway infrastructures. Within the frame of our study, we needed to take into account these bus lines in both the Rhône-Alpes and the Provence-Alpes-Côte d’Azur Regions.

Regional bus lines and stations

In the case of the Rhône-Alpes Region, we compared information from the SNCF open-data website and regional maps of the Regional Express Network²¹. We were able to identify some stations of regional bus lines operated by SNCF.

In the case of the Provence-Alpes-Côte d’Azur Region, we were able to identify Regional Bus Express lines and stations thanks to the regional dedicated website www.info-ler.fr/ that hosts the network maps and timetables of the network.

In both regions, we entered these stations (when they were different from railway stations) into a Geographical Information System in order to identify in which municipalities they are located.

Local authority bus lines and stations

Thanks to different local authority websites and online timetable information about each bus network, we created an Excel table of the number of regular bus lines that offer services per municipality. We excluded seasonal and school bus services.

This work was done for each of the following French “départements”: Isère, Drôme, Savoie, Haute-Savoie, Hautes-Alpes, Alpes de Haute-Provence, Alpes Maritimes, Var and Vaucluse. Around 9109 bus stops were identified in municipalities of the Alpine Convention perimeter. The number of bus lines per municipality is

²⁰ Available at: www.insee.fr/fr/themes/detail.asp?reg_id=99&ref_id=base-cc-resume-stat

²¹ Available at: www.openstreetmap.org/browse/relation/2827194

between 0 and 32 lines (the latter being for metropolitan areas or large cities). The average within the Alpine Convention Perimeter is around 1,2 lines per municipality.

Since the bus networks are well developed in all the Alpine territories, we did not necessarily use this transport service indicator as a discriminatory factor for identifying remote or sparsely areas. It was used as a final indicator in order to provide certain characteristics of the final identified territories.

e) Municipalities outside tourist hotspots

In order to identify the municipalities outside tourist hotspots, we referred to an indicator developed in the Magali Talandier PhD (method for estimating tourist presence). The indicator estimates the tourist presence in the municipality as a function of the inhabitants incomes and a tourist potential index:

$$\text{TXPRES} = 69,87 - 0,0008 \cdot \text{REV/HAB} + 29,44 \cdot \text{IPAT}$$

Where:

- “REV/HAB” is the inhabitants’ incomes²². They are estimated thanks to the INSEE database (Net household income registered in 2009, number of inhabitants in 2010);
- “IPAT” is the tourist potential index estimated thanks to the INSEE database: number of rooms in classified hotels and in unclassified chain hotels in 2010, number of pitches in classified campsites in 2010, number of holiday/weekend homes and occasional accommodation in 2010²³.

Thus, municipalities outside tourist hotspots are those where the indicator value is below the reference value of “100” (when it is over “100”, the municipality is considered popular with tourists).

f) Municipalities in demographic decline

Thanks to the National General Population Census provided by the INSEE, the number of inhabitants per municipality is available for the years 2006 and 2010.

Thus, identified territories are municipalities where the population in 2010 was lower than in 2006.

E.2.2.2. Precautions required for certain indicators

All the indicators were quite easy to measure. However, two indicators were implemented with precaution.

a) Tourist presence

The indicator measured is an approximation since it is based on an equation established in Talandier’s PhD (2007). The equation is used for data from 2009-2010.

Thus, in order to obtain accurate results, we should have identified all the parameters of the equation between:

- the inhabitants’ incomes and the tourist potential index (existing data bases at the municipal level)
- and tourist presence statistics available at a regional level (Tourism Ministry sources).

We did not identify parameters because we assumed that parameter results between the year 2007 and 2009-2010 were very close.

²² Available at: www.insee.fr/fr/themes/detail.asp?reg_id=99&ref_id=base-cc-irpp-nouv-serie

²³ Available at: www.insee.fr/fr/bases-de-donnees/default.asp?page=statistiques-locales/tourisme.htm

b) Public transport services

As previously mentioned, the SNCF database used (<http://test.data-sncf.com/>) to identify railway infrastructures does not include high speed train (TGV) stations.

19 high speed train stations are located in the Alpine Convention perimeter:

- 14 stations are located in metropolitan areas with more than 5,000 jobs. They are therefore not taken into account since the first indicator excludes municipalities that are under the influence of metropolitan areas with more than 5,000 jobs;
- 5 stations remain in the territory: Modane, Moûtiers-Salins-Brides-les-Bains, Saint-Avre-La Chambre, Saint-Jean-de-Maurienne/Arvan and Saint-Michel-Valloire. There are all located in the Savoie. However, they were not taken into account since the second indicator excludes municipalities that are under the influence of urban with less than 5,000 jobs.

We determined the number of regular local authority bus lines services per municipality.

As mentioned, we did not necessarily consider this indicator as discriminatory when identifying remote territories. It was used in order to provide certain characteristics of final identified territories.

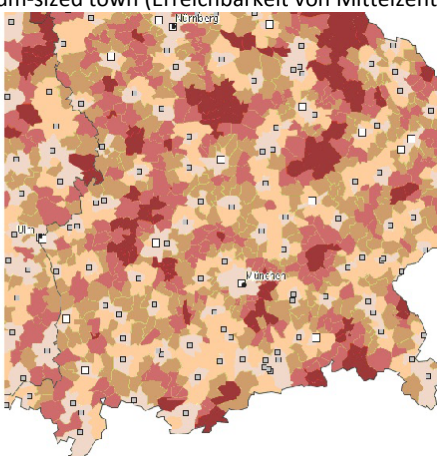
However, since bus service information was very limited, these services could only be considered as a very partial characterization of remote territories. In order to be more relevant, it would be useful to obtain additional information such as bus line frequency, the quality of services, bus times, the number of seats and kilometres offered, etc.

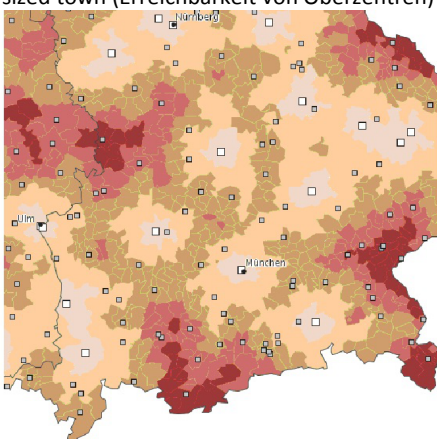
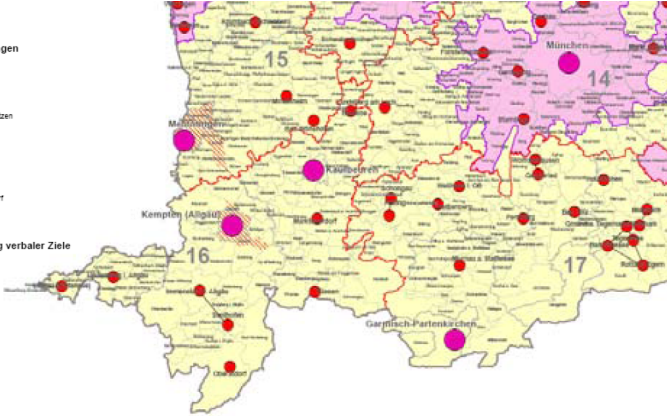
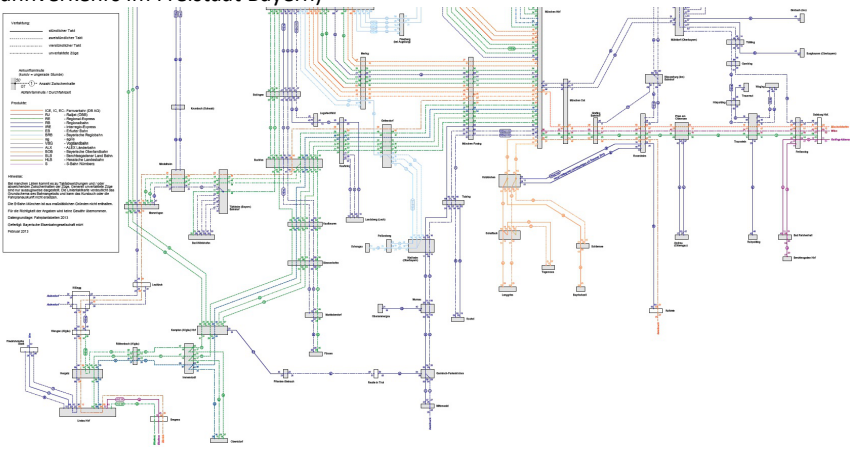
It remains difficult to define and measure a more specific bus service indicator that could be useful to identify remote territories, since access to information and databases is limited to local authority bus timetables (only available on websites). This work was quite time-consuming in terms of the added-value for this study.


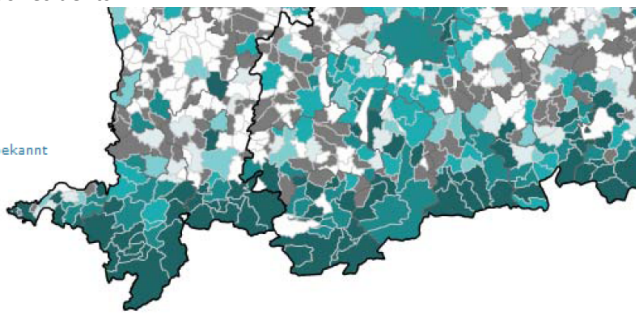
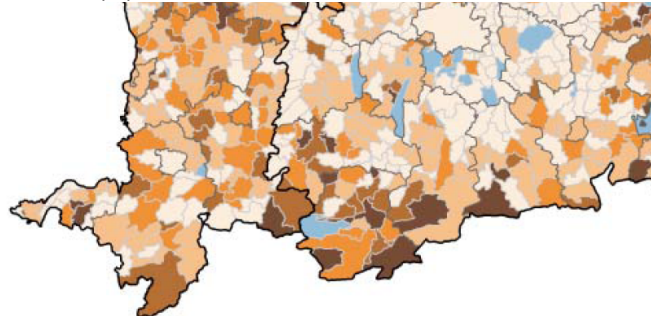
E.2.3. Germany

E.2.3.1. Situation in Germany in relation to the features of remote areas

The following table depicts available data with regards to indicators as proposed by the Subgroup. Data sources as well as data holders are indicated in the “Source” column.

Feature	Associated indicators in Germany	Source
Situated beyond the main influence areas of the metropolises and Alpine cities	<p>Accessibility of medium-sized town (Erreichbarkeit von Mittelzentren)</p> <p>Erreichbarkeit von Mittelzentren</p> <p>Namst: keine Auswahl</p> <p>Wert: keine Auswahl</p> <p>Pkw-Fahrzeit zum nächsten Mittel- oder Oberzentrum 2012 in Minuten</p> <p>bis unter 5</p> <p>5 bis unter 10</p> <p>10 bis unter 15</p> <p>15 bis unter 20</p> <p>20 bis unter 25</p> <p>25 und mehr</p> 	<p>Federal Spatial Observatory (Raumbeobachtung des Bundes)</p> <p>http://78.46.82.146/raumbeobachtung/</p>

Feature	Associated indicators in Germany	Source
	<p>Accessibility of large-sized town (Erreichbarkeit von Oberzentren) Erreichbarkeit von Oberzentren</p> <p>Name: keine Auswahl Wert: keine Auswahl</p> <p>Plw.Fahrzeit zum nächsten Oberzentrum 2012 in Minuten</p> <ul style="list-style-type: none"> bis unter 15 15 bis unter 30 30 bis unter 45 45 bis unter 60 60 bis unter 75 75 und mehr 	<p>Federal Spatial Observatory (Raumbeobachtung des Bundes) http://78.46.82.146/raumbeobachtung/</p>
Have a limited endowment in smaller cities	<p>Situated outside German DIAMONT labour market regions (within 17 min. drive to next core city (> 5,000 jobs, positive commuter balance, > 10,000 inhabitants): Rosenheim, Kempten (Allgäu), Bad Reichenhall, Freilassing, Wolfratshausen, Garmisch-Partenkirchen, Murnau a. Staffelsee, Prien a. Chiemsee, Wasserburg a. Inn, Traunreut, Traunstein, Trostberg, Penzberg, Schongau, Weilheim i. OB, Lindau (Bodensee), Lindenberg i. Allgäu, Füssen, Marktoberdorf, Immenstadt i. Allgäu, Oberstdorf</p>	DIAMONT project
	<p>Structural map of the State Development Programme” (Strukturkarte des Landesentwicklungsprogramms Bayern 2013)”</p> <p>Ziele der Raumordnung</p> <p>a) Zeichnerisch verbindliche Darstellungen</p> <ul style="list-style-type: none"> Algemeiner ländlicher Raum Ländlicher Raum mit Verdichtungsansätzen Verdichtungsraum Raum mit besonderem Handlungsbedarf <p>b) Zeichnerisch erläuternde Darstellung verbaler Ziele</p> <ul style="list-style-type: none"> Oberzentrum Mittelzentrum  <p>Maßstab: 1 : 425 000</p>	<p>www.stmwi.bayern.de/fileadmin/user_upload/stmwivt/themen/landesentwicklung/dokumente_und_cover/instrumente/lep_08_2013/anhang_2_-_strukturkarte.pdf</p>
Do not have the transport infrastructure and needed to compensate for the distance to urban centres	<p>Service frequency map of the Bavarian Railway Association (Linientaktkarte des Bahnverkehrs im Freistaat Bayern)</p> 	<p>Bavarian Railway Association http://beg.bahnland-bayern.de/planung/verkehrplanung?file=tl_files/corporate-portal/files/planung/verkehrplanung/beg_linientaktkarte_bayern.pdf</p>

Feature	Associated indicators in Germany	Source
	<p>Rail commuter relations (Übersichtskarte der Pendlerstrecken in Bayern)</p> 	
Outside tourist hotspots	<p>Overnight stays per 1000 residents</p> <ul style="list-style-type: none"> 176,0 - 1.698,0 1.698,1 - 3.392,0 3.392,1 - 6.339,0 6.339,1 - 16.371,0 16.371,1 - 441.404,0 Zahlenwert geheim oder unbekannt nichts vorhanden 	Bavarian state office for statistics and data processing (Bayerisches Landesamt für Statistik und Datenverarbeitung)
In demographic decline	<p>Population in 2002 in relation to population 2012 in %</p> <ul style="list-style-type: none"> -30,9 - -3,2 -3,1 - 0,1 0,2 - 2,8 2,9 - 5,8 5,9 - 38,9 Aussage nicht sinnvoll 	Bavarian state office for statistics and data processing (Bayerisches Landesamt für Statistik und Datenverarbeitung)

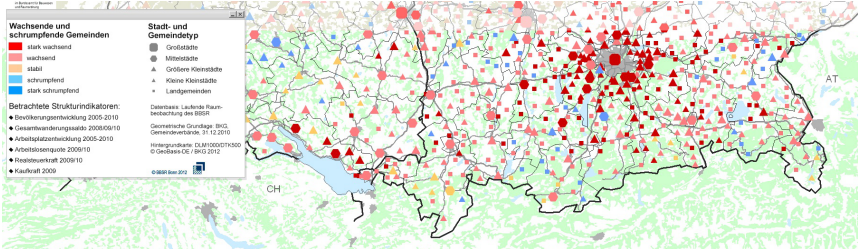
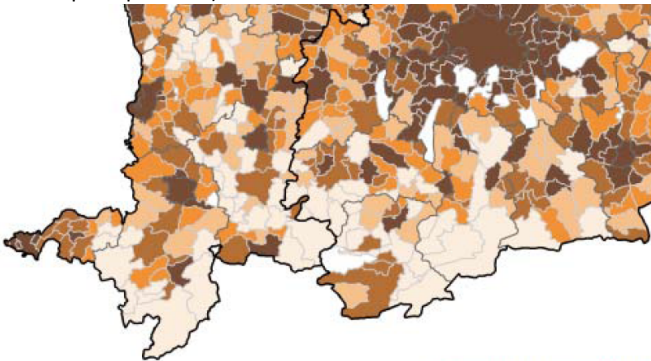
Feature	Associated indicators in Germany	Source
	<p>Aggregated indicator “Growing and shrinking municipalities”</p> <p>The aggregated indicator comprises the following indicators:</p> <ul style="list-style-type: none"> Population change 2005-2010 Net migration 2008/09/10 Job market development 2005-2010 Unemployment rate 2009/2010 Taxable capacity 2009/10 Purchasing power 2009 	<p>Federal Spatial Observatory (Raumbeobachtung des Bundes)</p> <p>http://info.bbr.bund.de/imagemap/swsgem/web/index.html</p>
Sparsely populated	<p>Population density (residents per square km)</p> 	

Table 11 – Indicators used within the German Alpine Convention Area

E.2.3.2. Indicators values for remote territories: methodology details and information

The column heads contain threshold values that have been set to identify disproportionately peripheral municipalities. Municipalities meeting the values are not considered as remote, whilst municipalities failing to fulfil these threshold values are considered as remote. A regular font indicates that the municipality has better accessibility than the threshold values, a bold font shows that it is below these threshold values and thus shows signs of remoteness.

As already explained in the report, not all municipalities in a region feature the same extent of remoteness, yet it is necessary to include less remote territories in the context of potential study areas. Therefore we suggest splitting municipalities into the following two categories:

- Core municipality: Municipalities that meet at least half of the remoteness indicators are defined as core municipalities.
- Additional municipality: Municipalities meeting some but less than half of the indicators are defined as additional municipalities that while not remote in a strict sense still qualify as potential study areas.

Region	Municipality	Population density ²⁴ (bold: below 60 residents per square km)	Hourly train service	Accessibility of medium sized town ²⁵ (bold: above 15 min. drive)	Accessibility of larger-sized town ²⁶ (bold: above 60 min. drive)	DIAMONT labour market region ²⁷	Population change 2001-2011 (bold: below -1%)	Core / Additional municipality
Oberallgäu/ Hörnergruppe	Oberstdorf	43	Yes	< 15 min.	< 60 min.		-1,3	Additional
	Hindelang	35	No	< 15 min.	< 60 min.		1	Additional
	Obermaiselstein	39	No	> 15 min.	< 60 min.		8,5	Core
	Balderschwang	6	No	> 15 min.	< 60 min.		25	Core
	Ofterschwang	107	No	> 15 min.	< 60 min.		9,3	Additional
	Bolsterlang	53	No	> 15 min.	< 60 min.		6,1	Core
	Wertach	54	No	> 15 min.	< 60 min.		3,8	Core
	Sonthofen	449	Yes	< 15 min.	< 60 min.		-2,2	Additional
	Fischen i. Allgäu	223	Yes	< 15 min.	< 60 min.		5,7	Additional
Ammergau/ Halblech	Unterammergau	49	Yes	> 15 min.	> 60 min.	Outside	1,2	Core
	Oberammergau	170	Yes	> 15 min.	> 60 min.		-4,2	Core
	Ettal	54	No	> 15 min.	> 60 min.		-4,8	Core
	Saulgrub	46	Yes	> 15 min.	< 60 min.		-3,0	Core
	Schwaigen	27	No	> 15 min.	> 60 min.		-4,1	Core
	Bad Bayersoien	65	No	> 15 min.	> 60 min.		-0,4	Core
	Wildsteig	27	No	> 15 min.	< 60 min.		5,8	Core
	Halblech	27	No	< 15 min.	< 60 min.		-4,4	Core
	Schwangau	45	No	< 15 min.	< 60 min.		0,9	Additional
Werdenfeller Land	Garmisch-Partenkirchen	127	Yes	< 15 min.	> 60 min.		-1,7	Additional
	Grainau	72	No	< 15 min.	> 60 min.		-6,4	Core
	Farchant	145	Yes	< 15 min.	< 60 min.		0,2	Additional
	Krün	54	No	> 15 min.	> 60 min.		-1,0	Core
	Mittenwald	56	Yes	> 15 min.	> 60 min.		-8,3	Core
Isarwinkel/ Achenpaß	Jachenau	7	No	> 15 min.	> 60 min.	Outside	-2,9	Core
	Lenggries	40	Yes	< 15 min.	< 60 min.		5,3	Additional
	Kreuth	31	No	< 15 min.	< 60 min.	Outside	-0,3	Core
	Wallgau	41	No	> 15 min.	> 60 min.		-0,6	Core
Südliches Oberland ²⁸	Bayrischzell	20	Yes	> 15 min.	< 60 min.	Outside	0,5	Core
	Fischbachau	72	Yes	< 15 min.	< 60 min.	Outside	-0,5	Additional
	Hausham	359	Yes	< 15 min.	< 60 min.	Outside	-3,7	Additional
	Miesbach	344	Yes	< 15 min.	< 60 min.	Outside	0,6	Additional
	Rottach-Egern	95	No	< 15 min.	< 60 min.	Outside	8,5	Additional
	Schliersee	84	Yes	< 15 min.	< 60 min.	Outside	2,7	Additional
	Tegernsee	172	Yes	< 15 min.	< 60 min.	Outside	-1,7	Additional

²⁴ The least densely populated county in Bavaria (Neustadt a.d. Waldnaab) features a population density of 68 residents per square km. To identify sparsely populated municipalities, the threshold has therefore been set to 60.

²⁵ Accessibility standards strongly depend on the type of town we refer to. While featuring a very good accessibility to medium-sized towns, the Berchtesgadener Land e.g. is one of the least accessible areas in the German Alpine Convention area in regard to major cities, partly also due to the fact that Austrian cities are not included in the Federal Spatial Observatory. Garmisch-Partenkirchen is considered as a medium-sized town.

²⁶ Central-place category of large-sized towns includes Kempten and Rosenheim in the German Alpine Convention area.

²⁷ The INTERREG IIIB-project DIAMONT has delineated labour market regions, formed by a major city above 10,000 residents and 5,000 work places and municipalities within a catchment area of a 17 minute-drive.

²⁸ Only one municipality qualifies as core peripheral municipality. Therefore, this region has been excluded from the in-depth-analysis

Region	Municipality	Population density (bold: below 60 residents per square km)	Hourly train service	Accessibility of medium sized town (bold: above 15 min. drive)	Accessibility of larger-sized town (bold: above 60 min. drive)	DIAMONT labour market region	Population change 2001-2011 (bold: below -1%)	Core / Additional municipality
Achtental, Kaiserwinkel	Schlechting	38	No	> 15 min.	< 60 min.	Outside	-3,7	Core
	Unterwössen	85	No	> 15 min.	< 60 min.		4,3	Additional
	Marquartstein	236	No	> 15 min.	< 60 min.		4,1	Additional
	Reit im Winkl	33	No	> 15 min.	< 60 min.		-11	Core
	Ruhpolding	42	Yes	> 15 min.	< 60 min.		-0,3	Core
Südliches Berchtesgadener Land	Schönau am Königssee	41	No	< 15 min.	> 60 min.		-3,0	Core
	Ramsau bei Berchtesgaden	14	No	< 15 min.	> 60 min.		-0,1	Core
	Schneizlreuth	13	No	< 15 min.	< 60 min.		-8,1	Core
	Bischofswiesen	122	Yes	< 15 min.	> 60 min.		3,2	Additional
	Berchtesgaden	217	Yes	< 15 min.	> 60 min.		0,9	Additional
	Marktschellenberg	102	No	< 15 min.	< 60 min.		0,4	Additional

Table 12 – Details of indicator values per remote municipality

E.3. LIST OF REMOTE MUNICIPALITIES PER COUNTRY

This appendix presents the list of identified remote territories in each country of the Alpine Convention perimeter.

E.3.1. Austria

The municipalities that “host” sustainable mobility solutions highlighted in Austria are the following:

Land	Municipality	Core / Additional municipality	Alpine Convention perimeter
Burgenland	Breitenbrunn		
Burgenland	Mörbisch am See		
Burgenland	Purbach am Neusiedler See		
Burgenland	Pöttsching		
Kärnten	Albeck		Yes
Kärnten	Bad Bleiberg		Yes
Kärnten	Bleiburg		Yes
Kärnten	Deutsch-Griffen		Yes
Kärnten	Feistritz a.d. Gail		Yes
Kärnten	Feistritz i. R.		Yes
Kärnten	Ferndorf		Yes
Kärnten	Fresach		Yes
Kärnten	Glödnitz		Yes
Kärnten	Gurk		Yes
Kärnten	Hohenthurn		Yes
Kärnten	Keutschach		Yes
Kärnten	Köttmannsdorf		Yes
Kärnten	Lavamünd		Yes
Kärnten	Ludmannsdorf		Yes
Kärnten	Magdalensberg		Yes
Kärnten	Maria Rain		Yes
Kärnten	Maria Wörth		Yes
Kärnten	Metnitz		Yes
Kärnten	Moosburg		Yes

Land	Municipality	Core / Additional municipality	Alpine Convention perimeter
Kärnten	Neuhaus		Yes
Kärnten	Nötsch		Yes
Kärnten	Radenthein		Yes
Kärnten	Rosegg		Yes
Kärnten	Schiefling		Yes
Kärnten	St. Jakob i. Ros.		Yes
Kärnten	St. Stefan i. G.		Yes
Kärnten	Stockenboi		Yes
Kärnten	Straßburg		Yes
Kärnten	Weitensfeld		Yes
Salzburg	Bischofshofen		Yes
Salzburg	Pfarrwerfen		Yes
Salzburg	Werfenweng		Yes
Salzburg	Göriach		Yes
Salzburg	Lessach		Yes
Salzburg	Mariapfarr		Yes
Salzburg	Mauterndorf		Yes
Salzburg	Muhr		Yes
Salzburg	Ramingstein		Yes
Salzburg	Sankt Andrä im Lungau		Yes
Salzburg	Sankt Margarethen im Lungau		Yes
Salzburg	Sankt Michael im Lungau		Yes
Salzburg	Tamsweg		Yes
Salzburg	Thomatal		Yes
Salzburg	Tweng		Yes
Salzburg	Unternberg		Yes
Salzburg	Weißpriach		Yes
Salzburg	Zederhaus		Yes
Niederösterreich	Kaumberg		Yes
Niederösterreich	Altenmarkt an der Triesting		Yes
Niederösterreich	Hainfeld		Yes
Niederösterreich	Weissenbach an der Triesting		Yes
Niederösterreich	Mitterbach am Erlaufsee		Yes
Niederösterreich	Gaming		Yes
Steiermark	Mariazell		Yes
Steiermark	Hieflau		Yes
Steiermark	Admont		Yes
Steiermark	Ardning		Yes
Steiermark	Gams		Yes
Steiermark	Johnsbach		Yes
Steiermark	Landl		Yes
Steiermark	Palfau		Yes
Steiermark	St.Gallen		Yes
Steiermark	Weißbach		Yes
Steiermark	Weng		Yes
Steiermark	Dürnstein		Yes
Steiermark	Frojach		Yes
Steiermark	Krakaudorf		Yes
Steiermark	Krakauhintermühlen		Yes
Steiermark	Krakauschatten		Yes
Steiermark	Kulm		Yes
Steiermark	Laßnitz		Yes
Steiermark	Mariahof		Yes
Steiermark	Mühlen		Yes
Steiermark	Murau		Yes
Steiermark	Neumarkt		Yes
Steiermark	Niederwölz		Yes

Land	Municipality	Core / Additional municipality	Alpine Convention perimeter
Steiermark	Oberwölz		Yes
Steiermark	Oberwölz		Yes
Steiermark	Perchau		Yes
Steiermark	Predlitz		Yes
Steiermark	Ranten		Yes
Steiermark	Rinegg		Yes
Steiermark	St.Blasen		Yes
Steiermark	St.Georgen		Yes
Steiermark	St.Lambrecht		Yes
Steiermark	St.Lorenzen		Yes
Steiermark	St.Marein		Yes
Steiermark	St.Peter		Yes
Steiermark	Scheifling		Yes
Steiermark	Schöder		Yes
Steiermark	Schönberg		Yes
Steiermark	Stadl		Yes
Steiermark	Stolzalpe		Yes
Steiermark	Teufenbach		Yes
Steiermark	Triebendorf		Yes
Steiermark	Winklarn		Yes
Steiermark	Zeutschach		Yes
Steiermark	St.Ruprecht		Yes
Tirol	Hopfgarten im Deferegggen		Yes
Tirol	St Jakob im Deferegggen		Yes
Tirol	St Veit im Deferegggen		Yes
Vorarlberg	Sulzberg		Yes
Vorarlberg	Riefensberg		Yes
Vorarlberg	Doren		Yes
Vorarlberg	Krumbach		Yes
Vorarlberg	Alberschwende		Yes
Vorarlberg	Hittisau		Yes
Vorarlberg	Langenegg		Yes
Vorarlberg	Lingenau		Yes
Vorarlberg	Egg		Yes
Vorarlberg	Sibratsgfall		Yes
Vorarlberg	Schwarzenberg		Yes
Vorarlberg	Andelsbuch		Yes
Vorarlberg	Bezau		Yes
Vorarlberg	Reuthe		Yes
Vorarlberg	Bizau		Yes
Vorarlberg	Mellau		Yes
Vorarlberg	Schnepfau		Yes
Vorarlberg	Schopperrau		Yes
Vorarlberg	Au		Yes
Vorarlberg	Damüls		Yes
Vorarlberg	Fontanella		Yes
Vorarlberg	Warth		Yes
Vorarlberg	Schröcken		Yes
Vorarlberg	Sonntag		Yes
Vorarlberg	Blons		Yes
Vorarlberg	St. Gerold		Yes
Vorarlberg	Thüringerberg		Yes
Vorarlberg	Raggal		Yes
Oberösterreich	Steyr		
Oberösterreich	Windhaag bei Freistadt		
Oberösterreich	Altmünster		Yes
Oberösterreich	Bad Goisern am Hallstättersee		Yes

Land	Municipality	Core / Additional municipality	Alpine Convention perimeter
Oberösterreich	Bad Ischl		Yes
Oberösterreich	Ebensee		Yes
Oberösterreich	Gmunden		Yes
Oberösterreich	Gosau		Yes
Oberösterreich	Grünau im Almtal		Yes
Oberösterreich	Gschwandt		Yes
Oberösterreich	Hallstatt		Yes
Oberösterreich	Kirchham		Yes
Oberösterreich	Laakirchen		
Oberösterreich	Obertraun		Yes
Oberösterreich	Ohlsdorf		
Oberösterreich	Pinsdorf		Yes
Oberösterreich	Roitham		
Oberösterreich	St. Konrad		Yes
Oberösterreich	St. Wolfgang im Salzkammergut		Yes
Oberösterreich	Traunkirchen		Yes
Oberösterreich	Scharnstein		Yes
Oberösterreich	Vorchdorf		
Oberösterreich	Edlbach		Yes
Oberösterreich	Grünburg		Yes
Oberösterreich	Hinterstoder		Yes
Oberösterreich	Kirchdorf an der Krems		
Oberösterreich	Klaus an der Pyhrnbahn		Yes
Oberösterreich	Kremsmünster		
Oberösterreich	Micheldorf in Oberösterreich		Yes
Oberösterreich	Molln		Yes
Oberösterreich	Nußbach		
Oberösterreich	Oberschlierbach		Yes
Oberösterreich	Pettenbach		
Oberösterreich	Ried im Traunkreis		
Oberösterreich	Rosenau am Hengstpaß		Yes
Oberösterreich	Roßleithen		Yes
Oberösterreich	St. Pankraz		Yes
Oberösterreich	Schlierbach		
Oberösterreich	Spital am Pyhrn		Yes
Oberösterreich	Steinbach am Ziehberg		Yes
Oberösterreich	Steinbach an der Steyr		Yes
Oberösterreich	Vorderstoder		Yes
Oberösterreich	Wartberg an der Krems		
Oberösterreich	Windischgarsten		Yes
Oberösterreich	Perg		
Oberösterreich	Rechberg		
Oberösterreich	St. Thomas am Blasenstein		
Oberösterreich	Windhaag bei Perg		
Oberösterreich	Adlwang		
Oberösterreich	Aschach an der Steyr		
Oberösterreich	Bad Hall		
Oberösterreich	Dietach		
Oberösterreich	Gafrenz		Yes
Oberösterreich	Garsten		Yes
Oberösterreich	Großraming		Yes
Oberösterreich	Laussa		Yes
Oberösterreich	Losenstein		Yes
Oberösterreich	Maria Neustift		Yes
Oberösterreich	Pfarrkirchen bei Bad Hall		
Oberösterreich	Reichraming		Yes
Oberösterreich	Rohr im Kremstal		

Land	Municipality	Core / Additional municipality	Alpine Convention perimeter
Oberösterreich	St. Ulrich bei Steyr		Yes
Oberösterreich	Schiedlberg		
Oberösterreich	Sierning		
Oberösterreich	Ternberg		Yes
Oberösterreich	Waldneukirchen		
Oberösterreich	Wolfern		
Oberösterreich	Weyer		Yes
Oberösterreich	Ampflwang im Hausruckwald		
Oberösterreich	Attersee am Attersee		Yes
Oberösterreich	Attnang-Puchheim		
Oberösterreich	Atzbach		
Oberösterreich	Aurach am Hongar		Yes
Oberösterreich	Berg im Attergau		
Oberösterreich	Desselbrunn		
Oberösterreich	Fornach		
Oberösterreich	Frankenburg am Hausruck		
Oberösterreich	Frankenmarkt		
Oberösterreich	Gampern		
Oberösterreich	Innerschwand am Mondsee		Yes
Oberösterreich	Lenzing		
Oberösterreich	Manning		
Oberösterreich	Mondsee		Yes
Oberösterreich	Neukirchen an der Vöckla		
Oberösterreich	Niederthalheim		
Oberösterreich	Nußdorf am Attersee		Yes
Oberösterreich	Oberhofen am Irrsee		Yes
Oberösterreich	Oberndorf bei Schwanenstadt		
Oberösterreich	Oberwang		Yes
Oberösterreich	Ottwang am Hausruck		
Oberösterreich	Pfaffing		
Oberösterreich	Pilsbach		
Oberösterreich	Pitzenberg		
Oberösterreich	Pöndorf		
Oberösterreich	Puchkirchen am Trattberg		
Oberösterreich	Pühret		
Oberösterreich	Redleiten		
Oberösterreich	Redlham		
Oberösterreich	Regau		
Oberösterreich	Rüstorf		
Oberösterreich	Rutzenham		
Oberösterreich	St. Georgen im Attergau		Yes
Oberösterreich	St. Lorenz		Yes
Oberösterreich	Schlatt		
Oberösterreich	Schörfing am Attersee		Yes
Oberösterreich	Schwanenstadt		
Oberösterreich	Seewalchen am Attersee		Yes
Oberösterreich	Steinbach am Attersee		Yes
Oberösterreich	Straß im Attergau		Yes
Oberösterreich	Tiefgraben		Yes
Oberösterreich	Timelkam		
Oberösterreich	Ungenach		
Oberösterreich	Unterach am Attersee		Yes
Oberösterreich	Vöcklabruck		
Oberösterreich	Vöcklamarkt		
Oberösterreich	Weißkirchen im Attergau		Yes
Oberösterreich	Weyregg am Attersee		Yes
Oberösterreich	Wolfsegg am Hausruck		

Land	Municipality	Core / Additional municipality	Alpine Convention perimeter
Oberösterreich	Zell am Moos		Yes
Oberösterreich	Zell am Pettenfirst		

Table 13 – List of the 254 Austrian remote municipalities

E.3.2. France

The entire list of remote municipalities is the following:

Department	Municipality	Core / Additional municipality	Alpine Convention perimeter
Alpes-de-Haute-Provence	Angles	Core	Yes
Alpes-de-Haute-Provence	Aubignosc	Additional	Yes
Alpes-de-Haute-Provence	Auzet	Additional	Yes
Alpes-de-Haute-Provence	Beauvezer	Additional	Yes
Alpes-de-Haute-Provence	Bellaire	Additional	Yes
Alpes-de-Haute-Provence	Blieux	Additional	Yes
Alpes-de-Haute-Provence	Le Caire	Additional	Yes
Alpes-de-Haute-Provence	Le Castellard-Melan	Core	Yes
Alpes-de-Haute-Provence	Castellet-lès-Sausses	Additional	Yes
Alpes-de-Haute-Provence	Châteaufort	Additional	Yes
Alpes-de-Haute-Provence	Colmars	Additional	Yes
Alpes-de-Haute-Provence	Curel	Additional	Yes
Alpes-de-Haute-Provence	Demandlox	Core	Yes
Alpes-de-Haute-Provence	Enchastrayes	Additional	Yes
Alpes-de-Haute-Provence	Ganagobie	Core	Yes
Alpes-de-Haute-Provence	La Garde	Additional	Yes
Alpes-de-Haute-Provence	Larche	Additional	Yes
Alpes-de-Haute-Provence	Lardiers	Additional	Yes
Alpes-de-Haute-Provence	Limans	Additional	Yes
Alpes-de-Haute-Provence	Melve	Additional	Yes
Alpes-de-Haute-Provence	Montjustin	Additional	Yes
Alpes-de-Haute-Provence	Nibles	Additional	Yes
Alpes-de-Haute-Provence	Puimichel	Additional	Yes
Alpes-de-Haute-Provence	Redortiers	Additional	Yes
Alpes-de-Haute-Provence	Revest-Saint-Martin	Additional	Yes
Alpes-de-Haute-Provence	Sainte-Croix-de-Verdon	Additional	Yes
Alpes-de-Haute-Provence	Saint-Geniez	Additional	Yes
Alpes-de-Haute-Provence	Saint-Lions	Additional	Yes
Alpes-de-Haute-Provence	Senez	Core	Yes
Alpes-de-Haute-Provence	Sourribes	Core	Yes
Alpes-de-Haute-Provence	Tartonne	Additional	Yes
Alpes-de-Haute-Provence	Les Thuiles	Additional	Yes
Alpes-de-Haute-Provence	Turriers	Additional	Yes
Alpes-de-Haute-Provence	Ubraye	Additional	Yes
Alpes-de-Haute-Provence	Vachères	Additional	Yes
Alpes-de-Haute-Provence	Valbelle	Additional	Yes
Alpes-de-Haute-Provence	Valernes	Additional	Yes
Alpes-de-Haute-Provence	Vergons	Additional	Yes
Hautes-Alpes	Abriès	Additional	Yes
Hautes-Alpes	Bénévent-et-Charbillac	Additional	Yes
Hautes-Alpes	Le Bersac	Core	Yes
Hautes-Alpes	Bruis	Core	Yes
Hautes-Alpes	La Chapelle-en-Valgodémar	Additional	Yes
Hautes-Alpes	Lagrand	Additional	Yes
Hautes-Alpes	Molines-en-Queyras	Additional	Yes
Hautes-Alpes	Orcières	Additional	Yes
Hautes-Alpes	Les Orres	Additional	Yes
Hautes-Alpes	Ribeyret	Additional	Yes

Department	Municipality	Core / Additional municipality	Alpine Convention perimeter
Hautes-Alpes	Rosans	Additional	Yes
Hautes-Alpes	Saint-André-d'Embrun	Additional	Yes
Hautes-Alpes	Saint-Disdier	Additional	Yes
Hautes-Alpes	Saint-Étienne-en-Dévoluy	Additional	Yes
Hautes-Alpes	Saint-Genis	Additional	Yes
Hautes-Alpes	Saint-Jacques-en-Valgodémar	Core	Yes
Hautes-Alpes	Saint-Michel-de-Chaillol	Additional	Yes
Hautes-Alpes	Saint-Pierre-d'Argençon	Core	Yes
Hautes-Alpes	Saint-Véran	Additional	Yes
Hautes-Alpes	Savournon	Core	Yes
Hautes-Alpes	Trescléoux	Additional	Yes
Hautes-Alpes	Villar-Loubière	Additional	Yes
Alpes-Maritimes	Châteauneuf-d'Entraunes	Additional	Yes
Alpes-Maritimes	Saint-Dalmas-le-Selvage	Additional	Yes
Alpes-Maritimes	Saint-Étienne-de-Tinée	Additional	Yes
Alpes-Maritimes	Saint-Martin-d'Entraunes	Additional	Yes
Alpes-Maritimes	Saint-Martin-Vésubie	Additional	Yes
Alpes-Maritimes	Saint-Sauveur-Sur-Tinée	Additional	Yes
Alpes-Maritimes	Sauze	Additional	Yes
Var	Brenon	Additional	Yes
Vaucluse	Buoux	Core	Yes
Vaucluse	Grambois	Additional	Yes
Vaucluse	Lcaoste	Additional	Yes
Vaucluse	Savoillan	Additional	Yes
Vaucluse	Vagnies	Additional	Yes
Drôme	Arnayon	Additional	Yes
Drôme	Aucelon	Additional	Yes
Drôme	Ballons	Additional	Yes
Drôme	Bouvières	Additional	Yes
Drôme	Le Chaffal	Additional	Yes
Drôme	La Charce	Additional	Yes
Drôme	Chastel-Arnaud	Additional	Yes
Drôme	Châteauneuf-de-Bordette	Core	Yes
Drôme	Châtillon-en-Diois	Additional	Yes
Drôme	Chaudebonne	Additional	Yes
Drôme	La Chaudière	Additional	Yes
Drôme	Chauvac	Additional	Yes
Drôme	Cornillac	Additional	Yes
Drôme	Crupies	Core	Yes
Drôme	Curnier	Additional	Yes
Drôme	Échevis	Additional	Yes
Drôme	Espenel	Additional	Yes
Drôme	Eygalayes	Core	Yes
Drôme	Eygaliers	Additional	Yes
Drôme	Eygluy-Escoulin	Additional	Yes
Drôme	Val-Maravel	Additional	Yes
Drôme	Gumiane	Additional	Yes
Drôme	Izon-la-Bruisse	Additional	Yes
Drôme	Montauban-sur-l'Ouvèze	Additional	Yes
Drôme	Montaulieu	Core	Yes
Drôme	Montferrand-la-Fare	Additional	Yes
Drôme	Montfroc	Additional	Yes
Drôme	Montmaur-en-Diois	Additional	Yes
Drôme	Mornans	Additional	Yes
Drôme	La Motte-Chalançon	Additional	Yes
Drôme	La Motte-Fanjas	Additional	Yes
Drôme	Omlèze	Additional	Yes

Department	Municipality	Core / Additional municipality	Alpine Convention perimeter
Drôme	Pelonne	Additional	Yes
Drôme	Plaisians	Core	Yes
Drôme	Plan-de-Baix	Additional	Yes
Drôme	Le Poët-Célard	Additional	Yes
Drôme	Pommerol	Additional	Yes
Drôme	Poyols	Additional	Yes
Drôme	Les Prés	Additional	Yes
Drôme	Rochechinard	Core	Yes
Drôme	Roussieux	Additional	Yes
Drôme	Saint-Agnan-en-Vercors	Additional	Yes
Drôme	Saint-Benoit-en-Diois	Additional	Yes
Drôme	Sainte-Croix	Additional	Yes
Drôme	Saint-Dizier-en-Diois	Additional	Yes
Drôme	Sainte-Euphémie-sur-Ouvèze	Additional	Yes
Drôme	Saint-May	Additional	Yes
Drôme	Saint-Nazaire-le-Désert	Additional	Yes
Drôme	Saint-Sauveur-Gouvernet	Additional	Yes
Drôme	Souspierre	Additional	Yes
Drôme	Suze	Core	Yes
Drôme	Teyssières	Core	Yes
Drôme	Les Tonils	Additional	Yes
Drôme	Truinas	Core	Yes
Drôme	Vachères-en-Quint	Additional	Yes
Drôme	Vassieux-en-Vercors	Additional	Yes
Drôme	Verclause	Core	Yes
Drôme	Vercoiran	Additional	Yes
Drôme	Véronne	Core	Yes
Drôme	Vers-sur-Méouge	Additional	Yes
Drôme	Villefranche-le-Château	Additional	Yes
Drôme	Villeperdrix	Additional	Yes
Isère	Ambel	Additional	Yes
Isère	Beaufin	Additional	Yes
Isère	Besse	Additional	Yes
Isère	Cordéac	Core	Yes
Isère	Dionay	Additional	Yes
Isère	Entraigues	Additional	Yes
Isère	Serre-Nerpol	Core	Yes
Isère	Ornon	Additional	Yes
Isère	Prunières	Core	Yes
Isère	Rencurel	Core	Yes
Isère	Saint-Christophe-en-Oisans	Additional	Yes
Isère	Saint-Maurice-en-Trièves	Additional	Yes
Isère	La Salette-Fallavaux	Additional	Yes
Isère	Siévoz	Additional	Yes
Isère	Venosc	Additional	Yes
Isère	Villard-Notre-Dame	Additional	Yes
Isère	Villaerd-Eculas	Additional	Yes
Isère	Villard-Reymond	Additional	Yes
Savoie	Les Allues	Additional	Yes
Savoie	Les Avanchers-Valmorel	Additional	Yes
Savoie	Bonneval	Core	Yes
Savoie	Crest-Voland	Additional	Yes
Savoie	La Giettaz	Additional	Yes
Savoie	Hauteluce	Additional	Yes
Savoie	Jarsy	Core	Yes
Savoie	Montgellafrey	Additional	Yes
Savoie	Montricher-Albanne	Additional	Yes

Department	Municipality	Core / Additional municipality	Alpine Convention perimeter
Savoie	Notre-Dame-du-Pré	Additional	Yes
Savoie	Orelle	Additional	Yes
Savoie	Planay	Additional	Yes
Savoie	Sainte-Foy-Tarentaise	Additional	Yes
Savoie	Saint-Martin-de-Belleville	Additional	Yes
Savoie	Saint-Sorlin-d'Arves	Additional	Yes
Savoie	Termignon	Additional	Yes
Savoie	Val-d'Isère	Additional	Yes
Savoie	Valmeinier	Additional	Yes
Savoie	Villarembert	Additional	Yes
Savoie	Villarodin-Bourget	Additional	Yes
Haute-Savoie	Bonnevaux	Additional	Yes
Haute-Savoie	Le Bouchet	Core	Yes
Haute-Savoie	La Clusaz	Additional	Yes
Haute-Savoie	Les Gets	Additional	Yes

Table 14 – List of the 177 French remote municipalities

E.3.3. Germany

The entire list of remote municipalities is the following:

District	Municipality	Core / Additional municipality	Alpine Convention perimeter
Oberallgäu/Hörnergruppe	Balderschwang	Core	Yes
Oberallgäu/Hörnergruppe	Bolsterlang	Core	Yes
Oberallgäu/Hörnergruppe	Fischen i. Allgäu	Additional	Yes
Oberallgäu/Hörnergruppe	Hindelang	Core	Yes
Oberallgäu/Hörnergruppe	Obermaiselstein	Core	Yes
Oberallgäu/Hörnergruppe	Oberstdorf	Additional	Yes
Oberallgäu/Hörnergruppe	Ofterschwang	Core	Yes
Oberallgäu/Hörnergruppe	Sonthofen	Additional	Yes
Oberallgäu/Hörnergruppe	Wertach	Core	Yes
Ammergau/Halblech	Bad Bayersoien	Core	Yes
Ammergau/Halblech	Ettal	Core	Yes
Ammergau/Halblech	Halblech	Additional	Yes
Ammergau/Halblech	Oberammergau	Core	Yes
Ammergau/Halblech	Saulgrub	Core	Yes
Ammergau/Halblech	Schwaigen	Core	Yes
Ammergau/Halblech	Schwangau	Additional	Yes
Ammergau/Halblech	Unterammergau	Core	Yes
Ammergau/Halblech	Wildsteig	Core	Yes
Werdenfelser Land	Farchant	Additional	Yes
Werdenfelser Land	Garmisch-Partenkirchen	Additional	Yes
Werdenfelser Land	Grainau	Core	Yes
Werdenfelser Land	Krün	Core	Yes
Werdenfelser Land	Mittenwald	Core	Yes
Mangfallgebirge	Bayerischzell	Core	Yes
Mangfallgebirge	Fischbachau	Additional	Yes
Mangfallgebirge	Hausham	Additional	Yes
Mangfallgebirge	Miesbach	Additional	Yes
Mangfallgebirge	Rottach-Egern	Additional	Yes
Mangfallgebirge	Schliersee	Additional	Yes
Mangfallgebirge	Tegernsee	Additional	Yes
Isarwinkel/Achenpaß	Jachenau	Core	Yes
Isarwinkel/Achenpaß	Kreuth	Core	Yes
Isarwinkel/Achenpaß	Lenggries	Additional	Yes
Isarwinkel/Achenpaß	Wallgau	Core	Yes
Achental/Kaiserwinkel	Marquartstein	Additional	Yes

District	Municipality	Core / Additional municipality	Alpine Convention perimeter
Achental/Kaiserwinkel	Reit im Winkl	Core	Yes
Achental/Kaiserwinkel	Ruhpolding	Core	Yes
Achental/Kaiserwinkel	Schleching	Core	Yes
Achental/Kaiserwinkel	Unterwössen	Additional	Yes
Südliches Berchtesgadener	Berchtesgaden	Additional	Yes
Südliches Berchtesgadener	Bischofswiesen	Additional	Yes
Südliches Berchtesgadener	Marktschellenberg	Additional	Yes
Südliches Berchtesgadener	Ramsau bei Berchtesgaden	Core	Yes
Südliches Berchtesgadener	Schönau am Königssee	Core	Yes
Südliches Berchtesgadener	Schneizlreuth	Core	Yes

Table 15 – List of the 45 German remote municipalities

E.3.4. Italy

The entire list of remote municipalities is the following:

Province	Municipality	Core / Additional municipality	Alpine Convention perimeter
Turin	Ala di Stura	Core	Yes
Turin	Balme	Core	Yes
Turin	Bobbio Pellice	Core	Yes
Turin	Canischio	Additional	Yes
Turin	Castelnuovo Nigra	Core	Yes
Turin	Ceresole Reale	Core	Yes
Turin	Cesana Torinese	Core	Yes
Turin	Chialamberto	Core	Yes
Turin	Exilles	Core	Yes
Turin	Fenestrelle	Core	Yes
Turin	Frassinetto	Core	Yes
Turin	Giaglione	Additional	Yes
Turin	Groscavallo	Core	Yes
Turin	Ingria	Core	Yes
Turin	Lemie	Core	Yes
Turin	Locana	Core	Yes
Turin	Massello	Core	Yes
Turin	Mattie	Additional	Yes
Turin	Meugliano	Additional	Yes
Turin	Mezzenile	Additional	Yes
Turin	Mompantero	Additional	Yes
Turin	Monastero di Lanzo	Additional	Yes
Turin	Moncenisio	Core	Yes
Turin	Noasca	Core	Yes
Turin	Noavales	Additional	Yes
Turin	Perrero	Core	Yes
Turin	Prali	Core	Yes
Turin	Pramollo	Core	Yes
Turin	Ribordone	Core	Yes
Turin	Ronco Canavese	Core	Yes
Turin	Rorà	Additional	Yes
Turin	Roure	Core	Yes
Turin	Salza di Pinerolo	Core	Yes
Turin	Trausella	Core	Yes
Turin	Traversella	Core	Yes
Turin	Usseaux	Core	Yes
Turin	Usseglio	Core	Yes
Turin	Valprato Soana	Core	Yes
Turin	Vico Canavese	Additional	Yes
Turin	Villar Pellice	Additional	Yes

