



# ATO Space Collaborative Decision Making (SpCDM) Space Operations Committee VI (SpOC VI) Executive Summary

**What:** From August 23-24, 2023, ATO System Operations held the Space Collaborative Decision-Making Program (SpCDM) sixth Space Operations Committee (SpOC VI) meeting at the FAA Air Traffic Control System Command Center in Warrenton, VA. The overall program launched on June 30, 2021. This is a summary of the event.

**Who:** Space launch and reentry operators that intend to launch by 2025 took part, including **Blue Origin, Boeing, Firefly, Relativity, Rocket Lab, Sierra Space, SpaceX, Stoke Space, and United Launch Alliance (ULA)**. The **Commercial Spaceflight Federation (CSF)** also participated, and the aviation associations, **Airlines for America (A4A), International Air Transport Association (IATA), and National Business Aviation Association (NBAA)**.

**NASA** is the interagency partner on the SpOC and took part. The FAA participants included **AST, ANG, NATCA**, and various offices from the **ATO**, including **AJR, AJV, AJT, and AJM**.

Airline representatives from **JetBlue, Delta, and Southwest** also observed the meeting.

The program is invitation-only, collaborative, and not a FACA.

**Core agenda:** A core focus of the meeting was a retrospective of the ATO SpCDM program since its inception and a discussion of future collaborative efforts. The agenda included topics such as:

Topic	Presenter(s)	
<b>ATO SpCDM Co-chair welcome</b>	Patrick Butler Blue Origin SpCDM Industry Co-chair	Duane Freer FAA ATO Space Operations SpCDM FAA Co-chair
<b>ATO SpCDM program updates</b>	Elizabeth McGovern Assink FAA ATO SpCDM Program Manager FAA ATO Space Operations	Allison Nicholls ATO SpCDM Program Coordinator FAA ATO Space Operations
<b>ATO SpCDM Data Exchange sub-team 1: Space Data Integrator update</b>	Crystal Toney Program Manager FAA Space Integration Program	Ron McKee Systems Engineer United Launch Alliance
<b>ATO SpCDM Data Exchange sub-team 2: Mission planning update</b>	Randolph "Randy" Mauer Program Manager FAA ATO Space Operations	Bob Lindberg Senior Advisor Firefly Aerospace
<b>ATO SpCDM International sub-team update</b>	Hannah Browne Space Operations International Liaison FAA ATO International	Mike Kennard Mission Execution, New Glenn Mission Operations Blue Origin

<b>ATO Space Operations metrics</b>	Orion Barker Mission Lead FAA ATO Space Operations	
<b>Spaceports brief</b>	Pam Underwood Director FAA Office of Spaceports	
<b>Boeing Starliner operational brief</b>	Lisa Rosenblum Loucks President, Ascendant Spaceflight Services, LLC	
<b>ATO SpCDM retrospective and future discussion</b>	Patrick Butler Blue Origin SpCDM Industry Co-chair	Mike Lapidus Director, Government Affairs SpaceX
<b>JetBlue operational brief</b>	Sally Russell Manager, Air Traffic Systems & Meteorology JetBlue	
<b>FAA Optimization Notice brief</b>	Duane Freer FAA ATO Space Operations SpCDM FAA Co-chair	
<b>ATO Space Industry Day debrief</b>	Duane Freer FAA ATO Space Operations SpCDM FAA Co-chair	
<b>Joint CDM efforts</b>	Elizabeth McGovern Assink ATO SpCDM Program Manager FAA ATO Space Operations	Renee Fields Operations Research Analyst FAA ATO Performance Analysis
	Vern Payne Manager, CDM & International Operations FAA ATO System Operation	Tony Price ATCSCC/NAS Training Administrator FAA ATO System Operations
<b>IATA brief</b>	Mike Carver International Airline Operations Liaison IATA	Ruby Sayyed Head of ATM Advocacy IATA
<b>Rocket Lab operational brief</b>	Aaron Kuipers Director - Test and Launch Operations (East Coast USA) Rocket Lab	
<b>Open ATO SpCDM forum</b>	Patrick Butler Blue Origin SpCDM Industry Co-chair	

**Key outcomes:** The key meeting outcomes included:

**Data:** Launch and reentry data remains a focal point of ATO SpOC discussions. ATO SpOC members stress the importance of streamlining and avoiding duplicative data entry throughout the FAA licensing process, mission planning, and real-time mission operations.

ATO SpOC members held a robust metrics discussion on critical decision windows (CDWs) and the factors leading to a decision to scrub a mission, with an interest in a breakdown by operator and

vehicle type. ATO SpOC members are also interested in a similar breakdown of a 2022 review of projected number of aircraft impacted by launches to pinpoint issues with impacts for evaluation.

