3rd Annual CMMI ® Technology Conference and User Group

CMMI ® Today…
the US Army Perspective

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Who We Are…

OUR ARMY AT WAR
RELEVANT AND READY

Our Army is at war with nearly 50 percent of its forces engaged in combat. We will continue to be so for the foreseeable future.

Our Army is a proud member of the Joint Force expertly serving our nation and its citizens as we continuously strive toward new goals and improve performance.

Our Soldiers, their training, readiness, and welfare, are central to all we do.

Our individual and organizational approach to our duties and tasks must reflect the seriousness and sense of urgency characteristic of an Army at war. Our Soldiers and our nation deserve nothing less.

We are at war.
U.S. Army Theme

Who We Serve...

Our Fundamental Process Needs…

The Army Materiel Command's RDE Centers are responsible for the bulk of the Army's Materiel Acquisition – what are their basic process needs?

- **Maintain and enhance Core Competencies**
- **Improve quality & consistency of products and services**
- **Increase productivity & reduce cycle time**
- **Improve customer satisfaction**
- **Improve competitive ability to partner with Industry**

Business Processes – not unlike those of Industry

- Requirements Management (RM)
- Project Management (PM)
- Acquisition Management (AM)
- System Engineering (SE)
- Product Evaluation (PE)
- Performance Management (PFM)
- Organizational Process Management (OPM)
- Status Review (SR)
- Configuration Management (CM)
- Process Assurance (PA)

Current Status across the RDE Centers (1)

- **ARDEC – became the World's First CMMI Level 3**
  (Armaments RDE Center)
  - ***Software Enterprise – February 2002***
  - ***Based on CMMI-SE/SW/A, version 1.02d***
  - ***Current pursuits…***
    - **Level 4 for Software Enterprise**
    - **Level 4 for "pilot" Systems Engineering Enterprise**
    - **Level 3 for Systems Engineering ARDEC-wide (phased)**

- **CERDEC – became DoD's First CMMI Level 5**
  (Communication – Electronics RDE Center)
  - ***Fire Support Software Engineering – August 2003***
  - ***Based on CMMI-SE/SW***
  - ***Current pursuits…***
    - **Other Software Engineering elements are investigating CMMI**
    - **No corporate activity in Systems Engineering**

Current Status across the RDE Centers (2)

- **TARDEC – investigating migration to CMMI**
  (Tank-Automotive RDE Center)
  - ***Software Engineering Level 3 – August 2001***
  - ***Based on SW-CMM, version 1.1***
  - ***Current pursuits…***
    - **Investigating migration to CMMI for Software Engineering**
    - **No corporate activity in Systems Engineering**

- **PM Abrams – became Army's First SA-CMM application**
  (PEO Ground Combat Systems)
  - ***Software Acquisition Level 2 – November 2001***
  - ***Based on SA-CMM, version 1.02***
  - ***Current pursuits…***
    - **Investigating expansion of Level 2 to all projects within PM**
    - **Expand to Level 3 for Risk Management KPA**

Current Status across the RDE Centers (3)

- **AMRDEC – currently transitioning from CMM to CMMI**
  (Aviation & Missile RDE Center)
  - ***Software Engineering Level 4 – Fiscal Year 2000***
  - ***Based on SW-CMM, version 1.1***
  - ***Current pursuits…***
    - **Level 4 for CMMI-SE/SW/SS (v1.1) for Software Engineering Center**
    - **Mini appraisal scheduled for Fiscal Year 2004**
    - **No corporate activity in Systems Engineering**

ARDEC Lessons Learned

- Active senior management involvement is a prerequisite.
- Communication, training and coaching are all essential and must be integrated.
- CMMI and the standard processes must be supplemented.
- Measurement effort should start early and be kept streamlined.
- Process group should include participation from all project leaders.
- CMMI needs to be tailored for non-developmental projects.
- Should handle infrastructure efforts (PI, CM, QA, etc.) as individual projects.
- A central Process Asset Library and repository are basic and must be actively stocked and maintained.
- CMMI does not address the quality of the framework.

ARDEC Successful Practices

- **Active integration of the quality assurance function into the process improvement effort.**
  - ***Periodically assess project activities & artifacts.***
  - ***Target the audits to assess compliance with CMMI.***
- **Extension of the standard processes through a comprehensive set of framework elements.**
  - ***Templates, forms, checklists.***
  - ***Training and coaching information.***

CERDEC Return on Investment

- System Growth
  - *Organization sustained a growth in LOC supported (1.5 million in 1993 to over 9.5 million today) without a growth in personnel staff levels*
  - *Attributed to improvements in process, reuse, and application of new technologies*
- Size Stability
  - *Estimating ability has improved by 250%*
- Software Quality
  - *80% decrease in software defects found during formal testing*
- Productivity
  - *48% improvement in LOC/hour coding rate*
- Cost
  - *Yearly operating costs averaged over the last 13 years was only $30M instead of the estimated $59M w/o process improvement*

The Army's Corporate Commitment…

Army Strategic Software Improvement Process (ASSIP)

The Bottom Line…

- Senior Management is proactively involved in Process Improvement across the Army
- The Army is committed to Process Improvement
- A CMMI-based approach has worked and is yielding many tangible benefits
- The long journey has just begun…