The Johns Hopkins University
APPLIED PHYSICS LABORATORY

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Live-Virtual-Constructive Architecture Roadmap Asset Reuse System

Enterprise Metacard Builder Resource Portal

User's Manual

February 2011

The Johns Hopkins University
APPLIED PHYSICS LABORATORY

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Live-Virtual-Constructive Architecture Roadmap Asset Reuse System

Enterprise Metacard Builder Resource Portal

User's Manual

February 2011

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TABLE OF CONTENTS

LIST OF FIGURES

1. WHAT IS THE EMBR PORTAL?

The Enterprise Metacard Builder Resource (EMBR) Portal enables users to develop and manage metacards describing modeling and simulation (M&S) assets without having to be experts in Extensible Markup Language (XML). Users can also search, evaluate, and provide feedback on M&S assets. The EMBR Portal also supports the transfer of metacards to selected repositories and catalogs.

Figure 1 shows the EMBR Portal homepage.

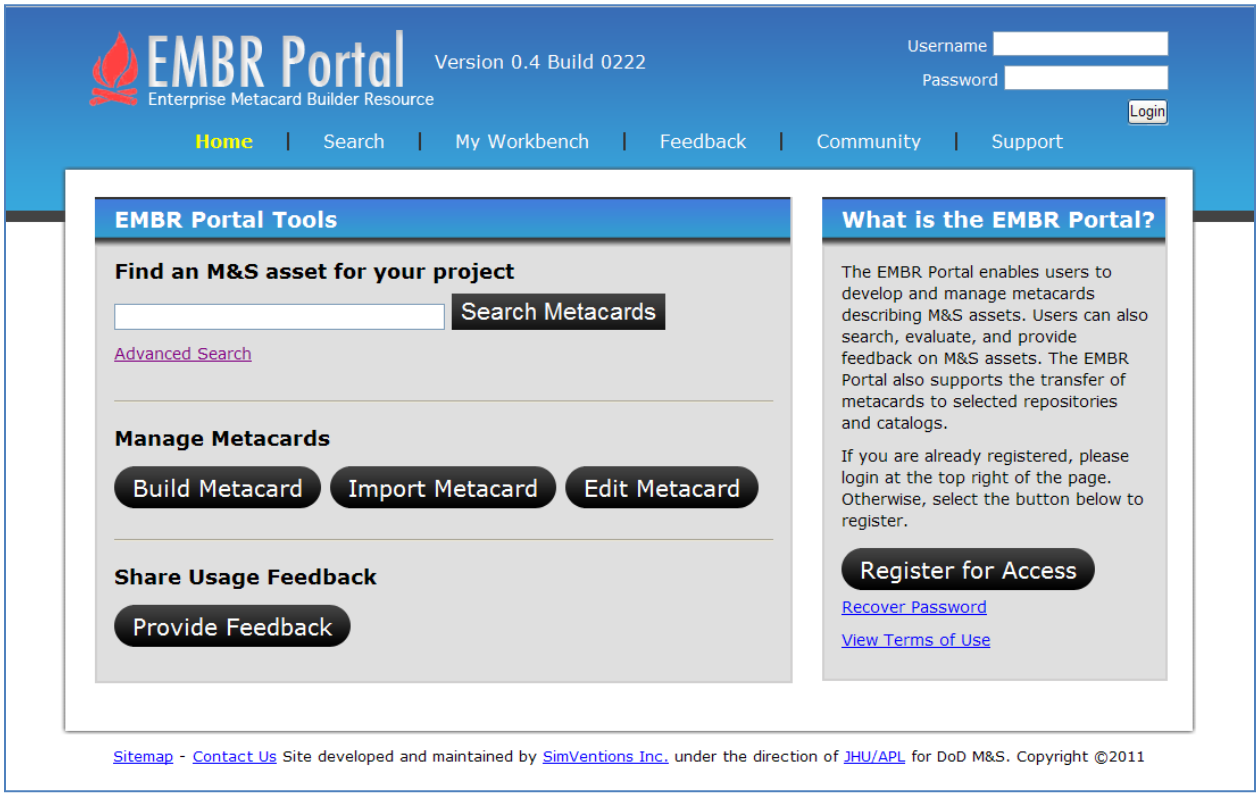

Figure 1 – Homepage – Not Logged In

If you are already registered, login at the top right of the page. Otherwise, select the "Register for Access" button in the right panel to register. A registration page will appear for you to enter and submit your information and registration request to the site owner. This menu will have you enter and confirm a password for your use to access the site. Once you have received your confirmed account login and password, you can login normally using the username/password combination assigned to you. This homepage also allows you to recover your password if you have forgotten it.

Once logged in, you can access all essential functions on the EMBR Portal homepage:

- Search.
- Manage metacards.
- Share usage experience.
- Access your metacards or others you are tracking.
- Recall previous searches.
- Review and share usage feedback.
- Check on collaboration requests, messages and comments.

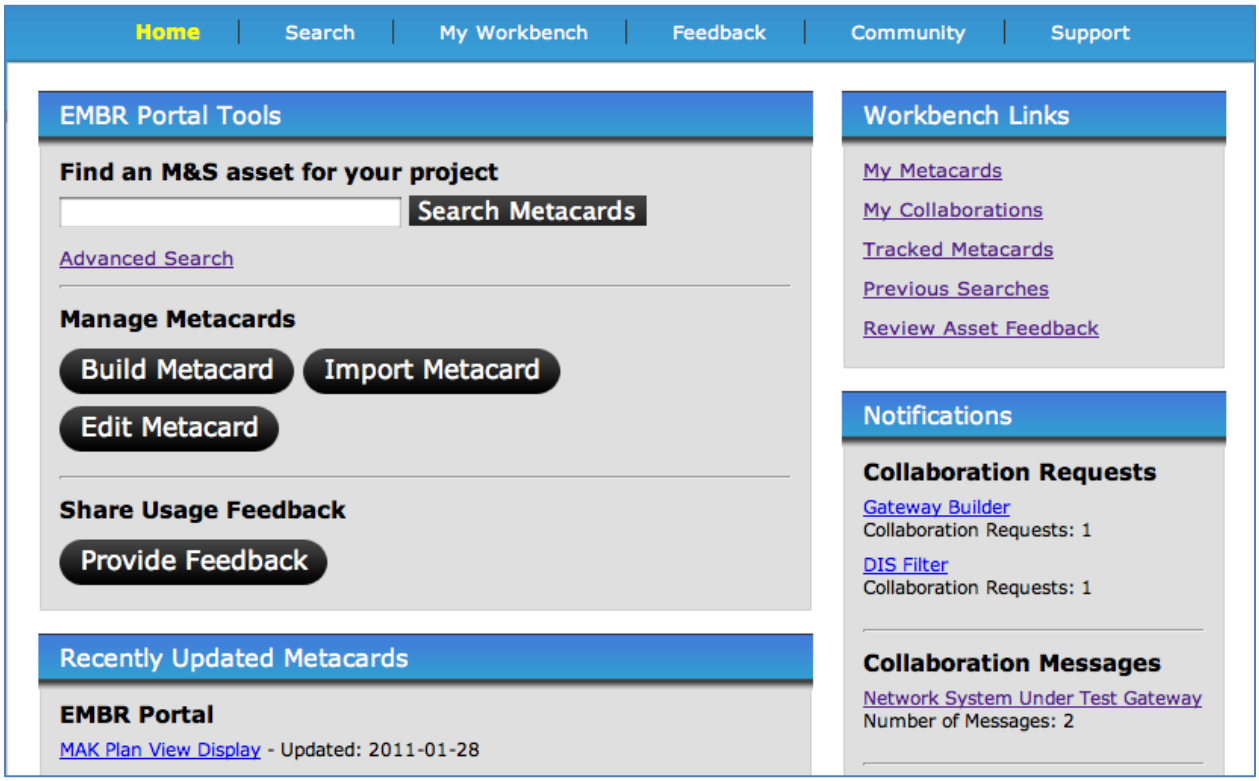

Figure 2 – Homepage – Logged In

The homepage provides a series of tabs across the top:

- Home (Default page).
- Search: provides access to search tools.
- My Workbench: provides access to your personal workspace.
- Feedback: enables you to comment on resources listed in metacards.
- Community: accesses Wiki pages, discussions and links to other sites.
- Support: enables you to communicate with site support.

