



**FAA**

**Commercial Space Transportation**

[faa.gov/space](https://faa.gov/space)

# **FAA Office of Commercial Space Transportation (AST)**

February 16, 2023



# Who Is AST?

- AST is the FAA's internal name for Office of Commercial Space Transportation
  - One of 5 lines of business in the FAA
- On behalf of the Department of Transportation (DOT), AST licenses commercial launch/reentry activities, and launch/reentry sites carried out by United States citizens/companies
- Our Mission: Oversee and enable the safest commercial space transportation system in the world
  - Oversee means: authorize through a license or permit, regulate and inspect
  - Enable means: efficient, effective, expedient, facilitate
  - Safest means: protection of the public, property and U.S. interests
- Since 1989 the FAA has licensed and/or permitted 517 commercial launches/reentries and 14 Spaceport operator licenses
- AST has zero public casualties or major property damage



# Types of activities FAA/AST is involved in

## Commercial Launch/Reentry Licenses

- Expendable Launch Vehicles (ELV)
- Reusable Launch Vehicles (RLV)
- Air Launch (ELV/RLV)



## Experimental Permits

## Spaceport Licenses

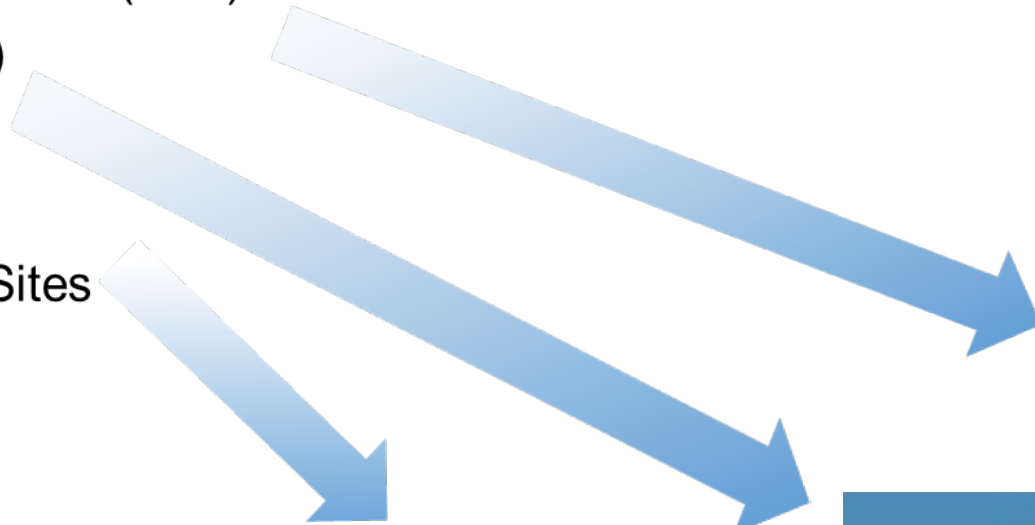
- Launch and Reentry Sites

## Safety Element Approvals

## Inspections

- Launch
- Operations and Sites

## Payload Reviews



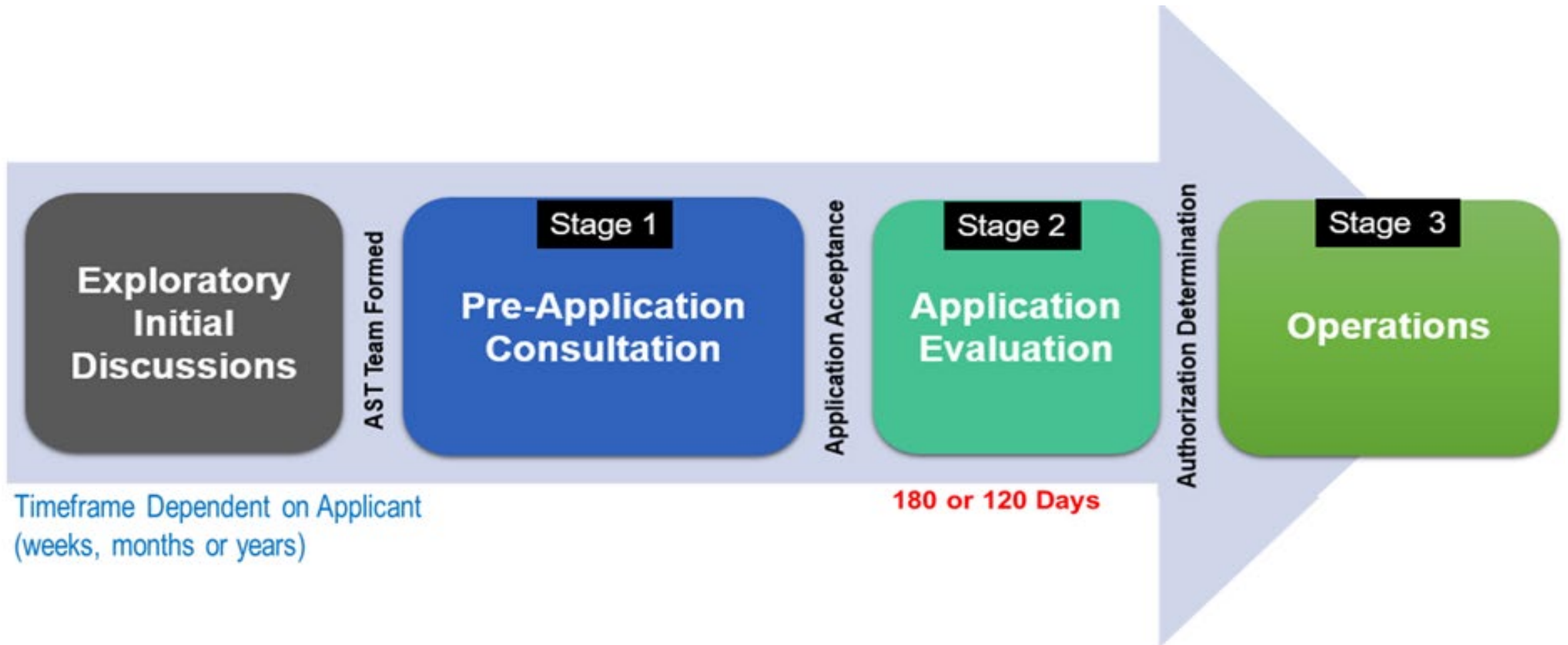
# Who Needs a License or Permit?

