FAA COE CST

(Center of Excellence for Commercial Space Transportation)

- **Past**
- **Present**
- **Highlights**
- **Future**

Ken Davidian, FAA AST Director of Research
FAA COMSTAC Systems Working Group Mtg
May 7, 2014

Center of Excellence for Commercial Space Transportation

Created by the Omnibus Budget Reconciliation Act of 1990, Public Law 101-508, Title IX, Aviation Safety and Capacity Expansion Act.

- **What**: A 10-year partnership of academia, industry, and government to create a world-class consortium.
  - August 2010 - August 2020
- **3 Goals**: Research, Training, Outreach/STEM
- **Purpose**: **Improve National Competitiveness…**

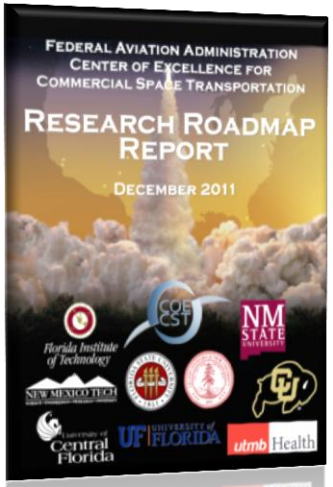
  … through the development of advanced, specialized *human, physical, and knowledge resources* to address commercial space industry challenges.
- **Origins**: Openly-competed and selected by the FAA Administrator.
- **Matching Requirement:** 1:1 for All USG Funds

COE CST Research Areas & Tasks

1. Space Traffic Management & Operations

- 1.1 Orbital
- 1.2 Suborbital
- 1.3 NAS Integration
- 1.4 Spaceport Operations
- 1.5 Integrated Air/Space Traffic Management

SAFETY



2. Space Transportation Ops, Technologies & Payloads

- 2.1 Ground System & Ops Safety Techs
- 2.2 Vehicle Safety Analyses
- 2.3 Vehicle Safety Systems & Techs
- 2.4 Payload Safety
- 2.5 Vehicle Ops Safety

SAFETY

3. Human Spaceflight

- 3.1 Aerospace Physiology & Medicine
- 3.2 Personnel Training
- 3.3 ECLSS
- 3.4 Habitability & Human Factors
- 3.5 Human Rating

SAFETY

4. Space Transportation Industry Viability

- 4.1 Markets
- 4.2 Policy
- 4.3 Law
- 4.4 Regulation
- 4.5 Cross-Cutting Topics

EFP

FAA Center of Excellence for Commercial Space Transportation

Annual Technical, Admin Meetings

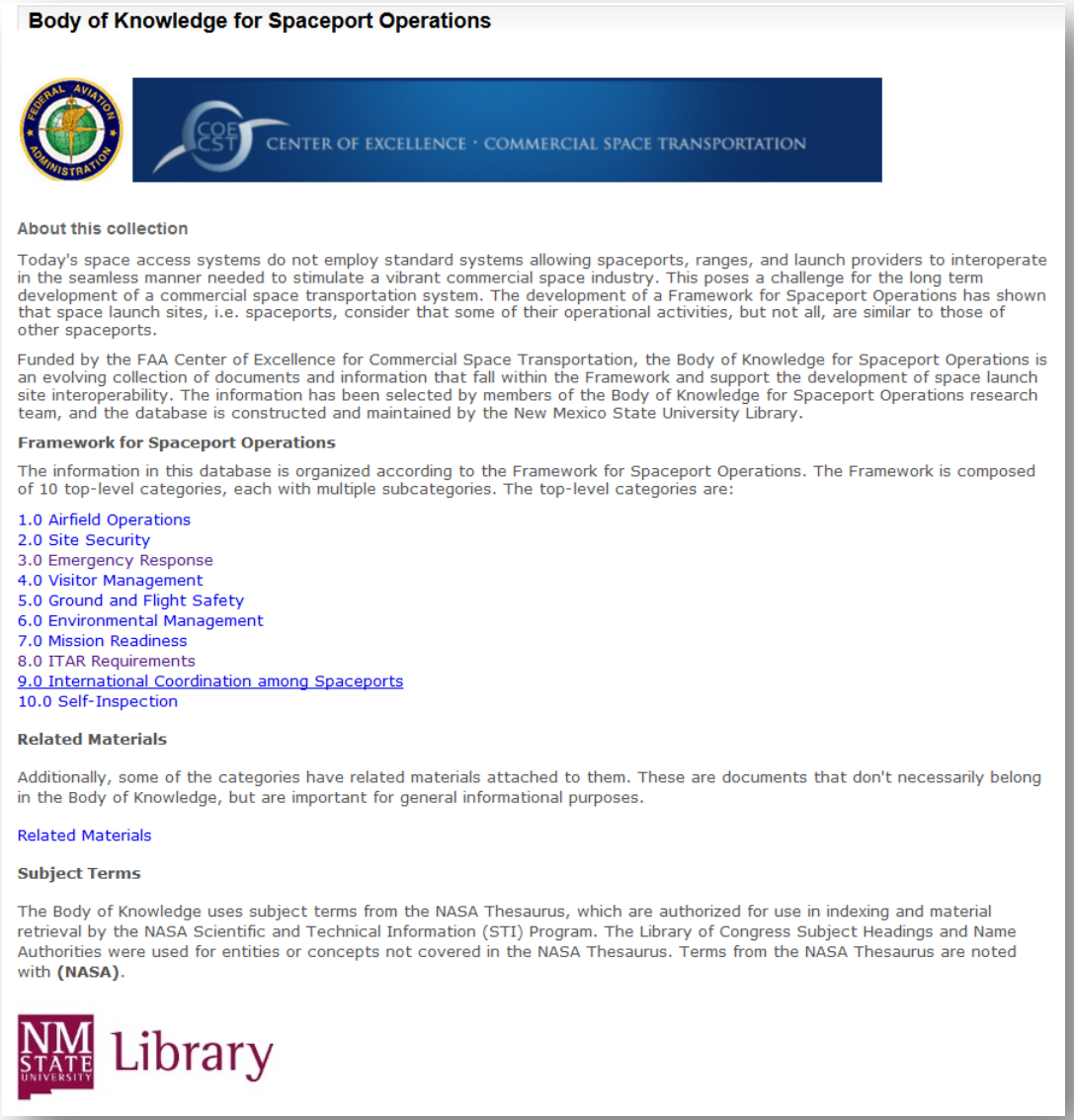
ATM3, October 28-30, 2013, Washington DC

