ISRO Offers Free Online GNSS Course for Students, Pros

The Indian Space Research Organisation (ISRO) is conducting a free online course on GNSS for students and professionals Sept. 13-24.

The course is the 87th outreach program conducted by the Indian Institute of Remote Sensing (IIRS), an ISRO division. The GNSS course provides an introduction to GPS and GNSS, receivers, processing methods, errors and accuracy.

Learn more at the website.

Read more in *GPS World* article. https://www.gpsworld.com/isro-offers-free-online-gnss-course-for-students-pros/?utm_source=Navigate%21+Weekly+GNSS+News&utm_medium=Newsletter&utm_campaign=NCMCD210818002&oly_enc_id=1784A2382467C6V

2021-08-18

Precise Positioning is Unleashing Innovation

When you're building a robot to traverse difficult terrains and negotiate traffic there's not a lot of room for error. That was the challenge facing NxtGen Industries, a Sydney-based start-up that builds robots which move autonomously to monitor and maintain assets such as buildings or industrial infrastructure, in both rural and urban environments. Managing director, Daniel Messina, has positioned his service to span the gap between the robotics and industrial sectors using precise positioning technology.

Businesses across Australia are now able to draw on centimetre-accurate location data to guide autonomous vehicles as they inspect mines, make deliveries, travel across farms or operate in busy city environments. At the heart of this is the National Positioning Infrastructure Capability (NPIC) component of Geoscience Australia's Positioning Australia program.

The Australian Government initiative is improving the accuracy of location data to three to five centimetres for industry users in areas of mobile or internet coverage. This is being done by expanding, upgrading and standardising hundreds of Global Navigation Satellite Systems (GNSS) reference stations across Australia and its territories.

Read more in *Spatial Source* article. https://www.spatialsource.com.au/gpsnav/precise-positioning-is-unleashing-innovation?utm_medium=email&utm_campaign=SS%20Newsletter%2018082021&utm_content=SS%20Newsletter%2018082021+CID_3787f6ad4cfd45776b2b19aa61b6a404&utm_source=Campaign%20Monitor&utm_term=READ%20MORE

2021-08-16

Waymo's Autonomous Vehicles Have Clocked 20 Million Miles on Public Roads

Although other companies that are working on autonomous driving might get more attention, Waymo is still hard at work on the technology. The Alphabet subsidiary just provided an update on its Waymo Driver AI as well as more details about its self-driving tests.

An array of LiDAR, radar and cameras can track what's going on all around the vehicle in a variety of weather conditions, Waymo says. The system generates a 3D view of the vehicle's surroundings that humans would be able to understand. Along with other cars, the system can render pedestrians in addition to cyclists who narrowly pass by the vehicle.

The company says Waymo Driver can detect small objects and movements at a distance, such as a truck door in the middle of traffic and someone jumping out to deliver a package. It claims the AI can recognise steam emanating from utility holes and drive the vehicle through it, and understand the difference between a stop sign and its reflection. Waymo has been testing its vehicles in San Francisco since 2009 and it ramped up its efforts in the city earlier this year.

Read more in *article*…
https://www.engadget.com/waymo-autonomous-vehicles-update-san-francisco-193934150.html
2021-08-19

Galileo G2 Navigation Payloads Begin Testing

Testing on Galileo's second-generation hardware has begun.

Test versions of the satellites' navigation payloads is undergoing evaluation by Airbus Defence and Space at its Ottobrunn facility in Germany and by Thales Alenia Space at the ESTEC technical centre in the Netherlands of the European Space Agency (ESA).

