

The Modeling and Simulation Catalog for Discovery, Knowledge, and Reuse



Stephen Hunt

OSD CAPE Joint Data Support (SAIC)

Stephen.Hunt.ctr@osd.mil

The DoD Office of Security Review has cleared this report for public release (Distribution A) (Case No. 11-S-0097)

<https://MSCatalog.osd.mil>



- Visibility
- Net-centric Vision
- Discovery Process
- Metadata
- M&S Catalog
- Roles
- Benefits
 - ✓ Challenges
 - ✓ Motivations
- Participation
- Next steps



- **Visibility**
- Net-centric Vision
- Discovery Process
- Metadata
- M&S Catalog
- Roles
- Benefits
 - ✓ Challenges
 - ✓ Motivations
- Participation
- Next steps

The Goal: Visibility Across M&S Supported Communities

Visibility: Provide the capability to discover modeling and simulation resources (tools, data, and services) across DoD.

- Corporate visibility of DoD M&S resources enables reuse, improves efficiency, and helps identify high priority research areas
- More specifically, it will help us identify:
 - The M&S tools in use or in development in DoD
 - The degree to which a tool is generally accepted
 - The availability of data for existing M&S tools
 - The experts in particular tools, techniques or functional areas

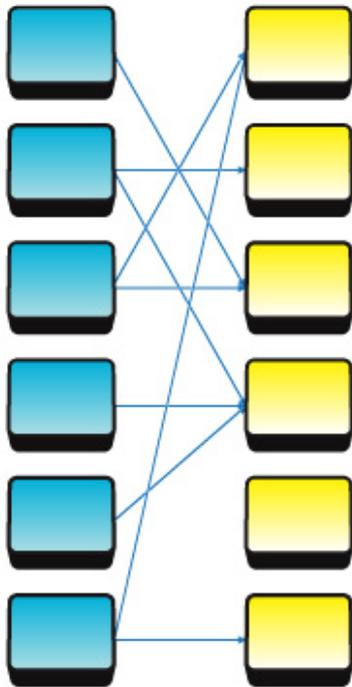


- Visibility
- Net-centric Vision
- Discovery Process
- Metadata
- M&S Catalog
- Roles
- Benefits
 - ✓ Challenges
 - ✓ Motivations
- Participation
- Next steps

Net-centric Vision

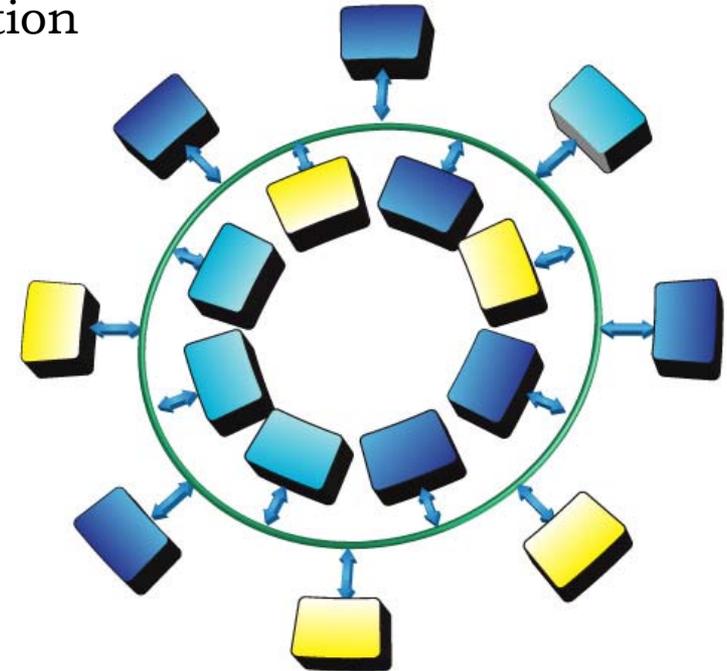
Before

- Pre-determined “point to point” connections within systems and applications on disparate networks
- Producer “pushes” information to predefined consumers



After

- Systems and applications are web-service enabled to expose their information
- Authorized known & unanticipated consumers “pull” or “subscribe to” what they need regardless of who produced the information



But how do you find it?

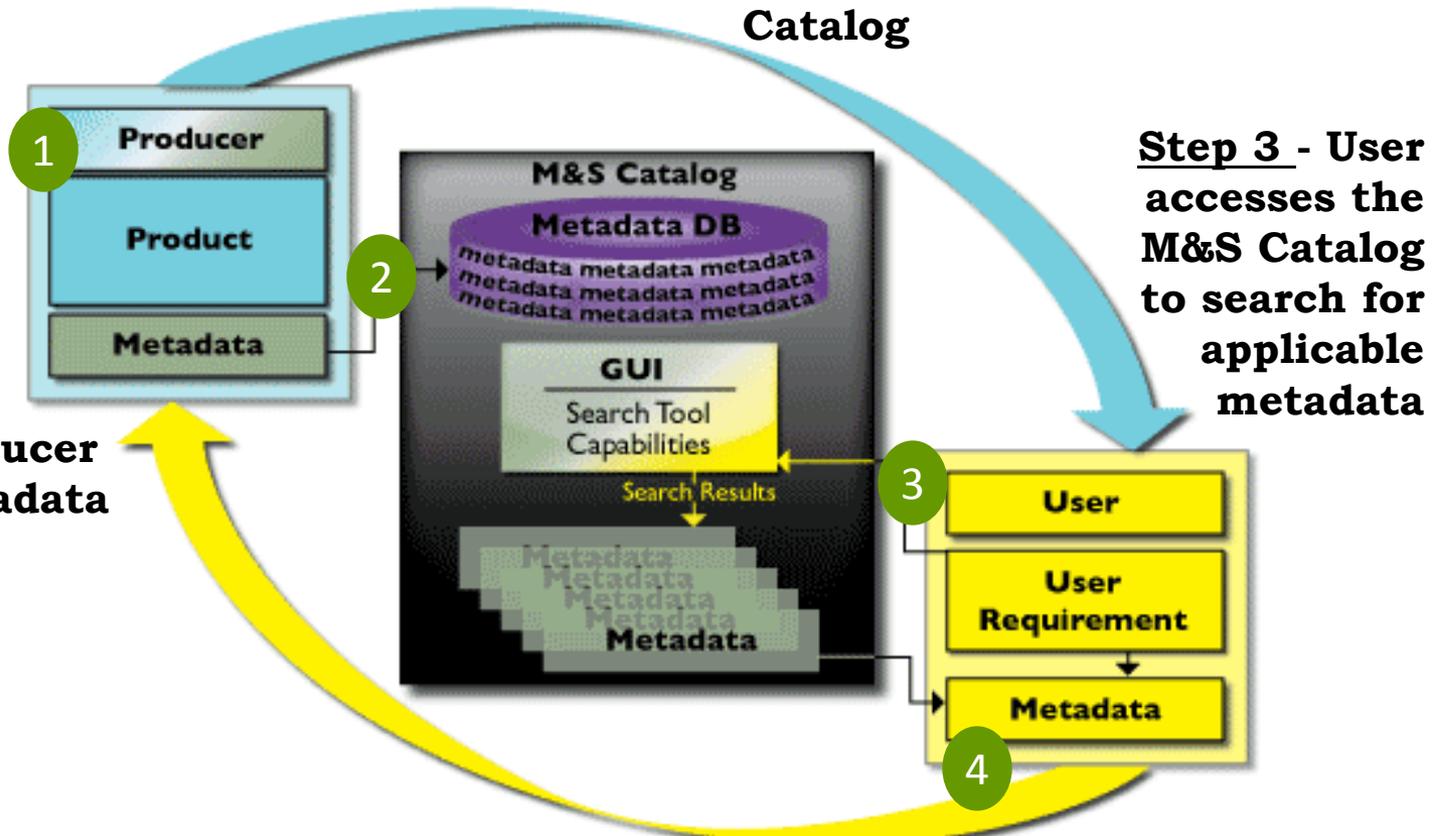


- Visibility
- Net-centric Vision
- **Discovery Process**
- Metadata
- M&S Catalog
- Roles
- Benefits
 - ✓ Challenges
 - ✓ Motivations
- Participation
- Next steps

