

Newmont to Automate Boddington Trucks in World First

Newmont has approved a \$227 million investment in a Caterpillar autonomous haulage system (AHS) at the Boddington gold mine in Western Australia. Boddington will become the world's first open pit gold mine with an autonomous haul truck fleet when the MineStar Command for hauling system is operational in 2021.

Newmont expects the project will extend Boddington's mine life by at least two years through the improved efficiencies provided by the AHS. This site is already Western Australia's largest producer of gold, with 709,000 ounces delivered in 2018. The fleet of autonomous Caterpillar 793F haul trucks will feature rigorous safety controls that reduce worker exposure to potential vehicle interactions, according to the United States-based company. Newmont is executing a people strategy at Boddington that will provide opportunities for reskilling and redeployment of haul truck drivers to other roles supporting the AHS.

Read more in *article...*

<https://www.australianmining.com.au/news/newmont-to-automate-boddington-trucks-in-world-first/>

2020-02-20



China to Complete its Answer to GPS with BeiDou Navigation Satellite Launches in March, May

China will launch Beidou navigation satellites in March and May this year, completing a constellation designed for an array of civil and military applications.

A Long March 3B rocket arrived at the Xichang Satellite Launch Center Feb. 14, according to China News Service. The Beidou satellite for the launch has also arrived at Xichang, the [report](#) states.

Both missions will launch single satellites to geosynchronous transfer orbits using enhanced hypergolic Long March 3B rockets.

Xichang spaceport has implemented measures to counter the spread of the Covid-19 coronavirus, but has [resumed launches](#) following the Chinese New Year holiday. China announced plans for [more than 40 launches](#) this year ahead of the outbreak.

The completed Beidou navigation satellite system consists of 27 satellites in medium Earth orbits, five in geostationary orbits and three in inclined GEO orbits. The orbits of the latter are designed to form two figure eight loops to provide optimised coverage to China and neighbouring countries in the Asia-Pacific.

Read more in *Space News* article. <https://spacenews.com/china-to-complete-its-answer-to-gps-with-beidou-navigation-satellite-launches-in-march-may/>
2020-02-28



NSW Government Confirms New Sydney Space Industry Hub For Tech Precinct

The NSW government is planning a space industry hub for Sydney to rival the Lot Fourteen precinct in Adelaide.

State Minister for Jobs, Investment, Tourism and Western Sydney Stuart Ayres said NSW aimed to be at the forefront of the rapidly growing multibillion-dollar space industry, an ambition set out in the new Space Strategy launched this week.

Minister Ayres said the NSW Space Industry Development Strategy would maximise opportunities for NSW businesses to take advantage of the growing demand for space technologies, estimated to be worth \$420 billion globally.

He said NSW currently accounted for the largest concentration of Australia's space activities – 41 per cent of all Australian space businesses and 35 per cent of Australia's university space research and development.

“Nearly every industry is looking to increase its output and improve its efficiency through space-enabled technologies,” he said.

“Space is not just about what’s up there, it’s also about what’s down here. These technologies are used in robotics, agriculture, energy, communications, transportation, aviation, advanced manufacturing, information technology and construction. They are in the technology we all use in our daily lives.”

The \$5 million space strategy will include the delivery of a National Space Industry Hub, planned to be the anchor tenant at the new Sydney Innovation and Technology Precinct to be created in the redevelopment of Central Station.

Read more in *article...*

https://www.spaceconnectonline.com.au/operations/4177-nsw-government-confirms-new-sydney-space-industry-hub-for-tech-precinct?utm_source=SpaceConnect&utm_campaign=21_02_20&utm_medium=email&utm_content=1&utm_emailID=

2020-02-21



Prime Minister Opens Space Agency HQ In Adelaide

The new home for the Australian Space Agency was officially opened in a ceremony by the Prime Minister at Lot Fourteen, at the old Royal Adelaide Hospital site.

Mr. Morrison said that the agency was central to securing a larger Australian share of the growing space economy, projected to be worth \$1 trillion globally by 2040.

“Space captures the imagination and inspires us all. It develops new technologies that improve life on Earth and it offers huge economic and job opportunities,” he said.

Head of the Australian Space Agency, Dr. Megan Clark AC, welcomed the milestone.

