



EGNOS IN THE MARITIME APPLICATION DOMAIN MARKET SEGMENT UPDATE

EGNOS Service Provision Workshop 2015

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EGNSS applications in the Maritime segment



GENERAL NAVIGATION

- Ocean waters
- Coastal waters
- Port approach
- Inland waterways
- Restricted waters

MANOEUVRING AND OPERATIONS IN PORTS

- Automatic collision avoidance
- Local Vessel Traffic System

TRAFFIC MANAGEMENT

- Shore to ship
- Ship to shore
- Ship to ship

HOMELAND SECURITY

- Immigration control
- Fraud prevention

SEARCH AND RESCUE

- Location of vessels and people in distress

RECREATIONAL LEISURE

- Ocean waters
- Coastal waters
- Port approach
- Restricted waters



Maritime

Map of key possible applications

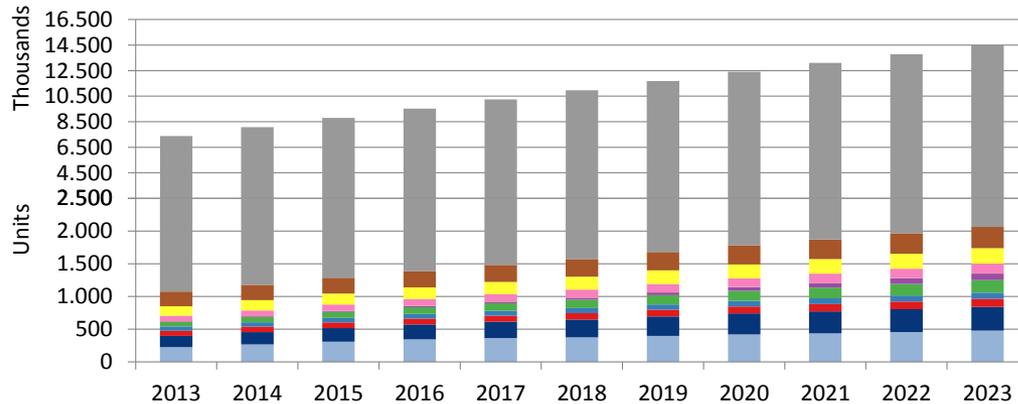
Application	Description	Target Users	Value Proposition
General Navigation	<ul style="list-style-type: none"> Ocean waters; Coastal waters; Port approach; Inland waterways; Restricted waters (includes fishery) 	<ul style="list-style-type: none"> Shipping companies Vessel owners Fishermen Port authorities Emergency managers 	<p>EGNOS</p> <ul style="list-style-type: none"> Improves accuracy and may provide integrity data for all segments of users. Integrity data at system level is available in the SIS and EDAS
Manoeuvring operations in ports	<ul style="list-style-type: none"> Local Vessel Traffic System; Cargo containers management; Automatic collision avoidance 		
Traffic Management <i>(via AIS - Automated Identification Systems)</i>	<ul style="list-style-type: none"> Ship to ship Ship to shore Shore to ship 		
Homeland security <i>(via LRIT - Long Range Identification & Tracking)</i>	<ul style="list-style-type: none"> Immigration control Fraud prevention 		
Search and rescue	<ul style="list-style-type: none"> Emergency service for Maritime 		
Recreation and Leisure <i>(Non-regulated)</i>	<ul style="list-style-type: none"> Ocean waters Coastal waters Port approach Restricted waters 		



