

Draft

Army Materiel Command
Product Data
FY01 – FY08 Tactical Plan

25 Aug 2000

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Background

The Army Materiel Command (AMC) Product Data Functional Coordinating Group (PD FCG) has prepared this Tactical Plan for Product Data. This plan relates evolving strategic goals and objectives to the methods planned for their achievement and the specific projects that will implement them. This is a revision of the initial version of the Tactical Plan, dated 13 Jan 00. The Tactical Plan will be updated as required, but not less than annually, by the AMC Product Data Functional Coordinating Group (PD FCG).

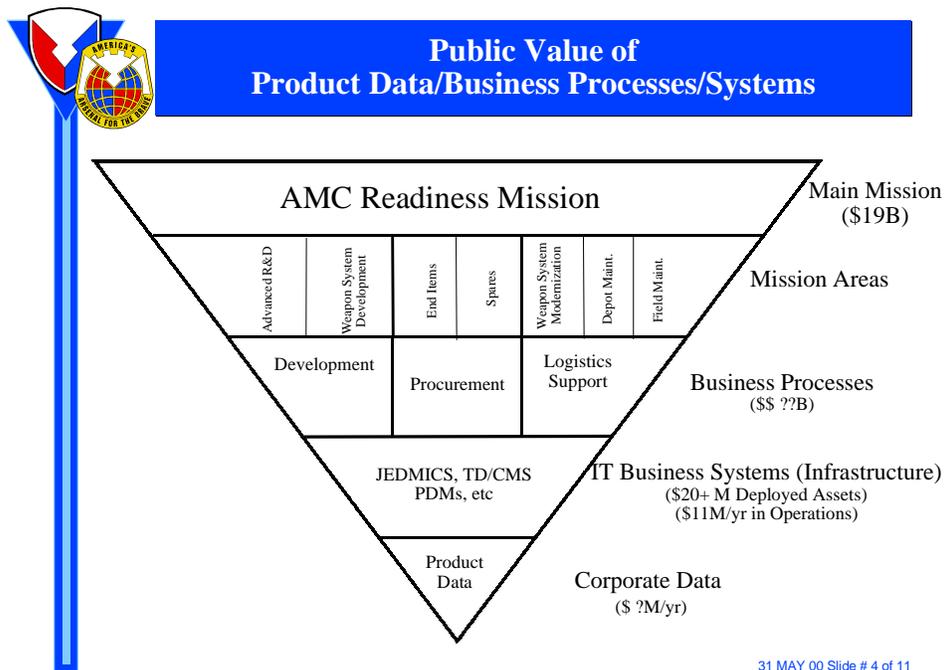
The strategic goals for AMC Management of Product Data are based on the following vision:

Provide and maintain an integrated and interoperable product data environment that is system/hardware transparent, and can provide the product data when required, where required, and in the required state to enhance materiel readiness.

The primary mission of the Army Materiel Command (AMC) is improved readiness of the soldiers in the field. Field readiness is the result of efforts in all three of the AMC major mission areas (Research & Development, Acquisition, and Logistics). Rapid access to accurate product data is a key enabler to achieving major business process improvements in all three mission areas. Improvements in product data quality, access, storage, management, and distribution will allow AMC to develop materiel faster, conduct more in-depth engineering analysis to make the design better, reduce materiel acquisition/production time and costs, and improve logistics support response times.

The “Public Value” of AMC Product Data

AMC product data describes all its existing and notional weapon systems. It includes descriptions of the items, how they were developed, how they operate, how they should be manufactured, and how they should be repaired. The data resides in a variety of Information Technology (IT) business systems, such as: Technical Data / Configuration Management System (TD/CMS), Joint Engineering Data Management Information and Control System (JEDMICS), several commercial product data management (PDM) systems, and in filing cabinets or other hardcopy storage mechanisms. Together, the product data and related IT business systems are used by every facet of the Army. Materiel Developers create, modify, and analyze the data; acquisition personnel use the data to procure end-items and spares; and logistics support personnel rely on the data for field support, field and depot repairs, legacy system modernization, demilitarization, and disposal. Even in the case of Prime Vendor support the failure to acquire or have access to weapon system product data forces a dependency on the Prime Vendor for the life of the item and adversely affects Army’s flexibility for future competition. DOD Directive 5000.2 requires PMs to “provide for long-term access to data required for competitive sourcing of systems support throughout its life cycle”. Figure 1 below pictorially shows how Product Data can be considered a supporting base for all AMC functions and mission areas.



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Figure 1

The inverted pyramid makes two important points about the public value of AMC product data. First, at each level of the diagram the scope of the areas under consideration broadens to the point that the entire AMC readiness mission is affected by product data. The second point relates to the relative investment expended on each level of the pyramid. While exact values aren't known, AMC spends millions of dollars annually on the purchase, maintenance, and upgrade of its product data throughout the MSCs. It spends 10-20 times that amount annually on the purchase and operation of its IT business systems used to process and manipulate the data. When viewed by Total Obligation Authority (TOA), AMC business process areas and mission areas spend hundreds of billions of dollars annually using the product data to develop, procure, and maintain the various weapon systems and support equipment to provide the needed field readiness. AMC inventory accounts alone total over \$7 billion. When viewed in this context, it is evident that a relatively small investment in maintenance and enhancement of product data and associated IT business systems can positively influence a vastly greater amount of business processes. Conversely, ignoring needed investments in product data and IT business systems can severely limit the business processes, if not totally stop them.

