Federal Aviation Administration

Key Issues in Commercial Space Transportation

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Commercial Space Transportation Advisory Committee

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Congressional Action

U.S. Commercial Space Launch Competitiveness Act

- Indemnification extended through September 2025
- Learning period extended through September 2023
- Government Astronauts defined
- Operation of ISS extended through September 2024
- U.S. policy articulated for Space Resource utilization
- Twelve reports assigned to provide Congress with information and recommendations on a variety of commercial space topics

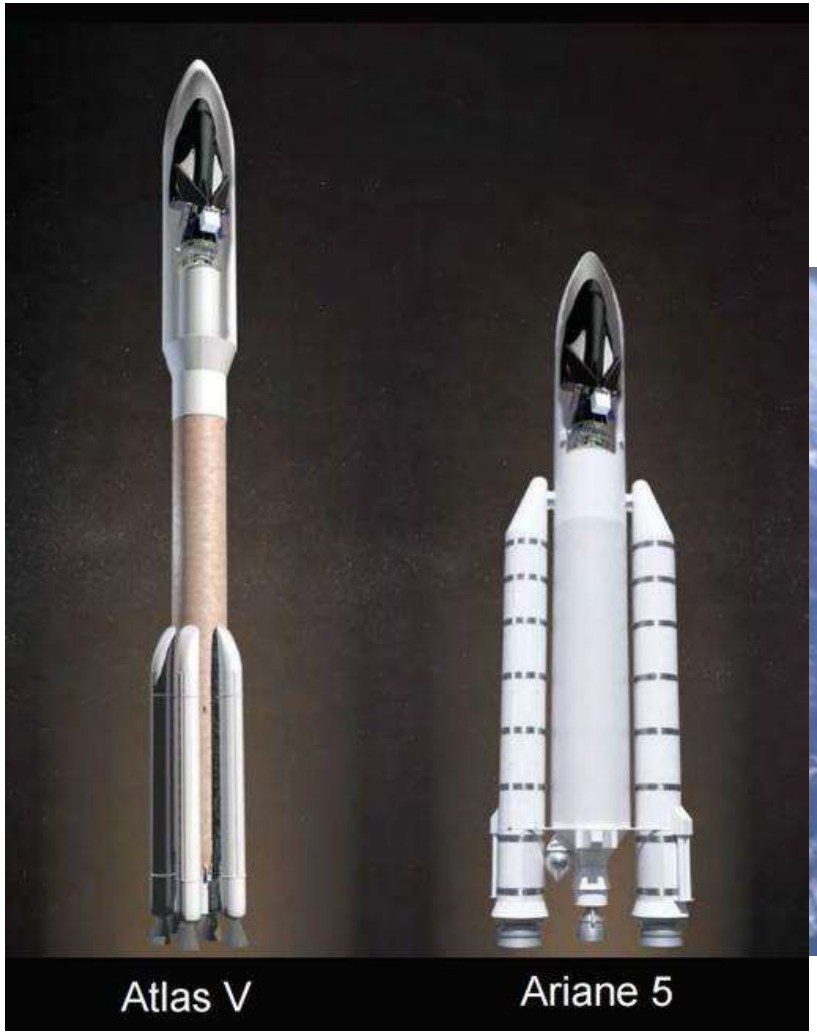
SpaceShipTwo Rollout

Commercial Cargo Program

Orbital ATK

SPACEX

Commercial Cargo – A New Provider



Sierra Nevada Corporation
Dream Chaser

Falcon 9 1st Stage Landing

Autonomous Spaceport Drone Ship

Blue Origin

Commercial Crew Program

Boeing Starliner

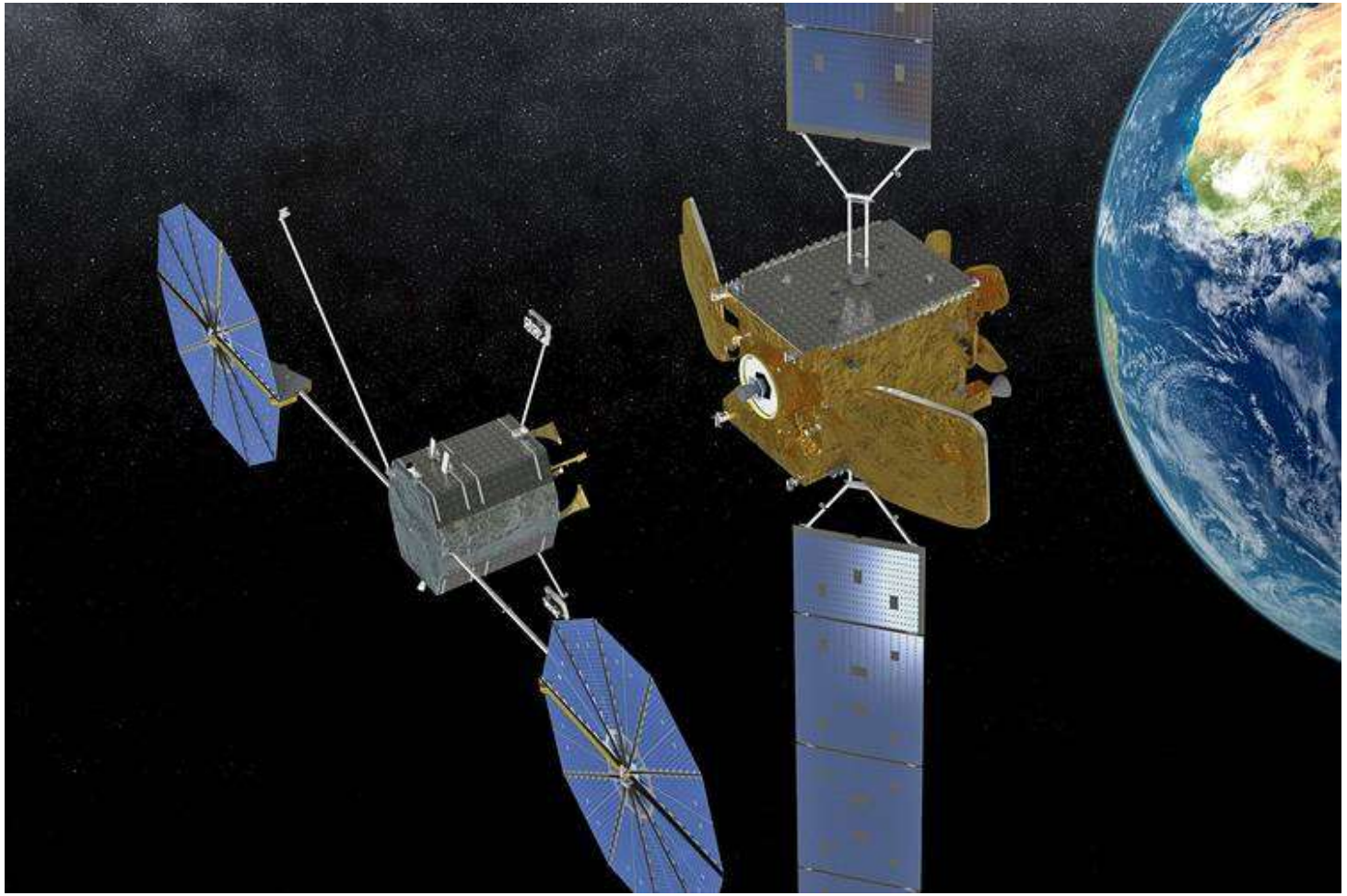
SpaceX Dragon 2

Commercial Crew & Cargo Processing Facility

Launch Complex-39A

Potential Orbital ATK Use of VAB

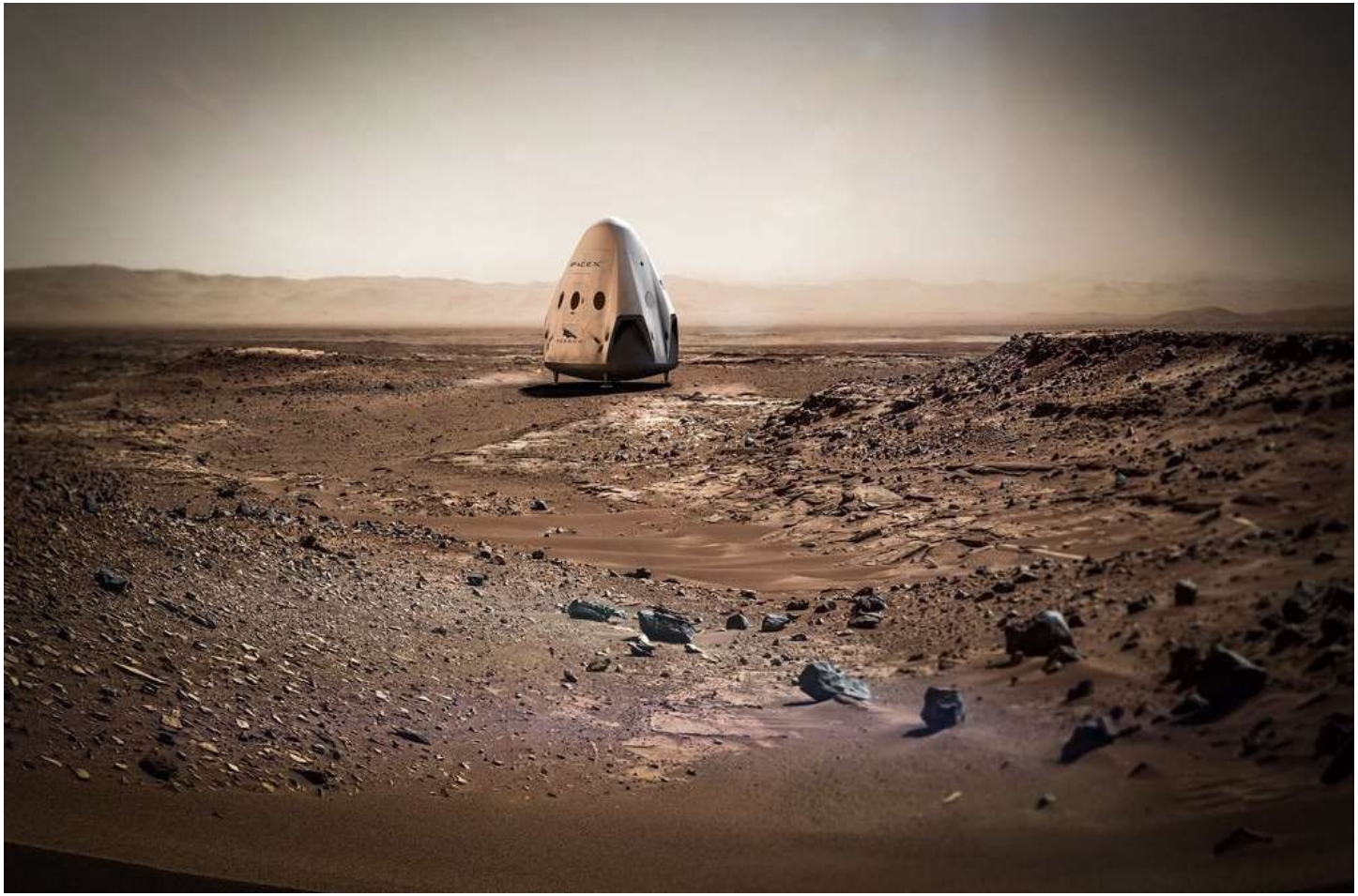
Orbital ATK/Intelsat Agreement