From the homepage you can begin to search, manage metacards, or share usage feedback using these tabs. The homepage also provides access to your Workbench Links, including:

- Metacards that you own (identified as My Metacards).
- Metacards on which you are collaborating (identified as My Collaborations).
- Metacards you are tracking (identified as Tracked Metacards).

Under Notifications, you can find links to requests for collaboration sent to you by other uses, as well as collaboration messages.

2. SEARCH CAPABILITIES

The EMBR Portal provides a mechanism to discover assets of interest by searching the metacards that have already been produced or managed through the EMBR Portal. You can use the simple search box on the homepage under EMBR Portal Tools by entering keywords of interest, or select the Search tab or the "Advanced Search" link under the search box for more detailed search selections.

If you have selected the Search tab or the Advanced Search link, you will be taken to the Search page as illustrated in Figure 3. Under the EMBR Portal Search panel, you can now also select specific Query Elements to refine your search. By selecting and deselecting specific metacard elements to be queried by the search engine, you can refine your search to return the results specified by your selection. The Search page also shows you a list of metacards most frequently searched and a list of recently updated metacards.

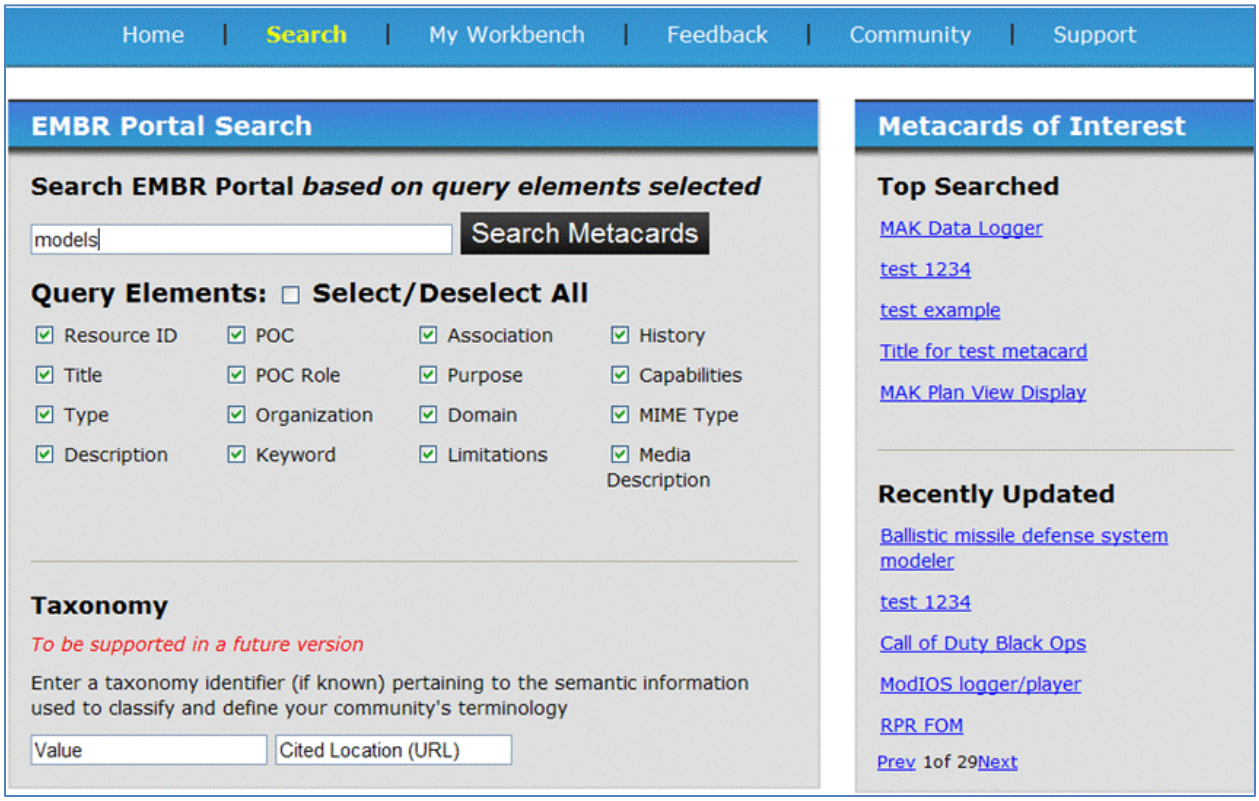

Figure 3 – Search Page

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Figure 4 illustrates the results of such a search, consisting of a list of metacards of interest that have been discovered by the search engine.

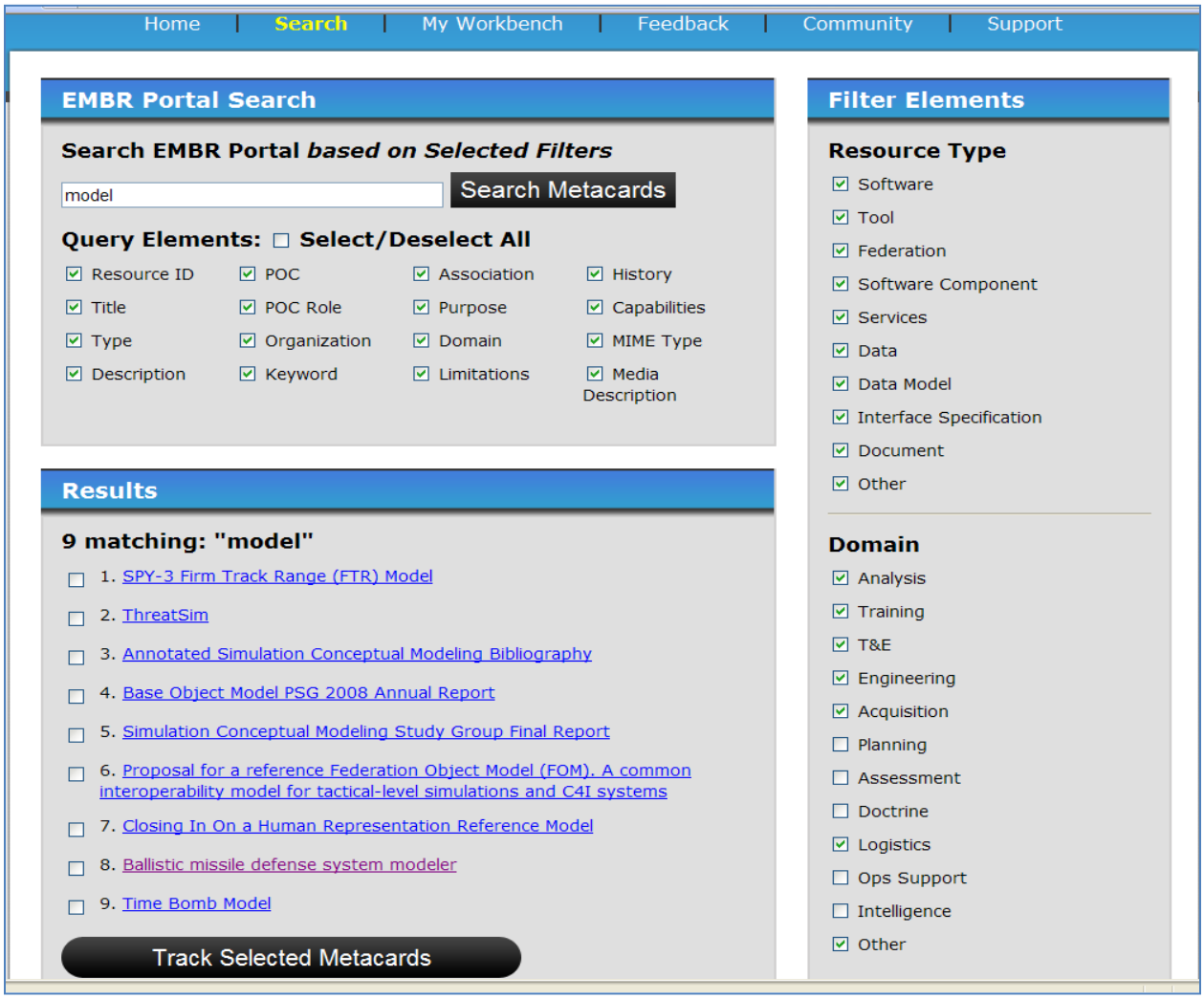

Figure 4 – Search Page Results

The results of the search are provided in the Results panel. The ability to Filter Elements is provided on the right panel. When you deselect one or more resource or domain categories, these results are filtered out. Likewise, selecting one or more of these categories turns off the filter for the respective metacards that fit the selected categories.