AAM4, April 22-23, 2014, FIT, Melbourne, FL

Suborbital Flight Human Testing

Body of Knowledge for Spaceport Operations

- Research Area: 1.4 Spaceport Operations
- University: NMSU
- PI: Dr. Patricia Hynes
- Partners: AIAA, ATK, Bachner Consultants, Inc., Ball Aerospace, Cimmaron Software Services, Digital Solutions, Marketing Consultant, National Space Grant Foundation, New Mexico Spaceport Authority, NMSU Space Development Foundation, SATWEST, Space News, Spaceport Sweden, Swedish Institute of Space Physics, Boeing CSSI, Dynetics, Jacobs Technology, Lockheed Martin, PSU Aerospace Engineering, Qinetiq, Space Works Enterprises, Spaceport America Consultants, Spaceworks, The Tauri Group, Webster University Space Programs, XCOR Aerospace



Body of Knowledge for Spaceport Operations

CENTER OF EXCELLENCE · COMMERCIAL SPACE TRANSPORTATION

About this collection

Today's space access systems do not employ standard systems allowing spaceports, ranges, and launch providers to interoperate in the seamless manner needed to stimulate a vibrant commercial space industry. This poses a challenge for the long term development of a commercial space transportation system. The development of a Framework for Spaceport Operations has shown that space launch sites, i.e. spaceports, consider that some of their operational activities, but not all, are similar to those of other spaceports.

Funded by the FAA Center of Excellence for Commercial Space Transportation, the Body of Knowledge for Spaceport Operations is an evolving collection of documents and information that fall within the Framework and support the development of space launch site interoperability. The information has been selected by members of the Body of Knowledge for Spaceport Operations research team, and the database is constructed and maintained by the New Mexico State University Library.

Framework for Spaceport Operations

The information in this database is organized according to the Framework for Spaceport Operations. The Framework is composed of 10 top-level categories, each with multiple subcategories. The top-level categories are:

1.0 Airfield 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

Related Materials

Additionally, some of the categories have related materials attached to them. These are documents that don't necessarily belong in the Body of Knowledge, but are important for general informational purposes.

