

OVERVIEW OF SERC/AIRC AND THINKING AHEAD

NPS – ACQUISITION RESEARCH SYMPOSIUM

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CRITICAL STAKEHOLDER PERSPECTIVES ON THE NEED FOR ENGAGING ACADEMIA

PERSPECTIVES FROM THE AIRC FORUM (APRIL 6, 2021)

OSD/A&S Perspectives

- Diversity of ideas and inputs – engage a broad community beyond the usual organizations
- Leverage the intent in the NDAA language – waivers possible in support of pilots and projects
- Go beyond just looking at the technology dimension; cultural and organizational context is critical

Congressional/Legislative Perspectives

- We are depending on AIRC to develop an S&T-like research enterprise focused on the business of DoD Acquisition
 - Research should be mission focused but should include fundamental/seminal research (Connect the “users” with the “researchers”)
 - Research Portfolio should include basic and applied research (high and low risk)
 - It should go beyond “white papers” and “recommendations” into instrumented pilots, experiments, and modeling/simulation
 - Can we develop the equivalent of a “test range” for policies and practices (aka – a Policy “Flight Simulator”)?
 - Engage a broad cross section of academia – beyond engineering and science - to include business schools, policy schools, law schools
- AIRC can and should play a role in enhancing the current workforce and developing a pipeline of talent

PERSPECTIVES FROM THE AIRC FORUM (APRIL 6, 2021)

Military Departments Perspective

- We need to close the gap between S&T and Acquisition
- Critical that we focus on the triad of Digital Engineering – Agile – MOSA
- We need to focus on training for today's and tomorrow's acquisition professionals
- Integrate M&S and DE – Model Validation and Verification
- Develop new cost models for DevOps; DevSecOps;
- Rethink – ALL: Acquisition Process; Engineering Process; Requirements Process
- We need to fix the IP Problem

Think Tank Perspective

Change is hard – Sustained leadership is key!

- We really need to focus on who is the real "user" or "customer"
- There are significant skill gaps in our workforce
- We need to invest in talent development
- We need to provide additional financial flexibility

SERC

- In 2008, DoD competitive RFP for a University Affiliated Research Center (UARC) on systems engineering
- Stevens Institute of Technology led a team that brought together much of the best systems engineering research talent in the nation to form a stable and enduring collaboration to the benefit of the DoD
- Stevens was awarded the SERC in September 2008
 - Vested through a 5-year renewable task order based IDIQ contract (current 2018–2023)
 - A second 5-year contract with ACC at Picatinny Arsenal was awarded in Summer of 2018 – this allows outreach to the rest of the Federal Agencies

AIRC

- A new center under the existing SERC UARC, added on September 30, 2020
 - Statutory directive
 - Expands SERC focus to all of acquisition
 - Systems engineering is one of many critical functions and disciplines within acquisition

SERC/AIRC is unique among UARCs

- Only UARC funded at the DoD level: USD(R&E)
- Reach to a collaborative network of 22+ universities
- Address all government acquisition and systems engineering: education, research, and practice

AIRC: CULTIVATING INNOVATION AND TRANSFORMATIVE RESEARCH ACROSS ACADEMIA, GOVERNMENT, AND INDUSTRY

Goals (*from Congress*)

- Provide academic analyses and policy alternatives for innovation in defense acquisition policies and practices
- Demonstrations and pilot programs of innovative acquisition policies and practices

Source: 10 USC 2361a; FY2020 NDAA, Sec. 835

Mission

- Innovation and Evidence-Based Decision Making to Improve Acquisition Outcomes
- A learning organization that reaches across the Department of Defense (DoD) to enable innovation and evidence-based decision making manifested through policy, organizational change management, and workforce development.

