Where Our National Security Begins...
NRO
Application Service Provider
Industry Advisory Working Group

Working Session
January 30, 2018
What is an IAG?

Industry partners self-organizing to discuss matters of mutual concern and provide pragmatic recommendations regarding the industrial base.

An IAG is:
- Volunteer-based
- Strategic in nature
- Objective (pros & cons)
- Open to participation
- Company-agnostic
- Problem-centric
- Focused on outcomes

An IAG is not:
- Sponsored by the government
- Restricted in participation
- Proprietary
- A pursuit/capture venue
- A shaping & positioning opportunity
- A venue to recommend products
- An open ended discussion forum

Future Business Models are of Strategic Importance to the Industry Base
Agenda

- Welcome & Introductions
- “Snapshots”
- Government Perspective*
- “S2P Corner” & “C2S Corner”
- DevOps Action Team discussion
- Open Dialog: 2018 Look Ahead & Priorities
- No-Host Social
Snapshots

- Software 101 Course discussions w ACE
- Cloud Onboarding Readiness Guide: IAWG Review
- IPA Cloud Broker feedback and lessons learned
- GEOINT 2018: Joint NGA-NRO Industry Advisory Group session

2018 Team Lead Volunteers

- DevOps Contracts team: Themba Hinke
- Software RFP/NAM language: Gavin Greene
- DevOps vs Waterfall TTO: OPEN
- Barriers to speed & incentivizing industry: OPEN
NRO IAWG Co-Chair Nominees

**Ann Waynik**
SAIC
Senior Program Manager
Ms. Waynik has 30-years’ experience across NRO, NGA, CIA, and DoD (Pentagon) in systems engineering and acquisition, SETA and management (program, capture, business development). She has a proven reputation for an effective leadership style. Ms. Waynik was the NGA lead briefer for a cost saving analysis study for 60 program/project consolidations. Ann has provided concurrent Program/Line Management and technical support to several Government customers (SED, COMM, GED, RSPO). Ms. Waynik’s serves as Chantilly Business Forum president and a member of NRO/NGA business forums (VIM, NAWG General Assembly and NRO Industry Advisory WG working session).

**Dr. Suzanne Sincavage, PhD**
IDIQ, Inc.
President & CEO
Dr. Sincavage’s career encompasses 16 years of field scientist experience in the biotechnology and pharmaceutical industry, covering therapeutic areas of Infectious Disease, Virology, Oncology, Hematology, Urology and Immunology. Her dissertation entitled "Identification and Analysis of Obstacles in Biological Terrorism Preparedness and Response" provided a unique theoretical framework integrating medical, environmental and social perspectives. Her research focused on consequences of weapons of mass destruction addressing challenges facing federal, state and local agencies and conveying the impact on authorities, organizations, businesses and public health.

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**Alex J. Fox**
IBM
Associate Partner, National Intelligence Solutions
Alex leads the Intelligence Community Solutions team within IBM’s Global Business Services Division in developing solutions that leverage IBM’s Research and commercial solutions to deliver disruptive capability to the IC. Focus areas include Big Data, Artificial Intelligence, Neuromorphic and High-Performance Computing centered around the IC’s TCPED mission. Prior to IBM, Alex held positions at DigitalGlobe, TASC, Northrop Grumman, GeoEye, and Orbital Sciences. Alex holds a MS in Computer Science from Johns Hopkins University and a BS in Information and Computer Science from the Georgia Institute of Technology.

**Michael J. Moran**
Peraton
Executive Director, Strategies & Solutions
Intelligence Community and Air Force Programs
Mike’s NRO experience began in 1992 as a Program A launch integrator and spacecraft engineer. He served in SIGINT and in the NRO HQ staff representing SIGINT and Launch programs. Mike contributed to the NRO in other Air Force assignments as Commander of the 22nd Space Ops Squadron, Group Commander/Director of the Atlas 5 Launch Program, and Wing Commander/Director of the Space Development & Test Wing. In 2013 he returned to the NRO as the COMM Directorate’s Associate CIO and Deputy Director of the NISP.
GED Industry Day: Challenges We Heard

- Contracting
  - GFE and 3rd Party deliveries (right thing to do but hard)
  - Balanced bidding strategies vs. executability
    - Alternative contracting strategies for Agile DevOps

- Acquisition:
  - Adoption of the “Custodian” model in a multi-vendor marketplace?
    - Agile DevOps: what’s worked? What hasn’t worked?
    - Pricing models…is it even possible to motivate industry to build before buy?

- Architecture
  - Incentivizing Framework adoption?
  - Implications of a hybrid cloud hosting model
  - NRO applications on DoD Infrastructure?

- Personnel/Skill mix
  - Expertise in data science, agile development and cloud migration
  - Non-technical IC professionals consuming/interacting w/technical data services

**NRO IAWG: How do business/operating models impact these?**
GED Question to Industry: How to access Talent?
Responses...

