

# ***Discovery of Modeling & Simulation Assets to Support Systems Engineering***

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*Presenter*

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- The ability to discover, evaluate, and reuse relevant M&S assets could potentially improve engineering results and lower overall program costs.
- Tools to increase visibility and accessibility of DoD M&S asset metadata are needed.

**Disclaimer:** The views presented in this paper are those of the authors and do not necessarily represent the views of the Department of Defense or its Components.

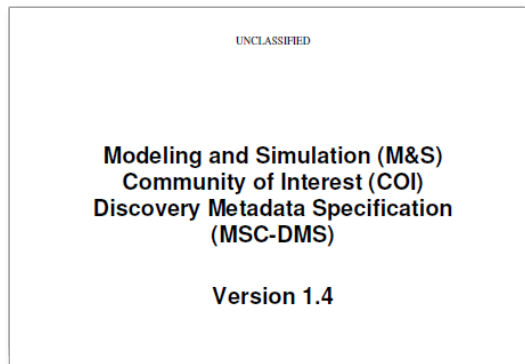
- What is metadata?
- M&S COI metadata specification
- DoD M&S Catalog

- Metadata
  - Descriptive information about the meaning of other data (“Data about data”)
- Discovery Metadata
  - Information about M&S assets, such as resources, contacts, taxonomies
- Structural Metadata
  - Information about the rules governing metadata structure and format, such as schemas and transforms



- Discovery Metadata → catalogs
- Structural Metadata → registries
- M&S Assets → repositories

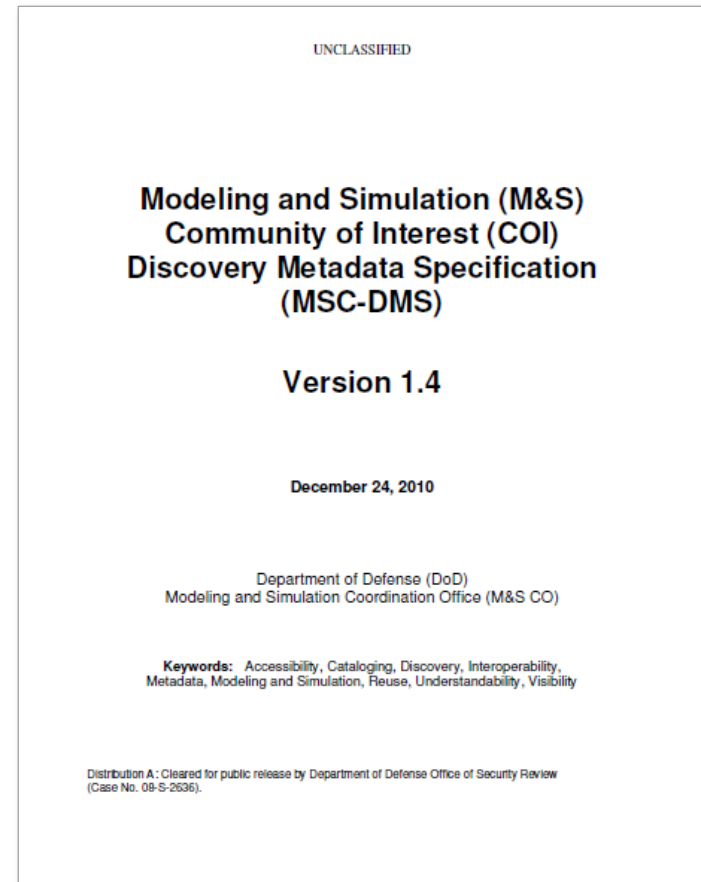
- **MSC-DMS: M&S Community of Interest Discovery Metadata Specification**
  - The metadata specification tailored for the M&S COI that conforms to DDMS
- Specification and user-friendly Implementation Guides are posted on M&S CO's website [www.msco.mil/resource\\_discovery.html](http://www.msco.mil/resource_discovery.html)

