

IC-IC: Enhancing interconnectivity through infoconnectivity

Enhancing interconnectivity of short and long distance transport networks through passenger focused interlinked information-connectivity

www.ic-ic.eu



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List of abbreviations and meanings

Activity (e.g. A1.3)	A sub-ordinated work package within a Work Package
AL	Activity Leader
Beneficiary	Organisation working in the project, which has signed CA
CA	Consortium Agreement
D (e.g. D1.3)	Deliverable
DoW	Description of Work (in Annex 1 of the Grant Agreement)
EC	European Commission
ECAS	EC's online Participant Portal
GA	Grant Agreement
IC-IC	Enhancing InterConnectivity through InfoConnectivity
ICS	InfoConnectivity System
ICT	Information and Communication Technology
IT	Information Technology
IFR	Internal Finance Report
Key Stakeholders	As "Stakeholders", but actively participating in the project
M	Month
MS	Milestone
NFC	Near Field Communication
Partner	A person working on IC-IC for a Beneficiary
PC	Project Coordinator
PCC	Project Coordination Committee
PM	Person Month(s)
QB	Quality Board
QM	Quality Manual
QR	Quick Response
R&D	Research and Development
SAB	Scientific Advisory Board
SSM	Self-service machines
Stakeholders	Entities with genuine interest in IC-IC developments, with the ability to enforce/support implementation of the project's results
UI	User Interface
WP	Work Package

Table 1: Abbreviations and meanings

0 Executive Summary

IC-IC is the abbreviation of “Enhancing interconnectivity through infoconnectivity” meaning to enhance interconnectivity of short and long distance transport networks through passenger focused interlinked information-connectivity. IC-IC is developed under the European Community’s Seventh Framework Programme, theme [TPT.2010-4 / TPT.2010-5. TPT] and has the overall goal of reaching an optimisation and integration of Research and Development (R&D) efforts for transport of passengers by enhanced intermodality, demand/supply management and logistics for transport of passengers through increased co-modality and understanding of social behaviour. This is created by providing the – for the traveler – necessary information at the right place at the right time in a way he/she can perceive it.

This has led to an EU-wide, standardized traveller App for providing orientation at airports to foreign tourists and journey information to everyone along the journey. By analysing the needs and wants of international travellers of all age groups and backgrounds, the requirements for such an Information Connectivity System have been derived. Those requirements together with the economic interest of the potential stakeholders as airport operators transport providers of far and short travel devices as well as the retail sector build the basis for the conception and design of the prototype of such a travel App. The research results served as the background for developing a prototype ICS and an implementation concept for a mobile solution. Enhancing interconnectivity of short and long distance transport networks through passenger focused interlinked information-connectivity, IC-IC developed an ICS (InfoConnectivity System), involving the airports of Amsterdam, Frankfurt, Paris and Vienna, related ground transport and airlines, representing both short and longdistance transport. By providing currently missing information which travellers already wish to have with regard to facilities and services of their next immediate destination and/or next transport provider(s), the ICS aims to improve the travelling experience implying a possible gain of time, and to improve switching between transport modes. Much of such information can be provided while waiting, e.g. in the airport train/bus, the lounge, the airplane, utilizing camera mobile phones to connect to information provided by QR (Quick Response) codes, and mobile phones fitted with NFC (Near Field Communication) able to connect to respective tags. It can also be integrated in various other systems of transport operators or stationary information channels, like self-service machines.

Requirements of the ageing population were considered by utilizing the "Age Explorer", a suit that lets test persons experience the obstacles old persons encounter when moving, filling out forms, operating "Self Check-in", or a ticket machine. 1000 persons in 3 countries were interviewed, information of Stakeholders collected, model ICS applications developed and implemented to serve in real live situations. The effectiveness of the InfoConnectivity improvements was assessed with regard to information made available which otherwise a traveller would not have been able to access plus gained time and ease of passenger transfer between transport networks. Based on this, an ICS handbook was elaborated. With a presentation of this mobile solution and possible business models on a stakeholders conference in Paris the project was finalized, also showing ways to implement an ICS as an information standard – not only on a technical point of view. This document represents the final reporting of project steps and findings, as well as contact to the participants in case of further interest.

1 Description of Project Context and Objectives

IC-IC is the abbreviation of “Enhancing interconnectivity through infoconnectivity” meaning to enhance interconnectivity of short and long distance transport networks through passenger focused interlinked information-connectivity. IC-IC is developed under the European Community’s Seventh Framework Programme, theme [TPT.2010-4 / TPT.2010-5. TPT] and has the overall goal of reaching an optimisation and integration of R&D efforts for transport of passengers by enhanced intermodality, demand/supply management and logistics for transport of passengers through increased co-modality and understanding of social behaviour. The intention of the project was focused on the following scenario.

If you arrive by air in Europe, information is provided in the local language and - usually - also in English. The currently existing information systems are hostile to visitors who do not speak these two languages. Moreover, the traveler is confronted with completely different “languages”/Travel information systems when changing transport providers. But can Europe afford to disregard all possible visitors (many of them potential tourists) who neither speak English nor the local language? The aging population is steadily growing. Should older people just not travel, because information and its conveying media are not adequate for their special needs? A traveller who needs to transverse from one transport system to another is expected to adjust to infrastructures determined by technological principles at interfaces at given borderlines where he/she enters a new world in which other rules and conventions apply. A traveller has no chance to get information beforehand - if we exclude finding it on the Internet, without it you have difficulties, and even if you have it – or parts of it – prior to departure, you might get lost. The effectiveness of public transport often depends on changing between different modes/lines of transport in time. This is even more critical when it comes to transferring from long to short distance transport networks and vice versa. If “interconnectivity/intermodality” between transport networks is to be enhanced, measures of improving “InfoConnectivity” (short for information connectivity) between transport networks and their customers are indispensable. In this context transport hubs gain special attention as they are a link between the transport means. Especially airports are of interest, as they facilitate transfer among countries, cultures and different transport concepts. However, transport hub management normally – like their relating transport partners – restricts its customer communication to their operating area informing about directions within the airport, departures/arrivals or commercial offerings but rarely about other transport providers.

Highest possible effects in improving passenger transfers may be expected by introducing the concept of InfoConnectivity between transport networks, considering problems encountered by old age passengers, by visitors unfamiliar with local conventions and by travellers who neither understand the local language nor English, which usually is provided, at least in air terminals. InfoConnectivity is to ensure harmonized and purposive multimodal information transfer to travellers via human-system interfaces. The prime infoconnectivity requirement to ensure understanding and goal oriented action on the side of the passenger is the provision and harmonization of passenger focused information structures and information elements.

However, corporate policies are traditionally incompatible with notions of providing information on other- related or not related - operational systems unless fully or partly owned by the relating transport hub. The IC-IC consortium, therefore, sets out to develop measures which identify useful intertwined information as the result of the efforts of key stakeholders (airports and connecting long and short distance transport providers) whose concerns have a focus on advanced customer service.

The benefits for the facilitators (within IC-IC these are airports, but can also be others): passengers, free from hecticness enjoying a relaxed time prior to departure for some shopping, socializing in a bar

or writing a postcard to a friend at home. After arrival, knowing where to go, the passenger catches the next train or bus with ease, which she/he otherwise might have missed.

Current research, which relates vaguely to InfoConnectivity, is often driven by mere interest in the exploration of technical possibilities and the market potential of NFC (Near Field Communication) and QR (Quick Response) Codes by trying to tackle the technical difficulties of the installation and connectivity, not taking into account user needs. IC-IC, thus, sees infoconnectivity as an innovative cross-domain concept: Bearing in mind that the information conveyed should facilitate the mobility of the passengers not only within but also across transport networks, infoconnectivity requests that information is presented in an intertwined way. Thus, infoconnectivity extends the traditional notion of an interface positioned at an intersection between different domains, to a zone of interaction between the concerned transport networks and their shared customers.

Designing information (systems) for people on the move, able to access information at the time, place and in the situation where it is needed (the concept of InfoConnectivity) is a design challenge worth taking on. By providing currently missing information, which travellers wish to have on facilities and services of their next immediate step of the journey, ICS can improve the travelling experience and ease of change between transport modes. It makes use of the growing numbers of mobile device users and rapidly evolving technological possibilities offered by such systems. As much of such information can be provided while being idle, e.g. while waiting in the airport train/bus, the lounge, the airplane, e.g. camera mobile phones can be utilized to connect to information provided by QR (Quick Response) codes, and smart phones fitted with NFC able to connect to respective tags. But also information channels already employed by the transport (hub) operators like screens or self-service machines can be integrated in an ICS Information environment. IC-IC has developed an ICS (InfoConnectivity System), involving the airports of Amsterdam, Frankfurt, Paris and Vienna, related ground transport and airlines, representing both short- and long-distance transport. Many stakeholders were involved in e.g. Stakeholders Forums and a Stakeholder Conference.

The project included the identification of current practice in passenger focused information in interconnections between short and long distance transport networks as well as suggestions of innovative passenger focused information supply. The identification of passenger information needs were assessed through the "Age Explorer", a suit that lets test persons experience the obstacles old persons encounter when moving, filling out forms, operating "Self Check-in", or a ticket machine. Also, 1000 persons in 3 countries were interviewed, as well as information and feedback from Stakeholders collected. With this knowledge and set up journeys and scenarios were used in order to make suggestions of mobility enhancing concepts of interaction between transport networks and their passengers in zones of intertwined information as well as possibilities for passenger focused information provision.

By providing currently missing information which travellers already wish to have with regard to facilities and services of their next immediate destination and/or next transport provider(s), the ICS can improve the travelling experience through a possible gain of time but mostly by providing necessary information for the next travel steps. Much of such information can be provided while waiting, e.g. in the airport train/bus, the lounge, the airplane. To provide ICS information to the multi-lingual target group of travellers, ICS includes translated content to offer relevant information in 14 languages with English as the reference language. Nevertheless, during the project it has been elaborated to utilize an editor in a full version of ICS, as simply translating words is not efficient but rather explaining the various transport systems. With this approach, the requirements of the ageing population, handicapped or foreign travellers are taken more into account. In addition a model ICS application was developed and implemented in a prototype which was tested in real live situations. The effectiveness of the InfoConnectivity improvements were assessed with regard to information made available which otherwise a traveller would not have been able to access that easily plus gained time and ease of passenger transfer between transport networks. Based on this, an ICS

handbook was elaborated as well as a Business Model and publically available Policy Recommendations derived from the project to enhance intermodal travel.

