Agile Acquisition Roadmap for Secure Cloud & IT Infrastructure

Assuring IT Program Outcomes through Decision Analytics; measuring the business value of emerging technologies, innovations, and lessons learned.

"Weapons systems depend on stable requirements, but with IT, technology changes faster than the requirements process can keep up," he said. "It changes faster than the budget process and it changes faster than the acquisition milestone process. For all these reasons, the normal acquisition process does not work for information technology.”  DepSec Bill Lynn statement at the IT-AAC Defense IT Acquisition Summit
IT-AAC Public/Private Partnership

“A knowledgeable & conflict free Community of Practice bring forward proven methods, expertise and innovations to empower the Federal IT Acquisition Ecosystem”

Honorable Mike Wynne, 21st AFSEC, Co-Founder and Chairman Emeritus, IT-AAC

“Together, these steps will help to catalyze a fundamental reform of Federal IT, which is essential to improving the effectiveness and efficiency of the Federal Government” White House, OMB Director
Cloud Acquisition Challenge

We are delivering yesterday's technology tomorrow

1. Centralized - Mainframe
   - Central computer center, slow turn around
   - One size fits all
   - Limited reuse of application modules

2. Client/Server - Decentralized
   - PC enabled and network
   - Software distributed in both server and client computers
   - Heavy focus on software development and point to point integration

3. Internet - Cloud
   - Virtualized compute; global network enabled, plug & play
   - IT Infrastructure decoupled from Applications
   - COTS & OSS Integration, Software as a Service

✓ We are in early stages of Wave 3 information technology
✓ Mainframe and Client-Server waves remain in place
✓ Waves represent many co-dependent technologies, matured over time
✓ Adding functional capability has become easier with each new wave
✓ But enterprise infrastructure gaps & vulnerabilities have become more critical

✓ Innovations of the market and benchmarked best practices are invisible to the Defense Industrial Complex

Innovations of the market and benchmarked best practices are invisible to the Defense Industrial Complex

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Overcoming the Acquisition Challenges

We are buying yesterday's technology .... tomorrow

1. **Good laws, poor enforcement:** Clinger Cohen Act, Public Law 104-113, and FAR FFRDC use restrictions have prevented adoption of innovative solutions and IT standards of practices which should drive establishment of shared IT infrastructure (SOA):
   - A robust set of Acquisition Processes are available but not visible to Defense Industrial Complex, requiring a true public/private partnership like IT-AAC that is not vested in the status quo. Title 10 and lack of strong governance impede long term funding of infrastructure and drive “Big Bang” stove pipes. New rules needed for SOA ConOps.

2. **CULTURE:** 15 years of IT reform efforts have fallen short, with only minor changes to current MilSpec methods. (DODAF, JCIDS, NESI, LISI) compete with standards and orthogonal to Benchmarked Industry Best Practices.
   - IT-AAC communities are uniquely dedicated streamlining IT Architecture and Acquisition Processes, structured to establish standards of practices. ICH’s “clearinghouse” of proven methods and decision tools represent the CMMI of IT Acquisition.

3. **INCENTIVES:** Traditional SIs and FFRDCs are insulated from commercial IT innovations and vested in status quo. DoD needs an organic, conflict free mechanisms for tapping innovations of the market, commercial expertise, and real world lessons learned.
   - IT-AAC brings a world of innovation, expertise and knowledge that has proven to drive successful outcomes. IT-AAC membership are CONFLICT FREE & inclusive of innovative businesses, universities, SDOs, think tanks and research institutes.

4. **PROCESS:** Both CCA and Sec804 will require revamping of IT Requirements, Architecture, Tech Assessment and Decision Support Processes. Any new process should have both govt/industry buyin, conform to OMB A119 and reflect a proven vs new MilSpec.
   - IT-AAC partnership brings to market a collaborative structure for the IT Acquisition community. Its 2 year effort has already created agency proven methods based on commercial best practices.

