

## Second Usage Area Workshop (June 21-22) Position Paper.

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**Preface:** Intel has interest and active research investments in several areas relevant to both the Core Infrastructure and the candidate Use Case topics for Future Internet. Some of this research is already active in Europe via FP, national funded and direct bi-lateral Joint Innovation Programs. Intel has made contributions via active FP7 projects (SLA@SOI) to NEXOF-RA, has been active in the FI-MANA and FINES working groups, and has recently engaged with the Future Internet Research Alliance (FIRA). Intel is interested in actively participating in the Future Internet PPP as a research partner.

### Response to questions:

(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 ?*

An example under discussion is the topic of smart grids especially community or micro-grids under the eEnergy topic. Meaningful implementation of smart, community oriented micro-grids will require technical advancements at application service level, interoperability advancements via interfaces and protocols, and use of a highly effective distributed infrastructure from the data centre to the hands of the consumer. Another example is the emergence of the 3d Internet (Content) which will not only make interfaces more scalable and intuitive, but also drive new usage models.

(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.)?*

All of the above but additionally, to realise the goal of enabling vertical and horizontal as well as local innovation, interfaces, protocols and semantic models need to be significantly enriched. Resources and services within a heterogeneous distributed infrastructure for example, may have functional or non-functional differentiating attributes which a service several layers removed may wish to discover, negotiate for and consume in an intelligent, automated manner. Information sources which are unstructured (inductive loop in metro areas for example), may benefit from a reference or easily deployable information architecture which would make application services more scalable.

(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?*

Interface and interoperability specifications, implementation of protocols for negotiation and consumption, guarantees of privacy, security, dependability, ability to federate autonomously, ability to manage internal efficiency while maintaining SLAs, etc.

*(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?*

Meaningful experimentation will need to engage test beds already in place or being funded through other means as the scale is beyond what the PPP can budget for. Existing smart city experiments will need to be connected with, as well as large-scale electric vehicle deployments as an example of the user-facing services, and large-scale virtualised grid test beds in the case of cloud hosted application services and compute / storage services.

*(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?*

In addition to technology research and innovation, Intel has been active in ethnography-influenced, evidence-based research for several years. This is complemented by active research into value assessment methodologies. Intel would potentially contribute as a developer and integrator of technology capabilities in the core infrastructure. From a Use Case perspective, Intel would potentially contribute to architecture models, scenario development and evaluation.

**Summary:**

Intel would welcome the opportunity to contribute to and participate in both Use Case and Core Infrastructure research under the PPP. Specific contributions would leverage existing and future investments in eEnergy (smart grids), Content (3d Internet), Infrastructure Management (SLA support, service orientation, virtualisation, data centre energy management), Service Federation, Context Awareness, Personalisation, Mobility, RFID, Platform Innovations, among others.