

2 SOPS Says Goodbye to GPS Satellite

At 25-years old, Global Positioning System Satellite Vehicle Number 27 completed its time in orbit before the 2nd Space Operations Squadron said goodbye via final command and disposal here April 18. SVN 27 was launched in 1992, meaning it performed more than triple its design life of 7.5 years.

“The most interesting thing about this process for me, was the ability to do some experimentation and advance training prior to the disposal,” said 1st Lt. Cameron Smith, 2 SOPS bus subsystem analyst. “Experimentation started in mid-March which consisted of advance training opportunities and vehicle component validation. This was very exciting and new to a lot of people in 2 SOPS.”

Smith explained underperforming satellites, such as SVN 27, are removed from the GPS constellation to make room for satellites with increased capability.

Since GPS satellites do not carry the amount of fuel required for de-orbit manoeuvres, they are instead pushed to a higher orbit, roughly 1,000 kilometres above the operational GPS orbit. During the final contact with the vehicle, the satellite is commanded into the safest, lowest energy state possible. This means all fuel has been depleted from the fuel tanks, the batteries are unable to hold a charge and the vehicle is in a spin-stabilized configuration.

Bus component degradations and navigational issues, among other reasons, usually kill a satellite. Fortunately for SVN 27, there were no major flaws throughout its life span.

<http://www.schriever.af.mil/News/Article-Display/Article/1159940/2-sops-says-goodbye-to-gps-satellite/>

2017-04-21



Huawei Leads The Way With Galileo

Huawei, the world’s third largest smartphone vendor, recently announced that its newest flagship smartphones are Galileo-enabled. This includes the company’s

newly-launched P10 and P10 plus models, as well as its Mate 9, Mate 9 pro and Porsche Design Mate 9 smartphones. The Huawei phones are equipped with Broadcom Limited's Galileo-enabled BCM4774 GNSS chipset.

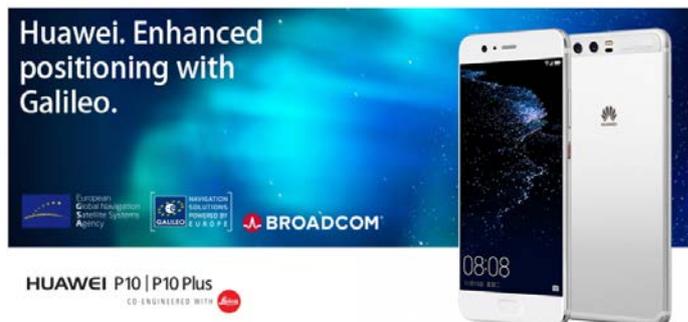
“Our investment in providing people with a better location experience is another example of our commitment to delivering meaningful innovation,” says Huawei Head of Handset Portfolio and Planning, Europe, Arne Herkelmann. “With our Mate 9 and P10 families, all being Galileo-enabled, we ensure our customers have the most connected device no matter where they are.”

“We are excited to see our leading edge GNSS receiver chip, the BCM4774, which supports Galileo, being utilized in flagship smartphones from Huawei,” adds Broadcom Limited Senior Vice President and General Manager of Mobile Connectivity Products Division Michael Hurlston. “With the experience from our early work on BOC-modulated signals and its performance benefit for mass market devices, we anticipate Galileo support will soon become a de facto standard in smartphones and tablets and enrich the end-user experience of location-based services (LBS).”

As the new Huawei phones use the Android Operating System 7.0, called Nougat, application developers also have access to raw GNSS measurements directly from their Huawei phones. This feature opens up the possibility for higher accuracy and the deployment of algorithms traditionally restricted to more advanced GNSS receivers.

<https://www.gsa.europa.eu/newsroom/news/huawei-leads-way-galileo>

2017-04-27



2017 European Satellite Navigation Competition Kicks Off in Brussels

From 1 April to 30 June 2017, the European Satellite Navigation Competition (known as the 'Galileo Masters'), the largest international competition for the innovative use of satellite navigation, will be scouting for outstanding ideas and business models to put on the fast track.

The European Satellite Navigation Competition (ESNC) was launched, along with the Copernicus Masters, the leading innovation platform for commercial Earth

observation applications, at a joint international kick-off event hosted by the Representation of the Free State of Bavaria to the EU in Brussels, on 5 April 2017.

From now until June 30, ESNC will be searching for the most forward-thinking applications based on satellite navigation. The winners, which will be announced at a ceremony as part of the Estonian Space Week in Tallinn, Estonia, in November, will share in this year's prize pool of more than EUR 1 million and will benefit from the ESNC's unparalleled support network, including the ESA Business Incubation Centres and the brand new E-GNSS Accelerator, co-funded by the European Commission.