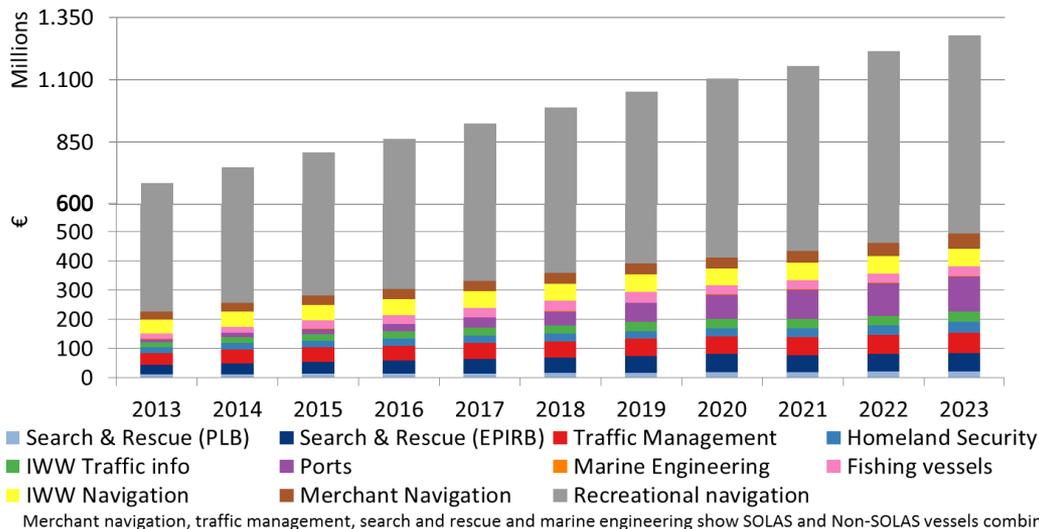
Maritime

Market Data and Key Trends

Installed base of GNSS devices by application



Core revenue of GNSS device sales by application



MARKET AND TECHNOLOGY TRENDS

Regulated Vessels

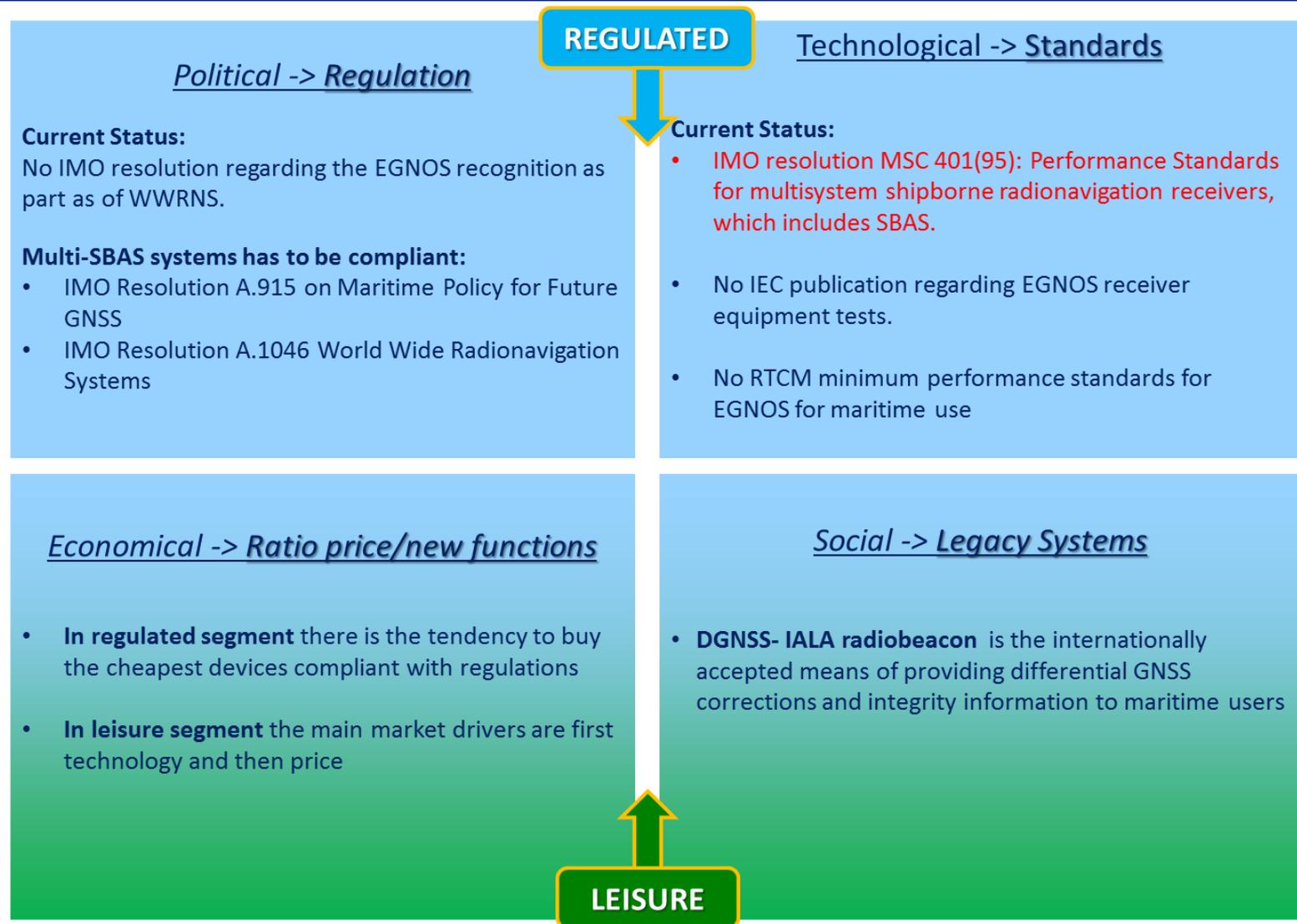
- Multi-constellation GNSS receiver in the centre of proposed IMO E- Navigation concept
- In regulated segment, General Navigation and SAR have the largest share in GNSS receiver shipments
- Manoeuvring operations in ports will get benefit from more accurate position provided by augmentation systems