5. **PEOPLE:** IT Acquisition Ecosystem untrained and lack IT knowledge to make sound decisions; Lack of clear metrics and incentives put focus on compliance vs outcomes
   - ICH’s structured to establish standardized IT performance metrics (MOEs) and Service Level Agreements (SLAs) across the acquisition lifecycle and validated by benchmarked best practices. Partnership with SDOs and large corporate users provide needed expertise to enable sound decision making.
CSFs For Acquisition of Enterprise Services (Secure Cloud)

- **Portfolio Mgt:** assess to what degree existing infrastructure services, technologies and platforms that can be reconfigured into a new Infrastructure as a Service (IaaS), Platform as a Service (PaaS) and/or Software as a Service (SaaS)

- **Acquisition Agility:** Streamlined Acquisition Process (per CCA), and maximize use of commercial innovations of the market. Reduce bureaucratic acquisition barriers and inefficiencies that drive up cost and harm competition.

- **Increase Innovation:** Establish public/private information exchanges that enable greater access to non-traditional suppliers and innovations of the market. Leveraging existing sources of IT assessment evidence, testing and implementation results.

- **Information Assurance:** address security needs at all stages of the acquisition lifecycle; requirements, architecture, tech assessment, and procurement, accompanied by well defined SLAs.

- **Workforce readiness:** PMs and IT Acquisition Professionals need IT specific training and mentoring that reflects commercial standards of practice

- **Continuous Stakeholder Participation:** the acquisition process must align with the acquisition process to accommodate the fast paced market. IT-AAC provides a clearinghouse of innovative solutions and sources of past performance
OMB’s 25 Point IT Reform Plan

IT Investments must Align the Acquisition Process with the Technology Cycle.

- **Point 13.** Design and develop a cadre of specialized IT acquisition professionals.

- **Point 14.** Identify IT acquisition best practices and adopt government-wide.

- **Point 15.** Issue contracting guidance and templates to support modular development.

- **Point 16.** Reduce barriers to entry for small innovative technology companies.
IT-AAC Informs all Stages of IT Acquisition
leveraging innovations and benchmarked best practices

IT-AAC Partnership brings forth wide range of IT expertise need to mentor PMs:

◆ **Governance and Oversight**: how an enterprise supports, oversees and manages IT programs and ongoing portfolio. SOA as defined in the commercial market is governance tool not technology. DoD5000 and BCL represent the current approaches.

◆ **Decision Analytics**: enables effective Program Management and Value Stream Analysis execution. As most of these sub-processes are designed to improve decision making, a relative new discipline has evolved (since 86), that addresses the human and cultural challenges in decision making. Decision Analytics is the discipline of framing the essence and success criteria of each gate in the acquisition lifecycle. It brings focus to the high risk areas of a program, and reduces analysis/paralysis.

◆ **Capability Specification**: Actionable requirements must be constrained by the realm of the possible. With pressures to do more with less, we must embrace mechanisms that force a relative valuation/impact of the gap/capability, with clearly defined outcomes.

◆ **Solution Architecture**: This is one of the most critical elements of the acquisition lifecycle, as it should represent all stakeholder agreements. The market embrace of SOA is not about technology, but a refocusing of the EA on service level management and data. A good architecture is a lexicon that links requirements, technologies and acquisition strategy.

◆ **Technology Assessment**: Understanding the limitation of technology early in the process is key. Without a clear view of the “realm of the possible” validated by real world results, we often find ourselves in high risk areas and over specification. Market research must be done early to help users constrain requirements and embrace the inherent business practices that codify. Recognizing that 70% make up of every IT application is vested in IT infrastructure (netcentric, cloud, SOA), it is critical to establish a common infrastructure/infrastructure standard by which all applications can share. The most prolific is ITIL to date.

◆ **Business Case Analysis**: Demonstrating the business value of technology investments, based on evidenced based research and lifecycle cost. This is a core requirement of Clinger Cohen Act.

