



EGNOS Market and service strategy

EGNOS Annual Workshop

Fiammetta Diani – Head of Market Development

2 December 2021



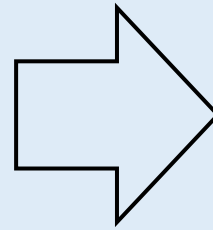
New EGNOS users, new needs in the air, sea and land



798 EGNOS approaches
EGNOS avionics for 38% of EU fleet



46 EGNOS helicopter approaches, mainly
emergency and medical ops



Less equipped aerodromes



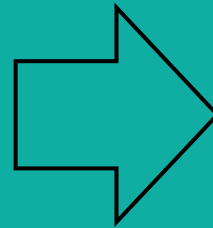
Urban air mobility



EGNOS in 90% non SOLAS vessels



EGNOS retransmission via AIS/IALA beacons



SOLAS vessels navigation



Maritime Autonomous Surface Ships



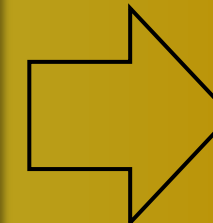
EGNOS in all mapping
devices



EGNOS for > 90% of
farmers using GNSS



> 150 000 wagons with EGNSS
for non-safety critical apps



EGNSS for Rail signalling



Connected and autonomous cars



EGNOS contributes to Green deal

Thanks to increasing number of EGNOS based procedures in Europe

More options for closer alternates

Airlines can select closer alternate aerodrome if suitable for operations

Shorter trajectories

EGNOS offers potential reduction in distance thank to design flexibility

Reduced number of missed approaches

EGNOS lower minima offers better changes for landing in poor visibility

Supports rationalization of conventional radars

EGNOS may contribute to some nav aids removals used for CAT I approaches



Fuel & CO2 saving

by minimizing diversion distance

by shorten distance

by minimizing number of missed approaches

By decrease of conventional radars

by loading less fuel to aircraft

by loading less fuel to aircraft

less energy generated





Guidelines to facilitate implementation of EGNOS to general aviation published!



>2000 airports in Europe with no/limited ground infrastructure



Priority: Increase flying with instruments to increase safety



enables instrument flying without need to invest in ground infrastructure to all aerodromes



An outcome of a excellent cooperation of EUSPA with EASA and great work of ESSP and general aviation community and stakeholders that supported its development within an EUSPA-EASA GNSS Working group (GNSS GA WG) for general aviation.

12/2019

Safety promotion material

Supported by EASA

3/2020

EUSPA - EASA GNSS Working group for general aviation

50+ members: NAAs and airspace users

11/2021

Safety Assessment Guidelines

Supported by EASA, presented to NAAs

2021/2022

1st implementations

at Plzen aerodrome

https://www.euspa.europa.eu/sites/default/files/uploads/safety_assessment_guidelines_for_ga.pdf

<https://www.euspa.europa.eu/newsroom/news/euspa-and-easa-join-hands-bring-instrument-flying-general-aviation-egnos>





REALITY: Empowering drones with EGNOS



- Adapting the manned aviation **RNP and integrity concept** to define **narrow air corridors for drones**
- Leveraging **EGNOS** in an own navigation system

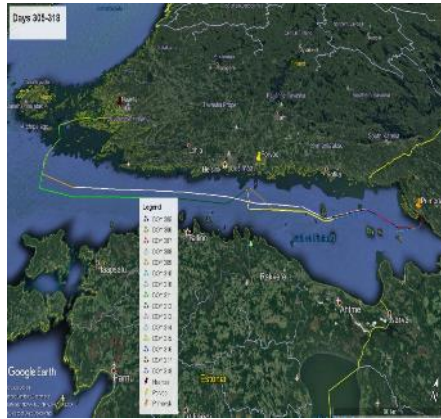


REALITY: GSA/GRANT/06/2017-6





EGNOS complementing IALA Differential GNSS infrastructure (compliant with IMO Res. A1046)



Fundamental Elements



KONGSBERG



International Electrotechnical Commission

PT 61108-7

Maritime navigation and radiocommunication equipment and systems - Global navigation satellite systems (GNSS) - Part 7: Satellite Based Augmentation Systems - Receiver Equipment - Performance requirements and method of testing

To prepare a standard for a Satellite Based Augmentation Systems Receiver Equipment

2018/2019



Users need and service concept agreed with stakeholders

Successful validation campaigns

2020



Service concept consolidated

Prototype receiver

Successful validation campaigns

2021



Receiver guidelines finalised

Guidelines implemented in receiver

Agreement with IHO on EGNOS Maritime

Safety Information Service (MSI)

2023



IEC receiver test performance standard finalised

Service declaration



Moving forward to introduce EGNSS in ERTMS



European Parliament supports GNSS inclusion in ERTMS (resolution of 7 July 2021 on railway safety and signaling), calling on the EU rail industry to develop technical solutions in order for the GNSS to enable the ERTMS on a large scale;

Actions in place to support GNSS use in ERTMS:

- **ERTMS Change request 1368:** Documentation for including EGNOS Augmentation in ERTMS under review by rail stakeholders
- **EGNSS Service for rail definition:** 2 mission studies in progress + ERGO stakeholder platform
- **EUSPA Fundamental elements programme:** 2 FE projects launched for receiver development
- **Updated EU in rail signaling roadmap**, coordinated with main rail stakeholder associations published on EUSPA website



Shape the EGNSS you need

EGNOS and GALILEO User Satisfaction Surveys are open!

EGN
OS



<https://ec.europa.eu/eusurvey/runner/EGNOS-User-Satisfaction-Survey-2021>

GALILE
O



<https://ec.europa.eu/eusurvey/runner/GALILEO-User-Satisfaction-Survey-2021>



Linking space to user needs

Get in touch with us

www.euspa.europa.eu



The European Union Agency for the Space Programme is hiring!

Apply today and help shape the future of #EUSpace!