<https://www.gsa.europa.eu/newsroom/news/2017-european-satellite-navigation-competition-kicks-brussels>

2017-04-21



ABC Assessment Data Shows Wide Impacts to Some GPS Receivers

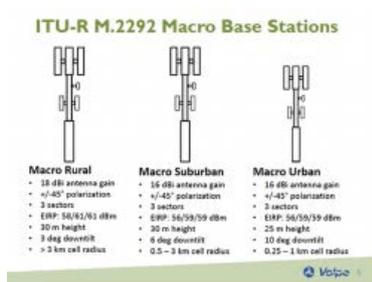
Test results from the long-running Adjacent Band Compatibility (ABC) Assessment show interference from wireless signals in nearby bands could negatively impact GPS receivers kilometres away from Long-Term Evolution (LTE) ground stations and render some more closely located GPS receivers useless.

The Assessment sprang from the controversy surrounding the ground-based wireless network proposed by LightSquared in 2010. Researchers at the Department of Transportation (DoT) have been working to determine a series of interference masks — that is power limits by frequency — for the spectrum stretching 100 megahertz on either side of the GPS L1 signal centred at 1575.42 MHz. The goal is to have a way to estimate interference risk of future proposals before extensive resources are invested.

The yardstick being used to determine when interference occurs is a one-decibel degradation in the carrier-to-noise density ratio (C/N_0). This a practical and internationally [accepted standard](#), explained Capt. Frank Clark of the Air Force's GPS Directorate in a presentation on the subject. LightSquared, which is now named Ligado, objects to using C/N_0 , pushing instead for using changes in position error to determine interference — a standard that favours LTE.

Read more in *Inside GNSS* article. <http://insidegnss.com/node/5442>

2017-04-20



Coming Soon: the 2017 GSA GNSS Market Report

The all-new 2017 GSA GNSS Market Report will be launched in May, and here's a sneak peek at the market intelligence and insight you'll find inside.

When it comes to GNSS market intelligence and insight, the GSA's GNSS Market Report sets the standard. Regularly referenced by policy-makers and business leaders around the world, the publication has earned its reputation as the go-to resource for an in-depth look at GNSS market opportunities and trends across an array of essential market segments.

Since its launch in 2015, the 4th Issue of the GNSS Market Report has been downloaded over 43 000 times. Covering location-based services (LBS), road transportation, aviation, maritime, rail, agriculture, mapping and surveying, and timing and synchronisation, the report served a wide variety of industries, private businesses, institutions and public stakeholders.

In addition to the information on shipments, revenues and installed receiver bases that you have come to expect from the report, this edition has some exciting new features, including:

- an expanded section on such macro-trends as the Internet of Things (IoT), Smart Cities and Big Data, where GNSS has become an essential element;
- segment-specific user perspectives, with an emphasis on the increasingly stringent demands of today's GNSS users;
- the unique added value that EGNOS and Galileo brings to each segment and how, with the recent Declaration of Galileo Initial Services, Galileo is already enhancing the functioning of many applications;
- a special feature on the important role that GNSS plays in the growing market of drones.

<https://www.gsa.europa.eu/newsroom/news/coming-soon-2017-gsa-gnss-market-report>

2017-04-19



Driving Test: Learners Must Be Able To Use Sat Navs

Learner drivers will have to be able to follow directions from a sat nav and drive into a parking space to pass their test. Ministers have announced four changes to the current test which will come into force on 4 December.

Drivers will also be expected to answer vehicle safety questions while on the move and complete 20 minutes of independent driving rather than 10. The RAC Foundation said it would be a "far more realistic assessment".

The Driving and Vehicle Standards Agency (DVSA), which is in charge of running driving tests and approving instructors, said it wanted the test to have "more real life scenarios" such as driving into and reversing out of a parking space. It said it wants the test to reflect the changing behaviours of drivers.

Manoeuvres such as "reverse around a corner" will be replaced in the new test and examiners will test a driver's ability to use a sat nav as an alternative to following road signs. About half of all car drivers now have a sat nav and using them teaches drivers to better manage distractions, the DVSA said.