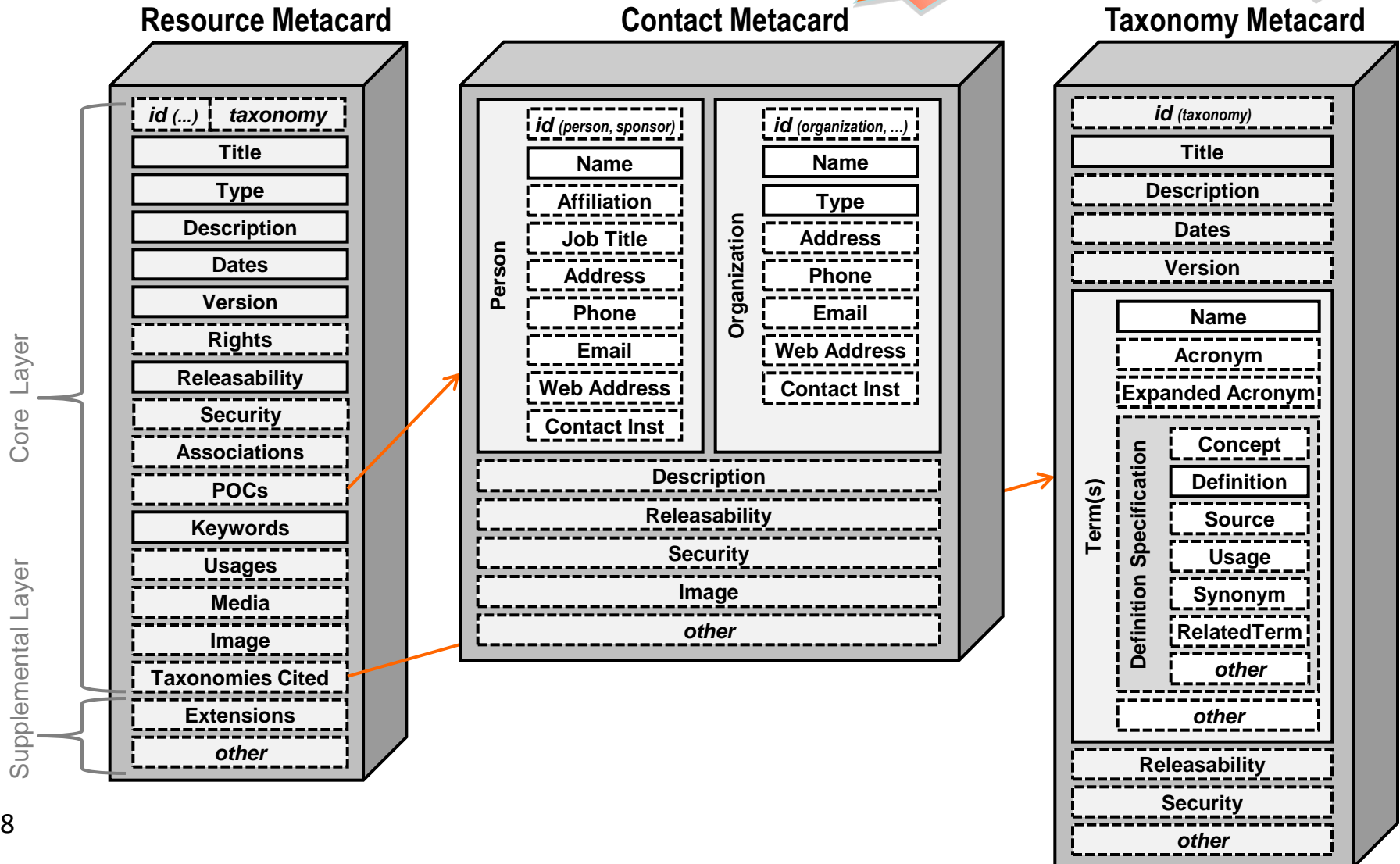


- MSC-DMS under formal change management
  - Changes driven by users (mostly) and policy (sometimes)

## Updates:

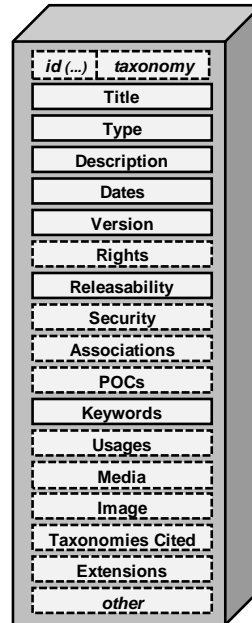
- 24 December 2010, Version 1.4:
  - Reorganization of the specification
  - Adds Contacts and Taxonomy Classifications
  - Multicard capability
  - Eliminate HLA Waiver requirement
  - Alignment with DDMS –V2.0 and 3.0
- 22 March 2010, Version 1.3:
  - Updated enumerated data sets
  - Added new capabilities
  - Improved VV&A coverage
- 9 September 2009, Version 1.2.1:
  - Correction to XML schema import
- 20 February 2009, Version 1.2:
  - Alignment to DDMS-V2.0 and IC-ISM-V2.1
  - Content corrections
- 27 August 2008, Version 1.1:
  - Initial Set of User comments
  - DoD M&S Catalog Project Team Comments
  - Improved extensibility
- 7 – 21 January 2008, Version 1.0.1:
  - Draft comments



