Integrated Metadata Repository System (IMRS)

End User Manual
Volume 1 - Metadata Repository

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APPENDIX A - ACRONYMS AND ABBREVIATIONS A-1

1. SCOPE

1.1. Identification

System Identifier:	IMRS
Title:	Integrated Metadata Repository System (IMRS)
Contract Number:	NBCHD010016
Project Number:	94148DEA-53
Delivery Order Number:	NBCHD020001-00
Customer:	Defense Logistics Information Service (DLIS)
System End User:	Various DoD Services and Agencies
System Developer:	Data Networks Corporation (DNC)
Volume Number(s):	Volume 1
Software Release Number:	2.1

1.2. System Overview

The Defense Logistics Information Service (DLIS) is an information broker of logistics information to its parent Defense Logistics Agency (DLA) organization, as well as other Department of Defense (DoD), federal government, and international, e.g., North Atlantic Treaty Organization (NATO), information customers. To achieve the benefits of a Collaborative Data Environment (CDE) within DLIS and an Integrated Data Environment (IDE) throughout DLA, it is imperative to engineer the subject data into an integrated view and to store the enterprise metadata in a common place where information engineers can use these “building blocks” to architect the CDE.

The Integrated Metadata Repository System (IMRS) is a metadata management tool intended to support the engineering and configuration management of data environments that include complex databases, federated data environments and data warehouses/data marts. The metadata contained within the IMRS is used to support application development, data integration and the system administration functions needed to implement a CDE). IMRS functionality includes the ability to store logical and physical data models, schema, and metadata associated with physical data sources and the information required for mapping one to the other. The IMRS Core Data Element Registry is defined by the ISO/IEC 11179 Metadata Management standard and includes the ability to register and standardize the metadata related to a data element. Regardless of their underlying implementation technology, the IMRS facilitates the implementation and management of data environments that share a common goal of providing seamless and consistent views of the underlying data to properly accredited users. The IMRS supports data integration through an integration schema and a standard reference data approach to accomplish this goal and to facilitate data sharing from diverse data sources. The IMRS database uses the Oracle Relational Data Base Management System (RDBMS) and implements a Web-based user interface to facilitate user access.

The IMRS maintains a broad set of metadata required for the implementation, support and use of integrated data environments. The metadata and information contained in the IMRS database include:

- One or more integration schemas with appropriate sets of views (Reference Views) so that access to a potentially disparate set of data can appear seamless and be consistent among all users;

- A logical data model known as the Reference Data Model (RDM) which logically models all of the data within the data environment(s) of interest;

- Copies of the schemas for each of the underlying, data sources from which the data environment draws its data;

- Mapping information to show exactly how data is transformed from the data sources and presented through the views of the integration or common schema of the integrated data environment;

- Mappings from the data elements in the views of the integration schema to the attributes in the Reference Data Model that correspond to those data elements;

- Information required to access and manage access to the data sources;

- Documentation to track the status of the data sharing process required to establish and maintain access to the data sources;

- Definitions, syntax and allowed domain values for each of the data elements within the views of the integration schema and the data sources.

The Reference Data Model (RDM) is the structure that documents the data requirements that address information exchange requirements. The descriptive elements of the RDM consist of its subject areas, entities, and attributes. The RDM has been developed as an IDEF1X model using ERwin.

Reference Views are derived from the Reference Data Model in the IMRS database and in the aggregate will represent a comprehensive implementation of that model (the integration schema). The Reference Data Model provides a comprehensive definition of data that is accessible within the data environment. All data elements that can be obtained from data sources integrated into the data environment are accessible through Reference Views in the integrated schema. The Reference Views also define the standard name and syntax for each data element. To the maximum extent possible, all requests to retrieve data from the data environment will be processed directly against a Reference View, or indirectly against user views or objects through a Reference View.

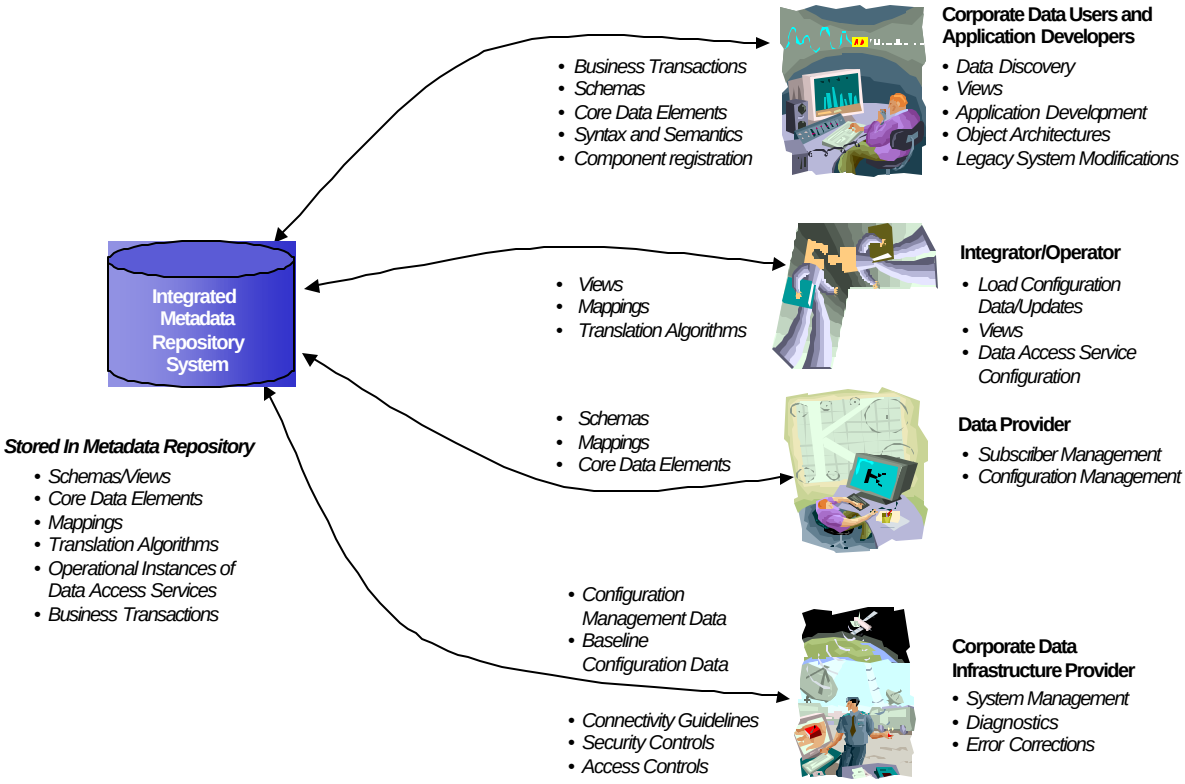


Figure 1.2.1-1 Vision for a Collaborative Data Environment (CDE)

The IMRS will be central to the management and implementation of the integrated data environment, which is intended to provide seamless access to data and will enable the linking of data, such as a part number, with its associated technical manuals. See , Vision for a Collaborative Data Environment (CDE), which depicts the CDE vision.

Data types that may be requested by a subscriber (user) from a provider (data owner) include:

- Structured data (relational, hierarchical and indexed databases and files structured as records).
- Unstructured data (engineering drawings, voice, video, graphics).
- Data published on the Internet (HTML Web pages), and
- Documents (tagged and untagged).

The IMRS incorporates information to configure the bridging capability for the Data Access Servers to respond to requests from various subscribers with data obtained from data sources.

1.2.1. Data Sources and Data Source Connectivity

“Data sources” are the existing government files and databases constituting the sources of product data. The Data Source Connectivity (DSC) component provides the means to physically communicate with the data source and extract the required data.

1.2.2. Data Access Servers

Data Access Servers (DAS) provide the means to request data from data sources via DSCs without having to understand the specifics of the interface to each data source or establish user accounts and firewall access to each data source. DASs can be data warehouses, data marts, virtual data warehouses, data gateways and other approaches that insulate the portal applications from the intricacies of accessing DSCs directly. The functionality of specific DAS instances will differ depending on the requirements of the user community requiring access to IDE data sources and the characteristics of the data sources they need to access.

1.3. Document Overview

The purpose of this manual is to document access and use of the Integrated Metadata Repository System (IMRS) from an end user perspective. This manual is organized as follows:

Section 2 - Referenced Documents

Section 3 - Software Summary

Section 4 - Using the Software

Section 5 - User Terminal Processing Procedures

Appendix A – Acronyms and Abbreviations

Section 2 lists all documents and other materials used in preparing this manual.

Section 3 describes the system software (software application, inventory, environment, organization and overview of system operation, contingencies, security, and problem reporting information).

Section 4 describes how to use the IMRS database, inputs/outputs, as well as recovery and error correction procedures.

Section 5 provides guidance for accessing IMRS database tabs (menus) and associated functions.

Appendix A includes Acronyms and Abbreviations

2. REFERENCED DOCUMENTS

The following documents were used or referenced during the development of this document:

1. Data Networks Corporation (DNC). *Defense Logistics Information Service Metadata Repository Project Integrated Metadata Repository System Close Out Briefing*. DLIS Close-Out Brief-IMRS-020501B.ppt. 5 February 2001.

2. Data Networks Corporation (DNC). *DLIS Data Management Baseline Document (Draft)*. 28 February 2002.

3. Data Networks Corporation (DNC*). Implementing a Product Data Access and Coordination Strategy Operational Concept Description (OCD) for an Integrated Metadata Repository System (Final).* 15 December 2000.

4. Data Networks Corporation (DNC). *Data Engineering for a Collaborative Data Environment Technical Proposal for FEDSIM GSA Schedule Order No. 94148DEA-53*. July 2001.

5. Data Networks Corporation (DNC). *System/Subsystem Design Description (SSDD) for the Integrated Metadata Repository System Volume 1 – Metadata Repository Version 2.0 (Draft).* 3 June 2002.

6. Data Networks Corporation (DNC). *System/Subsystem Specification (SSS) for the Integrated Metadata Repository System Volume 1 – Metadata Repository Version 2.0 (Draft)*. 29 May 2002.

7. Department of Defense (DoD). *Military Standard Software Development and Documentation (MIL-STD-498)*. 5 December 1994.

8. FEDSIM. *SOW, Data Engineering for a Collaborative Data Environment*, 10 October 2001.

9. ISO/IEC 11179: Information technology – Data Management and Interchange – Metadata Registries. 21 May 2001.

10. ISO/IEC 20943: Information technology – Data management and Interchange – Procedures for achieving metadata registry (MdR) content consistency – Part 1: Data elements. 21 May 2001.

3. SOFTWARE SUMMARY

3.1. Software Application

The IMRS provides a core set of functions to allow Program Managers and other data owners (providers) to manage their data, while allowing properly credentialed organizations (subscribers) to gain access to the data. An IDE that ensures quality and timely data in support of Focused Logistics concepts to meet Warfighter requirements and achieve Joint Vision 2010 and 2020 goals. To achieve an IDE, a common vocabulary of applicable logistics terms and knowledge of the source and context of available data is essential. The IMRS provides such a capability.

Using the IMRS will assist in improving DoD logistics operations. The IMRS also helps reduce data latency and the use of derivative data, improving the reliability of information retrieved. As a result, commanders and operational planners will have access to information that allows them to make better management decisions. Logisticians will also have better visibility over information about materiel in the logistics pipeline, allowing them to make better usage, inventory and forecasting decisions.

The following summarizes the advantages of the IMRS:

- IMRS gives subscribers a tool for determining logistics data availability and how to contact data providers to gain access to it.

- IMRS streamlines the development of information portals (end-user applications for accessing information needed to perform job functions), thereby saving development time and money to provide the flexibility to rapidly respond to changing subscriber requirements.

- IMRS simplifies the process for gaining access to shared data while allowing data providers to maintain control over access to their data.

The IMRS validates the principles of the Product Data Access and Coordination Strategic Plan by demonstrating the benefits of an IDE.

3.2. Software Inventory

The IMRS database consists of various data views, physical data sources, business agreement data (DSSs, DSRs, and MOAs), repository management data, and a data search mechanism. Tables mapping the entities and attributes in the logical Reference Data Model to data sources are included, as well as status information regarding the data sharing process under way with each instance of shared data to the sources (such as whether a business agreement has been reached with the data source owner to provide data access or an indication as to what technical work is in progress or has been completed).

Like other DoD data, logistics data is held in a variety of decentralized databases managed by numerous program managers and by several logistics support organizations.

Data sources are the existing files and databases constituting the sources of data per Data Sharing Requests. The Data Source Connectivity (DSC) component provides the means to physically communicate with the data source and extract the required data.

3.3. Software Environment

The IMRS database is a Web-based Oracle RDBMS that provides for storing and retrieving of metadata, administrative policy information, and security controls for product data sources. The IMRS is developed based on the Object Management Group (OMG) standards for Common Warehouse Metadata (CWM) and its interchange (CWMI). The IMRS requires subscription, and users must have an account and password to access the database.

Portal developers for subscriber organizations define requirements for product data that already exist in participating systems. IMRS is accessed via the Web to determine the reference data, administrative procedures, and security constraints involved in gaining access to the required data. From these, the developer identifies the data objects necessary for access to the shared data and constructs queries, triggers, etc., as appropriate for the portal design. Views used by portal developers are registered in the IMRS database, so that they can be notified if changes occur.

The user interface software is capable of running on any operating system that supports a Web Browser that supports Java 2. The initial version of the system will execute on Intel Pentium PCs. The minimum end-user system configuration is:

- 133 MHz Pentium CPU
- 16 Mbytes RAM
- 1 Gbyte Disk

The minimum server system configuration is:

- 200 MHz Pentium CPU
- 128 Mbytes RAM
- 2 Gbytes Disk

The end-user application supports Internet communications using the IP standard. The server application software will not exceed an average CPU utilization of 10% of capacity over a twenty-four hour period. All software, including the database system, is portable between Windows, Windows NT, Sun Solaris UNIX, and HPUX UNIX. The initial implementation of the server software will execute on Windows NT 4.0.

3.4. Software Organization and Overview of Operation

The overall system architecture is depicted in Figure 1.2.2-1. The major system components are:

- Browse Views
- Physical Data Sources
- Business Agreements
- Repository Management
- Search

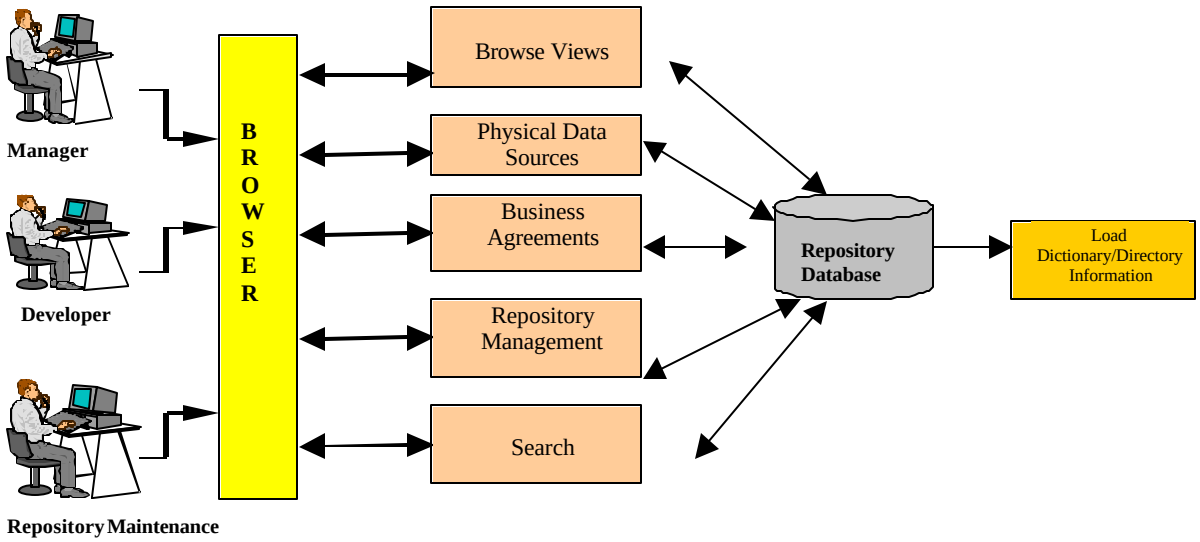


Figure 1.2.2-1 Metadata Repository System Architecture Components

3.5. Contingencies and Alternate States and Modes of Operation

In the event of system maintenance, email notification should be sent to all users. A broadcast message should display as a reminder fifteen minutes prior to the scheduled system maintenance event. Unscheduled system downtime will require users to manually log, maintain, and/or track their data until normal system operations resume.

