



A word from ENAV

It was October 1997, when a Boeing 727 operated by FAA, performed flight trials in Ciampino airport testing for the first time in Italy the SBAS concept. The results of those trials, organized by ENAV and FAA using the ENAV and Telespazio Mediterranean Test Bed reference stations, paved the way to the support that ENAV has provided in the last 15 years to the European GNSS Programme EGNOS. Indeed, ENAV has been involved in all the main EGNOS milestones contributing with its ANSP expertise, being one of the seven ESSP shareholders and directly operating elements of the system located in Italy like the Ciampino Mission Control Center and 2 RIMS. In December 2012 ENAV has achieved a further important role in the GNSS domain being among the first European ANSPs publishing EGNOS LPV procedures. The first Italian LPV procedure, flyable since 13th December 2012, serves the Milano Linate airport, it is followed soon in January by others produced for Rome-Fiumicino airport and Rome-Ciampino airport, so allowing to fly EGNOS procedures in three of the main Italian international airports and to offer EGNOS benefits to commercial and business/general aviation. This is a significant step in the implementation of PBN in Italy.

Ing. Claudio Rinaldi / ENAV International Strategies Office

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..... EGNOS, IT'S THERE, USE IT!

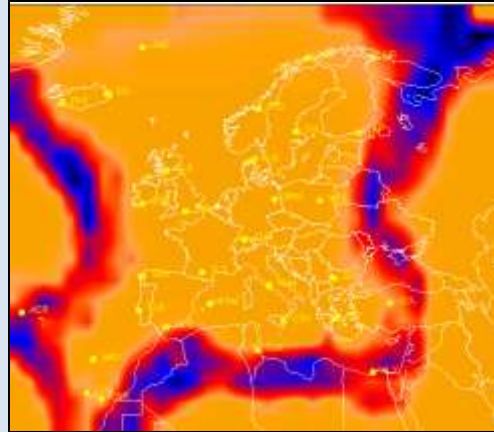
Status of the EGNOS implementation in aviation EGNOS LPV procedures already published in Europe

Country	Airports	LPV Procedures	APV Baro Procedures ¹
France	21	24	0
Switzerland	2	2	0
Italy	3	3	0
Guernsey	1	2	0
Germany	38	5	82
Total	65	36	82

¹ Enabled to be flown with EGNOS vertical guidance

EGNOS System news

In January 31st a new GPS satellite (PRN24) has been included in EGNOS PRN mask. The mask has now 31 satellites in total. This new satellite will increase the satellites visibility providing a better level of performance in Europe; in particular an improvement in the Protection levels during the periods in which the satellite is visible.



APV-1 service availability impact of PRN24

Italy and Germany start EGNOS LPV procedures publication

Milano- Linate has been the first Italian airport where the benefits provided by the EGNOS technology can be experienced by operators, followed by the Roman airports of Ciampino and Fuimicino.

ENAV, the Italian Air Navigation Services Provider, had signed the EGNOS Working Agreement last May 2012, but it was in December when it started the implementation of EGNOS-based approach procedures at Italian airports; first at Milano, recently at the Roman airports of Fiumicino and Campino.

On the other side, DFS, the German Air Navigation Services Provider, has also started the publication of LPV procedures in 4 of its airports. EGNOS was already in use in 38 German airports through APV-Baro procedures.



Milano-Linate Airport

Receivers Laboratory

The Receiver User Lab started a couple of years ago with the aim of providing ESSP the means to access and evaluate real EGNOS performances (i.e.: performances seen by users equipped with SBAS receivers/sensors).

Aviation is the user community which has been given the highest priority.

Nowadays ESSP has four TSO 145/146 receivers: *Garmin GIA 63W*, *Rockwell-Collins GPS-400S*, *Universal LP/LPV* and *CMC-5024* (on exploitation phase).

Thanks to the ESP_MON project with EC and EUROCONTROL, ESSP can also have access to data recorded by other TSO 145/146 receivers located in different sites within the EGNOS service area, what widens considerably ESSP evaluation capacity.