By selecting a metacard from the Results panel, you will be directed to the "My Workbench" tab, where the major portions of the metacard will appear in the Metacard View as illustrated in Figure 5.

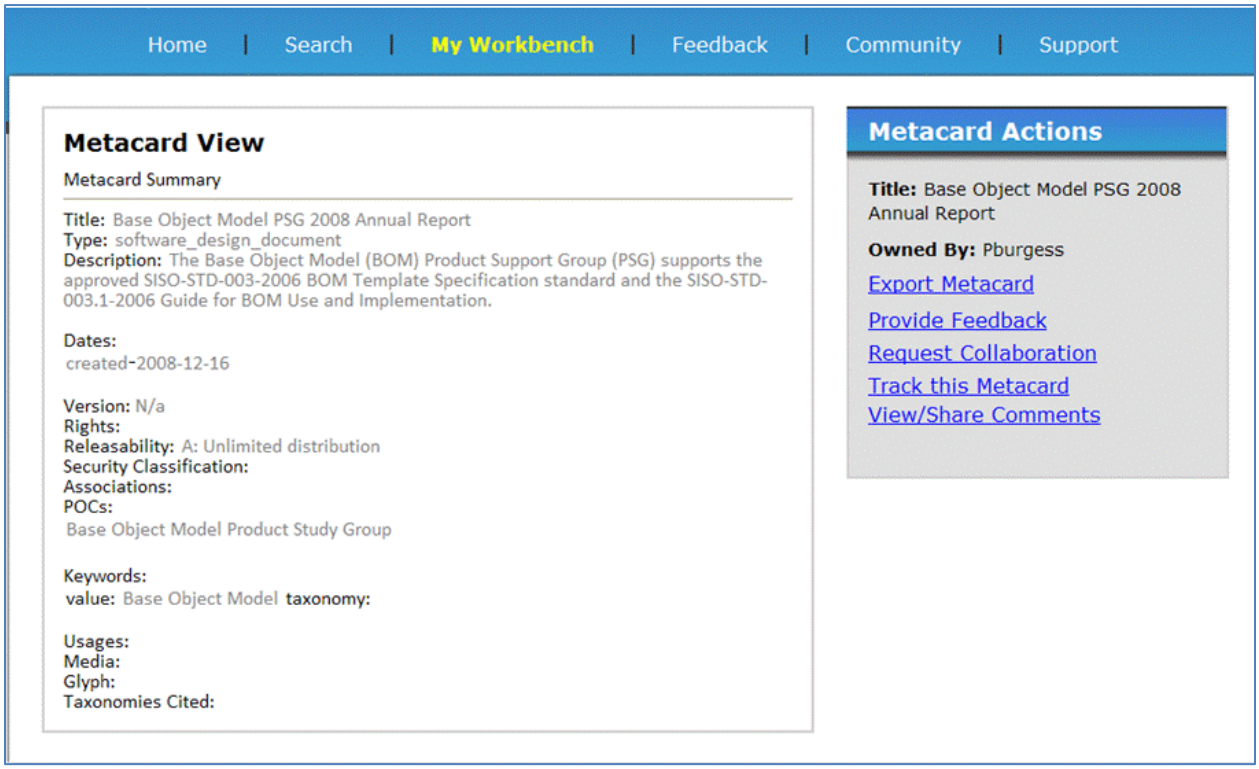

Figure 5 – Metacard View

The Metacard View allows you to track the metacard, by monitoring changes to a metacard throughout its lifecycle, or to download a metacard. If you wish to download a metacard, select Export Metacard, which will lead you to a set of menus from which you will select the format into which the metacard is to be downloaded onto your hard drive.

3. MY WORKBENCH CAPABILITIES

The Workbench page is the core page for managing all the metacards that you own, metacards that you are tracking, and metacards on which you are collaborating. Through this page you can also validate and submit metacards for deployment to other sources and catalogs. Developers and integrators are encouraged to use the workbench to help develop and manage their asset metacards.

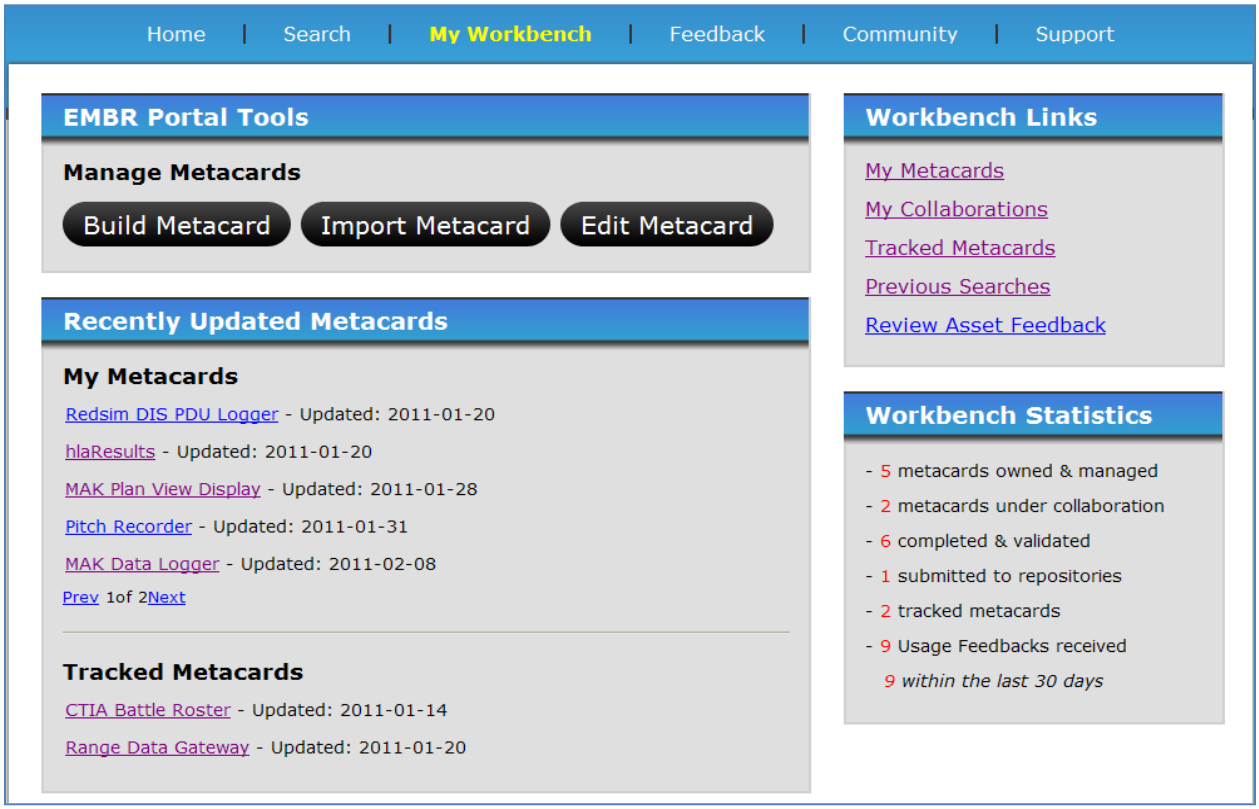

Figure 6 – Workbench Page

Workbench capabilities include the ability to build, import, edit, and track metacards. You can also view previous searches and usage feedback. Several statistical, notification, and update panels are also provided to keep you informed of the status of the metacards you own and track, and other recently updated metacards.