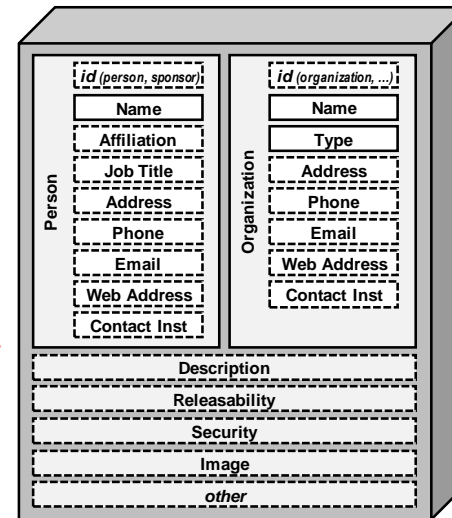




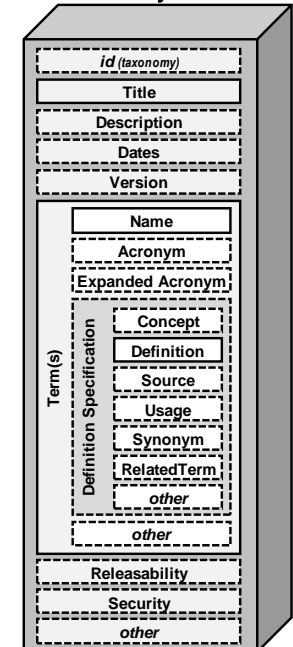
Resource Metacard



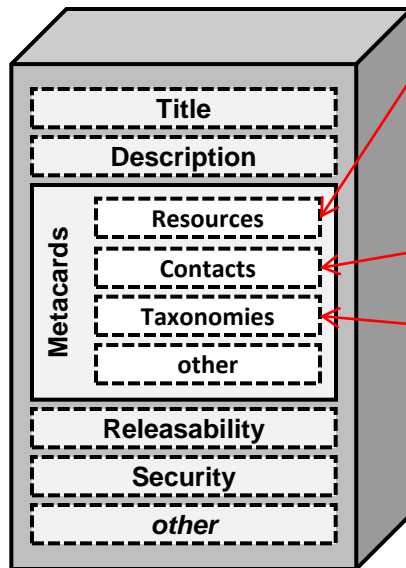
Contact Metacard



Taxonomy Metacard



