“How Has CMMI Improved Our Program and Project Performance – Or Has It?”

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How Has CMMI Improved Our Program and Project Performance – Or Has It?

Integrated Defense Systems

Topics

• CMMI Deployment and Use
• Common Process Initiatives
• Plans for SE Management on Programs
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CMMI Maturity Level – All IDS Business Units and All Major Sites

Boeing Sites Appraised at ML5

Note: Based on CMMI assessments at most sites in SW, SE, IPPD, and Supplier Management.

Boeing Is Committed to CMMI
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Domain Expertise & Experience - Independent Reviews

Baldrige National Quality Program

Overarching Framework
- Management Leadership
- High level visibility

ISO
Registration
- Process documentation standard
- Quality measurement system

Boeing Proprietary

“How to” Strategies
- End to End
- Value Stream Analysis

Lean Enterprise

PMBP
Program Management
Best Practices
Management
- Maturity matrix
- Review feedback

Business Excellence

Capability Maturity Model Integration
Process Improvement
- Implementation
- Metrics driven

Systems Engineering

Execution
- SE-Lan
- Maturity

Boeing Proprietary

Systems Engineering
Concept of SE Execution

- Use **CMMI in its fullness** to manage process maturity
- Incorporate **Program SE Performance Management**
  - Work-product metrics and **trends**
  - Methods for using assessments and metrics to manage the program
- Create a **customer/contractor partnership** to develop “structured management” on the programs

**Focus on SE Practice and Related Measures to Ensure Program Success**
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Assessment Initiatives Hierarchy

PMBP (Boeing)
- Program Management
- Supplier Integration
- Organization
- Business Plan
- Program Execution
- Risk and Issue Mgt.

Baldrige
- Customer / Market Focus
- Leadership
- HR Focus
- Business Results

ISO 9000
- Customer & Market Focus
- Manage Business
- Process and Product Quality

CMMI
- Best Practices for selected Process Areas
  - Engineering
  - Project Management
  - Supplier Management
- Framework for process improvement
- Appraisal Process

Assessments
- Expands on CMMI
  - Management Commitment
  - Infrastructure
  - Program Execution
  - Monitor and Support
- Performed on all programs
- Done through complete Life Cycle

Domain Assessments

Program

Program Teams

Customer Requirements, Reviews and Audits
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Improvement Initiatives

Goal: Productivity
- 6 Sigma
- DFMA
- MBD/E
- Simulation

Goal: Discipline
- CMMI/SE
- ISO 9000 / AS 9100
- Baldrige Quality Award
- Engineering Excellence

Goal: Performance
- Integrated Product Teams
- Management Best Practices
- HILT Ownership

Goal: Efficiency & Flexibility
- Common Processes
- Common Tools
- Uniformity Focus

Leadership Focus
- Process Focus

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Boeing Has Defined Common Processes Consistent with CMMI
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Applying Common Process Assets on Programs

- Process Breakdown Structure
- Policies
- Procedures
- 18 Business Process Instructions
- Common Processes
- Program Unique Processes
- Cross-functional process threads
- Value Stream, Business Scenario, Process Thread
- Legend:
  - Common process
  - Program unique used at multiple sites
  - Program unique used at single site

Program Lifecycle:
- Mission Analysis Definition
- Define Mission Requirements
- Concept Definition
- Concept Development
- Preliminary Definition
- Detail Definition
- First Articles
- Production
- Support
- Program Controlled
- IDS Engineering Controlled

Value Stream, Business Scenario, Process Thread

Program Lifecycle

Production
Support
Mission Analysis Definition
Define Mission Requirements
Concept Definition
Concept Development
Preliminary Definition
Detail Definition
First Articles

Legend
- Common process
- Program unique used at multiple sites
- Program unique used at single site

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- CMMI Deployment and Use
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Strengthening SE Execution at IDS

**Management Commitment**
- Boeing Strategy/Policies
- Leadership
- Resources

**Monitor and Support**
- Disciplined assessment process
- Leading indicators

**Implementation/Execution**
- Planning
- Resources
- Organization / RAA

**Infrastructure**
- Comprehensive SE process assets
- Subject Matter Experts
- SE integration across sites
Summary

- **Maturity level** and **Capability profile** are necessary, but not sufficient for SE maturity

- Recommend deployment of SE processes and metrics to ensure **program’s ability to execute**
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