Where Our National Security Begins...
Agenda

- Welcome & Introductions
- Government-Industry Dialog
- IAWG “Snapshots” & Discussion
- Implementation Team: Software Business 101
- Action Teams: Requirements & GOTS/COTS Drivers
- Next Steps
- No-Host Social
What is the NRO ASP IAG?

Industry partners self-organizing to discuss matters of mutual concern and affecting the future business of the NRO industrial base.

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

The 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

“Action Team” Approach: 4-6 week durations & deliverables-based
Download at http://usgif.org/community/Committees/NROASPIAWG
Mission: Help move NRO from vertical systems to mission platforms
- Identify business models that will support government and industry objectives
- Identify potential pitfalls and recommend potential solutions

Charter: Provide expert industry resource and sounding board focused on Business aspects of emerging models 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

“Action Team” Approach: 4-6 week durations & deliverables-based makes it worthwhile to participate!
“Snapshots”

– GEOINT: NGA-NRO IAWG Joint Session on Monday 5/16 @ 1230-1400
  • “Evolving to a Sustainable Govt-Industry ICITE Business Model”
  • NASP IAG Topics: Software licensing approaches, use of OSS/ToR, Requirements
  • NAWG Topics: TBD

– Terms of Reference Updates to Andy Murren and John Farrell!

– C2S Program Office and Amazon Partner Network discussion

– NRO ICITE Day summary
NRO ICITE Day: Industry Perspectives
Working together to pioneer “profound change”

Why Future Ground Architecture?

“The greatest challenge is going to be on the ground, so I look to the NRO to be the innovators, to plow new ground, to figure out the technology and how to do this, because the rest of us are going to be kind-of catching up, figuring out how to do this because it’s going to be a profound change.”

...Director of National Intelligence, James R. Clapper
Fall 2014, PEO Tech Hall

FGA, NASP and NISP Are Evolving the Business Model

Summary

NRO is Transforming the way we do business …
• Developing an architecture to enhance mission performance
• Implementing Enterprise collection optimization, multi-int and ABI/OGP as foundational architecture
• Delivering a unified, modern, resilient commercial-style services platform and interfaces supporting mission applications and information sharing

Industry feedback is key to mission success...

NASP Industry Advisory Working Group
Co-Chair: CAPT Nick Buck, USN (Ret)
1. Recognize the GOTS vs COTS question is a make/buy decision
   - Both use OSS extensively (why build it if you can grab it?)
   - Different risk models, indemnification, and life cycle cost implications
   - “Hybrid” COTS + GOTS leveraging open APIs may be best of both worlds

   - Investment profiles, architecture decisions, teaming, RFP responses
   - Over-asking can drive industry to game the system or gold-plate
   - Under-asking can turn Best Value into LPTA and leave capability on the table
   - The need for requirements prioritization is underappreciated

3. Technology is evolving faster than requirements:
   - 1-on-1 dialogs with Industry are encouraged prior to RFP release
   - Guidance: DoD Vendor Communication Plan, Administrator for Federal Procurement Policy

Do you have ideas on making things better? Participate in the IAWG!
Action & Implementation Teams

Updates & Discussion
Requirements:
What the Government Wants vs What Industry Can Provide

Action Team Update
April 26, 2016
Steve Thomas
Governments Needs vs. Industry Capabilities

The government will receive the best overall value when:
- Requirements align to industry capabilities, be they commercial, open source, or developmental
- Requirements are prioritized and prioritization is reflected in RFP/RFQ (high to low; threshold-objective)

When government requirements and Industry capabilities diverge, best value suffers:
- “Over Asking”: viable alternatives may not receive credible consideration, development risk increased
- “Under Asking”: capabilities are “left on the table”, requirements risk increased
- Distinction between commodity commercial item vs. tailored solutions procurements

To align requirements to industry capabilities, the government would, prior to RFI stage:
- Perform market research to identify commercially available capabilities (including in-person dialog)
- Identify and publish specific gaps between requirements and commercially available capabilities
- Reflect capabilities and gaps in the RFI for industry comment and recommendations
The “Over Ask”

