EGNOS

EGNOS, it's there. Use it.

EGNOS BULLETIN

Issue 17, Q4 2015

European
Global Navigation
Satellite Systems
Agency

Precise navigation,
powered by Europe

http://egnos-portal.gsa.europa.eu/

ESSP

We certify you're there.

http://www.essp-sas.eu/

EGNOS implementation

EGNOS Success Stories

EASA MML-STC FOR GNS-430W AND GNS-530W

Gama Aviation (Engineering) Ltd has recently achieved EASA certification of a new Multiple Model List Supplemental Type Certificate (MML STC) for the Garmin products GNS430W and GNS530W, which enables SBAS LPV approach capabilities. The development has been funded by the GSA and counted on the support of PPL/IR-Europe.

A similar AML STC has been available in the USA since January 2011 (FAA STC SA01933LA-D) with Garmin Inc. as the holder. The MML covers hundreds of turboprop, single piston and twin-piston aircraft models from different manufacturers like Cessna, Britten-Norman, Cirrus, Diamond, Hawker Beechcraft, Mitsubishi, Mooney, Piaggio, Pilatus, Piper, Socata and Viking among others. Although Garmin discontinued the manufacture of these products, there are still thousands of aircraft in Europe fitted with G430W/G530W which could benefit from this STC, which cost is estimated at around 300€.

Credits: © Garmin

In addition, for those fitted with the non-W versions of these devices, second-hand products are available in the market for around 6,000€ and 9,000€ respectively but they could also upgrade their non-W units through the European Garmin Avionics Repair Workshop at an approximate cost of 3,000€.

For further information on this STC, please contact Barry Peat at Gama Aviation (Engineering) Ltd via barry.peat@gamaaviation.com

Credits: © Garmin

FIRST LPV PUBLISHED IN BELGIUM

The first LPV in Belgium, at Antwerp, was published on the 10th December 2015.

On this day, the Aviation Press Club (APC), Antwerp Airport and FLYINGGROUP celebreated a press meeting at Antwerp's airport.

Did you know…?

…that agent 007 James Bond flies with EGNOS? The Islander aircraft used in his last movie Spectre, equipped with a dual GTN650's installation, has been recently acquired by Skybus to operate the future LPV procedures at St Mary's and Lands' End airports (more info here).

Talking about EGNOS benefits with…

Rafael Olmedo,

ESNC GSA Special Price winner 2015

In this edition we interview Mr Rafael Olmedo, CTO of the company Geko Navsat and winner of this year's European Satellite Navigation Competition (ESNC) GSA Special Prize. His experience in applying EGNOS in disruptive ways in many of his projects is worth being shared with the audience of the EGNOS bulletin.

You have been researching for a number of years in innovative GNSS applications, some of them involving EGNOS. Could you show what added value you consider EGNOS can bring to the users of your inventions?

In my first contact with GPS in 1990, I could be aware about two main constrains: the lack of accuracy and integrity. The deactivation of the Selective Availability (SA) in 2000 enabled the springing up of many new applications such as car navigators, or the Location Based Services (LBS), popularized later by smartphones. Nevertheless, the application of GPS for the implementation of more demanding applications was still requiring the use of corrections for improving the navigation solution calculated by popular receivers. EGNOS tackled directly these limitations of GPS.

The first time we did a complete use of EGNOS was at developing a collaborative navigation system, which later led us to the "ARIADNA" project developed under the 7th Frame work Program. From then on, all our projects undertaken in several fields (aeronautics, transport, rescue & emergency, environmental...) have always considered EGNOS as part of the solution. Today EGNOS it is key cornerstone in the development of a guidance system for visually impaired people in which we are currently working. No blind user will fully trust a guidance system which cannot offer enough precision and safety.

Overall, GPS users know and value EGNOS for providing better accuracy than GPS, but it is undoubtedly the ability to monitor and report on the status of the GPS constellation and to bring confidence about its use what is its best contribution to the system. EGNOS reaches our GPS receivers via satellite or through the Internet. Despite of being almost transparent to users, its added value is crucial for better performance and the development of new GNSS applications and features.

Your KYNEO project has been awarded this year's GSA Special Prize of the ESNC, for the most promising application idea for European GNSS. What does it consist of?

After having been involved in many previous GNSS research and innovation projects, we saw that many different products and services were looking for similar solutions for positioning that could be flexibly adapted in different contexts.

Based on this, we created KYNEO, which is a compact and programmable electronic board that integrates a set of motion sensors, a multi-constellation GNSS receiver (including EGNOS and Galileo), and wireless communication and storage capabilities.

KYNEO allows developers to rapidly and flexibly build their own navigation solutions based on open–source software. But we are also users of KYNEO: it's enabling us to develop fast prototypes, and proofs of concept for our own projects.

You are addressing innovative concepts like Sensorial Navigation, the 'GNSS of Things', etc. Do you think there is still an open field for innovation using EGNOS, and E-GNSS in general, in the incoming years, or on the contrary we are reaching saturation?