3.6. Security and Privacy

The IMRS is password protected with restrictions on access privileges based on the user ID. Access authority to the IMRS is read only for normal users. Users with proper privileges will have the read/write capability. The connection to and from the mid-tier platform is secure and does not provide access to unauthorized users. The IMRS meets C2 security requirements as identified in DoD 5200.17, Security Requirements for Automated Information and Telecommunications Systems, along with the DoD 5200.28, DoD Trusted Computer System Evaluation Criteria. All users must complete a registration form prior to gaining system access.

3.6.1. User Identification and Authentication

Upon entering the user ID (Login Name), an "Invalid user ID and password" error message appears if the User ID or Password is incorrect.

If the password is close to expiring, the user will be notified starting seven days prior to password expiration, and again at every login.

If the password does expire, the user's login ID will be set to force a password change.

- User IDs (Login Names) are case sensitive.
- Users have a maximum of three login attempts before their account is disabled.

3.6.2. Passwords

The new user needs to sign up for an account before entering the system. To obtain an account, the user needs to provide organization information, contact information, and the user ID and password. The system will verify the uniqueness of user ID and verify all mandatory fields. A successful account registration will be displayed and further instructions will be provided. After the System Administrator has assigned access permissions, the user can log into the system and change the password.

The following requirements are applied to the password:

- Passwords shall be at least eight (8) characters long but less than sixteen characters long.
- Passwords shall consist of a mix of upper case letters, lowercase letters, numbers, and special characters, including at least one of each. Valid special characters are !, @, #, $, %, ^, *, (,) (there nine characters only)
- Any repeating characters in consecutive positions are not allowed. (i.e. good password - jY747*$6 (7 is used more than once but is not next to each other) bad password - jY744*$6 (4 repeats in consecutive positions)
- Passwords shall not be the same as or the reverse of the user login ID
- Passwords cannot be the same or the reverse of any of the users five previous passwords.
- If you are changing the password, the new password must differ from the previous password by at least three (3) characters. This is a character by character match comparing the first position of the new password with the first position of the previous password and then the second position, etc... (i.e. previous password = S34#jw*8 Acceptable new passwords 48S34#jw or T73#jw*8 or S34#km*85 (ok because positions 5.6. and 9 are different). Unacceptable new passwords G64#jw*8 (only the first two characters have changed) or S34*jw*9 (only position 4 and 8 have changed).
- User accounts will be locked after three (3) invalid access attempts. The System Administrator will process requests to unlock accounts.

3.7. Assistance and Problem Reporting

For any problems encountered during the operation and use of the IMRS, contact your immediate supervisor.

4. USING THE SOFTWARE

4.1. Accessing the Software

The following details the procedures that must be followed to access the IMRS (all instructions assume the user is familiar with Web Browser commands and navigation):

1. Obtain the IMRS URL.
2. Initiate a Web Browser.
3. Type the IMRS URL into the "http://" Browser address box and press ENTER.
4. Once the login screen appears (as shown in Figure 4.1- 1), click in the *Login Name* field.
5. Type in your Login Name (user ID).
6. Click in the *Password* field or press the TAB key.
7. Type in your password and then click on the *Login* link.
8. The IMRS menu displays

Figure 4.1- 1 IMRS Login Screen

For new user, click the link on the login page to sign up an account to access the system (See Figure 4.1- 2).

You need to provide your organization information, contact information, and the user ID and password that you prefer. The system will then verify the uniqueness of your user ID and verify all the mandatory fields. A successful account registration will be displayed and further instruction will be given.

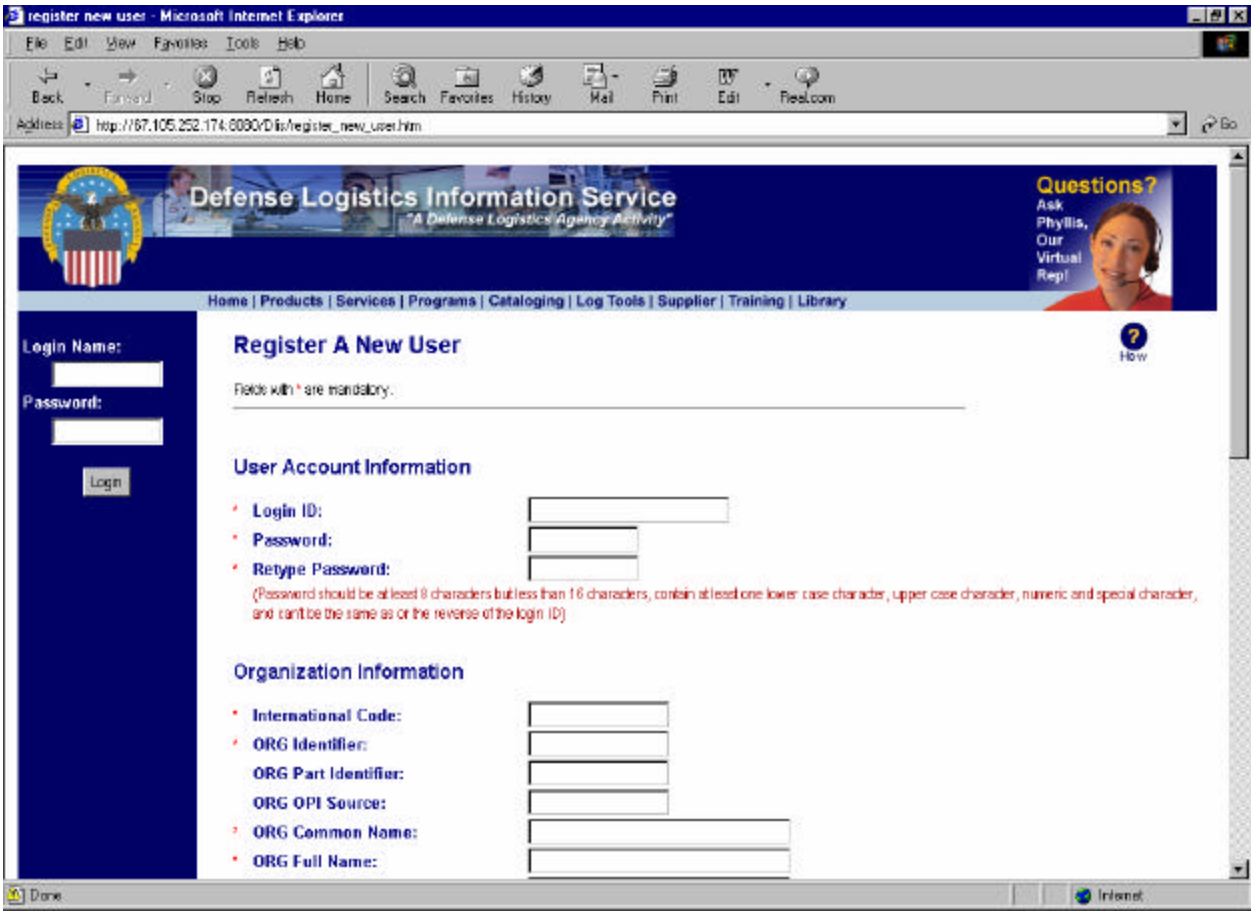


Figure 4.1- 2 Register A New User

The following screen (See Figure 4.1- 3) is displayed once you have logged into the system.

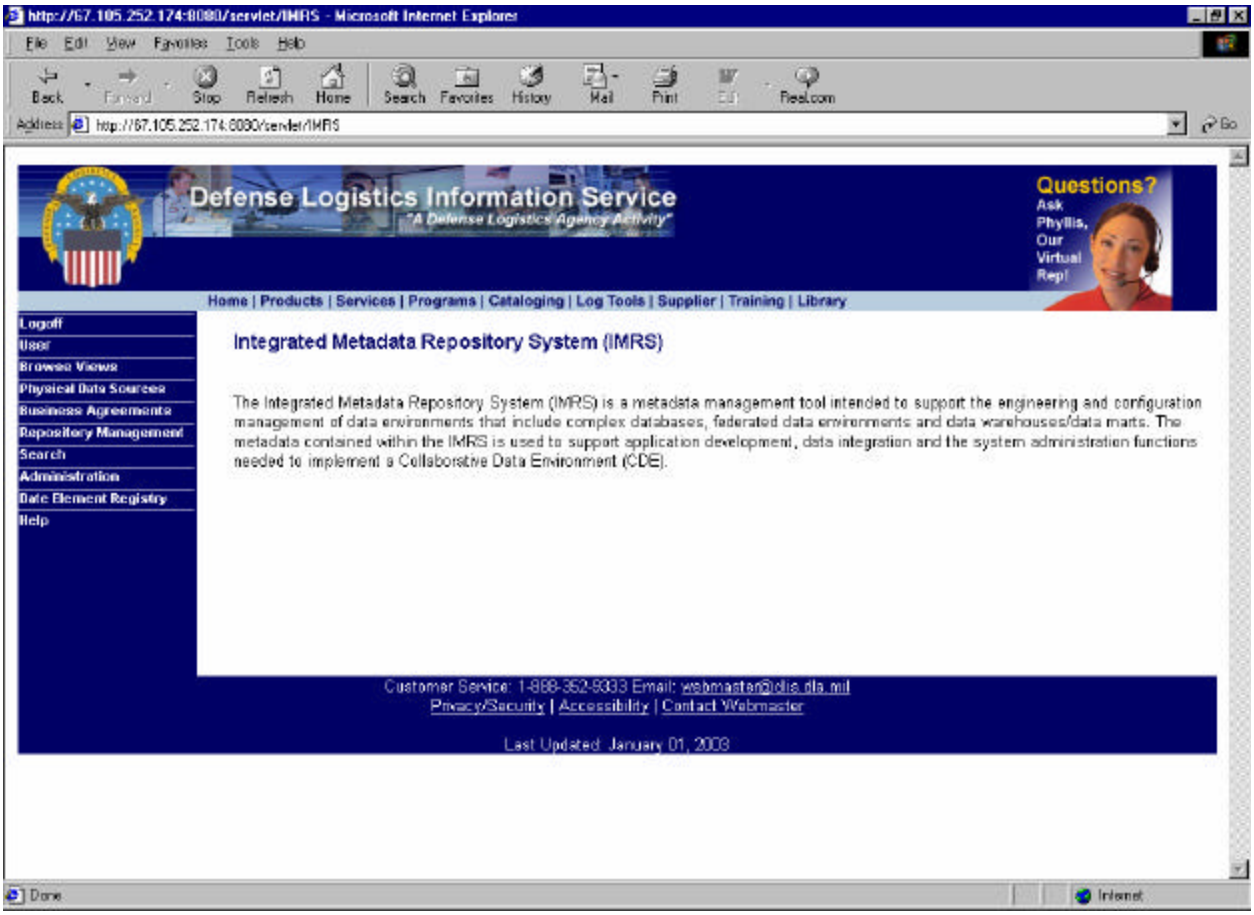


Figure 4.1- 3 IMRS Main Menu

4.2. User

The User screen provides interface for registered user to update the account information and update the contact information pertaining to the same account.

4.2.1. Maintain User Information

You can update your account information except Login ID. You need to fill in all of the mandatory fields in order to submit the new information. Enter the information that you want to update and click *Save* when you finish (See Figure 4.2.1- 1).

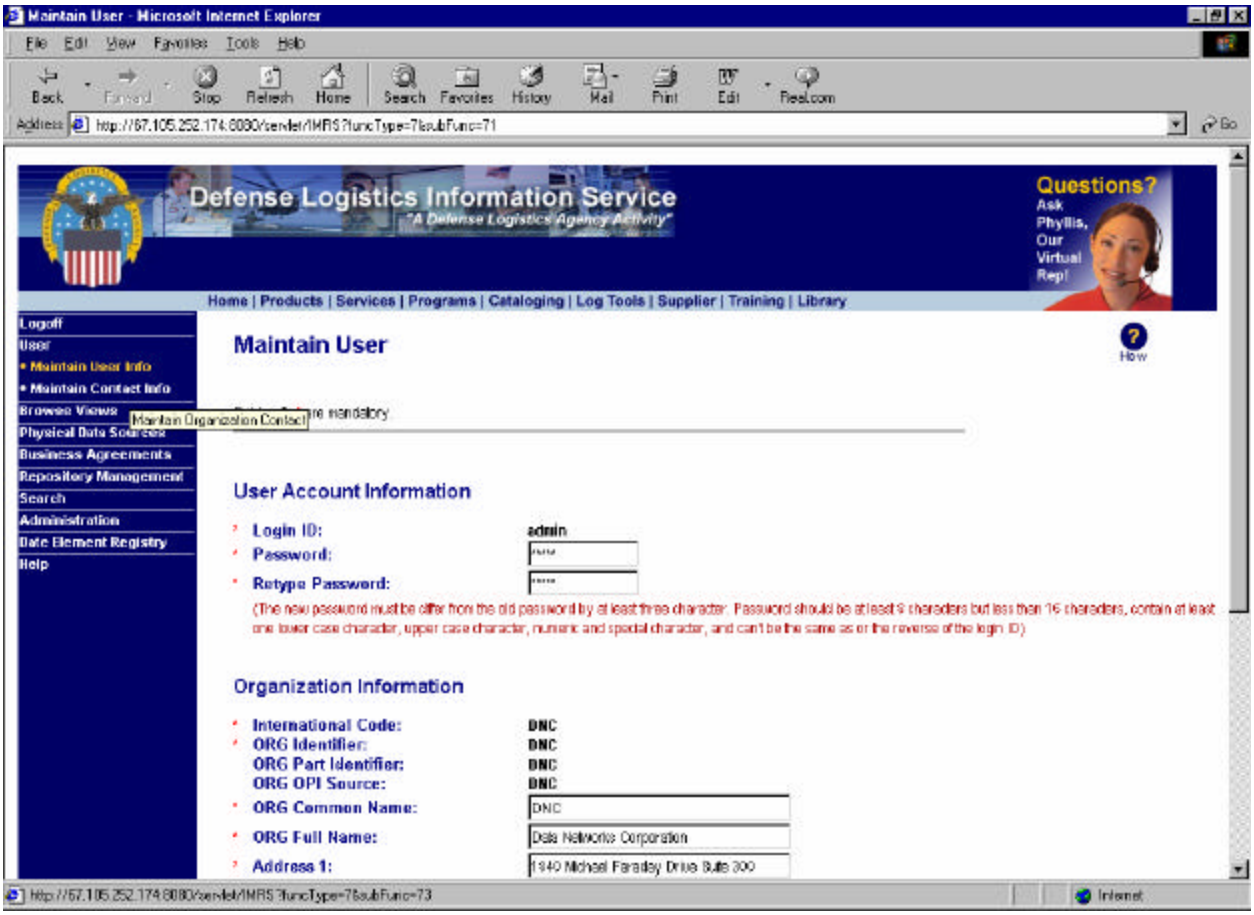


Figure 4.2.1- 1 User – Maintain User Information

4.2.2. Maintain Contact Information

You can maintain (add, view, update, or delete) the contact information pertaining to the same account. Enter the information that you want to update and click *Save* when you finish (See Figure 4.2.2- 1).