*“This is where we need a joint sub team where aviation and space are agreeing and speaking the same data language. No one industry has all the data to get to the real impact.”*

– Patrick Butler, ATO SpCDM Co-chair, Blue Origin

*“People are making conclusions not based on data. I would rather make conclusions based on data, good or bad, but data-driven conclusions.”*

– Duane Freer, ATO SpCDM Co-chair, FAA ATO Space Operations

*“After a mission, my team (ATO Space Operations) has a review. We discuss what we could have done better based on the data and what could have been done better as a system. That is the only way to improve.”*

– Duane Freer, ATO SpCDM Co-chair, FAA ATO Space Operations

Real-time data exchange supports the efficiency efforts of ATO Space Operations. It is the foundation to enable safe, fast, flexible access to space – a priority for space launch and reentry operators.

**Information Exchange:** ATO SpOC VI featured operational briefs from Rocket Lab, Boeing, JetBlue, and IATA as information exchange for industry partners. The meeting also included an overview of Spaceports by the FAA’s Director of Spaceports.

The ATO SpCDM TFM Learning site has expanded its key trainings to include SpCDM knowledge briefs. The first is an overview of launch window determination by United Launch Alliance’s Commercial Program Director. Core information includes:

- Launch vehicle overview
- Orbit overview
- Launch date and time determination
- Launch window constraints
- Real-time impacts on launch day

[Click here](#) to watch the SpCDM knowledge brief on launch window determination.

A new section with reference materials has been added to the ATO SpCDM TFM Learning site. It includes [sample educational articles on airspace efficiency efforts](#), recent FAA newsroom articles, and media.

**Joint CDM activities:** Leadership from the SpCDM and CDM program management teams and sub-teams have partnered on various activities:

- **Metrics:** [The CDM Stakeholder Engagement Team \(SET\)](#) is leading a joint sub-team comprised of space and aviation subject matter experts. The sub-team is tasked with establishing a common set of metrics to measure both space operations and aviation operations in areas where the two activities overlap. The collaborative efforts between the FAA and industry will aim to capture robust performance data to provide insight into impacts, identify trends, and lead to the discovery of ways to improve efficiency.
- **Education:** [The CDM Training Team \(CTT\)](#) is leading a joint sub-team comprised of space and aviation subject matter experts. The sub-team is tasked with establishing an information resource for a joint understanding of Space Operations.
- **Collaboration:** The ATO SpCDM program has collaborated with the aviation community since its inception:
  - Three airline associations are represented on the ATO SpOC - NBAA, A4A, and IATA.
  - Airlines have briefed on their operations and efficiency needs - Delta, Southwest, and JetBlue.
  - Held an ATO SpOC meeting at Southwest Airlines HQ in Dallas, TX.
  - Invited airlines to periodically observe ATO SpOC meetings (Southwest, Delta, Southwest, JetBlue, and American).
- **Executive Leadership:** Facilitated joint executive CDM meetings:
  - FY 2023: Regular co-chair meetings.
  - FY 2024: Bi-annual to start in January.

**Surveillance services:** It was announced during ATO SpOC VI that the FAA will start to provide surveillance services to space operators at the ranges. Surveillance is defined as monitoring Temporary Flight Restrictions (TFRs) and Altitude Reservations (ALTRVs) for aircraft that could potentially conflict with a mission, and the space operator can make decisions as appropriate. More information will become available as surveillance services are rolled out by range location.

*“I’ve been a big proponent of the FAA doing surveillance as they have the best situational awareness and sensor network to help operators make decisions.”*

– Julia Black, Director of Range Operations, Stoke Space

**ATO SpCDM roadmap:** During ATO SpOC VI, development of a SpCDM implementation roadmap of current ATO SpCDM activities to align with long-term, strategic airspace integration efforts. Current activities would have tactical milestones and leverage the sub-teams and ATO SpOC meetings.

**ATO SpCDM sub-teams:** Each ATO SpCDM sub-team briefed the SpOC on sub-team status, recent and upcoming activities, and outcomes. ATO SpCDM sub-teams are a cornerstone of ATO SpCDM collaboration efforts and remain a focal point for members. They consist of government and industry professionals with specific subject matter expertise. In addition, sub-teams are charged by the ATO SpCDM Executive Steering Committee (ESC) to explore specific space-related tasks.

- Data Exchange sub-team 1: Space Data Integrator (SDI)

- The sub-team is tasked to increase operational efficiency in NAS traffic management of space operations by incorporating real-time data from the launch providers for improved FAA situational awareness.
  - The SDI team continues to meet with operators and brief them on what SDI is, what it is not, the benefits, and the status of deployments and capabilities.
  - Currently, three operators are in various stages of testing for onboarding to SDI.
- Data Exchange sub-team 2: Mission planning
    - The mission planning sub-team is tasked to explore tools and processes to improve the pre-mission data exchange between the FAA, launch and reentry operators, and other stakeholders.
    - Operators can access a launch and reentry operations calendar via the ATO Space Operations portal - a priority action item from the last ATO SpOC meeting.
    - The sub-team provides industry expertise to the FAA and NASA Ames portal development teams.
  - International sub-team
    - The international sub-team is tasked to inform launch and reentry operators of best practices for preparing and disseminating space operations-related airspace coordination and fostering a greater understanding of the value of leveraging ICAO and CANSO connections for efficient airspace utilization during space operations.
    - The international sub-team is in the final review process of an international lesson learned and best practices document for operators - a priority action item from the last ATO SpOC meeting.