Personally, I like to do the exercise of imagining a shaker in which combine GNSS with other technologies, topics or issues. This imaginary cocktail always comes up with innovative solutions, and for us, it has led to the achievement of most of our awards. The secret is to rely on the fact that GNSS technologies can be combined with anything, and especially to know the ingredients well before mixing.

When we imagined EGNOS and Galileo many years ago, we could not suspect its current potential impact in sectors such as banking, energy, and insurance. Now we can envision easily the combination of GNSS with medicine, big data, forensic issues or even the Internet of things. These are the new frontiers. And after those, new ones will appear.

You are running a start-up company for the development of high added-value satnav solutions. Is it easy to make this for a living?

What do you miss? Finally: what would you suggest to entrepreneurs entering this business?

It's not easy, but it's being exciting. During the previous 20 years, I worked in a research institution within the aerospace sector. I have to confess that I discovered the real meaning of "innovation" when we founded our startup. Making money and getting sustainable products from research results is not an easy task, even less for a researcher. However, when you really love what you do, and when you really believe on it, it's easier to find partners, friends, and support from the public administration. Also, the European Commission is doing a great job in creating opportunities and supporting startups.

> "KYNEO allows developers to rapidly and flexibly build their own navigation solutions based on open–source software."

Concerning other entrepreneurs, I would say to them that nowadays this is a good business to enter, because it is plenty of opportunities. But there are not magic tricks. Just working hard, looking for inspiration, and being confident on people and on the future.

Meet the users

Rafael Olmedo is founder and CTO in GEKO NAVSAT. He has academical degrees in Aeronautical Engineering and Physics, and specialized technical training in GNSS technologies. He has more than 20 years of experience in R&D projects concerning the application of GNSS in innovative applications.

He has received 10 awards in the European Satellite Navigation Competition (ESNC), including the GSA special topic prize in 2015 and 2012, and the ESA special topic prize in 2010. He has also received several innovation prizes in Spain.

ArcGIS+EGNOS, use cases

Esri, (Environmental Systems Research Institute) is an international supplier of Geographic Information System (GIS) software, web GIS and geodatabase management application. The company hosts annual User's Conference in those countries where it is present and this year an ArcGIS & EGNOS success story was presented in the plenary session of the "Conferencia ESRI España". Those EGNOS use cases are described in the paragraphs below.

