Ligado moves forward with lawsuit against DOD

The U.S. Court of Federal Claims has allowed Ligado Networks to proceed with its $39 billion lawsuit against the federal government, marking a significant development in a long-standing dispute over 5G spectrum usage and property rights.

Judge Edward Damich partially favoured Ligado by acknowledging the company's case for property interest in the spectrum allegedly used by the Department of Defense (DOD) while rejecting its claim that the FCC license constituted a property right subject to federal taking.

The controversy stems from the FCC's 2020 decision granting Ligado exclusive authority over spectrum near GPS frequencies, raising concerns about potential interference with GPS systems. Ligado's October 2023 lawsuit accuses the U.S. government of conducting a "multiyear misinformation and disparagement campaign" to conceal its activities and misappropriate Ligado's licensed spectrum for DOD systems without permission or compensation.

Read more in *GPS World* article. https://www.gpsworld.com/ligado-moves-forward-with-lawsuit-against-dod/?utm_source=Navigate%21+Weekly+News&utm_medium=Newsletter&utm_campaign=NCMCD241204004&oly_enc_id=1784A2382467C6V

2024-12-10

EUSPA awards GMV for Galileo Emergency Alert System upgrade

The European Union Agency for the Space Programme (EUSPA) has awarded GMV a framework contract to deliver new Galileo functionalities under the EmeRgency Alerting System (ERAS). This four-year contract, valued at approximately $6 million, will enable significant advancements in Europe's disaster response capabilities. The GMV-led consortium includes Ineco, ALTEN Spain and Kineton as subcontractors.

ERAS will primarily allow Member States' National Civil Protection Authorities to broadcast emergency warning messages directly to populations in at-risk or affected areas. These alerts will be transmitted via Galileo satellites to smartphones and

other Galileo-enabled devices. According to EUSPA, the messages will contain crucial information about the hazard, including its type, severity, affected area, expected onset and duration, as well as guidance for appropriate responses.

The Galileo Emergency Warning Satellite Service (EWSS) and ERAS seek to enhance Galileo by offering resilience and complementarity to existing public warning systems, independence from terrestrial and mobile networks, rapid communication with global reach and particular benefits for remote areas with limited mobile coverage.

Read more in *GPS World* article. https://www.gpsworld.com/euspa-awards-gmv-for-galileo-emergency-alert-system-upgrade/?utm_source=Navigate%21+Weekly+News&utm_medium=Newsletter&utm_campaign=NCMCD241211002&oly_enc_id=1784A2382467C6V

2024-12-16

SWOT sharpens seafloor focus

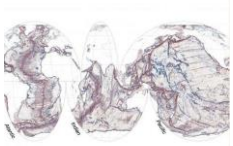
A satellite-mounted instrument has in just one year produced higher-resolution imagery of the global seafloor than that from comparable systems over the past 30 years.

At present, ship-mounted soundings have surveyed about 25% of the seafloor. For the other 75%, the only information comes, indirectly, from satellite altimeters that measure the detailed shape of the sea surface. This shape provides information about the variations in gravity from undersea topography, so altimeter data provide most of the seafloor topography shown in common map programs such as Google Earth.

Yao Yu, a postdoctoral researcher at Scripps Institution of Oceanography at UC San Diego, and colleagues revealed the results produced by the Surface Water and Ocean Topography (SWOT) radar altimeter in a study published Dec. 13 in the journal Science. The team used SWOT data to transform what may have resembled blurry blobs into discernible seamounts, ridges and troughs. They compared SWOT data to 30 years' worth of data from traditional altimetry that only measured in one dimension rather than in the swaths that SWOT measures.

Read more in *article*…

https://www.spacedaily.com/reports/SWOT_sharpens_seafloor_focus_999.html
2024-12-13



Latest GPS satellite launched from Florida

The latest GPS satellite was boosted into orbit from the Cape Canaveral Space Force Station in Florida on Tuesday, 17 December.
GPS III SV07 is now under the control of Lockheed Martin's Denver Launch & Checkout Operations Center until its official acceptance into the operational GPS 31-satellite constellation.

According to its manufacturer, Lockheed Martin, the (GPS) III satellite, was launched on an "accelerated timeline".

The time from Space Force call-up to launch for SV07 was reduced to about three months to demonstrate operational agility for launch of critical national security missions.

Read more in *Spatial Source* article. https://www.spatialsource.com.au/latest-gps-satellite-launched-from-florida/?utm_campaign=SS%20-%20Overall%20Publication%20-%20Master&utm_medium=email&_hsenc=p2ANqtz-_ck92aC_BgeHevNz-VFSkzGd5Rq-eoUpgiZE6J0lCPUQw9adcJdWyaWeLg_AoGCXEjZvbIk2CyXAbrABmyLpWugVkblw&_hsmi=339081353&utm_content=339081353&utm_source=hs_email
2024-12-18

[6 technology trends that drive automotive mapping and navigation]

The automotive navigation of tomorrow is highly connected and capable of dynamically using high-resolution map information and vehicle and environmental data from the cloud. It is an enabler for powerful driver assistance, intelligent e-mobility and autonomous driving. As a global provider of software engineering services for the mobility industry, Intellias is involved in many of these developments.

