Solutions Facilitator

Joint Army Navy NASA Air Force 8th Modeling and Simulation/6th Liquid Propulsion/5th Spacecraft Propulsion Joint Subcommittee Meeting

December 5-9, 2011

Tom Brown, PhD
NASA Marshall Space Flight Center
Outline

• NIRPS Planning Organization
• Solutions Strategy Team Membership
• Solutions scope and the Grand Challenges
• Notional operating model and “solutions” challenges
• Key milestones and near term products
• Conclusion
NIRPS Planning Organization

**Executive Officer**
Bill Ondocsin (NASA)

**NIRPS Director**
Dale Thomas, PhD (NASA)
**Deputy Director**
TBD

**Stewardship**
Lead: Jamie Neidert, PhD (AMRDEC)
Integration Rep: Rajiv Doreswamy, PhD

- Academia
- Industry
- Government

**Technology**
Lead: George Schmidt, PhD (NASA)
Integration Rep: Bill Ondocsin

- Academia
- Industry
- Government

**Solutions Facilitator**
Lead: Tom Brown, PhD (NASA)
Integration Rep: Rhonda Thompson

- Academia
- Industry
- Government

**Multi-Agency Executive Committee (Government Only)**

**Academic Advisory Group**

**Industry Advisory Group**

Rotational

Not Yet Formed
Solutions Team Membership

Thomas (Tom) Brown – Lead
Rhonda Childress-Thompson – Facilitator

• Brett Alexander  Blue Origin
• Randy Kendall  Aerospace Corp
• Nickolas Demidovich  Federal Aviation Administration
• Steven J. Gentz  NESC, MSFC Chief Engineer
• Roberto Garcia  NESC, Propulsion Fellow
• Dr. Eun S. Kim  Aerospace Corp
• Mark Moody  Rocket Propulsion Test Management Board – SS
• Roger Baird  NASA Propulsion Steering Committee – MSFC
• Mitchell Walker  Georgia Tech
• Frank McCall  Boeing
• David Jacobson  NASA GRC
NIRPS: A Joint Solution

Scope:
- National
- Multi-organizational
- Multi-sector

Purpose:
NIRPS will help preserve and align government and private rocket propulsion capabilities to meet present and future US commercial, civil, and defense needs, while providing authoritative insight and recommendations to National decisional authorities

Tri-faceted approach:

- **Stewardship**: Monitor and analyze the state of the industry in order to formulate and recommend National Policy options and strategies that promote a healthy industrial base and ensure best-value for the American taxpayer

- **Technology**: Identify technology needs and recommend technology insertions by leading roadmap assessments and actively participating in program formulation activities

- **Solutions Facilitator/Provider**: Maintain relationships and awareness across the Government, industry and academia, to align available capacity with emerging demand

A Unique National Resource with the Capability to Serve Multiple Interests
Solutions Scope/Goals

• Primarily a “Facilitator” to allow existing skills, capabilities to be leveraged by multiple industry partners

• Simplifies process of working with multiple government entities

• Potential single point/interface for government, academic, and potentially other industry capabilities

• Provides a resource to communicate available skills, capabilities, etc…

• Allows partners to complete required skill/capability sets without “re-inventing the wheel”
## Grand Challenges

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<th>Grand Challenge</th>
<th>Stewardship</th>
<th>Technology</th>
<th>Solutions Facilitator</th>
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<td>Support the competitiveness and resilience of the industrial base</td>
<td>Primary</td>
<td>Secondary</td>
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<tr>
<td>Reduce development and sustainment costs for missile and rocket systems</td>
<td>Primary</td>
<td>Secondary</td>
<td>Secondary</td>
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<tr>
<td>Collaborate across agencies for missile and rocket propulsion system development</td>
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<td>Secondary</td>
<td>Primary</td>
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<tr>
<td>Foster access to facilities and expertise across Government, industry, and academia</td>
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<td>Develop and implement an integrated science and technology plan for propulsion systems</td>
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<td>Invigorate the STEM pipeline</td>
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The “Solutions” facet of NIRPS addresses or partially addresses each of the six **GRAND CHALLENGES**
A Notional Solutions Operations Model

NIRPS provides and facilitates simplified access to a broad range of national propulsion capabilities/facilities.
Objective: comprehensive “inventory” of government capabilities & facilities that can be leveraged to support industry needs

Challenges:
1. What skills, capabilities, facilities should be included?

2. How is this implemented?

3. How do we deal with industry information and sensitivities?
   a) Use of excess capacity?
   b) Competition & other sensitivities?
Schedule to Initial Operational Capability
(\textit{Key Milestones} \& \textit{Products})

- **Key Milestone:** Initial Operating Capability \quad April 2012

- **Near Term Required Products**
  - Scope \& Draft Charter
  - Initial Concept of Operations
  - Initial Skill/Capabilities Inventory
Conclusion

NIRPS “Solutions” plans to enable our nation’s future in rocket propulsion systems by leveraging existing skills and capabilities to support industry’s future needs.