**POCs:**

Duane Freer, Group Manager – ATO Space Operations (AJR-1800)  
 Elizabeth McGovern Assink, Program Manager – SpCDM (AJR-1800)  
 Allison Nicholls, Program Coordinator – SpCDM (AJR-1800)  
[SpOC@FAA.GOV](mailto:SpOC@FAA.GOV)

Those at Cape Canaveral, SME contact for Space Operations include:  
 Brien Gallagher at (936) 697-1910 or [Brien.P-CTR.Gallagher@faa.gov](mailto:Brien.P-CTR.Gallagher@faa.gov)



FAA ATO Space Collaborative Decision Making Program (SpCDM)  
Participant List  
**Space Operations Committee (SpOC) VI**  
**August 23-24, 2023**

Organization	Participant	Status
A4A – Airlines for America	Jeff Rehaluk	In person
Blue Origin	Patrick Butler (SpCDM co-chair) Mike Kennard (sub-team co-lead)	In person Virtual
Boeing	Lisa Loucks	In person
CSF – Commercial Spaceflight Federation	Isaiah Wonnemberg	In person
Delta Air Lines	Erin Cobbett	Virtual
FAA – AST Commercial Space Transportation	Emily Sisneros (alt) Pam Underwood (speaker) Brooke Teferra (observer) Amrit Singh (observer)	Virtual In person In person Virtual
FAA – ATO-AJM Program Management Organization	Crystal Toney (AJM-225) Space Integration (sub-team co-lead) Lisa Kemon (AJM-225) Space Integration (alt) Amanda Matthews (AJM-225) Space Integration (observer)	In person Virtual - 8/23 only Virtual
FAA – ATO-AJR Systems Operations Services	Vern Payne (AJR-1) CDM (speaker) Ed Kesler (AJR-1) NAS Operations (SME) LaKisha Price (AJR-1) NAS Operations (SpCDM co-chair) Duane Freer (AJR-1800) Space Operations (group manager) Elizabeth Assink (AJR-1800) Space Operations (SpCDM program manager) Orion Barker (AJR-1800) Space Operations (speaker) Garrett Campanell (AJR-1800) Space Operations Sean Kavanagh (AJR-1800) Space Operations Tamra Lee (AJR-1800) Space Operations Randy Mauer (AJR-1800) Space Operations (sub-team co-lead) Allison Nicholls (AJR-1800) Space Operations (ctr coordinator) Gunther Smiley (AJR-1800) Space Operations Joshua Subler (AJR-1800) Space Operations Tony Price (AJR-1) ATCSCC/NAS Training Administrator (speaker) Renee Fields (AJR-G) Performance Analysis (speaker)	In person In person In person - 8/24 only In person In person In person In person In person In person In person In person In person In person In person In person In person In person
FAA – ATO-AJT Air Traffic Services	Jon Stowe (AJT-3120) Operations Planning and Integration (alt)	In person
FAA – ATO-AJV Mission Support Services	Michelle Lott (AJV-S) Strategy Guillermo Sotelo (AJV-S) Strategy (alt) Frank Long (AJV-P) Policy Mike Wood (AJV-P) Policy (alt) Greg Hébert (AJV-I) International (alt)	In person Virtual In person Virtual In person
FAA - ANG Office of NextGen	Matt Modderno (ANG) Office of NextGen (SME) Wyatt Element (ANG) Office of NextGen (observer)	In person Virtual
FAA – NATCA National Air Traffic Controllers Association	Paul Behan (alt)	In person

Organization	Participant	Status
Firefly	TJ Binotto	In person
IATA – International Air Transport Association	Mike Carver Ruby Sayyed (speaker)	In person - 8/24 only Virtual
JetBlue	Sally Russell (speaker)	Virtual
NASA – National Aeronautics and Space Administration	Steve Chan (observer) Eric Wahl (observer)	In person Virtual
NBAA – National Business Aviation Association	Heidi Williams Dean Snell	In person In person - 8/24 only
Relativity	Joy Mosdell (alt)	In person
Rocket Lab, USA	Asher Best Aaron Kuipers (alt)	Virtual In person
Sierra Space	Christopher Allison	In person
Southwest Airlines	Darin Tietjen (speaker)	Virtual
SpaceX	Mike Lapidus	In person
Stoke Space	Julia Black	In person 8/23 - virtual 8/24
ULA – United Launch Alliance	Vern Thorp (ESC) Clint Hunt Michael Rudolph (alt) Ron McKee (sub-team co-lead)	Virtual - 8/24 only In person - 8/23 only Virtual Virtual - 8/23 only