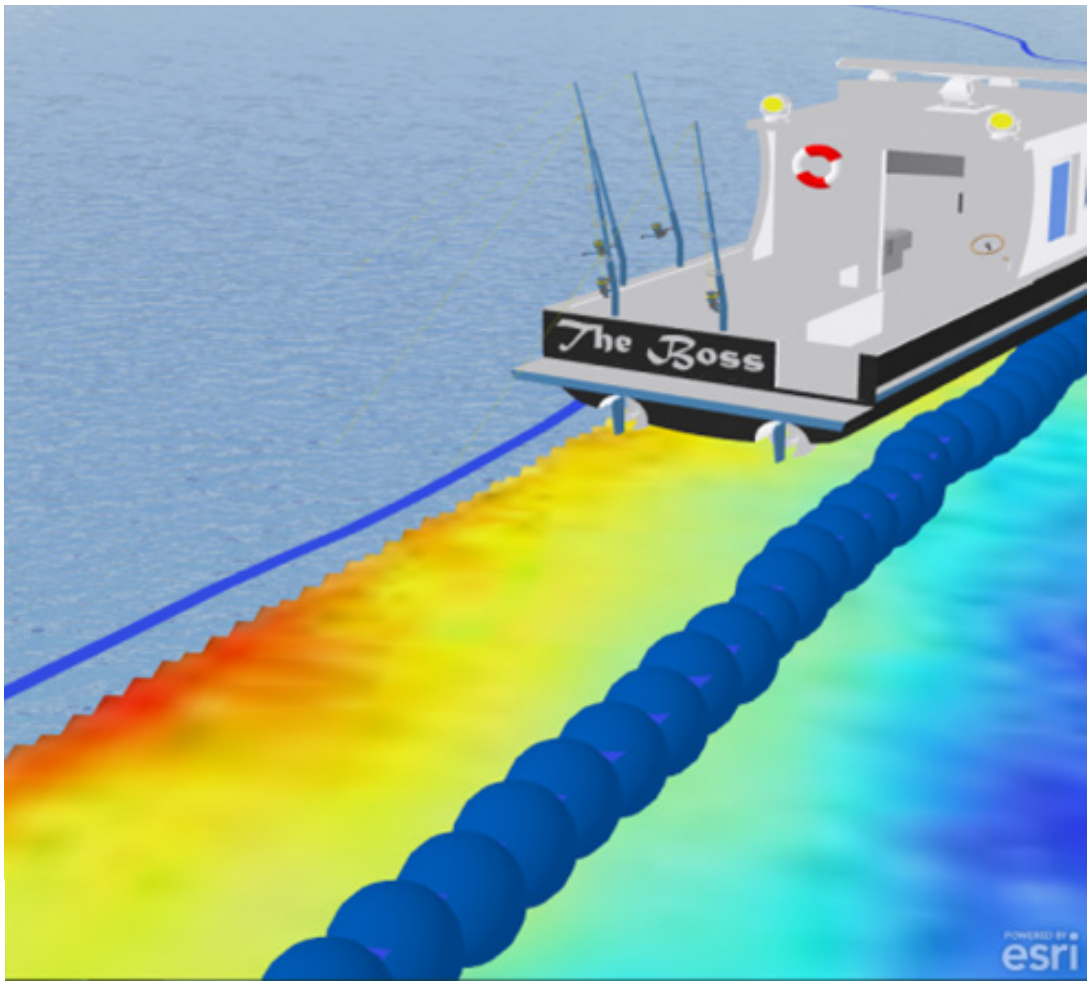
BATHYMETRY AT PUERTO DE BARCELONA

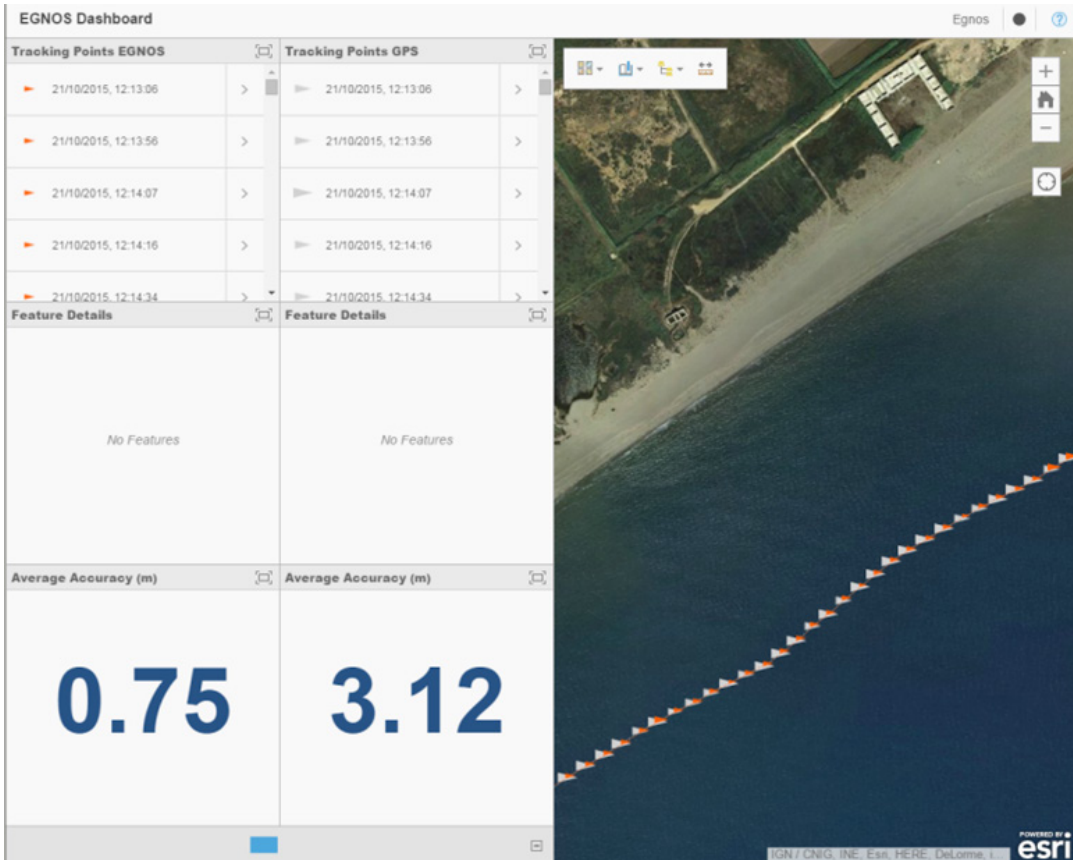
Ports and harbor surveys cover a collection of topographic elevations and hydrographic depths to assess the condition of navigation channels to quantify and determine dredging requirements, the condition of navigation structures, such as jetties and breakwaters, and adjacent shoreline.

> "EGNOS fulfills 1a, 1b and 2 requirements of S-44 from IHO (International Hydrographic Organization), to perform bathymetries"

The Barcelona port authority was interested in assessing if EGNOS fulfills the requirements of S-44 from IHO (International Hydrographic Organization), to perform bathymetries. Data used to make bathymetric maps typically comes from an echo sounder mounted beneath or over the side of a boat, "pinging" a beam of sound downward at the seafloor. A GNSS system locates the soundings with respect to the surface of the earth. In this case, data was collected from a Leica receiver, EGNOS compatible, and the boat echo sounder.