Strategic Goals

In order to support the overall AMC strategic goal of improved materiel readiness, the Tactical Plan recognizes four product data goals that must be met. These four goals are:

Goal 1 – MANAGE CORPORATE DATA. *Generate and maintain product data throughout the weapon system life cycle in information-rich forms.*

Goal 2 – MAINTAIN/UPGRADE THE INFRASTRUCTURE. *Achieve and continually maintain a modern, fully integrated and interoperable Acquisition and Logistics Product Data environment.*

Goal 3 - IMPROVE BUSINESS PROCESSES. *Improve our business processes by continually improving and expanding the application of product data management tools.*

Goal 4 - MANAGE BUSINESS RISKS. *Reduce business risk by demonstrating advanced technologies and methodologies for product data management.*

Implementation Strategies

The PD FCG also developed implementation strategies that it feels are the best general guidelines for achievement of the goals. The strategies are:

1) Seek Standardization for Data Access Interoperability

Select and use common Interface Standards/Methodologies – Given the multitude of existing IT systems within both the Government and industry, we need to mutually agree on interface standards and methodologies to enable communication and eventual interoperability with our trading partners. Figure 2 shows a notional view of Integrated Digital Environments (IDEs) of the future and the requirement for multiple data access and exchange with any given site.

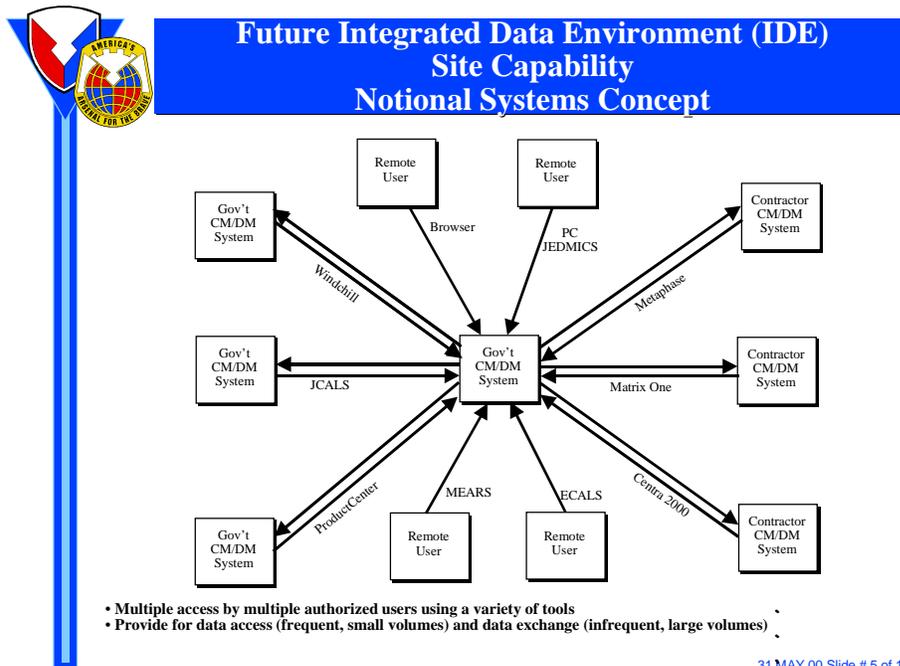


Figure 2

Specific areas of standardization that must be worked include:

- ◆ Data Exchange Standards (Government/Industry Partners)
 - ◆ AMC-STD-2549 – Configuration Management Data Interface
 - ◆ eXtensible Markup Language (XML)
 - ◆ PDES/STEP
- ◆ Open System Methodologies for application interfaces
- ◆ Common User Access Methodology to all AMC Customers (Depots, PMs/PEOs, Industry, DLA, USAF, Navy, Marine Corps, Allies)

This strategy is key to allowing Enterprise-wide data access from any remote site, by any authorized user, through a variety of tools.

2) Mandate AMC-wide Common Functionality

Establish Baseline Capabilities – For the foreseeable future, each MSC and PM will continue to develop IDEs and data management systems that meet their immediate needs. With the longer-term goal of system interoperability, a set of baseline capabilities must be developed to ensure that the same basic functions are available at all sites. This strategy will assure that business process capabilities at all MSCs evolve at similar rates and eases the job of creating links between these capabilities for cross-site business processes. Workflow is an example of a capability that is needed at most/all sites and should ultimately be linked together so that workflows can cross sites. This approach does not preclude sites from adding additional capabilities based on unique needs. Major Baseline capabilities include: Configuration Management, Data Storage, Data Location, and Workflow.

AMC's Baseline Capabilities are documented in the Automated Configuration Management System (ACMS) Performance Specification, MIL-PRF-32029 (MI).

3) Maintain/Upgrade Data Intelligence to improve Business Processes

Much of AMC's legacy product data is either not in digital form or exists in a low-level digital representation (raster). Upgrading this legacy data is necessary in order to support current and evolving automated business processes. This strategy involves: maintaining the inherent intelligence in newly created data (keeping 3-D CAD models intact in native and neutral file formats); converting legacy data into more intelligent and more useful formats; and taking advantage of future improvements in data formats/representations to improve business processes. Improved data intelligence is needed to support future business processes such as SBA/SMART.