This Final Report outlines main science and technology findings followed by a chapter on potential impact and business models. It finally gives some organizational information as contact data of the research participants and connected partners in case of further interest in the project or implementation possibilities.

2 Main Science and Technology Findings

In the following paragraph main science and technology findings are summarized for the different work packages (WP) respectively.

2.1 WP1: Information acquisition

2.1.1 Objectives

Stakeholders as airport providers in Vienna, Paris, Frankfurt and Amsterdam and related transport providers and the communication of the stakeholders among themselves and with their customers were identified. Readily available customer information was collected and the responsibilities for the creation and maintenance of the information were found out.

Additionally, memorable shortfalls of information provided to travellers were investigated through omnibus surveys carried out in three countries.

The outcome of WP1 = Deliverable 1.1 (D.1.1) "Information acquisition report" was a prerequisite for both WP2 "Conceiving Scenarios/Personas" and A5.7 "Policy recommendations".

2.1.2 Findings

2.1.2.1 Survey on travellers

In order to investigate information requirements of passengers a survey has been conducted. Covering passengers arriving/departing from three countries; Spain, Poland, Russia.

The interviews took place from April 5 until April 20, 2011.

Total sample size 4541, broken down by country:

Spain = 1504

Poland = 1517

Russia = 1520

Respondents were between 18 and 70 years of age of the general population.

The interviews were performed online and took on average 15 minutes.

Interviews have been distributed proportionally to general population.

Afterwards, and to guarantee general population representation, the proper weighting to the sample following the criteria, gender and age (crossed), area, size of habitat and social class was applied.

Information requirements on the way to the airport

For all countries, 2 questions arise most frequently when travelling to the airport.

- Need to know if your flight was on time, delayed or even cancelled?
- Forgot which terminal your check-in counter was, which terminal one should go to?

Other questions did not occur to more than 10% of travellers, when asking individuals specifically.

Information requirements at the airport

The most common pre-defined situation experienced by travellers in all three countries while at the airport and if they succeeded:

- Needed to buy a specific souvenir at the airport

- Unsure about whether the airport had internet access
- Would have liked to have VAT refunded Urgently needed internet access via Wi-Fi
- Had problems accessing the Internet because you did not know how to do it Realized you had a pair of nail scissors in your hand luggage and have tried to leave it somewhere in the airport in order to claim it when you get back from your trip
- Realized that you did not have travel insurance and would have liked to purchase it at the airport
- Tried to send a letter at the airport
- Tried to buy a stamp

Information requirements on the airplan

The most common pre-defined situation experienced by travellers in all three countries while on the airplane

- Where to get tourist information Need to buy presents at the airport and would like information about shops available
- Information about how to get to your destination in a fast, inexpensive manner Needed to know if the airport has a currency exchange, location and opening hours
- Had questions about immigration and customs Where to get information about accommodation
- Needed to buy presents before arrivals Needed internet access or to make an important phone call
Battery charger and compatibility with local situation, if a shop is available in the airport

As stated in the Description of Work (DoW), the project's key stakeholders have been requested to indicate communication requirements governed by legislation, standards and political decision makers to explain the principles of their customer related communication policies. They also have been asked to supply the information they currently make available to travellers.

The results presented are to be considered as source material for both WP2 "Conceiving Scenarios/Personas" and A5.7 "Policy Recommendations".

As most relevant are the answers to the issue of information connectivity, as out of various perspectives the need of smart information systems is regarded as a means to overcome political and organizational barriers.

2.1.2.2 Airlines / Carriers

Aua

AUA has many cooperations with connected organizations and travel providers (e.g. Vienna Airport (VIE), taxi companies (red|cab), car rental companies (Sixt), etc.). The connections are represented with links on the AUA website. But there is no information exchange between the companies done (besides the exchange of flight plan information with Vienna Airport).

Flight connection information within the Star Alliance Group is also available and provided on the monitors in the airplanes for incoming passengers. This service is available for bigger airports (e.g. Vienna, Frankfurt and Munich). The information includes the connection gate, time and status of the connection flight. Only necessary connection flights are displayed, i.e. where passengers on board have connections to.

This service should not be made available for other airlines that are not members of the Star Alliance Group.

Regarding the design of the ICS, branding of the presented information is very important. The presentation of AUA related information has to follow the respective corporate identity guidelines.

Royal Dutch Airline (KLM)

Was also asked for input on an InfoConnectivity system, however, at that time KLM had no special interest. At a later stage this attitude changed and input for ICS could be gathered.

2.1.2.3 Airports

Airport Vienna

Information Connectivity

There are many stakeholders connected to the airport. But there are no real information connectivity efforts. This is mainly due to technical problems (no standards for data exchange, different data formats, etc.)

Regarding the design of the ICS, the most important tasks or features (maximum of 10 to 15) should be made available via the system. Also the language of choice should be used. The design of the ICS should be either quite neutral or flexible branding should be easily possible.

Frankfurt Airport (Fraport)

Information Connectivity

Fraport has strong cooperations with DB and RMV. Connecting information with Deutsche Bahn (DB) works actually well. The cooperation to Rhein Main Verkehrsverbund (RMV) is still in progress.

Regarding the design of the ICS, Fraport states that it should be as easy as possible. The system should concentrate on basic information. For Fraport wayfinding is the most important thing at the airport.

Schiphol

Information Connectivity

There are initiatives with KLM, Schiphol and NS. The idea is to have an interlinked travel information system with GPS systems for the road and the 'dynamization' of public transport for all parties.

Regarding the design of the ICS, Schiphol states that the design should be simple, creative, user-friendly and made by people who are experts in the field.

Aeroports de Paris

Information Connectivity

As there are numerous stakeholders, all with different information systems, involved it seems difficult to bring them all together. But nevertheless, RATP and Keolis have open interfaces that would allow access to their information systems.

Another aspect is that, based on the space provided for the information, it is difficult to separate the direction information systems from the commercial ones when it comes to signage.

The main problems seem to be points with connections between different modalities.

Regarding the design of the ICS, it has been noted that static information reaches its limit when there are too many information streams. The focus must be on dynamic information collected from different sources.

A system like this should allow the traveller to anticipate. The access to information can be made whenever wanted or needed and this will reduce the stress of the traveller.

2.1.2.4 Public Train Services

Deutsche Bahn

Information Connectivity

DB is part of a cooperation with Railteam (Railteam is an alliance of high-speed rail operators in Europe). Other participants are SNCF, ÖBB, SBB. Within this project data is being exchanged.

Main problems are mainly seen in the costs for data exchange and the different data standards.

Nederlandse Spoorwegen (NS)

Information Connectivity

NS is involved in cooperations with Schiphol and KLM that try to collaborate for linking information together.

Regarding the design of the ICS, the following quote was made: "Just think of what you want, an intuitive approach for customers. Needs to be nice and fun. With our organization I think what we are lacking is that we are so good at operationalizing something and making it work but we do not add the pleasure/fun concept. In Hannover we had a presentation of the iPad and they said the same thing to us. Please make travel information fun. The question is, is this possible? What kind of device you have and the target group (e.g. the iPad is ideal but cuts into your target group)."

Société Nationale des Chemins de Fer (SNCF)

Information Connectivity

There are ongoing activities regarding information sharing (e.g. information exchange with other countries for international trains).

From the point of SNCF there are interfaces (web services) provided for accessing their information.

SNCF does not see technical but mostly political reasons why information connectivity is not working.

SNCF is at the moment working on location-based infrastructures for providing information. This includes localisation techniques that can be used indoor.

This is also useful for the design of the ICS.

2.1.2.5 Linked Transport System

Public Transport Association of the Vienna Region (VOR) and ITS Vienna Region (ITS)

Information Connectivity

A lot of different organizations currently exchange data with VOR/ITS (e.g. ÖBB, City of Vienna, Burgenland, Lower Austria, etc.). The data exchange is either done by linking to the respective websites, by real data exchange (via files) or by using VOR's router (as done by Wiener Linien).

Problems encountered are mainly seen as organizational problems.

Regarding the design of the ICS, VOR/ITS would like to see the integration of an indoor navigation system.

Rhein-Main-Verkehrsverbund (RMV)

Information Connectivity

There is an ongoing initiative with Verband Deutscher Verkehrsunternehmen (VDV) which is about e-ticketing. The idea is to combine different transport companies from different cities. The passenger will no longer have to occupy himself with the charge but just travel. The system will automatically generate a ticket and send a bill to the passenger.

Regarding the design of the ICS, there have been no proposals made.

KEOLIS Group (KEOLIS)

Information Connectivity

KEOLIS is more and more using the ideas of open-data when it comes to sharing passenger information. The problems are that as soon as another transport provider processes the data, it can not be controlled how he is doing this. This sometimes leads to different, and maybe unwanted and confusing, information presentations.

Regarding the design of the ICS, it has been noted that static information reaches its limit, especially when the information and people flows become more and more complex. It is physically impossible to present them all.

The focus should be on dynamic information with open information from different sources in combination with the possibility to give real-time information during the journey.

Régie Autonome de Transports Parisiens (RATP)

Information Connectivity

There have been some discussions about possible partnerships. But these mainly involve ticket selling options. Information exchange and information connectivity have not been mentioned.

Problems for this are mainly seen in the coordination of the necessary efforts.

2.2 WP2: Conceiving Personas/Journeys/Scenarios

2.2.1 Objectives

WP2 is about persona modelling, journey development and scenarios writing. Based on findings of WP1, target groups were identified and a passenger segmentation was build. Out of this segmentation 16 personas, journeys and scenarios were created for designing an ICS to improve the interconnectivity and travel experience through better infoconnectivity.

Since it is very hard to meet every imaginable need of every possible traveller, target groups were identified which cover most of the de facto passengers that use and traverse between short and longdistance transport networks, or vice versa. The method employed to translate their requirements into simulations that best reflect real life situations was done by modelling "Personas", representing the specific passenger target groups and defining "Journeys" (the ways the Personas need to go and the points of contact in which they interact with a transport association, an airport and related service providers).Personas are a design tool, hypothetical users representing passenger segments. Journeys are used as abstract activity descriptions. They visualize process and descriptionary activities while traveling. Scenarios are highly specific and personalised with personas. They are stories to describe a sequence of actions and events, personas, journeys and the scenario-based design approach help to go over a bridge from investigation and evaluation of the current situation of information usage to creating a future Information and Communication Technology (ICT) enhanced ICS. The method(s) employed were borrowed from A. Cooper and W. Olins. In addition, scenarios were developed to cover the activities a passenger undergoes on a trip. The outcome of the respective deliverable is passenger segmentation, 16 personas, 16 journeys and 16 scenarios already indicating ICS possibilities. Additionally, there are 5 final personas and scenarios for the field investigations in WP3. The results of WP2 were the basis on which the following WPs were grounded.

