The Future of CMMI ®

Industry Panel

CMMI Technology Conference and User Group

November 15, 2011

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The Future of CMMI - Panel

National Defense Industrial Association

Introduction:

- How well does CMMI meet the needs of your organizations, and the marketplace in general?
- What works? What doesn't? Where does CMMI need to go to better fit the needs of organizations in the future?

Format:

- Panelist responses to topic statements
- Open discussion / Q&A

Panelists

- **Mike Campo** (Raytheon Company)
- **Brian Gallagher** (Northrop Grumman)
- **Jim Gill** (The Boeing Company)
- **Lynn Penn** (Lockheed Martin)
- **Rusty Young** (Software Engineering Institute)

Raytheon

Customer Success Is Our Mission

The Future of CMMI®

Michael Campo

Raytheon Integrated Defense Systems

NDIA CMMI® Technology Conference and User Group

November 15, 2011

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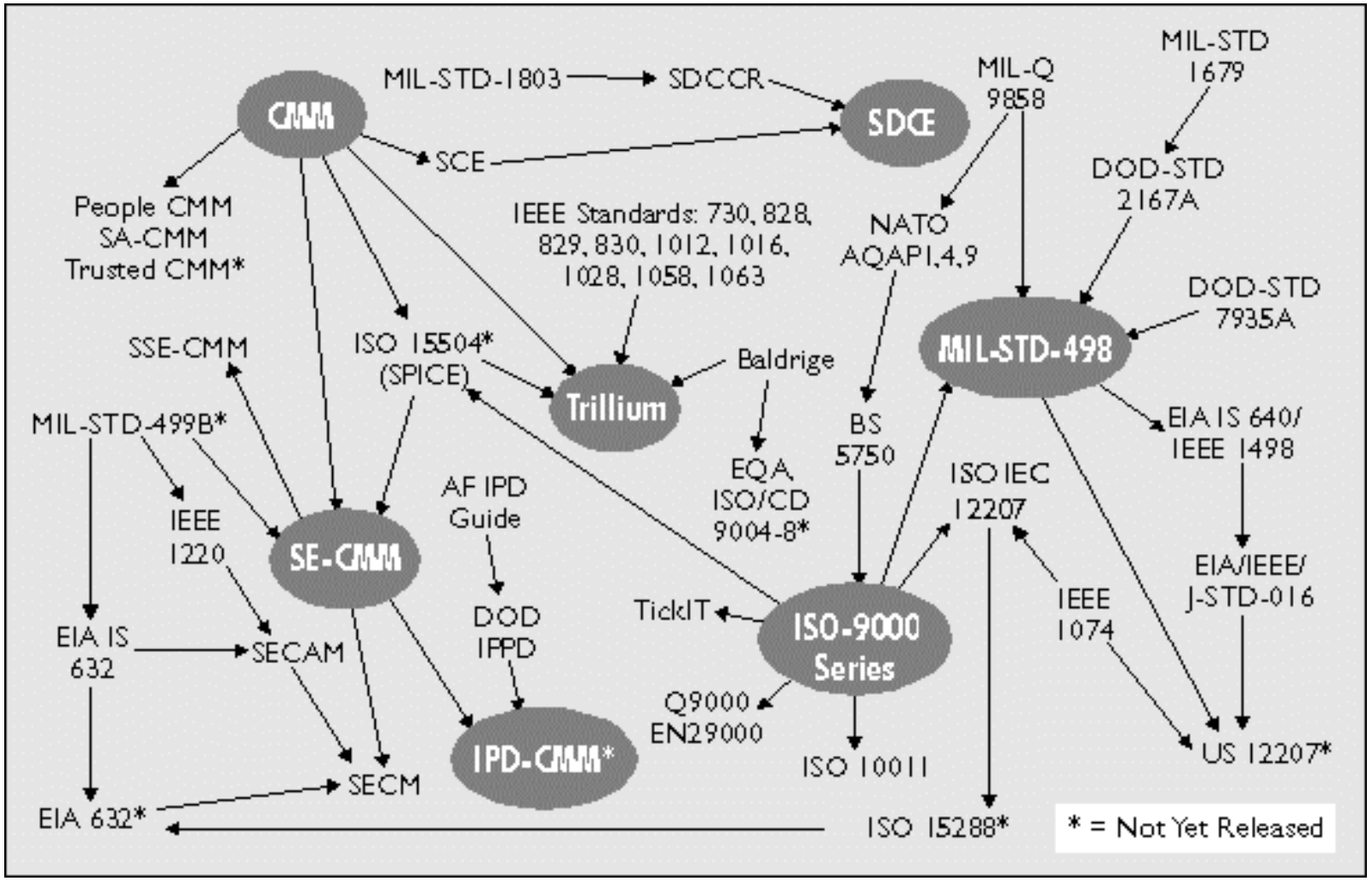
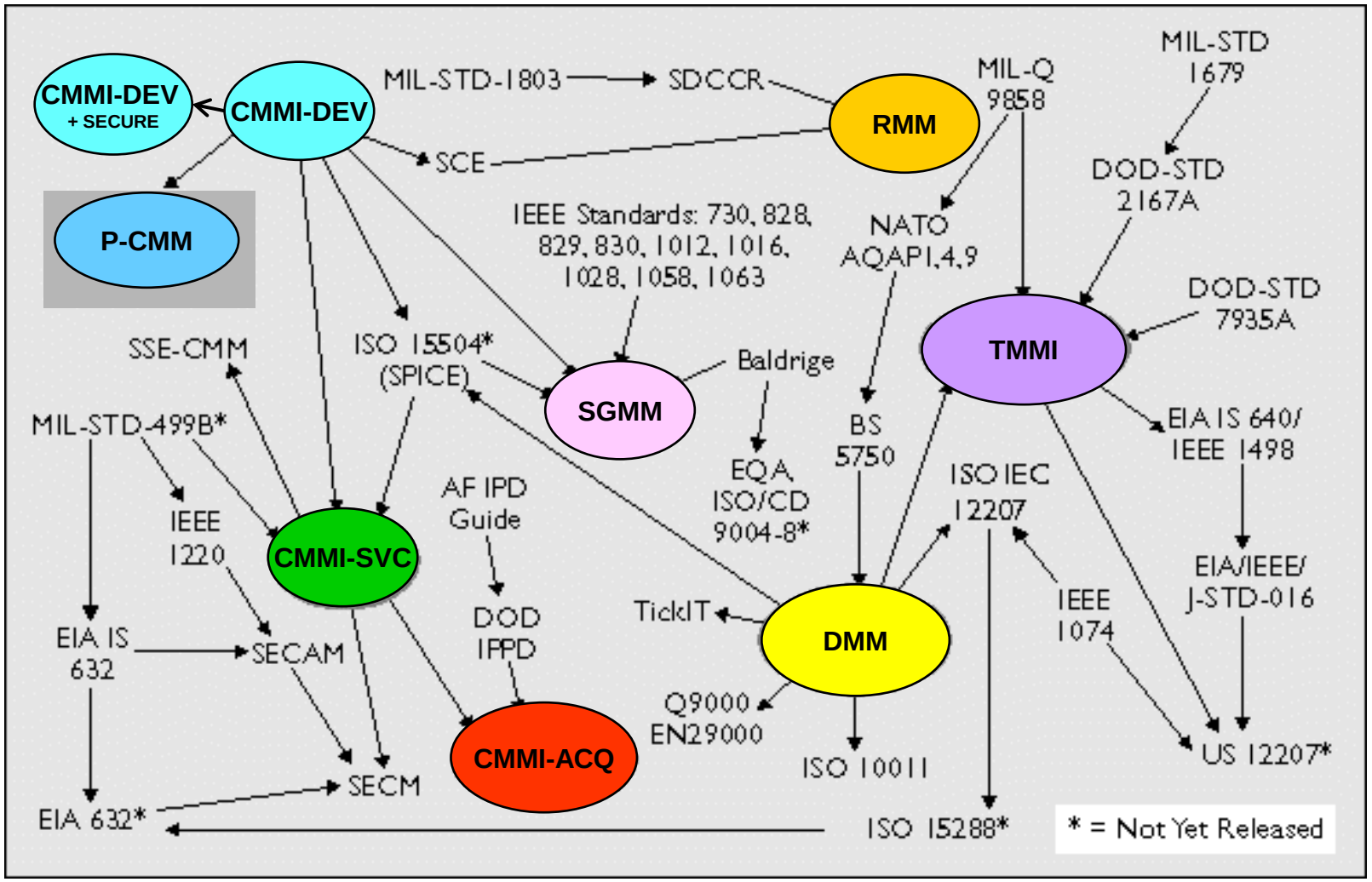
The Frameworks Quagmire[1]