◆ **Procurement and Contracting**: Software as a Service and SOA portent a new dynamic for acquisition of IT (health IT, cyber, business systems), that brings focus to Service Level Agreements (SLAs), Software as a Service (SaaS) and SL Management. If the previous activities do not directly feed the acquisition strategy or provide mechanisms for contractor accountability, all is lost.
AAM Aligns IT with Business Needs

increasing stake holder value, reducing risks

Reference Models

Associated Metrics

Core Business Mission Objectives

Performance Metrics

Business Processes & Infrastructure

Security Profiles

Business Drivers & Metrics (BRM/OV)

Service Components & Metrics (SRM/SV)

Application Layer 1

Effectiveness/Efficiency

Interoperability, Fit, Finish

Common Infrastructure Layer \( N \)

Secure Solutions

User/Integrator Best Practices

AAM Service Component

Vendor Solution Templates

Business Driven Top Down

SAIL Solution Frameworks

Aligns with business needs

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**Building on Patterns of Success**

*Open IT Methods and Standards of Practice outside the reach of the Defense Industrial Complex!*

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<tr>
<td>Eliminated hi-risk Requirements by 23%, $100Ms in potential savings</td>
<td>Established optimal arch with ROI of 450% &amp; $458 million savings</td>
<td>Completed AoA, BCA, AQ Selection in just 4 months.</td>
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<tr>
<td>Greatly Exceeded Forecasted Saving in both analysis and acquisition</td>
<td>Moved FMS from OMB “red” to “green”. Eliminated duplicative investments that saved $200M</td>
<td>$300 million in potential savings with minimal investment</td>
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<tr>
<td>BTA: Apply AAM to complete AoA and BCA for DoD SOA Project</td>
<td>GPO: Developed Acquisition Strategy for Future Digital System</td>
<td>JFCOM: MNIS Evaluation of Alternatives for Cross Domain Solutions</td>
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<tr>
<td>Reduced pre-acquisition cycle time and cost of Analysis by 80% (4 months vs 18)</td>
<td>Led to successful acquisition and implementation on time, on budget and 80% cheaper than NARA RMS</td>
<td>Evaluated 100’s of Options in 90 days, enabling stake holder buy in and source selection.</td>
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Experience + Innovation = IT-AAC
empowered by Evidenced Base Research

To provide the PMs and Decision Makers with an alternative resources and expertise needed to maximizes innovations of the market and mitigate risk.

**PMs will need access to proven IT expertise and commercial innovations to achieve OMB and OSD Efficiency and IT Reform objectives:**

- **Speed** -- achieve 6-12 month cycle times vice 7-8 years (early pilots prove this is possible)

- **Incremental development, testing, and fielding** -- vice one "big bang"

- **Actionable Requirements** -- Sacrifice or defer customization for speed and COTS/OS utilization - Leverage established standards of practice and open modular platforms

- **Meet DoD's wide-range IT needs** -- from modernizing C2 to updating word processing software

- **Focused on Outcomes and Operational Effectiveness** - Health IT, InfoSharing, Cyber Security, Consolidated IT Infrastructure, Business Systems
Fortune 100 SOA/Cloud Benchmarked
Best Practices and Lessons Learned

OSD HA SOA Implementation Best Practices
What is SOA/Cloud

A Fortune 100 User Perspective

SOA is about the Business: An architectures style and enterprise governance structure for communicating business needs and measurable service agreements associated with shared enterprise technology services.

SOA is not about Technology, Cloud is the Implementation Side of SOA!

SOA concepts can be operationalized with almost any technology; Web Services, COBAL, ISB, JAVA, RDB, WSDL, UDDI, etc… But focusing on technology & Standards is a common failure/anti-pattern
Six CSFs for SOA/Cloud Transformation that ICH can Assist you in achieving Success

To establish an SOA/Cloud Leadership must address six critical success factors:

1. Establish common requirements and capability development methods that remove ambiguity and over specification. Consider adoption of Capability Assessment Method refinement.

2. Revamp current Architecture Governance and Solution Engineering processes that drive a technology neutral SOA paradigm in automating Business Process and Infrastructure Capabilities. This requires access to commercial expertise and best practices.