“We’re delighted to have a new home in the centre of Adelaide, and we look forward to developing the Australian Space Discovery Centre and Mission Control, which will open next year.” said Dr. Clark.

The new headquarters will employ 20 full-time equivalent staff. The launch secures Adelaide's spot as Australia's space capital, with over 60 organisations in the space sector already calling the city home.

Read more in *Spatial Source* article. https://www.spatialsource.com.au/gpsnav/prime-minister-opens-space-agency-hq-in-adelaide?utm_medium=email&utm_campaign=Newsletter%202622020&utm_content=Newsletter%202622020+Version+A+CID_d398c153621e5f45648d26b0eee8305b&utm_source=Campaign%20Monitor&utm_term=READ%20MORE

2020-02-26



Trump Signs Executive Order To Guard Critical Infrastructure That Relies On GPS

US President Trump on Wednesday 12 February signed an executive order that directs federal agencies to take steps to reduce the disruption of critical infrastructure that relies on positioning, navigation and timing (PNT) services like GPS.

The executive order is aimed at strengthening the resilience of critical infrastructure that relies on PNT services, including systems involved in transportation, electricity delivery and communications. Officials billed it as the “first-ever” executive order on PNT use.

“The national and economic security of the United States depends on the reliable and efficient functioning of critical infrastructure,” the executive order states. “Because of the widespread adoption of PNT services, the disruption or manipulation of these services has the potential to adversely affect the national and economic security of the United States. To strengthen national resilience, the Federal Government must foster the responsible use of PNT services by critical infrastructure owners and operators,” it states.

Read more in *article*...

<https://thehill.com/homenews/administration/482738-trump-signs-executive-order-to-guard-critical-infrastructure-that>

2020-02-12



The Police had to Go to the Media Before the National Police Directorate Understood the Gravity of GPS Jamming Against Norway

Early 2017, the Finnmark police noticed that GPS signals many places in their county infrequently disappeared. This caused problems for several civilian actors, amongst them aviation and others who depend on GPS signals to navigate the landscape. Finnmark Police District notified the National Police Directorate, yet received no response whatsoever, says Police Chief Ellen Katrine Hætta.

“We sent an alarm through police channels, but nothing happened. Only when the issue hit the media did a dialogue ensue”, Hætta said at the Kirkenes Conference last week during a talk about preparedness and security in the High North.

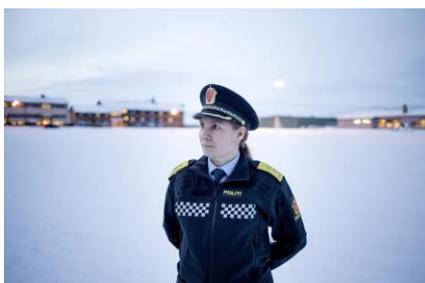
In an interview with High North News, Hætta elaborates on the [situation that arose in the winter of 2017](#).

“When extraordinary situations occur, we will always provide situation reports to the National Police Directorate (NPD). However, it was probably not perceived to be as serious for civilian preparedness as it actually was. What made this difficult, was the fact that this jamming was unstable and unpredictable. Things did for instance not last long enough to initiate satisfactory measuring, amongst others”.

Read more in *article...*

<https://www.highnorthnews.com/en/police-had-go-media-national-police-directorate-understood-gravity-gps-jamming-against-norway>

2020-02-18



DoD Drone Spoofed GPS On Small Aircraft

A small aircraft's encounter with a likely military drone near Edwards Air Force Base resulted in navigation failure, according to a report filed with NASA's Aviation Safety Reporting System. In October 2019, a single engine Piper P-46 Malibu was flying at 24,000 feet 36 miles north of Los Angeles en route San Diego.

The pilot reported, "I saw a DOD drone (inverted V tail) pass overhead approximately 1,000 [feet] above. At the same time, my PFD [primary flight display] indicated that I had a large magnetic variation error, and in turn ... indicated that I was now flying to a new way point (TCH VOR) located in Utah, well off my flight plan." Later, the navigation system indicated that the aircraft was on its way to a spot in Montana. Interestingly, the flight plan displayed by another cockpit instrument, the Multi-Function Display, was not affected.

