

IAF SPACE COMMUNICATIONS AND NAVIGATION SYMPOSIUM (B2)
Advanced Satellite Services (4)

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MIRROR GALILEO PROGRAM IN ITALY

Abstract

Under the coordination of the delegated structure of Italian Ministers Presidency, a strategic plan called Space Economy was issued to define the Italian national policy for space. The main objective of this plan was to promote the space activities as one the main propulsive factor in the national economy stepping up the vision of this business from pure research objectives into applications useful for the well-being of the people and the immediate benefit of the Italian society. In this framework, the programme Mirror Galileo, coordinated by the Italian Ministry of Infrastructures and Transport, was created around the following set of Infrastrutture Operative Nazionali (ION) - National Operational Infrastructures: 1) ION Train command and control on regional lines by the use of satellite navigation. The objective of this ION is the adoption of ERTMS (European Railway Train Management System)/ETCS of level 3, which is based on the concept of Virtual Balise (Boa di segnalazione virtuale) and the use of the navigation satellite in the command and control of trains, in the respect of the integrity requirements of the railway business; 2) ION Navigation of UAV (Unmanned Aerial Vehicles) by satellite (weight > 150 kg). ION UAV addresses the segment of light RPAS/UAV (class micro, mini and small under the NATO classification, up to 150 Kg of weight), ensuring precise localization and tracking with accuracy up to decimeter level; 3) ION Management of harbor access by means of satellite navigation. Italy foresees the ION Harbor access as the necessary tool by which navigation will be supported in Italian harbors, integrating the current VTS systems and to be built around the future new maritime communication standard VDES (VHF Data Exchange System for maritime Applications); 4) ION Access control for automotive, public fleet management and customer geo-fencing by means of satellite navigation. The ION will indeed support the road transportation, with a particular attention to the urban areas and will implement the localization and tracking of road vehicles with unprecedented accuracy, as needed for precise geofencing and fleet management. All these applications will run on top of a transversal infrastructure called ION RINSA (Rete Italiana per la Navigazione Satellitare Aumentata), i.e. Italian Network for Augmented Satellite Navigation. RINSA will support the transportation services in Italy in its various typology such as road, railway, sea and air. The network will be used in conjunction with dedicated local equipment and receivers on board of the moving vehicles to ensure a smooth service in adherence to the service requirements.