1. Clearance sponsorship
   - Challenge: no way to onboard talent without awarded work (clearance tied to contract)
   - IDEA: leverage company’s IR&D to justify sponsorship (IR&D must be briefed to govt)
   - IDEA: utilize CRADAs to establish no-cost contractual relationship
   - IDEA: S2P starter kit concept

2. Price vs Profitability constraints imposed by government are a barrier
   - Challenge: pressure to reduce rates and margin makes top talent unaffordable, especially to recruit and retain in light of security clearance sponsorship challenge
   - Question: can GED’s shift to price realism away from LPTA change this calculus?

3. Other Responses?

NRO IAWG: What ideas do you have to address the talent challenge?
Government Perspective
“S2P Corner”

*Latest & Greatest…*

*Topics & Issues Discussion*

CWAN accessible @ HTTPS://S2P.proj.nro.ic.gov

Unclassified S2P JPortal @ https://www.s2p.cloud
# Release 3.1 Focus

<table>
<thead>
<tr>
<th>JIRA Epic</th>
<th>Priority</th>
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<tr>
<td>FVEY Migration Environment</td>
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<tr>
<td>Software Supply Chain</td>
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<tr>
<td>OpenShift Container Platform</td>
<td>1.2</td>
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<td>CA API Gateway</td>
<td>1.3</td>
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<td>FVEY Test Environment</td>
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<td>Red Hat Satellite</td>
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<td>ServiceNow – CM Module</td>
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<td>Developer AMI</td>
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<tr>
<td>Developer Desktop Provisioning</td>
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<td>Einstein</td>
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<tr>
<td>Empower</td>
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<td>Splunk</td>
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<tr>
<td>Technical Debt</td>
<td>2.3</td>
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<tr>
<td>Mission Essential Environment</td>
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Capacity Limit: Items above line included in Release, below line worked as time allows.
S2P Growth Rate

Average 43.4% growth per quarter

Does not include 13,000+ JEMA users

UNCLASSIFIED
“C2S Corner”

re:Invent Conference Summaries

@ https://aws.amazon.com/

AWS Announcements made at re:Invent available upon request from zellerst@amazon.com
NRO IAWG
2017 Action Teams & Topics

DevOps Action Team

Lessons Learned Inputs

Contracts Language Team Kickoff
DevOps Action Team Update

Jay Eward (Team Lead)  Ken Laskey (Team Lead)
Clark van Buskirk  Pete Epstein  John Farrell  Sam Stollar
Shawn Lucas  Andy Murren  Jared Putman  Jeff York
Suzanne Sincavage  Steve Thomas

Action Team Report:
• Action Team is incorporating latest “Lessons Learned”
• Peer Review draft to be offered to all IAWG members for comment
• 2-week Comment period supports final report by February meeting
Agile / DevOps Lessons Learned & Best Practices
Agile Lessons Learned/Best Practices

Greater understanding of mission need leads to more impactful solutions

- Focusing on meeting user needs, within the time allotted, reduces “gold plating” and drives the program to focus on value added activities and avoid wasted effort.
- Agile and DevOps enable environments where government end-users can work side by side with developers, allowing solution providers a more intimate understanding of mission needs.

Maximum benefits are realized when Agile & DevOps processes and Customer processes are aligned (e.g. Security, Requirements, Transition)

- This is achieved by integrating Agile & DevOps processes with government standards (e.g. NSIS), IT Service Management (ITSM), acquisition practices, contracting procedures and operational processes.
- Agile & DevOps practices can be more effective when blended with best practices of other methodologies like Systems Engineering, Deployment & tailored/adaptive Waterfall approaches, transparent EVMS, and well defined PMP/RACI approaches that clearly define roles, responsibilities, and business processes.

The ability to reprioritize requirements, shift schedules, change design paths, and adapt to evolving mission needs can lead to wasted effort if stakeholders do not understand the value of a traded capability or unsatisfied requirements.

- Successful Agile & DevOps developments focus on development “flow” and sprint “velocity” as measured by speed of new mission capability from dev to production (aka “Value”)
- Programs must groom future requirements ahead of release planning. Agile & DevOps do not absolve government product owner from having a plan and prioritizing requirements in time. Recommended approach is to use epochs in an Agile cadence.
- Training is fundamental and absolutely critical.
Agile & DevOps practices include Capability & Architecture Roadmapping... Use them! They provide critical context to Release Planning as projects evolve and teams learn.

- The flexibility inherent in Agile projects may seem to be at odds with long-term architectural objectives, but Agile & DevOps encourages the use of Agile Architectures and capability roadmaps.
- This architecture is emergent, starts with the simplest architecture possible, and uses the concept of an Architectural Runway coupled with capabilities that define the needs of the architecture based on the capability roadmaps – on a just-in-time basis.

