

Nov 18th, 10:30 AM - 11:00 AM

## Keynote speaker - Bill Davis

Bill Davis  
FAA ATO

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**Air Traffic Organization**

**Commercial Space Integration**





**FAA**  
Air Traffic Organization

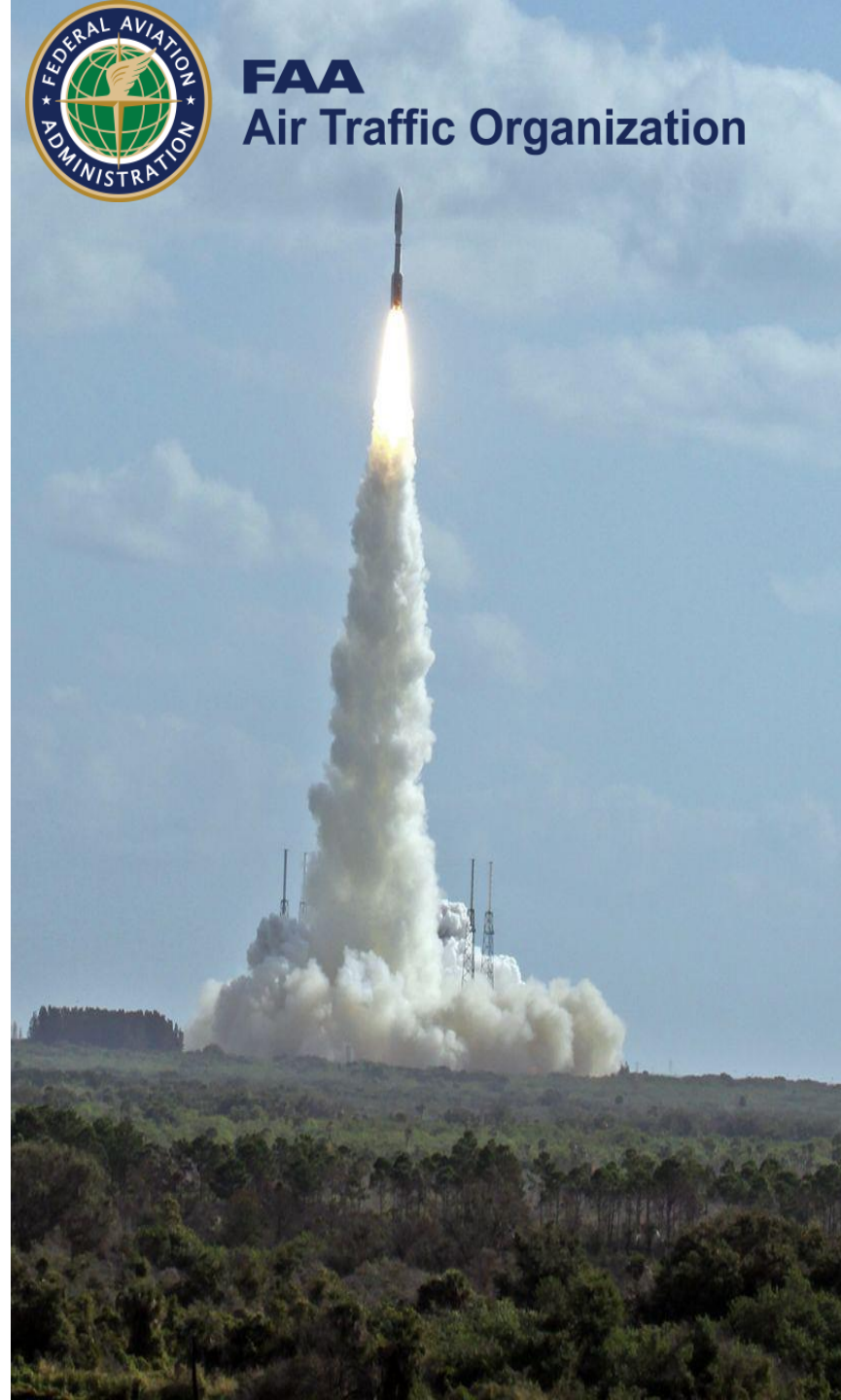
# Embry Riddle Space Traffic Management Conference

FAA Air Traffic Organization  
Commercial Space Integration

Presented to: STM Conference

Presented by: Bill Davis, Air Traffic Organization,  
Executive Director of Emerging  
Technologies Integration

