L3Harris Contracted For GPS III Follow-on Payloads

L3Harris Technologies has received contracts totalling US$137 million for four navigation payload Mission Data Units (MDU) for future GPS III Follow-On (GPS IIIF) satellites.

Lockheed Martin, the prime contractor for GPS III/IIIF, selected L3Harris in 2018 to design and build the first two fully-digital MDUs, the heart of the satellite's navigation payload. The MDU generates more powerful GPS signals and assures clock operations for GPS users, L3Harris said.

"The digital MDU is flexible enough to adapt to advances in GPS technology and future changes in mission needs," said Ed Zoiss, president, Space and Airborne Systems, L3Harris. "The new MDU will also support a smooth transition for the U.S. Space Force's GPS OCX ground control segment."

Read more in *GPS World* article. https://www.gpsworld.com/l3harris-contracted-for-gps-iii-follow-on-payloads/?utm_source=Navigate%21+Weekly+GNSS+News&utm_medium=Newsletter&utm_campaign=NCMCD210217002&oly_enc_id=1784A2382467C6V

2021-02-23

Vodafone Tests Remote Centimetre-level Tracking Tech

Vodafone has successfully used new precision positioning technology to remotely track a vehicle to within 10 centimetres of its location, an improvement of more than three meters compared to its current system.

Vodafone is working in partnership with Sapcorda, using Vodafone's global internet of things (IoT) platform, which has 118 million connections worldwide.

Vodafone expects the technology to enable applications that warn autonomous trucks of obstacles, tell first responders the position of critical medical drones, and give operators the precisely location of important cargo.

Pinpoint accuracy is critical to the acceptance and mass adoption of autonomous vehicles on the road and in factories, airports, dockyards and any site where machines are in motion. A matter of centimetres can be crucial to ensuring the safety of passengers on a driverless bus, or knowing the precise location of a medical drone.

Read more in *GPS World* article. https://www.gpsworld.com/vodafone-tests-remote-centimeter-level-tracking-tech/?utm_source=Navigate%21+Weekly+GNSS+News&utm_medium=Newsletter&utm_campaign=NCMCD210217002&oly_enc_id=1784A2382467C6V

2021-02-16

Galileo Elliptical Auxiliary Satellites Removed from Service

Two Galileo satellites launched in 2014 by a Soyuz rocket into erroneous orbits, which had been briefly set healthy late last year, have now been removed from service. The change stems from the discovery that, while the vast majority of users obtained an improved

positioning, some commercial receivers had difficulty with the satellites' highly elliptical orbits, created by the malfunction in the Russian launch vehicle.

The European GNSS Agency (GSA) issued a Service Notice to Galileo Users (SNGU) on February 16:

"On 30 November 2020, flags were removed from GSAT0201 and GSAT0202 satellites, making these satellites available for positioning as auxiliary satellites. Following the removal of these flags, the Galileo Programme set up an observation period to collect user feedback and experience with the use of these satellites."

Read more in *Inside GNSS* article. https://insidegnss.com/galileo-elliptical-auxiliary-satellites-removed-from-service/
2021-02-23

Ordnance Survey Launches OS Maps For Australia

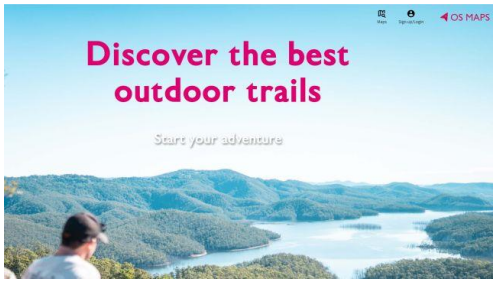
OS is looking to expand on the success of OS Maps by transporting its award-winning app over 14,000 kilometres away to Australian soil.