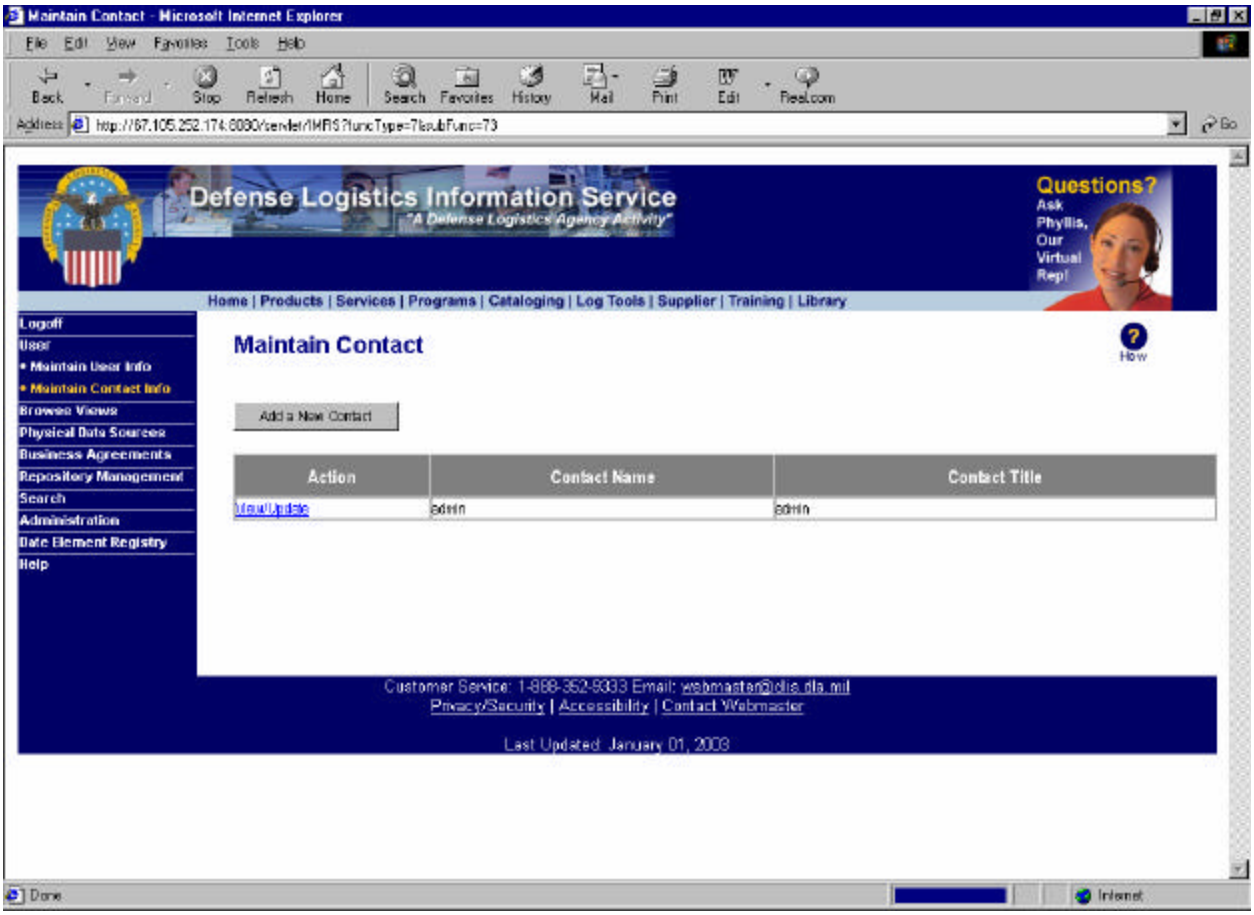


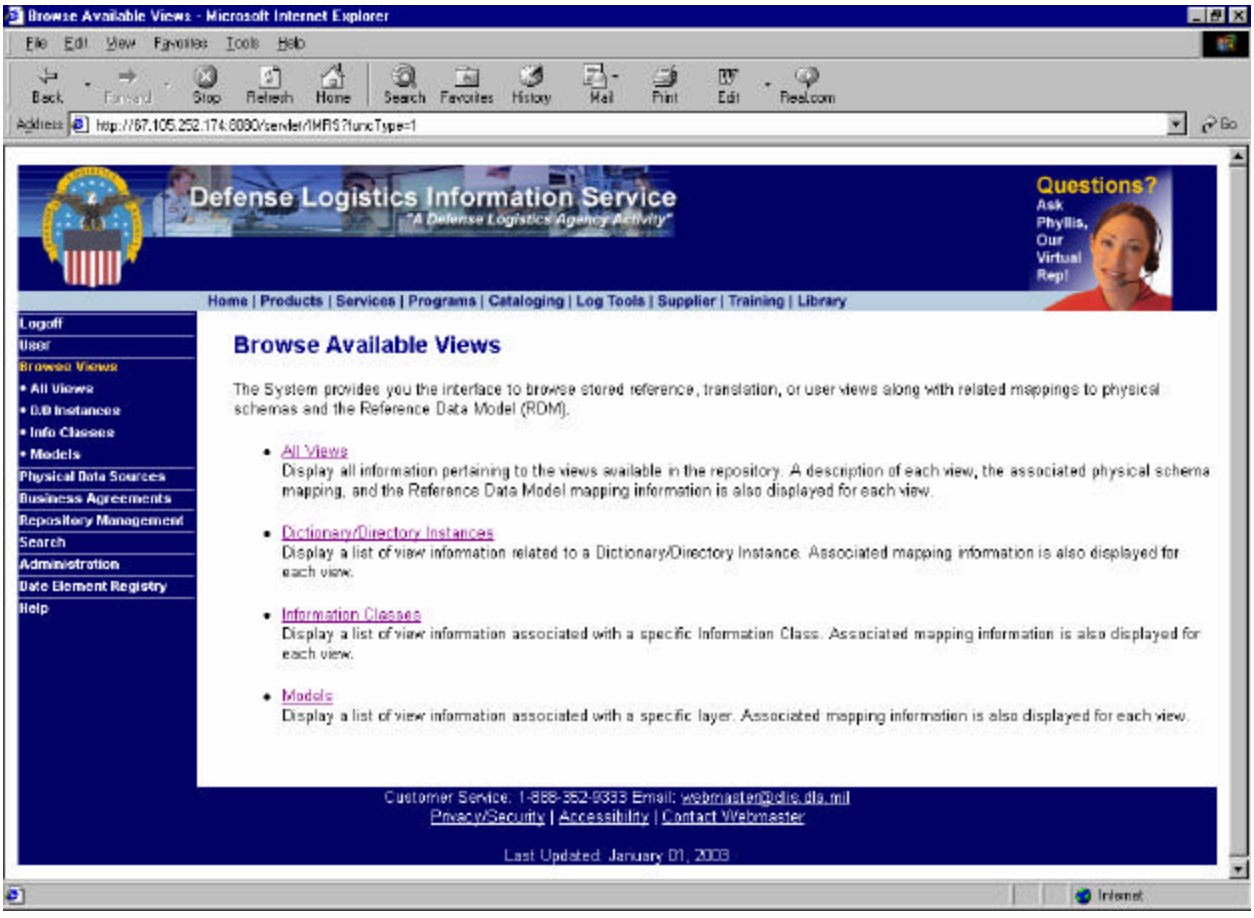
Figure 4.2.2- 1 User - Maintain contact Information

4.3. Browse Views

The “Browse Views” function provides user interface capabilities that display stored reference, translation, or user views along with related mappings to physical schemas and the Reference Data Model (RDM). The Browse Available Views link allows the user to select from four different options (See Figure 4.3- 1):

- Browse All Views available in the IMRS database
- Browse Views by a specific Dictionary/Directory (D/D) instance
- Browse Views by a specific Information Class (by category of information), or
- Browse Views by Model (by reference, translation, or user model)

From the displayed Browse selections, the user may read view descriptions, physical schema mapping information, and RDM mapping information by clicking on the link options. To close each window, press ALT F4 or click on the close button (X) in the



upper right-hand corner of the dialog box.

Figure 4.3- 1 Browse Views Menu Selections

4.3.1. Browse Available Views - All Views

Select the *All Views* link to list all information pertaining to the views available in the repository (See Figure 4.3.1- 1). A description of each view (click on the *View Description* link), the associated physical schema mapping (click on the *View Mapping* link), and the Reference Data Model mapping information (click on the *View RDM Mapping* link) is also displayed for each view.

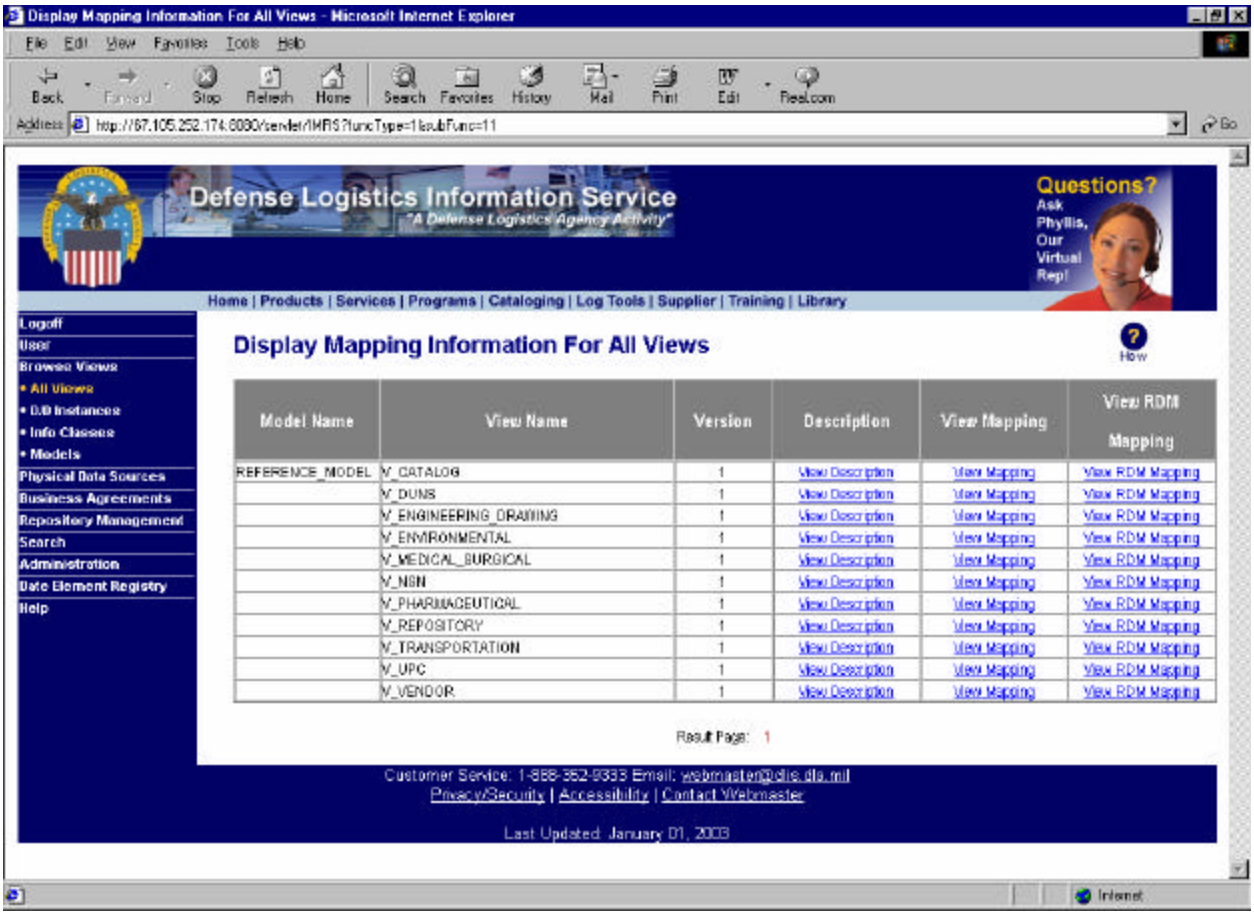


Figure 4.3.1- 1 Browse Available Views - All Views Menu Selection

For both the "View Mapping" and the "View RDM Mapping" options, the screen displays several links.

Click *Expression* link for a mapping to the physical schema traced by Data Source, Table, and Column (See Figure 4.3.1 - 2).

Click link under “Mapped to Column” to show information on the linked database or model, the table, column, data type and length, null/not null option, and a description of the column (See Figure 4.3.1 - 3).

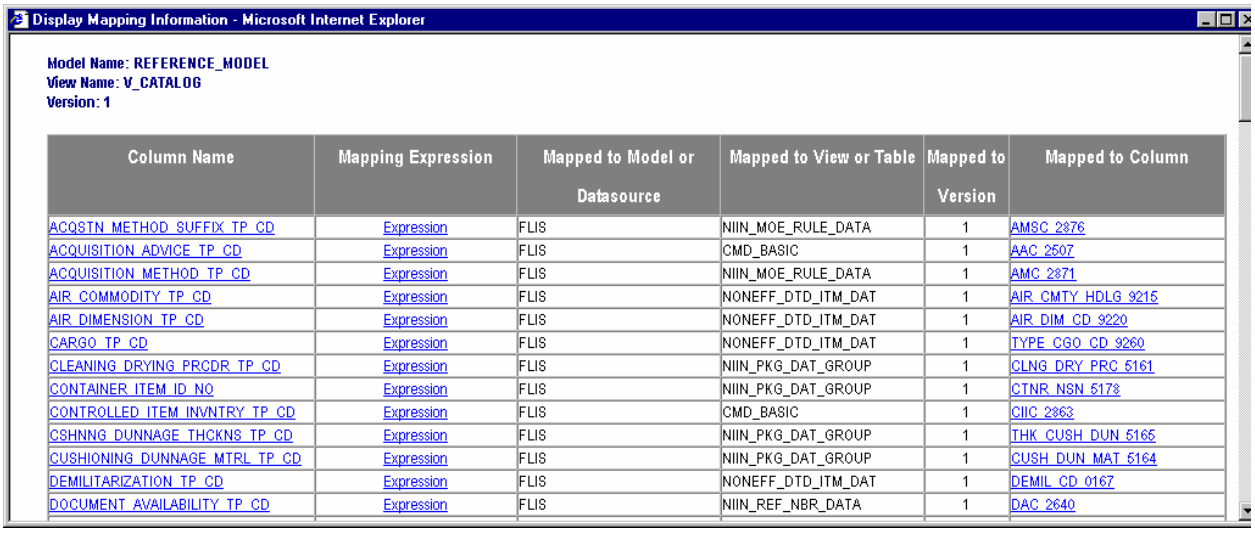


Figure 4.3.1- 2 Browse Available Views - All Views Menu Selection (View Mapping)