4) Protect Corporate Data Assets

Data Protection and Information Assurance – More and more of our product data is being digitized and stored in electronic data repositories and more people are seeking access to

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that data. There is a growing need to be able to protect our data from access by unauthorized users and to assure its integrity as it is transmitted between people/systems/sites. In the first case, mechanisms must be put in place to assure only authorized users gain access to the data. Methods such as authentication certificates and defined job “roles” are possible ways to address this need. Data integrity is being addressed through a variety of Public Key Infrastructure (PKI) initiatives.

Plans for Continuity of Operations, Common Data Backup, Disaster Recovery – For the most part, no AMC site has developed a good, comprehensive data recovery or continuity of operations plan in the event of a catastrophic disaster. Major events such as earthquakes, fires, tornadoes, local flooding or explosions can render a data repository permanently disabled and result in permanent loss of the data. AMC product data is so integral to the efficient operation of its business processes that its permanent loss would cause irreparable harm. Considerable funds would be required to replace this data, if it can be replaced at all. Data backup, recovery, and alternate ways to provide needed services need to be planned for.

OMA Funding Strategy

The FCG has established an AMC Operations and Maintenance, Army (OMA) Special Program entitled “Lifecycle Product Data”. Its purpose is to provide centralized funding for projects that support the achievement of AMC’s Product Data Management vision and objectives. Due to the unique mission requirements and needs of each MSC, many of their product data management initiatives and solutions are site unique. In these cases solution projects will be funded by the MSC out of operational funds of other funding they may seek and obtain. In order to be eligible for AMC centralized funding, a project must accomplish one or more of the following:

- 1) formulate performance or interoperability requirements
- 2) accomplish horizontal integration
- 3) provide tools that all MSCs will use
- 4) reduce risk by demonstrating new technology

This Tactical Plan has been prepared to support in more detail the Program Objective Memorandum (POM) submission for this OMA Special Program.

The Lifecycle Product Data Program and the Tactical Plan have been structured to correspond with the four strategic goals given above. This structure allows the Tactical Plan and the OMA POM submissions to be cross-indexed in order to show how each individual project supports the overall strategic goals and utilizes one or more of the implementing strategies.

Tactical Plan Projects (Centrally Funded Initiatives)

Overall AMC Goal: IMPROVE MATERIEL READINESS

1.0 PD FCG Goal - MANAGE CORPORATE DATA. *Generate and maintain product data throughout the weapon system life cycle in information-rich forms.*

1.1 Strategy - Maintain/Upgrade Data Intelligence to improve Business Processes

Description: More and more AMC business processes are being automated and are creating or using increasingly complex and information rich forms of product data. Cost effectively maintaining this product data in useable forms throughout a weapon system's life and providing a level of consistency among these formats to meet interoperability needs requires continual planning and control as well as migrating the product data from one format to another. This product data management goal also supports and interfaces with the Defense Standardization Program (DSP) strategic goal of "Processes, Products, and Services - Electronic Data Exchange".

AMC Project – Automated Document Conversion System (ADCS)

Description: Much of AMC legacy product data exists in either non-digital representations (paper, aperture cards, mylar, etc.) or it is digitized, but exists in a low-level format (raster) only. Maximizing AMC business processes requires that product data contain multiple formats and a higher level of intelligence (3-D CAD representation) to facilitate the acquisition and/or production of weapon system components. The Congressionally mandated Automated Document Conversion System (ADCS) program is working to achieve this goal and many data conversion efforts are now underway. Unfortunately, this DOD managed program and associated funding stream may cease to exist after FY01 or be identified as ADCS. At that time each service is expected to have established their own POM funding line to continue the efforts. Multiple projects have been submitted in the FY02-07 POM to provide for technical data conversion needed to support specific weapon systems in the years ahead. Requirements for the projects were compiled from inputs obtained from Program Executive Officer (PEO)/ Program Managers (PMs), Major Subordinate Commands (MSCs) and the Corps of Engineers and therefore represent Army requirements.

Impact if not funded: Cannot convert legacy forms (engineering/technical data) to digital format (required by DoD Vision 2010 & Congressional guidance). Cannot implement transition to a digitized Army as directed by Congress. Combat readiness of Fighting Force may be degraded because data that is required to procure and/or produce the replacement, spare and repair parts that are required to maintain readiness is not available in useable format.

Procurement/reprocurement cost reduction opportunities associated with more usable data formats will be lost.

AMC Project – Product Data throughout the Lifecycle (PDtLC)

Description: This project builds on the results of the Nov 99 PDtLC Workshop to evaluate different data storage formats and media to determine which ones have the best potential for extending accessibility over the long life cycles experienced by many DOD weapon systems. Multiple functional areas will be examined to determine their lifecycle data needs. It is envisioned that no one format or media will be best for all functional areas and data types, so that a set of recommended formats and media will be developed along with guidelines as to their applicability.

Impact if not funded: Failure to fund this effort will leave AMC without a clear roadmap of how to proactively prepare for extended data use throughout the weapon system lifecycle. It will prevent PMs and IMMCs from effectively providing total lifecycle management of their items due to an inability to access all or part of the legacy product data. Obsolescence of data formats and media will cause the Army to pay extra to either re-create the data or translate the data into a format that is accessible now and in the future.

