



## EGNOS extensions beyond EU

EGNOS Service Provision Workshop 2015 – Copenhagen

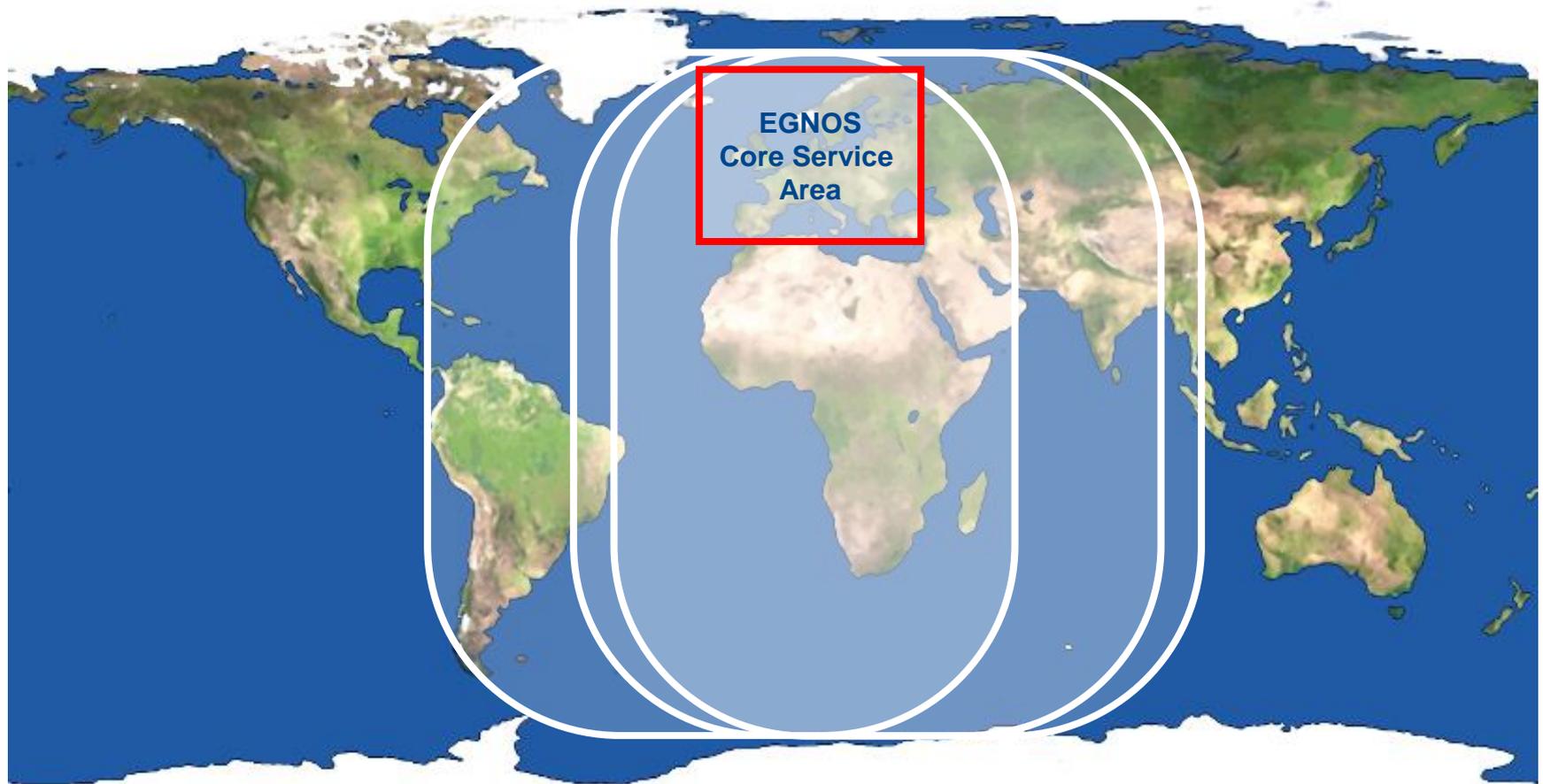
Ugo CELESTINO, DG GROWTH – Unit J3

Applications, Security, International cooperation

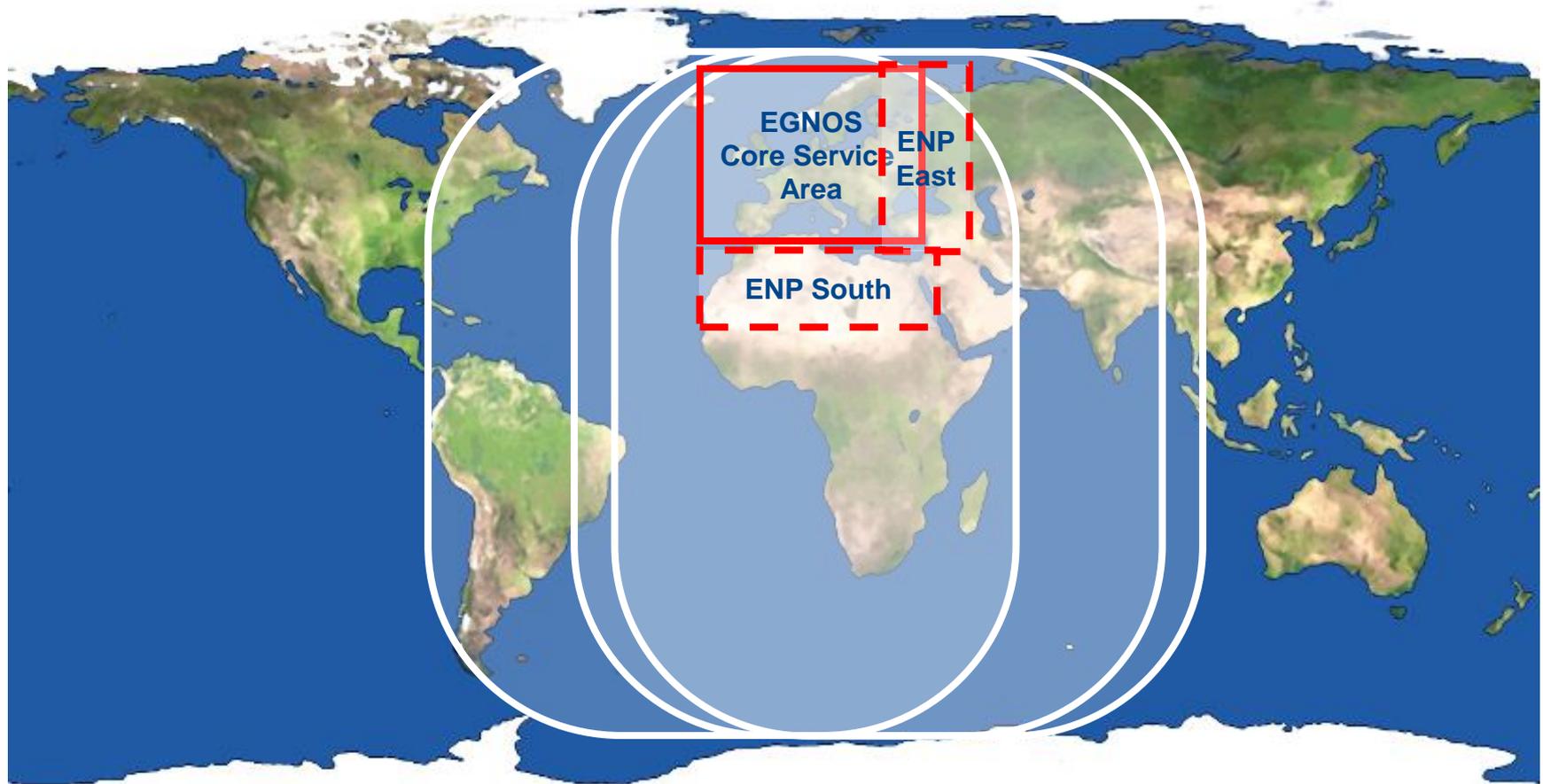


- Promote use of SBAS, especially for air transport.
- Enhance the business opportunities for the European GNSS technologies and application industries (upstream and downstream).
- Pursuing other EU policies (i.e. cooperation, external relations, neighbouring).

