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

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)
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

<table>
<thead>
<tr>
<th>Service Evolution</th>
<th>Evolution System</th>
<th>Evolution (QR)</th>
<th>OS SDD</th>
<th>SoL SDD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>Q2</td>
<td>Q3</td>
<td>Q4</td>
<td>2015</td>
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<tr>
<td>NPA EU-28</td>
<td>LPV-200</td>
<td>NOTAM SL5</td>
<td>OS EU-28*</td>
<td>72N</td>
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</tbody>
</table>

- **ESR241M**
- **ESR241N**
- **YSR#3**
- **ESR242**

*OS EU-28*

**APV-I EU-28**

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[Images and logos related to EGNOS and GSA]
Evolution of SoL (APV-1) coverage

2016
- Limited to 70°N

2018
- Extended to 72°N

2020
- Further extended 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

<table>
<thead>
<tr>
<th>Type of Action</th>
<th>Topic</th>
<th>Budget (EUR mln)</th>
<th>Funding rate</th>
<th>Indirect costs</th>
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<tbody>
<tr>
<td>IA</td>
<td>EGNSS Transport Applications</td>
<td>14.50</td>
<td>70%</td>
<td>25% of the total eligible costs excluding:</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>• Subcontracting</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Costs of resources made available by 3rd parties</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>• Financial support to 3rd parties</td>
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<tr>
<td>CSA</td>
<td>EGNSS Awareness raising and capacity building</td>
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</table>

**Total budget:** 33.00

**Opening:** 08 November 2016  
**Deadline:** 01 March 2017

**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.
THANK YOU