Province	Municipality	Core / Additional municipality	Alpine Convention perimeter
Turin	Viù	Core	Yes
Vercelli	Alagna Valsesia	Core	Yes
Vercelli	Boccioleto	Core	Yes
Vercelli	Breia	Additional	Yes
Vercelli	Cervatto	Core	Yes
Vercelli	Cravagliana	Core	Yes
Vercelli	Fobello	Core	Yes
Vercelli	Mollia	Core	Yes
Vercelli	Piode	Core	Yes
Vercelli	Rassa	Core	Yes
Vercelli	Rima San Giuseppe	Core	Yes
Vercelli	Rimasco	Core	Yes
Vercelli	Rimella	Core	Yes
Vercelli	Rossa	Additional	Yes
Vercelli	Sabbia	Core	Yes
Vercelli	Scopello	Additional	Yes
Cuneo	Acceglio	Core	Yes
Cuneo	Argentera	Core	Yes
Cuneo	Battifollo	Additional	Yes
Cuneo	Bellino	Core	Yes
Cuneo	Bergolo	Additional	Yes
Cuneo	Bonvicino	Core	Yes
Cuneo	Briga Alta	Core	Yes
Cuneo	Brondello	Additional	Yes
Cuneo	Camerana	Additional	Yes
Cuneo	Canosio	Core	Yes
Cuneo	Caprauna	Core	Yes
Cuneo	Casteldelfino	Core	Yes
Cuneo	Castelletto Uzzone	Additional	Yes
Cuneo	Castellino Tanaro	Additional	Yes
Cuneo	Castelmagno	Core	Yes
Cuneo	Celle di Macra	Core	Yes
Cuneo	Cissone	Core	Yes
Cuneo	Crissolo	Core	Yes
Cuneo	Elva	Core	Yes
Cuneo	Entracque	Core	Yes
Cuneo	Frabosa Soprana	Additional	Yes
Cuneo	Frassino	Additional	Yes
Cuneo	Garessio	Additional	Yes
Cuneo	Gorzegno	Additional	Yes
Cuneo	Gottasecca	Core	Yes
Cuneo	Isasca	Additional	Yes
Cuneo	Levice	Additional	Yes
Cuneo	Limone Piemonte	Additional	Yes
Cuneo	Lisio	Additional	Yes
Cuneo	Macra	Core	Yes
Cuneo	Marmora	Core	Yes
Cuneo	Marsaglia	Additional	Yes
Cuneo	Melle	Core	Yes
Cuneo	Moiola	Additional	Yes
Cuneo	Mombarcaro	Core	Yes
Cuneo	Monasterolo Casotto	Core	Yes
Cuneo	Montaldo di Mondovì	Additional	Yes
Cuneo	Montemale di Cuneo	Additional	Yes
Cuneo	Monterosso Grana	Core	Yes
Cuneo	Oncino	Core	Yes
Cuneo	Ormea	Core	Yes

Province	Municipality	Core / Additional municipality	Alpine Convention perimeter
Cuneo	Pamparato	Core	Yes
Cuneo	Paroldo	Additional	Yes
Cuneo	Pezzolo Valle Uzzone	Core	Yes
Cuneo	Pietraporzio	Core	Yes
Cuneo	Pontechianale	Core	Yes
Cuneo	Pradleves	Core	Yes
Cuneo	Prazzo	Core	Yes
Cuneo	Priola	Additional	Yes
Cuneo	Rittana	Core	Yes
Cuneo	Roaschia	Core	Yes
Cuneo	Roascio	Core	Yes
Cuneo	Roburent	Additional	Yes
Cuneo	Rocca Cigliè	Additional	Yes
Cuneo	Sale San Giovanni	Additional	Yes
Cuneo	Sampeyre	Core	Yes
Cuneo	San Damiano Macra	Core	Yes
Cuneo	Scagnello	Additional	Yes
Cuneo	Torre Bormida	Additional	Yes
Cuneo	Torre Mondovì	Additional	Yes
Cuneo	Torresina	Additional	Yes
Cuneo	Valdieri	Core	Yes
Cuneo	Valloriate	Core	Yes
Cuneo	Vernante	Additional	Yes
Cuneo	Vinadio	Core	Yes
Cuneo	Viola	Additional	Yes
Aosta	Bionaz	Core	Yes
Aosta	Brusson	Additional	Yes
Aosta	Champorcher	Core	Yes
Aosta	Cogne	Core	Yes
Aosta	Courmayeur	Core	Yes
Aosta	Gaby	Core	Yes
Aosta	La Magdeleine	Core	Yes
Aosta	Lillianes	Additional	Yes
Aosta	Ollomont	Core	Yes
Aosta	Perloz	Additional	Yes
Aosta	Pontboset	Core	Yes
Aosta	Rhemes-Notre-Dame	Core	Yes
Aosta	Rhemes-Saint-Georges	Core	Yes
Aosta	Saint-Nicolas	Additional	Yes
Aosta	Saint-Rhémy-en-Bosses	Core	Yes
Aosta	Valsavarenche	Core	Yes
Imperia	Aquila d'Arroschia	Additional	Yes
Imperia	Armo	Core	Yes
Imperia	Borghetto d'Arroschia	Additional	Yes
Imperia	Carpasio	Core	Yes
Imperia	Castel Vittorio	Core	Yes
Imperia	Cosio d'Arroschia	Core	Yes
Imperia	Mendatica	Core	Yes
Imperia	Molini di Triora	Core	Yes
Imperia	Montalto Ligure	Additional	Yes
Imperia	Montegrosso Pian Latte	Core	Yes
Imperia	Olivetta San Michele	Additional	Yes
Imperia	Pigna	Additional	Yes
Imperia	Pornassio	Additional	Yes
Imperia	Rezzo	Core	Yes
Imperia	Triora	Core	Yes
Savona	Bormida	Additional	Yes

Province	Municipality	Core / Additional municipality	Alpine Convention perimeter
Savona	Calizzano	Additional	Yes
Savona	Castelvecchio di Rocca Barbena	Core	Yes
Savona	Massimino	Additional	Yes
Savona	Murialdo	Additional	Yes
Savona	Nasino	Core	Yes
Savona	Osiglia	Additional	Yes
Savona	Rialto	Additional	Yes
Savona	Testico	Additional	Yes
Varese	Curiglia con Monteviasco	Additional	Yes
Varese	Pino sulla Sponda del Lago Maggiore	Additional	Yes
Varese	Tronzano Lago Maggiore	Additional	Yes
Varese	Veduggio	Core	Yes
Como	Cavargna	Additional	Yes
Como	Cusino	Additional	Yes
Como	Dosso del Liro	Core	Yes
Como	Garzeno	Additional	Yes
Como	Livo	Core	Yes
Como	Montemezzo	Additional	Yes
Como	Peglio	Additional	Yes
Como	San Nazzaro Val Cavargna	Additional	Yes
Como	Val Rezzo	Additional	Yes
Sondrio	Albaredo per San Marco	Additional	Yes
Sondrio	Bema	Core	Yes
Sondrio	Campodolcino	Additional	Yes
Sondrio	Chiesa in Valmalenco	Additional	Yes
Sondrio	Fusine	Additional	Yes
Sondrio	Gerola Alta	Core	Yes
Sondrio	Madesimo	Core	Yes
Sondrio	Lanzada	Core	Yes
Sondrio	San Giacomo Filippo	Core	Yes
Sondrio	Spriana	Core	Yes
Sondrio	Tartano	Core	Yes
Sondrio	Torre di Santa Maria	Additional	Yes
Sondrio	Valfurva	Core	Yes
Sondrio	Val Masino	Core	Yes
Sondrio	Vervio	Additional	Yes
Bergamo	Averara	Additional	Yes
Bergamo	Azzone	Additional	Yes
Bergamo	Branzi	Additional	Yes
Bergamo	Carona	Core	Yes
Bergamo	Cusio	Additional	Yes
Bergamo	Foppolo	Core	Yes
Bergamo	Isola di Fondra	Core	Yes
Bergamo	Mezzoldo	Core	Yes
Bergamo	Oltressenda Alta	Core	Yes
Bergamo	Ornica	Core	Yes
Bergamo	Piazzatorre	Additional	Yes
Bergamo	Piazzolo	Additional	Yes
Bergamo	Roncobello	Additional	Yes
Bergamo	Schilpario	Additional	Yes
Bergamo	Valbondione	Core	Yes
Bergamo	Valgoglio	Additional	Yes
Bergamo	Valleve	Core	Yes
Bergamo	Valtorta	Core	Yes
Bergamo	Vedeseta	Core	Yes
Brescia	Capovalle	Additional	Yes
Brescia	Cevo	Additional	Yes

Province	Municipality	Core / Additional municipality	Alpine Convention perimeter
Brescia	Cimbergo	Additional	Yes
Brescia	Corteno Golgi	Additional	Yes
Brescia	Incudine	Additional	Yes
Brescia	Irma	Additional	Yes
Brescia	Lavenone	Additional	Yes
Brescia	Magasa	Core	Yes
Brescia	Monno	Additional	Yes
Brescia	Paisco Lovenò	Core	Yes
Brescia	Pertica Alta	Additional	Yes
Brescia	Pertica Bassa	Additional	Yes
Brescia	Ponte di Legno	Additional	Yes
Brescia	Saviore dell'Adamello	Core	Yes
Brescia	Valvestino	Core	Yes
Brescia	Vione	Additional	Yes
Bolzano	Avelengo	Additional	Yes
Bolzano	Lauregno	Additional	Yes
Bolzano	Martello	Core	Yes
Bolzano	Moso in Passiria	Core	Yes
Bolzano	Predoi	Core	Yes
Bolzano	Proves	Core	Yes
Bolzano	San Pancrazio	Additional	Yes
Bolzano	Selva dei Molini	Core	Yes
Bolzano	Senales	Core	Yes
Bolzano	Stelvio	Core	Yes
Bolzano	Ultimo	Core	Yes
Bolzano	Senale-San Felice	Additional	Yes
Trento	Bersone	Additional	Yes
Trento	Breguzzo	Additional	Yes
Trento	Bresimo	Core	Yes
Trento	Brione	Core	Yes
Trento	Campitello di Fassa	Additional	Yes
Trento	Canal San Bovo	Core	Yes
Trento	Castel Condino	Additional	Yes
Trento	Castello Tesino	Core	Yes
Trento	Cinte Tesino	Core	Yes
Trento	Frassilongo	Additional	Yes
Trento	Grauno	Additional	Yes
Trento	Montagne	Additional	Yes
Trento	Palù del Fersina	Core	Yes
Trento	Pieve Tesino	Core	Yes
Trento	Rabbi	Core	Yes
Trento	Sagron Mis	Additional	Yes
Trento	Valfloriana	Core	Yes
Trento	Vallarsa	Additional	Yes
Verona	Erbezzo	Additional	Yes
Verona	Selva di Progno	Additional	Yes
Vicenza	Cismon del Grappa	Additional	Yes
Vicenza	Laghi	Core	Yes
Vicenza	Lastebasse	Core	Yes
Vicenza	Posina	Core	Yes
Belluno	Auronzo di Cadore	Additional	Yes
Belluno	Cibiana di Cadore	Additional	Yes
Belluno	Colle Santa Lucia	Additional	Yes
Belluno	Comelico Superiore	Additional	Yes
Belluno	Cortina d'Ampezzo	Additional	Yes
Belluno	Canale d'Agordo	Additional	Yes
Belluno	Gosaldo	Core	Yes

Province	Municipality	Core / Additional municipality	Alpine Convention perimeter
Belluno	La Valle Agordina	Additional	Yes
Belluno	Livinallongo del Col di Lana	Core	Yes
Belluno	Lorenzago di Cadore	Additional	Yes
Belluno	Ospitale di Cadore	Core	Yes
Belluno	Rivamonte Agordino	Additional	Yes
Belluno	Rocca Pietore	Additional	Yes
Belluno	San Nicolò di Comelico	Additional	Yes
Belluno	Santo Stefano di Cadore	Additional	Yes
Belluno	Sappada	Additional	Yes
Belluno	Selva di Cadore	Additional	Yes
Belluno	Soverzene	Additional	Yes
Belluno	Sovramonte	Additional	Yes
Belluno	Taibon Agordino	Additional	Yes
Belluno	Vigo di Cadore	Additional	Yes
Belluno	Vodo Cadore	Additional	Yes
Belluno	Zoldo Alto	Additional	Yes
Udine	Ampezzo	Core	Yes
Udine	Cavazzo Carnico	Additional	Yes
Udine	Chiusaforte	Core	Yes
Udine	Comeglians	Additional	Yes
Udine	Dogna	Core	Yes
Udine	Drenchia	Core	Yes
Udine	Forni Avoltri	Core	Yes
Udine	Forni di Sopra	Core	Yes
Udine	Forni di Sotto	Core	Yes
Udine	Grimacco	Additional	Yes
Udine	Lauco	Additional	Yes
Udine	Ligosullo	Core	Yes
Udine	Lusevera	Core	Yes
Udine	Malborghetto Valbruna	Core	Yes
Udine	Moggio Udinese	Core	Yes
Udine	Pontebba	Core	Yes
Udine	Prato Carnico	Core	Yes
Udine	Preone	Core	Yes
Udine	Prepotto	Additional	Yes
Udine	Pulfero	Additional	Yes
Udine	Ravascletto	Additional	Yes
Udine	Resia	Core	Yes
Udine	Resiutta	Additional	Yes
Udine	Rigolato	Additional	Yes
Udine	Savogna	Additional	Yes
Udine	Socchieve	Core	Yes
Udine	Stregna	Additional	Yes
Udine	Taipana	Core	Yes
Udine	Tarvisio	Additional	Yes
Udine	Trasaghis	Additional	Yes
Udine	Verzegnis	Additional	Yes
Gorizia	Dolegna del Collio	Additional	Yes
Pordenone	Andreis	Core	Yes
Pordenone	Barcis	Core	Yes
Pordenone	Cimolais	Core	Yes
Pordenone	Claut	Core	Yes
Pordenone	Clauzetto	Core	Yes
Pordenone	Erto e Casso	Core	Yes
Pordenone	Frisanco	Core	Yes
Pordenone	Tramonti di Sopra	Core	Yes
Pordenone	Tramonti di Sotto	Core	Yes

Province	Municipality	Core / Additional municipality	Alpine Convention perimeter
Pordenone	Vito d'Asio	Additional	Yes
Biella	Campiglia Cervo	Core	Yes
Biella	Caprile	Additional	Yes
Biella	Curino	Additional	Yes
Biella	Quittengo	Additional	Yes
Lecco	Dorio	Additional	Yes
Lecco	Tremenico	Additional	Yes
Lecco	Vendrogno	Additional	Yes
Verbano-Cusio-Ossola	Antrona Schieranco	Core	Yes
Verbano-Cusio-Ossola	Aurano	Core	Yes
Verbano-Cusio-Ossola	Baceno	Core	Yes
Verbano-Cusio-Ossola	Bannio Anzino	Core	Yes
Verbano-Cusio-Ossola	Bognanco	Core	Yes
Verbano-Cusio-Ossola	Calasca-Castiglione	Core	Yes
Verbano-Cusio-Ossola	Caprezzo	Additional	Yes
Verbano-Cusio-Ossola	Cavaglio-Spocchia	Core	Yes
Verbano-Cusio-Ossola	Ceppo Morelli	Core	Yes
Verbano-Cusio-Ossola	Craveggia	Additional	Yes
Verbano-Cusio-Ossola	Crodo	Additional	Yes
Verbano-Cusio-Ossola	Cursolo-Orasso	Core	Yes
Verbano-Cusio-Ossola	Falmenta	Core	Yes
Verbano-Cusio-Ossola	Formazza	Core	Yes
Verbano-Cusio-Ossola	Gurro	Additional	Yes
Verbano-Cusio-Ossola	Intragna	Core	Yes
Verbano-Cusio-Ossola	Loreglia	Additional	Yes
Verbano-Cusio-Ossola	Macugnaga	Core	Yes
Verbano-Cusio-Ossola	Madonna del Sasso	Additional	Yes
Verbano-Cusio-Ossola	Massiola	Additional	Yes
Verbano-Cusio-Ossola	Miazzina	Additional	Yes
Verbano-Cusio-Ossola	Montescheno	Additional	Yes
Verbano-Cusio-Ossola	Premia	Core	Yes
Verbano-Cusio-Ossola	Quarna Sopra	Additional	Yes
Verbano-Cusio-Ossola	Quarna Sotto	Additional	Yes
Verbano-Cusio-Ossola	Re	Additional	Yes
Verbano-Cusio-Ossola	Trasquera	Core	Yes
Verbano-Cusio-Ossola	Trontano	Additional	Yes
Verbano-Cusio-Ossola	Vanzone con San Carlo	Additional	Yes
Verbano-Cusio-Ossola	Varzo	Additional	Yes
Verbano-Cusio-Ossola	Viganella	Core	Yes

Table 16 – List of the 364 Slovenian remote municipalities

E.3.5. Slovenia

The entire list of remote municipalities is the following:

Regija	Municipality	Core / Additional municipality	Alpine Convention perimeter
Goriška	Cerkno	Additional	Yes
Gorenjska	Gorje	Core	Yes
Savinja	Gornji Grad	Additional	Yes
Goriška	Kanal	Additional	Yes
Goriška	Kobarid	Core	Yes
Gorenjska	Kranjska Gora	Core	Yes
Savinja	Ljubno	Additional	Yes
Drava	Lovrenc Na Pohorju	Additional	Yes
Savinja	Luče	Core	Yes
Carinthia	Mislinja	Additional	Yes
Carinthia	Podvelka	Core	Yes

Regija	Municipality	Core / Additional municipality	Alpine Convention perimeter
Goriška	Tolmin	Additional	Yes
Savinja	Vitanje	Additional	Yes

Table 17 – List of the 13 Slovenian remote municipalities

E.3.6. Switzerland

The entire list of Swiss remote municipalities are the following:

Canton	Municipality	Core / Additional municipality	Alpine Convention perimeter
Bern	Kandergrund	Additional	Yes
Bern	Gadmen	Core	Yes
Bern	Guttannen	Core	Yes
Bern	Innertkirchen	Additional	Yes
Bern	Boltigen	Additional	Yes
Bern	St. Stephan	Additional	Yes
Bern	Zweisimmen	Additional	Yes
Bern	Gsteig	Additional	Yes
Bern	Lauenen	Additional	Yes
Bern	Rüschegg	Additional	Yes
Bern	Schangnau	Additional	Yes
Lucerne	Doppleschwand	Additional	Yes
Lucerne	Entlebuch	Additional	Yes
Lucerne	Escholz matt	Additional	Yes
Lucerne	Flühli	Additional	Yes
Lucerne	Hasle (LU)	Additional	Yes
Lucerne	Marbach (LU)	Additional	Yes
Lucerne	Romoos	Additional	Yes
Lucerne	Schüpfheim	Additional	Yes
Uri	Altdorf (UR)	Additional	Yes
Uri	Andermatt	Additional	Yes
Uri	Attinghausen	Additional	Yes
Uri	Bauen	Core	Yes
Uri	Bürglen (UR)	Additional	Yes
Uri	Erstfeld	Additional	Yes
Uri	Göschenen	Additional	Yes
Uri	Gurtellen	Additional	Yes
Uri	Hospental	Core	Yes
Uri	Isenthal	Additional	Yes
Uri	Realp	Core	Yes
Uri	Schattdorf	Additional	Yes
Uri	Seedorf (UR)	Additional	Yes
Uri	Silenen	Additional	Yes
Uri	Spiringen	Additional	Yes
Uri	Unterschächen	Additional	Yes
Uri	Wassen	Core	Yes
Obwalden	Lungern	Additional	Yes
Glarus	Glarus Süd	Additional	Yes
Glarus	Glarus	Additional	Yes
Fribourg	Jaun	Additional	Yes
Fribourg	Plaffeien	Additional	Yes
St. Gallen	Quarten	Additional	Yes
St. Gallen	Walenstadt	Additional	Yes
St. Gallen	Ebnat-Kappel	Additional	Yes
St. Gallen	Stein (SG)	Core	Yes
St. Gallen	Nesslau-Krummenau	Additional	Yes
Graubünden	Alvaschein	Core	Yes
Graubünden	Mon	Core	Yes

Canton	Municipality	Core / Additional municipality	Alpine Convention perimeter
Graubünden	Mutten	Core	Yes
Graubünden	Stierva	Core	Yes
Graubünden	Tiefencastel	Core	Yes
Graubünden	Brien/Brinzauls	Core	Yes
Graubünden	Lantsch/Lenz	Core	Yes
Graubünden	Surava	Core	Yes
Graubünden	Bergün/Bravuogn	Additional	Yes
Graubünden	Filisur	Core	Yes
Graubünden	Cunter	Core	Yes
Graubünden	Marmorera	Core	Yes
Graubünden	Mulegns	Core	Yes
Graubünden	Riom-Parsonz	Core	Yes
Graubünden	Salouf	Core	Yes
Graubünden	Savognin	Additional	Yes
Graubünden	Sur	Core	Yes
Graubünden	Tinizong-Rona	Core	Yes
Graubünden	Brusio	Additional	Yes
Graubünden	Poschiavo	Additional	Yes
Graubünden	Castrisch	Core	Yes
Graubünden	Falera	Additional	Yes
Graubünden	Ilanz	Additional	Yes
Graubünden	Ladir	Core	Yes
Graubünden	Luven	Core	Yes
Graubünden	Pitasch	Core	Yes
Graubünden	Riein	Core	Yes
Graubünden	Ruschein	Core	Yes
Graubünden	Sagogn	Additional	Yes
Graubünden	Schluein	Additional	Yes
Graubünden	Schnaus	Core	Yes
Graubünden	Sevgein	Core	Yes
Graubünden	Valendas	Core	Yes
Graubünden	Cumbel	Core	Yes
Graubünden	Duvin	Core	Yes
Graubünden	Degen	Core	Yes
Graubünden	Lumbrein	Core	Yes
Graubünden	Morissen	Core	Yes
Graubünden	St. Martin	Core	Yes
Graubünden	Suraua	Core	Yes
Graubünden	Vals	Additional	Yes
Graubünden	Vignogn	Core	Yes
Graubünden	Vella	Core	Yes
Graubünden	Vrin	Core	Yes
Graubünden	Andiast	Core	Yes
Graubünden	Obersaxen	Additional	Yes
Graubünden	Pigniu	Core	Yes
Graubünden	Rueun	Core	Yes
Graubünden	Siat	Core	Yes
Graubünden	Waltensburg/Vuorz	Core	Yes
Graubünden	Mundaun	Core	Yes
Graubünden	Safien	Core	Yes
Graubünden	Tenna	Core	Yes
Graubünden	Flerden	Core	Yes
Graubünden	Masein	Core	Yes
Graubünden	Tschappina	Core	Yes
Graubünden	Urmein	Core	Yes
Graubünden	Avers	Core	Yes
Graubünden	Hinterrhein	Core	Yes

Canton	Municipality	Core / Additional municipality	Alpine Convention perimeter
Graubünden	Nufenen	Core	Yes
Graubünden	Splügen	Core	Yes
Graubünden	Sufers	Core	Yes
Graubünden	Andeer	Additional	Yes
Graubünden	Casti-Wergenstein	Core	Yes
Graubünden	Donat	Core	Yes
Graubünden	Lohn (GR)	Core	Yes
Graubünden	Mathon	Core	Yes
Graubünden	Rongellen	Core	Yes
Graubünden	Zillis-Reischen	Core	Yes
Graubünden	Ferrera	Core	Yes
Graubünden	Ardez	Core	Yes
Graubünden	Guarda	Core	Yes
Graubünden	Lavin	Core	Yes
Graubünden	Susch	Core	Yes
Graubünden	Tarasp	Core	Yes
Graubünden	Zernez	Additional	Yes
Graubünden	Ramosch	Core	Yes
Graubünden	Tschlin	Core	Yes
Graubünden	Ftan	Additional	Yes
Graubünden	Sent	Additional	Yes
Graubünden	Bregaglia	Core	Yes
Graubünden	Cauco	Core	Yes
Graubünden	Rossa	Core	Yes
Graubünden	Mesocco	Additional	Yes
Graubünden	Soazza	Core	Yes
Graubünden	Val Müstair	Additional	Yes
Graubünden	Fideris	Additional	Yes
Graubünden	Furna	Core	Yes
Graubünden	Jenaz	Additional	Yes
Graubünden	Conters im Prättigau	Core	Yes
Graubünden	Luzein	Additional	Yes
Graubünden	St. Antönien	Core	Yes
Graubünden	Breil/Brigels	Additional	Yes
Graubünden	Disentis/Mustér	Additional	Yes
Graubünden	Medel (Lucmagn)	Core	Yes
Graubünden	Sumvitg	Additional	Yes
Graubünden	Tujetsch	Additional	Yes
Graubünden	Trun	Additional	Yes
Ticino	Ludiano	Core	Yes
Ticino	Semione	Core	Yes
Ticino	Acquarossa	Core	Yes
Ticino	Blenio	Additional	Yes
Ticino	Airolo	Additional	Yes
Ticino	Anzonico	Core	Yes
Ticino	Bedretto	Core	Yes
Ticino	Calpiogna	Core	Yes
Ticino	Campello	Core	Yes
Ticino	Cavagnago	Core	Yes
Ticino	Chironico	Core	Yes
Ticino	Dalpe	Core	Yes
Ticino	Faido	Additional	Yes
Ticino	Giornico	Additional	Yes
Ticino	Mairengo	Core	Yes
Ticino	Oscio	Core	Yes
Ticino	Prato (Leventina)	Core	Yes
Ticino	Quinto	Additional	Yes

Canton	Municipality	Core / Additional municipality	Alpine Convention perimeter
Ticino	Sobrio	Core	Yes
Ticino	Brione (Verzasca)	Core	Yes
Ticino	Frasco	Core	Yes
Ticino	Sonogno	Core	Yes
Ticino	Onsernone	Core	Yes
Ticino	Isorno	Core	Yes
Ticino	Astano	Core	Yes
Ticino	Migliaglia	Core	Yes
Ticino	Monteggio	Additional	Yes
Ticino	Sessa	Additional	Yes
Ticino	Bosco/Gurin	Core	Yes
Ticino	Campo (Vallemaggia)	Core	Yes
Ticino	Cerentino	Core	Yes
Ticino	Cevio	Core	Yes
Ticino	Linescio	Core	Yes
Ticino	Lavizzara	Core	Yes
Vaud	Ormont-Dessous	Additional	Yes
Vaud	Château-d'Oex	Additional	Yes
Vaud	Rougemont	Additional	Yes
Valais	Simplon	Core	Yes
Valais	Zwischbergen	Core	Yes
Valais	Bourg-Saint-Pierre	Core	Yes
Valais	Liddes	Additional	Yes
Valais	Bellwald	Core	Yes
Valais	Binn	Core	Yes
Valais	Blitzingen	Core	Yes
Valais	Grafschaft	Core	Yes
Valais	Münster-Geschinen	Core	Yes
Valais	Reckingen-Gluringen	Core	Yes
Valais	Obergoms	Core	Yes
Valais	Evolène	Additional	Yes
Valais	Ergisch	Core	Yes
Valais	Oberems	Core	Yes
Valais	Saint-Gingolph	Additional	Yes
Valais	Blatten	Core	Yes
Valais	Bürchen	Additional	Yes
Valais	Eischoll	Core	Yes
Valais	Ferden	Core	Yes
Valais	Kippel	Core	Yes
Valais	Niedergesteln	Additional	Yes
Valais	Raron	Additional	Yes
Valais	Unterbäch	Core	Yes
Valais	Wiler (Lötschen)	Core	Yes
Valais	Anniviers	Additional	Yes
Valais	Eisten	Core	Yes
Valais	Embd	Core	Yes
Valais	Grächen	Additional	Yes
Valais	Randa	Core	Yes
Valais	Saas-Almagell	Core	Yes
Valais	Saas-Balen	Core	Yes
Valais	Saas-Grund	Additional	Yes
Valais	St. Niklaus	Additional	Yes
Valais	Stalden (VS)	Additional	Yes
Valais	Staldenried	Additional	Yes
Valais	Täsch	Additional	Yes
Valais	Törbel	Core	Yes
Valais	Visperterminen	Additional	Yes























Canton	Municipality	Core / Additional municipality	Alpine Convention perimeter
Bern	Mont-Tramelan	Core	
Bern	Rebévelier	Core	
Bern	Eggiwil	Additional	
Bern	Langnau im Emm.	Additional	
Bern	Signau	Additional	
Bern	Trub	Additional	
Bern	Trubschachen	Additional	
Lucern	Hergiswil bei Willisau	Additional	
Lucern	Luthern	Additional	
Lucern	Menznau	Additional	
Solothurn	Aedermannsdorf	Additional	
Solothurn	Herbetswil	Additional	
Solothurn	Mümliswil-Ramiswil	Additional	
Solothurn	Beinwil (SO)	Core	
Solothurn	Nunningen	Additional	
Solothurn	Zullwil	Additional	
Basel-Landschaft	Hemmiken	Core	
Basel-Landschaft	Rickenbach (BL)	Additional	
Basel-Landschaft	Bretzwil	Additional	
Basel-Landschaft	Lauwil	Core	
Basel-Landschaft	Liedertswil	Core	
Basel-Landschaft	Reigoldswil	Additional	
Basel-Landschaft	Titterten	Core	
Schaffhausen	Beggingen	Core	
Schaffhausen	Schleitheim	Additional	
Aargau	Hornussen	Additional	
Aargau	Hellikon	Additional	
Aargau	Schupfart	Additional	
Aargau	Wegenstetten	Additional	
Aargau	Zuzgen	Additional	
Vaud	Berolle	Core	
Vaud	Bière	Additional	
Vaud	Longirod	Core	
Vaud	Marchissy	Core	
Vaud	Mollens (VD)	Core	
Vaud	Saint-George	Additional	
Vaud	Mont-la-Ville	Core	
Vaud	Montricher	Additional	
Vaud	La Praz	Core	
Vaud	Vallorbe	Additional	
Vaud	Vaulion	Core	
Vaud	L'Abbaye	Additional	
Vaud	Le Chenit	Additional	
Vaud	Le Lieu	Additional	
Neuchâtel	La Brévine	Additional	
Neuchâtel	Le Cerneux-Péquignot	Core	
Neuchâtel	La Chaux-du-Milieu	Core	
Neuchâtel	La Côte-aux-Fées	Additional	
Neuchâtel	Les Verrières	Additional	
Jura	Le Bémont (JU)	Core	
Jura	Les Breuleux	Additional	
Jura	La Chaux-des-Breuleux	Core	
Jura	Les Enfers	Core	
Jura	Montfaucon	Core	
Jura	Saignelégier	Additional	
Jura	Soubey	Core	
Jura	Beurnevésin	Core	

Canton	Municipality	Core / Additional municipality	Alpine Convention perimeter
Jura	Boncourt	Additional	
Jura	Bonfol	Additional	
Jura	Bressaucourt	Core	
Jura	Bure	Additional	
Jura	Coeuve	Additional	
Jura	Courchavon	Core	
Jura	Courtedoux	Additional	
Jura	Dampfreux	Core	
Jura	Fahy	Core	
Jura	Grandfontaine	Core	
Jura	Lugnez	Core	
Jura	Rocourt	Core	
Jura	Vendlincourt	Additional	
Jura	Basse-Allaine	Core	

Table 18 – List of the 221 Swiss remote municipalities

E.4. OVERVIEW OF COLLECTED GOOD PRACTICES

The following table provides an overview of the 54 collected good practices:

Good practice	Country	Category	Area	Main target group	
				Tourists	Residents
A bike for my village, my village with a bike in Crévoux		Other mobility services	Additional municipalities	X	
ALIAS Project: hospitals networking for telemedicine		Non-mobility solutions	Alpine Convention municipalities		X
Allô-Bus near Aosta		Micro public transport services	Alpine Convention municipalities		X
Alpentaxi		Organisation and mobility management	Core municipalities	X	
AutoSSS: Secure hitch-hiking service in the Trièves		Other mobility services	Alpine Convention municipalities		X
Bergsteigerbus Eng: Hiker's bus in the Karwendel		Micro public transport services	Core municipalities	X	
Breitbandoffensive: investment offensive for high-speed Internet		Non-mobility solutions	Alpine Convention municipalities		X
Broadband Internet access and shared office space		Non-mobility solutions	Core municipalities		X
Broadband project: Internet connectivity in Trentino		Non-mobility solutions	Core municipalities		X
Bürgerkarte Oberstdorf		Organisation and mobility management	Additional municipalities		X
Bus Alpin		Micro public transport services	Core municipalities	X	X
Cycling training for pupils from primary schools in Maribor		Organisation and mobility management	Alpine Convention municipalities		X
DEF-Mobil		Micro public transport services	Alpine Convention municipalities	X	X
Dorfmobil Klaus		Micro public transport services	Alpine Convention municipalities		X
e-GAP intermodal		Organisation and mobility management	Additional municipalities	X	X
Einkaufsbuss: shopping bus in Niederbüren		Micro public transport services	Outside Alpine Convention		X
Elastibus in Val del Chiese		Micro public transport services	Core municipalities		X
Electric mobility in the Province of Belluno		Other mobility services	Additional municipalities		X
Electric vehicles in Eisenkappel		Other mobility services	Alpine Convention municipalities	X	X
EMMA: Electric mobility with connectivity in Friedrichshafen		Other mobility services	Outside Alpine Convention	X	X
EMorail project		Other mobility services	Alpine Convention municipalities		X
ERIC: Internet resource centres in PACA		Non-mobility solutions	Core municipalities		X

































Good practice	Country	Category	Area	Main target group	
				Tourists	Residents
Free Shuttle in the Ubaye Valley		Micro public transport services	Additional municipalities	X	X
Gmoa Bus		Micro public transport services	Outside Alpine Convention	X	X
Go-Mobil		Micro public transport services	Alpine Convention municipalities		X
Gorenjska Electro-Trip		Other mobility services	Core municipalities	X	
Gseispur		Micro public transport services	Alpine Convention municipalities	X	
Ilzer Land: Inter-municipal public transport concept		Organisation and mobility management	Outside Alpine Convention		X
Immer mobil: Individual transport services for elderly in rural areas		Organisation and mobility management	Core municipalities		X
Informatics centre in Vicosoprano		Non-mobility solutions	Alpine Convention municipalities		X
InnoV-Net: Education in remote areas		Non-mobility solutions	Core municipalities		X
Integrated public transport on Idro Lake		Organisation and mobility management	Additional municipalities	X	X
Jugendcard		Organisation and mobility management	Core municipalities		X
Malteser mobility services		Other mobility services	Alpine Convention municipalities		X
MiFaZ: Regional promotion of the carpooling platform		Organisation and mobility management	Core municipalities		X
Mobility management between Saas-Fee and Visp		Other mobility services	Core municipalities	X	X
MORECO: Mobility and residential costs		Organisation and mobility management	Alpine Convention municipalities		X
Next bike		Other mobility services	Alpine Convention municipalities	X	
Nightliner		Micro public transport services	Core municipalities		X
Optical fibres in Budoia		Non-mobility solutions	Alpine Convention municipalities		X
Pedelec network in the Allgäu region		Other mobility services	Core municipalities	X	
Points visio rendez-vous: Video-conferencing meeting points in the Hautes-Alpes		Non-mobility solutions	Core municipalities		X
Provibus		Micro public transport services	Core municipalities		X
Public services relay in the Ecrins area		Non-mobility solutions	Alpine Convention municipalities		X
Reorganization of shuttle services in the Queyras		Organisation and mobility management	Alpine Convention municipalities	X	X
School transport by cable car in Venosc		Organisation and mobility management	Additional municipalities		X
Stadtbuss Kolbermoor: Flexible city bus		Micro public transport services	Alpine Convention municipalities		X
Supporting community shops in Trentino		Non-mobility solutions	Core municipalities		X
Tälerbus Lungau		Micro public transport services	Alpine Convention municipalities	X	
Talente carpooling in Voralberg		Other mobility services	Alpine Convention municipalities		X
Teleworking Alcatel		Non-mobility solutions	Alpine Convention municipalities		X
Transport on demand for the elderly in Modane		Micro public transport services	Alpine Convention municipalities		X
Transport on demand in the Drôme		Micro public transport services	Core municipalities		X
Werfenweng Shuttle		Micro public transport services	Alpine Convention municipalities	X	X

Table 19 – Overview of the 54 collected good practices

Table of contents

A. Guidelines.....	8
A.1. Reminder of context: the promotion of sustainable transport solutions.....	9
A.2. Remote territories.....	9
A.3. The task of the Soft Mobility Subgroup.....	10
B. Identification of remote territories.....	11
B.1. Introduction.....	12
B.1.1. Two ways to define remote territories.....	12
B.1.2. Remoteness: a question of scale and individual perception.....	12
B.2. General methodology used to identify remote territories.....	13
B.3. Conclusions.....	15
C. Sustainable mobility solutions.....	16
C.1. Introduction.....	17
C.2. Analysis of good practices.....	18
C.2.1. Micro public transport services.....	20
C.2.2. Other mobility services.....	39
C.2.3. Non-mobility solutions.....	52
C.2.4. Organisation and mobility management measures.....	65
D. Main lessons and recommendations.....	78
D.1. First lessons learnt from good practices.....	79
D.1.1. A fairly high number of good practices	79
D.1.2. A very wide range of measures.....	79
D.1.3. The importance of tourism.....	81
D.1.4. A lack of evaluation and monitoring.....	81
D.1.5. Good practices transferability from one territory to another.....	82
D.2. Main recommendations.....	82
D.2.1. The need for local expertise and close monitoring of the users' needs.....	83
D.2.1.1. Analyse mobility patterns.....	83
D.2.1.2. Involve local stakeholders.....	83
D.2.1.3. Monitor users' needs and expectations.....	83
D.2.2. The need for integrated approaches and improved coordination.....	84
D.2.2.1. Integrate all mobility offers.....	84
D.2.2.2. Bring or maintain services in remote territories.....	84
D.2.2.3. Spatial integration and economies of scale.....	85
D.2.3. The need for a simple and easily understandable mobility offer.....	86
D.2.3.1. Centralize, unify and develop information on mobility.....	86
D.2.3.2. Integrate pricing and ticketing.....	87
D.2.4. The need for long-term funding.....	87
D.2.4.1. Control operating costs.....	87
D.2.4.2. Secure funding in the long term.....	88
D.3. Conclusions.....	89

E. Appendix.....	90
E.1. General mapping of identified remote areas per country.....	91
E.1.1. Austria.....	91
E.1.1.1. Feature used to identify remote municipalities.....	91
E.1.1.2. Selected indicators to identify remote areas.....	92
E.1.1.3. The Austrian remote Alpine municipalities.....	93
E.1.1.4. Characteristics of the Austrian remote areas.....	93
E.1.2. France.....	94
E.1.2.1. Selected indicators to identify remote areas.....	94
E.1.2.2. The French remote Alpine municipalities.....	94
E.1.2.3. Characteristics of the French remote areas.....	96
E.1.3. Germany.....	98
E.1.3.1. Selected indicators to identify remote areas.....	98
E.1.3.2. The German remote Alpine municipalities.....	99
E.1.3.3. Characteristics of the German remote areas.....	100
E.1.4. Italy.....	102
E.1.4.1. Selected indicators to identify remote areas.....	102
E.1.4.2. The Italian remote Alpine municipalities.....	102
E.1.4.3. Characteristics of the Italian remote areas.....	103
E.1.5. Slovenia.....	105
E.1.5.1. Selected indicators to identify remote areas.....	105
E.1.5.2. The Slovenian remote Alpine municipalities.....	105
E.1.5.3. Characteristics of the Slovenian remote areas.....	106
E.1.6. Switzerland.....	106
E.1.6.1. Selected indicators to identify remote areas.....	106
E.1.6.2. The Swiss remote Alpine territories.....	107
E.1.6.3. Characteristics of the Swiss remote areas.....	108
E.2. Detailed methodologies to identify remote areas per country.....	109
E.2.1. Austria.....	109
E.2.1.1. Inhabitants of territory served by the on-demand public transport system	109
E.2.1.2. Population density in served regions.....	109
E.2.1.3. Importance of Tourism	110
E.2.1.4. Accessibility of Regions.....	111
E.2.2. France.....	112
E.2.2.1. Databases and measures used.....	112
E.2.2.2. Precautions required for certain indicators.....	114
E.2.3. Germany.....	115
E.2.3.1. Situation in Germany in relation to the features of remote areas.....	115
E.2.3.2. Indicators values for remote territories: methodology details and information.....	118
E.3. List of remote municipalities per country.....	120
E.3.1. Austria.....	120
E.3.2. France.....	125
E.3.3. Germany.....	128
E.3.4. Italy.....	129
E.3.5. Slovenia.....	135
E.3.6. Switzerland.....	136
E.4. Overview of collected good practices.....	141

List of figures and tables

Illustration 1 – Alpine Convention perimeter.....	13
Illustration 2 – Remote territories in the Alpine Regions.....	15
Illustration 3 – Best practices referring to the category “Micro public transport services”	20
Illustration 4 – Best practices referring to the category “Other mobility services”	39
Illustration 5 – Best practices referring to the category “Non-mobility solutions”	52
Illustration 6 – Best practices in the category “Organisation and mobility management measures”	65
Illustration 7 – Degree of urbanisation per municipality in Austria.....	91
Illustration 8 – Known cases studies of mobility solutions for people without a car.....	92
Illustration 9 – Municipalities with best practices in sustainable mobility systems.....	93
Illustration 10 – Remote territories in France.....	95
Illustration 11 – Five identified remote territories in France.....	96
Illustration 12 – Remote territories in Germany.....	99
Illustration 13 – Seven identified remote territories in Germany.....	100
Illustration 14 – Remote territories in Italy.....	103
Illustration 15 – Eight identified remote territories in Italy.....	104
Illustration 16 – Remote territories in Slovenia.....	106
Illustration 17 – Remote territories in Switzerland.....	108
Illustration 18 – Population density in East Tyrol, settlement area of municipalities.....	110
Illustration 19 – Population density in East Tyrol, administrative territory of municipalities.....	110
Illustration 20 – Overnight stays per capita in Austria.....	110
Illustration 21 – Accessibility by public transport in East Tyrol and Carinthia.....	111
Illustration 22 – Typical timetable of scheduled buses in a remote and rural area in East Tyrol.....	111
Table 1 – Features used to identify remote territories.....	14
Table 2 – List of good practices presented in the report.....	19
Table 3 – List of Austrian indicators.....	92
Table 4 – List of the French indicators gradually implemented.....	94
Table 5 – List of the French remote territories.....	95
Table 6 – List of the German indicators gradually implemented.....	98
Table 7 – List of the Italian indicators gradually implemented.....	102
Table 8 – List of the Slovenian indicators gradually implemented.....	105
Table 9 – List of the Swiss indicators gradually implemented.....	107
Table 10 – Urban area classification in France.....	112
Table 11 – Indicators used within the German Alpine Convention Area.....	118
Table 12 – Details of indicator values per remote municipality.....	120
Table 13 – List of the 254 Austrian remote municipalities.....	125
Table 14 – List of the 177 French remote municipalities.....	128
Table 15 – List of the 45 German remote municipalities.....	129
Table 16 – List of the 364 Slovenian remote municipalities.....	135
Table 17 – List of the 13 Slovenian remote municipalities.....	136
Table 18 – List of the 221 Swiss remote municipalities.....	141
Table 19 – Overview of the 54 collected good practices.....	142



**Annex 3 Short summary, executive summary and report on Sustainable solutions
for logistics and urban freight delivery in the Alpine region**



Arbeitsgruppe Verkehr
Untergruppe Soft Mobility

Nachhaltige Lösungen für Logistik und städtischen Lieferverkehr im Alpenraum

Zusammenfassung

Oktober 2014

Der Ständige Ausschuss der Alpenkonvention legt das Mandat der Arbeitsgruppe Verkehr alle zwei Jahre neu fest. 2012 wurde in Vorbereitung auf die Alpenkonferenz 2014 ein Überblick über Best Practices und geeignete Strategien für Logistik und städtischen Lieferverkehr im Alpenraum und die Ausarbeitung von Empfehlungen zur Förderung nachhaltiger Lösungen in diesen Regionen als eines der Themen für die Arbeitsgruppe Verkehr vorgesehen. Das vorliegende Dokument ist eine Zusammenfassung des Abschlussberichts der Arbeitsgruppe Verkehr vom Oktober 2014.

Vielfalt der einzelstaatlichen Rahmenbedingungen und Situationen in den Alpenorten

Die gesetzlichen Rahmenbedingungen und die Organisation der örtlichen Behörden sind bei jedem Vergleich und jeder Umsetzung in den verschiedenen Ländern zu berücksichtigen. In einem ersten Schritt wurden daher für jedes Land die gesetzlichen Rahmenbedingungen und Zuständigkeiten auf regionaler Ebene, sowie die relevanten Planungsunterlagen und Programme für Logistik und städtischen Lieferverkehr kurz vorgestellt. Ferner spielt auch der Kontext jedes Ortes/Einzugsgebietes eine wichtige Rolle bei der Beurteilung der Übertragbarkeit von Best Practices. Im Anhang zu dem Bericht wird daher der Kontext jedes an der Studie beteiligten Ortes/Einzugsgebietes erläutert.

Nachhaltige Verkehrslösungen für Logistik und städtischen Lieferverkehr: eine Auswahl an Best Practices

Die Studie konzentrierte sich auf die folgenden Alpenstädte: Grenoble, Annecy und Chambéry, Rosenheim, Bad Reichenhall, Garmisch-Partenkirchen, Kaufbeuren, Kempten, Lindau, Aosta, Turin, Como, Trient, Thun, Bulle und Zizers. Zudem wurden auch ergänzende Initiativen erfasst, die außerhalb dieser Gebiete umgesetzt wurden, vorausgesetzt, sie sind auf Alpenstädte übertragbar. Obwohl fast 50 Best Practices von der Untergruppe analysiert wurden, erhebt diese Auswahl keinen Anspruch auf Vollständigkeit. Eine konkrete Einteilung der Maßnahmen war schwierig, weil die Best Practices oft mehrere Ebenen verknüpfen.

Leitung und Kooperation	Errichtung eines leitenden Gremiums, Anhörungsverfahren mit privaten Stakeholdern, Einbeziehung und Engagement von Gewerbetreibenden (Hersteller, Spediteure, Einzelhändler) sowie von Anwohnern,...
Bestimmungen und Organisation	Zufahrtsbeschränkungen für LKW basierend auf mehrere Kriterien (Uhrzeit, Gewicht, Maße, Lärm, Luftverschmutzung, Ladungsfaktor, Art der Güter), städtische Logistikplanung, ...
Infrastruktur	Laderampen, städtische Logistikzentren (städtische Logistik- und Verteilungszentren, lokale Logistikzentren),...
Städteplanung	Berücksichtigung von Fracht- und Lieferaspekten in Master- und Landnutzungsplänen, spezifische städtische Mobilitätspläne einschließlich Güterverkehr,...
Schulung und Information	Information für Speditionsfirmen und Fahrer (Karten, Echtzeitinformation usw.), Schulungen für Frachtführer und die technischen Dienststellen der Städte,...
Supply Chain Management	Sammelgutverkehr, Verwendung umweltfreundlicher Fahrzeuge,...
Intelligente Verkehrssysteme	Flottenmanagement- oder Tracking- und Tracing-Systeme, Zugangskontrollsysteme, Verkehrsleit- und Informationssysteme,...
Datenerfassungs- und Darstellungsinstrumente	Umfragen, statistische Daten, Datenanalyse, Nachfragemodelle,...

Hauptergebnisse

Es besteht kein großer Unterschied zwischen der Logistik in Alpenstädten und an anderen Orten, mit Ausnahme der negativen Auswirkungen.

In den meisten Orten fehlt es an Statistiken über den städtischen Güterverkehr. Die Verfügbarkeit von Daten ist im Vergleich zum Personenverkehr relativ gering. Verkehrsprobleme in Städten konzentrieren sich meist auf den Personenverkehr.

Die potenzielle Zunahme von Hauslieferungen in Verbindung mit der älter werdenden Bevölkerung und dem Wachstum des E-Commerce scheint nicht berücksichtigt zu werden.

Mehrere Initiativen zeigen, dass ein koordinierter Güterverkehr als Kombination aus positiven Anreizen und Einschränkungen funktionieren muss.

In manchen Orten wird der Güterverkehr als privates Thema gesehen, mit dem die öffentliche Verwaltung nichts zu tun hat. Die negativen Auswirkungen des Güterverkehrs gelten im Vergleich zu den Folgen von Pendler- und Personenverkehr als geringfügiges Verkehrsproblem.

Die Kooperation mit staatlichen und privaten Akteuren vor Ort ist eine Voraussetzung für Erfolg.

Einige Aspekte sind wohlbekannt und werden dementsprechend umfassend berücksichtigt, andere Aspekte hingegen werden geradezu ignoriert.

Empfehlungen

Entwicklung von Public-Private-Partnerships und Förderung nachhaltiger städtischer Logistik-Chartas

Anhörungen sind für den Erfolg eines Logistikprojektes entscheidend, da sie sicherstellen, dass die Bestimmungen effektiv und effizient zugleich sind. Eine städtische Logistik-Charta wäre eine Chance für die Führung fruchtbarer Diskussionen mit allen Beteiligten und für die Entwicklung gemeinsamer Lösungen, um die Gewerbetreibenden zu einer Koordination ihrer Tätigkeiten anzuhalten. Die Federführung der Charta kann eine örtliche Behörde übernehmen, aber jeder Beteiligte kann für ein bestimmtes Projekt zuständig sein.

Nutzung der Vorschriften für die Entwicklung CO2-freier Lieferungen

Selektive Einschränkungen des LKW-Verkehrs können ein ausgesprochen wirkungsvolles kurzfristiges Instrument sein. Die zur Anwendung kommenden Kriterien umfassen Nutzlast, Geräuschentwicklung und Zeitfenster für Lieferungen. Allerdings können positive Maßnahmen effizienter sein als Einschränkungen, darunter großzügigere Zeitfenster für Lieferungen mit Elektrofahrzeugen. Um eine Stabilität der langfristigen politischen Maßnahmen ebenso wie ein effizientes städtisches Lieferverkehrssystem zu gewährleisten, ist eine Harmonisierung, Vereinheitlichung und problemlose Durchsetzung der städtischen Bestimmungen erforderlich.

Berücksichtigung des Lieferverkehrs in städtischen Räumen

Während die Einrichtung spezifischer Lieferzonen im vorhandenen Straßennetz auf Grund des Drucks der Autofahrer, aber auch der Ladenbesitzer kompliziert ist, ist es einfacher, den erforderlichen Raum bei der Nachrüstung von Straßen und Stadtvierteln oder in neuen Stadtprojekten zu planen und zu berücksichtigen.

Durchführung gezielter Umfragen zur Verbesserung des Kenntnisstands

Im Bereich des Personenverkehrs werden jedes Jahr zahllose Umfragen und Analysen durchgeführt. Andererseits gibt es kaum Informationen zum Güterverkehr. Die Durchführung von Studien ist daher ein Ausgangspunkt für eine angemessene Analyse des Umfangs des städtischen Lieferverkehrs (insbesondere in Kleinstädten) und die Beurteilung der potenziellen Verbesserungen für Gesundheit, Umwelt und Stadtqualität sowie die Entwicklung eines effizienten Güterverkehrssystems.

Schutz der sonstigen Infrastrukturen und Förderung ihrer Nutzung

Der Schutz der sonstigen Infrastrukturen ist zwingend erforderlich, sofern vorhanden, weil sie in Zukunft möglicherweise nützlich sind. Sollten sie verschwinden, könnte auch die Idee der Verkehrsverlagerung („Modal Shift“) verschwinden, oder ihre Wiedereinführung wäre erheblich teurer.

