"Linked Open Apps Ecosystem to open up innovation in smart cities"

Project Number: 297363

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Summary

The delivery of the iCity Urban Platform is a crucial milestone for the iCity Project and marks the point where several parallel pilots will be run by each of the four involved major cities. The iCity Platform is deployed with the purpose that each city will develop pilots for various applications which focus on improving efficiencies and communities in transportation and mobility, social care and ageing, environment, citizen's participation enhancing the inclusion of persons with disabilities and other relevant fields.

This document is to report the status of the pilot's deployment as well as setting out the iCity milestones, and measurement indicators, with the aim of monitoring and controlling progress at different stages in the project life.

DOCUMENT HISTORY

Version	Date of issue	Status	Content and changes	Modified by
0.1	03/09/2011	Draft	First draft	Marc Garriga, Sergi Amigó (IMI)
0.2	20/02/2015	Final	Final version	Marc Garriga, Sergi Amigó (IMI)
0.3	23/02/2015	Final	Final version-revised	Raluca Ciungu (IMI)

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ABBREVIATIONS AND ACRONYMS

Acronym	Description
App	Application
PU	Public
DoW	Document of Work
SMEs	Small and Medium Enterprises
API	Application Programming Interface

1 Introduction[1]

The iCity Project will develop and deploy an Urban Platform and operational processes to enable user-driven open innovation ecosystems in which to co-create, deploy, operate and exploit Internet enabled public services or services of public interest in smart cities.

This project is organized as a joint effort carried out by a cross-border alliance of 'Smart Cities' (Barcelona, Genoa and Bologna) with the involvement of third parties (companies, SMEs and third sector) contributing to create a rewarding environment within the iCity Project.

With the delivery of the iCity Urban Platform, a milestone is reached where the iCity Project can start with a series of pilots in parallel to run by each of the four involved major cities. The city project pilots will be based on the iCity platform currently in continuous improving and will integrate existing open shared technology platform. The shared iCity Platform will provide an integrated vision of a city and its infrastructures and all integrated components, building the basis of digital information and communication to foster a user-driven open innovation ecosystem.

The integration of municipal Open Information Systems in the iCity Platform originates the possibility to interact with these infrastructures allowing the development of applications and services by these third parties. The general concept of the pilot is to develop applications and services by third parties using open municipal infrastructures integrated in the iCity Platform.

The iCity Platform is deployed with the purpose that each city will develop pilots in different sectors. These set of key thematic areas are well aligned with the Digital Agenda for Europe flagship initiative: improving transportation efficiency and mobility, social care and ageing, environment, citizen's participation, enhancing the inclusion of persons with disabilities and other relevant fields.

[1] Part of this section has been extracted from the DoW

2 Purpose of this document

The iCity Project is split into a number of phases, this helps the management and deployment of resources and capabilities so the iCity platform is gradually developed and introduced to the local software development community and user public.

Evolution of the iCity Project phases is outlined as follows:

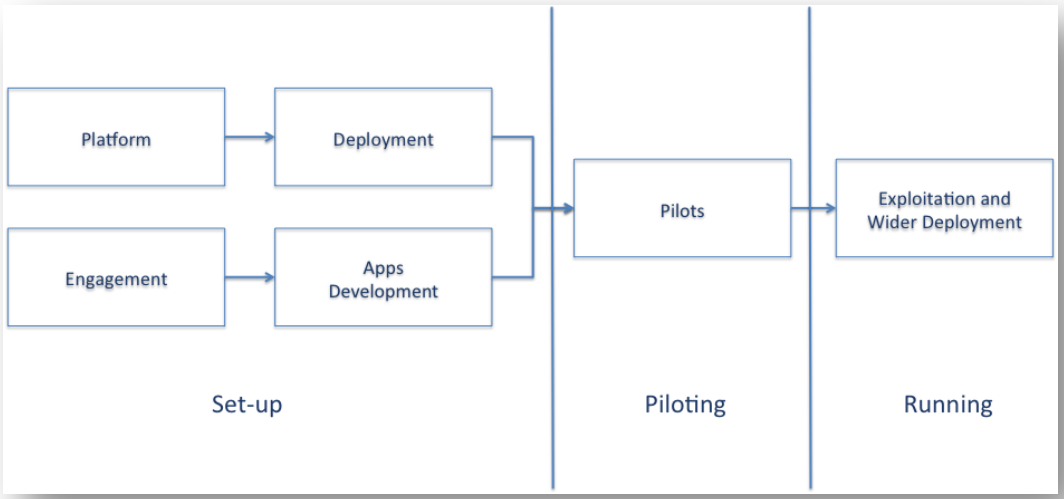

Figure 1: Phases of the iCity Project[2]

