

Handbook for Transport and Tourism Operators



BETTER INFORMED, BETTER TRAVEL

towards a sustainable
mobility information network





BETTER INFORMED, BETTER TRAVEL

towards a sustainable
mobility information network

Handbook for Transport and Tourism Operators

ALPINFONET - SUSTAINABLE MOBILITY INFORMATION NETWORK FOR THE ALPINE SPACE

Lead Partner:

Bavarian Ministry of the Interior, for Building and Transport (DE)

Project partners:

Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management (AT)

Regional Development Agency East Tyrol (AT)

Administration of the State Government of Vorarlberg – Department for Economic Affairs (AT)

European Academy of Bolzano (IT)

Politecnico di Torino – Interuniversity Department of Regional and Urban Studies and Planning (IT)

Municipality of Gorizia (IT)

Department of Transport Management, Infrastructure, Mobility and Logistics of Regione Piemonte (IT)

Ministry for Ecology, Sustainable Development, Transport and Housing (FR)

Provence-Alpes-Côte d'Azur Region, Transport Department (FR)

Rhône-Alpes Region, Transport Department (FR)

Regional Development Agency of Northern Primorska Ltd. Nova Gorica (SI)

Federal Ministry of Transport and Digital Infrastructure (DE)



The project was initiated by the Alpine Convention, Working Group Transport

FOREWORD

Holidaying without a car? Unimaginable for many tourists. Several researches as well as national transport surveys all over Europe show how the car still remains the most important and most popular form of transport – for holidays or in everyday life – owing to the independence it provides. In recent years, the number of tourists – and thus their journeys – has been increasing. In the Alpine Space the growing volume of traffic, and not only from tourism, is even more significant and therefore it is absolutely necessary to rethink and change people's travel behaviour to achieve more sustainable mobility patterns.



What is needed to change this way of thinking and to motivate people to make use of (often available and highly developed) sustainable means of transport? Our answer is: information for everybody, at any time, any place and for any destination, including the last mile to work or home or any other accommodation.

Providing easy, accessible and clear information about eco-friendly transport for tourists and residents will motivate the change from motorised private transport to sustainable transport services and strengthen both the tourism and the public transport sector.

Within the AlplInfoNet project, five pilot regions from the Alpine Space tested different technical and organisational solutions to provide comprehensive and easily accessible information on (cross-border) mobility. Acting as pioneers, they had to overcome various technical, organisational and political barriers. In the end, they opted for the solution that was most appropriate for their specific regional situation.

AlplInfoNet strove to find long lasting, sustainable and practical solution(s) for providing adequate mobility information that can continue to be improved after the end of the project.

This handbook aims at imparting the experiences and solutions of the AlplInfoNet project also to other regions than those involved in the project, supporting them in implementing appropriate solutions in their own regions. Sharing innovative solutions will enable the network to grow and will ensure that the Alpine Space remains an attractive tourist destination and a valuable place to live.

Harry Seybert, Bavarian State Ministry of the Interior, for Building and Transport

"Why can't I yet plan or book my journey through Europe – switching from air to rail or sea, to urban or road transport – in one single go and online?"

Siim Kallas, European Commission Vice-President and Commissioner for Mobility and Transport, ITS Conference, 22nd June 2010

TABLE OF CONTENTS

THE PROJECT AND ITS AIMS	7
BRINGING TOGETHER TRANSPORT AND TOURISM	10
The target users of AlplInfoNet	10
The transport modes covered by AlplInfoNet	11
Products and services developed in AlplInfoNet	13
<i>The exchange of information</i>	13
<i>The conditions for cooperation</i>	14
LESSONS LEARNED	15
The “AlplInfoNet Toolbox”. Short presentation of each tool	15
<i>Smart Links</i>	15
<i>Journey planner Widgets</i>	16
<i>XML-Interface/Webservice</i>	16
<i>Connection of two Journey planners</i>	16
<i>Time Table Completion</i>	16
<i>Enhancement of Journey Planners</i>	17
<i>Additional Mobility Services (AMSS) / Last Mile</i>	17
<i>Editorial Information</i>	18
<i>Maps</i>	18
<i>POIs adaption</i>	19
<i>Internationalisation</i>	19
<i>Start Widget</i>	20
Use of the tools in the pilot regions. A short overview	21
<i>Lake Constance</i>	21
<i>Lake Chiemsee</i>	24
<i>East Tyrol</i>	26
<i>Province of Gorizia and Goriška</i>	28
<i>Piemonte, Provence Alpes Côte d’Azur and Rhône-Alpes</i>	29
SECURING COOPERATION AND DATA EXCHANGE	
IN A TRANSNATIONAL PERSPECTIVE	32
Defining procedures and standards for cooperation on data exchange	
at a transnational level: lessons learned from the AlplInfoNet Pilot Regions	33
Ensuring the feasibility of long-term cooperation: recommendations for a	
business model	37
THE SHOW MUST GO ON. FUTURE PROSPECTS	38
ANNEX 1: USE OF THE TOOLS IN THE PILOT REGIONS	40

THE PROJECT AND ITS AIMS

Increasing the use of sustainable transport also for leisure travel is becoming of utmost importance to further reduce the use of private cars. To this end, travellers should have reliable and detailed door-to-door information about the available sustainable transport options to get to their destination. However, despite the fact that there are numerous tourism and mobility information systems (TIS and MISs) available online, often users cannot find the information they need, which is severely hampering the shift from cars to using sustainable transport. Failure to provide information about public transport, last mile offers and local mobility at the destination prevents tourists, and even commuters, from using public transport. And travelling between countries by means of sustainable transport is even more challenging: while in most cases there are local, regional and national information systems (ISs), impartial and comprehensive cross-border information is still missing.

These issues are some of the reasons why the Working Group Transport of the Alpine Convention supported the AlpInfoNet project, the first European project on this matter initiated by the Alpine Convention.

The initial objectives of the AlpInfoNet project were ambitious and highly challenging: to develop an integrated information service across the Alps to connect tourism and public transport data and provide travellers with comprehensive, smart and reliable transnational information about the sustainable mobility offers to/from and within the Alpine Space.

The ultimate aim was to encourage a behavioural change in travellers and to bring about a modal diversion by improving the quality of the information services and thus facilitating access to public transport.

The project involves three cross-border and two national pilot regions in the Alpine Space with five different situations regarding tourism and mobility services, ISs, and covers diverse juridical situations.

The pilot regions cover the territory of Lake Constance, Lake Chiemsee, East Tyrol, Province of Gorizia and Goriška, Piemonte, Provence-Alpes-Côte-d'Azur and Rhône-Alpes (Figure 1); the characteristics of the regions involved are showed in table 1 while more detailed information is given in Annex 1.



Figure 1 – AlplInfoNet pilot regions.

The complexity of the context and the diversity of the regions involved made creating a new platform inadvisable; instead an attempt was made to integrate the existing ISs that are well established at local, regional and national level.

Specific attention was paid to the interoperability and to the harmonisation of the selected ISs in order to provide ‘smart’ sustainable mobility information (SMI) to travellers and inhabitants. To guarantee the implementation of suitable solutions and the achievement of long lasting results, technical and political key actors from transport, tourism and environment sectors were actively involved in the project. A target group was also picked to find out their needs and expectations and propose a communication strategy. Existing technical solutions were compiled, evaluated in terms of their strengths and weaknesses and tested by the pilot regions. In addition, the legal and political framework for establishing a cross-border mobility information service was analysed, challenges were identified and their solutions were developed.

The following chapters will provide an overview of the activities, the challenges and the solutions of AlplInfoNet through to setting up and implementing a cross-border SMI network.

	Area/Regions	Area	Population	Yearly tourists (arrivals)
Lake Constance	Lindau County / Bodenseekreis County Federal State Vorarlberg	3,589.63km ²	660,831	3,567,768
Lake Chiemsee	City of Rosenheim, district of Rosenheim, district of Traunstein, district of Berchtesgadener Land, City of Salzburg (Austria)	3,850.54km ²	578,407	1,975,813
East Tyrol	East Tyrol (district with 33 communities)	2,019.87 km ²	49,885	417,301
Province of Gorizia and Goriška	Province of Gorizia – 25 municipalities, Goriška region – 13 municipalities	2,792km ²	261,265	592,901
Piemonte, Provence Alpes Côte d'Azur and Rhône-Alpes	Provincia Cuneo, Provincia Torino, Maurienne valley, Romanche valley & Oisans and Valbonnais Massifs, Briançonnais, Ecrins, Queyras, Champsaur, Valgaudemar, Dévoluy, Embrunais, Serre-Ponçon, Gapençais, High Verdon and Ubaye valleys	25,977.56km ²	3,086.082	no data available

Table 1 – Characteristics of the pilot regions.

BRINGING TOGETHER TRANSPORT AND TOURISM

The first challenge of AlpInfoNet was to bring together the transport and tourism operators who will be the users of the ISs developed within the project. The following sections present the target users and provide details of the system developed up to this point.

The target users of AlpInfoNet

AlpInfoNet allows end users travelling to the Alps to rapidly get all the information they need for a seamless, car-free service chain to their holiday destination and during the stay to:

- easily plan their eco-friendly arrival at the holiday destination from door-to-door;
- inform them about options for sustainable mobility at the holiday destination.

As mentioned above, the main target groups of AlpInfoNet are not the end-users but the tourism and transport stakeholders who are - or shall be - the providers of the information. In fact, they are the ones who take part in the value chain for producing the service (Figure 2) and give the relevant information on methods of sustainable transport as well as about tourism activities.

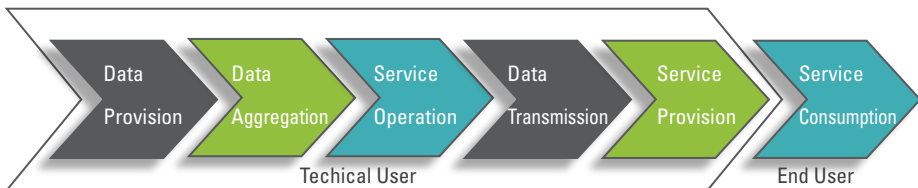


Figure 2 – Chain of Sustainable Mobility information and related users.

