



European  
**G**lobal Navigation  
**S**atellite Systems  
**A**gency

# **EGNOS V2 / V3 DEVELOPMENTS**

## **Rabat – 5 April 2016**

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EGNOS Exploitation Program

# TODAY'S SUCCESS



# EGNOS: pre-requisites

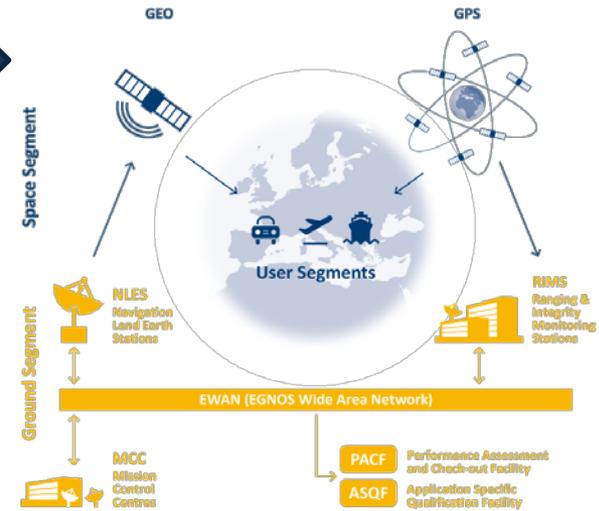
## 1. Availability of the EGNOS service:

- service declared operational
- provided by a certified Service Provider

Need for a system

## 2. Receivers SBAS off-the-shelf products available and sufficiently attractive for users to equip

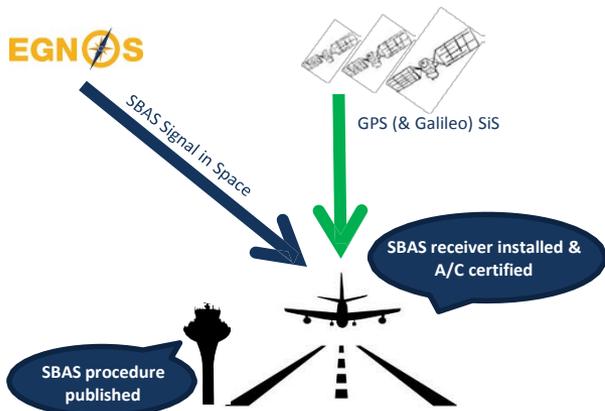
## 3. Published procedures (for aviation) (i.e. ultimately the motivation for ANSPs to use SBAS would be to rationalise other NavAids)