3. Adopt SOA enabled methods that drive Reusable & Standardized Solution Architectures, Performance Metrics and Assessment Results. Reuse can significantly reduce cost, risk and cycle times.

4. Adopt a standardized data interoperability framework the establishes a common vocabulary and standards of practice established within a true public/private partnership.

5. Leverage public/private partnership structure and Solution Architecture Working Group approach that will establish standards of practice for community adoption and criteria for assessing the business fit of COTS, GOTS and Open Source Solutions.

6. Establish collaborative mechanisms by which practitioners, non-traditional suppliers, innovators, standards bodies and communities of practice can participate.
Cloud Key Impact Areas
Each must be re-oriented towards Services/Outcomes

- Governance: Most Critical, Senior Mgt have Iron Fist on Common Data Model and Infrastructure services. Funding control is paramount.
- Document and assess your current portfolio of IT Capabilities in a Services/Value Context. Leverage your current investments and licences.
- Shift Requirements focus to Capability & Service Component outcomes and measures.
- Evaluating IT (COTS) in a Services and Capability context: View IT for what business and infrastructure services are provided vs technology/standards focus.
- Assessments (TA, AoA, Market Research, JCIDS, DODAF): Must have a bottom/service view of COTS/Open Source that drives decisions.
- Key SOA Standards (process and technology), BPM, BPEL, AAM, FEA PMO Reference Models.
- Key Technology and Approaches: Focus on Measures of Effectiveness (MOE) and SLAs.
- Security and ID Mgt Decisions also must be addressed early on at each level of architecture decomposition.
- Certification and Accreditation (C&A) and Testing considerations must be incorporated into the Acquisition Lifecycle.
The Desired Outcome – Agility Through Design-Time & Real-Time SOA with Active Policy Enforcement

Machine-Machine enforcement
SOA/Cloud Success is Predicated on Common Service Infrastructure

- Assumes heterogeneous services, applications
- Policy and Governance managed by Service Level Agreements (SLAs)
- Focus on specifications, interoperability, integration
- Works well with a hybrid process and capability enterprise (e.g., Afloat, NMCI, USMC, DoD/J/S, Coalition, etc)
  - Redundancy, disconnected operations
  - Failover, Contingency of Operations
  - Performance
  - Other functional/operational requirements (e.g., local “working” copies)
- Varying mechanisms, trust models
  - Replication, Synchronization, Messaging, Orchestration
  - One/Two way trusts
A 10 Company Distillation of Best Practices

◆ Best Practice Number 1: To succeed at SOA: align with your organization’s leadership by building services that are tightly coupled with the organization’s most important goals.

◆ Best Practice Number 2: Services must be easy to find and understand. Those who do use them must be rewarded.

◆ Best Practice Number 3: Ensure that services are well documented and widely publicized.

◆ Best Practice Number 4: The SOA must allow data to flow from one end of the enterprise to the other with its meaning intact and in a secure fashion.

◆ Best Practice Number 5: Don’t build SOA. Solve a business problem …. Agility and cost saving will follow. This ancillary to Best Practice 1. Build from within.
Best Practice Number 1:  To succeed at SOA/Cloud: align with your organization’s leadership by building services that are tightly coupled with the organization’s most important goals

◆ Positive Pattern - FEDEX’S fourth SOA implementation has been successful because it was aligned to a business crisis that had to be solved. Fedex’s IT costs were out of control and they could not make changes fast enough. They believed that they could reduce technology costs by eliminating point-to-point solutions. They succeeded at that. They believed that they could get to market faster with new business capabilities by reusing services. They have not yet fully succeeded and have determined that the results they want must build agility across the IT organization.

◆ Anti- Pattern - CITI’s SOA is a set of technology fiefdoms, rather than a set of shared services. They are unable to further the bank’s inter- and intra-operability but instead squabble with each other over the crumbs of a ruined enterprise. Conceivably, this enterprise might not have been ruined if an alignment of technology and business goals could have been achieved.

