

# SEAMLESS TRAVEL ACROSS EUROPE THE INTEGRA CONCEPT AND DEVELOPMENT

*Paulo Matos Martins*

*Grupo de Transportes, Território e Desenvolvimento Sustentável (GulTTS), Instituto Superior de Engenharia de Lisboa (ISEL), Portugal*

*Email: [paulo.martins@dec.isel.pt](mailto:paulo.martins@dec.isel.pt)*

*Inês Soares*

*Grupo de Transportes, Território e Desenvolvimento Sustentável (GulTTS), Instituto Superior de Engenharia de Lisboa (ISEL), Portugal*

*Email: [isoares@ceec.isel.pt](mailto:isoares@ceec.isel.pt)*

## ABSTRACT

In this communication we present the INTEGRA concept and brand, as well as the main results achieved by the START project in the development of INTEGRA, the activity A5 of START. The objectives, the main priorities and the audiences are identified. We also address the promotion initiatives already made, the tools and services implemented or in implementation and make some additional considerations about the future of INTEGRA as a European Consortium.

Due to the very good initial adhesion it is expected that by the end of 2013 between sixty to one hundred cities, regions, transport operators and other entities from the Atlantic Area Regions and also the rest of Europe have declared their intention to join INTEGRA Consortium and become members of the network, exceeding the initial expectations.

*Keywords: Public transports, Information systems, Sustainable mobility, ITS, Accessibility, European networks, Electric Mobility, Travel and Tourism, Integra*

## INTRODUCTION

The INTEGRA initiative had its first conceptual developments during a project of the INTERREG III B. The project was *PARTNER - Promoting Accessibility between Regional and Transnational transport Networks in EuRope* (INTERREG III B, n.d.), last from 2004 until 2008 and a simple prototype of a European journey planner was implemented. The initial work was further developed and expanded during the follow-up project *START - Seamless Travel across the Atlantic area Regions using sustainable Transport* (START Consortium,

2010). START is a project partially funded by the Transnational Territorial Cooperation Programme of the Atlantic Arc and runs from January 2009 to June 2013 (including two project extensions). START has as main objective the simplification of travel between and within the Atlantic Area Regions, by improving accessibility to and between transport systems and promoting the use of transport modes more environmentally friendly.

The project is developed by a consortium of thirteen partners from four countries (Fig. 1) of the Atlantic Arc: Portugal, Spain, France and United Kingdom. In Portugal the partners are the Superior Institute of Engineering of Lisbon (ISEL), the National Railway Museum Foundation (FMNF) and CP – Comboios de Portugal (Trains of Portugal), the public entity responsible for rendering national and international passenger rail services.



Figure 1 – Geographic locations of the START project partners

The work around INTEGRA is embedded in the activity A5 of START<sup>1</sup>. In this paper we describe the results obtained from A5 activity, directly related to the developments of INTEGRA. Simultaneously, we also present the current development, initiatives and perspectives for the future of INTERGA, namely the establishment of the INTEGRA Consortium (see the logo in Fig. 2).

We risk to say that INTEGRA framework appears as the most important result (and the more visible as well) of START. We predict that the future developments and improvement of INTEGRA will be addressed by an international consortium comprising a network of territorial authorities, transport and tourism operators, technological companies, supporting entities and universities. It is expected from 2014 onwards INTEGRA name will be gradually appearing in public and became to be known as synonymous of quality in Transports. It will be an added value supporting transport information systems and helping users to take advantages of travel option that promote sustainable mobility across Europe, like public transports or electric mobility.

---

<sup>1</sup> START comprises a total of eleven activities, ranging from general management, to interoperability of journey planners, accessibility on public transports or relations with the customers. For further details see: <http://www.start-project.eu/en/Home.aspx>

The INTEGRA universe is focused on achieving “seamless travel across and within European regions” mainly by removing as much as possible the barriers related with information. This will allow the increase of the ‘feasible choice set’ of sustainable solutions presented to travellers and, additionally, the continuous growth of trust on available (and well informed) solution sponsored by INTEGRA. One of the main strands to achieve INTEGRA goals is through the harmonization of information related with transports and points of interest (tourism, culture, sports and so) and their relationship. There is also a strong association with the ticketing systems (another source of barriers), which is not currently addressed by INTEGRA, but might be included in the future.



Figure 2 – INTEGRA logo (left) and examples of other variants

INTEGRA’s main objective is to facilitate the movement of European citizens all around European regions using the sustainable options available in Europe for passengers mobility. Our main target audience are all the European citizens who need to travel within their region or country, or across European regions. We are talking about tourists, business men, students, but also all those who need to make a non regular trip across Europe, across their region or even their city. We can call them “non regular or occasional travellers”, for whom the lack of information about available transport choices can act as a barrier, representing a risk and lack of confidence on the performance of the system (feeling of lack of liability and reliability). This kind of risk is felt as an hazard for the success of the journey itself and also for the execution of the activities demanded, implying in general the choice of private car or taxi as the more reliable modes for the success of the displacement. Our second target audience consist in all the stakeholders (the supply, in a broad sense) intervening in the process of creating and managing the information needed for "Seamless travel". These are the cities and regions, the public transport operators, tourism operators, operators of electric mobility and soft modes, technology companies and also universities and R&D centres.