To understand the target groups' needs, a survey of the transport and tourism stakeholders was conducted in all the countries involved. The survey used several methods – workshops, focus groups, interviews and questionnaires – aiming at investigating the following issues:

- What are the needs of transport and tourism operators?
- What transport methods should be covered?
- What products and services should be developed?
- What tools are appropriate for the exchange of information?
- What are the conditions for cooperation?

- What is the current situation in terms of transport information shared among people?
- What data exist and in what format are they available?

The chief finding from the survey was that the main challenge to be tackled to build high-quality information services for tourists in the Alpine region about sustainable transport is to **integrate information** from transport and tourism sectors and **achieve harmonisation**.

Specifically, the **transport actors** dealing with MISs are primarily focused on interoperable and seamless sustainable mobility information systems (SMIs) for travellers, and this requires making the **existing MISs interoperable**. The stakeholders insist on enhancing transnational information in the pilot regions. Their key objective is for a modal shift as this fits with their public policies and implies more customers for the transport companies. Their main concern is to make the (potential) travellers confident that their travel comfort and ease will be guaranteed. They are fully aware that, in order to achieve comprehensive and solid information, a lot of effort has to be put into the data quality and standards.

The **tourism actors** dealing with tourist information systems (TISs) are interested in having **greater cooperation with the transport sector** and are ready to be involved in the project. Their key objective is customer satisfaction, to attract more users by providing the best services. To this end, they need interoperability among their TISs and between TISs and MISs to offer to their customers a **complete sustainable mobility information chain: long distance, last kilometre (or last mile) and on-site mobility information** given through smart and high value services. Users need to feel confident about the information displayed, meaning that the quality and reliability of information are the key aspects of the service.

The transport modes covered by AlpInfoNet

The modal shift towards sustainable mobility can only be obtained by involving all parties supplying sustainable transport. The surveys in the pilot regions revealed what types of transport services are present, how they are managed, who provides the information and what types of information about the services are available to the users. Regarding tourism mobility, the most interesting, but difficult, issue was to integrate not only the traditional operators of public transport, but also all the shuttle services (private and public) that are used for the “last mile” in the tourist areas. For this reason, less attention was paid to the road network for private cars and the main focus was on:

- Walking (Private transport)
- Bike (Private transport)
- Carpooling (Private transport)

- Taxi (AMS: Additional Mobility Services)
- Car rental (AMS: Additional Mobility Services)
- Car sharing (AMS: Additional Mobility Services)
- Bike sharing (AMS: Additional Mobility Services)
- Bike rental (AMS: Additional Mobility Services)
- Demand responsive transport (DRT) (AMS: Additional Mobility Services)
- Tourist Shuttle (AMS: Additional Mobility Services)
- Train (Public transport)
- Long-distance Coach (Public transport)
- Bus (Public transport)
- Tram/Metro (Public transport)
- Passenger ship (Public transport)
- Cableway (Public transport)

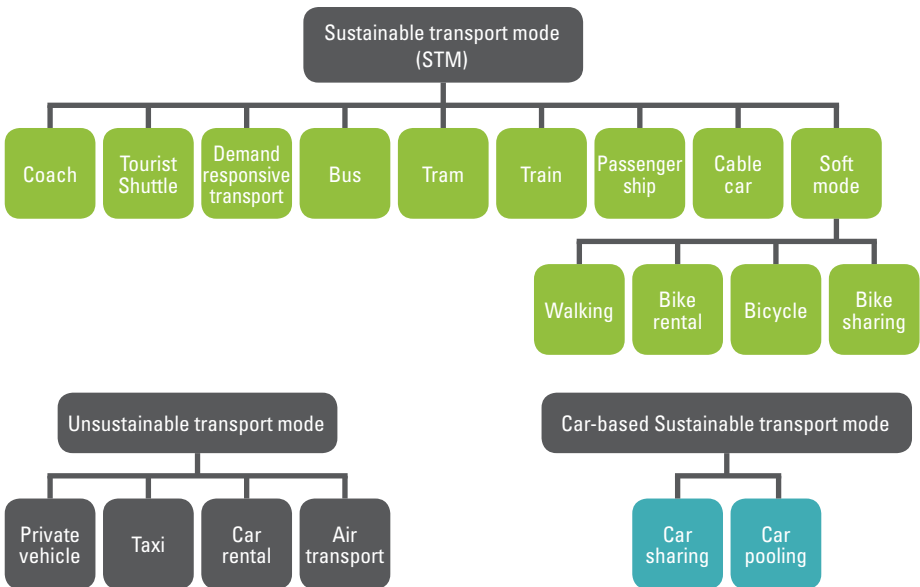


Figure 3 – Overview of transport modes.

Products and services developed in AlpInfoNet

The most basic service expected is to achieve a **smart link to tourism points of interest (POIs) and SMI services**. This service could be achieved by connecting public transport passenger pickup points with tourist POIs in order to provide consistent services (for example common digital maps, easy to use journey planners, combined geo-localisations, etc.).

The ideal would be to develop a journey-planning service combining POIs with sustainable mobility journey options (including walking and cycling). This web-service could be accessible through an interface for tourism operators so that they could include journey-planner results in their tourist services, add a search box or a widget on their homepage and integrate a journey planning service (front end).

The development of existing ISs in the different countries of the AlpInfoNet pilot regions will be in successive steps, giving time for a targeted exchange of information and the appropriate conditions for cooperation.

The exchange of information

The main need for the information exchange is at regional and transnational level. This means that, in the pilot regions, on both sides of the borders, existing ISs should be able to communicate and to understand each other in order to set up interoperable and seamless SMIs for the travellers.

Transport and tourism stakeholders have different levels of expertise and needs: data ownership and the expertise on data processing are dealt with by transport actors while tourist information (POIs, accommodation, leisure activities, etc.) is managed by tourism operators. Therefore, the joint action is focused on the presentation of the SMIs and of the related services.

Furthermore, each IS provider will use what is already working or is currently being developed and not introduce any innovation. In fact, the main effort will be to create a synergy among what already exists, currently differing widely in terms of technological level. This diversity requires that ISs share common specifications for information exchange so that existing systems can communicate; these specifications could involve having common data formats, common data models, common interfaces, common protocols, common services, common data quality standard, common services and quality standards.

The **first category of information** to be dealt with regards the location of the different points. **Transport pickup points and POIs** (as well as other geo-located information) should be linked and have a common format and a common map projection. There are currently several different formats and map projections being used. In AlpInfoNet this issue was faced in two ways:

- a common format and common map projection are defined and each system develops a unique data conversion tool between its own format and the common format (some of them already exist);
- no common format or common map projection is defined and each system develops as many data conversion tools as there are ISs with which it wants to communicate.

The **second category of information is represented by scheduled and real-time transport data**. The surveys of all the public transport operators provided an understanding of the current standard they use; none of them promoted the use of European Standards (NeTEx or SIRI), while some mentioned GTFS. The only exception is the Piemonte region that has worked extensively on integrating standards. In the very near future, the region will implement the regional global standard based on the NeTEx standard: it will be the BipEx standard – a “dialect” of NeTEx – because it includes the section related to electronic ticketing. Obviously applying a standard is a dynamic process under construction and, even though the European Commission promotes this solution, in practice operators and institutions are waiting to find out which will be the best solution. In this scenario the AlplInfoNet solutions are not intent on introducing new standards but aim to put different MISs in communication with each other.

The conditions for cooperation

Building sustainable solutions for tourist mobility requires the collaboration of many players. The AlplInfoNet project made it possible to bring together all the important subjects involved in people’s mobility to try and find points in common and to encourage partnerships both locally and across borders. A key issue was to investigate the readiness of the various players to exchange information, essential for offering a truly integrated IS on sustainable mobility. The survey showed that all the transport players agreed to exchange data, information or connections to services of all other parties. The surveys and interviews with the transport operators revealed some common points of view and suggestions regarding the sharing of information:

- exchange of information must be free of charge;
- data not to be commercially used (data selling is forbidden, but, for example, services can be profit-oriented by advertising);
- prepared to send information for completely non-commercial services;
- discrimination-free services;
- impartial presentation of transport supply;
- reciprocal data exchange;
- inclusion of references to data provider on derived services;
- exclusion of commercial-sensitive data;
- control over re-use (sharing of traffic figures).

Likewise, tourism operators clearly expect free of charge access, with reciprocity and transparency. They are aware that they are in competition with foreign territories, but they state they are willing to cooperate and to share information.

LESSONS LEARNED

As shown in the previous chapter, the situation and the framework conditions for establishing a SMI vary among regions and countries and a single universal solution fitting all the requirements is very difficult to implement. Therefore, rather than proposing an “all inclusive server”, AlpInfoNet offers the “AlpInfoNet Toolbox” that, based on the existing ISs, builds up an information network including all those systems.

The “AlpInfoNet Toolbox”. Short presentation of each tool

The “AlpInfoNet Toolbox” includes detailed specifications of many different technical solutions that can be helpful for enhancing and improving existing ISs, as well as for building connections between two or more of these systems. All these techniques fit with each other and any organisation interested in providing people with better information about sustainable mobility can pick from this toolbox just the most helpful and suitable solutions according to the individual organisational, financial, and technical framework conditions. The modular system, a broad spectrum ranging from easily implemented techniques to more complex solutions, is designed to encourage beginners to embark on the first step towards better information about sustainable mobility and, at the same time, to stimulate advanced stakeholders and regions to further improve and implement even more user-friendly solutions.

Thanks to this approach, people can find SMI on the websites they already know, because the tools enable existing websites and tourist and mobility information systems to be connected to each other.

Detailed descriptions of the 12 tools developed during the project are shown below.

Smart Links

Static links simply direct the user to relevant information on the linked website, while smart links lead the user to a web service on another website in a smart way. For example, a hotel website can offer a smart link to a journey planner. This smart link not only puts through to the journey planner website, but also transfers parameters to specify certain features of the web service, so that the user is transferred to a trip-planning form of the journey planner, where the hotel is already pre-filled as destination. Static links can connect to any website, while smart links must be supported by the

linked web service and documentation (which specifies the parameters accepted by the system) must be provided by the operator of the linked system.

Website Links are easy to implement, but the drawback is that the user is directed to another website. Implementing links to sites offering information about local and regional sustainable mobility options, website operators (such as municipalities, regions, tourism associations, tourist attractions, providers of accommodation and tourist activities, etc.) can help users find relevant information for planning holidays without a car and journeys by sustainable transport.