<http://www.bbc.com/news/uk-39594852>

2017-04-15



Apple Gets the Green Light to Test Self-Driving Cars in California

Much-discussed and sometimes despaired of, there's finally official word that Apple is working on a self-driving car, joining the dozens of other tech and auto companies approved to test autonomous vehicles in California. The Cupertino, Calif.-based tech giant has long been rumored to be working on its own autonomous car as part of an initiative called Project Titan, but has never officially confirmed its plans. Apple was so mum about the project that some thought it may have been shuttered, said Michelle Krebs, executive analyst for Autotrader.

However, on Friday 14 April the company appeared on the state's Department of Motor Vehicle's [list of approved applicants](#) to test autonomous vehicles. That list had already included companies such as Tesla, Google and Uber, along with car makers including BMW, Ford, Honda and Volkswagen.

“For a company that has yet to publicly acknowledge its efforts in this area, this is as close to a tacit admission” as is likely to be given, said Michael Ramsey, a self-driving car analyst with Gartner. “It will be interesting to see what form the test vehicles take and what can be gleaned about Apple's strategy.”

Apple's state vehicle testing permit covers three vehicles, all of them 2015 Lexus RX540h, and six drivers, the California DMV said. Business Insider, MarketWatch and VentureBeat were among the first news outlets to report the development. <https://www.usatoday.com/story/tech/news/2017/04/14/apple-joins-driverless-car-test-applicants/100467124/>

2017-04-14



'Indoor GPS' Apps Closer to Reality With New NIST Challenge

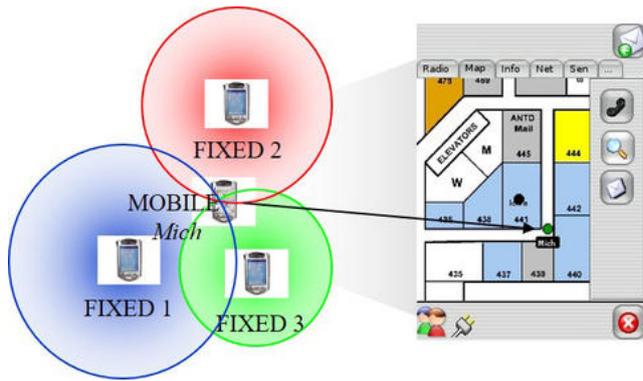
GPS usually works great outdoors, but what if you're disoriented in a large building such as a museum or a mall? There are no smartphone apps for indoor navigation, but new data collected by the National Institute of Standards and Technology (NIST)—and a competition to find the app developers who can make the best use of it—may help solve the problem.

The NIST team walked smartphones along 30 different set courses in four different buildings, including factory, warehouse and subterranean settings. At numerous predetermined locations along each course, the researchers created “timestamps” on all the phones corresponding to the times the person collecting the data was going over test points on the floors, whose locations had been professionally surveyed. The [resulting data](#) is now freely available online to the general public for developing smartphone indoor localization apps.

To encourage their development, NIST is sponsoring a competition called [PerfLoc](#) to generate the best apps from the developer community. Developers have until August 17, 2017, to create computer algorithms that can make sense of the data and to submit their estimates of the smartphones' locations along the courses. The team has developed a methodology to evaluate the algorithms' performance over the internet.

<https://www.nist.gov/news-events/news/2017/04/indoor-gps-apps-closer-reality-new-nist-challenge>

2017-04-07



These Tiny, Cube-Shaped Satellites Are Launching Australia Back Into Space

The first Australian-built satellites in 15 years were launched into space by NASA on Wednesday 19 April, in what researchers hope will be the beginnings of a [renewed space exploration effort](#) by Australia.

It's only the third time that Australian-built satellites have been sent into space, said Andrew Dempster, the director of the Australian Centre for Space Engineering Research (ACSER) at UNSW, which built two of the satellites.

The first satellite was launched back in 1967, followed by one in 2002. "So we've got more hardware in space today than Australia's had in its history," he said.

The three 'cubesats' join a total of 28 satellites which were launched into space aboard a rocket from an air force station in Florida. The tiny 'cubesats' weigh just 1.3kg each, but researchers say they could provide us with groundbreaking information on our weather and communication systems.

Universities across Australia -- including UNSW, University of Sydney, ANU, the University of Adelaide and the University of South Australia -- have joined forces with universities from 22 countries as part of the international space mission, called QB50.

The satellites are currently on their way to the International Space Station. In May, the first 'cubesats' will be launched to around 380km above our planet's surface, where they will take the most extensive measurements ever made of the little-understood thermosphere while drifting into an orbit around Earth.

http://www.huffingtonpost.com.au/2017/04/18/these-tiny-cube-shaped-satellites-are-launching-australia-back_a_22045161/?utm_hp_ref=au-homepage

2017-04-19



GPS Budget Outlook Appears Solid

With two federal budgets in play simultaneously, defense spending increases being proposed from multiple directions and a looming government shutdown it's easy to lose track of where things stand with GPS funding.

