

## UN agencies call for GNSS interference protection

The International Civil Aviation Organization (ICAO), International Telecommunication Union (ITU) and International Maritime Organization (IMO) have issued a statement expressing “grave concern” over spoofing and jamming of the GNSS.

The three UN bodies have urged member states to act to “urgently enhance the protection” of GNSS operating in the frequency bands allocated to the Radio Navigation Satellite Service (RNSS).

This comes in the wake of increasing incidents of interference with aviation, maritime and other satellite telecommunications services.

“Global Navigation Satellite Systems are critical to our safety on land, at sea and in the air,” said ITU Secretary-General Doreen Bogdan-Martin.

“Member States should ensure the uninterrupted operation of these systems for everyone’s safety and the resilience of essential services that our lives depend on.”

Read more in *Spatial Source* article. [https://www.spatialsource.com.au/un-agencies-call-for-gnss-interference-protection/?utm\\_campaign=SS%20-%20Overall%20Publication%20-%20Master&utm\\_medium=email&hsenc=p2ANqtz-9a3TfdIKh5w6qB7P\\_XclMILbN2\\_VY9jylbczCYOJiaotPE\\_mBHUP5TkAeGOZ4tkXzOvynA\\_8G09\\_-8l4eBDtH9cXOzdA&hsmi=353591783&utm\\_content=353591783&utm\\_source=hs\\_email](https://www.spatialsource.com.au/un-agencies-call-for-gnss-interference-protection/?utm_campaign=SS%20-%20Overall%20Publication%20-%20Master&utm_medium=email&hsenc=p2ANqtz-9a3TfdIKh5w6qB7P_XclMILbN2_VY9jylbczCYOJiaotPE_mBHUP5TkAeGOZ4tkXzOvynA_8G09_-8l4eBDtH9cXOzdA&hsmi=353591783&utm_content=353591783&utm_source=hs_email)  
2025-03-26



## Iridium STL: Protecting PNT as Part of a Layered Approach

There’s a growing awareness of the threats spoofing and jamming pose to GNSS, and what would happen if the system so many rely on went down. People from

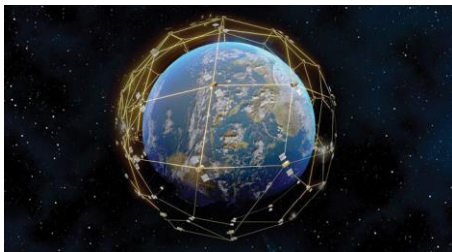
outside the industry want complementary solutions designed to enhance GNSS resiliency and protect critical infrastructure, driving the push to create a more layered approach.

The industry is working to develop solutions that help mitigate ever-evolving threats, with manufacturers creating and testing complementary PNT (CPNT) solutions that can backup GNSS. Some, like Iridium Satellite Time and Location (STL), are already making a difference today.

Michael O'Connor co-founded Satelles, the company behind STL, more than a decade ago to address society's overreliance on GNSS, an impressive, accomplished system but one that is susceptible to degradation, interference and cyberattacks. STL was developed to provide a separate service that's impervious to the types of attacks GNSS is vulnerable to. Last year, longtime partner Iridium acquired Satelles, with the plan to drive adoption in markets Satelles already had a strong presence in, like the wireless industry and data centres, and to expand the STL service into core Iridium markets like maritime and aviation.

Read more in *Inside GNSS* article. <https://insidegnss.com/iridium-stl-protecting-pnt-as-part-of-a-layered-approach/>

2025-03-25



## Space Force Presses on with R-GPS Constellation

The U.S. Space Force is concerned about the resiliency of the Global Positioning System (GPS) and has moved out on a plan to address it, although it's unclear if the money will be there in the coming years to achieve all the service's goals.

The service, created in 2019 during the first Trump Administration, is worried that existing GPS satellites are too prone to interference and jamming.

It has proposed Resilient GPS, or R-GPS, an additional network of smaller, cheaper navigation satellites to augment the existing network of 31 GPS satellites. This addition to the network is estimated to cost \$1 billion over the next five years for up to 20 small satellites.