Entwicklung der Verwendung von Lastenrädern

Lastenräder sind für die Frachtbeförderung perfekt geeignet, vor allem auf dem letzten Kilometer. Sie können von Spediteuren und Einzelhändlern verwendet werden. Durch die Verwendung von Elektrofahrrädern kann die Reichweite der Lastenräder erhöht werden. Es wird davon ausgegangen, dass der Strom für E-Bikes aus erneuerbaren Energiequellen stammt, damit es sich um einen nachhaltigen Mobilitätsdienst handelt.

Erhalt der bestehenden Logistikzonen zur Vermeidung der Verzettlung von Logistikaktivitäten

Die Verzettlung von Logistikaktivitäten führt zu zahlreichen Problemen: Inanspruchnahme von Grundstücken, längere Entfernungen, gemeinsame Straßennutzung und Staus. Es sollte sichergestellt sein, dass die Logistikaktivitäten stark in das Stadtgewebe eingebunden werden, um die vorstehend genannten negativen externen Effekte im Rahmen des Möglichen zu vermeiden. Allerdings sind die Grundstückspreise in Stadtzentren oft zu hoch für Logistikaktivitäten. Das ist die größte Herausforderung für eine Gemeinde: sie kann die Nutzung brachliegender Gebiete zu Logistikzwecken „blockieren“. Das Blockieren oder Reservieren von Grundstücken kann mit Planungsunterlagen erfolgen

Die vorliegende Unterlage ist eine Zusammenfassung des Abschlussberichts der Arbeitsgruppe Verkehr. Die nachstehenden Experten haben an dieser Studie teilgenommen: Inga Ahrens (DE), Paolo Angelini (IT), Céline Avril (FR), Ueli Balmer (CH), Franziska Borer Blindenbacher (CH), Daniel Chemin (FR, Koordinator), Laura Clergue (FR), Karl Fischer (DE), Wolfgang Grubert (AT), Veronika Holzer (AT), Ernst Lung (AT), Stefan Marzelli (DE), Nicola Neumeier (DE), Stefanie Pfändler (CH), Thomas Plantier (FR, Bearbeiter), Zlatko Podgorski (SI), Christian Rankl (AT), Massimo Santori (IT), Claudia Schwarz (DE), Harry Seybert (DE) und Raffaele Vergnani (IT).

Sustainable solutions for logistics and urban freight delivery in the Alpine region

Alpine Convention
Working Group
“Transport”
Sub-group
“Soft Mobility”

Executive summary



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Table of content

1Background..... 1

2National framework 1

3Towns concerned by the study..... 2

4Measures and best practices..... 3

5Main findings..... 4

6Recommendations of the Working Group..... 5

 Development of public-private partnership and promotion of sustainable urban logistics charters5

 Using regulations to develop carbon-free deliveries5

 Taking into account deliveries in urban spaces design.....5

 Carrying out specific surveys to improve knowledge.....5

 Preservation of non-road infrastructures and promotion of their use5

 Development of the use of cargo bikes5

 Prevention of logistics' dispersion by preservation of existing logistics space5

1 Background

In 2012, the 51st Permanent Committee of the Alpine Convention defined the mandate for the Transport Group for 2013-2014. It asked the Alpine delegations to further investigate on the issue of logistics and urban freight delivery. Actions, experiments and projects in Alpine towns were analysed, measures and solutions aiming at improving urban efficiency and quality of life for residents were reported. It was decided to focus on case studies in selected towns in the Alpine area, but not to ignore relevant external approaches if they can be transferred. This synthesis report summarises the national contributions.

2 National framework

Knowing the legal framework and the organisation of local authorities is a prerequisite to any comparative work and to any transposition to other towns. Consequently, the report comprises a short description for Austria, France, Germany, Italy and Switzerland:

- **Austria:** The transport policy has a clear strategy of shifting freight transport from road to rail. In relation to the discharge of urban streets from heavy freight trucks, direct rail connections to / from factories and freight distribution centres are considered. On the level of company strategies and measures to reduce costs and environmental impacts have already been successfully implemented. The combined transport network NINA and some combined transport terminals have an important function for urban and regional logistics, e.g. Hall in Tyrol and Cargo Center Graz. Further national supporting programs for research, development and implementation of measures are considered as important contributions to improve efficiency of urban and regional freight logistics. Examples for such programmes are Klima:aktiv mobil and Future Mobility.
- **France:** The urban transport authorities, which have several legal forms (communes, groups of communes, intercommunal boards or joint management boards), are responsible for preparing and managing sustainable urban mobility plans, which comprise also urban freight transport. The authority to issue access restrictions to certain roads in the conurbation is the commune. When conurbations include several communes, they often cover areas with different regulations for transport introduced by local authorities. A single conurbation may therefore have dozens of regulations and standards concerning delivery vehicles. Delivery companies often face inconsistent regulations that are difficult both to understand and to follow. The task of organising freight delivery is rather complex due to the vast array of institutional stakeholders.
- **Germany:** Due to the federal structure the legal framework for freight transport is complex - the responsibilities are delegated to authorities on different regional levels. In relation to freight traffic within the urban road network, the towns have the most relevant authorities. They can compile a transport development plan and integrate goods transport, but this is

not mandatory. The present transport development plans are often rather dedicated to public transport issues than goods transport or urban logistics.

- **Italy:** Regarding mobility the Italian legal framework assigns full autonomy to municipalities. In order to reduce the environmental impact of pollutant emissions and city traffic, the mayors of several Italian municipalities introduced restrictions on traffic circulation, generally in the inner areas. As these measures are very heterogeneous, the Ministry for Transport and Infrastructure highlighted the need for a more harmonised legislation on urban traffic in 2010. Currently, the Ministry of Transport is working on a process aiming not only at promoting a harmonisation procedure between stakeholders, but also at developing a long-lasting sharing of experiences and know-how that municipalities should accrue under the actions of the agreement.
- **Switzerland:** There is no specific national regulation for urban transport, but infrastructure projects in urban areas can be co-funded with means from the so-called infrastructure fund. Two programmes for infrastructure projects in agglomerations have been launched since the fund exists, but their focus is clearly on passenger transport. There are two important general regulations influencing freight delivery also in urban areas. The first is the so-called night ban, prohibiting the use of heavy goods vehicles during night hours between 10 p.m. and 5 a.m. The second regulation is the performance-related heavy goods vehicle fee, which includes external costs and is therefore relatively high. Moreover, the municipalities can enact traffic regulations like e.g. limited access to specific roads.

3 Towns concerned by the study

The delegations have been asked to conduct an analysis on logistics and urban freight delivery in selected Alpine towns as presented in the table below. The detailed analyses are included in appendix 1 of the report.

France	Grenoble, Annecy and Chambéry
Germany	Rosenheim, Bad Reichenhall, Garmisch-Partenkirchen, Kaufbeuren, Kempten and Lindau
Italy	Aosta, Torino, Como and Trento
Switzerland	Thun, Bulle and Zizers

The framework of the analysis included :

- Overview of the town
- The issue of urban freight delivery in regional organisations
- The current freight delivery situation in the conurbation
- The actions, experiments and projects

4 Measures and best practices

The report uses a distinctive categorisation of measures which was applied in the European reports on urban logistics such as COST321, BESTUFS or SUGAR. The "Soft Mobility" Sub-group of the Alpine Convention has chosen 8 categories to classify the national measures. The delegations documented almost 50 best practices of these measure categories within and outside the area of the Alpine Convention. They are specified in appendix 2 and 3 of the report.

Governance and cooperation	Measures like establishing a governing body or a consultation processes.
Regulation and organisation	Regulation is the main tool that a town can use to ensure a more efficient last mile delivery. Currently, towns use preferably truck access restrictions, which are based on various criteria like time frames, weight, size, emissions, loading factor, type of goods. Regulations need to be enforced in order to prevent drivers ignoring them, but this can, however, require significant resources.
Infrastructure	<p>New infrastructure can be built with a certain emphasis on urban goods transport. The most widely used tool in urban areas is the loading bay, probably because of its local nature and its relatively easy incorporation into the road network. Another type of infrastructure measures are Urban Logistics Spaces (ULS), which aim at breaking up and reorganising the flows through the town. They are an effective response to demand for more designated logistics space from logistics companies. There are several types of ULS :</p> <ul style="list-style-type: none"> • Urban Logistics Zones (ULZs) are main entry points for freight into conurbation. • Urban Distribution Centres (UDCs) are designed for parcels that are coming from or heading to a problematic area of the town. • Local Logistics Spaces (LLSs) are small logistics spaces (150 to 300m²), designed to provide a logistics facility located in close proximity to businesses or individuals concerned, and thereby improving the efficiency of delivery rounds.
Urban planning	It is quite uncommon to use town planning measures in urban freight transport policy, but it could be an interesting solution to achieve more sustainable goods mobility in town centres.

Education and information	Urban authorities can provide freight transport companies and drivers with information such as maps or the use of real-time information. Examples are lorry route maps, web-based information on traffic problems and roadworks, information boards.
Supply chain management	Physical distribution of goods to consumers is a crucial factor of the last mile business model. Possible solutions are e.g groups of reception boxes. In this case, the customer to be the last part of the chain. Another example is the introduction of environmentally friendly vehicles (EFV) into urban transport, which at present is most common in Western European countries.
Intelligent transport system (ITS)	ITS makes use of technologies like telematics, GPS, smart cards etc. It can be divided into freight transport management systems mainly used by freight companies which allow effective planning of vehicle loads and journeys, in-cab communication etc. and traffic management systems which are used by authorities to manage traffic on certain roads.
Data acquisition and modelling tools	To model and simulate the traffic system and transport it is very important to manage and forecast urban freight. This applies for public agencies as well as for the private sector. Freight demand models are one component of transportation planning at strategic, tactical and operational levels.

5 Main findings

The case studies of Alpine towns and the best practices lead to six main conclusions :

- There is no major difference between the problems of urban logistics in Alpine towns and other locations, except for the negative impacts.
- In most of the towns, there is a lack of statistics concerning urban freight transport. The data availability is poor compared to passenger transport.
- Transportation issues in towns are often focused on passenger transport. Urban freight is not taken into account locally.
- Coordinated freight transport has to be performed as a combination of positive incentives and restrictions.
- In some towns freight transport is perceived as a completely private issue. Freight transport is not on the agenda of policy and administration in small towns, as negative effects of freight transport are perceived as a minor problem compared to commuting and passenger transport.
- Some themes are well-known and thus well-implemented while some are ignored completely. These ignored topics are therefore going to be developed in more detail in this report below.

6 Recommendations of the Working Group

To support innovative and functional logistics concepts in urban freight delivery the "Soft Mobility" subgroup drew up seven recommendations:

Development of public-private partnership and promotion of sustainable urban logistics charters

Urban logistics involves many different institutional and professional stakeholders. Consultation is thus a crucial success factor of any project. A sustainable urban logistics charter should contain requirements for local authorities and freight delivery companies to promote solutions that are beneficial to urban deliveries. These may include the use of environmentally friendly vehicles, the harmonisation of delivery times, or more efficient use of dedicated spaces. An urban distribution charter should be the result of local negotiations and its content should vary according to the partners (including individuals) involved, their objectives and their willingness to commit themselves to the process.

Using regulations to develop carbon-free deliveries

Restrictions for heavy vehicles can be a very effective short-term instrument, but positive measures can be more effective, such as greater time frames for electric vehicle deliveries.

Taking into account deliveries in urban spaces design

Delivery vehicles require space which should be planned and reserved during retrofitting of streets and neighbourhoods or in new urban projects.

Carrying out specific surveys to improve knowledge

Permanent or periodic surveys and statistics on urban freight transport are needed for a sound analysis and the development of an efficient goods transport system.

Preservation of non-road infrastructures and promotion of their use

Non-road infrastructure, if available, has to be preserved, even if it is not used currently. Otherwise, the idea of modal shift will disappear with them and re-installation would be more costly.

Development of the use of cargo bikes

Promoting the use of cargo bikes can be a solution to reduce the negative impact of freight transport in town centres and electric bikes may extend their operating distances.

Prevention of logistics' dispersion by preservation of existing logistics space

The dispersion of logistics activities induces many problems like land use, longer distances, road sharing and congestion. Therefore it should be ensured that logistics activities stay close to the urban tissue, even if the price of land in the town centres is too exuberant for logistics activities. It is a challenge for communities to reserve land through planning documents.

This document is a summary of the final report issued in October 2014 by the “Soft Mobility” subgroup of the Alpine Convention Working Group Transport.

The following experts have participated in the study: Inga Ahrens (DE), Paolo Angelini (IT), Céline Avril (FR), Ueli Balmer (CH), Franziska Borer Blindenbacher (CH), Daniel Chemin (FR, coordinator), Laura Clergue (Fr), Karl Fischer (DE), Wolfgang Grubert (AT), Veronika Holzer (AT), Ernst Lung (AT), Stefan Marzelli (DE), Nicola Neumeier (DE), Stefanie Pfändler (CH), Thomas Plantier (FR, editor), Zlatko Podgorski (SI), Christian Rankl (AT), Massimo Santori (IT), Claudia Schwarz (DE), Harry Seybert (DE) and Raffaele Vergnani (IT).

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Sustainable solutions for logistics and urban freight delivery in the Alpine region

Alpine Convention
Working Group
“Transport”
Sub-group
“Soft Mobility”



Table of Contents

1.Mandate given by the Standing Committee of the Alpine conference and conduct of the study.....	5
2.Introduction.....	6
3.National framework.....	7
3.1.Austria.....	7
3.2.France.....	14
3.3.Germany.....	16
3.4.Italy.....	19
3.5.Switzerland.....	21
4.Towns concerned by the study.....	23
5.Categories of measures.....	24
5.1.Governance and cooperation.....	25
5.2.Regulation and organisation.....	25
5.3.Infrastructure.....	26
5.4.Urban planning.....	28
5.5.Education and information.....	28
5.6.Supply chain management.....	29
5.7.Intelligent transport system (ITS).....	29
5.8.Data acquisition and modelling tools.....	30
6.Best practices.....	31
7.Main findings.....	34
8.Recommendations.....	35
9.Appendix n°1 Description of the context of the towns concerned by the study.....	38
10.Appendix n°2 : Description of best practices within the area of the Alpine Convention.....	75
11.Appendix n°3 Description of best practices outside of the Alpine Convention area but applicable on Alpine towns.....	99

ACT OF TRANSMISSION

SYNTHESIS REPORT “Sustainable solutions for logistics and urban freight delivery in the Alpine region”

The subgroup “Soft mobility” has agreed the final text of the synthesis report on “Sustainable solutions for logistics and urban freight delivery in the Alpine region”, on the basis of the Mandate given to the Working Group Transport of the Alpine Convention.

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1. Mandate given by the Standing Committee of the Alpine conference and conduct of the study

During the 51st standing committee of the alpine convention, held in Milano on November 20th-21st, 2012, the mandate of the Transport Group for 2013-2014 was adopted.

The new mandate, to be accomplished before the 13th Alpine Conference, asked the Alpine delegations to further investigate on the issue of logistics and urban freight delivery, and to analyse actions, experiments and projects, in alpine towns, throughout the different countries, and to report measures and solutions adopted in the same realities, aiming at improving urban efficiency and quality of life for residents.

The text of the Mandate regarding the related point is here reported, as follows:

“After completion of the ongoing work on local passenger transport, including its urban and interurban aspects, the issue of « Logistics and urban freight delivery » is next on the agenda. This specific discussion will explore, in particular, the measures taken or planned by Alpine towns to improve both urban efficiency and quality of life for residents.”

The activities of the “Soft Mobility” subgroup, regarding logistics and urban freight delivery, started in occasion of the 26th meeting of the Working Group Transport (Feb 5th 2013, Paris). This meeting was the occasion to clarify the objectives, to set out the key stages in the study and to agree on the method to be used. During the second meeting, (May 29th 2013, Paris), the guidelines were approved and a general road-map was commonly agreed. It was decided to focus on examples from the Alpine area, but not to overlook other initiatives if they can be transferred. A consensus was found to exclude the long distance supply chains.

The third (Dec 12th 2013, Wien) and fourth (May 27th 2014, Paris) meetings were the occasion to present and discuss the case studies sent by the delegations of each country. During summer, each partner provided contributions to improve the conclusions and recommendations of the transnational report. The final draft was examined during the 30th meeting (Sept 8th 2014, Paris) of the Working Group Transport.

2. Introduction

Urban freight transport is becoming more and more important in Europe. On the one hand it has negative impacts on the environment and society and on the other hand it is getting more and more costly and less reliable.

The volume of freight transported in conurbations has risen sharply in recent decades. This is due to:

- Changes in household consumption behaviour, with the amount of household budgets assigned to consumption tripling in the last 50 years.
- Changes in management and distribution practices, such as reduced stock and tighter flow organisation.
- International division of manufacturing processes, with more specialised and polarised activities and outsourced production facilities.
- Increases in the number of individual consignments, with the average number of consignments per capita doubling between 1988 and 2004.
- The growth of e-commerce, with the total turnover of e-commerce businesses increasing more than five-fold between 2005 and 2012.

In urban areas, freight transport systems create a variety of negative economic, environmental and social impacts. These include:

- Economic impacts: congestion, inefficiency, and resource waste.
- Environmental impacts: pollutant emissions including the primary greenhouse gas carbon dioxide, the use of non-renewable fossil-fuel, land and aggregates, and waste products such as tyres, oil and other materials.
- Social impacts: the physical consequences of pollutant emissions on public health (death, illness, hazards, etc.), the injuries and death resulting from traffic accidents, noise, visual intrusion, and other quality of life issues (including the loss of Greenfield sites and open spaces in urban areas as a result of transport infrastructure developments)¹.

The Alps are particularly affected by changes in climate. The Alpine ecosystem reacts sensitively to a warming climate hence the necessity to act on urban logistics. Traffic noise is increasing and mountainous region can affect and worsen noise propagation. The European environmental noise directive underline the importance to integrate the commercial transport into planning processes. The topographical conditions and the climate conditions in the Alps impede the scattering of local air pollution (CO, NOx, HC, particles).

Urban logistics is defined as "the art of transporting freight into, out of, and within a city in the most effective manner possible"². This process involves a variety of stakeholders, often with opposing needs and objectives, such as public authorities, businesses, institutions and local residents. Urban logistics includes freight delivery, and also other activities such as the organisation of transport flows, within either a company or a given geographical area, and optimisation of these flows.

¹ BESTUFS (2007) Good Practice Guide on Urban Freight Transport

² Laboratoire d'Economie des Transports (LET), Mesurer l'impact du transport de marchandises en ville, 2001

3. National framework

Knowing the legal framework and the organization of local authorities is a prerequisite to any comparative work and to any transposition to other towns.

3.1. *Austria*

Gesamtverkehrsplan für Österreich” (Mobility Plan for Austria):

In Austria general objectives for freight transport are included in this document published by the federal ministry for transport, innovation and technology in December 2012.

The Austrian transport policy has a clear strategy of shifting freight transport from road to rail. In the year 2025 a share of 40% of freight transport (ton-km) should be transported on rail. This will be achieved by improving the rail infrastructure, specifically on the main axes. The truck tolls are organized in accordance with EU legal requirements.

An additional approach is promoting rail transport services, focused on forms of rail freight, which are exposed, due to their cost structure, to a strong competition to road haulage. The financial aid contributes to cover additional costs in rail freight, which do not occur on roads.

The European Commission has declared these by Austrian aid programs as compatible with the internal market. The actual funding agreements of the national government, represented by the ministry for transport, innovation and technology with the various railway companies last until the end of 2017 and include rail freight services in the single wagon-load traffic, unaccompanied combined transport and providing rolling road connections. A further important program is the support of the construction of railway sidings.

Especially direct rail connections to /from factories and freight distributions centres discharge urban streets from heavy freight traffic by trucks.

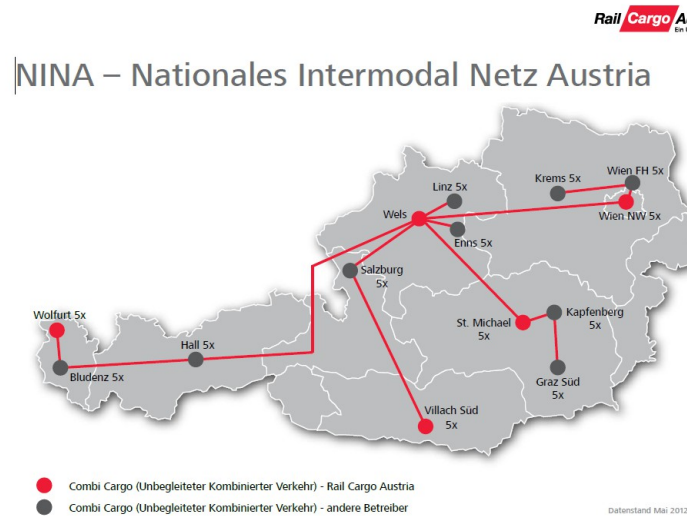
Financial support programs for logistics

An important approach to develop and to implement sustainable city logistic concepts in Austria are national (financial) support programs.

Introduction : The current situation in Austria

In Austria classic examples for city logistics with a central freight distribution centre, provided by municipalities or by private public partner ships are rather an exception (see case studies Klagenfurt, Cargo Center Graz), but on the level of companies, strategies and a lot measures to reduce costs and negative environmental impacts of freight transport in urban and suburban areas were already successfully implemented.

In Austria the rail freight company Rail Cargo Austria provides under the brand “EC Logistics” logistic centres in whole Austria, some of them are situated in the Alpine Convention territory and some others near to the Alps and service also Alpine regions (see map below):



Lager means storage

Source: http://www.ec-logistics.net/en/Customer_Service/Logistics_Center/index.jsp

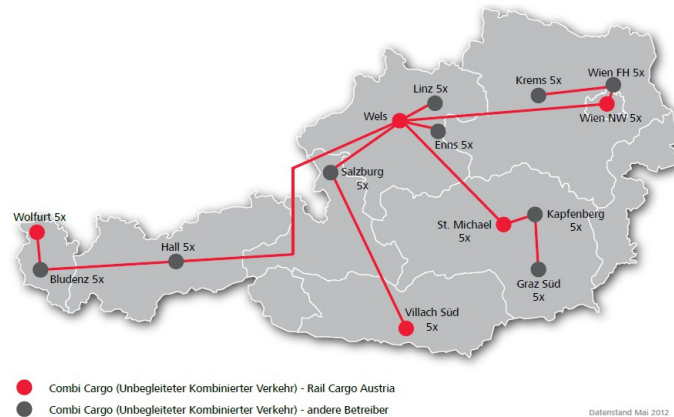
The logistic centres offer European-wide door-to-door universal services for transporting parcels, general cargo and part-load consignments. Numerous additional services, such as cash on delivery and weighing, are also available. Examples for services are the branches pharmaceuticals, food and other consumer goods, spare parts and wine³

Moreover, some combined transport terminals have also an important function for urban and regional logistics (presented examples in this report: Hall in Tyrol and Cargo Center Graz).

Rail Cargo Austria provides the network of combined transport trains with daily services (most of the over-night) called NINA (National Intermodal Network Austria). The mentioned terminals, which are used by the food supplier chains are included in this network. The following map gives an overview to the combined transport network and the terminals in Austria:

³ See at <http://www.ec-logistics.net/de/Branchen/index.jsp>.

NINA – Nationales Intermodal Netz Austria



Source:

http://www.railcargo.at/en/Logistics_services/Intermodal/Combi_Cargo/NINA/index.jsp

For the future development of efficient and environmentally sustainable development of urban and regional logistics, national supporting programs for research, development and implementation of measures are important. These programs contribute also to improve efficiency of urban and regional freight logistics.

Klima:aktiv mobil

The successful program klima:aktiv mobil is financed by the Austrian Ministry for Environment. The program started in 2004 and has the main objective to reduce the greenhouse- gas emissions in Austria.

A main target group of the program are companies, especially in the construction sector and in transport.

Supported measures in the field of freight transport are e.g.:

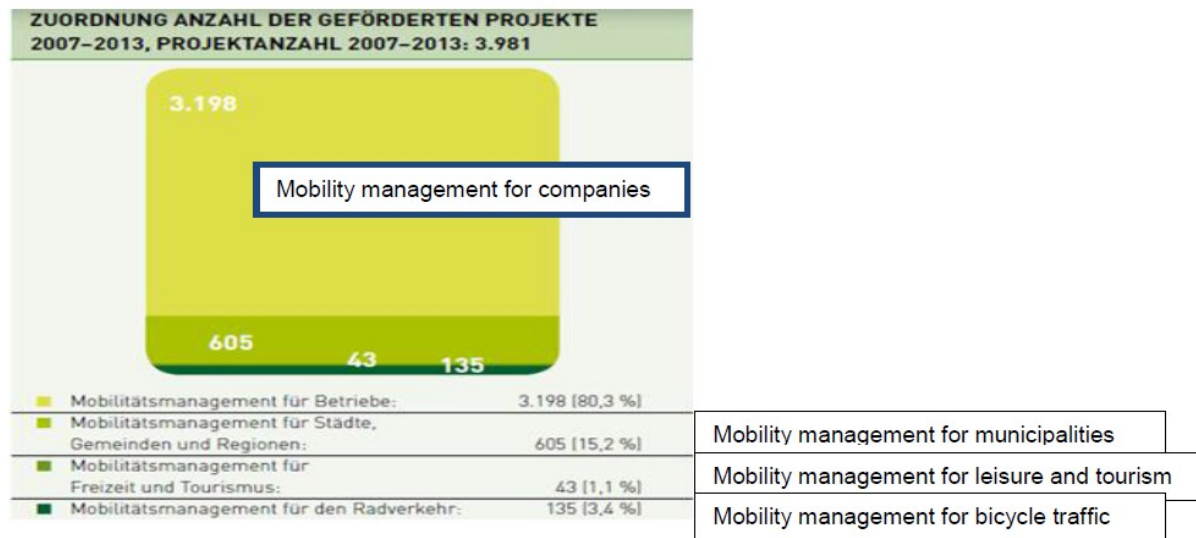
- Adaptation of duty vehicles for alternative (cleaner) fuel including supply facilities
- Implementation of IT-based traffic information and logistic systems
- IT-based systems to optimise delivery tours
- Replacement of diesel-powered transportation by electric powered freight cable cars or conveyor belts
- Optimising transport logistics for construction works to reduce greenhouse gas emissions
- Trainings for fuel saving driving for bus and truck drivers.

The program achieved in the period from 2004 until 2013:

- Approximately 4.900 klima:aktiv mobil projects were successfully implemented, thereof 3.500 by companies, especially in the fields transport and construction
- Around 570.000 tons of CO2 emissions yearly are avoided by all implemented measures (cumulated value for the year 2013)
- The whole support sum by the federal ministry for environment in the period from 2004 – 2013 was around 66.6 Mio. Euro and total investments of 495 Mio. € were induced.
- 5.600 “green jobs” were created or saved

- About 12.000 vehicles with alternative propulsion (thereof 10.000 electric powered) and more than 1.000 charging stations were supported in the klima:active.mobile program

Supported projects in the klima:aktiv mobil program in the period 2007 – 2013



The most of mobility management projects supported by the klima:aktiv mobil program are focused on companies and many of them on freight logistics (3.198 projects and a share of more than 80%) Other supported projects were elaborated together with municipalities 605 (15,2%) and finally projects for leisure and tourism and for promoting cycling.

Source and further information: „Klima:aktiv mobil Förderungsprogramm, Leistungsbericht 2013 und neue Akzente; Vienna 2014⁴

Some of the supported measures address city logistic, further klima:aktiv mobile measures are not typical for city logistics, but they contribute to reductions of negative environmental impacts and improving efficiency of urban transport logistics. Selected measures with relevance for city logistics will be presented in this report.

The research program “Future Mobility” of the Federal Ministry for Transport, Innovation and Technology

The Federal Ministry for Transport, Innovation and Technology addresses in its research programs also freight logistics. Most of the finished projects are focused on combined transport for longer distances and on transshipment technologies.

The research program “Future Mobility” focuses on the search for integrated solutions designed to help build the mobility system of the future, a system that must balance social, environmental and economic needs. This integrated approach helps create systems that

⁴ Will be published soon at

http://www.bmlfuw.gv.at/publikationen/umwelt/laerm_verkehr_mobilitaet.html

contribute significantly to ensuring mobility while minimizing the negative impacts of transport. The program is established for the period 2012-2020, the annual budget is 13 - 19 million Euro, beneficiaries are universities and non-university research groups, companies, NGOs, public agencies including transport providers. Sustainable urban logistics is one main task of the Future Mobility Program.

Project: Guidelines for ecologically sustainable urban freight logistics (acronym GöMoS)

The objectives of this project are described below:

“The originally chosen city logistic approaches investigated and propagated isolated transport consolidations within freight transport centres. Today solutions have to focus on a much wider approach. GöMoS takes this into consideration by developing the method based on the 3 main action fields of a successful logistic for towns:

- the operators of projects (differentiated by branches),
- the towns where the projects are implemented and
- the projects it selves.

At the beginning the methodical framework and the project borders are defined in cooperation with the client and a possible project advisory board. After this the actual situation regarding freight transport in Austrian towns will be surveyed by the help of a primary inquiry. This is done with a questionnaire and an inquiry regarding operators and projects in Austrian towns conducted by the praxis partner of the GöMoS team and regarding the view of the towns with the support of the Austrian Städtebund (union of Austrian towns).

Transport problems in general, specific problems of freight transport in towns, projects regarding logistics in towns and sustainable freight transport in towns (in operation, planned, in concept, funded, failed), criteria for implementation and future requirements for logistic project in towns will be investigated.

It is possible to integrate the requirements of different branches and also of parcel services using the knowledge and background of the praxis partner.

Specifications for the future are developed based on the developed method and the analysis results of the inquiries (qualitative and quantitative). This enables the deduction of best practices, assessment criteria and indicators (benchmark and measurement) for the action fields operator (who), project (what) and city (where) by using a cross sectional analysis.

By doing so it is possible to prepare the input for a balanced scorecard per action field. This is the basis for the guidelines. These single considerations per field are linked together to one overall assessment scheme (guidelines). These guidelines are integrated in a handbook together with action options and recommendations. The handbook including guidelines enables the assessment of future urban logistics projects from a public as well as a private business view.”⁵

The handbook, which is elaborated in the project GöMoS will be a valuable input for a call of the Austrian Climate and Energy Funds to logistics in urban regions. This call should be launched at the end of 2014.⁶

5 Source: <http://www2.ffg.at/verkehr/projekte.php?lang=de&id=&browse=programm&limit=-1&programm=50&ausschreibung=0&thema=0&keywords=Keywords&slimit=20&slimit=20>

6 See <http://www.klimafonds.gv.at/foerderungen/aktuelle-foerderungen/>

Project non-motorized shopping logistics:

Current status and problem definition:

Due to escalating (sprawling) development of settlements and the concomitant traffic volumes in a globalised economy, distances of transport – and therefore energy use and emissions as well – have grown tremendously in all parts of the supply chain of goods and services. Last-mile transport plays a significant role as exemplified by the fact that shopping by car uses on average about 100 times more fuel per kg of goods and km than required for supplying a retailer by a truck. Here is, facing the challenges of finite resources and looming climate change, the starting point of the proposed project, to reduce energy consumption and emissions again. Shorter distances and more efficient means of transport will play a major role in this endeavour.

Aims and methods for achievement of objectives:

The main aim is to develop a system for non-motorized transport of goods and the associated creation of suitable components, for optimization of last-mile transport of goods to the customers' homes. For this new system of short-distance transport new concepts for innovative products (types of means of transport for pedestrians and cyclists), procedures (organisation of use) and services (delivery) are to be developed. The focus is on new types of shopping trolleys also suitable for transport of goods to the homes. For their use innovative organizational methods, aided by IT-systems, will be analysed, which ensure a cycle of shopping trolleys between retailers and homes (e.g. a rental system). This includes a corresponding infrastructure (places for leaving the innovative means of transport in public space as well as residential buildings).

New and improved products (shopping trolleys, walking frames, bike trailer, high-load bikes etc.) and services will be integrated into the system, to ensure suitable means of transport for every shopping need.

Requirements on settlement structures for a successful implementation of the new transport system will be analysed (e.g. retailers within short distances).

Following an analysis of needs, profiles of requirements will be specified, adequate solution statements (concepts) for the new types of means of transport as well as their use and their integration in the system of short distance transport will be developed, and the potential for their utilization will be assessed.

Expected results and findings:

A transport system useful for all people in the long term for the “last mile” of the transport chain in shopping, ensuring their supply in a sustainable manner. In detail:

- Design concepts for innovative types of means of transport (particularly shopping trolleys), partly for improvement of selected means of transport (e.g. high-load bikes)
- A concept for management of the system and organisation of the necessary infrastructure and settlement structure.⁷

Support of work sidings and terminals (« Anschlussbahn- und Terminalförderung »)

A successful measure which is also valuable to improve city logistics is the support of the construction of work sidings of rails (“Anschlussbahnen”) to factories and big trading places to stimulate a shift from road to rail. Moreover, towns can be discharged from truck traffic

⁷ Source: <http://www2.ffg.at/verkehr/projektpdf.php?id=1124&lang=en>

between origin / destination of the freight to rail cargo stations. In Austria more than 60 % of rail cargo has its origin or destination in work sidings.⁸

In the period from 2007 until 2012 55 work sidings and terminal projects in whole Austria were supported by the climate and energy funds with together 46 Mio.€ (financial contribution to the funds by the federal ministry for transport, innovation and technology). Currently the avoided CO₂ –emissions of these measures are around 922.000 tons yearly.⁹



Photo: bmvit

Regional transport conceptions

In the most regional traffic conceptions environmentally sustainable freight logistics is mentioned as general objective. In the mobility conception for the country Salzburg (Landesmobilitätskonzept für Salzburg and in the masterplan traffic for Vienna (Masterplan Verkehr Wien 2003) specific projects on city logistics are briefly described (see chapter 4).

Traffic legislation concerning urban logistics

As usual all over Europe the Austrian road traffic act includes regulation relevant for city logistics, e.g. weight or size limits for trucks and temporary traffic bans, especially in pedestrian zones, which are only open in the morning (until 11 a.m.) for good deliveries. Delivery zones can be reserved and for other vehicles in the delivery periods parking is forbidden.

The Austrian tax legislation provides advantages for owner of electric powered cars, they need not pay a tax for the fuel consumption as for combustion cars, when buying a new vehicle and also a tax calculated based on the motor performance is not levied for electric powered cars and light duty vehicles.

8 Source: <http://www.gsv.co.at/wp-content/uploads/Bericht%20zum%20GSV%20Forum%20Trimodaler%20Verkehr.pdf>

9 Source: Jahresprogramm 2013 des Klima- und Energiefonds
<http://www.klimafonds.gv.at/assets/Uploads/Jahresprogramme/jahresprogramm2013.korr.pdf>

3.2. *France*

The urban transport authority is responsible for preparing and managing the sustainable urban mobility plan. As such, it is in charge of drafting the freight element of the plan covering its urban transport area. However, it does not always have the necessary powers to take action.

Under French law, urban transport authorities are "authorities with the power to organise general urban public transport services. They also have the power to organise demand-responsive transport services." Within their specific urban transport area they organise road, river and maritime transport services, as well as rail and other rail-based transport services on the networks that their remit covers." In this sense, urban transport authorities are not responsible for road transport outside their urban transport area or rail transport on the national rail network. Urban transport authorities are able to organise services covering freight delivery or urban logistics if they can prove that it permits to reduce pollution and nuisances affecting the environment.

As of 1 January 2011, there were 296 urban transport authorities in France, with a variety of legal forms.

The simplest type of urban transport authority is the "commune". In practice, however, this structure is only used to set up transport networks in small urban areas. Beyond a certain population size, "communes" tend to join forces under a single, intercommunal structure which also acts as the transport authority. This type of intercommunal structure normally fulfils other functions in addition to urban transport organisation (urban policy, economic development, drainage, spatial development, etc.). In some rare cases, the urban transport authority may also be a joint management board ("syndicat mixte"), comprising different types of local authority (commune, intercommunal cooperation authority, department).

In 2011, the breakdown of urban transport authorities was as follows:

- 26% were "communes"
- 58% were communities (groups of "communes" with their own tax imposition powers and with responsibilities covering multiple sectors). This figure includes intercommunal authorities ("communautés de communes"), urban authorities ("communautés d'agglomération") (the most common type of urban transport authority, accounting for 41% of the total), and urban communities ("communautés urbaines").
- 6% were intercommunal authority boards ("syndicats intercommunaux") with sole responsibility for urban transport
- the remaining 10% were joint management boards ("syndicats mixtes") comprising different types of local authority.

Communes have police power for traffic and parking. As such, mayors have the authority to issue orders prohibiting access to certain roads in the conurbation at specific times, or to restrict such access to certain types of user or vehicle. Furthermore, the mayor has the power to regulate vehicle stopping and parking or to reserve certain spaces for delivery vehicles (loading and unloading)¹⁰. It is important to note, however, that "decisions taken by authorities with road and traffic policing powers that have an impact on transport in the urban

10 Article L.2213 of the French General Local Authority Code ("Code Général des Collectivités")

transport area must be compatible, or must be made compatible, with the provisions of the urban transport plan."¹¹

Given that conurbations include several communes, they often cover areas with disparate regulations introduced by local authorities on an ad-hoc basis in response to one-off requirements. Although these regulations are generally consistent within a given commune, this is very rarely the case between communes. As such, a single conurbation may have dozens of regulations and standards covering the weight and dimensions of delivery vehicles. Delivery companies therefore often face a wealth of inconsistent regulations that are difficult both to understand and to follow.

Another useful measure with respect to urban freight delivery is the introduction of loading zones on public roads. The commune or intercommunality has the power to take such measures (mandatory power of "communautés urbaine", optional power of "communautés de commune" or "communautés d'agglomération").

Economic development falls within the remit of the commune and, where applicable, the intercommunality when acting in community interests. In particular, authority for the development and management of business districts lies with the commune or intercommunality (mandatory power of "communautés d'agglomération", "communautés urbaines" and "communautés de commune", where these receive financial contributions from businesses).

As such, the same geographical location may feature:

- a "syndicat mixte" acting as the urban transport authority, with a range of powers including authority for the urban transport plan
- a "communauté urbaine", the remit of which covers economic development and the organisation of business districts
- several communes, each of which has police and traffic powers and which is normally responsible for road improvement and which issues building permits.

This vast array of institutional stakeholders makes the task of organising freight delivery considerably more complex, and renders it particularly difficult to take the necessary action. It is therefore essential to introduce good governance between stakeholders. It is important to remember, however, that the elected representatives at each level may be of different political persuasions. This, in turn, makes it difficult to ensure good relations.

11 Article L.1214-6 of the French Transport Code (Code des Transports)

3.3. Germany

Legal framework

The legal framework for freight transport in Germany reflects the federal structures—the responsibilities are distributed to authorities on different spatial levels.

Ministries, authorities, administration level	Competence / responsibility ¹²
Federal Ministry of Transport and Digital Infrastructure Federal Office for Goods Transport	Transport policy, federal laws on transport issues, federal infrastructure planning, national action plan freight transport, responsible for HGV toll and control
Bavarian Ministry of the Interior, Building and Transport	Transport policy, transport planning, international transport issues; public transport on rail and road; transport infrastructure – all transport means (road, rail, air and water); goods transport and freight villages;
District government / administration	Economic promotion / business development, promotion of research and technology projects; regional planning procedures for projects like freight villages
County administration, resp. administration of county-free towns	Permits for commercial goods transport, Permits for passenger transport, Planning of local / regional public transport
Municipalities	Traffic bans and restriction of urban traffic, low emission zones, parking management, municipal traffic control (parking, speed limits) of urban roads; re-routing schemes for trucks

Concerning freight traffic within the urban road network, the towns have the most relevant competences. They can compile a transport development plan and integrate goods transport, but this is not mandatory. The existing transport development plans address often more public transport issues than goods transport or urban logistic. But some towns intend to develop integrates transport plans or even sustainable urban mobility plans as the EU suggests.

Relevant planning documents

- **National Action Plan Freight Transport**

The National Action Plan Freight Transport dating from 2010 addresses objectives, measures and innovative approaches in five thematic fields, one of it (Reconciling transport growth and the protection of the environment and climate) addressing urban logistics in particular. In detail, the measure of a logistics initiative for urban areas¹³ outlines the following objectives:

¹² Only the relevant competences for this report, not comprehensive

¹³ For more details <http://www.bmvbs.de/SharedDocs/DE/Artikel/UI/initiative-logistik-im-staedtischen-raum.html?nn=35922>

- Distributing last-mile transport particularly in towns and agglomerations more smoothly and environmentally-friendly, e.g. by developing new logistic concepts.
- Broad application of innovative concepts in urban areas to better organize freight transport.
- Freight villages are logistical interfaces capable of restructuring freight transport in urban areas.
- Negative environmental and health effects should be reduced by these measures.

- **Federal Transport Infrastructure Plan**

The federal transport infrastructure plan (Bundesverkehrswegeplan – BVWP) is the most important conceptual instrument to plan transport infrastructure in responsibility of the federal state in the long term. These are highways and federal roads, railways and waterways. Airports, harbours and freight villages are not included, but the federal state is responsible to connect them to the federal transport network. The federal transport infrastructure plan is the frame and planning instrument, but includes no financial plan and has no legislative character. It is valid for 10 to 15 years until the next plan is completed. At the moment the BVWP from 2003 is still valid, a draft concept for the new plan, which is scheduled for 2015 is already available.

This draft concept suggests a system of hierarchically differentiated central points¹⁴ as base for the analysis of accessibility deficits for goods transport comparable to the accessibility analysis which was done for individual passenger traffic, but not yet for transport logistic. Central points for goods transports are e.g. airports, harbours and terminals for combined transport or freight villages. As for economic reasons accessibility for goods transport gains relevance it is foreseen to develop a directive for an integrated network design for goods transport on roads and railroads based on such a hierarchical system of central points.

- **Bavarian Spatial Development Plan**

The Bavarian Spatial Development Plan (2013) contains the following references to goods transport:

- "Goods transport should be optimised."
- "Optimising goods transport e.g. through measures of bundling urban goods transport considerably contributes to the reduction of negative impacts on agglomerations. To sustainably reduce impacts on roads and environment, road goods transport should be shifted to rail or waterways. Extending infrastructures for combined goods transport e.g. freight villages reduce transport volumes on roads and accelerate and increase service quality in goods transport. New technologies, particularly telematics, can contribute to the integration and better utilisation of transport capacities."

- **Regional plans in the perimeter of the Alpine Convention (Planning region 16, 17 and 18)**

Regional plans are generally derived from the Bavarian Spatial Development Plan and concretise it for a region which is formed of several counties resp. county free towns. They contain basic principles and aims for the regions. While regional plan 16 (Allgäu) does not mention freight transport, the regional plan 17 (Oberland) refers to goods transport with the general aim: "The possibility of goods transport by rail should be used where it is feasible."

14 Comparable to the spatial planning concept of central places and axis connecting them

The regional plan 18 (South-east Upper Bavaria) dating from 2001 contains several references to goods transport. The named basic principles are:

- "Goods transport especially on long distances should be shifted to rail",
- "In Rosenheim, Mühldorf a. Inn, Traunstein and Freilassing freight centres resp. freight villages with handling plant for combined transport shall be provided."
- "Intercargo shall be improved in the region by development of the rail line Munich – Mühldorf a. Inn – Freilassing – Salzburg ..."
- "At the former highway border crossing Walserberg a cross-border City-logistic centre with rail access for the region as well as for Salzburg is aspired."

Relevant study for urban logistic

- **Report "Effects of Freight villages in Germany"**

In 2010 a study examined the effects of the freight villages on the labour market, on transport in general, ecological effects, modal shift effects in combined transport and their relevance for urban logistic solutions. Concerning the last point the study analysed why most of the so-called City-Logistic solutions developed in the 90th– often in the context of pilot activities – failed. The study concluded as reasons for failing:

- They were only transport offers ;
- Varying transport volumes / varying demand ;
- High competition of partners / high costs for transactions ;
- Telematics interfaces were not unified and therefore problematic ;
- Collection of goods was time-consuming (waiting times at ramps), especially without freight villages ;
- Structural Weakness of retail ;
- Significant reduction of consignment sizes, enforced by significant growth of courier, express and parcel services which form a kind of own city-logistic with high efficiency ;
- Missing regulative privileges of city-logistic vehicles.

But as most of the few surviving city-logistic services are in urban areas with freight villages, it can be concluded that the existence of freight villages supports city-logistic. The study gives several recommendations for urban logistic:

- The location of freight villages is decisive to reach a remarkable relief of transport effects especially in urban regions. A location has to be selected, which allows a 24-hours service without limitations and the connection to the transport network has to be very good.
- The move from transport intense enterprises from inner-urban areas as well as the zoning of areas for industrial location within the freight village contributes significantly to the channelling and concentration of truck traffic in the periphery of towns and agglomerations. Synergistic effects by concentrating logistic services and their clients in the freight villages lead to further economization of transports (e.g. food distribution, automobile industry).

3.4. Italy

The Italian legislative framework assigns to municipalities, through the Urban Mobility Plans (Piani Urbani della Mobilità, PUM) and the Urban Traffic Plan (Piani Urbani del Traffico, PUT) full autonomy with regard to mobility. On the basis of such authorization, in order to reduce the environmental impact of pollutant emissions and to reduce city traffic, the Mayors of several Italian municipalities introduced restrictions on traffic circulation, generally in the inner areas, establishing the ZTL (Limited Traffic Zones). These measures included the closure of freight traffic in urban areas, the introduction of driving bans, the limitation to goods delivery only for a few hours per day, the introduction of forms of payment for accessing “ZTL”. Sometimes, these measures were put in place without a proper comparison with transport operators.

In recent years there has been a significant increase of such measures. Despite the pursuing of the same objectives, municipalities adopted very heterogeneous measures on traffic regulation, creating a still more fragmented and confused framework for regulating access and transit in their central areas. This lack of homogeneity favoured regulatory uncertainty and created serious concerns to transport operators, intended as obstacles to the organization of their activities.

The Ministry for Transport and Infrastructure on 28th July 2010 published a document titled “First elements for the new National Plan on Logistics”, within which is included a report titled “Introductory note to the results emerging from the Autocarriers Board”, highlighting the need to introduce a more harmonized legislation on urban traffic. More specifically, it is reported that “within the Plan, a non secondary role will be covered by the topic of urban freight delivery, on which uniform rules shall be laid down. While respecting the specificities of the different urban centres, local authorities must comply with the above-mentioned rules in traffic regulation, recognizing the role of urban freight as fundamental to the well-being and quality of life of citizens”.

On this purpose relevant was the work made by the Advisory Council for the Road Transport and Logistics (deleted after the spending review implemented in 2012) in consultation with key economic players and administrations, notably municipalities and regions.

The Advisory Council, after signing a first agreement with ANCI (National Association of Italian Municipalities) has established a working group that led, after several meetings and an intense analysis of ongoing experiences at national and European level, to the preparation of an operational proposal to make the field of urban freight delivery a real market with specific contracts. The update of the National Logistics Plan and the subsequent Directive of the Ministry of Transport, Infrastructure Development Economic, identified the possible actions and policies aimed at strengthening the role of city logistics as a mean to relaunch Italian economy.

The agreement was the first step towards a shared platform for the study and development of the most significant experiences in the field of urban freight distribution. Afterwards, specific actions to collect most valuable studies and experiences will follow, considered as important inputs to apply solutions and effective regulations on urban freight delivery, starting from most important Italian towns.

Coming to more recent years, among the four measures of implementation of the Logistics Plan 2011-2020, formulated in May 2012 by former Advisory Council for Road Transport, now called Directorate General for road transport and intermodality, the second proposal considers urban freight delivery as a factor of development. According to the ministerial document, it is clear that urban freight delivery is a topic of major importance, since it represents a strategic sector for mobility in metropolitan areas, and considered as a prerequisite for the economic growth of towns. As a matter of fact, the amount of freight transport at urban/local level amounts, on an annual basis, to 606 million tons and 12.5 billion tons per kilometre, respectively accounting for 48.8% and 7.2% of the entire national road haulage. In addition, the economic output per year of this transport segment is estimated at 27.5 billion Euros, as reported in the ministerial document.

Between the guidelines, as concerns Urban Mobility Plans, the regulation already in force since 2000, is expanded by including the principles which should inspire it. Among these principles:

- The promotion of a coordination at regional level to elaborate scenarios compatible with the operational capability of enterprises;
- Balance the needs of the goods supply necessary to enhance the vitality of the economic and social fabric of the urban centres, with the objectives of reducing traffic congestion and air pollution;
- Regulate the activities of the urban freight delivery, according to the criteria reward or penalize according to the emission standards of vehicles engaged in the delivery of goods and modes more or less efficient use of such vehicles,
- Stimulate the gradual renewal of the vehicle fleet to the highest technological standards, in compliance with environmental sustainability and the principle of technological neutrality.

The Ministry of Transport is currently working together with the municipalities of Turin, Milan and Naples on a process of joint analysis about the implications of different and more innovative freight management policies, at urban level. The aim is to promote not only a first harmonization process between stakeholders, but a long-lasting sharing of experiences and know-how that municipalities should accrue under the actions of the agreement.

According to the above-mentioned, it is evident an urgent need to integrate policies for short-term traffic management with those of medium-long term, strengthening infrastructure and, more generally, promoting the use of vehicles with high environmental standards. Even if the area of applicability of city logistics is normally quite restricted (at urban or interurban scale), most of their impacts are reproduced at larger scale.

The implementation of these objectives cannot be achieved through the simple definition of exclusive intervention areas and responsibilities. On the contrary, in compliance with local authorities, it is needed a better coordination from different administration levels, starting from laws and regulations applied to the national territory until single municipal decrees. The ongoing efforts of the Italian legislation framework are addressed in this direction.

3.5. Switzerland

In Switzerland there is no specific national regulation for urban transport. But infrastructure projects in urban areas can be co-funded with means from a specific fund, the so-called infrastructure fund. Main condition for such a co-funding is the integration of the projects in a program coordinating the different modes of transport and respecting the needs of sustainable transportation. The amount of subsidies varies from 30 to 50%, according to the quality of the program. In Switzerland, 55 urban areas are acknowledged as so-called "agglomerations" (or single towns) and have therefore the right to draft a program and to apply for subsidies. The Infrastructure Fund Act (IFA)¹⁵ has been put into force in 2008. Since then, two programs have been launched for a period of four years each. The total sum of subsidies assured by the parliament for infrastructure projects in agglomerations amounts to 2,5 bio. €.

The focus of these programs for urban areas is clearly on passenger transport. But if a particular program proves to have positive effects on goods transport – or is reducing its negative effects - it will be awarded additional points and the amount of subsidies may be raised. To judge the added value of a program for goods transport or its capacity to reduce its negative aspects respectively, the following factors are being considered:

- Infrastructure (loading zones, etc.)
- Transport management (cooperation, information)
- Traffic management
- Legal measures and regulation (restrictions for use of roads).

