

Automated Configuration Management System (ACMS)

Joint CMAG/Systems Engineering Meeting

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DSN 793-6586

Purpose of Briefing

To present an informational briefing on the Army's ACMS effort that stresses how ACMS supports Acquisition Reform both in terms of:

- How ACMS is being procured
 - performance requirements & interface control requirements
- How ACMS will be used
 - supporting IPTs performing concurrent engineering throughout the weapon system life cycle
 - necessary component of an IDE
 - consistent with industry practices
 - supporting Army goal of presenting single face to industry

Briefing Outline

- Background
 - Current Army Environment and Problems
- ACMS
 - Task
 - Methodology
 - Summary
- AMC Implementation Strategy

Current Engineering Data Statistics

AMC has:

- 6 Technical Data/Configuration Management System (TD/CMS) and 5 Joint Engineering Data Management Information Control System (JEDMICS) sites
- 8.5 Million images
- 5,000 Engineering Change Proposals (ECPs) / yr
- 8,500 spare parts procurements / yr

Current Army Environment

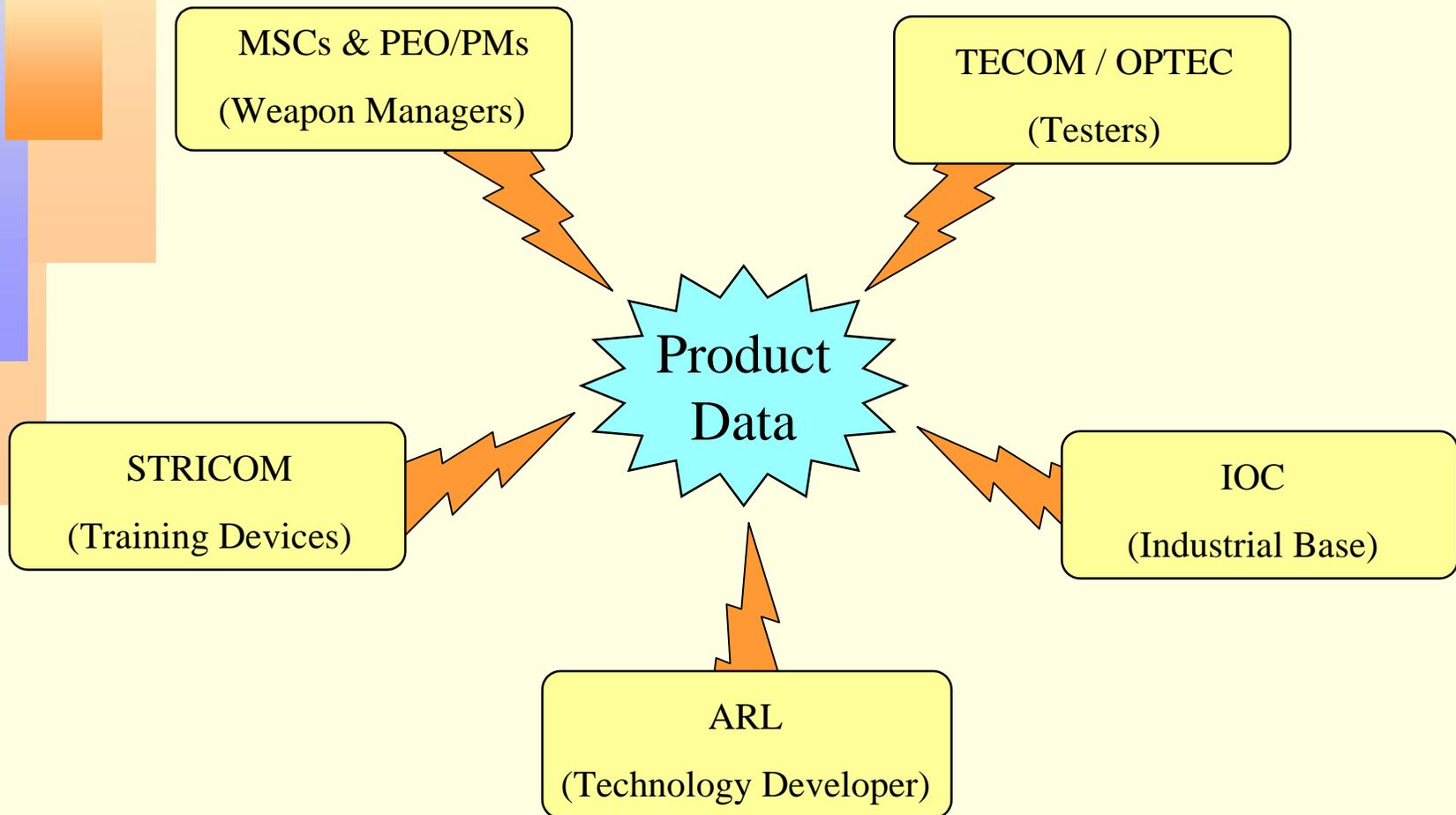