With the cooperation and direct participation of the (heterogeneous) consortium, including players from different backgrounds (the second target audience), INTEGRA aims to provide directly to travellers (our main target) a set of tools and services which will allow travellers to properly plan and organize their trips. Users will receive simple and quality information that will lead them to trust more and more on public transport and/or solutions for sustainable mobility. This framework doesn’t imply necessarily that the solutions (tools and services) must be directly delivered by INTEGRA. By the contrary, we strongly desire that INTEGRA will act mainly as a catalyst environment allowing the cooperation between partners (from several backgrounds and regions/countries) to development and promote new tools and services that incorporate INTEGRA perspective and guidelines as a way to improve seamless mobility.

This paper is divided into five sections. This section, the first one, presents a brief introduction to INTEGRA and highlights some fundamental notions about the subject and identifies the main objectives and targets of the initiative. In the second section we make a

somehow detailed characterization of the INTEGRA concept, we present some of the main goals to be achieved, showing its advantages and potential. Also in this section we describe the INTEGRA brand as a quality brand associated with travel information systems, addressed to the users/travellers. We also emphasize the potential of the brand to improve seamless travel across Europe. In section three we present examples of local activities carried out under START, which are intended to be continued in the INTEGRA framework. The fourth section we describe a set of tools and services that have been developed as prototypes (or are still in development), which will correspond to the initial core of INTEGRA toolbox and will help to establish the first INTEGRA initiatives. Lastly, in section five we present our conclusions and the future outlook for the development of the INTEGRA framework and the European consortium.

## **THE INTEGRA CONCEPT: ADVANTAGES AND POTENTIAL**

The INTEGRA concept, as a vision, aims to achieve the most perfect integration of the information systems related to public transport and, in general, sustainable mobility in order to promote “seamless travel” across and within European regions and cities. Besides that, INTEGRA is also a unique quality brand that should hopefully identify the infrastructures, systems and services that are guided by suitable quality approaches to “seamless travel”. The strong visual brand we deliver intends to be a synonymous of trust between users and service providers.

INTEGRA is and will be much more than a quality brand and concept, but these are the two fundamental pillars upon which we intend to extend the bridges and strength the links between supply and demand, providing information increasingly “perfect”, coupled with other high quality aspects of the supply.

Our vision can be summarized in the phrase: “***INTEGRA: the European quality brand for seamless travel and sustainable mobility***”.

The INTEGRA concept (and brand) is characterized essentially:

- As an European brand that symbolizes **quality information** in public transport and sustainable mobility, including electric and soft modes;
- By promoting and developing strategies for an **inclusive approach**;
- As a new brand which hasn't been created to replace the existing brands, but rather to **complement & cooperate** with them;
- By bringing a **new vision** and a **systemic approach**, integrating various types of players around sustainable mobility and the development of a transnational potential;
- By the implementation of **practical supporting measures** (tools and services, but also other soft initiatives) for the mitigation and elimination of travel barriers, helping also the strengthening of an harmonized market for sustainable mobility in Europe;
- By working simultaneously in the following dimensions:
  - Institutional;
  - Technical;
  - Physical;
  - Cultural;

- Social;
  - Transnational
- to achieve the objectives already defined.

The characteristics listed will lead primarily to the development and establishment of harmonized tools to help users to access information about public transport opportunities (trips and timetables), sustainable mobility products and local points of interest and ways to reach them by choosing efficient and reliable journeys. This is done on the base of the unifying principle that **“perfect information promotes sustainable mobility and increases the benefits for all stakeholders”**.

As mentioned already, the INTEGRA concept and brand are directed for two distinct target audiences. The first group are the users, the travellers and the “mobility clients” that, in an economic perspective, represent the demand. The second target audience are the institutional players that contribute to the establishment of public transports, solutions for sustainable mobility and all activities related to points of interest, like touristic or cultural places. This second group of stakeholders represent several levels of the supply of transport means and activities.

In the case of demand, which we will simply call “the users”, INTEGRA aims to provide a unique perspective for the access to information (see Fig. 3). What we can call a **“one stop shop”** service. This is a “one stop” point, not from a physical or geographical point of view (as we expect the development of multiple tools and services, around Europe), but from the viewpoint of conceptualization, harmonization, trust and access to the information by the users. We don’t intend to promote or build a global information system or any unified travel (or journey) planner. INTEGRA wants to help existing (or new) systems to provide, through a unique framework, useful and harmonized information - easy to access - about public transport and options for sustainable mobility and wants to help answer questions like “how I get there” or “how do I return” using public transport and sustainable modes.