Multicard

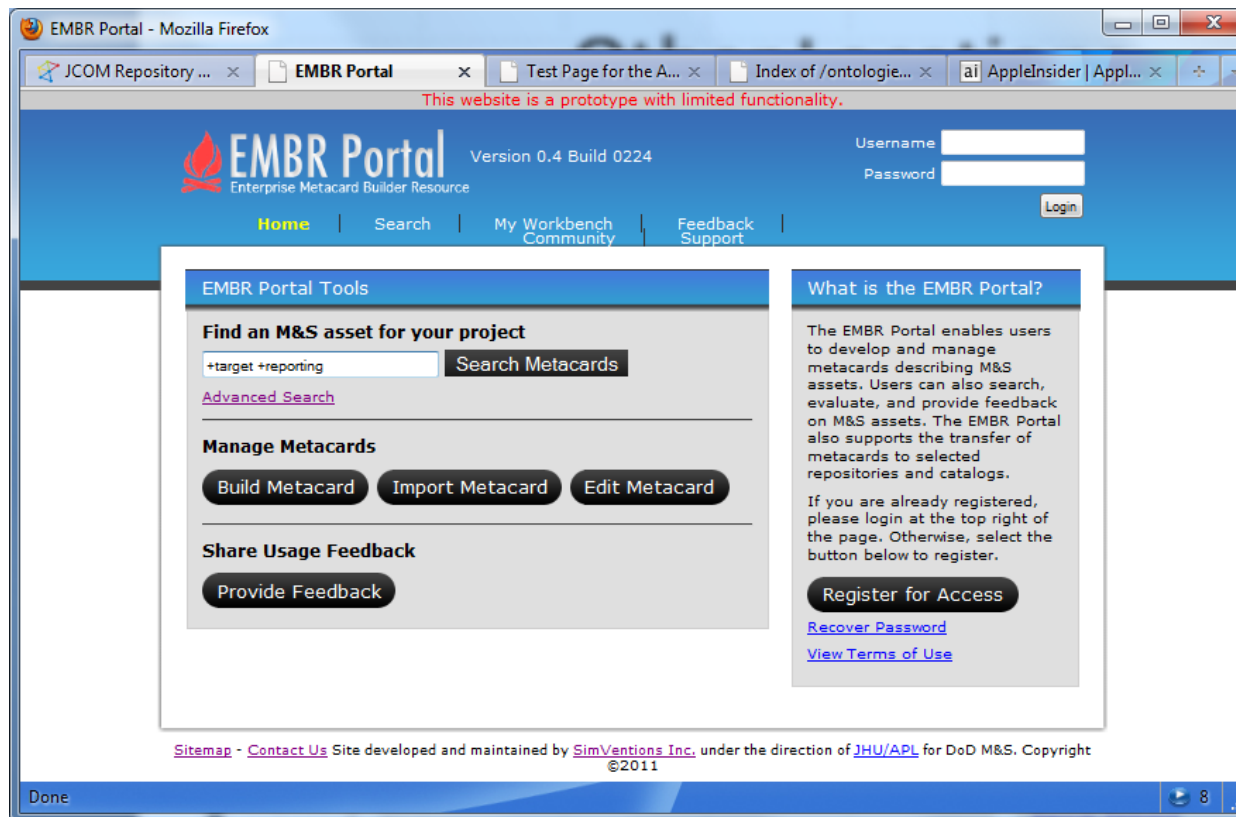


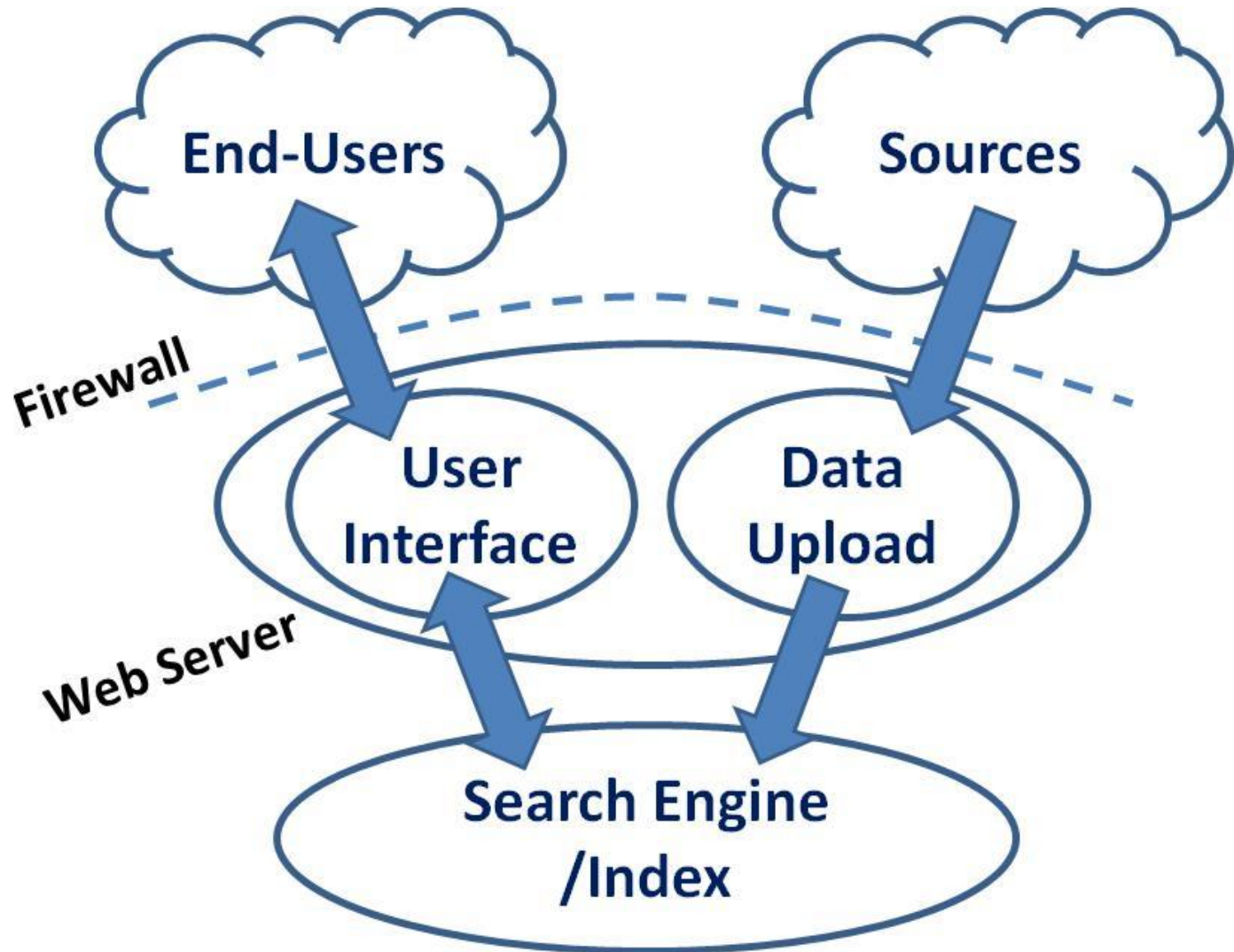
A **multicard** allows multiple metacards to be aggregated into one file set.