Journey planner Widgets

Some MISs offer a so-called widget. This is a configurable small area to be displayed on a third-party website, such as a hotel website. A visitor to this website can enter her/his start address and, by clicking “submit”, she/he will be transferred to the journey planner, where the mobility information is offered.

Thus, for example, a widget builds a link between a tourist website and a journey planner and is the first step towards a sustainable information network.

XML-Interface/Webservice

A tourist website can be enhanced by retrieving the mobility information from the journey planner via an XML-interface or web service. This is an interface for communication from machine to machine. The destination website can get the mobility information in the background and display it as its own content, without forwarding to another website. This is a big advantage compared to “Smart Link”, “Journey planner Widget” or “start widget”, which transfers the user to another website.

However, to implement such an interface is expensive and time-consuming and needs a considerable effort of coordination with the provider of the journey planner.

Connection of two Journey planners

A journey planner usually offers trip information related to small areas but does not provide information for a longer journey. In order to cover larger areas, adjacent journey planners should be connected so that they are able to give detailed information for longer journeys. For successfully connecting two journey planners, AlpInfoNet suggests to use one of the existing well-defined interfaces (like EU-Spirit or DELFI in Germany) and to define some meta information, like a set of transition points, at the outset.

Time Table Completion

Ideally, public transport journey planners should include detailed and up-to-date information about all public transport services available in a certain area for users to have comprehensive travel information and advice. However, quite often there are

gaps in the information, mainly in cases of public transport services provided by small operators or the transport offer in “peripheral” areas. Whenever information is missing from public transport journey planners, the data need to be completed and regular updating of the information in the journey planners has to be guaranteed.

The techniques to fill the gaps in public transport information very much depend on the underlying journey planner system and need to be agreed with the system operator. Most journey planner systems offer the so-called Import Interfaces, which can be used to include timetable data. If it is not possible to add timetable information via an Import Interface, the data can be imported manually, for example via a web-based editor.

Enhancement of Journey Planners

Existing journey planners cannot normally handle requests for information when planning a trip well into the future; for example, when entering a date for a trip taking place in the following year, most systems say that there is no offer available at the requested time.

Furthermore, existing journey planners do not usually offer information regarding additional mobility services such as shuttle buses or cableways. Most journey planners only show fixed dates and times and so they cannot handle transport services not having a timetable. Therefore, AlpInfoNet suggests enhancing the journeys planners so that the system explains for what dates it can give information and gives some hints when the user enters a date that is too far in the future.

The systems shall also be enhanced to handle mobility services providing days and times of the service (e.g. Monday to Friday from 8:00 to 18:00), the duration of the journey and the average waiting time for the next transport to arrive.

Additional Mobility Services (AMSs) / Last Mile

Additional Mobility Services are a supply complementing conventional public transport. Such services include tourist buses, shuttle buses, cableways, taxis, car rental and car sharing. These AMSs are especially important for travellers since they can help to cover the “last mile” from the public transport alighting point to the final destination and often are a significant part of the sustainable on-site transport supply. However, although such AMSs are often found in tourist regions, they are not usually covered by the existing ISs. In order to provide people with all necessary information for planning both the door-to-door journey with sustainable transport modes and the sustainable on-site mobility, it is of utmost importance to add information about AMSs to the existing ISs.

AMSs can be classified according to:

- availability (e.g. whether the service can be used by the general public or by certain groups of people such as customers, guests, card owners, etc.);

- schedule (e.g. whether the service has a fixed time table, runs at fixed time intervals or “always”);
- type of service (e.g. whether the customer will be transported or gets a self-drive vehicle to hire).

AMSs, which operate on a fixed timetable or at fixed time intervals, can normally be easily integrated into existing MIS from a technical point of view (see section “Enhancement of Journey Planners”). However, there might be organisational barriers and problems that hinder integration of such systems into existing public transport journey planners.

Even though full integration of an AMS into an existing public transport journey planner is not possible, at least basic information for all AMSs should be given: for example, editorial text (see section “Editorial Information”) in existing MISs and TISs and “Mobility POIs” added on the maps (see section “Maps”). Editorial text and “Mobility POIs” for AMSs should give clear information about the position of the pick-up points (e.g. rental stations, pickup/set down point of shuttle bus, etc.), type of AMSs offered, operation time and time intervals, user group restrictions (if any), phone number or website where the service can be ordered and additional information obtained, route or area, etc.

Editorial Information

Editorial information is a very simple but effective tool providing simple texts or graphical information regarding any kind of transport. Thus, when detailed timetables and/or route information for mobility services are not available, a good solution is to give at least some useful editorial information describing the available service and the conditions for using it, as well as providing a phone number, email-address or link to a website where more information can be obtained. In addition, text-based information is also helpful for the user when graphical information (such as schematic route maps for AMSs or instructional pictures) is included.

Since editorial information is usually hosted locally and not linked to any external information source, special care should be taken to ensure that the information given is correct and always up-to-date. Therefore, before providing editorial information, it is of utmost importance to establish contact with the provider/operator of the related mobility service and specify how this information can be kept up-to-date.

Maps

In order to be able to assess the feasibility of on-site mobility without a car, tourists need an overview of the mobility services offered in a region. To this end, most people would prefer a visualisation of the mobility services offered in relation to the POIs they plan to visit in the region.

Maps are a powerful way of providing such additional geographical information to the user. For the information systems, several types of existing map services such as community map services (e.g. Open Street Map), free map services (e.g. Google maps) and commercial map services (e.g. here maps, TeleAtlas) can be used; the specific license issues should be taken into account already at the planning stage. For example, existing community map services such as Open Street Map may be used to give POIs information. However, it should be kept in mind that such a community map is not a suitable tool for “storing” information since it can be changed by any community member at any time. Therefore, it is essential to record all the data and information so that they can be restored whenever this might be necessary.

POIs adaption

Points of interest are valuable, important or otherwise interesting places such as sights, restaurants, hotels, police stations, hospitals, museums, public buildings and authorities.

Both tourist and mobility services deal with POIs: tourist websites offer information about POIs while mobility services use POIs as the start or destination of a trip. When a tourist uses both systems, (s)he could be confused if a POI exists in one system, but not in the other or if the POI has different names (e.g. a hotel has changed its name and only one system has been updated accordingly). To avoid such a problem, AlpInfoNet recommends adapting the POIs in the TISs and MISs. This can be done manually by comparing the POI-lists of all systems involved, unifying the names and coordinates and complementing missing POIs. A better alternative is to define a leading system for each category of POIs and to share this part of the POI-list between the leading system and all the other systems.

Internationalisation

All the information is offered at least in the local language and in English since tourists make up one of the main target groups for the SMI. In fact, any additional language improves the usability of the IS for tourists unable to speak the local language. However, special care needs to be taken, using “simple language”, especially in the English version, since it is often used by non-native English speakers.

A special focus should be put on names (e.g. names of cities, POIs) and local characters when providing information to the user. It is recommended to use always the local characters (such as ü, ß, á, ô, etc.) as well as names in local language, since this helps the user with orientation on-site. However, when the system handles user’s input, it should always accept and understand names in all languages, and the “simple” form of any local characters. For example it should not matter whether the user enters München, Munich, Munchen or Muenchen - the system should recognise all these names as “München”.

Start Widget

In order to give to the user good and comprehensive information on a tourist website about a destination like a hotel or another point of interest, it would be useful to offer:

- one or more journey planners covering the destination;
- information about AMSs;
- some more editorial information;
- maps.

To help the administrator of the tourist websites present all this information, AlpInfoNet has developed the so called “start widget”. It can be included in any website and combines some of the aforementioned tools in just one easy tool. The “start widget” provides Smart Links to appropriate Journey planners. In order to determine which Journey planner fits best, the “start widget” offers buttons where the user has to choose her/his start region. A second variant of the “start widget” asks for postcode or city.

The “start widget” also includes Editorial Text offering information about AMSs, explaining how to get to the next station and describing further offers at the destination such as transfer to station or airport, or bike rental.

A German and English version of the “start widget” can be downloaded from the AlpInfoNet Server (www.alpinfonet.eu). It contains a simple configuration file in which the webmaster of the destination website adds the address or the coordinates of the destination and can set up the widget’s colours. This colour adaptation enables the widget to be harmoniously integrated into the design of the destination website. The existing documentation on how to use the widget facilitates the integration of the “start widget” into any website.

The AlpInfoNet Toolbox with a detailed description of the technical solutions can be downloaded from the AlpInfoNet website (www.alpinfonet.eu).

Use of the tools in the pilot regions. A short overview

This overview shows the work done within the AlplInfoNet project in the pilot regions using the tools described and provides a picture of the present situation in the regions, also including activities carried out in parallel to AlplInfoNet.

The different ways AlplInfoNet has been implemented in the pilot regions reflect the different framework conditions of these regions. Annex 1 provides more detailed information about the technical solutions implemented in the pilot regions.



Lake Constance

German side

Analysing the mobility information offered to users in the German pilot region showed that there is a strong need to improve how public transport is promoted on websites of tourist service providers.

A comprehensive analysis of mobility information of 208 hotel websites revealed that the promotion of public transport on such websites can be significantly improved: 67% of the examined hotel websites did not refer to public transport options at all and about 90% did not offer any last mile information. Furthermore, of the total of 122 websites that do provide modal-specific travel information, motorised individual transport is very much favoured: 44% of the websites only refer to the private car, 89% mention the private car in the first place and only about 10% of these websites mainly list trains and buses as eco-friendly travel options before private cars and planes. In view of these findings, one of the main tools implemented in the German pilot regions is the AlplInfoNet “start widget” (Figure 4) which helps tourist operators provide information about sustainable mobility options.