The aircraft had been operating under an Instrument Flight Plan. Federal Aviation Administration rules for light aircraft allow such operation with GPS as the sole navigation sensor. With the primary flight display not operating properly, the aircraft was no longer able to fly a safe instrument approach to landing. Fortunately, the weather was such that it could proceed and land using Visual Flight Rules.

In the pilot's words, "Had it not been a VMC [visual meteorological conditions] day allowing me to fly a visual approach, I would have had to [advise Air Traffic Control] – and find a way to land without any reliable approach capability."

Read more in *GPS World* article. https://www.gpsworld.com/report-dod-drone-spoofed-gps-on-small-aircraft/?utm_source=Navigate%21+Weekly+GNSS+News&utm_medium=Newsletter&utm_campaign=NCMCD200212004&oly_enc_id=1784A2382467C6V

2020-02-12



Third GPS III Arrives at Cape Canaveral for April Launch

The nation's third next-generation GPS III satellite — and the first delivered by Lockheed Martin to the new U.S. Space Force — has arrived in Florida for an expected April launch.

On Feb. 5, the third Lockheed Martin-built GPS III space vehicle (GPS III SV03) was shipped to Cape Canaveral from the company's GPS III Processing Facility near Denver aboard a massive Air Force C-17 aircraft traveling from Buckley Air Force Base, Colorado.

GPS III **SV03** — nicknamed “Columbus” — is the latest of up to 32 next-generation GPS III/GPS III Follow-On (GPS IIIF) satellites Lockheed Martin has designed and is building to help the Space Force modernize GPS with new technology and capabilities.

Read more in *GPS World* article. https://www.gpsworld.com/third-gps-iii-arrives-at-cape-canaveral-for-april-launch/?utm_source=Navigate%21+Weekly+GNSS+News&utm_medium=Newsletter&utm_campaign=NCMCD200205003&oly_enc_id=1784A2382467C6V

2020-02-10



Amazon And Google Take The Wheel As Car Companies Develop Future Vehicles

Car companies have pushed their own infotainment displays for years. But consumers, who've grown used to Google Maps and Amazon Alexa, have pushed back. So automakers are partnering with tech companies to roll out car-optimised apps, voice assistants and remote updates that promise to transform your driving experience.

General Motors ([GM](#)), **Fiat Chrysler** ([FCAU](#)), **Nissan** ([NSANY](#)) and Volvo are building **Alphabet's** ([GOOGL](#)) Google Assistant, Google Maps and Google Play Store directly into cars for the first time. They're using Android-based software built from the ground up for cars, and it will replace carmakers' factory systems if you so

choose. GM is also integrating **Amazon** ([AMZN](#)) Alexa into millions of vehicles, as are Volkswagen, BMW and several other automakers including the hot EV startup Rivian. By contrast, **Apple's** ([AAPL](#)) CarPlay app appears to be staying on iPhones, rather than migrating to a car's infotainment system as an embedded feature.

For Google and Amazon, partnering with [car companies](#) could mean adding millions of users to their growing ecosystems as they look to create a seamless experience for Google and Alexa apps at home and on the move. For automakers, it could also help them catch up with **Tesla** ([TSLA](#)) on technology that resonates with customers, but brings up issues tied to data security, data privacy and vehicle affordability.

Read more in *article*...

<https://www.investors.com/news/car-companies-tap-amazon-alexa-google-android-new-car-tech/>

2020-02-07



Automated Shipping Moves Containers With Locata

At [ION GNSS+](#) in September, I met with Nunzio Gambale and Paul Benshoeff of Locata. They were excited to share their news about the timing tests conducted at White Sands Missile Range by the U.S. Air Force's 746th Test Squadron.

In the January issue, [we share the results of the tests](#). The two also showed me and Matteo Luccio, our contributing editor, a YouTube video highlighting another Locata project: guiding 100-ton robots around the Ports of Auckland, New Zealand. The robots are straddle carriers, giant mechanisms that are usually driven by a human. The carriers move and sort the shipping containers as they arrive from ships and leave via truck or train.

In the new setup, Locata has made possible the elimination of the human element with nanosecond-precision tracking.

Tom Scott, a former Sky One television host and now host of a series of YouTube shows, highlighted the robotic system in April 2019 on his “Amazing Places” channel.

