



**Federal Aviation
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Commercial Spaceflight Federation



The Role of Commercial Space in Securing America's Future:

An Economically Strong America is Essential
to a Secure America

Presentation Overview

- Current Environment Specific to Commercial Space Transportation & Human Spaceflight
- FAA COE-CST Framework for Commercial Spaceport Operations online database

Douglas L. Loverro

Deputy Assistant Secretary of Defense for Space Policy

“It’s critically important that we in the Defense Department figure out how to be welcoming to the commercial space interests and ...leverage it for our needs in the same way we leverage every other industry in this nation to meet defense needs.”

Oct. 16, 2014 - ISPCS 2014 <http://goo.gl/0LCEZ8>



National Space Policy - June 28, 2010

Promote a robust domestic commercial space industry:

Goal:

Energize competitive domestic industries to participate in global markets and advance the development of:

- satellite manufacturing; satellite-based services; space launch; terrestrial applications;
- and increased entrepreneurship.

Question?

How have FAA, DoD, & NASA implemented these policies?

Program Investments

US Government Investment in Commercial Space

Agency	Program	Budget
FAA AST	COE-CST	\$1m/yr for 10 years -2020
DARPA	XS-1	\$37m 2014-2016
NASA	Commercial Crew	Total \$15.07b 2014
	Commercial Cargo	

FAA AST COE CST - \$1m/yr/10 yrs

- Commercial Space Transportation - AST
Division of FAA

FAA Center of Excellence for Commercial Space
Transportation (COE CST)

Established in 2010

Funding commitment **\$1m** a year for 10
years

Spaceport Operations Database

Purpose: Collect the body of knowledge on Spaceport Operations to help educate the new workforce

Online searchable data base of 124 categories related to spaceport operations.

<http://contentdm.nmsu.edu/>

Ten FAA Licensed Spaceports in US



Framework Categories

- 1.0 Airfield and Launch Operations
- 2.0 Site Security
- 3.0 Emergency Response
- 4.0 Visitor Management
- 5.0 Ground and Flight Safety
- 6.0 Environmental Management
- 7.0 Mission Readiness
- 8.0 ITAR Requirements
- 9.0 International Coordination among Spaceports
- 10.0 Self-Inspection

Accident Investigations

- Incidents at Mojave air and Space Port
 - NTSB report AAR 1502
 - <http://www.nts.gov/investigations/accidentreports/pages/AAR1502.aspx>

Commercial Spaceflight Federation

- Trade Industry Association
- Members include spaceports, flight operators, satellite manufacturers
- Why they cited in recent NTSB Report on the Scales Composites accident

ITEA Contributions to the Digital Collection: We Need Your Help

Framework to Capture a Body of Knowledge for Commercial Spaceports

Documents

Policies

URLs

Practices

MOUs/MOAs

What Else?

DARPA XS-1- \$37 million

- The Boeing Company-working with Blue Origin
- Masten Space Systems-working with XCOR Aerospace
- Northrop Grumman Corporation-working with Virgin Galactic
- Likely costs & range schedule will determine if these companies use commercial launch sites

NASA Commercial Crew

- CCtCap: **\$6.8** billion awarded Sept. 2014 to
- The Boeing Company and
- Space Exploration Technologies

NASA Commercial Crew

- Boeing **\$4.2** billion
- Upcoming: Commercial Crew and Cargo Processing Facility (C3PF) opening
 - Kennedy Space Center Florida

NASA Commercial Crew

- SpaceX- **\$2.6b**
- Commercial Spaceport investments
- Leasing orbital site at Vandenberg & 2 sites at Cape Canaveral
- Brownsville Spaceport - commercial orbital site
- Leasing high-altitude sub-orbital facility at Spaceport America - test site

NASA Commercial Cargo Re-Supply (CRS)

Phase 2 announcement Nov.5 \$14B

CURRENT ENVIRONMENT

Orbital ATK - Phase 1

Mid-Atlantic Regional Spaceport (MARS)

Antares/Cygnus - 3 successful dockings

Return to flight: December 2015

ULA Atlas 5 and Cygnus from Kennedy Space Center

SLC 41

NASA Commercial Cargo Re-Supply (CRS)

SpaceX-CRS - Phase 1

SL 37 Kennedy Space Center

Falcon/Dragon

6 successful dockings with ISS

Space X CRS-7

Exploded over the Cape June 28th, 2015

Return to flight: TBD

Going Forward

- Synergy among all installations government and commercial to eventually work for the common good of the nation's space transportation system.
- Enable & Facilitate education of a new workforce