Although obtaining mapping and navigation data is easier today than it was 10 years ago — thanks to dashcams, UAVs and satellites — collecting this data is still labour-intensive. Even if most corners of the world are already recorded in public and private geographic information systems (GIS), the maps still need to be maintained regularly. Data accuracy and timeliness are the two biggest challenges in the mobility industry, followed by coverage, as the physical world is constantly evolving. To meet these requirements, the evolution of navigation and digital mapping is gathering pace. The following six technology and deployment trends will drive automotive mapping and navigation in the coming years.

Read more in *GPS World* article. https://www.gpsworld.com/6-technology-trends-that-drive-automotive-mapping-and-navigation/?utm_source=Navigate%21+Weekly+News&utm_medium=Newsletter&utm_campaign=NCMCD241204004&oly_enc_id=1784A2382467C6V

2024-12-09

[Australia and India advance resilient PNT]

Skykraft, an Australian space technology company, has signed a participating project partner agreement to advance positioning, navigation and timing (PNT) systems in low-Earth orbit (LEO). This agreement, backed by an International Space Investment (ISI) India Projects grant from the Australian Government, marks a significant milestone in fostering space cooperation between Australia and India.

The project's primary objective is to develop and demonstrate collaborative PNT systems. This includes establishing the viability of large-scale LEO constellations, addressing vulnerabilities in existing GNSS in denied environments, and exploring novel applications for

PNT signals from LEO. Additionally, the project aims to create a comprehensive roadmap for collaborative LEO-PNT by implementing resilient, easily updatable constellations.

Read more in *GPS World* article. https://www.gpsworld.com/australia-and-india-advance-resilient-pnt/?utm_source=Defense+PNT&utm_medium=Newsletter&utm_campaign=NCMCD241205003&oly_enc_id=1784A2382467C6V

2024-12-09

China advances next-generation BeiDou satellite navigation system

China is embarking on the development of its next-generation BeiDou Navigation Satellite System (BDS), designed to provide technologically superior capabilities and enhanced functionalities. This initiative aims to deliver higher-quality services to users worldwide.

The plan includes the launch of three experimental satellites by 2027. Full network deployment is scheduled to commence in 2029, with completion targeted for 2035.

The China Satellite Navigation Office revealed that the upcoming system will offer real-time, highly accurate navigation, positioning, and timing services with precision levels from metres to decimetres. This upgraded system is expected to excel in precision, reliability, seamless accessibility, intelligent functionality, network integration, and adaptive flexibility.

The BeiDou project began in 1994. The initial phases, BDS-1 and BDS-2, were completed in 2000 and 2012, respectively. BDS-3, which became operational on July 31, 2020, elevated China to become the third country with an independent global navigation satellite system. Its hybrid orbital constellation-a blend of medium Earth orbit, geostationary Earth orbit, and inclined geosynchronous orbit satellites-sets it apart as a unique "Chinese solution" among global satellite navigation systems.

Read more in *Space Daily* article.
https://www.spacedaily.com/reports/China_advances_next_generation_BeiDou_satellite_navigation_system_999.html

2024-11-30

[ArkEdge Space selected by JAXA to develop lunar navigation satellite system]

[ArkEdge Space], a Japanese space start-up based in Tokyo, has been selected by the Japan Aerospace Exploration Agency (JAXA) under its Space Strategy Fund to lead the development of advanced lunar navigation technology.

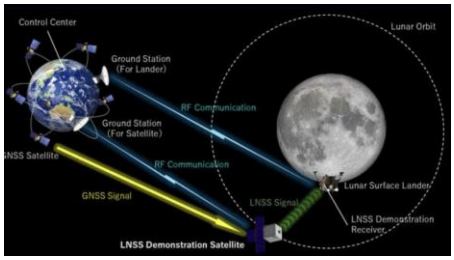
Under the agreement, ArkEdge Space will plan and design the mass production and operation of micro-satellite constellations to lead the development of a next-generation Lunar Navigation Satellite System (LNSS), a vital component to the International “LunaNet” initiative driven by National Aeronautics and Space Administration (NASA), European Space Agency (ESA) and JAXA. LunaNet seeks to establish essential infrastructure to support sustainable lunar exploration and foster the growth of the lunar economy.

