



EGNOS Market status and adoption plan 2019

Maritime, Rail, Agriculture and Geomatics

Carmen Aguilera, Operational Market Development Manager, GSA

Sofía Cilla, Service Adoption Manager, ESSP

EGNOS Service Provision Workshop

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Market SEGMENTS



Maritime



Rail



Timing & Synchronisation



Geomatics



Agriculture

GSA Adoption Strategy implementation overview

EGNOS Service Provision contract



- ❑ EC Policy Objectives
- ❑ Market trends and needs
- ❑ 2018 User Satisfaction Survey

GSA E-GNSS adoption strategy

Priorities

ESSP Objectives

Action plan

Time plan

Per market segment



Strategic actions
User/Stakeholder coordination
Contribution to policy
Application and receiver R&D



Annual EGNOS Multimodal
Adoption plan
Operational support to
adoption



Credit: ESSP

MARITIME

EGNOS Market Status



Regulated
SOLAS

100% EGNOS enabled
SOLAS devices

January 2018: Guidelines
for the transmission of
EGNOS correction
published by IALA



Unregulated
Leisure

89% EGNOS enabled
non-SOLAS devices

❑ 90% of manufacturers with SBAS-enabled product

➤ *Accuracy*

➤ *Integrity*

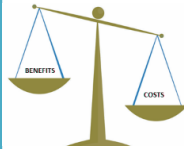
IMPROVED



2019: User needs analysis
to support the definition
of the technical
requirements for new
EGNOS maritime service
and related receivers

MARITIME

EGNOS Adoption plan 2019 Priorities



Cost-benefit analysis for IALA/AIS stations recapitalization using EGNOS

Guidelines update for the implementation of SBAS in shipborne receivers



- Availability & continuity maps (static performances)
- Test campaigns (dynamic performances)

Support Service Concept Definition, Provision Scheme and Liability Scheme

Maritime: retransmission of SBAS corrections

On 2019:

CBA and architecture analysis has been done to Portuguese
« Instituto Hidrográfico – Marinha, Divisão de Navegação »

On 2019:

First contacts established with
« Galati Lower Danube River Administration » (Romania)

Customised **CBA**s under request at
egnos-adoption@essp-sas.eu

In previous years, other CBAs supported authorities decision to use



Read the latest issue of the EGNOS bulletin Q2 2019

France chooses EGNOS to improve services for sea users

Renewal of Estonian DGNSS stations powered by EDAS





©GSA

RAIL

EGNSS Market Status

Safety relevant applications



- GSA + ERA + Shift2Rail towards having E-GNSS enabled ERTMS
- Environment characterisation and first requirements on E-GNSS by STAR project
- Architecture of E-GNSS in rail signalling virtual balise concept defined within the Shift2Rail X2RAIL2 Project
- CBA for GNSS in signalling launched by GSA in August 2019

Non-safety relevant applications

- 250 TGV units equipped by January 2019 in France/SNCF with Galileo enabled receivers for passenger information
- DB Cargo AG rail car fleet (~30000) will be equipped with Galileo enabled smart sensors provided by Siemens Mobility AG
- **Other railway freight operators are already equipped with EGNOS enabled and configured devices**

RAIL

EGNOS Adoption Plan 2019 Priorities

Non-safety relevant applications



GNSS devices penetration on-board freight trains

Safety relevant applications



Cost Benefit Analysis

Freight cargo: market overview

At least **9 European rail companies** are digitalizing entire freight wagon fleet with **GNSS tracking sensors**

23,000 smart wagons have been already equipped with EGNSS telematics devices. **> 7000 wagons already using EGNOS**



Freight cargo cars market size: **~ 170,000 units**
Timeframe to equip with EGNSS sensors: **2022**