BEAM Being Attached to ISS

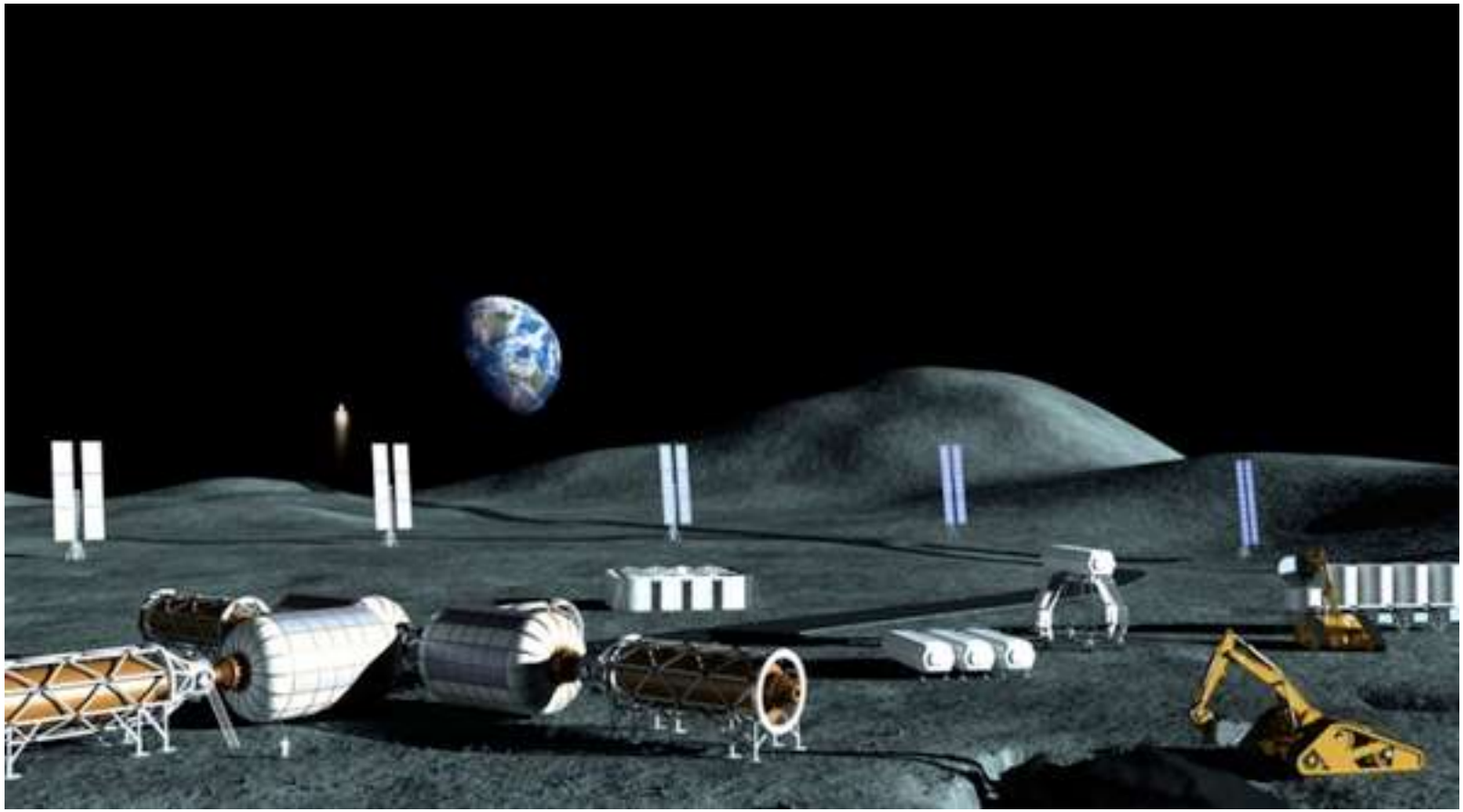
OneWeb Satellite Factory

Red Dragon




SPACE FOUNDATION
32ND SPACE SYMPOSIUM
April 11-14, 2016 · Colorado Springs, Colorado USA

Moon Village to Be Discussed at IAC 2016




REP. JIM BRIDENSTINE
OKLAHOMA'S FIRST DISTRICT
WWW.SPACERENAISSANCEACT.COM
AMERICAN SPACE RENAISSANCE ACT
REP. JIM BRIDENSTINE
OKLAHOMA'S FIRST DISTRICT

American Space Renaissance Act (1)

- Establishes the position of Assistant Secretary of Transportation for Commercial Space Transportation
- Authorizes AST appropriations for FY17-FY21
  - FY17 - $43.2M
  - FY18 - $55.5M
  - FY19 - $66.0M
  - FY20 - $80.5M
  - FY21 - $99.0M

American Space Renaissance Act (2)

- Establishes an Office of Spaceports within AST
- Updates and funds the Space Transportation Infrastructure Matching Grants program
- Establishes a prize account for commercial space activities
- Establishes a loan guarantee program within the Department of Commerce to support the space industrial base
- Permits the Secretary of Transportation to allow experimental aircraft to be used for spaceflight training at FAA licensed spaceports

American Space Renaissance Act (3)

