

## Second Lockheed Martin GPS III Satellite Declared “Available for Launch” by US Air Force

As the first Lockheed Martin-built GPS III satellite prepares to ship to the launch pad, the U.S. Air Force has declared that the second GPS III satellite is complete, fully tested and ready to launch.

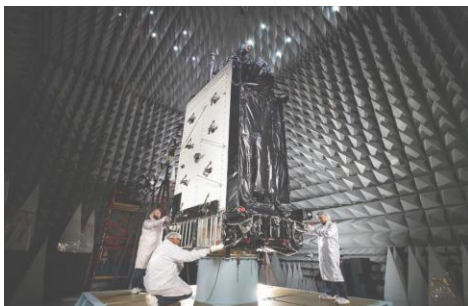
The Air Force’s “Available for Launch” declaration is the final acceptance of Lockheed Martin’s second GPS III Space Vehicle (GPS III SV02) – declaring it technically sound and ready to launch. GPS III SV02 will bring new capabilities to U.S. and allied military forces, and a new civil signal that will improve future connectivity worldwide for commercial and civilian users.

GPS III SV02 now awaits official call up for launch in Lockheed Martin’s GPS III Processing Facility clean room in Denver. In June, the Air Force officially called up its [first GPS III satellite](#) for launch.

“The first GPS III satellite, GPS III SV01, was declared [‘Available for Launch’ in September 2017](#). It is now being prepared for shipment to Cape Canaveral, Florida for a launch before the end of the year,” said Johnathon Caldwell, Lockheed Martin’s program manager for Navigation Systems. “With two GPS III satellites now ready for launch, and the third GPS III expected to be ready by early next year, we’re building strong momentum. These satellites will soon begin modernising the current GPS constellation with new capabilities and more advanced technology.”

Read more in *Inside GNSS* article. <http://insidegnss.com/second-lockheed-martin-gps-iii-satellite-declared-available-for-launch-by-us-air-force/>

2018-08-21



## UAVs: Quantifying Industry Users' Needs

FrontierSI have released a comprehensive report that highlights the gaps in understanding between UAV data providers and the needs of the geospatial industry in creating data products that meet project requirements.

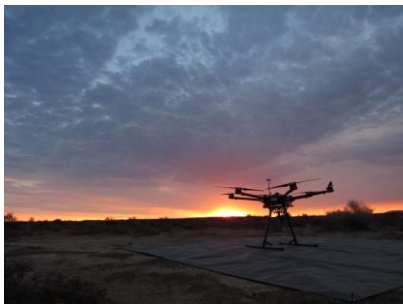
Based on extensive research and a survey of over 135 responses from 80 organisations, FrontierSI's 'UAV data acquisition in Australia and New Zealand user needs' report identifies the user needs of nearly 60 distinct applications across 12 industry sectors — and describes the individual technical requirements of these in detail.

Seeking to tackle the ongoing issue of low data quality provided by some data providers and resulting costs and project setbacks for users, the researchers found clear deficiencies in established and documented standards for UAV-borne data capture, and widely varying quality assurance processes.

Read more in *Spatial Source* article.

<https://www.spatialsource.com.au/unmanned/uavs-quantifying-the-spatial-industrys-needs>

2018-08-14



## Final Defense Authorization Act Supports GPS Spending, Cuts Back-Up

The John S. McCain National Defense Authorization Act (NDAA) for Fiscal Year 2019 (HR 5515) approves spending of \$716 billion of which \$1.46 billion will go to the GPS program. The NDAA authorises nearly the entire White House request for GPS though it cuts \$18 million from the GPS III F budget because, according to the conference report, there was “insufficient justification” for the money.

Signed into law on August 10, the final language also cut a provision mandating a back-up for GPS-provided timing. The House bill originally included the fiscal year 2019 (FY19) authorisation language for the U.S. Coast Guard. The National Timing Resilience and Security Act of 2018 was attached to the Coast Guard bill, which was seen as relatively uncontroversial and likely to pass. Under the Act the Secretary of Transportation would establish a resilient and reliable alternative timing system — given that money was appropriated for it. The system had to be wireless, terrestrial and able to penetrate underground and inside buildings — all characteristics of the widely supported, and repeatedly delayed, eLoran system.