2.2.2 Findings

After evaluating the in WP1 collected information as well as information from similar projects, several Personas have been created trying to both satisfy the relevance of personas for the air transport sector and special needs of focus groups like elderly, handicapped or non-native speakers. The Personas were developed rich in character in order to create highly realistic scenarios which then build the basis for ICS design.

Persona No 15 - foreign traveller

FACTS



Name: Haruto Ohtaubo (m)
Age: 64

Family status: married to Kumiko (f), 3 children, 1 grandchild

Education: studied electronic engineering
Profession: pensioner

Image source: jpn.thestudio

Passenger Segment No 15 - foreign traveller

Motivations: Leisure

Passenger Number: 2

Frequency: medium

Destinations: intercontinental

Luggage: Normal

Transport mode: public transport

PERSONAL

Haruto loves his wife Kumiko very much and has 3 wonderful children. His whole pride is his grandchild Fumiko. He had to explain the world to her when she was a child. These days, Fumiko visits her grandparents often.

Haruto has worked as an electronic specialist at a large electronic corporation in Japan. Being a pensioner, his attitude is to enjoy his life and have a good time. He meditates every day, but he is not the „traditional“ Japanese.

Haruto is a modern man who is interested in consumer technologies. He has a mobile phone, and since his last birthday he owns a tablet computer, although he has some problems using it. With his tablet computer he can watch videos, so he must not read newspaper articles. This helps him because he does not need his reading glasses.

He has travelled a lot for business in Japan and to Europe. Haruto and Kumiko want to travel Europe and see Paris, Munich and London in 4 weeks. They have saved

money for a long time to make this journey possible. They have booked economy class tickets and hotels via a travel agency, accepted everything and didn't ask further questions.

Motto: „Disappear without a trace(japanese saying)“



Image source: jpn.co, flickr -Jan syntex, privat, panthermar

GOALS & NEEDS

Haruto and Kumiko want to fly from Tokyo via Frankfurt to Munich. They travel from home in Hamamatsu to Tokyo International Airport (Haneda) by train. They drive by train, because they want to calm down and have a pleasant journey.

Goals
Haruto wants to enjoy the trip. He is happy to make this travel and hopes that everything will get fine. He wants to get information about the trip on his smartphone, he wants to know where to change money and how to find the right way at the transfer hub.

Questions
Because it is long time ago that Haruto has spoken English, he is a bit anxious before travelling. Will everybody understand him? Can he speak and express himself in English as well? Will they get their transfer flight on time?

Frustrations & Pain Points
Haruto hopes that everything comes down and nothing bad will happen. He is a bit shy and does not want to express how he feels. He dislikes to talk to strangers or staff member at the airport and wants to

Figure 1: Example for developed Personas [Deliverable 2.4]

After Persona modelling their different Journeys have been sketched in order to identify likely problems to be dealt with when travelling with short and long distance transportation. This then was used in field studies in order to verify such issues and points where they arise. As different kind of problems can arise, activities along a journey were divided into process activities (necessary to successfully complete a journey) and discretionary activities (inbetween process activities, like leisure activities). This makes also a later prioritisation of ICS features possible.

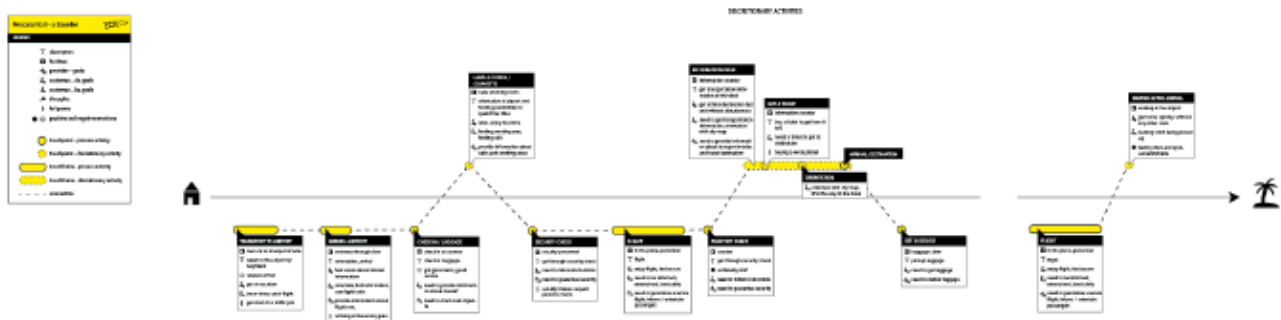


Figure 2: Example for Journey [Deliverable 2.4]

In the end of Persona and Journey modelling, Scenarios already showing first possible solutions through an ICS were developed. In these the first ideas showed a huge range of possible information

channels, possible features and necessary information providers. It became clear that ICS can be more than only a technical solution, but also offering stationary information via flyers, braceslets or self-service machines. In general the provision of information along the whole journey from different providers is the main issue, thus, an information ecosystem and standards for providing information are crucial for an possible ICS.

2.3 WP3: Field Investigations

2.3.1 Objectives

Field investigations, based on well defined scenarios employing personas and their journeys were conducted and documented. In addition, real persons unfamiliar with local conventions, were observed/shadowed operating self-service facilities to find out cognitive shortfalls.

The purpose of the investigations was to determine both the current level and quality of information provision to travelers and the possibilities - if not needs - for improvements, aiming at accelerated passenger transfers via an ICS, which have been developed in WP4 and demonstrated by means of ICS model applications in WP5. The following objectives have been met:

- the identification of information gaps along mobility chains, done via fact finding activities
- the determination of the current quality of provided customer information
- the determination of expected improvements in the provision of customer information via the ICS

2.3.2 Findings

To substitute the “persona shadowing” method described in DoW, the “Expert fact finding” method were developed to investigate information shortfalls on key stakeholder premises. This has become necessary as persona shadowing especially in security areas at airports are difficult to execute. A traveller requirements table was used to allow for the matching of identified information with information needs of travellers irrespective of the place where the study was conducted. Quality of provided information was an additional topic to be followed up. Experts (personnel of beneficiaries) were requested to carry out this procedure in the four field investigation sites in Austria (Vienna), France (Paris), Germany (Frankfurt) and the Netherlands (Amsterdam).

Benchmarking of self-service facilities: A method developed in Activity 3.3 (A3.3) was refined to check self check-in devices and ticket vending machines for their performance, considering different age groups, origin and gender of travellers operating the devices by observing anonymous travellers willing to allow being watched. A short questionnaire to be answered by the observed users added additional insights how the performance of the devices was perceived. A final questionnaire addressing maintenance staff asked for usual/common known problems with the investigated devices. Self-service machines (SSM) were also evaluated by experiencing the use of SSM with the Sakamoto New Age Simulator suit, which allows to experience problems encountered by senior travelers. Beneficiary staff (experts) would wear the suit and make comments during the process of buying a ticket at a ticket vending machine. The questionnaire for benchmarking of self-service facilities was adapted to serve the case.

In addition, consensus was reached after many discussions on a multi-method user-centred approach (including focus groups, interviews, diary and field studies), that could be carried out or substitute to

benchmarking of self-service facilities, in case permission problems occurred and cannot be overcome.

At CDG Paris airport, it was not possible at that time to perform any studies in the public part of the airport, which is why the responsible beneficiary applied for shifting the fact finding and benchmarking of self check-in devices from the airport to Paris Gare du Nord. This request was passed on to the EC and was approved. Gare du Nord seemed to be an adequate substitution, since it is a long distance transport terminal for the “Eurostar” trains. This way, the train station must be considered a hub between short and long distance transport, therefore, being of relevance for IC-IC. Fact findings at Schiphol Airport could not be carried out due to the fact that permission to perform fact findings was denied by the airport authority despite extensive discussion between HKU and Schiphol Airport to obtain authorisation. HKU instead engaged in multimethod approach combining interviews and diary studies in order to understand shortfalls of Schiphol Airport from a user perspective.

Thanks to its business relationships with the stakeholder Aréoport de Paris (ADP), the partner was able to use a window of opportunity to investigate self-service facilities (public transport ticket vending machines and check-in kiosks) in Paris CDG and Orly airports. The method used for the investigation was developed for this particular case. Later on, it has been adapted for Milestone 9 (MS9) to be used in field investigations. Furthermore, aware of the increasing use of smartphones during the mobility experience, the partner proposed and managed an additional activity, the benchmark and review of several travel apps. The aim was, on the one hand, to explore the relationship between the information available on personal devices and on-site information systems, and on the other hand, to establish a state of the art concerning User Interface (UI) design.

The findings of the conducted studies have been enriched with Stakeholder Feedback, as described before, on their opinion on information provision along the journey. The matching of the findings showed that there is a discrepancy between actual/needed information from passenger point of view and the estimation of the Stakeholder concerning such provided information.

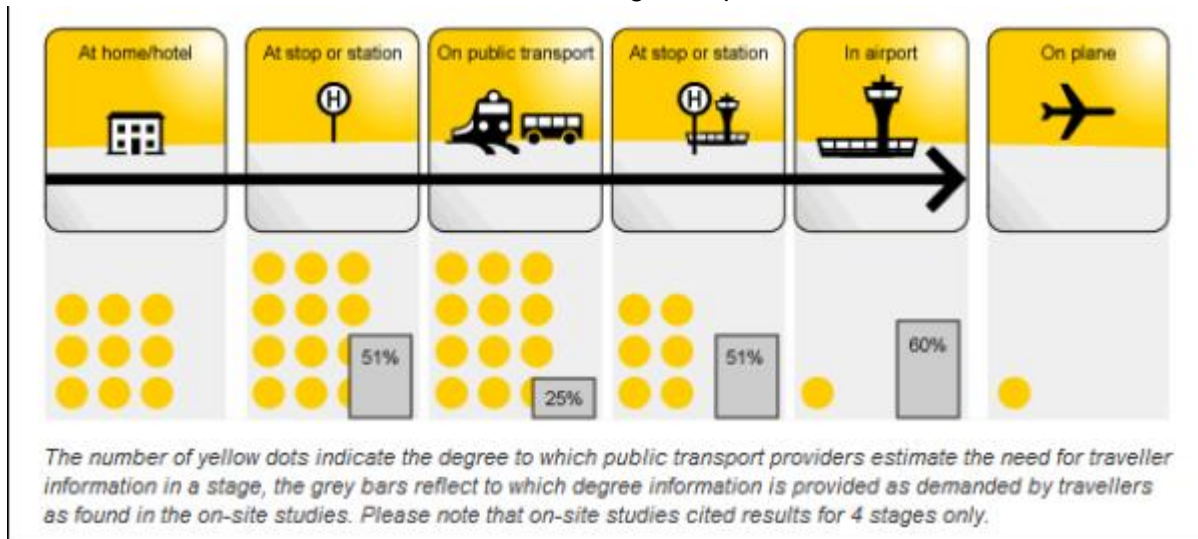


Figure 3: Information gaps along the Journey [Newsletter 3]

2.4 WP4: Creating an ICT enhanced ICS

2.4.1 Objectives

In this WP, technologies to trigger information to be displayed on a traveler's handheld communication device were investigated to find means to connect to the ICT enhanced ICS through which the information can be made accessible. It is assumed that events, which can obstruct, slow down or stop the onward journey can be evaded or mastered successfully if the necessary information is provided before the event or at the moment it arises. Thus, ICS can improve comfort by making such information available and possibly reduce time required for activities to perform the actual travel procedure.