Analyzing data collected using EGNOS (for the shallowest measurement acquired, 57 meters depth, the Total Vertical Uncertinty with a confidence level of 95% was 89.4 cm) demonstrated that this service accomplishes the requirements of surveys 1a (waters of more than 40m depth), 1b and 2 according to S-44 from IHO (International Hydrographic Organization) in offshore bathymetries.





COASTLINE MONITORING AT EL PRAT BEACH

The other case study presented in the conference, was carried out in an area close to beach of El Prat, zone of particular interest due to constant changes of coastline as a result of dumping sand. It was compared the data accuracy of measurements collected from only GPS and EGNOS signals. ZenoCollector solution provided by Leica Geosystems was used for that purpose. ZenoCollector combines a high-accuracy data collection Zeno 20 device with Collector for ArcGIS and thanks to this ArcGIS, data collected on the device was automatically synced back to ArcGIS Online, giving everyone in the organization access to the latest authoritative data. The results showed that EGNOS improves considerably GPS accuracy (see left side picture above mean accuracy expressed in meters) for free just using an EGNOS compatible equipment.

EGNOS use case presentation (in Spanish)

EGNOS demonstration at the Port of Rotterdam

A showcase activity was organized by GS1 and the European GNSS Agency at the Port of Rotterdam where the benefits of EGNOS, augmenting GPS were presented to the Director of Nautical Developments, Policy & Plans. Specifically, the demonstration targeted the Port's ongoing hinterland connectivity projects which complements the scope of the GSA's EGNOS Multimodal Adoption Plan for the rail and inter-freight transport markets.

EGNOS has shown outstanding performance in safety critical aviation applications which could equally be applied in railways, logistics services and operations. There have been several initiatives trying to promote and communicate the benefits of EGNOS features but of course, it has not been possible to cover the whole implementer community. To address this issue in the multimodal logistics market segment, a demonstration activity was organized at the Port of Rotterdam Cruise liner terminal, on the 21st of October, 2015 in conjunction with the PRONTO project.

> "The inclusion of EGNOS data in the GS1 EPCIS would undoubtedly improve the accuracy of the available location data, however, a main feature in my eyes is the fact that EGNOS together with Galileo (when on line) will be able to deliver validated and tamper-proof GNSS data."
>
> *Douglas Walker Hill, GS1 Denmark*

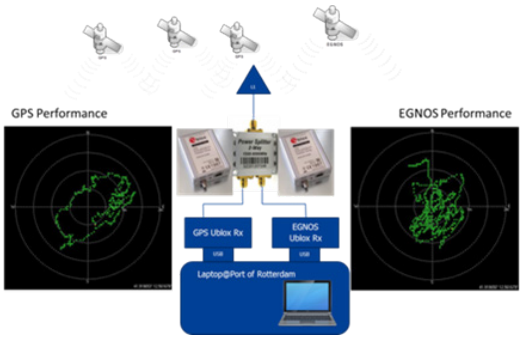
The activity visualised the expected levels of performance which can be achieved with EGNOS when used in logistics for terminal freight operations.
The intention of the activity was to feed the location read results into a GS1 EPCIS (the Electronic Product Code Information Services, an ISO standard for supply chain and asset tracking and tracing information services) and through a supply chain scenario demonstrate the added accuracy of augmented GNSS using EGNOS.
Diverse representatives and interested parties from the Port user community, Industry and the GSA attended the demonstration, namely: The European GNSS Agency (GSA), Port of Rotterdam policy and planning department, European Satellite Services Provider (ESSP), GS1 Global standards and Telespazio.
After taking the geolocation readings during the demonstration, positioning results were post-processed and shared with GS1 which showed promising benefits for users applying this technology in an EPCIS application.
The result was, according to Mr. Douglas W. Hill, "a very efficient demonstration of EGNOS capabilities"

What is PRONTO?

PRONTO (Port Rendezvous of Nautical and Terminal Operations) is an R+D activity, led by GS1, aimed at producing a traceability system for goods and services (the EPCIS system, an ISO standard as of this year), and testing it in limited trials in key logistics scenarios, to increase visibility in the supply chain. According to GS1, "the PRONTO EPCIS system is a social business communication platform for the port community. It invites all parties to share and receive information regarding the planning of all services related to the vessel. This leads to optimization of the port call." It is an initiative that originates from the Avanti project and is based on GS1's standards.

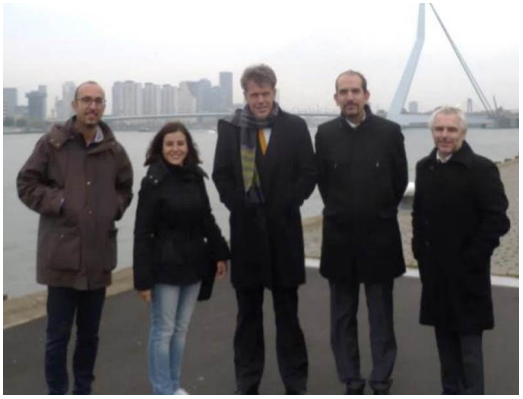
The demonstration

The demonstration consisted of setting two receivers at the Cruise liner terminal in the Port of Rotterdam and feeding the results into a program installed on a laptop. Both GPS and GPS + EGNOS positioning outputs were shown in real time and were recorded for further post-processing.