Please, note that Set-up phase is a critical dependency that must be completed ahead of the second phase Piloting. The platform development and deployment as well as the software developer engagement and consequently Apps development are requirements to carry out a successful Piloting phase. The purpose of Piloting is to deploy the first pilots under the iCity Project as well as to collect information about their performance.

Advances carried out during this phase will be explained in this document with the purpose to analyze the current situation at month 30 of the iCity Project in terms of pilot's development.

Please note the Piloting phase implies a process that is in progress and gradually maturing. There are expected the delivery of two additional versions of this document in the future, with the same structure which will detail the work tasks until the concluding phase.

[2] Figure extracted from the DoW

3 Pilot's Development Report at Month 30

Due to delays with the iCity Platform development and deployment, engagement has also experienced delays. Now the platform has been accepted and validated by current partners as a useful tool to start with the dynamization activities.

Now, we are deeply involved in organizing engagement activities with the purpose to get applications of public interest developed by interested third parties.

At month 30 we cannot provide with all expected results and reports because no iCity application has been created yet. Despite that, this document is elaborated as agreed in the DoW.

3.1 iCity Platform

Status	Up and Running. Link to access the API: http://icity-devp.icityproject.com/
Functionalities	This platform version allows developers create APPs using the API iCity (REST)
Open Infrastructures integrated	• BCN: Barcelona Sensor Platform (BSP) • BCN: Smart Citizen Platform • BCN: IRIS (Barcelona citizen complaints system) • GLA: Transport For London (TFL) - Journey Planner • GLA: Air quality sensor • GLA: Alert me • CDG: Weather Station • CDG: Citizen's Desk • COBO: TPER-QueryHelloBus • COBO: TPER-QueryHellobus4ivr • COBO: TPER-QueryResale • COBO: CISIUM EVENTS • COBO: CISIUM TRAFFIC • COBO: CISIUM PARKING • LAM: suggestion and complaints • ZAR: suggestion and complaints • COR: agenda • ABT: Urbiotica sensors • ABT: Parkare sensors

API iCity	Request service and registration service.
API Open Data	Search, catalogue and publish
SDK	Expands the API REST iCity providing developers with more documentation.
Additional information	Front-end with users will be constituted by: • Public portal (providing public information related to iCity Project) The link is www.icityproject.eu • Allowing access the API REST to developers under registration. The link is http://icity-devp.icityproject.com/

3.2 Pilot Project Deployment

3.2.1 Open municipal information systems

ALREADY OPEN INFRASTRUCTURES

Infrastructure	Weather Station
City	Genoa
Description	Genoa has a network of weather stations that provide information about temperature, humidity and wind speed from many providers. These infrastructures allow developing applications that show real time information about local weather. These data are used by citizens but it's also among the information used by our local Civil protection.
State	Integrated to the iCity Platform
API	API available
Additional information	This infrastructure must be used to this way: Only iCity platform can access directly.
Availability	Available
Work plan	Integrated

Infrastructure	BSP (Barcelona Sensors Platform, also known as Sentilo)
City	Barcelona

Description	Barcelona City Council offers a platform to access to sensors data which are distributed around the city. ▪ This BSP includes these kind of sensors: ▪ Environmental sensors (temperature, NO2, CO2, noise). ▪ Sustainability (level of capacity of the container waste) ▪ Traffic management (parking sensors). Walkers flows (number of pedestrian). ▪ Irrigation control (ground humidity, wind, rain, temperature) ▪ Building energy management sensors (electricity and gas)
State	Integrated to the iCity Platform
API	API available
Additional information	Service limitation: Number of actions per unit time is restricted to 10 queries per second. Cost: Free (analysis of the possibility charge a fee in the future)
Availability	Available
Work plan	Integrated