Gained time at the travelers free disposal can be used to either shorten the overall journey in terms of duration, or spent for other activities, shopping etc. WP4 deals with the assessment of suggested infoconnectivity improvements concerning the provision of otherwise unattainable information and the time gaining potential of an implemented ICS.

The ICS to be developed will serve as a backbone of ICS Model Applications (see WP5), whilst insights gained from A5.5 will be used to verify (or correct) the ICS efficiency factor defined in WP 4 Findings of previous Work Packages 1, 2 and 3 will be considered for the development of the ICS.

2.4.2 Findings

It was started to compare the available technologies to retrieve information on the spot, and investigated which technology to use and integrate in the ICS for providing information on mobile devices. The outcomes of this elaboration have been described in a technical report, which was reassessed due to huge changes in market penetration and technologies relating to mobile devices during the project. The main conclusion of the report were that using of QR codes fits better to the scope of the ICS, because there are many mobile devices already taking advantage of QR codes, either built-in or through an app, and QR codes are wider used. However, due to quickly evolving technology an approach fitting not only current standard is required.

In the project technical components of ICS, necessary interfaces and system requirements have been elaborated.

In order to harmonize design requirements and software/technical implementing requirements an agile ICS development was chosen. System architecture, content and design, thus, were elaborated simultaneously. Therefore, the concept of point of interests (POIs) and traveller mind sets were applied to ensure a user centered ICS.

Despite the very diverse traveller requirements and the different technical infrastructures and systems in place at the airport sites where the ICS model applications will be realised, we were able to design a unifying ICS architecture that can accommodate both the requirements and the available systems. This designed platform can easily cater for diverse ICS implementation sites and input/output channels, This flexibility to adapt to different IT architecture requirements comes with a pre-defined interface in order to manage intergration of different stakeholders and their IT systems. Currently, a standard interface for data exchange is missing within the European Union (EU). Thus, in case of advancing market penetration of ICS, such a standard interface as well as information standard could be created.

As ICS content should also be available in at least 14 different languages, the system allows content storage of several different languages, which include not only latin-roman based languages, but also form based languages like Chinese or Arabic. This has also already been taken into account in the design.

A click dummy can be retrieved from the IC-IC website, showing the functioning and also design of the ICS.

The assessment of this system showed that through the multi-source concept, the way information is displayed, the availability of relevant information (customized by the traveler) and the retrieval of information also in a familiar language lead to a stress reduction, an increase in comfort and possible gain of time.

2.5 WP5: ICS Model applications

2.5.1 Objectives

Based on the insights gained in WP3 and WP4, indicative content was developed for every collaborating transport hub (viz. airport) and connecting short and long distance transport providers. The purpose of the ICS model applications is the exemplification of means and tools to be implemented by transport stakeholders, in order to create a functional ICS. For evaluation/validation purpose, one critical journey of a specific persona will be singled out for estimating the potential effectiveness of the ICS. Further the political relevance of the project's insights was highlighted. Therefore, the value of an implemented ICS was presented for both the industry and airport regions. Afterwards, a business model for ICS and the implicated consequences were indicated. Based on this recommendations for politics have been derived.

2.5.2 Findings

The ICS as envisioned and developed as prototype were set in the environment of the four main airport regions of IC-IC. They showed definite touch points and implementation possibilities for ICS at these airports. Exemplary different implementation means beside the app are displayed below.



Figure 4: Exemplary implementation possibility at airport [Handbook]

Based on these implementation possibilities, ICS has been assessed. It can be concluded that ICS is capable of reducing stress for the traveller as he has the feeling of being prepared and moreover, give him the means to accomplish a unknown journey successfully as all the relevant information is provided. This leads to a positive reception of travelling experience. Thus, customer satisfaction raises, as the traveller gains a positive value (see Homburg C. and H. Krohmer (2006), pp. 44).

The rise in customer satisfaction is of relevance for companies because of a positive correlation between customer satisfaction and customer loyalty and customer satisfaction and price-relevant behaviour. According to Homburg C. and H. Krohmer (2006) customer loyalty has three different dimensions which all are positively influenced by customer satisfaction. These are behaviour of repurchase, willingness to buy additional products, and recommendation of the product to other

potential customers (see pp.44). As the ICS raises customer satisfaction the positive evaluation of ICS involved stakeholders and their products (e.g. Airlines, transport operators, transport hubs) overall will profit from a rising customer loyalty. Moreover, Homburg/Hoyer/Koschate (2005) could show that customer satisfaction also influences the acceptance of price increases as well as the willingness to pay in general (see Homburg C. and H. Krohmer (2006), pp.44).

In this sense ICS is of special interest for transport hub operators. The ICS does not only offer a way to manage information from other relevant transport providers (e.g. Airlines or local transport) and “integrate” them in the transport hub’s local information technology (IT) network, but also a way to foster local business by providing a marketing platform for local shops. For instance the App can integrate coupons of shops or present shop offers to arriving tourists. This way more travellers passing the transport hub can be accessed through an additional marketing channel. Moreover, such a system could improve the passenger flow as the transport hub operator can motivate travellers to go to less crowded places or reduce waiting lines on check-in or security check due to better informed travellers. If information like actual waiting times and estimates for the traveller’s spare time can be calculated via ICS (depending on the data availability and legal consequences), the transport hub can use ICS also to prevent tourists to spend unused time at the boarding gate and instead make them go shopping. Thus, the ICS can directly be used as mean for maximizing profit through marketing. Similar to transport hub operators, of course, advantages for improving customer satisfaction are also applicable for transport providers themselves. For instance, services like the ICS service hotline, staff support, or optimized sign system offer the same positive benefit for transport providers as for transport hub operators. Beside this positive effect on customer loyalty, this increased customer satisfaction can also be used to exploit cross-selling benefits. Partnerships between transport providers or between transport providers and other service providers could be even more profitable when integrated in the ICS. Participation in the ICS opens up another channel to access likely customers for both partners. On the one hand international tourists booking a flight are made aware of a regional transport mode which can be used for reaching the destination (e.g. as alternative to taxi). On the other hand local tourists travelling to the airport and using the regional transport provider are made aware of offers of the airline. Such cooperation of airlines and regional transport providers (e.g. Lufthansa and Deutsche Bahn) already exist. Nevertheless, ICS can make such cooperation even more profitable as the ICS has a focus on the whole journey and thus, enhances the awareness of such combined offers on the traveller’s side.

Project’s insights have been taken into account in order to highlight current short-comings when fostering inter-connectivity, the possibility of ICS to overcome such short-comings as well as obstacles for implementing ICS. In the following the overall conclusion and recommended actions for politics in particular are presented:

1. Implementation of an information quality standard for traveller relevant information

The project has identified an information gap along a traveller journey. This gap can be reduced / eliminated if already available information would be presented and available in a different way. One such standard can be the ICS. Therefore, an information quality standard should be a goal of political actions, as it is a key for improving and supporting inter-connectivity. Moreover, especially considering the results of investigations on self-service or signage systems, elderly people profit relatively more from such a standard. Due to demographic change it should also be important for the politics to keep this group in mind.

2. Implementing a data interface standard and fostering data exchange standard

In the project we have seen that data exchange from a legal perspective is in principle no huge obstacle for creating an information connectivity network. However, from an implementation

perspective especially the missing data exchange standard presents a hurdle for the creation of such a network with many different participants. Moreover, the different rules varying between the different mobility and service providers can create additional obstacles for the creation of such a network. Thus, politics should foster standards for data exchanges considering data protection and general compliance rules found in the industry for mobility services. Also, they should foster the implementation of a data interface standard, such like ICS, in order to support the creation of inter-connected information provision networks.

3. Fostering of cooperation between key stakeholders Europe wide

Also the potential problems that can occur on a cooperation level when creating such an information network such as ICS have been highlighted in the project. Although we believe that the individual stakeholder will have an interest of their own to participate in such a network, the sharing of relevant data might be a matter of discussion. As information is always also a means of power or competitive advantage, the sharing of data is especially to be supported and – in case this does not work on a voluntary basis – implemented by politics. Moreover, as the creation of such a border-crossing network needs to have an organization itself to manage it, politics should foster border-crossing and inter-connecting cooperation of mobility service providers especially.

4. Fostering an Europewide ICS implementation and ICS branding

An information network for travellers can already be efficient if applied on a small scale. However, the idea to use ICS also as a means to foster international tourism and sharpen the competitive edge of European transport hubs / providers and tourism requires a Europewide rollout. This means that a network like ICS becomes more profitable the more users and stakeholders participate in such a network. Therefore, European politics should support the implementation of ICS in present and coming transport hubs and integration in present or planned (IT-) infrastructure changes throughout Europe. Only this way an information quality standard as stated in 1. can be fully realized and the gains of ICS exploited. This is also necessary to guarantee a consistent positive experience of travelling, thus, creating a strong ICS brand. Such a strong brand can be used by both tourism and mobility industry to increase the number of visitors and customers even more.