◆ Anti- Pattern - Kaiser still views themselves as set of uncommented service domains that has severely impeded the success in created agility or cost reductions. It proves that SOA when applied to a system has limited results ad SOA value is in reuse across significant parts of the organization (enterprise model).

◆ Emerging- Pattern - BTA (Business Transformation Agency)- it is too soon to tell although their planning has already shown the management commitment, a key success criteria.
Best Practice Number 2: Services must be easy to find and understand. Those who do not use them must be rewarded. This means control and management (governance of the metadata).

Positive Pattern - FEDEX defined the organization into service component business managers; moving from a vertical structure that created stove pipe applications to a horizontal organization that produced common business services. They went from an organization where cost of application here rising at rate that they endangered the health of their business model. They went from a back office that delayed time to market (aka services to the warfighter) that had near zero time to deliver. Now the organization is SOA’ing their front-end application and then will “SOA” their testing going from three releases a year to real-time offerings (needed in CANES). A common object broker controls the metadata and enforced through LEGAL SOA Document on how to build their 12 service components (note: corporate SOA have yielded large service domains that are differentiated within the service). FEEX uses SAML for real-time control for machine to machine policy enforcement (another CANES requirement).

Anti-Pattern - Kaiser, Oracle managers still maintain large discretionary controls and with self-contained budgets and rewards. These organizations have large numbers of levels of management underneath them. In these circumstances, there exists a strong disincentive to reuse services which has lead to weak results in their internal SOA efforts.

Anti-Pattern – Citi reinforced its design discipline with bonuses. The new services had to replace an existing system. Building a service wasn’t enough; bonuses were paid only when an old system’s hardware was decommissioned and signed-off.

Emerging Pattern - BTA is in the early stage of this effort, they are establishing they have begun searching for reuse service, setting up a repository, defining a common way for describing services. It is still too early to see how the organization will be able to migrate their 27 business systems into common services. Like many government organization budgets are on systems/applications the government acquisition model has yet to allow service component funding equivalent to the Fedex enterprise model.
Best Practice Number 3: Ensure that services are well documented and widely publicized.

- **Positive Pattern – FEDEX** has become a service-based enterprise. Their business expansion is dominated by acquisition of new types of delivery companies. Each is being effectively integrated by the built service components keeping them competitive in their market.

- **Positive Pattern – The Hartford** accomplished a profound alignment between the business and the IT department by creating transparency in what is usually very opaque, the registry. It has built business-significant capabilities such as address verification, a Department of Motor Vehicles driver's license check etc. and it has retired the many solutions stuck in silos doing these functions. In fact, according to web reports, the Harford’s SOA is moving into the mainstream and being asked to handle mission-critical functions. But their unyielding demand to establish, first and foremost, the transparent public awareness of their services through their registry, is core to their success.

- **Anti-Pattern – Kaiser** - In too many SOA implementations, the registry is a second thought. Kaiser Permanente (where one of our authors was the head of technology architecture) is the sterling anti-pattern here. In a multi-year, multimillion dollar program to create a SOA infrastructure, they chose not only to not choose an enterprise repository, but, in fact, retired the license for a registry they had purchased some time ago, rather than pay a maintenance bill. Kaiser has a number of non-integrated registries of data. They are implementing a complete metadata project for their business intelligence efforts. They are defining the enterprise's business services in relation to their data. They are not capturing the firm’s XML schemas or bind to any other governance or metadata program. Service Discovery is by word of mouth alone. The result of this is that in 2009 the organization has a proliferation of web services and no reusable services to speak of. The web services are used to contribute to the point-to-point legacy rather than pulling the organization to a more business-aligned organization that uses technology to serve its business goals.
**Best Practice Number 4:** The SOA/Cloud must allow data to flow from one end of the enterprise to the other with its meaning intact and in a secure fashion. Being late lets inferior information products in decreasing business mission effectiveness. WarFighters need the best from the get-go.