- If a company is U.S. incorporated or operated in U.S. territory, it needs authorization
- U.S. citizens or entities organized under laws of U.S. or any State must obtain a license:
  - To launch or reenter a vehicle inside or outside U.S.;
  - To operate a launch (spaceport) or reentry site inside or outside of U.S.;
- A Foreign entity that wishes to operate a vehicle or site within U.S. territory.
- An entity may obtain an experimental permit:
  - To launch a reusable suborbital vehicle from United States for research and development, or prior to obtaining a launch license, to show compliance with requirements for a license or crew training.
- FAA does NOT license launches or reentries “Government carries out for Government”:
  - While NASA and the Department of Defense conduct their own launches, both are increasingly using commercial space launch services.





# Typical AST Authorization Process Overview



# Airspace Integration

- Per 14 CFR 400 regulations, an applicant shall complete a letter of agreement (LOA) with the FAA Air Traffic Control (ATC) office having jurisdiction over the airspace through which operations will take place to establish procedures for issuance of a Notice to Air Missions (NOTAM).
- NOTAM defines the lateral confines of the airspace closure with the associated dates/time for a launch/reentry operation. NOTAM's must be issued in advance of operations to notify other users of the National Airspace System of the airspace closure.
- Applies to the following for launch and reentry:
  - 14 CFR 420.31 – Launch Site Operator License
  - 14 CFR 417.111 – Launch Plans
  - 14 CFR 431.75 – Launch and Reentry of an RLV
  - 14 CFR 437.35 – Experimental Permits
  - 14 CFR 450- Launch and Reentry License Requirements



# Airspace Integration

- During the pre-application phase the AST licensing team works with the commercial space applicant and brings in the FAA Air Traffic Organization for airspace integration
- FAA Air Traffic Organization (ATO) is the line of business in the FAA that is responsible for ensuring safety, efficiency, and capacity of the National Airspace System (NAS)
- FAA ATO works to develop a letter of agreement with the applicant that meets our 14 CFR Regulations



# Key Takeaways

- AST has a dual mandate: protect the (uninvolved) public & encourage
- FAA authorizes space operations, we do not certify space vehicles
- FAA does not authorize military or civil launches and reentries
- All U.S. incorporated commercial operations need an FAA authorization regardless of launch or reentry site anywhere in the world
- Industry cadence is steadily increasing, with great potential
- Website:
  - [www.faa.gov/space](https://www.faa.gov/space)
- Answers to Frequently Asked Questions:
  - [https://www.faa.gov/space/additional\\_information/faq/](https://www.faa.gov/space/additional_information/faq/)





# Additional Information



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# Foreign Agreements

- FAA CFR 400 Regulations also require operators to have an LOA with any foreign Air Navigation Service Providers/entities whose airspace may also require a closure via a NOTAM.
  - Most often for stage drops and/or jettisoning of items that require an aircraft hazard area
- CFR 450.147 (3) Agreements for notices to airmen. Unless otherwise addressed in agreements with the site operator, the FAA Air Traffic Organization or *other applicable air navigation authority* to establish procedures for the issuance of a Notice to Airmen prior to a launch or reentry, for closing of air routes during the respective launch and reentry windows, and for other measures necessary to protect public health and safety;



# Foreign Agreement Coordination

- During the licensing pre-application phase the commercial space applicant and/or FAA will reach out to the foreign entity to start agreement coordination.
- FAA ATO has agreed to coordinate international NOTAMs for the commercial space operator
  - In lieu of an agreement between the foreign entity, the operator can develop an agreement with ATO Space Operations that addresses and outlines the procedures for ATO to coordinate any necessary NOTAMs .
  - If the operator chooses to develop an agreement with ATO, that agreement does meet the regulatory requirement and they don't have to develop one directly with the foreign entity.