Consequently, a “start widget”, encompassing all relevant transport modes both for travelling to and within the region, was developed for the pilot region Lake Constance (and Lake Chiemsee). The “start widget” is a web tool that forwards the users to the most suitable national or international MISs and presents regional and service-

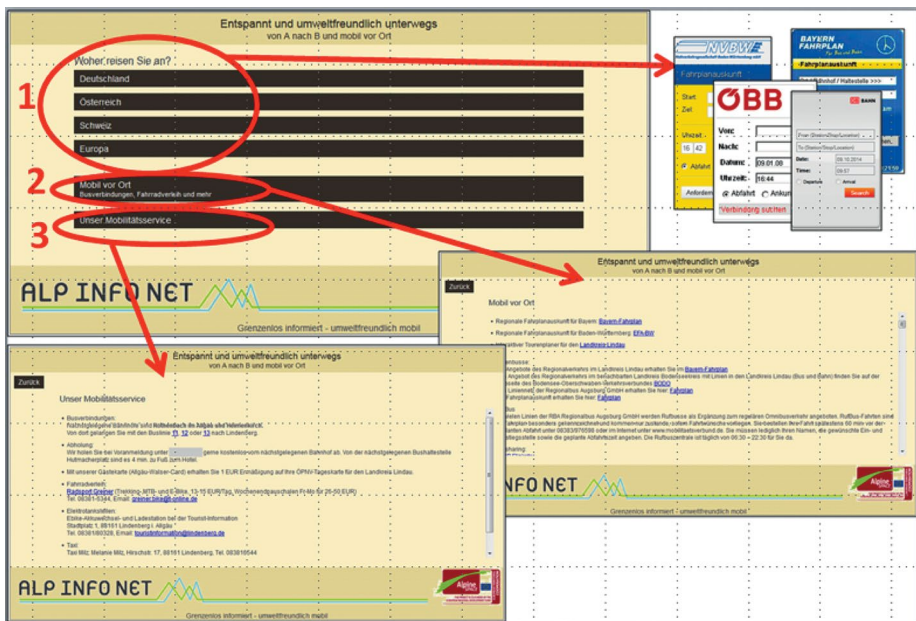


Figure 4 – Start widget in the Lake Constance pilot region - German side.

provider-specific mobility offers; it allows webmasters to conveniently include mobility information in existing websites.

The “start widget” also links to the Austrian and Swiss mobility system around Lake Constance.

At regional level, the “start widget” shares and displays specific regional mobility options that are maintained in a single database or, very simply, in a web page hosted by a regional stakeholder (e.g. district authorities, regional tourism authority).

At individual (tourism) service provider level, webmasters can easily modify the AlpInfoNet “start widget” to give information about local transport services (e.g. pick-up services, rental options, by adding local-specific descriptions). Furthermore, the AlpInfoNet “start widget” can easily be adapted to the corporate design requirements of the service providers.

The technical data files are available on the AlpInfoNet website at: http://www.alpinfo.net.eu/download/Pages/Practical_Implementation.aspx. A German language guideline and a summary of the pilot activities are available for downloading, offering help to tourism service providers to improve the sustainable mobility information on their websites.

Austrian side

In Vorarlberg widgets are used to connect the TIS and the MIS. As regards the TIS – related, for instance, to the website of a hotel – the customer can find a widget with prefilled destination. In order to get information about travelling to this destination, the customer has only to fill in the starting point and another window (from the MIS) shows the route to the hotel.

For providing cross-border routes, journey planners are connected. For the time being, this connection is implemented by an exchange of raw-data, such as between Bavaria and Austria. In the future it will be ensured by using an interface like EU-Spirit. Thanks to this technology, the state of Vorarlberg aims to increase the accuracy and the quality of the MISs. In fact, journey planners that are connected but still separate provide several benefits since the separate systems can be updated more often, they can include real time information and each system operator strives to provide good maps without the map license costs.

The enhancement of the timetables to include tourist services – such as a hiking bus – is made via the timetable management software.

Exchange of POIs between the TIS (hotels, etc.) and the MIS (transport stops) is done by a web-service called Web Feature Service or "WFS". Due to this exchange of POIs, a customer can see information about the hotels in the MIS and can also set these

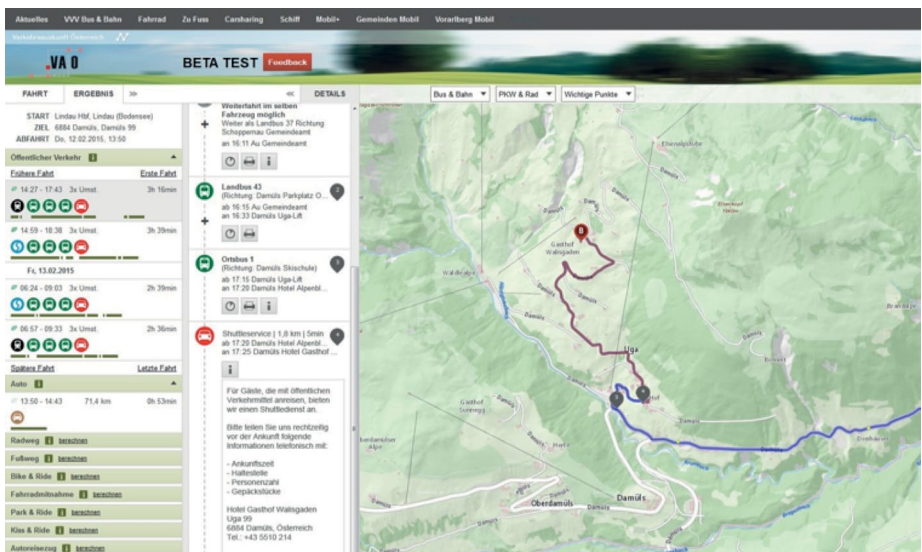


Figure 5 – Example of last mile information in the Lake Constance pilot region - Austrian side.
Source: <http://fahrplan.vmobil.at/>

POIs as start or destination points for routing requests. In addition, last mile information is integrated into the MIS: the TIS is enhanced, so that hotel owners (who operate an AMS) are able to add information about their last mile offers. This information will be exchanged with the MIS thanks to an interface. The MIS processes this information for providing a multimodal routing, a chain of different transport modes from the departure point to the hotel. For example, in the screenshot shown in Figure 5, the last part of the route (marked in red) is an on-demand shuttle-service provided by the hotel to bring customers from the nearest bus stop to the hotel.



The solution and implementation in the pilot region Lake Chiemsee focuses on three pillars:

- Free and editable worldwide map – OpenStreetMap. Within the project it was agreed that the OpenStreetMap, with all its regional know-how, is integrated in the Bavarian MIS BayernFahrplan as the basis for the map. In this way the user gets all information from the tourism sector (in the OpenStreetMap) and the timetable data.
- Regional Know-How as the best source for tourism data and on-site information. Updated data about POIs, restaurants, hotels and sights will be integrated in the MIS BayernFahrplan (system DEFAS) on a regular basis twice a year. So all POIs etc. can be shown and routed on the map inclusive of the last mile and footpath (Figure 6).
- Connection of MIS and TIS – The AlpInfoNet “widget”. The majority of the websites of hotels, guesthouses and apartments only give information on travelling by car (e.g. a link to Google maps) or no information at all about how to get to the hotel. Furthermore, it would also be necessary to provide the guests with on-site mobility information and last mile offers (e.g. hotel shuttles, taxis, rental cars, etc.). To this end, the AlpInfoNet “start widget” was developed; it can be integrated free of charge and with a minimum of (programming) effort into websites of hotels, guesthouses, restaurants, public buildings, associations and further interested companies/clubs who want to provide travel information and tourist information.

BAYERN FAHRPLAN
Für BundesBahn

Textversion | Kontakt | Presse | Datenschutzerklärung | Impressum | Anmelden

Auskunft | Haltestellen-Infos | Weitere Dienste | Mein Fahrplan | Allgemeine Infos

Fahrplanauskunft | Abfahrtsmonitor

Ihre Angaben:
Von: München Hbf
Nach: Aschau i. Chiemgau, Kampenwandbahn
Hinfahrt: 11.11.2014 ab 11:47

Auswahl Druckansicht

FAHRT	AM	AB	AN	DAUER	UMSTIEGEN
1.	11.11.	11:55	13:47	01:52	2 x
2.	11.11.	11:55	13:55	02:00	1 x
3.	11.11.	13:55	16:29	02:34	2 x
4.	11.11.	14:18	16:29	02:00	3 x
5.	11.11.	15:29	17:11	01:42	1 x

OSM | Mehr... | Karte | Satellit | Hybrid

Figure 6 – Integrated OSM map in the MIS BayernFahrplan

The widget is a tool that links to the best journey planner for the guest's departure point (Figure 7); for example, if the guest's origin address is in Bavaria, the AlpInfoNet "start widget" placed on the website of a Bavarian hotel would link to the MIS BayernFahrplan (www.bayern-fahrplan.de); if the guest arrives from outside of Bavaria, the "start widget" links to the MIS Deutsche Bahn (German Railway Association / www.bahn.de).

The "start widget" is available on the AlpInfoNet website for downloading in German and English.

Entspannt und umweltfreundlich unterwegs
von A nach B und mobil vor Ort

Woher reisen Sie an?

Straße / Haltestelle / Bahnhof

PLZ Ort

Fahrplanauskunft

Mobil vor Ort
Busverbindungen, Fahrradverleih und mehr

ALP INFO NET

Grenzenlos informiert - umweltfreundlich mobil

Figure 7 – Example of "start widget" in the Lake Chiemsee pilot region.

Source: http://www.lkzprien.de/de/main/anfahrt_2.htm



East Tyrol

In the pilot region East Tyrol, the timetable and route information for AMS is digitally collected and included in the MIS of the Verkehrsverbund Tirol (VVT).