So far, some lawmakers in Congress have not been convinced that more GPS satellites are the answer. In April 2024, the Secretary of the Air Force, the parent department of Space Force, received approval from the deputy secretary of Defense to immediately repurpose \$40 million of fiscal year 2023 defense appropriations to start R-GPS, which previously had been known as GPS-Lite.

Read more in *Inside GNSS* article. <https://insidegnss.com/space-forces-presses-on-with-r-gps-constellation/>

2025-03-20



## Turning Over a New Leaf at the 17th European Space Conference

Against a rapidly changing geopolitical backdrop, security and defence, competitiveness and resilience, and new innovations like LEO PNT dominated talks at this year's conference in Brussels.

This will be the first full year of President Ursula von der Leyen's second European Commission (EC). Speaking at the 17th European Space Conference in Brussels, EC Director for Satellite Navigation and Earth Observation Christoph Kautz talked about what the reassembled assembly could mean for EU space: "The new Commission just began its term on 1 December 2024, and, looking at von der

Leyen’s program, the main overarching elements appear to be competitiveness and resilience, and of course these two aspects will be reflected in all the programs of the EU. Our GNSS flagships, Galileo and EGNOS, will not be exceptions.”

Competitiveness and resilience notwithstanding, the topics of security and defence seemed to cause the greater stir, playing front and centre throughout the European Space Conference. It’s been a recurring refrain for several years now, certainly since the most recent invasion of Ukraine by Russia. Now, we see combined the ongoing horror on Europe’s eastern border with the accession of a new yet strangely familiar, and, for some, almost equally horrifying U.S. administration to the west, and Europe finds itself sorely pressed to answer the call—if not to war itself, at least to proper self-defence.

Read more in *Inside GNSS* article. <https://insidegnss.com/turning-over-a-new-leaf-at-the-17th-european-space-conference/>

2025-03-26



### **GMV to support the advancement of the Galileo Reference Centre**

The European Union Agency for the Space Programme (EUSPA) has awarded GMV a framework contract to advance the Galileo Reference Centre (GRC), a key facility for monitoring and evaluating the performance of the Galileo satellite navigation system. Located in Noordwijk, the Netherlands, the GRC independently assesses Galileo’s operations, signal quality, and user-level service performance and compares its performance with that of other GNSS.

The upcoming GRC V2 version will introduce real-time monitoring capabilities, enhancing EUSPA’s ability to oversee GNSS services.

Read more in *GPS World* article. <https://www.gpsworld.com/gmv-to-support-the-advancement-of-the-galileo-reference->

[centre/?utm\\_source=Navigate%21+Weekly+News&utm\\_medium=Newsletter&utm\\_campaign=NCMCD250312002&oly\\_enc\\_id=1784A2382467C6V](https://www.gpsworld.com/xona-space-systems-trimble-to-deliver-advanced-navigation-services/?utm_source=Navigate%21+Weekly+News&utm_medium=Newsletter&utm_campaign=NCMCD250312002&oly_enc_id=1784A2382467C6V)

2025-03-18



## **Xona Space Systems, Trimble to deliver advanced navigation services**

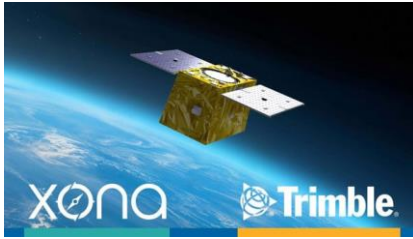
[Xona Space Systems](#) and Trimble have collaborated to integrate Trimble correction services with Xona's PULSAR high-performance navigation service.

Initial satellite launches are expected in late 2026 with service starting in 2027 through the PULSAR satellite network, enabling secure, high-precision positioning for applications ranging from geospatial to low-power mass mobile and IoT. In support of this new and developing collaboration, Xona has received an investment from [Trimble Ventures](#).

Xona PULSAR, powered by Xona's planned network of small satellites in low-Earth orbit (LEO), is being developed to deliver robust and secure high-precision positioning and navigation services directly to current GNSS hardware. The PULSAR service, which will include high precision correction services through this collaboration, has the potential to provide scalable, cost-effective solutions for industries with demanding positioning and navigation requirements, such as civil construction, surveying and mapping, and automotive and IoT applications. Xona's signals are also expected to enable operations inside low-rise buildings, as well as improve resistance to jamming and interference compared to current GNSS capabilities.