Facts

- Army legacy digital product data is primarily stored in "unintelligent" raster format
- Contractors are developing "intelligent" data that cannot be managed by TD/CMS
- TD/CMS can't manage multiple product baselines
- CITIS implementations tend to be program unique (digital delivery of product data)

Resulting Problems

- Forces new producers to "re-invent" lost data intelligence - geometry and metadata
- Army incurs additional cost for conversion of data to raster format
- Depots must rely on other unofficial data sources to support repair and modifications
- Repetitive unique solutions are expensive and provide little interoperability

Army Interoperability Needs



Solution

Need an automated configuration management system that:

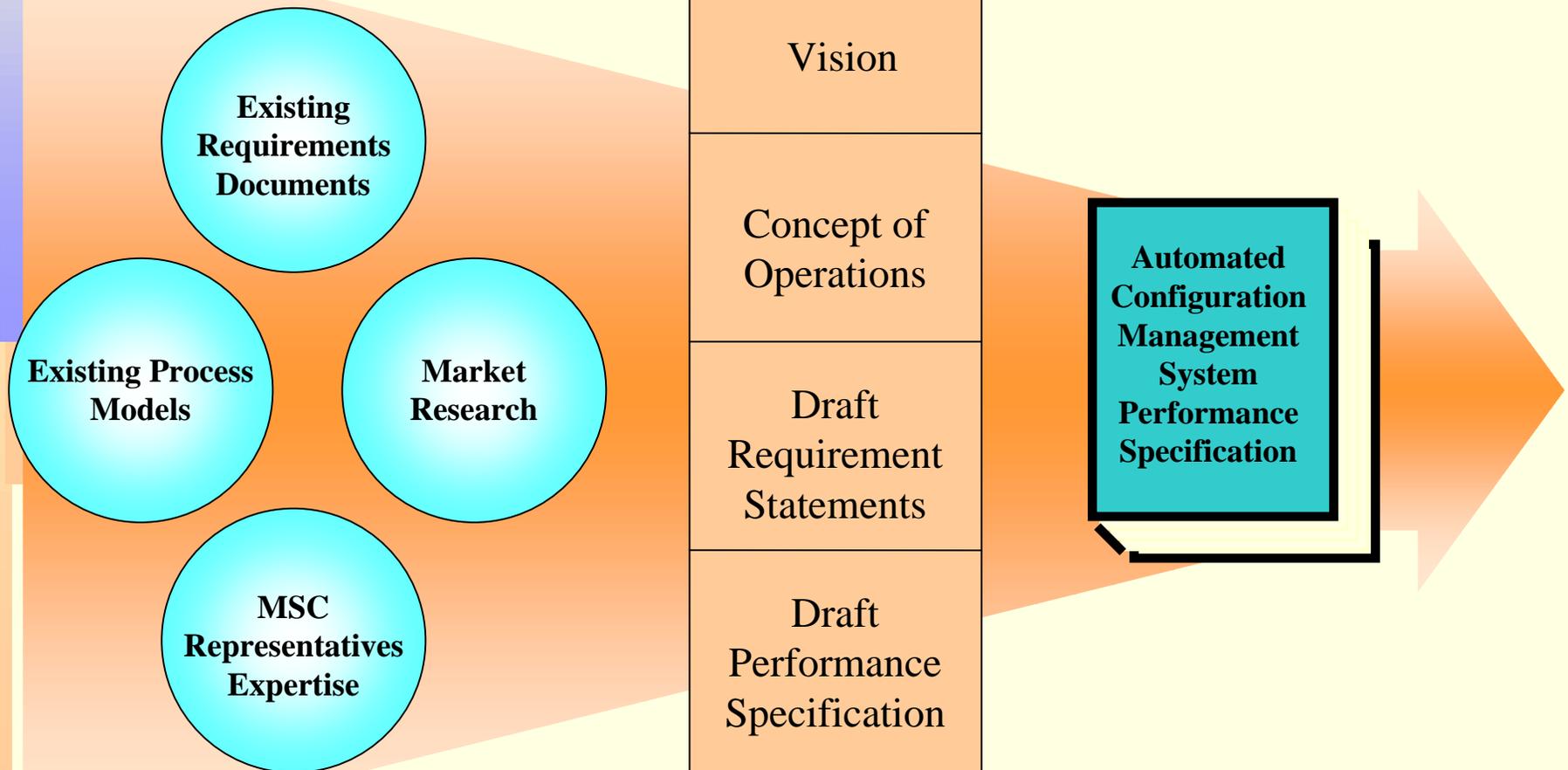
- Knows about all product related data
- Can accept and manipulate “intelligent” data and manage multiple product baselines
- Is compatible with Industry practices
- Provides a standard means for the delivery of digital product data
- Supports Acquisition Reform objectives
- Allows for interoperability between sites
- Uses Commercial-off-the-Shelf technology

