TAI Assessment Architecture Workshop
Keystone, Colorado
July 16-17, 2003

Workshop Objectives

The objectives of the Workshop were as follows:

- Provide a basis for TAI Assessment Architecture revisions to improve the effectiveness of individual program assessments and systemic analysis results
- Address issue areas in the Assessment Architecture that might require:
  - Clarification
  - Reprioritization
  - Expansion
  - Incorporation
- Identify new areas to be added to the architecture based on emerging acquisition and technical trends

Additional background information may be found in the attached briefing material.

Attendees

The following personnel attended the TAI Assessment Architecture Workshop. A full list of the attendees contact information is attached.

Kristen Baldwin
Randy Horne
Perry DeWeese
Leighton Horn
Leigh French
Rose Pajerski
Fred Hall
Joe Jarzombek
Dave Berg
Laura Dwinnell
Manfred Muehlen
Jim Van Buren
Rob Flowe
Jenny Tucker
Tim Perkins
Mohammed Alsaid
Jo Anne Lane
Scott Lucero
Tom Conrad
Bob Charette
Jack McGarry
Bruce Algood

Chronological Summary - Wednesday, July 16, 2003

Group Introductions
Overview Presentation
Presentation on typology criteria and TAI current implementation
Exercise on the typology and its use within the TAI assessment process

Chronological Summary - Thursday, July 17, 2003

The following proposed changes to the current TAI Assessment Information Model were addressed in open discussions. These represent those areas that are proposed for modification or addition in the Phase 3 assessment architecture. The primary topic headings are bolded.

- **Systems Engineering**
  - Issue / solution trade off process
  - Technical scope only?
  - Functional specialty?
  - Umbrella specialty?
  - Technical decisions recognizing management and other constraints?
  - Decision to address the typology as a whole as representing systems scope - recommendation to treat systems engineering as an integrating process within the typology

- **Systems Interoperability - Mission Environment**
  - Clear definition of system scope / capability / function with respect to program responsibility
  - Mission definition / environment
  - External system mission, management, technical interfaces and dependencies
  - Recommendation to scope interoperability as functional interfaces external to the system/assessment in question

- **System Performance**
  - Applies to both individual and integrated system components
  - Technical performance focus
  - Related to performance testing
  - Possible new typology focus area

- **Process Adherence and Capability**
  - Individual and organizational processes
  - Individual organizations and total team composition
  - Scalability of processes
  - Appropriateness of processes
  - Clarification required in proposed model modifications

- **Technology Integration and Effectiveness**
  - Program impact profile (schedule and cost)
  - Maturity of the technology (risks at both ends - push and pull)
  - Technology infrastructure - supportability and maintainability of the technology
  - Complexity of the proposed technology
  - Operability considerations

    - Appropriateness - (Is it the right technology the best selection out of all that are available?)

- **Organizational Dynamics**
    - Structure and Interfaces
    - Leadership and accountability
    - Relationship management
    - Morale
    - Teamwork and team dynamics
    - System Dynamics
    - Communication
    - Stakeholder scope
    - Stakeholder influence
    - Recommendation to make this area more visible

- **Mission Clarity**

- **Delivery Capability**
    - Production capability
    - Test capability
    - Recommendation to view production as a component of delivery

- **Business Environment**
    - management agenda
    - corporate constraints/agenda
    - business health
    - business financials - requirements

- **Decision Management**
    - Risk management
    - Change Management
    - Measurement (objective information availability and use)
    - Must address both decision making process and decision implementation process

- **Development Strategy**
    - Acceptability
    - Suitability
    - Feasibility

- **Architecture**
    - Componentization
    - Management (authority)
    - Scalability
    - Maturity
    - Suitability

- **Acquisition Strategy**
  - Mature strategy
  - Feasible strategy
  - Suitable strategy

- **Acquisition Environment**
  - Emerging
  - Legacy
  - Conflicts
  - Recommendation to view life-cycle and chronological impacts and differences

- **System Integrity**
  - Safety
  - Security
  - Reliability
  - Dependability
  - Encompasses safety and information security

- **Corporate Enterprise Issues**
  - Cash flow
  - Other financial considerations
  - Competition
  - Stockholder value
  - Overhead / infrastructure
  - Business / financial management
  - Resource / personnel strategy
  - Mergers and acquisitions
  - Investment strategy
  - Strategic goals - program fit
  - Corporate health
  - Predetermined biases
  - Topic may be more pertinent to non-DoD entities

- **Technical product**
  - Documentation (?)
  - Integration
  - Testing
  - Mission assurance (quality?)

