

## Next Generation Navigation Reference System

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One of the missions of the Air Force Flight Test Center (AFFTC) is to evaluate the performance of state of the art aircraft navigation devices. In order to accomplish this task, the AFFTC designed a flight reference system in 1994. However, the increased accuracy and capabilities of modern systems have created a technology gap between the original reference system and those navigation systems currently deployed. To correct this problem, the Advanced Navigation Technology (ANT) Center has been investigating new sensors and techniques which can be used in an upgraded reference system. In addition to traditional GPS and inertial navigation systems, the ANT Center is testing the next generation prototype with high-resolution digital cameras for feature tracking, onboard lasers for long distance measurement, and ground based sensors such as radars, lasers, and cameras for tracking the aircraft during flight. The results of these simulations will help the AFFTC build the next generation flight reference system.

For more information see “Smearcheck, M. and M. Veth, "Sensor Modeling and Sensitivity Analysis for Next Generation Time-Space Position Information (TSPI) System," *Proceedings of the Institute of Navigation International Technical Meeting*, San Diego, CA, January 2010”.

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