Health of the Space Industrial Base (SIB)

Presentation to the

Supply Chain 2011 Conference

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Premise

- A less than healthy space industrial base is a multifaceted risk to mission success.
- Threats can appear from (at least)
  - Instability/lack of investment in product lines to reflect technology evolution
  - Over lean workforce/process resulting in design and/or process escapes
  - Demographic imbalances with long term risks to knowledge capture and transfer
  - Shifting supply chains with inapparent loss of qualification heritage

Topics

- Brief summary of the Commerce Department Space Industrial Base Survey(s)
- NASA Industrial Base Intra-Agency Working Group (IBIWG)
- Interagency Space Industrial Base Forums

Space "Deep Dive" Survey

- Phase One:
  - Identifying and prioritizing a list of companies to be surveyed for each agency's programs.
  - Identifying production, employment, financial, research & development and other competitive statistics to be collected and assessed.
- Phase Two:
  - Developing, field testing and obtaining Office of Management and Budget (OMB) approval for the survey.
  - Finalizing the industry survey in Excel and coding survey database.
- Phase Three:
  - Disseminating industry survey and monitoring survey completion progress. **[Target release January]**
  - Handling phone and e-mail inquiries regarding survey process.
- Phase Four:
  - Reviewing, validating and tabulating survey responses.
  - Analyzing data, and creating a comprehensive database for each agency to benchmark space industry performance.
  - Provide written analysis and findings of aggregate survey data.

NASA's Industrial Base Working Group

- DA is designated as senior Agency official responsible for integration of industrial base/supply chain management issues

Deputy Administrator → **Executive Council (EC)**

- Implementation delegated to AA

Associate Administrator → **Program Management Council (PMC)** or **Mission Support Council (MSC)**

Office of Chief Engineer

- OCE assigned responsibility to staff the integration/coordination of all industrial base and related issues

Industrial Base Intra-Agency Working Group (IBIWG) NEW

- IBIWG serves as NASA forum for developing consensus and recommending resolution of issues associated with ensuring a viable space-related industrial base

HQ Ofc(s) | Centers

NASA's Industrial Base Working Group

- Facilitate coordination of intra-Agency space industrial base (SIB) issues
  - Forum to discuss and share information
  - Responsible to staff SIB recommendations for decisions by Agency Management Councils (EC, PMC, or MSC)

- Principal support for senior Agency officials attending SIBC or other interagency SIB forums
  - Responsible to coordinate Agency-wide responses to action items

- Oversee NASA representation on SIB working groups and to coordinate NASA responses to action items

IBIWG MEMBERSHIP

Industrial Base Intra-Agency Working Group (IBIWG)
Rodney Liesveld, Chair, OCE
Doug Comstock, Deputy Chair, Office of Chief Technologist
Carl Weber, Deputy Chair, Office of Procurement

Headquarters Offices
OCE: Hal Bell
HEOMD: Ted Bujewski
SMD: Mike Moore
ARMD: Jon Montgomery
MSD-OSI: Sue Kinney
OSMA: Vicky Hwa
OCIO: Gene Sullivan
OIIR: David Flynn
OSBP: Richard Mann
OHRC: Kevin Ortegel
OGC: Scott Barber

Centers
ARC: Phil Luna
DFRC: Jim Smolka
GRC: Bryan Smith
GSFC: Christyl Johnson
JPL: Rene Fradet
JSC: Kevin Templin
KSC: Miguel Rodriguez
LaRC: Steve Jurczyk
MSFC: Dale Thomas
SSC: Freddie Douglas

Interagency Space Industrial Base Forums

Defense Production Act Committee (DPAC) NEW

- Established by Congress to advise the President on the effective use of the authority under the Defense Production Act to expedite supply of and expand productive capacity for materials and services essential to the national defense.
- [Space industrial base only part of broad portfolio]

National Security Space Industrial Base Council (SIBC)

- Identify and address national security space industrial base issues, on behalf of SecDef and DNI
- Seek to coordinate similar activities with civil & commercial space sector
- EXCOM: DoD EA(Space), D/NRO, D/MDA, A/NASA