Demo description: GPS vs EGNOS accuracy.

Telespazio, who organised the demo, also showed the potential of using EGNOS Data Access System (EDAS) which is applied in order to increase the integrity of a position. This means a higher degree of trust can be placed on the EGNOS positioning results which is realised through a solution called LCS (LoCation Server). LCS improves the availability of the EGNOS corrections (via EDAS) and enhances the EGNOS Open Service positioning accuracy through a patented algorithm, especially suited to the needs of logistics applications.

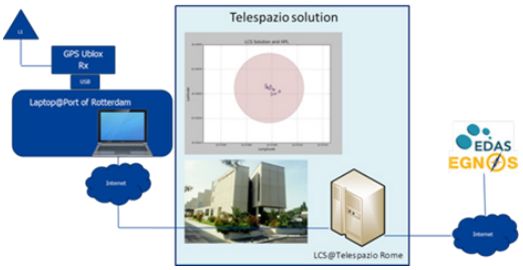


A team photo after the demonstration.
From right to left:

- Douglas Walker Hill, COO GS1 Denmark
- Daniel Lopour, Market Development Officer, GSA
- Captain Ben R.J. van Scherpenzeel, Director Nautical Developments, Policy & Plans (Port of Rotterdam)
- Virginia Antón, ESSP
- Gian Paolo Plaia, Telespazio
- Not in the picture, Antonio Salonico, Telespazio.

Test	EGNOS Horizontal Accuracy. m	GPS standalone Horizontal Accuracy. m
Average deviation from true position	1.5	2.0
95% confidence	3.1	4.0

During the demo it was also shown that Horizontal Protection Level provides an upper boundary for horizontal errors which can be used to measure the geolocation information quality and the confidence of the EGNOS position solution.



Demo: Integrity with remote connection to LCS.

In summary, it was demonstrated that EGNOS provides improved performance when compared to the use of a GPS-only solution. In addition, although EGNOS Signal-In-Space is limited to locations where at least one EGNOS GEO satellite is in line-of-sight, this limitation can be overcome with EDAS (EGNOS Data Access Service) where EGNOS messages can be obtained with a simple Internet access. In addition, the "protection level" delivered by EGNOS is a guarantee of the position information reliability, allowing for the establishment of a liability scheme among the various stakeholders, thus supporting the implementation of the European policies for logistics such as e-freight and logistics applications.

> "EGNOS can increase the accuracy performance and guarantee such level of performance thus providing added value to the positioning inputs in the logistics value chain management"

According to Virginia Antón, from ESSP, the EGNOS Service Provider: "EGNOS can increase the accuracy performance and guarantee such level of performance thus providing added value to the positioning inputs in the logistics value chain management".

What's new?
Since last bulletin...

EGNOS WORKING AGREEMENTS (EWA) SIGNED

The following EWAs have been signed in the last quarter:

Irish Aviation Authority
Ireland

Saint Mary's Airport
United Kingdom

AAA Ltd (Booker Airfield)
UK

LPV & APV BARO PROCEDURES PUBLISHED PER COUNTRY

(including last AIRAC cycle 2015 #13 – 10/12/2015)

Next table shows, for each country:

- the number of airports with LPV procedures, as well as the total number of LPV procedures;
- the number of airports with APV Baro procedures authorised to be flown with EGNOS vertical guidance as well as the total number of APV Baro procedures.

Country	Airports – LPV procedures	# LPV Procedures	Airports – APV baro Procedures	# APV baro Procedures
Austria	2	2	0	0
Belgium	1	1	0	0
Croatia	1	1	0	0
Czech Republic	4	8	1	4
Denmark	3	6	0	0
Finland	1	2	0	0
France	75	119	3	3
Germany	21	35	24	63
Guernsey	1	2	0	0
Italy	7	15	0	0
Netherlands	2	3	0	0
Norway	10	20	0	0
Poland	2	4	0	0
Portugal	1	2	0	0
Slovak Republic	2	4	0	0
Spain	1	2	0	0
Sweden	2	3	0	0
Switzerland	8	10	0	0
United Kingdom	2	4	0	0
Total	**146**	**243**	**28**	**70**

Warm welcome to Belgium as the "newcomer" in the EGNOS LPV publications list!

SERVICE IMPLEMENTATION ROADMAPS UPDATE

A new version of EGNOS Services Implementation roadmaps (SIRs) will be published in January 2016 in the EGNOS User Support website describing the current status of the EGNOS Services and the foreseen evolutions in a 3-year timeframe. The main improvements with respect to the previous version are the introduction of references to System milestones linked to Service evolutions and the addition of a high-level information about long-term Services evolution beyond the 3-year timeframe.

