Where Our National Security Begins...
Welcome & Introductions

Government-Industry Dialog

IAWG “Snapshots” & Discussion

SI-Related Action Topics

Implementation & Action Team Updates

Next Steps

No-Host Social
Government-Industry Dialog

NRO Chief Architect
Col Myles Nakamura, USAF (Ret)

NRO Application Service Provider
Mr. Greg Culkowski

NRO Infrastructure Service Provider
Col Darwyn Banks, USAF (Ret)
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-competed 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
“Snapshots”

– FGA Industry Day charts and videos posted on ARC

– NRO IT Way Forward panel opportunity

– Software ToR and OSSI update
The ASP Challenge: Why an IAG?

- Government Stated Challenge: “Industry (developer) resistance”
  - Move from vertically integrated system-based acquisitions to “platform-based”
  - Perception that industry-wide preference is for vertically integrated systems

- How do we “get there from here”?
  - Government cannot act unilaterally and expect a positive outcome
  - Industry cannot wait for government guidance and expect a positive outcome
  - Breadth, depth and number of issues: too many to address at one time
  - Industry partners approaching government one at a time is unproductive
  - RFI’s and Industry Day meetings serve a different purpose

*Industry must self-organize around specific issues and provide rational, pragmatic perspectives on viable ASP business models*
What is an IAG?

Industry partners self-organizing to discuss matters of mutual concern and affecting the future business of the national 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
Phase 1 Implementation Teams

**Software Decision F/W**
LEAD: Nick Buck
Jared Putman
Pam Arya
Marc Kriz
John Farrell
David Beddoe

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**S/W Biz 101 & Industry Partnership**
LEAD: Mike Miller
Matt Madigan
Eric Amberge
Jim Metsala
Anita Weber
Keith Barber
Suzanne Sincavage
Advisor: Kathy Pherson
Advisor (TBD): Darryl Murdock

☑ In-Work

**S/W Dev vs Integration**
LEAD: Keith Barber
Ben Avicolli
Erik Grant
John Hays
Doug Harts
Animesh Gupta
Ray Falcione/Michelle Combs
Nick Buck

☑ In-Reporting

**Time Phased Migration Plan (Government led)**
Lead: TBD
Kick Off-TBD
GED ICITE Transition Liaison planning
Software Framework Integration vs. Software Development

NRO ASP Industry Advisory Working Group

February 2016

PEER REVIEW DISCUSSION
Topical Background

NASP IAWG report published in 2015

Challenge identified: evolving roles
- Software developer vs COTS integrator
- Framework vs segment integrator

Industry recommendations
- Define roles, distinguish between
- Cross-walk government thinking with industry trends

Driving Questions:
Is there a difference between software development & integration?
If so, how is NRO industry base affected?
Alternative Segmentation & Integration Models*

- Segmentation model must precede OCI model
- Key OCI Issues:
  - Who writes requirements?
  - Who makes make-buy decisions?
- Mission-specific OCI ok if consistently applied

*For illustrative purposes only. Not intended to reflect gov't architecture

Striking a Balance

ASP
Industry: bigger investment
Competitive field: smaller
Prime Contractor Integration

ASP-NASP
Industry: Medium investment
Comp field: broader, by msn
Mostly Industry integration

ASP-Framework-NASP
Industry: Focused investment
Competitive field: broadest
Govt-Industry integration
Software Integration vs Development
Related Issues

- NPS wargame: promoting lock-in vs promoting open competitive ecosystem
  - Finding: software integrators have power to create lock in from the beginning
  - Observation: GOTS can be a form of lock in. Both COTS and GOTS susceptible.
  - Finding: specific steps must be taken to minimize lock in

- Closely related to COTS vs GOTS business model
  - Pure GOTS development using OSS module integration
  - Pure COTS integration using out of the box configurations (incl OSS modules)
  - Hybrid: GOTS “extending” COTS via API/SDK beyond out of box configurations

- Source code vs Executable code
  - Government proscribed deliverables & requirements must address COTS/GOTS
  - Government assumption/preference to GOTS because COTS requires licensing?
Software Integration vs Development Team

Potential Criteria

Criteria: Configuration vs Coding?
- Coding to transform and normalize data
- Coding for functionality
- Configuration of software functionality in executable/run time

Criteria: “Wrapping”? A common practice. In terms of integration vs development:
- Am I abstracting/concealing vendor IP?
- Am I removing/reducing visibility of sub-components?
- Is the resulting baseline CM controlled at the bundled level or at the component level?
- Is wrapper code maintained separate and distinct from the components or as an integrated unit?