◆ **Positive Pattern – BT's** architecture has been conceived of and built which solves data integration problem in a coherent and solid way. This is exciting because this particular pattern and architecture solves at least 90% of the problems presented by the business case we see before the OSD HA. In other words, just as in the OSD HA, information is produced in the field in a set of native applications. This information must flow though the organization coherently and, in some cases, in semi-real time. This business unit does not have the particular problem of needing to transform data on the fly to redact it sufficiently to make it capable of crossing security boundaries. However, the solution employed includes an ESB, which can easily accommodate the insertion of a semantic engine into the architecture which could do this work. When the data is so sensitive that human approval would be necessary to have it cross borders, an approval process could be inserted in the data flow just shown in this pattern solution.

◆ **Anti-Pattern - Kaiser** - The health care industry lacks clear data policy. Institutions like the Cleveland Clinic end up with complex projects to reconcile these vocabularies in real time, with experimental reasoners and intense de-normalized data warehouses that are all but impossible to maintain. In medicine, there are multiple conflicting vocabularies mandated by various regulatory agencies. SNOMED, a tool to record clinical facts is somewhat in conflict with LOINC, which is in conflict with X.12, an insurance standard which describes some of the same observations, procedures and lab tests. Within particular specialties, there might be one way to describe something, and within another it might be described in another way.
Best Practice Number 5: Don’t build a Cloud before you first solve a business problem with a key user …. Agility and cost saving will follow. This is ancillary to Problem 1. Build from within.

◆ Positive Pattern – FEDEX built from within turning application parts into a shared service and managed them as services. New shipping products were a combination of their shipping service domain and their pricing service domain. They trusted their legacy systems. This was not a start from scratch.

◆ Anti-Pattern – CITI had a service processing SWIFT transactions that was so powerful it processed over 20% of all SWIFT transactions in the world. When the SWIFT teams asked their SOA team how to do SOA, the SOA team’s response was, “We can help you move to a better technology, but you should be teaching us how to do SOA”. The SWIFT team, their management and the SOA team’s management in corporate technology did not accept this answer. They did not trust their legacy systems.
Recommendations to the OSD HA
ICH & IT-AAC is organized to help implement these CSFs

1. Focus on a major problem and let a SOA approach evolve from that problem.
2. Determine what is a good service and enforce it.
3. Don’t start till your metadata is defined … you will never recover.
4. Use strongly enforced data policy and active governance policy enforcement to create machine-machine mechanism for a real-time SOA needed in the Afloat program.
5. Reuse as much as possible from legacy (do not start from scratch).
6. Determine how services are to built for the OSD HA, you cannot assume separate funding will achieve enterprise SOA service components and pay for themselves during the life-cycle.
7. Create and fund service component owners who’s customers will be the functional application owners.
8. Build service domain that cover large major functions and not an array of small service components (subroutine-like; remember FEDEX has only 12).
9. Learn how to accredit a reusable service component, possibly from enclave testing policy.
SOA GOVERNANCE IMPLICATIONS

the management/policy that enables effective Cloud Utilization
Fortune 100 companies view SOA as a business driven, capability based architecture style. It provides a governance model for enabling an Agile Enterprise and reducing cost through elimination of redundant functions and integration cost. It’s about the business, not about the technology. **SOA is Business and Management-Centric**
SOA/Cloud Acquisition Approach
Using the Acquisition Assurance Method

Many of our Case Studies tried a SOA centric approach many times and FAILED. However Real Business issues, Common Application Services and Infrastructure services followed.
Pre-SOA/Cloud
Separate System, Separate Funding, Little Enterprise Governance

System 1
Owned by Funding Line and PM
Data Policy 1
Application Structure 1

System 2
Owned by Funding Line and PM
Data Policy 2
Application Structure 2

System 3
Owned by Funding Line and PM
Data Policy 3
Application Structure 3

System 4
Owned by Funding Line and PM
Data Policy 4
Application Structure 4

Stovepipe are Inevitable
SOA/Cloud in Government

Shared Infrastructure Services (IaaS, PaaS, SaaS)
Governed by Strict Policies to Achieve Reuse, Still System-Centric