Read more in *Inside GNSS* article. <http://insidegnss.com/final-defense-authorization-act-supports-gps-spending-cuts-back-up/>

2018-08-15



## How GPS and Location Played a Big Role in FIFA World Cup 2018

Arriving a bit late to the party, soccer's governing bodies have finally recognised the importance of technology in contrast with many other team sports. Both on and off the pitch, the FIFA World Cup in Russia saw technology — GPS and location in particular — making a huge impact. While [goal-line technology](#), which has at its heart precise positioning, hit the headlines in the championship, use of wearables, player positional data and metrics for tactical analysis are some of the others that made news.

GPS-based wearables have been a common sight in practice sessions for some time now, but it was not allowed in competitive sports till very recently, including the previous World Cup in Brazil. It was only in February 2015, the International [Football Association](#) Board approved the use of electronic tracking in official fixtures, just in time for that year's Women's World Cup in Canada.

Read more in *Geospatial World* article. <https://www.geospatialworld.net/article/how-gps-and-location-played-a-big-role-in-fifa-world-cup-2018/>

2018-08-13



## China Issues National Standards for the Testing of Autonomous Vehicles

China has deployed a set of national standards for testing smart autonomous cars on roads, which is expected to accelerate the technology's development.

Approximately 12 regional governments have previously issued their guidelines on the road testing of autonomous vehicles, with the first released in Beijing in December 2017, however this is the first set at a national level.

Local standards vary from region to region, posing barriers for companies that would like to conduct tests in different places. A set of national standards solves this problem, said the [China Industry Innovation Alliance for the Intelligent and Connected Vehicles](#) (CAICV).

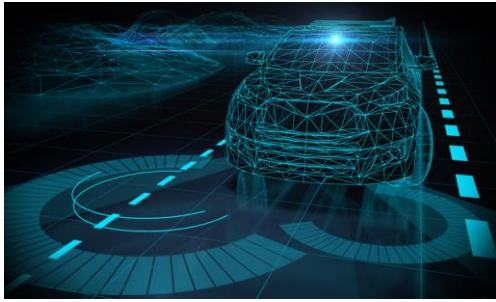
The alliance, together with several other industry associations, was commissioned by the Ministry of Industry and Information Technology to accumulate the standards.

With safety as the overriding rule, the set of standards covers vehicle tests in 34 traffic situations, such as slowing down after detecting speed limit signs and stopping when pedestrians are identified ahead.

Read more in...

<https://www.intelligenttransport.com/transport-news/70487/autonomous-technology-regulations-china/>

2018-08-14



## Start-up Company Launches New Lidar Scanner Design

Start-up company Baraja has combined wavelength-tuneable laser with prism-like optics for a new Lidar designed system (Spectrum Scan) that eliminates any moving parts making the device more durable, especially for autonomous vehicles.

Baraja have stated that their application of prism-like optics improves scalability, reliability and performance issues associated with designs that rely on physically rotating lasers or moving mirrors to scan an environment, and that vibration and shock in vehicular applications causes traditional mechanisms to fail over time, a limitation that their design addresses.

“After spending years in stealth, iterating behind closed doors with OEMs and other high-profile pioneers in the autonomous vehicle space, we are confident that we have built a high performance Lidar system, one that addresses many of the challenges facing the autonomous vehicle industry.” said Cibby Pulikkaseril, Baraja co-founder and CTO.

Read more in *Geomatics World* article. <https://www.geomatics-world.co.uk/content/news/start-up-company-launches-new-lidar-scanner-design>

2018-08-01



## Pentagon Bars Troops from Using GPS-Tracking Devices While Deployed

The Pentagon announced Monday 6 August that U.S. military personnel are no longer allowed to use "geolocation capabilities" on personal or government devices, such as iPhones and fitness-tracking devices, during operational deployments and at the discretion of commanders any other time.

"The rapidly evolving market of devices, applications, and services with geolocation capabilities presents a significant risk to the Department of Defense personnel on and off duty, and to our military operations globally," according to an Aug. 3 memo from Patrick Shanahan, the deputy secretary of defense.

Geolocation capabilities can expose personal information, locations, routines, and numbers of Defense Department personnel, and "potentially create unintended security consequences and increased risk to the joint force and mission," the memo states.

Read more in...

<https://www.military.com/daily-news/2018/08/06/pentagon-bars-troops-using-gps-tracking-devices-while-deployed.html>

2018-08-06



## **‘Mission Impossible – Fallout’ Includes Helicopter Stunts with NovAtel Onboard**

A NovAtel GNSS antenna guided Tom Cruise as he performed stunt helicopter dives for his latest movie, "Mission: Impossible – Fallout."