Research

- Defense acquisition policies and practices
- Best practices
- Application of new technologies and analytical capabilities to improve acquisition policies and practices

Prototype and demonstrate new acquisition practices

Establish data repositories and develop analytical capabilities

- Enable researchers and acquisition professionals to access and analyze historical data sets
- Support research and new policy and practice development

Executive education

- Acquisition workforce development
- Acquisition issues to non-acquisition professionals

Ongoing reviews: recommendation implementations: acquisition policies and practices

- Legislation, regulations, revisions to policies and procedures, and resources required

Source: 10 USC 2361a; FY2020 NDAA, Sec. 835

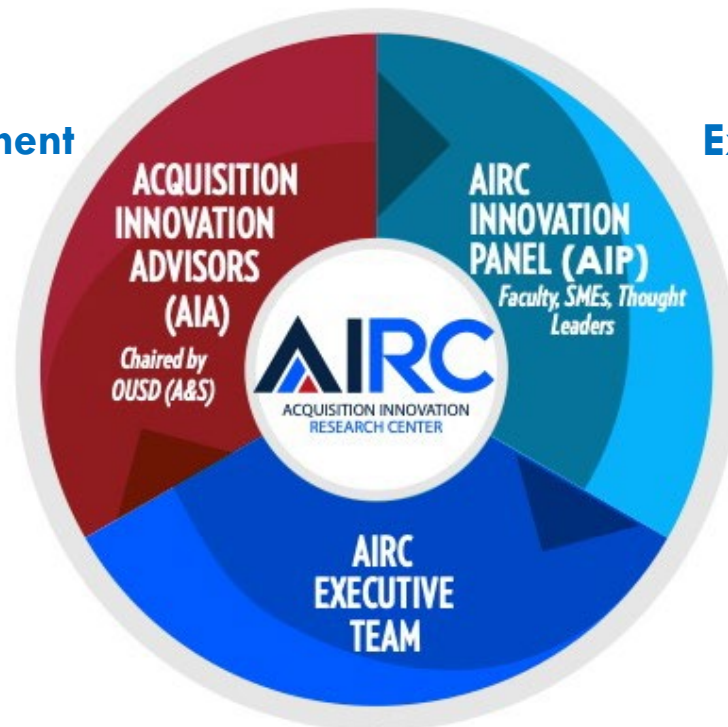
ORGANIZING WITH A VIEW TOWARDS ROBUST ENGAGEMENT

AIA Membership:

OUSD(A&S)
 OUSD(R&E)
 CAPE
 CIOs/CDOs
 Comptrollers
 DOT&E
 CAEs
 Procurement
 DAU
 Other key stakeholders

Government

External



AIP Membership:

Hon. John J. Young, Jr.
 LtGen (ret.) Edward Cardon
 VAdm (ret.) Joseph W. Dyer
 LtGen (ret.) Wendy M. Masiello
 Dr. Trevor Brown
 COL (ret) Andrew Carter
 Mr. Blaise Durante
 Mr. Kevin Gates
 Ms. Stephanie Halcrow
 Mr. Tim Richardson
 Mr. Matthew Rose
 Mr. Jeff Ryder
 Dr. Stoney Trent
 Mr. Christopher Zember

20+ University Research Partnership

STRATEGIC DoD STAKEHOLDER ENGAGEMENT

Strategic Engagement: Non-trivial to the success of AIRC

Approach: Information meetings followed by Advisory Boards/Committees – Acquisition Innovation Panel and the Acquisition Innovation Forums