Date: November 18, 2016

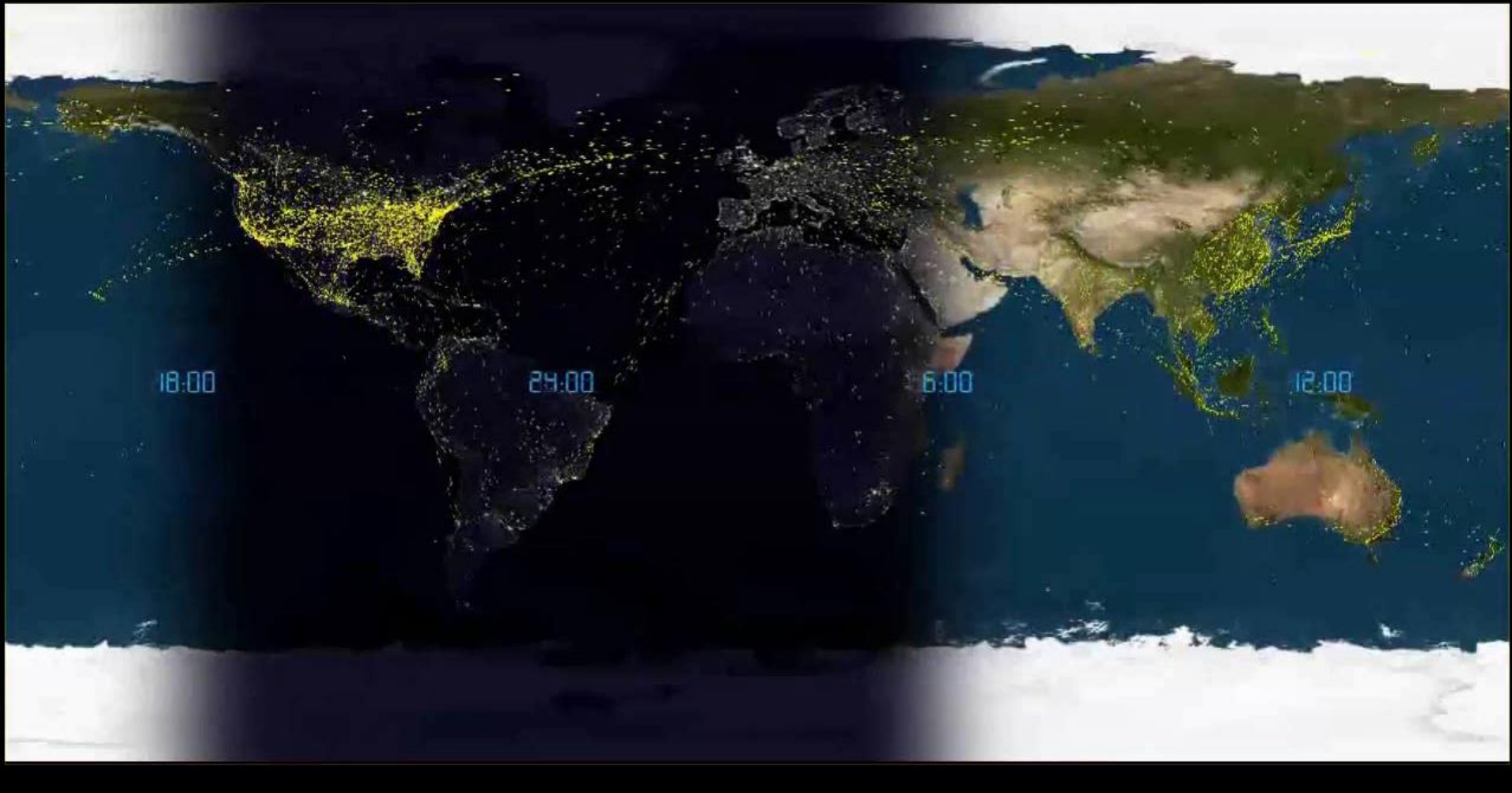




# Overview

- **Air Traffic Global View**
- **A View of the National Airspace System**
- **FAA Organizational Structure**
- **Air Traffic Organization Overview**
- **ATO Commercial Space Updates:**
  - Commercial Space Integration Team Governance
  - ATO Roadmap
  - Examples of Tools in Development: Predictive Analysis Tool (PAT), NAS Effects Assessment Prototype (NEAP), Information Sharing Capability (ISC)









