China to Launch First BeiDou-3 Navigation Satellite this (Northern) Summer

Chinese navigation satellite BeiDou-3 is scheduled to be launched in July 2017, according to its developer, China Aerospace Science and Technology Corporation (CASC). As reported in January by People's Daily, a publication of the state news agency, the company claimed that six to eight satellites will be deployed within the year.

China has completed the construction of the BeiDou-2 system consisting of 14 BeiDou satellites and 32 ground stations. The launch of 18 satellites in the global coverage constellation will be completed in 2018 to guarantee basic service for countries along the Belt and Road route.

By 2020, 35 BeiDou-3 satellites will have been sent into space, providing service to users around the globe. In addition to expanded coverage, the BeiDou-3 is expected to provide greatly improved performance. Its life span reportedly can reach 12 years.

Read more in *Inside GNSS* article. http://insidegnss.com/node/5356

2017-02-16

Prefecture in China's Xinjiang to Track Cars By Satellite

A prefecture in China's far western Xinjiang region is requiring all vehicles to install satellite tracking systems as part of stepped-up measures against violent attacks. Traffic police in Bayingolin Mongol Autonomous Prefecture announced the regulation on Sunday, shortly after thousands of heavily armed police paraded in the Xinjiang capital and ruling Communist Party officials vowed to ramp up their campaign against separatists and Islamic militants.

The vehicle-tracking program in Bayingolin will utilise China's homegrown Beidou satellite system, launched in recent years to reduce China's reliance on U.S.-based GPS providers for sensitive applications. Authorities said they will also track cars using RFID technology embedded in licence plates.

"In recent years, the terrorist situation around the world has become severe, and cars are the main means of transport for terrorists," said prefectural authorities in an online statement. Authorities aimed to register and track up to 20,000 vehicles, the statement said.

Gas stations will only serve cars equipped with the tracking system, according to a

separate local news report. Police officials in the prefecture confirmed the tracking program but declined to answer questions.

Xinjiang officials have sharply increased surveillance, street searches and police patrols in recent years amid bombings, vehicle and knife attacks blamed on separatist militants from the native ethnic Uighur minority. Uighur activists say economic marginalisation and a repressive government presence — including restrictions on Muslim religious and cultural practices — have fuelled resentment and feed a vicious cycle of radicalisation and violence.

http://www.seattletimes.com/news/prefecture-in-chinas-xinjiang-to-track-cars-by-satellite/

2017-02-20

New Zealand Joins Australia to Develop Precise Satellite Positioning

Ministers from Australia and New Zealand have this week announced an agreement for the two nations to combine forces to develop precise satellite positioning in the Australasian region.

In January it was announced that the Australian Government will invest $12 million in a two-year program looking into the future of positioning technology in Australia. Now, the New Zealand government will now be contributing a further AU$2m to the cause and working on the project to test instant, accurate and reliable positioning technology. Three global technology companies, GMV, Inmarsat and Lockheed Martin, have also been reported to be collaborating closely on the project.

As part of Australia's National Positioning Infrastructure (NPI), the project will study and test a satellite-based augmentation system (SBAS) and precise point positioning (PPP) for instant, accurate and reliable positioning technology that could provide future safety, productivity, efficiency and environmental benefits across many industries.

The project will involve Geoscience Australia and the Cooperative Research Centre for Spatial Information (CRCSI) working closely with a number of New Zealand organisations, including Land Information New Zealand (LINZ), the New Zealand Transport Agency, the Ministry of Business, Innovation and Employment, and the

Ministry of Transport.

Read more in *Spatial Source* article.
http://www.spatialsource.com.au/surveying/%E2%80%8Bnew-zealand-joins-australia-develop-precise-satellite-positioning

2017-02-22

City Streets Become a Living Lab That Could Transform Your Daily Travel

Integrated transport has long been the holy grail of transport engineering. Now, a project set up north of Melbourne's CBD aims to make it a reality.

Led by the School of Engineering at the University of Melbourne, the project will create a living laboratory for developing a highly integrated, smart, multimodal transport system. The goals are to make travel more efficient, safer, cleaner and more sustainable.