Related Materials

Subject Terms

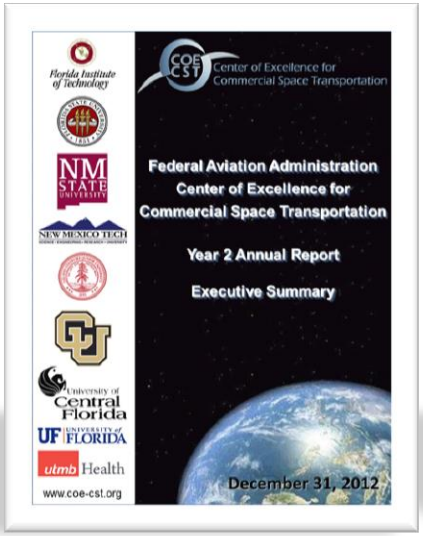
The Body of Knowledge uses subject terms from the NASA Thesaurus, which are authorized for use in indexing and material retrieval by the NASA Scientific and Technical Information (STI) Program. The Library of Congress Subject Headings and Name Authorities were used for entities or concepts not covered in the NASA Thesaurus. Terms from the NASA Thesaurus are noted with **(NASA)**.

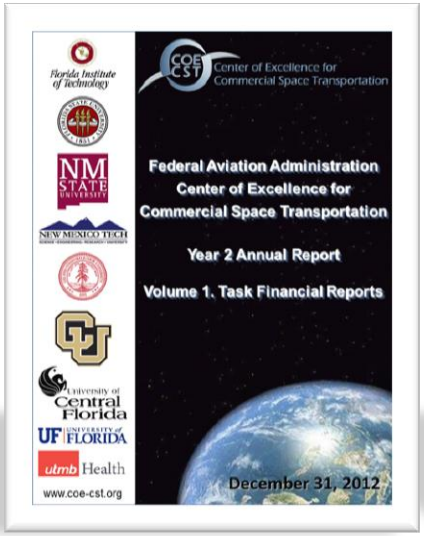
NM STATE UNIVERSITY Library

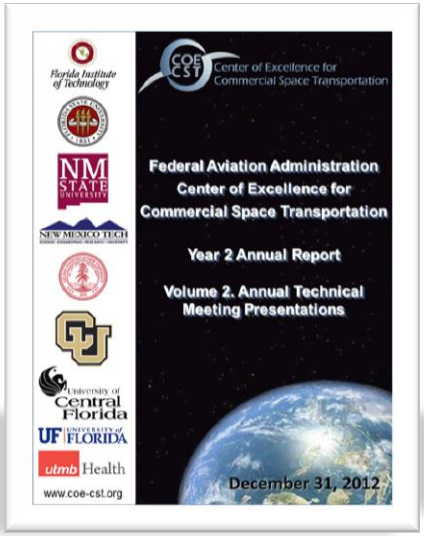
URL: contentdm.nmsu.edu:2011/cdm/landingpage/collection/NMSGCBOK

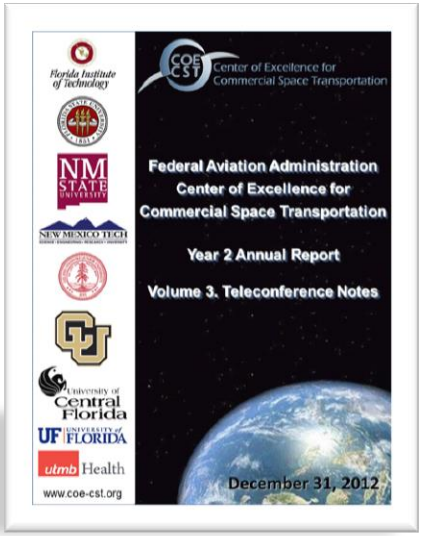
COE CST Year 3 Annual Reports

- Now available on the web at:
  - Exec Summ: bit.ly/COECSTYr3ExecSumm
  - Volume 1: bit.ly/COECSTYr3Vol1
  - Volume 2: bit.ly/COECSTYr3Vol2
  - Volume 3: bit.ly/COECSTYr3Vol3







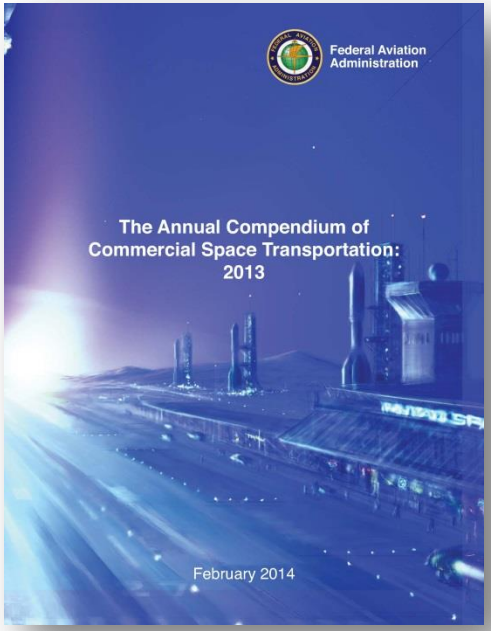


COE CST's Official Journal: New Space

For More Information…

- FAA AST Annual Compendium of Commercial Space Transportation: 2013
- COE CST Web Site
- Blogs & Wikis
  - Florida Space RePort by Eddie Ellegood
  - ParabolicArc.com by Douglas Messier
  - Commercial Space Wiki

