

U.S. Commercial Space Transportation Regulations



Presented to the

United Nations Committee on Peaceful Uses of
Outer Space Scientific and Technical
Subcommittee

By

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Department of Transportation/Federal Aviation Administration Statutory Authority

51 U. S. C. Chapter 509 (formerly the Commercial Space Launch Act of 1984, as amended)

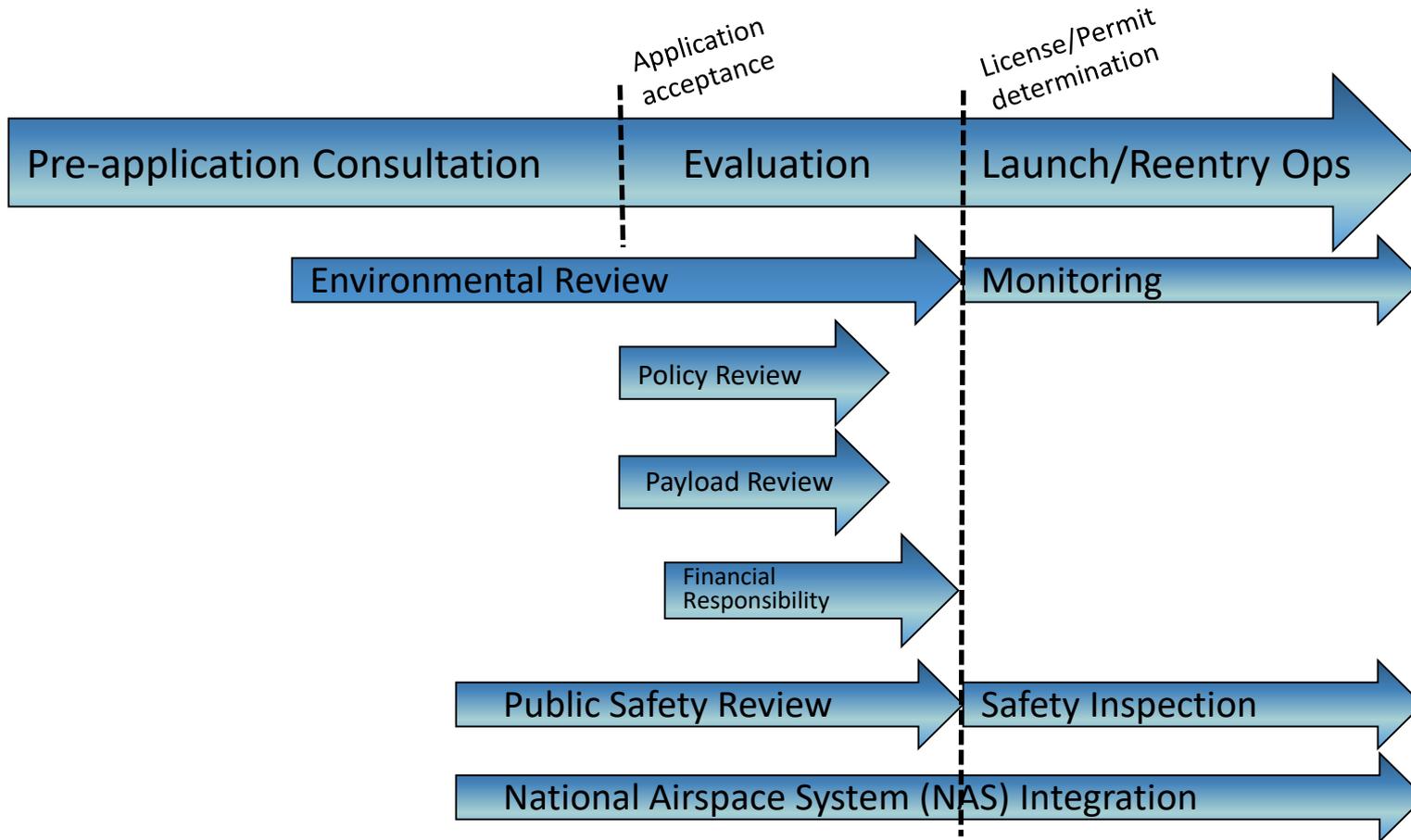
- Authorizes the FAA* to license commercial launch and reentry activities and the operation of launch and reentry sites as carried out by U.S. citizens or within the United States.
- Directs the FAA to:
 - Exercise this responsibility consistent with **public** health and **safety**, safety of property, and the national security and foreign policy interests of the United States, and
 - **Encourage, facilitate, and promote** commercial space launches and reentries by the private sector.