Discovery Process



Step 2 - Producer makes metadata electronically accessible to M&S Catalog



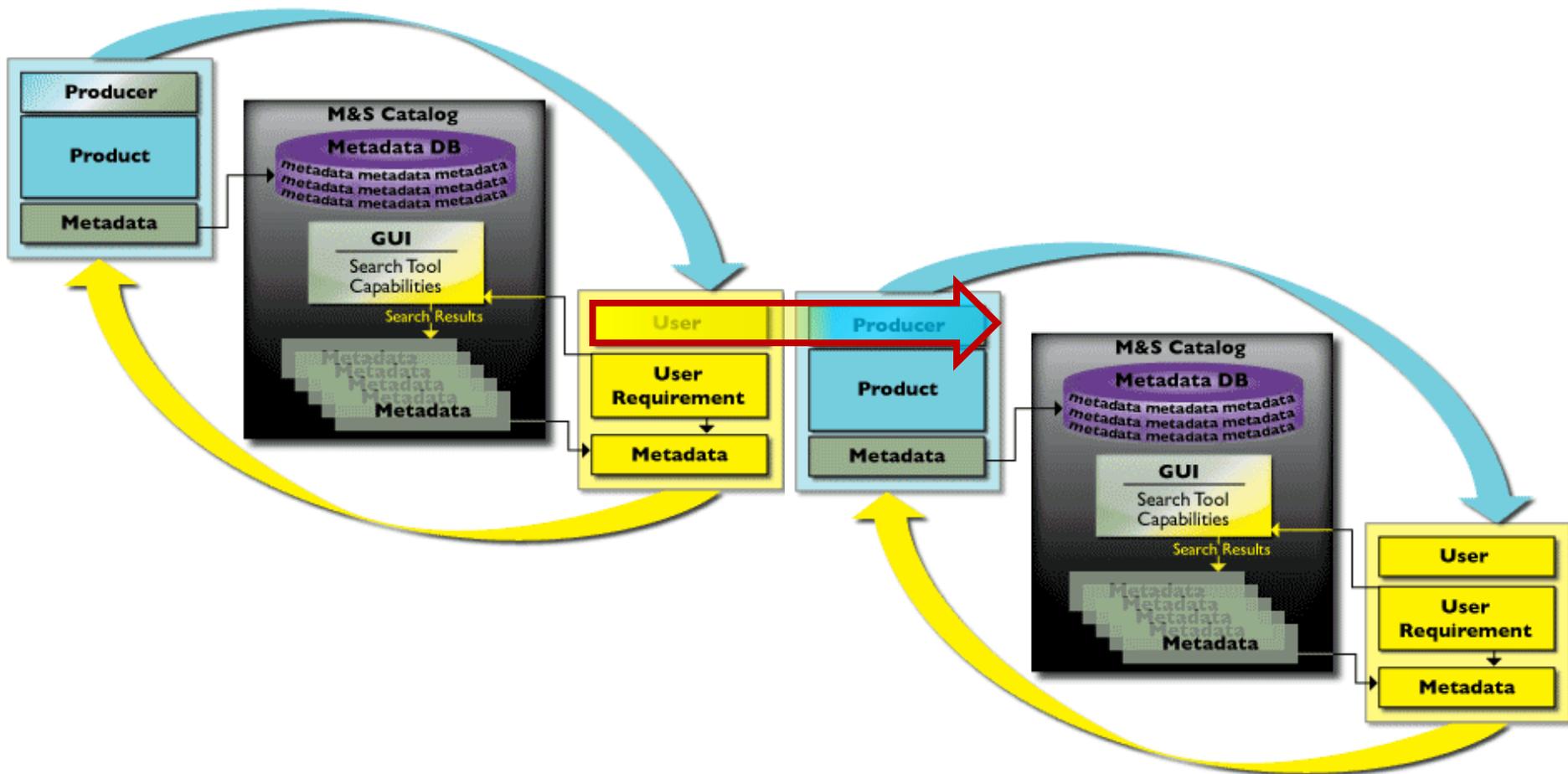
Step 1 - Producer creates metadata with all new products

Step 3 - User accesses the M&S Catalog to search for applicable metadata

Step 4 - User reviews resulting metadata in order to find the optimum product to meet requirements

User gains visibility into available resources to select best product and gains access to the product that best fulfills needs

Discovery Circle of life

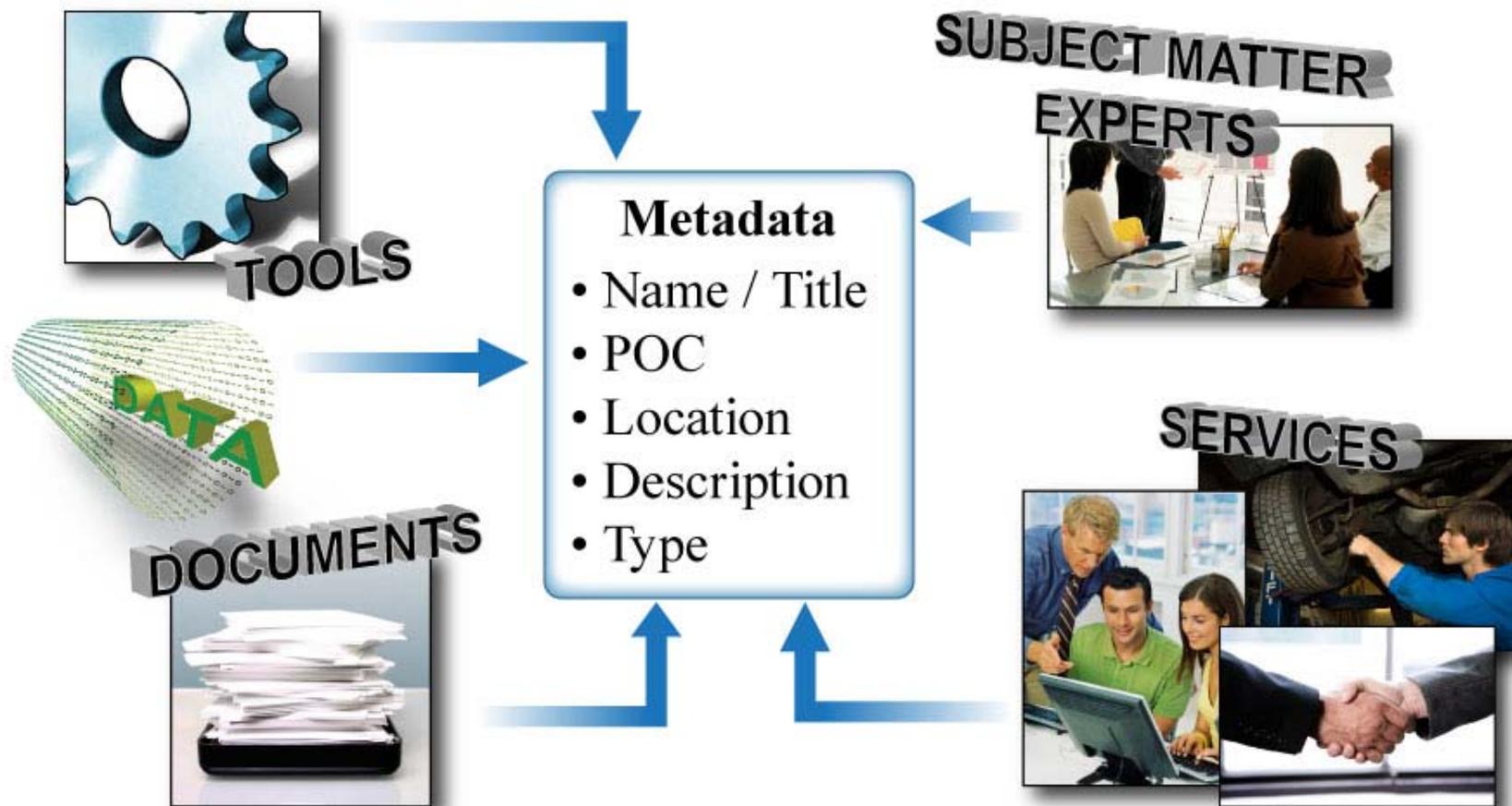


Users find products to complete their projects which becomes a new product to be advertised via the discovery process



- Visibility
- Net-centric Vision
- Discovery Process
- **Metadata**
- M&S Catalog
- Roles
- Benefits
 - ✓ Challenges
 - ✓ Motivations
- Participation
- Next steps

Metadata is life blood of Discovery



**Standardized metadata specifications:
DoD Discovery Metadata Spec (DDMS)
Communities of Interest DMS**

Metadata is not new



- Author
- Title
- Subject
- Category
- Kind of literature
- Edition



973.9
Bur

What Ever Happened To The American Dream
Burkett, Larry
What Ever Happened To The American Dream
Moody Press / Chicago, IL, c1993
297 p. ; 24 cm.

ISBN 0802471757
Our founding fathers envisioned it as one of life, liberty, and the pursuit of happiness, as well as freedom to build a better future for one's family...

4

1. Economy, U.S 2. Finances (Money, Economics, Investments) I. Title

Keywords

Multiple Catalogs to search on different elements

973.9
Bur

Burkett, Larry
What Ever Happened To The American Dream
Moody Press / Chicago, IL, c1993
297 p. ; 24 cm.

ISBN 0802471757
Our founding fathers envisioned it as one of life, liberty, and the pursuit of happiness, as well as freedom to build a better future for one's family...

4

1. Economy, U.S 2. Finances (Money, Economics, Investments) I. Title

FINANCES (MONEY, ECONOMICS, INVESTMENTS)
Burkett, Larry
What Ever Happened To The American Dream
Moody Press / Chicago, IL, c1993
297 p. ; 24 cm.

ISBN 0802471757
Our founding fathers envisioned it as one of life, liberty, and the pursuit of happiness, as well as freedom to build a better future for one's family...

4

1. Economy, U.S 2. Finances (Money, Economics, Investments) I. Title

973.9
Bur

Burkett, Larry
What Ever Happened To The American Dream
Moody Press / Chicago, IL, c1993
297 p. ; 24 cm.

Media Type: Book, Hardback
ISBN 0802471757
LOCN 94108139
Published: 1993 \$17.99

4

1. Economy, U.S 2. Finances (Money, Economics, Investments) I. Title

ECONOMY, U.S
Burkett, Larry
What Ever Happened To The American Dream
Moody Press / Chicago, IL, c1993
297 p. ; 24 cm.

ISBN 0802471757
Our founding fathers envisioned it as one of life, liberty, and the pursuit of happiness, as well as freedom to build a better future for one's family...