Infrastructure

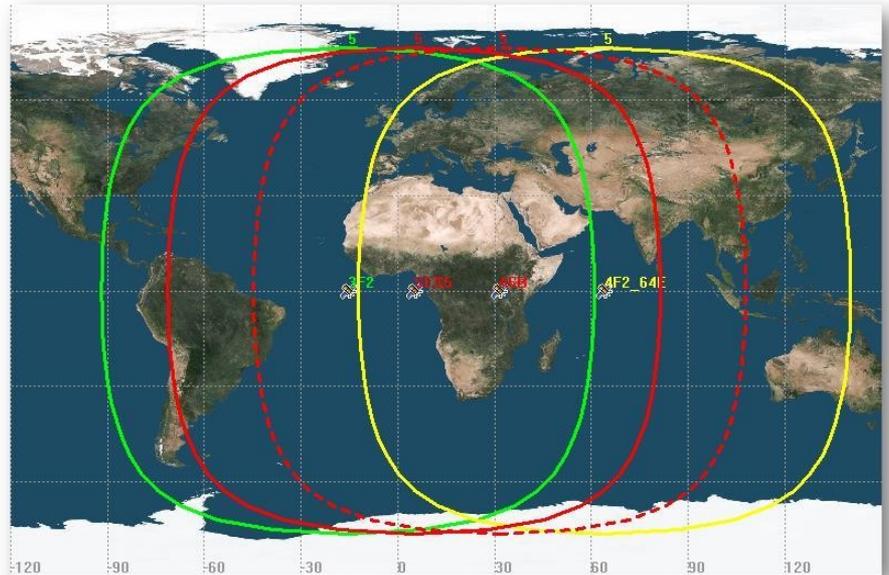
Design and Evolutions

Operations and Maintenance



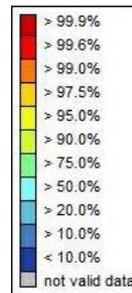
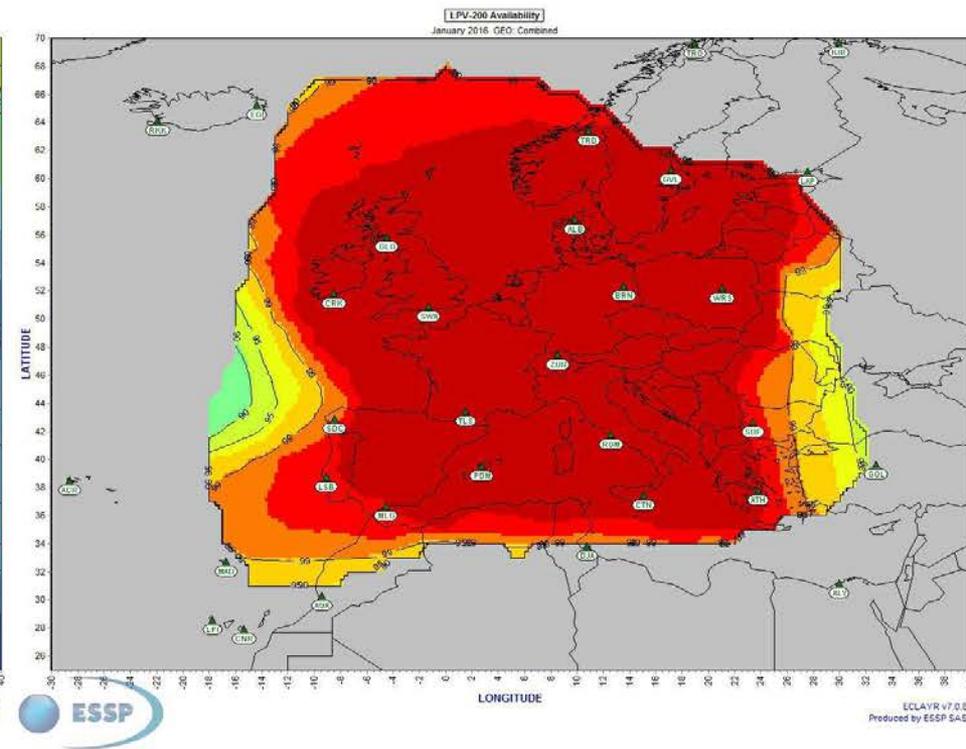
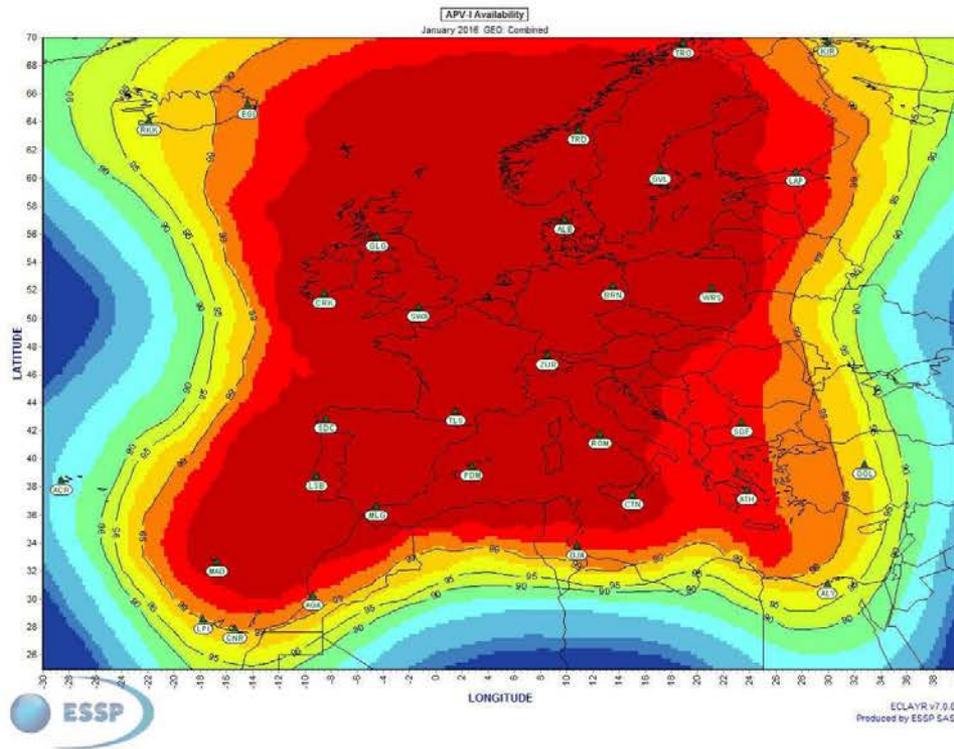
# Current EGNOS System Status