* The Secretary of Transportation's licensing authority has been delegated to the Administrator of the FAA and further assigned to the Associate Administrator for Commercial Space Transportation (AST).

Regulations for Licensing

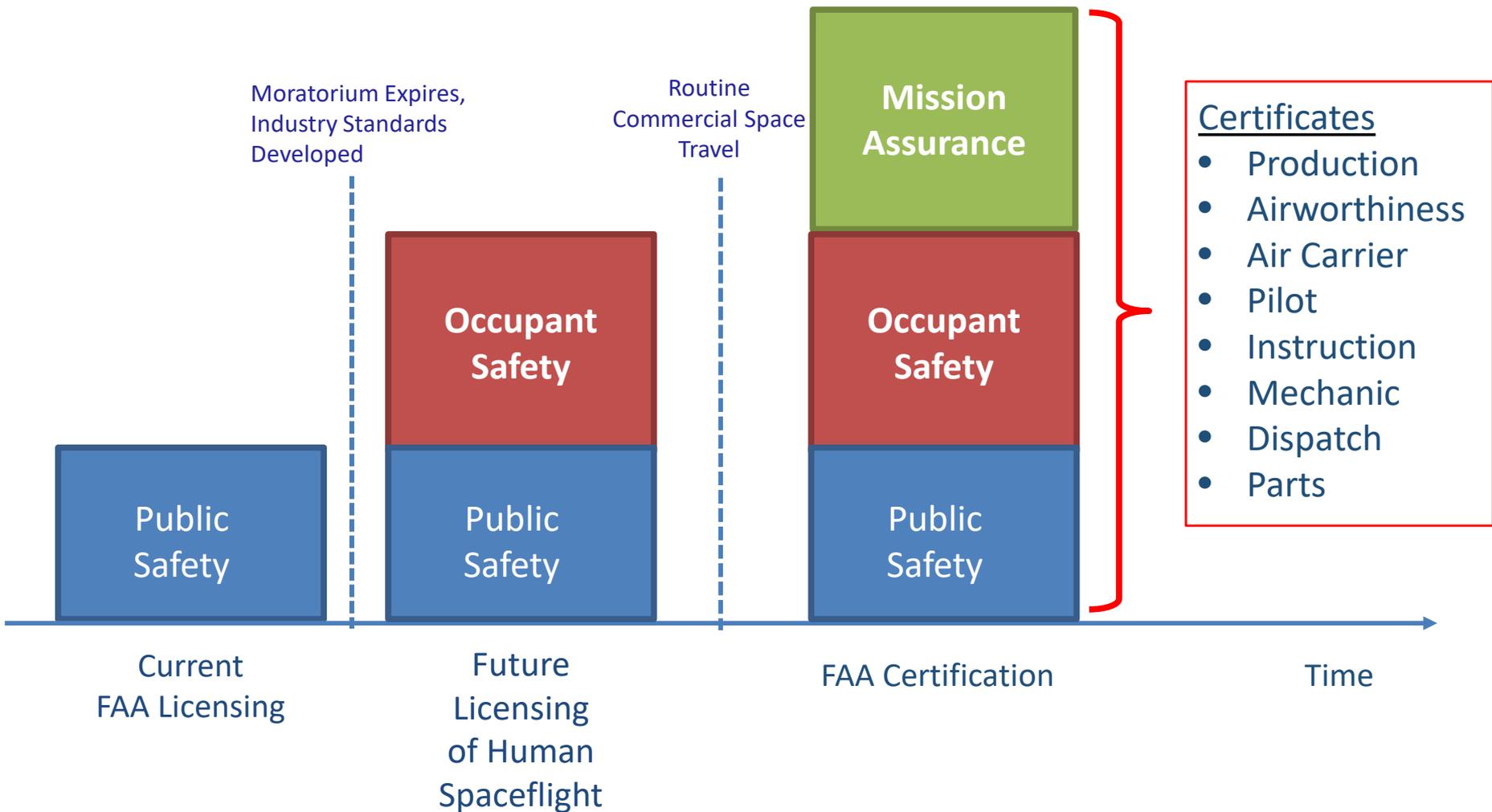
- An entity must obtain a license:
 - To **launch** a launch vehicle from the United States;
 - To **operate** a launch site within the United States;
 - To **reenter** a reentry vehicle in the United States; or
 - To **operate a reentry site** within the United States.
- A U.S. citizen or an entity organized under the laws of the United States or any State must obtain a license:
 - To **launch a launch vehicle *outside*** the United States;
 - To **operate a launch site *outside*** of the United States;
 - To **reenter** a reentry vehicle *outside* of the United States; or
 - To operate a reentry site *outside* of the United States.
- **FAA does not license** launches or reentries “the Government carries out for the Government”
 - NASA and DOD typically carry out their own launches.
 - US Government has an option to choose commercial launch services

