

CHANGING LANDSCAPE OF MASS MARKET GNSS TECHNOLOGIES: FROM STANDALONE SOLUTIONS TO HIGH PRECISION

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Biography

Peter Fairhurst joined the Product Strategy team in at u-blox AG in 2015 and is responsible for the strategic development of unmanned vehicles markets within u-blox. Peter Fairhurst holds a doctorate degree in geodesy from Newcastle University and an MBA from the University of Strathclyde and has over 10 years of experience in the GNSS industry. Prior to joining u-blox, Peter worked with the product management group of Leica Geosystems AG, specifically focusing on high precision GNSS technologies.

Abstract

The near future will see a number of autonomous vehicle applications appearing on the market that use high precision location technologies in order to navigate without human control. Due to its ability to provide absolute position, velocity and time, high precision GNSS solutions will be a central technology in providing autonomous navigation control.

Current high precision GNSS solutions are able to deliver the centimeter level accuracy required for autonomous navigation control but introduce several limitations such as high costs, size, weight and a dependence on GNSS correction services which inhibit the large scale deployment of high precision GNSS solutions required to meet the demand of autonomous vehicle applications.

The availability of the next generation of GNSS signals will drive the cost of ownership of high precision GNSS receivers down but the dependency on the current state of GNSS correction services still remains a blockage to wide scale adoption. For example, GNSS correction services will become a key part of autonomous vehicle navigation as it will enable the operation of high precision localization within a large scale region, such as a country or continent, but the current GNSS correction services deployment technology is complex and the cost too high for large volume adoption. The QZSS LEX signal partially addresses the GNSS correction service issue by distributing GNSS correction services, such as CLAS, across Japan and will play an integral part in enabling mass adoption for high precision GNSS solutions but within the Japan region only.

u-blox introduces the challenges to the GNSS ecosystem and discusses the options available to reduce the cost of ownership of future high precision GNSS solutions to a level closer to consumer GNSS technology rather than the existing high precision GNSS offerings and drive adoption of high precision GNSS technologies on a global scale.