BEING RESTRUCTURD

NASA

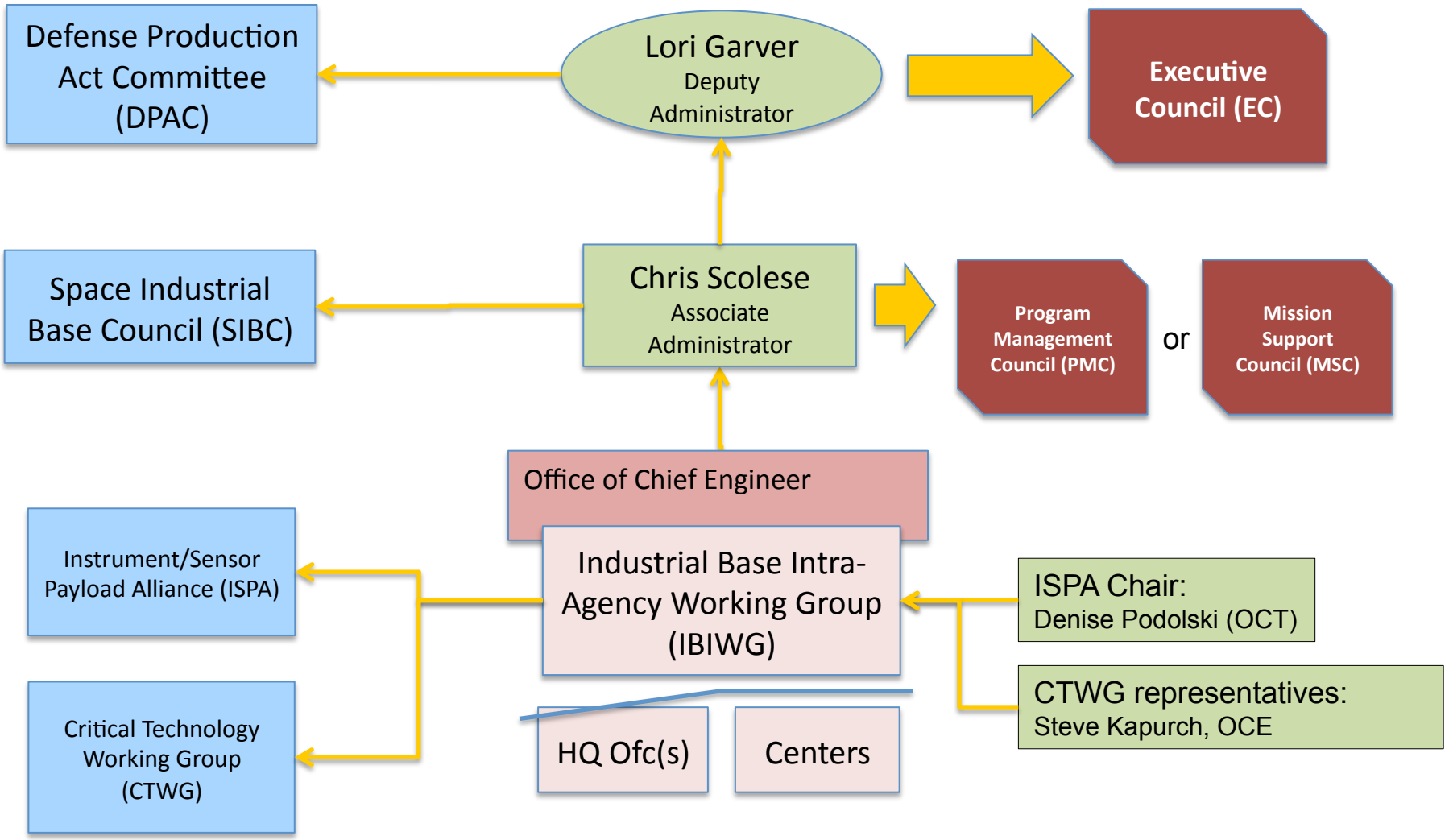
Instrument/Sensor Payload Alliance (ISPA) NEW

- Provide a forum for sharing critical expertise and process enhancements
- Facilitate understanding of common space instrument/payload development issues and lessons learned across multiple agencies

Critical Technology Working Group (CTWG)

- Identify and provide recommendations to sustain space technologies/capabilities whose health and viability are “at risk”
- Tactical perspective of industrial base issues

NASA SIB Support Structure



Backup Slides

Space “Deep Dive” Survey

- Task 1: Create a Supplier Master List
  - Excel Spreadsheet with the following column headers:

- ✓ **Entity/Facility/Company**
- ✓ **Street Address**
- ✓ **State**
- ✓ **Zip Code**
- ✓ **Country**
- ✓ **Web Address**
- ✓ **Point of Contact Name**
- ✓ **E-mail Address**
- ✓ **Phone Number**
- ✓ **Program Affiliation/Participation--Agency Space Program(s)**
- ✓ **Primary Technology/Product/Service Acquired**
- ✓ **Other Technology/Product/Service Acquired**
- ✓ **Date of most Recent Contract**
- ✓ **Contract Number/Code**

