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Press release

RFI, ERSAT PROJECT: SATELLITE TECHNOLOGIES TO MANAGE REGIONAL RAILWAY TRAFFIC

- **on conventional and secondary lines**
- **integrating the ERTMS (railway) and GALILEO (satellite) systems**
- **goals: increasing traffic capacity and reducing management costs**
- **potentialities sketched out in Rome during an international conference**
- **trial underway in Sardinia on the Cagliari - San Gavino line**
- **The "a regime ERSAT" system may be installed on nearly 45% of the Italian railway line**

Rome, 12 February 2016

Satellite technologies to safely monitor and manage railway traffic on secondary, local and regional lines.

It will be possible through ERSAT, a last generation system which, first in Europe, interfaces and integrates railway technology – the ERTMS (European Rail Traffic Management System) signalling system – with GALILEO, the satellite navigation and tracking system.

Goals: increasing the traffic capacity available to railway undertakings, thereby contributing to a decrease in CO_2 emissions, and ensuring the current railway safety standards while simultaneously reducing management costs. The new technological equipment will in fact demand minor investments for installation and maintenance purposes, since the data points of the current signalling systems (SCMT and SSC), i.e. controllable balises, will be replaced by "virtual" balises managed by the satellite receiver, as integrated into the ERTMS signalling system.

The potentialities of ERSAT have been sketched out to engineers, technicians and sector specialists in the course of the "First Workshop on ERSAT EAV" international conference, held today in Rome at the premises of Gruppo FS Italiane (Italian State Railway Group).
Attendees: **Maurizio Gentile**, Chief Executive Officer of Rete Ferroviaria Italiana (Gruppo FS Italiane), **Carlo Des Dorides**, Executive Director of European Global Navigation Satellite Systems Agency (GSA), **Joseph Doppelbauer**, Executive Director of European Railway Agency (ERA), **Amedeo Gargiulo**, Director of the National Agency for Railway Safety (ANSF) and Stefano Siragusa, Chief Executive Officer and General Manager of Ansaldo STS.

The Operational Centre of the ERSAT EAV project has been operating in Sardinia, on the Cagliari - San Gavino line, since February 2015. The trials, which are yielding excellent results during this initial phase, will be finalized by January 2017.

The trials which RFI and DB Netz (the Managers of Italian and German railway infrastructures) and Trenitalia are currently running in Sardinia, together with ASSTRA (an Association which 140 public and private companies operating in the local, urban and suburban public transport are affiliated to), are coordinated by Ansaldo STS and aim – thanks to contributions from the European Space Agency (ESA), the Italian Space Agency (ASI) and the European Global Navigation Satellite Systems Agency (GSA) - at integrating and validating satellite technologies into the ERTMS signalling system.

The ERTMS system, which has been operating for more than ten years on the Italian High Speed/High Capacity System lines, the Turin – Milan – Bologna – Florence – Rome – Salerno vertical axis, transmitting data and information through the use of the GSM-R (Global System Mobile-Railway) system, set aside for railway undertakings, makes it possible to track down the train progress, instant-by-instant, by providing the train driver with all the information necessary for safe driving, along with the activation of the emergency braking in the event that not all train parameters are complied with and the train speed exceeds the permissible limit.

Through ERSAT, once the localization of trains (position and speed) has been received by satellite, the ERTMS system oversees the railway traffic situation through a ground/train dialogue: data and information are conveyed to the devices installed on board the trains by the base stations positioned along the railway track, every seven kilometres approximately. Nowadays, fixed balises, placed every 1.3 km, are resorted to for the same activities.

At full capacity ERSAT system may be installed on nearly 45% of the secondary conventional network, by replacing the current security systems, as well as on a large chunk of the European network. It may also be applied in order to monitor and manage the railway lines, urban and suburban, historically licensed to the private industry.

The project is co-funded by the European Union within the European Framework Program for Research and Innovation, *Horizon 2020*.
The trial of satellite technologies, begun thanks to the *3InSat* project (ending on February 2016), funded by ESA and ASI, has paved the way to the field trials of ERSAT EAV.

Milan's "Bocconi" University will conduct, on behalf of the European Union, an in-depth analysis of the economic sustainability (cost/benefit ratio) of the ERSAT system.