A LinkedIn post from the company suggests theatre-goers "Keep an eye on the scene where Tom Cruise flies a helicopter through a narrow canyon to catch our Compact GNSS Antenna in action!"

Above is a behind-the-scenes video that shows how Airbus helped Cruise, an actor known for doing many of his own stunts, learn to fly a helicopter and navigate a treacherous dive sequence (with the aid of the NovAtel receiver).

Read more in *GPS World* article. [http://gpsworld.com/mission-impossible-fallout-includes-helicopter-stunts-with-novatel-onboard/?utm\\_source=gps\\_navigate&utm\\_medium=email&utm\\_campaign=gps\\_navigate\\_08072018&eid=376813635&bid=2198958](http://gpsworld.com/mission-impossible-fallout-includes-helicopter-stunts-with-novatel-onboard/?utm_source=gps_navigate&utm_medium=email&utm_campaign=gps_navigate_08072018&eid=376813635&bid=2198958)

2018-07-31





## GPS Experts Vote Unanimously to Oppose Ligado's Newest Proposal

The nation's leading GPS experts voted unanimously Monday 6 August to oppose allowing Ligado Networks to use spectrum neighbouring the GPS band for terrestrial communications. The National Space-Based Positioning, Navigation, and Timing (PNT) Advisory Board urged opposition to the proposal saying that even if the transmissions' power was lowered to just under 10 watts it "will create totally unacceptable interference for a great number of GPS users in the United States."

Ligado Networks declined a request for comment.

Ligado has two bands, licensed now for satellite use, located particularly close to the GPS frequencies. The company and its predecessor LightSquared have been trying since 2010 to convince the Federal Communications Commission (FCC) to allow the frequencies to also be used for terrestrial communications, including for the Internet of things (IoT). To ease opposition from the GPS community and a host of GPS users Ligado pledged not to use the 1545-1555 MHz band for terrestrial applications and said in May it would lower the power in its proposal for the 1526-1536 MHz band to 9.98 dBW to avoid interference with certified aviation receivers.

Read more in *Inside GNSS* article. <http://insidegnss.com/gps-experts-vote-unanimously-to-oppose-ligados-newest-proposal/>

2018-08-06

Using the ABC Degradation Radii - Calculation of minimum Ligado 10W separation for various Classes of GPS receivers

Class of GPS Receiver	Bounding Degradation Radius for Receiver Class with 10W Transmitter (from ABC report - Appendix I)	Minimum Separation Between Ligado 10 Watt Transmitters (Meters)		
		90% Region Protected	50%	10%
High Performance/ High Productivity (HPH)	3400 meters	20,481	8190	6104
Emergency Vehicles and General Navigation (ELN)	1045 meters	6295	2815	2098
General Aviation and Helicopters (GAV)	1040 meters	6265	2802	2088
Timing (TIM)	293 meters	1765	789	588
Cell (CEL)	9.5 meters	57	26	19

We strongly believe 90% is the minimum Area Protection Criterion (maximum 10% degradation)

## Precise Positioning Drives Lane-level Accuracy in Automotive Industry

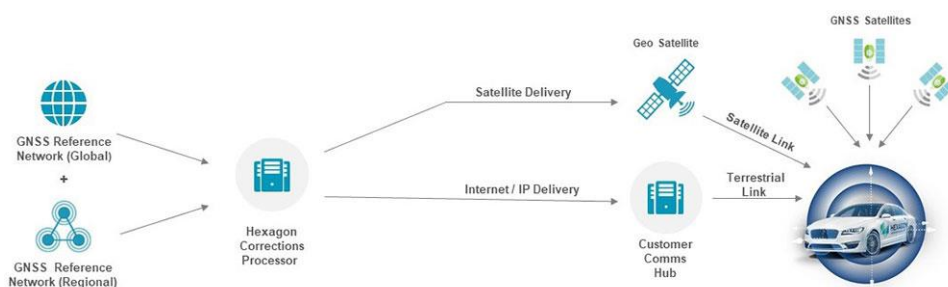
Autonomous technology is reshaping the future of the automotive industry and Hexagon’s Positioning Intelligence Division (Hexagon PI) is developing cutting-edge positioning solutions to support the growth of this rapidly changing industry.