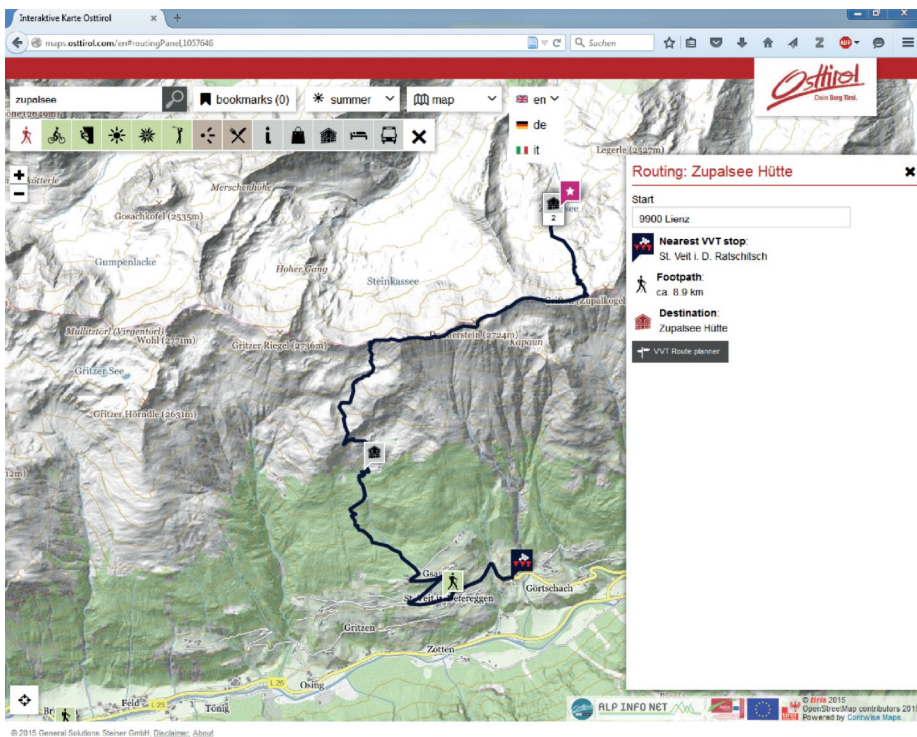


Figure 8 – Tourism POIs (e.g. mountain huts, hiking tours) and mobility POIs (public transport stops) integrated in the interactive tourism map of East Tyrol.

Source: <http://maps.osttirol.com>

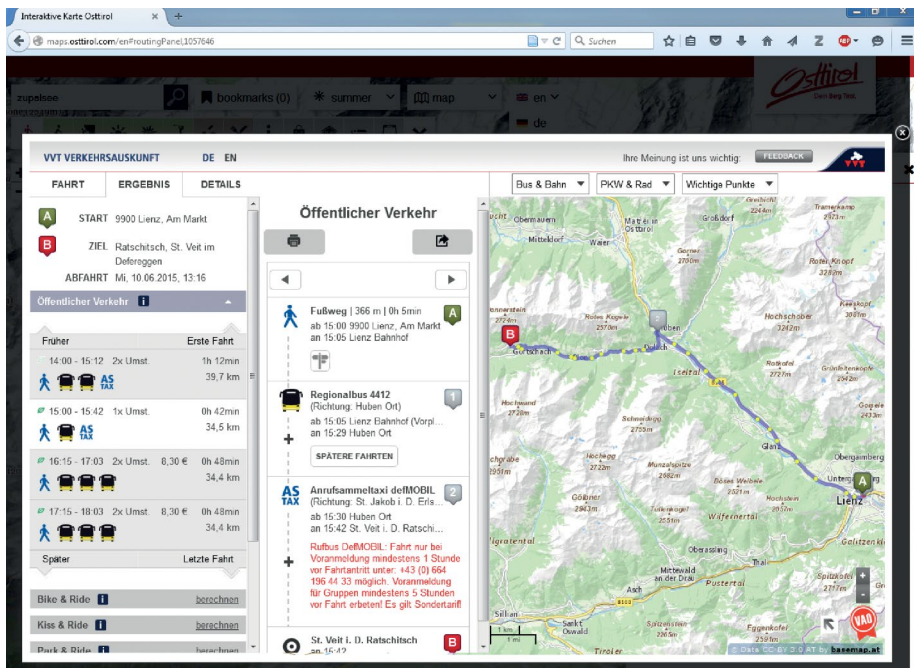


Figure 9 – Interactive map allowing the user to get routing information to/from any POI.
Source: <http://maps.osttirol.com>

Since the end of November 2014, the MIS of the VVT has been connected with the VAO “Verkehrsauskunft Österreich” (a MIS providing information about public transport throughout Austria). The timetable information given in the VVT travel planner is provided by the VAO.

AMS and public transport stops will be integrated into the interactive Software Contwise Maps, visualised on tirisMaps – the geographical information system of the Austrian Province of Tyrol – showing all tourism POIs in the region (Figure 8). The AMS stop points are currently being added to the interactive map. The stop-data (data format: shape file) will be updated in Contwise Maps via an import-interface.

The interactive map allows the user to get routing information to/from any POI: by clicking on the “routing” button, an overlay (using the light box technology) displays the VVT journey planner, which offers intermodal routing. Since this overlay is directly displayed on the website, the user can remain in the website rather than being redirected to another website (Figure 9).



Province of Gorizia and Goriška

In the pilot region Province of Gorizia and Goriška a new, transnational journey planner has been developed connecting mobility and tourist information (point of interests) in a user friendly web-based widget (Figure 10).

The solution contains train and bus timetables covering the whole country of Slovenia and the Italian Province of Gorizia and also includes tourist POIs of both regions. The end-user can select to travel from the origin to the destination (point on the map or POI) by available public transport – train or bus (not integrated solution) – on the chosen day of travelling.

The system generates the journey plan as text and on a GIS map (transport map from Open Street Map covering local POI's and transport stations). Moreover, from the train/bus stop to the chosen end destination (POI) the user receives information regarding AMSs (last mile offers) and other POIs nearby.

The system is available in Slovene, Italian and English. The application is only informative and contains mobility and tourism data from official data providers in Slovenia and Italy.

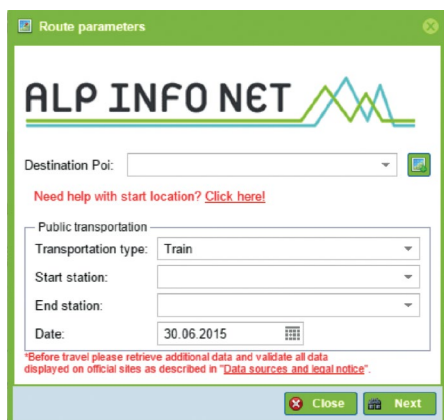


Figure 10 – AlpInfoNet journey planner widget of the Province of Gorizia and Goriška.
Source: <http://alpinfonet.rra-sp.si/>



*Piemonte, Provence Alpes
Côte d'Azur and Rhône-Alpes*

The AlpNet solution in the French-Italian pilot region is based on two websites.

The first website, called “AlpNet sustainable mobility information kit”, provides (after having created an account) different types of widgets for tourism operators:

- Widget “info-access”: to display any kind of editorial information about sustainable mobility and accessibility (text, image, link, etc.);
- Widget “next departure”: provides schedules of the next transport due to arrive at a specific stop point;
- Widget “info-transport repository”: linked to the national repository “PASSIM”, the widget provides information about transport information services and offers in a specific town, district, region, etc.; the perimeter of the repository was extended to Piemonte during the AlpNet project;
- Widget “map”: interactive map combining stop points, associated schedules and POIs.
- Widget “itineraries”: this makes routing requests directly from the same map because the widget “map” combines POIs and stop points. The request “calls” the multimodal trans-regional journey planner (second website included in the AlpNet solution of the French-Italian pilot region) and provides a routing solution directly in the widget.
- Furthermore, a “last mile” module, based on an open source GIS, was also produced; it is provided as an additional “information layer” on the “map” and “itineraries” widgets. The aim of this module is to display the AMSs available in a remote area whose perimeter is drawn and visible on the “map” and “itineraries” widgets. When clicking on the zone, all the AMS solutions are displayed in a popup. The user consequently gets all the required information to build her/his door-to-door travel using just one tool in a single web window.

All these widgets are easy to customise (colour, title, shape, etc.) and easy to integrate in a third-party tourism website by a simple “cut-and-paste” of the automatically generated html code (WYSIWYG = What You See Is What You Get).

Video tutorials are also provided to help the user step by step.

The second website hosts the demonstrator of the multimodal trans-regional journey planner (Figures 11 and 12). Currently, the journey planner provides routing solutions only on the French side of the pilot region. Cross-border solutions will be available as soon as the web services of the new Piemonte MIS are available.

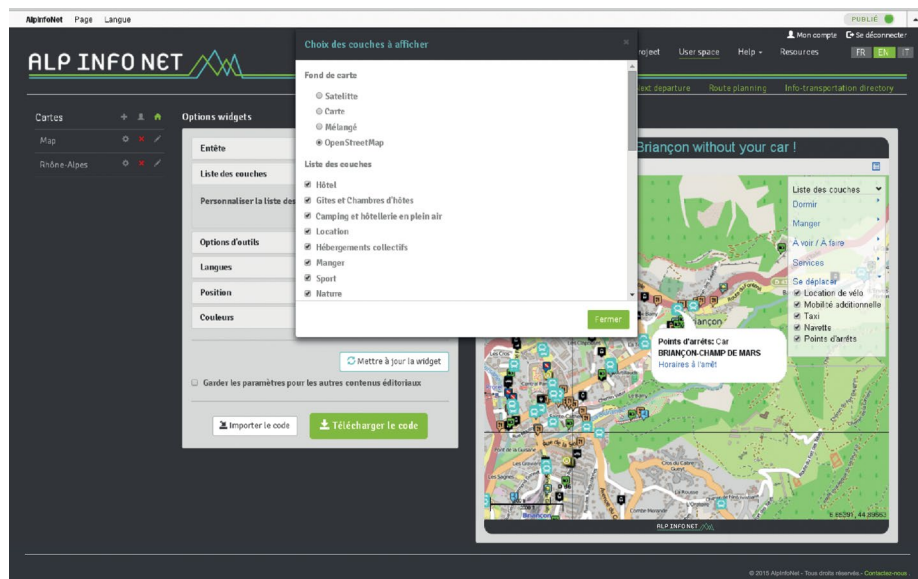


Figure 11 – Alpinet sustainable mobility information kit. Shaping a personalised “map” widget from the Alpinet platform for tourism operators.

Source: <http://www.alpinet.net.org/alpinet/fr/>

The most innovative characteristic of this cross-border multimodal journey planner refers to its technical conception, based on a distributed system architecture. The data are not centralised; the meta-engine sends requests to the interconnected systems and then a “switcher” organises and builds different routing solutions. Such solutions depend on the information sent by the MISs and take into account some travel criteria (date and time of departure, transports modes).

Due to this distributed journey planner, routing solutions are available from and to any address in the pilot region and also from the stop points of the main French cities (Paris, Lyon, Lille, etc.) which are integrated in the databases of the interconnected MISs.