Read more in *GPS World* article. [https://www.gpsworld.com/xona-space-systems-trimble-to-deliver-advanced-navigation-services/?utm\\_source=Navigate%21+Weekly+News&utm\\_medium=Newsletter&utm\\_campaign=NCMCD250312002&oly\\_enc\\_id=1784A2382467C6V](https://www.gpsworld.com/xona-space-systems-trimble-to-deliver-advanced-navigation-services/?utm_source=Navigate%21+Weekly+News&utm_medium=Newsletter&utm_campaign=NCMCD250312002&oly_enc_id=1784A2382467C6V)

2025-03-14



## **Moon navigation system advances with Thales Alenia Space leading orbital segment**

Thales Alenia Space, a joint venture between Thales (67%) and Leonardo (33%), has entered into a contract with Telespazio, itself a joint venture between Leonardo (67%) and Thales (33%), to handle the design and development of the orbital segment for the European Space Agency's Moonlight Lunar Communications and Navigation Services (LCNS) initiative.

Spearheaded by ESA and led by Telespazio, the Moonlight program aims to establish a network of satellites orbiting the Moon to deliver state-of-the-art communication and navigation capabilities. This infrastructure will enable autonomous lunar landings, support surface mobility operations, and allow fast, reliable data exchange between the Moon and Earth. The system is critical for sustaining a long-term human presence on the Moon, while also improving mission efficiency and reducing costs.

Read more in *this* article...

[https://www.spacedaily.com/reports/Moon\\_navigation\\_system\\_advances\\_with\\_Thales\\_Alenea\\_Space\\_leading\\_orbital\\_segment\\_999.html](https://www.spacedaily.com/reports/Moon_navigation_system_advances_with_Thales_Alenea_Space_leading_orbital_segment_999.html)

2025-03-18



## **FCC to meet on GPS alternatives**

Federal Communications Commission (FCC) Chair, Brendan Carr announced [in a March 5 blog post](#) that the commission would be addressing GPS alternatives along with Next Generation 911 issues at its next meeting.

Pledging that “...public safety and national security will be top priorities for us at the FCC” along with quick action on related issues, Chairman Carr said the commission’s March 2025 open meeting will start “... with an inquiry that explores alternatives to GPS.”

Describing GPS as indispensable but not infallible, Carr’s post showed a substantial appreciation of PNT and GPS alternative issues as well as much of the related policy history.

It also cites President Trump, Senator Cruz, and Senator Markey as advocating action to “... ensure we have a resilient system in place.”

In 2020, President Trump issued [Executive Order 13905 on “Strengthening National Resilience Through Responsible Use of Positioning, Navigation, and Timing Services.”](#) Designed to stimulate adoption of open market commercial solutions, it does not seem to have made the nation’s PNT substantially more resilient in the intervening five years.

Read more in *GPS World* article. [https://www.gpsworld.com/fcc-to-meet-on-gps-alternatives/?utm\\_source=Navigate%21+Weekly+News&utm\\_medium=Newsletter&utm\\_campaign=NCMCD250305003&oly\\_enc\\_id=1784A2382467C6V](https://www.gpsworld.com/fcc-to-meet-on-gps-alternatives/?utm_source=Navigate%21+Weekly+News&utm_medium=Newsletter&utm_campaign=NCMCD250305003&oly_enc_id=1784A2382467C6V)

2025-03-07



### **Jammertest returns to Norway for fourth consecutive year**

For the fourth consecutive year, [Jammertest](#) will take place in Bleik on Andøya, Norway, with [applications now open until March 15, 2025](#). This event serves as a critical platform for industry and equipment manufacturers to test their systems against jamming and spoofing attacks, identify vulnerabilities and develop more resilient solutions. It attracts participants from diverse sectors, including the global automotive and security industries, telecommunications, academia and government authorities.