www.coe-cst.org



bit.ly/ASTComp2013

Federal Aviation Administration

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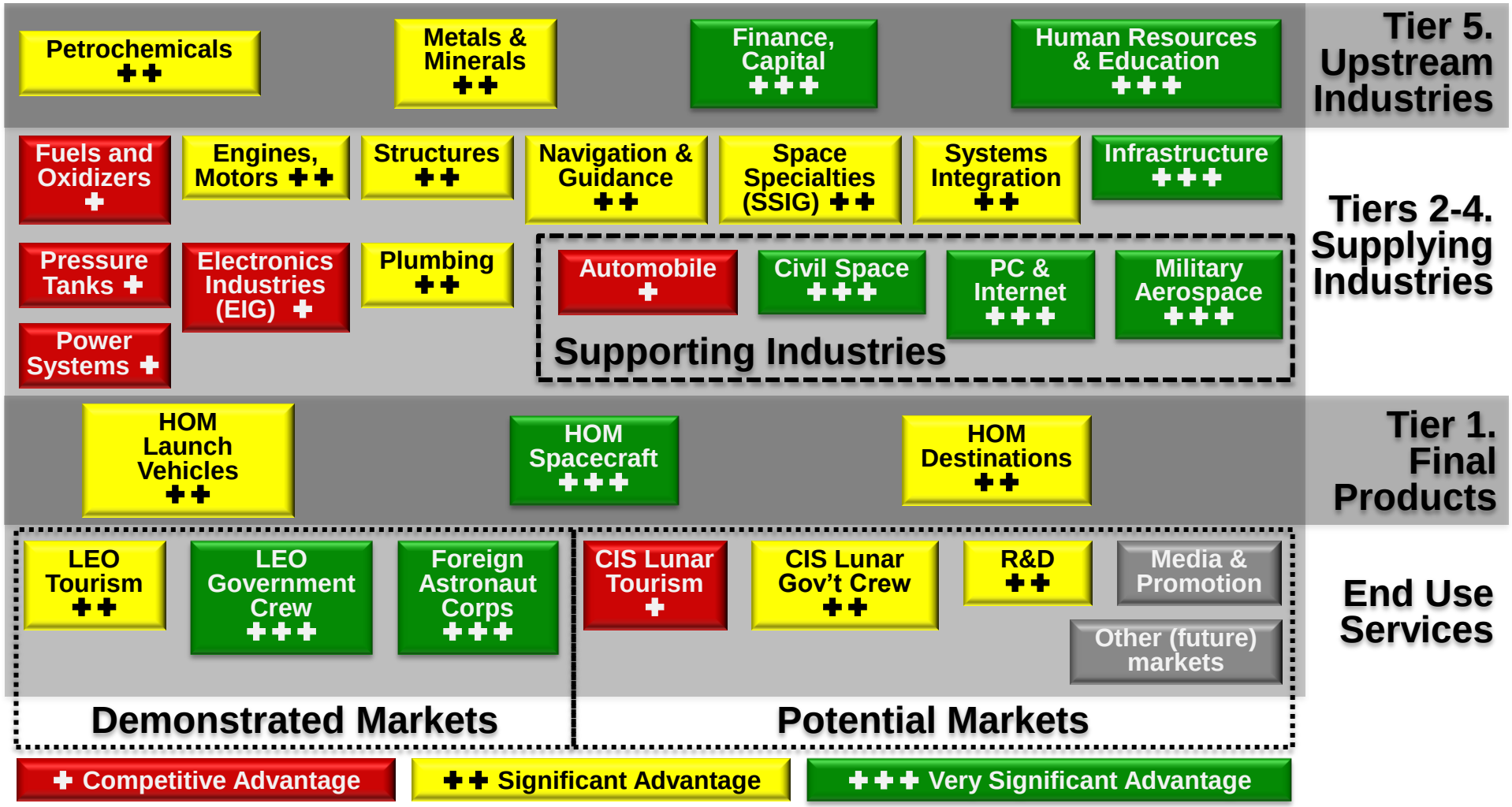
US Human Orbital Market Industry Base



Source: Autry, Greg and Linda Huang. "An Analysis Of The Competitive Advantage Of The United States Of America In Commercial Human Orbital Spaceflight Markets", 2013.