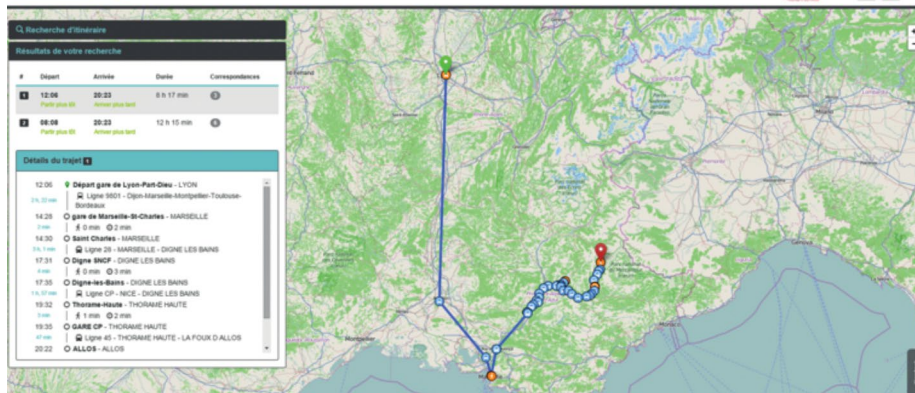


Figure 12 – Multimodal trans-regional routing solutions from the Alpinet journey planner (demo version).

Source: <http://mobi.alpinet.org/#/home>

On the Italian side of the pilot region, the Piemonte Region implemented a software procedure for converting the public transport timetable data of regional buses from a proprietary format into the GTFS format. The publication of these data by Piemonte Region in the regional Open Data Portal (www.dati.piemonte.it) will encourage both re-use by third parties and data integration with cross-border areas (Italy-France).

In addition, tourism data already published in the regional Open Data Portal (museums, architectural heritage and accommodation structures) have been enhanced by adding new information and multi-language descriptions and converting the data from csv to xml format.

SECURING COOPERATION AND DATA EXCHANGE IN A TRANSNATIONAL PERSPECTIVE

A set of legislative and policy aspects need to be addressed to establish a sustainable mobility information network (SMIN). This is essential in order to understand commercial and market conditions and their influence on stakeholders' willingness to cooperate. These legal and policy aspects - together with identifying suitable technical solutions - constitute the key conditions to ensure the interoperability of MISs and TISs in the AlpInfoNet cross-border pilot regions, in accordance with the project's integrated approach.

A first challenge is to **identify the existing relevant legislative frameworks and policy schemes** regulating commercial conditions concerning MIS and TIS data. These legislative and policy frameworks mainly include:

- policies and laws directly referring to adoption of ISs in public transport at EU level as well as in project partners' countries and regions;
- policies and laws directly referring to adoption of ISs in a context related to the management of the tourist destination or to the POIs in the project partners' countries and regions;
- policies and laws directly referring to adoption of TISs and MISs or referring to any improvement in ISs that can enhance the transport and tourism experience.

There are a number of aspects facilitating or hindering potential cooperation in MIS and TIS data management at transnational level.

A first element favouring cooperation is to set up standardised procedures and solutions able to overcome any barriers perceived by the various groups of stakeholders – the public and private actors in the sectors of transport and tourism – making them unwilling to cooperate. These procedures and standards must include firm agreements about legal and financial requirements to set up a long-term feasible business model for transnational cooperation in data exchange.

A second important element helping good cooperation is the EU Directive 2010/40 on the "ITS - Intelligent Transport System", which deals with the opportunities deriving from improvements to the interoperability of transport information services.

Alongside the evolution of the EU Open Data policies, a growing number of EU legislative frameworks, policy initiatives and guidelines aim at providing real guidance to Member States for promoting the development of cooperation in intelligent information and data exchange. However, difficulties may occur owing to the very uneven implementing of EU Directive 2013/37 on the re-use of public sector information (PSI Directive). This is common even in the Alpine Space where various solutions have been adopted by Member States to comply with EU law. Germany and Italy, for

instance, have adopted specific PSI re-use measures, while Austria and Slovenia have implemented a combination of new measures, specifically addressing PSI data re-use and adaptation of previous legislation. France has confirmed its existing legislation to include the PSI Directive's requirements.

Thus, **in order to work out suitable models for cooperation in a cross-border context as regards MIS and TIS data exchange, the AlpNet experience shows that comparative, context-appropriate solutions must be developed.** These solutions need to respond to the different features and combinations of the following categories of limitations that can be found in each specific transnational context:

- *governance-related limitations*: the lack of coordination between stakeholders is certainly the most critical factor highlighted so far (both at cross-border and public/private level), as it is fairly widespread in all the Member States;
- *technical limitations*: the consequence of a lack of coordination and insufficient dialogue among the stakeholders can also be seen at a technical level. Different EU standardised data formats are being used, making interfaces or interchanges with other networks more complicated;
- *commercial and legislative limitations*: a very close relationship exists between commercial and legislative aspects. The differences in the agreements and licenses in place for implementing SMINs, even within the same Member State, call for the need to define clear procedures for both private and public data ownership and use.

The AlpNet experience shows that the proposed solutions need to be addressed also at cross-border level. Based on such an approach, the stakeholders must be provided with harmonised procedures and standards to ensure that data exchange takes into account the context-specific legislative, political, commercial and market conditions.

Defining procedures and standards for cooperation on data exchange at a transnational level: lessons learned from the AlpNet Pilot Regions

The project analysed procedures and standards in the Pilot Regions, addressing all present conditions of data exchange used for developing the AlpNet solution or used in the frame of existing MIS and TIS.

The Project then identified a **set of contractual terms and recommended schemes for cooperation. This portfolio of solutions is a valuable legacy left to the stakeholders by all partners, to help them to establish perennial and efficient interaction for transport and tourism data exchange.**

In general, tourist information is mainly managed by public organisations. Private operators are usually data-providers, mainly of specific tourism and transport supply and/or regional products. The project activities in the **pilot regions** have shown that, despite the diverse nature of MIS market stakeholders, there are some **common points for defining an agreement**:

- the principle of **free data sharing** is viewed as the pre-condition for the creation of a valuable and steady MIS market;
- the preferred way of sharing data is to **use existing systems**;
- the organisations considered as most “legitimised” to ensure the integration of the data exchange between bodies are the public tourism offices. The integration made by a private operator is not accepted.

Furthermore, the **stakeholders outlined some important conditions**:

- **sensitive data** about the internal organisation of the service **should not be shared**;
- a **direct and visible reference to the source of the data** should be present in all the services developed using such data.

Narrowing the territorial focus to the transnational pilot regions, important elements emerged, as summarised below.

Piemonte, Provence-Alpes-Côte d’Azur and Rhône-Alpes (Italy, France)

- The partners worked to properly integrate the local transport supply information in the MIS. However, the availability of last mile and AMS information has not been contractually established. Informal arrangements based on a shared “win-win” motivation ensure the progressive integration of such data in AlpNet outputs, but without a guarantee of long-lasting efficacy. Different hypotheses for a more efficient process are being discussed in collaboration with different local and regional stakeholders.
- A specific contractual agreement (convention) has been signed between the Provence-Alpes-Côte-d’Azur Region (which is responsible for the realisation, hosting and maintenance of the AlpNet outputs) and the Departmental Councils of Savoie and Isère to make the transport data included in their MISs “MobiSavoie” and “Itinisére” accessible for the AlpNet cross-border journey planner and the “sustainable mobility information kit”. The agreement lasts until July 2016 and is tacitly renewed each year. The geographical perimeter of the agreement may be extended to Piemonte and to the whole Rhône-Alpes Region if their reciprocal forthcoming regional MISs (new Pronto TPL, Centrale OûRA) are connected to the pilot region outputs.
- The Public authorities (Departmental Councils of Savoie and Isère, PACA Region) in charge of the MISs got the authorisation from their data providers (local transport

authorities and transports operators) to re-use the data which, however, remains their property. This task mostly consisted of:

- updating the existing conventions or
- taking a decision in the steering committee.

Lake Constance (Austria, Germany)

- Since tourism data are not publicly available, the signature of a contract with the tourism organisations (Lindau Tourismus und Kongress GmbH and Allgäu GmbH) will be necessary, in order to use data about the tourism POIs in the regional MIS.
- All the contractual agreements for data exchange from the Austrian side of the pilot region are already settled.

Lake Chiemsee (Austria, Germany)

- To get access to information regarding private transport supply (last mile) and SMI data from local transport operators (AMS) for being re-used in existing MIS (DEFAS FGI BAYERN), mostly informal arrangements took place, without a guarantee of long-lasting efficacy.
- Since tourism data are not publicly available, the signature of a contract between the tourism associations and the Bayerische Eisenbahngesellschaft (BEG) was necessary, in order to integrate the tourism POIs in the regional MIS (DEFAS system).

Province of Gorizia and Goriška (Italy, Slovenia)

- In Italy, the transport service provider provided raw data thanks to informal arrangements. An informal agreement between the Municipality and the Tourism Board (Agency) has been required (to upload POIs on the OSM platform for re-use in the SMIN).
- LMO information was collected and uploaded manually to the system, with no need to require authorisation from any service provider since this is publicly available and usable information.
- In Slovenia, the partners got access to the web-service of Slovenian Railways (in GFTS format) while e-mail agreements were made for the bus transport supply and the POIs.

East Tyrol (Austria)

The procedure in East Tyrol is quite similar to that in Vorarlberg. The regional tourism association and the state wide Tyrol Tourism are financed by public funding and by visitors' taxes and the Verkehrsverbund Tirol (VVT) by public funding and revenues from fares. Thus, the model in Tyrol connects already existing systems through their

respective interfaces, which implies an ideal utilization of existing infrastructure and resources:

- Transport: VVT is the co-ordinating point for all issues concerning fares, timetables and infrastructure in Tyrol's short-distance public transport system. The connection to public transport is ensured by using the Verkehrsauskunft Österreich (VAO). AMSs with a timetable have already been integrated in the system and further technical measures are being developed;
- Tourism: Tyrol tourism operates a geo-database which locates information of relevance to tourism in the form of points and lines based on TIRIS maps (geographical information system of the State of Tyrol). The data of the regional tourism association are integrated in this common data pool. The interactive map shows routes and activities/objects - hiking, biking or Nordic walking trails, ski lifts, hotels, tourist attractions or mountain shelters: all routes and activities/objects are located in the map and can be routed. The cooperation partners provide tourism-relevant content free of charge and ensure that the data are updated regularly.

