

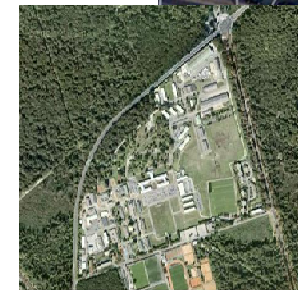
***New Funding Opportunities
to Support Safety of Navigation:
EGNOS and Galileo***

***e-Navigation Underway
31 January-2 February 2017***

GSA 2016

The European GNSS Agency (GSA) today:

- Staff: about **145**
- Nationalities: **21**
- Headquarters: **Prague**
(since September 2012)
- Other Locations:
St Germain en Laye, Toulouse, Swanwick,
and Torrejon





Galileo is being implemented

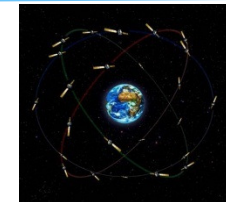


GALILEO:

- European GNSS that will provide initial services in 2016 (OS and SAR), and will contribute to positioning, navigation and timing applications.
- **Recognised by IMO as part of WWRNS (2016)**
- **Global** high performance services.
- Run by **civil** authorities.
- Dual frequencies as standard.
- Interoperable with other GNSS.

Full Operational Capability
Full services, 24 satellites
2020

Initial services declaration
for OS and SAR,
2016



In-Orbit Validation
4 operational satellites and
ground segment
2013



GIOVE A/B
2 test satellites
2005/2008



Galileo System Testbed v1
Validation of critical algorithms
2003



16 satellites for
initial services

EGNOS services are operational

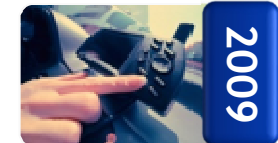
European Geostationary Navigation Overlay Service

- Uses geostationary satellites and a network of ground stations to **receive, analyse and augment GPS signals (in the future also Galileo)**.
- Makes existing GNSS signals suitable for **safety critical applications**.
- **Increases the accuracy** of existing satellite positioning signals while providing a crucial **'integrity message'**, informing users in the event of problems.



EGNOS Open Service (OS)

- Service Declaration: 1st October 2009
- Already extensively used in road, agriculture, maritime, and mapping segments



EGNOS Data Access Service (EDAS) http://www.essp-sas.eu/service_definition_documents

- EDAS Service provided since 2010
- Service Declaration: 26th July 2012
- Commercial/professional multimodal applications



A new safety service for maritime is under definition – compliant with IMO res. 1046

- SBAS Shipborne Receivers – A new sub-group in RTCM SC-104 for the preparation of Guidelines for implementation and definition of tests specifications

2020



EGNOS, it's there. Use it.

MAIN OBJECTIVES AND ACTIVITIES

E-NAVIGATION UNDERWAY
31 JANUARY- 2 FEBRUARY 2017



European
Global Navigation
Satellite Systems
Agency



Precise navigation,
powered by Europe



EGNOS in Maritime and IWW

Where we are:

SBAS/EGNOS used in maritime and IWW navigation without the use of the integrity information provided. C.a 90% of manufacturers (SOLAS and non-SOLAS) offer a SBAS-enabled receiver.

Where we want to be:

EGNOS adopted by maritime and IWW users for safety-related applications, with main focus in General Navigation.

