



EGNOS, it's there. Use it.

Details on EGNOS Multimodal Adoption Plan 2015 Status

Promoting EGNOS in aviation, maritime, rail, agriculture and surveying market segments

EGNOS Service Provision Workshop
Copenhagen 29th-30th September 2015



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- ESP contribution to EGNOS Multimodal Adoption Plan 2015
- Aviation
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Introduction

The need of active promotion of EGNOS



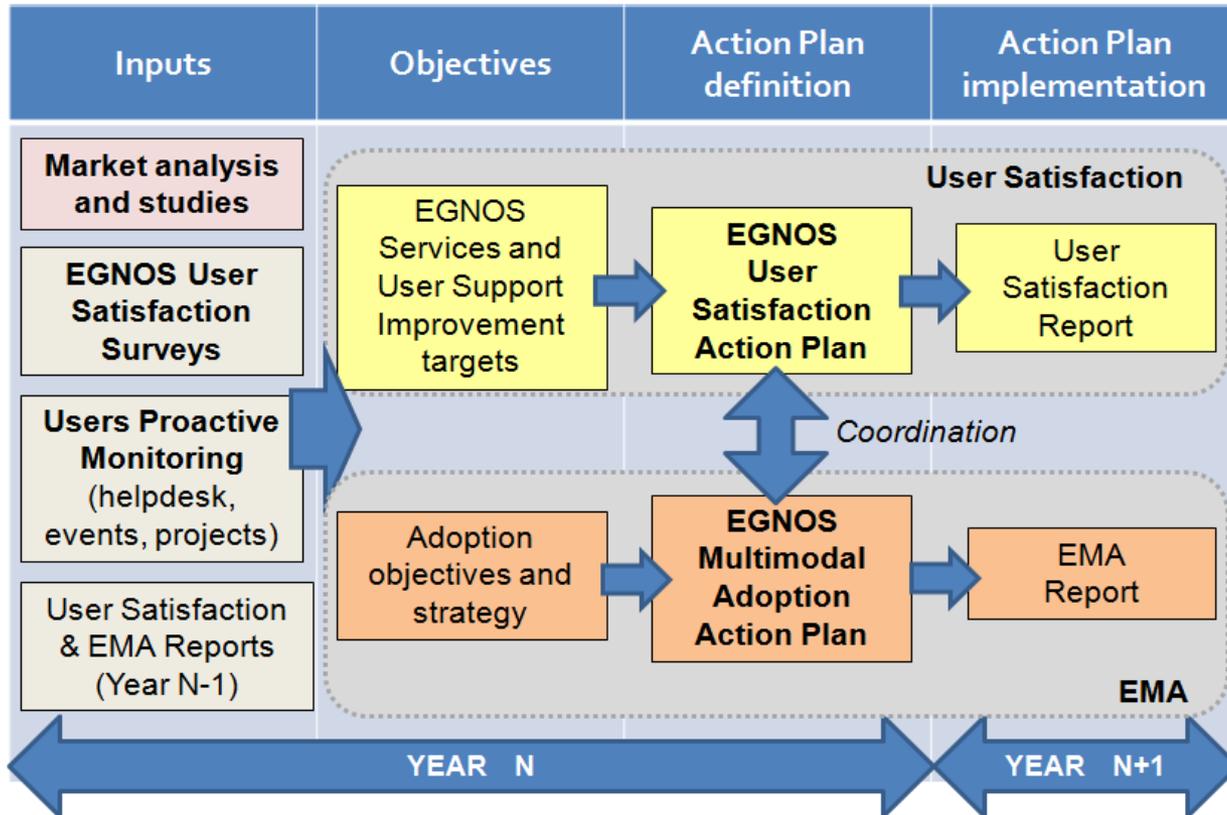
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Introduction



User Satisfaction:

Activities addressed to improve users' perception on EGNOS service provision (especially those aspects directly related with ESSP core responsibilities).

EMA:

Activities addressed to promote EGNOS and foster its adoption in different application domains.