2.0 PD FCG Goal - MAINTAIN INFRASTRUCTURE. *Achieve and continually maintain a modern, fully integrated and interoperable Acquisition and Logistics Product Data environment.*

2.1 Strategy - Seek Standardization for Data Access Interoperability

Description: Modernization of the configuration management, data management, and overall data repository tools is key to achieving more effective management of product data. Improvements in this area are required to achieve the DOD directed goal of creating and implementing an integrated digital environment (IDE). Access to product data must be provided to many different organizations (Government and contractor) at worldwide locations to improve their business processes.

AMC Project – Assessment of Interoperability in the Current Environment

Description: This project will examine the current Army data management system environment (JEDMICS, TD/CMS, commercial PDM, JCALS, PM IDEs, CITIS, etc), evaluate current commercial and Government interoperability standards and tools, and propose a methodology to attain data access and exchange interoperability between these diverse systems in the near term (5 years).

Impact if not funded: Failure to fund this effort will cause major delays in AMC/Army's ability to integrate its diverse data management systems to allow

for data sharing between all data users. Development, procurement, logistics, and contractor personnel need this capability to enable total lifecycle management of weapon systems. It is also needed to achieve the DOD and Army goals for Integrated Digital Environments (IDE).

AMC Project – Achievement of ACMS Interoperability

Description: This project will evaluate current MSC data management systems (PDM or otherwise) and compare them to the ACMS Performance Specification requirements for capability and interoperability. Alternative methods to achieve a common set of functionality and data access/exchange will be evaluated, and a recommended course of action provided. Alternative methods to be examined include: XML/DXDE, use of a top-level PDM to locate data in MSC PDM systems, use of MIL-STD-2549, and others. The goal is to build from the current diverse multi-system environment to an interoperable environment with each MSC having full ACMS functionality.

Impact if not funded: Failure to fund this project will leave AMC/Army without a truly integrated corporate-wide ACMS capability. Lack of data access/exchange between sites increases development, procurement, engineering support, and logistics costs.

2.2 Strategy - Mandate AMC-wide Common Functionality

AMC Project – Common ECP Interface Specification & Demo

Description: This project will provide a short suspense demonstration at one MSC that provides a common interface for submission and evaluation of ECPs using different systems. As a by-product, an interface specification is also generated for use by other sites with other systems.

Impact if not funded: Failure to fund this project will delay the establishment of a critical common user interface specification that is needed to achieve system interoperability.

AMC Project – Common User Access Interface (PC JEDMICS Enhancement)

Description: This project builds on the current PC JEDMICS common user interface capability so that non-repository technical personnel can access multiple new data management systems through a common client and use it to locate and find drawings/data. This user interface won't provide the full capabilities of a regular PDM client or web client tool, and assumes the remote user knows the drawing they want to find and doesn't have large scale drawing requirements. It may have a raster viewer component to enable drawing viewing and must build in some access limitations/control. It will not have the current PC JEDMICS upload capability.

Impact if not funded: Failure to fund this effort will result in added cost and time to train users in the operation of new product data management systems. A common, familiar interface will allow users to rapidly attain proficiency on new systems with minimal if any training and a reduced learning curve.

3.0 PD FCG Goal - IMPROVE BUSINESS PROCESSES. *Improve business processes by continually improving and expanding the application of product data management tools.*

3.1 Strategy - Maintain/Upgrade Data Intelligence to improve Business Processes

Description: AMC has significant talent providing information technology solutions. We need to establish core capabilities and encourage the innovation of sites and individuals to foster a continuous improvement of capabilities. Using Business Process Re-engineering (BPR) and the increased capabilities of the product data management tools, we can increase efficiencies to all Army acquisition and logistics business processes.

AMC Project – Contractor Integrated Data Service (CIDS)

Description: One such BPR effort involves updating and expanding the current Contractor Integrated Technical Information Service (CITIS) approach so that it encompasses all contractually requested data and standardizes approaches and guidelines for more cost effective operation. A task force, made up of representatives from PEO/PM and MSC communities, met in Sep 99 to brainstorm ideas for improving CITIS. They coined a new title, Contractor Integrated Data Service (CIDS), and identified many issues that must be explored and revised in order to achieve the superior contractor/Government data interface that each group desires. A project has been submitted to provide funding for contractor support and travel to enable the task force to develop a Concept of Operations (CONOPS) for CIDS. The CONOPS will provide common guidelines and concepts upon which contract-specific CIDS can be based. It will also provide detailed guidance for preparation of CIDS requirements in contract statements of work.

Impact if not funded: Product Data will not be available utilizing state of the art technologies and techniques for procurement of replacement, spare and repair parts for Combat Units. Will stop progress on development of a Concept of Operations for Contractor Integrated Data Services (CIDS) and its implementation. ASA(ALT) has expressed keen interest in the completion of this initiative. Combat units may not be combat ready because of lack of replacement, spare and repair parts because the necessary tools to access and use data to procure them are not available.

AMC Project – Field Incident Engineering System (FIES)

Description: This project will develop an automated design tool, the Field Incident Engineering System (FIES), that integrates and interfaces the necessary existing and new databases from one single access point that would enable both evaluation and diagnostic testing to be accomplished. This integration will then be implemented into a field response that would not only document data results but also facilitate an automated and active response to initiate real time updates and design change recommendations and thus allowing a rapid correction of the deficiencies revealed in the field incident investigations. Specifically, the automated tool being proposed here integrates component databases, i.e., Lot Acceptance Tests, Ammunition surveillance, field incidents, Technical Data Package, System Safety Risk Assessment, Finite Element Analysis, Ballistic Firing data, modeling, metallurgical analysis data, ECPs and historical MIF data, into a single smart model to effectively automate the resources necessary to rapidly respond to a field incident, determine cause, and provide disposition and feedback to the customer and designers.