An idea for the potential collaboration in a further implementation project and a business model has been elaborated based on the canvas model:

Key Partner Primary <ul style="list-style-type: none"> ■ Airport providers ■ Airlines Secondary <ul style="list-style-type: none"> ■ Airport shops ■ Local public transport companies ■ Telecommunication companies ■ Travel agencies 	Key Activities <ul style="list-style-type: none"> ■ Infrastructure dev. ■ System maint. ■ CIP ■ Data collection & translation / combination & enrichment 	Services <ul style="list-style-type: none"> ■ Door2door journey planer ■ Travelling on airports ■ Time saving / maximization / optimization ■ One stop shops ■ Freebies ■ Language offers ■ Local information (local cultural helper) ■ Traveler empowerment ■ Navigation ■ On and offline usage 	Relationships <ul style="list-style-type: none"> ■ Self service with general support 	Clients <ul style="list-style-type: none"> ■ Foreign travelers (unfamiliar with procedures/locations) ■ Mass market ■ Tourists
	Key Resources <ul style="list-style-type: none"> ■ List of content ■ Data access ■ Pre-financing ■ Internet access ■ Connection to transport & service provider apps 		Channels <ul style="list-style-type: none"> ■ App based on existing info ■ Information about the App@Booking, ticket bay, advertising 	
Cost Centers <ul style="list-style-type: none"> ■ Minimum scope for 2 airports, 2 airlines: 6 months to implementation of the design ■ Technical concept: 1-2 years 			Revenue Streams <ul style="list-style-type: none"> ■ Advertisement (vouchers, white label strategy (hotel booking), editorial advertisement i.e city marketing platform) ■ Data flat rate/Freemium (cooperation with telecommunication companies first free than premium), prob. data selection and selling about travelers, (innovation) funding 	

Figure 5: Business Model Canvas [IC-IC Business Model]

Value proposition

The ICS is mainly designed to connect separate journey stages (planning the journey, travelling to destination, staying on site, returning) and to link different offers of mobility providers in order to assist the customer with an on- and offline provided door-to-door journey planner.

Clients

Traveller/Tourist

The ICS App offers its main benefit to travellers as they can plan ahead and optimize their travel time according to sudden wishes and needs. In case of spare time, activities aside a journey (consuming, informing, sight-seeing,) can be initiated and fulfilled. On the whole journey, the traveller is supported and guided by information and services provided by ICS.

Key Partners

Transport Hubs, Transport Providers and Airlines

By improving internal processes and traveller streams, waiting time can be reduced in order to increase customer satisfaction. This matter not only leads to a cost reduction through IT-supported processes but also to more revenues due to consumption within additional time for the travellers. Moreover, the ICS offers an additional marketing channel for all relevant stakeholders, i.e. shops, hotels and restaurants as well as local tourist organizations. As the ICS functions as an information channel for present travellers, offers within ICS raise the customer awareness. It even opens up a new and effective way to share information with international tourists for local data providers. This is supported by a multi lingual content and a user friendly graphical user interface. Therefore, ICS offers extra revenue by extending the reached target group.

Key Resources

The key resources and activities of the main stakeholders (airlines, airports and content providers like editorials) are fundamental for the success of an ICS. Data that needs to be available in such a system can be defined as geo-data, air-traffic data, regional-traffic data and tourism-information data.

A further success factors will be the promotion of the system by the key partners and the generated pre-financing.

Key Activities

The collection, aggregation and enrichment of data and information are a major task in order to develop a self-service oriented system. Additionally, the different information channels accessed by this system (smartphone application, phone service, etc.) need to be implemented / created as well. The set-up of a scalable technical and informational architecture (maintenance) are key activities concerning the value proposition.

Revenue Streams

A solid business model with stable, sustainable revenue streams can be generated by brand-building and brand-communication activities in cooperation with airlines and telecommunication-providers (i.e. freemium approach) as well as from editorial advertisement (vouchers, white label strategy (i.e. integration in existing services like hotel booking providers, city marketing platforms etc.)). The term "freemium" is a combination of the words "free" and "premium." It describes a business model in which you give a core product away for free to a large group of users and sell premium products to a smaller fraction of this user base. A further funding of the EC can be also taken into consideration.

Strategic aim

Achieving market penetration through scalable service integration, with a freemium approach within one year of development.

The creation of an ICS Handbook was based on an abridged summary of the user requirements established in WP1, the results of the field investigations and data evaluations done in WP3, the ICT enhanced ICS developed in WP4 and the insights gained from the ICS model applications and ICS model application assessment of WP5. The structure of the handbook, however, will be of a didactic nature to allow consortia, consisting of a transport hub (viz. airport) and connecting short and longdistance transport providers to tailor and to implement an ICS InfoConnectivity System to their requirements. The handbook as well as the policy recommendations are available for the general public.

3 Potential Impact and Dissemination

In the following chapter the potential impact (including the socio-economic impact and the wider societal implications of the project so far) and the main dissemination activities and exploitation of results are described.

3.1 Potential impact

The ICS was developed to assist international travellers. The strategic concept to involve political decision makers, transport providers and other relevant information providers which otherwise would be hard to attain. Whenever an ICS gets implemented in a given airport region it will lead up to close co-operation of transport providers, enhancing the transfer of travellers and enabling them to supply their (often unforeseen) wants, possibly also shortening their transfer time and making them feel comfortable. Travellers of all sorts can benefit from this. Moreover, as the ICS can provide relevant travel information in foreign languages, among them Russian, Arabic, Chinese, Japanese and Spanish (which is not only spoken in Spain but dominates many parts of South America) the implementation of ICSs has the potential to make air and related ground travel in Europe a memorable experience both for EU citizens, tourists and business people from overseas alike. Either of them will not only refer to such an experience informally to acquaintances, friends and colleagues. ICS itself can be a branding strategy in order to reduce anxiety of potential travellers that otherwise might prefer to stay at home or to postpone a journey. Thus, ICS can have a positive impact on European competitiveness for tourism and travel providers, through fostering a positive travel experience. Through strategic partnerships, business can be strengthened against competition from emerging countries.

Furthermore, ICS cannot only be a means for short and long distance travel, but also for other means of transportation requiring interconnectivity like public transport networks. Thus, ICS can have a huge range of implementation possibilities, also creating a positive impact on city development and infrastructure.

3.2 WP6: Networking, dissemination and participation

WP 6 combined all communication tasks to effectively reach and involve stakeholders by constantly expanding the audience along the duration of the IC-IC project. It concerns the dissemination of information on the ICS model applications (see WP 5) and other interim results, the outcomes of the Stakeholders Conference and the final version of the ICS Handbook. Dissemination activities started from Month 1 by establishing frameworks, processes and plans. An initial dissemination plan intended to bring together current knowledge of target audiences, existing networks and priority activities during the project. It was regularly reviewed and updated, based on project developments. Part of this planning activity was to develop a coherent visual identity for the project results including graphics, templates, styles and guidelines which can be used by partners when presenting their work in electronic and print material.

1. Dissemination to the target audience

Disseminating intermediate and final results via a Stakeholders Forum and a Stakeholder Conference guarantees that the target audience of the IC-IC project is effectively reached. This group comprises all European airports, their related ground transport providers, all European airlines and transport authorities. Furthermore, the focus of the IC-IC dissemination framework is to ensure that the project's research and practical outcomes are widely disseminated to the appropriate target communities, at appropriate times, via appropriate methods, and that those who can contribute to development, evaluation, uptake and use of the IC-IC outcomes can be identified and encouraged to participate. All IC-IC partners used their partnerships, standardisation activities and experience in EC funded projects to help dissemination, either through direct participation in WP6, or through their respective technical WPs and activities.

To additionally spread information to an even larger audience such as airport organizations, the European representation of disabled persons and the Airport Regions Conference have been addressed.

2. Dissemination to special interest groups

This was done via special interest media (theme related scientific and trade journals). In addition the consortium considered the initiation of special interest groups e.g. in LinkedIn and XING and the dissemination of project related information to them. To reach the general public information on project information on interim and final results were contributed to social media sites/blogs and have been distributed to editors of theme related sections of mass media and news agencies. The results of IC-IC are "public" to whoever will want to implement ICS applications develop new and other ones based on the guidelines offered in the ICS handbook. Besides, dissemination was done via Newsletter, to which every interested person could register on the website or social media sites/blogs. Such already registered stakeholders respectively their representatives as well as all additionally nominated stakeholders have received the project newsletters, including invitations to all key events of the project. Moreover, active participation in the project has been fostered by the respective beneficiaries.

The project web site, through which information concerning the project and its progress is presented and maintained. Furthermore, public deliverables will be made available to interested individuals for download. The site will be maintained and updated regularly, and will be active for at least two years after the end of the project.

Exploitation of project results is currently not planned, as the ICS requires definite partners for implementation in order to develop ICS further into a working system. Individual contacts with interested parties have been made at the Stakeholder Conference. Nonetheless, such a development requires further invest, which is why project results will be provided even after project ending in order to cater further interest and elaborate existing or create new contacts which can lead to an implementation.

IPR issues are taken care of in the Consortium Agreement of the project. In general the IC-IC Consortium, resp. STAR as Project Coordinator, is available for questions concerning IPR issues. Currently, content made publically available is meant for access.

4 IC-IC Consortium

4.1 Contacts

4.1.1 Current partners

IIID International Institute for Information Design

The main concern of the International Institute for Information Design (IIID) is to contribute to an understanding within the human community with respect to cultural and economic issues by means of improved visual communication. Special attention is paid to the potential of graphic information design to overcome both social and language barriers. IIID endeavours to develop information design as an independent interdisciplinary field of knowledge and professional activities, to document and to make generally accessible specifically relevant information, to do research within its possibilities and in co-operation with its members and to find new ways of educating information designers. IIID is affiliated to the International Council of Graphic Design Associations (ICOGRADA) and cooperates with a number of other national and international organizations, interested in information design. IIID is recommended by UNESCO as a partner organization for world wide co-operation on matters of information design (Resolution 4.9 of the 28th General Conference of UNESCO, 1995, Paris).

IIID RE

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Wien, 1170 Austria
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FH Joanneum University of Applied Sciences

FH Joanneum is a regional university of applied sciences with about 4000 students. Besides many study programmes in technical, economic, social, and medical disciplines, FH Joanneum offers a range of bachelor and master programmes in industrial design, information design, media and interaction design, exhibition and museum design. FH Joanneum has a strong interest in promoting internationalisation and exchange activities as well as e-learning. The sector of "Fachhochschulen" in Austria offers degree programmes in application-oriented disciplines.

FH Joanneum University of Applied Sciences offers 32 Master's, Bachelors's and Diploma degree programmes in the areas of Business, Technology, Information Engineering, Mobility Engineering, Social Services, Public Health, Media and Design and two postgraduate programmes in the area of management. FH Joanneum is one of Austria's leading Universities of Applied Sciences. The quality and practical relevance of our courses is guaranteed by our close contacts with partner businesses and institutions. Additionally, international cooperation and the mobility of students and faculty members in exchange programmes with partner universities help to maintain our international profile.