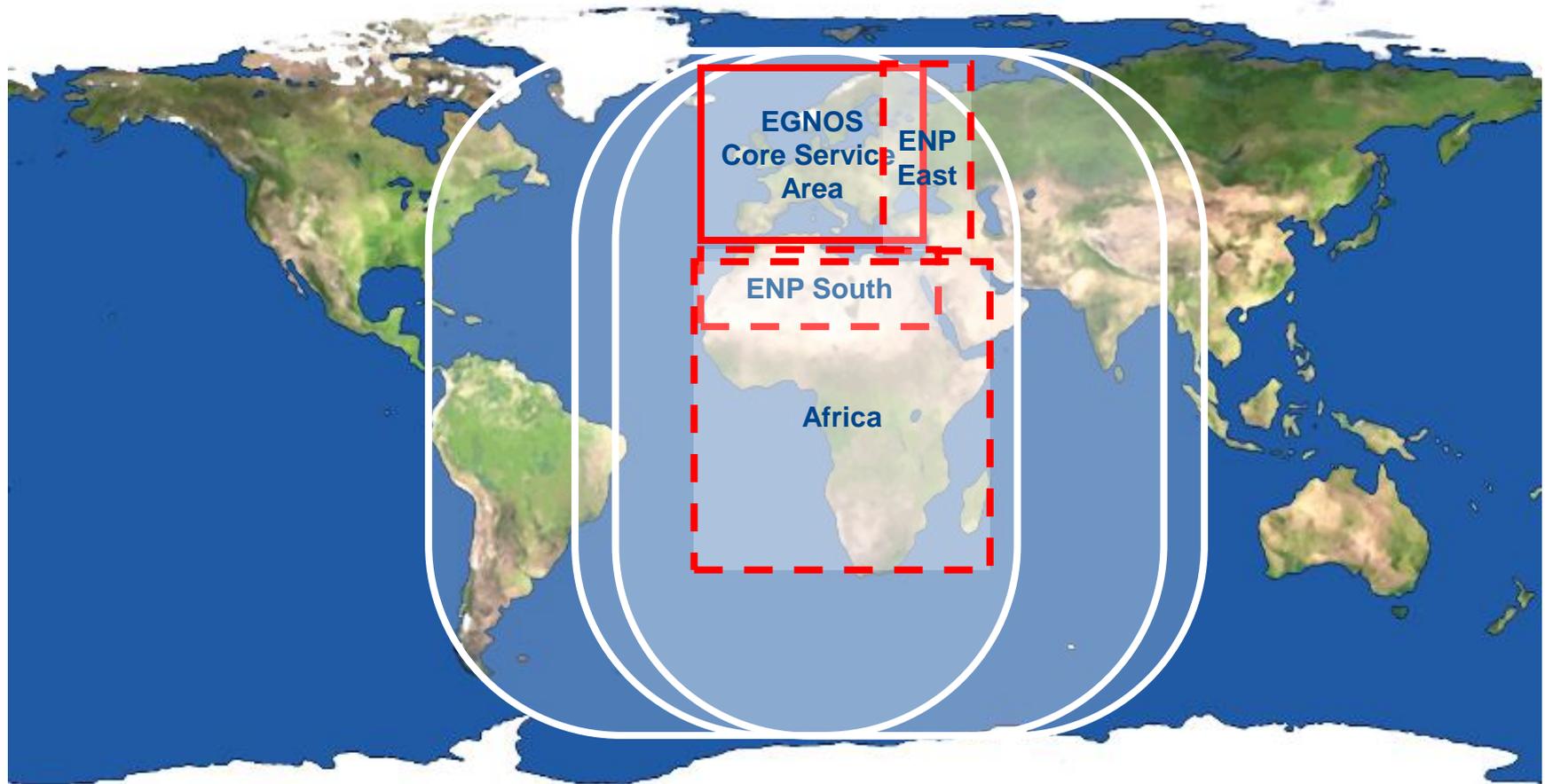
- Aviation: use EGNOS to comply with ICAO requirements on PBN
  - Save on ILS investment
  - Increase safety
  - Open new routes
  - Improve operations efficiency
  
- Use the EU SBAS technology in other transports & non-transport domains.
  
- Cooperate with EU on space matters.