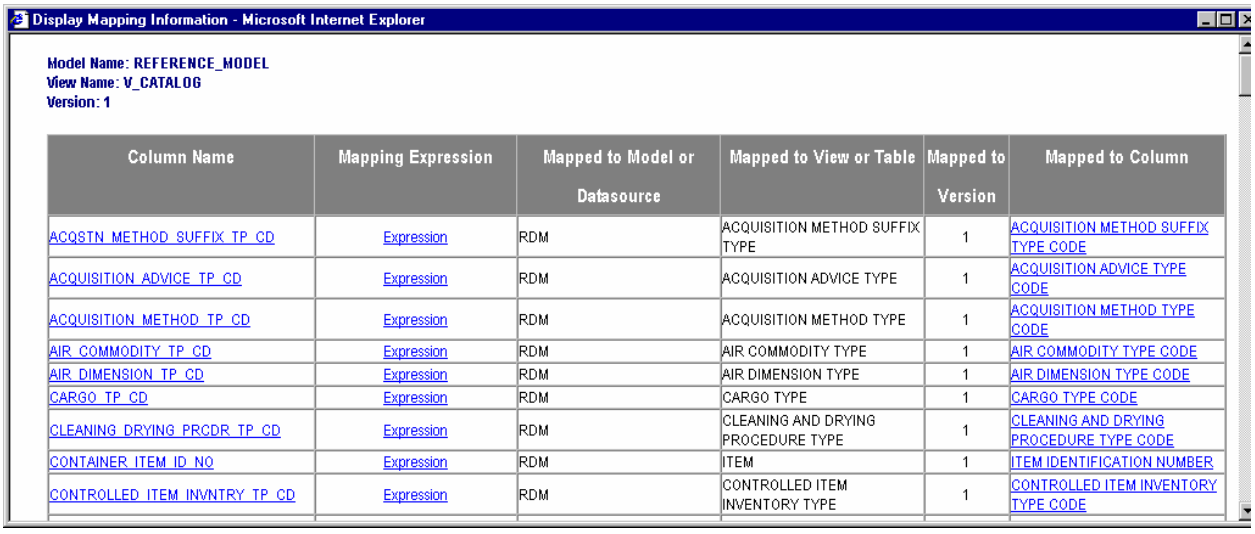


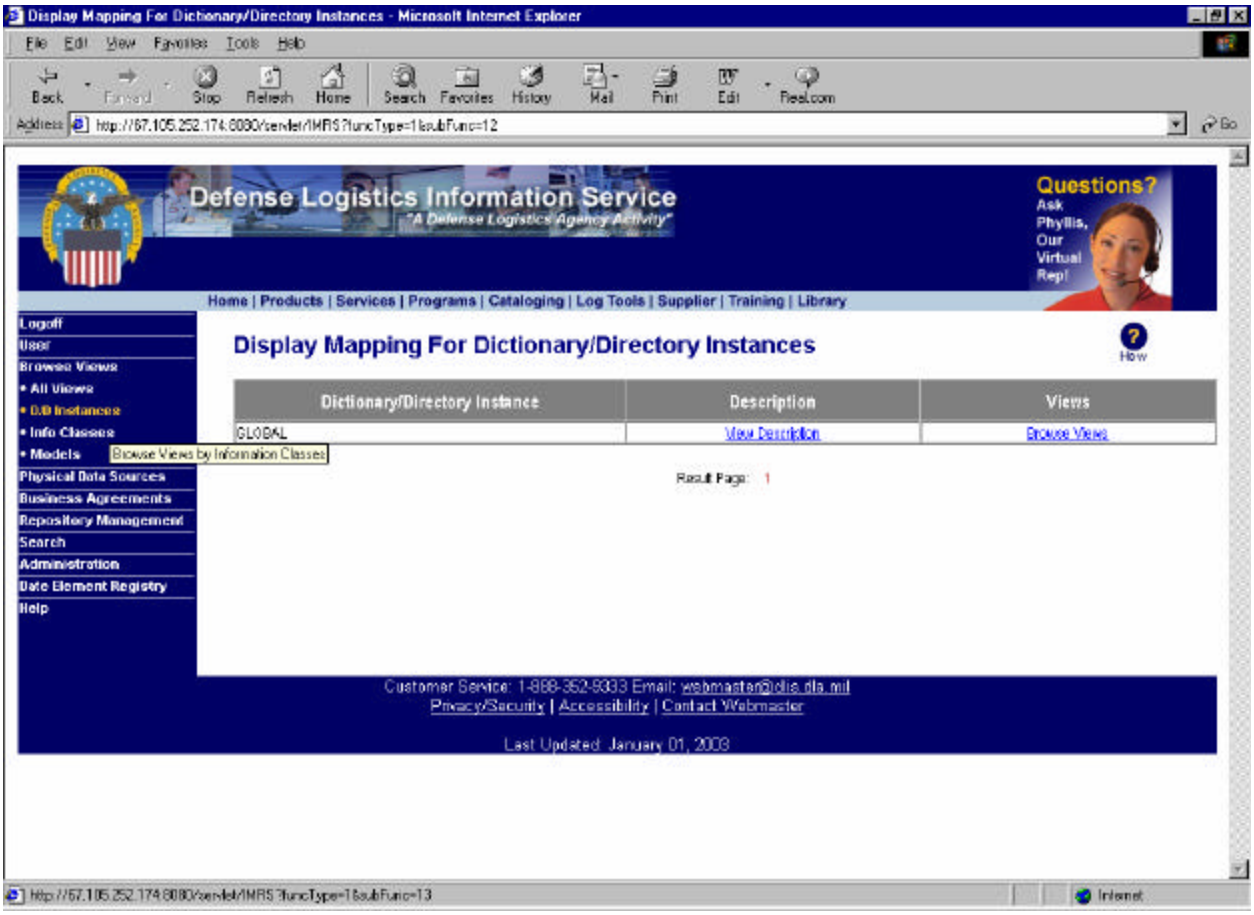
Figure 4.3.1- 3 Browse Available Views - All Views Menu Selection (View RDM Mapping)

4.3.2. Browse Available Views - Dictionary/Directory Instances

A list of D/D Instances is displayed. Click on the *Browse Views* link to list all view information associated with a Dictionary/Directory Instance (See Figure 4.3.2- 1). Associated mapping information is also displayed for each view. The user may select from the following D/D instances:

Example:

- Global (All available views)
- Product_Data_Profile (Product Data deliverable)



- VDBJTAV (JTAV CSC deliverable)
- VDBNAVY (Navy FMSO mediator deliverable)

Figure 4.3.2- 1 Browse Available Views - D/D Instances Menu Selection

A list of views pertaining to the selected Dictionary/Directory Instance is displayed. Associated mapping information is also displayed for each view.

Click on Description for Description of the View.
Click on View Mapping for mapping information.
Click View RDM Mapping to see the mapping to the Reference Data Model.

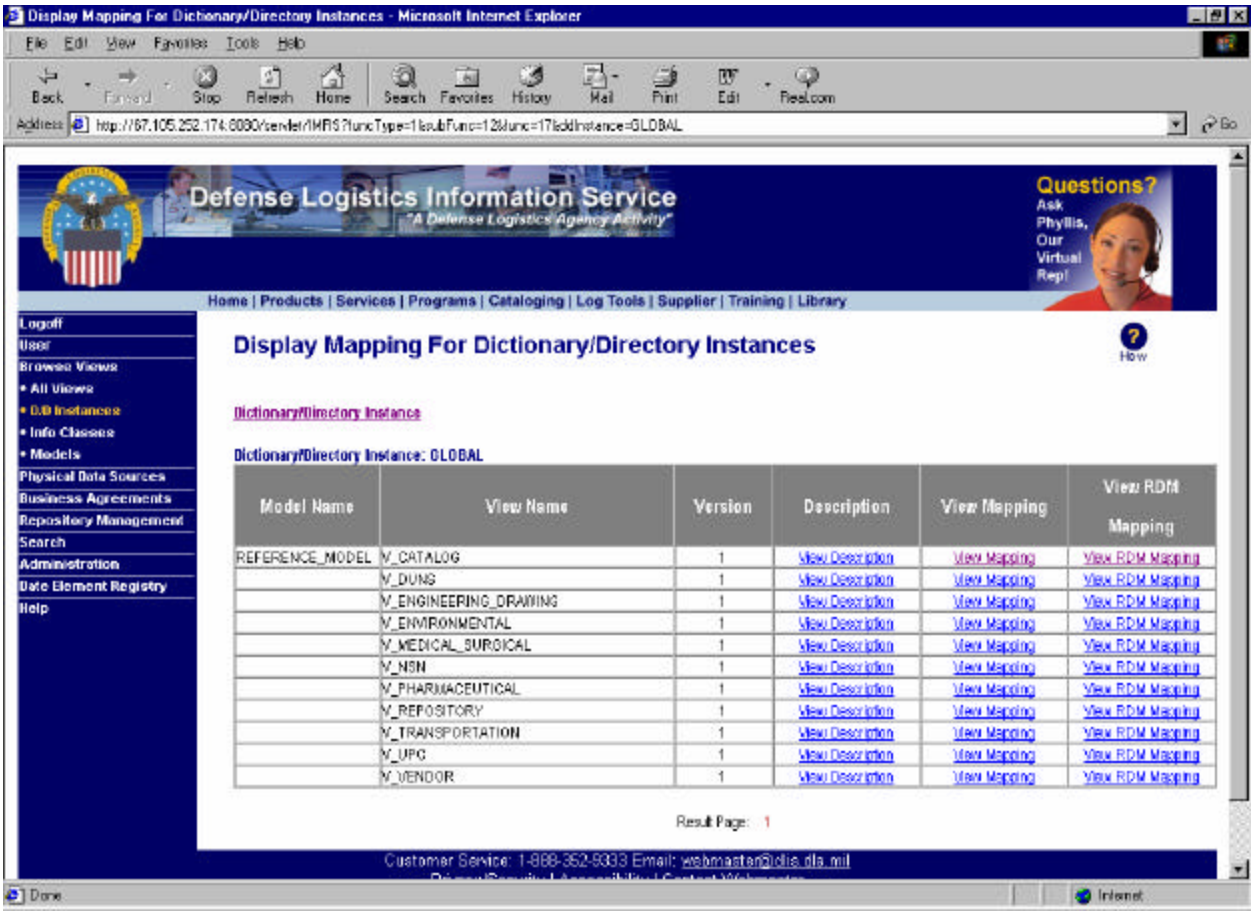


Figure 4.3.2- 2 Browse Available Views - D/D Instances Menu Selection

4.3.3. Browse Available Views - Product Data Information Classes

Click on the *Browse Views by Information Class* link from menu to list all view information associated with a specific Information Class. Valid data type selections include the following Information Classes:

- Configuration Identification and Control
- Contract
- Cost
- Inventory/Asset Management
- Item Identification
- Maintenance/Modification
- Manufacturing
- Organizational Data
- Product Concept
- Product Functional Design
- Product Instance
- Product Physical Design
- Product Requirements
- Product Support Design
- Product Support Plan
- Program Management
- Provisioning
- Quality
- Technical Manuals
- Test and Evaluation
- Training
- Transportation

A list of Information Classes is displayed. Click Browse Views to see the views pertaining to the Information Classes (See Figure 4.3.3- 1).

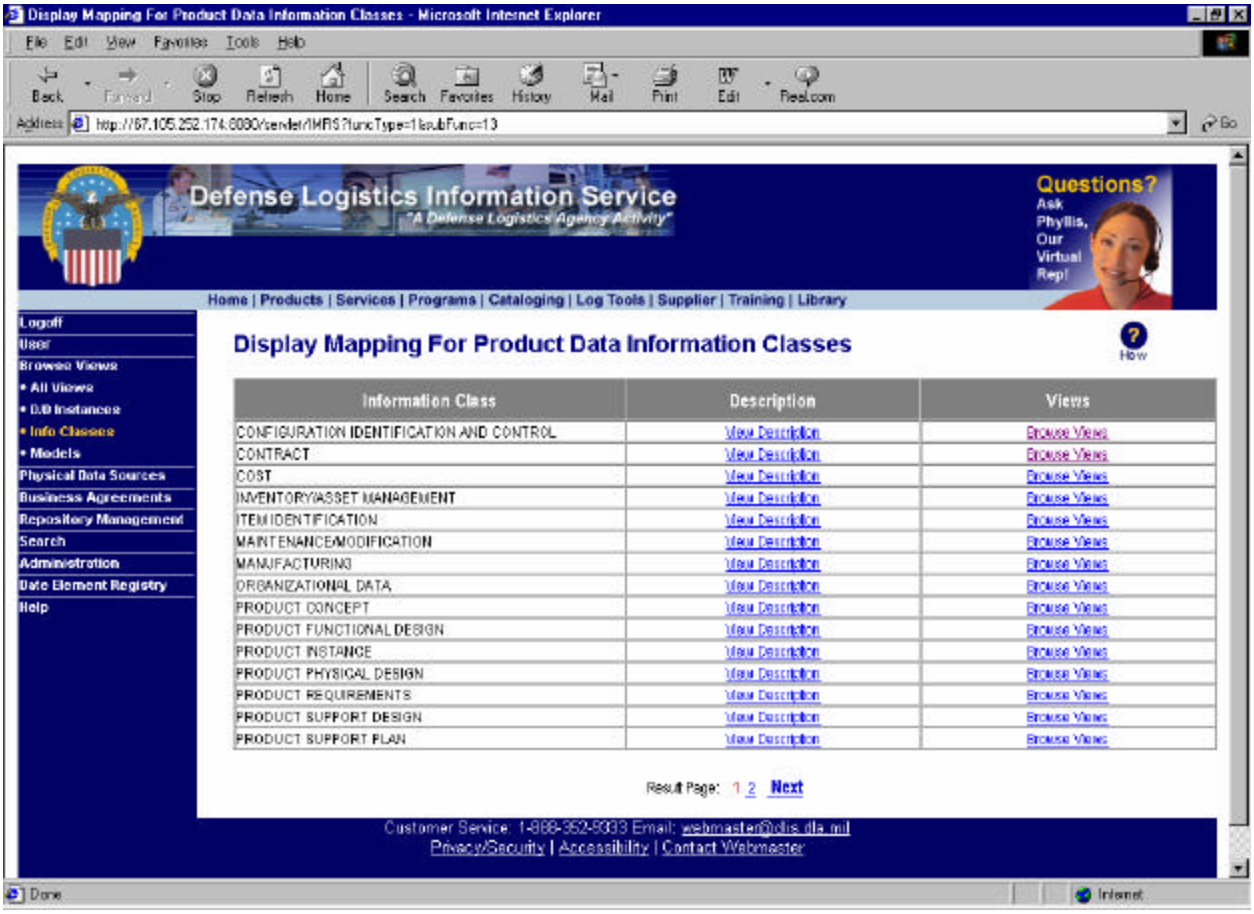


Figure 4.3.3- 1 Browse Available Views - PD Info Classes Menu Selection

A list of views pertaining to the selected Information Class is displayed (See Figure 4.3.3- 2).

Click on Description for Description of the View.
Click on View Mapping for mapping information.
Click View RDM Mapping to see the mapping to the Reference Data Model.

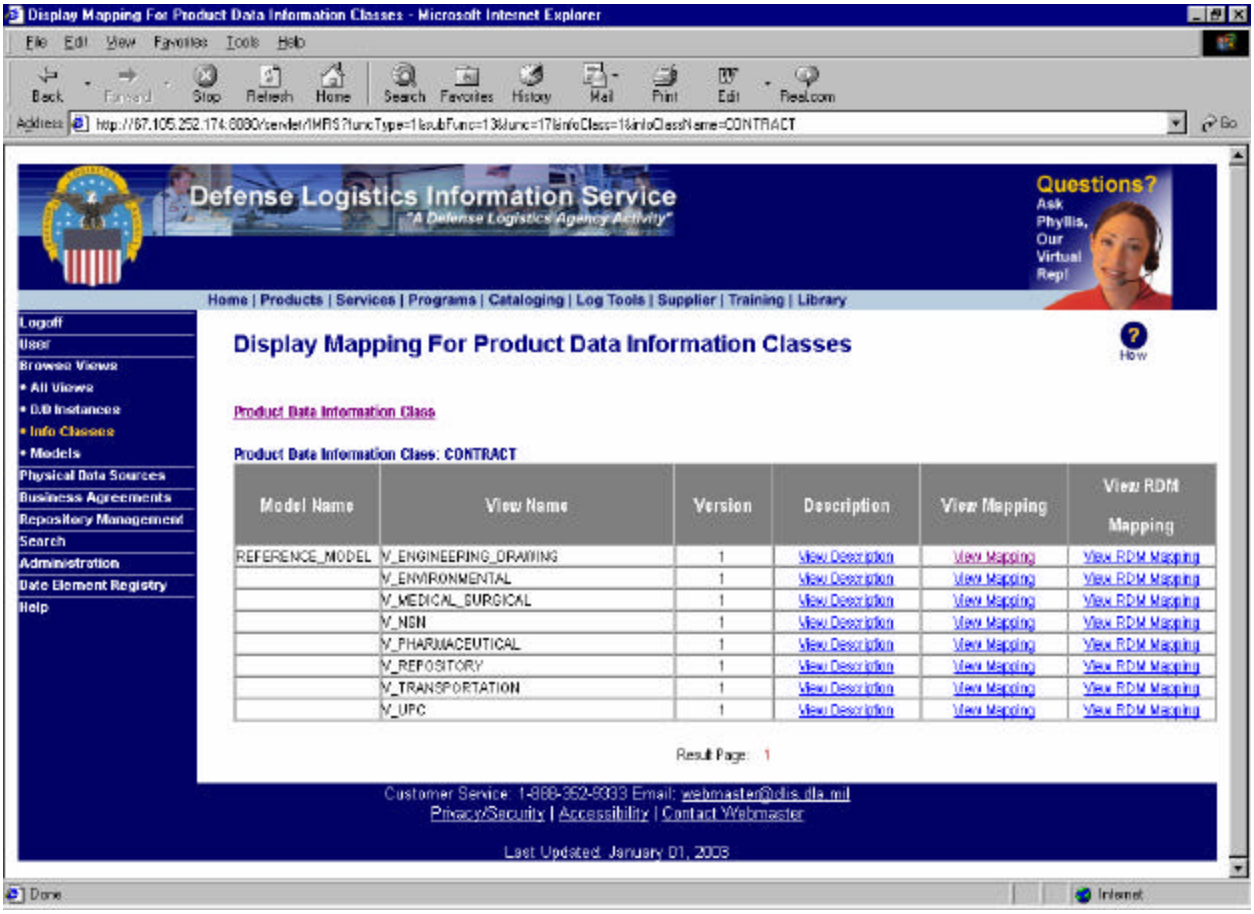


Figure 4.3.3- 2 Browse Available Views - PD Information Classes Menu Selection

4.3.4. Browse Available Views - Models

Click on the *Browse Views by Models* link from menu to list all view information associated with a specific reference, translation, or user Model (See Figure 4.3.4 - 1).