# NAS Operations

ATO Commercial Space Integration



**FAA**  
Air Traffic Organization

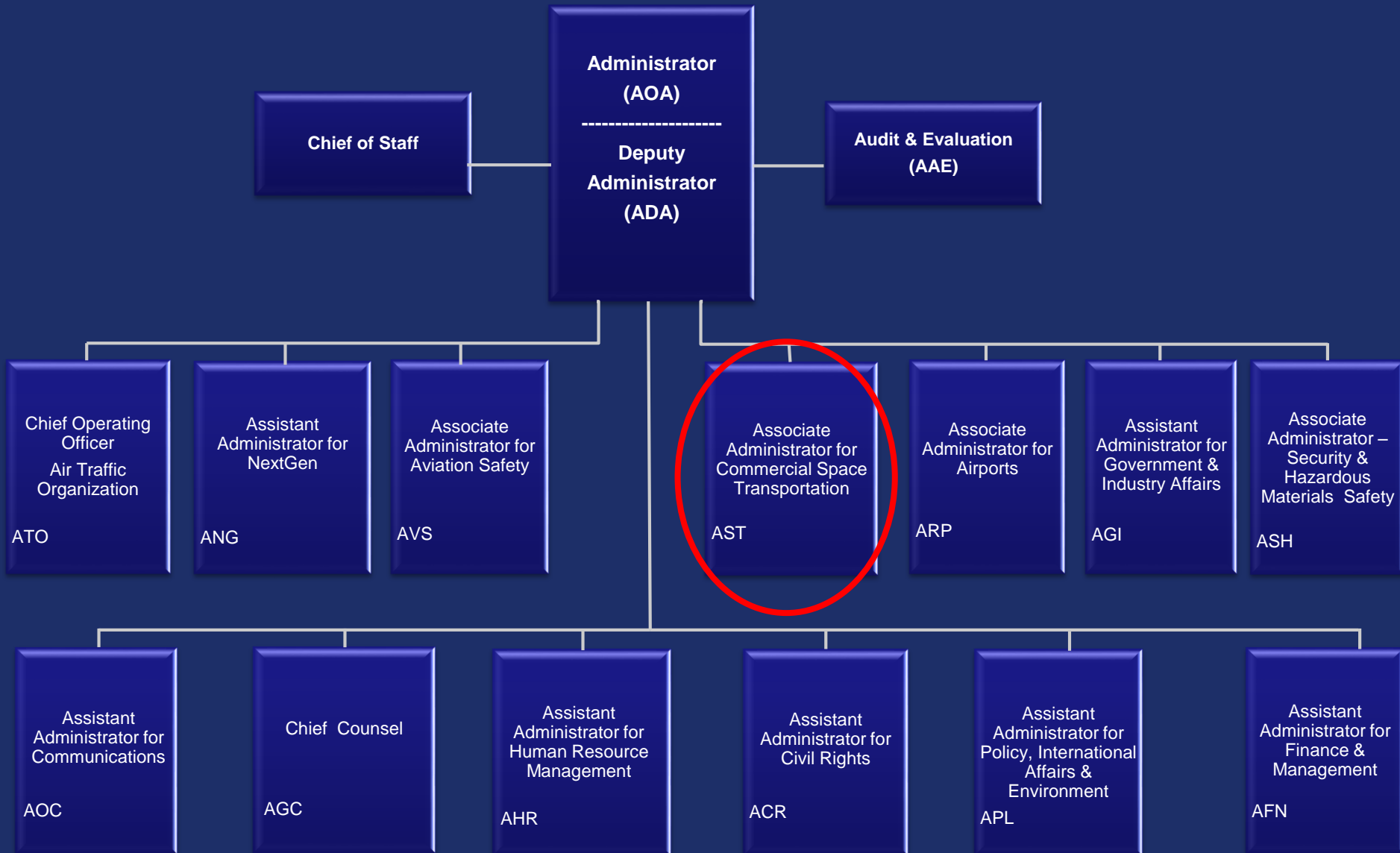


# FAA ORGANIZATIONAL CHARTS





# FAA Organizational Structure

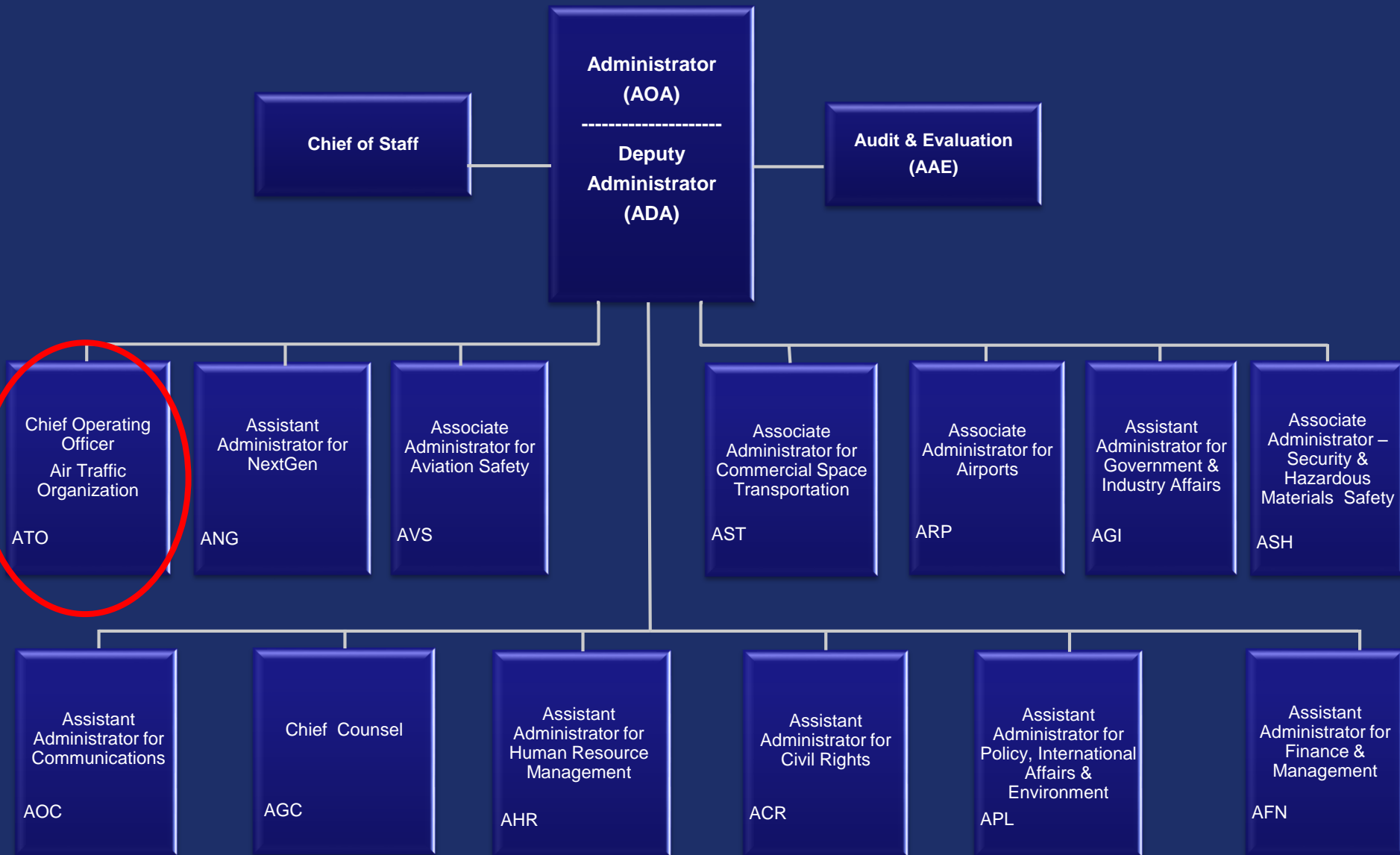


# AST History and Responsibilities

The Office of Commercial Space Transportation was established in 1984 as part of the Office of the Secretary of Transportation within the Department of Transportation. In November 1995, AST was transferred to the Federal Aviation Administration (FAA) as the FAA's only space-related line of business. AST was established to:

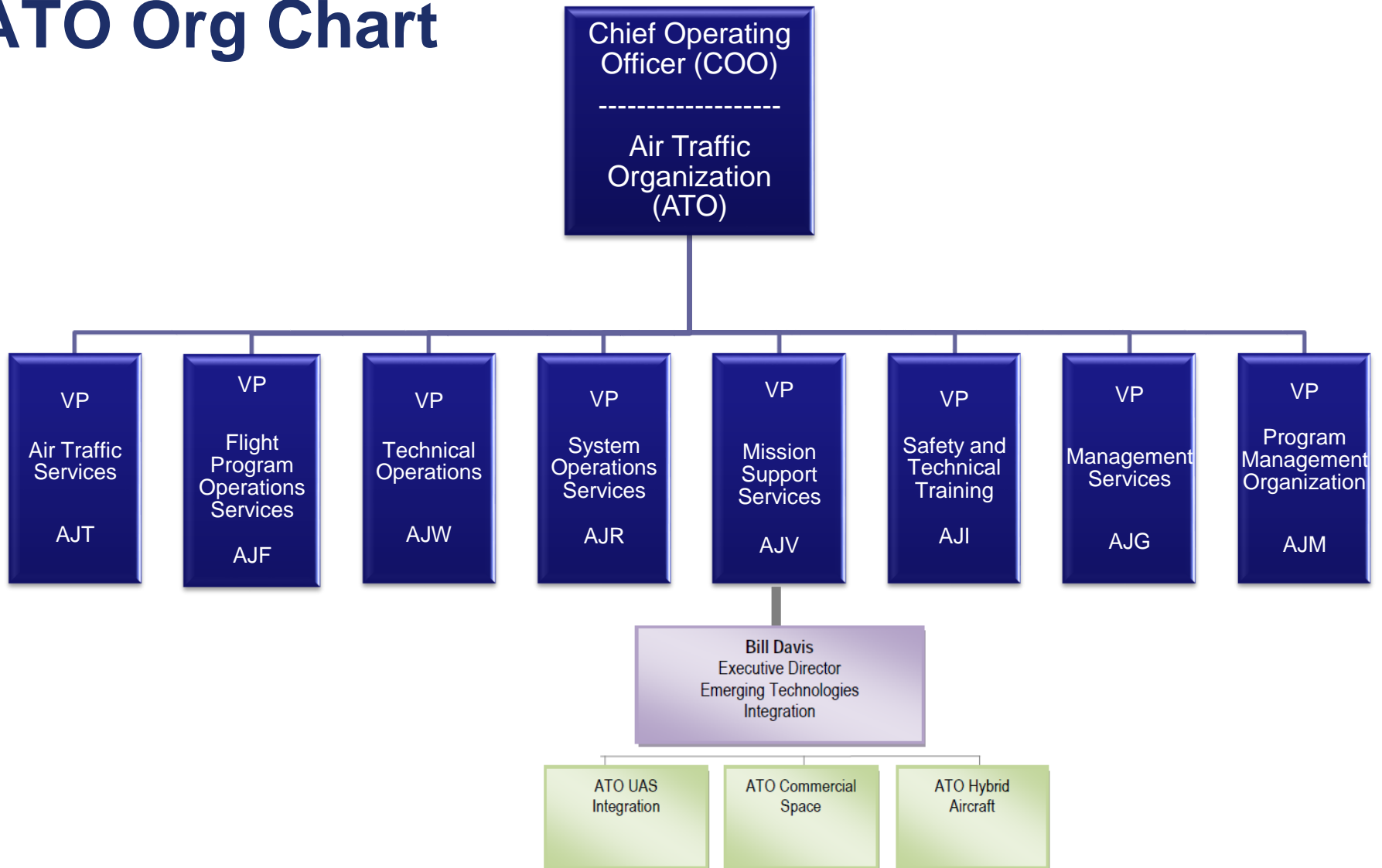
- Regulate the U.S. commercial space transportation industry, to ensure compliance with international obligations of the United States, and to protect the public health and safety, safety of property, and national security and foreign policy interests of the United States;
- Encourage, facilitate, and promote commercial space launches and reentries by the private sector;
- Recommend appropriate changes in Federal statutes, treaties, regulations, policies, plans, and procedures; and
- Facilitate the strengthening and expansion of the United States space transportation infrastructure

# FAA Organizational Structure





# ATO Org Chart



# ATO OVERVIEW



# ATO

- **Operational arm of the FAA**
- **Responsible for 30.2 million square miles of airspace**
- **17% of the world's airspace**
- **35,000 employees/over 14,000 air traffic controllers**
- **Hundreds of air traffic control facilities**
- **Traffic/safety/efficiency of the National Airspace System (NAS)**





# ATO Commercial Space Integration

**Mission Statement: To safely and efficiently integrate space operations into the NAS**



# ATO Commercial Space Integration

## FAA Strategic Initiatives:

- **FAA Strategic Priorities:** Deliver benefits through technology and infrastructure
- **Administrator Priority Initiatives:** **NAS Initiative:** Lay the foundation for the NAS of the future by achieving prioritized NextGen benefits, integrating new user entrants, and delivering more efficient, streamlined services
- **Related Sub-Initiatives:** Integrate new user entrants (unmanned aircraft and commercial space)



## ATO Commercial Space Integration (CSI) Office established April 1, 2015:

- Coordinate/align ATO efforts pertaining to integration of space operations
- Ensure effective collaboration with Office of Commercial Space (AST) and other FAA entities to align policy and services with FAA Strategic Initiatives
- Provide objective, independent assessments and recommendations
- Ultimately, the successful integration of space operations in the NAS