FAA License Process Overview



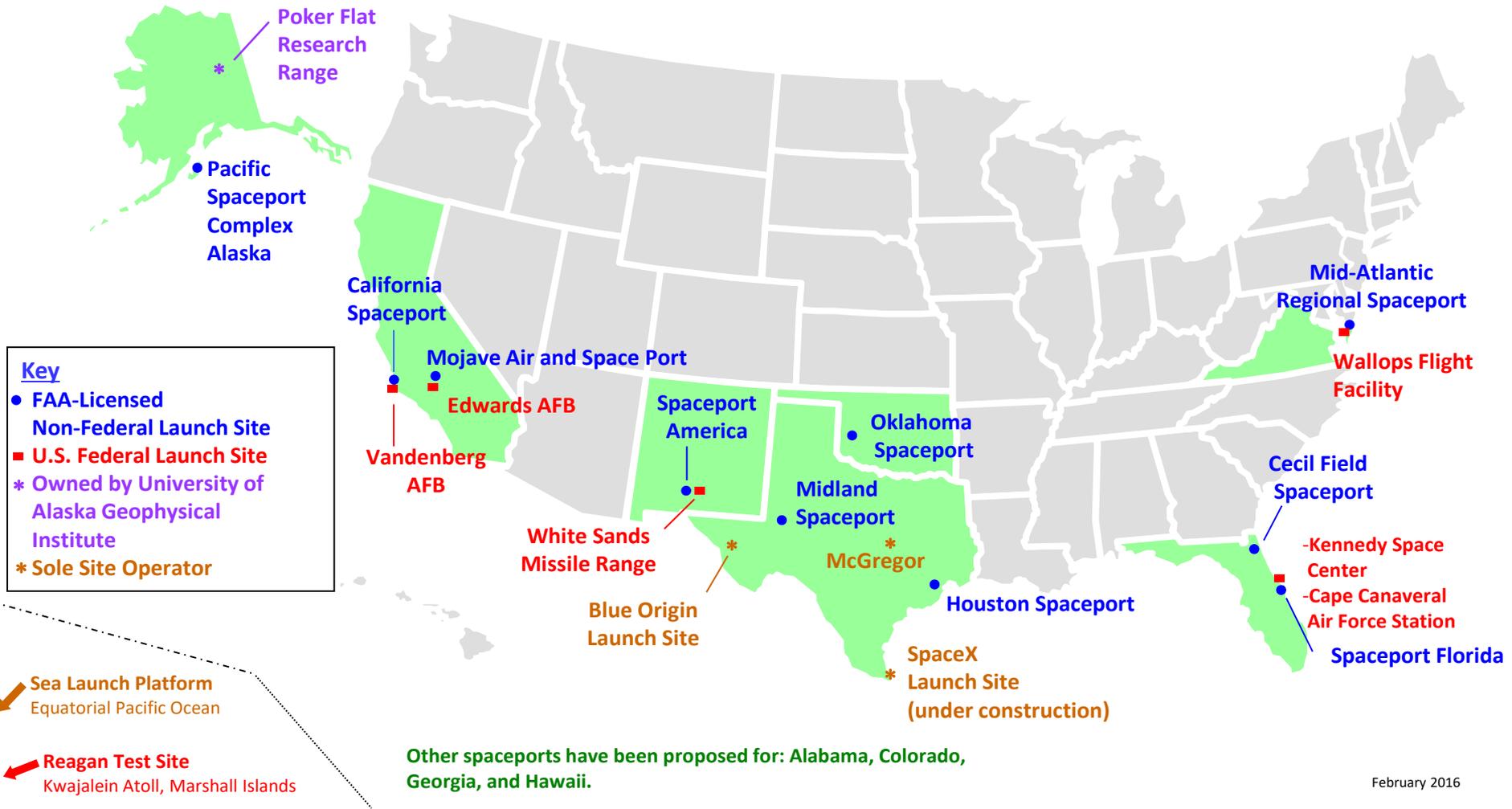
FAA has 180 days to respond to a "complete enough" application for a license, 120 days for a permit

