



Septentrio Spirent Case Study

The Challenge

Septentrio Satellite Navigation NV, designs, manufactures, markets and supports high-end dual-frequency GNSS receivers with the best possible performance at a very competitive price. Targeted at original equipment manufacturers (OEMs), Septentrio's core technology is being applied in precise positioning, timing and attitude determination applications.

To provide best quality measurements and position solution in difficult conditions such as strong multipath environments, Septentrio engineers develop state-of-the-art multipath mitigation algorithms. Performances of the new algorithms need to be characterized under well defined and easy to reproduce conditions.

This requires a way to control all reflected signal's parameters and the generation of a multipath-free reference signal to compare to.

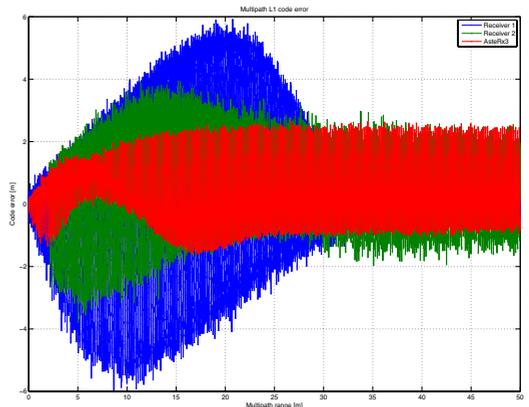
The Solution

Septentrio selected GSS7700 L1+L2 GPS simulator and SimGEN™ control software to generate easy to customize GPS signals. SimGEN™ is easy to use and provides control over all aspect of GPS signal including the ability to simulate situations beyond GPS constellation capability by adjusting clock and orbit parameters.

Benefits

The flexibility to configure all reflected signal parameters and to let them automatically change with time in a controllable way is of great help. We created a scenario where one reflected signal was gradually delayed with respect to the direct line-of-sight signal and computed the resulting range and carrier phase errors envelope, clearly demonstrating the performances of the Septentrio APME multipath mitigation algorithm. For example, the figure shows the measured range error of several receivers, including AsteRx3.

This simulation directly demonstrates the benefits of APME in the short multipath range (<10m), which is prevailing in real life conditions.



Spirent's unrivalled experience and expertise in GNSS simulation ensures accurate results that customers trust and rely on to evaluate their products and applications. Contact us to find out how Spirent solutions can help you.



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Customer Quote

“GSS7700 simulator* together with SimGEN™ gives deep control over GPS signal and enables simulations beyond real constellation limitations.”

Sébastien Pardoën, GNSS data analyst, Septentrio

* The GSS7700 has now been superseded by the [GSS8000](#)

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