Besides the specific measures of these programs, there are general regulations influencing goods transports and thus also freight delivery in urban areas. The two most important ones are aiming at heavy goods transport on the road (vehicles with a weight of more than 3.5 tons). The first is the so-called night ban, prohibiting the use of heavy goods vehicles during night hours between 10 p.m. and 5 a.m.. The second is the heavy goods vehicle fee. It is a performance- related fee, depending on the kilometres driven, the weight of the vehicles and the emissions exhausted. As the external costs of goods transport on the road are included in the calculation of the tariffs applied, the rate is relatively high. For a 40 ton vehicle, the fee amounts to about 80cts/km. Due to this, rail in Switzerland could maintain a high share of about 40% in goods transport. As urban towns situated within the frame of the Alpine Convention are also connected to the rail system, they can profit from this situation too.

The fact that there is no specific regulation for goods transport in urban areas is, among others, a consequence of the division of road authority between Confederation, cantons and municipalities. The Confederation is responsible for the national motorway network with an actual total length of 1'800 kilometres. The cantons account for their road network with a total length of about 20'000 kilo-meters. Construction, maintenance and operation of the

15 Link IFA: http://www.are.admin.ch/themen/verkehr/00250/00460/index.html?lang=en&download=NHZLpZeg7t.Inp6lONTU042l2Z6ln1ad1lZn4Z2qZpnO2Yuq2Z6gpJCDeIF_gmy m162epYbg2c_JjKbNoKSn6A--

remaining 50'000 kilometres is the duty of the municipalities. They have of course to respect a series of general regulations put in force by the Confederation and the cantons – so they are, due to a federal law guaranteeing the free use of the entire road network¹⁶, not allowed to raise fees or taxes for the use of their municipal roads. Nevertheless, they have a certain leeway concerning traffic regulation. They can limit access to specific roads, be it for specific times or in general. They also can limit the access for vehicles exceeding a specific weight limit, mainly the limit for heavy vehicles of 3.5 tons. It has to be considered that the general night ban for heavy vehicles is reducing the problem of disturbance of night's rest and is thus, at least during night time, limiting the need for regulation aiming at protecting people from traffic noise.

Another important field for urban freight delivery in which the municipalities have ample leeway is the parking policy. But as it can be seen from the examples mentioned in chapter 4.6, municipalities have so far made only little use of their possibilities in formulating a coherent policy for urban freight delivery. Another maybe even more important reason for this reluctance might be the concern that such concepts might cause follow-up costs for the municipalities.

16 There are, however, two important exceptions to this general rule: The motorway sticker, a flat fee of 32€ p.a. for the use of the national motorway network, and the performance-related fee for heavy goods vehicles. As the general rule is written down in the constitution, these exceptions had to be mentioned on this level as well.

4. Towns concerned by the study

The following map presents the towns concerned by the study:



More details are presented in appendix n°1 which indicates for each concerned city included in the alpine convention perimeter:

- an overview of the city,
- the issue of urban freight delivery in regional organisation
- the current freight delivery situation in the conurbation
- the actions, experiments and projects

5. Categories of measures

Making a distinctive categorisation of measures is difficult since there are many interdependencies. The categories described were used in European reports on urban logistics such as COST321, BESTUFS or SUGAR.

The “Soft Mobility” Sub-group of the alpine convention has chosen for a categorisation into 8 topics:

- Governance and cooperation
- Regulation and organisation
- Infrastructure
- Urban planning
- Education and information
- Supply chain management
- Intelligent transport system
- Data acquisition and modelling tools

5.1. Governance and cooperation

Before implementing a measure to improve the freight organization, it is often necessary to establish a governing body. Consultation processes with private stakeholders provide a better understanding of the constraints and obligations of each party and allow the development of concerted action programs. Any positive effect on the last mile deliveries needs the participation and commitment of professionals (producers, carriers, retailers) and of residents.

5.2. Regulation and organisation

Regulation is the main tool that a city can use to ensure a more efficient last mile delivery. Cities are in charge of local traffic and parking regulations, including all regulations that relate to delivery vehicles. Historically, most of the traffic and parking regulation have aimed at solving punctual problems at the level of a street or a neighbourhood. Rules are generally very parochial and can be conflicting.

- The tool that towns uses in priority is truck access restrictions. These restrictions can be based on various criteria: time frames, weight, size, noise emission, air pollution, loading factor, type of goods.
- Time windows aim to keep designated streets or areas free of freight traffic during specific periods. Many towns have regulations on delivery time windows in city centres. Delivery time windows depend on the opening time of shops. As such, times windows often open in the morning (between 7:00 and 12:00). It doesn't mean that there are no freight vehicle the afternoon: carriers still use this period for pick-up activities and home deliveries.
- Night deliveries are often regulated and are controversial. Many towns consider this as a good strategy to decrease the number of trucks during daytime but the noise impact should be taken into account. One solution commonly used is to authorize vehicle operating under 60dB (PIEK certified vehicles for instance). The time windows are often 5:00 to 7:00 and 20:00 to 23:00 meaning deliveries aren't authorized between 23:00 and 5:00.
- Weight restriction are the most common regulation in Europe. Their main objective is to limit the physical damage that freight vehicle inflict on the infrastructure. It isn't the best criteria to regulate freight traffic. Restrictions based on dimension or surface areas of vehicle are better to limit the physical hindrance of freight traffic. Smaller vehicle are easier to operate in the urban environment. This type of regulation can be counterproductive: a heavy goods vehicle can be replaced by multiple light commercial vehicles which means a stronger impact on congestion level and environmental balance.
- Traffic regulations require enforcement to prevent drivers ignoring them. This is especially true of vehicle access and loading regulations, speeding regulations, and statutory lorry routes. However, enforcement of traffic regulations can require significant resources and can be very expensive. Enforcement bodies may not see it as their first priority because they lack information on this subject or training. When developing urban freight measures, it is a necessity to consider enforcement at the start as it plays a key role.

5.3. Infrastructure

New infrastructure can be built with a certain emphasis on urban goods transport. But new infrastructure might result in more transport. An effective infrastructure policy must therefore promote non-road transport modes and more generally encourage new patterns of infrastructure use that will result in a decrease of congestion and of the other negative effect on urban goods transports.

- The loading bay is the most widely used logistical tool in urban areas. The somewhat systematic development of loading bays in the majority of urban areas is linked to a combination of several factors such as the increasing business density in city centres, the road transportation of goods taking shape as a sector in its own right (the advent of professional courier services, in particular) as well as looking out for the interests of the various road system users when drawing up town planning policies. The fact that loading bays are still regarded as a viable solution to urban distribution issues is due mainly to its widespread, very local nature, when compared to other urban logistic facilities, and for the way in which it can be easily incorporated into a road system. They remain a public facility yet are made available for companies to use (business establishments and transport professionals). However, loading bays do not solve all of the issues. They are not suitable for vehicles which are larger or smaller than average or for deliveries which must be made as closely to the delivery address as possible so as not to break the cold chain, for example), given that it is impossible to increase the number of bays in front of each business. Loading bays facilitate the delivery of goods into urban centres. As such, they constitute a major challenge in maintaining the business dynamics of city centres which are faced with a growing number of business and retail hubs operating in the outskirts of towns.
- Urban logistic spaces are defined as *"interfaces designed to facilitate the relationship between shipments and deliveries, between roads and operating sites, and between the city and its inner and outer suburbs"*¹⁷. The purpose of these spaces is to break up and reorganise the flows that move through the city, for the benefit of some or all of the local economy's stakeholders.
These logistic spaces deliver a number of benefits:
 - optimising delivery rounds and reducing "final-mile" distances by creating forced transfer points closer to the city or city centre
 - reorganising delivery rounds to reduce the number of vehicles on the road; when combined with the reduction in distance travelled, this can help to reduce congestion and improve road sharing
 - limiting greenhouse gas emissions: feedback has shown that these spaces deliver substantial environmental improvements, reducing polluting emissions by around 50%
 - helping to improve air quality, by reducing the total distance travelled, limiting the number of vehicles on the road or introducing environmentally friendly delivery systems.

ULSs are an effective response to demand for more designated logistics space from haulage and logistics companies.

There are 3 different types of ULS

- Urban Logistic Zones (ULZs). These are the main entry points for freight into the conurbation. These vast logistic spaces were introduced in the 1980s and tended to be located far from city centres (with the exception of ports, rail depots and certain markets designated as being of "national interest"). The benefit of having these types of space in urban areas is the creation of forced transfer points closer to towns, from where freight can be channelled more effectively to its final destination. Grouping several logistics companies together in the same location also helps to encourage productive collaboration. Example: Sogaris hubs in Arenc and Rungis
- Urban Distribution Centres (UDCs). These centres are designed to house freight that comes from, or is heading to, a problematic area of the city (restricted neighbourhood, city centre, etc.). They are used to optimise service to these areas by streamlining delivery routes. Urban distribution centres are normally operated by a service provider, which breaks up and reorganises incoming flows from several transport operators in a more efficient manner.

There are **two main types** of urban distribution centre in Europe:

- The first type to appear is based on the results of experiments and examples in other countries (Germany, Italy, the Netherlands, Japan, the UK, etc.) and relies on voluntary effort by the local authority. Under this model, the local authority introduces a "requirement" for all operations serving a problematic area to pass through the hub. This type of arrangement has been introduced in La Rochelle, as well as in towns abroad such as Monaco, Padua, Bristol and Yokohama. These hubs are often unpopular with haulage companies, however, as they entail additional costs and the vast majority of service providers wish to retain control of the delivery to the end customer. Moreover, the French legal system does not currently permit the creation of public service delegations for freight delivery.
 - The second type is based on coordination between private entities. Under this model, local authorities act as developers by ring-fencing land for logistic spaces, identifying real estate opportunities, acting as the link between project initiators and land owners or providing initial subsidies. There is no obligation for haulage companies to use this type of urban distribution centre. The urban distribution centre transport provider acts as a subcontractor of other transport companies, and is therefore in direct competition with other urban subcontractors.
- Local Logistic Spaces. These are small logistic spaces (150 to 300m²), normally run by a single operator. They are designed to provide a logistics facility located in close proximity to the businesses or individuals concerned, and thereby improve the efficiency of delivery rounds. Freight is delivered to the local

logistic spaces by heavy goods vehicle in the early hours of the morning (4 am or 5am), before congestion problems arise. This freight is then distributed to major retailers and supermarkets in the urban area in light vehicles from 6 am onwards, and to independent retailers between 10 am and noon. One of the benefits of these small sites lies in the fact that can be housed in existing buildings, selected on the basis of availability. Currently, the majority of these sites are installed on disused car parks, or on car parks looking to generate additional income.

5.4. Urban planning

Planning strategies for urban freight represent all policies and regulations using Master and Land Use Plans, as well as land use and building ordinances with a direct impact on freight deliveries.

Although the use of city planning measure is quite uncommon for towns implementing on urban freight transport policy, it seems however that it could prove to be an interesting solution today to achieve a more sustainable goods mobility in city centres.

The Urban mobility plan can be used to propose a more appropriate treatment of on-street delivery areas based on a set of actions combining information, prevention and enforcement if necessary. It can impose that main generator of freight (supermarket, warehouses, hotels, large office areas...) integrate delivery areas within their premises proportional to the freight volume they generate. This kind of measure can apply to new buildings or buildings subjected to important transformations or new activities.

It can be also used to impose storage areas to be accommodated for activities such as restaurant, bar and cafés. This is an original policy aiming at reducing the demand for transport and delivery by obliging those activities to store bottles for the use of several days, thereby reducing the need for frequent delivery.

Using city planning ordinance and building codes is an effective mean to limit the congestion on roads. However, a municipality that wishes to implement such measures must make sure that these regulations will not induce developers and shopkeepers to implement their businesses somewhere else, where no delivery parking provisions are required.¹⁸

5.5. Education and information

Urban authorities can provide information to freight transport companies and drivers by the provision of map or the use of real time information. It can be: lorry routes maps, web based information on traffic problems and road works, information boards...

Public authorities have a role in educating and training freight operator and towns' technical services.

5.6. Supply chain management

The physical distribution of goods to the consumer is a critical factor in the success of the last mile business model.

Private stakeholders can modify their supply chain management in order to deliver goods more efficiently be it economically or environmentally.

- Designated lockers or locker-banks are groups of reception box units. They are similar to collection points as they are not sited at each customer's premises. They can be found in apartment blocks, work places, car parks, and railway stations... Lockers have electronic locks with a variable opening code, and can be used for different customers on different days. Customers may be notified by message about when their delivery has arrived, the box number and location, and the code to open the box. Locker-banks require the customer to make the final leg of the journey. However, locker-banks are located to make the deviation in customers' journeys as short as possible.
- The introduction of environmentally-friendly vehicles (EFV) into urban transport is most common in Western European countries at present. Public authorities have made resources and financial support available to encourage innovative freight transport and logistics concepts including EFV and new vehicle technologies in urban areas, by a mix of incentives and regulations. Main types of EFV include:
 - Alternative fuels including LPG, CNG, Bio-Fuels and Hydrogen-based-technology
 - Diesel and petrol including Euro engine emissions standards for goods vehicles
 - Electric and hybrid vehicles. Electric vehicles are especially suitable to reduce noise emissions and produce no exhaust emissions. Many municipal and national activities have started to encourage the use of EFV in urban freight transport.

5.7. Intelligent transport system (ITS)

Various forms of ITS can be used can be used for urban freight including vehicle telematics, global positioning system (GPS), smart cards... ITS can be divided into:

- Freight transport management systems: fleet management systems or tracking and tracing systems which are mainly used by freight transport companies. Those systems can permit an efficient planning of vehicle loads and journeys (computerised vehicle routing and scheduling), allows communication between the driver and the company planner (in-cab communication system) or can be used to manage goods vehicle arrival at major sites (slot booking systems).
- Traffic management systems: access control systems, traffic management and information systems which are mainly used by public authorities. For instance, urban traffic management and control systems help to improve traffic flow, to reduce journey times and delays, and to improve road safety.

5.8. Data acquisition and modelling tools

To manage and control the urban freight transport it is very important to have models and tools to simulate the system. Freight demand models are one of the key components of transportation planning at the strategic, tactical and operational levels. Public agencies need to forecast future transport needs for both people and commodities in order to provide the infrastructure and human resources that make such movement possible. The private sector needs forecasts of demand for transportation services in order to anticipate future financial commitments, equipment acquisition and labour requirements

In France, a statistic-descriptive model, called Freturb©, was developed. It allows the number of vehicles attracted by each traffic zone to be obtained. This model, starting from the socio-economic data of each traffic zone of the study area and using the results of surveys carried out in French towns, allows us to obtain the vehicles required for restocking in each traffic zone.

In Germany in the towns of Berlin, Munich and Hamburg data acquisition and data analysis regarding urban freight transport were carried out to develop a tool for commercial traffic on roads for city planning calculation. The tool (WIVER©) provides the basis for different scenarios and measures and it recognises the complexity of trip chains for commercial freight traffic. In 2003, the WIVER© approach was transferred to a general framework backed up by a system theory and included in the software program VISEVA© at the Technical University of Dresden.¹⁹

¹⁹ A state of the art on urban freight distribution at European scale, Francesco Russo, Antonio Comi, University of Reggio Calabria – Italy – UE, 2004

6. Best practices

Within the area of the Alpine Convention, the following actions were presented and analysed: 1 out of 2 is about governance

- 1 out of 3 is about infrastructure, regulation and organisation or supply chain management
- 1 out of 4 is about urban planning or intelligent transport system
- 1 is about education and information.
- None is about data acquisition or modelling tools (but its because its generally a national initiative).

Austria – Project E-Log in Klagenfurt/ Carinthia – an ambitious project for electric powered freight mobility
Austria – Combined transport terminals as base for city logistics: Examples hall in Tyrol and Bludenz (Vorarlberg)
Austria – Project Innoversys (Innovative Verkehrssysteme für die Wirtschaft der Europaregion Salzburg) : shifting freight from road to rail by a more efficient use of existing rail infrastructure.
France – Grenoble sustainable logistics action plan
France – Sustainable urban mobility plan including freight
Germany – Freight hub Burghausen and Freight hub Traunstein
Germany – Regional Freight Transport Management Lake Chiemsee
Italy – the urban distribution centre of City Porto Aosta
Italy – Working Group on Freight Transport
Italy – Smart fusion Como: testing new technologies and innovative models for urban freight deliveries
Italy – PIE VERDE project
Switzerland – SpediThun
Switzerland – Strict restrictions mainly in pedestrian zones

The following best practices outside of the Alpine Convention area but applicable on Alpine towns were also presented and analysed:

- 1 out of 3 is about infrastructure or supply chain management
- 1 out of 5 is about governance and cooperation, urban planning or data acquisition and modelling tools
- 4 concern education and information or intelligent transport system
- 3 concern regulation and organisation.

Austria – Cargo Center Graz (CCG)
Austria – Project Cycle Logistics

Austria – Project Rumba (Vienna)Austria
Austria – Innovative bicycle-trailers Austria
Austria – Wastepaper logistics: collecting in Vienna and transport by train across the Alps to a paper factory in Frohnleiten (Styria)
Austria – It-based delivery tour planning system and fuel-saving driving training for truck-drivers in a big furniture delivery chain in Vienna
France – National guideline to developing loading bays : quantity, location and dimensions
France – Paris' Sustainable Urban Logistics Charter
France – Regulating freight delivery : the case of Lyon
France – Data collection modelling, Bordeaux
France – Simplycité: an urban distribution centre in Saint-Etienne
Germany – Bentobox
Germany – Environmental loading point for inner city delivery (Bremen)
Germany – CarGo Tram (Dresden)
Germany – Emissions-free parcel delivery (Nuremberg)
Germany – “Bring-Buddy”- Concept
Germany – Truck routing system (Bremen)
Germany – Environmentally oriented traffic control (Potsdam)
Germany – E-City-Logistics (Berlin)
Germany – Urban Retail Logistics (Ruhr region)
Italy – Cityporto Padova
Italy – CEDM:Centre for eco-friendly City Freight Distribution in Lucca
Italy – CityLog
Switzerland – Statistics: Main data on national level (GTS)
Switzerland – Cargotram in Zurich
Switzerland – Specific education of city planners, transport engineers and architects
Switzerland – UrbanZen
Switzerland – Establishment of priority areas for city logistics
Switzerland – Framework “Urban freight transport”
Slovenia – Local freight partnership development plan in Ljubljana
Slovenia – Promotion of sustainable freight logistics in Ljubljana

Every good practise is described in appendix, with a general presentation, the action typology, the underlying issue (problem/needs addressed) and objectives, the specification, the implementation details, the supporting mechanism, the results / assessment, the conditions of success or failure, strong and weak points, transfer possibilities and contacts.

The best practices described contain positive results but each case is very specific. It is important to adapt the organisation when transferring a solution to another city. Some conditions must be met for a successful transfer of best practices²⁰:

- to take into account the city's economic situation and its evolution,
- to make an analysis before the implementation of the project,
- to take into account the global supply and transport chain,
- to detect and suppress the bias which can be introduced when making practice choices,
- to identify the constraints of scale of the project,
- to identify the project which can go along different types of innovation,
- to implement the follow up with permanent assessment surveys using relevant indicators in order to be able to draw comparisons between the ex-ante and ex-post situations and to assess the implemented measure impact.

There is never a single optimal solution. One has to look for a combination of measures that is specifically aimed at achieving the desired result.

7. Main findings

There are six main conclusions:

- There is no major difference between the problems of urban logistics in alpine towns and other locations, except for the negative impacts.
- In most of the towns, there is a lack of statistics concerning urban freight transport. The data availability is poor compared to passenger transport.
- Transportation issues in towns are often focused on passenger transport. Urban freight is not taken into account locally. Also, a potential increase of home deliveries linked to ageing population and on the E-commerce growth seem never to be taken into account.
- Several actions show that coordinated freight transport has to be performed as a combination of positive incentives and restrictions.
- In some towns freight transport is perceived as a completely private issue where public administration is not involved. Freight transport is not on the agenda of policy and administration in small towns, as negative effects of freight transport are considered as a minor problem of transport in general (and compared to commuter and passenger transport effects). Cooperation with local public and private actors (retailers, shippers, transport operators) is a prerequisite for success.
- Some themes are well-known and thus well-implemented, and on the other hand some topics are really ignored. These left-aside themes are thus the ones this report is going to develop a bit further in its following recommendations.

8. Recommendations

8.1. Develop public-private partnership and promote sustainable urban logistics charters

Urban logistics is a complex field, involving a multitude of different institutional and professional stakeholders. Consultation is therefore crucial to the success of any project in this area, and ensures that regulations are both effective and efficient. Local authorities have an important part to play in developing and implementing sustainable distribution systems and practices.

In recent decades, there has been a rising trend in the use of consultation processes involving stakeholders which had previously had little contact with each other, i.e. haulage and delivery companies, and councillors and local authority departments (and shopkeepers). Although these discussions have not always delivered concrete results, they have provided both parties (i.e. not just public sector managers) with an opportunity to get to grips with the problems and inefficiencies of urban freight delivery.

An urban distribution charter would represent an opportunity to conduct more effective discussions. The transport sector in general, however, is highly fragmented and disparate in nature and any such discussions therefore need to consider the needs and requirements of all parties (small delivery companies, subcontractors, major clients, couriers, logistics providers, specialist distributors, etc.). However, the presence or absence of a particular retailer's association can either make or break a consultation process. There may also be some benefit in including other partners, such as large city-centre establishments that generate high delivery volumes (supermarkets, etc.) and representatives of river and rail infrastructure owners located within the urban area.

Many small haulage companies (often subcontractors of large groups) complain about the excessive demands placed upon them by recipients in urban areas (multiple deliveries per day, refusal to accept designated delivery times, making the delivery company wait, etc.). However, through fear of losing their traditional customer base or a lack of resources, these operators are afraid to take initiatives and offer the types of new service that would help to make urban freight delivery more efficient.

Local authorities often consult stakeholders when they develop their sustainable distribution strategy. An accurate consultation process would provide an opportunity for the development of joint solutions, encouraging professionals to coordinate their activities to deliver practical day-to-day improvements to delivery services.

An urban distribution charter can be a way, for local authorities, to formalise and consolidate the consultation processes established. The leader of the charter can be the local authority but each stakeholder can be in charge of a specific project. For instance, freight industry can be in charge of the development of silent deliveries, efficient vehicle utilisation, waterway and railway deliveries... while public authorities can take care of urban regulation, design of loading bays...

A charter should set out requirements for local authorities and freight delivery companies to promote – within their respective areas of responsibility – solutions that are beneficial to urban deliveries. These may include the use of environmentally friendly vehicles, the harmonisation of delivery times, or more efficient use of dedicated spaces.

Although the precise objectives may differ according to the type of charter concerned and the level of ambition shown by the local authority, it is important to remember that urban logistics involves more than just urban freight delivery. Firstly, freight delivery in urban areas (the so-called "final mile") is entirely dependent on the upstream logistics chain. Secondly, any attempt to achieve sustainable urban logistics will require action on existing urban logistics facilities and infrastructure (and in particular on forced transfer points such as urban logistic spaces, ports, rail depots and logistics hubs).

An urban distribution charter should be the result of local negotiations and its content should vary according to the partners (including individuals) involved, their objectives and their willingness to commit to the process. It is nevertheless a good idea, and in likelihood beneficial, to introduce formal procedures to guide the development of a "charter" type document. For instance, this type of formal document are developed in France and in England²¹. As such, a charter is both a binding contractual document between partners and a local and national communication resource.

8.2. Using regulation to develop carbon free deliveries

Many alpine towns and their surroundings are very congested. Selective restrictions for heavy vehicles can be a very effective short-term instrument. The criteria applied include effective loads, noise emission and restricted time windows for deliveries. However, positive measures can be more effective than restrictions, such as greater time frames for electric vehicle deliveries.

In order to achieve stability in long-term policies as well as efficient urban goods transport systems, it is important that urban regulation are harmonised, standardised and easy to enforce.

8.3. Take into account deliveries in urban spaces design

One of the problems of urban delivery is the space consumed by delivery vehicles. Security issues, and congestion problems are often due to lack of dedicated delivery areas (restricted time and space slots for loading areas; integration of loading areas in urban patterns or urban development measures).

While reserving spaces is complicated in existing streets because of the pressure of motorists or even storekeepers, it is easier to plan and reserve needed land during retrofitting of streets and neighbourhoods, or in new urban projects.

To know the number and location of spaces required for delivery, a study of the needs will be required in advance. This work should be done as early as possible.

21 A guide on how to set up Freight Quality Partnership, Department for Transport, Feb 2010

www.freightbestpractice.org.uk/freight-quality-partnerships-guide

Freight Quality Partnerships – Case Studies, Department for Transport, Dec 2006

<http://www.freightbestpractice.org.uk/freight-quality-partnerships-case-studies>

Local Authority Freight – Management Guide, Department for Transport, Jan 2007

www.freightbestpractice.org.uk/local-authority-freight-management-guide

8.4. Carry out specific surveys to improve knowledge

In terms of passenger travelling, a very important number of surveys and studies is conducted annually. On the contrary, for goods transportation, difficulties in uniting stakeholders and implementing actions is related to the fact that few data are available on number of freight movements, vehicle types, type of and amount of goods. The issue is misunderstood or unknown, as well as possible solutions.

Permanent or periodic surveys are needed as well as more investment in data collection and statistics on urban freight transport. Conducting studies is therefore a starting point for a sound analysis of the scope of urban freight transport (in particular in smaller towns) and the evaluation of potential improvements for health, environment and urban quality and finally for developing an efficient goods transport system.

8.5. Preserve non-road infrastructures and promote their use

Preservation of non-road infrastructure is mandatory if available, because even if they are not used today, it will perhaps be useful in the future. If it disappears, the idea of modal shift might also disappear, or it will cost even more to be reinstalled. It is therefore necessary to preserve rails, railway stations, ports and docks anytime possible.

8.6. Develop the use of cargo bikes

The cargo bike is a suitable transportation vehicle for the transport of goods, especially on the last mile. It can be used by carriers and retailers. Promoting the use of cargo bikes can be a solution to reduce the negative impact of freight transport in the inner city centre. The use of cargo bikes will be limited to shorter distances. However the use of electric bikes may extend the operating distance of cargo bikes. It is assumed that electricity for e-bikes is produced from regenerative sources to make it a sustainable mobility service.

8.7. Prevent logistics' sprawl by preservation of the existing logistics lands

The scattering of logistic activities induces many problems: land use, longer distances, road sharing and congestion. It should be ensured that logistics activities are strongly connected to the urban tissue to avoid the aforementioned negative external effects as much as possible. But the price of land in the town centre can be exuberant for logistics activities. This is the major challenge for the community: they can "block" the use of certain parts of wasteland areas for logistics purposes. Blocking or reservation of the land can be performed with planning documents.

9. Appendix n°1 Description of the context of the towns concerned by the study

9.1. France

9.1.1. Grenoble

Overview

The Grenoble conurbation consists of 28 communes with a total population of 398,600 and covers an area of 326 km² (Insee, 2008). It has a high population density, with 1,280 inhabitants per km² across the conurbation as a whole, and 8,610 per km² in Grenoble city centre. This dynamic region has more jobs (210,400) than its economically active population (170,000). The conurbation features steep terrain. The city of Grenoble itself is located on a plain, at the confluence of the rivers Isère and Drac. The conurbation is surrounded by three mountain ranges: Belledonne, Chartreuse and Vercors.

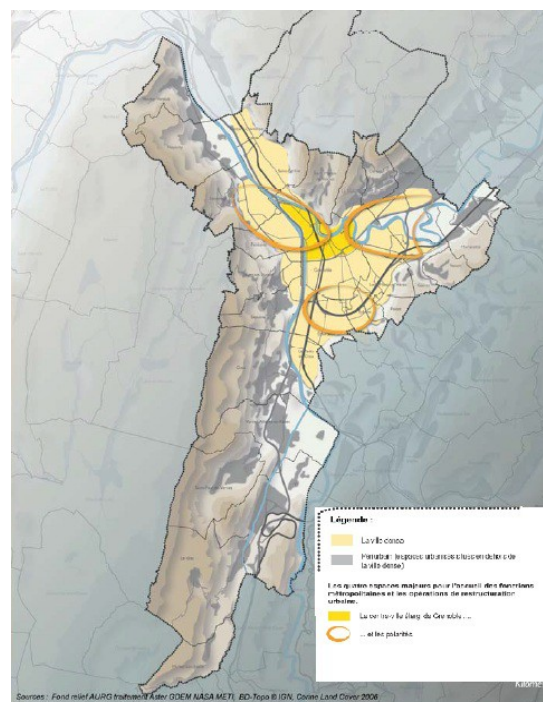
The region comprises three types of space:

- A dense urban space: Grenoble and its historic city centre, along with the adjoining areas, including the suburbs and the business, shopping and infrastructure districts located primarily around the motorways and the southern ring road. This area accounts for 85% of the conurbation's population and 95% of its jobs.
- Less dense periurban areas, dominated by residential housing and open spaces and farmland.

In terms of the region's economy, there are 15 sites of special interest ("sites d'intérêt communautaire"), representing approximately 230 hectares of industrial land.

Across the conurbation as a whole, there are 75 business districts that fall under the responsibility of the commune or intercommunality. These provide around 90,000 jobs, or 45% of the total number of jobs in the conurbation.

Outside the dense city centre, the business districts are located on the outskirts of the conurbation: to the north-east in the communes of Fontaine, Saint-Egrève and Sassenage; to the east in the communes of Meylan and Saint-Martin-d'Hères; and to the south in the communes of Echirolles, Eybens and Pont-de-Claix.



Grenoble and the surrounding areas experience regular pollution peaks that exceed the limits set by European regulations.

Freight delivery accounts for approximately 11% of total greenhouse gas emissions in the "Métro" area, with heavy goods vehicles and light utility vehicles representing only 5% to 8% of traffic on urban expressways and 2% to 8% of total traffic on all main roads in the conurbation.

In terms of particulate matter (PM): in 2007, 100% of the population living in the centre of the conurbation (more than 319,000 people) were subject to levels that exceeded the maximum limit of 35 polluted days.

The atmospheric protection plan (PPA) sets out targets to reduce particulate emissions by 30%, and NOx by 40%, between the reference year (2007) and the target year (2015). In order to achieve this goal, two complementary initiatives are required: to reduce transport-related emissions, and to reduce the population exposed to these emissions (through more effective town planning).

The issue of urban freight delivery in regional organisation

The following authorities hold powers in the Grenoble region:

- the Syndicat Mixte des Transports Collectifs (SMTC), which organises public transport services within the Grenoble conurbation urban transport area (49 communes as at 1 January 2014) in conjunction with local partners, and which is responsible for developing the urban transport plan
- the Grenoble Alpes Métropole "communauté d'agglomération" (the "Métro"), which is responsible for economic development and supporting the local economy
- the Société d'Economie Mixte des Transports Publics de l'Agglomération Grenobloise (SEMITAG), which operates the passenger transport network
- the communes, which have traffic and parking police powers and are responsible for development via the local urban development plans (PLUs)
- the "établissement public du schéma de cohérence territoriale" (public regional integrated development plan agency), which develops the SCoT (regional integrated development plan).

Discussions are currently ongoing with regards to a future body covering the Grenoble Urban Region.

The guiding principle set out in the Grenoble region's regional integrated development plan (SCoT) with respect to freight delivery and logistics is to encourage the use of forms of transport other than roads:

- to manage the development of logistics hubs in a manner that prioritises local supply needs
- to encourage initiatives to transfer operations to rail and cable transport
- to ring-fence spaces suitable for the creation of new logistics infrastructure located close to railways
- to set out a regional strategy covering freight delivery and urban logistics

There are significant discrepancies between the regulations in each commune. These discrepancies concern tonnage in particular, with 60% of communes prohibiting access to heavy goods vehicles weighing more than 3.5 tonnes.

Time-related regulations are also in place in Grenoble city centre, with vehicles forbidden from travelling in the centre between 6:30 am and 11:30 am.

Loading zones, however, are not properly regulated at all. The "Métro" is apparently interested in introducing a delivery disc system, similar to the one used in Lyon.

As such, traffic and parking are not strictly regulated. There are designated loading zones and spaces, but neither light utility vehicles nor heavy goods vehicles use these properly. As the authorities themselves admit, these zones are poorly positioned and badly designed. They are often too narrow to accommodate heavy goods vehicles. An overhaul of these parking areas, and the corresponding regulations, will be addressed in future projects.

There are several pedestrian zones that are accessible to delivery vehicles, including one particular square in the very centre of Grenoble. Access to these zones is managed by retractable bollards, which are lowered between 6:30 am and 11:30 am and are raised to prevent vehicle access at other times of day. However, some deliveries are made after 11:30 am and in the afternoon, with delivery vehicles regularly using the tram lines, illegally, to enter and leave this regulated zone.

Current freight delivery situation in the conurbation

The Grenoble conurbation benefits from its proximity to major transport routes (Rhône Valley, Lyon-Italy route, etc.) and national and European logistics hubs such as the Chesnes logistics hub. As such, the majority of the freight transported into the conurbation comes from logistics hubs located outside the Grenoble region, in Est-Lyonnais, Ain and Nord-Isère.

Local freight delivery and distribution businesses therefore focus primarily on supplying the Grenoble region and conurbation. The "Métro" area currently houses around 10,000 logistics jobs and 5,000 additional jobs in specialist companies in the freight delivery, logistics, warehousing, postal and courier sectors. The logistics hubs in the Grenoble region are located close to major motorway infrastructures, outside the conurbation itself (in the Voiron area in particular), with a polarised economic region around the Lyon outer ring and the Rhône Valley. In general, logistics facilities tend to be located ever further from the centre of the conurbation. Under increasing pressure for land, the majority of transport companies are now located on the north-western fringes of the conurbation, in the communes of Saint Martin le Vinoux, Saint Egrève, Fontanil and Fontaine. The consequence of this "distancing" of transport and logistics businesses is an increase in congestion and polluting emissions.

There are no "connected" hubs (rail or river) in the Grenoble region. In terms of transport provision for the Grenoble conurbation, rail has a modal share of less than 5%. There is limited use of forms of transport other than road, and where these alternatives do exist, they are limited to specific sectors such as the transport of hazardous materials. Nevertheless, road-based transport still accounts for almost 60% of hazardous materials by weight.

Accessing the centre of the Grenoble conurbation by road is difficult. The "distancing" of transport companies is leading to longer trips which, in turn, is increasing the amount of time that delivery vehicles spend in congestion on the outskirts of the conurbation. This is particularly true of the A48 and A480 motorways, which are highly congested during peak times each day. According to the "toll zone" survey conducted by the Conseil Général de l'Isère in 2010, heavy goods vehicles transporting freight account for 5% of total road traffic in the Grenoble conurbation. This low percentage is due to the fact that major national and European logistics flows pass mainly through the Rhône Valley (A7 motorway), with Lyon as

the primary focal point. This freight is then transported on connections towards Italy (A43) and northern and eastern France and the rest of Europe (A6, A42, A39, etc.).

HGV flows in the Grenoble region are highly polarised, with almost two thirds of such flows focused towards Nord Isère and the Lyon region. The majority of these flows are concentrated on the conurbation's motorways and expressways. The highest concentrations of HGV traffic are found on the A48 and A4802 motorways, with more than 6,000 vehicles per day.

In terms of urban flows, businesses located in the main communes of the Grenoble conurbation account for more than 185,000 delivery operations per week, or 37,000 operations per day for a five-day working week. These operations involve a total distance of around 750,000 km per week within the conurbation, or 150,000 km per day (for a five-day working week), 53% of which is travelled by utility vehicles weighing less than 3.5 tonnes. Vans and other light utility vehicles are responsible for a significant proportion of freight traffic within the Grenoble conurbation and region. These include vehicles belonging to small businesses and shopkeepers, small delivery vehicles designed to serve urban areas and postal delivery vans belonging to La Poste and courier companies.

Of all the communes in the conurbation, Grenoble is the source of the most freight "movements" (heavy goods vehicles and light utility vehicles). In total, 40% of all freight deliveries and pick-ups generated by the conurbation are performed in the commune of Grenoble.

The "Grenoble14" extended city centre currently accounts for around 50,000 delivery operations per week (approximately 10,000 operations per working day), i.e. more than a quarter of the estimated number of operations across the conurbation as a whole. This situation reflects the high density of small businesses and service-sector companies, as well as the high concentration of both population and jobs in this area.

This high density of delivery flows and activities in a restricted and limited space causes specific problems, which have been highlighted in interviews and workshops with stakeholders. These include problems accessing the city centre and wasted time caused by congestion on the roads, problems caused by certain narrow streets demanding the use of small vehicles, a lack of loading zones or the unavailability of these zones due to unauthorised parking by private vehicles, a lack of spaces for trades people to park their vehicles close to building sites, difficulties caused by pedestrian zones requiring deliveries to be made in a narrow window of time in the morning, etc.

It is also important to note that freight delivery is highly internalised within the Grenoble conurbation. Around three quarters of all jobs in the sector are provided by companies that handle their own transport and logistics services.

Actions, experiments and projects

The Grenoble region's sustainable logistics action plan features four key areas and sets out 15 actions to deliver improvements in urban freight delivery. These actions are currently under discussion and the stakeholders responsible for managing and coordinating them are currently being appointed. Work will begin in 2014 and the initial results will be examined in 2015.

A number of private initiatives have already been undertaken, including:

- use of bicycles for final-mile deliveries (Velocité 2008), which produced extremely positive results. This initiative should be continued in the future. The company concerned is actively involved in all consultation bodies.
- La Poste now makes deliveries using electric vehicles, using subsidies from the ADEME fund and central government support to expand its fleet of electric vehicles.

9.1.2. Annecy

Overview

The Communauté d'Agglomération d'Annecy, in the Haute-Savoie department has a population of 144,000, and is located 40 km from Geneva and 40 km from Chambéry.

The A41 motorway, which runs from Chambéry to Geneva, passes through the region. An average of 33,800 vehicles pass through Annecy on the A41 each day, including approximately 2,200 heavy goods vehicles.

The RD3508 acts as the bypass for Annecy and provides access to the Epagny shopping district, to the north east of the conurbation.

In winter, vehicles weighing more than 7.5 tonnes are not permitted to travel on the Annecy bypass or on the A41 between Geneva and Chambéry between the hours of 7 am and 6 pm, on certain dates only. These restrictions are due to expected high volumes of traffic on these routes caused by holidaymakers.

The Annecy conurbation comprises 13 communes. The city of Annecy itself has a population of 50,254, or 35% of the population of the conurbation as a whole. As at 31 December 2008, there were a total of 80,720 jobs in the region. In 2011, the most dynamic sectors were construction (up 19%), retail and transport (up 15%) and administration and education (up 13%).

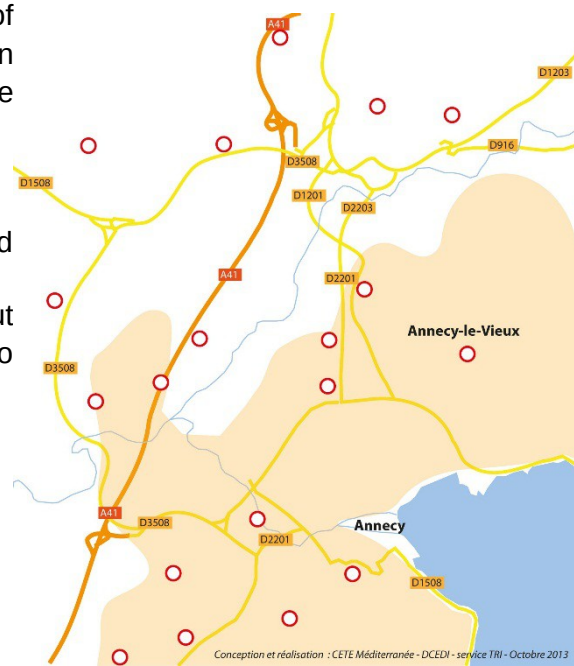
The Annecy conurbation's economy is driven by two business incubators and four excellence clusters, located at two business parks (64ha). A third business park (44ha) is currently being developed.

The main retail outlets are located to the west of the conurbation in Epagny (70 ha), to the south, in Seynod, (65 shops close to the A41) and in the city center.

Logistics

There are very few logistics hubs in Annecy and its conurbation.

Annecy's sustainable urban mobility plan sets out the area's major roads, but in practice no



regulations are applied and heavy goods vehicles are not required to use the designated transit routes.

The transport and logistics company location map shows that these businesses are located close to major transport routes, i.e. to the south of the conurbation. None of these businesses is located in the centre of the Annecy commune.

Relevant authorities on urban freight delivery

The following authorities hold powers in the Annecy region:

- the Communauté d'Agglomération d'Annecy, which is responsible for transportation planning, preparation of the sustainable urban mobility plan and economic development
- the communes, which have traffic and parking police powers and are responsible for development via the local urban development plans (PLUs)
- the Syndicat Mixte du SCoT du Bassin Annécien, which is responsible for the regional integrated development plan (SCoT).

The political situation in the Annecy conurbation is complex. There is no will to revise the sustainable urban mobility plan, even though it was due for revision two years ago, as this revision would be likely to cause tension between councillors. In terms of urban logistics, an initiative was launched in 2011 to introduce an urban distribution centre. This initiative led to broad consensus between councillors on this topic. However, no consultation body or working group has yet been formed on the matter of urban logistics.

The 2001 sustainable urban mobility plan contains a paragraph about urban freight delivery, in which it confirms the idea that HGV routes must be consistent across the entire region covered by the "communauté d'agglomération". It proposes "an improvement to delivery conditions in the centre and a reduction in the inconvenience that this causes".

The proposed actions are:

- to create loading zones
- to introduce harmonised time regulations and to enforce compliance with regulations
- to introduce a consultation process involving all stakeholders (technical departments, shopkeepers and haulage companies).

Although discussed only in brief, the subject was nevertheless identified as a major issue and the initial areas for action were consistent with the ministry's proposals at the time.

Nevertheless, 12 years later, none of these actions has been fully implemented.

For example, there are discrepancies between the regulations in each commune. The sustainable urban mobility plan sets out a requirement to harmonise time-related regulations, but this has not been implemented.

The Annecy basin regional integrated development plan (SCoT du Bassin Annécien) was formally passed on 31 July 2013 and sets out seven actions relating to urban logistics:

- create Urban Logistic Spaces
- incorporate logistics into public space development and planning processes
- "include, in all significant commercial, service-sector, hotel and hospital projects, a requirement to provide sufficient space for deliveries and delivery vehicle parking"
- create a logistics hub on the immediate outskirts of the conurbation's centre
- modernise and rationalise city-centre deliveries, including the use of environmentally friendly vehicles, upstream/downstream pooling of the logistics chain, etc.
- "prepare a plan of urban logistics facilities across the conurbation"

- "consider the development of e-commerce"

The provisions of the SCoT therefore explicitly include the creation of the urban distribution centre.

Local issues

The Annecy commune generates total emissions of 334,000 tonnes of carbon dioxide equivalent, of which 12% is generated by freight delivery.²² Freight delivery by heavy goods vehicles causes both noise and pollution.

The basin-shaped topography of the Savoie and Haute-Savoie departments causes air masses to stagnate over the region, with the surrounding mountains preventing the wind from dispersing particulate matter. The air quality in Annecy is therefore between average and very poor for 145 days (or 39%) of the year. Improving air quality is therefore a major challenge, and reducing the harm caused by heavy goods vehicles is a major factor in delivering this improvement.

Actions, experiments and projects

A number of experiments have been conducted in the area, driven by private initiatives. These cover urban freight delivery using environmentally friendly modes of transport, including :

Ecolocolis: a two-person company which delivers documents and parcels ranging from standard packages to bunches of flowers.

Logydine and Fnac: Logydine is a logistics company. Fnac organises daily shuttle transport services between its warehouses in Annecy, using a 25 m³ electric lorry. Fnac is a major player in the search for new, innovative solutions in the Annecy conurbation. For example, the company is involved in the european project Urbannecey/LIFE+.

Experiments: Urbannecey / LIFE+

The LIFE programme is a European Union financial instrument designed to support all types of environmental project. In 2012, the Logistic Cluster Rhône-Alpes responded to a call for projects with an urban distribution centre project. The aim of the project is to create an integrated urban logistics hub to manage the circulation of freight. The project, located in Annecy, involves:

- creating an operation and management plan
- driving sustainable economic growth within the urban distribution centre by creating a separate legal entity that reflects the interests of all stakeholders and delivery companies that wish to invest
- investigating the possibility of introducing suitable regulations and improving parking conditions for delivery vehicles
- developing a software interface that is compatible with existing haulage company software programs and the hub's operating system
- deploying environmentally friendly vehicles and electrically assisted bicycles to improve the delivery service
- conducting an environmental impact analysis to promote the project both locally and on a wider scale.²³

22 Source: PCET Ville d'Annecy, bilan carbone 2009

23 Source: Logistic Cluster Rhône-Alpes

This project involves a range of different stakeholders: the Logistic Cluster Rhône-Alpes (economic cluster), which acts as the main coordinator and facilitator; Logidyne, a logistics company, which is the initiator of the project; Interface Transport, a consulting firm which provides technical consulting services; Renault Trucks, which provides transport solutions; Tri-Vallées, a company specialising in waste management, cleaning and environmental services, which designs electrically assisted bicycles.

9.1.3. Chambéry

Overview

Location and access

Chambéry Métropole is a conurbation of 122,000 people located in the Savoie department, 110 km from Lyon, 60 km from Grenoble and 40 km from Annecy. It is situated in a wide valley, enclosed by the Bauges Mountains to the east, the Chartreuse Mountains and the Belledonne Mountains to the south, the Chaîne de l'Épine to the west and Lake Bourget to the north.

It is connect to Lyon by the A43 motorway, and to Annecy and Grenoble by the A41 motorway. An urban expressway runs through the conurbation. Chambéry is located on a major transit route both to and from Italy, and between 5,000 and 6,000 heavy goods vehicles use the urban expressway each day.



Demographics and economy

Chambéry Métropole comprises 24 communes. The city of Chambéry itself has a population of 54,470, or 45% of the population of the conurbation as a whole.

As at 31 December 2008, there were a total of 37,644 jobs in the region. There are an estimated 41,500 freight movements in the conurbation (28,500 deliveries and 13,000 pick-ups).

The most dynamic sectors are construction (4,400 jobs in 2009), public administration, education and health (2,635 jobs,) and retail, transport and services (27,918 jobs).

The economy of Chambéry Métropole is based on five main sectors:

- public services (prefecture, courts, university, hospitals, etc.)
- traditional manufacturing and service sectors, such as food processing (Alpina, Coppelia, etc.), mechanical engineering (OCV, Opinel, Transrol, etc.), building materials (Placoplâtre, Vicat, etc.), well-being and spas, tourism and transport (Exapaq, GEFCO, Pedretti, etc.)
- innovation, which has led to the emergence of new sectors such as renewable energy, industrial ecology, waste enhancement and high-tech industries (optics, imaging, etc.)
- education and training (university, engineering school, Savoie Technolac, etc.)
- research.

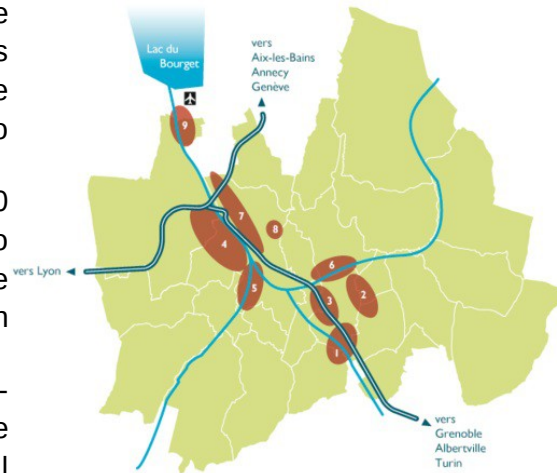
The conurbation has a total of nine business parks, the majority of which are located along the urban expressway.

Logistics

The Chambéry conurbation does not have an urban distribution centre, nor does it have specific loading zones. There are few logistics hubs in the conurbation, and its haulage companies are located in the industrial areas to the north of the conurbation.

Those businesses that generate HGV traffic (100 heavy goods vehicles per day at the most) do not pose major local traffic problems, since the majority of this traffic appears to use the urban expressway.

Despite recent closures, there are still a few rail-connected hubs, and some companies still have access to railway infrastructure for internal service within industrial sites. Placoplatre, for example, still has the facility to use the railway network for both supply and delivery purposes.



Urban freight delivery in regional organization

The following authorities hold powers in the Chambéry region:

- Chambéry Métropole, which is responsible for transportation planning, preparation of the sustainable urban mobility plan, operation of the passenger transport network and economic development
- the communes, which have traffic and parking police powers and are responsible for development via the local urban development plans (PLUs)
- the Syndicat Mixte Métropole Savoie, which is responsible for preparing the SCoT.

Chambéry Métropole is responsible for the freight element of the sustainable urban mobility plan. The analysis was conducted in 2003, in conjunction with the CCI and shopkeepers.

The main guideline of the sustainable urban mobility plan was to incorporate freight delivery into urban development and planning processes. The aim is to "facilitate activity to boost the performance of haulage companies", to "limit harm and conflicts between users caused by this traffic" and to "help to make the city centre economy more dynamic".

A total of 14 actions were identified in 2003: move businesses that generate HGV traffic close to the urban expressway; encourage the use of alternative forms of transport for journeys towards Italy (combined transport) to reduce through traffic; create a road haulage centre with a guarded HGV car park; introduce a statutory requirement for delivery zones and parking areas for new hypermarket and supermarket projects; pool costs ; create an urban logistics support centre; rationalise delivery rounds; harmonise regulations; take steps to favour the introduction of a home delivery system; encourage shopkeepers to collect freight from haulage company premises; enforce compliance with regulations; differentiate between uses of loading/unloading points; manage delivery vehicle access times in pedestrian zones; streamline the La Motte-Servolex business park.

But the body has remained inactive since then. Once new discussions are launched, it may be possible to reinstate this consultation process with the relevant stakeholders.

The Mayor of Chambéry, is also the Associate Chair of the "Centre-Ville en Mouvement" association. The association's aims are to "inject fresh impetus into city centres" and "promote innovation to deliver sustainable city centres". It publishes a range of documents, including the "boite du dernier kilomètre de livraison" (final-mile delivery box), which contains 30 innovation factsheets covering urban logistics. This presupposes that councillors in the Chambéry region are well-informed on the subject.

The conurbation's local climate and energy plan (PCET) drawn up by Chambéry city council includes plans to "initiate a debate on the creation of an urban logistics hub, under the LIFE programme, in conjunction with local stakeholders and in partnership with the Annecy conurbation, to address the issues surrounding urban deliveries."

Chambéry city council has introduced a policy to restrict access to the city centre in the mornings, especially for delivery vehicles. It has also introduced new measures to enforce compliance with parking space restrictions, and to limit noise and other harm caused by deliveries. As such, regional stakeholders do not see the need for a urban distribution centre-type facility.

There are discrepancies between the regulations in each commune. In Chambéry, there are designated delivery spaces. However these are not suited to large HGV vehicles. City-centre access is regulated, with access to city-centre shops in the pedestrian zone by special authorisation only (mostly in the mornings). Access is restricted by bollards. In general, the delivery spaces are broadly respected. There are no specific provisions for HGV parking overnight.

Local issues

The carbon analysis conducted in 2009 shows that the road transport sector generates 275,000 tonnes of carbon dioxide equivalent. HGV freight delivery accounts for an estimated 27% of road transport emissions. Concerning air pollution, the ATMO index is between average and very poor on 39% of days.

Actions, experiments and projects

A number of experiments have been conducted in the area, driven by private initiatives. These cover urban freight delivery using environmentally friendly modes of transport.