More information here.

SBAS IN THE WORLD

Table below shows the WAAS list of satellite-based approach procedures. You can find further information on SatNav news.

Courtesy of the FAA WAAS Team

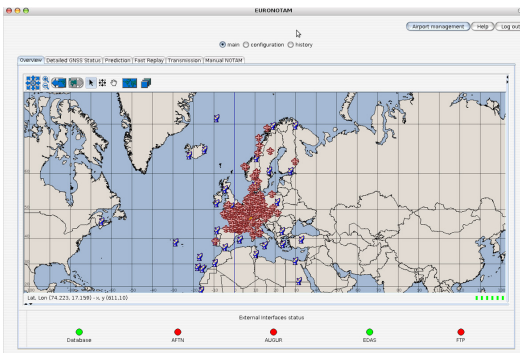
Satellite-based Approach Procedures

	Procedures (Part 139 Airports)	Procedures (Non-Part 139 Airports)	Total Number of Procedures
RNAV (GPS) Approach **LNAV Line of Minima**	1,767	4,217	5,984
RNAV (GPS) Approach **LNAV/VNAV Line of Minima**	1,374	2,068	3,492
RNAV (GPS) Approach **LPV Line of Minima**	1,380	2,187	3,567
Non-ILS runway	*53*	*1,610*	*1,663*
ILS runway	*1,327*	*577*	*1,904*
RNAV (GPS) Approach **LPVs w/200' HAT**			930
RNAV (GPS) Approach **LP Line of Minima**	82	511	592
GPS Approach **GPS Stand-Alone Procedures**	11	93	104
GLS Approach	11	0	11

(Data as of September 17, 2015)

EGNOS NOTICE TO AIR MEN SERVICE PROVISION

An important milestone for the NOTAM Proposal Provision took place in August 2015, with the deployment of a new EGNOS NOTAM infrastructure. As part of this upgrade, the security of the system was improved with the installation of new NOTAM FWs on a dedicated cabinet. Furthermore, considering the continuous increase on publication of EGNOS Based Approach procedures, the processing capabilities of the system together with the service robustness have been notably increased with the deployment of brand new servers.

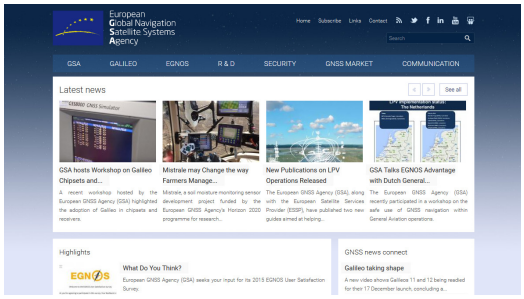


What's going on... in aviation.

GSA CALL FOR PROPOSALS 2015

The new Call for Proposals for the Acceleration of EGNOS adoption in the field of civil aviation launched by the GSA in 2015, announced in previous Issue 15 of the EGNOS Bulletin, has received plenty of applications as it happened last year. The total funding requested by these proposals has exceeded the available budget for the second time, which underlines the growing appetite for EGNOS in Europe. These proposals cover the publication of LPV approach procedures and other EGNOS based operations like LP, PinS, routes and even the recently declared LPV200 service. In what regards to operators, the different received proposals cover the development of STC solutions, the upgrade and re-certification of aircraft/rotorcraft and other activities such as crew training.

Apart from these primary activities, the Call was also opened to the development of new enablers which could help accelerate EGNOS adoption and prepare for other uses in navigation, surveillance and communication.



The proposals are currently under evaluation by the GSA and a panel of experts. The outcomes of this evaluation will be communicated to applicants during December and the signature of the awarded grant agreements should take place in January 2016. The 13 projects awarded from the preceding Call in 2014 (see Issue 15 for more details) have successfully celebrated their Kick off meetings and are expected to deliver their first results during the course of 2016.

EGNOS PRESENT AT THE ERA GENERAL ASSEMBLY

EGNOS was once again present at the annual European Regions Airline Association (ERA) General Assembly, held in Berlin between October the 13th and 15th. Both exhibiting at the General Assembly (GA) and presenting as part of the ERA Operations Group meeting, this event becomes an excellent opportunity for regional airlines to learn about how EGNOS can improve the continuity of their operations and, hence, their business results.

Within the Operations Group meeting, EGNOS informed the audience about the latest status of LPV approaches implementation in Europe. The presentation did also contain an interesting analysis about how EGNOS-based operations are today already in operation in a large number of airports affected by the commonly known Pilot Common Project (PCP) (Commission IR (EU) No 716/2014). The last part was dedicated to present the upcoming changes in EU regulations concerning the **Revision of operational approval criteria for Performance-Based Navigation (PBN)**: how PBN will during 2016 become part of Air Crew and Air Operations regulations affecting pilots training/checking, Part-FCL, -ARA, -ARO, -CAT, -ORA, -ORO and many others.
Captain David Rice from Aurigny Air Services then gave an insight into the advantages that LPV approaches have bought to his home base of Alderney in the Channel Islands.

