Reconsidering Requirements Development

A Case for Time-Phased Requirements

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Bottom Line Up Front

- The country is demanding better return on acquisition investment
- Congress and Acquisition Community has made significant changes to improve
- Requirements must do better to help Acquisition Community succeed
- Time-Phased Requirements helps assure warfighters get essential capabilities on-time and within budget
Background

- Geo-political environment increasingly uncertain
- Force structure needs recapitalization and next generation systems conceived
- U.S. economic situation demands acquisition efficiency

“DoD can no longer buy whatever it can imagine” Frank Kendall, PDUSD AT&L
Acquisition Reform Response

Serious reform to focus attention on Development Planning Phase to improve upfront technical preparation

DoD 5000.02
2008

WSARA 2009

NDIA Report
Industry’s Role

NDIA Report
Industry’s Role in Development Planning

National Defense Industrial Association
Systems Engineering Division
Development Planning Working Group

Industry’s Role in Development Planning

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Shift away from the 99-percent exquisite service-centric platforms that are so costly and so complex that they take forever to build, and only then in very limited quantities.
SECDEF Gates, Army War College, 2009

The goal is that any new weapons system should meet benchmarks for cost, schedule and performance while minimizing “requirements creep” – the kind of indiscipline that leads to $25 million howitzers, $500 million helicopters, $2 billion bombers, and $7 billion submarines.
SECDEF Gates, 2011

Need to curb [requirements’] appetite; need to know DoD can finish what it starts - Frank Kendall, PDUSD AT&L , NDIA, 2011
Gap & CBA Analysis Is Requirements Community’s Main Contribution to Successful (Unsuccessful) Acquisition

• Characterize gaps in capabilities in such a way that provides necessary context:
  – Compels validation of need in the face of other pressing operational priorities
  – Convincing that feasible solutions exist (affordability and assurance of timely delivery)
  – Provides sufficient substantiation of gap priorities and operational context for successful early acquisition process
Evolving Context - Evolving Requirements

Understand trends, timing and uncertainty:

- Changing geo-political and economic situation and trends
- National and defense strategic guidance
- Threat environment
- Warfighter plans and force capability
- Resources availability
- Technology/industrial base readiness
- Other (e.g., Allies, partners, friends capabilities)

Time-Phased Requirements (TPR) leverages evolving environment to determine critical timing of needed capabilities
Time-Phased Requirements (TPR)

TPR substantiates warfighters’ priorities and spiral timeframe for needed critical capabilities

- Seeks timely counter to expected emerging threats, and plan to evolve objective capabilities
- Provides enhanced basis for pre-MDD Solution Analysis efforts
- Provides clear environmental linkages and prioritization for trade studies and concept definitions
- Enables MDA to better assess feasibility of material solutions within funding environment
- Informs AoA community to find and assess appropriate alternatives
Evolutionary Acquisition

- Preferred DoD Strategy for rapid acquisition of mature technology
- Evolutionary approach delivers capability in increments
- Recognizes up front need for future capability improvements
- Balance needs and available capability with resources
- Collaboration among user, developer, and tester

Continuous Technology Development and Maturation

- Requires phased definition of capability needs, system requirements, and maturation of technologies
- Each increment:
  - Offers militarily useful and supportable operational capability
  - Requires its own set of threshold and objective values set by user
  - Provides increasing capability over time

Source: DAU, Richard Hansen, 2010

- Manual for the Operation of JCIDS, Jan 2011
- Capabilities-Based Assessment (CBA) User's Guide - Version 3
TPR Starts Acquisition Right

- Early requirement and prioritization to help fit material solution into evolutionary acquisition process
- Help early systems engineering and operations analysis trade studies to define core and objective capabilities
  - Help prioritize timing of major increments of capability
  - Better inform AoA guidance and study plan
- Reduce core and increment risk and be more affordable
- Help assess, plan and fit resource stream into economic projections
Post MDD TPR

• Improve fidelity and focus of AoA
  – Assess feasibility and affordability of timely delivery of early useful capability
  – Assess feasibility, robustness and affordability of alternatives to evolve timely needed additional capability

• Improve technology development focus and affordability

• Prior to MS B, C - Review and update TPR as input to Capability Development and Production Documents
  – Enables stakeholders to develop strategy to ensure timely delivery of needed capability within available funding
  – Encourages more affordable and faster testing
Summary - TPR for improved decisions

- Links requirements timing with evolving operational context
- Substantiates priority and timing of operational needs
- Provides essential information for early trade space and solution analyses
- Guides AoAs to ID affordable, robust, and timely alternatives
- Provides stakeholders key information to scope successful program development and incremental upgrades

“We … might establish, within the department, a position that says, ‘This is all we can afford,’ ” Assad noted. “In that regard, then you have to make the requirements meet that [dollar figure].” Shay Assad, OSD, Dir, Defense Pricing*

*Source: AF Magazine, Sep 2011