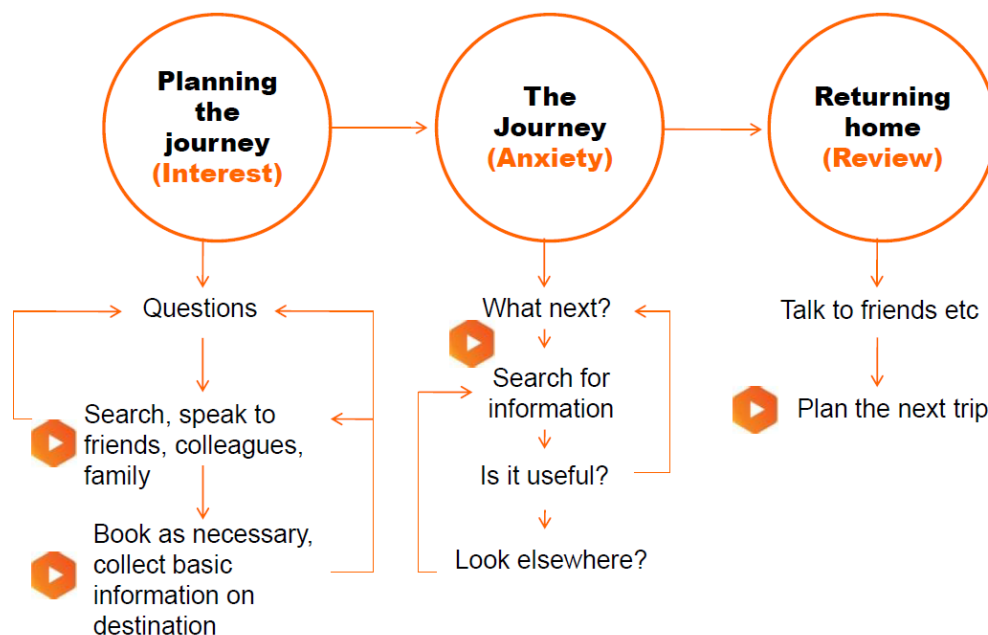


Figure 3 – Steps for the access to information

The brand was not created to replace the existing ones, but to be used as complement and in conjunction with them. As a pointer to the information services already existing and as an organizer of the metadata available for the users, helping them to find the right/best information they need. The best strategy developed is to use INTEGRA tools as a *smart push* of meta-information that enables users to access more easily to desired destinations/locations (websites of transport and sustainable mobility providers) in which the users can *pull* the detailed information they need to prepare and make their own trips as efficiently as possible.

The information provided must show travellers exactly what they expect when they use the public transport in a different city or region, such as:

- The buses appearance in the city/region;
- How to use the public transport (e.g., where and how to buy tickets);
- The exact places and ways to use the local supply of sustainable modes (such as electric vehicles, bicycles) or other soft initiatives;
- Further information for visitors to a region (e.g., the major touristic and cultural attractions and how to get there using public transport or other soft modes).

The INTEGRA products should preferably be presented in all European languages<sup>2</sup> (currently Portuguese, English, Spanish and French, from the countries of the Atlantic Area). It is acceptable, but not desirable, that these products are only developed in the region or country native language and in English, to ensure their economic viability and their birth.

The brand INTEGRA belongs to the European consortium and as it is intended to be a quality brand directed to travellers and potential users of public transport was prepared to be readily recognized as a synonymous of thrust. The brand has the following characteristics:

- Simple and understandable;
- Uniform, viable and normalized;
- Available in different languages.

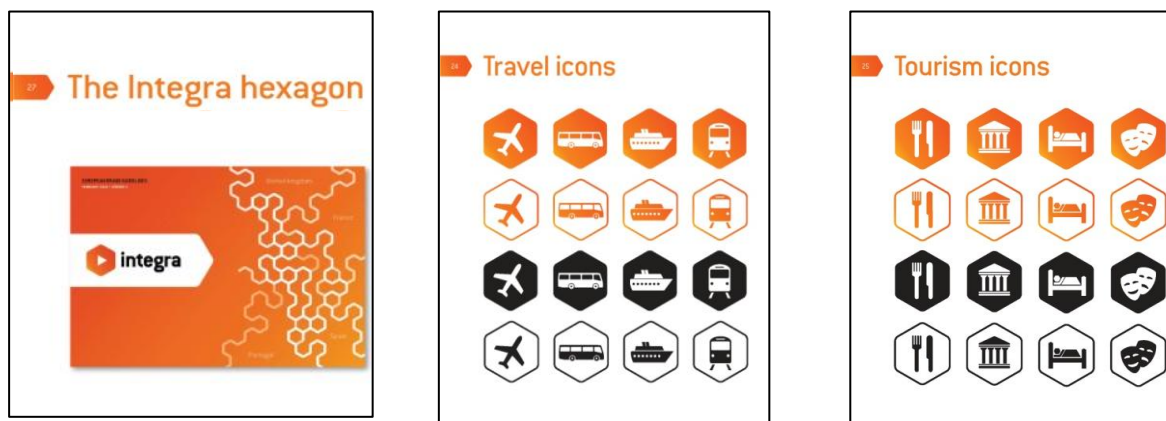


Figure 4 – Examples of symbols from the branding manual

<sup>2</sup> The automatic translation technologies have improved in the last years and currently are a reality which works well with the most common languages, like English. Improvements are expected in future years when global, more 'perfect' automatic translation solutions are expected to be used regularly.

The INTEGRA brand was the subject of a study of brand and image under START. A branding manual (Fig. 4) is available for those who need to incorporate the brand into INTEGRA instruments or to related the brand with their own branding tools (co-branding). The manual defines de brand, its visual identify, logotype, some symbols to use, the co-branding schemes and so on.

In Figure 5 we present an example of a brochure developed by the City of Entroncamento using INTEGRA branding structure. The original template was developed by Merseytravel, the Metropolitan Transportation Authority of Liverpool. This is also an example of networking between cities, making the promotion and common use of best practices within the framework of INTEGRA. The result was the delivery of a well designed leaflet, containing harmonized information, resulting also in cost savings and technical interaction between the two cities.



Figure 5 – City of Entroncamento brochure

## LOCAL ACTIONS

In this section we present some of the local actions undertaken since 2009 under START Project. These actions allowed raising experience, identify critical points and strengths of this kind of intervention and will serve as lessons for the launch of future INTEGRA local actions. However, the future INTEGRA local actions will be most focused on the management and development of information systems, since this is the main mission defined for INTEGRA.