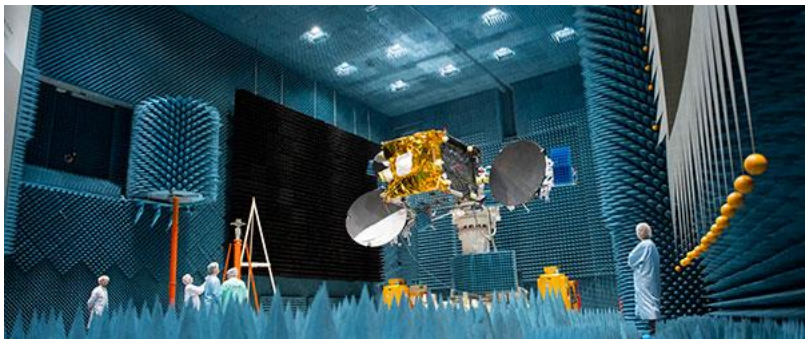
Known as the Galileo Payload Testbeds (GPLTBs), these are development models of the navigation payloads intended for the Galileo Second Generation (G2)

satellites. The navigation antennas of the testbed payloads are being testing to check whether they meet the ambitious performance levels set for the G2 satellites.

Instead of being assembled from space-ready components like an actual satellite payload, the GPLTBs are built from electronic parts placed in test racks, with a proof-of-concept version of a navigation antenna attached.

Read more in *GPS World* article. https://www.gpsworld.com/galileo-g2-navigation-payloads-begin-testing/?utm_source=Navigate%21+Weekly+GNSS+News&utm_medium=Newsletter&utm_campaign=NCMCD210804002&oly_enc_id=1784A2382467C6V

2021-08-06



India Seeks Global Adoption Of Its NavIC System

A new draft policy in India seeks to foster global use of its Indian NavIC satellite navigation system. The draft Indian Satellite Navigation Policy 2021 (SATNAV Policy 2021) is part of reforms of the Indian Space Research Organisation (ISRO)/Department of Space (DoS).

“ISRO/DOS shall work towards expanding the coverage from regional to global to ensure availability of [the] NavIC standalone signal in any part of the world without relying on other GNSS and aid in wide utilisation of [the] Indian navigation system across the globe,” states the policy document.

DoS will push NavIC for global use to meet demand for positioning, navigation and timing in commercial, strategic and societal applications. It aims to ensure the continuous availability of free-to-air navigation signals for civilian uses, while providing secured navigation signals for strategic uses.

Read more in *Spatial Source* article. https://www.gpsworld.com/india-seeks-global-adoption-of-its-navic-system/?utm_source=Navigate%21+Weekly+GNSS+News&utm_medium=Newsletter&utm_campaign=NCMCD210804002&oly_enc_id=1784A2382467C6V

2021-08-05

China Pushes Homegrown GPS For Connected Cars

China is encouraging carmakers to adopt the domestically developed Beidou satellite navigation system in their automated vehicles and other connected cars, apparently to steer them away from the U.S. government's GPS.

The advice comes in a new Ministry of Industry and Information Technology notice that calls on carmakers to strengthen data management. They should use a reliable satellite positioning system, the notice says, recommending Beidou for this purpose.

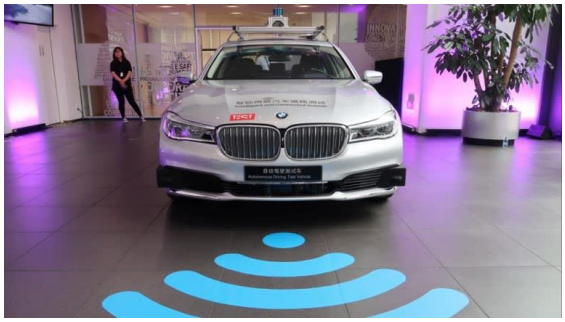
But because Beidou, which was completed in 2020, has met with only a lukewarm reception, many believe that this has stopped short of a mandate. GPS is widely used in China, particularly by foreign automakers.

The Chinese authorities are urging a broad range of industries to adopt Beidou, touting it as being more accurate than GPS thanks to a larger satellite network. But some businesses are hesitant because Beidou is "not user-friendly," in the words of a local internet company executive. The government now apparently wants to get the ball rolling with the auto industry.