For a display listing view information associated with a specific layer, see Figure 4.3.4-2. Associated mapping information is also displayed for each view.

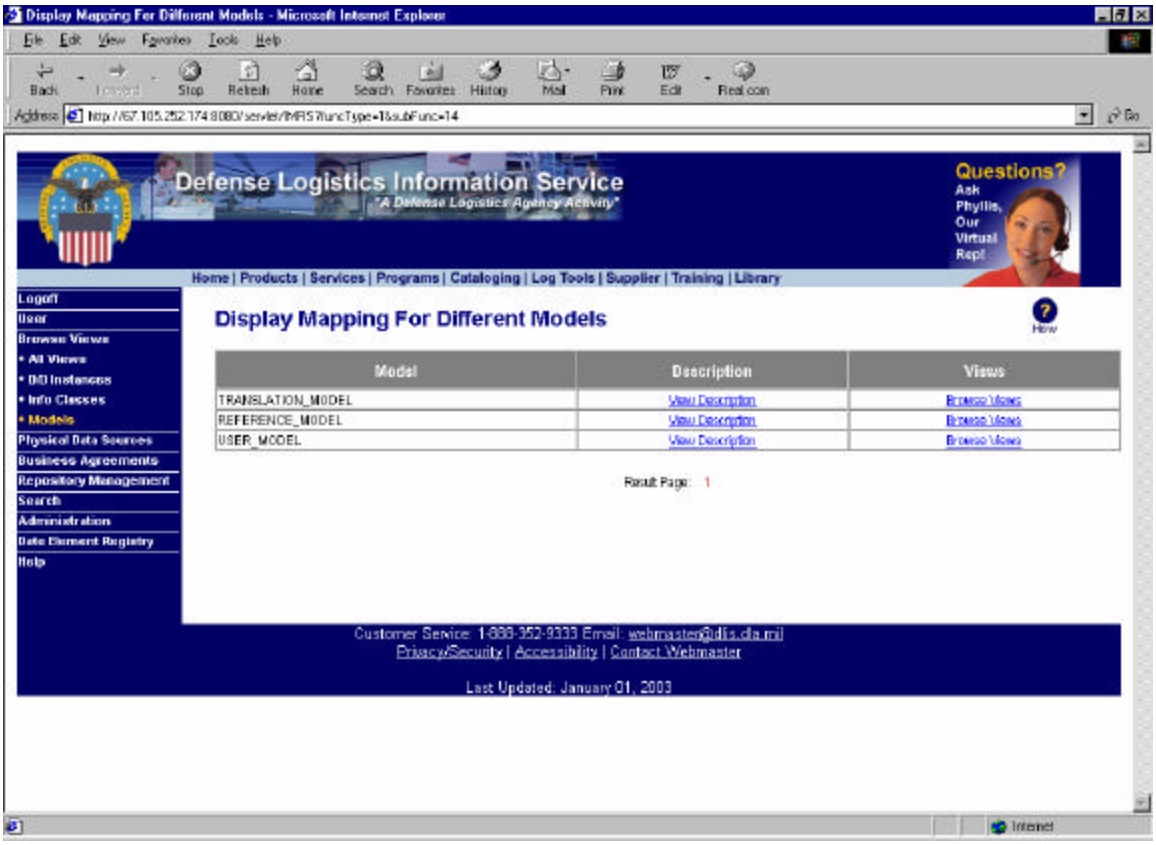


Figure 4.3.4- 1 Browse Available Views – Models Menu Selection

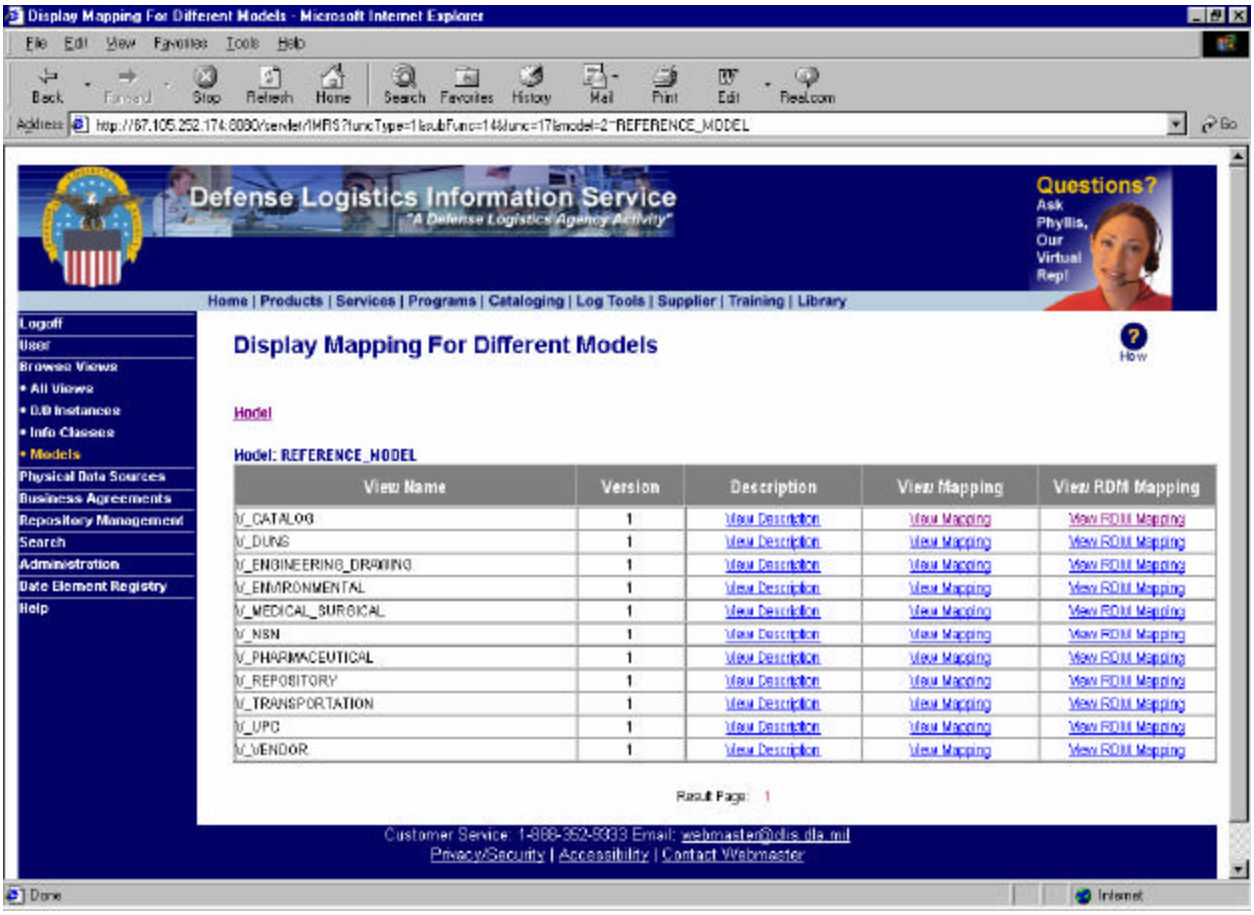


Figure 4.3.4- 2 Browse Available Views - Models Menu Selection

4.4. Physical Data Sources

The Physical Data Sources menu link (See Figure 4.4- 1) allows users to select the following options:

- Schema (table and column information) for each data source
- Tracing (views mapped to data sources)
- Connectivity (data source access information) or
- POCs (data source point of contact information)

The Physical Data Source interface provides user access to available schemas for physical data sources, tracing information, connectivity, and point of contact information.

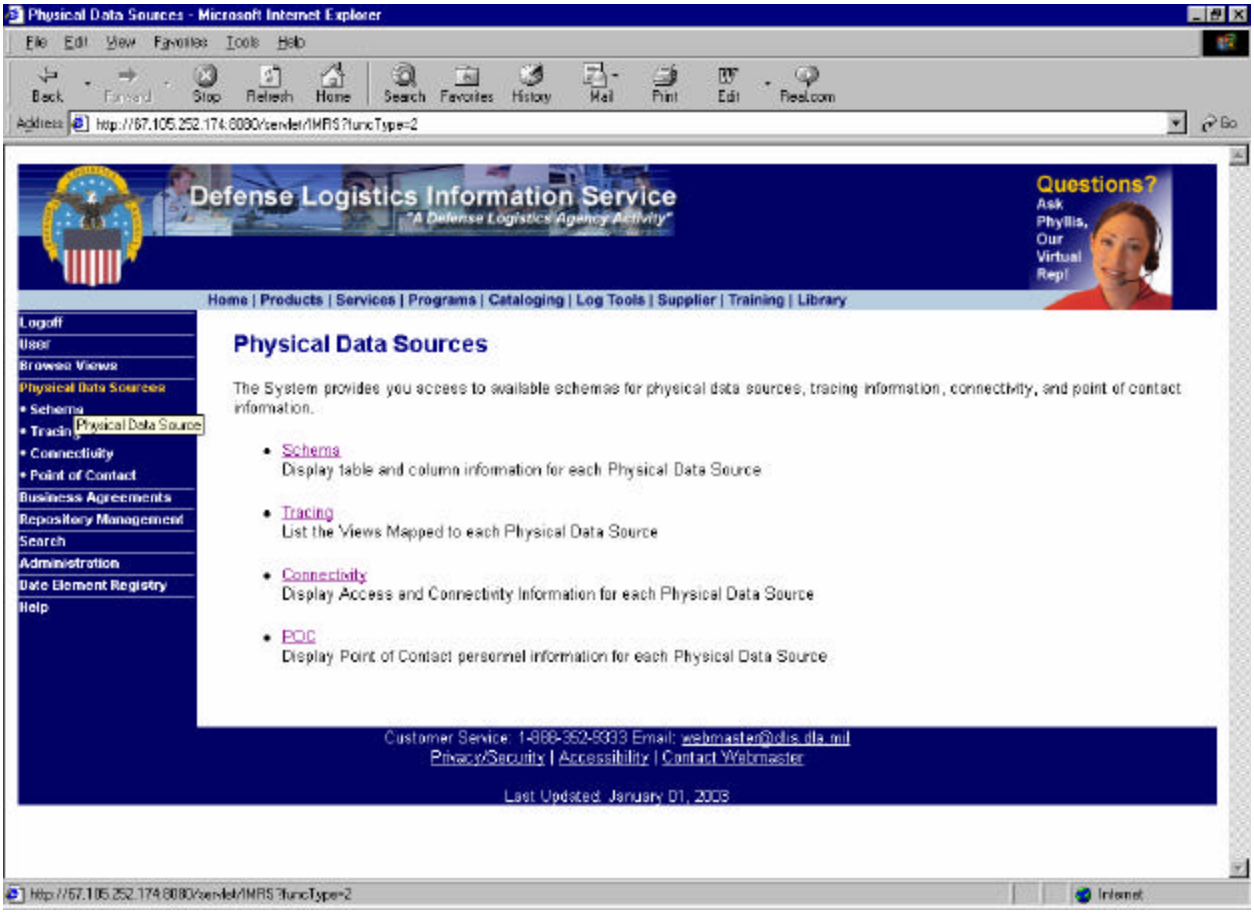


Figure 4.4- 1 Physical Data Sources Menu Selections

4.4.1. Physical Data Sources - Schema

The user may click the *View Schema* link (See Figure 4.4.1- 1) to display the schema for a data source. The Table information, such as table name, table version, version date, and its definition, is displayed (See Figure 4.4.1- 2). Click the *View Columns* link under the *View Columns* heading for each table to display all column information, such as column name, data type, nullable flag, and column comment (See Figure 4.4.1- 3).