The event's importance is underscored by the growing reliance of civilian services on satellite communications. Essential societal functions — such as transportation, emergency services, electronic communication, financial systems, and power supply — depend on accurate satellite-based positioning and timing. However, incidents of signal interference have highlighted vulnerabilities. For example, rescue helicopters in Norway have faced landing difficulties due to disrupted signals, and airports have been affected by illegal jammers. Airlines have also reported spoofing activity. According to the Norwegian Communications Authority, GNSS interference is an escalating concern that demands ongoing testing and innovation.

Read more in *GPS World* article. [https://www.gpsworld.com/jammertest-returns-to-norway-for-fourth-consecutive-year/?utm\\_source=Defense+PNT&utm\\_medium=Newsletter&utm\\_campaign=NCMCD250306003&oly\\_enc\\_id=1784A2382467C6V](https://www.gpsworld.com/jammertest-returns-to-norway-for-fourth-consecutive-year/?utm_source=Defense+PNT&utm_medium=Newsletter&utm_campaign=NCMCD250306003&oly_enc_id=1784A2382467C6V)

2025-03-12



## **US Air Force tests alternative PNT systems for GPS-denied environments**

The Air Force Life Cycle Management Center's Positioning, Navigation and Timing (PNT) Program Office, Integrated Solutions for Systems (IS4S) and [AEVEX Aerospace](#) have completed flight tests for the Resilient-Embedded GPS/INS (R-EGI) Modular Open Systems Architecture (MOSA). The tests demonstrated R-EGI's ability to integrate third-party alternative PNT solutions to ensure reliable navigation in GPS-denied environments.

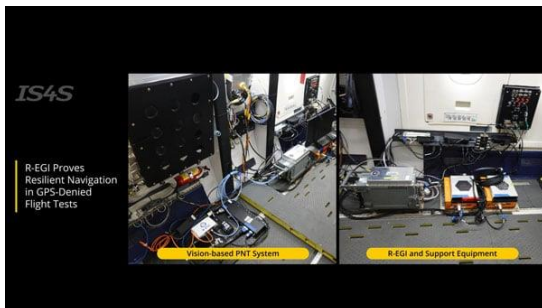
This achievement marks a step forward in developing R-EGI, demonstrating its ability to integrate a "plug & play" third-party alternative PNT capability that ensures reliable navigation in GPS-denied environments.

"This flight test represents a pivotal moment in the evolution of resilient PNT systems," said Jeff Hebert, senior scientist for PNT at the Air Force. "The rapid and

cost-effective integration of third-party PNT solutions into Department of Defense weapons systems is precisely why R-EGI and its open architecture were envisioned.”

Read more in *GPS World* article. [https://www.gpsworld.com/us-air-force-tests-alternative-pnt-systems-for-gps-denied-environments/?utm\\_source=Navigate%21+Weekly+News&utm\\_medium=Newsletter&utm\\_campaign=NCMCD250305003&oly\\_enc\\_id=1784A2382467C6V](https://www.gpsworld.com/us-air-force-tests-alternative-pnt-systems-for-gps-denied-environments/?utm_source=Navigate%21+Weekly+News&utm_medium=Newsletter&utm_campaign=NCMCD250305003&oly_enc_id=1784A2382467C6V)

2025-03-10



## **US Air Force to test Xona LEO GPS alternative**

[The Air Force Research Laboratory](#) awarded Xona Space Systems a contract to demonstrate and refine its commercial positioning, navigation and timing (PNT) solutions for Department of Defense ([DOD](#)) missions. The agreement, facilitated through the Space Technology Advanced Research — Fast-tracking Innovative Software and Hardware (STAR-FISH) program, increases Xona’s total contracted commitments to more than \$20 million.

Under the contract, [Xona](#) will evaluate its PULSAR satellite navigation service across commercial user devices in scenarios where GPS/GNSS signals may be denied or challenged. Testing will focus on assessing resistance to jamming and spoofing, reducing multipath interference and implementing secure key distribution protocols. The initiative aims to expedite the development of advanced alternative PNT capabilities in commercial off-the-shelf equipment, aligning with DOD requirements for rapid deployment.