- Current EGNOS Release: **ESR 2.4.1M** (since August 2015)
- 2 Operational GEOs:
  - Inmarsat 3F2 (PRN-120)
  - SES-5 (PRN-136)
- 1 GEO in Test/Back-up:
  - Inmarsat 4F2 (PRN-126) – moved to 63,9°E



- Better performance
- 39 RIMS (Ranging and Integrity Monitoring Stations)
- And, LPV-200

# Current EGNOS Service Performance: APV-1 & LPV-200



40 EWA signed  
178 Airports EGNOS-enabled  
245 APV-1 procedures

First LPV-200 procedures to be published very soon



# A BRIGHT FUTURE

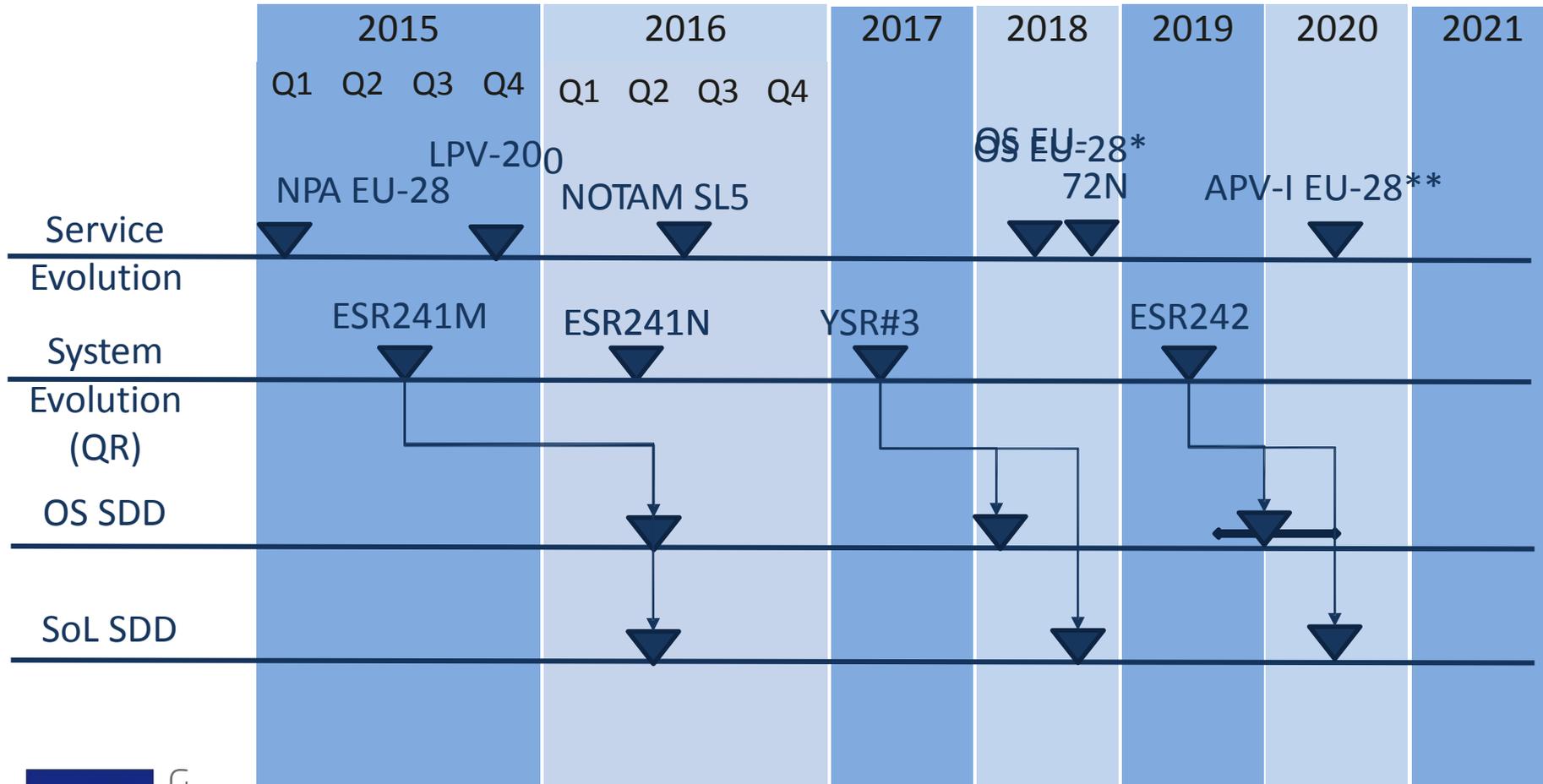


# Versions to come

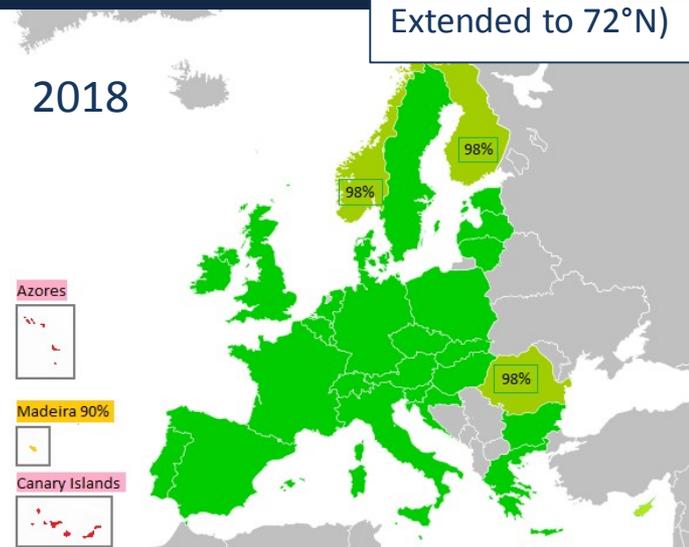
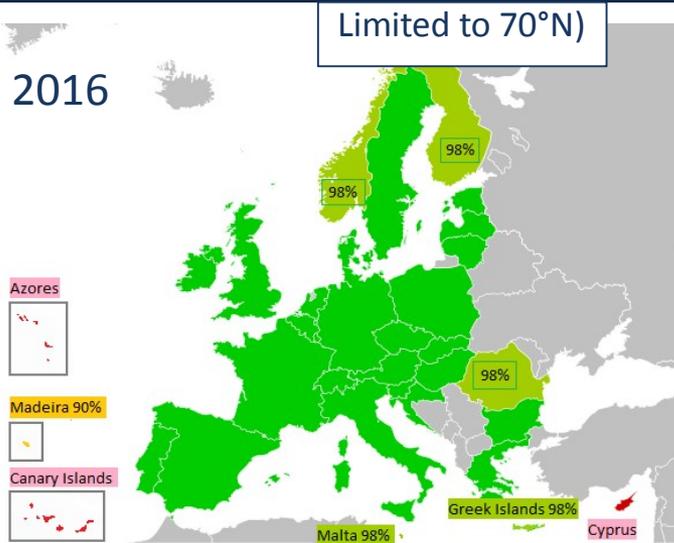
- **New ESR 2.4.1N**
  - New GEO (ASTRA-5B – PRN-123)
- **New ESR YSR3**
  - 72°N
  - New Ranging and Integrity Monitoring Station (Haifa, Israel)
- **New ESR 2.4.2**
  - Coverage
  - Obsolescence
  - GEO ranging / Algorithms (TBC)