### Examples in the United Kingdom

Merseytravel in cooperation with the Mersey Partnership, Arriva and Cumfybus released a unique smartcard destined to Liverpool visitors (Fig. 6). The smartcard for tourists is available for the arriving visitors at the Liverpool John Lennon airport. The card is available in two versions “travel” and “tourism” and has all the functionalities of a smartcard, whether for bus services or tourism attractions. The tourists can buy the smartcards through the website, at the ticket office at the Liverpool John Lennon airport and in Queen Square bus station, in city centre.



Figure 6 – Smartcard for travelers in Liverpool, available as ‘trips’ or ‘tourism’ versions

In Scotland it is easier to travel by bus in Argyll and Bute, due to the installation of location units on buses, which provide real-time information to the passengers about their location. The buses were equipped with GPRS, which allows them to communicate with the mobile phones and devices at stops. The buses also present a display to the motorist called *G Meter* which is designed to encourage eco-driving, reduce fuel consumption and vehicle wear.

### Examples in Portugal

The educational service of the National Railway Museum Foundation and Future Systems – Multimedia and Art Management developed for the museum an innovative and interactive solution with a dual propose (Fig. 7):

- To receive the kids in the museum in the best way;
- To promote the use of public transport to the museum visitors, especially the train, making the interaction between visitors and trains more attractive.

This service is included in the work stream of START: “Changing behaviour, convincing children”, since attitudes towards mobility and the usage of public transport are deeply influenced by the collective knowledge and examples learned in childhood.



Figure 7 – Mr. Steam & Friends and the augmented reality

An innovative solution for a multimedia kiosk was developed, with a large screen that enables the visualization of movies and the interaction with wireless devices. This equipment provides solutions to the museum through the production of 3D interactive content – a movie application, a solution of virtual reality and interactive games – allowing the first contact



between the younger visitors with the museum's collection and the general history of public transport, in a dynamic and very attractive way.

The main purpose is to present the railway history, drawing attention to the use of rail and other public transport, connecting the museum with the daily reality of children. The museum intends to offer to its younger visitors a journey through the history of the railways, in an attractive and experimental way, thus captivating the attention and provoking reactions. In the presentation of augmented reality train locomotives can be coupled with carriages or other different types of wagons, from the oldest train models to the most recent, such as TGV and Maglev.

### **Spanish examples**

Cantabria has developed a pilot project of a Real-Time Information System. The system is installed on suburban buses through GPRS and some hardware to implement the information system in real-time. There are displays and information panels in the main bus stops and stations in the region that display real-time information for passengers with scheduled timetables and the main suburban stops. In order to combine transportation and sustainability some of these panels are solar powered.

A system for managing queues at ticket sales counters was also developed in Santander Bus Station. Additionally, wifi access was also set up on major regional bus lines and new information machines connected to the regional transport website were installed, providing information on schedule, fares, stops, etc.

### **French examples**

The Urban Community of La Rochelle improved the quality of service provided to users in order to facilitate their travel on public transport in its territory. As part of the local actions of START about half of its fleet of buses was equipped with TFT flat screens that complement the information already available in the LED panels (Fig. 8).

These screens allow disseminating real-time information, estimating the arrival time at the next stop, the availability of other modes of transport near the stop, the level of accessibility at stops for people with reduced mobility and any announcement of delays.



Figure 8 – TFT screens implemented in La Rochelle buses

Also the region of Lower Normandy, together with the Department of Calvados, the City of Caen and Viacités signed a partnership agreement for the establishment and operation of intermodal ticketing system and an innovative digital system in Lower Normandy, which aims

to create a single transport ticket for use in four networks, developing more efficient ticketing systems.

## **INTEGRA SERVICES AND TOOLS**

The purpose of this section is to present the first INTEGRA tools and services, developed under START which will be continued and improved under the new INTEGRA Consortium. These collaborative tools are the current technological basis for the first operationalization of the main concepts of the INTEGRA framework. We don't intend to have tools 'extremely technological', but rather tools that work well and are well understood by the general user. These tools make up our stable base for the promotion of INTEGRA and also an initial platform to share information within INTEGRA.

The development of more complex and technological advanced tools and services (including integration with other areas and smart contents) is left to technological (IT) and content manager companies that want to participate in the INTEGRA framework. The creation of value by these solutions will be inherent to their intrinsic quality as IT solutions. Additionally, there is a new advantage. IT companies that previously had only access to regional or national markets will be able to access, through INTEGRA, to new opportunities for developing their work in other regions or countries.

### **The INTEGRA Portal**

The INTEGRA portal is a multimodal aggregator portal which supplies meta-data about journeys from city to city across Europe, including also practical information regarding mobility and points of interest in the destinations (Fig. 9). It is not a door-to-door trip planner, but it is an aggregator tool for the preparation of multimodal travels using a "top-down" approach which will culminate in the appointment of the best local information systems.