Integrated transport aims to combine various modes of travel to provide seamless door-to-door services. Reduced delays, increased safety and better health can all be achieved by sharing information between users, operators and network managers. This will optimise mobility and minimise costs for travellers.

The National Connected Multimodal Transport Test Bed includes arterial roads and local streets in an area of 4.5 square kilometres in Carlton, Fitzroy and Collingwood.

Bounded by Alexandra Parade and Victoria, Hoddle and Lygon streets, this busy inner-suburban area is a perfect location to test a new generation of connected transport systems. Our growing cities will need these systems to manage their increasing traffic.

Read more in *The Conversation* article. https://theconversation.com/city-streets-become-a-living-lab-that-could-transform-your-daily-travel-71272?utm_medium=email&utm_campaign=Latest%20from%20The%20Conversation%20for%20February%2023%202017%20-%2068225030&utm_content=Latest%20from%20The%20Conversation%20for%20February%2023%202017%20-%2068225030+CID_1be287eb68a43ac5f452df77ae984795&utm_source=campaign

_monitor&utm_term=City%20streets%20become%20a%20living%20lab%20that%20could%20transform%20your%20daily%20travel

2017-02-22

Spirent Security Experts Predict Greater Risk to GNSS this Year

Spirent Communications plc's annual security forecast warns of the increased likelihood of disruptions this year to a wide variety of civil and military applications relying on global navigation satellite systems — GPS, GLONASS, Galileo, and BeiDou.

The prediction of greater risk from hacking and location spoofing attacks by criminal, state-sponsored, and other adversaries is part of Spirent's annual security forecast for 2017, which was announced on February 3, 2017. The forecast also highlights the continued risk of distributed denial of service (DDoS) attacks on Internet of things (IoT) devices and industries, including health care and automotive, that Spirent believes are the prime targets for security threats soon.

Last year, Spirent's disruption predictions for 2016 led off with a prescient warning about the increased risk of cyber espionage, which has since been borne out, most notably by news reports of suspected activities by the Russian government to influence the 2016 U.S. presidential election. Also, as predicted, in 2016 threats from ransomware, malicious insiders, and compromised IoT devices increased, as did attacks on industrial control systems.

Read more in *Inside GNSS* article. http://insidegnss.com/node/5341

2017-02-07

Falsifying Galileo Satellite Signals Will Become More Difficult

The European Union activated its Galileo satellite navigation system in December 2016. The EU is dedicated to setting this system apart from other navigation systems such as GPS - the US counterpart of Galileo.

Researchers from the Department of Electrical Engineering at KU Leuven (University of Leuven, Belgium) have now risen to this challenge as well: they designed authentication features that will make it even more difficult to send out false Galileo signals.

Navigation systems are based on satellites that send out signals, including their location. The distance to four or more satellites makes it possible to determine someone's geographical position and time.

But this process may go wrong when hackers send out signals of their own that drown out the real ones. As the authentic signals are blocked, the position information for the navigation system is no longer correct.

Read more in *GPS Daily* article.
http://www.gpsdaily.com/reports/Falsifying_Galileo_satellite_signals_will_become_more_difficult_999.html

2017-02-14

Australia and Lockheed Field 2nd-Gen Sat-based Augmentation System

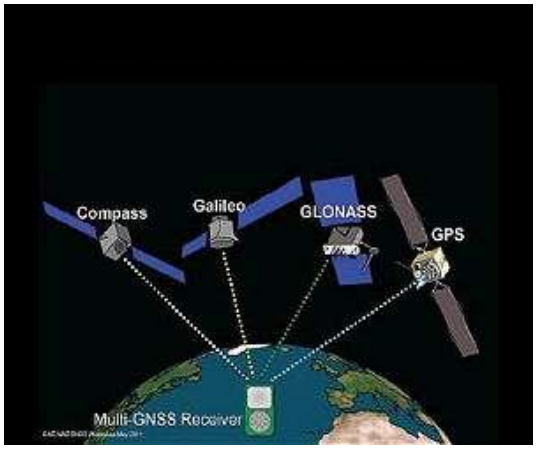
Global Navigation Satellite System (GNSS) signals are critical tools for industries

requiring exact precision and high confidence. Now, Geoscience Australia, an agency of the Commonwealth of Australia, and Lockheed Martin have entered into a collaborative research project to show how augmenting signals from multiple GNSS constellations can enhance positioning, navigation, and timing for a range of applications.

