

Septentrio and Point One Navigation Partner up for Autonomous Vehicle Demo



Septentrio, a leader in high-precision GNSS technology, is teaming up with Point One Navigation, a provider of precise location as a service, for autonomous vehicle demonstrations during [CES 2019](#) in Las Vegas, USA. Invitees will be able to ride in a fully autonomous demonstration vehicle that incorporates technology from both companies and to meet directly with technical experts.

Point One Navigation will showcase its proof-of-concept autonomous vehicle equipped with the FusionEngine vehicle localisation software. Demonstrations will utilise corrections from Point One's Polaris Cloud, an innovative new correction network that enables high-precision GPS and computer vision-based localisation, while allowing the customer to choose the performance

and price point that best fits their application. For users operating in open sky scenarios, a Septentrio RTK receiver can be used directly with Polaris Cloud to provide centimeter-level accuracy in seconds. In more challenging urban environments, Point One's FusionEngine software further integrates cameras and additional sensors to achieve the desired level of precision, even in the complete absence of satellite signals. With coast-to-coast coverage, Polaris Cloud provides a widely available solution for precision localisation today.

High-precision GNSS and computer vision

Point One Navigation has chosen to work with Septentrio to power its solutions for both the correction network and our FusionEngine reference design because of the excellent quality, robustness and jamming resistance of their [GNSS receiver technology](#), said Aaron Nathan, CEO & co-founder. His company has worked with Septentrio before in the autonomous space, and their GNSS technology combined with excellent application support has been integral to Point One's success, he added.

Neil Vancans, vice-president of global sales for Septentrio stated that Point One Navigation's thorough understanding of high-precision GNSS integrated with computer vision in a novel way offers a unique approach to solving the challenges in building safe solutions for increasingly autonomous vehicles.

Integrating camera, inertial, and GNSS data

The robust, globally accurate position and orientation obtained by Point One's FusionEngine software is a result of highly advanced algorithms that integrate camera, inertial, and GNSS data at over 200 times per second. FusionEngine has the accuracy and the resilience to inclement weather demanded by Level 2 applications such as highway lane keeping and V2X, while offering the robustness necessary for mission-critical Level 4 and Level 5 robotaxi and full autonomy applications. What's more, FusionEngine powered by the Polaris Cloud provides convergence to centimeter accuracy in seconds, not minutes. The platform also completely eliminates the combined location/map provider lock-in typical of other solutions based on HD mapping technology, enabling vehicle OEMs to choose the best map provider for a given region. Point One's FusionEngine software and Polaris Cloud is a highly innovative combination for safe, cost-effective autonomous driving.

Point One's solution is powered by Septentrio's GNSS receivers. For accurate positioning of autonomous vehicles, Septentrio utilises at least two frequencies broadcast by each GNSS constellation (BeiDou, Galileo, GLONASS, GPS, QZSS). With the increased number of GNSS signals obtained from multiple constellations, ADAS-equipped and autonomous vehicles achieve increased accuracy, along with greater reliability, integrity, and availability of GNSS signals.

Septentrio mosaic

GNSS module Septentrio recently announced its new mosaic compact multi-constellation GNSS Receiver SiP (system-in-package) module, available in 2019. The Septentrio mosaic, a multi-band, multi-constellation receiver in a low-power surface-mount module with a wide array of interfaces, is designed for mass market applications like robotics and autonomous systems.

The mosaic module integrates the latest GNSS and RF ASIC technology, as well as the robust positioning engine from Septentrio.

All Septentrio GNSS receivers and modules feature AIM+ technology, an advanced on-board interference mitigation commercially available. Septentrio GNSS receivers can suppress the widest variety of interferers, from simple continuous narrowband signals to the most complex wideband and pulsed jammers.

[Septentrio](#) and [Point One Navigation](#) will conduct live autonomous vehicle demonstrations for industry representatives attending the International CES in Las Vegas.

<https://www.gim-international.com/content/news/septentrio-and-point-one-navigation-partner-for-autonomous-vehicle-demo>