Read more in *article*…

https://asia.nikkei.com/Business/Technology/China-pushes-homegrown-GPS-for-connected-cars

2021-08-13



Making Sense of Correction Services Options

Real-time corrections were developed to increase the accuracy of Global Navigation Satellite Systems (GNSS) from tens of metres down to something that could deliver highly accurate measurements. There are some applications where sub-metre accuracy is sufficient and, in those cases, a regional Satellite-Based Augmentation System (SBAS) GNSS solution can suffice. However, for surveying applications, these positioning methods are not accurate enough.

The first GNSS survey technique relied on post-processing, which involved a lengthy workflow that included pre-planning, data collection, and post-processing back in the office to complete the job. In addition to office time and field personnel investment, this workflow didn't give surveyors the capabilities to do design stake-out.

Introduced in the mid-1990s, single base station Real-Time Kinematic (RTK) delivered a real-time GNSS correction method allowing surveyors to obtain high-accuracy positioning while surveying. This reduced the time required in the field and in the office when compared to post-processing. Traditional RTK requires a base station on site and a precise, time consuming setup. Originally, RTK relied heavily on line-of-sight radio connectivity and its accuracy is dependent on the distance to the base station, tethering the user to a limited area.

Read more in *GIM International* article. https://www.gim-international.com/content/article/making-sense-of-correction-services-options?utm_source=newsletter&utm_medium=email&utm_campaign=Newsletter+%7C+GIM+%7C+12-08-21&sid=46052

2021-08-12

Modern Civilization Would Be Lost Without GPS

Aircraft, cars, trucks, trains and ships rely on GPS for location data, while GPS timing signals underpin cellular communications and financial transactions.

A 2019 report sponsored by the National Institute of Standards and Technology estimated the loss of GPS would cost the U.S. economy $1 billion a day, or $1.5 billion if the technology failed in the April-May planting season for farmers. Two years later, the costs could be even higher with the sharp rise in consumer solutions and location-based rideshare and delivery services.

“Positioning, navigation and timing signals are important to so many stakeholders and for so many different applications that a disruption in these signals would likely be more economically significant today,” Alan O’Connor, senior economist and director of innovation economics at RTI International, the nonprofit research institute that prepared the 2019 report, said by email.

Read more in *article*…

https://spacenews.com/modern-civilization-would-be-lost-without-gps/?fbclid=IwAR3bjRghJc-QZuzZW_h1qWs3YnyOKME1lR1F-yvL52Z3eUyB-faYxZLxKCE

2021-08-03

NTS-3 Mission Progresses Toward Launch in 2023

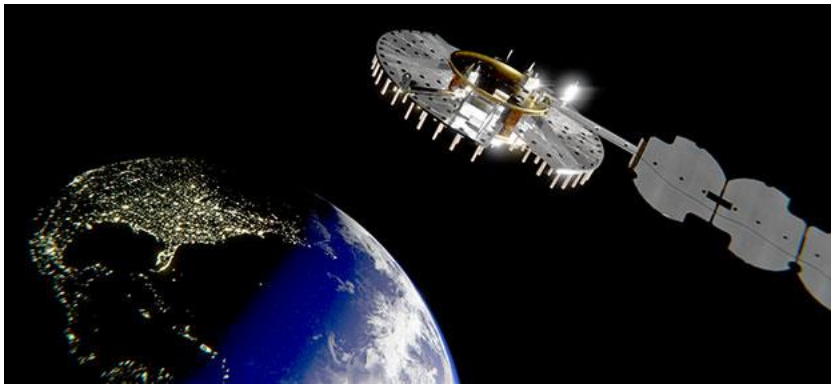
The Navigation Technology Satellite-3 (NTS-3) program is making major strides in developing a new navigation spacecraft for in-space demonstration. The NTS-3 is scheduled to launch to geosynchronous orbit from Cape Canaveral in 2023. This summer, Northrop Grumman Corp. delivered the ESPAStar-D spacecraft bus to L3Harris Technologies of Palm Bay, Florida.

“The transfer of the bus allows L3Harris to move forward building the NTS-3 spacecraft,” said 2nd Lt. Charles Schramka, the program’s deputy principal investigator. “L3Harris will perform tests and begin integrating the NTS-3 PNT payload onto the bus. Together the bus and payload will form the NTS-3 spacecraft.”

