NDIA
Armaments Division
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Armament Systems Forum

S&T Needs and GAPs
How to Better Communicate

Panel Discussion

Armament Division
Dave Broden --Chairman
Broden Resource Solutions LLC
S&T Needs and GAP’s
How to Better Communicate

PANEL MEMBERS

• Dave Broden, Panel Moderator
  • President Broden Resource Solutions LLC, Armament Division Chair

• Panelists:
  • Mr. Joe Pelino, US Army ARDEC
  • Mr. Mike Till, NSWC Dahlgren
  • Mr. Joe Buzzett, General Dynamics-OTS

• Attendee Participation:
  • Participation and Dialogue Enhances Panel Effectiveness and Value
  • Provide Observations, Comments, and Questions
S&T Needs and GAP’s
Better Communication

The Situation

• S&T Needs and GAPs Constantly Evolve—Require Focus and Attention

• Government R&D Centers and Industrial Base S&T Initiatives Are Focus to Address Timely and Relevant Responses to Needs and GAPs

• Communications Clarity and Timeliness is Key to Enable Response
  • Link User Community with:
    • Government R&D Centers
    • Industrial Base

• Both Government and Industrial Base Must Establish and Maintain Responsive “State of Art” S&T Capability

• Establishing and Maintaining “Open and Clear Communications” is Priority to Ensure Timely and Relevant Response to Needs and GAPs
S&T Needs and GAP’s Panel

Objectives

Assess S&T Needs and GAPs Evolving Topics and Awareness

Discuss Communication of Needs and GAP’s
User Community to DOD S&T Centers– Industry

Overview Industry Approach to S&T Investment Initiative
Communication to Government

Address Barriers and Challenges for Communication

Identify Approaches to Improve Communication and Sharing

Highlight Benefits of Improved S&T Needs and GAPs Awareness

Confirm Incentives for Improvement

Impact on S&T Investments and Product Development
S&T Needs and GAP’s
Better Communication
Why Knowing S&T Needs and GAPs is Important!!

- **Government View:**
  - Enables S&T Investment Strategies and Funding Priorities
  - Facilitates Addressing Priority Actions
  - Links S&T to JCIDS and Evolving Requirements
  - Addresses Plans for Industry S&T Contracts

- **Industry View:**
  - Key Element of Future Opportunities Vision
  - Enables Shaping of IR&D and Related Business Strategies
  - Identifies Opportunity for Technology Driven Innovation Initiatives
  - Facilitates “State of Art” S&T Capabilities and Application TRL
  - Reduces Timeline for Requirements, S&T, and Development
S&T Needs and GAP’s
Topics for Discussion

- Communication—“What, How, When, Who”
- Needs and GAP Awareness
- Technology Evolution—Speed of Technology Change
- Requirements Process—Complexity and Length of Time
- Ensuring User Agencies and R&D Centers are Aware of Industry “State of Art”
- Ensuring Industry Links to R&D Center Relevant S&T Activities
- Development of Product using Timely “State of Art”
- Requirement Pull vs. Technology Push
- *Timely and Relevant Industry/Government Response to Needs/GAPS*
S&T Needs and GAP’s

Government Agency Awareness

• **Effective:**
  - JCIDS Process
  - User Agency to R&D Center Links
  - “Operational Feedback”

• **Limitations:**
  - May be Limited to Specific Needs/Requirements
  - Funding Constraints

• **Opportunities:**
  - Increase User Participation in S&T Plans and Activities
  - Ensure User Involvement in NAC/DOTC Plans/Projects
S&T Needs and GAP’s
Industry Awareness

• **Effective:**
  • Industry Day Events at User Locations
  • NAC/DOTC Industry Days
  • Industry Meetings with User or R&D Centers

• **Limitations:**
  • Discussion Constrained by Government Data Exchange
  • User Comments re: Deployed Systems not Shared due to concern industry may consider comments as opportunity vs. data for consideration.
  • Proprietary Information
  • Competition Factors

• **Opportunities:**
  • Facilitate Industry Dialogue at all User and R&D Centers
  • Earlier and Incremental Release of Needs/GAP’s
  • Enable or Modify JCIDS to Facilitate Industry Dialogue Earlier in the Process
S&T Needs and GAP’s
Requirements Pull vs. Technology Push

• **Requirements Pull:**
  • JCIDS Process
  • Technology Driven by Specific Requirements
  • Often Linked to Demonstrated TRL Level
  • Tends to Focus on Existing or Proven Technology

• **Technology Push:**
  • Open to Innovation in S&T not Constrained to Requirements
  • Not Directly Tied to TRL Level
  • Enables “State of Art” Technology Application
  • Leverages Industry Innovation
    • “DOD Silicon Valley Initiative”
    • Commercial Technology Applied to DOD Products
  • **Concern:** Sometimes Not Accepted Due to Not Linked to JCIDS etc.