Infrastructure	Smart Citizen Platform
City	Barcelona (provider IAAC)
Description	Smart Citizen is a platform to generate participatory processes of people in the cities. Connecting data, people and knowledge, the objective of the platform is to serve as a node for building productive and open indicators, and distributed tools, and thereafter the collective construction of the city for its own inhabitants. The Smart Citizen project is based on geolocation, Internet and free hardware and software for data collection and sharing, and (in a second phase) the production of objects; it connects people with their environment and their city to create more effective and optimized relationships between resources, technology, communities, services and events in the urban environment. Currently it is being deployed

	worldwide. http://www.smartcitizen.me/
State	Integrated to the iCity Platform
API	API available
Additional information	test.smartcitizen.me/pages/terms
Availability	Available
Work plan	Integrated

Infrastructure	Air Quality Sensor
City	London
Description	London has a network of weather stations that provide information about temperature, humidity and wind speed from many providers. This infrastructure allows developing applications that show real time information about local weather. These data are used by citizens but it's also among the information used by local Civil protection.
State	Integrated to the iCity Platform
API	API available
Additional information	Pending to include this information
Availability	Available
Work plan	Integrated

OPEN INFRASTRUCTURES (but not yet accessible from iCity API)

Infrastructure	IRIS (Complaints and Suggestions System)
City	Barcelona
Description	Barcelona City Council offers different attention channels aimed to citizens (telematics, telephonic and face-to-face channel) with the purpose to allow citizens communicating incidences, complaints and suggestions about municipal services or city functioning. Furthermore, it is possible to consult the petition status by means of the three possible channels as well as claim it. To ensure the fastest resolution of each request, it is

	essential to classify correctly the requests.
State	Integrated to the iCity Platform.
API	Work in progress. A new API is being developed based on model 311.
Additional information	Number of actions per unit time: Not applicable However, it is important emphasize that the system detects SPAM. Hence, the access to an application which permits SPAM from its service will be blocked. Themes: All Incidences themes (extension of IRIS to mobile devices where just there are some themes). It is essential to collect 3 information required levels area-element-detail)
Availability	Available
Work plan	Integrated

Infrastructure	Citizen's Desk
City	Genoa
Description	This infrastructure is mainly based on the information stored on a database and managed through web and mobile applications. Through this system citizens may request information about department or work processes, receive documentation or forms by mail or fax, check the opening hours of the offices. There is also information about tourist and cultural points of interest, or security and public health structures (police stations, hospitals, embassies, etc.). The system is managed and used by various offices spread on the municipal territory but it will be expanded and will also supply information of other surrounding areas in an integrated way. The structure is already designed for distributed gathering of information from different sources.
State	Integrated to the iCity Platform
API	API work in progress.
Additional information	This infrastructure must be used to this way: Only iCity platform can access directly.
Availability	Available
Work plan	Integrated

Infrastructure	TPER—QueryHellobus
City	Bologna
Description	Public transportation arrival time information management service. Expected arrival time of a bus of the specified line to a bus stop
State	Integrated to the iCity Platform
API	API available.
Additional information	This infrastructure has not any restrictions.
Availability	Available
Work plan	Integrated

Infrastructure	TPER— QueryHellobus4ivr
City	Bologna
Description	Similar to QueryHello. Expected arrival time of a bus of the specified line to a bus stop in IVR-compliant format.
State	Integrated to the iCity Platform
API	API available.
Additional information	This infrastructure has not any restrictions.
Availability	Available
Work plan	Integrated

Infrastructure	TPER— QueryResale
City	Bologna
Description	The service provides the list of resellers of Bus tickets allocated in the nerby of a specific bus stop.
State	Integrated to the iCity Platform
API	Available
Additional information	This infrastructure has not any restrictions.
Availability	Pending improvements of iCity API.
Work plan	Integrated

Infrastructure	Transport For London (TFL) - Journey Planner

City	London
Description	Journey Planner provides customers with a desktop and mobile browser based journey planning solution. This facility will enable application developers to freely access the same journey solutions that are available to TfL customers on the TfL website and mobile site. Further details of the Journey Planner API are available here: http://www.tfl.gov.uk/businessandpartners/syndication/default.aspx
State	Integrated to the iCity Platform.
API	Available
Additional information	Access is by pre-registration – including agreement to terms and conditions. Developers will be approved by TfL and for purposes of the iCity Pilot have to be agreed with GLA iCity team first. http://www.tfl.gov.uk/businessandpartners/syndication/16492.aspx In order to provide the public with the most accurate information possible, feeds must be obtained and displayed in a timely fashion. In each TfL Online Standard XML feed, we provide the information necessary to do this appropriately according to the feed content, as follows (all dates and times are UTC). ▪ Feeds must be grabbed and displayed with the same frequency as that in the <RefreshRate> tag. ▪ Feeds should be grabbed and displayed in synchronicity with the <Schedule> tag. For example, if the publishing schedule is "Every quarter", please grab the feed a short time after that. Feeds must be displayed within a certain period after being grabbed, represented by the <Max_Latency> tag.
Availability	Available
Work plan	Integrated

