## **European satellite navigation systems:** implementation and exploitation 2014-2020

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This report from the Commission presents the interim evaluation of the European satellite navigation programmes, Galileo and EGNOS, and the evaluation of the European GNSS Agency (GSA), as required by Regulation (EU) No 1285/2013 on the implementation and exploitation of the European satellite navigation systems ("the GNSS Regulation") and Regulation (EU) No 912/2010 setting up the European GNSS Agency ("the GSA Regulation").

The interim evaluation focuses on the period from 1 January 2014 to 31 December 2016.

The evidence presented in the interim evaluation demonstrated that overall the implementation of the GNSS Regulation and of the GSA Regulation has shown good results in the light of the general evaluation criteria and specific requirements for the European GNSS programmes. The Galileo and EGNOS programmes have achieved all the milestones that were set for the period concerned and progress is being made towards delivering on all the programme implementation objectives set for 2020.

Market uptake: over the evaluation period, the market uptake of Galileo and EGNOS has progressed well. The European GNSS industry has grown and accounted for 25% of the global GNSS market in 2015.

The vast majority of new navigation chipsets include the processing of Galileo signals and are gradually integrated in user receivers in various market segments. All new products of the two largest smartphone manufacturers include Galileo-compatible chipsets.

As for EGNOS, major socio-economic benefits have already been produced especially in three industrial domains with the largest market penetration: aviation, agriculture and surveying.

**System deployment and services**: the Galileo programme has achieved its key objective set out for the evaluation period. The system was **declared operational** and is providing initial services since December 2016, namely an initial open service (OS), search and rescue support service (SAR) and public regulated service (PRS).

The **space segment** of Galileo was enhanced with 14 additional satellites launched in the evaluation period. In November 2016, for the first time ever, four Galileo satellites were launched together on an Ariane-5 rocket.

EGNOS now provides the highest quality guided approach services available today to airline and aerodrome operators, with an increase in flight and landing safety, and benefits related to the optimisation of fuel consumption. More than **230 airports in 20 countries** are using EGNOS landing approach procedures at the end of 2016.

**Budget:** for the period 2014-2020, the European Union allocated a total budget of **EUR 7 071.73 million** for the Galileo and EGNOS programmes. This envelope covers programme management activities, Galileo deployment and exploitation activities, EGNOS exploitation activities and risks associated with these activities. As of end 2016, the Galileo and EGNOS programmes are **on track to respect the budget boundaries** set by the GNSS Regulation for the period 2014-2020. The Commission monitors the budget closely to ensure its stays within the limit.

**GSA:** over the period 2014-2016, the Agency has been efficient overall in terms of smooth running, working methods and use of resources. Between 2014 and 2016 with the increasing responsibilities entrusted to the GSA, the total budget managed by the Agency has grown by 85.9%, and the GSA staff has increased by 22.1%.

**Next steps**: looking to the future, the Commission aims to provide a **long-term vision for the programmes**, allowing businesses and users to reap the benefits of the European satellite navigation systems. In this context, the Commission will strive for **greater synergies between space and defence programmes**, in line with the recently adopted Space Strategy for Europe and Defence Action Plan.

The European market for users of Galileo and EGNOS will expand. Also, the traditional GNSS market will be complemented with the field of Internet of Things, smart cities and Big Data. **The next years will be crucial** for consolidating the achievements and preparing the evolution of the programmes.