4. BUILDING A METACARD

The EMBR portal is designed to help producers, consumers, and integrators of M&S assets create and update M&S Community of Interest (COI) Discovery Metadata Specification (MSC-DMS) Resource Metacards pertaining to the following M&S resource types:

1. M&S software (implements a model or simulation).
2. Adjunct tools (e.g., data loggers).
3. Federations.
4. M&S software components.
5. M&S services (models and simulations implemented as web services).
6. M&S data (data in M&S-usable format and data produced by M&S).
7. M&S data models (structural metadata for M&S data).

8. Interface model specifications.
9. M&S support documents.

To build a new metacard, use the Build Metacard button on the Workbench page. This will bring up the metacard builder as illustrated in Figure 7.

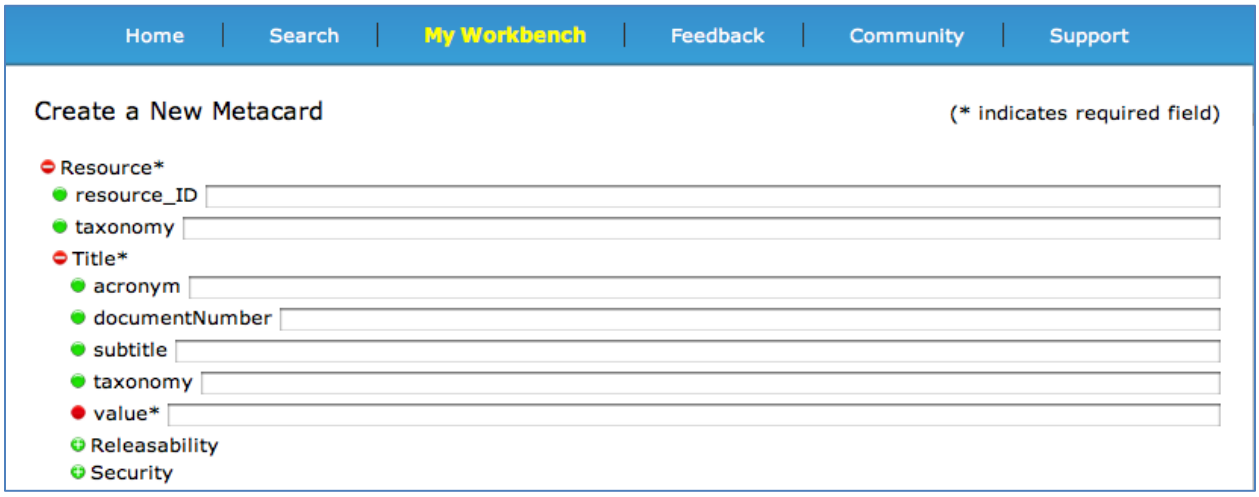

Figure 7 – Creating a Metacard

The Department of Defense (DoD) MSC-DMS serves as the standard template for these resource metacards. The specification is available at the Modeling and Simulation Coordination Office (M&S CO) website[1], and you are encouraged to download it and the supporting Implementation Guide for further guidance.

5. ACCESSING YOUR METACARDS

From the workbench, you can access your metacards under the My Metacards link. Clicking on this link will bring up the page illustrated in Figure 8.

[1] http://www.msco.mil/

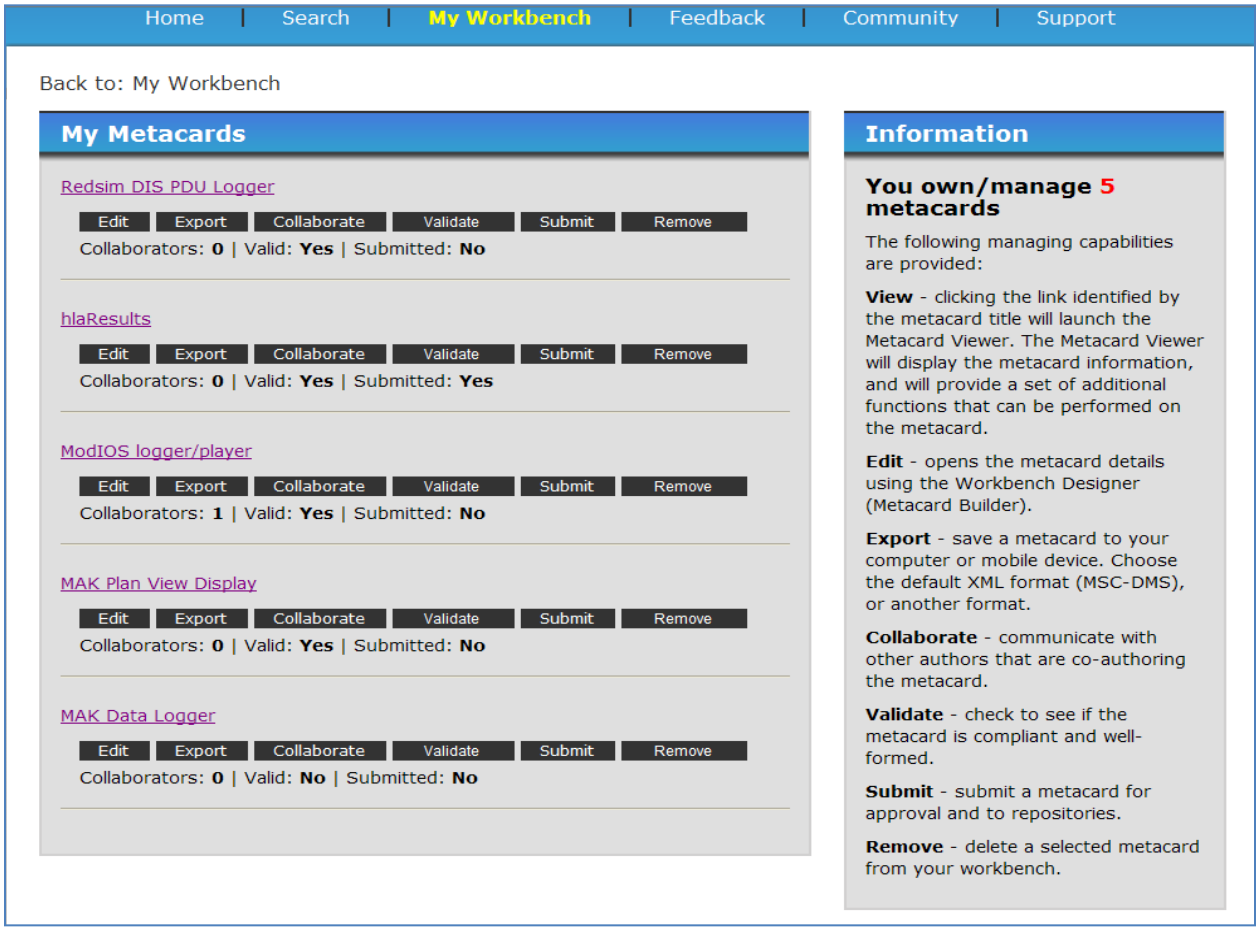

Figure 8 – My Metacards

The following managing capabilities are provided for each metacard:

View - clicking the link identified by the metacard title will launch the metacard viewer. The metacard viewer will display the metacard information and will also provide a set of additional functions that can be performed for the metacard.

Edit - opens the metacard details using the metacard builder.

Export - saves a metacard to your computer or mobile device. Choose the MSC-DMS or DoD Discovery Metadata Specification (DDMS) format.

Collaborate - communicates with other authors who are co-authoring the metacard.

Validate - checks to see if the metacard is compliant and well-formed.

Remove - deletes a selected metacard from your workbench.

6. EDITING METACARDS

The EMBR Portal provides a mechanism to edit metacards. From the workbench, you can access your metacards under the My Metacards link or the Edit Metacard button. Once you select a metacard of interest and select Edit, it will bring up the metacard editor as illustrated in Figure 9.