Agile is perceived in some government circles as lacking rigor when in fact Agile & DevOps, if implemented correctly, are as rigorous, if not more, than legacy processes.

- Agile & DevOps can provide processes that enables the team to be creative, innovative and flexible while, at the same time, ensuring that lean practices, best practices, and systems engineering discipline are applied appropriately thought the program lifecycle.
- Agile & DevOps eliminate “Cowboy Coding”, replacing it with a repeatable, detail oriented process that seeks to deliver working systems on a large scale.

Agile & DevOps provides transparency and new metrics to government, allowing government to have new levels of insight into the status of a program.

- Agile reporting practices allow government to understand status and/or progress of programs on a weekly or even daily basis – including plan vs actuals measurements for technical progress, risks, and velocity.
Agile development is not a silver bullet, and it may not be right for your project

- Depending on program/project goals, not all projects need to use Agile & DevOps. However, multiple studies show Agile development is more effective ASSUMING the project team is properly trained and equipped to implement. The more stable a development team, the more effective the implementation.
- New projects should be considered for Agile or Agile & DevOps implementations.
- Virtually any project type (even non-software development projects) can benefit from an Agile approach with an experienced coach to assist in setting up the project and appropriate training for the personnel participating in the program.

Agile development is simple in theory, but complex in practice. Scrum can be learned in two days, but learning how to setup a successful and high functioning agile program takes years of experience.

- Support team/staff must scale in proportion to the number of scrum teams. PM, Security, and other functions must be appropriate to the number of developers.
- Organization/Management. Successful Agile & DevOps programs require an organizational culture that fosters decentralized decision making, complete transparency, and lean thinking.
- The first step in establishing an Agile/Agile & DevOps program is educating the leaders, executives, and key stakeholders in order to assist them in establishing the required culture.

Agile & DevOps programs must have Agile & DevOps contracts and contract structures.

- The government and its support contractors MUST be trained and certified in Agile & DevOps.
- If contracts are “Agile” in name only and do not allow for continuous changes and evolving requirements the end goal will not be reached.
Agile / DevOps Contracting Language Action Team Kickoff
Agile DevOps Contracting: Industry Observations

- Implementation: Scrum Team & “Support function” metrics (fixed cost, fixed time)
  1. Capacity delivered
  2. Quality/defects
  3. Availability & incidence response

- CP or FFPLOE Contracting approaches can work… but differ in application & management
  - CP is workable with government controlling priorities and industry controlling velocity and capacity
  - FFPLOE is workable with govt/industry jointly defining Story Point LOE with fixed capacity

- Incentivizing speed? Consider Incentive Fee, whether using FFP or CP approaches
  - It allows industry to say “yes” instead of trading requirements.
  - For example, higher velocity against fixed cost/time means early delivery and govt/industry split the delta 50/50. Or higher velocity means more off the product backlog and govt/industry split the delta representing the sprint points.

- Keys to DevOps contract implementation
  - Active management of staffing mix
  - Government partner… no playing “gotcha” on speed #s.
  - Govt must focus on product roadmap & priority. Govt MUST own the priorities
  - Transparency of tools with criteria
  - Regular engagement/rhythm with government, e.g. re-prioritization meetings
  - Government discipline to NOT revert to LOE behavior by asking for people or FTE
Agile DevOps Contracting with fixed price software development requires numerous factors to be successful:

- A Government team with the overarching vision and engineering/technical ability to decompose that vision into features, and one that is collaborative and includes the development team as part of vision and technical-solution development.

- Buy-in and collegial working relationship between the Government program office, SETA support, and the development contractor.

- Fully articulated and documented engineering features, ready for development contractor to review, decompose, and commit to during sprint/release planning without changing meaning.

- A Government team ready to protect the development contractor mid-Sprint from unexpected and unplanned activity that would jeopardize the team’s ability to deliver what it committed to during planning.

- A contractor that is nimble, flexible, and innovative and able to partner with the Government to achieve program success.
DevOps Contracts Language Action Team

Themba Hinke (Team Lead)
Clark van Buskirk  Jared Stauffer  Pete Epstein  Jeff Sander
Sam Stollar      Dave Wade      Steve Thomas  Pam Arya
Ken Laskey       Ann Waynik     Animesh Gupta

Action Team Objectives:
- Research existing DevOps contract language used within USG
- Research existing alternative contracting approaches
- Collect, collate, and align approaches and language appropriate for NRO DevOps
- Industry-government roundtables to draft standard language for industry-wide coordination
Suggested Approach

