Trimble Introduces GNSS Data Integrity Monitoring for PPP Correction Service

Trimble has introduced data integrity monitoring for its precise point positioning (PPP) correction service, CenterPoint RTX Fast. The Trimble RTX Integrity monitoring system is an innovative, patented solution, built in direct response to client requirements for production-ready applications.

The solution continuously validates the reliability of correction data processed by the network, which is broadcast to users in the agriculture, geospatial, construction and automotive industries, ensuring positioning data is right the first time.

Integrity of GNSS Data

Through a smart two-step process, the Trimble RTX Integrity system verifies the integrity of GNSS data received from satellites and filters faulty information in the network server before the data is broadcast. A secondary post-broadcast check is conducted on the entire data transmission process where additional errors may be detected and removed. The integrity monitoring system is fully automated and reacts in seconds to detect, isolate and block faulty data to provide even more highly accurate and reliable positioning.

Trimble RTX Integrity is comprised of independent monitoring stations strategically positioned across RTX Fast networks in the USA, southern Canada and across Europe. These stations continuously monitor data output during multiple stages of the Trimble RTX positioning process. Any suspicious satellite data is removed during the integrity protection process and positioning is calculated using only validated data.

Ensuring Correction Stream Integrity and Reliability

Trimble Alloy GNSS reference receivers power the independent monitoring stations using redundant internet connectivity for added reliability. To date, no other positioning network offers the same level of data integrity validation across such expansive, contiguous geographies.

Trimble RTX Integrity monitoring system was developed in accordance with Automotive Software Performance Improvement and Capability dEtermination (ASPICE) and ISO 26262 automotive safety standards, making it easy to integrate into major automotive manufacturers' autonomous driving systems. Trimble RTX Integrity can also be used by Trimble's customers in the agriculture, geospatial and construction industries to ensure correction stream integrity and reliability for applications such as machine control and high-accuracy surveying applications.

“Trimble remains committed to exceeding expectations by providing accurate corrections to our customers to support safety-critical and other day-to-day applications,” said Patricia Boothe, senior vice president of autonomy at Trimble. “Implementing additional checks and balances to ensure our data is authenticated, trustworthy and accurate is of paramount importance to maintaining the integrity of our RTX network and instilling confidence with our users that the data is correct.”