Criteria: Testing approach?
- Single item (dev) vs multiple item (int) e.g. unit test vs Multi-segment testing
- Performance testing vs functional testing vs load testing
Software Integration vs Development Roles

Discussion

- What are the tradeoffs?
  - Requirements: individual products may not meet requirements or fit architecture even when config’d
  - Support tail: COTS & GOTS wrap components; COTS amortizes maintenance cost
  - Integration risk: government assumes more risk when wrapping not permitted
  - Security: component level control brings higher viz to code security but may result in exploits; bundled software may enhance code security and reduce inter-component exploits
  - Testing differences between an integrated software baseline vs a collection of components

- Who owns which requirement and at which level of verification/validation?

- “Web Development”…does it redefine or reframe the questions?

- RECOMMENDED ACTION: assemble scenarios showing the spectrum
  - No COTS available to meet requirements
  - COTS ubiquitous to meet requirements
  - Hybrid mix of COTS/GOTS (including FOSS integration) to meet requirements
Action Teams

February 23, 2016
Systems Integrator Focused Topics
Survey Monkey Results

- Requirements: What govt wants vs what industry can give
- Adopting agile methods e.g. dev-ops, workforce knowledge base, evolving industry base
- Viable revenue models in an ASP-ISP world
- Systems integration vs S/W integration; TSPR vs Segment Integrator
Top 4 Topics: Requirements

- (Govt) Requirements: learning from demos, what govt wants vs. what industry can give, req’ts vs “desirements”

- Training focus: goal to educate government in order to close the disparity between “needs and wants” or disparity between “the request” and the reality of the possible.

- One thing to explore is how industry can help the Gov and SETA’s pre-DRFP while maintaining consistency with the FAR
  - The government doesn’t know what it doesn’t know
  - Gov/SETA’s develop requirements in the dark and only rarely share Req/SOW pre DRFP
  - Coordination with industry is too late for substantive changes. Suggested changes can throw the acquisition cycle into a tailspin
Top 4 Topics: Adopting Agile

• (Govt) Adopting agile methods: evolving dev-ops paradigm, workforce knowledge base, changing industry base

• Focus on change and adoption of change: goal to aid or advise government in how to be change agents and/or adopt new frameworks, methods, or concepts

• Several IC agencies are wrestling with this topic: attempt to balance desires of acquisition and SE organizations (e.g., GED, COMM, SED) with processes and constraints of operations focused groups (MOD).

• This is an area where industry could partner with Government to define DevOps approaches that are suitable for critical mission environments.
Top 4 Topics: Revenue Models

- Viable industry revenue models in an ASP-ISP cloud world; what business model looks like @ 1 year, 4 years, 10 years (roadmap; requires cloud provider participation)

- Strategy focus: goal to provide government & industry with insight to structure(s), business model(s), or roadmap(s)

- Member observations:
  - “As Government chooses to become an integrator, and determines secret sauce that historical integrators have provided are trimmed down to just a set of Applications – What real role will the integrators need to provide – Especially as contract sizes shrink and the volume of competitions increases – Future challenges that the govt will struggle with, as they approach 2020 and beyond, include thought leadership to solve hard mission problems, and the lack of an industry base that understands the full mission thread within a functional area”
  - “ASP/ISP may not be the right term any more. We have third part cloud providers, SIs, Framework providers, and application or service group providers. One might argue that the cloud providers (Amazon at least) have a viable model.”
  - “Revenue model is tied to success of the Mission”
  - “How you define an revenue model for the ISP and ASP will have an impact on whether there will be a successful ISP & ASP.”
  - “Will a model of lot’s of small ISP/ASP development contracts delivering to a System Integrator work better than a few contracts?”
  - “Who is the integrator and their authority and the impact to the revenue model?”
**Top 4 Topics: System vs Software Integration**

- **Total system prime ("total system performance") vs segment integrator vs framework?**

- **Research focus:** goal to provide a side by side comparison or analysis of the roles.