Figure 9 – INTEGRA Portal (first version, 2011)

The portal provides information on how to reach the travel destinations, showing a range of possible choices of itineraries and sustainable mobility options. Several transportation options to travel between cities in Europe (currently only covers the Atlantic Area) are shown and advice for best options (using user ranking systems) is provided. Once the route is

chosen, the traveler is directed to the websites of the best journey planners and/or transport operators, major point of interest, and so on. On this second phase the user can consult fares, schedules and eventually book tickets online on the active systems. The user can also confront results from several systems to confirm any dubious information. Additionally can return INTEGRA feed-back about any wrong information or other negative aspect he finds., The portal provides also practical information for the preparation of the activities at the destination, like how the traveler can displace herself using local public transport and other relevant tips about how to access and visit cultural and historic points of interest.

## **INTEGRA thematic social network**

INTEGRA Social Network is a thematic social network supported by an autonomous system using resources available on web such as Google Maps and Facebook for the authentication, authorization and advertising. It is a promoter to exchange self mobility experiences by users, where the participants actively collaborate in order to share with friends and the community their travel experiences and where they can rate the quality of their experiences (Fig. 10).



Figure 10 – INTEGRA Social network

The INTEGRA Social Network is still on testing phases and only available in English, having about 200 registered users for a first test phase. The overall grade assigned to the information provided by users depends on a complex set of rankings, as is characteristic of social networks. It is possible to search different destinations in the social network. Currently users can search for more than 9.000 possible destinations, about 80 transport operators and 46 different types of vehicles. Users can add destinations, operators and vehicles if they don't exist. Users can also invite friends to share their travel experiences on the network or through publications on Facebook.

## **INTEGRA on general social networks and on the web**

The digital markets play today a fundamental role in the development of any project, organization or association. The social networks are one of the biggest phenomena of the current era, where technology and knowledge are the key factor to the development. The social networks effectively allow interactivity, customization, globalization, integration and democratization of information.

The use of social networking as a tool for dissemination and communication is essential to increase the visibility of the INTEGRA Consortium. The addition of INTEGRA to the several existing social networks is considered essential for the beginning of its phase of viral expansion towards users. We are now present on Facebook featuring four pages<sup>3</sup>, one for each country represented in START. The inclusion of the INTEGRA Consortium in other social networks, such as Twitter or LinkedIn, will also be developed in short time.

Another web tool that will be on-line during 2013 is the web page of the Consortium. This institutional portal is the formal 'entrance door' in the institutional ground of INTEGRA where members and interested parties can obtain institutional and technical information about all the initiatives. The portal is subdivided in a public and an only-for-members area, where different levels of detail about initiatives are delivered. The Consortium portal is also the place where members can access to data repositories, downloads, and other forms of networking and interaction.

### Terminology Repository and Glossary

Nowadays is extremely important to find and understand the information, in particularly quality information. However, different organizations, associations, countries or individuals have adopted their own unique data definitions and database structures, and these differences can affect the kinds of information available through these sources. It is essential to provide standardized information, and subsequently their associated definitions.

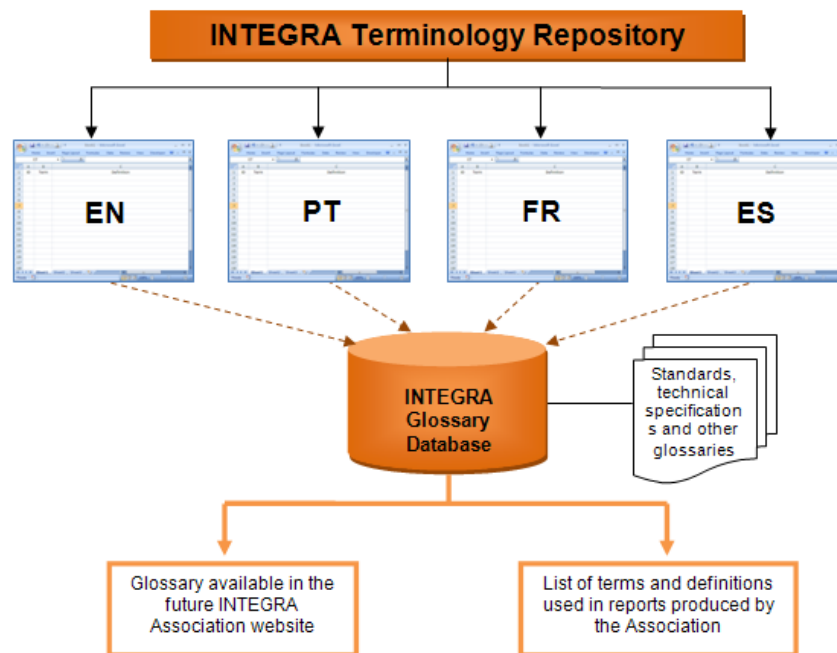


Figure 11 –Scheme of INTEGRA Repository of Terms

A common language is fundamental to effective communication. A single word can have several meanings depending on the context in which it is used. A concept can be referenced by several words, each communicating a different connotation or level of detail. It is evident

<sup>3</sup> Search on Facebook for Integra Travel Portugal, Integra Travel France, Integra Travel UK and Integra Travel Espanã.

the necessity of a standard terminology in order to simplify the communication between players of INTEGRA and the understanding of the users. A standardized terminology is a common language, nomenclature, classification or taxonomy designed to be shared among users (ISO, 2009). The INTEGRA framework establishes a repository of terms, where the definitions and terms are stored in a harmonized way, according to the technical specifications and standards provided by the European and international organizations for standardization such as ISO or CEN – see Fig. 11.