Read more in *GPS World* article. [https://www.gpsworld.com/us-air-force-to-test-xona-leo-gps-alternative/?utm\\_source=Navigate%21+Weekly+News&utm\\_medium=Newsletter&utm\\_campaign=NCMCD250226002&oly\\_enc\\_id=1784A2382467C6V](https://www.gpsworld.com/us-air-force-to-test-xona-leo-gps-alternative/?utm_source=Navigate%21+Weekly+News&utm_medium=Newsletter&utm_campaign=NCMCD250226002&oly_enc_id=1784A2382467C6V)

2025-02-27



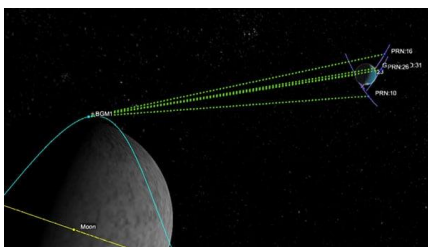
## **LuGRE receiver captures GNSS signals in lunar orbit**

The LuGRE receiver acquired and tracked GPS and Galileo satellite signals in lunar orbit on Feb. 19, operating at 63 Earth radii (approximately 401,814 km from Earth). Developed by Qascom for the Italian Space Agency in collaboration with NASA and supported by Politecnico di Torino, the receiver is integrated into Firefly Aerospace's Blue Ghost 1 lander as part of NASA's Commercial Lunar Payload Services program.

During the lander's lunar transit, LuGRE tracked signals in the L1/E1 and L5/E5 frequency bands. The farthest signal detected came from the Galileo constellation at 67.79 Earth radii (approximately 432,384 km from the receiver). The experiment demonstrated GNSS functionality near the Moon, where the lander orbited approximately 1.66 km/s.

Read more in *GPS World* article. [https://www.gpsworld.com/lugre-receiver-captures-gnss-signals-in-lunar-orbit/?utm\\_source=Navigate%21+Weekly+News&utm\\_medium=Newsletter&utm\\_campaign=NCMCD250219002&oly\\_enc\\_id=1784A2382467C6V](https://www.gpsworld.com/lugre-receiver-captures-gnss-signals-in-lunar-orbit/?utm_source=Navigate%21+Weekly+News&utm_medium=Newsletter&utm_campaign=NCMCD250219002&oly_enc_id=1784A2382467C6V)

2025-02-25



## FrontierSI launches Australia's first PNT Labs

**FrontierSI has announced the launch of what it is calling Australia's first positioning, navigation and timing (PNT) Labs, being a network of facilities for testing and analysing the performance and resilience of PNT technologies.**

The first such lab will be established at the Victorian Goldfields Railway (VGR) in Central Victoria, and will provide a "controlled and consistent real-world environment for PNT testing".

The VGR Lab will use a software-defined radio to introduce controlled radio frequency interference disruptions in order to see how different GNSS hardware and positioning algorithms handle them.

In December 2024, FrontierSI conducted a preliminary trial to assess the suitability of the VGR for the PNT Lab.

The trial involved measuring the track to 1cm accuracy using four high-precision GNSS receivers mounted on two separate rail vehicles.

Read more in *Spatial Source* article. [https://www.spatialsource.com.au/frontiersi-launches-australias-first-pnt-labs/?utm\\_campaign=SS%20-%20Overall%20Publication%20-%20Master&utm\\_medium=email&hsenc=p2ANqtz-9Sy357eoj7fvJFLWMLwn2Pmf29ms6\\_b20CCMjQx1\\_RPsFrGNSBE9M0PxD7X5H1alsCaokNDHpVfWZc9ZfIDWz84uQ&hsmi=348953322&utm\\_content=348953322&utm\\_source=hs\\_email](https://www.spatialsource.com.au/frontiersi-launches-australias-first-pnt-labs/?utm_campaign=SS%20-%20Overall%20Publication%20-%20Master&utm_medium=email&hsenc=p2ANqtz-9Sy357eoj7fvJFLWMLwn2Pmf29ms6_b20CCMjQx1_RPsFrGNSBE9M0PxD7X5H1alsCaokNDHpVfWZc9ZfIDWz84uQ&hsmi=348953322&utm_content=348953322&utm_source=hs_email)

2025-02-26

