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SURFACE SYSTEMS & INSTRUMENTS, INC. smoothroad.com

Custom Test Equipment • Mobile Technology Solutions • Inertial Profilers • ADA Compliance • FF/FL Testing

Why GPS Is Important

GPS receivers are embedded into our phones and cars. SSI profilers also use GPS in each of our profiling systems and models. SSI systems stream GPS position and index the coordinates with each elevation sample collected. This gives the ability to pair each 1-inch sample with a position coordinate.

The GPS receivers SSI uses are embedded within our electronics. We use OEM devices that give us the ability to use GPS, Glonass, Beidou, and Gallieo satellite constellations. With all four constellations we can have over 35 satellites at any given time. More satellites gives us more reception in areas which may have outages, like canyons or tree cover.

Typical position accuracy of SSI systems is 0.75-meters with GPS-SBAS corrections. Check your system information because that may change by application. With subscription services to receive more corrections the position accuracy can be as low as 4 cm without a base station.

GPS Tagging

To collect data, SSI has a few tools to help operators with triggering collections. The most common function is GPS Tagging. This is used to start or end collections, add events and pauses, all without touching the computer. The operator may use an existing collection or known points to create the tagging file to use during the collection. This is the best option to make repeatable collections over the same surface or to compare collections on exist versus post-pave surfaces.

Network Manager

An advanced version of GPS Tagging is the Network Manager. This tool allows operators to collect large, intertwined pavement networks that are too complicated for the simple GPS Tagging. The operator can upload the paths of the network and drive. The software takes care of the start/stop triggering. As you drive a map is populated to show the collections that have been completed and which remain.

We know that data is collected with GPS coordinates, but what is powerful is software options you can use after the data is collected. Some of the options are:

- GPS Navigation to roughness, defects, grind locations, stations
- KMZ or KML Google Earth Exports
- GIS Exports
- Survey elevation exports with CS9500 or Offroad profilers