

New Technology Could Help Track Firefighters for Safety

A research team at NASA's Jet Propulsion Laboratory in Pasadena, California, has developed a tracking system that could be a game-changer for firefighter safety. The team has been demonstrating the system, called POINTER (Precision Outdoor and Indoor Navigation and Tracking for Emergency Responders), for national and regional leaders in the first-responder community. The tracking technology could also benefit search-and-rescue teams in industrial or military contexts.

In August, POINTER was successfully demonstrated for top leadership at the Department of Homeland Security (DHS) Science and Technology Directorate, which has funded its development.

"To this day, the ability to track and locate first responders is a number one priority for disaster agencies across the country," said Greg Price, DHS First Responder Technologies Division director. "It's truly a Holy Grail capability that doesn't exist today. If the POINTER project continues along its current path of success, first responders will be safer in the future." Price observed the demo, along with DHS Under Secretary for Science and Technology Reginald Brothers and Deputy Under Secretary Robert Griffin.

<http://www.jpl.nasa.gov/news/news.php?feature=6706>

2016-12-19



Semi-autonomous Car to Hit Melbourne Motorways in Two New Trials

Two new trials are set to test semi-driverless technologies on Melbourne's busiest motorways, it has been reported.

The Victorian [Government](#) and La Trobe University have announced that they will begin testing semi-autonomous vehicle technologies on Melbourne's Transurban operated Citylink motorway and the EastLink tollway, respectively, Drive.com.au reported.

The trial programs, which will involve vehicles from a wide range of manufacturers, will be focused, not on pioneering new developments in fully driverless systems, but rather on understanding how existing functions in many new cars, such as distance-

keeping cruise control, lane keeping assist, and traffic sign recognition systems, work with the state's infrastructure, the report said.

Scott Charlton, Transurban CEO, said: "Industry experts say we will have fully driverless cars on the market in the next five to 10 years and we need to make sure our infrastructure is ready to meet this demand."

"Highly automated vehicles have the potential to significantly boost road safety, relieve congestion, and improve social mobility. We are pleased to partner with the Victorian [Government](#) to look at how these vehicles could one day deliver benefits for local road users."

<http://www.insurancebusinessonline.com.au/au/news/breaking-news/semiautonomous-car-to-hit-melbourne-motorways-in-two-new-trials-229086.aspx>

2016-12-22



Alphabet's Waymo Unveils Self-driving Minivan Fleet

Waymo, Alphabet Inc.'s new self-driving car spinoff, added 100 Chrysler Pacifica minivans to its fleet.

Fiat Chrysler Automobiles developed the minivan to be fully autonomous with Waymo technology, including a purpose-built computer and a suite of sensors, telematics and other systems. The new vehicles will head to public roads for testing next year.

The minivans were created via a partnership between Waymo and FCA at a Michigan engineering site. Testing of the technology occurred in Michigan, Arizona and at Waymo facilities in California. The Pacificas are based on the 2017 production model, but alterations were made to the cars' electrical, powertrain and structural systems.

"The Pacifica Hybrid will be a great addition to our fully self-driving test fleet," Waymo CEO [John Krafcik said in a press release](#). "FCA's product development and manufacturing teams have been agile partners, enabling us to go from program kickoff to full vehicle assembly in just six months."

The companies pointed out that self-driving cars have the potential to prevent some of the 1.2 million deaths that occur each year on roads worldwide, 94 percent of which are caused by human error.

http://www.bizjournals.com/sanantonio/news/2016/12/20/alphabets-self-driving-car-spinoff-waymo-unveils.html?ana=RSS%26s%3Darticle_search&utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+bizj_sanantonio+%28San+Antonio+Business+Journal%29

2016-12-20



7-Eleven Has Already Made 77 Deliveries By Drone

Sure, Amazon made its first drone delivery last week, but 7-Eleven already has it beat. Today, the convenience store company announced that it has already made a total of 77 deliveries by drone in the state of Nevada. Of course the caveat here is that 7-Eleven relied on Flirtey, a drone delivery service company that's already made a name for itself by delivering Domino's in New Zealand and textbooks in Australia. It also made the first FAA-approved urban drone delivery earlier this year.

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Though the deliveries kicked off in July, it was in November when the company started making regular weekend deliveries from a 7-Eleven store to about a dozen customers. They used a custom app to place their orders, which included everything from hot and cold food to over-the-counter medication. The items are then loaded into a special drone container. The app tells them when the drone is loaded up, when it's left the store and when it's arrived at their home. According to a press release, deliveries took less than 10 minutes.

"Flirtey is the world's leader in the drone delivery industry and we have now successfully completed the first month of routine commercial drone deliveries to customer homes in partnership with 7-Eleven," said Flirtey CEO Matthew Sweeny in a statement. "While other companies in this space are shipping jobs overseas, Flirtey's goal is to make delivery instant, and in the process create jobs at home for hardworking Americans and veterans. This is a giant leap towards a future where

every one can experience the convenience of Flirtey's instant store-to-door drone delivery."

<https://www.engadget.com/2016/12/20/7-eleven-has-already-made-77-deliveries-by-drone/?ncid=txtlnkusaolp00000602>

2016-12-20



Mercedes-Benz to Test Driverless Car in Australia

AUSTRALIA will play a role in the delivery of the next generation of self-driving cars, Mercedes-Benz has confirmed.

Engineers from Mercedes-Benz's test and validation department will fly to Melbourne in March 2017. Their mission: to install data-gathering equipment and software in a new E-Class sedan.

This car will be used in normal traffic by Mercedes-Benz Australia employees but the information it collects will be passed back to Mercedes-Benz's new €250 million-plus (AU\$357m) automated driving testing facility in southwest Germany near Immendingen.