Impact if not funded: TACOM-ARDEC and the Army will lose an opportunity to realize significant reductions in accident investigation cycle time and associated cost reductions/avoidances. Under the current system for the malfunction investigation process, the average completion time has ranged from 12.3 months to 15.9 months over the past four years. A conservative projection estimates that the proposed FIES system will be able to reduce investigation cycle time by 35-50%, or less than 9 months. This capability will enable ARDEC to support faster field notification and required design changes, thus meeting the growing need to deploy the fix and/or improvement now, not months or even years from now.

AMC Project: AMC-STD-2549 Operational Test

Description: This project will test AMC-STD-2549. This test will prove the utility of AMC-STD-2549 for use in data exchange. The test will consist of each Major Subordinate Command (MSC) generating data sets from their engineering data management systems IAW the Data Information Packets (DIP) found in AMC-STD-2549. A translator will be developed to load the data formatted IAW the DIPs into TACOM's Automated Configuration Management System (ACMS). Finally, participation from each MSC will be required on location. This test will establish processes for MSC to ACMS exchange of data and contractor delivery via AMC-STD-2549. This test will prove the completeness of the DIPs and operational concepts in the standard; and identify any deficiencies for any follow-up update to the standard. The translator developed through this effort will provide a template to assist in data migration for new ACMS sites and a template for contractor delivery of data.

Impact if not funded: With the cancellation of MIL-STD-2549 and MIL-STD-973, there are no available military specifications for configuration data interface or delivery formats. Additionally, a commercial equivalent standard has not been developed. AMC-STD-2549 will be the only standard available. Without testing the approved version, the Army will have no validated method for receiving data or placing it on contract. Additionally, ACMS relies heavily on 2549 for this functionality.

For the benefit of the Army, AMC must provide funding for the development of AMC-STD-2549, and recognize it as a value-added task. The next step in maintaining this is to provide validation of the standard.

4.0 PD FCG Goal - MANAGE BUSINESS RISKS. *Reduce business risk by demonstrating advanced technologies and methodologies for product data management.*

Description: This provides for identifying and proving-out new technologies for managing product data and reducing business risks. Risk reduction techniques include: bench marking industry and other government product data management processes, prove-out of pilot operations to demonstrate benefits, and market research to identify potential useful technologies.

In order to achieve the massive business process re-engineering that is needed to achieve AMC's product data goals many new technologies and approaches will have to be tested in pilot implementations. Successful pilots can then be exported to full-blown implementations at the MSC or AMC levels. Funding must be provided to support these pilots in order to discover our new business practices.

AMC Project – PD FCG Support

Description: To minimize risk, AMC has established a management process that provides for strong MSC involvement in implementing information technology (IT) initiatives. The Acquisition-engineering Information Board (AIB), one of four AMC Corporate Information Boards, is responsible for information management planning and control for acquisition and engineering functional areas. The Product Data Functional Coordinating Group (PD FCG), one of three committees under the AIB, has responsibility for the engineering area information management needs and is determining AMC product data needs. The PD FCG is comprised of members from each MSC and select other Army organizations. It is responsible for developing policy, guidance, future planning, requirements, and projects to address AMC's product data needs. In order to perform its function, the FCG will require funds and a technical support contractor to conduct studies, gather data, and evaluate commercial technologies. This project will provide the necessary funding for contractor support.

Impact if not funded: Data to support Combat Readiness may not be available without Product Data - Functional Coordinating Group coordination,

improvement of data management systems, process improvements and service life extension projects. Opportunities to reduce total ownership cost will be lost. Fighting Force readiness will be reduced due to non-availability of parts due to increased ALT/PLT.

AMC Project – EDMS PMO Support

Description: The Engineering Data Management Systems Program Management Office (EDMS PMO) - is responsible for acquisition or development of AMC-wide system solutions. Specific on-going EDMS PMO initiatives include development of a generic remote user interface that can access a variety of PDM systems while providing users a common look and feel, and assessment of MSC implementation of ACMS to assure a common level of capability and functionality. This project will fund PMO travel, equipment, and contractor support.

Impact if not funded: Data to support Combat Readiness may not be available without Engineering Data Management System - Project Management Office coordination, improvement of data management systems, process improvements and service life extension projects. Opportunities to reduce total ownership cost will be lost. Fighting Force readiness will be reduced due to non-availability of parts due to increased ALT/PLT.

AMC Project: Army Membership in PDES, Inc

Project Description: The Army has been a member of PDES, Inc. since 1993. This project will provide funding to continue Army participation in the PDES, Inc government-industry consortium, aimed at the development and deployment of ISO 10303, Standard for the Exchange of Product Data (STEP). STEP is an international standard that provides an unambiguous, computer interpretable definition of the physical and functional characteristics of a product throughout its life cycle. STEP is rapidly becoming the most widely used and supported neutral format product data standard used in the design, manufacture and sustainment of mechanical and electromechanical systems. Many major DoD suppliers, including Boeing, Lockheed-Martin, Northrop-Grumman and Rockwell-Collins are active members of PDES, Inc. and developers and users of ISO 10303. Continued participation in PDES, Inc. will insure that the Army is positioned to influence the further development of ISO 10303 and take full advantage of the benefits of utilizing STEP in business processes through the product data life cycle.