Potential Regulatory Path

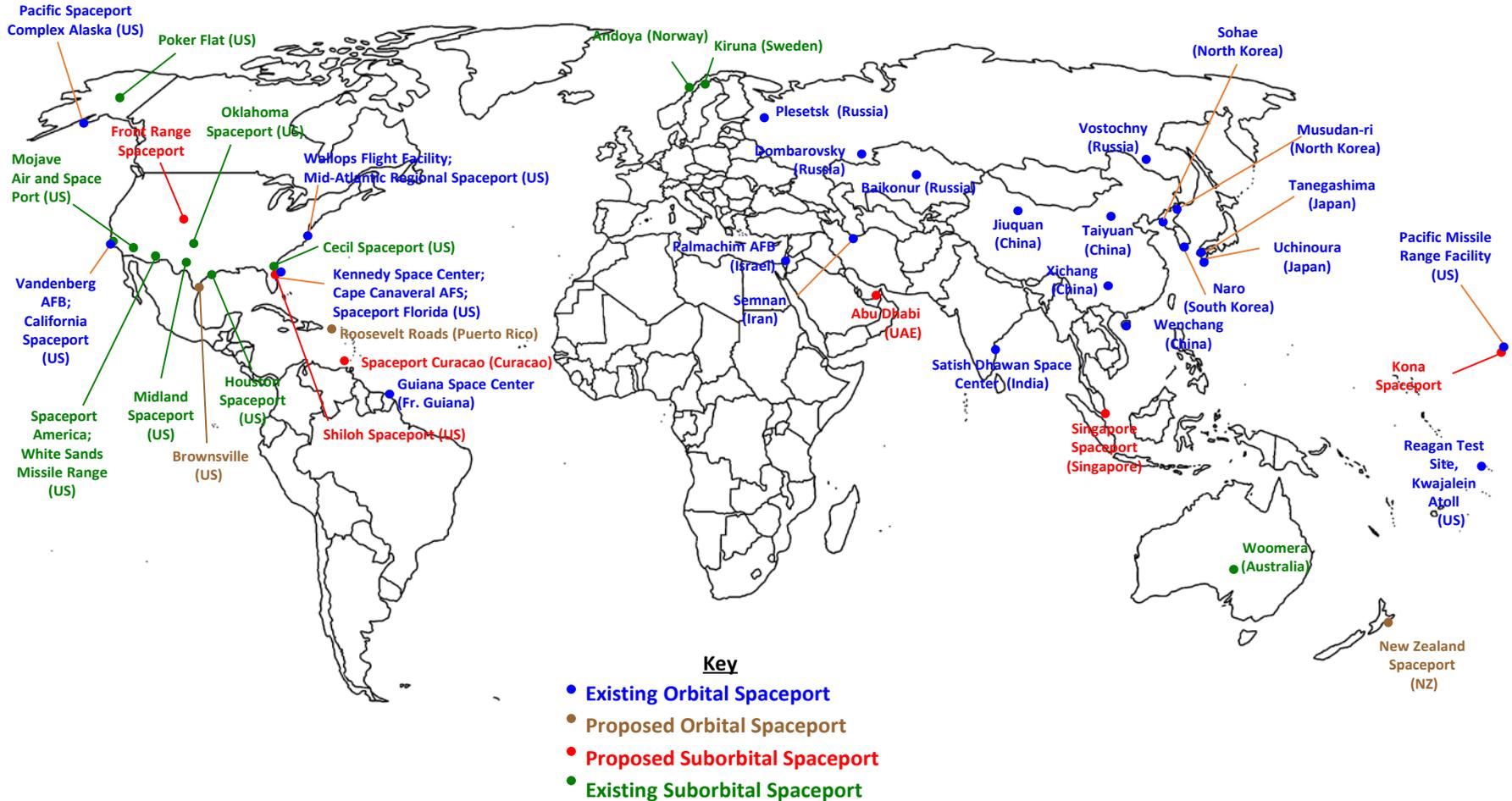


U.S. Spaceports

Commercial/Government/Private Active and Proposed Launch Sites

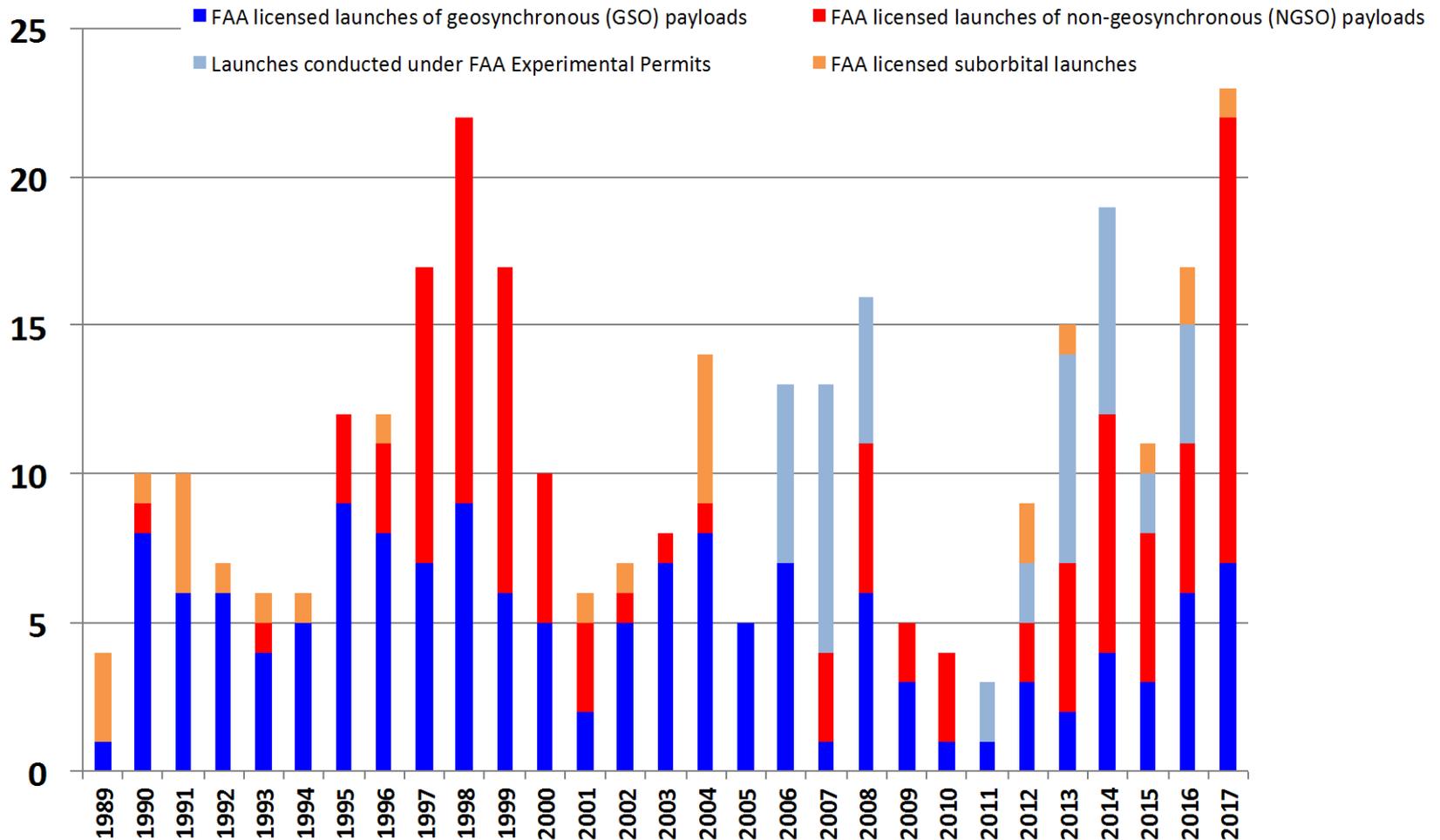


Existing and Proposed Global Spaceports



Source: FAA July 2016

FAA-Licensed and Permit Launches 1989 - 2017



275 FAA-licensed launches 1989 - 2017 (145 GEO, 106 NGSO, 24 Suborbital)
 44 Permit launches 2006 – 2017 (all suborbital)
 Includes 58 launches for U.S. Government (NASA [ISS], NOAA, DOD, others)