**Discussion: Achieving Balance of Both Pull and Push**
S&T Needs and GAP’s
Innovation Thru Commercial Technology
Leveraging

• **Situation:**
  - Industrial Base (Both DOD Related and Commercial) has Unique and “State of Art” S&T Capability for DOD Application.
  - Leveraging Commercial S&T for DOD Application May be Limited by Lack of Communication Awareness of S&T Needs and GAP’s
  - Commercial Focused Industry May Hold S&T Activity “Tightly”

• **Status:**
  - DOD “Silicon Valley Initiative” Established to Facilitate/Encourage Use of “State of Art” Commercial S&T

• **Question:**
  - *Are Needs and GAPs Accessible to Commercial Industry to Enable Links to Leverage Unique S&T Effectively and Timely?*
  - *How can Communications be Facilitated with DOD Community and with DOD Industrial Base?*
S&T Needs and GAP’s
Communication Challenges

- **Government:**
  - Competition Procurement Guidelines
  - Public Release Constraints
  - Timely Communication with Clarity of Statements
  - Clarity of S&T Response Plans

- **Industry:**
  - Attention to Needs and GAPs
  - Linking Industry S&T Strategies and Investment to Need/GAP Priorities
  - Competition Strategies and Impact
  - Proprietary Information and Data
  - Patents and Related Ownership
  - Ensuring Focused, Relevant, and TRL Ready S&T Capability
S&T Needs and GAP’s
Focus Outcomes

• Needs and GAP’s Communicated with Specific Link to Requirements
• Expand Dialogue Regarding “Technology Driven” Technology/Application
• Relaxed Constraints for Industrial Base Dialogue with User/R&D Centers
• Industry Awareness Guides Investment Initiatives in “State of Art”
• Balance Enabling of Requirements Pull vs. Technology Push
• Rapid Response to Critical Path Actions
S&T Needs and GAP’s
Communication Process Improvements

• Evolve Simple Process for Listing S&T Needs and Priorities

• Provide Focal Points

• Provide List at Regular Schedule (e.g. twice per year?)

• Provide Simple Feedback Loop for R&D Centers and Industrial Base to identify available relevant capability
  • Requirement Pull
  • Technology Push

• Communicate through:
  • 1. NDIA Forums etc.
  • 2. NAC/DOTC
  • 3. During Industry Days (Ft. Benning, NSWC-Dahlgren, Eglin AFB etc.)

• Other Limited Access Methods
S&T Needs and GAP’s
Better Communication Benefits

• 1. Assured Government and Industry Awareness of Needs/GAP’s

• 2. Improved Understanding of Evolving Requirements

• 3. Improved Link of Needs/GAPs to Requirements

• 4. Opportunity for Increased Awareness of Industry/Government Relevant S&T “State of Art” Activity and Approach—“What is Available?”

• 5. Improved (Shorter) Response Time to Address Needs/GAPs

• 6. Product Development Applies “State of Art” vs. Past Technology

• 7. Pay-off For S&T Investments at Earlier Date
  • Government Lab S&T Investment Application
  • Industry Incentives for IR&D and Related Investments

• 8. Opportunity for Priority of NAC/DOTC Projects
S&T Needs and GAP’s  
Better Communication  
Summary– Bottom Line

• S&T Needs and GAP *Awareness Enables* Focused and Timely “State of Art” Response to User Capability Objectives

• *Timely and Clarity of Communication* Ensures Government and Industry Strategies Linked and Focused to Priorities.

• *Increased Linkage* of User, R&D Centers with Industrial Base Partners Will Offer Innovative Responses

• **Benefit Realized Include:**  
  • Expanded Application of Relevant Commercial Technology  
  • Investment Strategies Linked to Needs/GAPs  
  • Ensure JCID Process Consideration of “State of Art”  
  • Timely Readiness of TRL Level for Application TRL>5  
  • Program Cost and Schedule Benefits/Risk Reduction  
  • Contract Opportunities for Industry

Initiatives Focused to Improved S&T Needs and GAPs  
Communication is Key to Evolving Technology Leadership