- **Linked to topic of revenue models. Impact of Gov. Integrator and/or acceptor of Development products to be integrated into frameworks by a third party.**

- **Member Observation:**
  - “It isn't clear what question this topic is trying to address. The terms "TSPR" and "Segment Integrator" do not seem to be popular within the community at the moment. Vertical "Segments" have been replaced by horizontal layers consisting of infrastructures, frameworks, services, and applications.”
Prioritization of SI-Focused Topics

System Integrator members ranked the top 4 SI topics to establish a prioritized “To Do List”.

Voting highlighted a diverse set of opinions, but a few patterns and priorities emerged

1. Requirements: learning from demos, what govt wants vs. what industry can give, reqt’s vs “desirements”
   • Did not receive largest number of “1st priority” votes, but received overall highest average rank in priority

2. Viable industry revenue models in an ASP-ISP cloud world; what the business model looks like @ 1 year, 4 years, 10 years (roadmap; requires cloud provider participation)
   • Extremely close to the above topic in overall average priority score

3. Adopting agile methods: evolving dev-ops paradigm, workforce knowledge base, changing industry base
   • Received greatest number of “1st priority votes” but received even greater number of “4th priority” votes

4. Systems integration vs Software integration; Total system prime vs segment integrator model
   • Received the lowest priority on average across all voters
Upon concurrence from larger NRO IAWG we will begin addressing Priority 1:

- **Requirements**: learning from demos, what govt wants vs. what industry can give, reqt’s vs “desirements”

- **Steps to work this action will include, but may not be limited to:**
  - Formalizing the goal of the team related to this action to include
    - Due date
    - Output Product(s)
  - Further define the topic and baseline each term in alignment with the “Terms of Reference” (i.e. how are requirement or demonstration defined)
  - Establish an operational tempo, including
    - Recurring Group meetings
    - Incremental milestone dates
  - Develop action items designed to reach end goal and assign them to members of the team.
  - Establish a shared repository or method to collaborate on work in process
# Phase 2: COTS/OSS/GOTS Business Model Action Teams

## Business Models
**Lead:** John Hays  
Mike Miller  
Danny Rajan  
Marybeth Wootton  
Suzanne Sincavage  
Alex Fox  
Marc Kriz  
Skip Maselli  
Nick Buck  
Shannon Silverstein  
John Farrell  
Keith Barber

**Topics:**  
- Warranty, Licensing & Liability  
- Version control & certification  
- CM, modifications/certification  
- Buy vs Build decisions  
- Business models (capital investment vs labor/FTE model)  
- Metrics & cost realism

- ✔️ In-Reporting

## Terms of Reference
**Lead:** John Farrell  
Keith Barber  
Ben Avicolli  
Eric Amberge  
Jim Metsala  
Pam Arya  
Matt Madigan  
David Beddoe  
Tim Diquinio  
Andy Murren

**Topics:**  
- Misunderstandings: policy, definitions of OSS/COTS (what it is, what it’s not), who uses it?  
- Miscommunications: “Open Software” vs “Open APIs” vs “Proprietary” vs “Closed”  
- Government PM biases against paying for commercial licenses

- ✔️ In Peer Review

## Drivers
**Lead:** Keith Barber (Nick Buck)  
Allen Shepherd  
Animesh Gupta  
Doug Harts  
Ken Kincel  
Jared Putman  
Leigh Thompson  
John Amazigo  
Shannon Silverstein  
Steve Thomas

**Topics:**  
- Architectural compliance & alignment  
- Unique/esoteric functional reqts  
- Preferences for Config Control  
- Software liability & warranties  
- Patch/update incorporation  
- Certified configuration & I/F perf  
- Amortized costs of function points  
- Baseline currency & upgrade paths

- ❏ To Do
“You Are Here”
Implementation & Action Team Map

COTS/GOTS Open Source Software Business Models

Business Model Differences + Terms of Reference

Drivers: Make-Buy Decisions

Software Business 101

Software Dev vs Integration Defined for OCI

COTS? \rightarrow \text{GOTS?} \rightarrow \text{Hybrid?} \rightarrow \text{COTS?}

Body of Knowledge and Industry/Government Dialog Advance Adoption of ISP-ASP Vision
Drivers Team: Factors to Consider

OPERATING MODEL FACTORS
- ABC 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
IAWG Contact Info & Additional Information

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- NASP IAWG Website: http://usgif.org/community/Committees/NROASPIAWG

- S2P Website: https://ged.svc.nro.ic.gov/nasp/softwareservicesplatform