Space “Deep Dive” Survey

- Task 1: Create a Supplier Master List
  - Include any foreign suppliers, as most will have an office located here in the U.S., and thus be subject to Commerce’s authority
  - Due to Commerce September 1, 2011

Space “Deep Dive” Survey

- Task 2: Create the survey questionnaire
  - Use DoC/NASA Human Space Flight Survey as starting point
  - Also due September 1, 2011

NASA's Industrial Base Working Group Actions

- Each Mission Directorate representative to take lead for creating the 'master supplier list' of the technology, product, or service for its programs and projects with support from the relevant Center representatives and submit a consolidated list using the Excel template back to the IBIWG chair not later than August 26, 2011, with weekly updates in the interim.

- Other HQs representatives also to create a 'master supplier list' with support from the relevant Center representatives for the technologies, products, or services within their purview. Submit by August 26, 2011 , with weekly updates in the interim.

- Center representatives to submit, by August 26, 2011, additional inputs not otherwise covered, with weekly updates in the interim.

- Everyone to review the HSF questionnaire and submit comments/additional items by August 12, 2011. (When updated questionnaire from Commerce is available it will be sent to everyone for final review and comment.)

Initial Report's
28 Reference Documents (page 1)

1 The Aerospace Corporation Barriers to Progress and Sustainability of National Security Space Technology Advancement – 2009

2 Aerospace Industry Association (AIA) Tipping Point: Maintaining the Health of the National Security Space Industrial Base – 2010

3 AFRL Space Industrial Base Decision Framework in a Globalized Marketplace – 2007

4 Aviation Week Workforce Study – 2010

5 CSIS Health of the U.S. Space Industrial Base and the Impact of Export Controls – 2008

6 CSIS National Security and the Commercial-Space Sector – 2010

7 DOD Annual Industrial Capabilities Report to – 2009

8 DOD Defense Acquisition Performance Assessment Report – 2006

9 DSB Creating an Effective National Security Industrial Base for the 21st Century, An Action Plan to Address the Coming Crisis – 2008

10 FAA Commercial Space Transportation Forecasts – 2010

11 FAA The Economic Impact of Commercial Space Transportation on the U.S. Economy in 2009 – 2010

12 Fortresses and Icebergs: The Evolution of the Transatlantic Defense Market and the Implications for U.S. National Security Policy, Vol. I and II – 2009

13 Futron's Space Competitiveness Index – 2010

14 GAO NASA Supplier Base: Challenges Exist in Transitioning from the Space Shuttle Program to the Next Generation of Human Space Flight Systems – 2007

Initial Report's
28 Reference Documents (page 2)