4

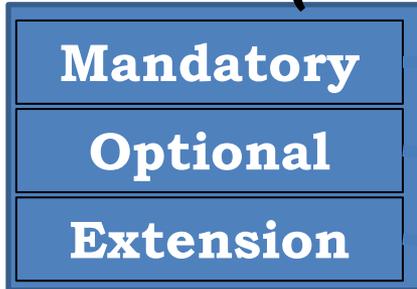
1. Economy, U.S 2. Finances (Money, Economics, Investments) I. Title

New technology enables easier access to metadata

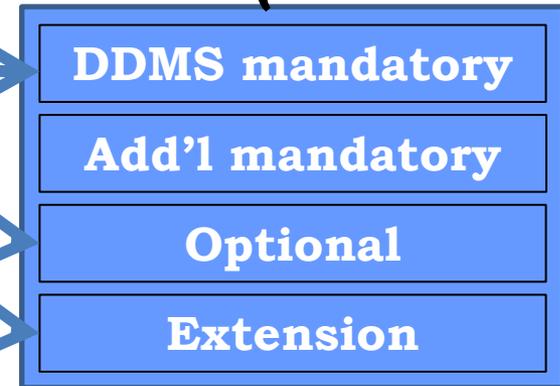
M&S COI Discovery Metadata Schema (MSC-DMS) Elements



DoD Discovery Metadata (DDMS)



M&S COI Discovery Metadata (MSC-DMS)



Applicable metadata elements

M&S Community tailored DMS founded on DDMS

Mandatory

- ✓ Title
- ✓ Type product
- ✓ Description
- ✓ Date of product
- ✓ Version
- ✓ Releaseability
- ✓ POC (Person)
- ✓ POC (Organization)
- ✓ Key words

Optional

- Acronym
- Document number
- Classification
- Associations
 - Studies
 - Tools
- Usages / purpose
- Media format
- Time period

Extensions

- Temporal Coverage
- Geospatial Coverage
- HLA Coverage
- Configuration Management
- VV&A Coverage



- Visibility
- Net-centric Vision
- Discovery Process
- Metadata
- **M&S Catalog**
- Roles
- Benefits
 - ✓ Challenges
 - ✓ Motivations
- Participation
- Next steps

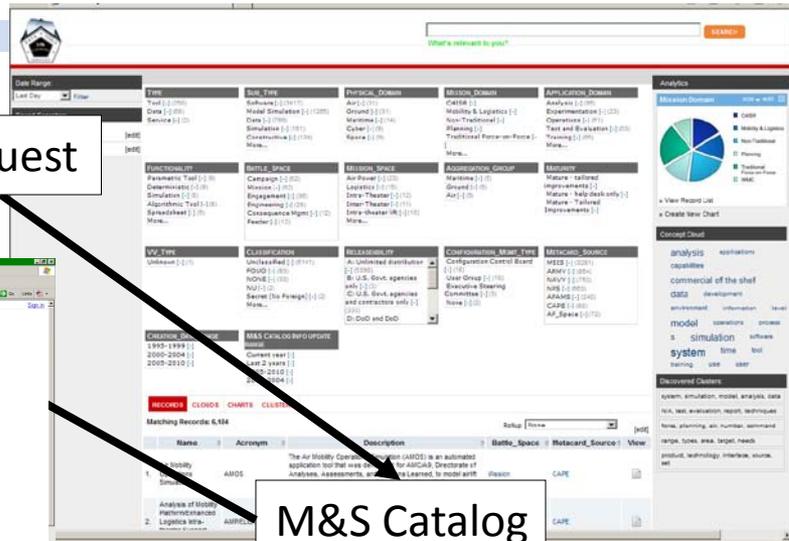
M&S Catalog Overview



Request

Response

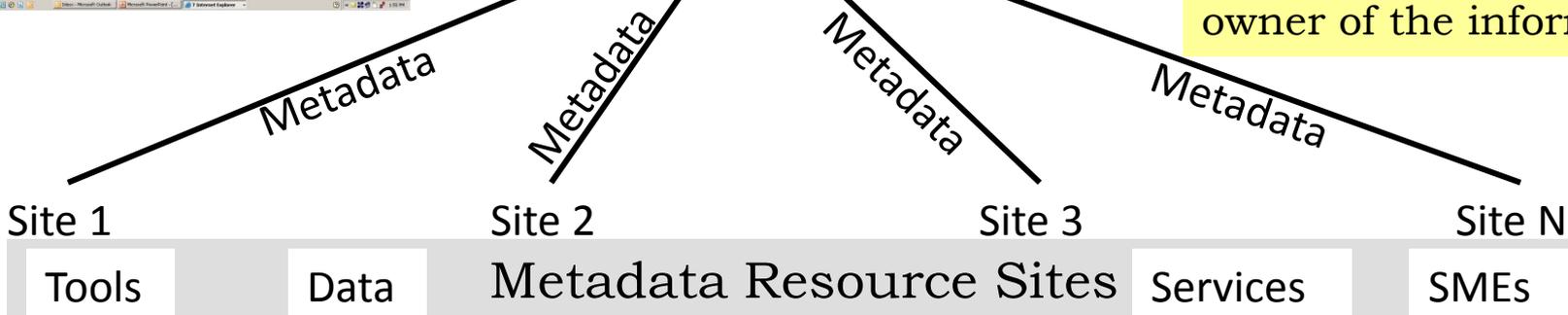
- ✓ User guided result format
- ✓ Card catalog
- ✓ Analysis tools
- ✓ Save search criteria



M&S Catalog

- Key word search
- Faceted search
- Dynamic theme clouds
- Taxonomy driven
- Product related forum
- User product ranking
- Crawled website search

Minimize duplication and maximize currency by accessing sites as close as possible to the owner of the information



M&S Catalog can only find information that is made available online

M&S Catalog Home Page



M&S CATALOG

Links

- [What is the M&S Catalog?](#)
- [Navigational search](#)
- [Metadata Collection Tool](#)
- [What the M&S Catalog is not!](#)
- [Add your products to the M&S Catalog](#)
- [References](#)
- [Contact us](#)



**Launch
M&S Catalog**

What is the M&S Catalog

Why the M&S Catalog?

One of the goals of the DoD Net-centric Vision is establishing visibility into the M&S resources across the DoD enterprise. In order to manage and employ Modeling & Simulation (M&S) capabilities effectively senior leaders and managers must have visibility into the DoD's M&S portfolio. Organizations supported by M&S need visibility into the tools, data and services that meet their requirements. This visibility is established through a discovery process that has at its core a search capability. The DoD M&S Steering Committee has commissioned the creation of the M&S Catalog to establish a web-based search capability that provides a "card catalog" level of detail about M&S tools, data and services.

What is the M&S Catalog?

The M&S Catalog is designed to intuitively and effectively guide a user quickly to a manageable set of alternatives to evaluate. Additionally, in response to the request of senior level managers, the tool will have the capability to perform analysis of the characteristics of the search result set of resources. This effort leverages the DoD Net-centric Vision of all resource descriptions and contact information (metadata) being posted in a defined format on the Global Information Grid (GIG). The M&S Catalog can load data from multiple file types as long as the format is known and specifies the metadata elements. Coordination between source sites and the M&S Catalog ensure the metadata is only accessible to authorized users.

Add your metadata

A significant effort is being under taken to encourage organizations across the DoD enterprise to integrate the information about their products with the M&S Catalog. Metadata can be accepted from a collection such as a service M&S Resource Repository (MSRR) or directly from the manger of a product. The vision is to interface as close to the origin of the metadata as possible so that the motivation to keep it current is high.

Benefits

The resulting visibility into the M&S world will provide significant benefits throughout DoD. Resource owners can use the catalog to maintain their own inventories as well as identify new customers. Resource seekers can rapidly find what they need and identify potential cost avoidances by learning of existing efforts. The department will achieve better resource management by ensuring resources are not applied to create existing capabilities, but instead focus on those areas where capabilities are lacking.

M&S Catalog Search



SEARCH

What's relevant to you?

Date Range:

Last Day

Saved Searches:

live fire test

random save

Save Current Search

TYPE	SUB_TYPE	PHYSICAL_DOMAIN	MISSION_DOMAIN	APPLICATION_DOMAIN
Tool [-] (250) Data [-] (98) Service [-] (2)	Software [-] (3417) Model Simulation [-] (1366) Data [-] (788) Simulation [-] (181) Constructive [-] (124) More...	Air [-] (31) Ground [-] (31) Maritime [-] (14) Cyber [-] (8) Space [-] (8)	C4ISR [-] Mobility & Logistics [-] Non-Traditional [-] Planning [-] Traditional Force-air-Force [-] More...	Analysis [-] (98) Experimentation [-] (23) Operations [-] (81) Test and Evaluation [-] (83) Training [-] (55) More...
FUNCTIONALITY	BATTLE_SPACE	MISSION_SPACE	AGGREGATION_GROUP	MATURITY
Parametric Tool [-] (8) Deterministic [-] (8) Simulation [-] (8) Algorithmic Tool [-] (8) Spreadsheet [-] (5) More...	Campaign [-] (52) Mission [-] (52) Engagement [-] (38) Engineering [-] (23) Consequence Mgmt [-] (12) Feeder [-] (12)	Air Power [-] (23) Logistics [-] (18) Intra-Theater [-] (12) Inter-Theater [-] (11) Intra-theater Ilt [-] (10) More...	Maritime [-] (5) Ground [-] (5) Air [-] (5)	Mature - tailored improvements [-] Mature - help desk only [-] Mature - Tailored Improvements [-]
VV_TYPE	CLASSIFICATION	RELEASIBILITY	CONFIGURATION_MGMT_TYPE	METACARD_SOURCE
Unknown [-] (1)	Unclassified [-] (8141) FOUO [-] (8) NONE [-] (3) NU [-] (2) Secret (No Foreign) [-] (2) More...	A: Unlimited distribution [-] (3395) B: U.S. Govt. agencies only [-] (3) C: U.S. Govt. agencies and contractors only [-] (233) D: DoD and DoD	Configuration Control Board [-] (18) User Group [-] (10) Executive Steering Committee [-] (3) None [-] (2)	MSIS [-] (281) ARMY [-] (854) NAVY [-] (783) NPS [-] (883) AFAMG [-] (240) CAPE [-] (80) AF_Space [-] (72)
CREATION_DATE_RANGE	M&S CATALOG INFO UPDATE RANGE			
1995-1999 [-] 2000-2004 [-] 2005-2010 [-]	Current year [-] Last 2 years [-] 2005-2010 [-] 2000-2004 [-]			