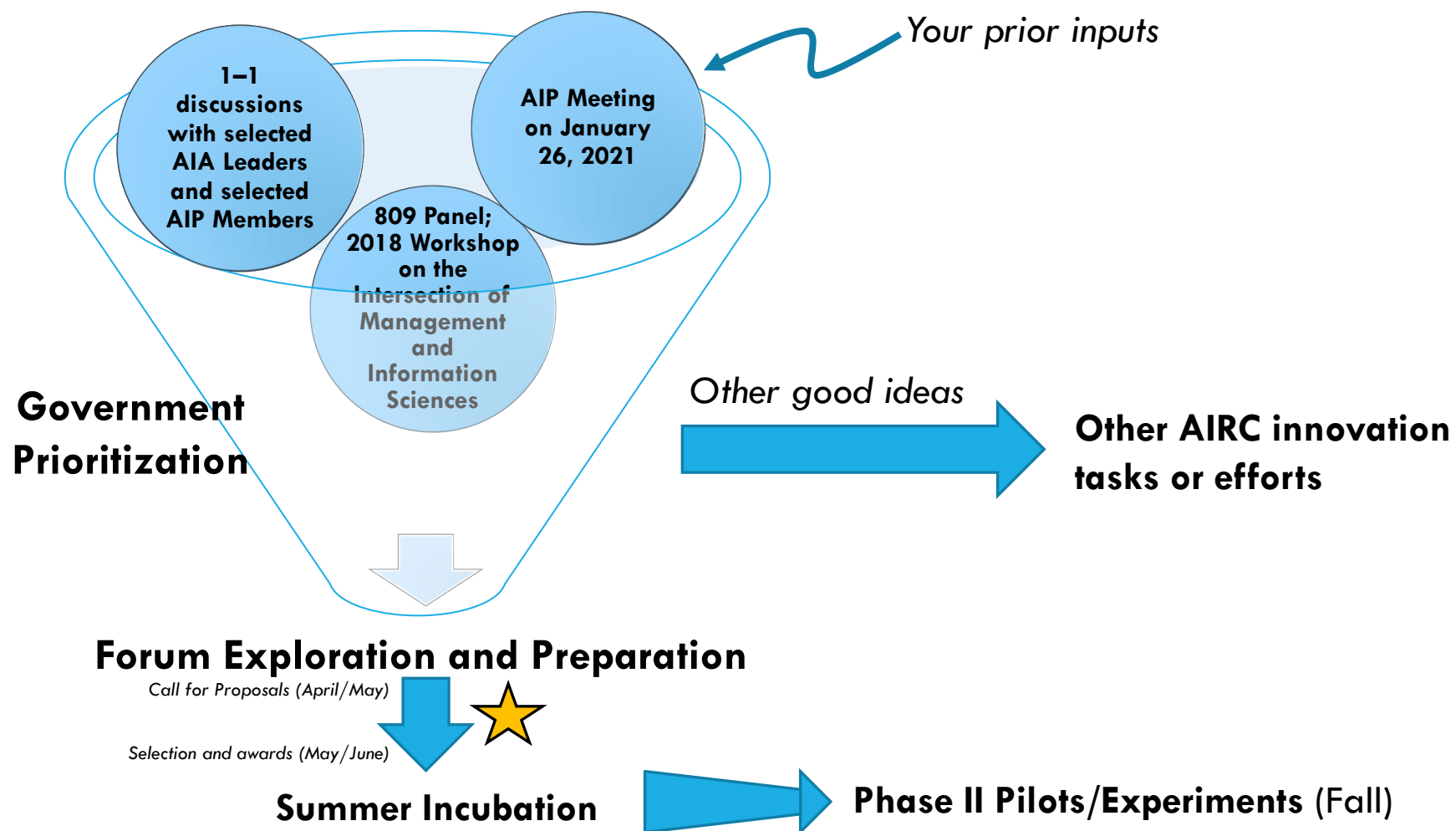
Extended Acquisition Community

Policy	Requirements & Intel	Funding	Programs	Test	Contracting	Industry	Thought Leaders
<ul style="list-style-type: none"> • Congress: HASC, SASC, HAC, SAC • OSD: A&S, R&E, P, CIO, CDO, CAPE 	<ul style="list-style-type: none"> • Joint Staff and Components : 5s, 7s, 8s • Army Futures Command • Air Force Warfare Integration Center • Navy N9 • IC 	<ul style="list-style-type: none"> • Comptrollers • 8s 	<ul style="list-style-type: none"> • CAEs • PEOs 	<ul style="list-style-type: none"> • DOTE • Component Test Centers 	<ul style="list-style-type: none"> • Contracting offices 	<ul style="list-style-type: none"> • Associations (e.g., NDIA) • Big 5 CEO /CTOs • Small business reps 	<ul style="list-style-type: none"> • DIU • JAIC • xWERX • DARPA • Defense Innovation Board • Defense Universities • Service Academies • AFIT, NPS, NDU, DAU