Hexagon PI is working with GNSS chipset manufacturers like STMicroelectronics to deliver automotive-grade, multi-frequency GNSS chipsets that combine our positioning algorithms with automotive-grade GNSS hardware to deliver solutions for connected cars, advanced driver-assistance systems (ADAS) and autonomous driving applications.

In June, Hexagon PI introduced TerraStar X GNSS correction technology, which enables lane-level vehicle positioning in under a minute, using automotive-grade chipsets and the Hexagon PI positioning engine. Built on the company’s latest precise point positioning (PPP) algorithms, TerraStar X leverages existing Hexagon capabilities in ground network infrastructure, correction data generation, and data packaging for delivery.

Read more in *GPS World* article. [http://gpsworld.com/precise-positioning-drives-lane-level-accuracy-in-automotive-industry/?utm\\_source=gps\\_navigate&utm\\_medium=email&utm\\_campaign=gps\\_navigate\\_08072018&eid=376813635&bid=2198958](http://gpsworld.com/precise-positioning-drives-lane-level-accuracy-in-automotive-industry/?utm_source=gps_navigate&utm_medium=email&utm_campaign=gps_navigate_08072018&eid=376813635&bid=2198958)

2018-08-02





## **Safety Testing in Indoor and Challenged Environments**

Consumer information organisations like the Insurance Institute for Highway Safety (IIHS) design test procedures to compare different automobile manufacturers' safety systems. The test equipment must be repeatable and as independent as possible of time of day, weather conditions or test-driver behaviour.

In 2015 IIHS completed a \$30 million expansion of the Vehicle Research Center (VRC), its centre piece a 5-acre fabric-covered track, to allow testing to continue rain or shine. It is complemented by an outdoor track for a total area of 15 acres. To simulate real-life potential crashes for safe, accurate and repeatable testing, the Institute has been researching robotic equipment to automate some of the driving tasks.

While the covered track offered much needed all-weather testing capability, it introduced a challenge for the standard high-accuracy GPS/GNSS equipment used for testing. IIHS operates a multi-frequency GNSS base station with real-time corrections. High-accuracy position, velocity and time (PVT) and other relevant parameters from these GPS units are required for testing and are essential for operating robotic test equipment.

However, tests on the covered track clearly showed the equipment was not delivering the required accuracy, reliability and repeatability: the steel trusses of the covered track roof were a sufficient obstruction to GNSS signals.

Locata provides an RTK GPS-like positioning capability utilizing ground-based transmitters which precisely time-synchronise to one another using their proprietary ranging signals without the need for cables or atomic clocks. This delivers centimetre-level accuracy with very high reliability, in networks of strategically placed, static LocataLites.

Read more in *GPS World* article. [http://gpsworld.com/safety-testing-in-indoor-and-challenged-environments/?utm\\_source=gps\\_navigate&utm\\_medium=email&utm\\_campaign=gps\\_navigate\\_08072018&eid=376813635&bid=2198958](http://gpsworld.com/safety-testing-in-indoor-and-challenged-environments/?utm_source=gps_navigate&utm_medium=email&utm_campaign=gps_navigate_08072018&eid=376813635&bid=2198958)

2018-08-06



## Meet the Man Writing 'Stop Brexit' Across Europe with a Van and GPS Tracker

As a passionate pro-European mourning the potential of Britain's last summer in the EU, Andy Pardy was looking for some kind of project to vent his frustration at Brexit.

The epiphany came as he was running, and staring at the fitness app which tracked his progress on a map. Theoretically one could use such a tracker to map out any shape, or indeed, words.

And it was with that that the 28-year-old did what anybody would do – pack in his job, buy a van and spend the summer driving across 32 European countries in a carefully constructed route to spell out 'Stop Brexit' for anyone tracking his progress.

Read more in...

<https://www.theneweuropean.co.uk/top-stories/meet-the-man-writing-stop-brexit-across-europe-with-a-van-and-gps-tracker-1-5642099>

2018-08-08



## **QZSS Satellites Benefit Western Australia Industries, Study Shows**

Curtin University researchers found the launch of new Japanese satellites has boosted satellite positioning capabilities in Western Australia (WA), offering huge potential benefits across numerous industries including mining, surveying and navigation. New research, published in the journal *GPS Solutions*, found signals from the recently launched Japanese QZSS satellites provide centimetre-level positioning accuracy, and thus significantly enhanced positioning capabilities in WA, thereby improving accuracy, reliability and availability.