INFRASTRUCTURES TO BE OPENED WITHIN THE NEXT 6 MONTHS

- Barcelona: MSE Service (information about the WiFi network to approach density of people in an area and flows of people around the city)
- Comune di Genoa: CISIUM – Events
- Comune di Genoa: CISIUM – Traffic
- Comune di Genoa: CISIUM – Parking
- Comune di Genoa: Genova Traffic Webcam
- London: Smartparking – Croydon
- CORNELLA: Cornellà Agenda
- IRIS Barcelona (API Open 311)
- LAMIA: Complaints & Suggestions (API Open 311)
- ZARAGOZA: Complaints & Suggestions (API Open 311)

3.2.2 Report of requests for approval of applications and services

As already stated at the introduction of this chapter, iCity Platform has experienced an important delay on deployment. Originally planned to be deployed and available by month 15, real deployment date has been shifted several months. A first version of the platform was up and running on month 18, but it was not stable and functional until the end of month 22.

As a result, dissemination and communication activities aimed at the developer communities and originally planned for year 2013 did not make sense until the very beginning of 2014. Until then iCity Platform could only be explained as a concept. And obviously, iCity Platform explained as a concept is not as powerful as explained and shown as a tangible reality, especially when facing a community with a really technical profile.

While our original strategy was focused on showing our platform to the developer communities, the difficulties provided by the mentioned delay on the platform availability made us think on other strategies.

These other strategies were:

- Organize a global event to gather developers and stakeholders for the iCity Platform, show them how it works and publish the new information systems opened and available for everyone. This event will be named iCity Camp
- Prepare an internal assessment for the Developers Portal in order to check its engagement capabilities and if there are aspects that could be improved.

3.2.3 Report of applications and services released

Still in progress. It will be included in future versions of this deliverable.

3.3 iCity Indicators

This document has been elaborated during month 30. Currently it has not been possible to collect data about the developed pilots because there are not iCity applications yet.

3.4 iCity Camp event

3.4.1 Main goal

As explained before, iCity Camp is created as a future event to join different actors related to the iCity Project but also with the main goal of promote the creation of new applications based on the iCity Platform. To meet these objective is essential to:

- Explain what iCity Platform really is and what it's supposed to be in a next future.
- Explain how Developers Portal works.
- Expose available systems through the API.

The iCity Platform dissemination and its promotion in the developer's communities will be essential for the engagement activities and at least to accomplish with WP5 strategic goals.

3.4.2 Organization

The iCity Camp will gather people from all Europe's participant cities in iCity Project, and it's planned to be celebrated in Barcelona during a weekend.

The contents for the event will be structured in two parts:

1. **First event part**: this will include a speech session about the iCity Project, the actual state and its expected evolution.
2. **Second event part**: this will be centered on the Developers Portal, its functionalities and how the API should be managed to implement applications. These sessions will be very practical and will be the introduction point for a contest to anyone interested in the platform.

3.4.3 The iCity Contest

As explained before, iCity Camp will be the launcher for a contest where any person can participate, not only for developers. So, this contest will offer prizes for:

- Ideas of applications or services based on the iCity Platform and the services provided by its connected information systems.
- Applications, published in any of the official and wide known application stores and applications that use the iCity API.

The contest will begin with the iCity Camp and will last some months so developers will have time enough to develop its ideas and build its applications. Prizes should be attractive for participants and consist in money.

3.5 Assessment for Developers Portal

This initiative was defined to find possible problems and issues related to the Developers Portal, not only for its functionalities but also with its engagement capabilities for developers. In past, sometimes were identified problems with the Developers Portal and it's important to check its behavior in order to ensure that it works aligned with de iCity Project objectives and promotes

the participation and project dissemination.

So, an assessment for the Developers Portal will be planned for the next months, considering it a formal and professional portal, that it's really what external users expect to find out when the connect for the very first time.