MULTIPLE PATHWAYS FOR LEVERAGING INNOVATIVE IDEAS



MODEL: REFINE AND SELECT IDEAS FOR PHASE I STUDIES





THEMATIC FOCUS FOR THE 2021 SPRING INCUBATE CYCLE

Digital Transformation and Acquisition

Definition:

- The profound transformation of acquisition business and organizational activities, processes, competencies, and product/service offerings
 - Fully leverage the potential of digital technologies and their accelerating impact to acquisition life cycle activities
- Reforms business and acquisition practices
 - Improving technical, contract, and business practices through authoritative sources of truth data, digital analytics, and data-driven decision making
- Replaces the current process of using documents and spreadsheets as the program baseline with a digital enterprise with linked digital artifacts.

2021 INCUBATE CONCEPTS AND USE CASES SELECTED BY DoD ADVISORS

Perspectives	Strategic Concepts	Application Use Cases
Decision Maker & Workforce	1. Workforce Training Technology Assist in rapid training, especially on new authorities and approaches through advanced training tools and technology.	<ul style="list-style-type: none"> Contracting officers on challenging approaches Cost estimators
Decision Maker	2. Corporate Memory and Future Constraints from Decisions Enable better actions and decisions by capturing, developing, sharing, and effectively using organizational knowledge.	<ul style="list-style-type: none"> Framing Assumptions Acquisition Strategies and Sustainment
Incentives & Culture	3. Aligning incentives for agility and innovation. Motivate innovation and acquisition agility by aligning workforce and organizational incentives.	<ul style="list-style-type: none"> OGC reviews Contracting audits Program risk taking
Infrastructure	4. Align Models for Iterative Software Testing. Use digital technology to transform testing of AI and software systems in development from linear, serial processes to iterative, incremental processes that build a body of evidence over time usable for operational assessments and evaluations.	<ul style="list-style-type: none"> AI Systems: Integrate models across domains—acquisition, T&E, training, requirements (e.g., unified language to share data/models across groups)
Infrastructure	5. Assessing ROI of Digital Transformation for Decision Making. Inform decision- making, budgeting, and tradeoffs by enabling assessments of return-on-investment for data science tool investments.	<ul style="list-style-type: none"> Test infrastructure Data science infrastructure and tools

Rule 1: Nobody gets to start with a clean sheet of paper

- Any reform is doomed to failure if it fails to start with an understanding of what the current system is, why it exists, what functions it performs, and who benefits from it;

Rule 2: If it sounds easy, it has already been tried**Rule 3: Never overlook what is working****Rule 4: There are no perfect solutions, only competing priorities**

- Business systems and processes serve multiple users and objectives... efforts to optimize for one purpose often undermines other goals, leading to a reform pendulum...

Rule 5: One size fits all approaches rarely work**Rule 6: The best designed reforms take a "well-defined" subset of problems, identifying root causes, and develop focused solutions**

- ...the gold standard for this is the Goldwater-Nichols Reorganization Act of 1986 – focused on jointness

Rule 7: Legislation alone doesn't solve anything

- ...the Packard Commission of 1986 did not change the transition to COTS until the Perry memo in 1994

Rule 8: Don't try to Take on Too Much

- ...senior leaders in the Pentagon have broad responsibilities but not a lot of time... when they try to attach everything at once they often end up accomplishing nothing...

Rule 9: Nobody in the Pentagon follows orders

- ...the military has a very clear operational chain of command... but administrative authority is so diffused in so many different directions... this causes policy decisions to be made on the basis of consultation and consensus, rather than direction

Rule 10: Most effective reform initiatives build broad support, address organizational alignment and individual incentives, and are driven by continuous engagement of senior officials



ACQUISITION INNOVATION
RESEARCH CENTER

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