- Metacard Builder prototype
  - Java-based client application

Type ms:subtype="BOM" ms:valu
5 &lt;ms&gt;Description&gt;
6 &lt;ms:Text&gt;Time Sensitive Target (TS
7 &lt;/ms&gt;Description&gt;
8 &lt;ms:Dates&gt;
9 &lt;ms&gt;Date ms:type="modified" ms:va
10 &lt;/ms:Dates&gt;
11 &lt;ms:Version ms:value="0.0" /&gt;
12 &lt;ms:Releasability ms:value="A: Unlim
13 &lt;ms:POCs&gt;
14 &lt;ms:POC&gt;
15 &lt;ms:Role ms:value="Author" /&gt;
16 &lt;ms:Person&gt;
17 &lt;ms&gt;Name ms:first="Paul" ms:las
18 &lt;ms:Position ms:value="CTO"&gt;
19 &lt;ms:Org ms:organizationID="540:
20 &lt;ms&gt;Name ms:value="SimVenti
21 &lt;/ms:Org&gt;
22 &lt;/ms:Position&gt;
23 &lt;ms:AddressInfo&gt;
24 &lt;ms:AddressLine1 ms:value="11!
25 &lt;/ms:AddressLine1&gt;
&lt;/pre&gt; The bottom status bar shows 'Schema: MSC-DMS-v1\_3\_1.xsd', 'Ln: 1, Col: 1', and 'SimVentions, Inc.'"/&gt;

- Enterprise Metacard Builder Resource (EMBR) Portal prototype (under direction of JHU APL)
  - Web-based metadata creation and maintenance





## M&S CATALOG

- Links
- What is the M&S Catalog?
  - Using the Navigational Search Capabilities
  - Add your products to the M&S Catalog
    - Metadata integration process
    - Metadata Collection Tool
  - Metadata Collection Tool Instructions
  - What the M&S Catalog is not!
  - References
  - Contact us
  - Launch M&S Catalog

### The M&S Catalog

#### Why

es across the DoD enterprise's portfolio. Organizations support at its core a search capability and catalog" level of detail about

### 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. Managers, the tool will have the capability to perform analysis of the characteristics of the search result set of resources, descriptions and contact information (metadata) being posted in a defined format on the Global Information Grid (GIG). The format is known and specifies the metadata elements. Coordination between source sites and the M&S Catalog ens

### Add your metadata

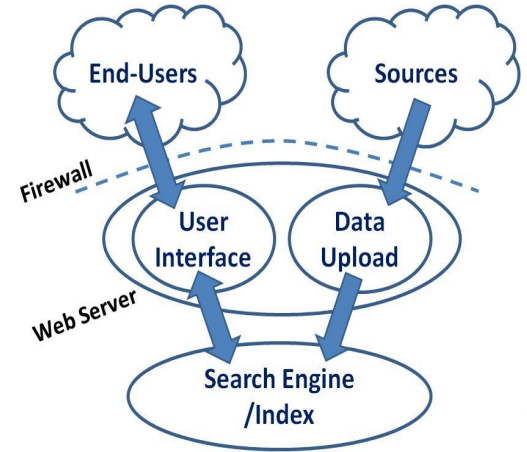
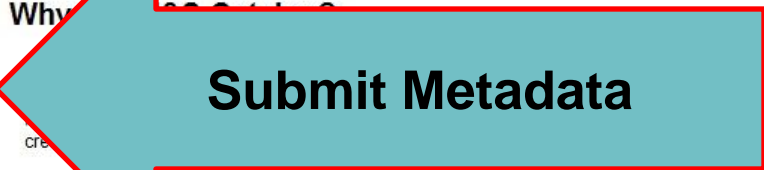
A significant effort is being undertaken to encourage organizations across the DoD enterprise to integrate the information about their products with the M&S Catalog. Metadata can be accepted from a collection such as a service M&S Resource Repository (MSRR) or directly from the manager of a product. 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.

