

Automated Configuration Management System (ACMS)

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Purpose

- To provide an overview of AMC's effort to prepare a performance specification for an automated configuration management system and AMC's strategy for its implementation

Briefing Outline

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

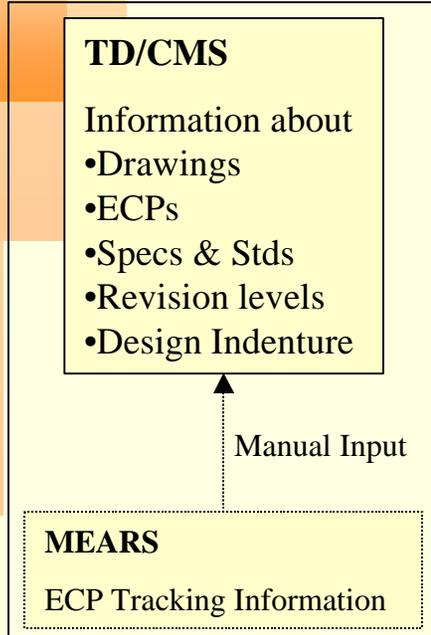
Configuration Management (CM)

“A management process for establishing and maintaining consistency of a product’s performance, functional, and physical attributes with its requirements, design and operational information throughout its life. ...”

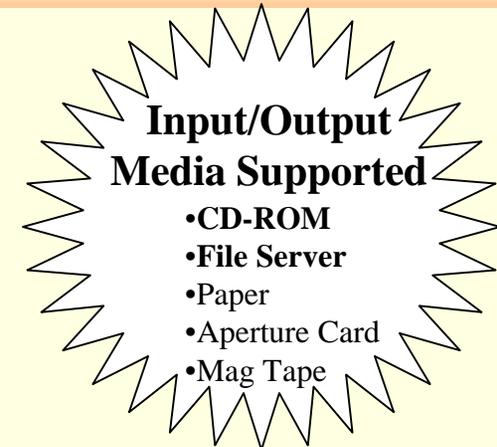
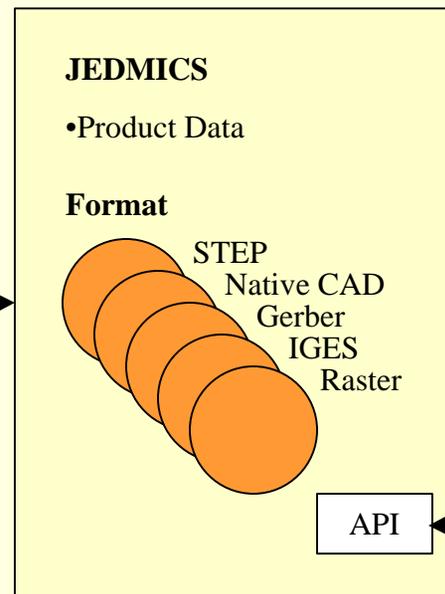
(MIL STD 2549)

