NRO
Application Service Provider
Industry Advisory Working Group

Working Session
April 4, 2017
Welcome & Introductions

“Snapshots”

Government Perspective

“C2S Corner” & “S2P Corner”

Action team updates: New Topics & DevOps kickoff

No-Host Social
“Snapshots”

- Updates: C2S IR&D Instances
- Charter Review
- Next meeting: May 2nd
- IAWG @ GEOINT 2017: Monday 6/5 @ 1300
“Join the NGA and NRO Industry Advisory Working Groups as they discuss how changes in the government-industry business model and the move to cloud will affect the industry base and future acquisitions. Bringing industry and government expertise together, the NGA and NRO IAWGs work to improve acquisition through pragmatic, actionable ideas.”

- Mock Acquisition Panel “A-ha” findings
- Make-Buy criteria for procuring COTS vs GOTS
- Market Research requirements & methods
- Preview of Software Business 101 course
- Dialog and discussion

If you’re going to GEOINT, please join us & encourage peers to attend!
Government Perspective
“C2S Corner”

Latest & Greatest…Fact vs Fiction

Topics & Issues Discussion

Event: AWS Partner Classified SA Hour
Thursdays 11:00-12:00
850-8002, 9342661
“S2P Corner”

Latest & Greatest…Fact vs Fiction

Topics & Issues Discussion

CWAN Accounts available @ HTTPS://S2P.proj.nro.ic.gov

Check out Confluence without an account @ HTTPS://S2P.proj.nro.ic.gov/confluence
Program Architecture Evolution

IAWG Focus: How does this evolution change Business Models?

*For illustrative purposes only. Not intended to reflect govt architecture
GOTS-COTS-FOSS Business Models

Action Team Update

Nick Buck
**COTS-GOTS Make-Buy: Factors to Consider**

**OPERATING MODEL FACTORS**
- Acquisition Strategy
  - “Speed to Need” (Day 1 vs Year 1 capability)
  - Incremental & Agile approaches (esp. COTS)
- Ease of development with Service contracts
  - ABC (Adopt, Buy, Create) vs CBA?
  - Ownership – Make/Buy/Integrate components
  - Measures of Success
  - QA/QC Independent
- Procurement Factors
  - Complexity of NDI Product procurement
  - Different pots of money: Dev vs O&M?
  - Licensing (OSS contribution?/Middleware)
  - Warranties, Indemnification, Cyber liability

**BUSINESS MODEL FACTORS**
- Technology cycle compression
- Funding models (government & industry)
- Services vs. Licenses:
  - Obs & expenditures (Govt)
  - Revenue recognition (Industry)
- TCO (Govt) and Cost recovery (Industry)
- Intellectual property influences
- Maintenance and licensing, royalties
- Protections and indemnification
- Retirement and refresh
- Risk models

**ARCHITECTURAL FACTORS**
- Open Architecture
  - Level of componentization
  - Degree of API publication
  - Open I/Fs vs Open Source code
- Requirements
  - 80-90% fit vs 100% fit vs not avail in marketplace
  - Outcome based vs Activity based
  - Tech Readiness/Product Maturity
# Risk Comparison – COTS/GOTS/Hybrid Models

**Is Hybrid the “Best of Both Worlds”?**

<table>
<thead>
<tr>
<th>RISK AREA</th>
<th>COTS</th>
<th>GOTS</th>
<th>Hybrid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development</td>
<td>• Developed in anticipation of market need</td>
<td>• Requirements must be well defined upfront to control risk.</td>
<td>• Lowest baseline risk. Development risk focused on extending COTS with new GOTS functionality.</td>
</tr>
<tr>
<td></td>
<td>• Purpose built, custom coding.</td>
<td>• Purpose built integration</td>
<td>• COTS integration points allow use as open platform</td>
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<tr>
<td></td>
<td></td>
<td>• Code can be modified if req’d</td>
<td>• Minimize custom integration</td>
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<tr>
<td></td>
<td></td>
<td>• External Interface complexity</td>
<td></td>
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<tr>
<td>Integration</td>
<td>• Dependent on API availability</td>
<td>• Purpose built integration</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• May require wrapping</td>
<td>• Code can be modified if req’d</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Legacy system complexity</td>
<td>• External Interface complexity</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>• Code can be modified if req’d</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• External Interface complexity</td>
<td></td>
</tr>
<tr>
<td>Performance</td>
<td>• Market driven performance</td>
<td>• Requirements driven testing and performance. “Have it your way.”</td>
<td>• Requirements driven performance &amp; testing PLUS widely available components</td>
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<td></td>
<td>• Unique mission configuration or adaption to legacy may be required.</td>
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<tr>
<td>Cost</td>
<td>• Cost amortized over larger expected market.</td>
<td>• Labor throughout lifecycle. Cost from requirements, testing and service rates.</td>
<td>• Minimize direct labor TCO.</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>• Leverage available COTS</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>• Maintain OSS</td>
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<tr>
<td>Schedule</td>
<td>• Available off the shelf with min modification. May require labor to configure or adapt.</td>
<td>• Minimum 6 months to capability. Timeline driven by requirements, testing and available services.</td>
<td>• “Day 1” capability + Requirements, testing and available services driven</td>
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<tr>
<td>Maintenance</td>
<td>• Services and version control per licensing parameters.</td>
<td>• Maintenance services. Version Control and promotion to operations.</td>
<td>• GOTS &amp; COTS delineated terms</td>
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<tr>
<td></td>
<td></td>
<td>• Sustaining outage</td>
<td>• Managed via maintenance model</td>
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<tr>
<td>Security</td>
<td>• Indemnification, warranties, IA risks/costs carried by supplier.</td>
<td>• Supports unique security needs.</td>
<td>• Indemnifications and protections, w/support to unique security needs.</td>
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<tr>
<td></td>
<td></td>
<td>• Requires labor to maintain.</td>
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</tbody>
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# Potential COTS-GOTS Procurement Models