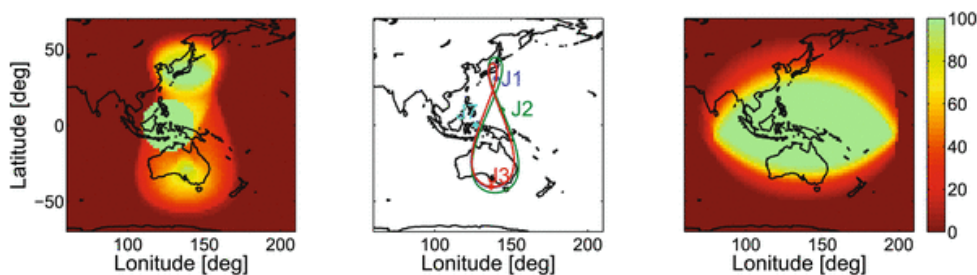
Lead researcher Professor Peter Teunissen, of Curtin's School of Earth and Planetary Sciences, said these results will improve further when the QZSS signals are combined with those from other satellite systems such as the Indian NavIC system. Teunissen said the analyses done by Curtin's GNSS Research Centre

demonstrated the highly accurate centimetre-level positioning capabilities that can now be achieved.

“Such improved positioning, accuracy and reliability would offer great benefits when applied in fields such as open-pit mining, surveying, hydrography, automated navigation, structural health monitoring, and subsidence and tectonic deformation monitoring used in the geospatial industry,” Teunissen said. “The benefits are not only restricted to positioning, but cover the whole range of satellite signal applications, including atmospheric sensing (ionosphere and troposphere) as used for climate change and space weather studies, and numerical weather prediction.”

Read more in *GPS World* article. [http://gpsworld.com/qzss-satellites-benefit-western-australia-industries-study-shows/?utm\\_source=gps\\_navigate&utm\\_medium=email&utm\\_campaign=gps\\_navigate\\_07312018&eid=376813635&bid=2191021](http://gpsworld.com/qzss-satellites-benefit-western-australia-industries-study-shows/?utm_source=gps_navigate&utm_medium=email&utm_campaign=gps_navigate_07312018&eid=376813635&bid=2191021)

2018-07-30



## **The Role of GNSS in Driverless Cars**

Extensive visual map databases are being created that, when coupled with cameras, radars and lidars on the vehicle and processed by artificial intelligence (AI) algorithms, enable the driverless car to be steered much the way humans drive. Pattern recognition processing in the vehicle allows it to “read” street signs and recognise landmarks, registering its position on the map.

This is the way a person drives in his or her home town, where they always know their orientation and don’t need GNSS. The AI processing “brain,” with access to huge map databases, either through local storage or a network connection, will always be in its familiar home environment: continuously knowing its own position and properly oriented for navigation.

So, will GNSS become unnecessary in the car of the future? Probably not.

First, no one method of navigation is foolproof, and today, GNSS is our primary method of navigating our cars. It is a cost-effective, accurate way of determining position in real time,

and with the integration of inertial navigation sensors to handle cases when GNSS is intermittently unavailable, it is improving.

Second, it is not just the car itself that needs to know its location for navigation, but also others outside the car. Ride-sharing apps like Uber and Lyft, car-sharing, usage-based insurance apps, dynamic toll charging, and parking apps all depend on knowing where the car is at all times. GNSS offers sufficient accuracy for all these apps by providing location coordinates. Therefore, a GNSS receiver will most likely remain in the car.

Read more in *GPS World* article. <http://gpsworld.com/the-role-of-gnss-in-driverless-cars/>  
2018-08-01



## **UK Could Develop Independent Satellite System After Leaving EU**

The Guardian has reported that the UK law enforcement and military will continue to access the encrypted signal of the Galileo satellite system post-Brexit.

According to the sources, the EU chief Brexit negotiator is contemplating an offer to the UK that will give London an advantage over the use of the encrypted service compared to other third-party nations.

Radio Sputnik has discussed the EU allowing UK law enforcement agencies and military access to the Galileo satellite system post-Brexit with Professor Sa'id Mosteshar, director of the London Institute of Space Policy and Law.

Read more in *GPS Daily* article.

[http://www.gpsdaily.com/reports/UK\\_could\\_develop\\_independent\\_satellite\\_system\\_after\\_leaving\\_EU\\_999.html](http://www.gpsdaily.com/reports/UK_could_develop_independent_satellite_system_after_leaving_EU_999.html)

2018-08-03