Analytics

Mission Domain

View Record List

Create New Chart

Concept Cloud:

analysis capabilities commercial off the shelf data development environment information level model operations process simulation software system time tool training use user

Discovered Clusters:

system, simulation, model, analysis, data
NA, test, evaluation, report, techniques
force, planning, air, number, command
range, types, area, target, needs
product, technology, interface, source, set

RECORDS CLOUDS CHARTS CLUSTERS

Matching Records: 6,184 Rollup:

Name	Acronym	Description	Functionality	Metacard_Source	View
1 Air Mobility Operations Simulation	AMOS	The Air Mobility Operations Simulation (AMOS) is an automated application tool that was developed for AMCIAS, Directorate of Analyses, Assessments, and Lessons Learned, to model airift movement worldwide, as well as air refueling activity necessary to		CAPE	
2 Analysis of Mobility Platform/Enhanced Logistics Intra-Theater Support	AMPELST	Enhanced Logistics Intra-theater Support Tool (ELIST) simulates the deployment of forces into a theater using a detailed model of sea and airports, staging bases, assembly areas, roadways, rail		CAPE	

17

M&S Catalog Search

Maritime Selected



within results
 SEARCH

Your Search:

Physical_Domain: Maritime

Remove All

Date Range:

Last Day

Saved Searches:

live fire test

random save

MISSION DOMAIN	FUNCTIONALITY	BATTLE_SPACE	MISSION_SPACE	AGGREGATION_GROUP
C4ISR [-] (1) Mobility & Logistics [-] Non-Traditional [-] Planning [-] Traditional Force-on-Force [-] More...	Parametric Tool [-] (3) Simulation [-] (3) Deterministic [-] (3) Algorithmic Tool [-] (3) Virtual [-] (2) More...	Campaigns [-] (11) Mission [-] (2) Feeder [-] (1)	Maritime [-] (13) Air Power [-] (11) Maritime Warfare [-] (10) Air Warfare [-] (8) Ground [-] (3) More...	Maritime [-] (3) Ground [-] (3) Air [-] (3)
MATURITY	RELEASEABILITY	CONFIGURATION_MGMT_Type	M&S CATALOG INFO UPDATE RANGE	
Mature - Tailored Improvements [-] Mature - help desk only [-]	C: U.S. Govt. agencies and contractors only [-] (12) D: DoD and DoD contractors only [-] (1) X: Those eligible to obtain export-controlled technical data [-] (1)	Configuration Control Board [-] (5) User Group [-] (3) Executive Steering Committee [-] (1)	Last 2 years [-] 2005-2010 [-]	

Analytics

Mission Domain view | edit

Concept Cloud:

air analysis
 assessment deployment
 development effectiveness
 force issues Lessons Learned
 level model operations
 SEAS simulation
 strategies support system
 systems theater tool

Discovered Clusters:

simulation, assessment, model, level, air
 SEAS, capability, environment, interactive, warfare
 issues, systems, Lessons Learned, spec, auspice
 planning, power
 framework, doctrine

RECORDS
CLOUDS
CHARTS
CLUSTERS

Matching Records: 14 Rollup: None

Name	Acronym	Description	Functionality	Metacard_Source	View
1 Analysis of Mobility Platform/Model for Inter-theater Deployment by Air and Sea (MDAS)	AMR/MDAS	Model for inter-theater Deployment by Air and Sea (MDAS) is an end-to-end scheduling and simulation tool for strategic deployment scenarios and is designed to measure the capability of a given set of strategic transportation assets to deploy specified	Algorithmic Tool	CAPE	<input type="button" value="View"/>
2 Aerial Port of Debarment	AMR-PAT	The Aerial Port of Debarment (APOD) model provides a high resolution depiction of infrastructure, material handling equipment, aircraft density, etc., interaction and assessment of selected Airport capabilities. This model is used for both deliber	Simulation	CAPE	<input type="button" value="View"/>
3 Joint Analysis System	JAS	The Joint Analysis System (JAS) is a C4ISR-centric, joint regional (campaign-level) model with integrated Strategic Mobility, Theater Logistics, and Joint Operations encompassing a broad range of military operations (ROMO). JAS is designed to support b		CAPE	<input type="button" value="View"/>
4 Effectiveness of Psychological Influence Calculator	EPIC	EPIC provides an analytical tool for forecasting the effectiveness of PSYOP strategies. EPIC is based on the initial analytical framework provided by the PSYOP JMEM Functional Area Working Group, and grounded in PSYOP doctrine. EPIC evaluates PSYOP prod	Algorithmic Tool	CAPE	<input type="button" value="View"/>
5 Joint Semi-Automated Forces	JSAF	Joint Semi-Automated Forces (JSAF) is a simulation system sponsored by U.S. Joint Forces Command's (USJFCOM) Joint Concept Development and Experimentation Directorate (JCED). The system generates entity-level simulations which interact individually in		CAPE	<input type="button" value="View"/>
		The Joint Theater Level Simulation (JTLS) system is an			

M&S Catalog Search

Additional Features



M&S CATALOG INFO UPDATE

1993-1999 [1] | Current year [1] |
 2000-2004 [1] | Last 2 years [1] |
 2005-2010 [1] | 2005-2004 [1]

RECORDS CLOUDS CHARTS CLUSTERS

Matching Records: 14

Maturity vs Capabilities

Functionality

M&S CATALOG INFO UPDATE

1993-1999 [1] | Current year [1] |
 2000-2004 [1] | Last 2 years [1] |
 2005-2010 [1] | 2005-2004 [1]

RECORDS CLOUDS CHARTS CLUSTERS

Matching Records: 14

air analysis

Assessments, development, effectiveness, force, issues, Lessons Learned, level, model, operations, s, SEAS, simulation, strategies, support, system, systems, theater, tool

simulation, assessment, model, level, air

SEAS, capability, environment, interactive, warfare

issues, systems, Lessons Learned, space, auspicus

planning, power

framework, doctrine

Year Search

Physical Domain: Maritime, Air, Land, Sea, Space, Submarine, Undersea, etc.

RECORDS CLOUDS CHARTS CLUSTERS

Matching Records: 14

simulation, assessment, model, level, air

SEAS, capability, environment, interactive, warfare

issues, systems, Lessons Learned, space, auspicus

planning, power

framework, doctrine

Edit Columns - Windows Internet Explorer

Title: Domain

Column number: 4

Width (%): 7

Alignment: Left, Center, Right

Acronym	Name	Description	Domain	Capabilities	View
JTL	Joint Theater Level Simulation	The Joint Theater Level Simulation (JTL) system is an interactive, multi-sided wargaming system that models air, land, and sea operations in a virtual environment.	Mobility, Air Warfare		
OCAM	Operational Campaign Analysis Model	OCAM is a PC-based modeling environment for development of object-oriented, stochastic simulation models tailored for analysis of particular scenarios, operations and issues. The level of resolution, data structures, input requirements, and outputs are user-definable.	Air Warfare		
ITEM	Integrated Theater Engagement Model	Used to model engagements between platforms in support of analysis. Integrated Theater Engagement Model (ITEM) gives representation sufficient to conduct AGS Assessments and EBI analyses. It is a campaign-level model used in the joint area for strategy.	CASR, Air To Air		
GRANT	GRANT		Planning	Air To Ground	
JAS	Joint Analysis System	The Joint Analysis System (JAS) is a CASR-centric, joint regional (campaign-level) model with integrated Strategic Mobility, Theater Logistics, and Joint Operations encompassing a broad range of military operations (COMO). JAS is designed to support...	CASR	Air Warfare	
NSS	Naval Simulation System	Naval Simulation System (NSS) is a multi-sided, multi-warfare, object oriented, Monte Carlo warlike simulation intended primarily for use by 31 operational planners and decision makers in CASR.	CASR	Air Warfare	



- Visibility
- Net-centric Vision
- Discovery Process
- Metadata
- M&S Catalog
- **Roles**
- Benefits
 - ✓ Challenges
 - ✓ Motivations
- Participation
- Next steps

Your Roles may be...