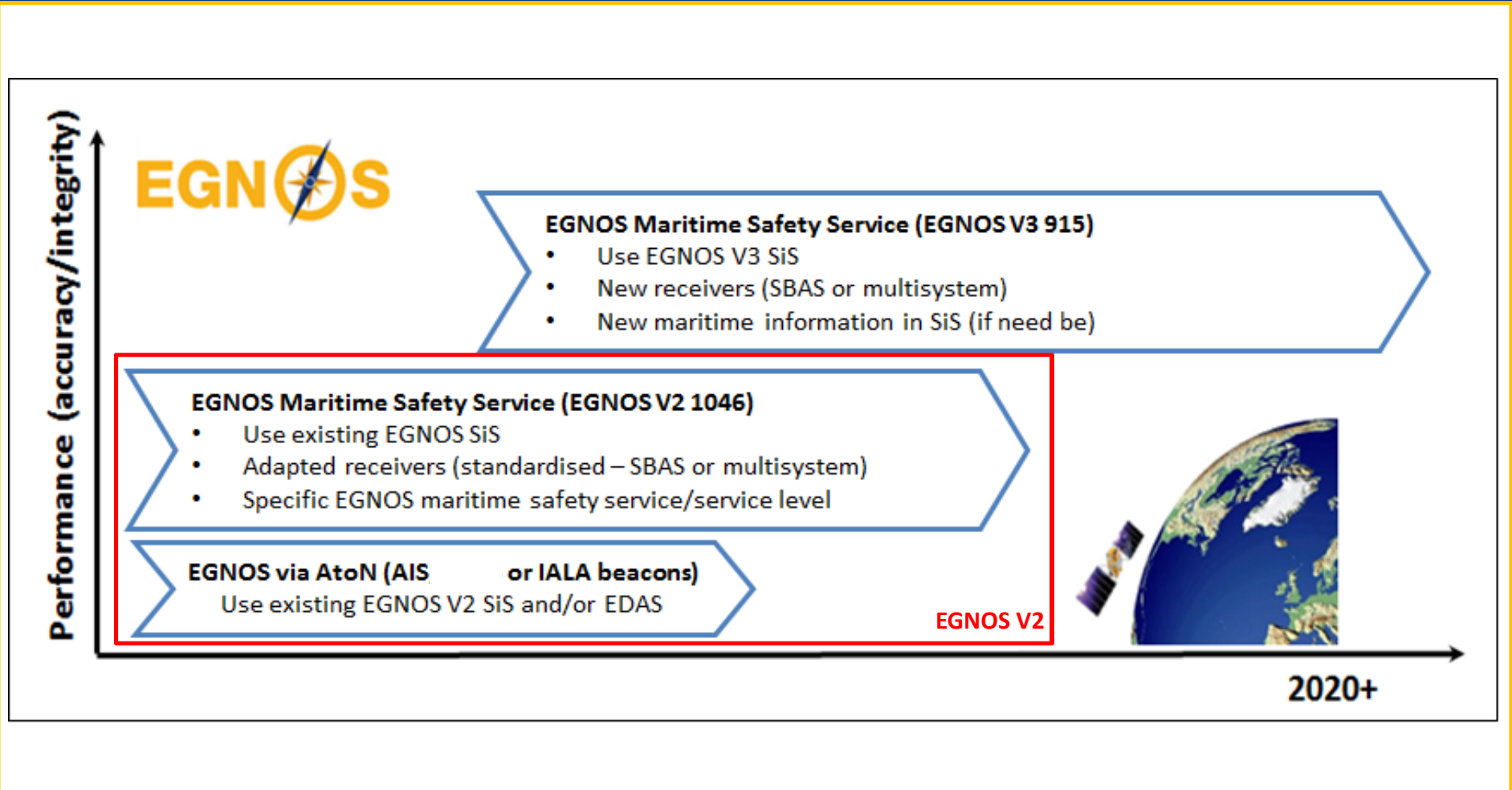
By 2020: EGNOS complementing DGNS infrastructure providing integrity information (at system level) for inland and coastal waters.

How to get there: Roadmap definition and implementation which includes:

- Definition of a new maritime and IWW safety service for SIS
 - Service provision aspects – Service Definition
 - RTCM Guidelines/Standard for SBAS shipborne receivers
- EGNOS transmission via existing shore infrastructure
 - IALA Guidelines for the transmission of EGNOS corrections via IALA beacons and AIS Stations



High level roadmap for EGNOS in maritime and IWW





EGNOS, it's there. Use it.