Did you know...?

...that INEA offers funding opportunities for SESAR solutions implementation? Further information and time line here.

HELITECH 2015

With the participation of GSA and ESSP SAS experts, this new edition of Europe's largest helicopter exhibition dedicated to the helicopter market was held in London's ExCel last 6th, 7th and 8th October 2015. The show provided an excellent opportunity to bring EGNOS closer to the helicopter community.
Again, a substantial interest about EGNOS was noticed from helicopter operators, including air ambulance and helicopter emergency medical services (HEMS), or oil rig operators from Northern European countries.
But the 2015 edition served for the first time to establish a significant number of contacts with EASA Part-21 organisations currently offering Supplemental Type Certificates (STC) enabling SBAS LPV capabilities on-board some of the most common models used by the above mentioned operator types. ESSP SAS, the EGNOS Service Provider, maintains and updates a list of those EASA STCs that can be used by European operators to retrofit their fixed-wing or rotorcraft units.

More information about how to make use of EGNOS, about theoretical Pilot Training for LPVs and about the processes related to obtain Operational Approval for LPV operations, can be found at the EGNOS User Support Website under the EGNOS Adoption Menu.

GARDEN & CARE USER FORUM

Sponsored by the Clean Sky JU to provide support to GRC-5 (Environment Friendly Flight Paths), the GARDEN and CARE projects have conducted extensive research towards the implementation of environment friendly helicopter IFR procedures. Making use of existing technologies like GNSS, and EGNOS in particular, and of innovative concepts like Simultaneous Non-Interfering (SNI) operations, Radius to Fix (RF) segments or Point in Space (PinS) procedures, both projects demonstrated the benefits that can be obtained by helicopter users when implementing IFR operations tailored to their needs and particular flying characteristics. The projects' User Forum was held in Toulouse last 5th November and gave attendees in depth explanations about the activities conducted.
These projects have been led by French EGIS consultancy, with a consortia completed by the French DGAC and the ATM consultancy firms Pildo Labs (Barcelona, Spain), and CGX Aero (Castres, France). Airbus Helicopters has provided technical support and validated the concepts developed within the project.

Did you know…?

…that new supporting material for operators wishing to obtain RNP APCH operational approval to LPV minima is now available? The document highlights the current applicable EASA regulation and its upcoming changes (i.e. Opinion 2015/03) and it has been nourished by experiences from operators which have successfully obtained their approval for LPVs. See it here.

What's going on...

in rail.

PETROCHEMICALS MONITORING ACROSS OVINTO AND SABIC EUROPEAN FLEET

Ovinto, a telemetry company specialising in the monitoring of goods transports, announced last November 17 that leading global supplier of petrochemicals, SABIC, is to equip its entire European fleet of 500 rail tank cars with Ovinto Sat M2M satellite-based tracking and monitoring technology.

The company uses its European fleet of rail tank cars to transport chemicals. By selecting the ATEX Ovinto Sat M2M asset tracking solution, SABIC has taken a significant next step in its focus on safety in the production and transport of chemicals. Additionally, the new technology is helping SABIC to optimise its supply chain operations and to enhance partner relationships. SABIC is now able to track each vehicle on its journey with track level precision in real time so it can have an accurate understanding of delivery times. This enables SABIC to immediately know whether a rail tank car has been loaded or unloaded or is ready to be redeployed. Ovinto Sat supports SABIC in its constant focus on safety and to maximise the value and efficiency of its assets, improving reliability and reach to obtain timely, accurate information about the status of every asset in its fleet.

"SABIC is a major provider of petrochemicals with customers who use our chemicals and plastics for many different applications. One of the transportation means we use is our fleet of rail tank cars. Keeping track of a large fleet of these cars, dispersed all over Europe, is crucial," said Judith Kleinen, Category Manager Land Transport & Spot Shipping Supply Chain, Chemicals at SABIC. "Our rail tank cars contain all sorts of materials, it is absolutely critical that we have the ability to track and monitor the status of the rail tank cars and their contents at all times."

"Thanks to Ovinto Sat integrating EGNOS, we are in an even better position to service our customers and suppliers and all the other stakeholders in the supply chain in order to get the materials they need when they need them and to be assured that our fleet is being used as efficiently as possible," she concluded.

Frederick Ronse, Ovinto CEO, commented: "To ensure efficient and reliable transportation of chemical materials across vast distances, uninterrupted monitoring is critical - relying on GSM and GPS alone simply cannot guarantee this connectivity and accuracy. Now, not only will SABIC be able to know exactly where their assets are, they can help ensure these assets are performing better and being used efficiently."

in maritime.

EGNOS IS PRESENT AT METS

From the 17th to the 19th of November, the world's largest marine equipment trade show for the leisure industry took place in Amsterdam: we are talking about METS, the Marine Equipment Trade Show.