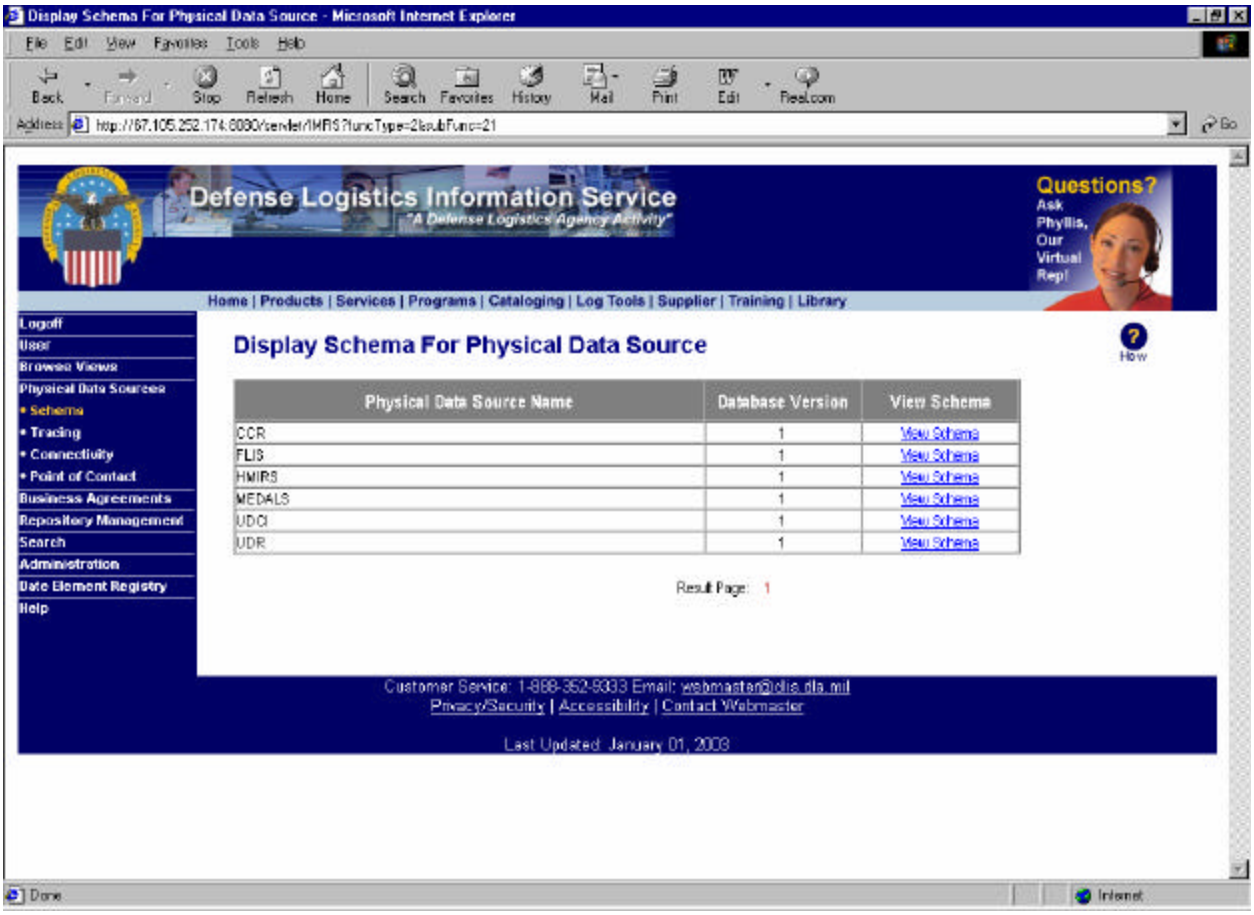


Figure 4.4.1- 1 Physical Data Sources – Schema Menu Selection

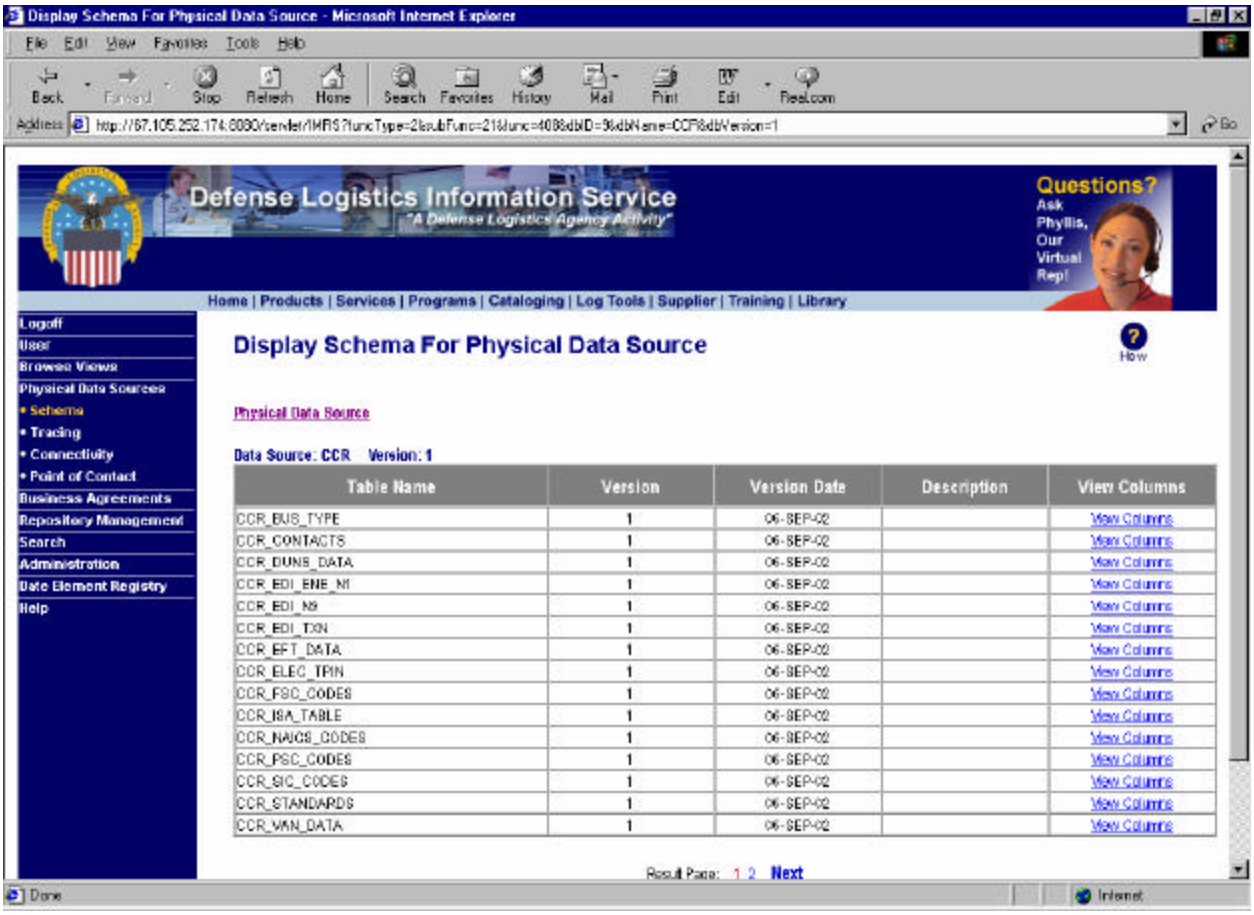


Figure 4.4.1- 2 Physical Data Sources - Schema Menu Selection

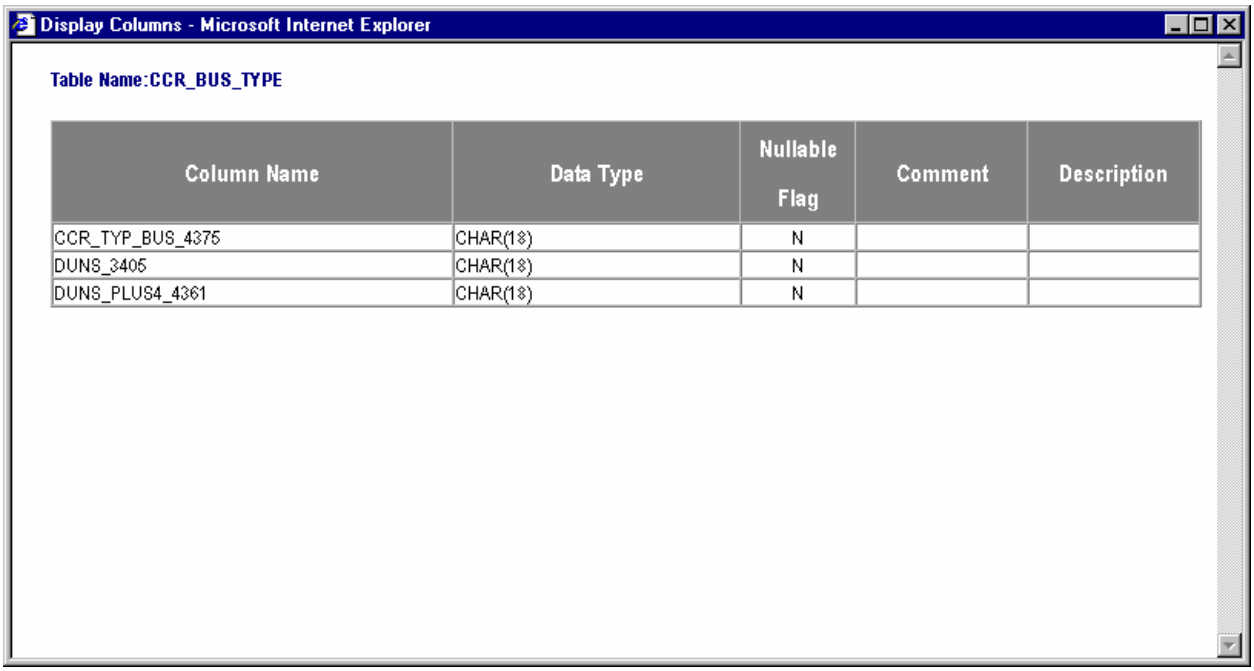


Figure 4.4.1- 3 Physical Data Sources - Schema Menu Selection

4.4.2. Physical Data Sources - Tracing

The user may click the *View Tracing* link (See Figure 4.4.2- 1) to display the tracing information for data sources. All tables' tracing information (with default sorting by physical table) involved in the mapping for a data source is displayed. The tracing information includes the mapping of a versioned physical table to a model and to a versioned view (See Figure 4.4.2- 2).

- Click the *View Tracing* link to display tracing information sorted by mapped to view. (This shows all of the physical tables that were used to map to this view) (See Figure 4.4.2- 2).

- The Physical Table column displays tracing information sorted by physical table. (This shows how the physical tables were mapped to views)

- Click the *View Name* to display the tracing information for this view. (This shows whether this view was mapped to other views or if it belongs to a certain D/D instance) (See Figure 4.4.2- 3).

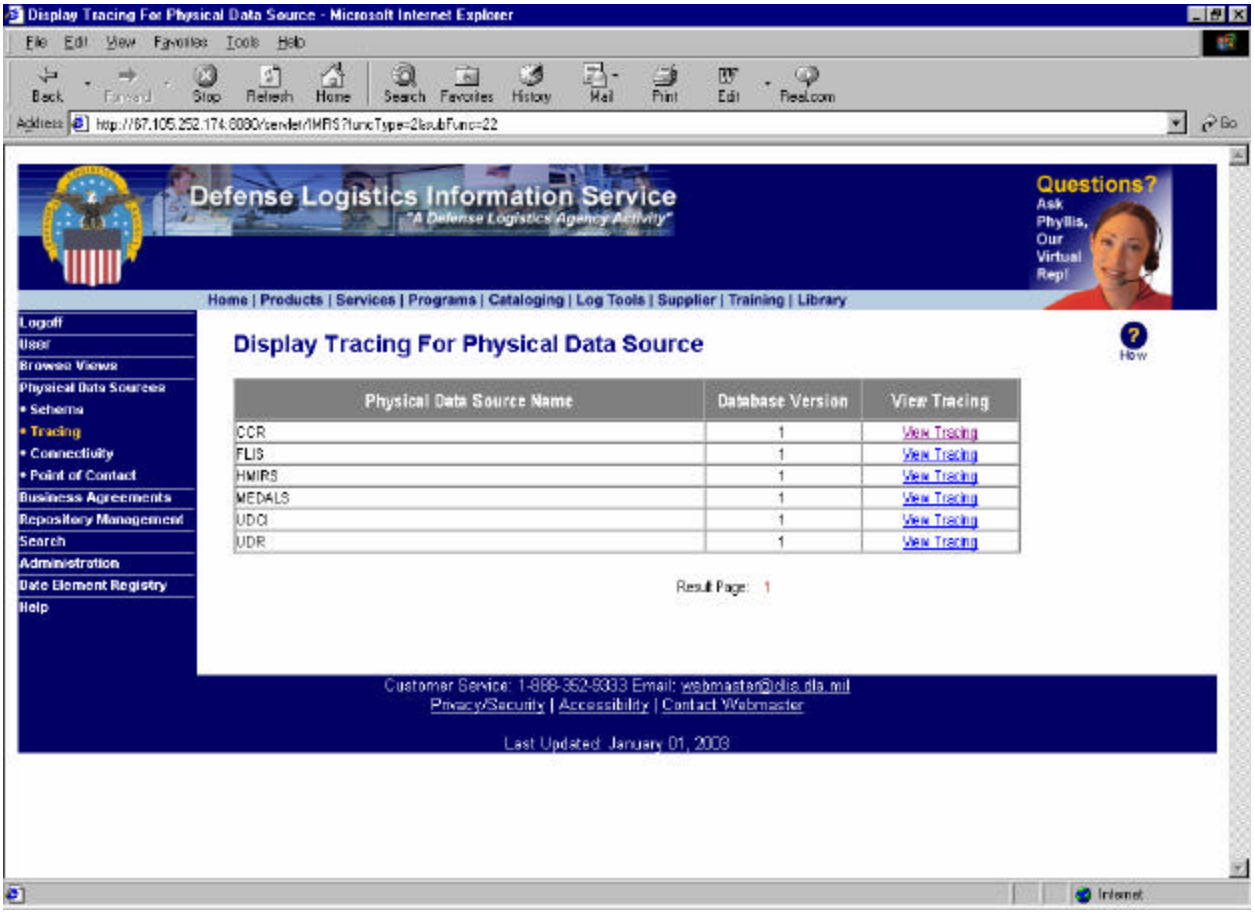


Figure 4.4.2- 1 Physical Data Sources - Tracing Menu Selection

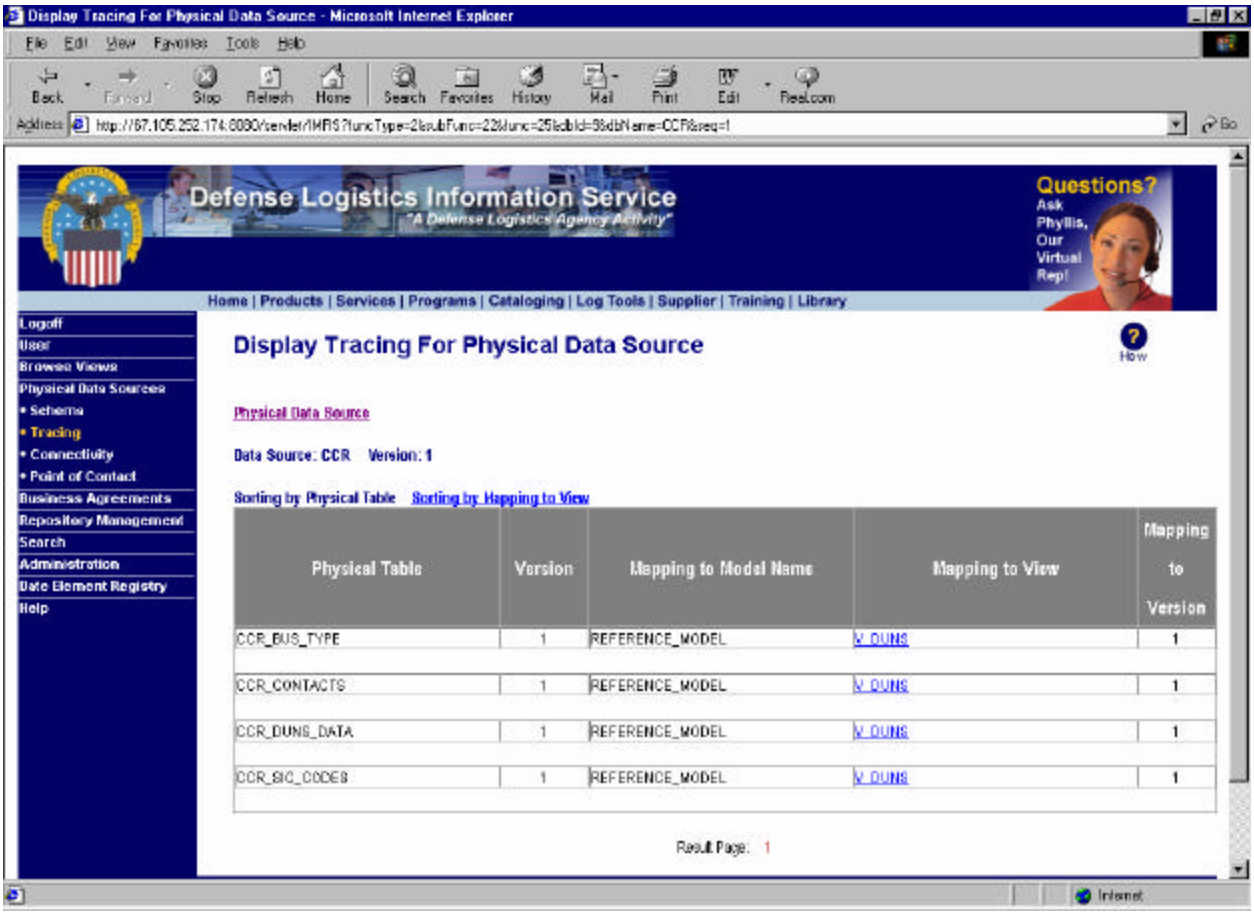


Figure 4.4.2- 2 Physical Data Sources - Tracing Menu Selection

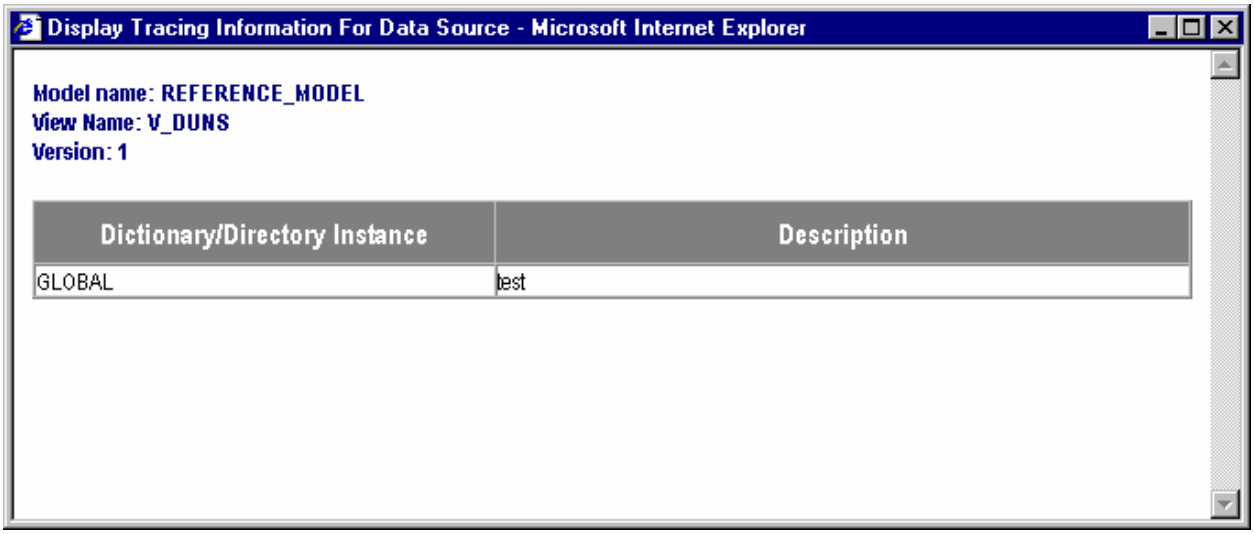


Figure 4.4.2- 3 Physical Data Sources - Tracing Menu Selection

4.4.3. Physical Data Sources - Connectivity

The user may click the *Connectivity* link from menu to display access and connectivity information (such as DB name, DB instance, service name, host name, server network name, location, and login ID) for each data source (See Figure 4.4.3 - 1).

