

NDGPS and HA-NDGPS - Tools for Today and Tomorrow

Presenter

James A. Arnold

FHWA

james.a.arnold@fhwa.dot.gov

Co-Presenter

Rudy Persaud

FHWA

The Nationwide Differential Global Positioning System (NDGPS) service has long been heralded as the solution for those tough areas where other differential systems just can't reach. With the addition of High Accuracy NDGPS (HA-NDGPS), even greater opportunities exist for populating Geographic Information Systems (GIS) with robust, reliable, and repeatable data.

This paper explores some of the more difficult environments in which NDGPS works and works well, presenting real world data from transportation and other application areas where heavy terrain, urban canyons, and even dense foliage cause other differential systems to fail. Detailed assessments of the quality of the service in urban canyons are presented and compared to other differential systems are presented. Applications in National Parks are presented and the difficulty of the terrain in areas like the Grand Canyon is also examined.

The paper then takes the next step forward into High Accuracy NDGPS, illustrating the centimeter level accuracies achieved during testing and exploring its ability to function, in cooperation with NDGPS, as an independent navigation system in the event GPS signals are unavailable to the end user.

These advancements in radionavigation technology match those modes by GPS, but offer greater flexibility and improved performance, quickly becoming the technology of choice throughout the nation and the world.