- **User-Customer Participation**
  - Breadth
  - Commitment
  - Experience
  - Conflicts

- Continuity

- **Management**
  - Source selection
  - Contract (agreement) management

- **Expectations management**
  - Cost / schedule / performance trades
  - Focused program life cycle events
  - Program scope
  - Assumptions / constraint expectations
  - Ties to stakeholder portion of typology
  - Expectation conflicts
  - Expectation priorities
  - External influences (ie: CAIG)

- **New and Emerging Trends / Issues**

- **Potential General Characteristics of Each Typology Issue**
  - Maturity
  - Feasibility
  - Scalability
  - Applicability
  - Robustness
  - Capability
  - Understandability
  - Clarity
  - Adequacy
  - Degree of conflict
  - Success factors

The following proposed changes to the new TAI Program Assessment Characterization Model were addressed in open discussions. These are to be considered for potential implementation to augment the current profile information.

- **Capability based acquisition**
- **Stakeholder list**
- **Organizational program priority**
- **Scope of systems of systems responsibility**
- **Systems engineering scope definition**
- **Evaluated adherence level**
- **Product development methodology (reuse, etc.)**

Detailed Discussion Notes - Thursday, July 17, 2003

- Business Environment considerations: fiscal year points, business health – the external market situation, management agenda, corporate constraints

- Capability Based Acquisition: maybe address this in the program profile or characteristics. Or put it under the Environment as Acquisition Environment

- How much trade space is a consideration.

- Blue wear: specifically associated with interfaces such as major program components.

- Need to keep in mind the purpose of the typology is to assist the team in identifying risks to that program, not to have a list in and of itself.

- Integrity Assurance includes safety, system and information security, reliability, dependability.

- Organizational structure and interface: would structure and interface be a subset of Organizational dynamics (IPTs included as subset) ?
    - Issues of leadership and accountability
    - Relationship management
    - Morale
    - Teamwork – team dynamics
    - Communication

- Reuse: Where can we best put it? Resources? Technical product?

- Componentization? Where can that be captured within Architecture?

- How can we capture the relationship of the program and its architecture selection based on its relationship with Enterprise driven architecture mandates, policy or guidance?

- Architecture scalability. Do we have a working definition yet?

- Documentation - Should that be highlighted? Already captured within Process from the perspective of this may be something that the team was supposed to do but is not. Maybe documentation should be considered under Technical Product. Need to characterize the difference between program documentation and production documentation.

- Has the program identified all of the pertinent stakeholders? Maybe the stakeholders should be identified in the program profile in that it helps to define the program parameters and working environment, just like things like ACAT level, development methodology, etc. If we use the current User/Customer area, we need to include stakeholder "involvement" or participation: breadth, commitment, experience, continuity, etc.

- Family of Systems, Systems of Systems - Need a place to capture the external interfaces and drivers for a program, as well as interrelationships. A program does not function on its own anymore - programs operate inter-service, inter-agency, joint, allied, etc. Combined Interoperability may have as subsets:
    - Management, span of control
    - Process, span of control, communication
    - Product line

- Reliance and dependencies on other systems. Mission Environment is related. Has the government adequately portrayed the architecture and environment that the program must operate within? Think of the FCS example where there are 18 programs that comprise FCS, but there are also external or non-organic systems that the FCS "suite" must be interoperable with in order to succeed.

- Operational Construct added possibly as Section 2.2 with the subsets being external system mission, management, and technical interfaces. "What's in and what's out." Provides perspective on how the issue area is assessed.

- Systems Engineering
    - Seen as a technical discipline as separate from cost and financial and management. On a small simplified scale, Systems Engineering defines as an approach to making decisions and tradeoffs within technical trade space
    - Qualifies the issue as Systems Engineering process, when it is not really a management problem or a technical process problem
    - Moved from specialists to generalists philosophy on programs.
    - Need to have pendulum swing back to specialists to allow the hard core of Systems Engineering skills to be highlighted and elevated. Possibly the switch away from specialists was to avoid the stovepipe thinking. Maybe OK for some disciplines, but has not worked in practice for Systems Engineering. Also a cost saving measure.
    - Can Systems Engineering be considered as part of Technical Process?

    - We may need to ask the assessment teams to draw a box around the scope of the assessment. The box will help define what is in/out of Systems Engineering, program team process expectations

- Process Adherence and Capability
    - Add attributes such as appropriateness and scalability of the process to the program

- Technology integration
    - Aspects of technology that we need to address: change management, insertion, deletion, obsolescence, and maturity of the technology
    - Technology maturity and the program's ability to plan for the adoption or retirement of technology can be captured in project planning - but it may not have high enough visibility
    - The supportability – not of the vendor or supplier – but of the vendor's support to the product itself is pertinent

- Decision Management
    - What are the criteria of decision management that we want the teams to understand and assess?
    - Are you making decisions by using good information?

- Reuse – is this the same as Reusability? Audience seems to think not. May need to add Reuse to the current typology

- Organizational structure – does it adequately address: joint, combined, etc. programs/