

Position Paper submitted to the second FI-PPP usage workshop

(1) Use case

We would like to propose large scale (wireless) sensor networks as a use case for the Future Internet. The (large) amount of individual devices and the requirements on precision timing and bandwidth make it an interesting case.

A specific opportunity arising is the development of a North Netherlands project called Sensor City. It is an initiative from the Municipality of Assen in which a large scale urban measurement network is realized that can be used as testing environment for a broad range of applications using complex sensor systems. The applications can vary from a smart traffic guiding system, to a dens mesh network for environmental monitoring.

(2) Functionality and Technologies

In our vision the specific requirements for the Future Internet to enable and to embed large scale sensor networks are:

- a) Network contains a clock distribution system that provides precision timing for connected sensor nodes;
- b) Separate control and data channels;
- c) The possibility for priority data transfer;
- d) Sufficient addressing space matching the number of sensor nodes constituting extended sensor networks;
- e) Handling of large amounts of data without disturbance on timing and control;
- f) Power over the internet for the sensor nodes;
- g) Wireless extensions to the internet.

(3) Core Technologies

We consider above mentioned requirements a) through c) as core for sensor networks.

(4) Experimentation Environment

We consider the above mentioned project Sensor City as an example of a suitable testing environment. It has all the features in it as mentioned within section 2.

(5) Our role

INCAS³ is a research institute that creates high-quality knowledge in the field of sensors and sensor systems by working together with industry and the scientific community. INCAS³ specializes in cognitive sensor systems. To advance this innovative technology and achieve technological breakthroughs, INCAS³ participates in national and international research projects from its base in Assen, The Netherlands.

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With regards to the FI-PPP INCAS³ can fulfill two roles: INCAS³ can be the lead party in identifying new requirements and applications for the future internet. INCAS³ is through its network able to acquire interested industrial and scientific parties that have challenging projects for the future internet.



The Northern Netherlands Provinces (SNN). This project is co-financed by the European Union, European Fund for Regional Development and The Ministry of Economic Affairs, Peaks in the Delta.



Ministerie van Economische Zaken



provincie Drenthe

Gemeente Assen 

This project is co-financed by the Province of Drenthe and the Municipality of Assen.



This project is supported by Sensor Universe.

