

## **Towards a Future Internet Public Private Partnership - Position Paper**

### **Life Supporting Technologies (Universidad Politecnica de Madrid)**

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### **SECOND USAGE AREA WORKSHOP**

#### **(1) What use case scenario in your area you would most appropriate consider the representative for large-scale experimentation with the Future Internet platform to be built starting from 2013?**

Madrid, 2013. John, 35. He works for a consulting firm as the responsible partner of the Energy area. Just as most of his workmates in the company, he works more than ten hours a day at the office and then spends another two hours at home working. He loves technology. He suffers from stress, hypertension and 5 years ago he was diagnosed with diabetes type I and therefore needs periodic monitoring by his doctor. Due to his clinical condition, he has to exercise every day, watch his diet and inject himself insulin. Thanks to the advances in health technologies, John has installed the DiabPad application in his iPad, this allows him to monitor his condition and follow a healthy lifestyle wherever he is. As every morning he has breakfast at 7:30 am at Starbucks. A year ago, Starbucks Company, together with other catering trades, participated in the project "Healthy Living" which aims to provide nutritional information about their products through a global database. The local is equipped with Internet and its products are labeled with RFID chips, so that all the information about the available products is stored in the database which is accessible through certain applications such as DiabPad. Before ordering, John measures his level of sugar with a glucometer and the data is directly sent through DiabPad (using the locals' WIFI) to a remote server that processes the information and suggests him a menu according to the amount of calories and sugars he should take in and consistent with the products available that morning. At 8:00 am he arrives at the office. Before he starts working, from his personal computer, he connects on-line with the virtual gym where he makes a session with his coach through a 3D video conference, while the biomedical sensors embedded in his underwear record the number of calories he has lost and sends that data to the doctor who assesses the amount of insulin that must inject himself. After spending all day in a meeting and with no time left for lunch, at 7:00 pm he goes to the supermarket to buy something for dinner. Once he is there, he connects to DiabPad which suggests him, after the doctor has evaluated the information received, to purchase food according to blood sugar levels and of John's preferences.

#### **(2) What innovative Internet functionality and technologies would you consider important for your suggested use case and scenario (e.g. context awareness, sensor networks, advanced real time processing capabilities handling huge volume of data, ad hoc service**

**composition and mash-up, managed broadband connectivity and services, embedded media support for interfaces easing the interpretation of processed contextual data, etc.)?**

In the proposed use case, John requires a wireless sensor network and a context awareness system to communicate with DiabPad application and transmit all information related to: sugar in blood, food available, calories lost. Also it requires a broadband network connection, 3D video conferencing system, and a system for real-time processing of the information sent to DiabPad. Natural, intelligent and intuitive user interfaces are also required.

**(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?**

From the perspective of the proposed scenario one of the challenging features will be the provision of 3D videoconferencing. This technology can be used not only in the area of e-health but also in areas like e-inclusion to enhance the communication, for instance for people with hearing impairments using the sign language.

**(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? 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?**

To allow a large-scale experiment which involves users, public healthcare and service providers, the participation of technological companies and research centers is a must. In addition, it would be necessary to bring these services to the homes and places of work of the users. In order to test the prototypes, the European network of Living Labs ENoLL is the perfect ecosystem where new prototypes and services based on Future Internet can be tested, as this network provides the necessary infrastructure.

**(5) 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?**

Our research group Life Supporting Technologies (Technical University of Madrid), has extensive experience in European research projects for more than 10 years within the areas of e-health and e-inclusion. We collaborate closely with end users organizations, hospitals and medical services. We own a Smart-House Living Lab, which is part of ENoLL, where we develop and evaluate Ambient Assisted Living services and innovative e-health services. The facilities consist of a fully accessible house built with the latest technologies, including technical walls, and all required communication infrastructure. In addition, different home automation technologies have been installed.