1. Sheard, Sarah, "The Frameworks Quagmire," *CrossTalk*, STSC, Hill Air Force Base, Utah, Sept. 1997.

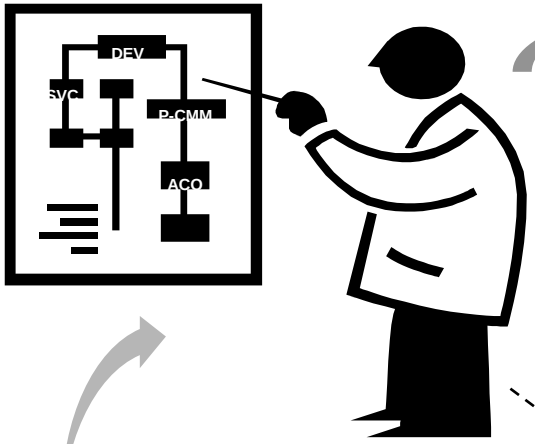
The Framework Quagmire - 2011



Adapted from Sarah Sheard, Software Productivity Consortium

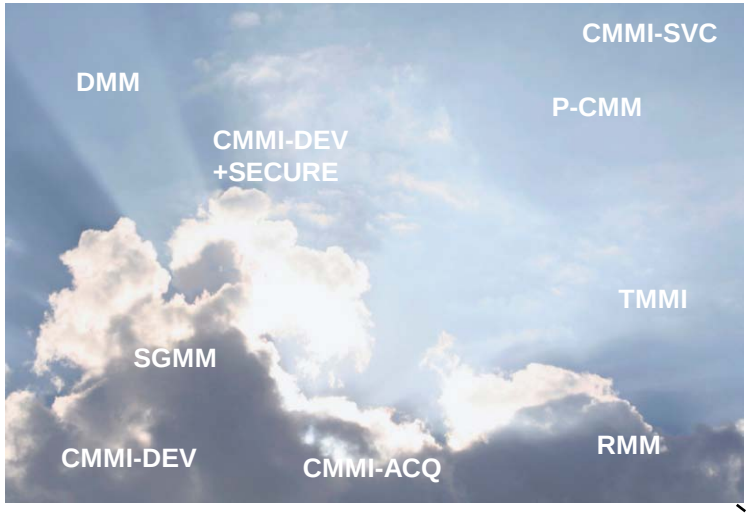
The Future…?

Set configuration flags

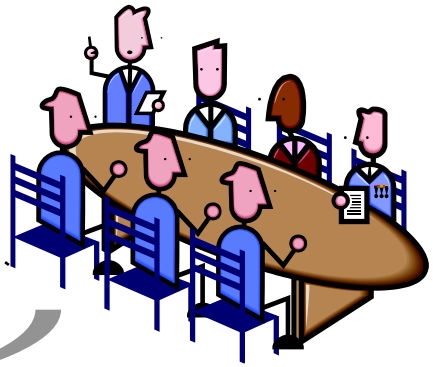


Dynamically create a model

PP DEV, ACQ, SVC	**RD** DEV, ACQ	**TS** DEV, +SECURE	**SD** SVC
REQM DEV, ACQ	**SCON** SVC, RMM	**VER** DEV,TMMI	**CM** DEV, DMM



Conduct one appraisal



Focus on the needs of the organization and its customers

Photo by Michael Campo

NORTHROP GRUMMAN

CMMI User's Group Conference, 2011

November 15, 2011

Brian P. Gallagher
Division Director
Cyber Intelligence Division
Northrop Grumman Information Systems

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NGC
Capabilities at a Glance

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- Weaponized Platforms
- Resilient Systems

- Weaponized Payloads
- Non-Kinetic Effects
- Secure Supply Chain
- Cyber Capability

- Training Programs
- Facility Staffing

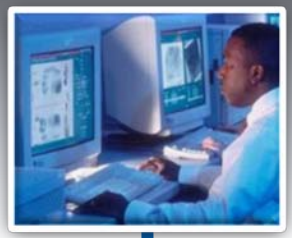
- CND Operations (IC, DoD, Fed)
- Title 50 & Title 10 Operations
- Intelligence Fusion & Analysis
- NCC, Kinetic & Non-Kinetic C2
- Next Generation Networks

Aerospace Systems

Electronic Systems

Technical Services

Information Systems



Integrated Cyber Security Goals and Future Vision

Corporate Cross Sector Initiatives

- Project Viceroy
- Project NKE

- Multi-Int, Multi-Sensor Mission Assurance
- Coordinated Non-Kinetic and Kinetic Mission Assurance

