

DEVELOPMENT OF A GNSS MONITORING NETWORK WITHIN THE MEDITERRANEAN AREA FOR AIR NAVIGATION APPLICATIONS

- BLUEGNSS Project -

Fabio Principe, Giuseppe Di Bitonto, Andrea Tomei, Vincenzo Pellegrini, Giovanni Morelli
IDS Ingegneria Dei Sistemi S.p.A. - <https://www.idscorporation.com>



Abstract – The main objective of BLUEGNSS project is the harmonization of PBN approach operations among the BLUE-MED FAB States. This is the first time in Europe that a RNP approach implementation project has been coordinated at FAB level. According to the ICAO recommendations, a key enabler to reach this purpose is the development of a regional GNSS monitoring network able to produce periodic reports on GNSS performance within the area of interest.



BLUEGNSS was one of the Horizon 2020-Galileo-2015-1 projects: grant agreement nr. 687198).

Consortium

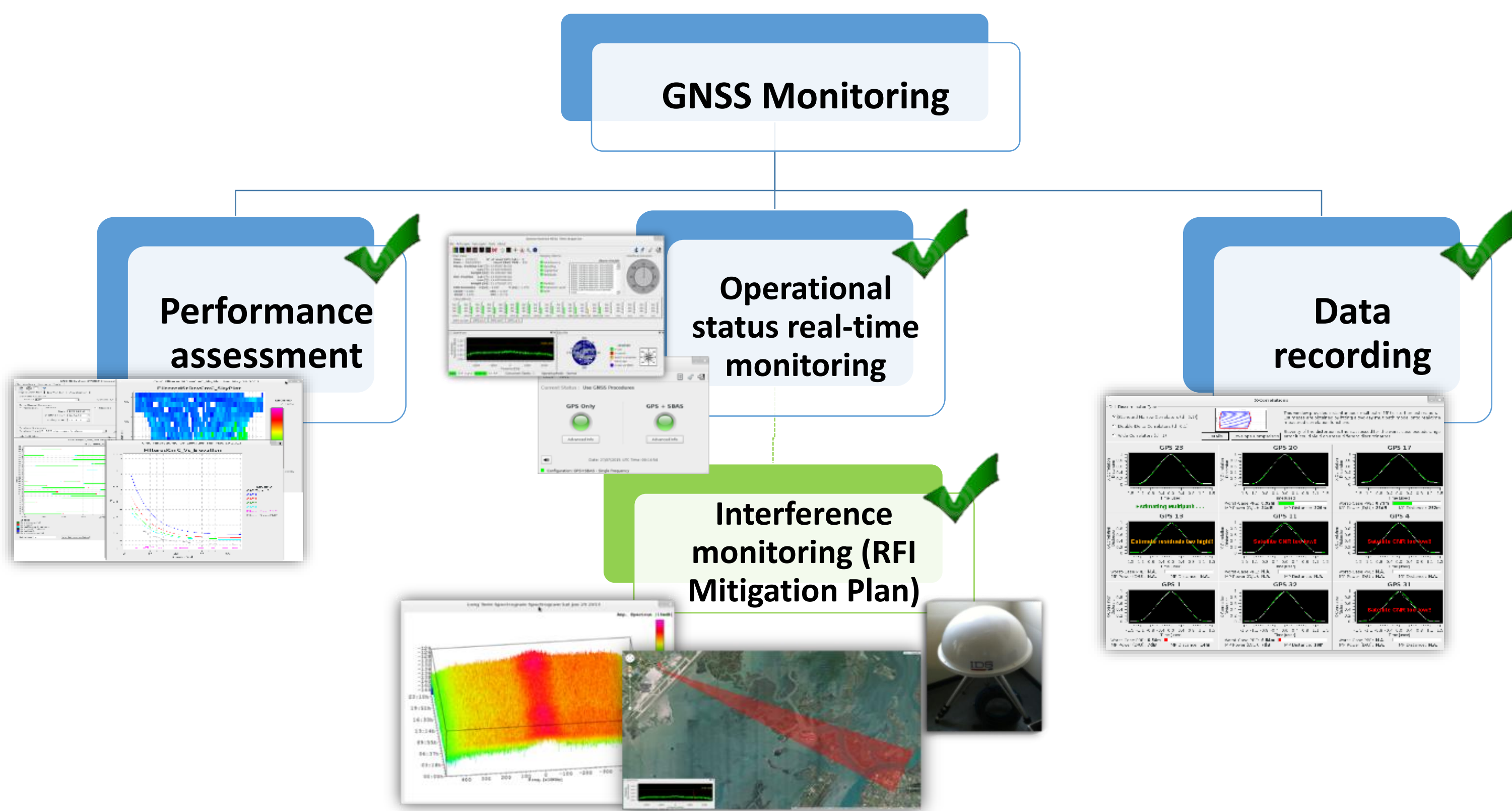


CIVIL AVIATION AUTHORITY

Industrial Partner

Air Navigation Service Providers

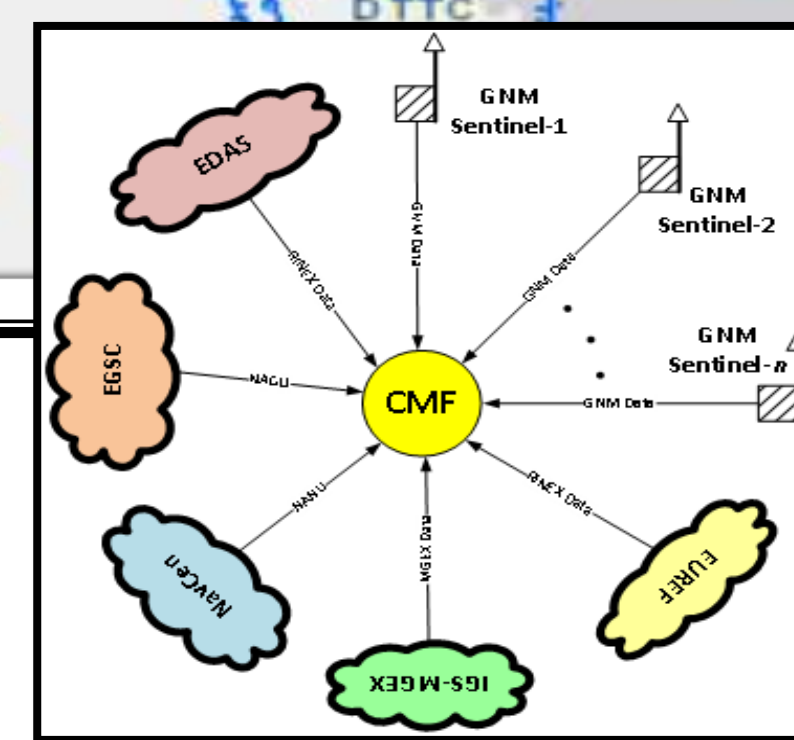
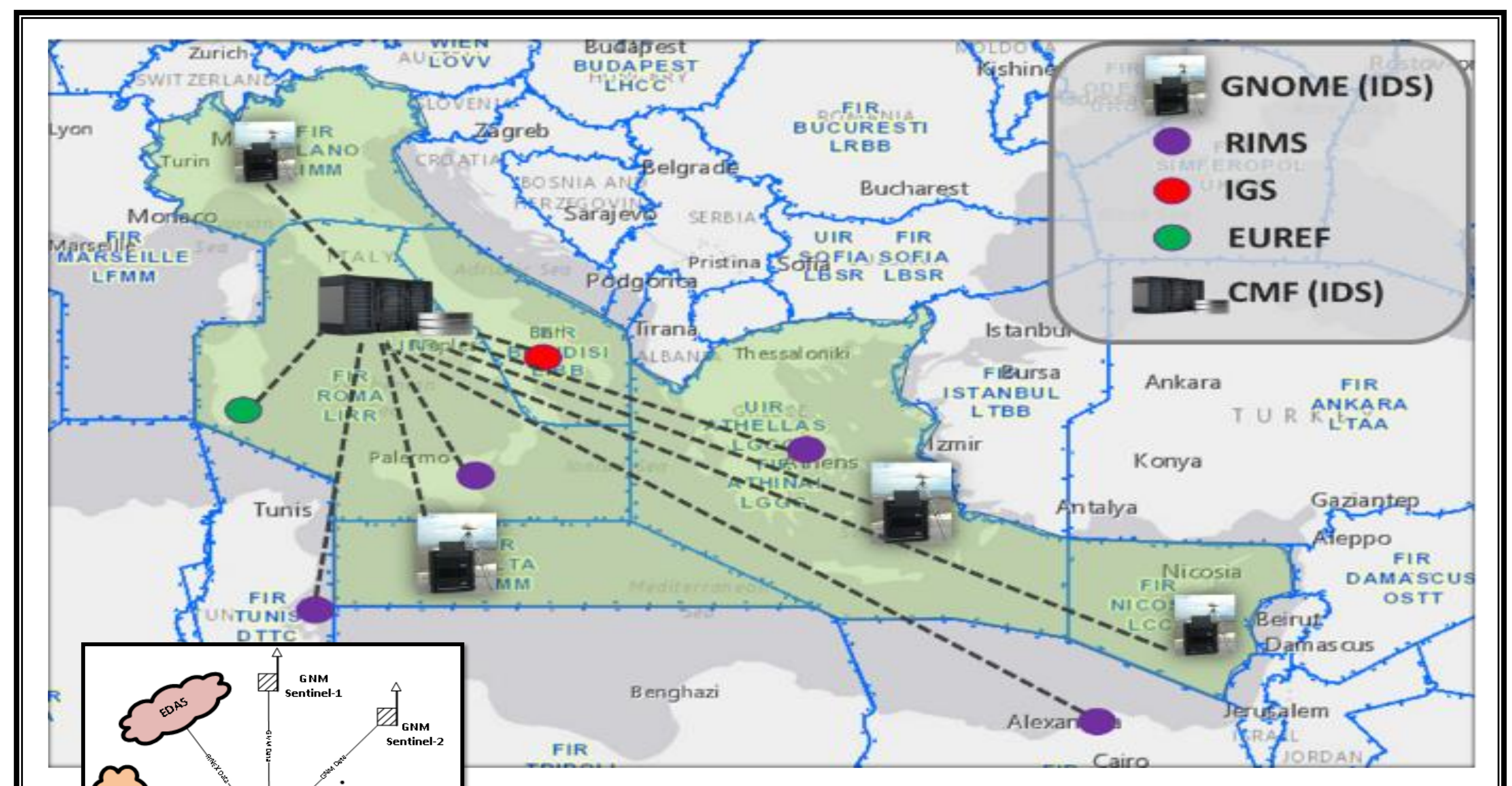
GNSS Monitoring Concept