Read more in *GPS World* article. https://www.gpsworld.com/automated-shipping-moves-containers-with-locata/?utm_source=Navigate%21+Weekly+GNSS+News&utm_medium=Newsletter&utm_campaign=NCMCD200129004&oly_enc_id=1784A2382467C6V

2020-01-29



Google Maps Marks 15-year Milestone With New Features

Google Maps marked 15 years on the road Thursday 6 February with the rollout of new features for the popular mobile app which has helped move navigation into the digital age. The tech giant is marking the occasion with a new look and product updates, vice president of product Dane Glasgow said in a blog post.

Google has dominated the market for navigation apps in recent years but the latest updates appear aimed at staying ahead of challengers including from Apple, which recently revamped its own maps application.

Read more in *GPS Daily* article. http://www.gpsdaily.com/reports/Google_Maps_marks_15-year_milestone_with_new_features_999.html

2020-02-06



ESA's Galileo Satnav System Can Now Reply To SOS Signals

Europe's [Galileo](#) satellite navigation system can now not only receive, relay, and locate distress beacon signals, it can also respond to the SOS, sending back an acknowledgement to those awaiting rescue that their location and call for help has been received and search and rescue services are responding. The new function became operational during the 12th European Space Conference in Brussels, which ran from January 21 to 22, 2020.

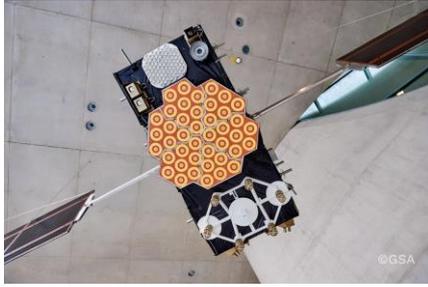
Global Navigation Satellite Systems (GNSS) have come a long way since the US Military introduced the first, Transit, in the 1960s. The technology not only revolutionised navigation to the point where anyone with a smartphone can pinpoint their location with the touch of an icon, but it's also having an increasing impact as more functions are added to that of basic navigation.

Today, there are four global satellite navigation systems and Galileo is a key part of the Cospas-Sarsat system founded in 1979 by Canada, France, Russia, and the US, with 24 out of the 26 Galileo satellites carrying an 8-kg search and rescue package next to the main antenna. According to ESA, the ability of the Galileo satellite constellation to receive and relay SOS signals saves up to 2,000 lives per year.

Read more in *article...*

<https://newatlas.com/space/esa-galileo-satnav-system-reply-sos-signals/>

2020-01-26



ION Award Winners Honoured for GNSS and PNT Contributions

The US Institute of Navigation (ION) presented its annual awards during the ION International Technical Meeting (ITM) and Precise Time and Time Interval Systems and Applications (PTTI) meeting in San Diego, California, Jan. 21-24.

The ION Annual Awards Program is sponsored by The Institute of Navigation to recognise 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-award-winners-honored-for-gnss-and-pnt-contributions/?utm_source=Navigate%21+Weekly+GNSS+News&utm_medium=Newsletter&utm_campaign=NCMCD200122003&oly_enc_id=1784A2382467C6V

2020-01-27



Space Force Decommissions 26-year-old GPS Satellite To Make Way For GPSIII Constellation

The 2nd Space Operations Squadron decommissioned Satellite Vehicle Number-36, the second to last Block IIA satellite, Jan. 27. Capt. Collin Dart, 2nd SOPS assistant flight commander of GPS mission engineering, said the disposal of SVN-36 will allow for newer vehicles to take its place.

“The main reason it was decommissioned was because, at this time, we’re accepting a lot of the new generation GPS IIIs,” he said. “We’re trying to open up the constellation to accept more of those new vehicles.”

Initially launched March 10, 1994, the satellite exceeded its estimated design life of around seven years, serving operationally for nearly 26 years. First Lt. Kristina Brandes, 2nd SOPS chief GPS sub-systems analyst, credited maintenance for exceeding its design life.

“The disposal of SVN-36 won’t have an effect on any holes or signal outages,” she said. “We still maintain 31 operational satellites and 35 total satellites in our constellation.”

Read more in *article...*

<https://www.schriever.af.mil/News/Article-Display/Article/2068128/space-force-decommissions-26-year-old-gps-satellite-to-make-way-for-gpsiii-cons/>

2020-01-29