Beginning 1 Aug 00 government associate participation in PDES, Inc. will be either two full time equivalent work-years, at 1800 hours per year, or one full time equivalent work-year plus \$25K. In addition there is a carry-over deficit of 4,358 hours (2.42 work-years) from prior years membership. This project proposes to pay off the deficit, and fund continued participation using the one work-year/\$25K option. The one full time equivalent work year can be in-house labor, contractor labor, or some combination thereof.

Impact if not funded: The Army will not be positioned to leverage the benefits of PDES, Inc. membership into the continued improvements of the product data business processes across AMC, as envisioned by the PD FCG Tactical Plan. In addition, the Army will be seen by industry as being an unreliable partner and renegeing on its commitments.

AMC Project: AMC-STD-2549 Training Implementation

Project Description: This project will provide the necessary resources to develop a plan and materials for training on AMC-STD-2549. This short-term project will develop the following:

1. Training plan to define instructors, attendees and resource the coordination of the classes.
2. PM Brief which will clearly define for the Program Managers the benefits of using AMC-STD-2549 on contract. This would be an executive level briefing package.
3. Training material for the following: Data Receiver, Data Manager and Data Provider (contractors)

The benefits of this project will be to standardize data deliverables across AMC and prepare users for the eventual switch from Military Standards for engineering data to commercial standards. Specifically, EIA-836 is targeted to replace AMC-STD-2549 but is more then a year away from publication.

Impact if not funded: Configuration Management information is a complex subject. AMC-STD-2549 attempts to put this information into an easily used document as well as a searchable database. However, a translation of the ideas in AMC-STD-2549 from previous standards requires formalized training for all users. The impact of not funding the development of this training includes :

- AMC-STD-2549 not being used to assist in the standardization of data across AMC
- Confusion and delay in contract award and CDRL delivery of information
- Multiple interpretations of AMC-STD-2549 usage leading to additional confusion and delay
- Multiple MSC's using internal resources to develop duplicate training materials

The following chart summarizes the funding requirements of each of the above projects seeking central funding.

AMC Product Data Tactical Plan

AMC Lifecycle Product Data Special Program OMA POM

Goals/Projects	FY01	FY02	FY03	FY04	FY05	FY06	FY07	FY08	TOTAL
MANAGE CORPORATE DATA									
Automated Document Conversion (ADCS)									
Product Data throughout the Life Cycle									
Goal Total									
MAINTAIN INFRASTRUCTURE									
Assessment of Interoperability									
Achievement of ACMS Interoperability									
Common ECP Interface Spec & Demo									
Common User Access Interface									
Goal Total									
IMPROVE BUSINESS PROCESSES									
Contractor Integrated Data Service (CIDS)									
Field Incident Engineering System (FIES)									
AMC-STD-2549 Operational Test									
Goal Total									
MANAGE BUSINESS RISKS									
PD FCG Support									
EDMS PMO Support									
Army Membership in PDES Inc									
AMC-STD-2549 Training Implementation									
Goal Total									
FY Totals (M)									

AMC Product Data Tactical Plan

Tactical Plan Projects (MSC Initiatives)

The following product data projects show the variety of efforts, both current and proposed, that are being accomplished at the MSCs through their own internal funding or other funding vehicles. As with the AMC central projects, these projects are categorized under the Tactical Plan goal they support.

PD FCG Goal 1 – MANAGE CORPORATE DATA. *Generate and maintain product data throughout the weapon system life cycle in information-rich forms.*

TACOM-ARDEC Initiatives:

- *TD/CMS Legacy Data Migration into Windchill PDM system* – Planned for FY01-02
- *3-D TDPs* – Ongoing through FY03

SBCCOM Initiatives:

- *Migration of Historical Aperture Card Data into Product Center PDM system* – Ongoing through FY08

CECOM Initiatives:

- *Data Migration into Centra 2000 PDM system to allow for JEDMICS Shutdown* – Ongoing for FY00

OSC Initiatives:

- *Ammunition Surveillance Information System (ASIS) Munitions History Program (MHP)* – Ongoing through FY08
- *TD/CMS Legacy Data Migration into PDM system* – Planned for FY02-03
- *World-Wide Ammunition-Data Repository Program (WARP)* – Ongoing through FY08

AMCOM Initiatives:

- *TARGETS Data Conversion* – Planned for FY01-08

STRICOM Initiatives:

- *Total Cost of Ownership Reduction* – Addresses Reducing Total Cost of Ownership throughout the life cycle. Since Operation and Support (O&S) costs comprise 80% of system's life cycle, efforts to reduce total cost of ownership are critical. In an effort to reduce TOC USA STRICOM will work with its trading partners in developing plans on how cost can be reduced on current and future programs. In meeting this objective STRICOM has taken an active role in implementing U.S. Army Materiel Commands program approach to Partnering for Success. Planned for FY01-08

TACOM-Warren Initiatives:

- *Automated Document Conversion System (ADCS)* – Ongoing through FY01
- *2-D to 3-D conversion* – Ongoing through FY04
- *TDP Validation* – Ongoing through FY03

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PD FCG Goal 2 – MAINTAIN/UPGRADE THE INFRASTRUCTURE. *Achieve and continually maintain a modern, fully integrated and interoperable Acquisition and Logistics Product Data environment.*