OSMaps.com shares the same look, feel and functionality as its British counterpart, and will provide a similar service for the whole of Australia.
The app utilises cutting-edge technology, including 3D mapping, and includes accurate and detailed mapping data from state governments across Australia. In addition, the new app contains ready-made routes provided by a range of partners including New South Wales National Parks and Wildlife Service.

Read more in *Spatial Source* article. https://www.spatialsource.com.au/gpsnav/ordnance-survey-launches-os-maps-for-

australia?utm_medium=email&utm_campaign=SS%20Newsletter%20240221&utm_content=SS%20Newsletter%20240221+CID_398d57d45cee51ba00b7e2b1ed18c55c&utm_source=Campaign%20Monitor&utm_term=READ%20MORE

2021-02-23



GPS Coalition Asks White House to Fix Ligado/5G Chaos

The GPS Innovation Alliance(GPSIA) sent a letter on Feb. 16 to the White House National Economic Council, asking it solve the issues with Ligado interfering with GPS spectrum.

“Strong and unified leadership by the U.S. government is needed to preserve and advance GPS – leadership that recognizes the inherently unique functional and technical attributes of GPS,” wrote J. David Grossman, GPSIA executive director, in the letter.

The coalition, which counts Garmin, Apple and John Deere among its members, was ensnared in the dispute between Trump executive branch agencies and the Federal Communications Commission (FCC) over whether the commission’s Ligado approval decision in 2020 would affect GPS.

In the letter to NEC Director Brian Deese, the group argues that these squabbles “are not unique to GPS” and “reflect a continued pattern by which shared decision-making is replaced by the FCC acting with exclusive authority as the final arbiter.”

Read more in *GPS World* article. https://www.gpsworld.com/gps-coalition-asks-white-house-to-fix-ligado-5g-chaos/

2021-02-16

Tests Begin of Galileo's OSNMA Signal Authentication Service

In a first for any satellite navigation system, Galileo has achieved the first position fix based on navigation signals carrying authenticated data, according to the European Space Agency.

Galileo's Open Service Navigation Message Authentication (OSNMA) is intended as a way to combat malicious spoofing of satnav signals.

OSNMA receivers successfully calculated an OSNMA-protected position fix after Galileo satellites started transmitting authentication data at 15:28 UTC on Nov. 18, 2020. The first tests used eight Galileo satellites for around two hours on Nov. 18. Tests have continued ever since, for intermittent periods, and will continue over the next months ahead of a public observation phase.

Read more in *GPS World* article. https://www.gpsworld.com/tests-begin-of-galileos-osnma-signal-authentication-service/?utm_source=Navigate%21+Weekly+GNSS+News&utm_medium=Newsletter&utm_campaign=NCMCD210210003&oly_enc_id=1784A2382467C6V

2021-02-11

Griffith Park Hikers, Listen Up: ‘Ellen Reid Soundwalk’ is a GPS-enabled Musical Map

A dirt trail leading up to the Griffith Park Observatory is alive with sound this afternoon. There’s the steady crunch of sneakers on gravel, the whipping wind in the trees; there’s a toddler’s distant squealing mixed with intermittent trilling from sparrows. Then there’s the orchestra.

Composer and sound artist Ellen Reid has scored this trail carefully, geocoding her original music to exact locations in the park, where visitors can access it on an app. The soundtrack to this particular spot on the Fern Dell Trail is soothing and gentle, with viola and cello strings leading the way along a shady, forested patch. Farther up, on the East Observatory Trail, a jazzy drum solo kicks in, punctuating each switchback with a thump-ding-and-wire-brush swoosh, heightening anticipation around every corner.

The immersive journey is “Ellen Reid Soundwalk,” a free public art project blending music, nature and technology.