IALA GUIDELINES AND PILOT PROJECT FOR THE TRANSMISSION OF EGNOS CORRECTIONS VIA IALA BEACONS AND AIS STATIONS

E-NAVIGATION UNDERWAY
31 JANUARY- 2 FEBRUARY 2017



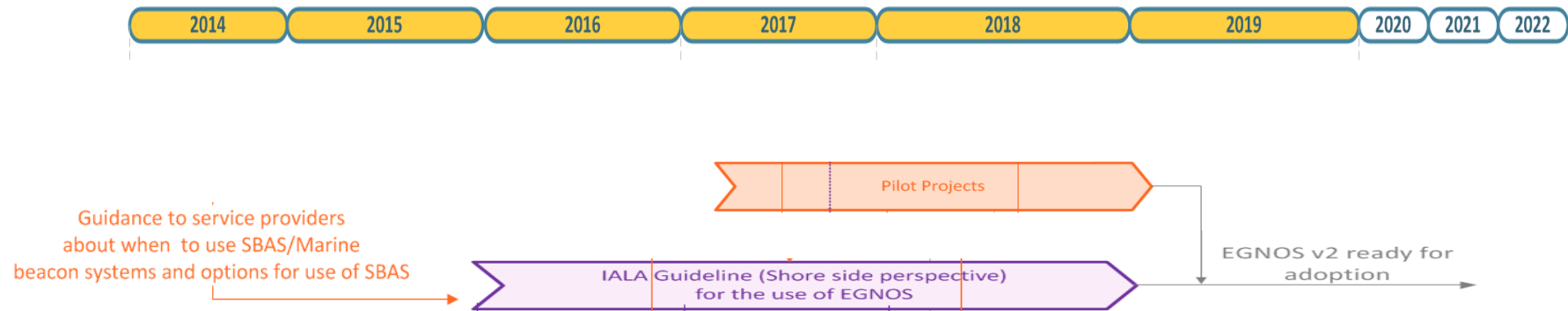
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Roadmap for adoption of EGNOS v2: IALA Guidelines – AIS/VDES and IALA beacons



- IALA Guideline for the use of SBAS under preparation. Work already started in IALA eNAV17 meeting in WG5-PNT.
- Pilot Project/Test Campaigns.
 - Indicative duration of the project foreseen: c.a. 1.5 years

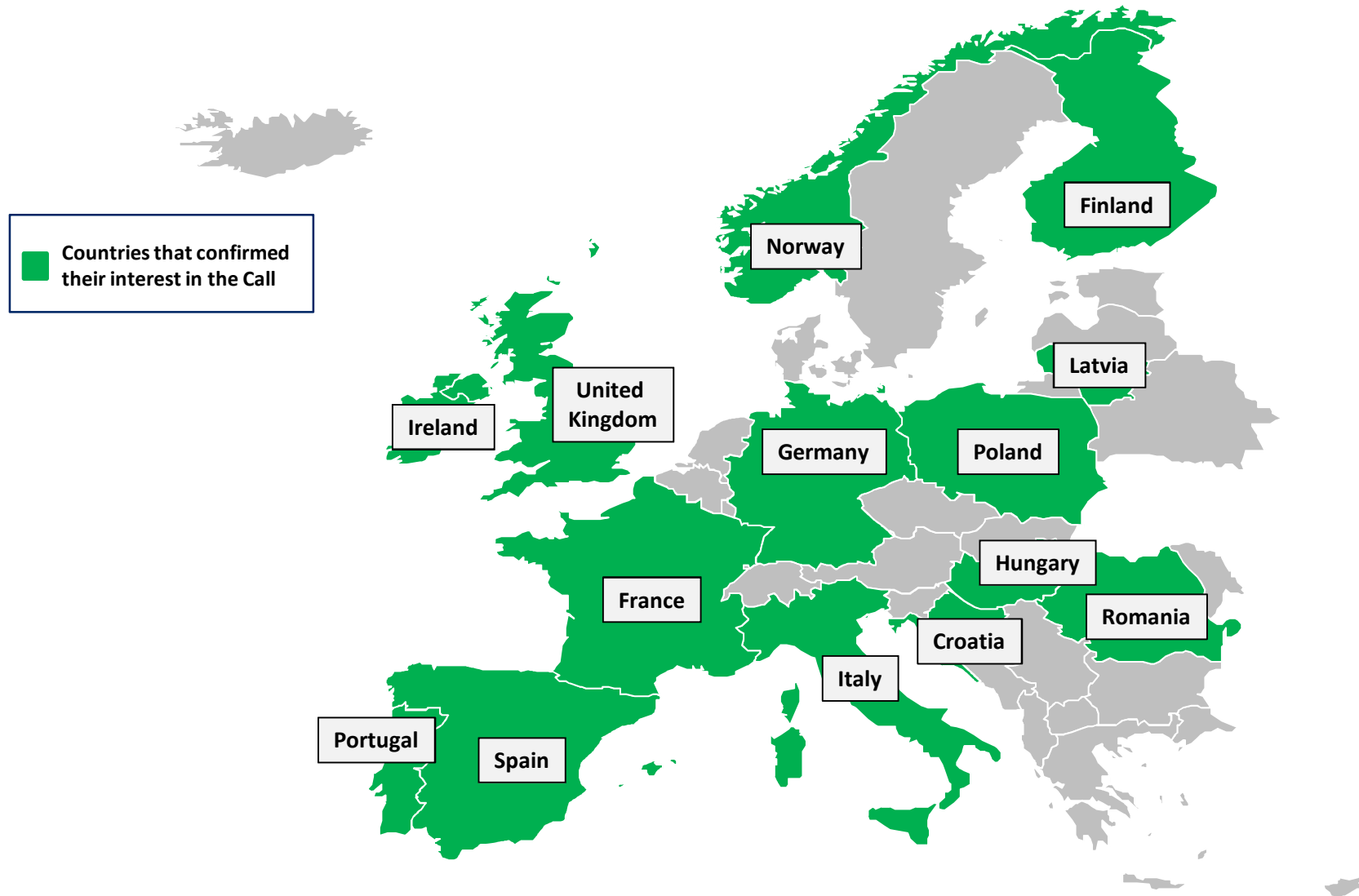
Roadmap for adoption of EGNOS v2: Status on IALA guidelines