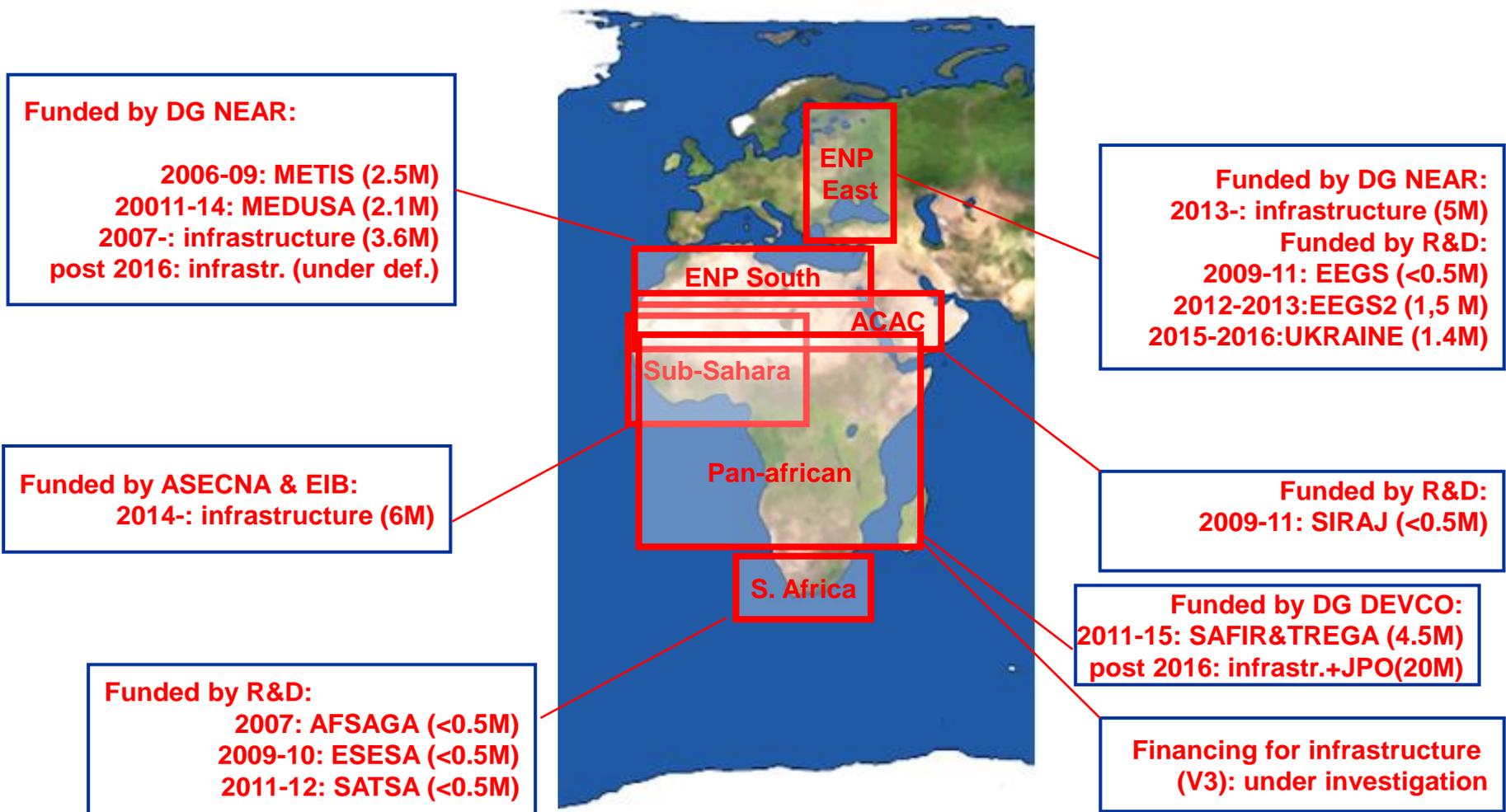


# EGNOS extensions possible within satellite footprints



# EGNOS extensions possible within satellite footprints





**Four areas covered:**

- 1) Users needs, real life tests and demo (OS, SoL)
- 2) GNSS skills
- 3) System infrastructure
- 4) Governance, regulatory roadmap to adoption

## EU and African partners are working together to provide SBAS services based on EGNOS over Africa

### ■ Objective

- Identify appropriate technical and financing solution for covering Africa with SBAS services, based on the EGNOS current and future technology.

### ■ Implementation

- GNSS cooperation reaffirmed with the adoption of the Roadmap (2014-17) at the Africa-EU Summit in April 2014, and funds allocated (2016-) as part of the pan-African Cooperation and Development Instrument (DCI).
- Commission received a mandate from the Member States to negotiate with ASECNA the conditions for cooperation towards provision of SBAS services based on EGNOS (sub-Sahara).
- Technical solutions, financing, governance and service provision aspects are the subjects of the ongoing analyses and discussions.