Non-regulated Recreational and Leisure segments

- Recreational and Leisure is by far the largest application in terms of number of GNSS devices, but it is very fragmented and difficult to reach



Overall E-GNSS adoption depends on four main factors





Maritime

Market Development Strategy

Where we want to be

Regulated

- EGNOS adopted by maritime users for safety-related applications
- **EGNOS** complementing **DGNSS** infrastructure providing integrity information for coastal and inland waters (by 2020).

Non-Regulated

- **EGNOS enabled** in every maritime receiver sold in Europe

How to get there

Regulated

- **Workshop series with EMRF to cover:**
 - Roadmap of adoption of EGNOS v2
 - User's requirements for navigation in ports
 - Service provision aspects
 - Provide inputs for Maritime Service Definition Documents (**EGNOS SIS** and **EDAS**)
- Pilot project for the transmission of **EGNOS** corrections via **AIS/VDES** and **IALA beacons (coverage)**
- Contribute to the preparation of **IALA guidelines** on the maritime use of **SBAS**
- Perform **cost-benefit analysis** of **DGNSS** infrastructure optimisation using **EGNOS**
- Contribute to the preparation of a **guideline for Rx manufacturers** for the SIS service
- Support **SBAS standardisation** processes at RTCM and IEC
- Support the **recognition of EGNOS at IMO** as part of the WWRNS

Non-Regulated

- **Demonstrate EGNOS benefits** for users and main receiver manufacturers/dealers



2015 action plan for EGNOS Service Provider



Regulated

EGNOS

Market Uptake



Unregulated Leisure

EDAS

EGNOS

GENERAL NAVIGATION

- 1 Perform cost-benefit analysis of optimisation of DGNSS network using EGNOS
- 2 Analysis of EGNOS v2 performances for its use in maritime using SBAS integrity
- 3 Analysis of users' requirements for navigation in ports
- 4 Guidelines on EGNOS transmission via AIS for Inland waterways, coastal waters and ports
- 5 Guidelines on EGNOS transmission via IALA beacons for coastal waters

LEISURE

- 6 Provide support in communicating EGNOS benefits to users and receiver manufacturers/dealers

THANK YOU FOR YOUR ATTENTION



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