A database properly structured, where are stored all the terms and concepts related to public transport and sustainable mobility ontologies is being created. The elements of this database are associated with a unique ID which allows the easy identification of the terms and further definitions. An internal structure to enable the provision of the terms and definitions in multiple languages was considered. Initially, was started up for the four languages of the project: Portuguese, English, Spanish and French. To achieve this goal a simple translation tool was elaborated, where the community members and other stakeholders can contribute to the gradual filling of the database with the translation of the terms and definitions stored previously in English. Ensuring linguistic accessibility whether in the terminology repository or in the glossary is essential in order to this service be used by a large number of partners and promote de easier communication between players of the community.

### **Frequently Asked Questions – FAQs**

With the development of INTEGRA FAQs Service we aim to create a single structure of harmonized frequently asked questions related to public transport and sustainable mobility in each INTEGRA city or region. The FAQs are a very popular and easy way of providing the answer to user's questions. We are implementing a wide range of frequently asked questions with synthetic answers which will be available on a standard. The structure of these FAQs must comprise the following characteristics:

- Must be easily applied to any city or region, which is not simple, because there is a huge variety of transport systems in Europe, contain many local, physical and institutional aspects very specific;
- Must be easily transferable and storable in a common and harmonized data structure, in order to allow the access and share of the information. The data structure has to be standardized according to the publicly available specifications, so that they can be made available in an open format for widespread use;
- Contain contents and a structure that allows the easy translation into several languages;
- The previous points imply the necessity of a strong commitment in providing quality information and in the process of validation, reviewing and upgrading this information, because we predict it will have a large viral range.

The INTEGRA FAQs system must have at least some elements of interactivity that allow users to identify the issues that are most important for them and allow users also to identify possible inaccuracies and give feedback to INTEGRA.

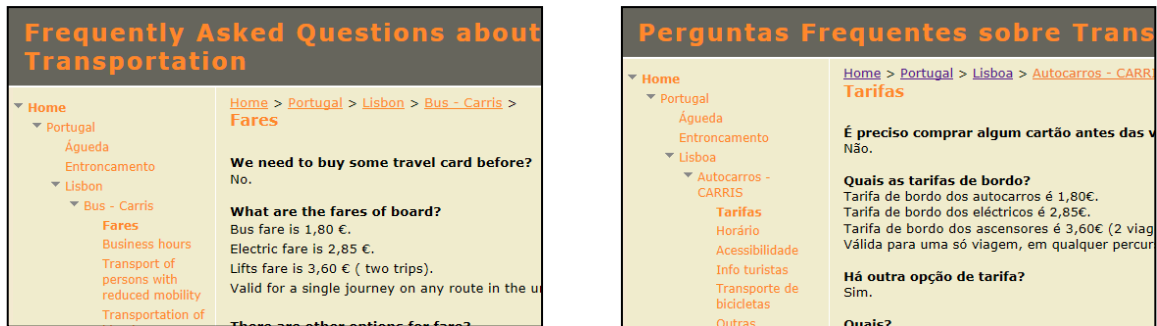


Figure 12 – Database of FAQs by destiny (country/city) and transport mode in English and Portuguese. Example of FAQs about fares on Lisbon public transport

The questions considered are related with the fares for each public transport service, schedules, accessibility for persons with reduced mobility, as well as the transport of bicycles or pets in public transports (in Fig. 12 we show the same questions, structured in a standardized format, available in English and Portuguese). In case of more comprehensive information, the FAQs link to the websites of the operators, cities or regions, where the user can obtain additional details, but in a non-harmonized environment.

## INTEGRA Standards

Regarding standards, the Integra Consortium doesn't aim to have any standardization committees or technical structure. For that purpose there are already several international bodies that play this role excellently. Instead, we intend to be an aggregative initiative, focused on identifying and promote best standards and the more appropriate technical specifications and the best circumstances for their application. Summarizing, we intend primarily to create a quality framework for the application of existing standardization processes.

Moreover, the players of INTEGRA network are encouraged to disseminate their best practices and success stories about standardization and interoperability, enabling this way the share of experiences across the various authorities and operators, through networking. This kind of dissemination allied with the guidelines and orientation of INTEGRA will develop a stable framework to help stakeholders future decisions about investments (in information systems and tools). This will allow future tactical and strategic decisions to incorporate appropriate approaches that generate economies of scale and avoid these entities eventually become hostage to proprietary solutions imposed by the market<sup>4</sup>.

One of the tasks of the Integra Consortium will be the evaluation and harmonization (through user guidelines and recommendations) of the wide range of standards and technical specifications related to information systems and sustainable mobility. We refer as examples the family of the CEN standards Transmodel (CEN TC278/WG3, 2001), the rules that are derived as a pre-standard IFOPT (CEN TC278/WG3, 2008), and other standards

<sup>4</sup> This kind of situation is less probable to occur in the big metropolitan regions or cities around Europe, where transport authorities have the necessary technical skills to fully understand the danger of specific solutions and have technical capability to incorporate the right specifications in tender documents. However, in small and medium size cities the authorities may need more of this kind of guidance and INTEGRA intervention might be important.

recommended by the INSPIRE Directive (European Commission, 2007), the ITS Directive (European Commission, 2010) or other recommendations (e.g., web accessibility standards), or even the GTFS<sup>5</sup> import/export specifications. One of the fundamental vectors of INTEGRA intervention will be the correct specification of the design needs for the information systems (whether internal to institutions or dedicated to the public) in the tender documentations and specifications that may be implemented by members in their future tenders. With the proper specifications new solutions are framed to develop along with the best practices and can come to have the quality guarantee of INSPIRE.