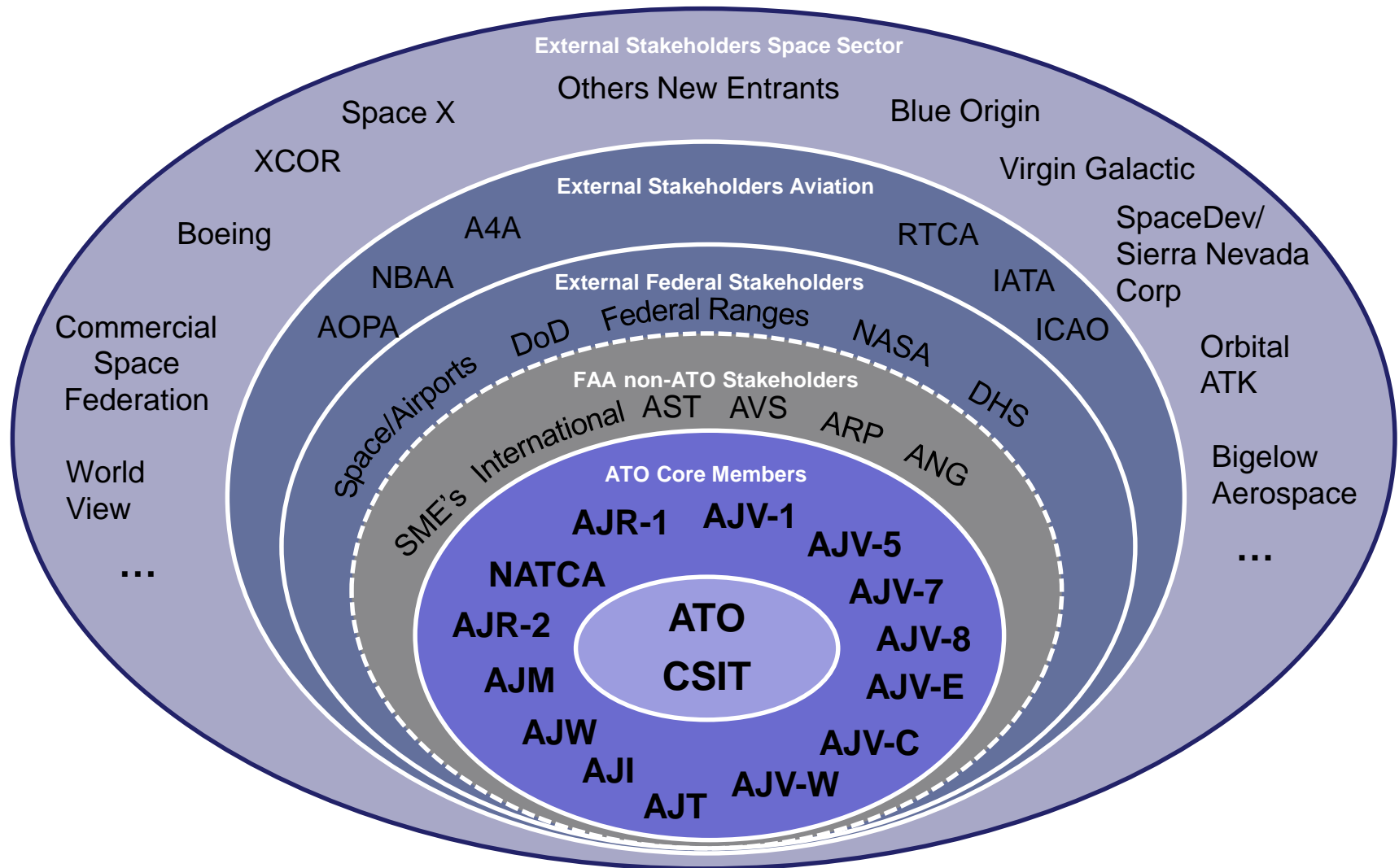




# ATO COMMERCIAL SPACE UPDATES: CSI TEAM



# Commercial Space Integration Team



# CSIT Scope

**Includes defining and coordinating policy, regulation, procedures, and strategic planning pertaining to integration of space operations into the NAS for all aspects of the ATO including but not limited to:**

- Planning for and managing changes to air traffic policy, regulation, and strategic planning;
- Establishing an ATO Commercial Space Integration roadmap;
- Planning for integration of space operations into affected ATO organizations.

## **CSIT will also:**

- Render FAA decisions on new space operation initiatives affecting the NAS;
- Provide support to air traffic control facilities by aiding resolution of Letters of Agreement issues that cannot be resolved within the individual facilities;
- Adapt to ATO Safety Initiatives (Safety Management System Process);
- Determine international leadership roles and responsibilities.



# ATO COMMERCIAL SPACE UPDATES: ROADMAP

# COO Statement on ATO Commercial Space

“We’re working hard to coordinate our commercial space efforts within the agency and get input and engagement from industry.”



“This includes the commercial space industry days we host at the Command Center, sponsored in partnership with the FAA’s Commercial Space office.”



“We’re also drawing up a Commercial Space Integration roadmap that will define changes in policy, regulation, procedures and automation capabilities, and determine the schedule by which these changes will be made.”