## EU and Ukraine cooperation for EGNOS SoL extension

- **Objective**
  - To extend the EGNOS SoL coverage to the Ukrainian territory.
  
- **Implementation**
  - EU-Ukraine GNSS Agreement (entered into force in 2013) foresees the possibility to extend EGNOS to Ukraine.
  - Commission-Ukraine Joint Statement (2013) expresses both sides' intention to extend EGNOS to Ukraine.
  - EU-Ukraine Association Agreement (June 2014) stipulates that transport cooperation shall cover the use of space systems and promotes cooperation in the area of GNSS.
  - Financing Agreement (August 2014) was signed between the Commission and Ukraine, reserving 5M€ from the European Neighbourhood funds to carry out the EGNOS extension.
  - To implement the extension a new international agreement is needed. The Commission is preparing the negotiating directives for this agreement.

## EU and ENP South partners have been working since 2006 to extend the EGNOS SoL coverage over N.Africa/M.East

### ■ Objective

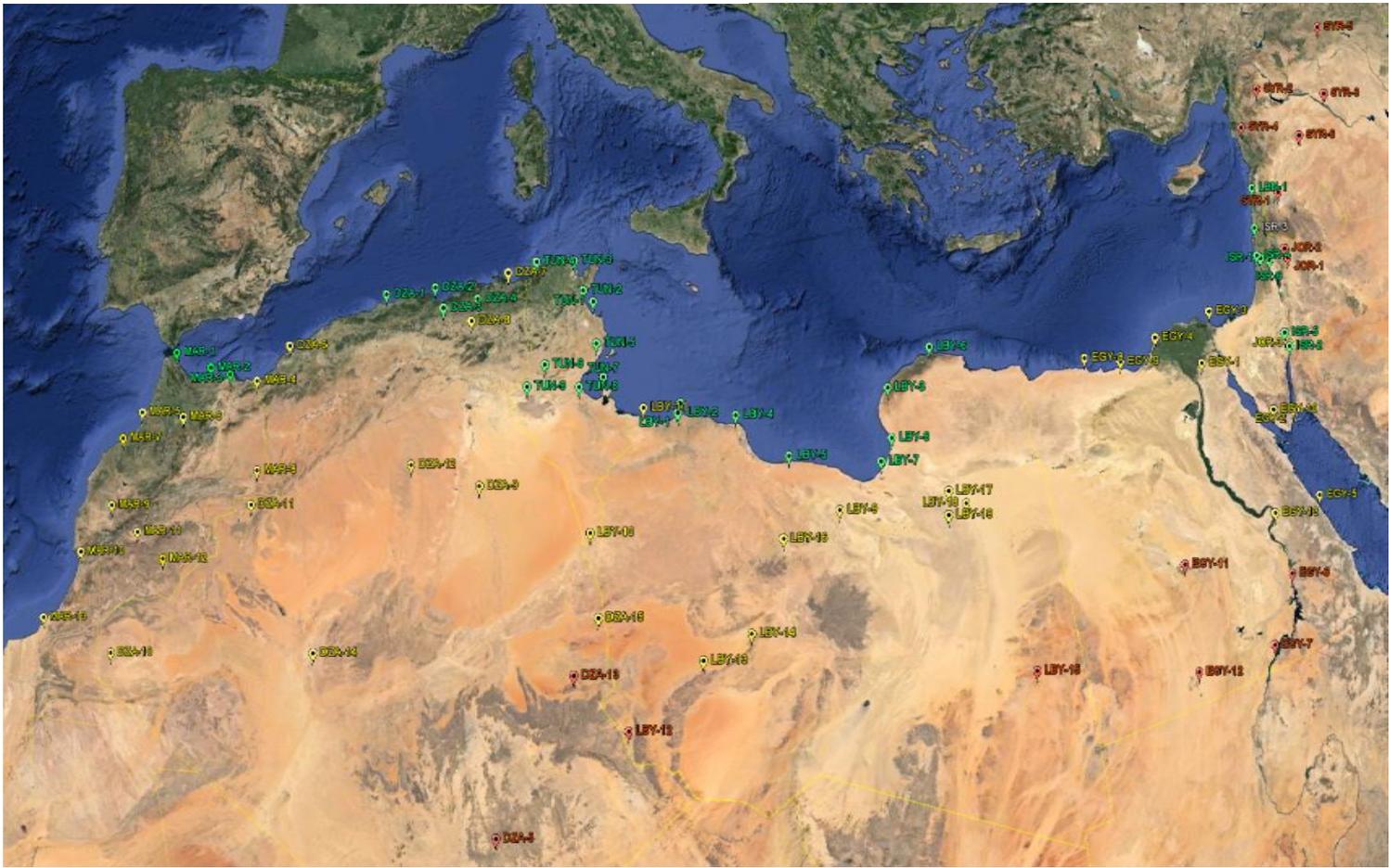
- Leveraging the EGNOS core service area infrastructure to extend coverage to 10 Mediterranean countries.