Based on Manual Governance

System 1
Owned by Funding Line and PM
Data Policy 1
Application Structure 1

System 2
Owned by Funding Line and PM
Data Policy 2
Application Structure 2

System 3
Owned by Funding Line and PM
Data Policy 3
Application Structure 3

System 4
Owned by Funding Line and PM
Data Policy 4
Application Structure 4

Discoverable
Orchestratable

Enterprise
MetaData
Model

Service
Component
Specifications
Re-Use Enterprise (SOA Services Modules)

Multiple systems Planned to use the Same Services. Must Fund Service Components and assign Service PMs

System 1
Owned by Funding Line and PM

System 2
Owned by Funding Line and PM

System 3
Owned by Funding Line and PM

System 4
Owned by Funding Line and PM

New Pattern of Planning for Reuse – Collaboration between System Owner and Service Owners and not ad hoc integration
Agile Acquisition Process Case Study

How Acquisition Assurance Method (AAM) Aligns Cloud/IT Infrastructure Lifecycle with the Federal Acquisition Process

AAM is the only known Agile Acquisition Framework to fully conform to OMB A119, CCA and NDAA Section 804
IT-AAC Capabilities Accelerate Success
leveraging what works

1. **Non-profit free think tank** composed of the world's most respected public service institutes and domain experts not available through traditional contracting mechanisms.

2. **Innovation Clearinghouse and Knowledge Exchange** that captures proven market innovations in an acquisition ready context (canonical form).

3. **Benchmarked Best Practices and Lessons Learned** (SOA, Cloud, IaaS, PaaS, SaaS, Web Services) provided by customers who share business value from real world implementation and testing results.

4. **Acquisition Decision Framework** that pools and normalizes infrastructure requirements, architectures, tech assessments, performance metrics (SLAs) business case analysis, and evaluation criteria.

5. **Leadership Roundtables and Educational Forums** that provide a hype-free interchange with government and industry leaders.

6. **Virtual Solution Architecture Integration Lab (SAIL) and Solution Architecture Working Groups (SAWG)**, that detail realm of the possible and pre-validate fit and finish of commercial solutions.

7. **Acquisition Advisory Contract Vehicles** that reduce time to market and accelerate acquisition outcomes.

"It is not a great mystery what needs to change, what it takes is the political will and willingness, as Eisenhower possessed, to make hard choices -- choices that will displease powerful people both inside the Pentagon and out"  **Defense Secretary Robert Gates**

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AAM Decision Analytics

Activities
- Determine Sponsor and Stake Holder representatives
- Codify Business Problem statement
- Validate Project Scope, Timeline, Outcomes
- Collect and evaluate existing data from RFI responses and other sources
- Establish Stake Holder Agreement and Success Criteria
- Establish Measures of Effectiveness

Artifacts/Deliverables
- Clear Problem Statement, Capability Gaps
- RFI Assessment
- Realm of the Possible
- Measures of Effectiveness
- Other data as Price lists

Critical Success Factors

Entry Criteria
- Initial Data collection
- Initial identification of Capabilities
- Business Needs & Gaps

Exit Criteria - Outcomes
- Approval of Project Plan
- Approval of Business Problem and Outcome
- Criteria: Adequacy of Capabilities or Plan for correction
AAM Decision Analytics

Activities

- Capture Problem Statement w/Sponsor
- Assess current Portfolio of Capabilities
- Establish Performance Measurements
- Document Agency Services Baseline
- Determine industry capabilities and metrics
- Capture Function Capabilities
- Determine level of granularity needed
- Hold Requirements WGs w/Sponsor's Key Stakeholders

Artifacts/Deliverables

- Publish Capability Analysis Report (CAR) (Requirements and their Justification)
- Work papers on:
  - Justification of Requirements, & Capabilities
  - Problem Statement Validation

Critical Success Factors

Entry Criteria

✓ Approved Project Plan and POAM

Exit Criteria

✓ Approval of the CAR by the Functional Sponsor
  Criteria: Adequacy of Capabilities or Plan for correction

