

Project Information



Heterogeneous Networks for Public Safety



The project will develop a heterogeneous network concept for future European public safety communications. This will be based on the integration of different networks, including ad hoc deployable systems. The project will be focused on the integration of existing communication systems including private mobile radio systems such as TETRA and TETRAPOL.

Main focus

The main focus of HPNS is to develop a heterogeneous network for European public safety communication and for the testing of a heterogeneous network with a number of applications reflecting public safety scenarios. This heterogeneous network will integrate a number of different network standards and will introduce a new inter-networking architecture. It will also introduce network management functionalities which will be optimised in accordance with public safety user requirements. The project will use technologies that are provided by a number of existing legacy communication systems. It will also develop new technical solutions that will

permit rapid integration of ad hoc technologies and systems. This feature of HNPS will be especially important in the areas where the communication infrastructure has been destroyed or cannot provide sufficient capacity in emergency situations.

The project is focussed on three main areas:

- ◆ Scenarios and associated field trails with user participation
- ◆ Heterogeneous network integration and management
- ◆ Applications and services.

Approach

The project approach is based on the concept of an integrated multi-standard system. The project will integrate a number of legacy communication systems such as GSM/GPRS, UMTS, TETRA, WiMAX and WLAN standards based systems.

The project will establish an evolutionary approach: the gradual integration of different systems will take into consideration

HNPS

Project ID: CP5-010

Start Date: 1 July 2008

Closure date: 31 December 2011

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Alcatel-Lucent France, France
ConnectCom s.à.r.l., Luxembourg
EADS SN, France
Entreprise des Postes et Télécommunications, Luxembourg
Eurecom, France
IBER-X, Spain
HITEC S.A., Luxembourg
Lion Systems, Luxembourg
Ministère d'Etat, Centre de Communications du Gouvernement, Luxembourg
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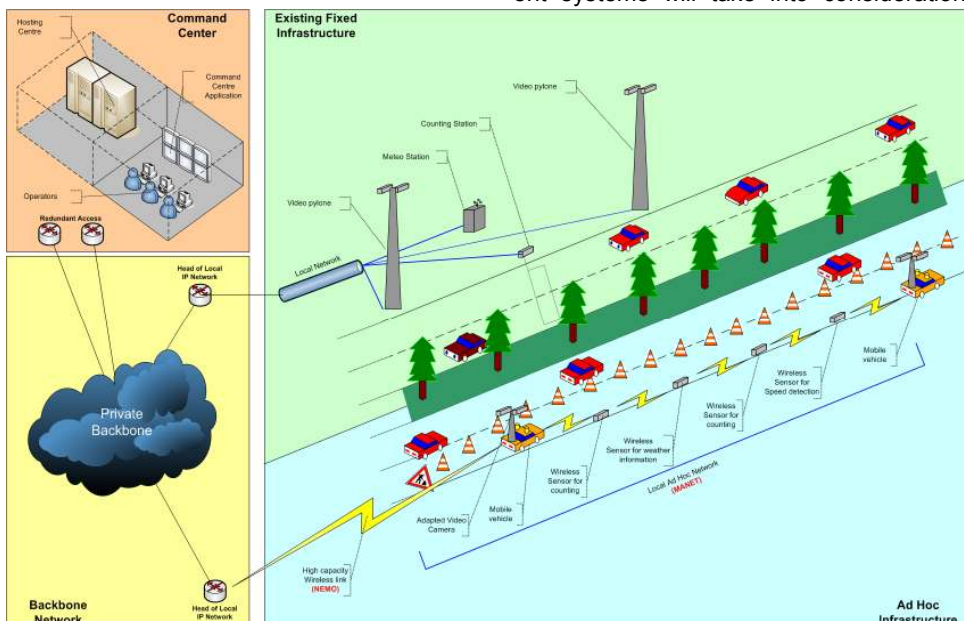
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Project Websites

www.celtic-initiative.org/projects/hnps

www.hnps.eu



the complexity and compatibility of different standards and protocols. Likewise the system approach will be used in application integration and test bed design. This test bed will be developed in the project and is intended to create a platform for:

- ◆ System compatibility tests which might be carried out by different research and industrial organisations
- ◆ Application integration and interoperability testing
- ◆ Usability studies and field trials, with the participation of public safety users
- ◆ Training and educational activities

These activities will foster collaboration between different European industrial as well as research players and users in the area of public safety communications and will promote the concept of a Pan-European Laboratory.

The HNPS project will follow an approach starting with user requirements and the analysis of how existing applications can be integrated into the framework. The development of the Heterogeneous Network Architecture is one core aspect of this project. The test bed design and field trial will provide more than only a proof of concept, but a valuable basis for future tests of new applications.

Main results

One main visible result from HNPS will be the integration of the different heterogeneous communication networks for emergency services. This integration is based on a requirements analysis for increasing availability and interoperability as well as the development of concepts to "bridge" between the different networks/services footing on reference scenarios of needed networks and applications bridging technologies.

HPNS will provide innovative solutions for heterogeneous internet-working architectures, adaptive network control and management, interoperable middleware, network cross layer protocols, ad-hoc broadband wireless network protocols and adaptive applications. Furthermore, HPNS will achieve the development of integrated system for public safety communication. This will include the open interoperable test-bed platform development. The project will look at the new system concept of heterogeneous networks and will facilitate the introduction of new services for public safety.

Impact

HPNS will develop the following prototypes and applications:

- ◆ Infrastructure including (governmental and industrial) service providers and users as well as performance tests for a

quantitative evaluation of the results.

- ◆ Test bed which could later on serve as a European test bed for interested third parties not participating in the project.
- ◆ Management tools to control the quality of service, security and availability of the collection of services and networks.
- ◆ Workforce management system with all the necessary features to respond to a crisis scenario with integration of external applications.

Furthermore HPNS will contribute to the areas of standardization of the Critical Information Infrastructure Protection (CIIP) network, integration of wireless sensor networks for critical scenarios monitoring, tools allowing the interworking between different emergency entities in Luxembourg and access to information via redundant networks as well as fast deployable intelligent detection networks allowing the access to alarms, sensor data and video information via heterogeneous networks.

About Celtic

Celtic is a European research and development programme, designed to strengthen Europe's competitiveness in telecommunications through short and medium term collaborative R&D projects. Celtic is currently the only European R&D programme fully dedicated to end-to-end telecommunication solutions.

Timeframe: 8 years, from 2004 to 2011

Clusterbudget: in the range of 1 billion euro, shared between governments and private participants

Participants: small, medium and large companies from telecommunications industry, universities, research institutes, and local authorities from all 35 Eureka countries.

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