- **Cycl'aubaine, Tri-Vallées** : Cycl'aubaine was the first company to introduce an electrically assisted bicycle parcel delivery service in a mountainous region. The business has since been taken over by Tri-Vallées, a company based in Albertville which has two light utility vehicles, one tricycle and one cargo bike and delivers around 40 parcels a day, making an average of five daily delivery rounds. Between 2011 and 2013, it has delivered more than 2,500 parcels per month to individual customers.
- **Tonton Livraison** : A self-employed individual has also set up a business known as "Tonton Livraison".

9.2. Germany

City-logistic solutions are the more effective the larger the urban area is they are applied to or the more sensitive the city is to negative effects of goods transport. The largest towns in terms of residents in the German Alpine Convention area are Kempten, Rosenheim and Kaufbeuren.

Particularly sensitive to transport-related emissions are towns that promote themselves as climatic spas. Several towns of different sizes in the German Alpine Convention area hold this label. The two largest of them – Bad Reichenhall and Garmisch-Partenkirchen - will therefore also be analysed, together with the only city that is required to carry out a Clean Air Quality Action Plan, Lindau.

9.2.1. Rosenheim

Overview

Rosenheim lies between the city of Munich (ca. 70km) and the towns of Salzburg (ca. 90 km) and Innsbruck (ca. 110 km) of neighbouring Austria. It is referred to as „Gateway to the South“because of its proximity and good connection to Austria, Italy and Eastern Europe. The urban municipality Rosenheim covers an area of 37.52 km². The town has 59.329 inhabitants. The population has increased by about 3 percent within the last 10 years and a further increase until 2028 is forecasted.²⁴ The surrounding administrative district Rosenheim counts 244.257 inhabitants.²⁵ The town is situated in the alpine upland of southeast Upper Bavaria, embedded in a landscape of high recreational value. The Alps, lakes (e.g. Chiemsee) and rivers are close-by. In terms of regional planning Rosenheim serves as a regional metropolis for the region 18 South-East Upper Bavaria and is an important economic centre for a population of about 800.000. (Stadt Rosenheim 2011, p.6). Rosenheim is famous as „shopping town“with a diversified retail industry in the city centre and big boxes (e.g. Aicher park) in the surroundings. It serves as an important location for educational (e.g. Hochschule Rosenheim), cultural (e.g. Kultur- und- Kongresszentrum) and administrative (e.g. Landratsamt) facilities. This is also shown in numbers as 70% of the 32.370 workplaces can be found in the tertiary sector (Stadt Rosenheim 2012a). And with 30% of all workplaces in industry (Stadt Rosenheim 2012b), among them world market leaders (e.g. Kathrein) Rosenheim has a robust economic structure.

The federal road B15 transits Rosenheim through the heart of the city from north to south. In Pfraundorf (ca. 7km from centre) it connects Rosenheim very well to the motorway to Austria (A8, A93) and to Munich (A8). Several country roads run from the surroundings to and through Rosenheim. In a transport development plan that is currently elaborated for Rosenheim, first results show that the road network is used to full capacity (see Figure 7 and Figure 8). More specific data for freight traffic will be available in 2014 (Stadt Rosenheim 2012a). In a recent survey about quality of life in Rosenheim (Stadt Rosenheim 2012b) the traffic situation was evaluated quite bad. The traffic routing in and around Rosenheim and the availability of parking spaces in the city centre were the two main issues that need to be improved. The general accessibility of the city centre by bike, car and public transport was evaluated as satisfactory. In another survey to the future development of Rosenheim in 2025

24 <http://www.rosenheim.de/wirtschaft/wirtschaftsstandort/daten-und-fakten.html>, 20.08.2013

25 <https://ergebnisse.zensus2011.de>, 22.08.2013

(Stadt Rosenheim 2012b) improvement of bike acceptance and public transport were the main wishes. Both studies regarding traffic focused on passenger transport only. Only when the possibility to open answers was given, „no/less heavy duty vehicles in the city were mentioned“(Stadt Rosenheim 2012b, p.30).

Within the municipality and the surrounding district (except for one distribution centre of DHL in the town Kolbermoor) no major freight centres do exist.

Rosenheim lies on two important railway axes (see Figure 9), the TEN-T priority project PP1 Berlin-Palermo and the axis Munich-Salzburg. Therefore it is excellent connected by regional, national and international railway passenger transport (e.g. in peak hours about every 10-20 minutes is a connection to Munich).

On these main transport axes freight transport plays a major role by both road and rail. By connecting Germany/Northern Europe to Italy and Eastern Europe huge amounts of goods transport pass by Rosenheim on road and rail. There is no data available about freight transport by rail in Rosenheim. Some companies have private side tracks (e.g. Inntal Metallverwertung GmbH) but no major logistic platforms exist. The closest terminals for combined transport can be found in Munich (Düss-Terminal München-Riem), Salzburg (Container Terminal Salzburg – CTS) and Wörgl (Rolling Road-ROLA) of neighboring Austria.

Environmental diagnostics

In 2001 the transport sector in Rosenheim produced 132.600 t CO₂. Freight traffic caused almost a third of all transport emissions, in numbers 45.000 t CO₂ per year. Thereof about 85% are generated by local transport or transport where origin or destination are lying within town.

It is estimated that through the introduction of a city logistics concept the originating and terminating traffic could be reduced by about 50% for heavy-duty vehicles, by about 30% for trucks and by about 10% for delivery vehicles. Only local transport with delivery vehicles might double for the reduction of transport with heavy-duty vehicles and trucks that causes higher emissions and is more consumption intensive (Stadt Rosenheim 2012, p. 23). Actual data to air quality doesn't exist. It is not foreseen to develop a Clean Air Plan or similar.

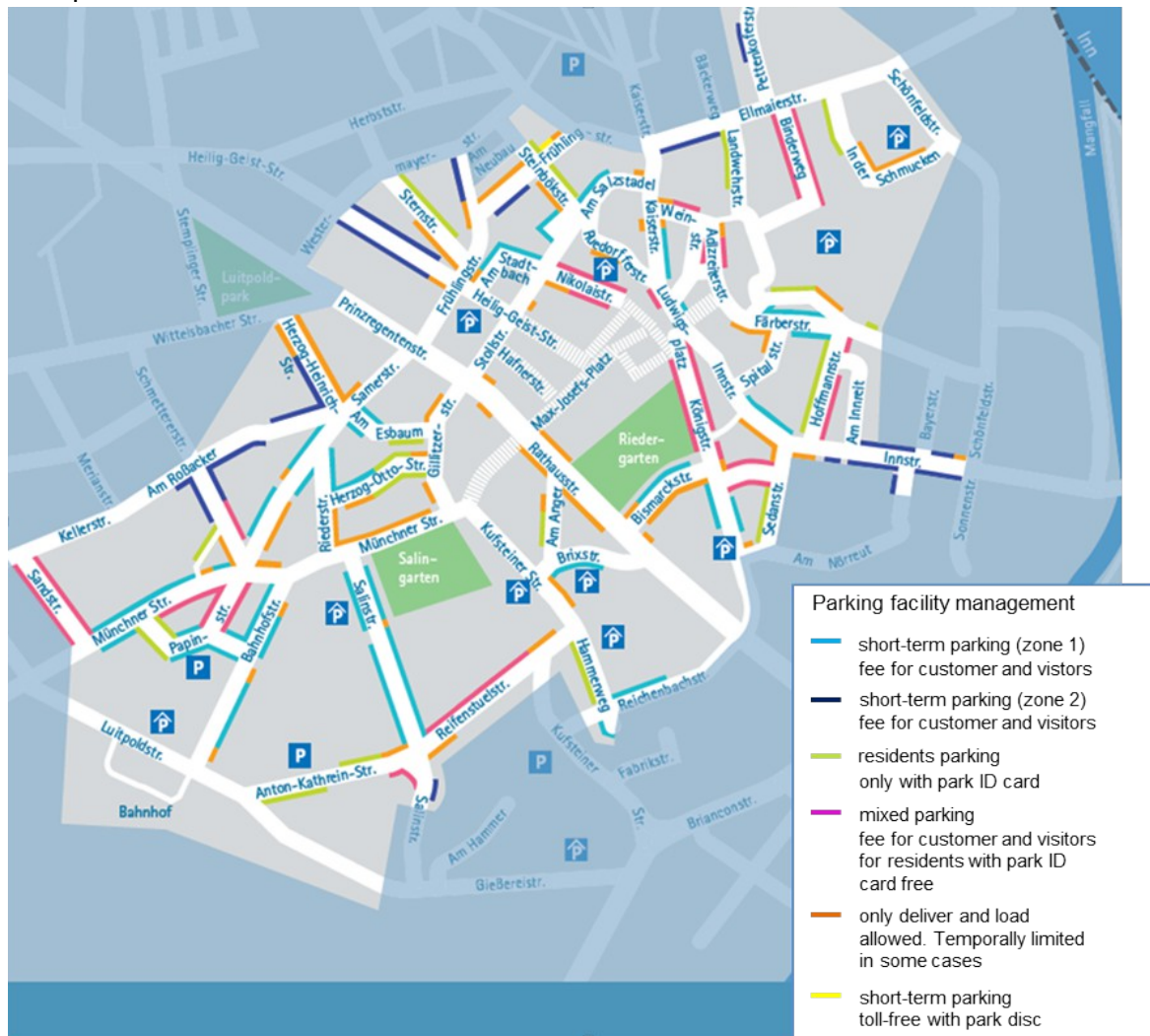
In Rosenheim 700 residents are affected by road traffic noise during day with a value LDEN > 67 dB(A) and 700 residents affected during night with a value LDEN > 57 dB(A). Following roads are concerned: B15, L2010, L2362, L2095, L2078.²⁶ Hot spots known to be caused by heavy-duty vehicles are the B15 and the L2362 (around „Brückenberg“-area). The exceedance of noise limit values is especially problematic close to residential areas. One example is the „Hubertusstraße“(see Figure 12 and 13) that is used as a shortcut through town by many vehicles (e.g. in 2010 16.600 cars and 1.400 trucks were counted on this road within 24 hours).

Townpeople living along this road are exposed to high noise and emission levels and have filed a lawsuit. An agreement could be reached by a 2 year-running pilot project that includes a speed limit of 30 km/h, measurements of noise and air quality as well as traffic counting (see Figure 12). Currently the prosecutors don't ask for the development of a Clean Air or Noise Action Plan as the time period for doing so is assessed too long. But depending on the measurement results the prosecutors will ask for further actions.²⁷ No special limitations for freight traffic (e.g. night driving ban, exclusion zones) are currently in force (except for truck

26 http://www.lfu.bayern.de/laerm/eg_umgebungs-laermrichtlinie/kartierung/doc/betroffene_je_gemeinde_gt67_u_gt57_gerundet.pdf, p.3, 22.09.2013

27 <http://www.ovb-online.de/rosenheim/rosenheim-stadt/tempo-hubertusstrasse-2812411.html> (of 21.03.2013), 13.11.2013

exclusion in the Gießenbachstraße). The main reason for that is that no alternative routes are available. But it is foreseen to develop a Noise Action Plan in the near future.²⁸ In the city centre of Rosenheim few loading and delivering zones exist²⁹. After having more results of the currently elaborated Transport Development Plan the future handling of freight transport will be discussed.



Loading and delivering zones in Rosenheim city centre (Source: City of Rosenheim, 2013)

Governance

The city of Rosenheim is currently elaborating a sustainable urban development concept „Rosenheim 2025- City in Future“. In this process an intensive public participation (surveys, expert hearings, workshops) and several technical expertise are included. In the 3 expert hearings, one³⁰ referring to „Urban Development, Transport, Energy and Environment“ mobility, transport and traffic infrastructure and the needs of improvement were discussed. But the focus was on person transport, freight transport and logistics weren't mentioned at all. With two surveys the public could participate in the urban development process. One was asking for the current quality of life in Rosenheim, the other for wishes for Rosenheim 2025. Need for improvement was seen in traffic management and infrastructure and public transport, always related to person transport. Only when the possibility to open answers was

28 Expert interview, 07.11.2013

29 Flyer Parkraummanagement; City of Rosenheim, 2013 (Parking space management)

30 <http://www.rosenheim.de/stadt-und-buerger/planen-und-bauen/rosenheim-2025/3-experten-hearing.html>, 26.08.2013

given, „no/less heavy duty vehicles in the city were mentioned“ (Stadt Rosenheim 2012b, p.30). Among the technical expertise an integrated concept for energy, climate and environmental protection³¹ has been elaborated³². The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety funded this study in the context of its Climate Protection Initiative. Within this study GHG emissions and energy consumption of different transport sectors in the year 2001 were analyzed. It was shown that freight traffic causes almost a third of all transport emissions in Rosenheim (see Figure 10). Although the positive effects through the introduction of a city logistic concept are clearly shown in the study, it cannot be found among the proposed measures for implementation. The city council Rosenheim has agreed to the results of the study in September 2012. In the approved „WP4 Implementation Scenario 2025 with catalogue of measures“ no measure regarding freight transport are included. The impression that there is no focus on freight transport/city logistic from the politics' and administration's point of view was confirmed by the expert interview: Politics, administration and economy see no need for action regarding urban freight transport, but concerned inhabitants do what is e.g. discussed in open councils.

Experiments

In the past ten years two attempts were made to develop approaches for urban logistics. One was made by the shipping company Günther Splitter of Rosenheim for a city logistic concept. Additionally the city administration wanted to develop a mobility management (e.g. for hospital, public works department). Due to lack of financing/subsidies the plans were never realized.³³

31 <http://www.rosenheim.de/news/einzelansicht/archive/2013/Januar/eintrag/1343.html>, 23.08.2013

32 <http://www.rosenheim.de/stadt-und-buerger/planen-und-bauen/rosenheim-2025.html>, 26.08.2013

33 Expert interview, 07.11.2013

9.2.2. Bad Reichenhall

Overview

The town Bad Reichenhall covers an area of 39,44 km² of which 5,7 km² are used for settlement and traffic. It consists of the 3 parts Kernstadt, Marzoll and Karlstein which altogether have 16.830 inhabitants. The administrative district Berchtesgadener Land in which the town Bad Reichenhall lies, counts 100.830 inhabitants. Bad Reichenhall is situated in a basin encircled by the Alps in southeast Upper Bavaria, directly on the border to Austria. It has a historic and long tradition of salt production and is nowadays a climatic spa (Alpine salt-water spa). Tourism is one main economic sector with 101.957 arrivals and 592.568 nights in 2011. The average stay lasted 5.81 days (Bayerisches Staatsbad 2012, p. 4ff). The number of arrivals increased in the last 5 years, the number of nights decreased with an outlier in 2010. Since several years Bad Reichenhall fosters sustainable tourism and is a member of the Alpine Pearls. Around 81% of the 8.010 workplaces are in the tertiary sector and 17% in the secondary sector. Among Bad Reichenhall's industry (world) famous companies as e.g. Reber (famous for „Mozartkugeln“) and Südsalz („Bad Reichenhaller Markensalz“) can be found. Moreover Bad Reichenhall serves traditionally as location for the German Federal Armed Forces (Hochstufen-Kaserne). In 2001 Bad Reichenhall has been awarded the title „Alpine Town of the Year“ for its particular commitment to the implementation of the Alpine Convention.

Bad Reichenhall lies on the border to Austria, with a distance of 22 km to the city of Salzburg, of 76 km to Rosenheim and of 133 km to Munich.

The federal roads B20 and B21 connect in Bad Reichenhall and run on the same route in/around Bad Reichenhall. Shortly after town they split again. This route is one of the heaviest traffic burdened routes in South East Upper Bavaria. Heavy-duty vehicles play a major role as this route is chosen for transnational transport by transport and shipping companies who want to avoid paying toll in neighbouring Austria (Stadt Bad Reichenhall 2013, p.3). To disburden this route and detour some of the traffic a traffic planning concept for a tunnel („Kirchholtunnel“) has been developed (see Figure 13). But in April 2013 a narrow public decision (50,2%) against tunnelling this route was taken. Both federal roads connect Bad Reichenhall to the motorway A8 Munich-Salzburg; from the B20 there are driveways to both directions in Piding (ca. 6 km), from the B21 there is only a driveway (after ca. 6 km) to the direction of Munich.

Regarding railway connection, Bad Reichenhall lies on a secondary line of the main line Munich-Salzburg. This line connects Freilassing with Berchtesgaden. In doing so, there is a connection to Berchtesgaden about every 45 min., one to Salzburg about every hour and to Munich about every 30 min. with one change in Freilassing or Salzburg. It takes around 30 min. to Berchtesgaden, 30 min. to Salzburg and 2:20h to Munich by train.³⁴

Regarding freight transport by rail a loading ramp exists in the station of Bad Reichenhall. But that is only partly used by the Federal Armed Forces.³⁵ The closest terminal for combined transport are the Container Terminal Salzburg (CTS)³⁶, the RoLa-Terminal (Rolling Road)³⁷ in Wörgl and the Container Terminal in Munich (Duss-Terminal München-Riem³⁸)

34 www.bahn.de, 09.09.2013

35 Expert Interview, 30.09.2013

36 www.ct-sbg.at, 09.09.2013

37 www.rola.at, 09.09.2013

38 www.dbnetze.com/duss-terminal, 09.09.2013

that is used by local companies e.g. Dolomitwerk (that has in peak periods 50 containers per day).

Environmental diagnostics

Levels of nitrogen oxide and ozone had been measured but no critical limits were exceeded. Measurements of particulate matters had not been performed. The rating as climatic spa is not in danger.³⁹ There are no data for GHG emissions.

In Bad Reichenhall 100 residents are affected by road traffic noise during day with a value $L_{DEN} > 67$ dB(A) and 100 residents affected during night with a value $L_{Night} > 57$ dB(A). Following roads are concerned: A8, B21, B20.⁴⁰ On B20 and B21 a ban on driving between 10pm-6am exists for trucks with a gross vehicle weight over 7,5t.

Neither a noise action plan nor a clean air plan does exist, as there is currently no need for it.

Governance

The city of Bad Reichenhall belongs to the administrative district Berchtesgadener Land. Within the city the traffic department is responsible for district, state and federal roads. Public transport is organized by municipal utilities. In the administrative district a traffic manager is responsible for transport planning.

Bad Reichenhall fosters natural gas transport by organizing public transport with natural gas buses, by using commercial vehicles powered by natural gas and subsidizing the purchase of natural gas passenger cars.

Urban freight traffic has been reduced through the introduction of exclusion zones in the late 1980s. Further approaches or activities for controlling urban freight transport don't exist, as currently there is no need for them. The public is invited to discuss any concerns in public consultation hours.

The traffic-planning concept "Kirchholztunnel" aims to disburden the federal roads B20 and B21 and would also shift freight traffic into the tunnel.

Actions and experiments

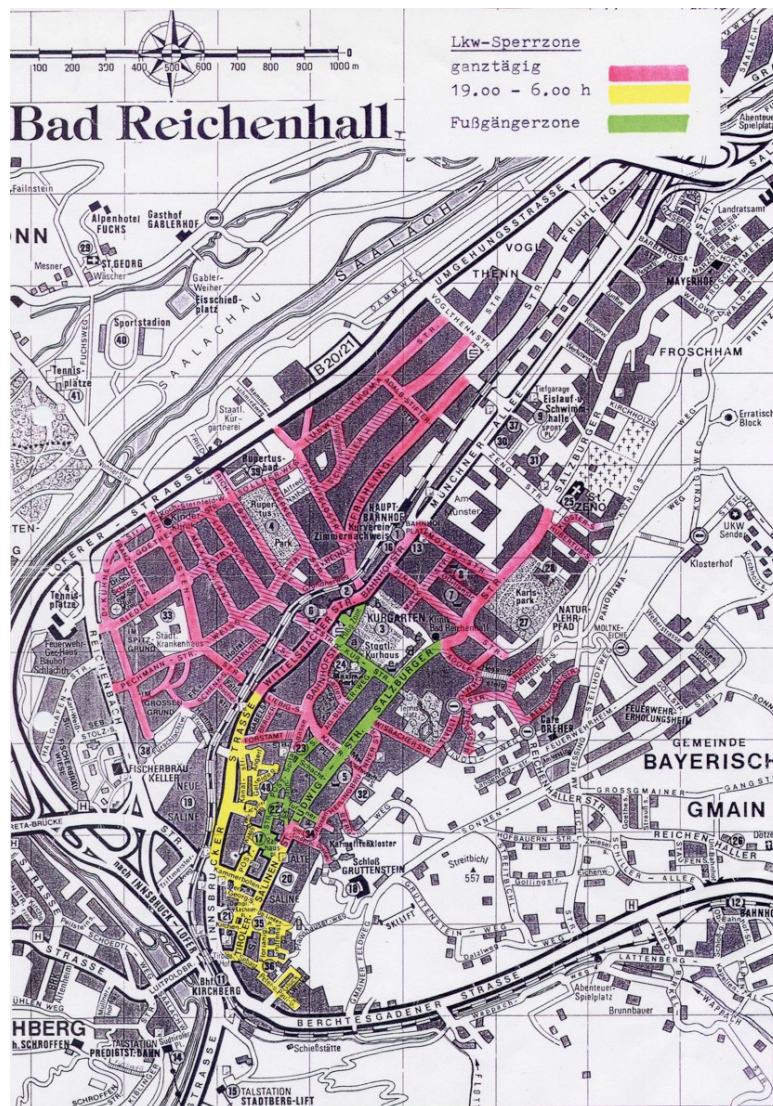
As a climatic spa Bad Reichenhall is particularly sensitive to transport-related emissions. It is member of the "Autofreie Kur- und Fremdenverkehrsorte (IAKF)" (Car-free spa and tourism towns) in Bavaria and has fostered sustainable public transport with different concepts since the 1980s.⁴¹ To minimize transport-related emissions in the city center and spa area the City of Bad Reichenhall has introduced exclusion zones for cars, motorbikes and trucks.⁴² Below is shown the truck exclusion map. In the major part of the city center (in pink) conventional trucks are excluded. Only silent trucks are permitted in this area. As silent trucks are considered vehicles that are classified with a noise level G1 („Geräuschklasse G1“) in the vehicle registration certificate. Different models are imaginable in this category but the majorities are trucks with closed motor powered by diesel. As the focus lies on noise reduction Bad Reichenhall subsidizes local companies with 1000€/vehicle for buying silent vehicles. In the pedestrian area (in green) delivery vehicles have access before 11am and after 5pm.

39 Expert interview, 30.09.2013

40 http://www.lfu.bayern.de/laerm/eg_umgebungsplaemrichtlinie/kartierung/doc/betroffene_je_gemeinde_gt67_u_gt57_gerundet.pdf, p.1, 22.09.2013

41 www.iakf.de/, 18.09.2013

42 <http://www.stadt-bad-reichenhall.de/de/verkehr/sperrzonen/>, 06.09.2013



Truck exclusion zone (Source: City of Bad Reichenhall)

Further Bad Reichenhall is a pilot city for natural gas powered vehicles. It organizes public and commercial transport by natural gas powered vehicles to reduce emissions. Recently the Bad Reichenhall got an invitation to join the project “Minniemoobil”⁴³ which aims to develop freight bicycles. No decision regarding participation has been taken so far.⁴⁴

43 <http://minniemoobil.com>, 13.11.2013

44 Expert interview, 30.09.2013

9.2.3. Garmisch-Partenkirchen

Overview

Garmisch-Partenkirchen (GAP), district capital of the district of the same name, lies in an Alpine surrounding at 708 m a.s.l. and covers an area of 205.67 km²⁴⁵. The town Garmisch-Partenkirchen consists of two settlements, Garmisch and Partenkirchen, which have merged to one municipality in 1935. Garmisch-Partenkirchen has 25,581 residents (Census 9th May 2011)⁴⁶ and a population density of about 127 residents per km²⁴⁷, which is very low due to the high Alpine share of the municipality area. Garmisch-Partenkirchen is the seat of the administrative district of the same name with 84,046 residents.

In the year 2012 Garmisch-Partenkirchen had about 10,300 regular workplaces⁴⁸ and a positive commuter balance of 1,685 persons. About one third of the workplaces is in the trade, transport and tourism sector, as Garmisch-Partenkirchen is one of the main tourist destinations for day tourism as well as for overnight stays in the German Alpine area. Furthermore Garmisch-Partenkirchen is the district's administrative center and has many workplaces in services providing enterprises (e.g. like waste disposal). For this reasons almost 9,000 work places are in the tertiary sector⁴⁹. No major enterprise is settled in GAP, most enterprises are concentrated on the local and regional market.

Garmisch-Partenkirchen lies at the federal road B2 Munich – Mittenwald and the federal road B23 Augsburg - Garmisch-Partenkirchen. From the north the town is accessible via the motorway A95, which ends in Eschenlohe (about 10 km from Garmisch-Partenkirchen) and flows into the federal road B2. This extends the travel time because the village of Oberau has to be passed with only one lane per direction. Therefore in peak times congestions on the way to Garmisch-Partenkirchen and in Garmisch-Partenkirchen are not rare and the accessibility by road traffic is hindered. This affects not only tourism, but also goods transport, what is seen as a disadvantage for business.

Coming from the south (Inn valley) the topography hinders road transport as well, the road is not accessible for heavy duty vehicles above 7.5 t. Present local bypasses are planned to improve this situation.

Concerning accessibility via rail Garmisch-Partenkirchen has a good accessibility for passengers (connected to Munich every hour, in peak times two trains per hour, travel time about 90 min). A part of the line has only one track – an obstacle for an increase in speed. A railway connection to Austria (Innsbruck) has also a regular service (9-10 times a day). Garmisch-Partenkirchen has no major public logistic platform.

Environmental diagnostic

As a climatic spa Garmisch-Partenkirchen is particularly sensitive to transport-related emissions. In spite of the congestions at both of the federal roads (B23 and B2), air pollution in Garmisch-Partenkirchen did not yet exceed the legal limit values.

The strategic noise map, compiled by the Bavarian Environment Agency for Garmisch-Partenkirchen shows the noise emissions LDEN.

45 Source: Statistik kommunal 2012

46 Source: <https://ergebnisse.zensus2011.de/#Home>:

47 Source: INKA online (loaded August 2013)

48 regular employees paying social insurance, self-employed persons, freelance and low-wage workers are not included

49 Source: INKA online (loaded August 2013)

The number of residents affected by road traffic noise (rounded on 50) shows in Garmisch-Partenkirchen 400 residents affected by LDEN > 67 dB(A) and 500 residents affected by LNight > 57 dB(A). Noise caused by railroad traffic is no issue in Garmisch-Partenkirchen.

Governance

Within the administration there is no position explicitly responsible for urban freight transport issues. Competences are determined for issues like traffic supervision and spatial planning / local building / infrastructure planning. For local and regional public transport planning a planning document is giving guidance and the municipal transport service company is providing the service. The contacts to the administration showed that urban freight transport and logistics is not an issue perceived as field of action. The only exception are regulations regarding deliveries in pedestrian zones.

Experiments

Garmisch-Partenkirchen is a model community for electro mobility. But all activities in this context are focused on passenger mobility, car-sharing for tourists and bikes, but – at least at the moment – not in urban freight transport.

9.2.4. Kaufbeuren

Overview

The county-free city of Kaufbeuren lies outside the geomorphological Alpine bow at 678 m a.s.l. and covers an area of about 40 km². Kaufbeuren has 41,550 residents (Census 2011) and a population density of about 1,040 residents per km².

In the year 2011 Kaufbeuren had about 15,500 regular workplaces and a small positive commuter balance of 621 employees. About 4,000 workplaces were in the second sector, about 6,000 in public or private service providers, about 5,500 also in the tertiary sector (trade, tourism, transport and others). This means that Kaufbeuren features a strong economic emphasize on the tertiary sector.

Kaufbeuren has two important parts: the historical town and quarter established after WW II for displaced persons, called Neu-Gablonz. Today more than 1/3 of Kaufbeuren's residents live in Neu-Gablonz and many enterprises are concentrated in this quarter.

Concerning road transport, Kaufbeuren is connected to two federal roads (B12 and B 16) but has no direct highway connection. The next highway (near Buchloe) A96 is about 20 km away from Kaufbeuren and can be reached by federal road B12.

Kaufbeuren has a good accessibility for passengers being serviced half-hourly through the railway lines Munich-Lindau and Augsburg-Füssen for regional services and one Intercity a day coming from northern Germany and going to Oberstdorf. The lines are not yet completely electrified. There is no goods dispatch at the railway station.

Concerning goods transport Kaufbeuren had a transport volume of about 3 Mio tons per year (2007/2010) which is predicted to increase to 4 Mio tons in the year 2020. All the goods are transported on roads, as there is no railway infrastructure for freight transport.

Kaufbeuren has no major public logistic platform and no public freight hub. A regional retailer (V-Markt) maintains a hub for its enterprise. Additionally several international shipping companies maintain logistic centres / depots in Kaufbeuren, where they provide logistic services for their clients:

Webopac-logistics maintains a logistic centre equipped with advanced storage technology, a high rack warehouse and back end for online shops;

Transport Logistic Allgaeu maintains a 700 m²-centre for stock turnover; Several industry-/commercial zones are located directly at the federal road B12, so many industry-related freights don't have to pass through the city centre.

Environmental diagnostic

There are no exceedances of air pollution caused by transport in Kaufbeuren.

Road traffic noise along the state roads St 2014, St 2055 and the federal roads B12 and B16 (rounded on 50) affect in Kaufbeuren 100 residents by LDEN > 67 dB(A) and 200 residents by LNight > 57 dB(A). Noise caused by railroad traffic is no issue in Kaufbeuren.

There is only one road where inhabitants perceived freight traffic as disturbing. But after about 30 years of planning a new road connection which is no more passing through housing areas, was built.

Governance and experiments

Concerning transport issues the city administration focuses more on optimizing public transport, than on urban logistics. They match the inner-urban bus lines to the arrival/departure times of the trains to improve the travel chain of commuters. A special bus line was installed to connect the commercial/industrial zones to the train station.

Due to the fact, that urban freight transport is not perceived as a greater disturbance neither elected officials nor the city administration pursue a local policy on urban logistics.

Restrictions for freight transport vehicles are only valid for the pedestrian zone in the city centre.

9.2.5. Kempten

Overview

The county-free city of Kempten lies at the northern rim of the Alpine bow at 674 m a.s.l. and covers an area of about 65 km². Kempten has 64,078 residents (Census 2011) and a population density of about 983 residents per km².

In the year 2011 Kempten had about 33,100 regular workplaces and a high positive commuter balance of 10,200 employees. About 6,300 workplaces were in the second sector, about 12,500 in public or private service providers, about 14,300 also in the tertiary sector (trade, tourism, transport and others). Kempten has a university of applied sciences with about 5,000 students.

Kempten lies at the highway A 7 and at the federal roads B12, B19 and B309. Concerning rail connection Kempten has a good accessibility for passengers being serviced at least hourly through the lines Munich – Lindau, Neu-Ulm - Memmingen – Kempten, Nuremberg – Lindau/Oberstdorf in regional service and three Intercity/Eurocity-connections from northern Germany to Oberstdorf or Munich to Zurich.

There are no major logistic platforms Kempten, but several international shipping companies maintain logistic centres / depots in Kempten, where they provide logistic services for their clients:

Dachser has its main seat in Kempten and maintains a distribution centre for the parcel service enterprise DPD, which is located nearby the highway A7 in the north of Kempten (Ursulasried).

Lebert maintains a branch in Kempten with 7,500 m² area for stock turnover and 24,000 m² logistic area.

Logistik Zentrum Allgäu (Center for Logistics Allgaeu Region) maintains a branch in Kempten.

All of them are located in commercial zones near the main road infrastructures, so they are not perceived as a pressure for the inhabitants.

Environmental diagnostic

Air pollution in Kempten did not yet exceed the legal limit values.

The strategic noise map, compiled by the Bavarian Environment Agency for Kempten, shows LDEN at state roads St 2009 and 2055, federal roads B1 and B309 and federal highway A7.

The number of residents affected by road traffic noise (rounded on 50) shows in Kempten 700 residents affected by LDEN > 67 dB(A) and 900 residents affected by LNight > 57 dB(A).

Noise caused by railroad traffic is no issue in Kempten.

There are some “hotspots” where air pollution is perceived as annoying, but they are strongly connected to individual motorized traffic and not as much to freight transport.

Governance

An integrated transport development plan is in process and goods transport will be an issue. It will be finished probably in 2014.

The municipal council of Kempten declared in 2009 that climate protection is one of five strategic future aims to the year 2020 and takes part in a pilot federal project “Masterplan 100% climate protection until 2050”. In this context Kempten has a manager for climate

protection issues in the administration. The manager plans to start a small city logistic project in the next two years, but this is not elaborated at the moment.

Experiments

In cooperation between the University of Kempten and a private enterprise (ABT) 50 delivery vehicles will be transformed to electric vehicles. The goal of this project is to prove that e-mobility is not only adequate for urban areas, but also for delivery services in rural regions.

9.2.6. Lindau

Overview

The city of Lindau, district capital of the district of the same name, at the Lake Constance at 400 m a.s.l. and covers an area of about 33 km². The historical centre of Lindau lies on an island in the Lake Constance. Lindau has 24,491 residents (Census 2011) and a population density of about 750 residents per km². Lindau is the seat of the administrative district of the same name with 78,420 residents.

In the year 2011 Lindau had about 11,600 regular workplaces and a relatively high positive commuter balance of 3,600 employees. About 4,300 workplaces were in the second sector, about 2,400 in public or private service providers, about 5,000 also in the tertiary sector (trade, tourism, transport and others). Especially summer tourism plays an important economic role for Lindau, but also congresses and conferences have economic importance. Lindau lies at the highway A 96 and at the federal roads B12 and B31. Concerning rail connection Lindau has a good accessibility for passengers being serviced through the lines Munich – Lindau, Nuremberg – Augsburg – Lindau, Ulm – Kempten – Lindau, (Stuttgart) – Ulm - Lindau in regional service and Intercity/Eurocity-connections from Munich to Zurich. Additionally Lindau is daily connected by the Austrian high-speed-train Railjet from Vienna.

Environmental diagnostic

In Lindau the Federal Environment Agency has a traffic-related air pollution monitoring station. It shows that Lindau had in the past several years more exceedances of the daily limit value⁵⁰ for PM10 (particulate matter < 10 µm).

Due to the exceedance in the year 2003 an action plan for clean air was developed in 2005/06 and updated in 2010 when NO₂ threshold was exceeded.

To reduce air pollution the effects of three measures concerning the transport sector were modelled:

Passage ban for HDV

Low emission zone

Speed limits

The results showed that none of these measures have enough effect on air quality to justify them. Detailed modelling of the emissions showed that local traffic has a share of 29% to particulate matter and local traffic in this case is mainly caused by private cars used by commuters. Most of the PM-pollution has its origin in other sources and the exceedance of the daily limit value occur mainly in winter times when inversions are very frequent.

The strategic noise map, compiled by the Bavarian Environment Agency for Lindau, shows LDEN at state roads St 2375, federal roads B12 and B31 and at federal highway A96.

50 The daily limit value of 50µg/m³ may be exceeded 35 days per year

The number of residents affected by road traffic noise (rounded on 50) shows in Lindau 200 residents affected by LDEN > 67 dB(A) and 200 residents affected by LNight > 57 dB(A). Noise caused by railroad traffic is no issue in Lindau.

Governance

Within the administration there is no position explicitly responsible for urban freight transport issues. Competences are determined for issues like traffic supervision and spatial planning / local building / infrastructure planning. For local and regional public transport planning a planning document is giving guidance and the municipal transport service company is providing the service. The contacts to the administration showed that urban freight transport and logistics is not an issue perceived as field of action.

Experiments

Lindau had started a City logistic project for the Island in the 90th, but sadly nobody within the administration or the Chamber of commerce could give any information about this project. In the air plan one suggestion to improve air quality was to re-activate this city logistic project, but this was not pursued.

9.3. Italy

The following pages briefly resume the state-of-the-art regarding logistics and urban freight delivery, at local/regional scale, in some selected Italian case studies and territories identified. Related best practices and further information will be highlighted in the dedicated session.

9.3.1. Aosta



Aosta is the most important urban area of the Autonomous region of Valle d'Aosta. The region is located along the corridor which connect North-Western Italy to France through the Mont Blanc Tunnel and it is one of the main Alpine transit roads. The city of Aosta plays a vital role in the development of the region with its 35,000 inhabitants, amounting to 27% of the total resident population of the region (127,000 units). This percentage reaches the 54% if we take into consideration the total population living in the "Plaine Valdotaïne" (69,000 units). Demographic trends of past decade highlight positive balance for the entire region, especially for Municipalities of "La Plaine" area (+13,1%) and lower values for Aosta (+2,7%). The city is also a crucial node also of economic and commercial activities. As far as it concerns services, Aosta is the main destination area for the entire population of the valley. Motorway connections crossing the city of Aosta mainly refer to two international itineraries:

1. Torino-Aosta-Mont Blanc (Motorway A5 e T1 of Mont Blanc) - Geneva (CH)- Macon (F);
2. Aosta-Martigny (R9-variante della SS 27-T2 del Gran San Bernardo).

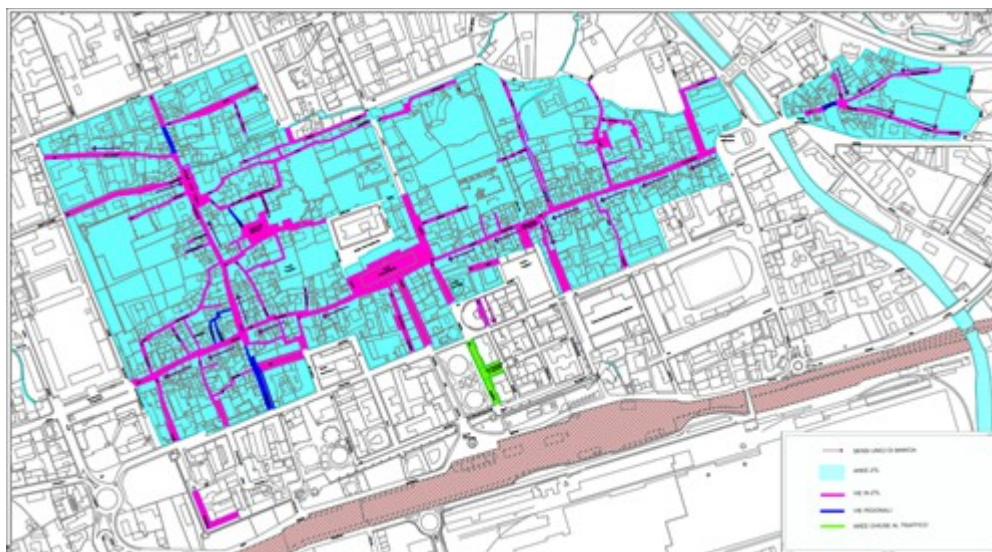
Currently, Aosta has one of the highest Italian motorization rate (70,3 cars per 100 inhabitants, national average amounts to 60,1), producing negative effects on mobility behaviours. Modal shift available data shown that 90% of trips starting from Aosta and 82% of trips having the city as final destination are made by car. Aosta generates and attracts 78% of daily trips, made for working or study purposes in the entire "Plaine" area.

Almost 70% of trips within 7 a.m. and 11 a.m. are made for travel purposes (with some differences among districts). Most trips are made on a daily basis or several times per week. With the exception of the hilly areas which register high shares of non-daily trips (40%). Most circulating cars (almost 75%) travels with only one person on-board.

Currently, the Autonomous Region of Valle d'Aosta not dispose of a regional Transport Plan, nor a regional Logistic Plan. The Territorial Coordination Plan (Piano Territoriale di

Coordinamento) has not been realized yet. Therefore, logistics is mainly regulated at municipal level. The municipality of Aosta realized in 2011 the General Plan on Urban Traffic (Piano Generale del Traffico Urbano, PGTU), in which is highlighted the role of the “Autoporto” and “Cityporto” (for further details, see the related best practice).

Aosta’s Autoporto is located in proximity at the “Aosta Est” tollbooth of highway no. A5, between the two municipalities of Brissogne and Pollein. The freight terminal is equipped with a large area for the parking of goods vehicles (40,000 m²) and specific services, such as customs offices, veterinary controls led by the Ministry of Health, a post office, a logistics platform, as well as various commercial and directional accessories. The parking area is used for temporary or longer stops, as a recovery for heavy vehicles coming from or directed to the Mont Blanc Tunnel. Its management is under the responsibility of Autoporto Valle d’Aosta S.p.A.



Source: www.autoportovda.it

Vehicles distributing the goods in shops located within the “LTZ⁵¹” area must follow the following rules:

- Access to “LTZ” area is allowed from 7 a.m. to 10.30 a.m.;
- Any stop (taking and delivering of goods) is allowed from 7 a.m. to 11 a.m.;

Within the General Plan of Urban Traffic of the Municipality of Aosta, some interesting data are available regarding urban freight delivery. Almost 80% of heavy vehicles which enter in

51 Limited Traffic Zone (LTZ). In Italian Zona a traffico limitato (ZTL)

the city between 7 a.m. and 11 a.m. make deliveries, while about 20% enter to withdraw goods. More than 60% of vehicles which enter in the city has a load factor lower than 25%. However, it should be indicated that the central urban area attracts more than 50% of commercial vehicles with a load factor higher than 25% (with peaks that reach 75% in some localized areas).

9.3.2. Torino and Piemonte

Historically, Piemonte has been considered, probably because of its morphology, more as a generator of traffic than an area of transit of goods. The regional economy have been characterized by large companies redistributing raw materials, semi-finished and finished products. Nowadays, the planning and the implementation of European major infrastructure corridors contributed contributed to modify this scenario.

The development of a regional logistics system capable to respond to the global demand brings necessarily both positive and negative elements for the territory: on the one hand, it is a factor of development of the regional system (higher local employment, development of know-how, the presence of high-level logistics services for local businesses). On the other hand, it can create critical situations (congestion, environmental pollution and “soil occupation”) for the presence of crossing streams.

Critical issues have been identified in the current freight traffic routes crossing the region, as well as in weak existing infrastructure and a not efficient logistics system that works in a non-optimal inter-modal side (especially the modal shift from road to rail), which clogs the urban nodes (and especially at metropolitan scale), as well as much of the network regional roads. This produces an excess of heavy traffic flows along corridors situated in most sensitive Alpine areas.

At the local level, the entrepreneurial system of Piemonte is composed by an extensive network of industrial districts. The business and productive structure on which are based the so-called industrial districts is quite diverse. However, the underlying trend, in many districts, is to create supply chains based on several SMEs. The dispersed production, often across various stages of manufacturing, makes the management of the transport flows of goods a key element for the competitiveness of individual districts. In addition, the current management – which should be verified with respect to the single district realities – often delegated the transport organization to the same companies that already operate a significant portion of their own. The type of the district, rather than the type of product or the geographical area of the district, affects the characteristics on which is managed. Three types are identified:

- Districts within which there are only one or a few large companies that emerge on the others for market power and technological and commercial leadership in relation to other;
- Districts where there are some medium-sized companies with market power and industrial capabilities mostly equivalent;
- Districts characterized by the presence of a widespread combination of small businesses and artisan companies of similar size, where none prevails;

The process started by institutions and companies in some territories is certainly a positive sign of greater awareness of the problem. Nevertheless, it would be necessary to establish a network of collaboration between the different administrative levels, supporting integration and dialogue between different sectors such as transport, environment, urban planning, trade and mobility of goods and related projects. These are areas of local government not sufficiently connected between them and rarely designed to promote an integrated system of

urban policies and sustainable mobility choices based on urban development and investment in transport.

For the organization of the logistics centre in the metropolitan area of Turin, on the which was started a special study are proposed:

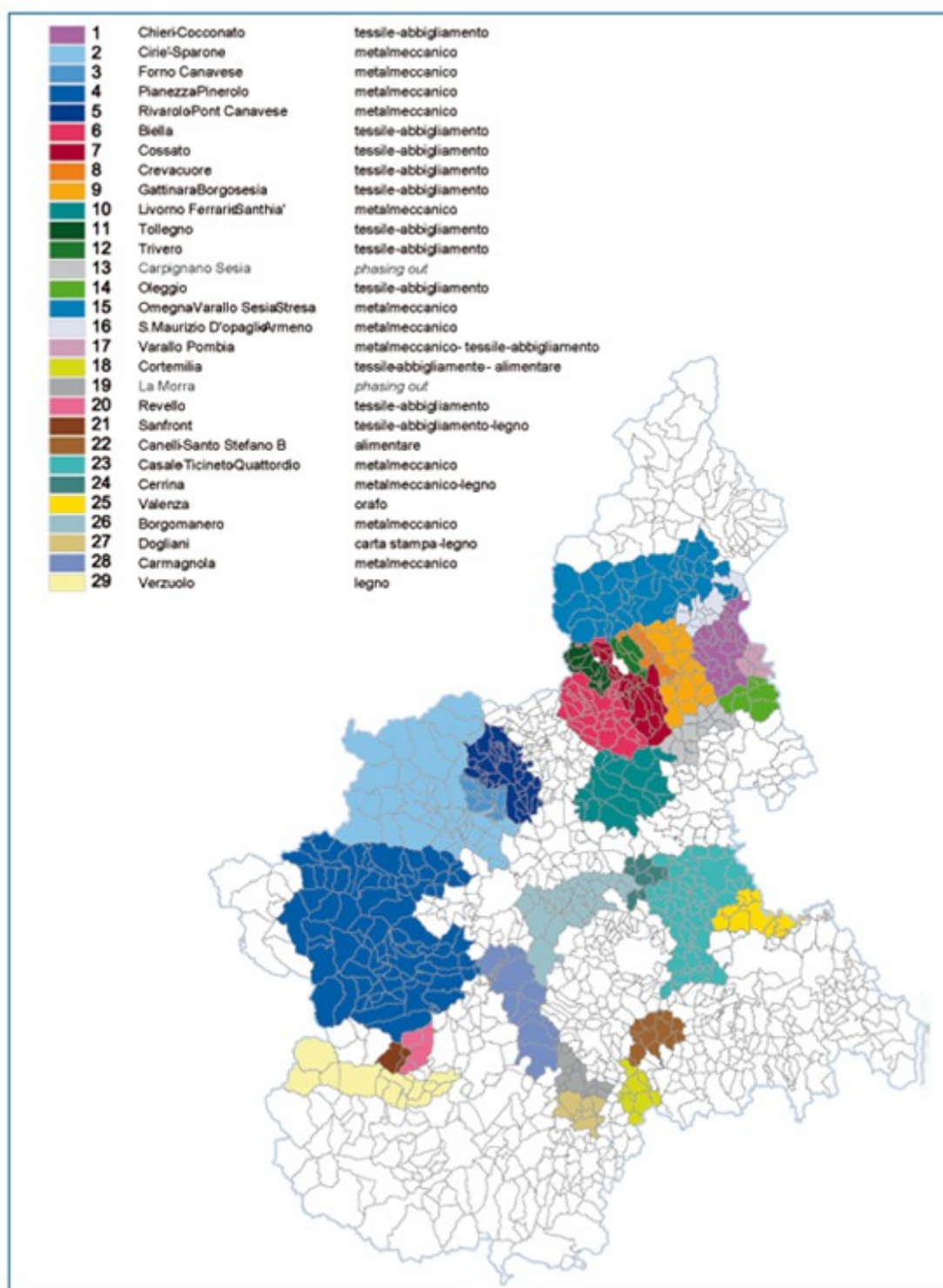
- the development of city logistics, acting on the rationalization of the system distribution of goods about times and schedules, storage and delivery;
- the activation of reverse logistics projects, aimed at reducing the environmental impact of return flows through the material handling, packaging, products and transport to waste treatment facilities;
- the introduction of e-logistics, creating the conditions for which firms, leveraging information technology, may transact business using procedures and computer applications, in accordance with shared standard trade agreements.

The municipality of Torino (130 km² surface) counts more than 900.000 inhabitants, and a GDP of about 55.000 millions of Euro (4.5% of national GDP), is one of the most important towns in Italy. Since the 1990's Torino has been following a path that transformed the city from an industrial capital into an innovation pole. Torino is nowadays multiplying its efforts towards a more sustainable development, one of the key-themes of the City Strategic Guidelines. Torino's path to become a "Smart City" started two years ago, when the City Council took the decision to take part in the initiative of the European Commission "Covenant of Mayors" and engaged itself to elaborate an Action Plan for Energy in order to reduce its CO₂ emissions more than 20% by 2020. The Torino Action Plan for Energy (TAPE), that represents a fundamental step to present Torino as "Smart City", was approved in 2010 and its objective is to reduce 40% CO₂ emissions by 2020.

Since the mid '90s the City of Torino has worked on sustainable mobility, approving the Traffic Urban Plan and detailed scale plans (city centre mobility plan, cycle paths plan, road safety plan, ecc). In 2011 The City Council approved the Sustainable Urban Mobility Plan, in line with the indications reported in the White Book "The European transport policy until 2010: time for choices" and the Green Book "Towards a new urban mobility culture".

Torino's city centre is at the heart of the daily commute, and requires greater protection for the presence of its historic fabric, with buildings of great artistic and architectural value. There are about 10,500 economic activities, of which the most numerous are commercial (retail / wholesale) and public places (bars / restaurants) which constitute a total of about 4200, followed by the tertiary sector and private public offices.

Figura 3.1 - Distretti Industriali Individuati dalla Regione Piemonte con DCR 2927-6663 del 26 febbraio 2002 - dati 2006



Fonte: Regione Piemonte

The city of Turin, even if not included within the Alpine Convention area, is currently facing new challenges on developing new solutions, keeping into account incoming traffic flows from surrounding perialpine areas.

In 2012 the City of Turin decided to improve the efficiency of urban logistics by shifting from policies offer oriented to supply demand management. Two official charts paved the way to this change of perspective: the first one was signed with Italian Ministry of Transport and Infrastructure, being the city experiencing this new governance model as coordinator of Italian Great Metropolitan Areas network. The second agreement was signed with all relevant local stakeholders in order to have a long term plan towards the objective of 2030 zero emission urban logistics. The new plan imply new investments for the renew of vehicles and the installation of tracing & tracking facilities for all commercial vehicles, investments that have been balanced by operative advantages for the operators that accept to follow to the recognition scheme.

The new governance model identify – in a time frame of five years – the necessary steps for the substitution of Euro 3-4 vehicles that have to be replaced with more environmentally friendly vehicles, or otherwise complying at least with Euro 5 and 3,5 tons or “zero emissions” vehicles with a gross vehicle weight less than or equal to 7 tons. In both cases, the vehicles should have installed electronic devices able to detect and transmit distance data regarding the location of the vehicle (tracking & tracing).