Observation: An “Over Ask” occurs when government requirements exceed existing (generally available) offerings or industry developmental capabilities and would be considered exceptionally unique, difficult to develop, or only available through a single provider.*

“Over Ask” adds program risk and negatively impacts industry and government alike:
- Fewer Industry Partners capable and/or qualified to bid, narrowing competitive field
- Precluding commercial solutions due to specific, exquisite functional or performance requirements.
- Industry partners may attempt to stretch their capabilities to meet the government requirements, thus adding unknown amounts of risk to program once in execution (i.e. over promise/under deliver)
- Added government program costs to re-develop existing capabilities in pursuit of the unique ones

Recommendations: There are several solutions that can mitigate or all but eliminate Over Ask
- Increase quantity and quality of market research, including in-person technical exchanges, symposia, and benchmarking
- Allow Industry ample (???) opportunities to educate and even demonstrate current capabilities or near team future capabilities already in development.
- Prioritize requirements within a RFP/RFQ, either in priority order or by threshold-objective. Identify which the government believes are developmental vs commercially available.
- Identify requirements that exceed industry capabilities and could negatively affect a program with one or more of the impacts listed above. Engage industry and publish findings prior to RFI.
- Use RFI and DRFP phases to screen requirements that could create an Over Ask.

* Not applicable to advanced research projects
Observation: An “Under Ask” occurs when requirements do not capitalize on standard industry capabilities/offerings or provide mechanisms for Industry to provide additional value.

“Under Ask” settles for incomplete capability:
- Generally, no proposal evaluation credit is given for over delivering or exceeding requirements
- Additional capability may need to be procured separately, adding cost and integration risk (e.g. like buying a new car without tires).
- Difficulty differentiating between offerors’ technical solution reduces Best Value to LPTA

Recommendations: There are several solutions that can mitigate or all but eliminate Under Ask
- Increase quantity and quality of in-person market research to understand extent of industry capabilities which may exceed government understanding of requirements
- Inform “requirements pull” with “technology push”. Allow Industry *ample (???)* opportunities to educate and even demonstrate current capabilities or near team future capabilities already in development.
- Leveraging this info, use RFI and DRFP phases to screen requirements that could create an Under Ask
- Bin resulting requirements into threshold vs objective in the RFQ/RFP
- Provide evaluation criteria that give credit for proposing objective capabilities, specifically those that come at no additional cost because they are already include within the solution
Current Landscape: Industry-Government Interaction

- **Challenge:** Conveying state of practice, commercially available technology, and industry developmental capabilities in order to align requirements and industry solutions

- **Issue:** Most programs restrict industry interaction to RFI, Industry Day 1 on 1 meetings

- **Impact:** insufficient market research & industry interaction before a FRFP, resulting in:
  - Unnecessary requirements
  - Requirements that are expensive to acquire and maintain
  - Inadequate contract mechanisms
  - Increased development risk due to lack of Industry insight or IR&D opportunities
  - Confusing FRFP material resulting in poor responses from Industry and/or protests

- **Government response to Industry to date:** “post questions to the ARC”
  - Since proprietary and/or contractor acquisition strategy is not protected via ARC posting, Industry rarely post questions that could aid the acquisition
Requirements Business Case

- Requirements are the single largest Business Case Driver for industry.

- Requirements Influence:
  - Investment Profiles / Size of the Opportunity (IRAD & B&P)
  - Architectural Decision
  - Solution decisions (COTS/GOTS/FOSS/Custom)
  - Team Decisions
  - Long Term Business Profiles (is this written to be an ECP Engine)
  - Business Case Risk
  - Understanding what is tunable

- Requirements are also the biggest impact to the governments business case
  - Lack of Clarity – drives unintended ECPs
  - GFE supplied “requirements” drive risk to cost and schedule
  - Govt behaviors on requirements substantially impact proposed solutions

Governments Best Value Solutions are directly influenced by the requirements / Section L & M
COTS/GOTS Open Source Software Business Models