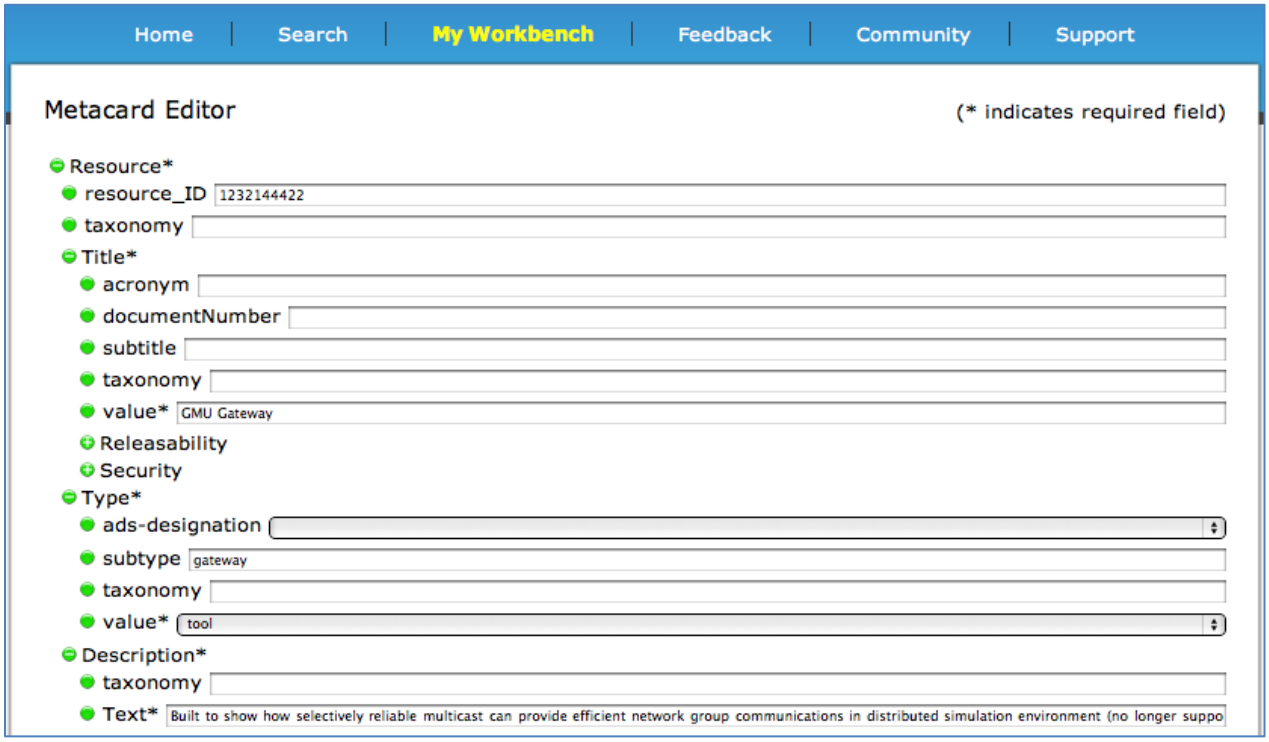

Figure 9 – Editing a Metacard

7. ACCESSING METACARDS YOU ARE TRACKING

From the workbench, you can access your metacards under the Tracked Metacards link. Clicking on this link will bring up the page illustrated in Figure 10.

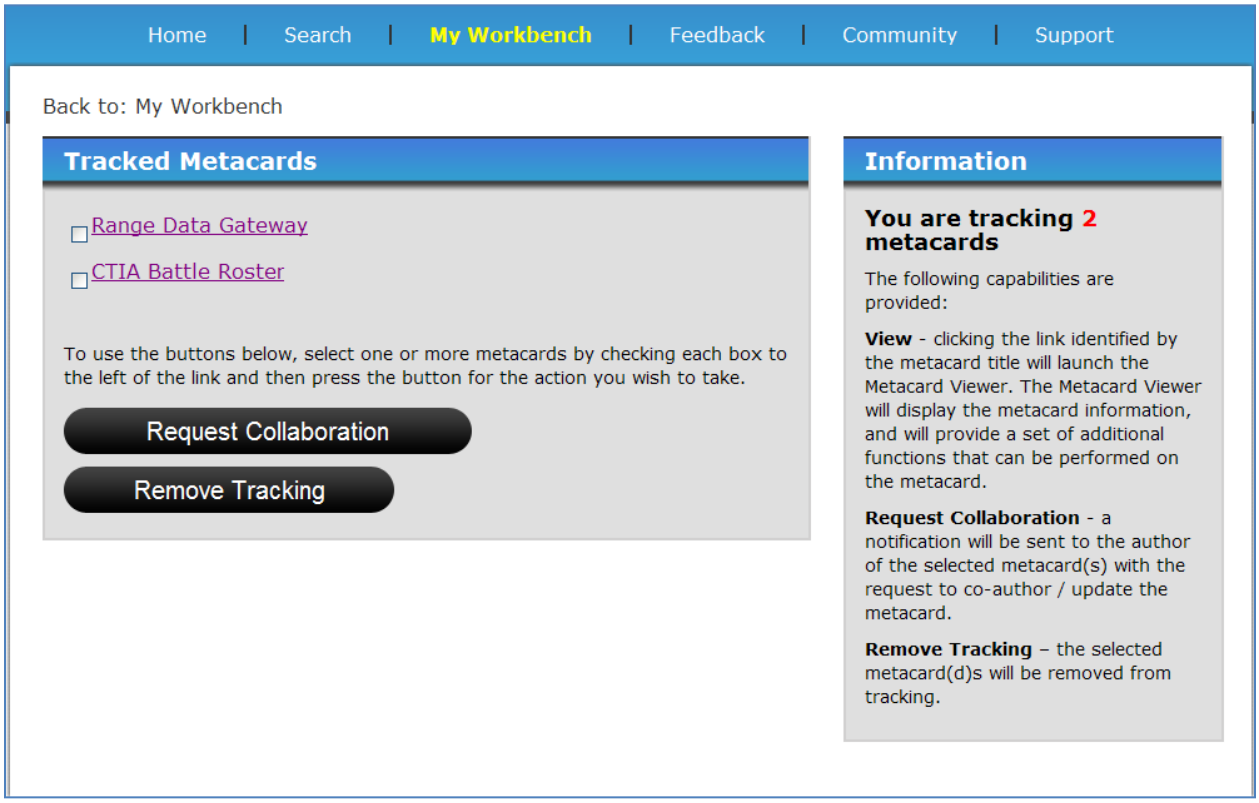

Figure 10 – Tracked Metacards

The following capabilities are provided for each tracked metacard:

View - clicking the link identified by the metacard title will launch the metacard viewer. The metacard viewer will display the metacard information and will also provide a set of additional functions that can be performed for the metacard.

Request Collaboration - a notification will be sent to the author of the selected metacard(s) requesting access to co-author or update the metacard.

Remove – the selected metacard(s) will be removed from tracking.

8. ACCESSING PREVIOUS SEARCHES

The EMBR Portal provides the capability for registered users to review previous searches. From the workbench, you can access your previous searches under the Previous Searches link. Clicking on this link will bring up the page illustrated in Figure 11.

Figure 11 – Previous Searches

The following capabilities are provided:

Search – resubmits a previous search.

Edit – resubmits a previous search, but allow the search string and filter selections to be modified first.

Remove – removes the selected from the list.

9. REVIEWING USAGE FEEDBACK

The EMBR Portal provides the capability for owners of metacards to review usage feedback. Feedback enables you to stay abreast of what others are saying regarding the metacards that you have created or uploaded, or ones on which you are collaborating with others. Usage feedback is also important when you are searching for assets of interest, and are basing your decision to choose an asset on the experience of others. Usage feedback enables you as a producer or an integrator to know how resources have been used and how they can be improved.

From the workbench**,** you can access usage feedback under the Review Asset Feedback link. Clicking on this link will bring up the page illustrated in Figure 12.