Current Engineering Data Management (EDM) Systems

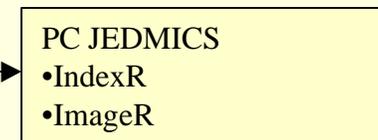
Configuration Management



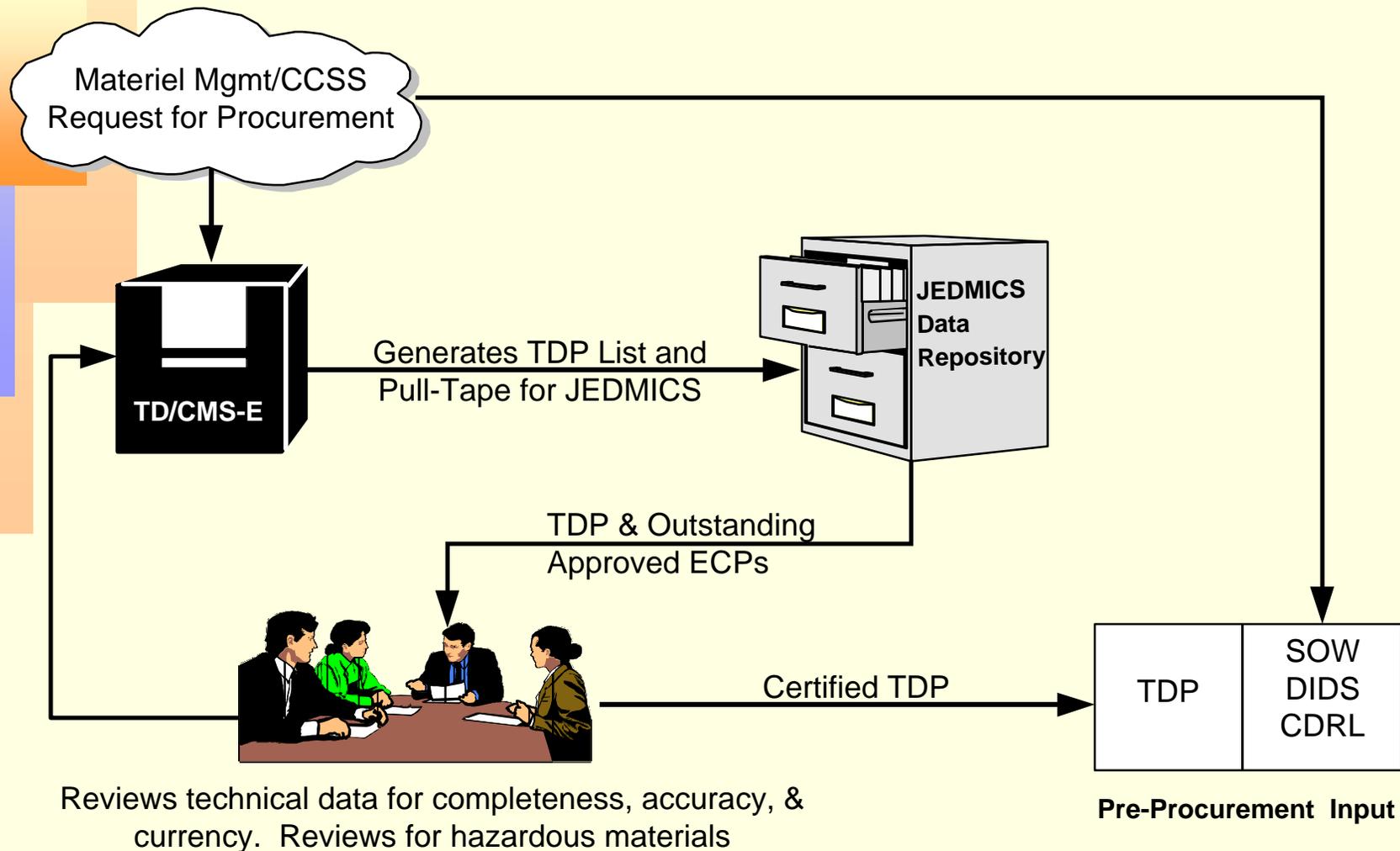
Repository



Direct User Access Tools



Tech Loop Process



Recent Trends in Army EDM

- Repositories are being asked to store an ever expanding range of data
- More and more users are gaining direct access to the repositories
- The number of repositories of record are expanding because of the increasing number of Contractor Integrated Technical Information Services (CITIS)
- Islands of automation are being linked
- Downsizing and reorganizations keep restructuring our EDM systems

Current Engineering Data Statistics

AMC has:

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

Current Army Environment

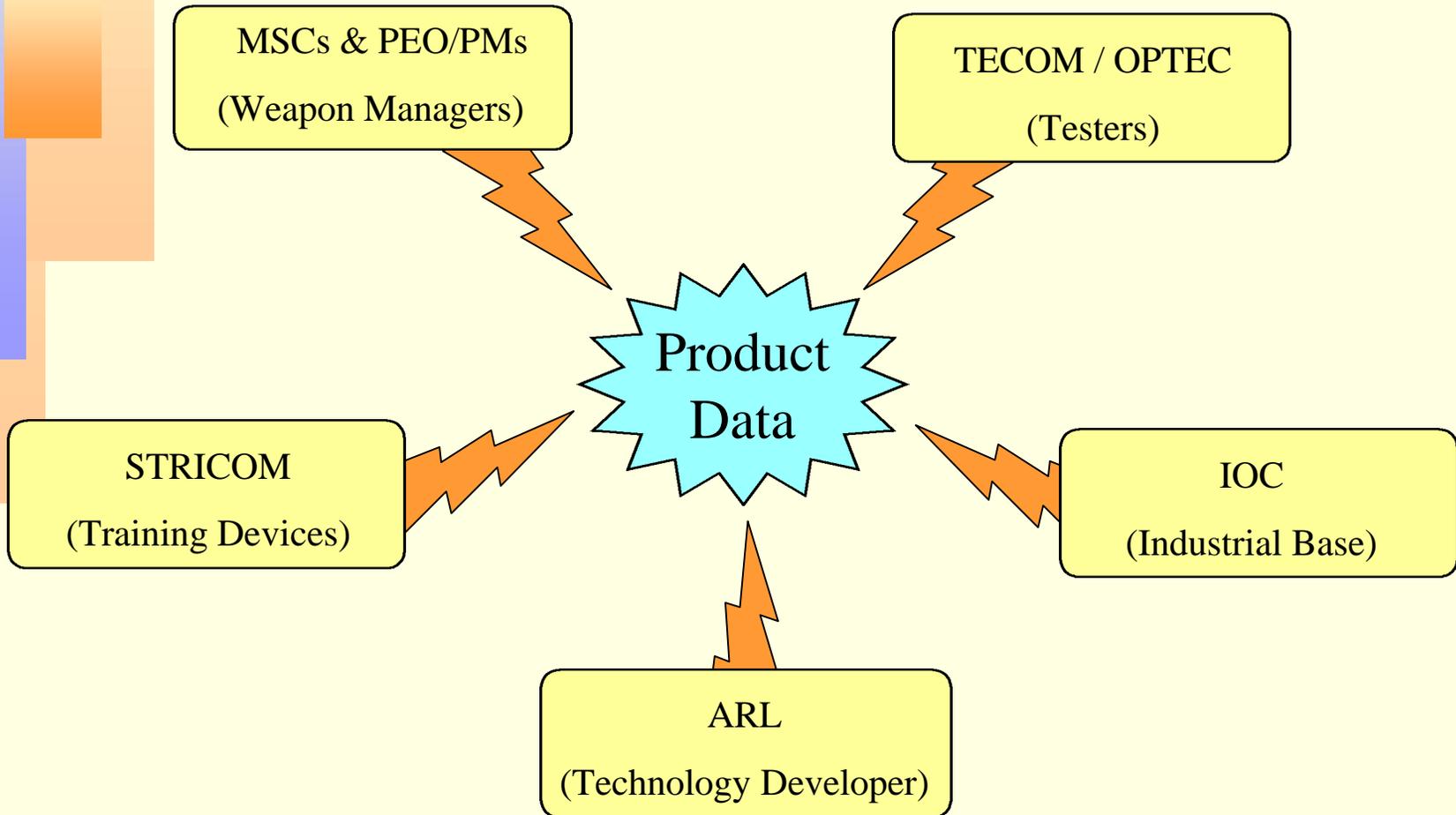
Facts

- 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, public and private, must rely on other unofficial data sources to support repair and modifications
- Repetitive unique solutions are expensive and provide little interoperability

Army Interoperability Needs



Analysis

- Army does not do all aspects of CM as well as it should. Current automated system (TD/CMS) can't handle all user needs.
- Army must switch from a “drawing” to “product” perspective.
- Army must provide access to all product data required (not just the two dimensional images of record) to support a product throughout its life cycle.
- Complete life cycle access to product data is only possible if the Army practices cradle to grave configuration management of product data.

Solution

Need an automated configuration management system that:

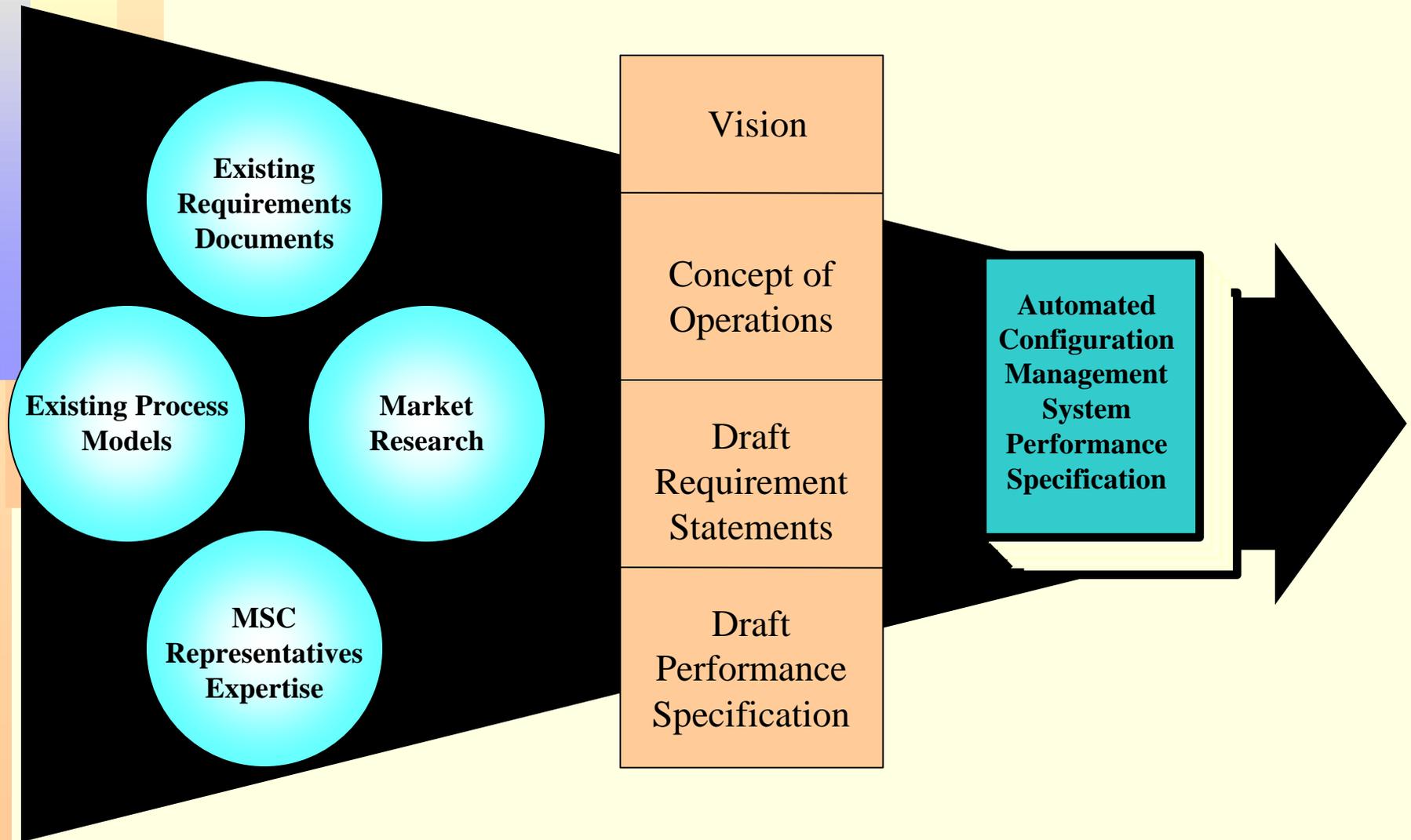
- Knows about all product related data
- Can accept and manipulate “intelligent” data and manage multiple product baselines
- Is compatible with Industry practices
- Provides a standard means for the delivery of digital product data
- Supports Acquisition Reform objectives
- Allows for interoperability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