Business Model Differences + Terms of Reference → Drivers: Make-Buy Decisions

Software Business 101

COTS Licensing Decision Framework

Software Dev vs Integration Defined for OCI

Body of Knowledge and Industry/Government Dialog Advance Adoption of ISP-ASP Vision
## Risk Comparison – COTS/GOTS/Hybrid Models

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

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<thead>
<tr>
<th></th>
<th>COTS</th>
<th>GOTS</th>
<th>Hybrid</th>
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<tbody>
<tr>
<td><strong>Development</strong></td>
<td>Development done prior in anticipation of market need</td>
<td>Requirements must be well defined upfront to control risk</td>
<td>Services to modify to fit COTS/GOTS to mission environment ✔</td>
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<td><strong>Performance</strong></td>
<td>Market driven performance • Unique mission configuration or adaption to legacy may be required.</td>
<td>Requirements driven performance and testing.</td>
<td>Requirements driven performance and testing, leverage COTS tested components ✔</td>
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<tr>
<td><strong>Cost</strong></td>
<td>Cost derived from on amortization risk based on larger market assumptions.</td>
<td>Cost derived from requirements, testing and service rates.</td>
<td>Cost derived from requirements, testing and service rates.</td>
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<tr>
<td><strong>Schedule</strong></td>
<td>As available of the shelf without modification. May require labor to configure or adapt.</td>
<td>Requirements, testing and available and services driven.</td>
<td>Requirements, testing and available and services driven ✔</td>
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<tr>
<td><strong>Maintenance</strong></td>
<td>Services of COTS and version control based on licensing parameters.</td>
<td>Maintenance services. Version Control and promotion to operations • Sustaining outage</td>
<td>GOTS and COTS are delineated terms • Managed through maintenance model ✔</td>
</tr>
<tr>
<td><strong>Security</strong></td>
<td>Indemnification and protections, IA are added costs carried by supplier.</td>
<td>Labor services to certify and maintain.</td>
<td>Embedded license and liability ✔</td>
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Software Business 101

Action Team Update
April 26, 2016
Anita Weber
Software Business 101 Course

What sorts of things led to this group being tasked with this mission?

– Myths

• Lower total cost is better
• Profit is greed
• GOTS is “free” because there aren’t any licensing costs
• Service and support is the same thing
• Small businesses can compete anywhere
• Overhead does not cost the government anything
• Training is Not Crucial
• This next big program will solve all of these problems
  – a. Mission is so complex there’s no way commercial solutions can address/solve
  – b. If you can do the work in Space, doing the same thing on the Ground should be easy (and cheap)
Discussion Topics

1. Deliverables
   a. Determine Target Audience for phase one Course (Open issue – how many classes and which audience is the initial one targeted towards)
   b. Balance any overlap with other work product (GOTS versus COTS, Methodology for Technology Acquisition, etc. each have some elements of similarity as for some areas of messaging)
   c. Pull together representative samples of industry terms and pricing structures (i.e., different maintenance models, break/fix and upgrades, etc.) (asked the larger IAWG team – awaiting feedback)

2. Team to reach out to government contacts to determine some of the broader misconceptions within the government community with regard to standard business practices
   a. How do vendors make money and invest in technology
   b. Are hardware margins more equitable and fair than software models? (Shared sample emails to larger team – awaiting feedback)

3. Current items from a research perspective
   a. American Institute of CPAs SOP 97-2 and SOP 98-1 (FASB rules on revenue recognition) (Draft version 1 attached for comment)
   b. Financial statements of representative companies (such as Cisco, Oracle, SAP, EMC, HP, Raytheon, Lockheed, etc.) (pulled – need to be compiled for representative discussion/section in course. Will be part of Matt’s session below)
   c. NYU study on profit margins by industry – Matt has begun this draft – attached for comment
Meeting with ESAM – initial observations

- “It’s think it’s helpful for software companies to give an overview of how their products are licensed. Another area some might not understand are royalty products.

- How pricing structures works and why the can fluctuate so much depending on timing.

- Explain the bureaucracy of getting things through the vendor process. Especially how it doesn’t always go along with government processes and timelines. (I think many govt execs may not understand how different the commercial software world is and what a small percentage is govt software sales.)“

Discussion for Implementation Team March 1, 2015
Meeting with ESAM – initial observations

- Enterprise Licenses – are they as valuable as they seem? Do they cause more problems than benefits?
  - Economies of Scale?
  - Administrative benefits?