Read more in *article*…

https://www.latimes.com/entertainment-arts/story/2021-02-18/ellen-reid-soundwalk-griffith-park-music-map

2021-02-18

ION Names 2021 Executive Committee, Council and Standing Committee Chairs

The Institute of Navigation (ION) has announced the new members of its Executive Committee, Council and Standing Committee Chairs following its Annual Awards during the ION International Technical Meeting and Precise Time and Time Interval Systems and Applications Meeting, both held virtually

Jan. 25-28. The ION Executive Committee, Council and Standing Committee Chairs will serve a two-year term.

"ION has a distinguished and passionate group of positioning, navigation and timing professionals in key positions to advance the goals of the organization." said Lisa Beaty, executive director at ION.

Read more in *GPS World* article. https://www.gpsworld.com/ion-names-2021-executive-committee-council-and-standing-committee-chairs/?utm_source=Navigate%21+Weekly+GNSS+News&utm_medium=Newsletter&utm_campaign=NCMCD210203002&oly_enc_id=1784A2382467C6V

2021-02-02

Trimble Partners with Roborace for its Autonomous Racing Series

Trimble has partnered with Roborace, an autonomous racing series with electric-powered vehicles. As part of the alliance, Roborace will use Trimble's Applanix POS LVX GNSS-inertial systems in its next-generation autonomous race cars for season one of the championship, which begins in September 2021.

As part of the technology and marketing alliance, Trimble will serve as the Official GNSS-Inertial Positioning Technology Partner and enable Roborace's engineering team to leverage Trimble resources such as technology, services and expertise that it provides across a wide variety of industries and applications, Roborace said. Trimble also will utilise Roborace's media platform in its global marketing initiatives.

Read more in *GPS World* article. https://www.gpsworld.com/trimble-partners-with-roborace-for-its-autonomous-racing-series/?utm_source=Navigate%21+Weekly+GNSS+News&utm_medium=Newsletter&utm_campaign=NCMCD210203002&oly_enc_id=1784A2382467C6V

2021-02-08

Expert Perspective on the DoT's "Complementary PNT and GPS Backup Technologies Demonstration Report"

The U.S. Department of Transportation's (DoT's) "Complementary PNT and GPS Backup Technologies Demonstration Report" released this January has some excellent data on the relative performances of various systems in timing and positioning. Figures 130 and 131 of the report rank the systems on "performance sensitive" and "cost sensitive" bases respectively and have received a lot of attention. While I don't disagree with the general assessments, there is considerable hazard in applying them blindly to select a national strategy.

Firstly, there were several technologies not demonstrated, most notably 4G and 5G NR, both of which have significant (and demonstrated) timing and positioning capabilities independent of GNSS. A second major hazard lies in deployed availability. Until and unless a technology is fully deployed over the coverage area, you will have holes in coverage. The market will play a major role in deciding what will actually be available. A third consideration is domain applicability. The report partially addresses this in having diverse test environments — indoor/outdoor; stationary/moving; etc. but it does not make an assessment as to whether the technology is applicable for a given class of user.

Read more in *Inside GNSS* article. https://insidegnss.com/expert-perspective-on-the-dots-complementary-pnt-and-gps-backup-technologies-demonstration-report/
2021-02-03

Royal Institute of Navigation, European Navigation Conferences on GNSS, PNT Co-locate Virtually in November

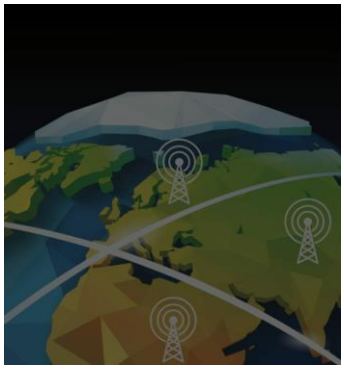
The European Navigation Conference and the Royal Institute of Navigation's (RIN's) International Navigation Conference are one and the same in 2021. They convene jointly and virtually as Navigation 2021, from November 15 to 18. The themes of Navigation 2021 bring together diverse disciplines to stimulate insights and knowledge sharing towards a more navigable world:

- PNT Systems & Technology
- Navigation In The Space Environment And Space Segment Developments
- Robust & Resilient PNT
- Applications of PNT
- Animal And Human Navigation
- PNT In Society

Participants come from across government, academia, industry and all PNT sectors. The Call for Papers is now open via rin.org.uk/Navigation2021.

