

**NDIA
Armaments Division
2016**

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**