



NATIONAL INSTITUTE FOR ROCKET PROPULSION SYSTEMS

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

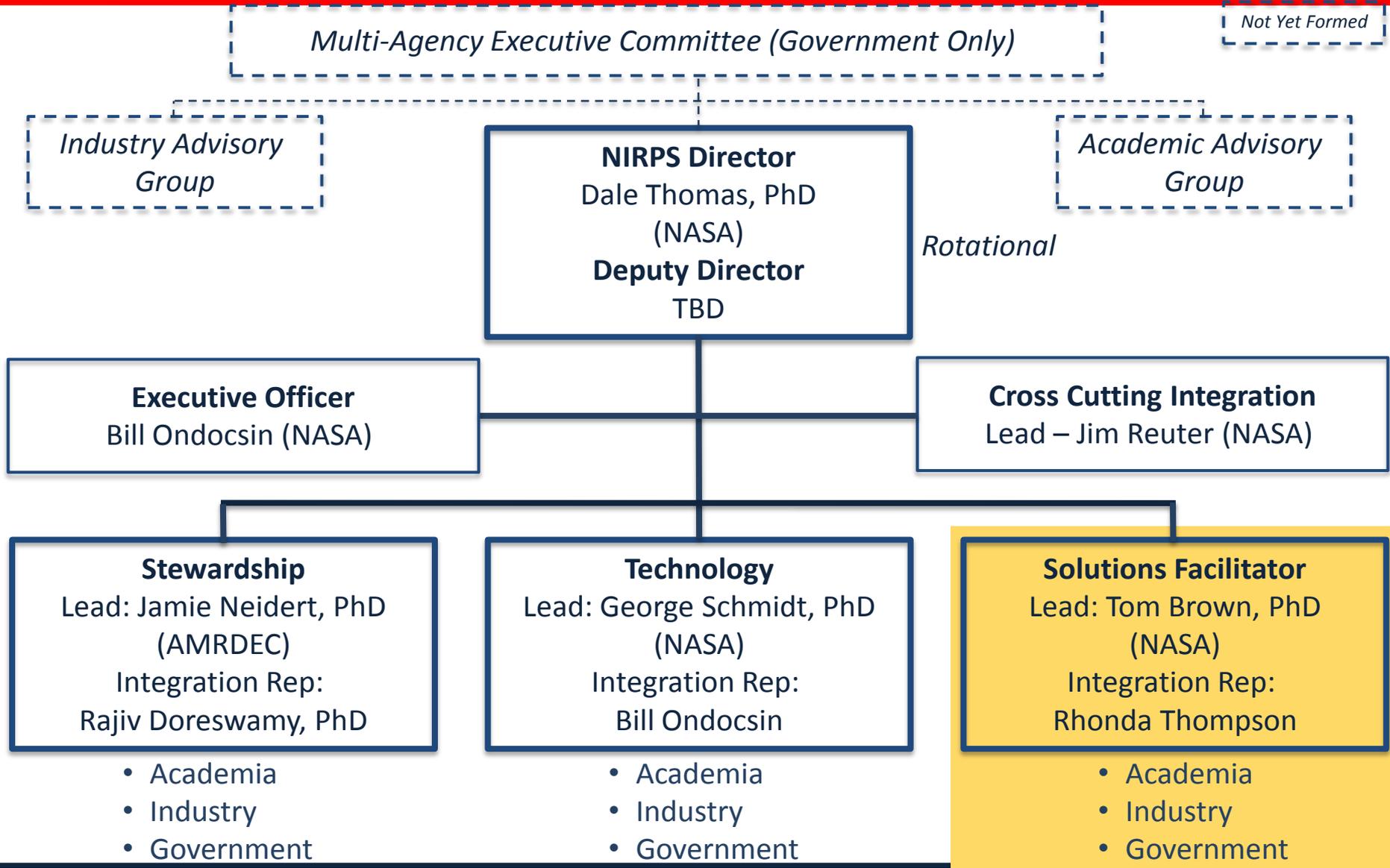
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Outline