The **contractual issue** is often overlooked, but it **remains crucial** for the sustainability of the development and for the system's implementation. Therefore, to ensure the sustainability of the AlpInfoNet products, it is recommended that the interested parties for data access or the exchange process **make formal agreements**. To ease this process, a set of contractual terms and recommendations on how to cooperate has been developed. Any agreement, whatever its form, should cover the following aspects:

- definition of the **parties**: name, organization, governance, stakeholders' roles, objectives, rights and duties;
- definition of the **functional responsibilities** (updating processes, data quality checking, etc.);
- definition of the **technical activities** (access data and rules, service level agreement, etc.);
- definition of the **financial responsibilities** between the parties and about the financial terms;
- definition of the **legal responsibilities** (liabilities carried by the parties, ownership of the data, the databases and the derived products, personal data protection clauses);
- definition of the exchanged **content**;
- definition of the **access**, conditions of **re-use** and **dissemination** of the data, databases and derived products;

- definition of the **editorial rules** (impartial and non-discriminatory presentation of the information, compulsory referencing to the data provider, no anticipatory restrictions of scope for the re-use, etc.);
- definition of the **evolution characteristics** of the agreement (duration, revision process, termination, etc.).

The **licence provided by the European Commission** in “D8 – FINAL REPORT – Study regarding guaranteed access to traffic and travel data and free provision of universal traffic information” fits both the regional and transnational needs for data exchange arrangements, and can easily be adapted, therefore representing an interesting and affordable model.

Ensuring the feasibility of long-term cooperation: recommendations for a business model

Another fundamental aim of the project was to provide a long-term (perennial) business model to deal with the provision of information on sustainable mobility in the Alpine Space.

Data owners involved in the AlpInfoNet project differed significantly depending on their characteristics (private and public) and their nationality. This meant that the project had to produce a list of alternative or comparable solutions, deriving from several different approaches to the willingness to cooperate and the method chosen for cooperation.

While the project was in progress it became clear that there is no single, standardised and preferred business model. As a consequence, a flexible and adaptable model is proposed, supporting operators and public institutions to adopt the technical solution and implement the most adequate agreement for the long-term.

The development of a business model must be considered as a dynamic process. Its logic must be tested, adjusted and fine-tuned in each region as the applications progressively enter the market and once the market structure is well understood.

THE SHOW MUST GO ON. FUTURE PROSPECTS

The SMIN for the Alpine Space had the ambitious goal of providing travellers and tourists with comprehensive information about sustainable means of transport beyond regional and national borders. This has been tested by connecting already existing ISs in transport and tourism in order to facilitate access to the Alpine Space and to local mobility in the pilot regions of the Alpine project.

The successful implementation of the SMIN in the Lake Constance Region (Germany: Bavaria and Baden-Württemberg; Austria: Vorarlberg), East Tyrol, Province of Gorizia and Goriška (Italy and Slovenia), Piemonte, Provence Alpes Cote d'Azur, Rhone-Alpes (Italy and France) and Lake Chiemsee (Germany and Austria) gives a clear demonstration of how a SMIN could work.

Despite legal, economic and technical challenges for implementing such a network, the five pilot regions developed and implemented transnational solutions and paved the way to a cross-border information network.

One of the lessons learned is that it is essential to have an agreement on mutual use of data in the tourism and transport sectors – data on POIs, on sights, on hotels and gastronomy, on bike and hiking routes, on (real time) timetable data, on stops and stations, on transport-on-demand, etc. – as well as an agreement on the interfaces to implement such data in the SMIN.

Thus, the emerging question is what is to follow in the future. The project has tried to answer this question by proposing two possible solutions to maintain and support the AlplInfoNet results: the implementation of a metadata server and/or the creation of an AlplInfoNet association.

Implementation of an AlplInfoNet metadata server as an interface between tourism and transport

The idea behind the AlplInfoNet metadata server is that all information about existing mobility and tourist information systems in the Alps are linked together in a virtual place, the AlplInfoNet metadata server. The server could provide a web interface for the uniform and structured collecting of all useful information to produce a really integrated SMIN. In this way all the transport and tourism operators, as well as the data providers, could make their data accessible for being integrated.

The local and regional data collected and hosted have to be updated at local and regional level because the input data continue to belong to their respective owners and the reliability, the quality and the timelines of the data are under the local and regional responsibility.

The follow up would extend the data sharing and integration outside the Alpine Space to make AlpInfoNet a Europe-wide tool, since tourists going to the Alps come from a wide range of countries (also from outside Europe).

Founding an AlpInfoNet association

To ensure the implementation and evolution of AlpInfoNet, the relevant stakeholders of the Alpine Space could establish an association. Such an association could be successively opened to other stakeholders or representatives outside of the Alpine Area. In order to achieve clear (political) support and commitment, the AlpInfoNet association should be linked to political institutions at different levels in the countries concerned as well as with the Alpine Convention and the EU.

The AlpInfoNet association would be responsible for financing the limited work necessary for the AlpInfoNet metadata server and for extending it to other regions and states, firstly in the Alpine Space and then in the rest of Europe.

LIST OF ABBREVIATIONS

AMS	Additional Mobility Service(s) Mobility services that do not have a timetable, such as Shuttle buses, demand-oriented transport, rental bikes, rental cars, cable cars, rack railroad etc.
ASP	Alpine Space Programme (www.alpine-space.eu)
BEG	Bavarian Railway Association
DB	Deutsche Bahn (German Railways)
EU	European Union
IS	Information Systems
MIS	Mobility Information System(s)
POI	Points of Interest(s)
PSI	Public Sector Information
SMI	Sustainable Mobility Information
SMIS	Sustainable Mobility Information System
SMIN	Sustainable Mobility Information Network
TIS	Tourist Information System(s)
VAO	Verkehrsauskunft Österreich (Mobility information Austria)
VVT	Verkehrsverbund Tirol (Transport association Tyrol)

ANNEX 1: USE OF THE TOOLS IN THE PILOT REGIONS

A short overview

In this Annex, a short overview is given on the present situation in the regions, including also the activities carried out in parallel to AlpInfoNet.

Lake Constance (Germany/Austria)

AlpInfoNet Tools	DE	AT	How this tool is used in the pilot region
Smart links	✓	✓	Germany: There are smart links established on various websites of service providers and public administrations (such as district governments, municipalities).
Journey planner widgets	✓	✓	Germany: Journey planner widgets (such as Deutsche Bahn) are rarely integrated in the websites of service providers.
XML-interface/Web service		✓	Austria: Exchange of POIs between the TIS (hotels, etc.) and the MIS (stopping points). This is done via a web-service called Web Feature Service or "WFS".
Connection of two journey planners		✓	Austria: Journey Planners are connected to provide cross-border routes. Today this is done by exchanging raw-data, as between Bavaria and Austria. In the future it will be done through an interface like EU-Spirit.
Timetable completion		✓	Austria: Timetables are enhanced with tourism services such as buses for hikers. This is done by feeding it into the timetable management software. Germany: The exchange of data will also be implemented on the German side so that data for Austria will be used in the Bavarian DEFAS system.
Enhancement of journey planners		✓	
Additional mobility services/Last Mile	✓		Germany: info on AMSs, such as bike rentals and e-cars, has been collected and documented. The AMSs of the pilot region are visualized for customers through the "start widget". Individual AMSs can be offered by service providers via their mobility offer, after implementing the start widget. Austria: Last mile information is added to the MIS. The TIS is enhanced to enable hotel owners (which operate the AMSs) to insert information about their last mile offers. This information will be exchanged with the MIS via an interface so that the MIS can provide a chain of different transport modes from tourist home to the hotel.

AlpInfoNet Tools	DE	AT	How this tool is used in the pilot region
Editorial information	✓		Germany: Editorial information is individually provided by service providers. A systematic implementation is offered in the “start widget” for the pilot region Lake Constance (see below).
Maps	✓	✓	Germany: Some maps have already been implemented, for example via the outdoor active platform of ALPSTEIN Tourismus GmbH & Co. KG. The maps also provide the location of POIs. Additional access to the portal and its maps is provided through the “start widget”, developed for the pilot region.
POIs adaption	✓	✓	Germany: The geographic information of AMS has been collected within the pilot region and is offered for use in the official MIS DEFAS of the Bavarian Railway Association (BEG). Furthermore, collecting and amending POIs from the tourism association Allgäu/Bayerisch-Schwaben e.V. has begun.
Internationalisation		✓	Germany: Multi-language offers are rare because, in the German pilot region, tourists mainly come from the Federal States Baden-Württemberg and Nordrhein-Westfalen: about 90% of arrivals come from within Germany, while international tourism only plays a minor role.
Start widget	✓	✓	Germany: A “start widget” for a joint link to the relevant MISs in the German pilot region has been developed. The implementation of the “start widget” has been presented to the regional representatives. The “start widget” still has to be implemented in the websites of service providers in the region. Austria: On accessing the TIS (e.g. homepage of the hotel) the customer finds a widget with the destination already inserted. He has only to fill in his starting point and then go to a new window (of the MIS) showing the route to the hotel.