### ■ Implementation

- Commission's Communication issued on 8 March 2011 on the cooperation with Southern Mediterranean countries, reinforced by the position adopted by the Ministerial Transport Conference of the Union for the Mediterranean (UfM) held on 14.11.2013, the area of Satellite Navigation is being pursued as field of technical cooperation, for its impact on transport efficiency, safety (e.g. civil aviation) and regional cooperation (RTAP 2014-20).
- Euromed GNSS I & II (METIS, MEDUSA, ESA): CBA per country, initial infrastructure, technical demonstrations, service demo in aviation and logistics, definition of framework for the long term.
- Just defined roadmap to provide EGNOS SoL coverage (capex, timeline). Funding under definition.

# EGNOS SoL extension: ENP South priorities

- Priority Area 1 (green airports)
- Priority Area 2 (yellow airports)
- Priority Area 3 (red airports)



Source: MEDUSA Analysis with ENP Countries, Jan 2014

# EGNOS SoL extension ENP South: infrastructure required

## ENI South APV-I Availability, 27 GPS SVs



**APV-I 99% Availability 27 SVs**



**PRIORITY  
ZONE 1  
AIRPORTS IS  
COVERED**



**5 more RIMS needed**

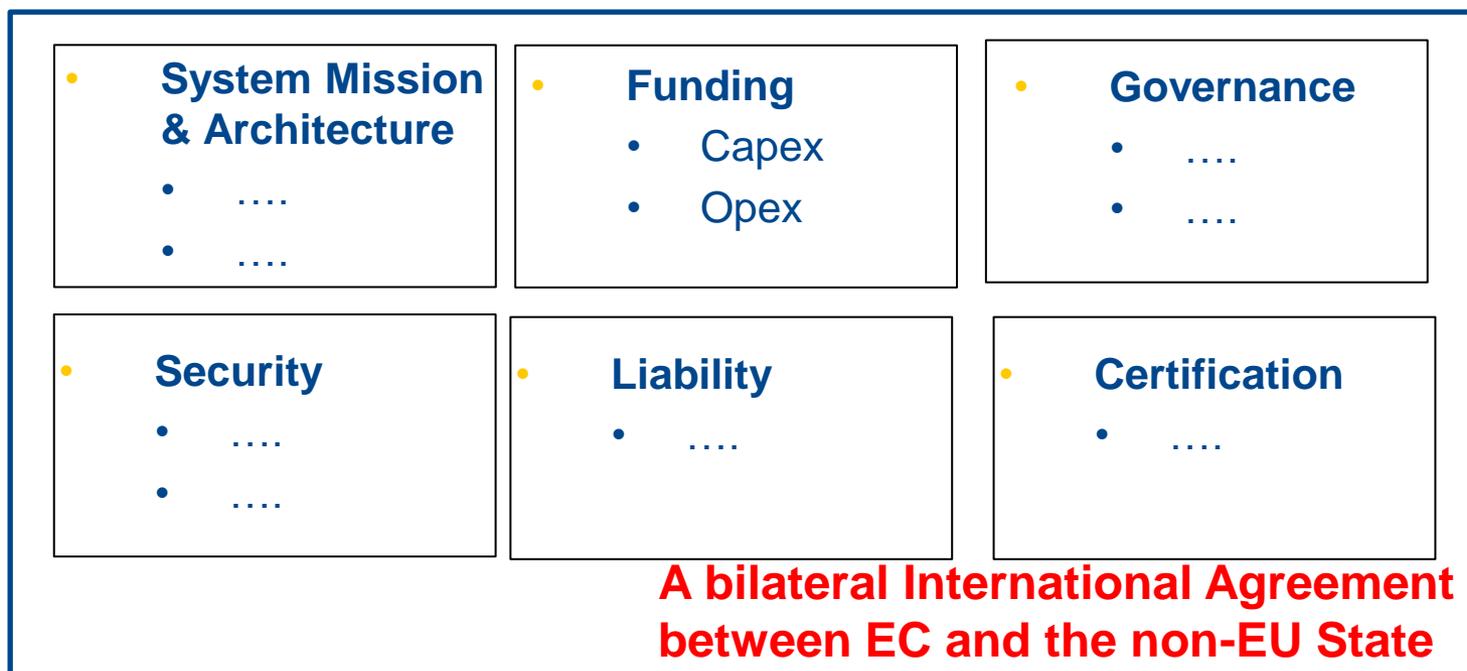
Source: ESA, 2015

## EGNOS extensions in GNSS Regulation (1285/2013)

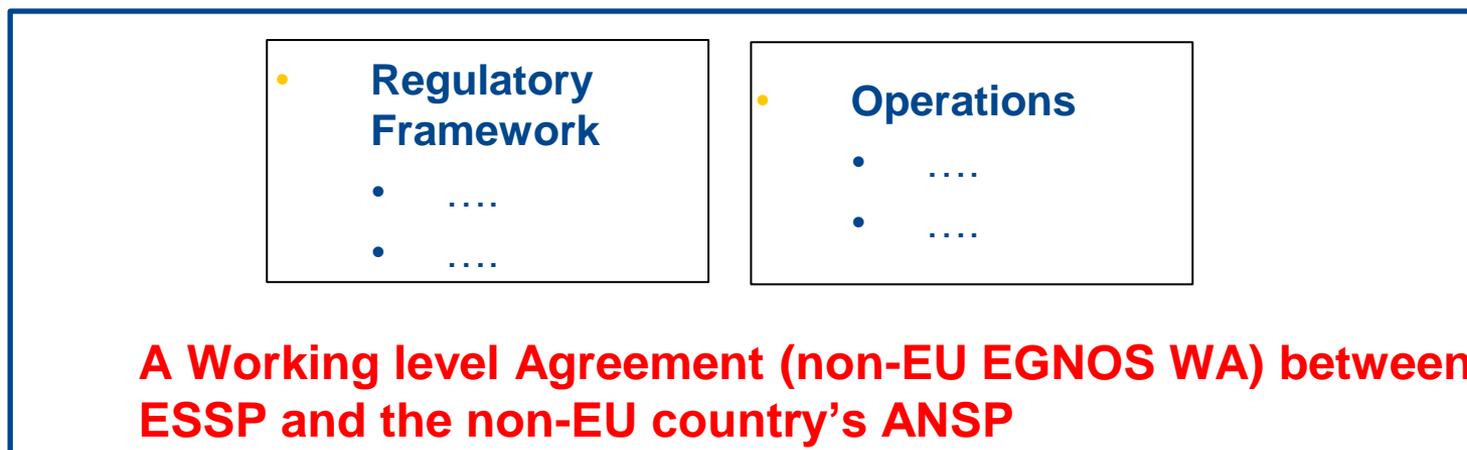
- (12) "...Subject to technical and financial constraints and on the basis of international agreements, the geographical coverage of the services provided by the EGNOS system could be extended to other regions of the world, in particular to the territories of candidate countries, of third countries associated with the Single European Sky and of countries in the European Neighbourhood Policy..."
- (42) "... In view of the global nature of the systems, it is essential that the Union enter into agreements with third countries and international organisations in the context of the Galileo and EGNOS programmes under Article 218 TFEU, in particular to ensure their smooth implementation, deal with certain questions relating to security and charging, optimise the services provided to citizens of the Union and meet the needs of third countries and international organisations..."
- (Art. 2-c) "... The geographical coverage of the EGNOS system may be extended to other regions of the world, in particular to the territories of candidate countries, of third countries associated with the Single European Sky and of countries in the European Neighbourhood Policy, subject to technical feasibility and on the basis of international agreements. The cost of such extension, including the related exploitation costs, shall not be covered by the resources referred to in Article 9. Such extension shall not delay the extension of the geographical coverage of the EGNOS system throughout the Member States' territories geographically located in Europe..."