0 months 1 month 2 months 3 months 4 months
AAM Decision Analytics

Activities

- Refine Capabilities into Service Component solution models (per OMB FEA-PMO)
- Conduct Market Survey
- Establish Service Component & Groupings
- Review RFQ for adequacy of detail
- If RFI responses lack depth or breadth, ICH will conduct Industry Outreach and Benchmarking
- Construct Service Component Analysis Groups
- PMO review

Artifacts/Deliverables

- Analysis Group; Service Components reference model mapping to capabilities/requirements
- Work papers on:
  - Results of the Market Survey
  - Standards of Practice
  - Industry Benchmarking Data
  - Standardized Vocabulary for describing service components and basis for establishing SLAs (not in scope)

Critical Success Factors

Entry Criteria

- Approved CAR (Validated Capabilities)

Exit Criteria

- Approval of Service Component by the PM
  Criteria: Adequate industry metrics or plan for correction

Timeline:

- 0 months
- 1 month
- 2 months
- 3 months
- 4 months
Activities

- Hold Functional WG w/Sponsor's Key Stakeholders
- Develop Prioritization Weighting Scale
- Team Normalized weighting of the Service Components
- Document each weights rationale

Artifacts/Deliverables

- Capability Prioritization Matrix
- Work papers on:
  - Service Component Prioritization Scale
  - Rationale for each weight given (traceability)

Critical Success Factors

Entry Criteria

- Approved Analysis Groups, Service Components and Standards of Practice

Exit Criteria

- Approved Capability Prioritization Matrix
- Criteria: Functional Sponsor Approval
Activities

- Evaluate RFI Responses
- Establish alternatives for the assessment
- Establish Scoring WG team
- Develop Scoring Plan
- Score Alternatives + +
- Perform Sensitivity Analysis on Scoring Results
- Analyze results
- Review AoA date points
- Present Results to Functional Sponsor - May included Functional WG team

Artifacts/Deliverables

- Analysis of Alternative (Compare New/Existing Solutions against Prioritized Capability)
- Work papers on:
  - Scoring Plan
  - Scoring Rationale
  - Sensitivity analyses performed
  - Technology Maturity Assessment

Critical Success Factors

Entry Criteria

✓ Approved Capability Prioritization Matrix

Exit Criteria

✓ Approval of Feasibility Assessment Report by DBSAE/ PMO
Criteria: (1) Assessment Team agreement on the scores.
(2) Reference material justifying scores
Activities

- Setup Main Cost Model
- Determine the quantities and time frame to be Evaluate
- "Setup Sub-Models for direct, indirect & migration cost + savings"
- Determine Model's elements related to ROI
- Determine the models for each alternative
- Collect Data industry data and assumptions
- Conduct TCO
- Review of Economic Analysis Results
- Present Results to Functional Sponsor - May included Functional WG team
- Develop Economic Analysis Report

Artifacts/Deliverables

- Economic Analysis Report
- Solution Architecture
- Documented CCA compliance
- Work papers on:
  - Model Documentation
  - Documentation of each Alternative
  - Documentation on costs developed for the Mode;
  - Documentation of Industry Metric determined

Critical Success Factors

Entry Criteria

✓ Approved Feasibility Assessment, AoA

Exit Criteria

✓ Approval of Economic Analysis Report by Functional Sponsor

Criteria: (1) Functional Sponsor Agreement
(2) Reference material justifying cost models

0 months 1 month 2 months 3 months 4 months

DBSAE Assessment
IT-AAC: Accelerating Innovation through Collaboration

*reduces time, cost and risk of redundant IT research and validation efforts*

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**S.A.I.L.**

Acceleration

Risk Level

Low

High

Strategy  Architecture  Research  Validation  Acquisition  Execution

**Acquisition Lifecycle Stages (cost & time line)**

Redundant Market Research and Testing

SAIL Collaborative Research and Validation

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Cost/time Delta

Acceptable Risk Level

Risk Delta

Project A  Project B  Project C

Inconclusive findings

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