- **Senior Leader (Producer & User)**
 - Support the establishment and accessibility of metadata for all of your organization's products
 - Utilize the Catalog to support the management of your M&S resources
- **Producer** – provide asset metadata to the M&S Catalog
 - Make your data available to others to reuse or refine
 - Provide a mechanism to document and manage your own M&S resources
- **User** – provide feedback on content and usability
 - Identify the cost avoidance associated with Catalog use
 - Identify desired features and new sources
- **IT technician**
 - Comply with standards and schemas
 - Establish electronic connectivity between metadata & M&S Catalog
- **All M&S Practitioners** – help get the word out
 - Highlight the advantages of Catalog use in reports and briefings
 - Participate in professional meetings that address technology initiatives to improve the state of M&S



- Visibility
- Net-centric Vision
- Discovery Process
- Metadata
- M&S Catalog
- Roles
- **Benefits**
 - ✓ Challenges
 - ✓ Motivations
- Participation
- Next steps



Producers

- Enable interoperability of tools and data formats & methods
- Establish authoritative standing
- More users of their product
- Greater benefit on investment to DoD

Users – Leadership & analyst / technician

- Improved management of M&S resources across the enterprise
- Rapid access to needed data, tools or services
- Reduced costs & time in fulfilling requirements
- Being able to reuse and build on existing vetted products

Technical

- Common discovery metadata schema
- COTS upload all file formats
- Web-based enables access
- Ability to accept metadata push enables network protections



Who / What / Where / How ?

- Who is responsible for overseeing metadata creation or accuracy?
- What is motivation to create & maintain metadata?
- Where to put metadata?
- How to fund a search tool that supports all?
- How to create metadata in specific formats?
- How to describe that special something in metadata schema?
- How will the metadata be used by others?

Sharing vs. Security

- Information Assurance (IA)
 - Firewalls, PKI certificates, Separation of public from private
- Personally Identifiable Information (PII)
- Aggregation of unclassified information can reveal classified info.

Motivation to Contribute



Top Down

- Leadership establish priority on creation, maintenance and sharing metadata
- Leadership resource level of effort and metadata creation, maintenance and sharing mechanism
- Inclusion of metadata in all deliverable
- Use of M&S Catalog Analytics to manage organizational products

Bottom up

- Increased visibility into products
- Increased users for product
 - Justification for funding
- Commenting and ranking along with user list provide pedigree
- Top ranking may lead to becoming authoritative source

Enabling

- Tools to minimize level of effort in creating, maintaining and sharing metadata



- Visibility
- Net-centric Vision
- Discovery Process
- Metadata
- M&S Catalog
- Roles
- Benefits
 - ✓ Challenges
 - ✓ Motivations
- **Participation**
- Next steps

Your Participation Tasks



Producers

- Determine what products are to be advertised
- Integrate metadata with a discovery service (e.g., M&S Catalog)

Users – Leadership & analyst / technician

- Provide input into metadata format and taxonomy
- Encourage participation by producers

Technical

- Develop tools to automate metadata creation and integration
- Map metadata format to DoD metadata or COI specifications

Entire discovery process and net-centric vision is dependent on the creation of & access to metadata

Where we are now- Integrated Metadata Source Sites

(over 6184 records – 6085 unique tools)



Major Sources

of records

Original
3

AF MSRR	240
Navy MSRR	753
CAPE JDS	80
AF SPC SARP	72
ARMY MSRR	864
DoD MSIS	3,281
NAVAIR MFS	53
Navy METOC OAML	61
NPS MOVES	663
PEO IWS	83

Potential New Source Sites

- In process of integration
 - USAF Logistics M&S
- Expressed interest
 - Army Electronic Proving Ground (ATEC)
 - Test and Training Enabling Architecture (TENA) Repository
 - USAF ASC/XRA-SIMAF (EAAGLES)
 - USMC PM TRASYS
 - NRL (interactive scenario builders)
 - Naval Air Warfare Center Training Sys Div (Submarine training group)
 - Los Alamos National Labs

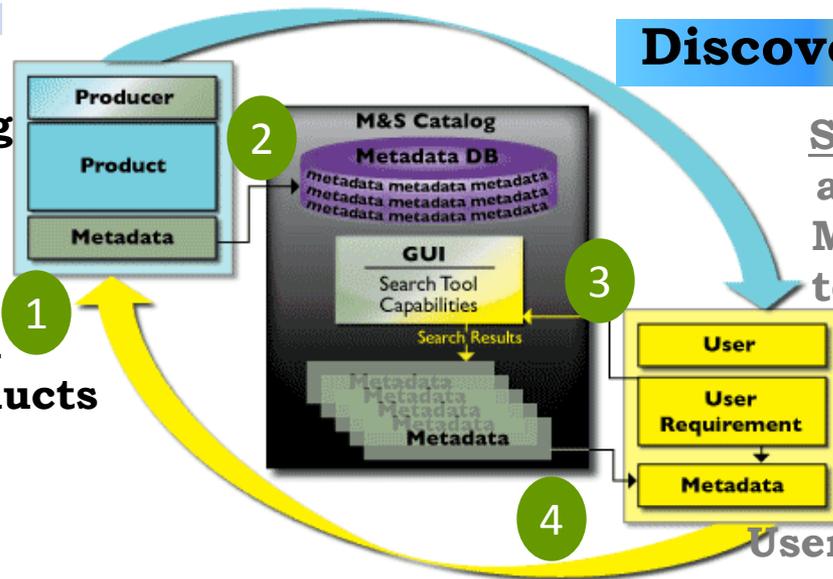
Can we add your organization's or activity's name to this list?

M&S Catalog Source Integration



Step 2 - Producer makes metadata electronically accessible to M&S Catalog

Step 1 - Producer creates metadata with all new products



Discovery Process

Step 3 - User accesses the M&S Catalog to search for applicable metadata

Step 4 - User reviews resulting metadata in order to find the optimum product to meet requirements

Organizational tasks to integrate in M&S Catalog:

1. Determine products to include in M&S Catalog
2. Develop or locate metadata for those products
3. Establish metadata in electronically accessible location
4. Integrate metadata location with M&S Catalog
 - a. Map metadata to M&S Catalog data model
 - b. Complete Data Exchange Agreement
5. Establish business model ensuring metadata accuracy and currency



- Visibility
- Net-centric Vision
- Discovery Process
- Metadata
- M&S Catalog
- Roles
- Benefits
 - ✓ Challenges
 - ✓ Motivations
- Participation
- Next steps



Outreach

- Reaching out to interested source organizations
- Plan and conduct outreach to users

Improvements

- Integrate metadata from identified accessible new sources
- Develop and improve tools to help create and transform metadata.
- Develop mechanisms to enable a web service automated upload
- Establish Web 2.0 interactive functions
- Improve web site interoperability via user feedback
- Expand management analysis capabilities

Working to minimize effort required to create metadata & integrate with M&S Catalog

31



- The DoD M&S Catalog provides a window into the department's tools, data, and services
- The Visibility Project has achieved a proof of concept and is proceeding into stable operations using a commercial search engine
- How you can help:
 - **Provide us with the organizations or departments (& POC info) that generates /should generate metadata**
 - **Send an “email of introduction”**
 - **Encourage the creation of metadata with all new products and update information on existing tools**
 - **Fund the creation and maintenance of metadata**
 - **Encourage personnel to use the M&S Catalog**
 - **Provide feedback on tool usability, analytic capabilities & faceted search selection options**

Questions??



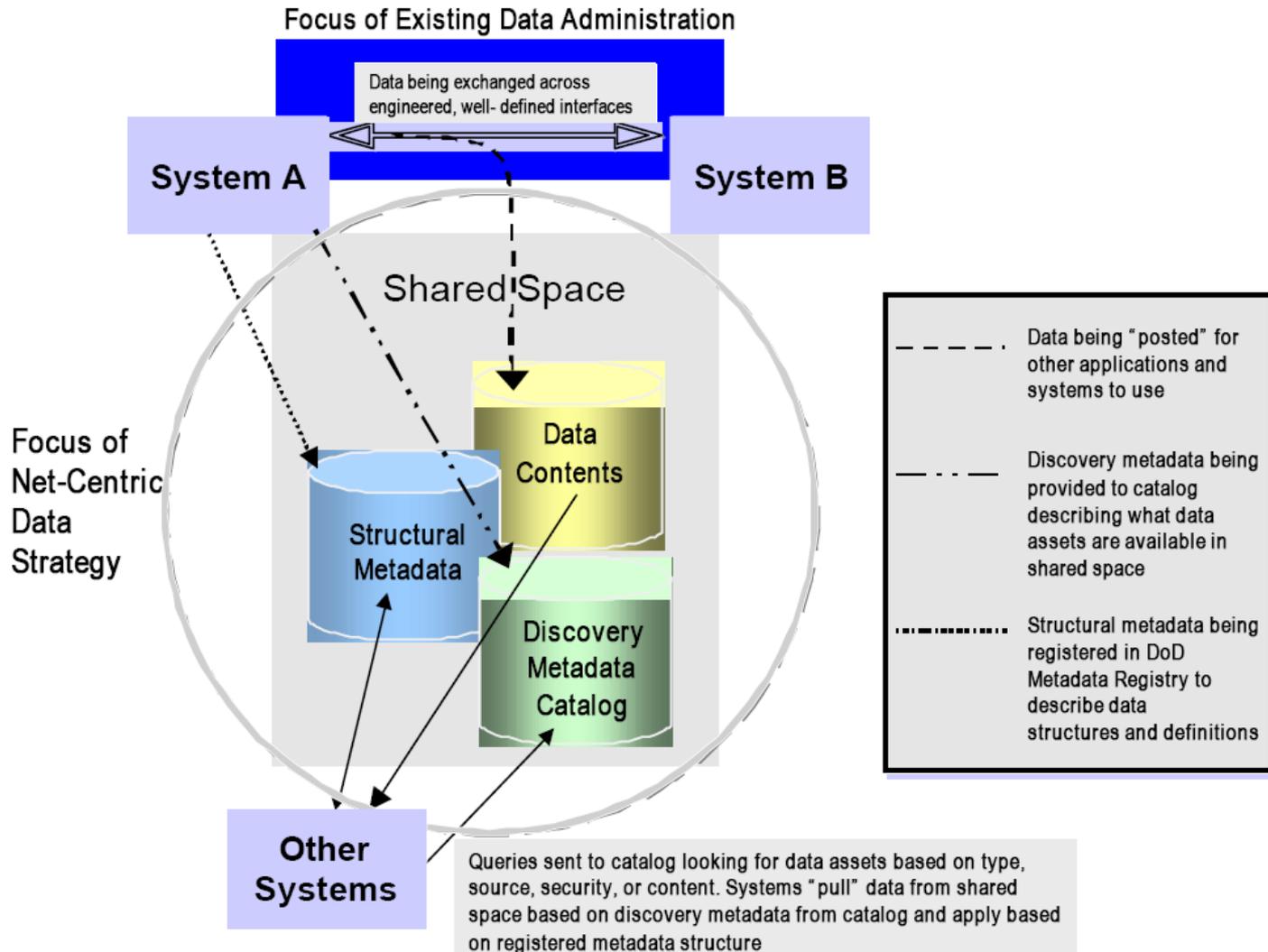
***Answers – MSCatalog@osd.mil
<https://MSCatalog.osd.mil>***