## **CONCLUSIONS AND FUTURE PROSPECTS**

We highlight that INTEGRA as a concept of “seamless travel across Europe” is now a reality, a young reality, but with all the conditions to expand in the short term. We believe INTEGRA, in the future will become a real asset to improve the quality of local and regional information systems in public transport and sustainable mobility and will represent a key factor for the promotion of seamless and sustainable journeys across Europe and within European regions and cities.

Concerning START project, the initial goals around INTEGRA were achieved, having been surpassed by the expansion of what was first predicted just as a European journey planner. INTEGRA tends now to be a framework, consisting on a mature concept, a brand, a consortium and a toolbox full of services and other tools. Initially, the growth of the concept was based on the development of the travel portal. Currently, the travel portal is the main tool, but is also one between several other tools and services that are going to be available within the INTEGRA Consortium.

The fact that INTEGRA has been developed under START as one of several parallel activities<sup>6</sup>, all important for the improvement of public transport, and running along with these activities, meant that INTEGRA somehow became ‘hostage’ of the overall formal framework of START. The agreement and acceptance of two project extensions by the Managing Authority of the Atlantic Arc Programme (from January 2011 until June 2013) was a wise and very important decision for the future of INTEGRA. The extensions allow all involved partners to focus their attention on the development of INTEGRA and on the entire INTEGRA framework, which became now much broader than what was initially predicted: just the travel portal.

The strong concentration of efforts in one single goal – INTEGRA – has been fruitful. The concept was strengthened and is being extended, using a holistic approach to include the fields of Transportation & Tourism and Electric & Soft Mobility. The analysis of feasibility of this broader integration is ongoing and in parallel we started search for the right stakeholders and other interested parties in these areas. The strategic expansion of INTEGRA was initiated having in mind not only the natural improvement of the coverage of information about mobility (reaching also other additional publics), but also the desire to improve overall

---

<sup>5</sup> General Transit Feed Specification Reference (Google, 2013)

<sup>6</sup> These activities included the enhancement of existing journey planners in France, integration of fare systems in several regions, improvement of accessibility, etc - consult (START Consortium, 2010) for more details.

harmonization, standardization and interoperability of the different systems related with sustainable mobility. This aspiration points to a bigger target of reducing (or eliminating some of the) barriers to travel and this way help broadening the intermodality options that may be offered to transport users and citizens in general when they travel and leisure across Europe.

Moreover, INTEGRA brand has achieve a maturity itself as a product and is practically ready to “go to the market”. Of course, this is not an easy process, because it is a non-commercial product (concept), to be launched in several countries and framed in different realities. Additionally, we have to have in mind two target-publics, the institutional entities coming from several fields (cities, transport, tourism, electric mobility, and so on) and the travellers and users in general. The strong image and presence of the brand is expected to benefit its entrance in the travel and tourism markets. From the first reactions already noted, we anticipate that INTEGRA will have a good success, even though the time of maturation necessary for some services and tools to become fully operational have not yet been achieved. We have to note the production chain of software and tools which need to have a global outreach and are based on bottom-up built methodologies (because they have to deal and fit into several different realities) might prove to be distinct from classic commercial products (developed for one client on the base of tender specifications). This evidence implies some patience and low initial expectations. Undoubtedly overall intangible benefits will be much broader initially than tangible benefits directly originated by the generalized use of the tools and services available under the INTEGRA framework.

Currently, we can say that the product and market conditions are fulfilled for the release of some experimental INTEGRA tool and services during 2013 and also to launch the INTEGRA European Consortium in the Atlantic Area countries. This will continue the brand beyond START. However, after more than four years working together on START (and with other experiences obtained previously), we can testify that the regional, economic and social conditions for the development of a transnational and later international brand covering several aspects of mobility are extremely demanding. The cities, regions and countries involved have their own socio-economic and cultural status and specificities which imply several ‘mind’ and professional differences which have to be overcome. This imbricate ‘tissue’ constitutes a threat and a barrier, but is also an opportunity, due to the richness of different practices existing and different solutions we can find already implemented locally.

We expect the INTEGRA Consortium to face different levels of difficulty in the different countries of the European arena. Local realities are different and local conditions of mobility and information systems associated with travel are also very distinct. In those countries and regions that provide already more advanced solutions to help the development of their public transport and mobility solutions, the value added by INTEGRA in the short term is less immediate and less tangible. In counterpoint it is also true that partners from these countries and regions can have a fundamental role in promoting and disseminating their (best) practices among INTEGRA members. For the regions or countries where journey planners, travel information systems and other tools to aid mobility are still in a more embryonic phase, the emergence of INTEGRA proposals may be less complex because we will help filling some gaps in the arena of regional and local mobility. But still, from an institutional point of view there is work to do and some mentalities and fears to change in this countries.



Concluding, INTEGRA has a unique and indispensable advantage. This advantage is its overall and global nature for providing the 'most perfect' information to allow European travelers to make their own conscientious choices about their best mobility options, in a more sustainable fashion. In other words, INTEGRA is essential a framework for a 'one stop shop', an entrance door in the multitude of the universe of existing journey, travel and tourism planners and information systems currently available. INTEGRA is also strongly based on a strategy of European cooperation developed in an inclusive way, non competitive with the current markets, rather complementary, based on a harmonized framework and standardized guidelines and practices. It is also, definitely, a proposal for cooperation we endorse all European regions, cities, transport operators, tourism partners, electric and soft modes promoters to consider in their future actions towards their citizens and visitors. Finally, INTEGRA is certainly a great start to make travel easier to everyone.