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ESP contribution to EMA 2015

Actions distribution per market segment

	Aviation	Maritime	Rail	Surveying & Agriculture	Total
	19	23	7	14	65



**Major effort focused
on Aviation**



**Increased effort wrt 2014
for maritime**

In ESP EMA there is contribution from both ESSP and TPZ Italy and Ibérica

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Aviation: What about objectives set during 2014

EWAs signed: 28 ✓

PUBLISHED LPVs: 184 ✗ (155 as per Airac cycle #13)

LPVs LAUNCHED: 97 ✓

AIRCRAFTS under certification: 130 ✓



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Aviation: Objectives 2015

...More EWAs signed

Target: **40** (cumulated)

Today: **37**



Yellow	Discussions paused
Green	Discussions on going
Blue	EWA signed
Blue with white arrow	Number of published LPV procedures
White	No feedback

...More LPVs published

Target: **269** (cumulated)

Today: **202**

...More EGNOS planned aerodromes

Target: **80**

Today: **88**

...More aircraft certified or under certification for LPV APCH

Target: **190** (with GSA & ESSP support)

Today: **78+ (47)**



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Aviation: tools and actions placed to promote EGNOS

Aviation objectives: more EWAs, more LPVs published, more aircrafts certified



- Operational Approval Guidelines
- LPV200 guidance material
- Active monitoring of LPV plans
- Identifying the List of STC available
- SBAS ops. for new manufactured a/c
- Business Cases
- Success stories promotion
- Performance Assessments
- Technical support to GSA funded projects



- Workshops
- Dedicated meetings and awareness actions
- Articles in magazines
- Emails/calls
- Events participation

Aviation: starting to create the appetite for LPV in regional and business aviation...

- ❖ **Seminar within ERA** (European Regions Airline Association) Operations Advisory group
- ❖ Preparation of **guidelines to get the operational approval down to LPV minima**
- ❖ **Airbus** : specific meetings
- ❖ **Contacts stablished at EBACE fair** (EBAA, Textron, Bombardier, Dassault, Air Alsie...)



Aviation: increasing awareness for LPVs in general aviation...

- ❖ PBN & EGNOS [training package disseminated](#)
- ❖ Contacts established with several GA stakeholders : AOPA, EGAST...
- ❖ Contacts at Aero Friedrichshafen (Garmin, BendixKing, Piper, Diamond, AOPA, Aeropole, DRF, WeFly...)
- ❖ Contacts with Flight Schools:
 - Supporting them to equip their aircrafts...
 - Asking about their simulators...
 - Providing info on EGNOS...



Aviation: developing Business Cases for Operators and Airports

Business Cases development are offered to established contacts and whenever it is detected an interest in LPV

- ❖ EnAir
- ❖ LuxAir
- ❖ NextJet
- ❖ Stobart

Benefits	DDC avoidance	Simple model
		Advanced model
	CFIT avoidance	Economic assessment of the average risk
Investment costs	Hardware	Fuel savings
		Maintenance savings
		Other commercial cost savings
		Integration
		Installation
		Crew training
Documentation		
	Certification	

Aviation: tools to foster EGNOS adoption

LPV procedures



EGNOS Business Case Tool



Guidelines, Training & Services Catalogue



Free on-line access to all tools and docs at [EGNOS USER SUPPORT WEBSITE](#)

Aviation: promoting GSA call 2015

- ❖ Active dissemination of the [call publication](#) : emails, phone-calls.
- ❖ Support to GSA in specific webinars to explain the call
- ❖ Engagement of strategic candidates
- ❖ Technical support to interested candidates

ESSP support to LPV implementation



We certify you're there.

**Víctor Álvarez
Alejandro Fransoy**



16/07/2015



GSA Call for Grants info session

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Maritime: promote EGNOS so it is used

means ...

... understand standards and regulation (IMO 1046/IMO 915, IALA R-121, ITU, IEC, RTCM...)



... Support GSA in fora/groups with technical info on EGNOS (EMRF)

Explore possibilities:

- EGNOS v2 use in current AtoN as DGPS-IALA beacons and AIS
- Prepare the background for the declaration of an EGNOS service for maritime using EGNOS v2 in line with IMO-1046

...keep contact with stakeholders, gather feedback, attend key events



- Main electronic equipment dealers and installers
- PPU users and manufacturers
- Pilot associations
- Ports



