MEDUSA

Expanding EGNOS in North Africa/Middle East

The European Geostationary Navigation Overlay Service (EGNOS) and Galileo also provide benefits to non-EU countries, in terms of increased **accuracy** and **reliability.**

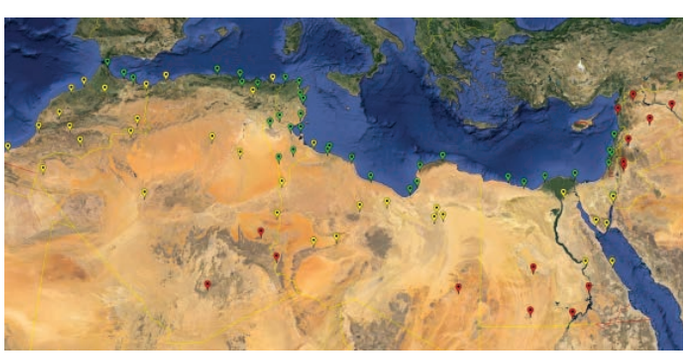
EGNOS delivers three distinct services with European regional coverage:

- EGNOS Safety-of-Life Service (SoL) certified for use in aviation applications since 2011
- EGNOS Open Service (OS) for use with consumer-grade receivers and in mass-market applications
- EGNOS Data Access Service (EDAS) for professional applications requiring accurate and reliable positioning.

Backed by the European Commission under the umbrella of its **Neighbourhood Policy**, the Euromed GNSS programme promotes EGNOS service extension to countries in **North Africa and the Middle East around the Mediterranean.**
These nations are **Algeria, Egypt, Israel, Jordan, Lebanon, Libya, Morocco, Palestine, Syria, and Tunisia.**

From 2006 until 2015, through two sequential phases, **METIS** and **MEDUSA**, Euromed GNSS ran programs providing **technical assistance, training, capacity building and regulatory analysis**, and involving the Ministries of Transport and aviation authorities of the participating countries.
Thanks to METIS and MEDUSA, these countries:

- Are informed about EGNOS services.
- Have learnt how to use them in different applications.
- Are aware of the relevant added value and the benefits that can be reaped by adopting EGNOS in aviation, freight transport/logistics and professional road markets (identified as priorities for them).
- Know what to do in order to create favourable conditions for EGNOS services' introduction in operations and exploitation.
- Have identified the priorities for EGNOS coverage extension over their airports.



Green/yellow/red: high/medium/low priority

The States are ready from the regulatory perspective to introduce EGNOS SoL operations in aviation and they can progress to the institutional arrangements with the EC.

Pre-operational landing procedures were already developed in Algeria, Lebanon, Israel, Tunisia.

Best-practices for the use of EGNOS OS and EDAS for freight transport/logistics and professional road applications are in place (e.g. Green Control in Tunisia).

Other non-EU countries/regions interested to use EGNOS can leverage on METIS and MEDUSA's outcomes.

MEDUSA

European Commission

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EGNOS SoL in aviation

LPV approach procedures validated at Monastir airport (Tunisia): *the first outside Europe*

8 GNSS procedures for runways (RWYs) developed for 4 airports/countries:

- 2 RWYs Monastir/Tunisia
- 3 RWYs Beirut/Lebanon
- 2 RWYs Bejaia/Algeria
- 1 RWY Ben-Gurion/Israel

Training courses on:

- GNSS/EGNOS receivers, data sources/collection, data performance analysis tools, GPS+RAIM monitoring
- GNSS procedures design (PANS OPS 8168 advanced class)
- Guidelines for safety assessment

EGNOS adoption in operations:

- Institutional process
- Regulatory framework based on 20 ICAO provisions
- States' regulatory analysis
- States' readiness and identification of next steps
- Recommendations for GNSS national strategy

Flights and benefits validation

Technical and know-how transfer

Feasibility assessment

Cost and benefits analysis

Safety assessment

Enablers for operational introduction

"To-dos" for procedure publications

Support to decision-making

Experience sharing with other non-EU countries (e.g. Balkans)

EGNOS OS and EDAS for freight transport/logistics and professional road

Tracking and tracing intermodal containers shipped via road-rail-sea from Europe to the port of Aqaba (Jordan): *the first real-life use in far-flung neighbouring regions*

Promotion of applications, added value, opportunities

Proof of benefits

Technical support

1 solution provider using GPS+EGNOS OS in Tunisia

1 end-user evaluating GPS+EGNOS in operational system for Jordan Customs