This innovative research project aims to demonstrate how a second-generation Satellite-Based Augmentation System (SBAS) testbed can - for the first time - use signals from both the Global Positioning System (GPS) and the Galileo constellation, and dual frequencies, to achieve even greater GNSS integrity and accuracy. Over two years, the testbed will validate applications in nine industry sectors: agriculture, aviation, construction, maritime, mining, rail, road, spatial, and utilities.

Read more in *GPS Daily* article.
http://www.gpsdaily.com/reports/Geoscience_Australia_and_Lockheed_Martin_team_for_2nd_Gen_satellite_based_augmentation_system_999.html

2017-02-14



Trump's Populist Revolt Could Put The Brakes On Self-Driving Cars

Self-driving cars haven't yet rolled into Washington politics. But when they do, they are likely to collide head-on with powerful forces, given their potential to threaten millions of driving jobs in the heartland while creating design and software jobs in tech centers like the Bay Area.

In today's scrambled political landscape, both President Trump and his Democratic opponents will have a variety of reasons to embrace the technology or reject it.

"It's a very complicated issue, because both parties could get on either side of this debate," said Andy Stern, former president of the Service Employees International Union.

Autonomous vehicles could kick millions of American truckers out of their cabs, not to mention rendering taxi and delivery drivers and those in less obvious professions like parking enforcers unemployed. Trump has made preserving blue-collar jobs a

top priority, even if it means browbeating American companies and their chief executives in public.

http://www.sfchronicle.com/business/article/Trump-s-populist-revolt-could-put-the-brakes-on-10922029.php

2017-02-09

Australia on the Move: How GPS Keeps Up with a Continent in Constant Motion

Nothing on the Earth's solid surface is static because all land is moving very slowly due to continental drift. This very slow movement affects everything around you in the same way so you can't tell it is happening, unless you are able to very accurately measure where on the Earth's surface you are.

The Australian continent, perched on the planet's fastest moving tectonic plate, is drifting at about seven centimetres a year to the northeast. This is taking features marked on our maps out of line with the global navigation satellite systems (GNSS) such as GPS.

These global systems guide our smartphones, cars and other geopositioning devices used in sectors such as construction, transport, mining, agriculture and surveying.

How can we keep our map coordinates up to date? That is a challenge faced by today's geodesists.

https://theconversation.com/australia-on-the-move-how-gps-keeps-up-with-a-continent-in-constant-motion-71883?utm_medium=email&utm_campaign=Latest%20from%20The%20Conversation%20for%20February%206%202017%20-%2066904879&utm_content=Latest%20from%20The%20Conversation%20for%20February%206%202017%20-%2066904879+CID_10e1559b132f2a7be568eeed942acc24&utm_source=campaign_monitor&utm_term=Australia%20on%20the%20move%20how%20GPS%20keeps%20up%20with%20a%20continent%20in%20constant%20motion

2017-02-06

3 Atomic Clocks Fail On 1 Indian Satellite, Replacement Prepped

Three atomic clocks onboard a single satellite of the NAVIC Indian regional navigation satellite system have failed.

Indian Space Research Organization (ISRO) Chairman A.S. Kiran Kumar told The Hindu newspaper that the agency is trying to restart the clocks. Kumar said the affected satellite, IRNSS-1A, is otherwise healthy, and the rest of the constellation is performing its core function of providing accurate position, navigation and time.

Last week, the European Space Agency discussed clock failures on board Galileo satellites. Rubidium atomic clocks onboard both constellations were manufactured by Spectratime of Switzerland, but the cause of the failures has not been identified and could involve factors other than clock design.

IRNSS-1A is equipped with one primary and two back-up clocks. At this time, it “will give a coarse value. It will not be used for computation. Messages from it will still be used,” Kumar said. “There are some anomalies in the atomic clock system on board. We are trying to restart it. Right now we are working out a mechanism for operating it.”

Read more in *GPS World* article. http://gpsworld.com/3-atomic-clocks-fail-on-1-indian-satellite-replacement-prepped/

2017-01-30