Lake Chiemsee

AlpInfoNet Tools		How this tool is used in the pilot region
Smart links	✓	See description below
Journey planner widgets	✓	See description below
XML-interface/Web service		
Connection of two journey planners		
Timetable completion		
Enhancement of journey planners	✓	The regional tourism associations have the best know-how and overview in the regions with always up-to-date tourist data about POIs, restaurants, hotels and sights. These data are integrated in the MIS BayernFahrplan (system DEFAS) on a regular basis twice a year.
Additional mobility services/Last Mile	✓	The hotel can describe its mobility services and offers in a text box in the widget ("Mobil vor Ort"). A template text is provided in the widget for the hotel to adjust to its own requirements. Information given in the text box refers to hotel shuttles, taxi companies, sights, walking distance to the next bus stops and train station, own bike rentals, link to all POIs available on the website of the tourism associations, etc. A single source gives the user all information on how to reach the destination including the last mile by sustainable transport and how to get around at the destination.
Editorial information	✓	See field "Additional mobility services/Last Mile"
Maps	✓	The tourism associations, hotels, transport providers and a lot of individuals are working on OpenStreetMap every day to integrate data like POIs, public buildings, paths, bike routes, roads, tracks, hotels, restaurants, rental stations, letter boxes, parks, etc. Within the project it was agreed that the OpenStreetMap is integrated in the Bavarian MIS BayernFahrplan as a basic map. In this way the user gets all information from the tourism sector (in the Open Street Map) and the timetable data in one system.
POIs adaption	✓	See field "Enhancement of journey planners"
Internationalisation		
Start widget	✓	See description in the chapter

East Tyrol

AlpInfoNet Tools		How this tool is used in the pilot region
Smart links	✓	Hotels will link from their websites to http://maps.osttirol.com
Journey planner widgets		
XML-interface/ Webservice	✓	Multimodal Routing Information from VVT is displayed in an overlay (using "lightbox" technology) on the interactive map at http://maps.osttirol.com
Connection of two journey planners	✓	Since September 2014 the MIS of VVT ("Verkehrsverbund Tirol") is connected with the MIS VAO ("Verkehrs Auskunft Österreich")
Timetable completion	✓	While connecting the MIS of VVT with the MIS VAO, any data missing from the public transport information were completed.
Enhancement of journey planners	✓	AMS information will be integrated into the MIS of VVT.
Additional mobility services/Last Mile	✓	AMS information will be integrated into the MIS of VVT.
Editorial information	✓	The "routing information" for the POIs names the next public transport stop as well as giving the walking distance to this stop.
Maps	✓	AMS and public transport stops will be integrated into the interactive Software Contwise Maps, visualised on tirisMaps (geographical information system of the Austrian Province of Tyrol), showing all tourism POIs in the region. The AMS stopping points are currently being added to the interactive map. The data on stopping points (data format: shapefile) will be periodically updated in Contwise Maps via an import-interface.
POIs adaption	✓	The TVB Osttirol will complete and adapt the POI information included in TVB's tourism database. This information is then fed into the geographical database of "Tirolwerbung" (Tourism Association of Tyrol) that collects the information from all regions within the Austrian Province of Tyrol.
Internationalisation	✓	The information on http://maps.osttirol.com is available in German, English and Italian
Start widget		

Province of Gorizia and Goriška

AlpInfoNet Tools		How this tool is used in the pilot region
Smart links	✓	Simple integration by smart widget configuration and embedded to end user websites by cut-and-pasting HTML code (included in iframe)
Journey planner widgets	✓	Users can create a journey planner.
XML-interface/ Webservice		Only smart links by embedded HTML code are provided.
Connection of two journey planners	✓	The Slovenian and Italian timetables are linked at the Gorizia/Nova Gorica entry/exit point. The user is asked to confirm the starting point when changing transport mode, from trains to buses and vice versa.
Timetable completion	✓	Train and Bus timetables from Slovenia and Italy are integrated.
Enhancement of journey planners		Users can browse LMO and other options (tourist POIs)
Additional mobility services/Last Mile	✓	Integrated into the widget for tourist POIs (for Goriška region, by SPIRIT Slovenia; for the province of Gorizia they were extracted from OSM).
Editorial information	✓	
Maps	✓	Base map by OSM, Google, Bing, all layers provided by OGC services (WMS/WFS).
POIs adaption	✓	Integrated from SPIRIT Slovenia and Agenzia Turismo Friuli Venezia Giulia (FGV).
Internationalisation	✓	The languages SI/IT/ENG are enabled.
Start widget	✓	Simple configuration and widget configurator is provided.

Piemonte, Provence-Alpes-Côte-d'Azur and Rhône-Alpes

AlpInfoNet Tools		How this tool is used in the pilot region
Smart links	✓	Smart links are used in different “customisable” widgets provided in the AlpInfoNet platform, such as in the “info-transport directory” widget. A smart link to a specific request about the “origin-destination” in a journey planner can also be easily integrated in an “info-access” widget by the person creating a personal widget.
Journey planner widgets	✓	<p>The AlpInfoNet Sustainable Mobility Information Kit available on a specific web platform provides five different widgets and each of them is customisable (design, colour, localisation, destination, data layers to be displayed, etc.).</p> <p>One of these five widgets is a journey planner widget (“itineraries”). It is directly linked to the URL of a webpage providing trans-regional routings thanks to a distributed architecture system and MetaServer currently connecting three French MISs. The new Piemonte MIS is currently in progress and is planned to be connected.</p> <p>The AlpInfoNet platform also provides, in the library of Journey Planner (JP) widgets, all the elements required for integrating existing JP widgets (the widgets for PACA Mobilité, MobiSavoie and Itinisière) in any website.</p> <p>The elements related to the widget of the new Piemonte JP will also be provided as soon as they are available.</p>
XML-interface/ Webservice	✓	<p>Many interfaces have been realised with the AlpInfoNet kit (widgets and web platform) and between the different connected MISs. For instance, entry (input) interfaces were made between the MISs and the “next departure”, “info transport directory” and “itineraries” widgets which use their data.</p> <p>Output web services were built for all widgets for them to be integrated in third-parties websites. By means of a MetaServer, output web services can update information displayed in the widgets and coming from the platform, or going through the platform and coming from interconnected MISs. Input and output web services have consequently been developed in the pilot region.</p> <p>Other output web services are planned, for instance to send data flows to third-party websites or interested TISs.</p>
Connection of two journey planners	✓	Three JPs were connected in the pilot region (distributed architecture system) through a MetaServer. The new Piemonte MIS is planned to be connected as soon as it becomes available (autumn 2015).
Timetable completion	✓	The interconnection of JP implies various modifications and updates to the JP concerned. The tests that are still ongoing to validate the efficiency of the distributed route plans have revealed various failings, errors and problems in the timetable and the MISs connected. Additions were consequently made to the timetable, and some have still to be done.

AlpInfoNet Tools		How this tool is used in the pilot region
Enhancement of journey planners	✓	The interconnection of JP implies various modifications to the JP concerned. The functioning of the MetaServer requires many updates and enhancements, especially on the web services of the MIS, despite most of them being quite new (two years old maximum). It is scheduled to integrate AMS into the existing MIS of the pilot region (see next row).
Additional mobility services/Last Mile	✓	<p>AMS information is provided through the “info-access” and “info transport directory” widgets.</p> <p>The first is for creating your own “info access” widget and inserting all the information related to AMS and last mile offers.</p> <p>As regards the second, when the AMS and last mile info becomes available for a location (e.g. Briançon), they will be integrated with the PASSIM database and displayed in the “info-transport directory” widget created for that location (e.g. Briançon).</p> <p>A specific last mile add-on was created on a specific open source GIS conceived and realised by one of our external IT providers. This Last Mile add-on allows remote areas mostly served by last mile offers to be defined/drawn and described. A web service was created to link this add-on and, consequently, the “last mile zones” to the “maps” and “itineraries” widgets available on the platform.</p> <p>In the end, a single map provides: tourism info (POI) and mobility info (stopping point + last mile info + routing or next departure time from stopping points).</p>
Editorial information	✓	The “info-access” widget provides editorial information on all relevant and required issues, topics, offers, etc., aimed at fostering sustainable mobility and accessibility of any location which benefits from such widgets.
Maps	✓	The “maps” and “itineraries” widgets are based on interactive and dynamic maps (various background maps available: Google, OSM, satellite, mix) combining POIs and stopping points. Routing requests can be sent directly from the map.
POIs adaption	✓	<p>Many sources of POIs, from France and Italy (Piemonte), are used for the AlpInfoNet sustainable mobility information kit and for the demonstrator of a trans-regional JP.</p> <p>All these POIs were consequently adapted and standardised in order to be correctly displayed in the various tools.</p> <p>For instance, in Piemonte, tourism data already published in the regional Open data portal (museums, architectural heritage and accommodation structures) have been enhanced by adding new information and multi-language descriptions and converting the data format from csv to xml.</p> <p>A global and standardised POI categorising of all the MIS and TIS concerned in the pilot region was not possible owing to the great diversity of the ISs and the very large size of the pilot region (too many POIs involved). But, at least in France, this work can begin by interlinking the two regional TIS (RA and PACA), ready to share their data (input and output) with the existing TIS.</p>

AlpInfoNet Tools		How this tool is used in the pilot region
Internationalisation	✓	The AlpInfoNet kit is provided in French, English and Italian. The kit integrates Italian POIs and Stopping Points (gtfs format). The demonstrator of a trans-regional JP is available in French and English.
Start widget		No start widget, but there is a KIT and mobi-alpinfonet.org

Imprint

Published by

Bavarian State Ministry of the Interior, for Building and Transport
Lazarettstraße 67, 80636 Munich, Germany
www.stmi.bayern.de

Authors and Editors

Cristian Camusso, Federico Cavallaro, Hugo Chauvin, Vivien Führ, Michaela Kargl, David Knapp, Federico Mannoni, Peter Miller, Nicola Neumeier, Cristina Pronello, Giorgio Ribaudo, Harry Seybert, Raffaele Vergnani with the support of the entire AlpInfoNet partnership

Conception and Design

Politecnico di Torino, www.polito.it

Printing

Rieder-Druckservice GmbH, Prien am Chiemsee, Germany
June 2015

Download

The handbook can be downloaded from www.alpinfonet.eu

Copyright ©

Bavarian Ministry of the Interior, for Building and Transport, 2015

Copies of this handbook – also of extracts thereof – may only be made with the permission of and with the reference to the publisher and if a sample copy is provided.

.....

Acknowledgements and legal disclaimer

The present handbook has been produced as part of the AlpInfoNet project, supported by the Alpine Space Programme and co-funded by the European Regional Development Fund (project number 6-4-2-DE).

The sole responsibility for the content of this publication lies with the authors. It does not necessarily reflect the opinion of the European Community, the ETC-ASP Managing Authority, the ETC-ASP Joint Secretariat or the Land Salzburg. None of these authorities is responsible for any use that may be made of the information contained herein.



Bayerisches Staatsministerium des
Innern, für Bau und Verkehr



MINISTERIUM
FÜR EIN
LEBENSWEERTES
ÖSTERREICH

EURAC
research



Bundesministerium
für Verkehr und
digitale Infrastruktur

Région



Provence-Alpes-Côte d'Azur



The project is co-funded by
the European Regional Development Fund