ESSP Receiver lab latest acquisitions have been Trimble (still under installation phase) and Topcon GR-1 receivers.



Antennas from ESSP Receiver lab

EGNOS projects



Workshop in Gliwice

The 4th SHERPA Workshop was held during 30th and 31st January 2013 at the Silesian University of Technology (SUT) in Gliwice, Poland.

An ambitious technical agenda was completed altogether with other supporting activities that SUT organized for the benefit of the whole audience. The main topics discussed during both days were:

- Regulatory framework after the creation of EASA, focusing on AMC documents for RNP APCH certification;
- EASA certification processes;
- Equipment qualification and aircraft installation processes;
- Lessons learnt from first equipped operators;
- Business Case model;
- Airport cost benefit analysis upon implementation of EGNOS APV procedures;
- Aircraft operators and ANSPs SHERPA partners feedback.

More than 30 people participated in the meetings, including SHERPA partners, an EASA's expert, Austro Control representatives (Austrian ANSP), GSA representatives, CAAs delegates and several Polish organizations representatives.



<http://sherpa.essp-sas.eu/>

SAFIR

A joint Consortium between **ASECNA** (Agence pour la Sécurité de la Navigation Aérienne en Afrique et à Madagascar) **Egis Avia**, **Pildo Labs** and **ESSP** have been designated by the **ACP Group** (African, Caribbean and Pacific Group of States) to implement the SAFIR Project in Africa.

SAFIR has been funded by the European Commission with the objective of building capacity within African ACP countries for the future deployment of GNSS/EGNOS in the region: several studies have pointed out that SBAS implementation in this continent will bring undeniable social and economic benefits in many sectors (transport, land management, oil and mining industry ...) and especially in Aviation.

EGNOS Customer Satisfaction Process

ESSP has defined a Customer Satisfaction Process in order to set up appropriate channels to interact with different EGNOS users making use of EGNOS services (process in line with the applicable ISO 9001: 2008).

With this aim, two specific Consultation processes have been initiated in early 2013 and covering 2012 service provision: one regarding the Safety-of-Life service ([link included](#)) and the other regarding the EDAS service. Questionnaires have been prepared and distributed among SoL users and EDAS registered users to collect the valuable feed-back about ESSP performance in the provision of these two services.

<http://ww2.online-encuesta.com/surveys/esnst/3f838ba5-d44c-41bb-a755-3ef8a9cb85cd>

Besides, there are plans to run an Open Service Consultation process in 2013 covering also 2012.

GNSS UPDATING

Interoperability Working Group (IWG)

ESSP participated at the 24th meeting of the SBAS Interoperability Group held in CNES premises in Toulouse, presenting the EGNOS-based procedures implementation status and the EGNOS Performance observations during 2012.

Many other different activities under EGNOS, WAAS, GAGAN, SDCM and MSAS scope were presented at this meeting, which aim is to establish adequate cooperation/coordination among SBAS providers so their implementation becomes more effective and part of a seamless worldwide navigation system. The gathering was the first to be attended by Russia's space agency and the Indian Bureau of Civil Aviation, to discuss their own SBAS systems.



Participants at the 24th IWG in Toulouse © GPS World

European Organization for Civil Aviation Equipment (EUROCAE)

EUROCAE comprises aviation stakeholders made up of Manufacturers, Services Providers, Aviation Authorities and Users (Airlines, Airports, operators) which aim is to provide the Aerospace industry with Standards and other regulatory documents.

ESSP participated in the last EUROCAE WG#62 meeting 34, held in December 2012; highlighting the official Declaration of the EDAS Service and presenting the new section in EGNOS user-support website that has been put in place for Aviation users, which contains a real-time map where to consult EGNOS availability in the different European airports (see Bulletin n.5).

