

**TOWARDS A FUTURE INTERNET PUBLIC PRIVATE PARTNERSHIP:
SECOND USAGE AREA WORKSHOP
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**Position Paper Draft
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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 (please refer to the documents referred to on the above websites for inspiration)?*

Given the world-wide trend towards (mega-) cities, it is essential to pursue safe, efficient and sustainable transportation systems that work in a city environment. Key issues are congestion avoidance, guidance, reducing pollution, integration of different transportation means (personal and public transportation, long-distance and city travel), fleet management, energy and charge management of electric vehicles.

Several existing ICT innovations are focused on a single application in transport (e.g. increase safety by Car2Car communication), but current systems lack the interconnection of different transportation means: personal transport, various forms of public transport, pedestrians. In each of these transport domains, information is created which could be valuable for systems of other domains. Evolvement of these innovations and connection of the domains would be the first step towards a “smart city.”

Further chances for a smart city are connections to services outside the transport domain. One first logical step is to combine the battery charge management with a smart energy grid. Charging the batteries of an electric vehicle is a movable load (both in time and space).

- (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.)?*

Key functionalities needed by a smart city environment are context awareness, support of a very high number of mobile nodes, 100% mobile internet coverage, convergence of peer-to-peer and infrastructure networking.

- (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?*

Management of a very high number of mobile nodes (for P2P and backend communication); scalable context servers; geocasting services.

- (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?

The basic need is a large scale service platform providing the abovementioned mobile context / geocasting services, including the wireless technology that allows a large number of mobile nodes to connect with this service at the same time. Scalability is the key issue here.

From the application side, we need a large number of personal and public transportation entities equipped with mobile internet nodes. These entities could be car information and navigation systems, public transport entities (bus, tram etc.), public transport information systems (in bus booths, airport information systems), personal information systems (smartphones, pedestrian navigation systems), and infrastructure components for e-mobility (charge stations).

- (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 a smart city environment, BMW could possibly provide a prototype fleet for personal mobility: cars, motorbikes, electric vehicles. BMW has profound experience with navigation and information systems, even with connectivity to the internet (“BMW online”) and with direct communication to other cars and infrastructure (Car2Car research project “SIM-TD”). New functionality within a smart city could be integrated into such systems.