A Combat Support Agency
Defense Information Systems Agency

Evolving Interoperability Certification to Support Agility

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March 13, 2012
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Contrast the current joint interoperability test certification process with the evolving vision, challenges, and progress to align requirements definition and integrated TE&C with Agile development and an emerging acquisition processes.
Current Process: Joint Interoperability Certification

Joint Staff J-8
Interoperability & Supportability Certification
Documents:
CDD, CPD, ISP, ISP Annex and TISP

Interoperability Test & Certification

Developmental and Operational Test & Evaluation

Risk

Analysis

Joint Interoperability Test Certification
Expires after 4 years, or upon changes affecting interoperability (system or environment)

NOTE: Interoperability changes require reentering process at appropriate point:
- Requirements updates
- J-8 I&S Certification
- JITC Test & Certification
Vision: Test Transformation
Supporting IT Acquisition Reform

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Continuous Integration and Test
- Developmental Test
- Operational Test
- Joint Interoperability Test
- Security Test

* Sprint is an increment of development

IT Acquisition Reform Supported by Agile Test, Evaluation, and Certification
Incremental TE&C Concept

Backlog Refinement
- Initial Reqmts Definition
- Release Planning
- Risk Analysis

Sprint Planning
- Proposed Capabilities & Acceptance Criteria
- Risk Analysis
- Test Strategy
- Infrastructure VV&A

Sprint
- Develop, Test & Data Collect
- Data Reduction & Analysis
- Refine, Adjudicate, and Document IOP Requirements
- Update Test Strategy
- Assess Status of IOP and Operational Impact (risk)

Sprint Timebox

Sprint Review
- IOP Requirements are updated
  - Digitally captured
  - Approved (if applicable)
- Update Status of IOP (e.g. Assessment)
- Draft Applicable IOP Certification Memo

Testing
4 – 8 Weeks

Product Backlog (PB)

Sprint Planning (SP)

Sprint Review (SR)

IOP TE&C Artifacts
- Operationally realistic test environment
- Test cases & scripts for product backlog req’ts

IOP TE&C Artifacts
- Risk analysis
- Test plan
- Test report template/outline
- IOP certification memo template/outline

IOP TE&C Artifacts
- Updated requirements
- Test results
- Refine test cases & scripts, as needed

IOP TE&C Artifacts
- Approved requirements
- IOP test report
- IOP certification memo

Refine, Adjudicate, and Document IOP Requirements
Requirements Evolution Example

Top-level Requirements - Joint Staff Approved

Overview and Summary Information

High-Level Operational Concept

Operational Activities

Top-level Requirements Approved by Joint Staff J8

Derived, Detailed Requirements Approved by lower-level authority

Sprints

- User Stories
- Product Backlog

Drives detailed functionality/information exchange requirements over time within the bounds of approved requirements

Mediated by overarching requirements (e.g., standards, architectures, JMTs, COI requirements, etc)

Joint Task & Mission Thread Information

System Interface(s) & Services Functional Descriptions

Detailed System & Services Data Exchange Requirements

Derived requirements through Agile development processes
Challenges

• Process development & policy alignment
  – DoD is working to support Agile in policy, but there is more work to do

• Budgeting - Funding
  – Agile requires early involvement and a fully integrated team… this may have budget impacts

• Education
  – Using Agile processes and integrated teams requires a change in culture and mindset, along with knowledge of new processes

• Provisioned test environment
  – Rapid development and fielding cycles require a responsive test program enabled by an “always on” operationally realistic test environment
Progress

• Policies
  – Working to incorporate concepts into DoD policy to allow flexibility that supports Agile

• Education
  – Most of JITC workforce is Scrum Master certified, influencing the culture and mindset of the organization

• Documentation
  – Streamlining IOP test & certification documentation (reports, certifications) to provide better information to decision makers and faster staffing & approval

• Infrastructure
  – Working to develop and leverage solutions that support rapid and, where possible, automated testing (testing as a service)
Summary

- Current interoperability certification processes must be changed in order to support Agile
  - Policies must be updated to support flexibility
  - Stakeholders must be educated to Agile processes
  - Documentation must be streamlined and relevant
  - Decision making must be pushed down to the lowest possible level
  - Architectures should be reused and federated
  - Test infrastructure must be persistent and operationally realistic
Contact Information & Resources

- **Hotline**
  - 1-800-538-JITC (5482)
  - hotline@disa.mil
  - http://jith.fhu.disa.mil/support.html
- **Joint Interoperability Tool (JIT)**
  - http://jit.fhu.disa.mil
  - Lessons Learned reports
  - NATO Interface Guide
- **System Tracking Program (STP)**
  - https://stp.fhu.disa.mil
  - Test events, plans, reports, certifications
- **NR-KPP Helpdesk**
  - NR-KPP_Helpdesk@disa.mil
- **NR-KPP Testing Guidebook**
- **CJCSI 6212 Resource Page**
- **E-ISP Tool**
  - https://jcpat.csd.disa.mil
Questions?

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March 13, 2012