- Does this cause people to sometimes accidentally misuse software? (or not realize TCO issues?)

- Do the people you work with generally know how to translate a CONOPS into meaningful requirements – not just functional, but in terms of the kinds of uses for software and the associated licenses that are needed for that use? ("sometimes") – KEY QUESTION – How do you find the right person(s) in industry (or elsewhere) to help PMs answer the questions to help them translate CONOPS into License requirements?

Discussion for Implementation Team March 1, 2015
Discussion Topic 1

Revenue Recognition Versus Booking
And why the differences matter

GROUP AGREES THIS IS READY FOR PEER REVIEW
Discussion Topic 1a

“How can we avoid the Software Police?”

Why total lifecycle cost and clarity of terms can be critical to program cost management and success.

Want to list the roles and responsibilities of SW vendor, Integrator, PM, ESAM and how do you balance what each of these folks can and can’t do

Questions to government – how have software companies come back to “take a bite” out of you?

What are the business practices of software companies that have caused you the biggest challenges over the years?

How are you tracking usage of software in your environments?
How decisions are made to add new functionality to a product roadmap.

Key to understand how different companies approach this. i.e., CA was sales driven...Juniper gave Federal Government (esp IC) disproportional preferential treatment/weighting...other companies?

(crafted email) “We’re working on a program to help educate the government on how technology companies develop COTS offerings that can benefit the government AND commercial businesses. One key area is product enhancements and prioritization. Can you help me to understand how your company makes decisions to add functionality to its product roadmap? How important is the Total Addressable Market to your firm in making these decisions? How do you decide on enhancements that are almost exclusively Federal Requirements (i.e., Common Criteria, FIPS, etc.)”

No one has anything to add to these at this point
Maintenance

What exactly does a maintenance fee cover?

Is there an actual cost of goods sold by the vendor?

How does a vendor set the maintenance cost other than by ‘tradition’?

Marginal costs of software updates (COTS) versus labor/services (GOTS)

*ASK – need a volunteer to start drafting a few slides outlining types of maintenance, definitions, considerations, benefits/risks associated with each (Initial slide from Eric - Matt is continuing to work on it)*
GOTS vs. COTS Drivers: Understanding the Make-Buy Decision

Action Team Update
April 26, 2016
Keith Barber
# Drivers Action Team Participants

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<tr>
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<tr>
<td>Keith Barber (Lead)</td>
<td>OG Systems</td>
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<tr>
<td>John Amazigo</td>
<td>IBM</td>
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<tr>
<td>David Beddoe</td>
<td>Intergraph</td>
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<tr>
<td>Andy Cibula</td>
<td>Cibula Technology Services</td>
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<td>John Farrell</td>
<td>HP Enterprise</td>
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<td>Animesh Gupta</td>
<td>TechOnTime</td>
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<td>Doug Harts</td>
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<td>Ken Kincel</td>
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<td>Marc Kriz</td>
<td>Cloudera</td>
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<td>Mike Manning (NAWG)</td>
<td>IAI</td>
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<td>Jared Putman</td>
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<td>Allen Shepherd</td>
<td>ASEC</td>
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<td>Leigh Thompson</td>
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<tr>
<td>Shannon Silverstein</td>
<td>NetIQ</td>
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<tr>
<td>Steve Thomas</td>
<td>Ball Aerospace</td>
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<tr>
<td>Nick Buck</td>
<td>Buck Consulting Group</td>
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COTS vs GOTS Acquisition Drivers

Drivers
- Integrate
- Buy
- Make

Pilots vs. Scalable
Needs
- Free (Free-r)
- Market Research
- Cost

Requirements
- DEV-OPS ("Mission")

BUDGET
- Cost
- TCB (Color of $)
- vs
- PROC (People?)
- vs
- O&M (MOC & OPM)

& "Gov't" Ownership (Use rights)

Oh, by the way...
Non-Material Solution...