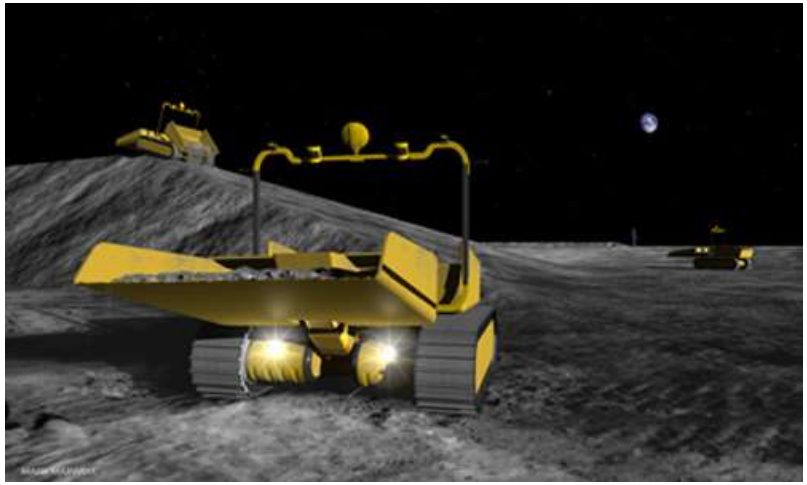
- Authorizes the Secretary of Transportation to obtain Space Situational Awareness information and provide it to civil, commercial, and international entities
- Directs that a lead Government agency be designated for Space Traffic Management activities and services

Key Issue #1

Question

- How can we enable new, non-traditional commercial operations in space?

Nontraditional Commercial Space Operations



Outer Space Treaty

Article VI

> "The activities of non-governmental entities in outer space … shall require authorization and continuing supervision by the appropriate State Party to the Treaty."

Key Stakeholders

- Department of Transportation (DOT)
  - Federal Aviation Administration (FAA)
- Department of Defense (DOD)
- Department of Commerce (DOC)
  - National Oceanic and Atmospheric Administration (NOAA)
  - National Telecommunication and Information Agency (NTIA)
- Department of State (DOS)
- National Aeronautics and Space Administration (NASA)
- Office of the Director of National Intelligence (ODNI)
- Federal Communications Commission (FCC)

Existing Regulatory Framework

- FAA – Responsible for licensing commercial launches and reentries
- FCC – Responsible for licensing radio broadcasts from space
- NOAA – Responsible for licensing remote sensing operations (such as taking pictures of the Earth)

- DoD and NASA are key players in space, but they are not regulatory agencies

Key Issue #1

Potential Solution:

•Allow the FAA to issue a Mission License (or a “Mission Authorization”), based on a finding that the proposed operations were consistent with the international obligations, foreign policy, and national security interests of the United States, and the protection of U.S. government uses of space.

Key Issue #1

Status:

- As part of the CSLCA, Congress directed that OSTP assess current and proposed commercial activities in space, identify appropriate authorization and supervision authorities, and recommend an authorization approach.
- That has now been accomplished, with a report submitted to Congress by Dr. Holdren on April 4, 2016.

Key Issue #1

Recommended Approach:

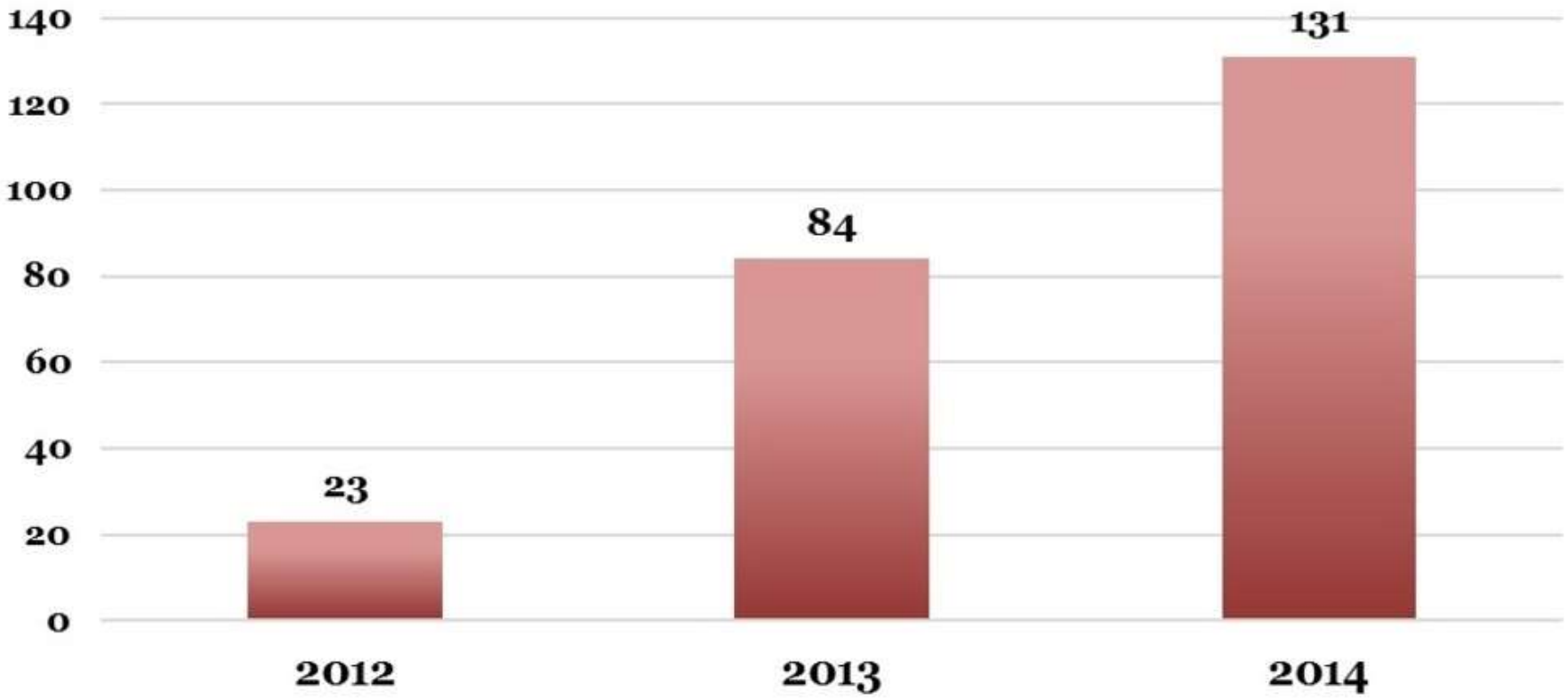
- The Secretary of Transportation would be authorized to grant authorizations for missions in outer space, consistent with the international obligations, foreign policy, and national security interests of the United States, and U.S. Government uses of outer space.
- Process would be modeled on FAA Payload Review process.
- Would not impact Government activities or missions already licensed by FCC or NOAA.

Key Issue #2

Initial Question:

