

## **185. UNIFIED 4D TRAJECTORY APPROACH FOR INTEGRATED TRAFFIC MANAGEMENT**

### **PROJECT AT-A-GLANCE**

- **AST RDAB POC:** Coleman, Kelvin
- **AST RESEARCH AREA:** 1.1 STM - Integration & Operations
- **PRINCIPAL INVESTIGATOR:** Alonso, Juan
- **EXECUTION ENTITY:** Stanford, CU
- **PERIOD OF PERFORMANCE:** Jan 3, 2011 - Jan 6, 2012
- **STATUS:** Ongoing

### **PROJECT DESCRIPTION**

**PURPOSE:** The projected growth in demand for the use of the traditional airspace by commercial space transportation entities will make it increasingly hard to accommodate launches on a Special Use Airspace (SUA) basis.

**OBJECTIVES:** The three main objectives for this project are:

- (i) to develop plausible architectures for an Integrated Airspace Management System,
- (ii) to research and develop the foundation of such a system so that, from the outset, time-space probabilistic trajectories and safety assessments can be incorporated, and
- (iii) to create a prototype implementation for a proof-of-concept of the system that may be further developed in a follow-on project.

**GOALS:** Development of requirements, architecture and prototype implementations of simultaneous air/space traffic management procedures for commercial space transportation. Leverage projected improvements derived from NextGen.

### **STATEMENT OF WORK**

1. Development of requirements, architecture and prototype implementations of simultaneous air/space traffic management procedures for commercial space transportation. Leverage projected improvements derived from NextGen.
2. Develop plausible architectures for an Integrated Airspace Management System (IAMS)
3. Research and develop the foundation of IAMS based on 4D, time-space probabilistic trajectories and safety assessments
4. Create a prototype implementation for a proof-of-concept of the IAMS that may be further developed in a follow-on project.