Back-up



<https://MSCatalog.osd.mil>

Figure 2. Scope of the Net-Centric Data Strategy



2.1 DOD DATA VISION

- “All data is advertised and available for users and applications when and where they need it.
- “Users and applications “tag” data assets with metadata, or data about data, to enable discovery of data. Users and applications post all data assets to “shared” space for use by the Enterprise.”

3.1.3 Create and Maintain Catalogs

- “Metadata catalogs will advertise the existence of shared data and will contain information about all data assets contained in the associated shared space (including databases, system output files, web pages, documents, and access services).”
- “COIs will establish and maintain catalogs. Each catalog may be organized according to the community-defined ontology. An Enterprise catalog will be established that links to community catalogs, effectively creating a ‘catalog of catalogs.’”

Table C2.T2. Primary Responsibilities of COIs

- Identify data assets and information sharing capabilities, both operational and developmental, that should conform to the data strategy goals of DoD Net-Centric Data Strategy.
- Identify approaches to enable those data assets and information sharing capabilities to satisfy data strategy goals and to measure the value to consumers of shared data.
- Develop and maintain semantic and structural agreements to ensure that data assets can be understood and used effectively by COI members and unanticipated users.
- Register appropriate metadata artifacts for use by the COI members and others.
- Extend the DoD Discovery Metadata Specification (DDMS) (Reference (c)) as required to ensure that COI-specific discovery metadata is understandable for enterprise searches.

2.1.2 Metadata

- Metadata can be associated with all data in the Enterprise for the purposes of “advertising” data assets for discovery
 - Metadata that describes or summarizes key attributes and concepts of a data asset are used in the discovery process
 - This “discovery” metadata allows users and applications to quickly search through a wide range of data assets to identify those assets that are most valuable to support their needs

3.1.2 Associate Discovery Metadata With Data Assets

To facilitate discovery of data assets, users and applications will provide discovery metadata, in accordance with the DoD Discovery Metadata Standard (DDMS), for all data posted to shared spaces.

3.1.3 Create and Maintain Catalogs

At a minimum, the mandatory discovery metadata elements in the DDMS must be represented within metadata catalogs for any data asset posted to a shared space.

Table C2.T2. Primary Responsibilities of COIs

- Identify data assets and information sharing capabilities, both operational and developmental, that should conform to the data strategy goals of DoD Net-Centric Data Strategy.
- Identify approaches to enable those data assets and information sharing capabilities to satisfy data strategy goals and to measure the value to consumers of shared data.
- Develop and maintain semantic and structural agreements to ensure that data assets can be understood and used effectively by COI members and unanticipated users.
- Register appropriate metadata artifacts for use by the COI members and others.
- Extend the DoD Discovery Metadata Specification (DDMS) (Reference (c)) as required to ensure that COI-specific discovery metadata is understandable for enterprise searches.

C4.2. MAKING DATA VISIBLE

C4.2.1. Activity Area Overview

C4.2.1.2. The discovery metadata may also include elements defined as COI extensions described in DoD Discovery Metadata Specification (DDMS).

- Elements are related to the subject matter of the data asset
- Necessary for specialist consumers in a particular subject matter to locate relevant data assets

C4.2.2. Implementation Activities

C4.2.2.5. Create a discovery capability containing discovery metadata

- The purpose of a discovery capability is to provide DDMS-formatted discovery metadata in response to federated searches
- Capability developers will then leverage the COI's discovery metadata in the discovery capability, allowing authorized users to discover the COI's data assets

C4.2. MAKING DATA VISIBLE

C4.2.1. Activity Area Overview

C4.2.1.1. Making data visible focuses on creating **discovery metadata** and deploying **discovery capabilities** that catalog data assets for users to find.

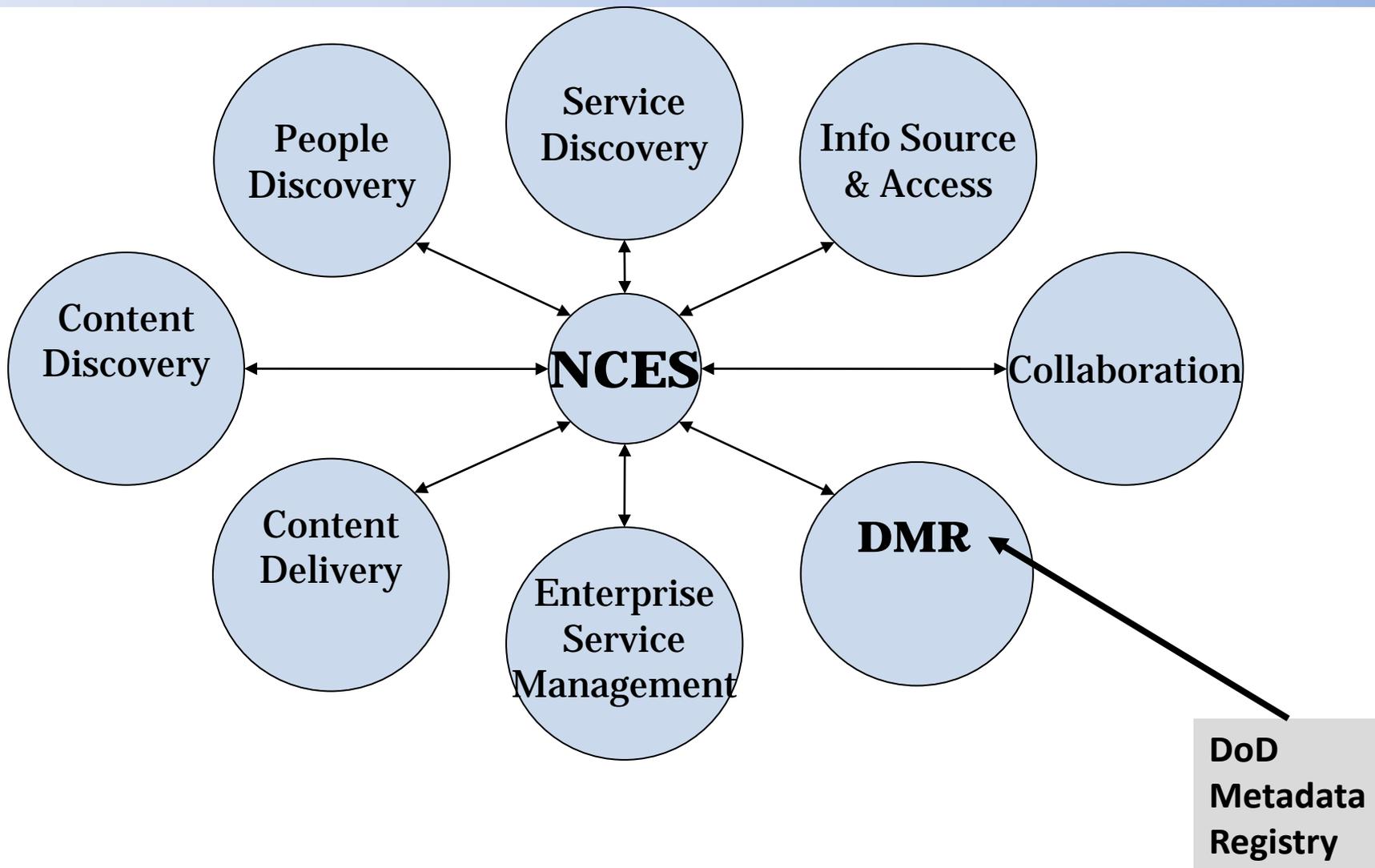
- The overall goal of data visibility is to enable DoD users to sift through the enormous volume and variety of DoD information holdings and quickly **discover data assets** that pertain to specific subjects of immediate interest.
- Enable consumers to find out who is responsible for specific assets, where the assets are located, what kind of data is available, and how to go about accessing them