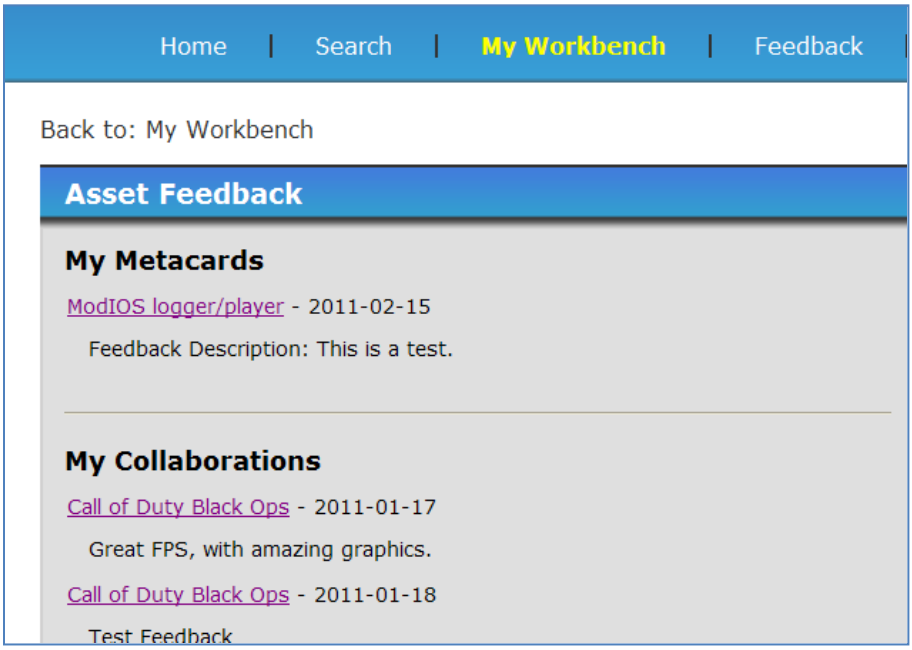

Figure 12 – Usage Feedback

You can respond to and evaluate feedback pertaining to your metacards (under My Metacards), and ones on which you are collaborating (under My Collaborations).

10. IMPORTING A METACARD

The EMBR Portal provides the capability to upload a metacard from your local computer or mobile device. From the homepage or workbench, you can access the import page by selecting the Import Metacard button. This action will bring up the page illustrated in Figure 13.

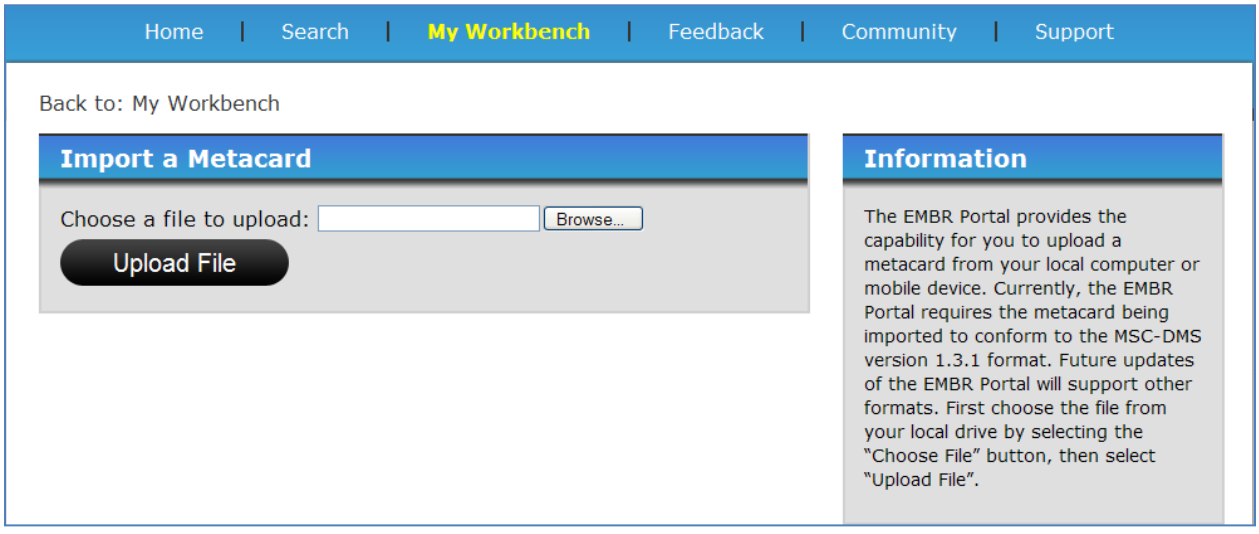

Figure 13 – Importing a Metacard

Choose the file from your local drive by selecting the Browse button, then select Upload File.

Currently, the EMBR Portal requires the metacard being imported to conform to the MSC-DMS version 1.3.1 format. Future updates of the EMBR Portal may support other formats.

11. COLLABORATING ON A METACARD

The EMBR Portal provides the capability to collaborate with others on a metacard as illustrated in Figure 14. Use this page to check-in and check-out metacards, freeze the metacards against future collaboration, share messages and links with other collaborators, authorize collaborators, and transfer ownership of the metacard to another collaborator.

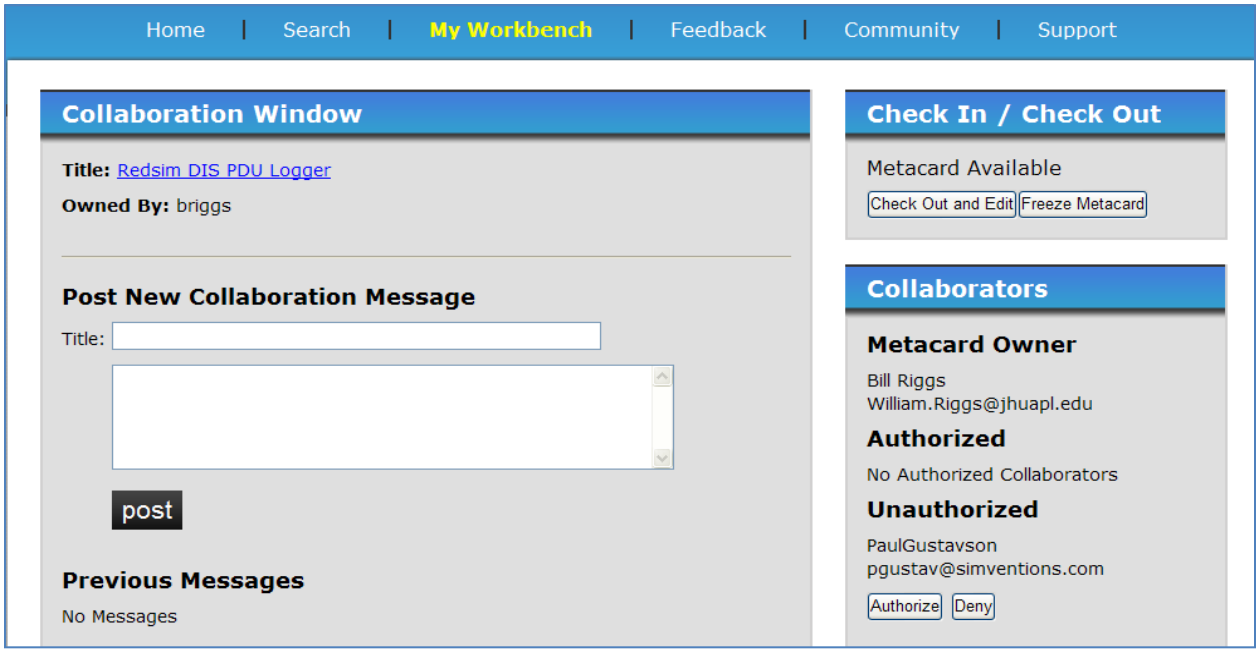

Figure 14 – Collaborating on a Metacard

You can access the Collaboration Window from your workbench by selecting the Collaborate button under the metacard on which you wish to collaborate. Enter the title of the collaboration message you wish to post, followed by the text of the message. Once you are finished, click the Post button to submit the message. You can also post links to a web site, such as an information or Wiki page through this window. The Collaboration Window also provides information on the check-in/ check-out status of the metacard, who owns the metacard, and what users are authorized to collaborate on the metacard.

In order to collaborate on a metacard, you must request collaboration with the metacard owner. In order to enable collaboration, select the metacard itself to see if you are listed as a collaborator on that metacard. If you are not authorized to collaborate on the metacard, select the metacard itself and select the "Request Collaboration" link on the right side of the page. The metacard itself will change by displaying "Collaboration Requested" in red letters in the Metacard View window. This status display will remain until the metacard owner has taken action on the collaboration request. The metacard owner will receive a notification of the collaboration request when he or she accesses the EMBR Portal. By selecting the "Authorize" button on the Collaboration Request, the metacard owner gives you permission to post collaboration messages and to edit the metacard itself.