- GSA, ESSP and ESA started the work at IALA for the preparation of IALA guidelines on the use of EGNOS, where several input papers were submitted
- The last input papers focused on an assessment of the best configurations for the transmission of EGNOS corrections over IALA beacons and AIS Stations.
- Next paper will focus on CBA (March 2017).

Roadmap for adoption of EGNOS v2: Status on Pilot Project

- Following the Call of interest launched on the use of EGNOS via another means of transmissions different from GEOs (i.e. IALA beacons, AIS and VDES), GSA received the confirmation of 14 countries interested in participating in a pilot.
- GSA is analysing how to support testing activities and has the intention to launch a pilot project in Q1 2017.

Expressions of interest in the pilot project of EGNOS over AIS/VDES and IALA beacons



H2020 Galileo 2017 Call



Source: www.visionaryadvertising.co.uk

Applications in Satellite Navigation – Galileo – 2017

Call is OPEN!

The screenshot displays the European Commission's Research & Innovation Participant Portal. At the top, the European Commission logo is on the left, and the text 'RESEARCH & INNOVATION Participant Portal' is centered. An orange box on the right indicates the 'Deadline: 01 March 2017'. Below the header is a navigation bar with links for 'HOME', 'FUNDING OPPORTUNITIES', 'HOW TO PARTICIPATE', 'EXPERTS', and 'SUPPORT'. A search bar labeled 'Search PP' and buttons for 'LOGIN' and 'REGISTER' are also present. The main content area features a sidebar on the left with 'EU Programmes 2014-2020' and 'FP7 & CIP Programmes 2007-'. The central focus is a call announcement for 'CALL: APPLICATIONS IN SATELLITE NAVIGATION – GALILEO – 2017', including its identifier 'H2020-GALILEO-GSA-2017' and publication date '14-10-2015'. A 'Call budget overview' link is provided. Below this, a 'Horizon 2020 > Industrial Leadership' section includes an 'H2020 website' link. A 'Call summary' section, with a '- Less' button, describes the 'Scene Setter' and the EGNSS system, stating it encompasses Galileo and EGNOS, providing navigation and timing services to increase availability and reliability of GNSS, while ensuring European non-dependence from other GNSS. The EGNOS system improves accuracy and provides reliability information for GPS and Galileo.

European Commission

RESEARCH & INNOVATION
Participant Portal

European Commission > Research & Innovation > Participant Portal > Opportunities

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H2020

Research Fund for Coal & Steel

COSME

3rd Health Programme

Consumer Programme

Justice Programme

FP7 & CIP Programmes 2007-

European Global Navigation Satellite Systems Agency

HORIZON 2020

CALL: APPLICATIONS IN SATELLITE NAVIGATION – GALILEO – 2017 [Call budget overview](#)

Call identifier: H2020-GALILEO-GSA-2017
Publication date: 14-10-2015

Horizon 2020 > Industrial Leadership [H2020 website](#)

Call summary [- Less](#)

Scene Setter:

The European Global Navigation Satellite System (EGNSS) encompasses the satellite navigation system established under the Galileo programme and the European Geostationary Overlay System (EGNOS). The Galileo system will provide position, navigation and timing services and increase availability and reliability of other GNSS, while ensuring the European non-dependence from other GNSS. The EGNOS system improves the accuracy and provides information on the reliability of the GPS system, and in the future also of the Galileo system.