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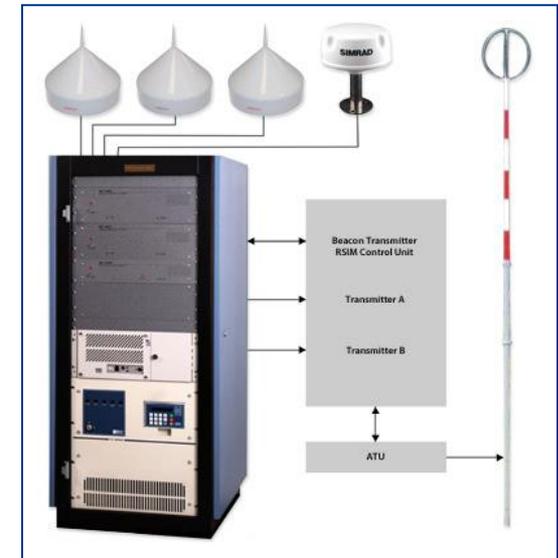


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Maritime: guidelines to transmit EGNOS corrections via IALA beacons & AIS stations

- ❖ Proposal of a high level architecture of an EGNOS based DGNSS service over IALA beacons and AIS using EGNOS SIS or EDAS
- ❖ EGNOS based VRS DGNSS service over IALA beacons and AIS.



DGNSS station: GNSS receiver + MF transmitter.
Courtesy: MxMarine

Maritime: prepare needed background for a EGNOS maritime service

- ❖ Sub-group in ERMF created to analyse/understand the requirements that AtoN providers will need from an EGNOS Services Provision Aspects point of view.
- ❖ First conversations launched, after the EMRF meeting held on the 23rd June in Puertos del Estado, Madrid/Spain.

Maritime: understanding the use of PPUs by pilots, to promote EGNOS in those equipments

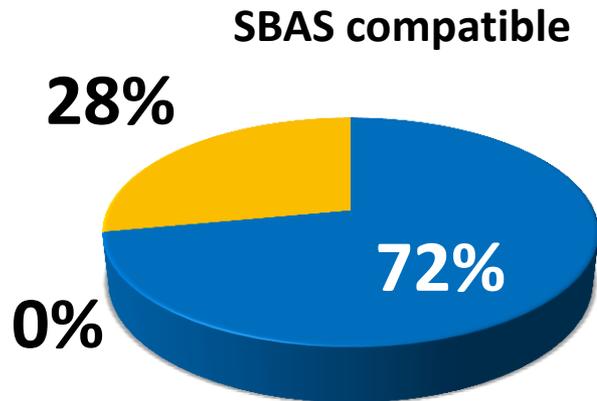
- ❖ Portable Pilot Units are tools used by pilots to help them navigate a ship until it is placed in the dock.
- ❖ More used in bad weather conditions that prevent visual pilotage
- ❖ Used in those ports with long times of navigation and narrow access channels
- ❖ EGNOS usage is helpful in those equipments.



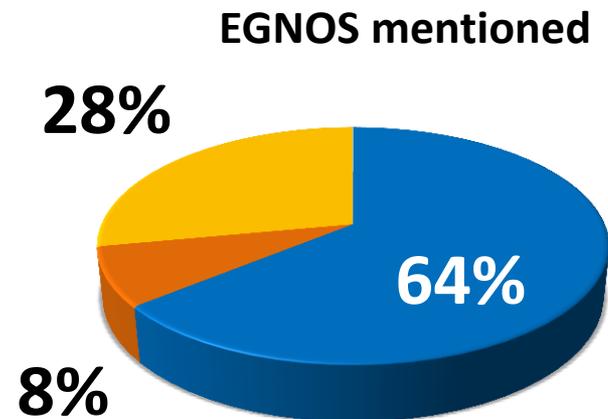
PPU installed on a ship bridge: courtesy of [Prácticos de Puerto](#)