C4.2.2. Implementation Activities

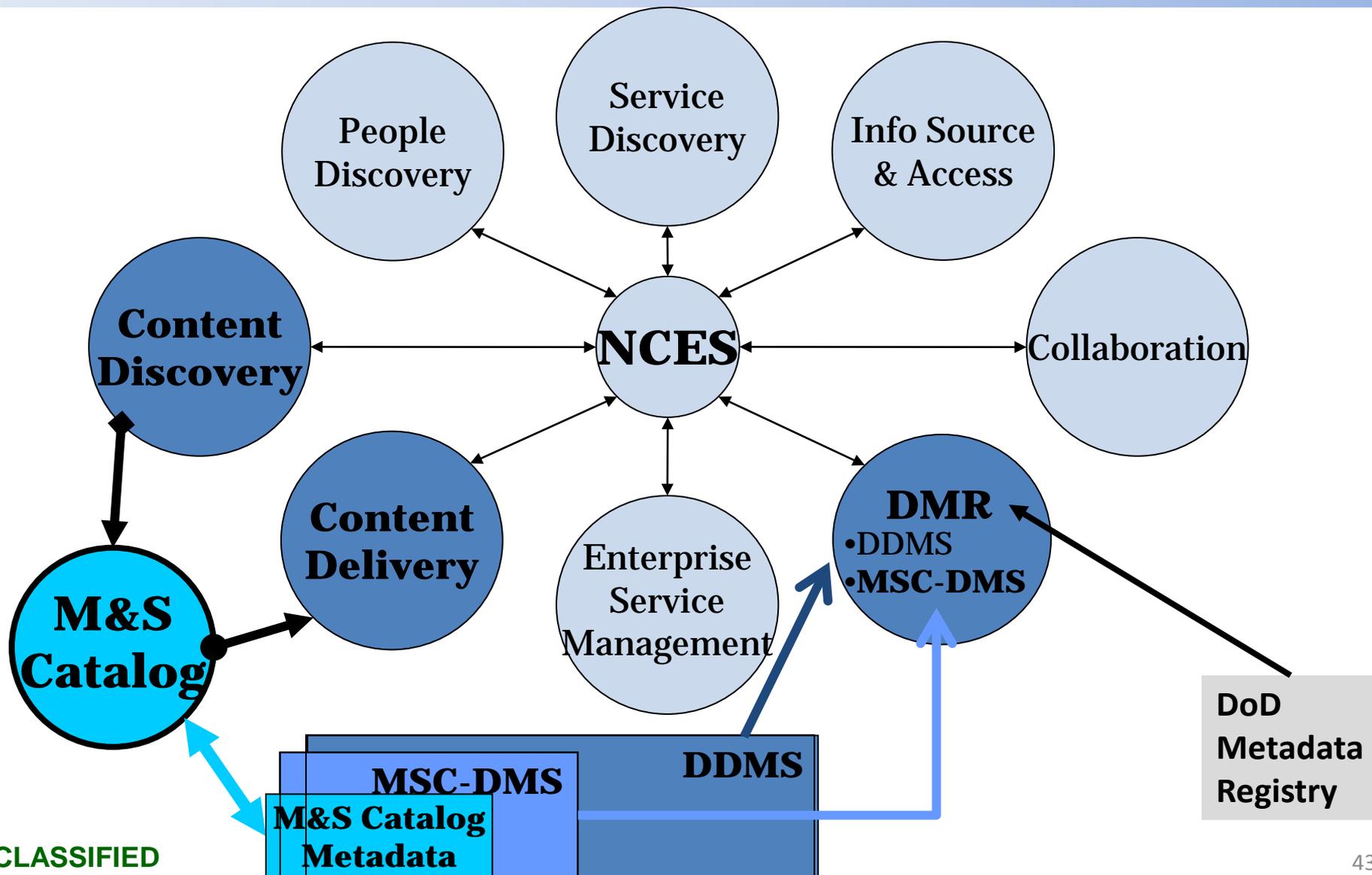
C4.2.2.5. Create a **discovery capability** containing **discovery metadata**.

- Identify the information and resources associated with providing a **discovery capability** that the COI can use for its **discovery metadata**
- **Federated searches**
- Allowing authorized users to discover the COI's data assets

DoD Net-centric Enterprise



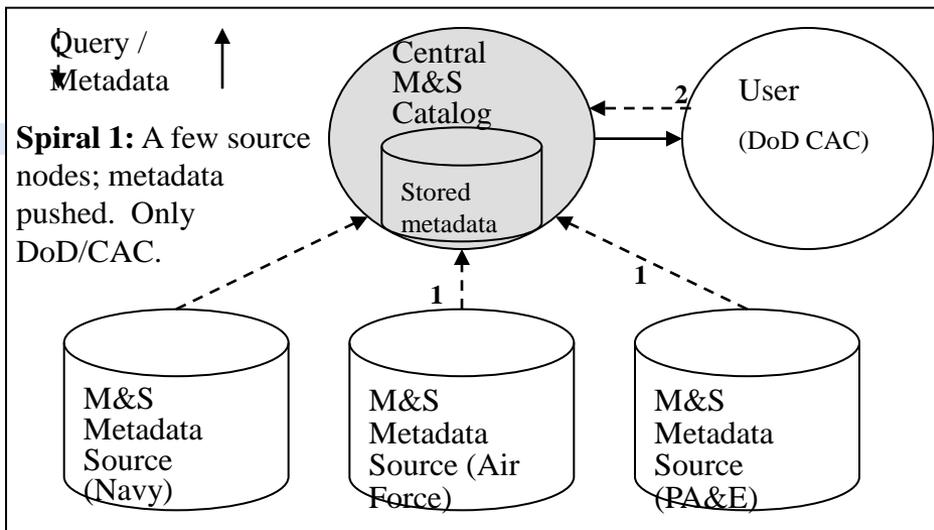
Placement in DoD Net-centric Enterprise



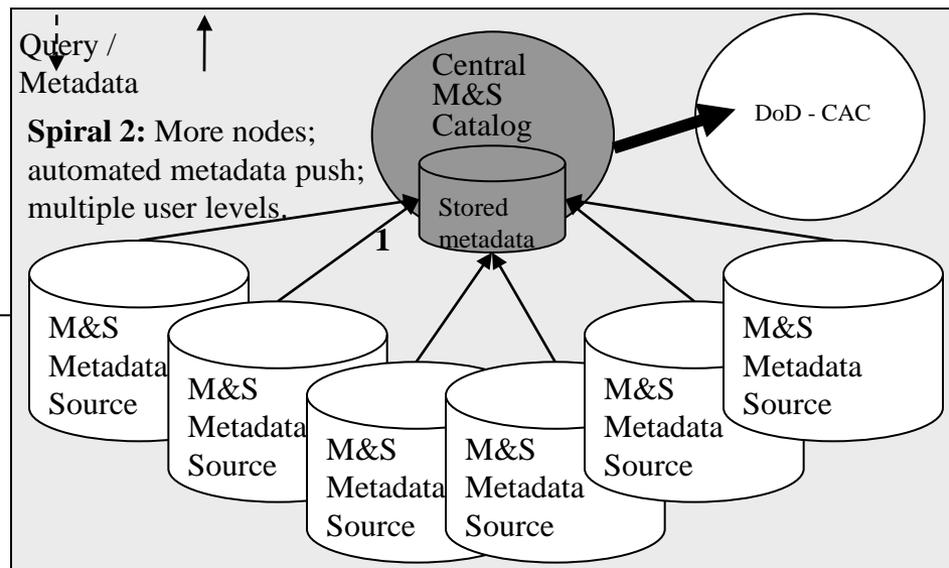
Prototype to Production



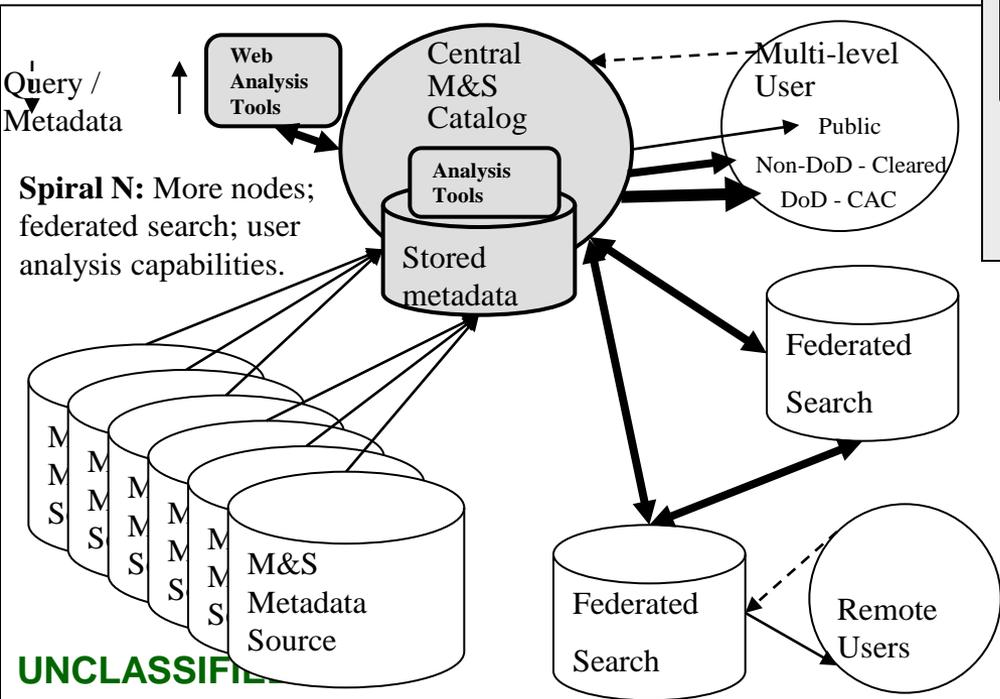
Spiral 1 (FY07/08)



Spiral 2 (FY09)