# EGNOS Service Evolution Plan



# Evolution of SoL (APV-1) coverage



# EGNOS V3

- Development Status:
  - Two parallel Phase B completed
- Mission Statement Act (European Commission - July 2015):
  - Legacy L1-only service continuity
  - Dual-Frequency services: L1-L5
  - Multi-constellation augmentation: GPS-Galileo
- On-going procurements:
  - GEO-3 SBAS payload service
  - System Phase C/D (under GSA-ESA Working Arrangement)
  - Sites survey (re-use/upgrade of EGNOS V2 sites)
  - DFMC Aviation protoflight receivers



# INPUTS FOR ACAC ROADMAP

# Inputs for ACAC roadmap

- Today's coverage committed for EU-28 (+Switzerland and Norway)
- Currently good performances in the North of Africa, but no guaranty
  - Good ionospheric conditions recently experienced
  - High number of available GPS satellites
- No commitment for MEDA in V242

# Inputs for ACAC roadmap

- MEDA is considered as an option in EGNOS V3 phase C/D
- Funding to be available (infrastructure + operations) prior to decision point
  - Early 2017 to exercise V3 option
  - In 2020 in the frame of the next financial perspective (for V3.x entry into operations around 2025)

# GSA recommendations

- Continue active involvement in SBAS introduction
- Benefit from current opportunities to
  - Start the process of applications implementation benefiting from the available limited coverage
  - Finalise the regulatory framework
- Be ready for EGNOS V3:
  - International agreement
  - Funding to be available for the next decision point (2017 or 2020)



# Applications in Satellite Navigation-Galileo-2017

Type of Action	Topic	Budget (EUR mln)	Funding rate	Indirect costs
IA	EGNSS Transport Applications	14.50	<b>70%</b> (except for non-profit legal entities, where a rate of 100% applies)	<b>25%</b> of the total eligible costs excluding: <ul style="list-style-type: none"> <li>• Subcontracting</li> <li>• Costs of resources made available by 3<sup>rd</sup> parties</li> <li>• Financial support to 3<sup>rd</sup> parties</li> </ul>
IA	EGNSS Mass Market Applications	9.00		
IA	EGNSS Professional Applications	8.00		
CSA	EGNSS Awareness raising and capacity building	1.50	<b>100%</b>	
<b>Total budget:</b>		<b>33.00</b>	<b>Opening: 08 November 2016</b> <b>Deadline: 01 March 2017</b>	

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

**CSA:** consisting of accompanying measures such as standardisation, dissemination, awareness-raising and communication, networking, policy dialogues and studies.



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**THANK YOU**