Our Centres for Research and Development serve as important links between our departments and the business world and have successfully carried out cooperative RandD projects for a wide range of companies. FH Joanneum's departments of Information Design, Media and Interaction Design have a research focus on interaction design as well as technology enhanced learning.

FHJ

FH Joanneum Gesellschaft mbH
Alte Poststrasse 152
Graz, 8020 Austria
www.fh-joanneum.at

ENSAD Ecole Nationale des Arts Décoratifs

The ENSAD, whose origins go back to 1766, is a national public educational establishment, under the supervision of the French Ministry of Culture and Communication. Its mission is to provide artistic, scientific and technical training for designers capable of conceiving, promoting and developing projects in all fields of decorative arts, and to carry out and promote research in these fields.

The teaching at the school revolves around 10 specialised departments: Interior Design and Scenography, Art-Space, Animated Film, Graphic/Multimedia Design, Object design, the Printed Image, Photography/Video, Set Design, Textile Design, and Clothing.

The whole training lasts 5 years. It is organized through learning of visual arts, technics, humanities and methodologies of the different business activities. It leads to the mastery of artistic design with many relations between the different departments. The ENSAD has also a research department that completes the main cycle with a specific pole of reflexion with programs linked to the fields of creation, existing or emerging, in relation with social, economic, technologic, political, industrial and cultural fields of the contemporary world. These programs gather teacher and student researchers into teams by program. This pole develops collaborations and partnerships with other educational establishments as well as with professionals and industrial companies, all over the world.

ENSAD

Ecole Nationale des Arts Décoratifs
rue d'Ulm 31
Paris, 75240 France
www.ensad.fr

STAR Star Engineering GmbH

Star Cooperation was founded in 1997 as a fully-owned subsidiary of DaimlerChrysler and became autonomous in 2005. Today, with more than 150 consultants, STAR is focusing on supplier and quality management and marketing and aftersales consulting particularly for clients in the international automotive industry. The core competencies of Star Cooperation include technical, commercial and IT consulting services. Star Engineering, It provides synergies for companies that appreciate an integrated approach to consulting in combination with extensive industry competencies. Based on our extensive experience, we can offer our clients comprehensive services in the value chain. These services range from product development to start of production, from sales to aftersales with a strong focus on process and quality management consulting services. With the consistent implementation of quality processes and methods, we create the basis for efficient processes in our customers organisation. Our solutions are both preventative, to help stop problems from occurring, and reactive, to provide quick solutions to any problems which may arise. We accompany the client team along the road to success—from conception right through to implementation. We also act to implement an effective monitoring concept, which guarantees continuous improvement. Our services include:

- Introduction and ongoing development of quality management systems
- A transparent quality management system: from introduction through to monitoring
- Cost reductions through targeted use of quality strategies, such as model and change management
- Targeted introduction of quality methods, e.g. FMEA, Six Sigma

STAR

Star Engineering GmbH
Otto-Lilienthal-Straße 5
Böblingen, 71034 Germany
www.star-engineering.com/

ATTOMA

An information design practice based in Paris, Attoma develops its expertise in fields where the complexity of what is at stake goes hand in hand with the need to present complex information to a demanding audience. Created by Giuseppe Attoma Pepe in 1997, Attoma accounts today for a staff of 10 employees. Attoma offers expertise in User Interface, Signage Systems (both static or dynamic) and Document design (statements and forms). Attoma has worked on projects for leading corporate clients and institutions as RATP (Paris Transportation Authority), SNCF (French National Railways Company), EDF R&D, Keolis Group, Thales Communications, Orange, La Banque Postale, Musée du Louvre, etc.

ATTOMA

Attoma Sarl
25, rue Titon
Paris, 75011 France
www.attoma.eu

FLU Fluidtime Data Services GmbH

Fluidtime is a design and software company that specializes in software solutions with the highest level of usability. Combining design, software and service, Fluidtime continues to set new standards. Numerous projects and cooperation with universities and research institutes guarantee the highest levels of innovation. FLU specializes in solutions for the travel and transport sectors, customer relationship management and digital marketing, news and media as well as business process management as our core activities.

FLU

Neubaugasse 12-14/25
Wien, 1070 Austria
www.fluidtime.com

ESPI Designers B.V. – “Edenspiekermann”

Edenspiekermann is an independent design group which is owned and run by its partners. Offices are in Amsterdam, Berlin and Stuttgart and have a close working relationship with alliance partners around the globe. ESPI designs brand experiences. Starting with a strategy, choosing the appropriate media to delivering it and then designing the complete experience. Our experience and knowledge can roughly be attributed to two main fields of expertise: brand identity development and information/service design. Brand Identity Development: An attractive brand distinguishes from

competition and improves financial results. It is the foundation for a long-lasting relationship with clients and customers. ESPI creates names, logos, typefaces and visual identity programs to form distinctive brands. And build identity management tools to maintain them. Some of our clients in this field of expertise: Bosch, Deutsche Bahn, City of Amsterdam, Enexis, Robeco, OttoBock, Frankfurter Messe. Service design and Information Design: Customers will be satisfied and remain loyal when your products and services deliver what your brand promises. We apply service design methods to develop digital forms, websites, apps and printing-on-demand tools that strengthen the brand experience. Some of our clients in this field of expertise: Eneco, City of Amsterdam, NS Dutch Railways, Rabobank, GVB (Amsterdam Public Transport), Prorail, Volkswagen, E-on, Wirecard.

ESPI

Barentszplein 7-II

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www.edenspiekermann.com

5W Fuenfwerken Design AG

We are experts in design and communication. It is our role to create the appropriate form for messages and information – by combining creativity with solid craftsmanship, knowledge and curiosity. We support national and international clients in the development of their identity as it applies to brand, corporate design and corporate communications. We develop and implement their publishing projects, trade show presentations and online presences with unexpected concepts, exceptional design and personalized consultation. Our objectives are to develop lasting solutions and to create economic and soft value. We are among the most prominent German design and consulting agencies. Our projects receive awards both nationally and internationally on a regular basis. Some examples are – the “BCP – Best of Corporate Publishing”, the “red dot award: communication design” and the “Certificate of Excellence” awarded by the Type Directors Club, NY.

Since 2009, the chief design and innovation officer of Fuenfwerken, Helmut Ness, is a member of the Traffic and Transport program committee of the International Institute for Information Design (IIID).

5W

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Wiesbaden, 65183 Germany

www.fuenfwerken.com

4.1.2 Retired partners

HKU Hogeschool voor de Kunsten Utrecht

Utrecht School of the Arts (HKU) is the largest institute of postgraduate and professional education in the arts in the Netherlands and one of the largest in Europe. Its well-known department of Art, Media & Technology focuses on education and research in the field of design, media & technology and provides bachelor, master and post grad education and research in a.o. interaction design, information design and game design. Learning at the Faculty is characterized by a unique combination of learning by doing and of technological and creative education, with a focus on realistic, multidisciplinary, professional team projects. Situated within the Arts, Media & Technology Faculty (KMT), the Utrecht Research & Design Institute for Digital Cultures (URDIDC) is dedicated to fundamental and applied research and development in the areas of eLearning, eResearch,

eInclusion, Information-, Music-, Narrative- & Game Design. The URDIDC holds research contracts from private companies, government and the European Commission IST Research Programmes (projects such as KAMP, MAID, LEDA and MEDiate). URDIDC specializes in engineering open and flexible content management solutions which cater for the needs of a variety of users (children, people with impairments); within a variety of contexts (arts-education, academic repositories); and with a variety of formats (streaming video, metadata retrieval of audio) Motivation/previous experience We recognize the growing importance of mobile & wireless communication, ubiquitous computing and the use of media in public spaces as a key trend within our domain. Several partner design & research projects have been realized covering QR-codes and RFID. Intensive FP7 research collaboration on cross platform multimedia content distribution, personalization and context awareness is currently taking place. Participation in IC-IC will provide the research groups of the department with new insights regarding the design for ambient experiences and the use of mobile and wireless communication within the field of information design. The research and design to be undertaken in IC-IC will lead to new insights and curriculum and provides us with new opportunities to connect several disciplines within the department. Cooperation with partners such as Schiphol, KLM and NS will provide an opportunity to share our research and knowledge in the field of ambient experience design and the role information design can play in the wireless future, helping these companies and society to prepare for the future. The department of Art, Media & Technology is putting more and more emphasis on educating and research for ambient experience design.

HKU

Janskerkhof 18
3512 BM Utrecht, Nederlande
<http://www.hku.nl/>

HdM Hochschule der Medien

Stuttgart Media University (HdM) is the only educational institute in Europe to cover every media field and regards itself as a full-service university for the media industry. Its range of courses extends from printing through to the Internet, from design through to electronic media. These contents are reflected in 21 courses of studies. One of these is Information Design. Information designers process information for specific target groups using a wide range of media. They conceive and design websites, brochures, leaflets, complex multimedia information systems, and learning programmes.

The Institute for Information Design Research (IIDR) at HdM covers four research areas:

- Usability and User Experience Research (Prof. Dr. Burmester)
- Visualization (Prof. Dr. Weber)
- Interaction Design Research (Prof. Tille)
- Intercultural Learning and Intercultural Information Design (Prof. Dr. Thissen)

Dr. Wibke Weber, Dr. Michael Burmester, and Ralph Tille currently work together in the research project "Interactive Information Graphics" funded by the federal state of Baden-Wurttemberg, Ministry of Science, Research and the Arts.

HDM

Nobelstraße 10
70569 Stuttgart
<http://www.hdm-stuttgart.de/>

IN2 search interfaces development Limited

IN2 provides customised solutions and services for the multimedia content providers regarding storage, management, indexing and retrieval of rich media. IN2's technology has been awarded by the German-wide "Initiative Mittelstand" as an innovative product in the category of content management at the "Innovationspreis 2007 ITK" and are licensed to third party media asset and content management systems. IN2 combines expertise in human computer interaction, artificial intelligence and knowledge-based user modelling techniques for providing personalised search and navigation of multimedia contents available through various networks at distributed databases and web offerings. The company also develops and deploys active exploration tools to enable efficient personalised presentation of complex information structures and spaces using a unique multi-view point approach.

IN2

22 Forth Street
Edinburgh, EH1 3LH, United Kingdom
<http://in-two.com/>

5 Use and dissemination of foreground

Concerning the use and dissemination of foreground the IC-IC consortium makes results of the project available on the project website, which will be maintained until two years after project ending. With this, interested stakeholders as well as other researcher and developers can gain insights and profit from project foreground.