EGNSS Device Penetration Plans at Freight Wagons Rail Cargo Companies



DB Cargo
Deutsche Bahn Gruppe

68,000
smart assets

to be installed with Telematics
SIEMENS CTmobile

VTG

80,000
smart assets

to be installed with Telematics
nexxiot

SBB Cargo **HUPAC**

750 smart assets **1,000** smart assets

to be installed with Telematics to be installed with Telematics

SAVVY FleetTrac **nexxiot**

ScandFibre
TRANSWAGGON TWA

7,500
smart assets

to be installed with Telematics
SAVVY CargoTrac

Rail Cargo Group
Member of ÖBB

13,700
smart assets

to be installed with Telematics
SmartCargo

sasol

to be installed with Telematics
ASTO Compact

SNCF

to be installed with Telematics
TRAXENS-BOX

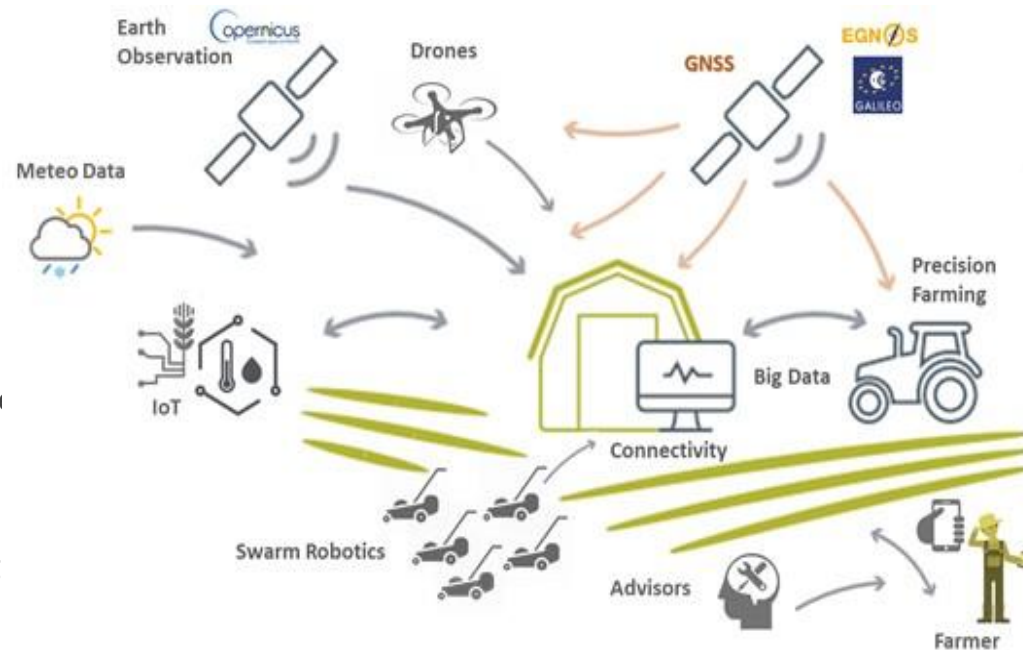


AGRICULTURE

EGNOS Market Status

EGNOS provides affordable solutions for precision farming over Europe

- **Affordable entry-level solution** for precision agriculture
- Enables farmers to **optimise yields, increase labour productivity and reduce driver fatigue** – all with minimal investment
- Supports **machinery guidance** solutions with **sub-metre level accuracy**, which is suitable for basic-value crop cultivation (e.g. cereals)
- Enables more **efficient management** of farming activities such as **spreading, spraying and harvesting**
- **Around 85% of tractors** in Europe using GNSS are equipped **with EGNOS**



EGNSS is the core technology of Agriculture 4.0

AGRICULTURE

EGNOS Adoption Plan 2019 Priorities



Updated online CBA tool & Agriculture Demonstrator

Analysis of the use of GPS/EGNOS in other farming equipment



Success stories

Agriculture Adoption Tools

EGNOS



CBA tool (EASE) for farmers



EGNOS demonstrator for agriculture



GEOMATICS

EGNOS Market Status

- EGNOS = **an effective option** for a wide range of mapping applications where **meter accuracy is adequate**
- EGNOS = **widely accessible**: covers the majority of Europe, with no white spots
- EGNOS does not require installation of hardware
- EGNOS = real time positioning
- Most new GNSS devices are EGNOS-enabled so costs are kept on effective level



TODAY, more than **90% of new GNSS devices** in surveying and mapping are EGNOS enabled mapping professionals can benefit from free metre-level accuracy that is widely available.

GEOMATICS

EGNOS Adoption Plan 2019 Priorities

Eric Gakstatter talks about the present and future of GNSS and EGNOS in the mapping sector

Source: gsa.europa.eu



Performance analysis



EGNOS visibility maps



Testing in the field & under real conditions



Perform dynamic EGNOS data collection campaign and analysis in real conditions

Database of EGNOS enabled GNSS equipment

Targeting success stories

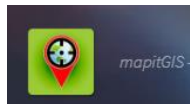
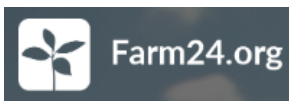
Use cases: collecting testimonies



Spanish Mountain Bike routes powered by EGNOS



EGNOS guiding tractors



NEUROPUBLIC



Article in AIE newsletter



EGNOS supports electric grid field operations improving GPS accuracy for free



Supporting GSA in EGNOS Adoption



HOW TO

Become compliant with European requirements for RNP APCH operations to LPV minima



THANK YOU