For the second year EGNOS was present in the exhibition at Hall 1, stand 601, surrounded by the most representative manufacturers of navigation equipment and AIS devices: Furuno, Navico, Garmin, Comnav, Raymarine, McMurdo, Standard Horizon, Weatherdock, etc.
The participation in this event was useful to strengthen communication with the contacted companies on the previous edition and also to enlarge the list of maritime contacts. It was the perfect place to promote EGNOS within those companies not aware on EGNOS benefits. Besides, it was also great to realise that several companies with SBAS compatible devices explicitly mention EGNOS in their equipment brochures (eg: Comnav, Simrad-Navico, em-trak, Marine Electronics, McMurdo etc).

THIRD WORKSHOP ON THE MARITIME USE OF EGNOS

The third edition of the Workshop on the Maritime Use of EGNOS co-organised by the EMRF and the GSA was held in Copenhagen on the 30th of September and 1st of October.

During the first day, the GSA outlined the on-going activities and proposed a detailed roadmap for the use of EGNOS v2 in the maritime domain, to be used as starting point of discussion among the expert audience of the workshop. Afterwards, it was presented the preliminary conclusions of a survey carried out to find out the actual users' requirements, mainly in terms of accuracy, for navigation in ports. This first analysis yielded positive results, since all the respondent port authorities have identified at least one type of operation in their ports that could take benefit of horizontal intermediate performance levels that EGNOS can perfectly meet.

The second day of the workshop started with a presentation on some technical architectures that could be used for the transmission of EGNOS corrections in RTCM format via AIS/VDES and IALA beacons. The objective of the proposed architectures is to use EGNOS as it is today using the existing infrastructure with slight modifications, the existing on-board receivers and the integrity scheme in use, so that it would be transparent for the end users. Finally, the EGNOS Service Provision Aspects were introduced with an overview of the activities developed by the Service Provision Working Group, created in July 2015. Complete information can be found here.

Did you know…?

…that during the 17th meeting of the IALA ENAV Committee, which took place from the 26th to the 30th of October, IALA members began to work in the guidelines for the use of SBAS in maritime. The aim of this document is to describe SBAS applications and services envisaged and its contribution to achieve resilient PNT in the maritime domain.

What's going on...

in agriculture.

AGRITECHNICA

More than 400000 people visited one of the largest agricultural machinery fairs. From the 12th to 18th November, in Hannover, EGNOS was present in Agritechnica in a joint stand with ESA and GSA.

The CLAAS field route optimizer with precise wheelmark computation and job time forecast, a cooperative development of the companies Claas, 365FarmNet Group and European GNSS Agency (by means of GEOPAL project) was awarded with an AGRITECHNICA silver medal.

Agritechnica allowed the possibility to talk to companies using EGNOS for their products and consultancy services offered to farmers. It was confirmed that EGNOS is a well-know positioning service in this market segment.

Upcoming Events

World ATM Congress

8-10 Mar

A new edition of the World ATM Congress, the most important Air Navigation Services Providers (ANSPs) congress in the world, will be held again in Madrid between 8th and 10th March 2016.
Operated by CANSO BV in association with the Air Traffic Control Association (ATCA), the event provides an excellent opportunity for worldwide ANSPs and the ATM Industry to meet. Visitors will have the chance to walk the exhibition and enjoy a large number of free conferences. EGNOS, the European SBAS enabling the implementation of Localiser Procedures with Vertical guidance approach operations, will take part in this important showcase of the latest developments in Air Traffic Management, Communications, Navigation and Surveillance.

EGNOS will be present at booth 242

EGNOS Service Adoption Docs + Tools

EGNOS User Support

DOCS & TOOLS | HELPDESK | EGNOS SYSTEM | SAFETY OF LIFE SERVICE | OPEN SERVICE | EDAS SERVICE

EGNOS ADOPTION

HOME / DOCS & TOOLS

LPV MAP

Where to fly an EGNOS-based Instrument Approach Procedure?

EBCAST

An EGNOS Business Case Assessment Tool for airports and airlines

BULLETINS

Access to all EGNOS Bulletins

Brochures

EGNOS benefits and success stories

GUIDANCE MATERIAL

Find-out how to use EGNOS

TRAINING MATERIAL

Information package to be used by Approved Training Organisations

USER SATISFACTION

User satisfaction surveys

Services

Sol. Service
Open Service
EDAS Service

Helpdesk

Helpdesk contact
+34 911 236 555
egnos-helpdesk@essp-sas.eu

Information

Service Definition Documents
Service Notices
Service Implementation Roadmaps

European Commission

ESSP
We certify you're there.

GSA

EGNOS

EGNOS, it's there. Use it.

http://egnos-user-support.essp-sas.eu

Information on historical and real-time EGNOS performance. EGNOS Signal in Space (SIS) status. Forecast on SIS availability and EGNOS performance. EDAS information and registration. EGNOS adoption material and tools.

http://egnos-portal.gsa.europa.eu

EGNOS applications. Developers platform. Business support.

For questions & information

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