#### B

throughout DoD. Resource owners can use the catalog to maintain their own inventories as well as identify new potential cost avoidances by learning of existing efforts. The department will achieve better resource management capabilities, but instead focus on those areas where capabilities are lacking.

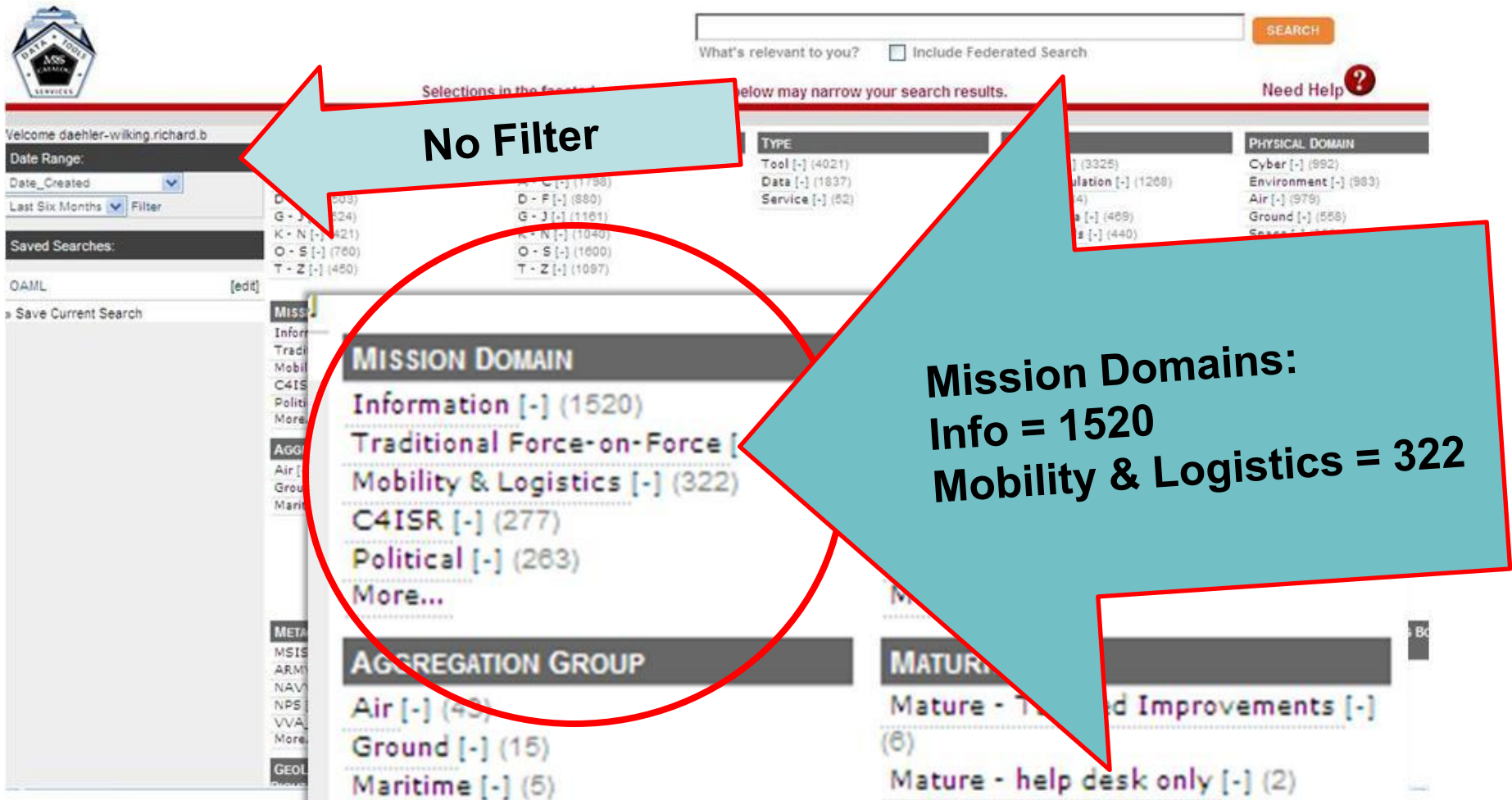
### Launch the M&S Catalog

To access the M&S Catalog search service, select the icon on the left side of this page.