Maritime: identify EGNOS compatible equipment SOLAS

❖ Identification of GNSS-based equipment used in SOLAS



■ YES
■ NO
■ N/A



■ YES
■ NO
■ N/A



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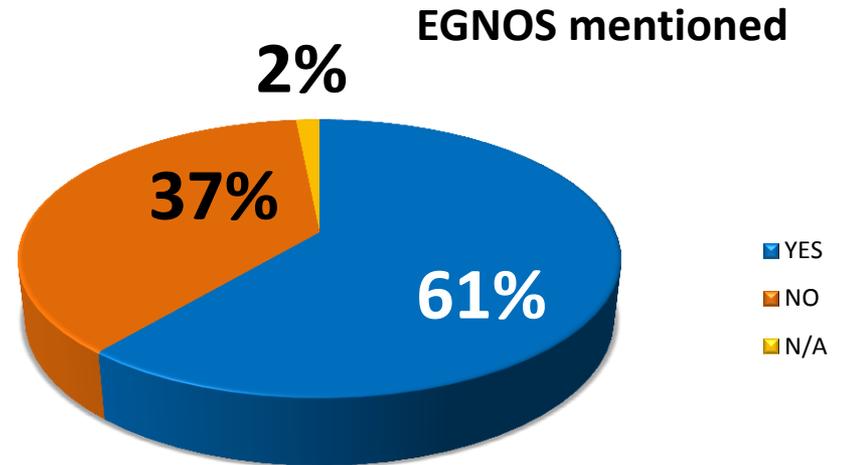
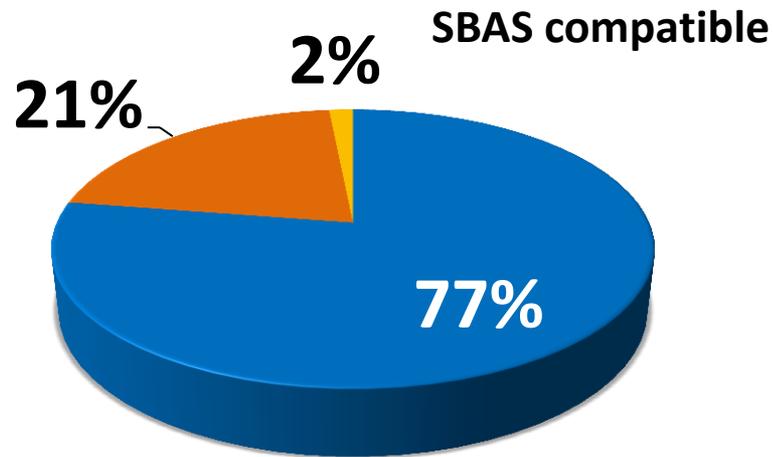


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Maritime: identify EGNOS compatible equipment non-SOLAS

❖ Identification of GNSS-based equipment used in non-SOLAS vessels



■ YES
■ NO
■ N/A

■ YES
■ NO
■ N/A

Maritime: promoting success stories

- ❖ EGNOS is well-known and used by regatta crew
- ❖ Regatta ships (as the ones in 52-super series -technologically avant-garde-) are equipped with EGNOS compatible equipment.
- ❖ Possibilities to promote this EGNOS success story to be further exploited.



Courtesy of [Super Series 52](#)



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Rail: promote EGNOS so it is used

means...

... support GSA in
fora/groups with
technical info on
EGNOS

✓ UNISIG - NGTC
WP7

✓ ERTMS user group

UNISIG

NGTC
Next Generation of
Train Control systems



... Develop

✓ Roadmap for
certification

✓ Basis of a Cost
Benefit Analysis

✓ IFT possibilities

...keep contact with
stakeholders, gather
feedback, attend key
events



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Agri & surveying: enhance usage

...being active in fora and enhance stakeholders relationship

- ✓ *Identify users*
- ✓ Launch and keep relationships

(CLGE, DLG, CLAAS, John Deere, TopCon, Trimble, Leica, etc..)

...understand this market segment and its technological evolution



...keep contact with users, gather feedback, attend key events



Agriculture: CAP reform, new possibilities

- ❖ Common Agricultural Policy , EU approved on 20 Dec 2013
- ❖ Three obligatory agricultural practices have been laid down (that is part of the so called “CAP greening”): **maintenance of permanent grassland, ecological focus areas(EFA) and crop diversification.**
- ❖ Minimum accuracy for LPI (land parcel identification systems) has been settled

Article 70

Identification system for agricultural parcels

1. The identification system for agricultural parcels shall be established on the basis of maps, land registry documents or other cartographic references. Use shall be made of computerized geographical information system techniques, including aerial or spatial orthoimagery, with a homogenous standard that guarantees a level of accuracy that is at least equivalent to that of cartography at a scale of 1:10 000 and, **as from 2016, at a scale of 1:5 000**, while taking into account the outline and condition of the parcel. This shall be fixed in accordance with existing Union standards.