This program, supported by up to 5 billion yen ($32.5 million) over four years, tasks ArkEdge Space with developing a 100kg class micro-satellite, developing crucial technology including the:

1. Lunar navigation payload
2. Demonstration satellite platform, along with a system operations plan
3. Establishment of an approach to mission evaluation

Read more in *GPS World* article. [https://www.gpsworld.com/arkedge-space-selected-by-jaxa-to-develop-lunar-navigation-satellite-system/?utm_source=Navigate%21+Weekly+News&utm_medium=Newsletter&utm_campaign=NCMCD241127002&oly_enc_id=1784A2382467C6V]

2024-12-03



Lockheed Martin challenges narrative on GPS vulnerability

Lockheed Martin is challenging the prevailing narrative that military users of the Global Positioning System (GPS) are dangerously vulnerable to service disruptions

and is emphasising the advanced security features set to debut with the upcoming GPS IIIF satellites.

GPS has become a critical infrastructure that touches nearly every aspect of modern life and military operations. While GPS is widely viewed as an indispensable backbone of the global economy, it is simultaneously seen as a fragile technological system vulnerable to sophisticated electronic warfare techniques and signal disruption.

Jesse Morehouse, Lockheed Martin's director of business development and strategy for positioning navigation and timing, said this narrative overlooks security upgrades and technological innovations being developed to enhance GPS.

Read more in *Space News* article. https://spacenews.com/lockheed-martin-challenges-narrative-on-gps-vulnerability/

2024-12-03

Clocks, eLoran, quantum and best practices – UK PNT forging ahead

Saying the government must focus on "delivering an operational resilient positioning, navigation and timing (PNT) system for the UK as soon as we can," the British Science Minister, Lord Patrick Vallance, announced several initiatives in his opening remarks to the Royal Institute of Navigation's UK PNT Leadership Seminar on Nov. 20.

Among them was a funding increase for the National Physical Laboratory's National Time Centre (NTC) project, from £30 million to £62.7 million, and a plan to have NTC and the first of the nation's new eLoran towers at initial operating capability by January of 2027.

Plans for all efforts beyond next year were necessarily caveated with "subject to spending review."

Read more in *GPS World* article. https://www.gpsworld.com/clocks-eloran-quantum-and-best-practices-uk-pnt-forging-ahead/?utm_source=Navigate%21+Weekly+News&utm_medium=Newsletter&utm_campaign=NCMCD241120002&oly_enc_id=1784A2382467C6V

2024-11-26

Working Papers: Upgrading Galileo

Europe's Galileo navigation system has taken a significant leap forward with the completion of a major upgrade to its Galileo Ground Segment. As one of the most complex ground segments ever developed in Europe, the challenge lay in seamlessly upgrading a system that serves more than four billion users globally—without disrupting service.

The result is an enhanced infrastructure that drives Galileo toward full operational capability while securing Europe's position as a leader in satellite navigation.

On March 11 at 13:39 UTC, Galileo satellites started transmitting the first navigation message from the newly upgraded Ground Segment System Build 2.0 (SB 2.0). This landmark event heralded several critical improvements that not only enhanced current operations but also laid the groundwork for future Galileo architectures, such as the upcoming Galileo Second Generation's.

Read more in *Inside GNSS* article. https://insidegnss.com/working-papers-upgrading-galileo/

2024-11-21

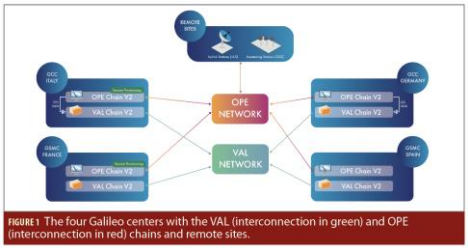


FIGURE 1 The four Galileo centers with the VAL (interconnection in green) and OPE (interconnection in red) chains and remote sites.

NTS-3: Expanding Concepts of Operations in a Contested World

Set to launch in late 2024, the NTS-3 satellite system developed by L3Harris together with the Air Force Research Lab (AFRL) is the Department of Defense's first experimental, integrated navigation satellite system in 50 years.

In 2019, the Department of the Air Force designated NTS-3 as one of three initial Vanguard programs to innovate solutions to the unique 21st century threats to GPS

availability and reliability. After several years of delays, NTS-3, developed by L3Harris, is nearing its launch date aboard the ULA Vulcan Centaur rocket. While experimental in nature, the capabilities around resilient PNT that NTS-3 will be testing are mission critical to maintaining navigation signal integrity and reliability in contested environments where GPS is constantly jammed or degraded. NTS-3 is intended to demonstrate the value of multilayer resiliency and prove critical technologies engineered to counter and mitigate the threat posed by the denial and degradation of PNT.

Read more in *Inside GNSS* article. https://insidegnss.com/nts-3-expanding-concepts-of-operations-in-a-contested-world/

2024-11-26