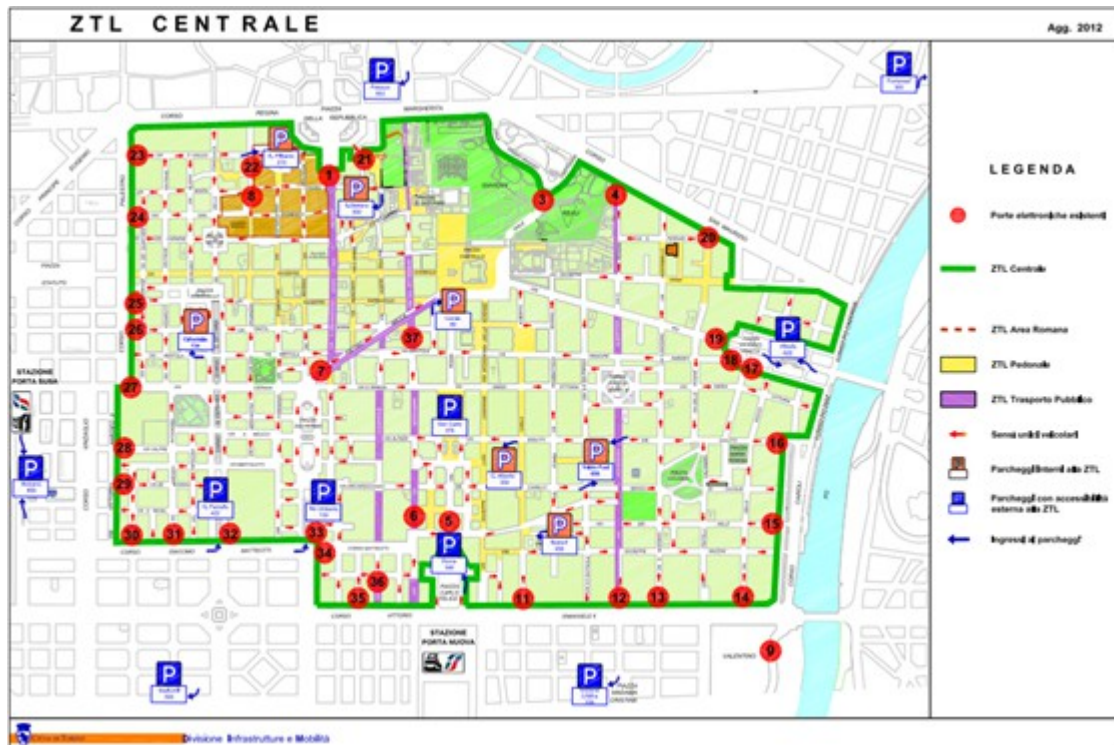
On the other hand, the operators fulfilling these requirements will have extended downtown restricted area (LTZ) time windows from 6 am to 12pm, free admission to LTZ for two years, use of reserved areas for loading/unloading in LTZ, use of reserved corridors for accessing the LTZ.

This concertation involved not only freight carriers, forwards and logistic operators but all relevant stakeholders including shopkeepers, chamber of commerce, automotive and ITS industries, representing a best practice that will be implemented at National level by all Great Metropolitan Areas in Italy.

Moreover, several projects are currently interesting the city, in particular should be mentioned the Urbelog⁵², PUMAS⁵³ and CityLOG projects (on the latter further details will be summarized in the following pages).

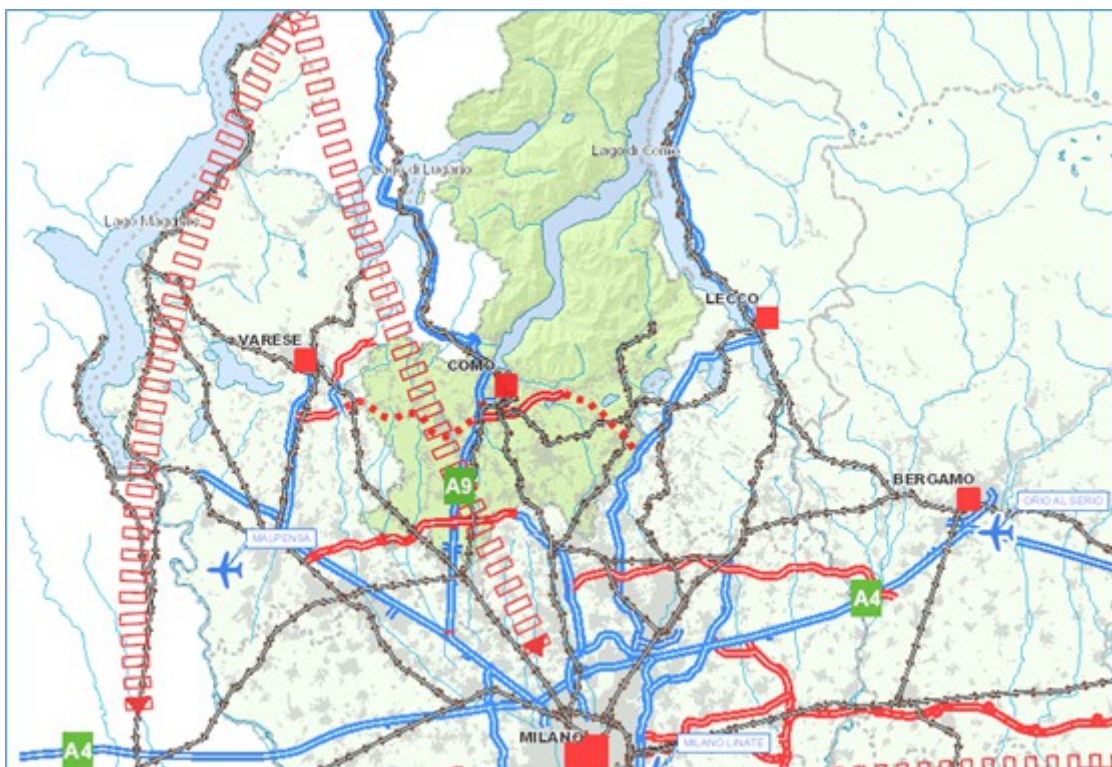
52 <http://www.sitospa.it/index.php/it/marketing-eventi/150-torino-sito-pilota-del-progetto-urbelog>

53 <http://www.sitospa.it/index.php/it/marketing-eventi/150-torino-sito-pilota-del-progetto-urbelog>



Torino's restricted traffic zone (Source: City Council of Torino)

9.3.3. Como – Lombardia



Source: elaboration from geoportale.provincia.como.it

Lombardy region is the most important Italian hub generating and attracting freight traffic. The elevated industrial concentration, the high population density and per-capita income produce in this area as much high mobility rate of people and goods, both within the region itself and towards other Italian and European regions.

The city of Como is situated at the southern tip of the south-west arm of Lake Como, located 40 kilometres north of Milan, bordering the Swiss towns of Chiasso and Vacallo. Nearby major towns are Varese, Lecco and Lugano (CH). Its population amounts to about 133,000 inhabitants, (23% of the entire province), and its number of employed people amounts to nearly 48,000 units (27% of the entire province). Demographic growth, even if at lower intensity than the provincial average, between 2001 and 2011 was remarkable (5,6%). Hinterland municipalities registered higher values (7,3%) than the inner city (4,6%). Even economic activities seemed to show a good resilience to the crisis, marking a significant decrease in the overall number only between 2008 and 2009 (-1.7%), remaining quite stable in the following years.

The economical structure is characterized by a strong concentration of tertiary activities, occupying 45% of employees working in the area and 38% of them within the province. The nearby lake certainly constitutes the most important driver for the development of local tourism, also in consideration of several international events and workshops regularly organized in the area.

According to a SWOT analysis recently developed, the main strong and weak points have been identified for the Como's area, here briefly resumed:

Strengths	Weaknesses
Existence of several companies and sectors of excellence, able to compete on national and international scenarios, in textile, mechanic, chemical and home furnishing sectors.	Incomplete infrastructure network and growing congestion of urban and regional mobility
Good level of infrastructure, both at road and rail level, to access to the Milan metropolitan area and to Switzerland (North-South) and connections to other main Lombardian towns (East-West)	Inadequate logistical infrastructure for the distribution of goods on a local scale and lack of inter-modal platforms for access main transnational road axes
New central role assumed by the city of Como, with regard to the strengthening of the Gotthard rail corridor and its reinforcement as logistic intermodal node (crossborder North-South links)	Need to strengthen rail links, at urban level
Thanks to the completion of works on upgrading the motorway no. A9 and the East-West connection on Alpine foothills, a remarkable improvement of infrastructure network is expected. Further enhancements may come from the realization of a	High exposure of the territory to hydrogeologic risks, and need of maintenance and safety measures
	Deep territorial gaps and difficult activation of virtuous growth paths in mountainous areas inland, poorly connected and exposed to the risk of further economic marginalization
	Growing congestion and pollution of urban areas, due to heavy car and truck traffic, The lack of adequate links to the Gotthard

connection between Varese, Como and Lecco.	corridor plays a key role in sharpening these phenomena
Proximity to the EXPO 2015 area and other most important exhibition areas	
Realtà industriale organizzata in interdepartmental districts, with high inclination to innovation and product diversification	

Among the strong points, highlighted also in the SWOT analysis, it is worth to recall the realization of an inter-modal logistics platform, in view of the ending of the AlpTransit line, which would constitute a strong support to the development of the economic system, providing answers to the growing demand of intermodal freight transport, given intense North-South flows and road transit restrictions prescribed by Switzerland. This infrastructure may also produce benefits to the decongestion of the urban area, optimizing last-mile freight delivery.

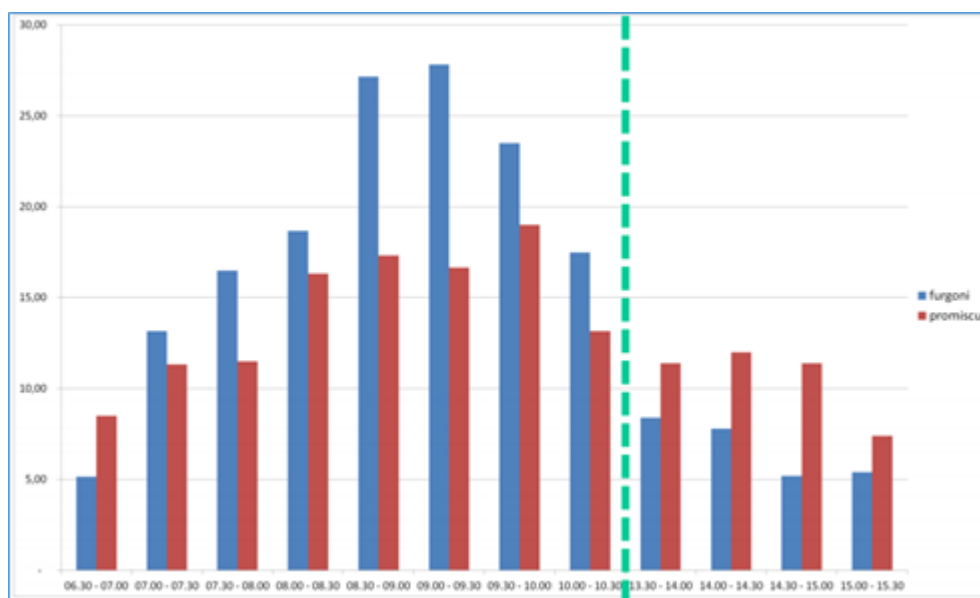
The Smartfusion initiative is currently reorganizing city logistics in the inner core area of Como. A demonstration of the new model of city logistics, which took place in Como's limited traffic zone (LTZ), during the week from 5th to 10th May 2014. The demonstration activity foreseen the use of the new Iveco electric vehicle and of the routing system that calculates least pollution grip for consolidated deliveries to LTZ dealers. The vehicle and the advanced navigation system have been developed respectively by Centro Ricerche Fiat and PTV Group within the Smartfusion project. Further details on such initiative are described in the specific chapter dedicated to the best practices.

The figure below shows the inner restricted area (orange colour), closed to car and heavy vehicles traffic.



Source: Lombardia region

The chart below highlights the number of vehicles entering every day, on average, within the Como's urban area, subdivided in “furgoni” (vans, blue coloured) and “promiscui” (mixed vehicles, red colour). The highest amount of vans circulate between 8.30 a.m. and 9.30, rapidly decreasing after 10.30 a.m. and during the afternoon. The number of mixed vehicles circulating is more distributed throughout the day, even if, also in this case, peak hours can be individuated among 8 a.m. and 10 a.m.



Source: Gruppo Clas

9.3.4. Trento



Source: www.interbrennero.it

The city of Trento is located in the Adige River valley in Trentino-Alto Adige. Modern-day Trento is a city with highly developed and organized modern social services, as well as several economic activities. In recent years Trento ranked extremely highly out of all 103 Italian towns for quality of life, standard of living, and business and job opportunities. Trento is also one of the nation's wealthiest and most prosperous, with its province being one of the richest in Italy, with a GDP per capita of €29,500 and a GDP (nominal) of €14.878 billion. Currently, the Trentino-Alto Adige region do not dispose of a Regional Logistics Plan (Piano Regionale della Logistica), nor a Regional Territorial Plan (Piano Territoriale Provinciale). The

Autonomous Province of Trento do not equally dispose of Coordination Provincial Plan (Piano di coordinamento provinciale).

With regard to the Trentino's area, supply chains of a certain relevance are those linked to agro-industry, paper industry, processing of porphyry, but also tourism and commerce that create congestion problems especially in historical centres and, especially in some seasons, in most sensitive and vulnerable areas from the environmental point of view. As concerns other logistic supply chains (car industry, fashion, fuel oils) their traffic flows are more developed on medium and long distances. Each one of these supply chains present specificities from the logistics point of view, which should be analysed in more-detail, looking for organizational and infrastructural adequate solutions.



Localization of the Trento's interport (source: Unione Interporti Riuniti)

Generally, despite the existence of several local logistic infrastructure (an interport and logistic private platforms), however, existing traffic flows show a high share of crossing traffic (mainly transalpine North-South) and a lower shares of traffic with origin and destination at local level. Therefore, most efforts in recent years have been addressed to the development of logistics and freight transport at medium and long distances (Northern Italy markets and beyond the Alps). In order to reduce traffic congestion, air and noise pollution, the City Council established a ZTL area within the city centre, with regulated accesses.

However, it is to be mentioned that a very important logistic node is operating in the Northern part of the municipality, in proximity of a well developed industrial and commercial area. It has been conceived mainly for favour access to local market and Northern Italy to transalpine and centre European markets The Interporto of Trento is well integrated within the national network infrastructure, both at road and rail level, and can rely on the following links:

- the A22 Motorway Brennero-Modena is only 250 meters far from the Interporto (Trento Nord tollbooth);
- national road no. 47 of Valsugana (SS47) and the provincial road no. 235 are only 500 meters far from Interport
- proximity to most important regional road network;
- the Brenner railway can be reached through the Trento railway station, served also by the new railway station of Roncafort, addressed only to freight transport.

Currently, the Trento interport dispose of a surface of 150.000 mq, distributed on 6 platforms (four of them 650 m long and two of them 400 m long). The current site occupies 275.000 mq. Accompanied (rolling highway), non-accompanied combined transport and traditional rail services are implemented.

9.4. Switzerland

The best practice examples presented for the case of Switzerland lay in- and outside of the Alpine convention area. The outside examples include Basel and Zurich, two major towns with 172'500 and 400'000 habitants respectively, as well as Arbon, a small town with a population of 14'000. Even though they lay outside of the Alpine Convention area and are not situated in a strictly alpine context, they were purposely included in the collection of best practice examples, since they display highly innovative solutions which are considered to be easily applicable in Alpine towns. The territories of the three examples within the area of the Alpine Convention are described in more detail below.

The following map shows the locations of the best practice examples for the case of Switzerland.



9.4.1. Thun

Thun is a town of almost 50'000 habitants in the canton of Bern and covers an area of 21.6 km². It lays at the boarder of the Lake of Thun and has a small, historical town center. It is around point where the river Aare flows out of the Lake of Thun and encompasses both banks of the river and an island between. The city ranges in altitude between about 560 m in the city centre and 1170 m on its eastern boundary.

32.1% of the city's total area is used for agricultural purposes, while 19.7% is forested. 45.6% is settled (buildings or roads) and 2.5% of the area is non-productive, mostly due to the presence of water or mountains.

Besides tourism, machine and precision instrument engineering, the food industry and publishing are the town's economic pillars.

In the centre of the city, there is a railway station connecting Thun the national railway network. There's also a public transport bus service operating within the city as well as connecting it with nearby towns.

The city is circumscribed by the federal road A6 which leads to Bern in a westerly direction and merges at Spiez into the A8 to Interlaken and Lucerne in an easterly direction. Thun has two highway exits (Thun North and Thun South). Within the borders of the city of Thun there is a narrow network of cantonal and municipal roads.

9.4.2. Bulle

Bulle is a town in the canton of Fribourg with a population of little over 20'000. It covers an area of 23.8 km² and is situated near the lake of Gruyère.

Bulle is the second largest town of the canton and its municipal territory is heavily branched. 17% of the community's territory are settled, 31% forested and 51% are used for agricultural purposes, while only 1% of Bulle's territory is unproductive. The altitude ranges from 771 m in the city centre to 1384 m in the south of the community's territory.

The town is an important regional centre of economy and trade. The former agricultural community has transformed today to an important hub of industry and the tertiary sector. Along the large streets, there has been a strong development of industrial zones on the western, northern and southern border of the town.

Bulle is three kilometres away from the nearest exit of the federal road A12 from Bern to Vevey. As an important touristic gateway to the Alpine region of Fribourg, Bulle suffered under a lot of motorized traffic during the weekends before a bypass was built in order to relieve the town from the traffic loads. The town is not directly connected to the national railway network but disposes only a regional train to Romont.

9.4.3. Zizers

Zizers is a small community of little over 3000 inhabitants in the canton of Graubünden. It covers an area of 11 km² and lays in the valley of the Rhine. It's territory ranges from the riverside at 561 m up to the ridge at an altitude of 17774 m.


41.5% of the territory is agriculturally used, 38.5% is forested, 12.1% is settled and 7.8% unproductive. While agriculture has lost its formal importance to the community, there are still numerous fruit orchards and vineyards. Zizers shares the industrially used zone "Tardisland" together with the neighboring community Igis.


The community has a railway station where trains pass from Chur to Landquart. There is also bus service from Landquart to Zizers. Chur can be reached within 10 minutes on the federal road A13 which passes right along the western border of the community.


10. Appendix n°2 : Description of best practices within the area of the Alpine Convention

Austria – Project E-Log in Klagenfurt/ Carinthia – an ambitious project for electric powered freight mobility

Location	Klagenfurt/ Carinthia
Service organizer	The project E-Log will be carried out by a partnership of institutions of the municipality, the biggest energy supplier in Carinthia, private companies and research-institutes.
General presentation	<p>In the framework of this project, which is under way, a freight logistic centre will be built. The place is accessible by road (near access to the Austrian A2 motorway, which is connecting Carinthia with Styria and the Vienna region and with Italy. Also a rail access by a work siding (Anschlussbahn) is available. Finally, the Klagenfurt-airport is situated close by this logistic centre.</p> <p>The logistic centre will also be the base for a fleet of 200 electric powered vehicles.</p>
Action typology	Infrastructure, governance and cooperation, supply chain management
Underlying issue and objectives	
Specification	<p>The electric powered vehicles (most of them light duty vehicles) will be rent including the reloading equipment to different logistic and service companies in Klagenfurt and the surrounding region. For the main freight connection between the logistic centre and the downtown of Klagenfurt 3 innovative “CityLogs” (articulated transporters), powered by hydrogen and fuel cells should be introduced.</p>
Implementation details	<p>The following 200 electric powered vehicles should be introduced in the project E-Log according the current plan: 20 Renault Twizy 80, 20 Renault Zoe, 100 Renault Kangoo, 40 Renault Kangoo Maxi, 6:Renault Maxity, 6 e-Wolf Vans, 5 e-Velotaxi Delivery Cruiser, 3 CityLogs (transporters, see http://www.citylog.at/)</p>  <p>Prototype of a CityLog: Source www.citylog.at</p>


	 <p>CityLog Train</p> <p>Source: http://www.het-engineering.com/de/produktentwicklungen/citylogistik-fahrzeugentwicklung</p> <p>The additional consumption of electric energy by the 200 electric vehicles should be covered by photovoltaic cells with a surface of 6300 square meters.</p> <p>200 electric powered vehicles seem to be a high number, but today 3200 cars and light duty vehicles are used for deliveries and service trips in Klagenfurt. In the project light duty vehicles are a focus, many of them are used also for social services, like “lunch on wheels” for elderly people.</p>
Supporting mechanism	<p>The project started in 2012 and will be finished in 2015. The financial support by the climate funds is 1,57 Mio. €.</p>
Results / Assessment	<p>Finally in the city of Klagenfurt, where frequently inversion weather situations with fog, typical for valleys and basins, come up, environmental zones with restricted access for conventional cars and duty vehicles should be introduced.</p> <p>The delivery of the electric vehicles starts in the year 2014.</p> <p>Based on the currently collected information the holistic urban freight logistic project E-LOG is the most ambitious in Austria and should be a main case study in the Austrian contribution to urban freight logistics.</p> <p>Source: www.klimafonds.gv.at and information by phone with a member of the project team in Klagenfurt.</p>
Condition of success or failure	
Contacts	<p>Dr. Wolfgang Hafner, Magistrat der Landeshauptstadt Klagenfurt am Wörthersee Tel.: +43 463 537-4885, E-Mail: wolfgang.hafner@klagenfurt.at, www.klagenfurt.at</p> <p>Christoph Wolfsegger, MSc, Klima- und Energiefonds Tel.: +43 1 585 03 90-28, E-Mail: christoph.wolfsegger@klimafonds.gv.at</p>

Austria – Combined transport terminals as base for city logistics: examples hall in Tyrol and Bludenz (Vorarlberg) 	
Location	An interesting example in the Alpine area are the combined transport terminals in Hall in Tyrol (near Innsbruck) and in Bludenz (Vorarlberg).
Service organizer	
General presentation	<p>The terminal in Hall in Tyrol offers good connections in unaccompanied combined transport in Austria, Denmark and Germany, further connections are planned to Italy (see: http://www.tssu.at/anschluesse). Some of these container train connections are used by a big food / other consumer products supplier company to send containers with different products to Hall in Tyrol and to distribute it in smaller deliveries (e.g. pallets) by truck to the markets of the supply chain in Tyrol. The city of Innsbruck has 125.000 inhabitants and the whole country northern Tyrol a population of 673.000.</p> <p>Source: https://www.tirol.gv.at/statistik-budget/statistik/wohnbevoelkerung/#c46659</p>
Action typology	Infrastructure
Underlying issue and objectives	
Specification	
Implementation details	<p>Since 2008, the “Orange Combi Cargo” is in use, a unit train, which runs daily between Vienna, Hall in Tyrol and Bludenz in Vorarlberg. Orange is the CI color of the carrier Gebrüder Weiss GmbH, who organize this service.</p> <p>Source: http://www.unglobalcompact.at/ungc/site/de/aktivitaeten/bestpractice/umwelt/gebruederweiss</p> <p>In addition to the Orange Combi Cargo train, the supplier company uses also combined transport trains provided by Rail Cargo Austria in the NINA-network (see page 21) to send products for the local and regional distribution in the urban agglomeration of Innsbruck and in northern Tyrol.</p>
Supporting mechanism	
Results / Assessment	Through the 600-meter-long freight train 66 truck trips are daily saved – this corresponds to a CO ₂ reduction of 9,000 tons per year.
Condition of success or failure	
Contacts	<p>Tiroler Strasse-Schiene- Umschlaggesellschaft mbH Löfflerweg 35 A-6060 Hall in Tirol; phone: +43 5223 56650; fax: +43 5223 56649; e-Mail: office@tssu.at</p>

Austria – Project Innoversys (Innovative Verkehrssysteme für die Wirtschaft der Europaregion Salzburg) 	
Location	Euregio Bavaria/Salzburg
Service organizer	
General presentation	The approach of this project is to bundle freight loads in the Euregio Bavaria/Salzburg to achieve load-sizes, which can be transported efficiently by rail.
Action typology	Infrastructure
Underlying issue and objectives	The focus of this project was to shift freight from road to rail by a more efficient use of existing rail infrastructure, e.g. of rail work sidings.
Specification	<p>In the project 8 implementation case studies were analysed. Since 2007 the following measures were implemented:</p> <ol style="list-style-type: none"> 1. „Mozart“- night container train Salzburg – Wien The innovation of this train was that unaccompanied combined transport was successfully implemented on a distance of only 320 km. A high share of the train capacity was used by a big food supplier chain. 2. Cooperation of the long distance freight train provider DB Schenker Rail AG Deutschland with the Salzburger Lokalbahn (agreement 2013) The benefit for city logistics is that the collection and the distribution of goods are provided on rail via railway sidings. 3. Gravel and grit on rail For the transport of large quantities of gravel and grit on the rail network was created. Since then, regular trains run from the newly constructed railway siding in different relations in the Euregio Salzburg http://www.iv-salzburg.at/dokumente/210/innoversys_folder2007.pdf
Implementation details	
Supporting mechanism	The project was elaborated in the frame of the Interreg IIIA program (Austria – Bavaria) in the years 2006 and 2007
Results / Assessment	Approximately 13.500 truck-loads could be shifted to rail, with the night container train Salzburg – Wien, and more than 1.000 tons CO ₂ -emissions were avoided.
Condition of success or failure	Since 2013 the service is interrupted, because the prices of the rail transport became too high.
Contacts	<p>Rudolf Mayer Beratungsgesellschaft (RMB) mbH Joseph-von-Fraunhofer-Str. 9 D-83209 Prien am Chiemsee; Tel. +49 -(0)8051 90 11 60; Fax +49 -(0)8051 90 11 09 mayer@rmb-log.de; www.rmb-log.de</p>

France – Grenoble sustainable logistics action plan

Location	Grenoble, inside the Alpine Convention area
Service organizer	Grenoble urban community ("Grenoble Alpes Metropole") and the urban transport authority ("Syndicat Mixte des Transports Collectifs de l'Agglomération Grenobloise")
General presentation	The Grenoble region's sustainable logistics action plan features 15 actions to deliver improvements in urban freight delivery.
Action typology	Governance and cooperation
Underlying issue and objectives	<p>Freight delivery accounts for approximately 11% of total greenhouse gas emissions in Grenoble urban area, with heavy goods vehicles and light utility vehicles representing only 5% to 8% of traffic on urban expressways and 2% to 8% of total traffic on all main roads in the conurbation.</p> <p>As with 15 other major urban centres in France, Grenoble and the surrounding areas experience regular pollution peaks that exceed the limits set by European regulations. The Grenoble region is particularly affected by two atmospheric pollutants: particulate matter (PM) and nitrogen dioxide (NO₂). The regulatory thresholds for these two pollutants are regularly exceeded. In general, the level of nitrogen dioxide along the conurbation's roads is too high, and particulate matter counts are excessively high in winter.</p>
Specification	<p>The Grenoble region's sustainable logistics action plan features four key areas and sets out 15 actions to deliver improvements in urban freight delivery.</p> <p>Area 1: Create and implement a shared roadmap</p> <p>Action 1: Create a permanent space for public/private dialogue concerning freight delivery and urban logistics in the Grenoble region</p> <p>Action 2: Promote and enhance the urban logistics profession</p> <p>Action 3: Prepare a plan of logistics facilities across the entire Grenoble urban region</p> <p>Area 2: Incorporate logistics functions into town planning and development processes</p> <p>Action 4: Include logistics in town planning documents</p> <p>Action 5: Prepare a plan of logistics facilities for the conurbation, including a hierarchy of these facilities</p> <p>Action 6: Improve service to Grenoble city centre by investigating the benefits and feasibility of creating an urban distribution centre</p> <p>Action 7: Develop logistics services in the conurbation's centres and interchange hubs</p> <p>Action 8: Prepare a loading zone plan</p> <p>Area 3: Drive performance and innovation through regulation</p> <p>Action 9: Harmonise freight delivery regulations (traffic and parking)</p> <p>Action 10: Improve regulatory enforcement</p> <p>Action 11: Create regulated traffic zones in urban centres to encourage the use of less polluting delivery vehicles</p> <p>Action 12: Encourage "best practice" to reduce harm and</p>

	<p>environmental impacts caused by deliveries</p> <p>Action 13: Experiment with deliveries outside congested periods</p> <p>Area 4: Promote mixed infrastructure and networks</p> <p>Action 14: Develop the concept of multi-purpose parking spaces</p> <p>Action 15: Encourage the use of alternatives to roads</p> <p>These actions are currently under discussion and the stakeholders responsible for managing and coordinating them are currently being appointed. Work will begin in 2014 and the initial results will be examined in 2015.</p>
Implementation details	<p>4 public meetings were organised in 2013: in February, in April, in June and in October. There were about 50 to 100 people present to each meetings representing shippers, carriers, shopkeepers, municipality, chamber of commerce, Regional council...</p> 
Supporting mechanism	Active collaboration of private companies and public entities.
Results / Assessment	It is too soon to have quantitative results but there were good feedbacks from private stakeholders.
Condition of success or failure	A strong political involvement
Contacts	Anne Builles, anne.builles@lametro.fr

France – Sustainable urban mobility plan including freight	
Location	French conurbations with a population greater than 100'000 inhabitants. In the Alpine convention, Annecy, Chambéry, Grasse and Chamonix have a sustainable urban mobility plan.
Service organizer	Urban transport authority
General presentation	<p>The French sustainable urban mobility plan were created by the French framework law on inland transport in 1982, but have only really developed since the introduction of the French law on air quality of 1996, which made them compulsory in conurbations with a population greater than 100,000.</p> <p>They started out as global transportation planning tools in conurbations for the development of public transport and active modes (walking and cycling) in the 1980s and 1990s, and have gradually taken on more importance around more recent issues or ones that received insufficient treatment in the early decades, such as environment and climate change, accessibility for people with reduced mobility, transport and town planning, parking management and freight delivery. Indeed, the law on air quality of 1996 set out a requirement for sustainable urban mobility plan to include a "freight delivery" element.</p>
Action typology	Urban planning, governance and cooperation
Underlying issue and objectives	<p>sustainable urban mobility plan are managed by the urban transport authority and involve a range of institutional, business and civil society stakeholders.</p> <p>In terms of freight, its purpose is "to set out:</p> <p style="padding-left: 40px;">The specific arrangements governing the parking and stopping [...] of freight delivery vehicles [...]</p> <p style="padding-left: 40px;">The organisation of supply arrangements within the conurbation to meet the needs of shops and businesses, ensuring that delivery times are consistent with the size and weight of delivery vehicles within the urban transport area, that sufficient space is allocated to deliveries to limit congestion on roads and in parking areas, improving the use of existing logistics infrastructure, and in particular such infrastructure located on access routes other than roads, and specifying the location of future infrastructure as part of a multi-modal strategy."⁵⁴</p> <p>In practical terms, the sustainable urban mobility plan may contribute to a better organisation of urban freight delivery, through measures designed to harmonise municipal regulations, define HGV routes, develop loading zones in public spaces and introduce the requirement to make some private space available for the largest traffic flow</p>

	generators.
Specification	<p>The actors involved are the City Council, economic and social stakeholders, boroughs' representative, local organisations, business organisations</p> <p>The main action regarding freight in most of the sustainable urban mobility plan in the harmonisation of municipal regulations and the use of railways or waterways to convey goods.</p>
Implementation details	<p>2001: approbation of Annecy sustainable urban mobility plan</p> <p>2003: approbation of Chambéry sustainable urban mobility plan</p> <p>2007: approbation of Chamonix sustainable urban mobility plan</p> <p>2011: approbation of Grasse sustainable urban mobility plan</p>
Supporting mechanism	--
Results / Assessment	It contributes to raise awareness of political bodies on freight issues.
Condition of success or failure	<p>A strong political commitment prior to the establishment of the sustainable urban mobility plan is a key factor. Critical success factors includes a close public private partnership and sufficient staffing in the city's department of transport.</p> <p>sustainable urban mobility plan gives an overview and general objectives which are coherent between passengers and freight but implementation is actually more difficult for freight orientations than for passage transport because of insufficient permanent support and lack of staff.</p>
Contacts	<p>Thomas Plantier</p> <p>Thomas.Plantier@Cerema.fr</p>

Germany – Freight hub Burghausen and Freight hub Traunstein



Location

Northern ports

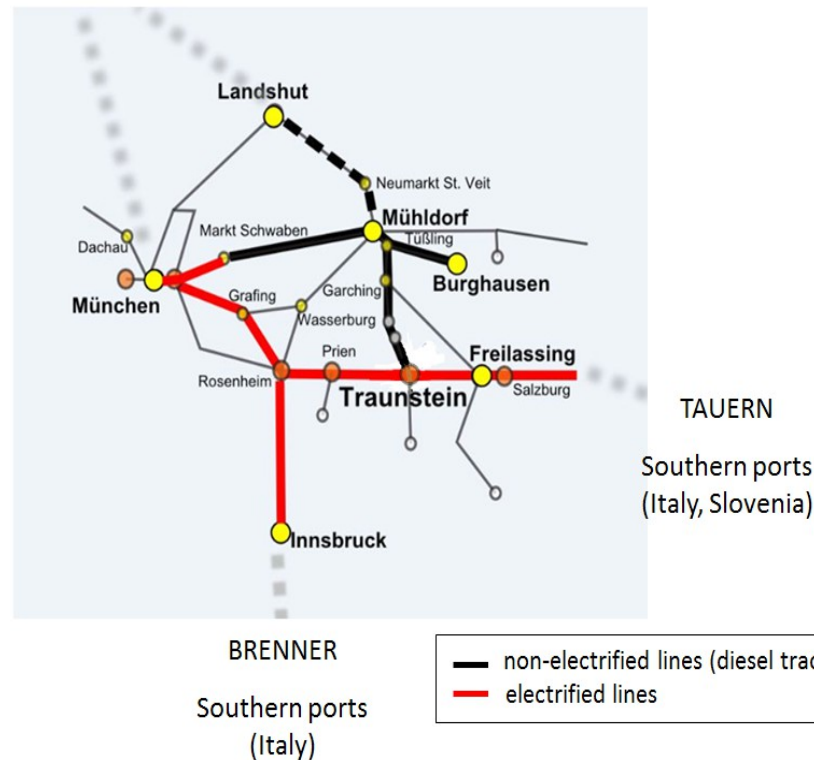


Figure 1: Southeast Upper Bavarian rail infrastructure (Source: LKZ, 2011)

On the other hand, several city-logistic projects have been terminated in southern Bavaria over the last few years:

Service organizer

General presentation


Action typology

Underlying issue and objectives

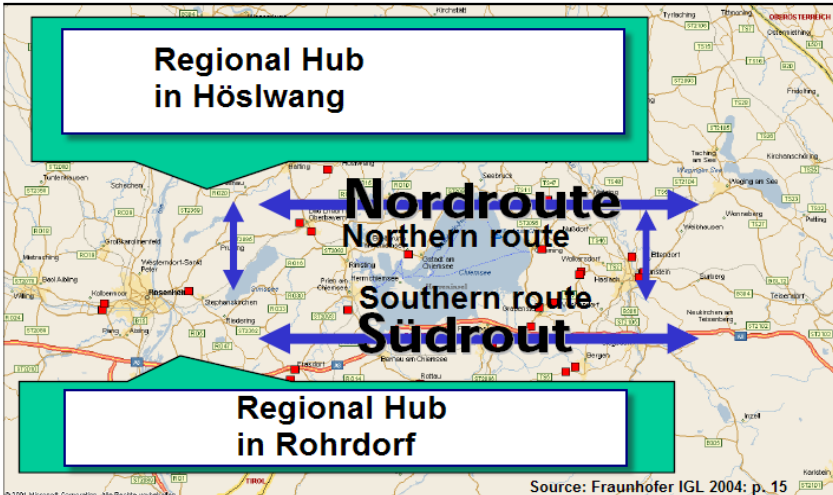
Infrastructure, governance and cooperation


On the basis of many years of experiences it is consistently shown that unaccompanied intermodal transport (UIT) is currently the only answer how to harmonize ecological and economical requirements in the sensitive Alpine region. In the former alpine-specific transport policy mega-projects like for example the Gotthard tunnel or the Brenner base tunnel was in the focus. But the fact was ignored that for a successful shift from road to rail a place is needed where this is physically and technically possible. Particularly affected by these requirements are the areas north and south as well as directly adjacent to the alpine Arc because the rail freight in this area is more economic than in the lowlands due to the geographical peculiarities of the Alpine region. Economy and transport policy therefore face the challenge to find areas from 80.000-120.000 m² for building such terminals in touristic

	<p>areas and areas of great importance for nature. It is also very important for the economical traffic management to find areas which are as near as possible cargo activity and the motorway as well as if possible on a double-tracked, electrified line.</p> <p>In the German Alpine Convention area and its closer catchment area, the following logistic projects are currently being established or planned.</p>
Specification	<p>Freight hub Burghausen</p> <p>Such an area was found for example (at least with partial fulfilment of the above mentioned requirements) at the location in Burghausen. Terminal (8 ha) has 4 tracks with 600 m each and will shift in the initial phase 40.000 and in a later stage 80.000 trucks from road to rail. Such terminals were co-founded in Germany in the last 10 years with 1 billion Euros of the Federal Republic of Germany (about 80% of the effective investments costs). With this funding the inherent disadvantage of short route section on the road, handling of cargo, long rail section, handling of cargo and short route section will be compensated to reach competitive prices for the intermodal transport in comparison to road freight transport.</p> <p>In the short term, this terminal will be extended by the addition of a freight transport terminal to offer additional services as repacking and labelling, storage as well as rail-related-on-site-services (container repairing, container Depot...). Ideally urban freight logistics (collection and delivery of goods) in such a freight logistic centre will be realized by electric vehicles.</p> <p>Freight hub Traunstein</p> <p>An additional terminal was designed for Traunstein. In contrast to Burghausen terminal the terminal in Traunstein would be located directly next to a double-tracked, electrified rail line between Munich and Salzburg as well as next to the motorway A8. The terminal is planned, but not yet under construction.</p>
Implementation details	
Supporting mechanism	<p>Freight hub Burghausen: a peculiarity is that among the Federal Republic of Germany also regional investors were found in the frame of a European tender to sign an Operator Agreement for 20 years comprising Deutsche Umschlaggesellschaft Schiene—Straße (DUSS) mbH (German Road-Rail Transshipment Company), DB Schenker BTT GmbH and Karl Schmidt Spedition GmbH & Co.KG. Burghausen</p>
Results / Assessment	<p>The terminal Burghausen started operations in June 2014.</p>
Condition of success or failure / Strong and weak points	
Contacts	

Germany – Regional Freight Transport Management Lake Chiemsee																			
Location	Lake Chiemsee																		
Service organizer	Association of 10 municipalities around the Lake Chiemsee																		
General presentation	The Regional Freight Transport Management Lake Chiemsee (Regionales Güterverkehrsmanagement Chiemseegemeinden / WBC Warenbündelung Chiemsee was a pilot project running 2003-2004(last entry dates 2005).																		
Action typology	Governance and cooperation																		
Underlying issue and objectives	The idea of the project started in 2003 by initiative of an association of 10 municipalities around the Lake Chiemsee, which cooperate in several fields with a focus on sustainable development. Prior to starting the project a study analysed the status-quo of local and regional freight transport and a group of experts ⁵⁵ was asked to elaborate a concept. The result was a concept that reduced delivery transports and increased the profitability of the transports.																		
Specification	<p>Several already existent systems of freight bundling like drop-box systems or pick-up points were analysed, but dismissed because of high efforts needed in terms of locations, permissions and the costs running such a system. So a logistic model was chosen, that primarily aims at shipping companies and good, parcel and pallet freight above a weight of 31.5 kg.</p> <p>Two models were developed:</p> <p>The first model arranged two reloading points for piece goods and the delivery of the bundled goods on fixed days of the week for the northern part and for the southern part of the Lake Chiemsee. This model was discussed in a stakeholder workshop. They perceived as crucial the time needed for unloading goods at the reloading point, the financial aspects of establishing and maintaining such a point and need for staff there.</p> <p>The second model based on the use of existing structures for the bundling, which was assumed to be less expensive and to need less time for reloading.</p> <p>The comparison of the different concepts is summarized in a table:</p> <table border="1"> <thead> <tr> <th>Concept</th><th>Advantage</th><th>Disadvantage</th><th>Costs</th></tr> </thead> <tbody> <tr> <td>Reloading on free fields</td><td>Cheap</td><td>High request for timeliness, hardly to fulfill</td><td>low</td></tr> <tr> <td>Locker boxes</td><td>No stuff needed</td><td>No service, only in case of disorder</td><td>Investment, maintenance, rent</td></tr> <tr> <td>Filling station as reloading point</td><td>Stuff available</td><td>Missing storage space, only</td><td>Rent for storage place and stuff</td></tr> </tbody> </table>			Concept	Advantage	Disadvantage	Costs	Reloading on free fields	Cheap	High request for timeliness, hardly to fulfill	low	Locker boxes	No stuff needed	No service, only in case of disorder	Investment, maintenance, rent	Filling station as reloading point	Stuff available	Missing storage space, only	Rent for storage place and stuff
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⁵⁵ Fraunhofer Institute for Material Flow and Logistics and a shipping company of the region (Günther Splitter Logistik)

			parcels	
	Central hall a new building	Central service center	High costs	New building, maintenance, stuff, equipment
	Use of given halls, shipping company from the region as service provider for delivery	Everything available: stuff and equipment	-	Increase of workload makes up for the expenses
	<p>Source: Fraunhofer IML 2004, p. 14</p> <p>The decision was taken to try the second model and on demand of the participating enterprises a manual was developed which regulates all procedures and charging.</p>			
	 <p>Logistic concept with two regional hubs</p> <p>Due to the geographical conditions with the Lake Chiemsee as a barrier for transport, routes can be prolonged up to 33%.</p>			
Implementation details				
Supporting mechanism				
Results / Assessment	<p>A small report on the system while it was working in summer 2005 gives some information about the effects:</p> <p>At this time three shipping companies participated.</p> <p>38 shipments were made per week, this accumulates to 1925 shipments per year.</p> <p>This saves about 3800 km/year.</p> <p>The project proofed that it is possible to establish a system of freight bundling without investing too much, if the developed rules are applied.</p> <p>The benefit achieved are the environmental effects more than effects in all day life of citizen as approximately one lorry less is not perceived by the population.</p>			
Condition of success or failure				
Contacts				

Italy – City Porto Aosta	
	
Location	Aosta is a town of about 35,000 inhabitants in the Autonomous region of Valle d'Aosta, located within the perimeter of the Alpine Convention (North-Western sector), at an altitude of 550 m a.s.l.
Service organizer	The project was co-financed by the Italian Ministry of the Environment, Land and Sea and supported by the Regional Councillorship on the Environment of the Autonomous Region of Valle d'Aosta and the Aosta City Councillorship on Mobility. The Municipality of Aosta, the Regional Councillorship on Land Management, Chambre Valdôtaine, the "Autoporto S.p.A." and Itinera Engineering S.r.l. companies are involved as well ⁵⁶ . The company Logistics Biellese s.n.c. is responsible for the management of the CityPorto, following a European call for tenders.
General presentation	The project "Cityporto Aosta" is aimed at reorganising the activities of freight delivery at urban scale – with particular attention to the historical centre and the "ZTL" ⁵⁷ area (counting around 8,500 inhabitants and 700 shops), creating a service of "centralized delivery", starting from a single logistic platform.
Action typology	Infrastructure, supply chain management, intelligent transport system, regulation and organisation
Underlying issue and objectives	According to the data related to traffic flows and their peaks highlighted in the Local Traffic Plan, the city centre was more and more affected by the crossing of heavy trucks along the city centre, increasing noise and air pollution as well as bothers for pedestrians. The project was also aimed at reducing journeys, improving the efficiency of urban traffic flows, lowering noise pollution and improving air quality, by means of vehicles with lower carbon emissions.
Specification	The actors involved are the City Council, economic and social stakeholders, boroughs' representative, local organisations, business organisations The main action regarding freight in most of the sustainable urban mobility plan in the harmonisation of municipal regulations and the use of railways or waterways to convey goods. Packages reach the logistic centre set up in the Cityporto area, where the information system already received in advance the data concerning the incoming goods. Goods are here unloaded and redistributed by Cityporto's responsible, according to the scheduled delivery programme. Goods can be

56 Total investments amount to 521.940 Euros, subdivided as follows:


- Municipality of Aosta, 417.720 euros (of which 198.111,19 co-financed by the Italian Ministry of the Environment, Land and Sea);
- Autonomous Region of Valle d'Aosta – Regional Councillorship of the Environment, 30.000 Euros;
- Società Autoporto, 9.000 euros;
- Chambre valdôtaine, 5.220 Euros;
- Itinera engineering srl, 60.000 Euros.

57 Restricted Traffic Area (Zona a Traffico Limitato, ZTL)


	<p>transported within the historical centre (ZTL area) every day, according to the following rules:</p> <ul style="list-style-type: none"> - entry for "Cityporto" vehicles allowed from 7 a.m. to 10.30 a.m., (exit within 11 a.m.), and from 3.30 p.m. to 4.30 p.m. (service on demand); - free entry for all freight forwarders from 7 a.m. to 8 a.m. (exit within 8.30 a.m.)
Implementation details	<p>Thanks to the multi-network system, each operator has its own system, suitably encoded, for the management of activities in the area. This information includes all terminals and their gates in order to facilitate withdrawals and deliveries of goods, according to the type of service. This information is called "mapping logistics".</p> <p>Moreover, Cityporto's employees make use of specific handhelds during the different working phases. The Honeywell Dolphin 6000 devices are equipped with a dedicated barcode reader, photocamera, GPRS and Wi-Fi connectivity and GPS Navigator, which also allows 'path optimization' of goods. Their main function is to certify the delivery of each good: this information is available in real time, both for logistic operators and Cityporto employees.</p>
Supporting mechanism	<p>Three charging stations refuel the vehicles, thanks to photovoltaic shelters and photovoltaic panels at high performance. The total production of the three charging stations is estimated at 6,490 kWh/year, allowing vehicles to operate about 100 km without using batteries. This further initiative received national⁵⁸, regional⁵⁹ and local public funds.</p>
Results / Assessment	<p>Here are briefly reported some valuable data related to Cityporto Aosta:</p> <ul style="list-style-type: none"> - 20-25 kg: mean weight of each package transported; - 300: the average number of packages delivered every day; - 6000/7000 kg: total weight of packages delivered every day.
Condition of success or failure / Strong and weak points	<p>Cityporto Aosta certainly represents a good example of application of a well-organized supply chain at local scale, integrating also other aspects such as innovation and promotion of renewable energies. Aosta, due to its limited extension, may represent a good example for other small-middle sized urban centres located in the Alps.</p>
Contacts	<p>http://www.cityportoasta.it</p>

58 D.Lgs 6th August 2010, "Incentivazione della produzione di energia elettrica mediante conversione fotovoltaica della fonte solare".


59 art. 6 quater della legge regionale 3 gennaio 2006, n. 3, "Misure per la riduzione del fabbisogno energetico nel settore terziario"

Italy – Working Group on Freight Transport	
	
Location	Lombardy region, partly included within the perimeter of the Alpine Convention area.
Service organizer	Lombardy region – Directorate General for Infrastructure and Mobility
General presentation	Lombardy region is the most important origin and destination for freight transport in Italy. The volume of goods transported amounts to nearly 400 million of tons per year (both internal and external traffic). About 90% of goods is carried out on road. For this reason the Lombardy region decided to establish a regional Working Group on freight transport (Tavolo regionale per la mobilità delle merci), bringing together institutions, Chambers of commerce and social partners with all the major actors involved in the supply chain (more than 80 associations overall). Three subgroups have been set up, among which one focused on “urban mobility” issues.
Action typology	Governance and cooperation
Underlying issue and objectives	The need to provide freight transport operators of a clearer and updated state-of-the-art of measures applied in the towns of Lombardy, as well as to better know the restricted areas.
Specification	<p>The Directorate General for Infrastructure and Mobility of the Lombardy region asked the main regional municipalities to collaborate in the preparation of a report that collects and shows, according to a common standard agreed with operators, useful information to allow hauliers to better plan their own paths to deliver goods in the city. Specific guidelines have been prepared to particular issues arisen during the works, i.e. the need to harmonise and rationalize the regulation of freight transport in urban centres in Lombardy, by means of:</p> <ul style="list-style-type: none"> - simplification, coordination and harmonization of measures for improving air quality, traffic regulation and loading/unloading operations; - elaboration of analytical tools and methods for planning mobility on medium and long term; - analysis of strengths and crucial measures of urban logistics, such as access restrictions, infrastructure, technology and regulation measures, providing concrete suggestions.
Implementation details	
Supporting mechanism	
Results / Assessment	Resolution no. 10/834 of 25th October, 2013, approved the "Guidelines of regional municipalities to regulate the activities of freight transport in urban areas". "The document includes two technical annexes "Tools and methods for the planning of measures to regulate the mobility of goods in urban areas" and "Report on measures on urban freight delivery", which was presented during the workshop organized by the Assessorate on Infrastrutture and Mobility at the Palazzo Lombardia,

	<p>on 14th November, 2013.</p> <p>Moreover, a detailed cartography of bans, limitations and activities allowed in most important towns of the region, in order to optimize the organization of their own delivery activities has been realized.</p>
Condition of success or failure	<p>The need of increased cooperation between all actors involved represent certainly an interesting approach, replicable also in other regions. This modus operandi follows the indications and the recent development of Italian legislation, aimed at favouring cooperation between State and local authorities; it may be suggested also at lower administration levels, e.g. in the case of specific district areas and/or, in the case of Alpine territories, along main bottom valleys and corridors. The aim could be the one to improve “last-mile” connections between interports and urban areas.</p> <p>The most challenging task remains to transform political discussion in concrete actions on the territories involved.</p>
Contacts	<p>DG Infrastructure and Mobility of the Lombardy Region Regional Working Group on Freight – Lombardy region</p>



Italy – Smart fusion Como	
	
Location	Como is a town of about 85,000 inhabitants in the Lombardy region, located at the border of the perimeter of the Alpine Convention and in proximity of Swiss boundary, at an altitude of 200 m a.s.l.
Service organizer	Fourteen project partners take part to the project. Among them, for Italy, FIAT Research Center, responsible for the development of eco-friendly means of transport, Lombardy region (Department of Trade, Tourism and Services) and Gruppo CLAS, responsible of trial activities. The city of Como is involved as one of the three pilot areas (together with Berlin and Newcastle).
General presentation	SmartFuSION (Smart Urban Freight SoluTIOns) is an innovative project approved and co-financed by the European Commission in the 7th Framework Programme for the European Green Cars Initiative. The project is aimed at testing new technologies and innovative models for urban freight delivery, in order to improve efficiency, economic, environmental and social sustainability
Action typology	Supply chain management, intelligent transport system, regulation and organisation
Underlying issue and objectives	
Specification	<p>The trial in the city of Como, provides, inter alia, the testing of electric and hybrid vehicles in the distribution of goods; the path optimization rationalization thanks to the use of Advanced Navigation systems, with particular attention to the improvement of dangerous goods and how to use the logistic platforms. Other activities are expected to:</p> <ul style="list-style-type: none"> enhance the innovation process and urban-interurban interfaces; demonstrate and evaluate the technical feasibility of the introduction of electric vehicles and second generation technologies for hybrid vehicles; apply these vehicle technologies, in conjunction with information technology, operational, managerial and regulatory innovations, including urban consolidation centres and telematics systems. determine success factors stimulating the acquisition of innovations by the logistics market; develop analytical tools that enable other city/regions and supply chains to analyse the probability of success and the benefits arising from the application of these innovations to their own territory / industry.
Implementation details	

Supporting mechanism	<p>Smartfusion held a series of workshops, among different pilot areas in each one of the three city-regions, in order to derive the user requirements from various regions in Europe. During the workshops, participants had the opportunity to exchange experiences and knowledge on urban freight transport. These workshops were the start of a two-phase assessment, allowing stakeholders to share knowledge and resources for cleaner, more efficient urban freight transport. Two workshops were held in Como, on 8th-9th October and 6th-7th February 2013. During the first one was presented the new ordinance for the Limited Traffic Zone (ZTL) issued in Como city center, that came into force on 1st October 2012. The second one was aimed at reaching a common view on the main measures to be implemented in the testing of Como, such as location of the Urban consolidation centre, the characteristics and tariff of the service, the type of goods to be delivered, the regulation aspects of the ZTL and its possible future extension.</p>
Results / Assessment	<p>Not yet foreseeable, as the project will end in March 2015. However, it could be mentioned that the main project output will be a Smart Urban Freight Designer tool, that will allow urban policy makers, users and operators to analyse the likely success and benefits of applying green vehicle technologies to their city-regions and supply chains.</p>
Condition of success or failure	<p>Collaboration and concertation at European level and, through a constructive dialogue between public and private stakeholders, with a concrete application on pilot areas, such as Como.</p> <p>Criticality: guarantee adequate transferability and make sure that the approach may be “adopted” by other realities, considering that each city constitutes a particular environment with, in addition, often specific traffic and access regulations.</p>
Contacts	<p>www.smartfusion.eu</p>

Italy – PIE VERDE project	
	
Location	Torino and Piemonte region, the latter partly located within the perimeter of the Alpine Convention area.
Service organizer	Iveco S.p.A., Lead Partner of the project, and other 29 project partners ⁶⁰ .
General presentation	<p>The project is aimed at enhancing the opportunities offered by city-logistics to promote innovation, through the strengthening of know-how processes and favouring cooperation between universities, research centres and companies. The main fields of interest are the following ones:</p> <ul style="list-style-type: none"> • Light commercial vehicle (light commercial vehicles) considered as core element of innovation; • systems, i.e. infrastructure and managing systems for city logistic (governance models and services), in order to take full advantage of innovations implemented to vehicles.
Action typology	Infrastructure, supply chain management, intelligent transport system, regulation and organisation, education and information
Underlying issue and objectives	<p>There is currently a strong potential for the use of electric powered vehicles, especially the ones travelling no more than 100 km daily (amounting to 20% of the entire light commercial vehicle fleet):</p> <ul style="list-style-type: none"> • Hybrid vehicle that allows access to more restrictive ZTL areas; • freight urban transport (ECMT estimation) accounts for 30% of the total freight traffic (in tonnes/km), contributes to 20% of “road occupation”, 56% to the total emissions of particulate matter and 23% of CO2 emissions; • European norm that binds the light commercial vehicle manufacturers to reduce CO2 emissions, in order to reach the European target of 175 g/km in 2014 and 147 g/km in 2020.
Specification	<p>Four macrothemes have been individuated, briefly explained as follows:</p> <p>Theme 1: engines with low environmental impact – main objectives are focused to the development of new modular architectures allowing the adaptation to different types of use, electric traction, hybrid traction (Dual Energy), store and recharge energy systems.</p> <p>Theme 2: new materials – main objectives are focused to the development of solutions for the relief and improvement of the efficiency of the components of the transmission line and the development of architectural and technological solutions for the realization of lightened shells;</p>

60 Iveco S.p.A. – as Lead Partner and FPT Industrial S.p.A., Magneti Marelli S.p.A., Centro Ricerche Fiat S.C.p.A., ENERGRID S.p.A., AMET ITALY S.r.l., BLUE Engineerig S.r.l., Bluethink S.p.A., Capetti Elettronica S.r.l., Cold Car S.p.A., EICAS Automazione, S.p.A., EMA S.r.l., Enerconv S.r.l., Get Italia S.r.l., MECAPROM TCO Italia S.r.l., MEC S.r.l., MECT S.r.l., MONET S.r.l., NOVA, PROGETTI S.r.l., OPAC POWER S.r.l., SynArea Consultants S.r.l., STC S.r.l., T&T Elettronica S.r.l., TEORES I S.p.A., VE&D Vehicle Engineering & Design S.r.l., 4S-Sistemi sicuri e sostenibili S.r.l., Politecnico di Torino, Università Degli Studi di Torino, Istituto Superiore Mario Boella, TNT Global express S.p.A.

