MAE Praxair Seminar

Dr. Daniel N. Aloi
ESE Department, Oakland University

"Overview of the Federal Aviation Adminstration's Local Area Augmentation System (LAAS)"

The Global Positioning System (GPS) has evolved as a technology enabler for applications involving the need to utilized position, velocity, and/or timing capability. The architecture of the GPS is such that it can be used in a variety of configurations depending on the specifications for a particular application such as the need for real-time state updates, high position accuracy, and/or update rate to name a few.

This research presentation describes the Federal Aviation Adminstration's (FAA) Local Area Augmentation System (LAAS). The LAAS is intended to replace the instrument landing systems (ILS) that currently exists for the guidance of aircraft on the approach and landing phase of flight. A single ILS must be outfitted for each runway at an airport whereas a single LAAS installation would service all runways simultaneously in addition to providing guidance to the aircraft while taxing back to the gate.

The LAAS is a differential GPS implementation based on the L1 coarse-acquisition (C/A) code pseudorange observable. The LAAS position updates are intended to provide guidance to commercial aircraft on the approach and landing phase of flight. The performance specification for the approach and landing phase of flight for commercial aircraft is broken down into three categories: Category I, Category II, and Category III. All three categories of performance mandate strict requirements in terms of accuracy, integrity, availability, and continuity of service. This presentation explains the conception of the current LAAS architecture to meet Category I service performance requirements while outlining the specific areas of research performed at Oakland University.

206 Furnas Hall
Thursday, April 7, 2005
Refreshments – 3:00 pm
Seminar 3:30 pm – 4:30 pm