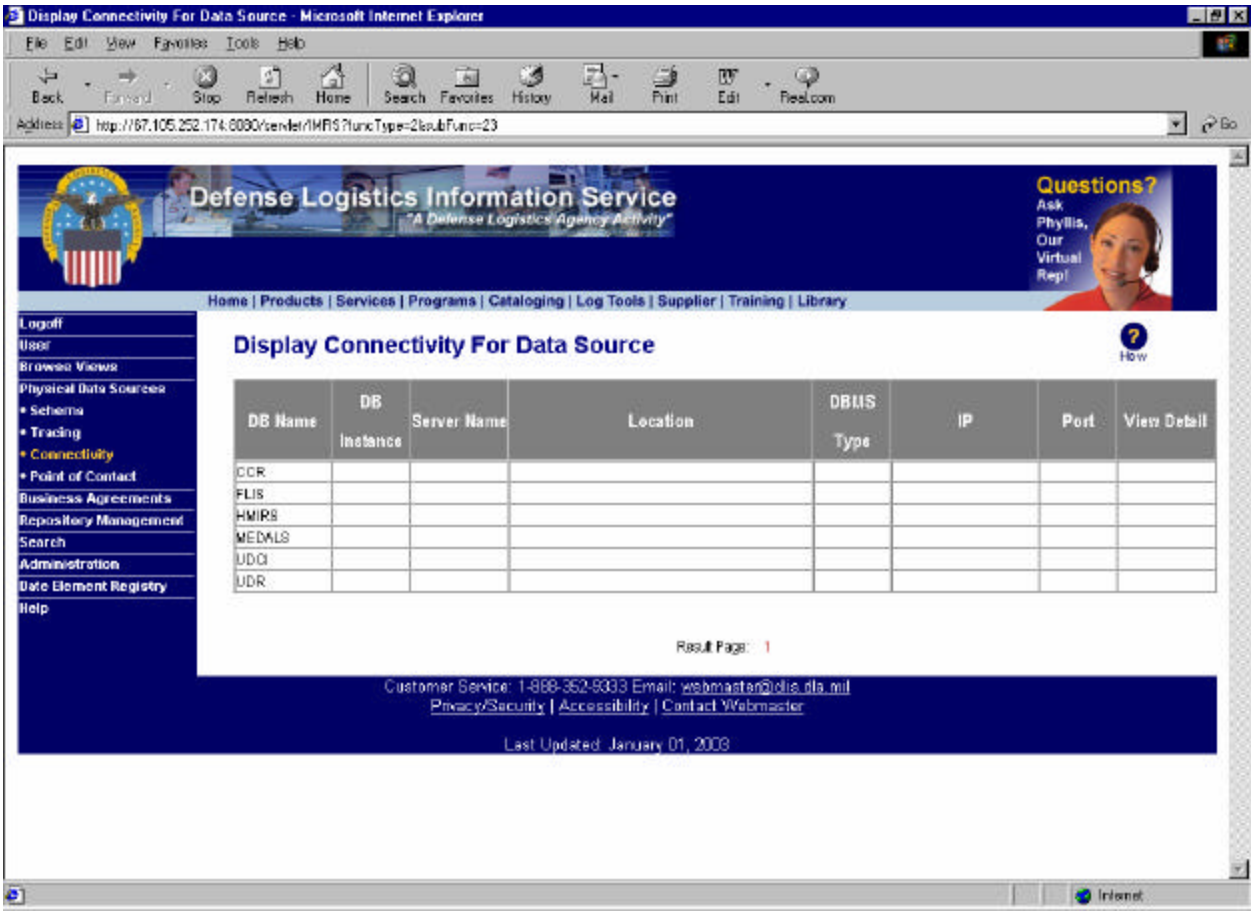


Figure 4.4.3- 1 Physical Data Sources - Connectivity Menu Selection

4.4.4. Physical Data Sources - Point of Contact (POC)

The user may click the *Point of Contact (POC)* link from menu to display information for contacting data source personnel.

Click *View POC* link (See Figure 4.4.4- 1) to display POC information such as organization, POC name, role, address, phone, fax, and email address (See Figure 4.4.4- 2).

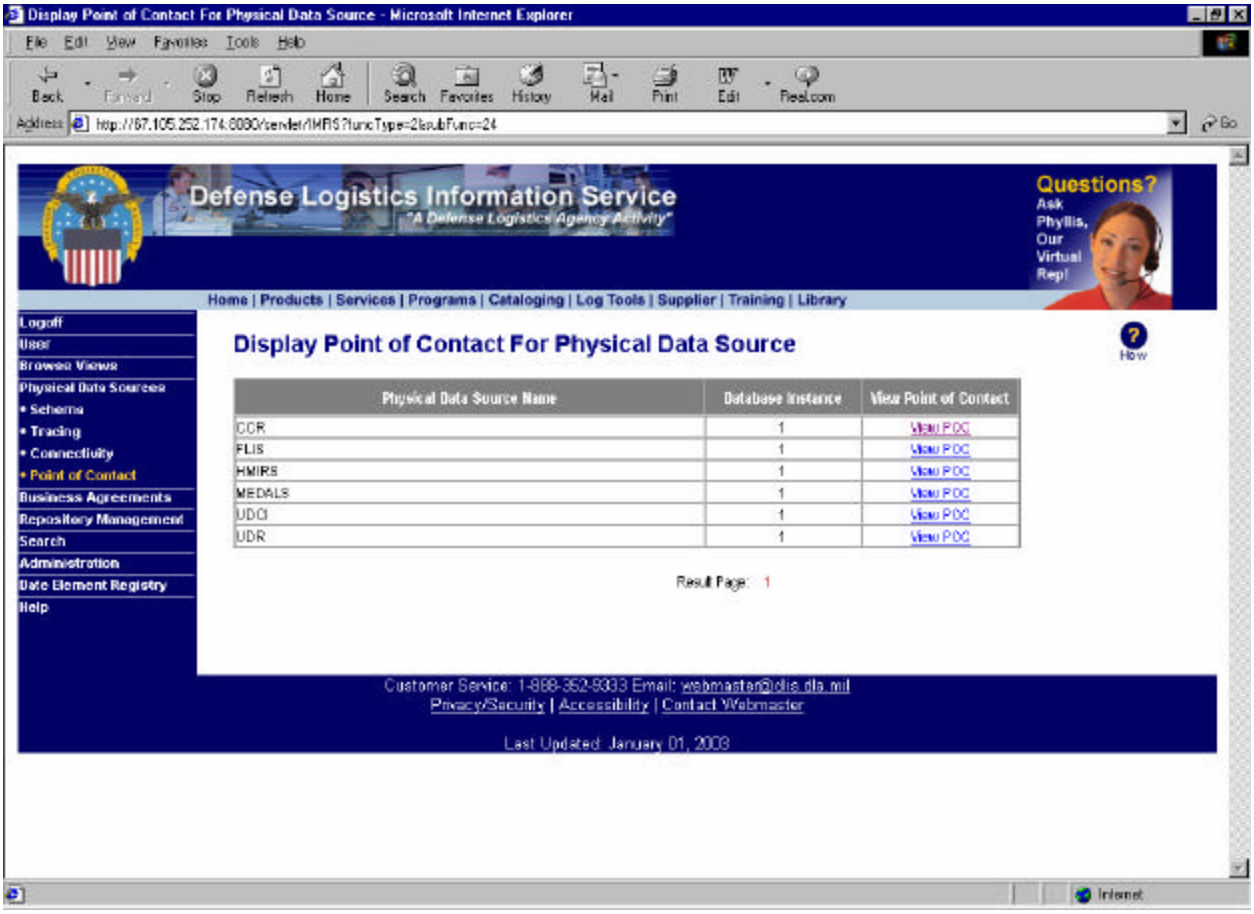


Figure 4.4.4- 1 Physical Data Sources - POCs Menu Selection

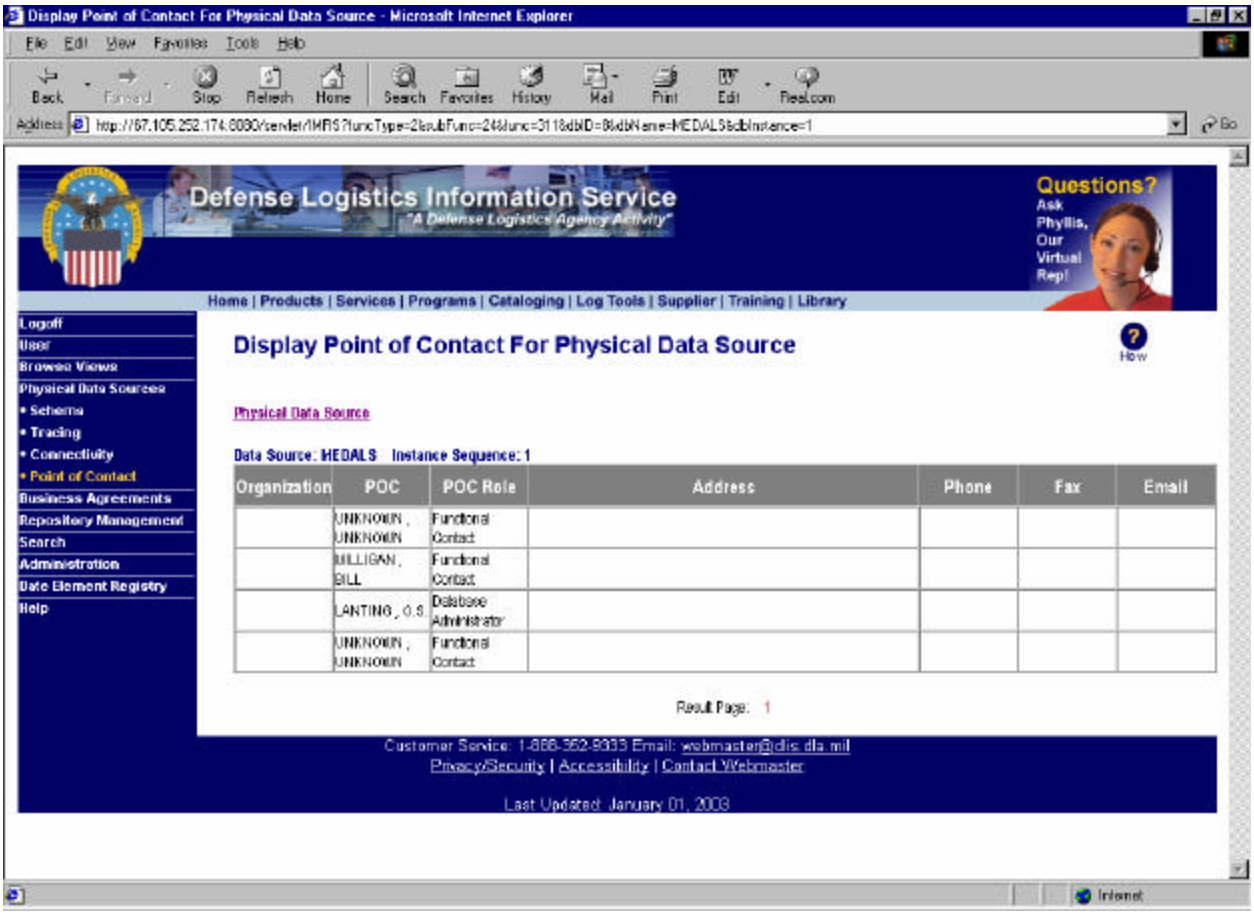


Figure 4.4.4- 2 Physical Data Sources - POCs Menu Selection

4.5. Business Agreements

The Business Agreements menu link option (See Figure 4.5- 1) allows users to view the following types of business agreements:

- Data Sharing Requests (DSRs) - requests for sharing data between systems.
- Data Sharing Specifications (DSSs) - specifications for data sharing requirements between systems.
- Memorandums of Agreement (MOAs) - system interface agreements between data subscribers and providers.

The Business Agreements option provides user interface capabilities to display data sharing business agreements. The Business Agreements interface provides user access to memoranda of agreement, all data sharing request information, and data sharing specifications.

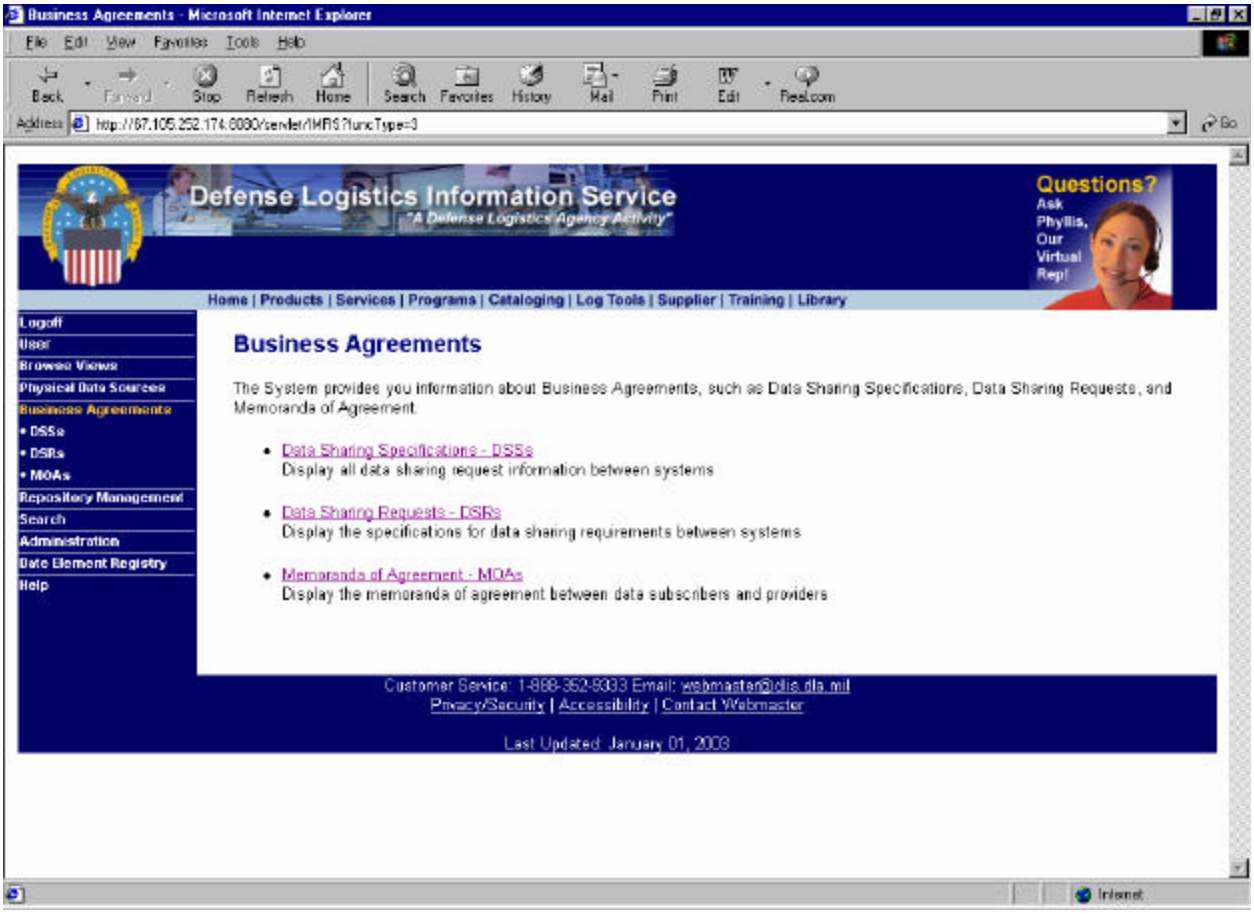


Figure 4.5- 1 Business Agreements Menu Selections

4.5.1. Business Agreements - DSSs

The Data Sharing Specification option provides user access to the data sharing specification related to a data sharing request and a source. This option lists Data Sharing Specifications (DSSs) that address a Data Sharing request (DSR) (See Figure 4.5.1-1). The actual data sharing specification files may also be displayed. The user may select DSSs by one of two options: DSS Addressing DSR or DSS Addressing Data Source.

