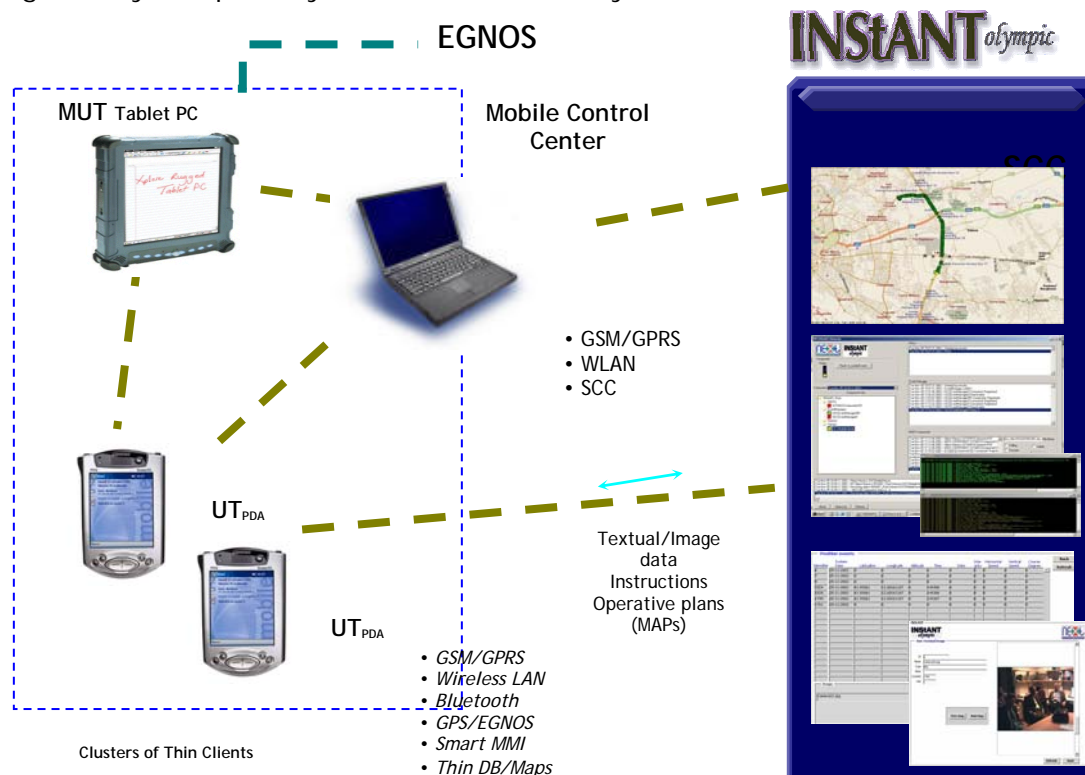


A Distributed and Mobile System to Support Emergency Situations Management

INSTANT, Infomobility Services for safeTy-critical Applications on Land and Sea based on the use of iNtegrated GNSS Terminals for needs of Olympic cities, is an RTD Pilot Project in the 5th Framework Programme under the GROWTH thematic programme and is coordinated by NEXT-(IT). Co-funded by EC and under the technical supervision of the GALILEO Interim Support Structure (GISS). It aims to provide a scalable and dynamic reconfigurable system to support Emergency Services.

"INSTANT" addresses Growth Programme's objectives for sustainable mobility and intermodality by using Second Generation GNSS in order to fulfil identified needs, with focus on the management of large-scale events and emergency situations. The project targets as a test case the Olympic Games of 2004 and proposes SOL applications in two different environments (sea and land) and in different land surroundings (urban, semi-urban). Project applications will make extensive use of up-to-date GNSS receivers in close integration with other emerging technologies (geo-information, mobile/satellite communications, personal digital assistants, mobile mapping software).

A typical layout of the INSTANT system is depicted in the following figure, in which a typical system configuration of the system shows two kinds of user terminals: pedestrian units, car units and the Service Control Centre. INSTANT is based on a distributed component based architecture and uses common QoS middleware technologies, where robust component based approach is used to scale appropriately for better system performance, quality assurance, reconfigurability, adaptability and service continuity features.



The system is composed of a clustered network of mobile equipments (PDA/Tablet) equipped with:

- GNSS navigation and positioning based on EGNOS receivers;
- GPRS/WiFi communications;
- Smart adaptable MMI interfaces with high level of usability and reconfigurability needed in real domains;
- Mapping capabilities and Multimedia data messaging and with characteristics of Upgradability, Usability and robustness.

Moreover, it is equipped with a Service Control Centralized Infrastructure (SCCI) capable of service functionalities , such as:

- GIS and Database servers containing Routes, Geo-referenced real time data with special facilities for location based services (e.g. Route/Fleet Management). Central and mobile databases will store position information and sensible data and share the management of (optimal) route planning of vehicles within service areas.
- Wireless server to enable mobile/distributed connections,
- Application server equipped with Data exchange management capabilities (e.g. SMS, Vector data in XML packets, Raster image processing) to serve a dynamic model for emergencies control and management of mobile equipments under critical alerting constraints (towards etherogeneous devices)

A complete mobile replica of the Service Control Centrer is called the Mobile Control Center.

Main customers of the project's services are entities of the public and private sector. These include the Organising Committee of the Olympic Games 2004, Fire Brigade and Civil Protection authorities, marine and yachting companies, security services companies, delivery companies etc.