Committed to Addressing The Nation's Challenges

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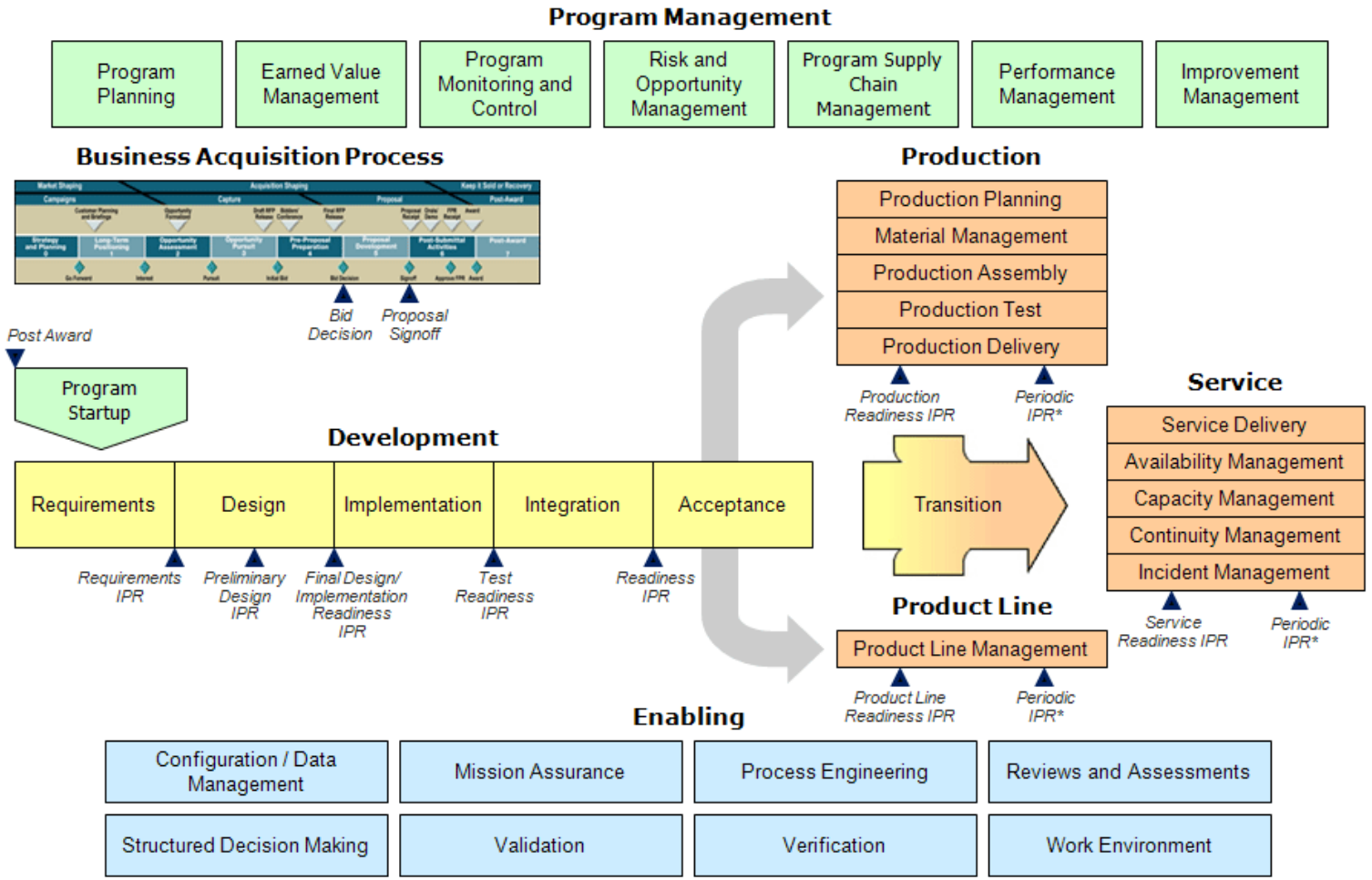
Standardization: The Program Execution Framework (PEF) Reference Model



Reference model shows all activities for all program types

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PEF program types

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1. Product Development. Activities involved in the transformation of customer needs to delivered products or service systems required to deliver services.
2. Product Maintenance. Activities involved in the adaptive, corrective, improvement, enhancement and sustainment of delivered products
3. Production / Manufacturing. Activities to repetitively produce products with no or slight variations on an approved core design.
4. Staff Augmentation. Activities related to providing consulting expertise with process ownership of program management only; delivering hours only. Management of the activities is done by the customer.
5. Professional Services. Activities related to providing services as specified, including ownership of essential processes. Unique program management of the activities is done by NG.
6. IT Managed Services. Activities related to providing Information Technology infrastructure services to organizations.
7. Operations. Operations, routine maintenance, and / or support to accepted, deployed, operational systems.
8. Product Line. Activities to build a set of systems or products sharing a common, managed set of features that satisfy the specific needs of a particular market segment or mission and that are developed from a common set of core assets in a prescribed way.