TACOM-ARDEC Initiatives:

- *JEDMICS Sustainment/Enhancement* – Planned for FY01-02
- *Development of Universal PC client* – Planned for FY02-03
- *Automated Configuration Management System (ACMS) / Windchill Implementation* – Planned for FY01-03

SBCCOM Initiatives:

- *Migration of Soldier Systems Center data into Product Center PDM system* - Ongoing
- *Investigate migration into ACMS* – Planned for FY03
- *ACMS Migration Efforts* – Planned for FY04-08
- *Investigate Migrations into AMC-STD-2549 format* – Planned for FY01
- *Migrations into AMC-STD-2549* – Planned for FY02-03
- *Common-Look to Industry* – Planned for FY02-03
- *Common ECP Interface* – Planned for FY02-03

CECOM Initiatives:

- *JEDMICS Shutdown / Enhancement of CENTRA 2000 PDM capabilities* - Ongoing

OSC Initiatives:

- *JEDMICS Sustainment/Enhancement* – Ongoing through FY02
- *ACMS Implementation and Maintenance (at HQ and Installations)* – Planned for FY01-08

AMCOM Initiatives:

- *JEDMICS Risk Reduction* – Ongoing through FY01

STRICOM Initiatives:

- *Task Package Automation* – Creates web Electronic Acquisition Procurement Package Including Supporting Documentation - CRDL's, SOW. Ongoing through FY08

TACOM-Warren Initiatives:

- *JEDMICS Shutdown* – Planned for FY01-02
- *ACMS/Windchill Implementation and Maintenance* – Ongoing through FY08

PD FCG Goal 3 - IMPROVE BUSINESS PROCESSES. *Improve our business processes by continually improving and expanding the application of product data management tools.*

TACOM-ARDEC Initiatives:

- *Integration of Windchill PDM Workflow with JCALS* – Planned for FY01-03

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- *CARS* – Ongoing through FY08
- *Web Drawing Assignment* - Ongoing
- *Web Pan Assignment Numbers* - Ongoing
- *Ammunition Production Problem Reporting* – Ongoing through FY01
- *TDP Problem Reporting* – Ongoing through FY01
- *AWCF Problem Reporting* – Ongoing through FY08
- *Web TDPs* – Ongoing through FY08
- *Arsenal Workload* – Ongoing through FY08
- *DLA Web TDPs* – Ongoing through FY08
- *STRICOM Web TDP Access* – Ongoing through FY08
- *ECALS* – Ongoing through FY08
- *TDP Refresh* – Ongoing through FY08
- *JEDMICS Web Interface* - Ongoing through FY08

SBCCOM Initiatives:

- *Implementation of Electronic Workflow for Engineering Data Processes* – Planned for FY01-02

CECOM Initiatives:

- *Integration of Centra 2000 PDM Workflow with JCALS* - Ongoing
- *Tech Loop Business Process Improvement* - Ongoing

OSC Initiatives:

- *Ammunition Surveillance Information System (ASIS)* – Ongoing through FY08
- *JCALs Implementation* – Ongoing through FY01
- *Integration of PDM with JCALS* – Planned for FY02-03

STRICOM Initiatives:

- *STRICOM Acquisition Model (STRIAM)* – Supports the development of a new contracting environment. Supports the development of an updated and automated STRIAM and other computer network and intranet based tools required to support the STRICOM acquisition process. Supports the development of academy computer based training. Ongoing through FY08

TACOM-Warren Initiatives:

- *Baseline ACMS Savings* – Ongoing through FY02
- *Web TDPs* – Ongoing through FY02
- *Arsenal Workload* - Ongoing through FY08
- *DLA Web TDPs* - Ongoing through FY08
- *ePIC Integration* - Ongoing through FY03

PD FCG Goal 4 - MANAGE BUSINESS RISKS. *Reduce business risk by demonstrating advanced technologies and methodologies for product data management.*

TACOM-ARDEC Initiatives:

- *Field Incident Engineering System (FIES)* – Planned for FY01

CECOM Initiatives:

- *Manage Business Risk* - Ongoing

OSC Initiatives:

- *ASIS RRAPDS Program* - Ongoing through FY08
- *Cryptek (encryption) Beta Test / Implementation* - Ongoing through FY08

STRICOM Initiatives:

- *E-CITIS* – Provides the capability for internal and external teams to share data.
Ongoing throughout FY08

TACOM-Warren Initiatives:

- *DLA 339 Form Transmittal Process* - Ongoing through FY03
- *Simulation Throughout the Life Cycle (SimTLC) Integration* - Ongoing through FY05
- *AMC-STD-2549 Development* - Ongoing through FY03
- *Product Data Mark-up Language (PDML) Usage* – Planned for FY01-05

The following charts summarize the funding requirements of each of the above projects using MSC internal or other funding.