15 Institute of Defense Analysis (IDA) Export Controls and the U.S. Defense Industrial Base – 2007

16 NASA Instrument Capability Study – 2008

17 National Research Council Beyond Fortress America – 2009

18 National Security Space Industrial Base Study and 2010 Update (OSD CAPE) – 2008

19 National Security Space Office (NSSO) Barriers to Entry and Sustainability in the US Space Industry – 2008

20 Office of Science and Technology Progress Assessment of the U.S. Space Launch Propulsion Industrial Base – 2009

21 Presidential Study Directive-3 (PSD-3), Task D

22 Presidential Task Force on Space Industry Workforce & Economic Development Report to the President – 2010

23 Review of US Human Spaceflight Plans Committee, Seeking a Human Spaceflight Program Worthy of a Great Nation – 2009

24 Satellite Industry Association State of the Satellite Industry – 2010

25 Solid Rocket Motor Industrial Base Interim Sustainment Plan Report to Congress – 2010

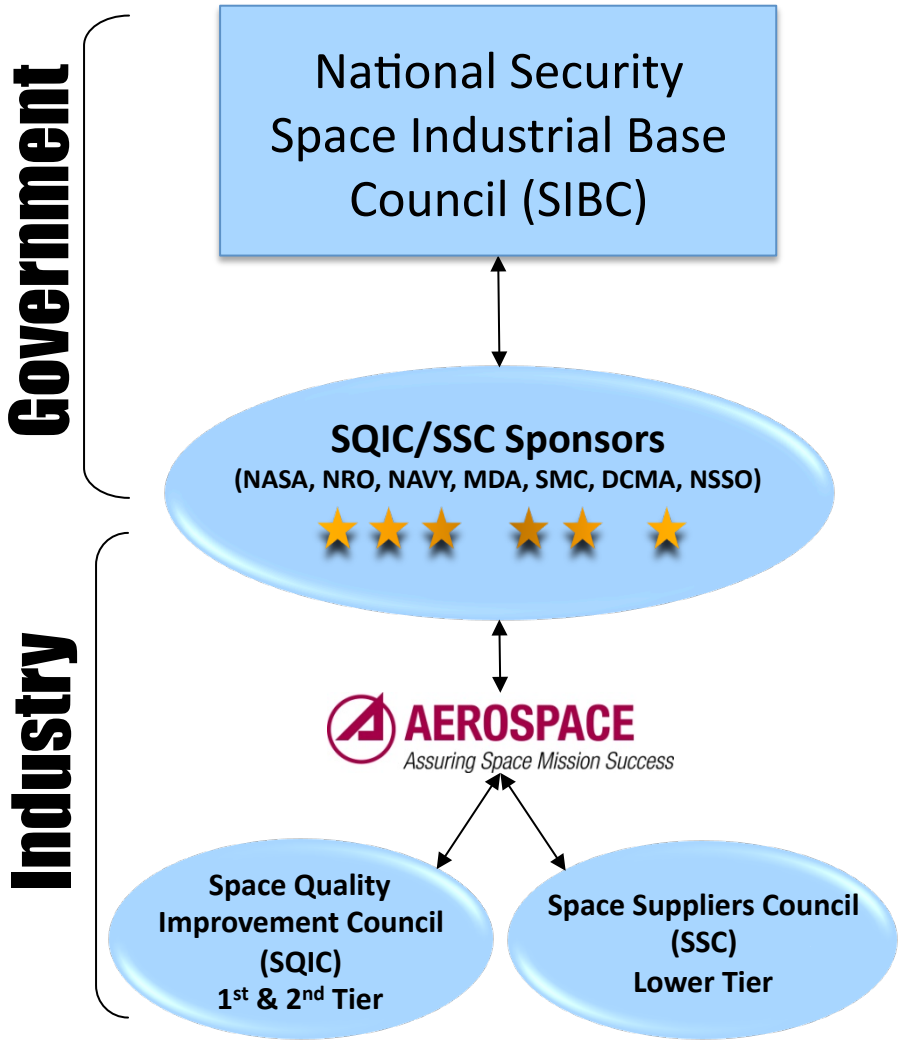
26 The Space Foundation Space Report – 2010

27 NASA/DOC Supply Chain Network Survey Data - 2010

28 USAF/DOC Space Industry Survey Data – 2007

Space Industrial Base Council

(Current Interagency/Industry Coordination)



Space Industrial Base Support Requirements

- Participate in SIBC collaborative forums and assume leadership roles where assigned those duties
  - ❑ Oversee NASA implementation of SIBC decisions and coordinate NASA contributions to those decisions
  - ❑ Coordinate NASA contributions and collaboratively create government wide strategies which sustain SIBC identified technologies/capabilities whose health and viability are identified to be at risk (tactical perspective)
  - ❑ Collect NASA information on health of space industrial base and collaboratively create government wide strategies to ensure continued health and viability (strategic perspective)
  - ❑ Coordinate common understanding of instrument/payload issues and lessons learned and prepare short and long range strategies to address issues identified (operational feedback into production, expansion of capability to new levels of performance and applications, identify gaps in the workforce and build strategies to close the gaps…)
  - ❑ Conduct and coordinate require NASA field work to support all elements of the SIBC structure and functions
  - ❑ As various ad-hoc working groups are formed, facilitate and coordinate focused activities required by the working groups
- Generate and enter into Space Act Agreements/Research Grants which support the technologies identified to be critical to the national security space industrial base and approved by the SIBC for funding

National Space Policy
Relevant Goals & Guidelines

- Among the new goals of the new National Space Policy is to:
  - ❑ "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."
- Additionally, one of the inter-sector guidelines provides additional emphasis:
  - ❑ "Strengthen U.S. Leadership In Space-Related Science, Technology, and Industrial Bases. Departments and agencies shall: conduct basic and applied research that increases capabilities and decreases costs, where this research is best supported by the government; encourage an innovative and entrepreneurial commercial space sector; and help ensure the availability of space-related industrial capabilities in support of critical government functions"
- Lastly, one of the implementation actions directs:
  - ❑ "The Secretary of Commerce, in coordination with other departments and agencies, shall develop and maintain a report on the health of the U.S. space industrial base and related issues, and recommendations for improving the state of the space industrial base."