Due to the early stage of development process, further development is needed in order to fully implement ICS. As this requires both invest and stakeholders dedicated to implement ICS, the Consortium explores existing contacts built up during the project to the participating stakeholders. However, also new potential stakeholder's like public transport, urban transport / infrastructure planning, or other areas which require inter-connectivity and shared information to enhance their potential are of interest and contacted. In case of interest the contact of STAR as Project Coordinator can be found on www.ic-ic.eu.

It is envisioned that – in case of interested stakeholders – the various partners of the IC-IC consortium as experts in their respective fields offer services from the foreground. This can range from optimizing existing information or signage infrastructure, optimizing existing apps concerning design or usability to creating a Stakeholder Consortium for sharing information and implementing an InfoConnectivity System.

IPR states that every beneficiary has the right on their developments, which is why the system architecture or the design as developed as well as the logo of the project belong rightfully to the respective beneficiaries. Otherwise, the Consortium favors the approach to spark ideas of developers, designers or stakeholders on future collaboration enhancing the chance to implement an InfoConnectivity System between different stakeholders and focusing more on the traveler's needs. From our perspective such an ICS as developed and described in the project creates a positive value for participating Stakeholders due to a change of mobility in society which fosters intermodal transport and requires a well functioning network and related information. The traveler wants to experience one journey and have one mean, which allows to plan, adjust, and execute his/her journey in a user friendly way. Thus, we see ICS as a huge opportunity for different kind of stakeholders, especially transport providers.

Socio-economic impact is to enable every traveler to plan and execute his/her journey in a way he/she favors. This means that also elderly, handicapped, or non-native speakers are able to master their journey successfully, giving them the chance to get more integrated into social life as they have access to different transport choices. Another possible impact can be the reduction of green-house gases through a better collaboration between different public transport providers which can increase the number of passengers taking public transports instead of cars.

5.1 Section A (public)

This section should describe the dissemination measures, including any scientific publications relating to foreground. **Its content will be made available in the public domain** thus demonstrating the added-value and positive impact of the project on the European Union.

TEMPLATE A1: LIST OF SCIENTIFIC (PEER REVIEWED) PUBLICATIONS, STARTING WITH THE MOST IMPORTANT ONES

NO.	Title	Main author	Title of the periodical or the series	Number, date or frequency	Publisher	Place of publication	Year of publication	Relevant pages	Permanent identifiers1 (if available)	Is/Will open access2 provided to this publication?
1	<i>Newsletter 1</i>	<i>IIID</i>		<i>November 2011</i>	<i>IIID</i>	<i>Website</i>	<i>2011</i>		http://www.ic-ic.eu/Newsletters.aspx#NL1	Yes
2	<i>Newsletter 2</i>	<i>IIID</i>		<i>October 2012</i>	<i>IIID</i>	<i>Website</i>	<i>2012</i>		http://www.ic-ic.eu/Newsletters.aspx#NL2	Yes
3	<i>Newsletter 3</i>	<i>IIID</i>		<i>December 2012</i>	<i>IIID</i>	<i>Website</i>	<i>2012</i>		http://www.ic-ic.eu/Newsletters.aspx#NL3	Yes
4	<i>Newsletter 4</i>	<i>IIID</i>		<i>August 2013</i>	<i>IIID</i>	<i>Website</i>	<i>2013</i>		http://www.ic-ic.eu/Newsletters.aspx#NL4	Yes
5	<i>Newsletter 5</i>	<i>IIID</i>		<i>October 2013</i>	<i>IIID</i>	<i>Website</i>	<i>2013</i>		http://www.ic-ic.eu/Newsletters.aspx#NL5	Yes
6	<i>Newsletter 6</i>	<i>IIID</i>		<i>December 2013</i>	<i>IIID</i>	<i>Website</i>	<i>2013</i>		http://www.ic-ic.eu/Newsletters.aspx#NL6	Yes
7	<i>Newsletter 7</i>	<i>IIID</i>		<i>March 2014</i>	<i>IIID</i>	<i>Website</i>	<i>2014</i>		http://www.ic-ic.eu/Newsletters.aspx#NL7	Yes
8	<i>Newsletter 8</i>	<i>IIID</i>		<i>May 2014</i>	<i>IIID</i>	<i>Website</i>	<i>2014</i>		http://www.ic-ic.eu/Newsletters.aspx#NL8	Yes

¹ A permanent identifier should be a persistent link to the published version full text if open access or abstract if article is pay per view) or to the final manuscript accepted for publication (link to article in repository).

² Open Access is defined as free of charge access for anyone via Internet. Please answer "yes" if the open access to the publication is already established and also if the embargo period for open access is not yet over but you intend to establish open access afterwards.

9	Newsletter 9	IIID		June 2014	IIID	Website	2014		http://www.ic-ic.eu/Newsletters.aspx#NL9	Yes
10	Newsletter 10	IIID		July 2014	IIID	Website	2014		http://www.ic-ic.eu/Newsletters.aspx#NL10	Yes
11	Information acquisition report	STAR		*	IIID	Website	2011		*	Yes
12	Report on Personas, Journeys and Scenarios	IIID		*	IIID	Website	2012		*	Yes
13	Policy Recommendations	STAR		*	IIID	Website	2014		*	Yes
14	ICS infoconnectivity system Handbook	ESPI		*	IIID	Website	2014		*	Yes
15	Business Model	IIID		*	IIID	Website	2014		*	Yes
16	Final Report	STAR		*	IIID	Website	2014		*	Yes

Table 2: List of Scientific (Peer Reviewed) Publications

* will be provided on the project's website after EC acceptance

TEMPLATE A2: LIST OF DISSEMINATION ACTIVITIES									
NO.	Type of activities ³	Main leader	Title	Date/Period	Place	Type of audience ⁴	Size of audience	Countries addressed	
1	Workshop	Ensad	Stakeholder Forum Paris	3 March 2014	Paris	Stakeholders	4	France	
2	Workshop	5W	Stakeholder Forum Frankfurt	5 March 2014	Frankfurt	Stakeholders	4	Germany	
3	Conference	IIID	Stakeholder Conference	28 May 2014	Paris	Stakeholders and Scientific Community	10	World wide	

Table 3: List of Dissemination Activities

³ A drop down list allows choosing the dissemination activity: publications, conferences, workshops, web, press releases, flyers, articles published in the popular press, videos, media briefings, presentations, exhibitions, thesis, interviews, films, TV clips, posters, Other.

⁴ A drop down list allows choosing the type of public: Scientific Community (higher education, Research), Industry, Civil Society, Policy makers, Medias, Other ('multiple choices' is possible).

5.2 Section B

This section should specify the exploitable foreground and provide the plans for exploitation. All these data can be public or confidential; the report must clearly mark non-publishable (confidential) parts that will be treated as such by the Commission. Information under Section B that is not marked as confidential **will be made available in the public domain** thus demonstrating the added-value and positive impact of the project on the European Union.

Template see: http://ec.europa.eu/research/participants/data/ref/fp7/89692/project-reporting_en.pdf pp.27

TEMPLATE B1: LIST OF APPLICATIONS FOR PATENTS, TRADEMARKS, REGISTERED DESIGNS, ETC.					
Type of IP Rights ⁵ :	Confidential Click on YES/NO	Foreseen embargo date dd/mm/yyyy	Application reference(s) (e.g. EP123456)	Subject or title of application	Applicant (s) (as on the application)

Table 4: List of Applications for Patents, Trademarks, Registered Designs, Ect.

⁵ A drop down list allows choosing the type of IP rights: Patents, Trademarks, Registered designs, Utility models, Others.

6 Report on social implications

Replies to the following questions will assist the Commission to obtain statistics and indicators on societal and socio-economic issues addressed by projects. The questions are arranged in a number of key themes. As well as producing certain statistics, the replies will also help identify those projects that have shown a real engagement with wider societal issues, and thereby identify interesting approaches to these issues and best practices. The replies for individual projects will not be made public.

A General Information *(completed automatically when Grant Agreement number is entered).*

Grant Agreement Number:

266250

Title of Project:

IC-IC: Enhancing interconnectivity

Name and Title of Coordinator:

STAR Engineering GmbH, Nuray Kous-Giousouf

B Ethics

1. Did your project undergo an Ethics Review (and/or Screening)?

- If Yes: have you described the progress of compliance with the relevant Ethics Review/Screening Requirements in the frame of the periodic/final project reports?

0Yes xNo

Special Reminder: the progress of compliance with the Ethics Review/Screening Requirements should be described in the Period/Final Project Reports under the Section 3.2.2 'Work Progress and Achievements'

2. Please indicate whether your project involved any of the following issues (tick box) :

YES

RESEARCH ON HUMANS

- Did the project involve children?
- Did the project involve patients?
- Did the project involve persons not able to give consent?
- Did the project involve adult healthy volunteers?
- Did the project involve Human genetic material?
- Did the project involve Human biological samples?
- Did the project involve Human data collection?

RESEARCH ON HUMAN EMBRYO/FOETUS

- Did the project involve Human Embryos?
- Did the project involve Human Foetal Tissue / Cells?
- Did the project involve Human Embryonic Stem Cells (hESCs)?
- Did the project on human Embryonic Stem Cells involve cells in culture?
- Did the project on human Embryonic Stem Cells involve the derivation of cells from Embryos?

PRIVACY

- Did the project involve processing of genetic information or personal data (eg. health, sexual lifestyle, ethnicity, political opinion, religious or philosophical conviction)?
- Did the project involve tracking the location or observation of people?

RESEARCH ON ANIMALS

- Did the project involve research on animals?
- Were those animals transgenic small laboratory animals?
- Were those animals transgenic farm animals?

• Were those animals cloned farm animals?	
• Were those animals non-human primates?	
RESEARCH INVOLVING DEVELOPING COUNTRIES	
• Did the project involve the use of local resources (genetic, animal, plant etc)?	
• Was the project of benefit to local community (capacity building, access to healthcare, education etc)?	
DUAL USE	
• Research having direct military use	0 Yes x No
• Research having the potential for terrorist abuse	0 Yes x No

C Workforce Statistics

3. Workforce statistics for the project: Please indicate in the table below the number of people who worked on the project (on a headcount basis).