Following L3Harris’s work, the Air Force Research Laboratory (AFRL) will test the bus with the NTS-3 ground control and user equipment segments, and will perform its own integrated testing on the overall NTS-3 system architecture.

Read more in *GPS World* article. https://www.gpsworld.com/nts-3-mission-progresses-toward-launch-in-2023/?utm_source=Navigate%21+Weekly+GNSS+News&utm_medium=Newsletter&utm_campaign=NCMCD210728003&oly_enc_id=1784A2382467C6V

2021-07-30



Latest Galileo Performance Reports For Q1 Of 2021 Are Out

The European Union Agency for the Space Programme (EUSPA), published the performance reports about the Galileo Open Service (OS) and the Search and Rescue Service (SAR) for the first quarter of 2021.

The OS is the free of charge service provided by Galileo. It will work side by side with the Open Service Navigation Message Authentication (OSNMA), which has recently been tested, to provide accurate and resilient positioning and timing to the user.
The SAR represents the European contribution to the Medium Earth Orbit Search and Rescue system (MEOSAR). Galileo satellites are able to forward signals from emergency beacons carried by planes, ships, or people, to the rescue operators so they can be aware of the location of an accident.
Both services showed excellent results in all the different areas of interest, consistently above the Minimum Performance Levels defined in the OS-Service Definition Document and the SAR-Service Definition.
Read more in *article*…

https://gnss.asia/new/galileo-performance-reports-q12021/

2021-07-19

Malcolm Turnbull Joins Advanced Navigation Board

Former prime minister Malcolm Turnbull has been appointed director on the board of Advanced Navigation, as the company looks to accelerate its expansion across global markets.

“Advanced Navigation demonstrates how innovative Australian science and engineering can develop world’s best autonomous navigation technology, so important as adversaries increasingly challenge wireless connectivity,” said Turnbull.

“I know from my direct experience how our friends and allies trust Australian technology and look forward to helping the team accelerate the global deployment and adoption of the Advanced Navigation’s products.”

“We’re very pleased to welcome Malcolm Turnbull to the Advanced Navigation board” said Chris Shaw, CEO of Advanced Navigation.

“As we continue to expand our business into more markets Mr Turnbull’s perspective gained from his extensive and impressive career will be a guiding hand for our future endeavours”.

Advanced Navigation began in Sydney in 2012 when engineers Xavier Orr and Chris Shaw commercialised their thesis research into AI neural network-based inertial navigation.

Read more in *Spatial Source* article. https://www.spatialsource.com.au/company-industry/malcolm-turnbull-joins-advanced-navigation-board?utm_medium=email&utm_campaign=SS%20Newsletter%2004082021&utm_content=SS%20Newsletter%2004082021+CID_fa83102caa8d48040878820c21ba1a21&utm_source=Campaign%20Monitor&utm_term=READ%20MORE

https://www.spatialsource.com.au/space/2-1m-for-sydney-based-national-space-industry-hub?utm_medium=email&utm_campaign=SS%20Newsletter%2004082021&utm_content=SS%20Newsletter%2004082021+CID_fa83102caa8d48040878820c21ba1a21&utm_source=Campaign%20Monitor&utm_term=21m%20for%20Sydney-based%20National%20Space%20Industry%20Hub

2021-08-03

Commerce Secretary Joins Fight Against GPS Jamming

Commerce Secretary Gina Raimondo has pledged her support to prevent Ligado Networks from occupying radio spectrum that more than a dozen government departments say could jam delicate GPS and other space-based signals. As we reported, the FCC last April approved Ligado's bid to use a narrow slice of spectrum adjacent to the space bands for high-capacity 5G cellular networks. The cell signals are millions of times more powerful than the GPS signals and the industries that depend on the timing messages from space are unanimous in their opposition.

Read more in *article*…

https://www.avweb.com/aviation-news/commerce-secretary-joins-fight-against-gps-jamming/

2021-07-28