Jochen Haab, Mercedes-Benz testing and validation manager and the man who will lead the expedition to Australia next year, says his small team will fit the local E-Class with data-capture devices and developmental software destined for an updated version of the S-Class limousine.

"We will do road testing in Australia to gather data and to find out if there are any hot spots in Australia, any topics we are not aware of," Mr Haab says.

The idea is to discover whether our roads and driving environment can cause unforeseen problems for the sophisticated sensor-based driver-aid and safety gear.

<http://www.news.com.au/technology/innovation/motoring/mercedes-to-test-driverless-car-in-australia/news-story/9dc13d770d4295bfbe78abd54ec93481?csp=9d65475ba96ada146e50ac66015b3e37>

2016-12-21



Europe's Own Satnav, Galileo, Due To Go Live

Seventeen years and more than 10 billion euros later, Europe's Galileo satnav system is set to go live Thursday 15 December, promising to outperform US and Russian rivals while boosting regional self-reliance.

Initial services, free to use worldwide, will be available only on smartphones and navigation boxes already fitted with Galileo-compatible microchips. Some devices may only need a software update to start using the new technology, and European Commission spokeswoman Mirna Talko said several smartphone giants were already making chips compatible with it.

"It will be the first time that users around the world will be able to be guided by Galileo satellites," said Lucia Caudet of the Commission, which funds the project.

Somewhat fuzzy at first, the signal will be boosted with help from satellites in the US military-run GPS system, growing stronger over time as orbiters are added to the now 18-strong Galileo network circling 23,222 kilometres above Earth. According to its proud parents, the Commission and European Space Agency, Galileo should be fully operational by 2020, providing time and positioning data of unprecedented accuracy.

Read more in *GPS Daily* article.

http://www.gpsdaily.com/reports/Europes_own_satnav_Galileo_due_to_go_live_999.html

2016-12-13



GDA2020 Gears Up To Reshape Australian Positioning

On the back of a media storm earlier in 2016 that drew international headlines on Australia's drifting continental plate, many are still wondering if Australia's datum will officially shift almost two metres this coming January.

The answer, in short, is yes it will.

GDA2020 is the name of the datum that in January 2017 will be 'defined' during January 2017 and will replace the existing GDA94 datum on over 100 of Australian GNSS CORS satellite positioning stations as the 'Recognised Value Standard of Measurement of Position'.

Read more in *Spatial Source* article. <http://www.spatialsource.com.au/company-industry/gda2020-gears-reshape-australian-positioning>

2016-12-14



Spoofing Will Attain Virus Status, Warns Expert

As manufacturers convert machines and appliances into remotely controllable objects (the Internet of Things), the potential for spoofing expands, perhaps exponentially. Hackers could interfere with the data supplied to autonomous cars or tracks, remotely forcing them to crash.

Although the dangers of GPS spoofing have been pointedly discussed in may

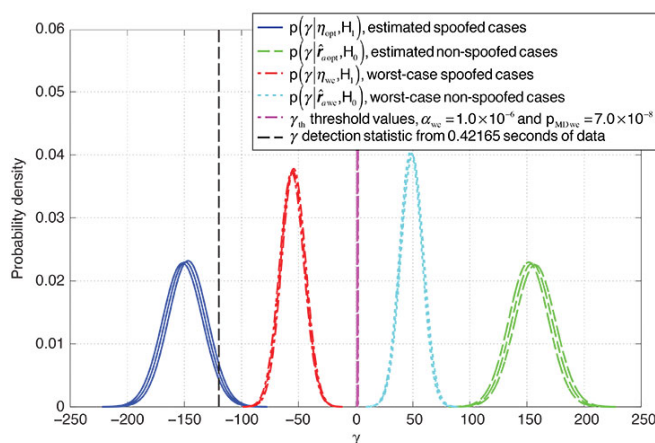
technical papers and articles in *GPS World* since the early 2000s, manufacturers have not devoted much attention to them because there weren't many devices making use of location-based technologies, according to associate professor Dinesh Manandhar of the University of Tokyo.

With the proliferation of GPS-capable smartphones and other networked devices, "anyone can become a target of the attack," Manandhar told the *Japan Times* in a recent interview.

"Too many things today use GPS as a reliable source of location information," Manandhar said. "People trust the location information from GPS satellites like God. When PCs became common for many people, the sudden outbreak of computer viruses became an issue around the world, and anti-virus software become an essential tool for everyone to protect their data," he added. "The same thing is now happening around GPS. We need a system to fight back against the risk."

Read more in *GPS World* article. <http://gpsworld.com/spoofing-will-attain-virus-status-warns-expert/>

2016-11-29



Navigating in Space

Spacecraft in low Earth orbit (LEO), at altitudes below 3,000 kilometers, remain within the main Global Positioning System (GPS) signals' Earth coverage.

Spacecraft employing GPS at these altitudes enjoy signal availability and navigation and timing performance emulating that of terrestrial users.

Until recently, the use of GPS on spacecraft that traverse above LEO and beyond the orbit of the GPS constellations was unproven and considered risky by spacecraft managers. The big question at the time was: would the power levels, availability, and accuracy of GPS signals at these altitudes facilitate navigation solutions and enhance mission objectives?

Flight experiments conducted around the turn of the new millennium demonstrated the viability of using GPS for navigation and time sensing in these high orbits by exploiting the full (aggregate) signal. In other words, employing the residual side-lobe

signals in addition to the higher power, narrow, main Earth coverage signal.

Through a concerted effort by NASA, private industry, and others, specially designed weak signal GPS receivers were developed to support space missions at these high altitudes. New, exciting missions were proposed to make use of these navigation signals in space. Today, operational space missions are employing GPS above LEO and many other missions are in development.

Read more in *Inside GNSS* article. <http://www.insidegnss.com/node/5196>

2016-11-30