Navipedia – the GNSS Wiki

Satellite navigation is progressing at such a rapid pace that it is difficult to keep track of the latest evolutions, satellite launches, technologies or even systems and signals. With Navipedia, the European Space Agency (ESA) introduces a common on-line entry point for GNSS know-how that enables users to access updated information on the existing GNSS systems, applications, receivers and fundamentals. Navipedia adopts the concept of Media-wiki products, so anyone can comment, propose modification to an existing article, suggest a new topic or submit a draft article. All articles in Navipedia are categorized in three levels: Basic for the general public without technical knowledge; Medium with more detailed tech information and Advanced; oriented to GNSS professionals. The contents are written and continuously reviewed by GNSS experts, hence ensuring their quality, reliability and consistency.

Today Navipedia is fully operational and its final objective is to bring together all GNSS community to build and maintain a truly reliable and updated web based, world-reference GNSS encyclopedia.

Navipedia results from an initiative from the European Space Agency (ESA) and it is supported by other entities such as the United Nations Office for Outer Space Affairs (UNOOSA).

www.navipedia.org

EGNOS and GNSS recent events

European Space Solutions (December 3-5, London)



The aim of this all-event in one (Conference, Exhibition and Support activities) was to bring businesses and the public sectors together with users and developers to explore how space can make a real difference to the lives and livelihoods of people across.

Regarding EGNOS & Galileo, ESSP hold a stand to provide an onsite **HelpDesk** for EGNOS / Galileo applications developers and ESSP staff participated as speaker in the Special Session GNSS for Aviation, and in the Location-based Service (LBS) Forum.



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1 Aviation Panel Discussion with **GSA** Gian Gerardo Calini, **NATS** Ken Ashton and **ESSP** Javier de Blas

2 EGNOS Helpdesk with **ESSP** Rafael Cardoso

3 European Space Expo at Saint James Park



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GNSS up-coming events



Madrid, Spain



- Organized by CANSO in collaboration with ATCA (Air Traffic Control Association)
- First-time event oriented to Air Navigation Services Providers and industry suppliers
- **EGNOS stand** hold by ESSP
- Workshop "EGNOS in the European ATM system"
- Award to Aena for the signature of the EGNOS Working Agreement (February 13th)
- Side events: **European Space Expo** in downtown Madrid

Come and visit the EGNOS stand – Pavilion 9 – nr. 1240

www.worldatmcongress.org



- 22th Edition of the Air Traffic Control Event in Amsterdam
- ESSP holding an **EGNOS stand** to present latest's EGNOS-based procedures implementation in Europe

Come and visit the EGNOS stand – Pavilion 10 -D400

www.atcglobalhub.com



- 6th conference and exhibition dedicated to regional airports
- EGNOS stand hold by ESSP
- ESSP will present "**SBAS** (Space-Based Augmentation System): Saving Costs & Enhancing Flexibility and Capacity at your Airport" in joint presentation with Eutralex

www.aci-europe-rac.com

More info on EGNOS

www.essp-sas.eu

EGNOS Service Provider Website. Info on the EGNOS system, news on the service. Status on EGNOS implementation in Aviation. Projects. Events. Others.

egnos-user-support.essp-sas.eu

Information on past and current EGNOS performances. Signal in Space (SIS) status. Forecast on SIS availability. EDAS information and registration.

egnos-portal.gsa.europa.eu

EGNOS applications. Developers platform. Business support.

For questions & Information
EGNOS HELPDESK
+ 34 911 236 555



egnos-helpdesk@essp-sas.eu

Disclaimer: EGNOS is a complex technical system and the users have certain obligations to exercise due care in using the EGNOS services. Before any use of the EGNOS services, all users should review the EGNOS SoL Service Definition Document ("SDD") and/or EGNOS Open Service SDD (both available on the ESSP SAS website <http://www.essp-sas.eu/>) in order to understand if and how they can use these EGNOS services, as well as to familiarise themselves with their respective performance level and other aspects the services may offer. Use of an EGNOS service implies acceptance of its corresponding SDD specific terms and conditions of use, including liability.

In case of doubt the users and other parties should contact the ESSP SAS helpdesk at egnos-helpdesk@essp-sas.eu. Aviation Users may also contact their National Supervisory Authority.

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