ICAO GNSS Manual

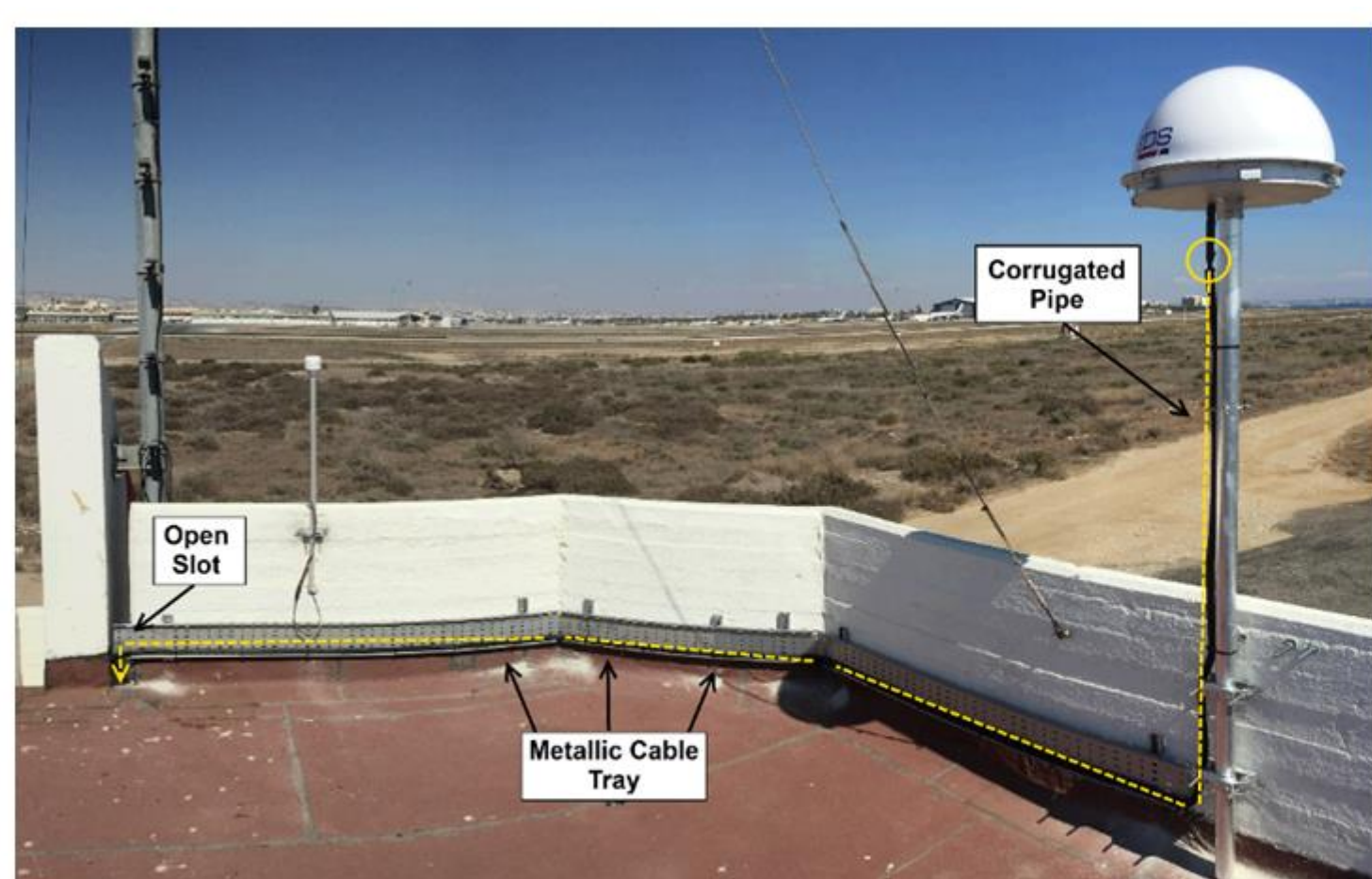
§7.8.1.1 – Annex 10, Volume I, 2.1.4.2 recommends that a State that approves GNSS-based operations should monitor and record relevant GNSS data to support accident and incident investigations. This data can also be used periodically to verify GNSS performance. It should be noted that this verification of GNSS performance is not intended to support a real-time notification process.