- It’s a Rosetta Stone and not a one-size-fits-all kind of approach.
- Deliverables:
  - Education materials
    - Terms of reference, reference reading list, key or required enablers such as security and contracts on board, PMs qualified to be product owners
  - DevOps Contracting Rosetta stone options
    - Contract type / Type of Deliverable / KPPs / KSAs / Management Volume Considerations / M Considerations / Incentive Fee Considerations / Award Fee Considerations / PMO Metrics / Exec Metrics / Management Controls / Assumptions / Anti-patterns / FAR considerations
  - Big rocks remaining for NRO··· others as a basis for the roundtable discussion
  - Sample Language tailored to the NRO··· others
Principles for Discussion

- This language is not set in stone but a Rosetta stone of options and a list of anti-patterns to avoid at all cost

- This language must be a spectrum of choices to allow the Government/Industry to match the appropriate contract type to the deliverable
  - Must preserve the foundations of risk-to-the-Government and risk-to-the-Contractor
  - Must be applicable for all contract types and not depend on exceptions or waivers

- IAWG role is to suggest a starting point for tailoring and then watch for anti-patterns when reviewing RFI s and RFPs
Open Dialog

Additional Topics for Consideration

Actions & Next Steps

No-Host Social
IAWG Contact Info & Additional Information

- Nick Buck: nick@buckgroup.net (703) 801-3405
- Co-Chair Position vacant: elections soon!
- Justin Franz (USGIF coord): justin.franz@usgif.org (571) 392-7205
**NASP IAWG: Charter & Objectives**

- **Mission:** Help NRO ASP and Industry jointly achieve transformation objectives
  - Identify business models that will support government and industry objectives
  - Identify potential pitfalls and recommend potential solution

- **Charter:** Provide expert industry resource and sounding board focused on:
  - Business aspects of emerging acquisition models used to acquire software services
  - Ramifications of componentizing software applications,
  - Benefits accrued to the government & industry,
  - Intended and unintended consequences against the industry base,
  - Limitations and viability as a reasonable course of action

- **Objectives:**
  - Provide strategic industry input to a changing acquisition landscape
  - Provide an objective and neutral venue for discussing approaches to business models
  - Foster effective communication between government and industry leadership
Guiding Principles & Deliverables

- **Provide Options, not “answers”**
  - Emphasize trade space and alternatives, not defining or recommending “the answer”:
  - Provide feedback (sometimes confidential) and socialize concepts in a trusted-partner venue

- **Constrain the problem set: Step 1 for Action Teams is defining the deliverable**
  - Emphasize speed and pragmatism over exhaustive research and perfect world scenarios
  - Quick hitting analyses, “Magic-Quadrant”-like outputs, roundtable
  - Timely enough to make the dialog relevant in the issue du jour

- **Remain credible**
  - Discussions must be vendor, supplier, and integrator agnostic, not just by product/company, but by architecture as well. Must self-police to ensure objectivity.
  - Recommendations must be realistic
  - Sweet spot is the bridge between policy and execution

- **Establish a functioning & robust Industry – NASP leadership interface**
  - Know when to defer to other groups or venues
  - Be responsive and objective above all
  - Open and collaborative (not duplicative of other efforts, involve as necessary)
### ISP-ASP Adoption Challenge Area

<table>
<thead>
<tr>
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<th>IAWG Action Teams</th>
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<tbody>
<tr>
<td><strong>Acquisition processes</strong></td>
<td>✓ Incentivizing govt/industry behavior</td>
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<tr>
<td>- Tech cycles shorter than acq cycles</td>
<td>✓ Requirements: Over-ask and Under-Ask</td>
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<tr>
<td>- Market research &amp; tech currency gaps</td>
<td>☐ Cloud business/revenue model (incenting speed)</td>
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<tr>
<td><strong>Procurement Models (“ABC” vs “CBA”)</strong></td>
<td>✓ Pay-for-Use Licensing &amp; ELA models</td>
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<tr>
<td>- Perceived bias against paid licensing</td>
<td>✓ GOTS/COTS/OSS Business models</td>
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<tr>
<td>- Role of OSS misunderstood</td>
<td>✓ Software Business 101 course</td>
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<tr>
<td>- Contracts: S/W vs Services</td>
<td>☐ (NEW) Business/Op Model to attract talent</td>
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<tr>
<td><strong>Integration Models</strong></td>
<td>✓ FGA Framework segmentation &amp; OCI</td>
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<tr>
<td>- Segmentation &amp; OCI concerns</td>
<td>✓ Software Development vs Integration</td>
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<tr>
<td>- Integration vs Configuration</td>
<td>✓ Agile &amp; DevOps</td>
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<tr>
<td>- Waterfall vs Agile DevOps</td>
<td>☐ (NEW) DevOps TTO in NSIS waterfall</td>
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### Consistently Strong Participation

Industry buy-in: 45+ volunteers at inception, up to ~75 across 25+ companies
Cross section of companies (large/med/small, H/W, S/W, services, Dev + SETA + FFRDC)
Work-product, deliverable based approach fosters active participation