# ATO Commercial Space Roadmap: Functional Categories

**Develop an ATO  
roadmap to integrate  
space operations into  
the NAS**

**1. Airspace**

**2. Procedures and Standards**

**3. Space Vehicle Planning**

**4. Space Vehicle Operations**

**5. Training**

**6. Policy and Regulations**

**7. Systems and Capabilities**

**8. Safety**

**9. Integration Planning**

“We’re also drawing up a Commercial Space Integration roadmap that will define changes in policy, regulation, procedures and automation capabilities, and determine the schedule by which these changes will be made.” Teri Bristol, ATO COO, February 2016

# ATO COMMERCIAL SPACE UPDATES: EXAMPLES OF TOOLS UNDER DEVELOPMENT

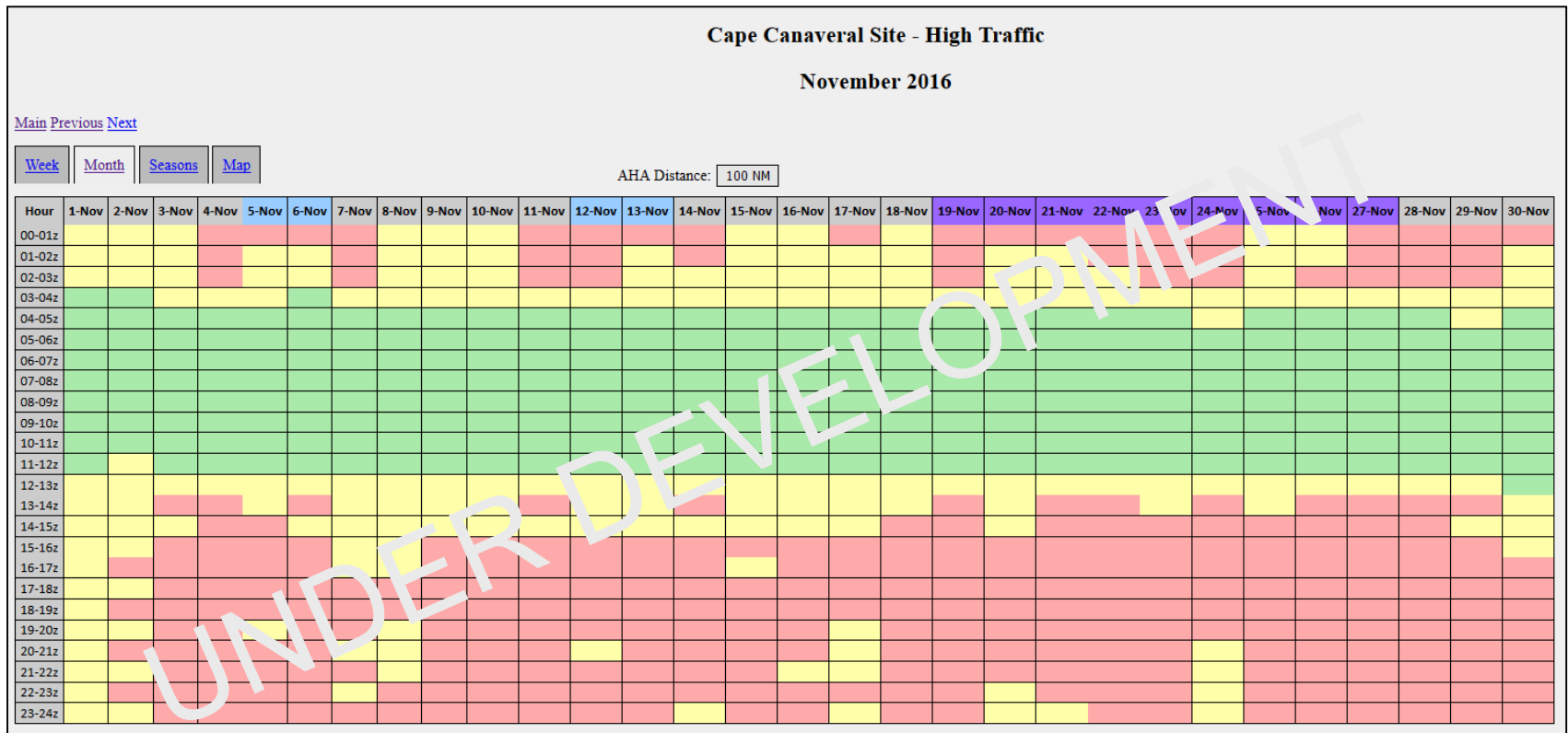
# Predictive Analysis Tool Prototype

- **Research effort that looks to develop a calendar of Traffic Projection for different launch sites**
  - Generated in advance, immediate access to user
  - Potential to aid space operators in planning future operations
  - Intuitive, portable and easy to publish
  - Support multiple views
  - Configurable