	<p>Theme 3: Reduction of losses and energy recovery – main objectives are focused to the development of systems for the reduction of rolling drag effects and for the improve of efficiency of engines, recovering kinetic and thermal energy.</p> <p>Transversal Theme: the «System» - main objectives are focused to the consideration of environmental factors (e.g. carbon footprint) and “dynamic” contexts in which variables change over time; assessment of impacts (traffic, charging spot, grid) using modelling and simulations, development of telematic and communication systems that promote maximum productivity, development of path-optimization techniques.</p>
Implementation details	
Supporting mechanism	<p>Smartfusion held a series of workshops, among different pilot areas in each one of the three city-regions, in order to derive the user requirements from various regions in Europe. During the workshops, participants had the opportunity to exchange experiences and knowledge on urban freight transport. These workshops were the start of a two-phase assessment, allowing stakeholders to share knowledge and resources for cleaner, more efficient urban freight transport. Two workshops were held in Como, on 8th-9th October and 6th-7th February 2013. During the first one was presented the new ordinance for the Limited Traffic Zone (ZTL) issued in Como city center, that came into force on 1st October 2012. The second one was aimed at reaching a common view on the main measures to be implemented in the testing of Como, such as location of the Urban consolidation centre, the characteristics and tariff of the service, the type of goods to be delivered, the regulation aspects of the ZTL and its possible future extension.</p>
Results / Assessment	Not yet foreseeable in detail. The project will end in December 2014.
Condition of success or failure / Strong and weak points	Important commitment to foster innovation and strengthen the impact of new technological solutions, under the lead of major transport operators. Potential results and analysis will be replicable to the entire national territory.
Contacts	Iveco S.p.A. – www.iveco.com

Switzerland – SpediThun	
	
Location	Thun is a town of almost 50'000 habitants in the canton of Bern. It lays within the Alpine convention area at the boarder of the Lake of Thun and has a small, historical town centre.
Service organizer	The association “Stadtmobilität Thun”, initiated by “VCS”, an association for transport and environment and the “IG Velo”, a cyclist lobby organization. Members are the local public transport operator, the municipality and several cyclist lobby organizations; the association of inner city trade and retailers is currently being integrated. The association deals with any question or problem in relation to urban mobility in the city of Thun including urban freight.
General presentation	<p>SpediThun is a city logistics scheme, aimed to enhance heavy vehicle transport to carry out deliveries in the historical center of Thun.</p> 
Action typology	Urban planning, supply chain management
Underlying issue and objectives	The narrow streets of the small city of Thun are often packed by large trucks which enter the city center only to deliver a few goods to local businesses. This is not only inconvenient for the deliverer but also for the local population as well as for tourists. Deliverers often don't know the area and spend time searching their destination within the city center, not taking the best ways to get around the narrow streets of Thun. SpediThun wants to offer a solution to these prob-blems: Local transport operators who know the area deliver the goods in a more efficient way and by far more conven-ient (smaller) vehicles. This is convenient for the deliverers who don't have to enter the city, for the retailers who re-ceive their goods all in one and by the same, known transport operators, for the city, its environment and its population because the deliveries are more efficient, the vehicles are used to their capacity and the negative effects of freight transport is minimized.
Specification	<p>In collaboration with two local transport operators, a terminal was realized in the outskirts of Thun, located near from the Thun highway exit. At the terminal the goods are reconsolidated and then delivered twice a day to the retailers in the inner city using appropriate vehicles adapted to the network of narrow streets downtown.</p> <p>There are approximately 350 retailers in the city of Thun. Goods arriving by 8:30 at the terminal are delivered no later than by 11:00. Arrivals by 13:00 are delivered by 18:00 at the latest. SpediThun also offers the return of empties.</p>


Implementation details	<p>SpediThun was started in summer 2000 under the motto “delivering together”. It emerged from the project “urban mo-bility” that was launched in 1997 by the municipality of Thun and various transport associations. The project is a public private partnership composed of five essential partners who are building a sort of steering committee for the project.</p> <p>The project is economically independent and apparently attractive for the two transport operators involved. The transport operators covered their entire costs due to terminal investments, etc. The municipality covered the cost for public relations and marketing at the beginning of the project. All other members of the working group covered their own expenses.</p>
Supporting mechanism	<p>The project was started with an intensive marketing campaign including over 300 transport operators as well as local businesses. The involved transport operators are known to be highly innovative, have good local contacts and have a close relation to the project.</p> <p>At the beginning, personal contacts were crucial and the partnership worked out very well. Nevertheless, the steering group broke up after the launch of the project and a first evaluation meeting. A success factor for the partnership and the project was the board composition of the steering group. An innovative actor is needed to initiate the project but broad partnership is necessary in order to reduce the implementation risk.</p>
Results / Assessment	<p>The project aims to deliver at least 200 consignments per week, reducing the number of trucks with trailers downtown to zero and reducing the number of trucks downtown up to 20%. In average, the SpediThun vans deliver around 50 tons into the city per month.</p>
Condition of success or failure	<p>Apart from the location of the terminal, its opening hours are estimated to be crucial for the success of the project. SpediThun takes a governing and coordinating role by bringing together the various actors and their different demands and supplies while knowing about the specific details and complexity of the local transport business.</p> <p>Although the partnership was attached to a project, thus temporary, the association considers now that it was broken up too quickly. They reckon that the partnership should have continued in order to elaborate further measures support-ive to the project.</p>
Contacts	<p>For more information contact the City of Thun: http://www.thun.ch/en/utilities-navigation/contact.html</p> <p>Detailed report and marketing concept (german): http://www.thun.ch/fileadmin/behoerden/fachstelle_umwelt_und_mobilitaet/media/pdf/spedithun.pdf</p>

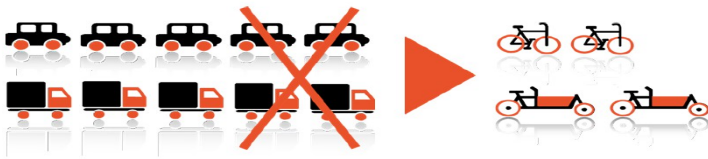
6 - Switzerland Strict restrictions mainly in pedestrian zones



Location	Various towns in Switzerland (some within the Alpine Convention area)
Service organizer	Local authorities
General presentation	On a country wide basis there are several direct regulations that affect freight transport in urban areas: There are several strict regulations, mainly in pedestrian zones.
Action typology	Governance and cooperation, regulation and organisation, urban planning
Underlying issue and objectives	National legislation in Switzerland defines possible restrictions cantons or municipalities are allowed to introduce. These are: time, weight and size restrictions for a specified area or street and loading time limitations.
Specification	The general prohibition for heavy goods vehicles to drive at night time on all roads (from 10PM to 5AM) and the HGV toll that applies for city streets as well as for other roads. There are many small to larger towns with pedestrian zones where deliveries are restricted to a certain time window. Weight and size limits are common as well. There is a strong connection between general traffic restriction zones to freight related restrictions.
Implementation details	Differences from case to case, but only 4 smaller towns (Bulle and Zizers within the Alpine Convention Area; Arbon and Riehen outside) ban heavy goods vehicles in their centres on a general basis. Due to the present legal framework there are no low emission schemes or access charge schemes in Switzerland. Nevertheless, based on the legislation concerning air quality, pilot projects and temporary restrictions are feasible and have effectively been realized in some cases.
Supporting mechanism	National and cantonal legislation
Results / Assessment	
Condition of success or failure /	
Contacts	Heiko Abel, Rapp AG Zurich; BESTUFS

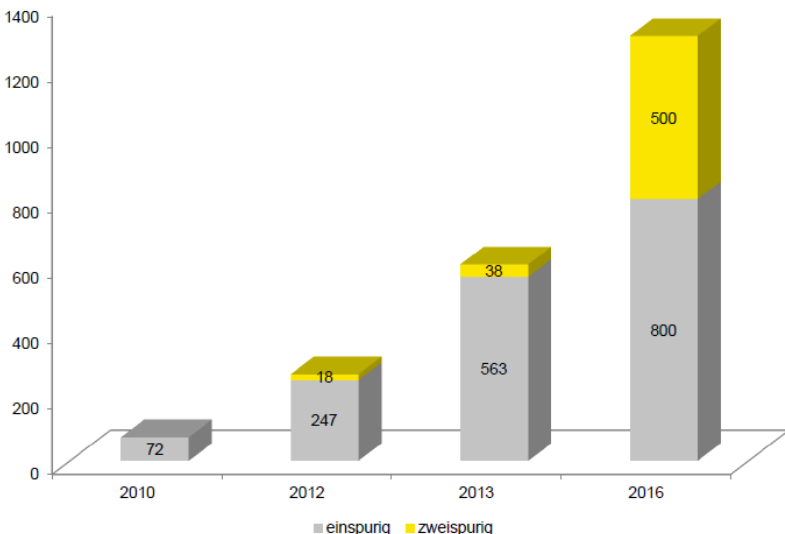
11. Appendix n°3 Description of best practices outside of the Alpine Convention area but applicable on Alpine towns



Austria – Cargo Centre Graz (CCG)		
Location	Graz	
Service organizer		
General presentation	The Cargo Centre, situated 20 km in the south of the downtown of Graz near, Werndorf is one of the biggest logistic centres in Austria.	
Action typology	Infrastructure	
Underlying issue and objectives		
Specification	<p>The Cargo Center is a combined transport terminal with 4 loading- rails with 700 m length and 2 portal cranes and big space for storing containers and transshipment activities between road and rail. More than 1000 employees in various logistic branches are working there. Moreover, CCG provides an own combined transport train to the Slovenian Adriatic port of Koper.</p> <p>In the context of urban and regional logistics, it is important that CCG is used by 2 big European supplier chains (mainly food, but also other consumer products) as distribution centre for the town of Graz (269.000 inhabitants) and the whole urban region (almost 600.000 inhabitants including the city of Graz). One of the supplier companies transports goods over long distances on rail, the other company transships products in the CCG from long distance trucks to smaller delivery trucks.</p>	
Implementation details		
Supporting mechanism	Private – public partnership.	
Results / Assessment		
Condition of success or failure		
Contacts	http://www.cargo-center-graz.at Contact: Cargo Center Graz Betriebsgesellschaft m.b.H.&CoKG, A-8402 Werndorf Phone:++43(0)3135 54445 – 0 Fax: ++43(0)3135 54445 - 20 office@cargo-center-graz.at	

Austria – Project Cycle Logistics (www.cyclelogistics.eu)	
Location	Europe
Service organizer	
General presentation	Running from May 2011 until April 2014 and spanning 11 countries, the EU-funded project CycleLogistics aims to reduce energy used in urban freight transport by replacing unnecessary motorised vehicles with cargo bikes for intra-urban delivery and goods transport in Europe.
Action typology	Supply chain management
Underlying issue and objectives	<p>Often diesel powered duty vehicles carry small freight over short distances in urban areas, causing some problems, like space demand, energy consumption and harmful emissions.</p> <p>The team of the European Cycle Logistics project (from May 2011 to May 2014) is working on possible solutions to these problems. The project demonstrates how big the possibilities for sustainable solutions are, if a portion of the urban goods transport would be shifted from motorized vehicles on bikes. For this purpose, during the project, based on existing traffic surveys of European towns, also a potential analysis was carried out and resulted in the following conclusions:</p> <p>In urban areas, especially in inner towns, 42% of the loads could quite well transported by special transport bikes. Approximately one third of these movable motorized transportation of goods is caused by commercial freight. The rest is so-called "private logistics". As a private logistics are considered transports of purchases (like consumer goods), of recreational materials and all those things that are larger than a handbag / school bag.</p> <p>Shifting Potential</p>  <p>4 out of 10</p> <p>Source: Susanne Wrighton; Cycle Logistics, presentation in research forum "Mobility for all", Vienna 4th December 2013</p>
Specification	<p>The project Cycle Logistics is focused on the following activities:</p> <ul style="list-style-type: none"> • Delivery of goods in the business to business (B2B) and business to consumer (B2C) segment • transport of goods in the municipal sector • small businesses and services • private goods transport with a focus on shopping traffic • interventions of city government to promote cargo bikes and restrictions of motorized delivery vehicles

	<ul style="list-style-type: none"> • establishing the European Cycle Logistics Federation • Already implemented examples for the use of cargo bikes are large express courier companies such as DHL, other examples are: • "Medic bike" in Germany, delivers medicine from the pharmacy directly to the customer. • In Graz restaurants and bakeries transport goods between shops and save time for searching a legal parking space • Also pizza in Germany is delivered with a specially designed e-cargo bike, on a large scale and for over ten years. <p>Cargo bikes are also suitable for the craft service sector: In Vienna, for example a bicycle window cleaner; chimney sweepers, photographers, painters and decorators, as well as locksmith and key services would be good candidates for a shift from motorized transport to a cargo bikes.</p> <ul style="list-style-type: none"> • Copenhagen : 530.000 inhabitants 35.000 cargo-bikes • Graz : 260.000 inhabitants 60 cargo-bikes
Implementation details	<p>The town administration of Graz is ambitious to increase the number of cargo-bikes, these bikes get a public support of 50 % of the price (up to 1000,-€, but only one support for every company), see at www.graz.at/cms/dokumente/10175977_367152/edfd9ac6/RL2011-Transportfahrraeder.pdf</p> <p>In the project "Cycle Logistics" interested companies and businesses are also given the opportunity to test for free cargo bikes specific purposes to find the most suitable models. Therefore, the number of load wheels in Graz since the project began was already more than doubled.</p> <p>Source of all information to the project Cycle Logistics: Susanne Wrigthon (FGM-Amor, Graz): Cycle Logistics, presentation in the research forum "Mobility for all", Vienna 4th December 2013 www.bmvit.gv.at/bmvit/innovation/mobilitaet/forschungsforum/forschungsforum2013.html</p>
Supporting mechanism	EU-funded project CycleLogistics
Results / Assessment	
Condition of success or failure	
Contacts	

Austria – Electro Mobility Logistics: Austrian Post	
	
Location	Austria
Service organizer	Austria Post
General presentation	
Action typology	Supply chain management
Underlying issue and objectives	<p>Austrian post distributors, who deliver letters and parcels, drive every working day approx. 200.000 km by car and 14,250 km by light motorbikes. More than 7.000 km are performed on bicycles and 6020 kilometers on foot. A lot of this post traffic is done in densely populated and urban areas.</p> <p>Electro-mobility on road has – with an interruption of some years – since more than 100 years an important role in the services of the Austrian Post. Already in 1913 in Vienna, the first package car type Daimler Tudor was in operation (with modest 30 horse powers and a range of 45 km).</p> <div>    </div> <div> Daimler Tudor (built 1913) E-Bike Puch La Poste (2011) Citroen Berlingo First Electrique (2011) </div> <p>Source: Alexander Casapiccola (Österreichische Post AG, presentation in the research forum “Mobility for all”, Vienna 4th December 2013</p>
Specification	
Implementation details	
Supporting mechanism	
Results / Assessment	<p>After the second world war, as fossil fuels were scarce and already the residents needs for silence during the nights were perceived, the electric fleet was increased up to 185 vehicles, because a large part of the post movements happens at night. Only in the eighties of the last millennium, there was an interruption of electric mobility, although individual providers still presented prototypes of electric powered duty vehicles. But these vehicles did not meet the postal requirements.</p> <p>In 2010, the topic of electro-mobility has been taken up again by the</p>

	<p>Austrian Post by introducing an initial fleet of electric powered 72 mopeds and bicycles. In 2012 came back first electric cars. At the end of this year the fleet of the Austrian Post counted already over 250 electric powered vehicles.</p> <p>At the end of 2013 the number of electric vehicles has already grown to 600 electric bicycles and mopeds. By the end of 2016 are about 1,300 electric vehicles in the fleet of the Austrian Post planned. One focal point of electric mobility in post services is currently in the Austrian capital Vienna. There was set the target to deliver at the end of 2016 all private letters CO2-free, by 10 electric bicycles, 90 electric mopeds and 150 cars, as well the charging infrastructure needed for this will be introduced. This is likely the greatest challenge, because not at all post- delivery-points parking space is available and therefore delivery vehicles are parked on public space.</p>  <table><thead><tr><th>Jahr</th><th>einspurig</th><th>zweispurig</th><th>Gesamt</th></tr></thead><tbody><tr><td>2010</td><td>72</td><td>0</td><td>72</td></tr><tr><td>2012</td><td>247</td><td>18</td><td>265</td></tr><tr><td>2013</td><td>563</td><td>38</td><td>601</td></tr><tr><td>2016</td><td>800</td><td>500</td><td>1300</td></tr></tbody></table> <p>2-wheelers (bikes, scooters), cars and trucks</p>	Jahr	einspurig	zweispurig	Gesamt	2010	72	0	72	2012	247	18	265	2013	563	38	601	2016	800	500	1300
Jahr	einspurig	zweispurig	Gesamt																		
2010	72	0	72																		
2012	247	18	265																		
2013	563	38	601																		
2016	800	500	1300																		
Condition of success or failure																					
Contacts	<p>Source of all information to electric mobility of the Austrian Post: Alexander Casapiccola (Österreichische Post AG, presentation in the research forum "Mobility for all", Vienna 4th December 2013</p> <p>www.bmvit.gv.at/bmvit/innovation/mobilitaet/forschungsforum/forschungsforsum2013.html in Wien und Graz und innovative</p>																				

Austria – Project Rumba (Vienna)	
Location	Vienna
Service organizer	Administration of Vienna
General presentation	Based on a project of the LIFE program the administration of Vienna elaborated a guidebook for the environmentally sustainable organization of building and infrastructure construction works. A summary report in English is available at http://www.rumba-info.at/files/kurzbericht_rumba_english.pdf .
Action typology	Infrastructure, education and information
Underlying issue and objectives	Reasons to elaborate the RUMBA project were: <ul style="list-style-type: none"> • Two thirds of the quantitative goods traffic (in tons) are building material transportations. • 99% of the building site traffic is done with trucks. • 7% to 10% of the NOx and particle emissions in traffic are due to building site traffic.
Specification	<p>In three demonstration projects at eight demonstration building sites of different types, measures for a sustainable building site management were implemented.</p> <div>   </div> <p>Photos: Kabelwerk Bauträger GmbH Source: Mobilitätsmanagement für Betriebe und öffentliche Verwaltungen Leitfaden für Betriebe und öffentliche Verwaltungen, Vienna 2010 , published by BMLFUW http://www.klimaaktiv.at/publikationen/mobilitaet/mobilitaetsmanagement.html</p>
Implementation details	<p>The demonstration projects had the following topics:</p> <ul style="list-style-type: none"> • Train instead of truck: Shift of excavation and pre-fabricated part transportation to the railway. • Ecological building site management: Waste separation at the building site, dust reduction, reduction of the disposal trips. • RUMBA contest among the building firms: Integrated planning

	<p>of a sustainable building site management in the context of a competition procedure (housing with approximately 500 dwellings).</p> <p>In addition, sustainable building site management needs the correct framework. Present market conditions do not offer sufficient incentives or obligations for a sustainable building site management. A substantial part of RUMBA consisted of developing recommendations for an improvement of the basic conditions for a sustainable building site management including the obtained feedback from the demonstration projects.</p>
Supporting mechanism	
Results / Assessment	<p>The success of the case studies and the evaluation of the environmental impacts is worth to be presented more detailed:</p> <p><i>Demonstration building site with pre-fabricated part logistics by train at an urban multi-storey building in Vienna</i></p> <p>A large complex of residential buildings with 204 dwellings in 26 floors was established in the 10th Viennese district. Four builder companies were involved in the project. Due to static requirements the first nine floors were established in site-mixed concrete whereas from the 10th Floor on, the pre-fabricated part construction method was applied. Altogether 1,200 pre-fabricated parts were used, among them 480 (40%, approximately 9,500 tons) railway-suited units, which means that they were not oversized.</p> <p>The railway-suited pre-fabricated units were driven by train over 18 km from the precasting plant of the builder company Mischek (with own work siding connection of rail) in Gerasdorf near Vienna to the unloading place of the Viennese south railway station and brought from there by truck to the building site (distance 2 km).</p> <p>Compared to truck transports, a reduction of the CO₂-emissions of around 54% to 91% depending on the traction (diesel or electric) could be reached by using rail transports.</p> <p>Environmental effects of the rail transport of pre- fabricated concrete elements:</p>

Indicators	Transport Handling			Change compared to truck			
	With truck	With train	³⁾	Diesel		Electric	
	¹⁾	Diesel ²⁾	Electric	absolute	%	absolute	%
Truck - km	16,896	1,408	1,408	-15,488	-93	-15,488	-93
Train - km	-	1,584	1,584	+1,584		+1,584	
Diesel usage (l)	11,830	5,400	1,000	-6,430	-54	-10,830	- 91
CO ₂ -emissions (t)	35.8	16.3	3.2	-19.5	-54	-32.6	- 91

¹⁾ 70 litres / 100 km

²⁾ With diesel traction, Usage of 100 litres/h, Driving time precasting plant - Viennese south railway station: 0,5 h

³⁾ 0.09 kg CO₂/tonkilometer

Source: Mischek ZT: Demonstrationsvorhaben Bahn statt Lkw im Rahmen des EU-LIFE-Projektes RUMBA, Wien, 2004

Demonstration: Building site excavation transport by train

At the former industrial site of the cable works Vienna-Meidling, a new quarter with approximately 900 dwellings, offices, a hotel and culture and leisure facilities is created. After a participation process including the neighbourhood, the use of the existing railway connecting line for the evacuation of the 170,000 tons of excavation (approximately 14,000 truck trips inclusive deadheads) was agreed and linked to the assignment of housing promotion means.

On the basis of the received offers, a life-cycle assessment was developed (see table below). The results made clear that the double-handling of the excavated material with conventional wheeled loaders charges the life-cycle balance of the railway alternative with 55% (CO₂) to 99% (particles). The use of low-polluting wheeled loaders like the ones used in the tunnel construction, could reduce the particle emissions of the wheeled loaders by 90%. Other technical solutions – like the use of the rolling-container-transport system (ACTS) or conveyors – could also save additional handling procedures, but the evacuation by train however costs 1,5 to 2 times more.

Environmental effects concerning the shift of excavation transports to the train

Alternative Offers	Distance to the dumpsite	Diesel / ton	CO ₂ / ton	Particles / ton
Truck to the next dumpsite	14 km	0.45 l	1.23 kg	0.41 g
Truck to the cheapest dumpsite	32.5 km	1.0 l	2.86 kg	0.96 g
Train with diesel traction	43 km	0.4 l	1.06 kg	0.83 g 0.08 g ¹⁾
Train with diesel + electric traction	5 km 49 km ²⁾	0.23 l	0.62 kg	0.76 g 0.08 g ¹⁾

¹⁾ Low-polluting wheeled loader as in the tunnel construction

²⁾ Electricity from renewable energy

Source: Mischek: *raum & kommunikation: Ökobilanz Schiene / Straße - Zur Umweltwirkung transportlogistischer Maßnahmen am Fallbeispiel des Aushubtransports der Wohnanlage Kabelwerke KDAG, Demonstrationsvorhaben Bahn statt LKW im Rahmen des EU-LIFE-Projektes, RUMBA, Wien, 2004.*

In a report of the program klima.aktiv.mobil some additional calculations to the case study on the transport of the excavation material lead were summed up:

- transport by truck: 32,5 km to the landfill, 2.86 kg CO₂/t = 486t CO₂ for 170'000 t
- by train: 43 km to the landfill, 1.06 kg CO₂/t = 80t CO₂ for 170'000t

So a CO₂ saving of about 400 tons was achieved.

In addition to the presented case studies in the project Rumba were worked out:

- A manual for sustainable building site management.
- Recommendations for the adaptation of laws, regulations, guidelines, standards, contract
- awards (biddings) and promotions.
- Conceptions for additional projects or supporting plans like the installation of building logistics centers.

In the up-date of the masterplan transport for Vienna 2008 the recommendations of the project Rumba were added. Moreover, in this document the importance of direct rail sidings and their consideration in land-use planning are highlighted. Moreover, support for freight traffic reducing business plans are recommended (see also <https://www.wien.gv.at/umweltschutz/oekobusiness/ueberblick.html>)

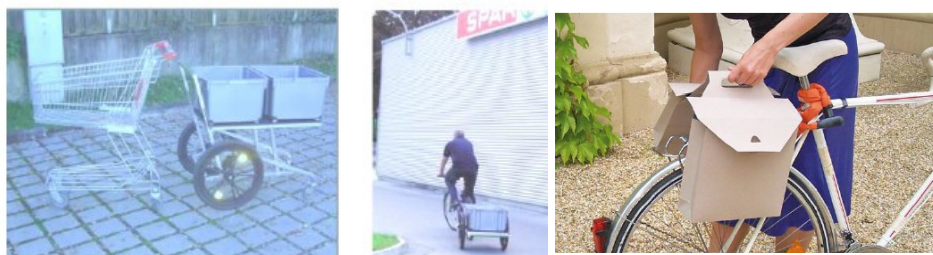
In the masterplan transport is also recommended that terminals for the combined transport (road rail and also from the inland waterway to road and rail should be more intensive used also for city logistics. Moreover, it should be checked if trams can contribute to urban freight logistics (like the Cargo Tram in Dresden).

Source: Wien Masterplan Verkehr, Fortschreibung 2008
<https://www.wien.gv.at/stadtentwicklung/studien/pdf/b008012.pdf> ,

	Freight Transport p. 25 f.
Condition of success or failure	
Contacts	<p>Results and documents of all project parts can be found at: www.rumba.info.at</p> <p>All information on the Rumba project is based on the English report at: http://www.rumba-info.at/files/kurzbericht_rumba_english.pdf, RUMBA – Guidelines for Sustainable Building Site Management – Short Report.</p>

Austria – Innovative bicycle-trailers	
Location	Vienna, Graz, Salzburg
Service organizer	
General presentation	<p>The Austrian super market chain “Spar” let elaborate by experienced transport planners a mobility survey among employees and customers in Vienna. The results of this study showed low shares of bicycle use (in most cases below 5 %) and high shares of pedestrians among the clients, in some in suburbs situated bigger shops also high shares of car use, up to 49%.</p> <p>Based on these results and wishes of clients, based of interviews the market chain started a motivation-campaign for the use of the bicycles for everyday instead of cars in 2012 in Vienna and Graz.</p>
Action typology	Supply chain management
Underlying issue and objectives	Motivation-campaign for the use of the bicycles for everyday instead of cars
Specification	In 2013 was introduced a prototype of a combined shopping cart and bicycle trailer in Vienna (see photos above). Moreover, a simple saddlebag “Tragerl” for the bikes was developed (see photo below)

Implementation details



Source of all information and photos to innovative bicycle trailers: Franz Hölzl, sustainability coordinator, SPAR Österreichische Warenhandels-AG, presentation in the research forum “Mobility for all”, Vienna 4th December 2013.



The INTERSPAR delivery box is unique: a delivery service creates social benefits: The purchases will be delivered to only two euros per delivery throughout Salzburg city. The delivery bicycle- rides make young people from the labour market of the association FAB, which can thus access the labour market. In use are eight climate-friendly e-bikes.

Supporting mechanism


Private initiative

Results / Assessment


Condition of success or failure

Contacts

Sources: Franz Hölzl (see above) and www.lieferbox.at

Austria – Wastepaper logistics: collecting in Vienna and transport by train across the Alps to a paper factory in Frohnleiten (Styria)	
Location	From Vienna to Frohnleiten (Styria).
Service organizer	
General presentation	A collection-equipment for waste paper containers from Vienna was built in the freight rail station Wien Penzing.
Action typology	Infrastructure, supply chain management
Underlying issue and objectives	Shift from road to rail
Specification	The waste paper containers are transported by rail to the paper factory in Frohnleiten (Styria).
Implementation details	 <p>photo: Rieger Austria Entsorgungs und Verwertungs GmbH</p>
Supporting mechanism	
Results / Assessment	<p>With this logistic chain around 30.000 tons freight per year are shifted from road to rail, this corresponds to a saving of almost 1.700 truckloads. The distance from Vienna to Frohnleiten is about 170 km and also returns of trucks must be considered. This would make a total of approximately 580.000 truck- kilometers which can be saved per year.</p> <p>Approx. 450 tons CO2 emissions can be saved yearly. In addition truck operating in frequently congested densely populated areas of Vienna can be reduced.</p>
Condition of success or failure	
Contacts	<p>Source: Mobilitätsmanagement für Betriebe und öffentliche Verwaltungen</p> <p>Leitfaden für Betriebe und öffentliche Verwaltungen, Vienna 2010 , published by BMLFUW</p> <p>http://www.klimaaktiv.at/publikationen/mobilitaet/mobilitaetsmanageme nt.html</p>

Austria – IT-based delivery tour planning system and fuel-saving driving training for truck-drivers in a big furniture delivery chain in Vienna

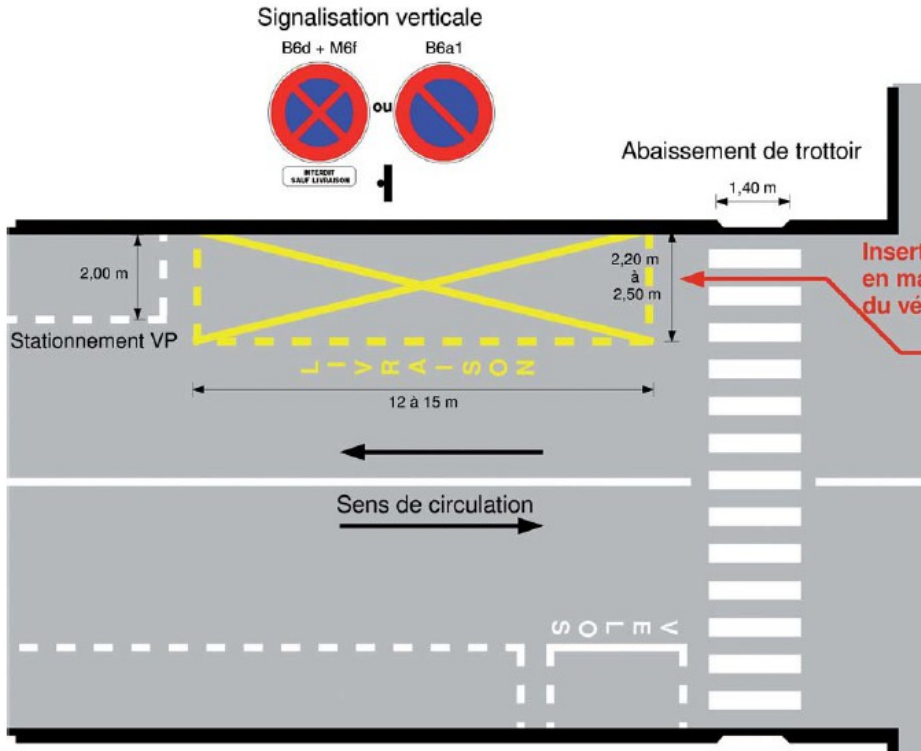
Location	Vienna
Service organizer	Company Möbel Lutz
General presentation	The measures of the furniture company Möbel Lutz are typical for measures in a company. The introduced tour planning system provides cost-optimal delivery tours with consideration given constraints. The telematics system provides a reporting, monitoring and archiving tool to get easily reliable information for operational and environmental decisions.
Action typology	Intelligent Transport System
Underlying issue and objectives	To provide cost-optimal delivery tours with consideration given constraints
Specification	For calculations and evaluations the IT system provides the following information: <ul style="list-style-type: none"> • Visualization of addresses • Driver-day reports • Toll cost evaluation • Vehicle utilization statistics • Cost monitoring of delivery routes
Implementation details	<p>By combining IT tour planning with a telematics system, a target / actual comparison the transparency and quality of planning is improved. Furthermore, unnecessary empty mileage, low vehicle utilization and increased fuel consumption avoided.</p> <p>In the presented project 29 trucks and 70 trailers are equipped with the necessary hardware and software.</p> <p>Implementation of truck fuel-saving training: 50 truck drivers of the furniture deliverer participated in the fuel saving training.</p>  <p>photo:Lutz Service GmbH</p>
Supporting mechanism	
Results / Assessment	<p>Optimization of tour planning: due to the described measures 24.500 liters of diesel per year and approximately 65 tons of CO2 are saved.</p> <p>Implementation of truck fuel-saving: the truck fleet needs more than 1</p>

	<p>mio. liters of diesel per year. The trained drivers save at least 5 % fuel and contribute with their fuel-saving driving style. The reduction of CO2 emissions is calculated by 138 tons per year.</p>
Condition of success or failure	
Contacts	<p>Source: Mobilitätsmanagement für Betriebe und öffentliche Verwaltungen Leitfaden für Betriebe und öffentliche Verwaltungen, Vienna 2010 , published by BMLFUW http://www.klimaaktiv.at/publikationen/mobilitaet/mobilitaetsmanagement.html</p>

**France – National guideline to developing loading bays:
quantity, location and dimensions**



Location	France (nationwide)
Service organizer	Centre for Expertise and Engineering on Risks, Urban and Country Planning, Environment and Mobility Technical Division for Territorial Development and Urban Planning
General presentation	Guide providing rules for the lay-out of on-street delivery spaces: number, size and design, location
Action typology	Infrastructure, education and information
Underlying issue and objectives	<p>The regulatory framework surrounding loading bays is incredibly vague, making it difficult to deal with urban delivery issues efficiently. This means it has been left open to interpretation, which is why many towns have been faced with the problem of illegal parking. In the majority of towns, the monitoring of loading bays takes second place to the monitoring of pay and display parking. Even though the purpose of this guide is not to suggest an in-depth modification to the legal status of loading bays or to suggest monitoring methods, the recent strategies used by several big towns (Paris, Lyon, Dijon, etc.) must be taken into account when considering loading bay development.</p> <p>By and large, the development of loading bays and their location in relation to the delivery addresses do not take into account the difficulties inherent to the delivery driver's line of work. Even though loading bays are mainly intended for goods transportation vehicles, their technical specifications (length, width, etc.) are often based on standards which have no bearing on the vehicle's dimensions.</p>
Specification	<p>The standard urban delivery vehicle equipped with a tail lift requires the length of the bay to be between 12 and 15 meters. This length takes into account the overall length of the vehicle as well as the size of a folded out tail lift and the space necessary at the back of the vehicle for the delivery person to handle the goods.</p> <p>Furthermore, this length allows the driver to pull straight into a bay. This is important because reverse parking is to be avoided with this sort of vehicle, mainly for the safety of other road users but especially for that of pedestrians or cyclists. As part of the considerations on multi-purpose spaces (loading bays/parking of private vehicles) the 15-meter length provides enough space for three private parking spaces during periods when the bay is not reserved for goods deliveries. This is an example of how to best make use of the public highway. An urban distribution vehicle, even the smallest 3.5-tonne van, has an overall width of more than 2 meters. In the same way that the standard dimensions of private cars are taken into account when designing parking bays, it is important that the size of the goods vehicle be considered when designing loading bays. Such considerations enable delivery drivers to easily identify the loading bay, ensure the safety of the delivery person as they move around their vehicle while it is parked in the bay and enable passing traffic to see when a goods vehicle is occupying it. In any case, the width of</p>

	<p>the loading bay road markings must, depending on the context, measure between 2.2 and 2.5 meters.</p>  <p>The diagram illustrates the recommended road markings for a loading bay. At the top, two vertical signs are shown: 'B6d + M6f' (a red circle with a blue diagonal line and a red 'X') and 'B6a1' (a red circle with a blue diagonal line). Below them is a small sign that reads 'INTERDIT SAUF LIVRAISON'. The main diagram shows a cross-section of a road. On the left, a 'Stationnement VP' (Vehicle Parking) area is marked with a 2.00 m width. The central 'LIVRAISON' (Delivery) zone is marked with yellow dashed lines and has a length of 12 to 15 m. To the right of the delivery zone, there is a 1.40 m wide area and a 2.20 to 2.50 m wide area. A 'Sens de circulation' (Direction of traffic) arrow points to the right. A 'S O R M <' (Soleil, Ombre, Rue, Marche) marking is visible on the right side. A red arrow points to the right side of the diagram with the text 'Insertion en marche du véhicule' (Insertion in motion of the vehicle).</p>
Implementation details	<p>This guide brings together recommendations based on fieldwork conducted in several French towns on loading bay development. This guide does not, by any means whatsoever, constitute a fixed set of instructions. The general suggestions outlined in this guide should be adapted to the specific requirements of each urban area.</p>
Supporting mechanism	<p>This guideline has been published and distributed in French in 2008 and English in 2010.</p>
Results / Assessment	<p>A better awareness of French towns technical services. Good feedbacks from the users of the delivery bays and transport companies' organizations. About 15.000 delivery bays have been redesigned based on the recommendations of this guideline</p>
Condition of success or failure	<p>--</p>
Contacts	<p>Thomas Plantier, Thomas.Plantier@developpement-durable.gouv.fr</p>

France – Paris' Sustainable Urban Logistics Charter



Location	Paris, outside of the Alpine Convention area (but applicable on Alpine towns)
Service organizer	Paris City Council
General presentation	In 2013, the city of Paris established a new charter fixing the rule and good practices for the urban transport of goods
Action typology	Governance and cooperation
Underlying issue and objectives	Paris with its 2.2 million inhabitants and its 1.8 million jobs must offer its residents, employees and visitors and foreign tourist efficient structures and networks for the movement of people and goods.
Specification	<p>This charter is founded on two key principles: actions concerning urban logistics facilities and infrastructure (hubs, networks, local infrastructure, etc.) and actions concerning innovative logistics practices (new organisational methods, new services, etc.).</p> <p>This charter involves 47 partners (shippers, carriers, shopkeepers, rail and waterway network authority, municipality, chamber of commerce, Regional council...).</p> <p>One of the objective, decided by the City political bodies, is to have 50% of deliveries made by electric vehicles in 2017 and 100% in 2020.</p>
Implementation details	<p>Paris has had a consultation body covering the issue of urban freight delivery since 2001. The first commitment and best practice charter was signed in 2006. This initial charter committed all signatories to a specific set of actions. However, the lack of a time-delimited action plan and participatory management meant that, over time, the private signatories have withdrawn from the charter. The charter has, nevertheless, been the source of several major achievements, primarily in areas covered by public stakeholders (a uniform 29 m² regulation across Paris, the introduction of delivery discs, permission to conduct "silent delivery" experiments, the introduction of reserved spaces for logistics, etc.).</p> <p>Aware of the limitations of these actions, Paris city council decided to renew the charter process in 2013, with a firm commitment to delivering sustainable public and private actions.</p>
Supporting mechanism	--


Results / Assessment	It is too soon to have quantitative results but there were good feedbacks from private stakeholders.
Condition of success or failure / Strong and weak points	<p>The strength of this new charter lies in the fact that it is considerably more operations-focused than the 2006 version. It includes a "project factsheets" section, concerning projects managed by both institutional stakeholders and private-sector stakeholders from the freight delivery sector.</p> <p>The main difficulty is to reach a consensus between the city authorities, carriers and shopkeeper, particularly to find the adequate rules acceptable to all.</p>
Contacts	Sylvaine Benjamin, sylvaine.benjamin@paris.fr

France – Regulating freight delivery : the case of Lyon



Location	Lyon, outside of the Alpine Convention area (but applicable on Alpine towns)
Service organizer	Lyon Urban Community ("Grand Lyon") and Lyon City Council
General presentation	The Lyon urban community decided to simplify and harmonise truck access regulation.
Action typology	Regulation and organisation
Underlying issue and objectives	In the Lyon metropolitan area, as many as thirty different rules on trucks' access regulations based on weight and size exist, forcing truck drivers to decide which rules they will comply with and which one they will disregard.
Specification	<p><u>Harmonisation and improvement of loading zone accessibility</u> Following the publication of a loading zone planning and location guide (Grand Lyon, 2006), action was taken to harmonise loading zones in all communes within the Lyon Urban Community. The aim of this initiative was to improve access to loading zones for transport professionals (size, suitable time periods and new signage). These loading zones are planned and developed as a matter of course during all road redevelopment projects, and are being introduced gradually in key locations.</p> <p><u>Time regulations</u> As part of the new delivery regulations applied in the Lyon Presqu'île area in 2007, the consultation body introduced a new delivery disc. This initiative is designed to improve loading zone availability by enforcing a higher delivery vehicle turnover rate. Under this new system, stopping time is limited to a maximum of 30 minutes. The delivery disc initiative has since been extended across Lyon and to the centre of Villeurbanne.</p> <p><u>Surface area regulations</u> As indicated above, Lyon city council has introduced surface area restrictions, with a limit of 29 m² applying between the hours of 7 am and 7 pm in the city centre. The chosen value represents a sensible compromise and is based on a similar initiative in Paris, where the surface area of delivery vehicles travelling in the city between 7 am and 10 pm is also limited to 29 m². In the interest of harmonisation, this regulation could be extended to cover the central zones of all French conurbations.</p> <p><u>Environmental regulations</u> This type of regulation involves authorising city-centre access for electric vehicles. Lyon has introduced such a regulation, where the most polluting vehicles (below the Euro 3 standard in 2010) are prohibited from travelling in the city centre. A similar regulation has</p>

	<p>also been introduced in other towns, including Toulouse, Berlin and Milan.</p> <p>The main drawback of this type of regulation, however, lies in enforcement. Information about a vehicle's Euro rating, for example, can only be found on its registration certificate, which renders effective enforcement impossible.</p>
Implementation details	<p>A freight delivery consultation body was set up in late 2004, chaired by Michèle Vullien (Vice President responsible for transport, Vice President of SYTRAL and Mayor of Dardilly). His role is to exchange and disseminate information, approve ongoing projects and publicise new projects.</p> <p>The body consists of public authority representatives (Grand Lyon, Lyon city council, Villeurbanne city council, the Rhône-Alpes Region and DDT), business representatives (distributors, operators, Rhône-Alpes Logistic Cluster and Région Urbaine de Lyon), researchers, chambers of commerce and the Lyon Urban Truck and Bus (LUTB) competitiveness cluster, among others.</p> <p>One example of the work undertaken by this consultation body is the new delivery regulations introduced in the Lyon Presqu'Île area in 2007. Consultation is therefore an essential part of the project implementation process.</p>
Supporting mechanism	Local traffic and parking regulation.
Results / Assessment	<p>The new delivery regulations introduced in the Lyon Presqu'Île area in 2007 were the result of work undertaken by the freight delivery consultation body. These regulations have already proved effective, with the corresponding improvements to loading zones resulting in:</p> <ul style="list-style-type: none"> • better use of loading zones by transport professionals • a 25% reduction in double parking • more effective enforcement.
Condition of success or failure	<p>These initiatives have been successful in Lyon due to:</p> <ul style="list-style-type: none"> • coordination and partnerships achieved through effective consultation • simple, harmonised regulations • the development of delivery zones in line with professional standards • effective enforcement methods and trained local officers.
Contacts	Diana Diziain, ddiziain@grandlyon.org

France – Data collection modelling, Bordeaux	
	
Location	Bordeaux, outside of the Alpine Convention area (but applicable on Alpine towns)
Service organizer	Bordeaux urban community, Laboratoire d'Economie des Transports, Ministry of transport and environment, the environmental French agency (ADEME)
General presentation	The French National programme “Urban Goods Movements” has been organising an ambitious urban goods movements data collection for many years.
Action typology	Data acquisition and modelling tools
Underlying issue and objectives	The data available on global urban logistic came from survey carried out in 1995. New surveys will help quantify the impact on urban logistic of the rapid growth of freight transport and e-commerce.
Specification	The unit considered is the “movement” i.e. deliveries or pick-ups achieved in each establishment.
Implementation details	<p>The “Laboratoire d'Economie des Transports” has built and analysed three large original Urban Goods Movements surveys in order to provide the quantitative elements useful for demand forecasting and vehicle flow generation in French towns. Surveys have been carried out in 1995, 1996 and 1997 in the French towns of Marseille, Dijon and Bordeaux.</p> <p>To be able to cope with the evolution of freight transport, a new survey is being carried out in Bordeaux (2013-2014).</p>
Supporting mechanism	The ministry of transport and environment, the environmental French agency (ADEME) and the local municipality are financing the survey.
Results / Assessment	First results will be available in September 2014. They will be used as a data base for the Freturb model calibration and as decision aid for the transport master plans of French towns.
Condition of success or failure	This survey make it possible for local authorities to measure the stake of the urban goods movements in city management.
Contacts	Thibaut Baladon, tbaladon@cu-bordeaux.fr

France – Simplicité: an urban distribution centre in Saint-Etienne	
Location	Saint-Etienne, outside of the Alpine area (but applicable on Alpine towns)
Service organizer	Saint-Etienne urban community ("Saint-Etienne Métropole") and private stakeholders
General presentation	In 2013, Saint-Etienne Métropole and local haulage companies created an urban distribution centre called "Simply Cité".
Action typology	Infrastructure, supply chain management
Underlying issue and objectives	<p>The key issues identified in Saint-Étienne are city-centre congestion, public space usage conflicts, pollution (e.g. CO₂ emissions of 2,200 tonnes per year and NO_x emissions of 8.8 tonnes per year), noise, the falling profitability of delivery services and delivery problems encountered by shopkeepers.</p> <p>In recent years, realisation of atmospheric protection plans and climate plans was obligatory. The haulage companies, meanwhile, demonstrated their intention to play an active role in the process, rather than simply accept rules that fail to consider the efforts they had already made. The local authority and haulage companies quickly reached a consensus on the idea of creating an urban distribution centre, based on existing models. The launch of an ERDF⁶¹ call for projects covering innovation in freight delivery, and the associated funding possibilities, represented the catalyst for this project.</p>
Specification	<p>The public stakeholders (Saint-Étienne Métropole, Saint-Étienne city council) and business stakeholders have joined forces to create a Co-operative Company of Collective Interest (SCIC) that <i>"allows all types of actors to associate with the same project [and] products [sic] all types of goods and services which meet the collective needs of a territory with the best possible mobilization of its economic and social resources"</i>⁶².</p> <p>The urban distribution centre covers transport operations concerning service-sector businesses, small businesses and service companies and certain shops. Hotels, restaurants, bakeries and pharmacies, for example, are excluded from the scope due to the nature of their freight.</p>



61 European Regional Development Fund (ERDF): It aims to redress the main regional imbalances by supporting the development and structural adjustment in regional economies – including the conversion of declining industrial regions and regions lagging behind. (<http://ec.europa.eu>)



62 <http://www.les-scic.coop>

Implementation details	<p>Haulage companies deliver their freight to the urban distribution centre. Staff at the urban distribution centre then break up the consignments and reorganise the freight into optimised delivery rounds using a special software program. They then make the deliveries in electric vehicles, enabling them to access the pedestrian zone at any time of day.</p> <p>The urban distribution centre acts as a traditional subcontractor, adopting a neutral position towards the haulage companies. It does not compete with them. The vehicles and delivery drivers' uniforms bear the urban distribution centre's "Simply Cité" branding.</p> <p>The urban distribution centre is located in a 500 m² facility, which can be extended to 1,500 m² to cope with future additional capacity needs. The facility includes four loading bays on two sides of the building. The urban distribution centre makes deliveries using two electric vehicles (one Goupil and one 3.5 ton vehicle) and employs three delivery drivers.</p> <p>Costs The subcontractors are normally paid per delivery. The standard market rates are between €2.10 and €2.60.</p>
Supporting mechanism	<p>The cost of the project is €321,000 (subsidies: ERDF €144,500; Saint-Étienne Métropole €64,000; Saint-Étienne city council €16,000). The project also involves other stakeholders who do not form part of the SCIC. These include central government, which is involved in an advisory capacity and university researchers.</p>
Results / Assessment	<p>The experiment is planned to last for one year. The urban distribution centre is aiming to achieve a 30% market share. In terms of turnover, the target is to achieve €250,000 in the first year and €450,000 in the second year. In the medium-term, the urban distribution centre's goal is to achieve profitability and enable the local council to withdraw its financial support.</p> <p>Three months after its launch, the urban distribution centre has not received any negative feedback from its customers.</p>
Condition of success or failure	<p>Obstacles/problems : The local authorities still do not have yet define a clear strategy in terms of urban freight delivery. At present, unauthorised parking on pavements and unauthorised access to the pedestrian zone remain significant issues.</p> <p>The conurbation wishes to preserve and maintain its consultation body. This should help to develop and facilitate future actions in conjunction with the urban distribution centre.</p>




