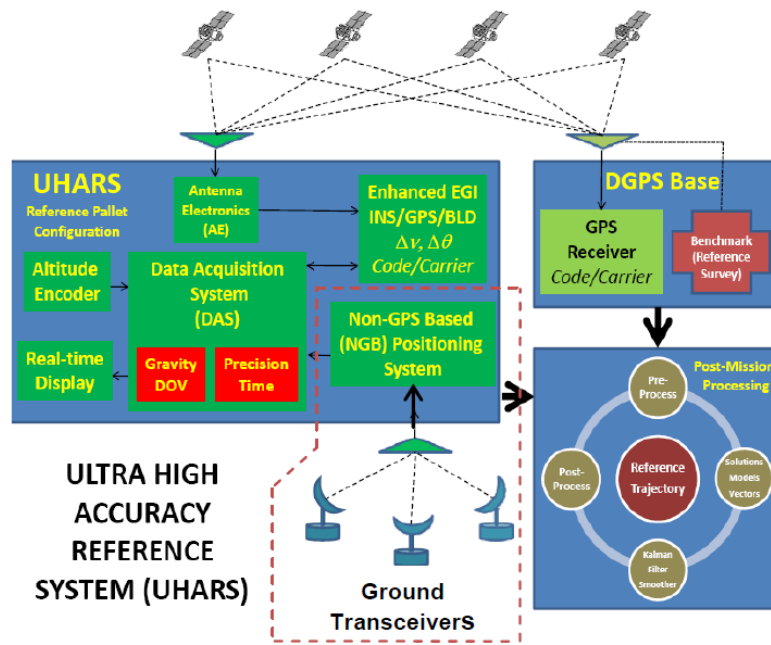


# Ultra-High Accuracy Reference System (UHARS) Support

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Sponsor: 746<sup>th</sup> Test Squadron (746 TS/TGGS)



The 746<sup>th</sup> Test Squadron is implementing a state-of-the-art reference system called UHARS. AFIT has conducted significant previous research using the system on which the UHARS is based and is supporting the 746 TS as they develop and deploy their permanent system. This new system is in development to enable the 746 TS to provide the increased accuracy and precision required to support testing and evaluation of future generations of guidance and navigation systems. It is designed to provide highly accurate position and velocity solutions in an electronic warfare environment where modernized and legacy GPS signals are jammed from friendly or hostile systems. AFIT has been instrumental in the research and development of the non-GPS-based system that the 746 TS is currently integrating in their next-generation reference system. AFIT performs the following tasks for this program:

1. Provides subject matter expertise in guidance, navigation, and control pertaining to reference systems development.
2. Reviews the system components and planned navigation algorithms for achieving the desired accuracy and precision.

3. Recommends testing to characterize the accuracy and precision of time, position, velocity, and attitude information of the UHARS.
4. Researches and recommends possible navigation solutions for increasing the expected performance of the UHARS.

**Further Reading:**

[http://www.locatacorp.com/wp-content/uploads/2011/10/USAF-Paper-ION-2011\\_NGBPS-Flight-Trial-Results-Sept-2011.pdf](http://www.locatacorp.com/wp-content/uploads/2011/10/USAF-Paper-ION-2011_NGBPS-Flight-Trial-Results-Sept-2011.pdf)