<https://mscatalog.osd.mil>





What's relevant to you?  Include Federated Search SEARCH

Need Help?

Selections in the facet below may narrow your search results.

Welcome daehler-wiking richard.b

Date Range:  
Date\_Created  
Last Six Months Filter

Saved Searches:  
OAML [edit]

Save Current Search

TYPE	PHYSICAL DOMAIN
Tool [-] (4021)	Cyber [-] (992)
Data [-] (1837)	Environment [-] (963)
Service [-] (62)	Air [-] (979)
	Ground [-] (558)
	Space [-] (111)

**MISSION DOMAIN**

- Information [-] (1520)
- Traditional Force-on-Force [-] (322)
- Mobility & Logistics [-] (322)
- C4ISR [-] (277)
- Political [-] (263)
- More...

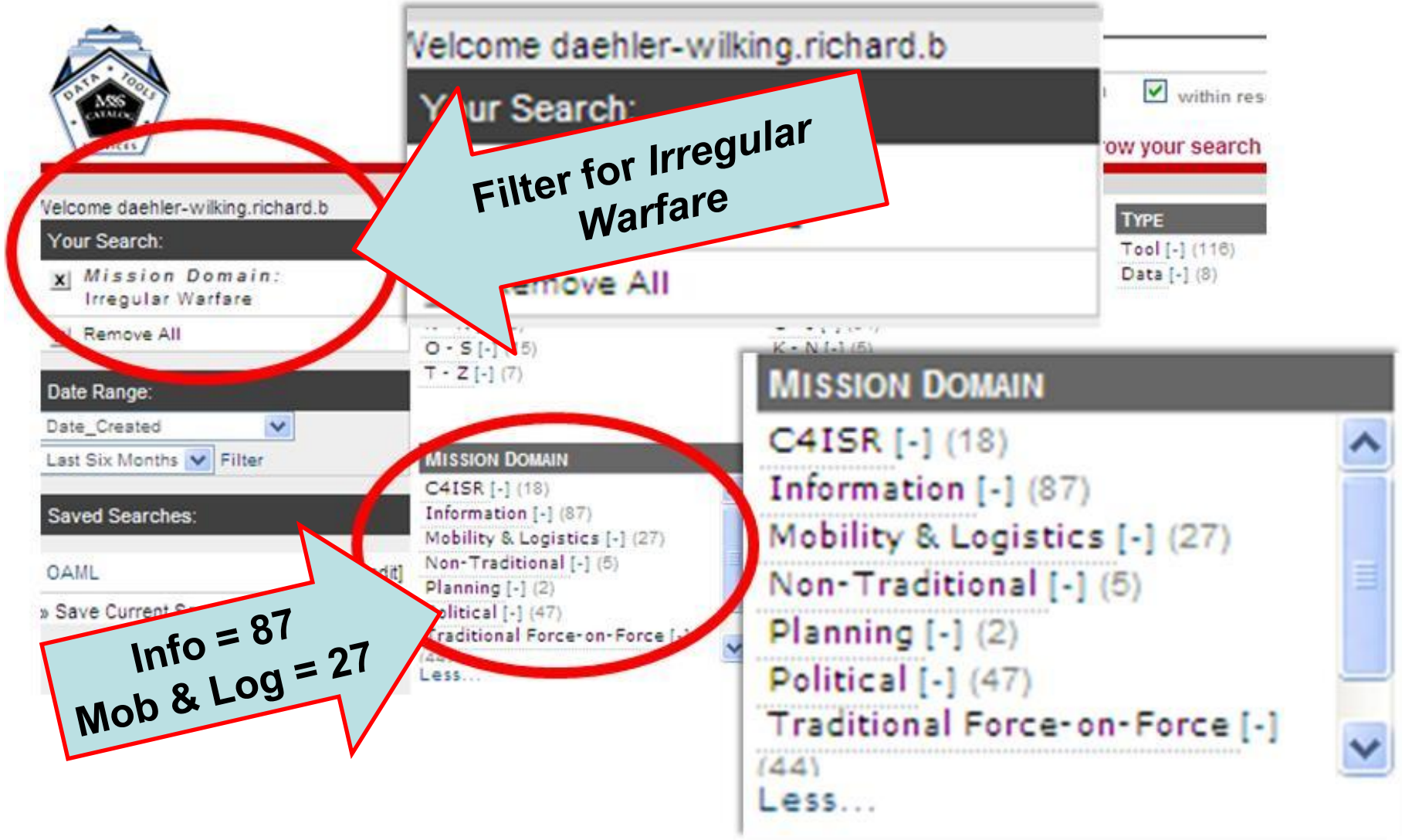
**AGGREGATION GROUP**

- Air [-] (43)
- Ground [-] (15)
- Maritime [-] (5)

**MATURE**

- Mature - Technical Improvements [-] (6)
- Mature - help desk only [-] (2)

**Callout:** Mission Domains:  
Info = 1520  
Mobility & Logistics = 322



Welcome daehler-wilking.richard.b

Your Search:

Mission Domain: Irregular Warfare

Remove All

Date Range:

Date\_Created

Last Six Months Filter

Saved Searches:

OAML

» Save Current Search

**Filter for Irregular Warfare**

**MISSION DOMAIN**

- C4ISR [-] (18)
- Information [-] (87)
- Mobility & Logistics [-] (27)
- Non-Traditional [-] (5)
- Planning [-] (2)