The immediate priority for congressional appropriators is to get their 2017 budget bills passed and signed before April 28, the expiration date of the continuing resolution presently keeping federal offices funded and open. The House passed a new Defense budget bill (HR 1301) on March 8 and sent it to the Senate. Though it was not clear as of press time when the Senate would take up the measure, the two houses have been coordinating on the revised bill so it should not be controversial.

"It's essentially the conference report, the conference version of the House and the Senate positions," said Mike Tierney, a senior consultant with Jacques and Associates, a consulting firm that specializes in defense, space/intelligence, homeland security and related industries.

Under that agreement lawmakers fully funded the GPS program — in fact they gave it a boost. The request of \$34.1 million for GPS III satellites procurement was granted in full while GPS III development was bumped up by \$30 million to \$171.9 million.

<http://insidegnss.com/node/5396>

2017-03-30



Galileo Search-And-Rescue Service Officially Launched

The Galileo Search And Rescue (SAR) service, made possible by the Galileo satellite constellation, is now active.

Galileo SAR is Europe's contribution to the COSPAS-SARSAT network, a distress alert detection and information distribution system best known for detecting and locating emergency beacons activated by aircraft, ships and hikers.

By providing COSPAS-SARSAT with the coverage capacity of the Galileo constellation equipped with SAR transponders, Europe is helping to reduce the detection delay of a distress signal from up to several hours to 10 minutes.

A return link, a signal informing the person in distress that the signal has been received and localized, will be added to the system by the end of 2018.

Read more in *GPS World* article. <http://gpsworld.com/galileo-search-and-rescue-service-officially-launched/>

2017-04-06



Study: 51% Of Aussie Men Want A Driverless Car Now (Only 41% For Women)

A poll by research firm Roy Morgan showed that male drivers were most likely to embrace a driver-free drive with 51 per cent agreeing they'd drive in a driverless car

now. However, female respondents were less enthusiastic with 41 per cent agreeing they would. The national average was 46 per cent.

Unsurprisingly, enthusiasm for driverless cars was greatest among the 18-24 year olds, some 83 per cent said they'd happily climb on board. It then diminished over the age brackets – 25-34 (58 per cent), 35-49 (52 per cent), 50-64 (38 per cent) and 65-plus (27 per cent).

Drivers in NSW were most likely to embrace the new technology (49 per cent) and Tasmania least likely (34 per cent).

<http://www.bandt.com.au/technology/study-51-aussie-men-want-driverless-car-now-41-women>

2017-04-07



Driverless Bus Trial To Begin

Curtin University will be the first tertiary institution in Australia to trial a commercial driverless bus when the service launches at the end of this month.

The autonomous bus will be free to ride, seat 11 people, will be entirely electric and will travel up to 45km/h.

Its route will be pre-determined using computer programming and remote sensors, stereo cameras and a global positioning system.

It will run down Brand Road near the Curtin University Bus Station and be able to navigate around temporary obstacles or obstructions on the road.

Curtin University Vice-Chancellor Professor Deborah Terry said the project would be good for research at the university and within the autonomous car industry.

“A wide range of Curtin research groups are looking to the future implementation of robotic and autonomous vehicles,” she said.

<http://www.yourlocalexaminer.com.au/driverless-bus-trial-begin/>
2017-03-30



Is It Time For Backup?

“It’s always been time.” That was the first answer out of the gate, given in Session 3 of the Munich Satellite Navigation Summit last month. Dominic Hayes, Spectrum Management and Policy for Galileo, EGNOS and Copernicus at the European Commission, was prompt off the mark. “GNSS is so good, so easy and so cheap, other means are falling out of use.” Therein lies the peril.

That emotion was seconded by every other speaker on the panel. But of course. Virtually no one in the GNSS community at large, let alone those attending the Munich Summit, thinks otherwise. Thinking and action do not go hand-in-hand, however. GNSS back-up resembles the weather, in that everybody talks about it, yet ... yet ... nothing changes. As long ago as 2015, the U.S. Department of Transportation and the Deputy Secretary of Defense made noises about building an alternative system to GPS in case of disruption, and certainly there were hand gestures aplenty prior to that.

Do we have a back-up, presently? No.

Read more in *GPS World* article. <http://gpsworld.com/is-it-time-for-backup/>
2017-03-27