Spiral N

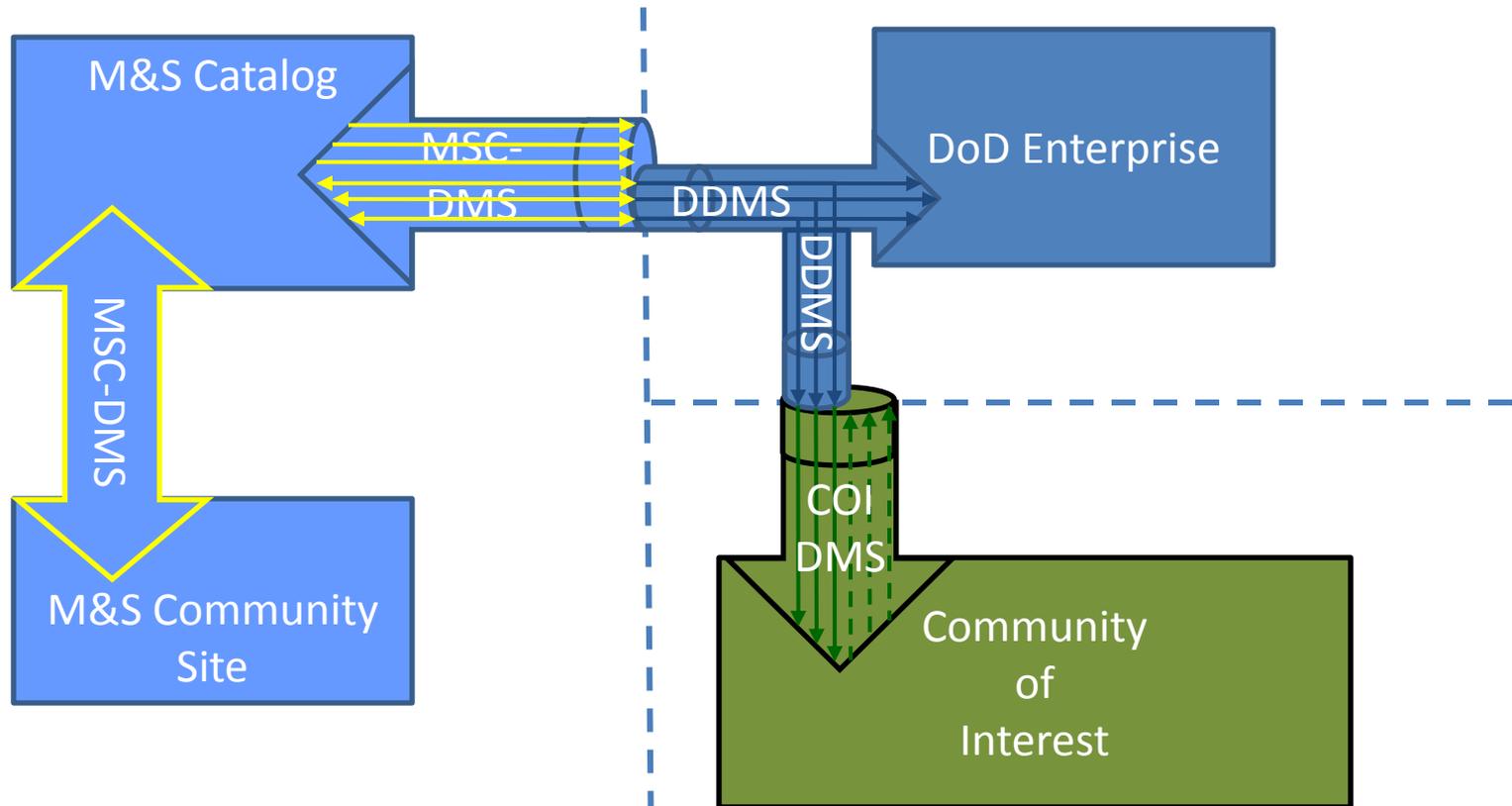


Spiral 1: Prototype concept demo

Spiral 2: Improve metadata foundation. More sources. Grow capabilities. Document search & discovery process. Governance. Sustainment.

Metadata Translations in Federated Searches

- Federated search limited to DDMS metadata elements
- Translation to each CIO DMS is critical to the success of the enterprise

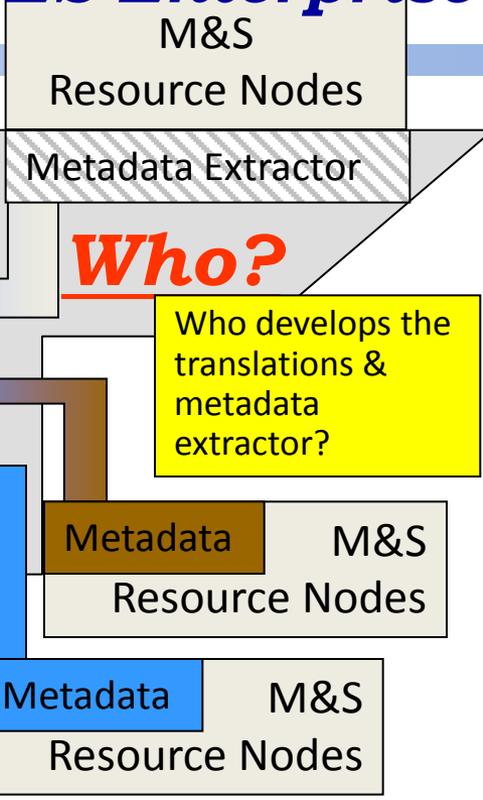
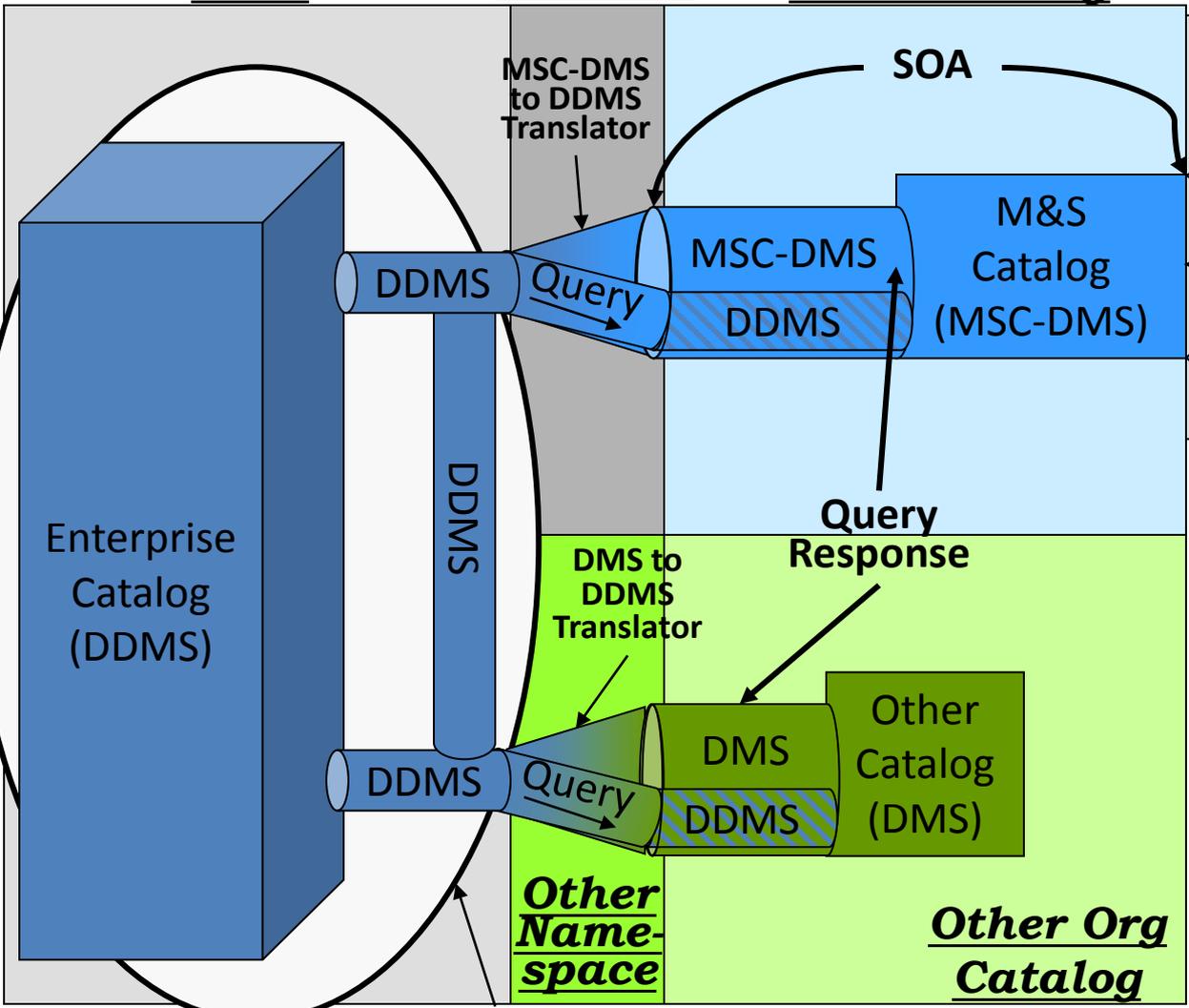


DDMS formatted Metadata is the metadata translator between communities of interest

Metadata Format Relationships M&S Catalog & the NCES Enterprise



DISA **M&S CO** **M&S Catalog**



- Three representative resource sites:
1. No metadata
 2. Non-MS-C-DMS metadata
 3. MSC-DMS metadata