	<p>In terms of topography and climate, Saint-Étienne is situated on hilly terrain. Some areas of the conurbation, may prove inaccessible to electric vehicles..</p> <p>Furthermore, Saint-Étienne is located in a mid-level mountainous region and is subject to potentially harsh weather conditions in mid-winter, including snowfall. These conditions were encountered during the first winter of operations.</p> <p>Condition of success :The success of the Saint-Etienne urban distribution centre is dependent on the following factors:</p> <ul style="list-style-type: none"> - Motivated councillors - Effective consultation involving all stakeholders - A high number of deliveries/pick-ups in the city centre.
Contacts	Fouad Bellouanas, f.bellouannas@agglo-st-etienne.fr


Germany – Bentobox		
Location	Pilot status in Berlin, afterwards the prototypes are going to Lyon and Torino.	
Service organizer	Consortium within the citylog project (Senat administration for urban development and environment Berlin, messenger Transport + Logistik GmbH, LogisticNetwork Consultants GmbH (LNC), Fraunhofer Institute for Production Systems and Design Technology (IPK)	
General presentation	<ul style="list-style-type: none"> • BentoBox is part of the citylog project, which follows three strategies to improve citylogistic systems: Development and use of innovative loading units • Vehicle technologies • Logistic-related telematics services • BentoBox is an innovative loading unit. 	
Action typology	Infrastructure	
Underlying issue and objectives	Substitute car by bike for courier services.	
Specification	<p>Small containers which can be used as inner-urban reloading point, meant to bundle deliveries of service providers. It works in two directions: as a small hub for detail delivery as well as a collection point for deliveries which will be shipped outside the region.</p> <p>The Prototyp weighs ca. 500 kg, the single small container ca. 80 kg. The measurements are 520 cm x 200 cm x 80 cm, of the small containers 200 cm x 67 cm x 80 cm. A power connection is needed (230 Volt).</p>  <p>The boxes can be transported with special bikes, trikes or small conventional delivery vehicles.</p>	

	 
Implementation details	
Supporting mechanism	Public funding
Results / Assessment	<p>Field tests ran for 7 weeks resp. 34 days, during this time 555 deliveries could be made with the use of BentoBox; 134 courier trips by car were substituted by freight bikes which is about 85% of trips in the test area</p> <p>Some deliveries were bundled which were direct deliveries before</p>
Condition of success or failure	Transferability is tested in Lyon and Torino
Contacts	<p>LogisticNetwork Consultants GmbH Dipl.-Ing. Andreas Weber Tel.: +49(0)30/46307-225 E-Mail: info@bentobox-berlin.de</p>

Germany – Environmental loading point for inner city delivery (Bremen)		
Location	Bremen	
Service organizer	Cooperation of local authorities, logistics operators and the chamber of commerce	
General presentation	The ELP was proposed by logistic enterprises as a benefit to use environmental friendly vehicles.	
Action typology	Urban planning, governance and cooperation	
Underlying issue and objectives	Since heavy duty vehicles (HDV, <10% of traffic) emit a disproportionately large amount of air pollutants (approx. 50% of the NOx in Bremen) it is necessary to reduce emissions in particular of HDV. To promote environmental friendly delivery vehicles in Bremen's inner city, an Environmental Loading Point (ELP) was established for 2 years in November 2007.	
Specification		<p>The ELP is a denoted area at Jacobikirchhof, near the pedestrian area with its shops. It is exclusively reserved for vehicles with emission standard EURO5 or EEV (enhanced environmental vehicle) and suitable for vehicles up to 7,5t resp. a length of 8,5m. Users need a permission to access the loading point. Vehicles are earmarked with a label and a transponder so that their authorisation can be checked automatically (a traffic light showing “red” if access is not allowed). Currently the loading times are unrestricted; to meet higher demand, a temporal restriction can be imposed. In contradiction to the regulations for the pedestrian area the loading point can be used after 11:00 am. This gives more flexibility to its users as an additional benefit.</p>
Implementation details	The Environmental Loading Point is established temporarily. After an assessment it is decided whether this loading point is maintained or even extended to 4 loading points.	
Supporting mechanism	The city paid for the building of the place and the EU Life Project Parfum supported it as pilot activity.	
Results / Assessment		
Condition of success or failure		
Contacts	Hendrik Koch T: +49 421 361 10455 Fax: +49 421 361 10875 Hendrik.Koch@umwelt.bremen.de	

Germany – CarGo Tram (Dresden) ⁶³	
	
Location	Dresden
Service organizer	DVB AG (Transportation Services of Dresden)
General presentation	Sustainable delivery of automobile components by a CarGoTram in the city-centre of Dresden
Action typology	Supply chain management
Underlying issue and objectives	With the construction of a new factory ("Transparent Factory") close to the city center, VW and the DVB AG developed an innovative logistic concept to avoid emissions by truck delivery in a sensitive urban environment. Within this logistic concept the idea of a CarGoTram was born.
Specification	The CargoTram was quickly planned and constructed and in the tram passenger transportation system integrated. Partnership: VW and DVB AG.
Implementation details	Since 2001 the CarGoTram is in use transporting automobile components just in time from the GVZ through the city center to the "Gläserne Manufaktur" ("Transparent Factory"). It consists of two 60-meter long trains that can carry up to 60t of goods each. Every trip of the CarGoTram saves three truck trips and their respective emissions.
Supporting mechanism	As the GVZ and the new factory are very close to efficient tramcar lines, huge infrastructure investments could be avoided. The CarGoTram concept is part of Dresden's "Clean Air and Action Plan".
Results / Assessment	Goods are delivered by the CarGoTram in a very sustainable way, emissions in the city center can be saved, efficiency of the CarGo-Tram is guaranteed by the need of a continuous transportation flow
Condition of success or failure	The CarGo Tram in Dresden is a very successful project due to an efficient tram network, high vehicle capacity, no obstruction of the normal tram traffic and the general wish by the public and politics for a sustainable city logistics concept. Developed for very specific conditions, not very easy transferable. The DVB AG is investigating the transfer of the concept to other applications in Dresden.
Contacts	E-mail: info@cargotram.de

63 <http://www.dvb.de/en/the-dvb-ag/facts-and-figures/cargotram/>, 07.11.2013


Germany – Emissions-free parcel delivery (Nuremberg) ⁶⁴	
	
Location	Nuremberg
Service organizer	DPD
General presentation	Emissions-free parcel delivery by electric vehicles in selected city centers
Action typology	Supply chain management
Underlying issue and objectives	Conservation of the climate Reduction of harmful greenhouse gases CO2- neutral shipping for all parcels
Specification	In 1997 a model project called ISOLDE ("inner-city service with optimized logistical services for retailers") was initiated in Nuremberg involving the state of Bavaria, the city of Nuremberg and a number of logistic service providers. DPD was the only system partner that continued with the concept and has started delivering parcels with two electric vehicles in the city's pedestrian zone.
Implementation details	Since the end of 2000 more than 1.5 million parcels have been delivered entirely free from emissions in Nuremberg's pedestrian zone. In comparison to conventional vehicles 68t CO2 have been saved and pollution from particulates has been reduced. In 2013 DPD has replaced the electric vehicles by two new –generation vehicles (220V instead of high-voltage power). DPD has implemented several projects for emissions-free delivery in other towns e.g. transport bikes in Hamburg.
Supporting mechanism	In Nuremberg's pedestrian zone delivery with conventional vehicles is only allowed until 10:30am. There are no restrictions on delivering and picking up parcels with the electric vehicles. Customers of DPD can be served all day long.
Results / Assessment	Emissions-neutral parcel delivery, reduction of emissions and congestion in Nuremberg's pedestrian zone
Condition of success or failure	The factors of success for the DPD project in Nuremberg are: no time restrictions for delivery, no additional costs for the customer, extension of concept to further European markets and the reduction of CO2 emissions.
Contacts	DPD Dynamic Parcel Distribution GmbH & Co. KG Frank Vergien PR Manager Wailandtstraße 1 63741 Aschaffenburg Phone: +49 6021 843-120

64 http://www.dpd.com/de_en/media/files/press_releases/2013/dpd_in_germany_using_new_generation_electric_vehicles_in_nuremberg, 21.10.2013


Germany – “Bring-Buddy”- Concept
(Source: Deutsche Post AG 2010:101)



Location	
Service organizer	Deutsche Post DHL
General presentation	Concept for future parcel delivery developed by Deutsche Post DHL
Action typology	Supply chain management
Underlying issue and objectives	Reduction of intra-urban traffic, reduction of congestion and CO ₂ -emissions by saving additional delivery vehicles
Specification	<p>Partnership: Cooperation for parcel delivery between logistic service providers and inhabitants of a city</p> <p>Measure: Residents use their everyday ways (to work, shopping, sport,...) for picking up and delivering parcels</p>
Implementation details	<p>Steps and timing: A Bring-Buddy checks online which and where parcels have to be picked up and delivered to (e.g. urban locker boxes, end customer, bar, other Bring-Buddy...); He decides which parcels he wants to pick up (depending on his everyday way) and receives the relevant code on this cellphone; By scanning the codes at pick-up and delivery it is guaranteed that the correct parcels are delivered to the right address/person</p> <p>Resources and infrastructure needed: Logistic service providers have to organize the shipments, control the transports (correct delivery, protection of the privacy of correspondence) and administrate the network of Bring-Buddies; it has to be guaranteed that Bring-Buddies do not make long detours for parcel delivery, otherwise the full potential of saving CO₂- emissions can not be achieved</p>
Supporting mechanism	Motivation of residents for participation in the “Bring-Buddy”-network e.g. rewards for the most active one, ...
Results / Assessment	Expected benefits: Savings of delivery vehicles, reduction of emissions and congestion
Condition of success or failure	Participation of a city's residents is crucial for the success of the concept; Legal issues regarding security and liability have to be clarified
Contacts	

Germany – Truck routing system (Bremen; Source: SUGAR 2011, p. 171 ff.)	
	
Location	Bremen
Service organizer	City Municipality of Bremen ⁶⁵
General presentation	In 1991 Bremen implemented a concept of integrative transport planning. This concept includes a truck routing system, which is based on voluntary use of recommended ways.
Action typology	Intelligent transport system
Underlying issue and objectives	<ul style="list-style-type: none"> • Facilitate shipping and delivery traffic finding the most comfortable way (referred to vehicle-access as well as acceptance of residents) • Keep transit traffic out of side streets and residential areas • Establish legal security for businesses and the municipality of Bremen • Avoid regulation by traffic bans as these can lead to detours
Specification	Cooperation between City, inhabitants, loaders and transport companies to make the distribution of goods for all stakeholders more efficient; Volunteer use of truck routing system as regulations can lead to detours and even worse impacts (e.g. affect areas with higher population density)
Implementation details	<p>Steps and timing: 1. Voluntary avoidance: Map indicating truck routes for driving, extension of city logistic measures and of the guiding system to industry parks 2. Avoidance by measures: Traffic regulation through restrictions e.g. bans</p> <p>Resources and infrastructure needed: Implementation of a variable message sign system (VMS) to recommend the use of alternative routes; construction measures for guidance and signs</p>
Supporting mechanism	Awareness and promotion campaigns, promotion of combined transport, strengthening of the multimodal freight village (GVZ)
Results / Assessment	Expected results: Minimize travel times and trip lengths of all trucks on the Bremen road network, minimize the number of residents affected by freight traffic; Achieved results: Decrease of freight traffic on residential roads about 40% and minor roads about 11%; benefits for fleet operators are in time and cost savings
Condition of success or failure	Involvement of all stakeholders (e.g. forwarders, shipping companies, loaders, residents,..) from the beginning is crucial for the success of the system
Contacts	<p>Ulrich Just, Ansgaritorstr. 2, 28195 Bremen</p> <p>Phone: +49 (421) 361-10239;</p> <p>ulrich.just@bau.bremen.de</p>

⁶⁵ <http://verkehrsinfo.bremen.de/lkw-verkehr/lkwfuehrung/explanation.html?size=0&mobile=0&L=1>,
30.10.2013

Germany – Environmentally oriented traffic control (Potsdam) ⁶⁶	
	
Location	Potsdam
Service organizer	City of Potsdam
General presentation	Since April 2012 Potsdam has been operating an environmentally oriented traffic control. The system, unique in whole Germany, aims to reduce emissions (mainly particulate matter, nitrogen dioxide) by tracking air pollution and adjusting the traffic flow accordingly.
Action typology	Intelligent transport system
Underlying issue and objectives	Because of exceeding limit values a reduction of air pollution by intelligently controlling the traffic flow should be achieved. The implementation bases on the city's clean air plan, federal legislation for monitoring air quality and reducing pollution levels and UE regulations to protect human health and environment.
Specification	Partnership: In cooperation with the European Union Potsdam has been able to establish the technical requirements for the system. Measure: Expansion and up-grading of the existing traffic control center
Implementation details	Steps and timing: The environmentally oriented traffic control system monitors levels of air pollution. In the case that specified values of nitrogen dioxide are exceeded the traffic lights on the heavily polluted places are adjusted to control the traffic (e.g. fostering the traffic flow, diverting of vehicles coming into the city) Resources and infrastructure needed: The existing traffic control center was expanded, and some 50 measuring stations were up-graded. The measurements combine now traffic density data, meteorological data and levels of air pollution. The control of 30 traffic lights was retrofit in order to be able to react to traffic problems or critical environmental situations.
Supporting mechanism	Development of sustainable transport e.g. Extension of bike lanes, fostering of public transport, speeding up of public transport
Results / Assessment	Improvement of air quality in many places; Some hot spots with too high levels are still existing
Condition of success or failure	Potsdam is against restriction (and the associated difficulties) for delivery vehicles; that was one reason Potsdam decided against an environmental zone (with exclusion for delivery vehicles) and for an intelligent traffic controlling system; Shifting of congestion and air pollution to outskirts and neighboring communities
Contacts	Phone: +49 (0) 331-289-2748 E-mail: info@mobil-potsdam.de

66 http://www.mobil-potsdam.de/environmentallyoriented-traffic-control_12_2.htm, 12.10.2013

Germany – E-City-Logistics (Berlin)


Source: Fraunhofer 2013, p. 84 f.





Location	Berlin
Service organizer	Research project on behalf of the German Federal Ministry of Transport, Building and Urban Development
General presentation	Research project to the integration of electric mobility and city logistics in the pilot region Berlin
Action typology	Data acquisition and modelling tools
Underlying issue and objectives	Demonstration of electric vehicles' potential for city logistics in respect to transport, energy, environment and its operational level as well as to urban development strategies; additionally the effects of regulatory measures and suitable logistic concepts will be analyzed. The results will be published in a user manual for the introduction of electric vehicles as urban delivery vehicles. ⁶⁷
Specification	Partnership: Public bodies (Federal Ministry of Transport, Building and Urban Development, City of Berlin), Transport companies (Deutsche Post DHL, Meyer&Meyer Transport Services); Research institutions (Deutsches Zentrum für Luft- und Raumfahrt IVF, Fraunhofer Institut für Produktionsanlagen und Konstruktionstechnik IPK), Other (VMZ Berlin Betreibergesellschaft mbH, 5GE Group AG, Logistic Network Consultants GmbH)
Implementation details	Demonstration of electric vehicles for efficient and environmentally friendly goods delivery by innovative concepts and new user advantages. Implementation of two field tests: 1. Fashion logistics operated by Meyer & Meyer ⁶⁸ ; aim: reduction of emissions, increase of cost-effectiveness by suitable logistic concepts; 2. Parcel services operated by Deutsche Post DHL; aim: faster introduction of electric vehicles as they have lower emissions than conventional vehicles
Supporting mechanism	The pilot region Berlin is one of totally eight pilot regions in which electric mobility is fostered and demonstrated.
Results / Assessment	
Condition of success or failure	
Contacts	Dr. Verena Ehrler Head of the department Commercial Transport German Aerospace Center (DLR) Institute of Transport Research, Commercial Transport Rutherfordstraße 2 12489 Berlin phone: +49 30 67055-453

67 http://www.dlr.de/vf/en/desktopdefault.aspx/tabid-958/4508_read-28668/, 04.11.2013

68 http://www.now-gmbh.de/uploads/media/05-F_BEHRENDT.pdf, 04.11.2013


Germany – Urban Retail Logistics (Ruhr region)	
Source: Fraunhofer 2013, p. 82 f. and ⁶⁹⁾	
	
Location	Research project in the framework of “EffizienzCluster Logistik-Ruhr” funded by the Federal Ministry of Education and Research
Service organizer	Research project to innovative concepts for distribution in urban areas
General presentation	Data acquisition and modelling tools
Action typology	Urban logistics has to face new challenges as congested infrastructure, restrictions for urban delivery and very individual customer demands. Therefore new approaches are needed to bundle commodity flows and offer individual services. Urban Retail Logistics focuses on intelligent cooperation of competitors to develop a new kind of distribution within urban spaces respecting customer's behaviour and the reduction of emissions in the same time.
Underlying issue and objectives	Partnership: Research institutions (Fraunhofer-Institut für Materialfluss und Logistik IML), Other (Capgemini Deutschland Holding GmbH, DOEGO Fruchthandel und Import eG, GS1 Germany, Landgard Blumen und Pflanzen GmbH, Lekkerland Deutschland GmbH & Co.KG, Metro Group Logistics and Warehousing MGL GmbH, REWE-Zentralfinanz eG, EffizienzCluster LogistikRuhr)
Specification	By introducing a City-Hub many different processes will be bundled. Besides bundling the commodities of competitors, the respective information flows will be processed by an Urban Information System. Smart IT-technologies and innovative concepts (e.g. Tante Emma 2.0) will be used to develop innovative logistic solutions for the whole Ruhr area.
Implementation details	The project is embedded in the context of the “EffizienzCluster LogistikRuhr”)
Supporting mechanism	
Results / Assessment	
Condition of success or failure	
Contacts	Christiane Auffermann Fraunhofer-Institut für Materialfluss und Logistik IML Phone: +49 (0) 2319743309 E-mail: auffermann@iml.fraunhofer.de

69 http://www.effizienzcluster.de/de/leitthemen_projekte/projekt.php?proPid=28, 07.11.2013


Italy – Cityporto Padova	
	
Location	Padova is a town of about 210,000 inhabitants in the Veneto region, located outside the perimeter of the Alpine Convention, in the Po Valley, at an altitude of 12 m a.s.l.
Service organizer	Interporto Padova S.p.A. and other 55 operators joined the initiative ⁷⁰ . Cityporto was financed according to a convention between Local Public Authorities, the Holding of local public transport and Interporto S.p.A.
General presentation	It is an operating service of delivery of goods in urban area carried out with a fleet of hybrid and CNG vehicles. It is aimed at rationalizing the deliveries of different transport operators, reducing traffic of freight transport vehicles on urban roads.
Action typology	Infrastructure, supply chain management
Underlying issue (problem/needs addressed) and objectives	<p>Cityporto is based on an extremely simple operating model: the operators that use the service deliver the goods to a specific logistics platform near the city, where the ecological vehicles are then loaded and distribute the goods in the city, the so called “last mile”, which may be just the limited traffic zones or the entire city centre.</p> 
Specification	Thanks to the funds provided by the CO2NeuTrAlp project, an electric vehicle was bought by the Municipality of Padova and made available to Interporto S.p.A. The vehicle was equipped with a refrigeration unit for the distribution of perishable goods. Interporto S.p.A. keeps the vehicle operational and provides training for drivers and maintenance staff of the vehicle. A 'track and trace' system for the shipment of the

70 2 Erre Logistic srl, Angelo Finesso SpA, Arcese Trasporti Spa, Arco Spedizioni SpA, Artoni Trasporti SpA, Autotrasporti e Sped. Barone Spa, Autotrasporti Fusaro Dante, Autotrasporti Ribi SpA, Autotrasporti Rossato snc, Bartolini Corriere Espresso, Bedin Autotrasporti SpA, Bennato Ulisse & Figli Srl, BCE Srl, Bisinella Srl, Borgato Group Srl, Cassol Trasporti Srl, CAMAL Sas, CDM Logistica Srl, Ceccarelli srl, CESPED SpA, CEVA Logistics Italia Srl, City Express Transport Srl, C.P. Autotrasporti Srl, DHL Exel Supply Chain Spa, DHL Global Forwarding Spa, F.Ili Favaro Sas, F.Ili Padovan Srl, Fercam SpA, Gefco Italia SpA, Girmo Poletto Srl, Giotto Diffusione Srl, I.M.E.G Trans srl, Irene Srl, Italsempione SpA, JAS Spa, Jumbo Trasporti Srl, M.T.N. SpA, Metro Partners Srl, Nordestrasporti Snc, Pernice Logistica Srl, Prosdoci GM Srl, Righetto Massimo, SEB-MANDI Soc. Coop, S.I.T.T.A.M. Srl, Schenker Italiana Srl, Sifte Berti SpA, SUSPA SpA, Tardini Autotrasporti Srl, TLD Srl, TiTo Trans, T.M.L. Trasporti Mobili Lombardia, TRI.LEM srl, Valsped Italia Spa, Zanardo Serv. Logist. Spa, Zanettini Paolo


	<p>products has been decisive in the successful implementation of the pilot project. With two trips per day (about 30 km each) and up to 45 deliveries, the limited range of the vehicle (approximately 100 km) has never been a problem. The batteries are charged overnight using standard industrial connectors.</p> <p>Cityporto Padova has been activated on 21st April 2004.</p>					
Implementation details						
Supporting mechanism						
Results / Assessment	Deliveries in 2005	Deliveries in 2012	Delivery increase 2005/2012	Packages in 2005	Packages in 2012	Delivery packages 2005/2012
	44.472	101.666	+128.60 %	191.036	397.126	+107.88 %
	<p>Gruppo CLAS made a study for the Italian Ministry of the Environment, Land and Sea evaluating progresses made by Cityporto Padova through years. The study pointed out a reduction of the length of delivery trips and the total amount of kilometres covered by freight vehicles, as follows (24 months period):</p> <p>Reduction of kms covered: 561,400 km Daily average reduction: 1,216 km/day Reduction of gas consumption (less freight transport vehicles circulating): 58,200 litres Natural gas consumption of Cityporto CNG vehicles: 3,904 kg</p> <p>Over the time frame taken in consideration (24 months), Cityporto activity achieved a great reduction of pollutants emissions, indicated as follows: Carbon Dioxide (CO₂): 219,65 tonn. Nitrogen Oxide (NO_x): 369 Kg Sulfur Oxide (SO_x): 72,8 Kg Volatile Organic Compounds (VOC): 210,4 Kg Particulate Matter (PM₁₀): 51,4 Kg</p>					
Condition of success or failure / Strong and weak points	<ul style="list-style-type: none"> - strong involvement of stakeholders; - full support by the Municipality of Padova; - definition of an industrial plan focused on economic sustainability; - voluntary subscription; - location of a freight village close to the urban area - step-by step implementation <p>Cityporto Padova is certainly one of the most successful and long-lasting Italian examples of applied city logistics. This is why its relevance and approach should be carefully taken into account and studied as a reference for possible replication in the Alpine or, like in this case, other peri-Alpine areas. Its business model and field of application is particularly interesting and more adapted to wide areas, as the city of Padova lies at the crossroads of important networks linking North-East of Italy. www.interportopd.it</p>					
Contacts						

Italy – Centre for eco-friendly City Freight Distribution in Lucca	
	
Location	Lucca is a town of about 87,000 inhabitants, located in the Tuscany region.
Service organizer	LuccaPort, eco-friendly transport and logistic service agency. It is an operative division of METRO Srl, participatory society of the Municipality of Lucca.
General presentation	The Centre for Eco-Friendly City Freight Distribution (CEDM – Centro Ecologico Distribuzione Merci) in Lucca represents a scheme of integrated actions whose goal is the implementation of a number of measures – regulatory, organisational, operational and technological – to enable the realisation and operation of a new city logistics system.
Action typology	Infrastructure, supply chain management, intelligent transport system, governance and cooperation
Underlying issue and objectives	<p>The main problems to be addressed were the presence of high levels of congestion due to commercial and freight traffic (relevant number of vehicles in the historical centre, non-optimised loads and delivery routes). Furthermore, high levels of air pollution, noise pollution and risk for historical buildings due to vibrations resulting from freight traffic, as well as safety conditions for pedestrians and tourists.</p> <p>According to data diffused, approximately 1,500 shops, retail points and commercial activities are located in the core area of city (i.e. the historical centre and its immediate surrounding) and constitute main destinations of freight flows travelling in the area. About 700 commercial vehicles were counted to enter the area each day. More than a quarter (27%) of business located in the area used their own vehicles.</p>
Specification	<p>The key operational concept behind CEDM is based on a city distribution terminal as a main infrastructure to support rationalised, eco and business-efficient urban distribution. CEDM measures are integrated in the broader context of mobility and transport measures and consist of the following key items:</p> <ul style="list-style-type: none"> - adoption of restrictions to regulate freight deliveries in the historical centre (time slots for different types of goods, minimum load factor, electrical vehicles for final deliveries); - cooperation among freight operators to cover last mile city distribution (e.g. load consolidation, transshipment at freight transit points, etc.) meeting access requirements and economic efficiency; - implementation of innovative delivery concepts including goods consignment via dedicated collect points (i.e. the CEDM Pack Station) to be used directly by citizens and tourists.
Implementation details	
Supporting mechanism	
Results / Assessment	The results achieved so far are relevant since they offer a good reference especially for small and mid-sized historic city centres. From a simple geographic and demographic perspective, the Italian Alpine

	Convention's area is characterized by several towns and urban areas
Condition of success or failure	In 2012 the City Council in collaboration with LUCCAPORT LAB has promoted the constitution of "Città Logica" (Logical Town) - International Association for sustainable city logistics in small and mid-sized historic towns. The Association is a non-profit organization aiming to the promotion, dissemination, exchange of good practices, study and analysis, knowledge transfer, application and strengthening of sustainable city logistics culture, solutions and services in order to support smart approaches to city logistics and to optimize the overall urban mobility, developing new services and eco-friendly city logistics systems, particularly in small and mid- sized historic towns. This could be very interesting for middle-sized Alpine towns.
Contacts	http://www.luccaport.it/content.php

Italy – CityLog	
	
Location	The CITYLOG solutions were implemented in three European test sites hosted in: Lyon, Berlin and Turin. Several components developed in CITYLOG were deployed according to specific test cases that were discussed by the partners in cooperation with local stakeholders. The project involved partners from 6 different European countries, including industries, research institutes, associations and local authorities.
Service organizer	CITYLOG is coordinated by FIAT Research Centre, it involves 18 partners in 6 different European countries, including industries, research institutes, associations and local authorities. The project CITYLOG has been conceived together with the project CITYMOVE. They are fully complementary towards an integrated innovative approach for urban freight distribution.
General presentation	The CITYLOG European project, started on January 1st 2010, is a focused research collaborative project co-funded by the European Commission under the Seventh Framework Programme, Theme 7, Sustainable Surface Transport. The CITYLOG project aimed at increasing the sustainability and the efficiency of urban delivery of goods by means of an adaptive and integrated mission management and innovative vehicle solutions. The innovative approach set out to decrease the number of delivery vehicles and optimise the use of delivery trucks in urban areas. It resulted in an increased quality of services. The solutions and technologies are of highest interest due to the increased energy efficiency and quality of services.
Action typology	Supply chain management
Underlying issue and objectives	The following activities were carried out: <ul style="list-style-type: none"> - Organisation of stakeholders' workshops; - Dissemination of the project results; - Exploitation plans and deployment perspectives
Specification	Today's city logistic system can be improved through innovative load units which can be carefully designed to operate, like the vehicles, in different missions. Therefore, a re-configurable internal layout will enable different uses, either as simple container or mobile pack station (BentoBox concept). In the latter case, the goal is the de-synchronisation of the delivery process between operators and final customers in order to reduce the unsuccessful deliveries. The innovative approach of CITYLOG will lead to decrease the number and optimise the use of delivery trucks in urban areas, while bringing an increased quality of services.
Implementation details	
Supporting mechanism	
Results / Assessment	The following main recommendations have been pointed out as results: <ul style="list-style-type: none"> - administrators, carriers and residents are interested in policy measures which allow for an efficient utilisation of the available road

	<p>capacity among the different road and non-road users;</p> <ul style="list-style-type: none"> - conflicts should be avoided mainly by policies addressing the aspects of accessibility (of freight vehicles to the inner city or to other commercial zones) and reallocation of road spaces (priority lanes, delivery and parking areas); - planning measures (freight plans) and IT based city logistics solutions (optimized routing) are preferred to road pricing measures; - urban freight vehicles have to be clean, silent and safe to meet the Administrators and Residents expectation; - urban freight vehicles and their drivers have to be assisted by ITS instruments (route planners), right-sized and flexible as regards to cargo capacity.
Condition of success or failure	Effective cross-cutting cooperation among several towns and projects, at European level.
Contacts	http://www.city-log.eu http://www.citymoveproject.eu

Switzerland – Statistics: Main data on national level (GTS)	
	
Location	Switzerland (nationwide)
Service organizer	Swiss federal statistical office
General presentation	By periodically collecting data on freight transports among lorry owners, Switzerland creates a nationwide data bank which helps not only to get a general view on the subject but to use it for political decision making
Action typology	Data acquisition and modelling tools
Underlying issue and objectives	The increasing importance of freight transports makes it necessary to get a general view on roads goods transports on national and regional level (goods and vehicle flows and structure of these flows).
Specification	<p>The first GTS was done by the Swiss federal statistical office in 1936/37. In 1993 it was repeated after a first attempt in 1984 had failed (see: strong and weak points).</p> <p>The objective of the GTS is to get representative and useful main data to develop political frameworks (government, parliament, administration) as well as to acquire fundamental knowledge for reaction on new circumstances of European politics (relationship with the EU, realization of NEAT, heavy vehicles fee and realization of the Alpine initiative).</p>
Implementation details	<p>A detailed questionnaire (German and French) was sent as a paper version via post to the selected interviewees. 80% of the lorry owners had to fill in a detailed questionnaire and 20% a simplified one. The sample size was found by random selection of 22 effective days – each day 1/22 of all vehicles were counted.</p> <p>Collected data include: kind and use of goods vehicle on a fixed day, origin-destination and all stops during the whole run, use of trailer, reason if there was no run, driven kilometers during the last year/day/transport taking more than one day, transported goods.</p>
Supporting mechanism	The collection of data is done periodically, only a few adaptations of the whole concept were done. This guarantees a good feedback (known procedure) and the results are comparable and can be used for assessment of the developments. A detailed description of the whole concept and further interpretation of some aspects within the public report helps to use data for further analyses.
Results / Assessment	The focus of the whole data collection was on national level. In spite of the small sample size and large zones the results can be used on regional level but one has to be conscious that the results of such a projection can't be representative. They have to be


	<p>regarded as approximate values. The statistics are not usually suitable on local level.</p> <p>Only road transport including delivery vehicles (> 1t) and no intermodal transport has been included into the survey.</p> <p>Therefore some important parts of the goods transports are missing, especially those which are of high interest within towns.</p>
Condition of success or failure	<p>In 1984, the survey was boycotted by the Swiss carriers (they decided to stay at home at the chosen days, no deliveries were done) whereas for the year 1993 part of the concept was modified and the collection of data was successful. One reason for the good feedback and quality of data collection is that the whole data collection and analyses were supported by law ("decree concerning collection on freight transports 1993).</p>
Contacts	<p>Martin Ruesch, Rapp AG Zurich, BESTUFS</p>


Switzerland – Cargotram in Zurich



Location	Zurich, outside of the Alpine Convention area (but applicable on Alpine towns with tram networks)
Service organizer	Mr. Neuhold, CEO of “Entsorgung und Recycling Zürich” ERZ (municipal public waste disposal and recycling company Zurich)
General presentation	 <p>Because of ecological reasons the Cargotram was introduced to shift waste transport from road to rail and thus to reduce vehicle kilometres of truck usage and to improve quality of life in the city of Zurich.</p>
Action typology	Infrastructure, supply chain management
Underlying issue and objectives	The ERZ is the city refuse disposal service. In Zurich, items too bulky for the dustcart can be collected at a charge, or left for free at one of the two ERZ yards. Yet 300 tons of bulky waste items are dumped illegally every year. ERZ has been brainstorming on how to provide a more attractive yet inexpensive service.
Specification	Zurich has an extensive tram network serving most neighbourhoods. There are also many suitable sidings not used by regular services. ERZ approached the tram company (VBZ) with the revolutionary idea of using its infrastructure to collect bulky refuse in the neighbourhoods, so making disposal much more straightforward for residents. The idea was met with enthusiasm and Cargotram was born.
Implementation details	<p>The Cargotram project has been introduced in 2003 and is implemented in daily business and operating. The initiator of the Cargotram is Mr. Neuhold, CEO of the ERZ. The approach has been and is to collect bulky goods of households near the tram stops and since 2005 onwards the collection of waste and electronic equipment for households and industries. The payload is carried in two standard refuse containers. These are carried on four-wheeled flat wagons.</p> <p>The Cargotram serves different tram stations in the city area. In total 9 stations are served. The Cargotram is addressed to public transport users, residents, cyclists and pedestrians. It is not allowed for non-users of public transport to deliver bulky goods to the Cargotram. Cars and delivery vehicles will be turned away.</p>

	The collection of bulky goods is taking place every four weeks per station. The opening times for the Cargotram are between 3 p.m. and 7 p.m.
Supporting mechanism	Since traction vehicles and freight trailers were already existent, the project could be realized in a very efficient way. The project has been and is carried out in cooperation between the municipal ERZ and the "Verkehrsbetriebe Zürich (VBZ, public transport service of the city of Zurich).
Results / Assessment	The project has proven its worth and will be continued. Cargotram not only makes a contribution towards reducing congestion and pollution, it also provides a valuable service to residents. The project is permanently monitored. The evaluation focuses on evaluation of tonnage, acceptance by local population, development of illegal waste disposal.
Condition of success or failure	A pre-condition of the system is that the concept is not hindering the public transport by tram. Therefore the positioning of Cargotram is at those stations where additional tracks are existing (turning points at the end of a tram line, for example). Main success factors have been in the good planning and communication, the good cooperation of service providers, and high acceptance. The project is transferable to other towns.
Contacts	Gottfried Neuhold, ERZ Zürich; http://www.stadt-zuerich.ch/content/vbz/de/index/produkte_dienstleistungen/cargo_tram_und_etram.html

Switzerland – Specific education of city planners, transport engineers and architects		
Location	Basel, outside of the Alpine Convention area (but applicable on Alpine towns)	
Service organizer	graduate schools, universities	
General presentation	In order to sharpen the awareness of city planners, transport engineers, architects and other key decision-makers concerning the needs of urban freight logistics, a study advises to foster specific educational modules at graduate schools and universities which address precisely this subject.	
Action typology	Urban planning, education and information	
Underlying issue and objectives	The subject of freight logistics, its planning and infrastructure is usually not particularly addressed during the education of city planners, transport engineers, architects or other concerned occupations. This causes a lack of awareness of these key decision-makers and therefore many difficulties in the long term planning as well as the every-day handling of urban freight logistics. A study therefore suggests that the subject should be, in fact, a mandatory part of such educations. It advises municipalities, cantons or the state to contact the concerned institutions and to communicate their need for such a complementary element in these curriculum as well as to propose their assistance in designing such a module.	
Specification	It is imaginable that regions or state with significant areas of Alpine territory would suggest to include the specific needs of Alpine towns and to include this subject into the educational program.	
Implementation details	Important stakeholders would be graduate schools, universities, the concerned public entities, but also planning offices and agencies.	
Supporting mechanism		
Results / Assessment	Enhancing the education of key decision-makers in a way that raises their awareness for the needs of urban freight logistics is a long-term contribution to well-planned infrastructure and processes.	
Contacts	Martin Ruesch, Rapp Trans AG Zurich, Report No. 60.166.0-001	


Switzerland – UrbanZen	
	
Location	Belgium, (but applicable in Switzerland and other Alpine countries)
Service organizer	The UrbanZen project is a partnership from the competitiveness cluster 'Logistics Wallonia' and involves several local companies, amongst whom are Liège company NSI Software IT & Services (conception of the project), private companies Smolinfo and M3 Systems, the Multitel research centre and the Road Research Centre (BRRC).
General presentation	UrbanZen is collecting information on public authorities needs and measures in relation to urban freight. The project will develop a GPS based tool to optimize travel times for heavy goods vehicles considering both infrastructure and policy measures. Thereby, UrbanZen proposes a collaborative solution which will contribute to decongesting urban traffic.
Action typology	Regulation and organisation, urban planning, infrastructure, data acquisition and modelling tools
Underlying issue and objectives	<p>The transport of merchandise by road has experienced developments which bring elements incompatible with sustainable mobility: a socially fragile sector, unnecessary and too numerous trips, congestion and negative effects involving the environment and the quality of life of local inhabitants...</p> <p>And the last few kilometres within an urban environment are the most costly and the most difficult for the transport company: dense traffic with congestion and jams, size constraints, the introduction of communal mobility plans and the growing volume of local regulations, which often vary greatly and pay little attention to freight needs – all of these hinder the smooth delivery of goods into town centres.</p>
Specification	<p>UrbanZen proposes a cooperative solution which will contribute to decongesting urban traffic. It is based on centralizing information from the twin sources of the drivers themselves and municipal authorities. This solution aims to obtain a notification of the existence of black spots from transporters and to match this information with computerized municipal mobility plans updated in real time by the municipal authorities.</p> <p>Information is fed back directly to drivers via the GPS system present in most lorries, enabling this system to calculate a new specific alternative route more suited to the constraints imposed by local authority managers. The originality of this scheme lies in the fact that it utilizes existing in-vehicle telematics (without an additional box) or a simple smartphone using generic operating systems.</p> <p>The use of UrbanZen will lead to more profitable operation of trucks in urban environments (decreasing transport times), to decongesting the urban area, and to diminishing nuisance with regard to inhabitants and other road users. It will also give the communal authorities immediate and long term data on the impact</p>


	of their mobility policies, which they can use to improve them, and decrease the production of CO2 and particulates engendered by trucks when stationary in congested areas.
Implementation details	The computer platform offering this system will at first be established at a Belgian level, then rolled out more generally in Europe. It is based on the open standards of road information communication (TPEG protocol, currently developed within a worldwide alliance – TISA), and on OpenGIS geographical architecture (an open standard becoming generally available to a worldwide public). The scheme quite clearly fits into the Belgian and European policy framework (BestUFS, Civitas and Sugar programs), by strengthening public/private collaboration in order to solve mobility problems in urban environments.
Supporting mechanism	Active collaboration of private companies and public entities
Results / Assessment	The project is still in the data-collecting-stage.
Condition of success or failure	
Contacts	Logistics Wallonia, http://www.logisticsinwallonia.be/urbanzen-0

Switzerland – Establishment of priority areas for city logistics

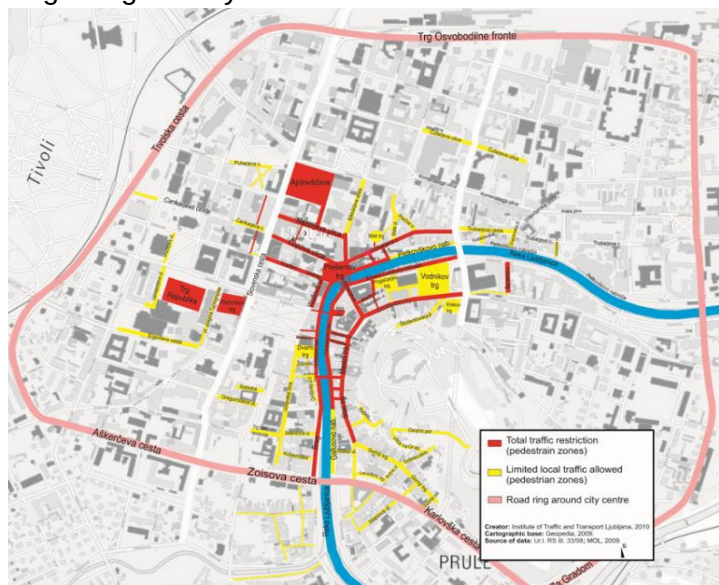


Location	Basel, outside of the Alpine Convention area (but applicable on Alpine towns)
Service organizer	Municipality of Basel
General presentation	In order to guarantee sufficient space for logistics and to minimize the problems caused by suboptimal location of logistics services, a study advises the city of Basel to legally define priority areas for city logistics.
Action typology	Governance and cooperation, urban planning
Underlying issue and objectives	The need for logistics services is constantly growing but for local (or new) logistics companies it becomes more and more difficult to find possibilities and room for expansion or new business locations. Often, conflicts arise among companies and local authorities or inhabitants concerning greater volumes of traffic and noise in the neighbourhood, parked trucks in narrow streets or other complaints. The needs of the logistics sector are often neglected in compare to other land use on city grounds.
Specification	In their cantonal structure plan the canton is advised to define adequate areas which shall be used primarily for city logistics. These areas have to meet certain criteria concerning their accessibility, size, shape, surrounding property, and the legal possibility of construction. The study advises to differentiate between different logistics uses such as terminals, ports, freight handling, storage, etc. Each use has its proper requirements for which different areas are appropriate.
Implementation details	The project has not yet been implemented. It is part of the proposed measures to assure sufficient logistics areas within the city of Basel. Stakeholders which will have to be involved include cantonal planning authorities, communal planning authorities, logistics companies and transport operators as well as concerned unions or other organizations. The implementation of the measure is proposed for 2015, when the cantonal structure plan and the communal zone plan will be revised.
Supporting mechanism	
Results / Assessment	Such a measure should assure sufficient areas for logistics use within the city of Basel and a optimal location where conflicts with other uses are minimized
Condition of success or failure	
Contacts	Martin Ruesch, Rapp Trans AG Zurich, Report No. 60.166.0-001

Switzerland – Framework “Urban freight transport”	
	
Location	Zurich, outside of the Alpine Convention area (but applicable on Alpine towns)
Service organizer	City of Zurich, civil engineering department, division for mobility and transport
General presentation	In Zurich the overall frameworks “Urban freight transport” has developed a strategy in order to reach specific goals.
Action typology	governance, regulation, urban planning
Underlying issue and objectives	The framework wants to react on the following circumstances: Increase of freight transports within the agglomeration, urban freight transport contributes in an above average percentage to noise and land-use, conflicts between heavy vehicles and slow traffic (bicyclists, pedestrians, motorcyclists), negative impacts of urban freight on environment and quality of life, new laws (protection of environment, air pollution, regional planning).
Specification	The main question, which led to the framework, was: “How can a certain piece of freight be transported with the most useful mode, on the shortest way and without loss of time, from its origin to its destination causing minimal costs, using a minimum of land and a minimum of follow-up pollution?”
Implementation details	<p>The answer to the questions above include various measures such as: planning of policy measures; innovations, more commercial transports (less transport for own account) and better circumstances on the market to get a better delivery density; better cooperation of road and rail transport systems, between pre- and end-haulage and between companies.</p> <p>Foreseen measures concerning city access: close certain roads for certain kinds of utility-vehicles, access for low-noise-vehicles; commercial vehicles get access to certain zones not being available for motorcar during certain hours of the day; flexible delivery-windows; regulations of paring- and loading-times; reform of wages and taxes.</p>
Supporting mechanism	the framework and a handbook with guidelines has been published and distributed
Results / Assessment	This is the case for the shopping-complex “Sihlcity” which has designed and planned its logistics processes in a way that all users can comfortably use the same (limited) space. Also, the retailer “Migros” has set up its deliveries in an efficient way and under strong noise prevention.
Condition of success or failure	Strong partners and political will needed.
Contacts	<p>Willi Dietrich (civil engineering department of the city of Zurich, http://www.stadt-zuerich.ch/ted/de/index/taz.html)</p> <p>Martin Ruesch (Rapp Trans AG Zurich, specialist, project manager)</p>

Slovenia – Local freight partnership development plan in Ljubljana	
	
Location	Ljubljana, outside of the Alpine Convention area (but applicable on Alpine towns)
Service organizer	City of Ljubljana
General presentation	<p>The growing significance of urban freight transport and logistics is related to increased population and sustained economic growth in urban areas. In towns freight transport represents 10-18% of road traffic.</p> <p>Freight transport in towns is specific because distribution takes place at the end of the transport chain, which is characterized by small loads, frequent number of runs and many vehicle kilometres. In many European towns access to the city centres is limited due to often narrow roads, congestion and high population density, the requirements of the population in terms of their mobility as well as environmental protection. One of the objectives of efficient urban logistics solutions is solving conflicts between different interest groups in the most capable way. For this reason, partnerships between key actors (stakeholders) are formally establishing in many European towns. The partnerships have different names such as “local freight network”, “freight quality partnership”, “city logistics forum”, etc. but the goals are the same, i.e. to find urban freight policy measures that will satisfy the needs of all stakeholders. They aim to develop an understanding of freight distribution issues and problems and promote constructive solutions acceptable for all stakeholders.</p> <p>To deal with city logistics the CIVITAS-ELAN project set up a common measure (7.1-COM Integrated freight policy development) to establish freight partnerships in all ELAN towns. The aim of the local freight partnership is to present local freight transport problems and to receive critical feedback and opinions from stakeholders.</p> <p>In this common measure, Ljubljana was a leading city and according to the guidelines from the freight delivery stakeholder’s partnership plan for Ljubljana, other towns should make their own partnership plans.</p>
Action typology	Supply chain management, urban planning
Underlying issue (problem/needs addressed) and objectives	Freight transport in Ljubljana has significantly increased recently, particularly since Slovenia has joined the European Union. There are several distribution places and many transport operators in Ljubljana which are situated at different locations in the city, especially in the suburbs. Among them there is a lack of cooperation which causes a large number of transport operations and predictably lower load factors than could be possible with coordinated logistics.

With the implementation of a restrict area (pedestrian zone) in the city centre in 2008, the freight delivery times were shortened from 6:00 to 9:30. During this time period freight delivery vehicles are congesting the city centre.



Restricted traffic zones in Ljubljana

The establishment of a stakeholder partnership was therefore strongly connected to the implementation of this local measure. The main goal of partnership establishment was a formation of a long term co-operation with all stakeholders dealing with freight transport in Ljubljana.


The most important objectives were:

- to reach consensus and solving freight transport problems;
- to find better solutions in freight transport;
- to provide better information about freight transport policy in the city;
- to increase awareness and communication.

As regards stakeholder participation the level of “deciding together” was chosen as the most suitable way for the implementation of the measure.

Specification	
Implementation details	<p>Participating stakeholders</p> <ul style="list-style-type: none"> · Local authority (City/ municipality) (1 partner); Research institutions (1 partner); Freight transport service providers (up to 6 partners); Distribution and logistics centres (1 partner); Chamber of commerce (1 partner); Local business sector (manufacturers, retailers, shop owners) (up to 8 partners); Police, local surveillance and other (2 partners) <p>Total: 10-20 actively involved partners</p>
Supporting mechanism	CIVITAS ELAN project
Results / Assessment	

Condition of success or failure / Strong and weak points	Strong partners and political will needed.
Contacts	http://www.ljubljana.si

Slovenia – Promotion of sustainable freight logistics in Ljubljana	
	
Location	Ljubljana, outside of the Alpine Convention area (but applicable on Alpine towns)
Service organizer	City of Ljubljana
General presentation	To counteract the problems associated with the negative impacts of freight transport, the City of Ljubljana has decided to promote sustainable city logistics. As a first step, a computer simulation model and a web portal for better freight transport in the city has been developed.
Action typology	Data acquisition and modelling tools, education and information
Underlying issue (problem/needs addressed) and objectives	<p>With pedestrian zones being overcrowded by delivery vehicles during delivery time in peak-hours, the City of Ljubljana has recognized the need to develop a long-term plan of measures aimed at reducing freight traffic in urban areas. In order to promote and increase the awareness of delivery companies, shop owners, citizens, local authorities and other stakeholders about sustainable freight logistics, different solutions have been introduced in Ljubljana within the CIVITAS ELAN project to achieve the following objectives:</p> <ul style="list-style-type: none"> • To carry out transport research on goods flows in the demonstration area and to determine appropriate transport policy measures for sustainable city logistics • To develop a computer model simulating efficient goods distribution • To establish a national internet web portal for the promotion and support of sustainable city logistics • To develop an on-line routing tool
Specification	
Implementation details	<p>The measure was started in 2009 with extensive research on freight traffic within the city centre to better define the specific problems associated with freight delivery in Ljubljana. As part of this research, traffic flows of freight vehicles on the main city roads were processed and analysed on a daily and yearly basis. The analysis was based on data of electronic traffic counters. In addition, delivery vehicles in selected pedestrian zones were analysed.</p> <p>All data was collected at entrance points and included the duration of performed deliveries, EURO emission standards, loading capacities and other important parameters for traffic planning and possible optimization of freight deliveries. In order to fully utilize the possibility to implement sustainable transport policy measures the special distribution of retailers and small companies within the city were also taken into account. Based on this data a web portal, for the promotion of sustainable freight logistics with freight transport simulation (www.dostave.si), was established in</p>

	<p>2012.</p> <p>The tool demonstrates the benefits and positive impacts that freight consolidation would bring to stakeholders. The internet web portal also includes on-line calculations of optimal routes for navigation within the city centre and calculations of optimal paths through the pedestrian zone. Interactive maps with free parking spaces for delivery vehicles are also available, as are the locations of physical barriers and entry points, charging stations for electric vehicles, etc. In other words, the web portal is a tool for delivery companies helping them to perform optimal deliveries. The web portal is fully operational and feedback on its usefulness is continuously being collected. Several events to promote the measure, including three day training sessions for efficient freight delivery and a national conference on sustainable freight delivery were organised in Ljubljana.</p>
Supporting mechanism	CIVITAS ELAN project
Results / Assessment	<p>With the help of the computer simulation model it was calculated that emissions could be reduced up to 20% within the demonstration area. The web portal so far has about 100 visits per month and the satisfaction of the users is higher than expected.</p> <p>Based on these findings Ljubljana hopes to implement a national web portal (including routing tool) for the promotion of sustainable city logistics, as well as to organise more driving training (Eco-driving) to ensure optimal deliveries and energy efficiency. Another notable fact determined through the survey was the weight consignment of the vehicles. Only about a third of the consignments are heavier than 100 kg and almost half of the consignments only weigh between 0 and 50 kg (13% between 50-100 kg). These findings can help to determine the type of vehicles needed for goods transport in the inner city area.</p>
Condition of success or failure / Strong and weak points	Strong partners and political will needed.
Contacts	http://www.ljubljana.si