BLUEGNSS network



BLUEGNSS network topology

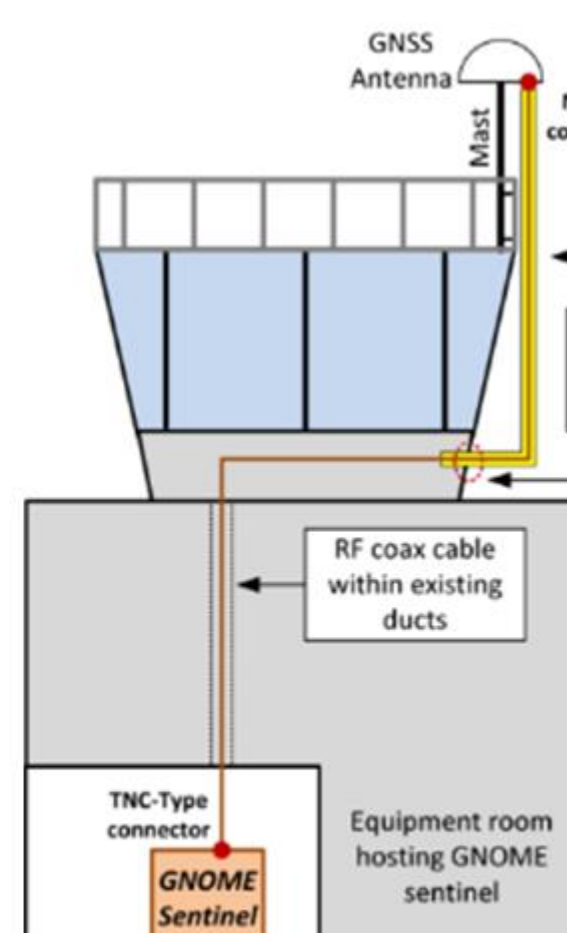
GNOME Sentinel



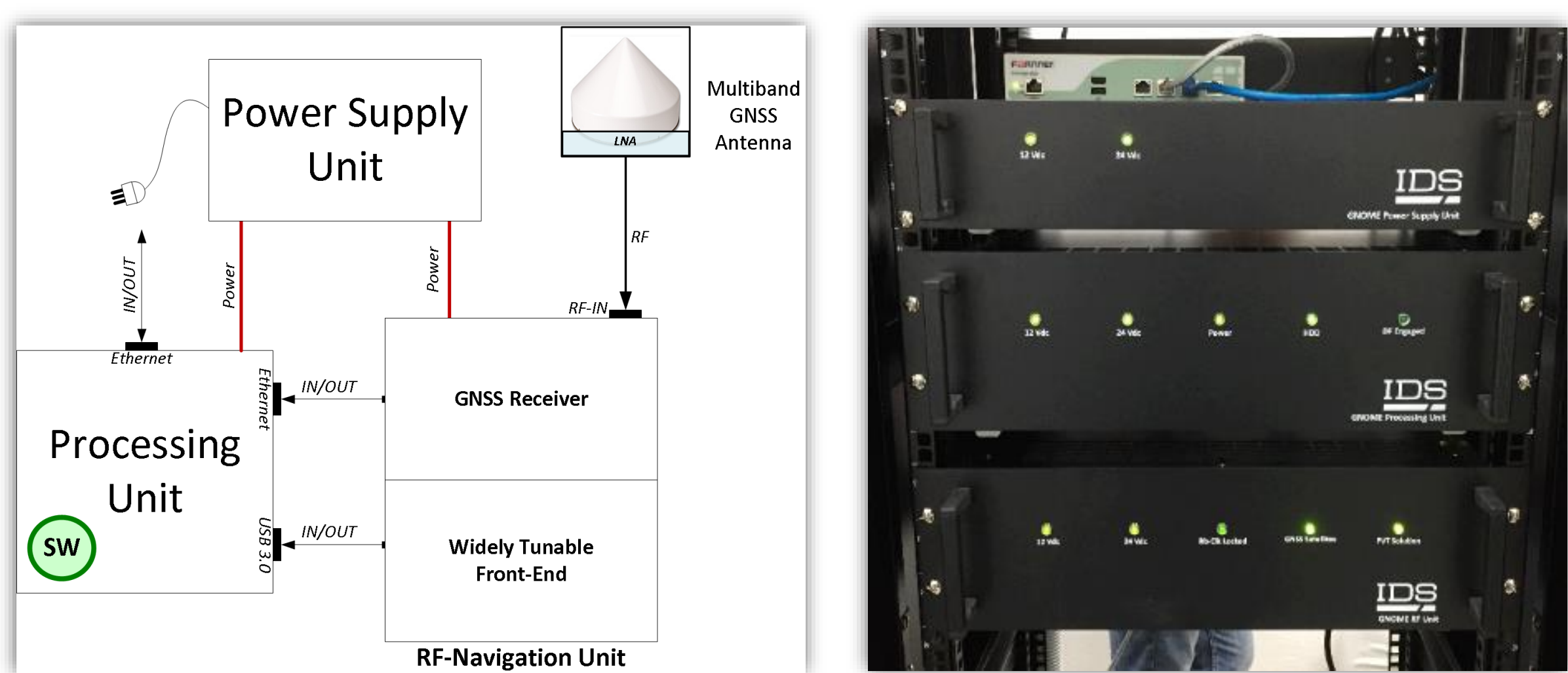
(a) Installation of the GNSS antenna on the roof of a shelter placed within the airport of Larnaca