<table>
<thead>
<tr>
<th>COTS</th>
<th>“Accelerated” COTS</th>
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<tbody>
<tr>
<td></td>
<td>Govt buys 100% functionality, but it addresses less than 100% of reqts</td>
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<tr>
<td></td>
<td>Govt request new requirement</td>
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<td></td>
<td>Vendor assesses market ROI and pays to develop “100%” solution, OR Govt defers requirement and waits for Vendor roadmap</td>
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<th>“Accelerated” COTS</th>
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<tr>
<td>Govt buys 100% functionality, but it addresses less than 100% of reqts</td>
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<tr>
<td>Govt identifies “delta” requirements</td>
<td></td>
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<tr>
<td>If no COTS Market ROI, Govt pays vendor for accelerating capability</td>
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<tr>
<td>If potential Market ROI, Govt/Vendor cost share accelerating capability</td>
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<table>
<thead>
<tr>
<th>COTS-GOTS “Hybrid”</th>
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<tbody>
<tr>
<td>Govt buys COTS but it meets less than 100% of requirement</td>
<td></td>
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<tr>
<td>Govt assigns “delta” reqts to integrator</td>
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<tr>
<td>Integrator extends COTS via API/SDK</td>
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<table>
<thead>
<tr>
<th>GOTS</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Govt builds 100%</td>
<td></td>
</tr>
<tr>
<td>Govt assigns reqts to integrator</td>
<td></td>
</tr>
<tr>
<td>Govt self-indemnifies &amp; ensures compliance with Economies Act</td>
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<tr>
<td>Vendor-free supply chain</td>
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**Assumptions:** both COTS/GOTS providers use open source
NRO IAWG
2017 Action Teams & Topics

VOLUNTEER NOW!
YOU CAN CONTRIBUTE!
CALL FOR LEADS & MEMBERS

2017 Action Team Topics

- (KICKING OFF) Adopting agile methods & DevOps vs Legacy processes:
  - Evolving dev-ops paradigm, workforce knowledge base, changing industry base

- Systems integration vs Software integration;
  - Total system prime vs segment integrator model

- Viable industry revenue models in an ASP-ISP cloud world

- ICD 503 Implementation to improve productivity and industry ROI

- Performance-Based Managed Services: a new operating model needed
DevOps Action Team

Jay Eward (Team Lead)

Clark van Buskirk
Ken Laskey
Jared Putman

Pete Epstein
Shawn Lucas
Suzanne Sincavage

John Farrell
Andy Murren
Jeff York

Observations:
• DevOps is a culture shock to developers and programs
• DevOps has great promise but faces major obstacles

Questions:
• Is DevOps fundamental to cloud adoption by NRO?
• How does DevOps impact the NRO Operating Model?
• Does DevOps change the NRO business model?
What is DevOps?

*DevOps is a Practice that:*

- Emphasizes collaboration and communication between software developers, operators, and testers while automating software delivery and infrastructure changes.
- Describes techniques for automating repetitive tasks within the software development lifecycle (SDLC) including software build, testing and deployments.
- Consists of multiple tool sets to AUTOMATE software development and delivery processes:
  - Code – Code development & review, continuous integration tools
  - Build – Version control tools, code merging, build status
  - Test – Test and results determine performance
  - Package – Artifact repository, application pre-deployment staging
  - Release – Change management, release approvals, release automation
  - Configure – Infrastructure configuration and management, Infrastructure as Code tools
**DevOps Meets Waterfall**

**Process Compatibility in High-side Environments**

*DevOps incorporates several disruptive concepts:*

- Continuous Integration
- Continuous Delivery & Deployment
- Continuous Configuration Automation
- Continuous Risk Assessment & Auditing

*Factors to Consider in the Action Team:*

- Appropriate for highly complex, multi-segment operational baselines? If so, how?
- Addressing cross-organizational equities, roles & responsibilities
- Accountability: who is responsible for requirements satisfaction & failures?
- Infrastructure requirements: hosting & network configuration/design assumptions
Open Dialog

CALL FOR IAWG CO-CHAIR

Additional Topics for Consideration

Actions & Next Steps

No-Host Social
• Nick Buck: nick@buckgroup.net (703) 801-3405

• Co-Chair Position vacant: consider volunteering!

• Justin Franz (USGIF coord): justin.franz@usgif.org (571) 392-7205
## What is an IAG?

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, or an open ended discussion forum. Instead, it is volunteer-based, strategic in nature, objective (pros & cons), open to participation, company-agnostic, problem-centric, and focused on outcomes. 

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

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