



## PRESS RELEASE

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# The GSA Unveils the 1<sup>st</sup> GNSS User Technology Report

***Today the European GNSS Agency (GSA) unveils its first GNSS User Technology Report - designed to help users understand today's receiver technology and the trends transforming the GNSS landscape.***

Written with contributions from leading GNSS receiver and chipset manufacturers, the *GSA GNSS User Technology Report* is as a valuable tool to support planning and decision-making in developing, purchasing and using GNSS user technology.

“Now more than ever, GNSS user technology is experiencing a rapid and exciting evolution, answering the needs of ubiquity, automation and secure positioning,” said Carlo des Dorides, GSA Executive Director. “This pioneering report explores these new developments in detail and examines how they will bring continuous location service, reliability and robustness to users.”

### **What's next for satellite navigation?**

GNSS technology has advanced quickly – both on the side of global constellations and user receivers. With this development, EGNOS and Galileo are becoming standard features of GNSS receivers, providing enhanced performance to users across the globe. Even with the increased deployment of other positioning technologies, thanks to its widespread and cost-effective source of location information, GNSS will remain at the core of all positioning technology.

“With changing user needs, in terms of expected positioning performance, the appearance of new and modernised GNSS signals, and advances in semiconductor technologies, we felt the need to take a closer look at the impact these changes will have on users and the role of GNSS in future positioning solutions,” added des Dorides.

### **Another Market Intelligence Resource from the GSA**

This is the Agency's first foray into GNSS User Technology analysis, following up from its popular *GNSS Market Report* series. The *GSA GNSS User Technology Report* zeros in on state-of-the-art GNSS receiver technology and analyses trends to change the GNSS landscape.

The Report examines GNSS user technology related to most GNSS applications, grouped into

#### For more information:

Donna Reay  
Head of Communication  
European GNSS Agency (GSA)  
donna.reay@gsa.europa.eu

Tel. +32 2 298 52 10  
Mobile: +32 498 98 52 10  
[www.gsa.europa.eu](http://www.gsa.europa.eu)[www.gsa.europa.eu](http://www.gsa.europa.eu)



three macrosegments: 1) mass market solutions 2) transport safety and liability-critical solutions, and 3) high precision, timing and asset management solutions. It also gives a general overview of the latest GNSS receiver technology common to all application areas, along with a supplement on location technologies that examines the present and future of GNSS in the positioning landscape.

**The Report can be downloaded free here:**

[https://www.gsa.europa.eu/system/files/reports/gnss\\_user\\_technology\\_report\\_webb.pdf](https://www.gsa.europa.eu/system/files/reports/gnss_user_technology_report_webb.pdf)

## GNSS User Technology Report

### Highlights

- Nearly 65% of all chipsets and modules currently on the market support multiple constellations.
- Within the next few years it is expected that 100% of all new devices will be multi-constellation capable.
- The leaders in multi-constellation capability are mass market receivers and high accuracy professional receivers, with nearly 30% already capable of using the four available global constellations.
- Receivers targeting such safety-critical applications as aviation must wait for new technologies to be proven and new standards or regulations to become available prior to implementing them.
- In terms of supported frequencies, 30% of all receivers implement more than one frequency, mostly in high precision.
- With the increasing demand for better resilience across all applications, the need for higher accuracy and integrity that automation demands, adoption of dual frequency solutions (E1/L1 + E5/L5) is expected to grow.
- In the mass market, the chipset supply chain is extremely consolidated, with a few players worldwide driving innovation.
- For liability and safety critical transport solutions, a consolidated industry with an important European presence dominates innovation in automotive, maritime and aviation, while new players are expected to emerge in such new applications as autonomous vehicles.
- In high precision, timing and asset management, the suppliers are specialised in various professional fields, although their products are based on a relatively low number of GNSS chipsets.

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Head of Communication  
European GNSS Agency (GSA)  
donna.reay@gsa.europa.eu

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## **Background**

The GNSS User Technology Report uses the GSA's internal Technology Monitoring process (TMP).

It complements the market monitoring and forecasting process, and its objective is the monitoring of trends and developments in the GNSS supply industry. It supports the GSA in the definition of the best strategy towards Galileo market adoption, provision of updated statistics on Galileo penetration in user terminals and chipsets, and analysing Galileo positioning among other GNSS and location technologies.

Part of the process is to keep up-to-date independent analysis, which assesses the capabilities of receivers, chipsets and modules currently available on the market. For the analysis, each device is weighted equally, regardless of whether it is a chipset or a receiver, and no matter what its sales volume is. The results should therefore be interpreted not as the split of constellations utilised by end users, but rather the split of constellations available in manufacturers' offerings.

The analysis includes all major receiver manufacturers in Europe and worldwide: Avidyne, Broadcom, CSR, Esterline, Furuno, Garmin, Hemisphere GNSS, Honeywell, Infineon, Intel, Japan Radio Co., John Deere, Kongsberg, Leica Geosystems AG, Mediatek, NavCom Technology, Nottingham Scientific Ltd, NovAtel, Omnicom, Orolia, Qualcomm, Rockwell Collins, Septentrio, SkyTraq Technology, STMicroelectronics, Texas Instruments, Thales Avionics, Topcon, Trimble, U-blox, Universal Aviation.

Search and Rescue, defence and public utilities receivers, chipsets and modules are not part of the analysis.

The information contained within the Report is a compilation of in-house knowledge, scientific papers, receiver and other user technology manufacturer's websites and, if needed, verified by consultation with experts in the relevant domain

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