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1. Manage Corporate Data - Generate and maintain product data throughout the weapon system lifecycle in information-rich forms.	Funding Source as: MSC(Internal), AMC, Other	FY00	FY01	FY02	FY03	FY04	FY05	FY06	FY07	FY08
TACOM-ARDEC Initiatives										
TD/CMS Legacy Data Migration to PDM	MSC									
3-D TDPs	MSC									
SBCCOM Initiatives										
Migrate Historical Apercard Data to PDM	MSC									
CECOM Initiatives										
Data Migration for JEDMICS Shutdown	AMC									
OSC Initiatives										
ASIS Munitions History Program (MHP)	(M)SC & (O)ther									
TD/CMS Legacy Data Migration to PDM	MSC									
World-Wide Ammo-Data Repository Program (WARP)	(M)SC & (O)ther									
AMCOM Initiatives										
TARGETS Data Conversion	MSC									
STRICOM Initiatives										
Total Cost of Ownership Reduction	Other									

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TACOM-Warren Initiatives										
ADCS	Other									
2D to 3D conversion	MS									
TDP validation	MSC									
2. Maintain Infrastructure - Achieve and continually maintain a modern, fully integrated and interoperable Acquisition and Logistics product data environment.	Funding Source as: MSC(Internal), AMC, Other	<u>FY00</u>	<u>FY01</u>	<u>FY02</u>	<u>FY03</u>	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>	<u>FY08</u>
TACOM-ARDEC Initiatives										
JEDMICS Enhancement	MSC									
Development of Universal PC client	AMC									
ACMS	MSC									
SBCCOM Initiatives										
Migrate the Soldier Systems Center data to the PDM	MSC									
Investigate Migration to ACMS	AMC									
ACMS Migrations Effort	AMC									
Investigate Migrations to AMC-STD-2549	AMC									
Migrations to AMC-STD-2549	MSC									
Common Look to Industry	AMC									
Common ECP Interface	AMC									
CECOM Initiatives										
JEDMICS Shutdown-Enhance CENTRA 2000	AMC									

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Capabilities										
OSC Initiatives										
JEDMICS Enhancement	MSC									
ACMS(HQ & Installations)	MSC									
AMCOM Initiatives										
JEDMICS Risk Mitigation	MSC									
STRICOM Initiatives										
Task Package Automation	MSC									
TACOM-Warren Initiatives										
JEDMICS shutdown	MSC									
ACMS	MSC									
3. Improve Business Processes - Improve our business processes by continually improving and expanding the application of product data management tools.	Funding Source as: MSC(Internal), AMC, Other	FY00	FY01	FY02	FY03	FY04	FY05	FY06	FY07	FY08
TACOM-ARDEC Initiatives										
Integration of PDM workflow w/JCALS	Other									
CARS	MSC									
Web Drawing Assignment	MSC									
Web Pan Assignemnt numbers	MSC									
Ammunition Production Problem reporting	MSC									
TDP Problem Reporting	MSC									

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AWCF Program Reporting	MSC									
WEB TPDs	MSC									
Arsenal workload	MSC									
DLA web TDPs	MSC									
STRICOM WEB TDP access	MSC									
ECALS	MSC									
TDP Refresh	MSC									
JEDMICS WEB Interface	MSC									
SBCCOM Initiatives										
Implement Electronic Workflow for Engineering Data Processes	MSC									
CECOM Initiatives										
Integration of PDM workflow w/JCALS	IDE									
Tech Loop Business Process Improvement	AMC									
OSC Initiatives										
Ammunition Surveillance Information System (ASIS)	MSC									
JCALS Implementation	MSC									
Integration of PDM w/JCALS	MSC									
STRICOM Initiatives										
STRICOM ACQUISITION MANUAL (STRIAM)	MSC									
TACOM-Warren Initiatives										
Baseline ACMS savings	Other									

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Web TDPs	MSC									
Arsenal workload	MSC									
DLA web TDPs	MSC									
ePIC integration	MSC									
4. Manage Business Risk - Reduce business risk by demonstrating advanced technologies and methodologies for product data management.	Funding Source as: MSC(Internal), AMC, Other	<u>FY00</u>	<u>FY01</u>	<u>FY02</u>	<u>FY03</u>	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>	<u>FY08</u>
TACOM-ARDEC Initiatives										
FIES	Other									
CECOM Initiatives										
Manage Business Risk										
OSC Initiatives										
ASIS RRAPDS Program	(M)SC & (O)ther									
Cryptek (encryption) Beta Test/Implementation	(M)SC & (O)ther									
STRICOM Initiatives										
E-CITIS	MSC									
TACOM-Warren Initiatives										
DLA 339 Process	Other									
SimTLC integration	MSC									
MIL-STD-2549 development	MSC									
PDML usage	MSC									

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* FY00 obligations based on TACOM Acquisition Center(s) Projection of both internal and PEO contract awards										
TACOM totals and Warren slice per Mr A Gianfermi, 6/22/00, Dover and Rock Island computed as 2:1 ratio of remainder										
** FY04 to FY08 are based on FY04 projections plus a 3% inflation										
*** Variable Cost does not include any work accomplished by Engineering on specific End Items										

AMC Product Data Tactical Plan

As can be seen from the above spreadsheets, most of the MSC self-funded product data management efforts are of a low dollar amount which reflects the small amount of funding available at the MSC operating budget level for data management enhancements. Of a total of 62 MSC projects:

- 44% are under \$100k each,
- 37% are between \$100k - \$500k each, and
- The remaining 19% are over \$500k each in value

It is also interesting to note that in 19 of the projects (30%) the MSCs were able to obtain some funding from external (AMC or other) sources. What isn't shown on the spreadsheet is the large backlog of potential product data management projects that could and should be implemented at each MSC to attain the capabilities needed in the future, but for which sources of funding have not been found. Each MSC indicated that only projects that have immediate applicability or are needed to sustain current operations are being funded. Long range preparation for future IDE needs is not being properly funded or budgeted for.