- Political [-] (47)
- Traditional Force-on-Force [-] (44)
- Less...

**Info = 87  
Mob & Log = 27**

**TYPE**

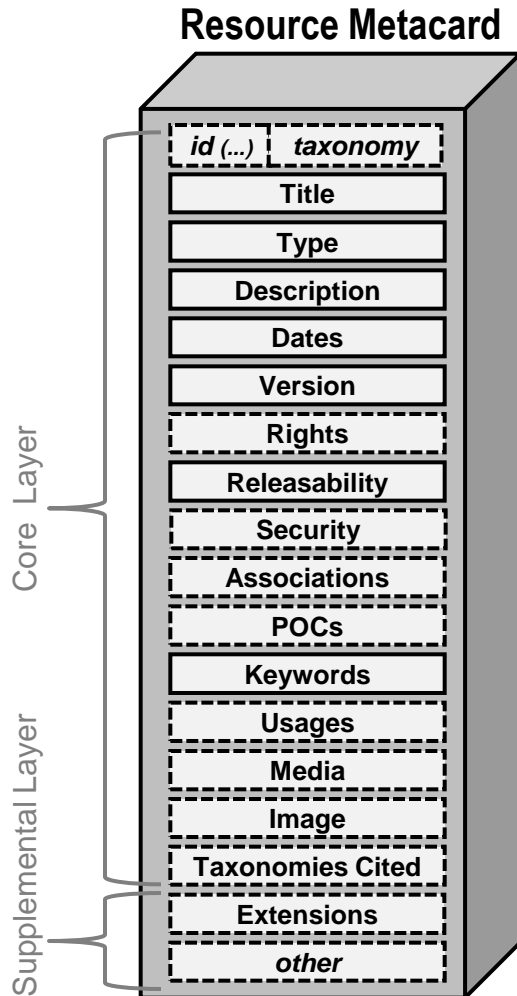
- Tool [-] (116)
- Data [-] (8)

- M&S COI is maturing a suite of services, tools, and standards to promote M&S asset visibility and reuse
  - DoD M&S Catalog  
(<https://mscatalog.osd.mil>)
  - M&S Metadata Specification  
([http://msco.mil/resource\\_discovery.html](http://msco.mil/resource_discovery.html))
  - Metadata editing and management tool  
(<https://embrportal.com/>)





- DoD Net-Centric Data Strategy (NCDS)
  - Describes DoD enterprise data visibility goals and DDMS
  - Establishes COIs and “COI-specific metadata structures”
- DoD Directive 8320.02 establishes data sharing policy
  - Data shall be **visible** through discovery metadata
  - Data shall be **accessible** in shared spaces
  - Data shall be **understandable** via structural metadata



## Selected Highlights

- » Added Resource Type enumerations
- » Associations now support new types of assets
- » Added HLA Coverage enumerations to increase flexibility
- » To conform with DDMS 3.0:
  - » Tweaked naming convention and cardinality of Contact and Organization components
  - » Security component was added to more metadata sets