Type of Position	Number of Women	Number of Men
Scientific Coordinator	1	8
Work package leaders	2	4
Experienced researchers (i.e. PhD holders)	4	21
PhD Students	1	1
Other	9	0

4. How many additional researchers (in companies and universities) were recruited specifically for this project?

Of which, indicate the number of men:

D Gender Aspects

5. Did you carry out specific Gender Equality Actions under the project? Yes No

6. Which of the following actions did you carry out and how effective were they?

	Not at all effective	Very effective
<input type="checkbox"/> Design and implement an equal opportunity policy	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
<input type="checkbox"/> Set targets to achieve a gender balance in the workforce	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
<input type="checkbox"/> Organise conferences and workshops on gender	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
<input type="checkbox"/> Actions to improve work-life balance	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
<input type="radio"/> Other: <input style="width: 200px; height: 20px;" type="text"/>		

7. Was there a gender dimension associated with the research content – i.e. wherever people were the focus of the research as, for example, consumers, users, patients or in trials, was the issue of gender considered and addressed?

Yes- please specify

No

E Synergies with Science Education

8. Did your project involve working with students and/or school pupils (e.g. open days, participation in science festivals and events, prizes/competitions or joint projects)?

Yes- please specify

No

9. Did the project generate any science education material (e.g. kits, websites, explanatory booklets, DVDs)?

Yes- please specify

No

F Interdisciplinarity

10. Which disciplines (see list below) are involved in your project?

Main discipline⁶:

Associated discipline⁶: Associated discipline⁶:

G Engaging with Civil society and policy makers

11a Did your project engage with societal actors beyond the research community? (if 'No', go to Question 14) Yes No

11b If yes, did you engage with citizens (citizens' panels / juries) or organised civil society (NGOs, patients' groups etc.)?

No

Yes- in determining what research should be performed

Yes - in implementing the research

⁶ Insert number from list below (Frascati Manual).

- Yes, in communicating /disseminating / using the results of the project

11c In doing so, did your project involve actors whose role is mainly to organise the dialogue with citizens and organised civil society (e.g. professional mediator; communication company, science museums)?

<input type="radio"/>	Yes
<input type="radio"/>	No

12. Did you engage with government / public bodies or policy makers (including international organisations)

- No
- Yes- in framing the research agenda
- Yes - in implementing the research agenda
- Yes, in communicating /disseminating / using the results of the project

13a Will the project generate outputs (expertise or scientific advice) which could be used by policy makers?

- Yes – as a **primary** objective (please indicate areas below- multiple answers possible)
- Yes – as a **secondary** objective (please indicate areas below - multiple answer possible)
- No

13b If Yes, in which fields?

Agriculture		Energy		Human rights	
Audiovisual and Media		Enlargement		Information Society (x)	
Budget		Enterprise		Institutional affairs	X
Competition		Environment (x)	X	Internal Market	
Consumers		External Relations		Justice, freedom and security	
Culture		External Trade		Public Health	
Customs		Fisheries and Maritime Affairs		Regional Policy (x)	X
Development Economic and		Food Safety		Research and Innovation	
Monetary Affairs		Foreign and Security Policy		Space	
Education, Training, Youth		Fraud		Taxation	X
Employment and Social Affairs		Humanitarian aid		Transport (x)	

13c If Yes, at which level? <input checked="" type="checkbox"/> Local / regional levels <input type="checkbox"/> National level <input checked="" type="checkbox"/> European level <input type="checkbox"/> International level							
H Use and dissemination							
14. How many Articles were published/accepted for publication in peer-reviewed journals?	0						
To how many of these is open access⁷ provided?							
How many of these are published in open access journals?							
How many of these are published in open repositories?							
To how many of these is open access not provided?							
Please check all applicable reasons for not providing open access:							
<input type="checkbox"/> publisher's licensing agreement would not permit publishing in a repository <input type="checkbox"/> no suitable repository available <input type="checkbox"/> no suitable open access journal available <input type="checkbox"/> no funds available to publish in an open access journal <input type="checkbox"/> lack of time and resources <input type="checkbox"/> lack of information on open access <input type="checkbox"/> other ⁸ :							
15. How many new patent applications ('priority filings') have been made? <i>("Technologically unique": multiple applications for the same invention in different jurisdictions should be counted as just one application of grant).</i>	0						
16. Indicate how many of the following Intellectual Property Rights were applied for (give number in each box).	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">Trademark</td> <td style="width: 20%;"></td> </tr> <tr> <td>Registered design</td> <td></td> </tr> <tr> <td>Other</td> <td></td> </tr> </table>	Trademark		Registered design		Other	
Trademark							
Registered design							
Other							
17. How many spin-off companies were created / are planned as a direct result of the project? <i>Indicate the approximate number of additional jobs in these companies:</i>	0						
18. Please indicate whether your project has a potential impact on employment, in comparison with the situation before your project:							
<table style="width:100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Increase in employment, or <input type="checkbox"/> Safeguard employment, or <input type="checkbox"/> Decrease in employment, <input type="checkbox"/> Difficult to estimate / not possible to quantify </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> In small & medium-sized enterprises <input type="checkbox"/> In large companies <input checked="" type="checkbox"/> None of the above / not relevant to the project </td> </tr> </table>		<input type="checkbox"/> Increase in employment, or <input type="checkbox"/> Safeguard employment, or <input type="checkbox"/> Decrease in employment, <input type="checkbox"/> Difficult to estimate / not possible to quantify	<input type="checkbox"/> In small & medium-sized enterprises <input type="checkbox"/> In large companies <input checked="" type="checkbox"/> None of the above / not relevant to the project				
<input type="checkbox"/> Increase in employment, or <input type="checkbox"/> Safeguard employment, or <input type="checkbox"/> Decrease in employment, <input type="checkbox"/> Difficult to estimate / not possible to quantify	<input type="checkbox"/> In small & medium-sized enterprises <input type="checkbox"/> In large companies <input checked="" type="checkbox"/> None of the above / not relevant to the project						
19. For your project partnership please estimate the employment effect resulting directly from your participation in Full Time Equivalent (FTE = one person working fulltime for a year) jobs:	<i>Indicate figure:</i>						

⁷ Open Access is defined as free of charge access for anyone via Internet.

⁸ For instance: classification for security project.

Difficult to estimate / not possible to quantify

x

I Media and Communication to the general public

20. As part of the project, were any of the beneficiaries professionals in communication or media relations?

Yes No

21. As part of the project, have any beneficiaries received professional media / communication training / advice to improve communication with the general public?

Yes No

22 Which of the following have been used to communicate information about your project to the general public, or have resulted from your project?

- | | |
|---|--|
| <input type="checkbox"/> Press Release | <input type="checkbox"/> Coverage in specialist press |
| <input checked="" type="checkbox"/> Media briefing | <input type="checkbox"/> Coverage in general (non-specialist) press |
| <input type="checkbox"/> TV coverage / report | <input type="checkbox"/> Coverage in national press |
| <input type="checkbox"/> Radio coverage / report | <input type="checkbox"/> Coverage in international press |
| <input type="checkbox"/> Brochures /posters / flyers | <input checked="" type="checkbox"/> Website for the general public / internet |
| <input checked="" type="checkbox"/> DVD /Film /Multimedia | <input type="checkbox"/> Event targeting general public (festival, conference, exhibition, science café) |

23 In which languages are the information products for the general public produced?

- | | |
|--|---|
| <input type="checkbox"/> Language of the coordinator | <input checked="" type="checkbox"/> English |
| <input type="checkbox"/> Other language(s) | |

Question F-10: Classification of Scientific Disciplines according to the Frascati Manual 2002 (Proposed Standard Practice for Surveys on Research and Experimental Development, OECD 2002):

FIELDS OF SCIENCE AND TECHNOLOGY

1. NATURAL SCIENCES

- 1.1 Mathematics and computer sciences [mathematics and other allied fields: computer sciences and other allied subjects (software development only; hardware development should be classified in the engineering fields)]
- 1.2 Physical sciences (astronomy and space sciences, physics and other allied subjects)
- 1.3 Chemical sciences (chemistry, other allied subjects)
- 1.4 Earth and related environmental sciences (geology, geophysics, mineralogy, physical geography and other geosciences, meteorology and other atmospheric sciences including climatic research, oceanography, vulcanology, palaeoecology, other allied sciences)
- 1.5 Biological sciences (biology, botany, bacteriology, microbiology, zoology, entomology, genetics, biochemistry, biophysics, other allied sciences, excluding clinical and veterinary sciences)

2. ENGINEERING AND TECHNOLOGY

- 2.1 Civil engineering (architecture engineering, building science and engineering, construction engineering, municipal and structural engineering and other allied subjects)

- 2.2 Electrical engineering, electronics [electrical engineering, electronics, communication engineering and systems, computer engineering (hardware only) and other allied subjects]
- 2.3. Other engineering sciences (such as chemical, aeronautical and space, mechanical, metallurgical and materials engineering, and their specialised subdivisions; forest products; applied sciences such as geodesy, industrial chemistry, etc.; the science and technology of food production; specialised technologies of interdisciplinary fields, e.g. systems analysis, metallurgy, mining, textile technology and other applied subjects)

3. MEDICAL SCIENCES

- 3.1 Basic medicine (anatomy, cytology, physiology, genetics, pharmacy, pharmacology, toxicology, immunology and immunohaematology, clinical chemistry, clinical microbiology, pathology)
- 3.2 Clinical medicine (anaesthesiology, paediatrics, obstetrics and gynaecology, internal medicine, surgery, dentistry, neurology, psychiatry, radiology, therapeutics, otorhinolaryngology, ophthalmology)
- 3.3 Health sciences (public health services, social medicine, hygiene, nursing, epidemiology)

4. AGRICULTURAL SCIENCES

- 4.1 Agriculture, forestry, fisheries and allied sciences (agronomy, animal husbandry, fisheries, forestry, horticulture, other allied subjects)
- 4.2 Veterinary medicine

5. SOCIAL SCIENCES

- 5.1 Psychology
- 5.2 Economics
- 5.3 Educational sciences (education and training and other allied subjects)
- 5.4 Other social sciences [anthropology (social and cultural) and ethnology, demography, geography (human, economic and social), town and country planning, management, law, linguistics, political sciences, sociology, organisation and methods, miscellaneous social sciences and interdisciplinary, methodological and historical S1T activities relating to subjects in this group. Physical anthropology, physical geography and psychophysiology should normally be classified with the natural sciences].

6. HUMANITIES

- 6.1 History (history, prehistory and history, together with auxiliary historical disciplines such as archaeology, numismatics, palaeography, genealogy, etc.)
- 6.2 Languages and literature (ancient and modern)
- 6.3 Other humanities [philosophy (including the history of science and technology) arts, history of art, art criticism, painting, sculpture, musicology, dramatic art excluding artistic "research" of any kind, religion, theology, other fields and subjects pertaining to the humanities, methodological, historical and other S1T activities relating to the subjects in this group]