(b) Installation of the GNSS antenna on the tower of Malta airport (with a sketch of the coax-cable path)

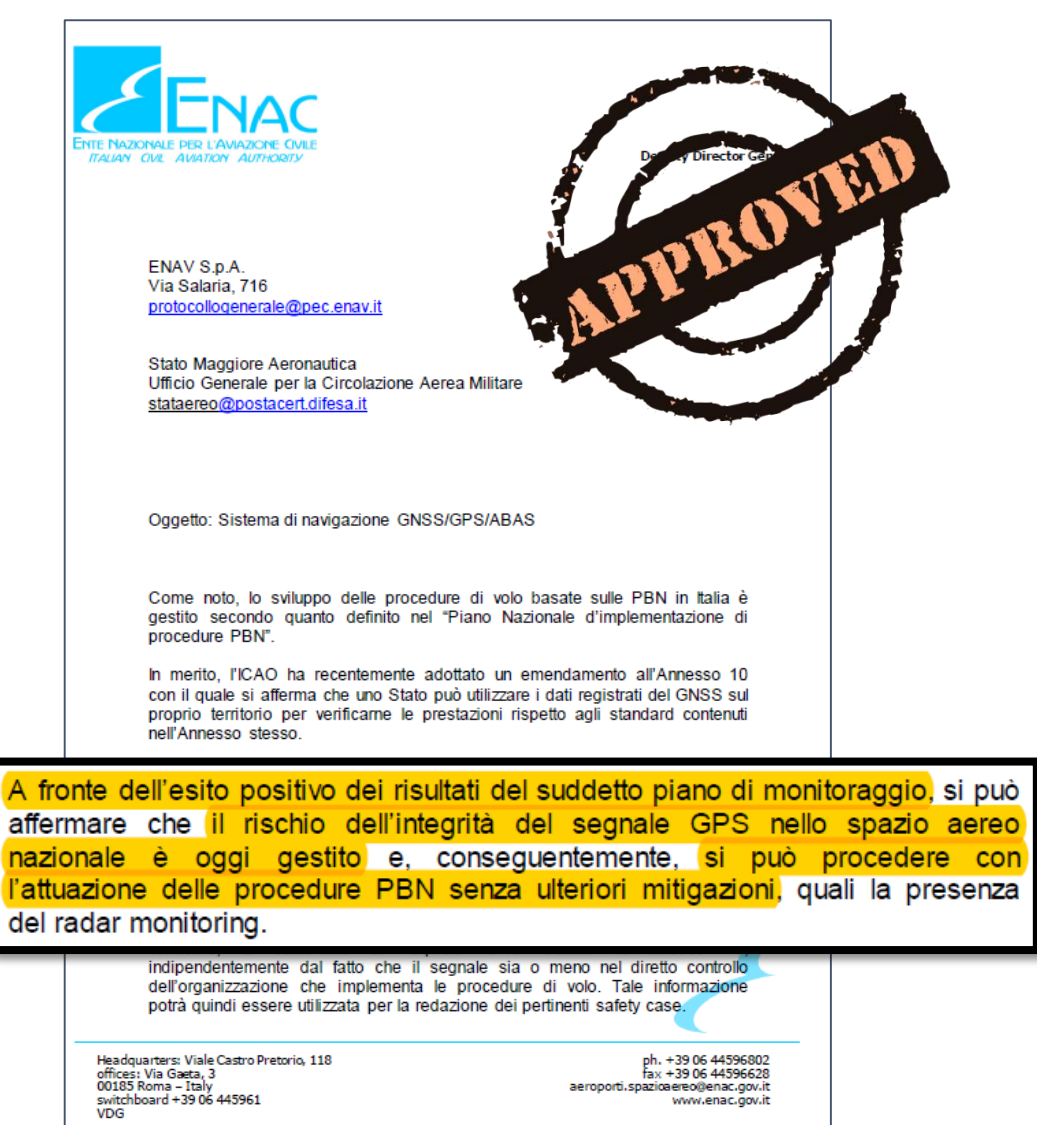


Central Monitoring Facility

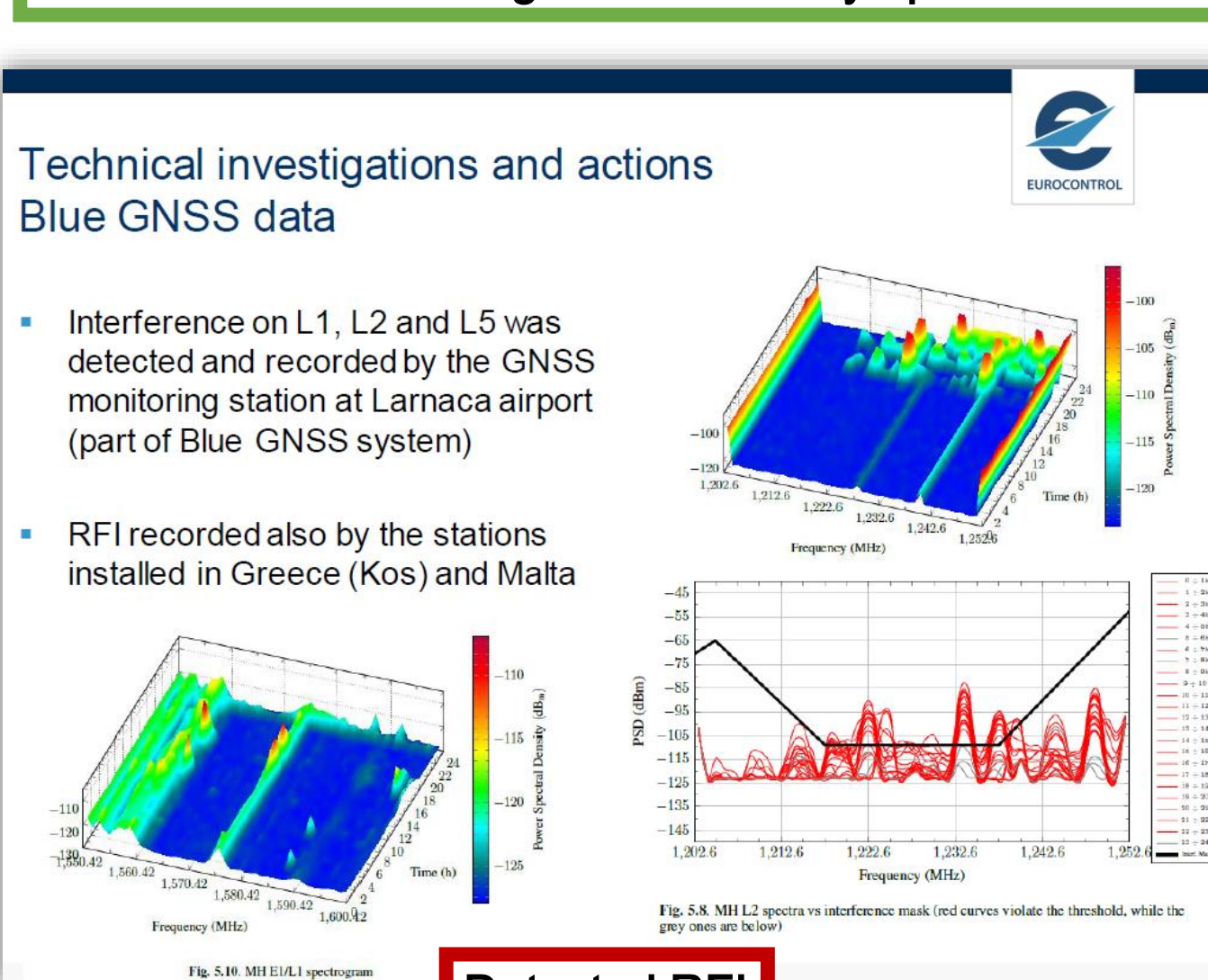


Main Outcomes