When you select and display the metacard itself, one of the selections that appears on the links on the right side of the metacard information window is "View/Share Comments." When you select this link, a dialog box will appear for you to enter a collaboration message title and body text. Once you have done so, select "Share" to post the comment to a shared space, which all authorized collaborators may view and submit responses in reply. See Section 13.

12. HOW TO REMOVE A METACARD

This page allows you to remove a metacard from your Workbench. Before removing a metacard, consider delegating ownership of the metacard to another user that is collaborating on the metacard. If you delegate ownership, the metacard and its related message, links, etc. are preserved; however, if you want to delete the metacard entirely, click the delete button on the right panel. The delete action is final and the metacard cannot be recovered.

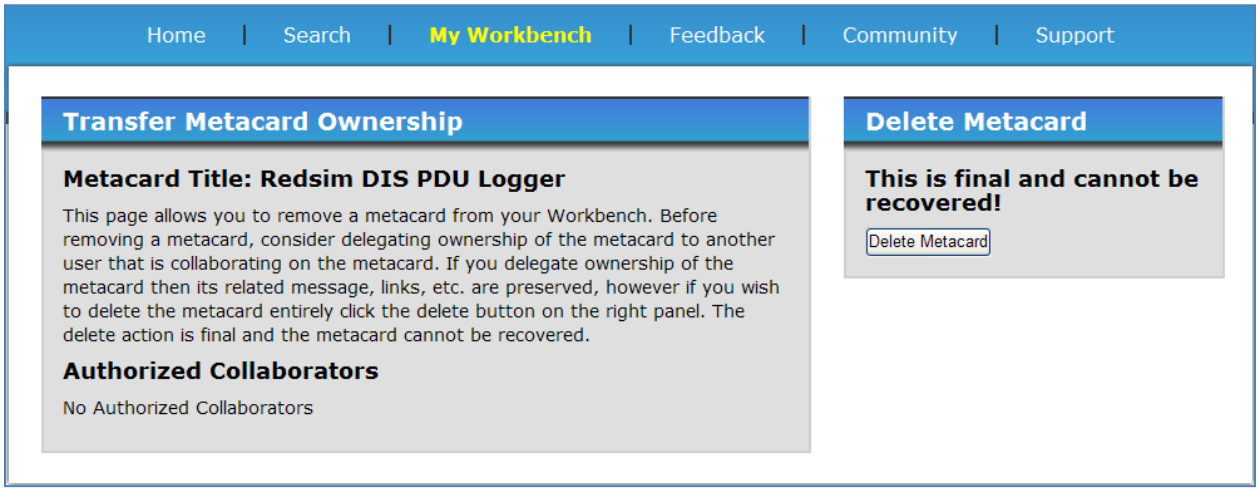

Figure 15 – Removing a Metacard

13. POSTING COMMENTS ON A METACARD

The EMBR Portal provides the capability for users to post comments regarding a metacard to share with other users. Use this page to post a new comment. Previous comments that have been posted are listed at the bottom of the page illustrated in Figure 16.

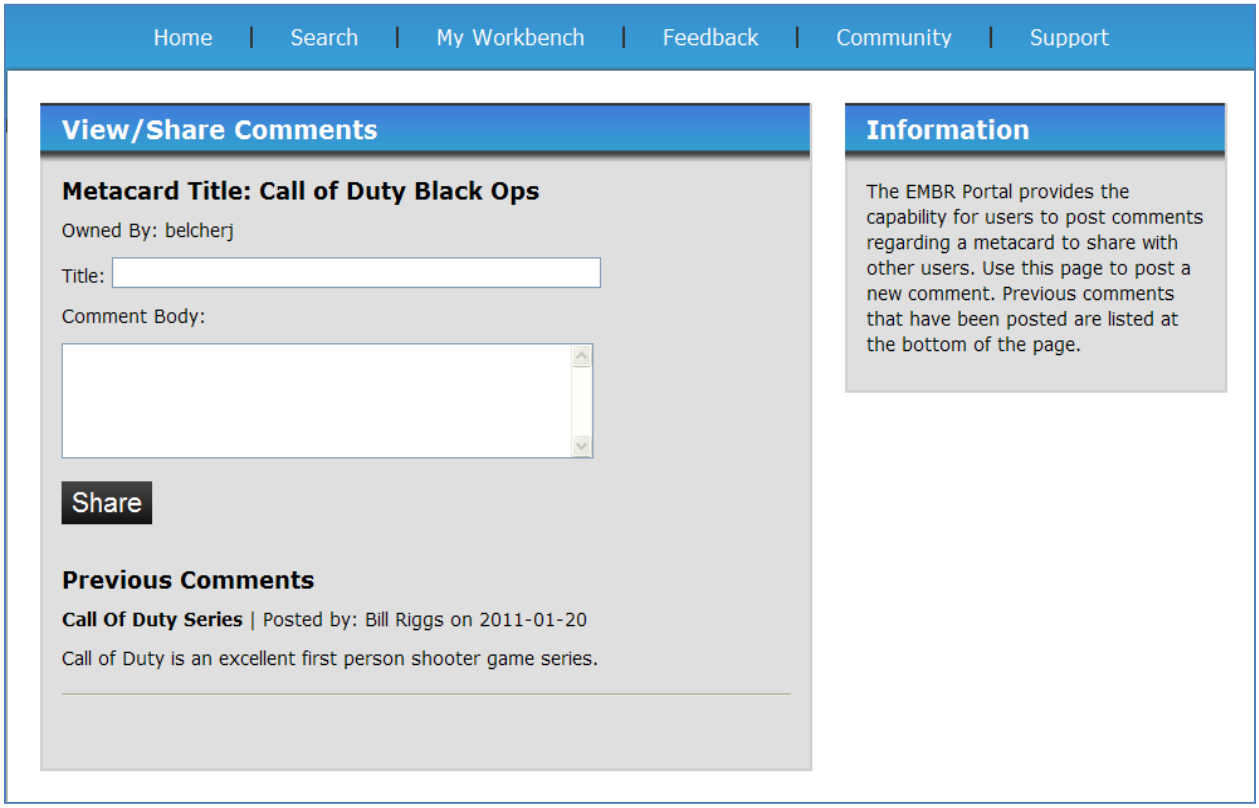

Figure 16 – Posting Comments on a Metacard

14. COMMUNITY AND SUPPORT TABS

The Community tab enables you to access a Wiki page, which enables you to read articles that other EMBR Portal users have written, as well as to author your own articles. As with any Wiki page, you should include footnotes, references and links to your sources. For each article, the EMBR Portal Wiki maintains a "main" page where the article is displayed to the reader, a "discussion" page for reader comments, an "edit" page to make changes, and a "history" page which provides access to the current and previous versions of the article. In order to use the Wiki, you must establish a separate Wiki account and login to create and edit content.

Figure 17 depicts the EMBR Portal Support page. By accessing the Support tab, you can download tutorials that explain EMBR portal and the M&S Catalog. The Support page provides additional information on account maintenance, including how to change your password. It also provides background information on the use of metacards. From this window, you can create a new ticket to submit a problem report or change request. By selecting "Create a new ticket," the EMBR portal will create an e-mail message to the portal administrator. Simply fill out the preformatted e-mail, entering the subject and body of the message describing the issue or problem. By selecting "Check on an existing ticket," you will be given access to the Mantis tracking system that supports the EMBR portal.

