Since VTT Technical Research Centre of Finland is a multidisciplinary research institute having expertise on all proposed usage areas, the following comments presents only the views of the center of communications technologies.

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)?

Content delivery as indicated already in the first Usage Area Workshop is one of the fastest growing application areas for future Internet. Especially the demand of 3D content creates challenges for communication infrastructure already in the near future. In addition the cloud services and social media are breaking through to the markets. Although there has been the research and development in the areas of content delivery, 3D media, cloud computing and social media, there is lack of large scale pilots integrating and enhancing the laboratory demonstration to pan-European content distribution and cloud service environment.

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.)?

From the technological point of view the content delivery in large scale needs several future Internet functionalities. To name a few main functionalities the first ones would be data security, trust and integrity. Similarly it is equally important to guarantee the capabilities of handling and storing huge amounts of the data and provide connectivity not only from wired but also mobile devices. For this, the context awareness and efficient discovery mechanism needs to be adopted. Possibilities for users to store and access the data and also execute services into scalable cloud computing and data centre environments will become the necessity as well as the sustainable use of the resources. In addition from customer, producer and prosumer point of view the billing and flexibility of handling access rights is equally important. Advances in wireless broadband connectivity will also help and is needed in providing the user access to cloud resources.

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 main functionalities provided by Future Internet core would be the content-aware discovery and dissemination mechanism. Namely for example Network of Information (NetInf), publish/subscribe and Content Centric Networking solutions. In addition the advances in core network routing and wireless broadband solution can provide a good basis for the backbone connectivity. Cognitive solutions for network and wireless access technologies for intelligent load balancing and network management in critical hotspot areas will aid to build up the required connectivity for mobile and wireless network users as well as improve the quality of service.

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?

Currently the piloting and experimentation e.g. for content and information centric networking has been carried out in laboratory environments and the utilizing virtualized overlay solutions such as PlanetLab. In order to enable the penetration of the new content delivery mechanism it is required to integrate the developed delivery platforms for everyday use. Since the different application areas (e.g. cloud services, life and stored media etc.) are mainly developed separately an open and unified API is needed. The API should provide not only the means of access the information but also modify and manage the content and services, and to handle the content production chain in secure way. In addition it is necessary that the backbone network including the wired core and wireless edges are integrated to support these operations.

The content delivery use case is also quite close to environment and utilities and smart cities. In this case the ideal goal for content delivery experimentation would be to integrate the Internet of Things (IoT) world with Internet of Media (IoM). The information sources of smart cities e.g. for logistic information, municipal engineering and administration and different kind of marketing and informative media content on hot spot areas could also in focus of media delivery experimentation.

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?

As one of the largest European research organization VTT has long experience and expertise on variety of ICT technologies. In the Content area the work has been focused on content management and delivery, solutions for utilizing social networks in media delivery, cloud computing solutions and network technologies for novel network solutions for information and content centric networking solutions. For example VTT's ICT section has long history on wireless and wired multimedia communications and content delivery platforms. In FI-PPP, in the context of usage areas, our main role would be in implementation of network solutions supporting content delivery and building the large scale infrastructure.