



Federal Aviation Administration

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local area augmentation system
LAAS

LOCAL AREA AUGMENTATION SYSTEM

LAAS - The FAA's Future GPS Approach and Landing System

The Local Area Augmentation System (LAAS) will augment the Global Positioning System (GPS) to provide an all-weather approach and landing navigation capability. LAAS will provide precision approach service within a nominal 23-mile coverage volume around the airport where the ground system is installed and broadcasts differential GPS corrections and integrity messages via a very high frequency (VHF) radio data link. LAAS will meet high accuracy and availability performance requirements necessary for Category I, II, and III precision approach operations. LAAS is expected to provide improved service over the Instrument Landing System (ILS) and reduced operating costs.

LAAS Benefits

- ◆ Precision approach capabilities to all runways at an airport from a single LAAS ground facility, reducing the need for costly redundant infrastructure
- ◆ Reduced taxi time by elimination of ILS critical areas
- ◆ Precise positioning information of aircraft that can be used by surface surveillance systems to prevent runway incursions during low visibility conditions
- ◆ Curved and segmented approach paths, not possible using current instrument landing systems, for Category I, II, and III precision approaches

Next Steps for LAAS

LAAS remains a research & development project focusing on the resolution of outstanding integrity and safety issues to reduce risk for future development. The FAA Ground Based Augmentation System (GBAS) Office is implementing a provably safe design at a prototype LAAS facility in Memphis, TN. This task is being performed under contract with Honeywell. By September 2006, the integrity analysis and integrated prototype system will be completed. Validation testing will follow. The FAA is also working with other service providers to facilitate development of an International Civil Aviation Organization (ICAO) Standards and Recommended Practices (SARPs) compliant Category I LAAS, based on the Memphis prototype by 2008.

International Standards for LAAS

The FAA shares the international goal of a worldwide, seamless, interoperable Global Navigation Satellite System (GNSS).

- ◆ RTCA has published the LAAS Minimum Aviation System Performance Standards (MASPS). This document allocated overall LAAS requirements between the ground equipment and the avionics (September 28, 1998)
- ◆ The development efforts of the avionics have been captured in the LAAS Minimum Operational Performance Standards (MOPS) (February 2000)
- ◆ ICAO's Navigation System Panel (NSP), formerly the Global Navigation Satellite System Panel (GNSS-P), has developed the SARPs for the GBAS for Category I (November 1, 2001)