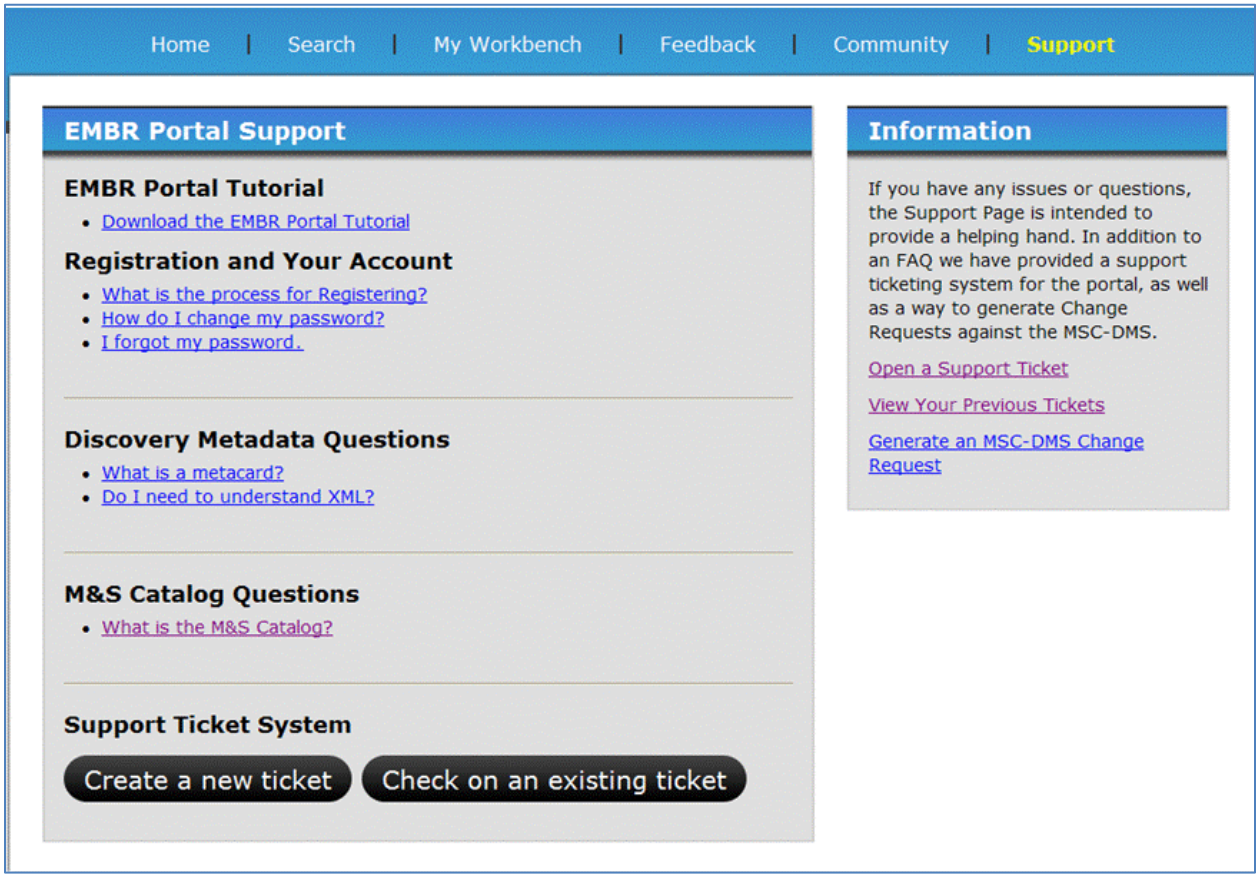

Figure 17 – EMBR Portal Support Page

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APPENDIX A: INSTALLATION INSTRUCTIONS

The EMBR Portal prototype website is hosted on a virtual machine. The EMBR Portal runs on an Apache Tomcat server executing on a Linux virtual platform (Ubuntu 10.04.1 LTS). Lucene/Solr is used for searching and indexing. Hypertext Preprocessor (PHP) scripts and Javascript are used for the graphical user interface (GUI) and functionality. The architecture is presented in Figure A-1.

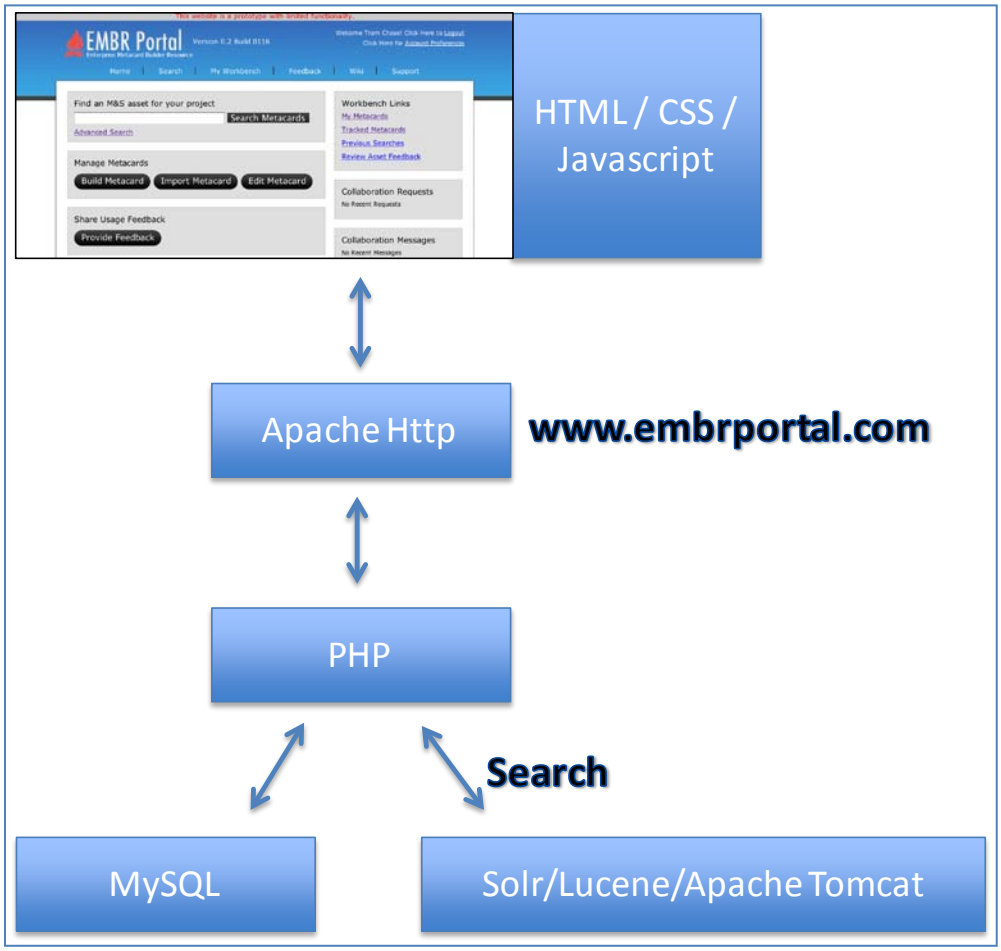

Figure A-1 - EMBR Portal Architecture

B.1 SYSTEM CHARACTERISTICS

The as-delivered system characteristics for the EMBR Prototype include the following:

- Ubuntu Linux 10.04.1 LTS.
- Apache Server 2.2.14 (port 80).
- Apache Tomcat 6.0.24 (port 8080).
- MySQL Server 5.1.14.
- PHP 5.3.2 (including PHP Solr 0.9.11 extension and required dependencies).
- Lucene 4.0-SNAPSHOT 1028882.
- Solr 4.0-SNAPSHOT 1028882.
- Sendmail 8.14.3.

B.2 INSTALLATION NOTES

- Solr must be installed on same host computer as the web server.
- Source tree as delivered should be placed in **"/var**" directory.
- MySQL username/password configured in **"/var/application/configs/application.ini**"
- MySQL database restore script as found in delivered source should be used to create database tables/user accounts.
- Solr deployed with schema.xml as found in the delivered source under **"/search**" directory.
- Apache connector forwarding Solr requests to Tomcat.

APPENDIX B: ABBREVIATIONS AND ACRONYMS

COI	Community of Interest
DDMS	DoD Discovery Metadata Specification
DoD	Department of Defense
EMBR	Enterprise Metacard Builder Resource
GUI	Graphical User Interface
JHU/APL	The John Hopkins University Applied Physics Laboratory
M&S	Modeling and Simulation
M&S CO	Modeling and Simulation Coordination Office
MSC-DMS	M&S COI Discovery Metadata Specification
PHP	Hypertext Preprocessor
XML	Extensible Markup Language

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