1 i-locate Fact Sheet

1.1 Outline the project's rationale and objectives

Recent studies have highlighted that, on average, we spend approximately 90% of our time indoors, often in unfamiliar environments. Being able to seamlessly locate people or objects within indoor AND outdoor spaces could enable a number of new Location-Based Services (LBS) of significant economic relevance. In some cases, such as in modern hospitals and health care centres, efficient and accurate “asset” tracking and management (be this medical staff, patients, visitors, equipment etc.) is extremely important in economic as well as in social terms.

Such location services require having access to Geographic Information (GI) of outdoor and –most notably– indoor spaces. While outdoor data can be easily accessed as Open Data (OD), a notable example being OpenStreetMap (OSM), the availability of Geographical Information of indoor spaces is not available on a large scale as Open Data. In case of publicly accessible buildings, such as hospitals, stations, airports, shopping malls and public offices, having access to geographical data of indoor spaces, and particularly as Open Data, could allow new business activities and bring a number of social benefits.

i-locate tries to bridges this gap through the creation of innovative businesses based on indoor and outdoor localisation of people and objects. To this extent, i-locate is engineered to address very clear market requirements emerging from a core of specialised SMEs, targeting the following objectives:

- To create a public geoportal, the so-called “virtual hub”, that will collect, make discoverable and provide access to indoor geographical information of publicly accessible buildings as Open Data.
- To extend current open standards to support indoor/outdoor LBS based on sound privacy and security policies, for the highest protection of personal/critical data.
- To develop an open source “toolkit” for LBS supporting integrated indoor-outdoor asset and people as well as their tracking and routing based on the aforementioned open standard protocols.
- To develop few clients for mobile devices (App) accessing the toolkit’s services via the aforementioned open standard protocols.
- To test –for more than one year- the “virtual hub” and the “toolkit” in the context of public health, private and public services with the involvement of real users and stakeholders within 13 pilots sites in 8 EU countries.
- To promote a number of openness and awareness-rising activities targeted at maximising the impact of the project within the widest community of stakeholders through series of conferences, workshops, training actions.
- To stimulate innovation and business activities around indoor Geographic Information through direct access to smeSpire, the largest network of geo-ICT SMEs in Europe, to ensure that the relevant critical mass is created around the results of i-locate and to foster development of innovative services.

The consortium gathers 24 partners, including technical developers, final users and technical partners providing support to final users as well as other partners in charge of horizontal activities such as definition of business models, exploitation and dissemination activities.

1.2 Technical baseline

Location-Based Services (LBS) have traditionally targeted outdoor spaces based on technologies such as GPS, GLONASS, EGNOS and Galileo. Over the past few years, increasingly accurate indoor localisation technologies, based on technologies such as Bluetooth, ZigBee and Wi-Fi have expanded the scope of LBS to include indoor spaces. The variety of technologies available is currently not addressed by existing software frameworks. For this reason i-locate will develop an extendible software "toolkit" that will allow creation of Location Based Services regardless of the underlying technologies and of the context (if indoor or outdoor). To do so it will create an abstraction level on top of location technologies based on open standards. Existing standards will be extended to consider specific requirements of indoor scenarios and to ensure sound privacy and security policies, for the highest protection of personal/critical data.

The LBS that will be developed by i-locate will be accessed from applications for mobile devices (smartphones, tablets) that will complement the service toolkit and allowing also crowdsourcing of information regarding indoor spaces as open data. It should be noted that, although there are a number of companies focusing on indoor LBS, there is no such technological ecosystem in the market.

In addition, i-locate will also deliver a public portal for indoor open GI, which could be regarded as the indoor counterpart of OpenStreetMap, ensuring provision of an adequate set of open data providing detailed knowledge of the interior geography of a space. The portal will allow easy discoverability, access and sharing through the Internet of open GI related to publicly accessible indoor spaces.

The portal is expected to grow far beyond the boundaries of the pilots. This will create a significant impact at the EU level facilitating start-up of businesses based on indoor mapping data of publicly available spaces.

1.3 Intended target groups

In general terms, i-locate targets the wide range of different user groups which may benefit of indoor and outdoor localisation technologies. In particular, the selected pilots target the following user groups:

- **Citizens**. Patients who will be guided over a given clinical path (e.g. during day hospital care) to reach the exact room within healthcare facilities (e.g. hospitals) where they have to undergo a health check. Visitors who need to be guided across outdoor and indoor spaces within public buildings (hospital, public offices, museums, technological parks, universities, fairs etc.).
- **Domain experts**. Doctors, health care professionals and ancillary staff who need: 1) to locate a portable piece of equipment inside the building: 2) to know the number of patients waiting for a given treatment (based on their position within the healthcare facility): 3) to locate and call a patient within the premises (e.g. in case of elderly patients getting lost within a large hospital).
- **Technicians**. Clinical engineers, multi-service providers, maintenance engineers who need: 1) to know how medical equipment is being used; 2) to locate a portable equipment that needs to be maintained.
- **Managers**. Facility managers who need: 1) to improve utilisation of resources through statistical analysis of spatial distribution of resources (human, devices etc.); 2) to promote forms of "lean hospitals" or –more in general- "lean offices" through localisation and sharing of asset between units; 3) to be informed immediately of malfunctioning devices (e.g. lifts) within a very large and complex infrastructure. Managers of public officers who need to

create location-based e-gov services that can be used by citizens to accomplish a given procedures that requires going through subsequent steps, visiting different offices, located in different places.

1.4 Application domains

Accurate seamless indoor and outdoor tracking of people and objects is extremely important in a number of domains (e.g. logistics, mobility, smart city services, health, retail etc.). To this extent it can be said that the i-locate toolkit will be applicable horizontally to all these domains although the selected pilot sites will focus on a few specific application domains for which the project will also develop end-user Apps: health, public services and cultural applications.

1.5 Intermediate and final outputs.

The first output of i-locate will be the delivery of a ready-to-be-deployed open source “toolkit” that will facilitate market entry of new companies and development of innovative businesses based on interoperable services for indoor and outdoor location, routing and asset management that use open GI for both indoor and outdoor spaces. In addition, i-locate will develop a public web-portal, the so-called “virtual hub” for sharing of and interoperable access to Indoor Geographic Information as open data. Lastly, the project will deliver the final mobile applications addressing the requirements of the project’s pilot sites: eHealth, public and private services, cultural heritage.

2 Project ID card

- Funded under: **The Information and Communication Technologies Policy Support Programme**
- Area: CIP-ICT-PSP-2013-7 - Theme 2 - Digital content, open data and creativity
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- Project reference: 621040
- Execution: From 01/01/2014 to 31/12/2016
- Project status: Open
- Contract type: The Information and Communication Technologies Policy Support Programme PB Pilot Type B

3 Links

- Project home page: www.i-locate.eu
- LinkedIn group: http://www.linkedin.com/groups?gid=7434810
- YouTube channel: http://www.youtube.com/channel/UCFaYoRUwrRQNBwUIWqfUjYg

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