
CARTIF FOUNDATION
Answer to the issues and open questions to be addressed during the
SECOND USAGE AREA WORKSHOP
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1. What use case and scenario in your area would you consider the most appropriate and representative one for large-scale experimentation with the Future Internet platform to be built starting from 2013?

There are many scenarios in which a city service (towards citizens) could be optimised through the FI core platform and whose environmental impact could be reduced: waste management, public lighting, water and gas networks, car parks are relevant examples.

Related to the 'Utilities and Environment' usage area, we consider representative a use case and scenario focused on Public Lighting, including public spaces such as stadiums, car parks, etc.

In this way, we suggest Public Lighting because this scenario reaches the whole city, cover all citizens and include a representative number of actors, from utilities to end users through public authorities. It is foreseen to use a large number of services supported by means of a service-oriented architecture (SOA) and on many core platform functionalities and technologies (below described).

2. What innovative Internet functionality and technologies would you consider important for your suggested use case and scenario?

A large number of the common enablers enumerated in the FI reference documents will be necessary. End to end connectivity from the sensor networks to the providers will be needed, so as sensor and actuator networks and context awareness. This use case would need advanced real time processing capabilities handling huge volume of data.

Furthermore, by means of Ad hoc service composition and mash-up apps should be integrated the whole city services in a multimodal interface system. A managed broadband connectivity should be provided to join the different aggregation points in which data are gathered.

Moreover, different actors have to deploy different services around public lighting. In this way, a service composition, brokering, execution, indexing, searching and discovery should be provided.

3. Which of the identified functionalities would you expect the Future Internet core technology platform to deliver to support your and other usage area scenarios?

The Future Internet core platform by means of Internet of things and considering the provision of the platform as a Service should deliver these identified functionalities to support this and other scenarios.

4. What kind of experimentation environment would you consider necessary for broad large scale testing of the platform to be developed in your use area?.

Our experimentation environment would be Public lighting infrastructure in different city areas, along Europe. All the actors who take part in the city lighting service should be involved by means of FI core platform, from service providers to citizens, including public authorities. Different interfaces and media supported by each one of them should be analysed.

5. What would be needed to experiment new services and applications cutting across use areas (services and application mash-up) and building a new services and application ecosystem around the prototype implementations of the platform?.

Developing each generic enablers and functionality services with generic, scalable interfaces; achieving a full interoperability.

Each new service should be able to auto install and deploy their functionalities seamlessly to any actors. A real end to end connectivity have to be deployed, any sensor and/or actuator joint to the platform may be used by any other service and provider.

6. How do you see the potential role of your organisation in the FI-PPP, in the context of Usage areas taking a prominent role in the Initiative, to ensure an appropriate application driven approach?.

Information and Communications Technologies (ICT) and Energy are two of the main research areas of CARTIF. Both together have created a multidisciplinary group focused on the application of ICT in the field of Energy, in particular Energy Efficiency, Energy Saving, Integration of Renewable Energy Systems, Electricity Market, Demand Response, Smart Grid, etc. A great part of our work targets is the application of these issues in housing, buildings and public spaces. Currently we are taking part in different regional, national and international projects. The two main research areas pursued by this group are the following:

– ICT4EE, particularly developing management middleware tools and services for the integral management of housing (residential), tertiary sector buildings and public spaces under the premises of interoperability, flexibility and standardisation in order to achieve greater energy efficiency and energy savings. This task is mainly focused on energy use optimisation, always bearing in mind the users' comfort, therefore applying techniques based in the 'ambient intelligence' (AmI) concept. This involves the following technology areas: Networks (devices), Multimedia integration, Artificial Intelligence, Context-awareness and Multi-modal human-machine interaction.

– RENEWABLE ENERGY: Implantation and optimisation of energy efficiency, energy saving and renewable energy integration in housing, tertiary sector, transport and industry. It is focused on HVAC and lighting systems, electric vehicles on the grid and industrial process with huge energy needs, by means of design, monitoring, control and management actions, such as algorithms, strategies, evaluation and diagnosis tools developed ad hoc for energy services.