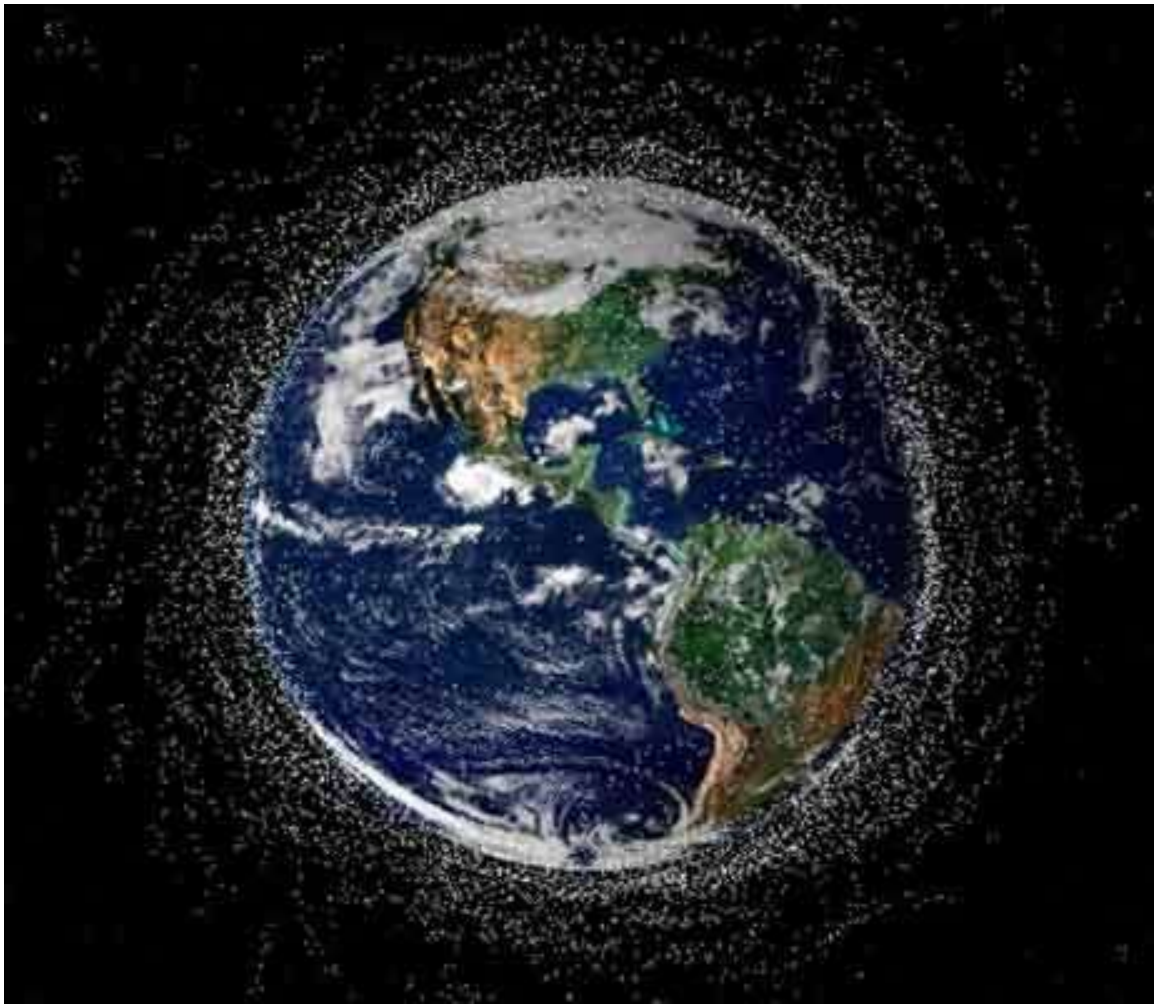
- How can we provide civil, commercial, and international satellite operators with the information they need to minimize the probability of collisions in space, while allowing the DoD to focus on its national security mission?

CubeSats Launched Per Year



From Space Digest – 2014 Year in Review

Orbital Debris



STRATCOM Perspective

From BreakingDefense.com
June 16, 2015

AIR, SPACE

STRATCOM Must Be Warfighters, Not FAA In Space: Lt. Gen. Kowalski

By SYDNEY J. FREEDBERG JR.
on June 16, 2015 at 1:54 PM

The View from the Pentagon

"The FAA really should be in charge of managing what's going on in space."

-*Douglas Loverro, Deputy Assistant Secretary of Defense for Space Policy, at the International Symposium for Personal and Commercial Spaceflight, October 15, 2014*

Key Issue #2

Follow-on Question:

- Is it feasible for a civil agency, such as the FAA, to process and release safety-related space situational awareness data, consistent with the national security interests and public safety obligations of the United States?

Key Issue #2

Response:

- Yes, it would be feasible to do that, and the Secretary of Transportation's report to Congress supports that position.
- Our recommendation would be to develop an implementation plan as soon as possible to start transitioning responsibility for collecting and disseminating safety-related space situational awareness data, from the Air Force to the FAA.

Key Issue #2

Approach:

- The transition should be accomplished in a crawl/ walk/run manner, so that all of the key stakeholders are comfortable with the approach being used, and with the resulting products and services.
- To the extent that there are remaining questions about cost, schedule, or accuracy of the data, those could be easily answered with a 6-month operational demonstration or pilot program that AST could conduct with industry.

Closing Thoughts

- This is an exciting time for commercial space, and the pace of activities appears to be accelerating.
- If we want these commercial endeavors to be successful, the government needs to make timely decisions on policy to reduce the regulatory uncertainty for industry.
- And if we want the DoD to be able to focus on national security challenges in space, we should relieve them of responsibility for being a Space Traffic Cop as soon as possible.