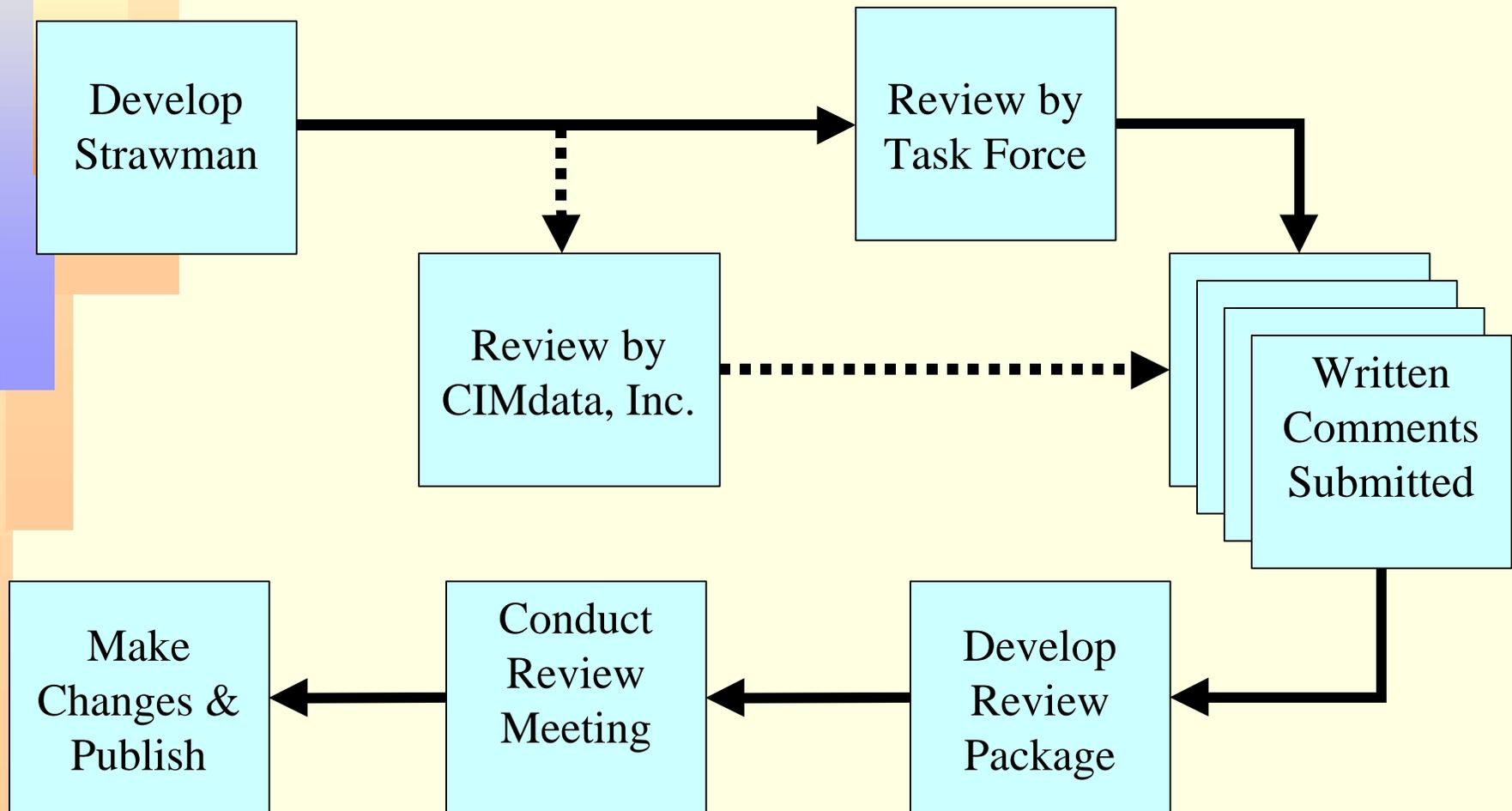
PDM Benefits

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 Task Force Review Process



CIMdata, Inc. Input

- Verified that our vision is consistent with the direction the PDM vendor community is moving
- Cautioned us that if we were truly serious about reaching our vision, we must limit the amount of tailoring of the specification that would be allowed
- Helped us identify the requirements that are not attainable with today's PDM systems
- Stated that, in the near term, the best chance of achieving the level of interoperability envisioned is to use same product at all sites



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.



Required Data

Required data is all product data, consisting of documents and metadata, required to specify, design, analyze, manufacture, maintain, sustain, test, inspect and dispose of the product over its entire life cycle.

Documents

- Drawings
- Reports
- Databases
- Application software
- Engineering designs
- etc.