That's ACMS!

Task

Army Materiel Command (AMC) tasked the Engineering Data Management Systems (EDMS) Functional Coordinating Group (FCG) to prepare a Performance Specification for an Army standard automated configuration management system that would meet the Army's current and future needs.

Methodology



PDM Functionality

- Product Structure/Bill of Materials
- Configuration Management
- Work/Process Flow Management
- Vaulting
- Program Management
- Imaging Services
- Parts Classification

Note: PDM systems tend to be highly customizable because of the vary nature of the product and the environment in which they operate. Few PDM systems provide the full range of functionality given above. All systems perform some functions better than others.

PDM Benefits

Typical PDM benefits reported by Commercial Sector

- Reduction in number of Engineering Changes 55-80%
- Reduction in Engineering Change processing time 35%
- Reduction in design/development costs 50%
- Reduction in design cycle time 20-40%
- Reduction in the number of parts 42%
- Reduction in the number of paper copies 40-90%
- Reduction in the number of document control staff 30%
- Reduction in document release time 60%
- Reduction in document request time 99%
- Reduction in manufacturing costs 30%



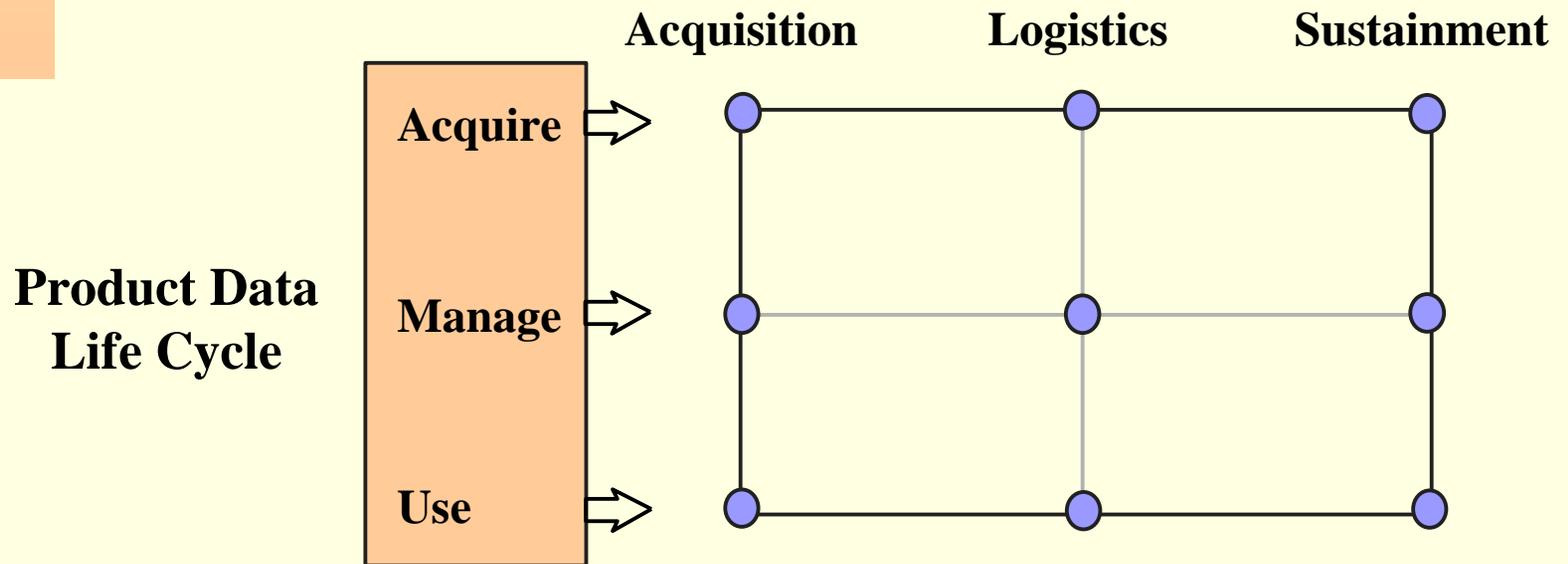
ACMS Vision

ACMS will:

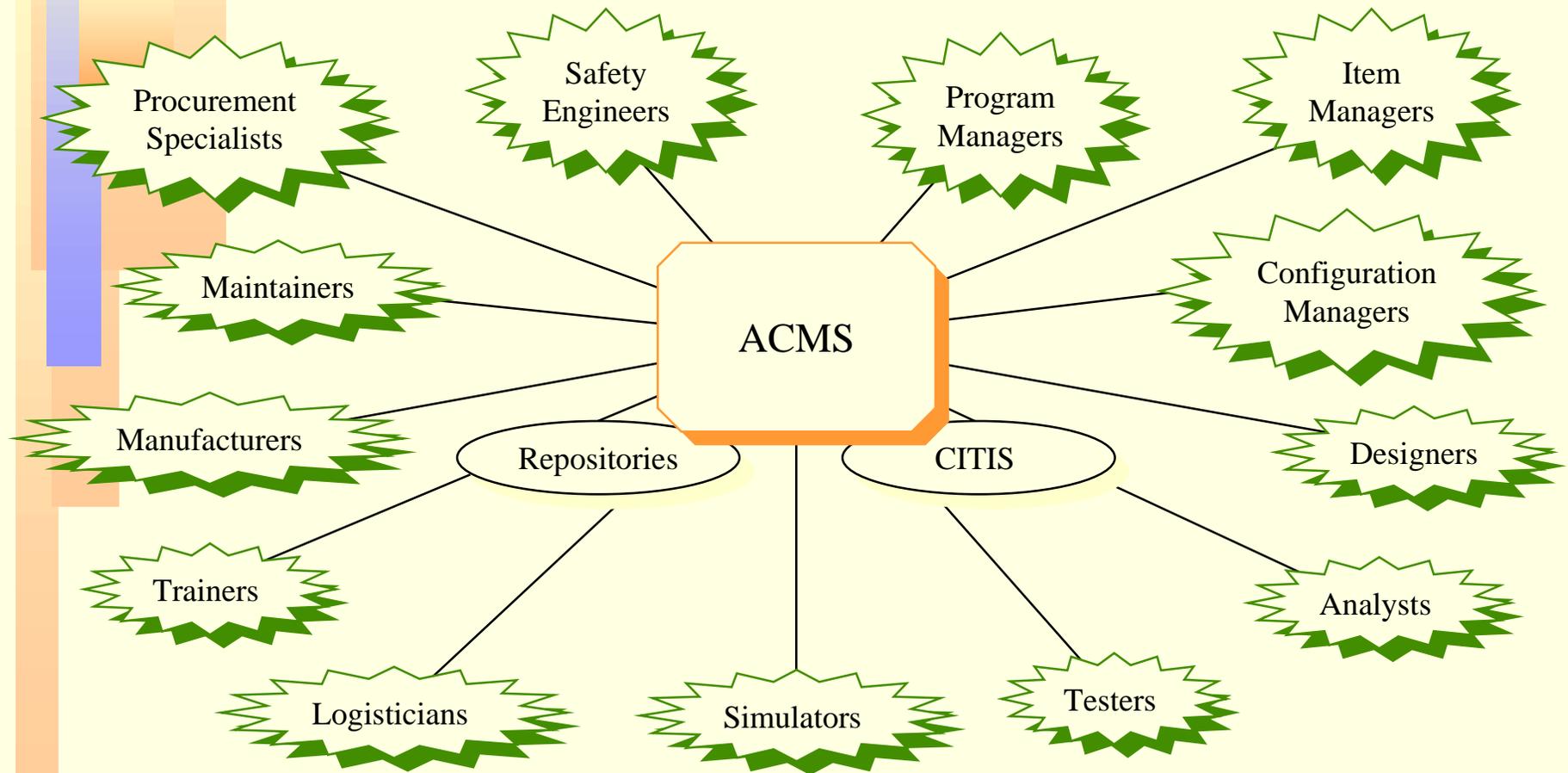
- Provide the **required data** when it is needed and in a form that the user can apply to accomplish the mission.
- Operate in a diverse Army environment, integrate with other MSC business processes, and communicate with other MSC, government and industry information management systems.