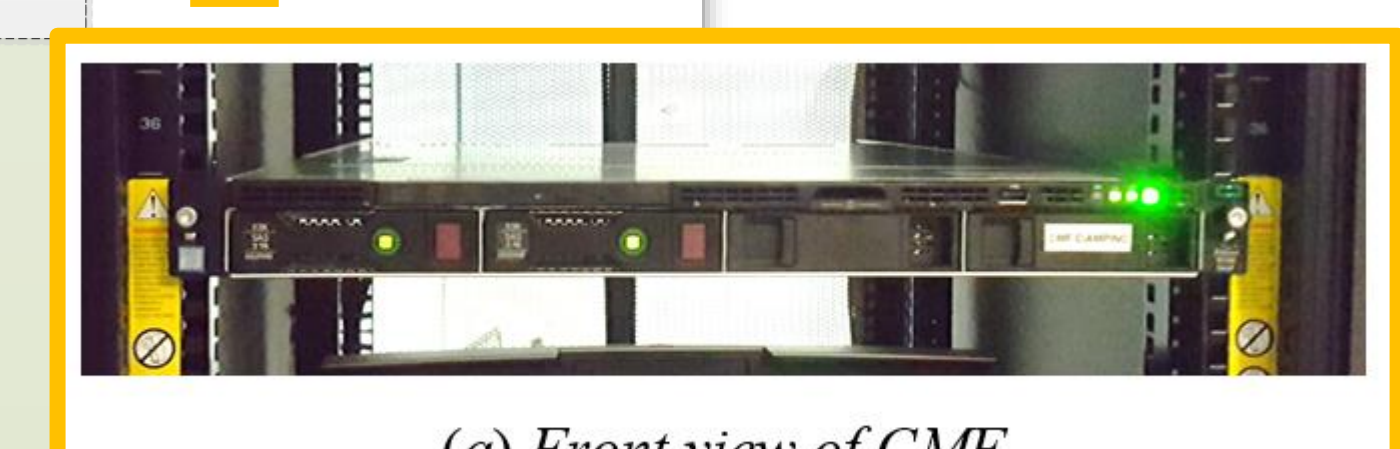
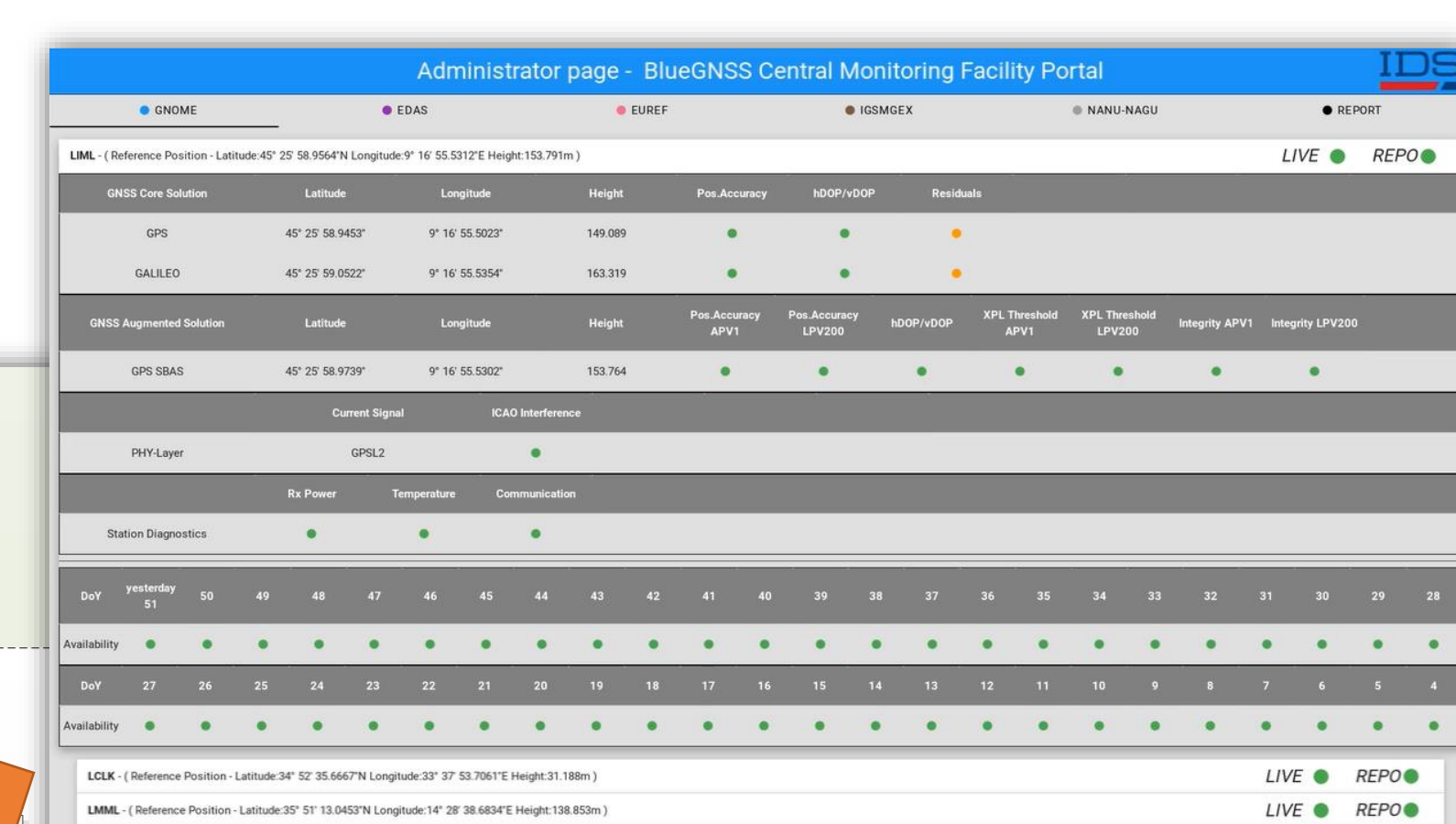
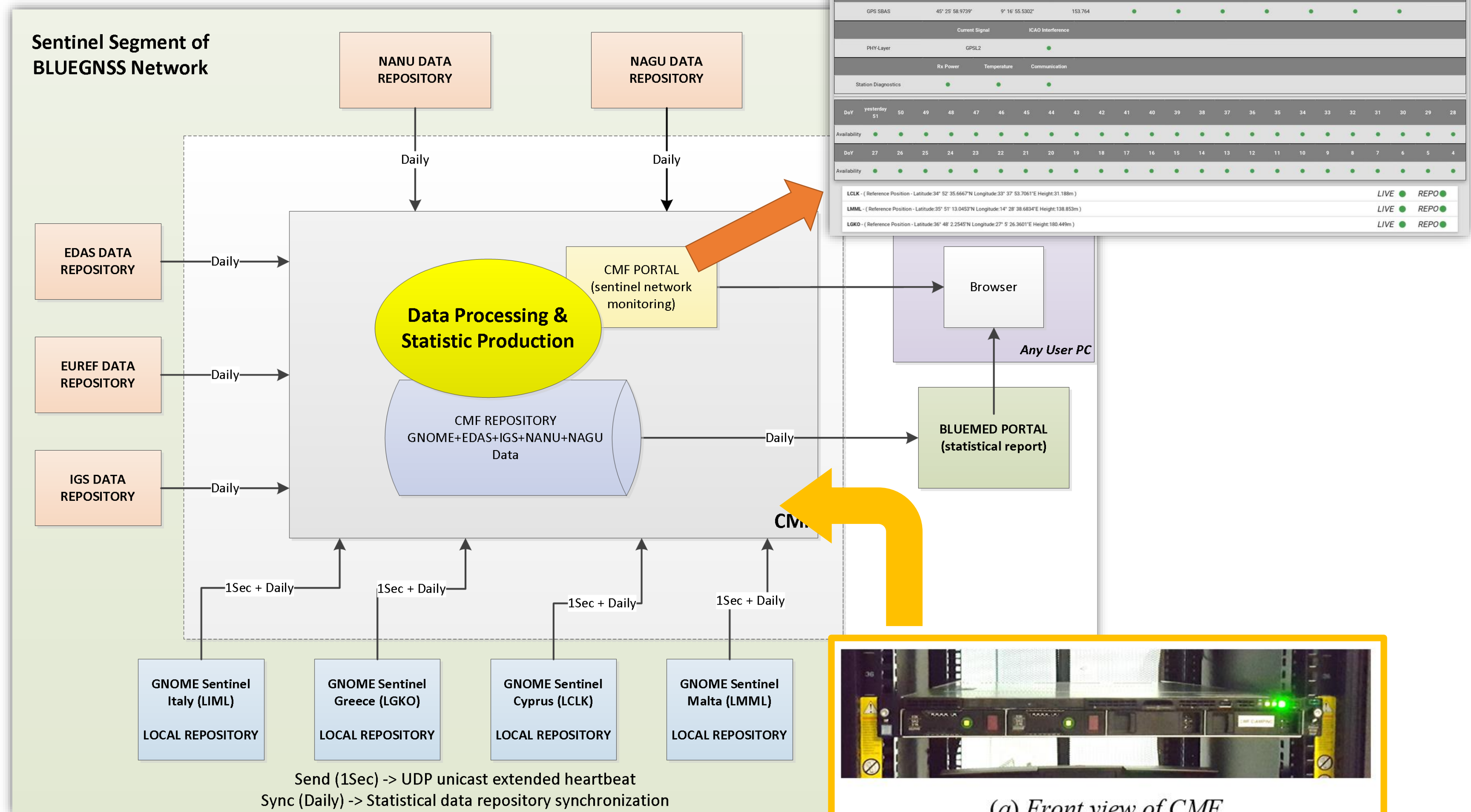
ENAC letter 16th March 2018



BLUEGNSS monitoring network is fully operative 24/7



Detected RFI



(a) Front view of CMF