Read more in *Inside GNSS* article. https://insidegnss.com/the-european-navigation-conference-and-the-royal-institute-of-navigations-rins-international-navigation-conference-are-one-and-the-same-in-2021-they-convene-jointly-and-virtually/

2021-01-28



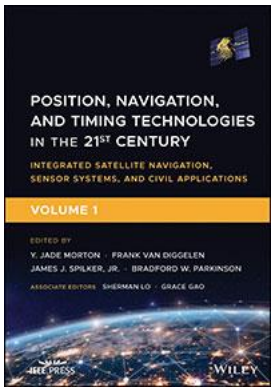
New 2-book Set Explores 21st-century PNT

After more than five years of hard work by 131 authors from 18 countries, the new book set *Position, Navigation, and Timing Technologies in the 21st Century*(PNT21) is finally ready to meet readers.

Published by Wiley-IEEE Press, PNT21 offers a uniquely comprehensive coverage of the latest developments in the field of PNT by world-renowned experts. The two-volume set contains 64 chapters organised into six parts.

Read more in *GPS World* article. https://www.gpsworld.com/new-2-book-set-explores-21st-century-pnt/?utm_source=Navigate%21+Weekly+GNSS+News&utm_medium=Newsletter&utm_campaign=NCMCD210127003&oly_enc_id=1784A2382467C6V

2021-02-01



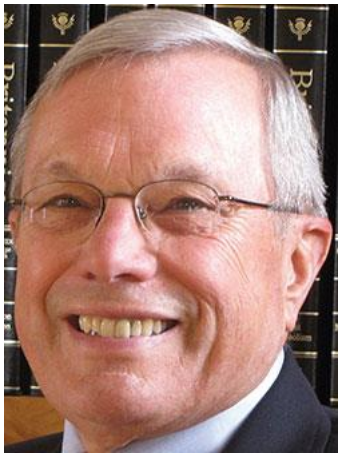
Brad Parkinson Offers 5 Ways to Protect, Improve PNT

We asked Brad Parkinson, the “Father of GPS” and a *GPS World* Editorial Advisory Board member, what the new U.S. administration’s priorities should be to make positioning, navigation and timing (PNT) more resilient.

- Protect the Spectrum.
- Protect the rapidly evaporating and self-proclaimed Gold Standard of GPS.
- Allow and encourage export of the basic and quickest fix to jamming and spoofing for high-value PNT users.
- Move the military focus from alternative PNT techniques to seriously upgrading their receivers and useful signals.
- Take government actions to rapidly identify, shut down, and prosecute GPS jammers.

Read more in *GPS World* article. https://www.gpsworld.com/brad-parkinson-offers-5-ways-to-protect-improve-pnt/?utm_source=Navigate%21+Weekly+GNSS+News&utm_medium=Newsletter&utm_campaign=NCMCD210127003&oly_enc_id=1784A2382467C6V

2021-02-01



ION Announces 2020 Annual Awards Winners

The Institute of Navigation (ION) presented its Annual Awards during the ION International Technical Meeting and Precise Time and Time Interval Systems and Applications Meeting, both held virtually Jan. 25-28. The ION Annual Awards Program recognises individuals making significant contributions or demonstrating outstanding performance relating to the art and science of navigation.

Read more in *GPS World* article. https://www.gpsworld.com/ion-announces-2020-annual-awards-winners/?utm_source=Navigate%21+Weekly+GNSS+News&utm_medium=Newsletter&utm_campaign=NCMCD210127003&oly_enc_id=1784A2382467C6V

2021-01-28


ION
INSTITUTE OF NAVIGATION