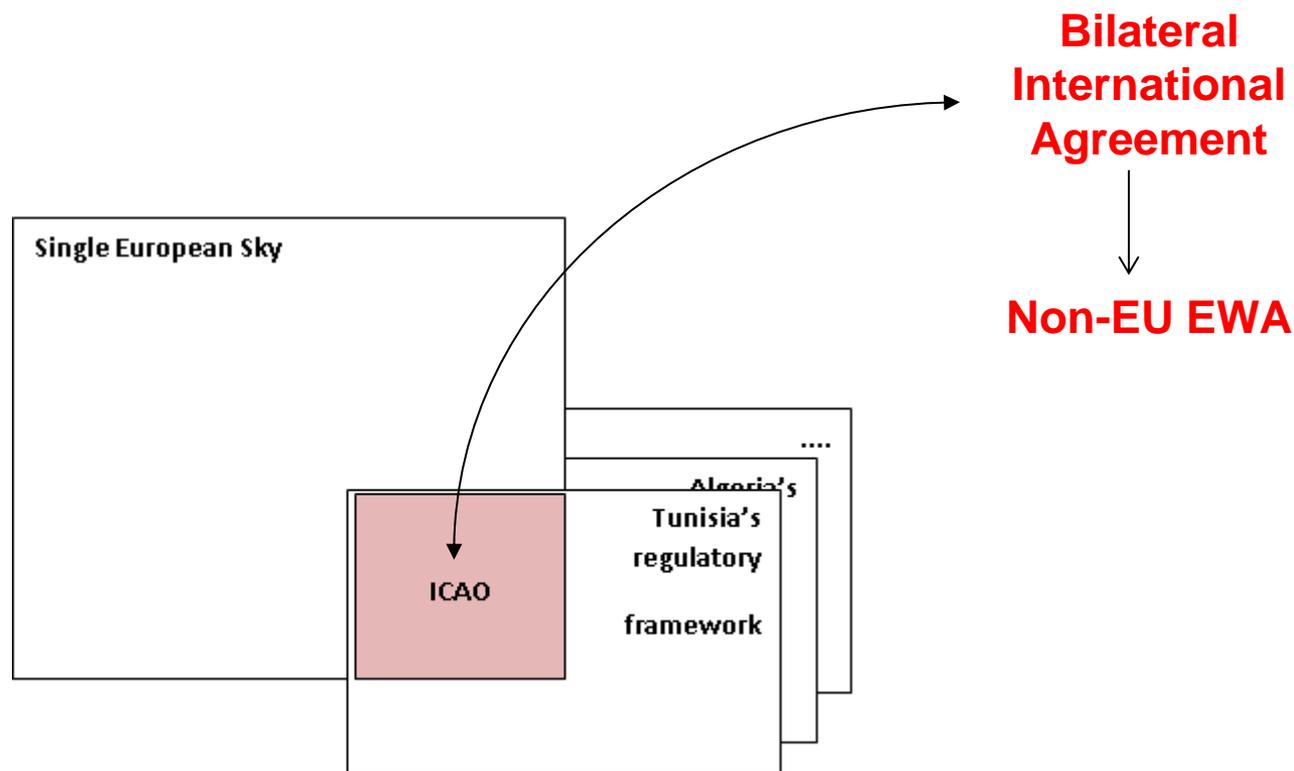
# What is needed for EGNOS SoL service in non-EU ?

SoL signal coverage



Service provision





- **EU Commission envisages an 'Common Template' Agreement to define all key issues for a specified set of countries (ENP South, East) – 2017-2018.**
- **Ad hoc agreement with ASECNA, international organization representing a specified set of countries (Sub-saharian Africa) – 2018.**
- **Special cases: Western Balkans – 2016 onwards**
  - Signatory to the European Common Aviation Area (ECAA) agreement
  - Compliant with SES (80-100%)
  - EU candidate / associate countries

- **EGNOS extension is a win-win occasion**
  - Non-EU countries get a technology leveraging existing public investments
  - EU opens up new venues of technical cooperation, business and long term partnerships
  
- **EC is leading this effort, but all players from EU side are key contributors**
  - GSA/ESA
  - ESSP
  - Industry



**Thank you for your attention**

Please send any feedback to:  
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