Delivery
- When is it needed in Ops...?
- Is "exquisite" more important than sched...?

Education
- Industry
- Government

"CONOP"
Drivers Team: Factors to Consider

OPERATING MODEL FACTORS
- ABC (Adopt, Buy, Create) vs CBA?
- Ease of dev with Service contracts
- Complexity of NDI Product procurement
- Different pots of money: dev vs O&M?

BUSINESS MODEL FACTORS
- Funding source models
- How are they acquired?
- Life cycle costs and cost recovery
- Intellectual property influences
- Maintenance and licensing, royalties
- Protections and indemnification
- Retirement and refresh
- Identify Representative models
- Risk models
- Observations

ARCHITECTURAL FACTORS
- 80-90% fit vs 100% fit
- Level of componentization
- Degree of API publication
- Open I/Fs vs Open Source code
Candidate Questions for Drivers Team
from S/W Decision F/W Team

1. (Kriz) If an existing COTS SW Solution existed that could meet 70-80% of program requirements, would you entertain acquiring it? (necessary to gauge acceptance of any COTS in the stack)

2. (Kriz) If a COTS solution is identified, are you willing to assist your contractor in gaining the necessary skills in order to support it?

3. (Kriz) Will the solution be deployed in the Private Cloud (AUE), or Public Cloud (IC-ITE) (not all COTS software can run in a Cloud and an even greater percentage of GOTS legacy apps cannot)

4. (Putman) Is this software built on open standards which promote integration with other software from a different vendor

5. (Beddoe) Can you access and explain the process clearly for network worthiness/installation-acceptance for software and software updates for your missions so that the most current software is adopted/utilized by your mission users?
   1. Keeping software up to current revisions, desktop/server/cloud, will lower the overall cost of software maintenance/support by commercial vendors (keeping staff and support for older versions costs the industry significant resources/money that could be reduced with “staying up to date”)

6. (Beddoe) Does your organization provide the guideline business justification and life-cycle costs for choosing and adopting COTS vs GOTS vs OSS vs Custom development integrated solutions?

7. (Beddoe) Is this service already provided in the commercial cloud? If so, what are the advantages of this solution over an existing solution (cost, capability, performance, etc)?

8. Do I have the skills on my program to implement and maintain this software or do I need some level of services support from the vendor?
Open Dialog

Additional Topics for Consideration

Actions & Next Steps

No-Host Social
Industry-Government Dialog Topics and Ideas
A (More or Less) Running List...

Industry Observations & Questions
- Would govt solicit industry feedback on S2P services for C2S migration?
- Not clear whether IC Marketplace is a pre-competited sourcing vehicle (CIA vs DoD rules)
- BAA’s are a good idea but payment structures aren’t conducive to NDI solutions
- Need Government PM/Engineer empowerment for 2 way conversations pre-RFP
- Prioritization of requirements needed: Industry can’t differentiate responses when all are equal
- Why can integrators get paid for S/W services but product companies are expected to provide at no cost?

Government Observations & Questions:
- is there a “spectrum model” that simultaneously incorporates PFU, Term and Perpetual licensing into an integrated program life cycle?
- How to leverage COTS when requirements are in flux/evolving?
- How to program/budget for a pay for use licensing model with pre-negotiated break points?
- Is there a way to add flexible t’s and c’s to DNI ELAs?
- Could IAWG review the standard t’s and c’s on DNI ELAs?
- What does industry care/need to know about future data center planning? Why does it matter?

DNI ESEWG: Need real world examples of metered service on contract today
IAWG Contact Info & Additional Information

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- Jordan Fuhr (USGIF coord): jordan.fuhr@usgif.org (571) 392-7205
- NASP IAWG Website: http://usgif.org/community/Committees/NROASPIAWG
- S2P Website: https://ged.svc.nro.ic.gov/nasp/softwareservicesplatform
Government-Industry Dialog

NRO Ground Enterprise Chief Architect
Col Myles Nakamura, USAF (Ret)

NRO Application Service Provider
Mr. Greg Culkowski

NRO Infrastructure Service Provider
Col Darwyn Banks, USAF (Ret)