### **Future Prospects**

In December 2012, about thirty entities, including regions, cities, transport operators, technological companies and other institutions have already signed the INTEGRA Letter of Intent, becoming honorary members of the consortium. INTEGRA promotion campaigns near the authorities responsible for the regulation and/or operation of the local and regional public transport have started recently in France, Spain and Portugal. In the United Kingdom will begin after the launch of the second version of INTEGRA Portal. Due to the national specificities in the organization and regulation of public transport in Portugal, the campaign for the promotion of INTEGRA will have two main audiences. The municipalities and the (new) inter-municipal communities on the one hand, and the entities related to the regulation, organisation and operation of public transport, such as the operators and their representative associations, on the other hand. Due to the recent extension of INTEGRA to tourism and electric and soft mobility, relevant players of these areas are also going to be contacted and invited to join (or cooperate) with INTEGRA. Given the excellent initial adhesion, we expect that by the end of 2013 between sixty and one hundred entities in the Atlantic Arc have declared their intention to join the INTEGRA Consortium, becoming honorary members, exceeding the initial expectations.

Another challenge is the special relation we intend to promote with universities and R&D centres. We intend some of the "reference services" to be used in INTEGRA will come from a development chain initiated inside the universities and R&D centres. The first phase of this chain will be the 'firing' of research ideas which must fit the INTEGRA building and goals. With these ideas students will develop their academic works and thesis in their regular course routine. In a second phase the best academic works become INTEGRA prototypes (allowing the best students to work at research level). Finally, there will be a third phase for those prototypes that have quality enough to be transformed in commercial products. The "go to the market" of these products will be done in cooperation with software and other technological companies, eventually with the concession of commercial rights. The services or applications born this way will result in common commercial products, but will have an intrinsic link and the quality stamp of INTEGRA. The market value of these commercial proposals will be measured by the quality of the technological solutions developed and its

ability to interact with other information systems and markets, bringing additional value to our main target audience, the travellers.

The main challenge for INTEGRA in 2013 will be to provide some of the services and tools described and to promote INTEGRA institutionally and encourage the interaction and networking between all members. This challenge includes also the formalization of the INTEGRA Consortium at least in some countries. Another challenge that is not yet fully achieved is the stabilization of the technological framework for the creation of harmonized multilingual base layers of INTEGRA tools and services, to provide reference services to the entire community: the travel portal, the social network, the provision of services in general social networks, the FAQs, the technical standards and so on.

The technological panorama of INTEGRA will achieve in the coming years the level of development described and will fit in a stable development phase of the consortium, where the number of participating entities will be sufficient to generate critical mass (and information) to be transformed in knowledge on “how to seamless travel in Europe using sustainable transport”. Then, on that stage, we can risk to say that INTEGRA will be a real added advantage in promoting travel and sustainable mobility, approaching regions and effectively contributing to the territorial, social, cultural and economic cohesion of Europe.

## **ACKNOWLEDGMENTS**

The START project (START Consortium, 2010) is a project from the *Transnational Cooperation Operational Programme Atlantic Area*, being co-financed by the European Union through ERDF - European Funding for Regional Development. START is framed in *Objective 3.1: Promote interoperability and continuity of existing transport networks and intermodality between maritime, road, rail and air* from the *Priority 3: Improve accessibility and internal links* of the the Programme. The authors are grateful for the co-financing provided by the European Union, which allowed the development of INTEGRA initiative and also the presentation of this communication.

This paper describes part of the joint effort of the partners of START and some of the perspectives the authors have about the future of INTEGRA. The authors are the solely responsible for the contents thereof. The text presented does not represent the opinion of the European Union or even START institutions which are not responsible for any use that may be made of the information contained in the communication.

## **BIBLIOGRAPHY**

CEN TC278/WG3. (2001). *The European Reference Data Model for Public Transport. V5.0* (p. 297).

CEN TC278/WG3. (2008). *Road traffic and transport telematics fixed objects in public transport Public transport Identification of Contents* (p. 144).

*Seamless Travel across Europe – the INTEGRA concept and development*  
MATOS MARTINS, Paulo; SOARES, Inês

European Commission. (2007). DIRECTIVE 2007/2/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 14 March 2007. *Official Journal of the European Union, L 108*(April 2007), 14.

European Commission. (2010). DIRECTIVE 2010/40/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 7 July 2010. *Official Journal of the European Union, L 207*(August 2010), 1–13.

Google. (2013). General Transit Feed Specification Reference - Transit — Google Developers. Retrieved January 22, 2013, from <https://developers.google.com/transit/gtfs/reference>

INTERREG III B. (n.d.). INTERREG III B Approved projects - project identification. *Promoting Accessibility between Regional and Transnational transport Networks in EuRope*. Retrieved January 16, 2013, from <http://www.interreg-atlantique.org/iiib/eng/projet/index.html?param=detail&idR=43&id=126>

ISO. (2009). *ISO 704 Terminology work — Principles and methods* (Vol. 2009, p. 74).

START Consortium. (2010). START Project - Home. *Seamless Travel across the Atlantic area Regions using sustainable Transport*. Retrieved January 16, 2013, from <http://www.start-project.eu/en/Home.aspx>