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NGIS Program Execution Framework (PEF)

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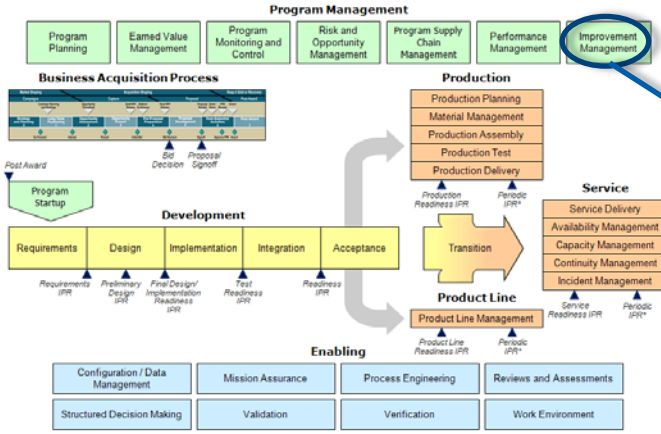
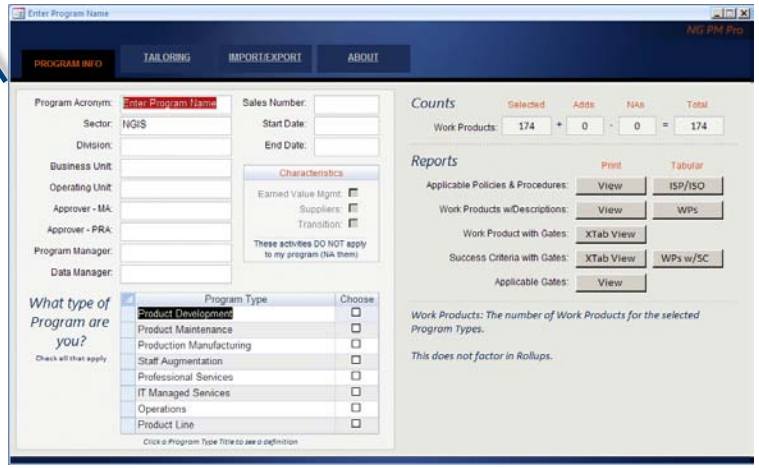
NG PM Pro tool encapsulates:
- Program types
- Work products and success criteria
- Business rules to select applicable work product elements, success criteria, and gates

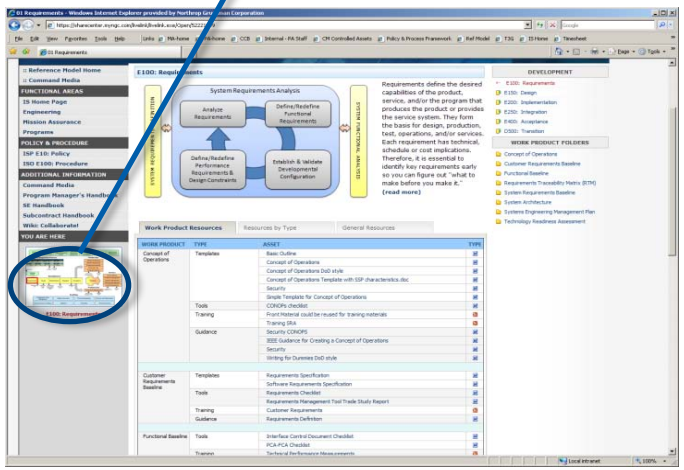


Reference Model defines:
- Core activities for Programs, Engineering, Mission Assurance
- Review gates

Each activity defined by:
- Policy (Command Media ISP)
- Procedure (Command Media ISO)
- Work products and success criteria

For each activity, T3G defines:
- Templates
- Tools
- Training
- Guidance





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Key Tenets

- Affordability is the practice of ensuring program success through ***the balancing*** of system performance (KPPs), total ownership cost , and schedule constraints ***while satisfying mission needs*** in concert with long-range investment, and force structure plans of the DoD
- To meet these principles we are recommending guidance for *Affordability and SE Tradeoff Analyses* that ***yield visibility*** into the relationship among the life-cycle phases, the KPPs and mission effectiveness. Key issues to be resolved
  - Quality of empirical data for estimation
  - Ensuring compatibility of affordability principles with budget and competitive procurement policies and processes
  - Life-cycle RAA (responsibility, authority & accountability)

Summary

- CMMI can help diverse cultures establish a common process framework to enable Program Execution success
- Strong, disciplined acquisition and development processes based on CMMI models (ACQ, DEV, SVC) is essential for meeting affordability challenges

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