Concept of Operations Addressed

Weapon System Life Cycle



ACMS Supports Weapon System IPTs



CM Data Exchange

3.1.2.1 Configuration management data exchange requirements

3.1.2.1.1 Process data information packets. ACMS shall provide the capability to accept, create, validate, store, retrieve, modify, and archive data information packets as defined in MIL-STD-2549.



Summary

- The lack of good data management capabilities is costing the Army a lot of money.
- Good Configuration Management is the key to data access and currency
- An ACMS will help the Army gain control over its product data and will provide the Army a tool by which it can continually improve its business processes
- Private industry experience shows significant cost savings can result

AMC Implementation Strategy

- Publish the ACMS Performance Specification
- Continue to build customer and stakeholder support
- Quantify economic impacts
- Pursue a two phase acquisition strategy
 - Review current MSC efforts; if necessary, perform market analysis; and develop implementation recommendations
 - Procure and install hardware and software and train personnel
- Seek funds to support the above

Visit the ACMS Web page

For additional information
and a copy of the
Performance Specification,
MIL-PRF-32029(MI)

[www-iea.ria.army.mil/ai/eng_data/
acms/acms_frameset1.html](http://www-iea.ria.army.mil/ai/eng_data/acms/acms_frameset1.html)

NOT
MEASUREMENT
SENSITIVE

MIL-PRF-32029(MI)
30 June 1998

PERFORMANCE SPECIFICATION
Automated Configuration Management System (ACMS)

This specification is approved for use by the Department of the Army and is available for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers performance requirements for the U.S. Army's Automated Configuration Management System (ACMS). It defines the functional requirements for ACMS, interface characteristics, and the environment in which it must operate.

1.2 ACMS overview

1.2.1 ACMS purpose. The ACMS will provide the Army with a next-generation configuration management and product data management system. It will enable greater access to and sharing of enterprise product data¹ in support of Integrated Product Teams (IPTs); engineering change action processing; and reprourement, operations, maintenance, and disposal activities. The primary enhancements ACMS will provide include the following:

- a. Storage and use. ACMS will extend the data types stored and managed, for example engineering models, simulations, and other forms of intelligent product data.
- b. Rapid retrieval. ACMS will enhance the user's ability to rapidly find, retrieve, and control access to product data.

¹ This performance specification uses the term "product data" to refer to all documents and metadata related to a product's requirements, design, implementation, and support. The term "document" has the same meaning as that used in MIL-STD-2549: A self-contained body of information or data which can be packaged for delivery on a single medium. Examples of documents include drawings, reports, standards, databases, application software, and engineering designs. "Metadata" are elements of information that describe the data, such as document identifier, date, owner, release level, format, keywords, data location, approval authorizations, part identifier, and part name.

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commander, U.S. Army Aviation and Missile Command, ATTN: AMSAM-RD-SE-TD-ST, Redstone Arsenal, AL 35898-5000, by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A

FSC 7030

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