Source: FAA/AST January 2018

Expanding Commercial Capabilities



Virgin Galactic



Sierra Nevada Corp



Boeing



Rocket Lab USA



Blue Origin



Orbital Sciences ATK



SpaceX

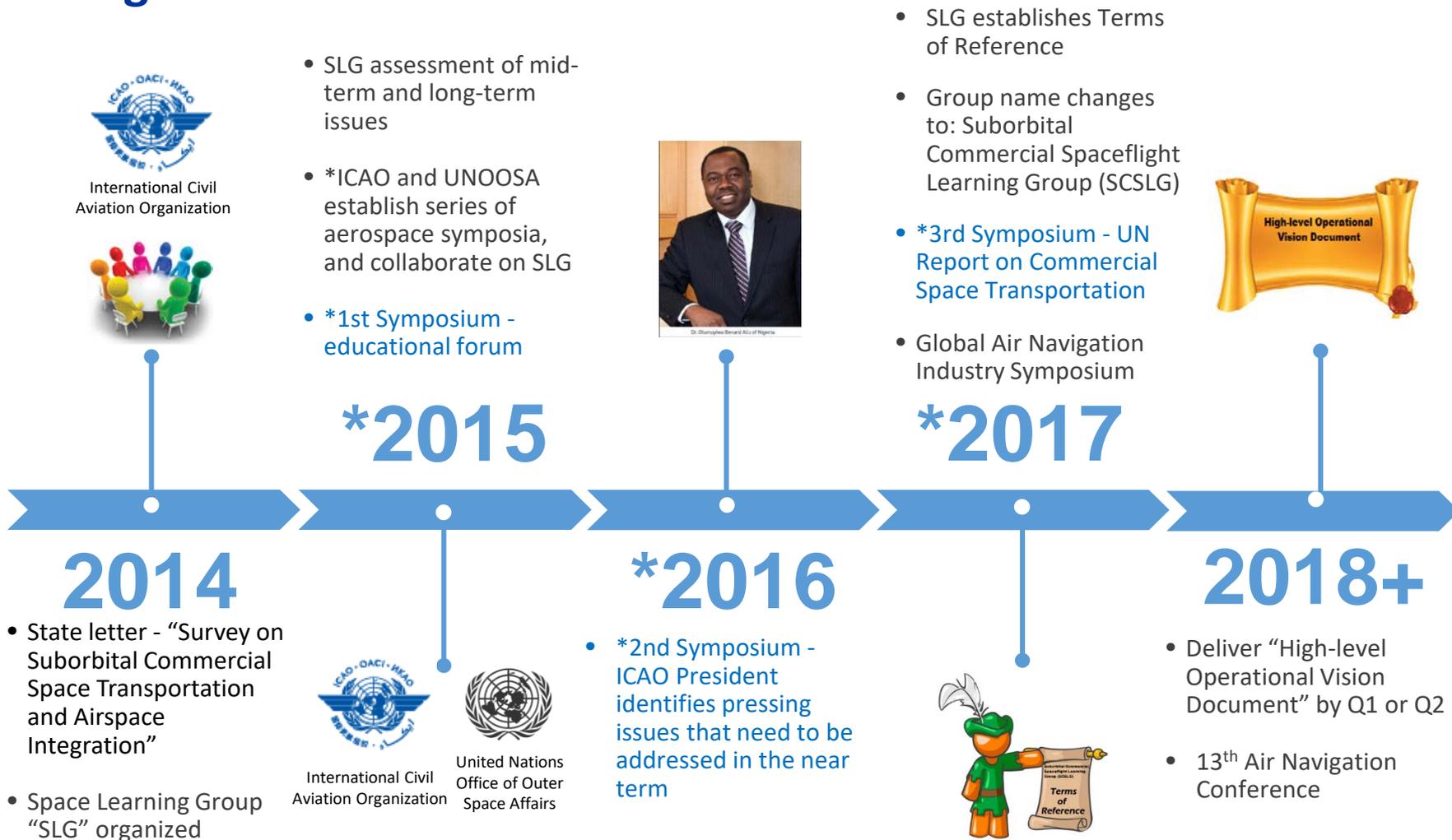


Bigelow Aerospace

FAA/AST International Goals

- The 2013 National Space Transportation Policy directs the Secretary of Transportation and other appropriate agencies to:
 - “Advocate internationally for the adoption of United States Government safety regulations, standards, and licensing measures to enhance global interoperability and safety of international commercial space transportation activities.”
- The FAA is promoting its commercial space transportation regulations for adoption by other countries—the goals of AST’s outreach are to:
 - 1) Assist U.S. industry activity outside the United States;*
 - 2) Provide U.S. international leadership;*
 - 3) Establish international relationships; and*
 - 4) Prepare for future interoperability between countries*

ICAO / UN OOSA Space Learning Group (SLG) Background and Milestones



Future Challenges, Considerations and New Markets

- DOT/FAA may be a logical regulatory authority for:
 - New “non-traditional” commercial space activity in new markets such as: orbital habitats, on-orbit servicing, lunar surface activity, asteroid mining, circumlunar, Mars missions
 - U.S. Space Traffic Management
- Congress passed the “U.S. Commercial Space Launch Competitiveness Act” in 2015 (PL 114-90)
 - Contains requirement for 12 reports from multiple government agencies due to Congress including 6 led by FAA. Report areas include:
 - Mission Authority, Orbital Traffic Management, Space Situational Awareness and Safety Data, Industry Standards, Space Resource Utilization, Transition to Safety-Focused Framework, Range Streamlining, Space Support Vehicles, and Maximum Probable Loss methodology.
- New legislation, protections and authorities may be needed
- Flexibility of government to support this dynamic industry
- Retaining focus on safety and efficiency of ANY transport mode