UNDER DEVELOPMENT



# Predictive Analysis Tool Example Screen



- Each site location divided into areas of high and moderate traffic levels
- Daily calendar generated by averaging 2010-2015 data by week number and then day of the week (e.g. November 8, 2016 is calculated as Tuesday average for week number 45)

# NAS Effects Assessment Prototype

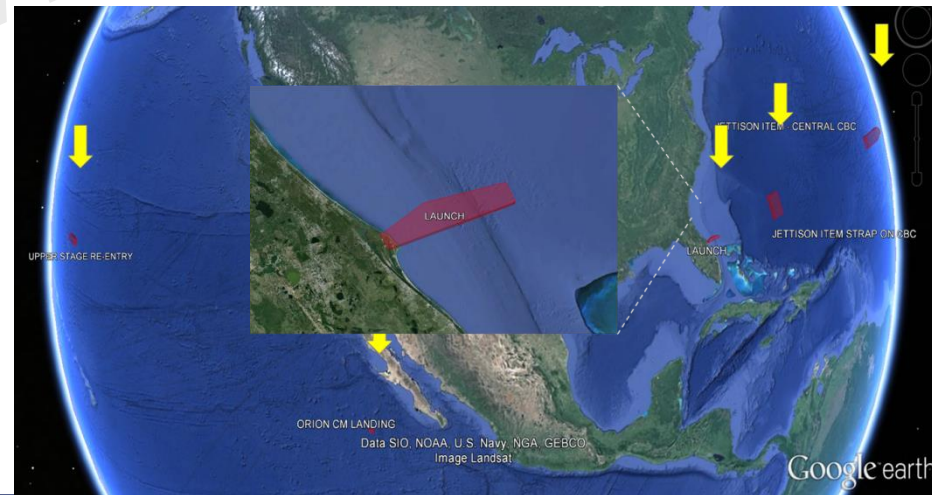
## Background



Image Source: NASA Website

**Demand for access to space for civilian, military and commercial purposes is on the rise**

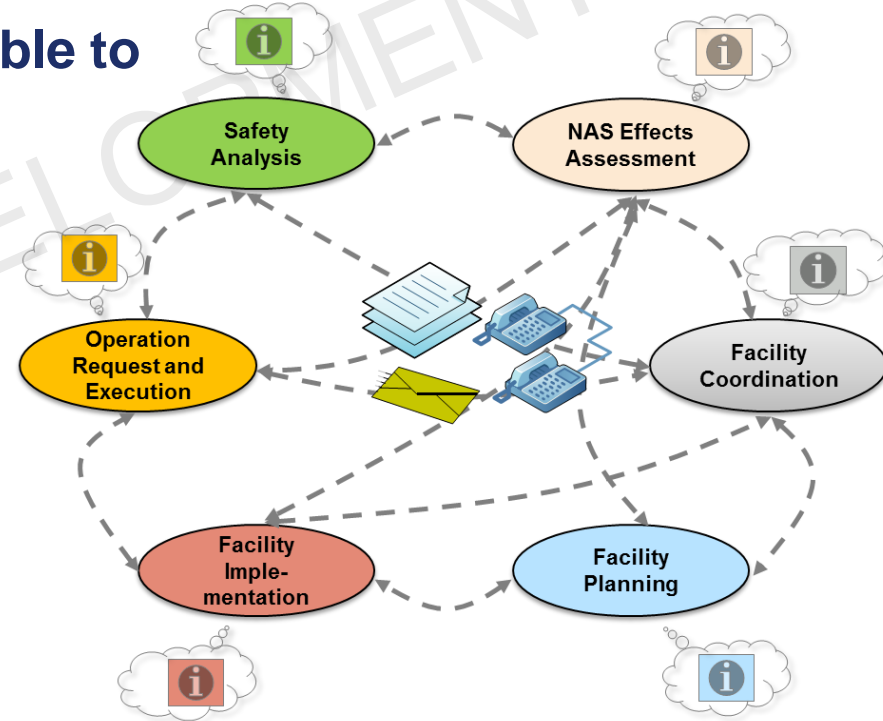
**FAA accommodates space launches often by blocking large volumes of airspace, resulting in flights re-routing and delays**



# Information Sharing Capability Pre-prototype

## Current Information Sharing Process is not Scalable

- Coordination: Manual and point-to-point
- Impact Assessments: Not accessible to all stakeholders
- Accessibility: No central point for information
- Repeatability: Launch and reentry decisions are case-by-case





# ATO Points of Contact

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