<http://ec.europa.eu/research/participants/portal/desktop/en>

Applications in Satellite Navigation-Galileo-2017

Type of Action	Topic	Budget (EUR mln)	Funding rate	Indirect costs
IA	EGNSS Transport Applications	14.50	70% (except for non-profit legal entities, where a rate of 100% applies)	25% of the total eligible costs excluding: <ul style="list-style-type: none"> • Subcontracting • Costs of resources made available by 3rd parties • Financial support to 3rd parties
IA	EGNSS Mass Market Applications	9.00		
IA	EGNSS Professional Applications	8.00		
CSA	EGNSS Awareness raising and capacity building	1.50	100%	
Total budget:		33.00	<div style="background-color: #f4a460; padding: 5px; text-align: center;">Deadline: 01 March 2017</div>	

Innovation Actions (IA): activities aimed at producing plans and arrangements or designs for new, altered or improved products, processes or services.

Coordination & Support Actions (CSA): consisting of accompanying measures such as standardisation, dissemination, awareness-raising and communication, networking, policy dialogues and studies.

Compulsory Preliminary Business Plan

GALILEO-1,2,3

What for: Demonstrate the commercial potential of the product and/or service and describe how this potential will be realised.

Why we ask: It is an input to evaluate the Impact criteria.

How to do: Template available in the participant portal.

- **Define the proposed offering:** the product and/or service and target market sector.
- **Review the market sector:** structure, size, drivers, market and technology trends.
- **Assess the competition:** main players, their current offerings and market share.
- **Describe the innovation** of the proposed offering in the context of the competition and the sector's needs
- Summarise **potential business model(s)** together with possible entry price(s) and costs
- Assess the **key risks to market entry** and possible options for risk mitigation.
- Outline, graphically, the **roll-out of the offering:** timescale, sales growth and market share.

Successful proposal- some hints

Be focused and concrete:

- ✓ Build on fairly mature application or business concepts and fill the gap
- ✓ Think to bring the products / services on the market at the end of the project



Build on market understanding and business expertise:

- ✓ Ideally, coordinator with good expertise in the specific market
- ✓ Demonstrable capability to commercialise the products and services developed



Demonstrate a clear motivation to commercialise the products and services:

- ✓ Market entry plan (marketing strategy & business plan)
- ✓ Previous achievements in the specific market



Focus on practical impact:

- ✓ Maximise the use of the **available signals**
- ✓ Prefer **trials** and **large scale demonstration**, involving final users in their real life procedures
- ✓ Produce **practical tools useful for the GNSS developer community**



Select applications where EGNOS and Galileo differentiators are key for the product/service success



Galileo-1-2017 EGNSS Transport Applications

Maritime and IWW are ready to benefit from EGNSS

Examples of emerging EGNSS applications in maritime and inland waterways (including the Arctic):

- vessels navigation,
- traffic management and surveillance,
- search and rescue,
- port operations,
- fisheries monitoring.



*Proposals should in particular build on the use of **current and future EGNOS dedicated services** for maritime and IWW, and the **Search and Rescue service of Galileo**, other Galileo differentiating features and services, such as **authentication, and high precision**.*

Examples of H2020 Galileo 1st call projects

spyGLASS- Galileo-based passive radar system for maritime surveillance

The recurrence of illegal activities at sea such as clandestine immigration, smuggling and trafficking, have made maritime surveillance a priority.

- A **passive bistatic radar** (PBR) based on Galileo transmissions for maritime surveillance is proposed
- A ground based receiver is considered for **coastal monitoring and also placed on mobile platforms** to assure open sea surveillance
- The primary task of this system is to detect and localize ships.
- This feature potentially enables surveillance both in coastal areas and the open sea



Questions time

Thank you!

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European
Global Navigation
Satellite Systems
Agency

HORIZON 2020