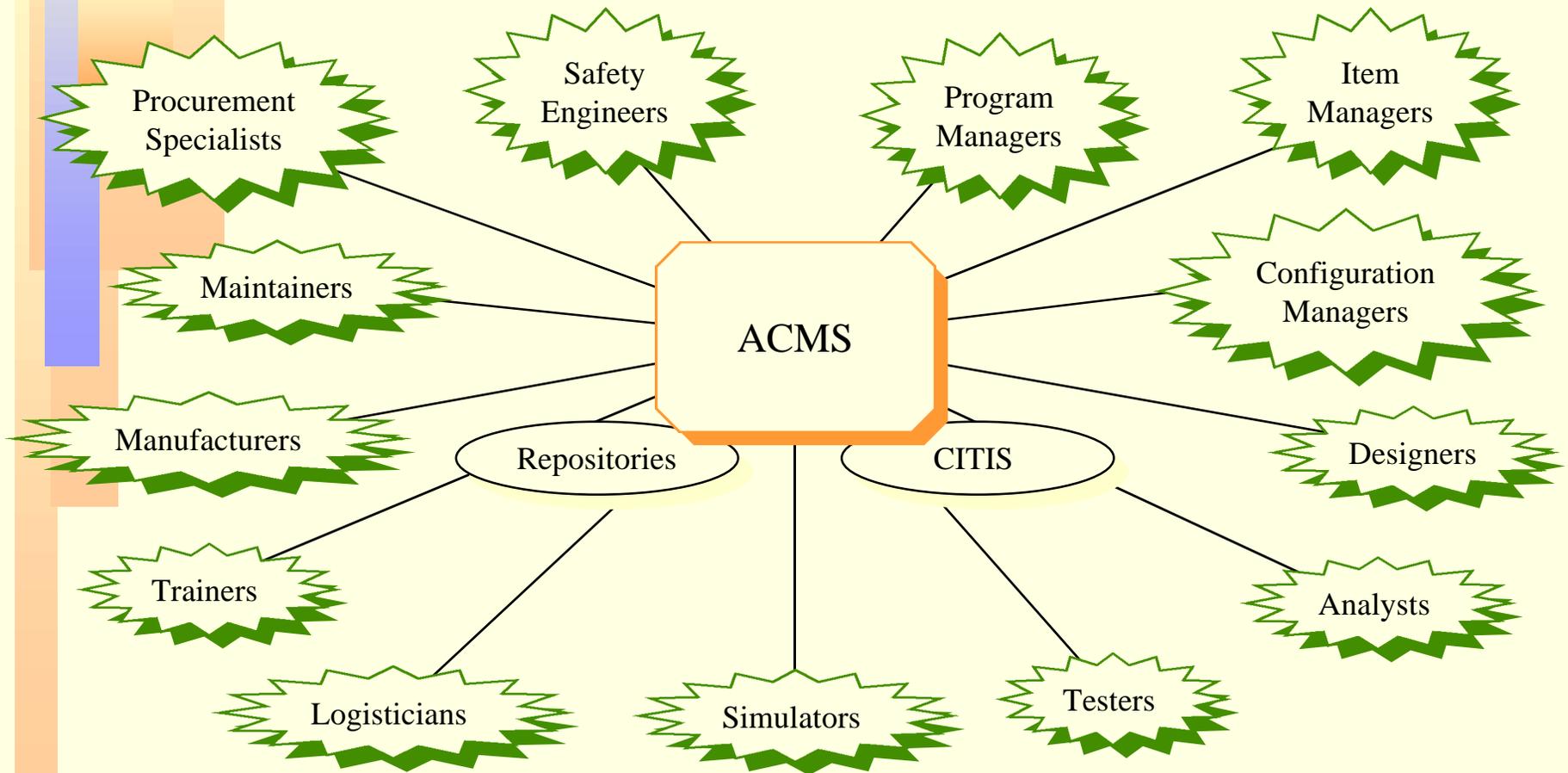
Metadata

(data about the documents)

- Identifier
- Document location
- Revision level
- Owner
- Author
- Relationship to products
- Relationship to other documents
- etc.



ACMS User Communities



Performance Specification

- Defines functional requirements
- Follows industry direction of “product focus” vs “document focus”
- Prepared by the CM experts within Army
- Suitable for evaluation and procurement of a Product Data and Configuration Management system
- Enables interoperability and standardization among Army organizations



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
 - Perform market analysis and develop implementation recommendations
 - Procure and install hardware and software and train personnel
- Seek funds to support the above

ACMS Performance Specification

- Publish as an Army specification with limited coordination
 - AMCOM will be the preparing activity
 - AMSAA will be the agent
- Forward to DoD for their consideration to publish as a DOD specification
- Issue an Army policy statement that would require any new configuration management, data management or PDM related acquisition comply with the specification



Build Support

■ Already Briefed

- Army Paperless Office IPT
- Army Information Management Users Conference
- IOC/ACALA Acquisition Reform Day
- JEDMICS Users' Meeting
- Logistics Community Manager
- Logistics Systems Re-Invention Office
- ADCS for RDA, Science and Technology, HQ AMC
- DCS for RDA, AMC

■ Plan to Brief

- AMC Principle Deputies for Acquisition and Logistics
- AMC Executive Steering Committee
- Logistics Information Board
- DUSD (L) /LR&M), Mark Adams



Market Analysis

- Use a contractor to perform analysis
 - Select a system integrator not a PDM vendor
 - Conduct site surveys
 - Evaluate the necessity of using multiple instances of a single PDM product
 - Recommend products and deployment strategies and plans
 - Provide testbed for Army evaluation of contractor recommendations
- AMC to charter an IPT
 - Solicit members from the EDMS FCG, EDMS PMO to chair
 - Prepare scope of work
 - Conduct IPRs
 - Perform Army evaluation of contractor recommendations
 - Recommend Army Implementation plans to HQ AMC



For Additional Information

Visit the ACMS Web page

www-iaa.ria.army.mil/ai/eng_data/acms/acms_frameset1.html

Better! Faster! Cheaper!