

IAF SPACE COMMUNICATIONS AND NAVIGATION SYMPOSIUM (B2)  
Advances in Space-based Navigation Technologies (1)

Author: Dr. Huseyn Babayev  
National Aviation Academy - Azerbaijan, Azerbaijan, hbabayev@naa.edu.az

Prof. Khagani Abdullayev  
National Aviation Academy - Azerbaijan, Azerbaijan, khabdullayev@naa.edu.az

## KEY BENEFITS OF EGNOS FOR AZERBAIJAN

**Abstract**

The European Geostationary Navigation Overlay Service (EGNOS) is Europe's regional satellite-based augmentation system (SBAS) that improves the accuracy of GNSS positioning information, while also providing a crucial integrity message regarding the continuity and availability of the signal. In addition, EGNOS transmits an extremely accurate universal time signal. EGNOS is fully operational in Europe. With the addition of a RIMS in Baku, its open service provision would be extended to Azerbaijan free of charge in sectors where increased accuracy of navigation, positioning and timing is important. Moreover, the RIMS in Baku can be a step towards the provision in Azerbaijan of the EGNOS Safety of Life service notably for aviation, where reliability of service is crucial. Key sectors of the economy where EGNOS open service can benefit Azerbaijan **In aviation**, EGNOS open service enables routes that are more accurate, optimizing airport access and improving flight safety.

- • Performance Based Navigation (PBN): applications used when an aircraft follows a specific procedure or route within a prescribed error margin (e.g. airport approach).
- Navigation aid: systems designed as additional aid to GA pilots flying according to (Visual Flight Rules). They are also used to alert when they get too close to restricted airspace.
- Unmanned Vehicles Systems: growing market, demanding robust positioning and navigation.

Safety of life in aviation: Beyond the open service, the EGNOS "Safety of Life" service could be provided in Azerbaijan, subject to certain jointly agreed conditions, and if the service is reliable 99% In other areas of transport: In road/rail transport users can benefit from EGNOS enabled tracking systems, for example for fleet management, tracing of dangerous/valuable goods, multimodal logistics. Oil and gas exploration: Satellite navigation can be used for offshore surveying, mine surveying, as well as tracking of mining and drilling equipment, etc. Agriculture: EGNOS offers an affordable solution to move towards precision agriculture, which results in efficient and sustainable farming. Construction: Precise mapping and surveying with EGNOS is applied for cadaster, urban planning including for smart cities and infrastructure monitoring. In marine engineering EGNOS can support construction cable or pipeline laying, seabed exploration, tide estimation, offshore surveying.