- 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



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

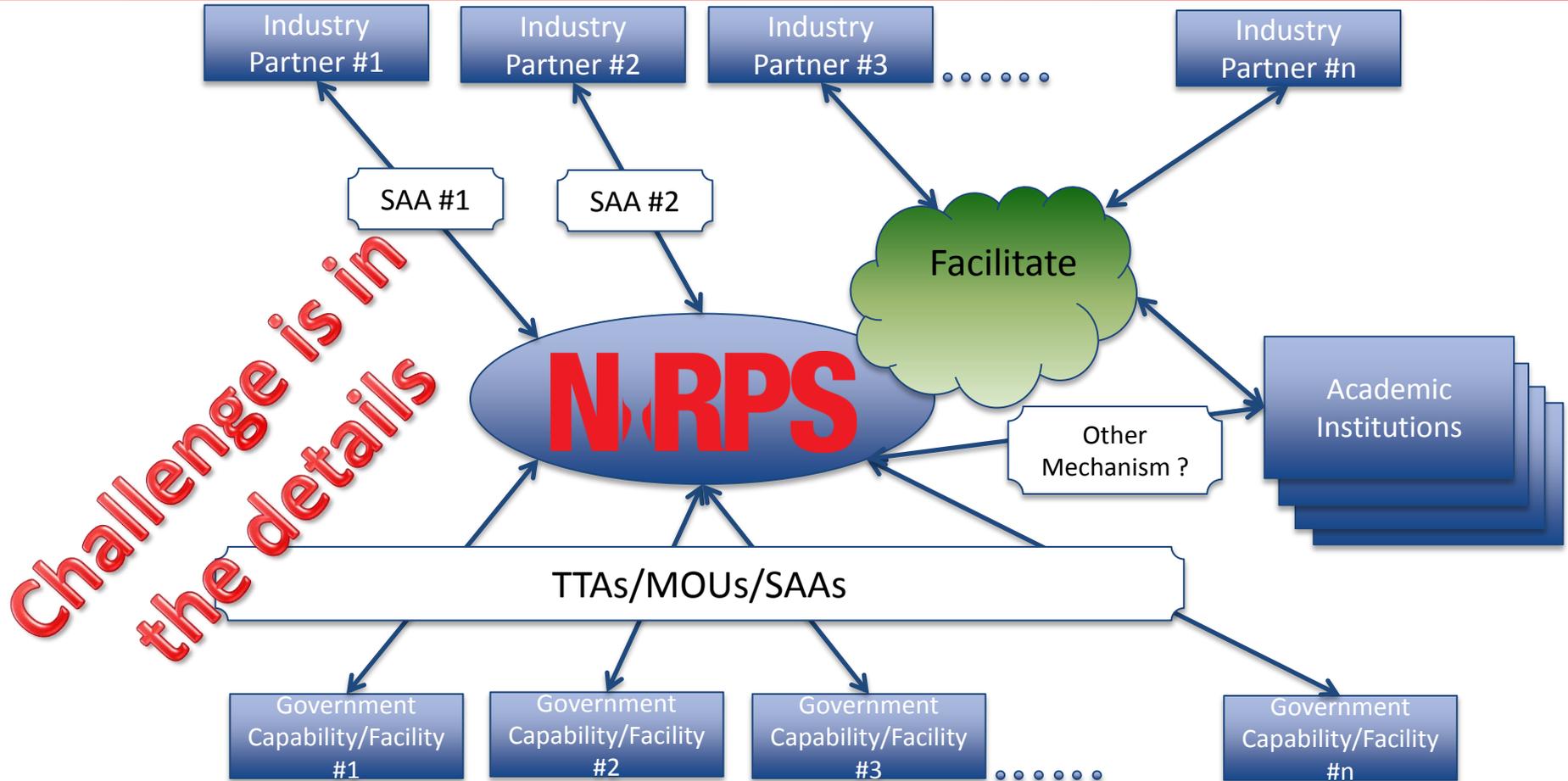
- Primarily a “Facilitator” to allow existing skills, capabilities to be leveraged by multiple industry partners
- Simplifies process of working with multiple government entities
- Potential single point/interface for government, academic, and potentially other industry capabilities
- Provides a resource to communicate available skills, capabilities, etc...
- Allows partners to complete required skill/capability sets without “re-inventing the wheel”

Grand Challenges

Grand Challenge	Stewardship	Technology	Solutions Facilitator
Support the competitiveness and resilience of the industrial base	Primary	Secondary	Secondary
Reduce development and sustainment costs for missile and rocket systems	Primary	Secondary	Secondary
Collaborate across agencies for missile and rocket propulsion system development	Secondary	Secondary	Primary
Foster access to facilities and expertise across Government, industry, and academia	Secondary	Secondary	Primary
Develop and implement an integrated science and technology plan for propulsion systems	Secondary	Primary	Secondary
Invigorate the STEM pipeline	Secondary	Primary	Secondary

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

Capabilities/Facilities Inventory

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

(Key Milestones & Products)

- **Key Milestone:** Initial Operating Capability April 2012
- **Near Term Required Products**
 - Scope & Draft Charter
 - Initial Concept of Operations
 - Initial Skill/Capabilities Inventory

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