Agriculture: CAP reform, new possibilities

Application	Justification (CAP reform link)	Affected users
Agricultural parcels identification accuracy	Article 70 Rule (UE) No 1306/2013 (the parcels identified as agricultural ones should be done with an accuracy (rsme) of 2.25meters and from 2016 onwards with an accuracy of 1.25m (rsme))	Land Parcel Identification Agencies
Continuous Measurement of agricultural parcels surface	Article 44, article 45 and article 46 Rule (UE) No 1307/2013	Farmers Agricultural Cooperatives LPI agencies Agricultural advisors
Continuous validation of parcels surface and activity	Not directly imposed by Article 44, article 45 and article 46 Rule (UE) No 1307/2013. Member states should place mechanisms to check/verify that the information provided by the farmers to ask for the CAP payments.	Agricultural inspectors
Continuous Measurement of agricultural activity held in a given parcels (to track crop type and pasture)	Article 44, article 45 and article 46 Rule (UE) No 1307/2013	Farmers Agricultural Cooperatives Agricultural advisors Agricultural inspectors (for insurance companies or public agencies) Member state payment agencies

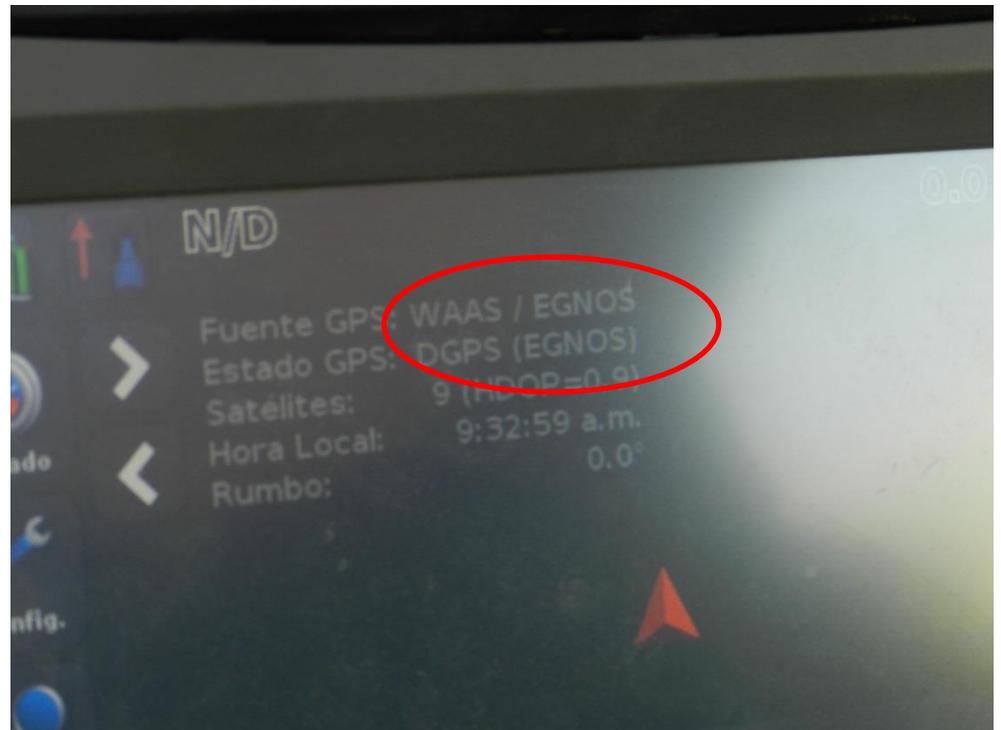
Agriculture: EGNOS to be more present in agricultural media

- ❖ Identification of events where EGNOS is used in the agricultural machinery:

DemoAgro, Innovagri... to reach final users



[DemoAgro 2015](#): Spraying using EGNOS as guidance



- ❖ Prepare article for specialised magazine

Surveying: prepare market oriented material

- ❖ Preparation of brochures
- ❖ Identification of success stories (Data 2d recording, Natural inventories catalogue)



- ❖ Stengethen co-marketing possibilities with well-established companies within GIS sector: exploring possibilities with





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QUESTIONS?

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