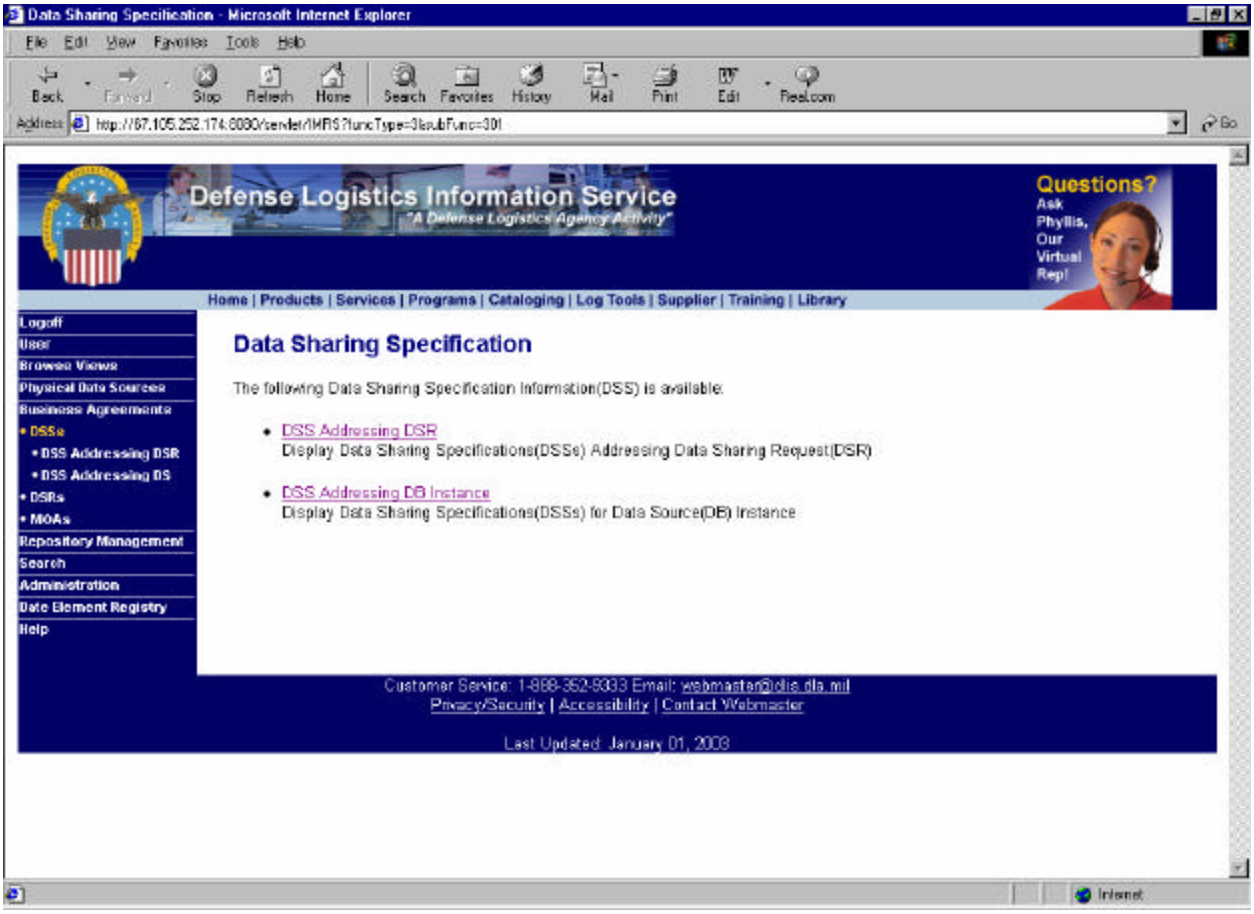


Figure 4.5.1-1 Business Agreements - DSRs Menu Selection

4.5.1.1. DSS Addressing DSR

A list of data sharing specifications is displayed (See Figure 4.5.1.1- 1). Click *View DSS* link and the information of the specified Data Sharing Specification such as System Name, DB Name, DB Version, Initial Date, Agreement Date, Access Completion Date, Mapping Completion Date, and Completion Date (See Figure 4.5.1.1- 2). Click the DSS File to view the contents of the DSS file (See Figure 4.5.1.1- 3).

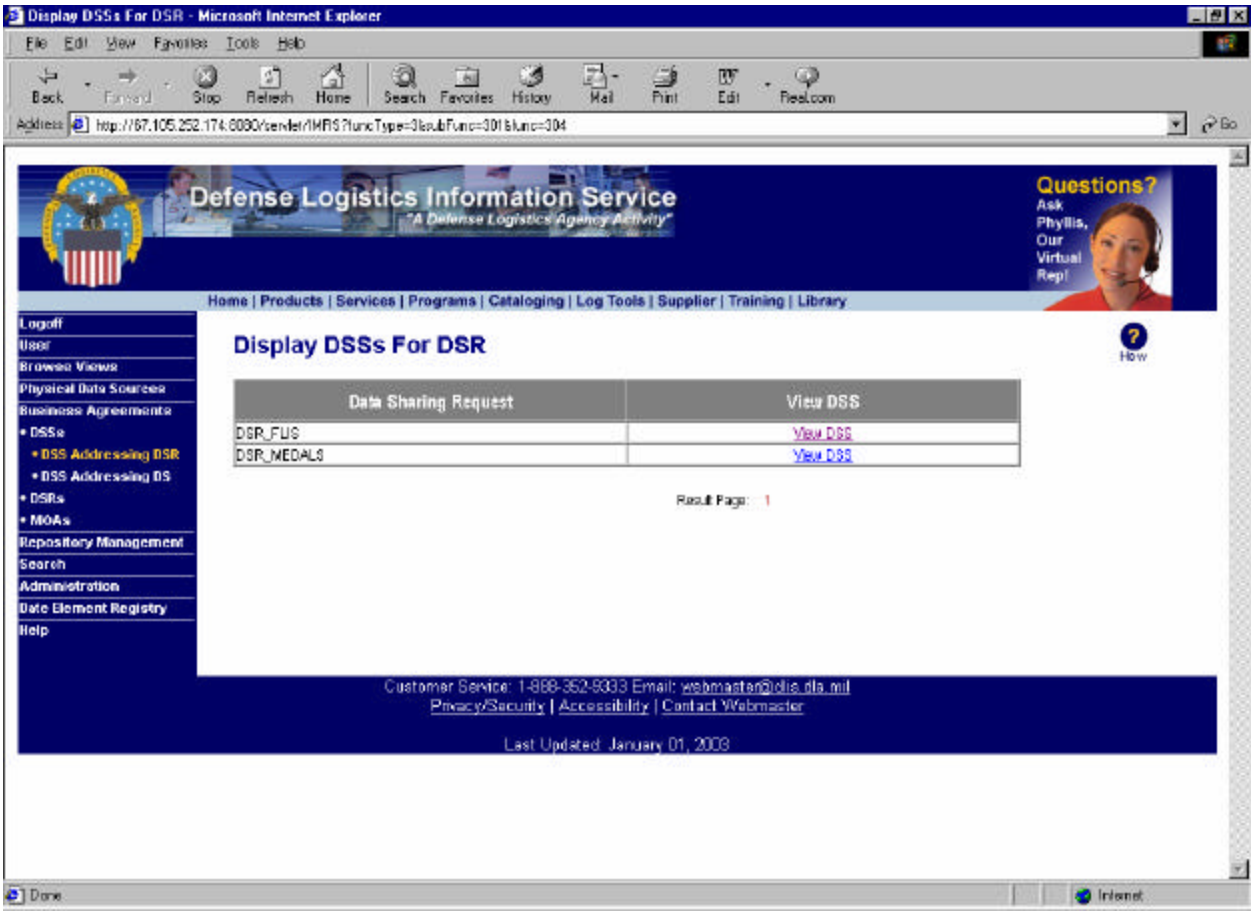


Figure 4.5.1.1- 1 Business Agreements - DSSs (DSS Addressing DSR) Menu Selection

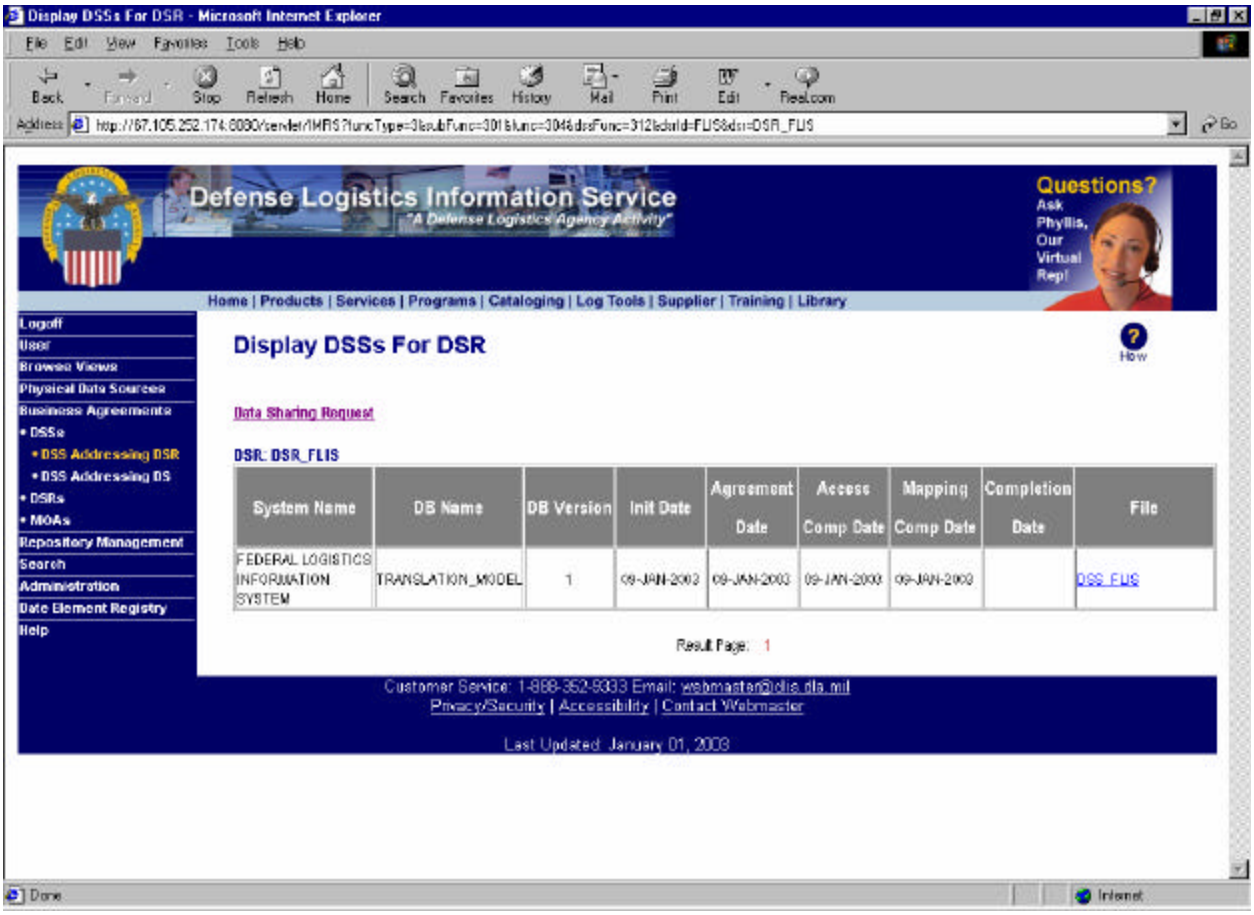


Figure 4.5.1.1- 2 Business Agreements - DSSs (DSS Addressing DSR) Menu Selection

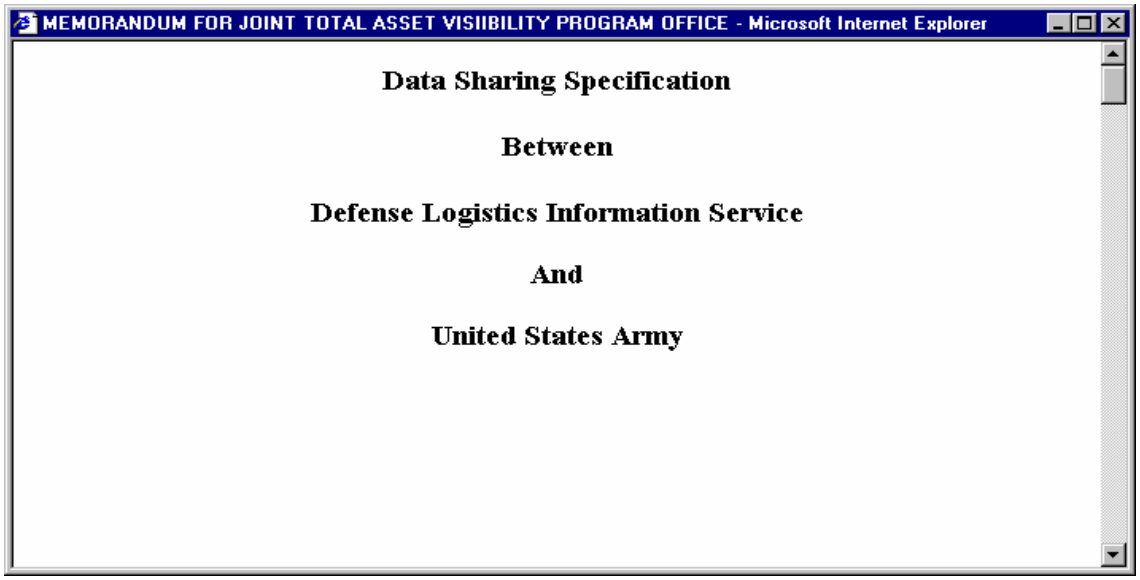


Figure 4.5.1.1- 3 Business Agreements – Detail Data Share Specification File

4.5.1.2. DSS Addressing Data Source

A list of data sharing specifications is displayed (See Figure 4.5.1.2- 1). Click View DSS to see the DSS information including system name, initiation date, business agreement date, access completion date, mapping completion date, completion date, and the detail document file, that address a specific data sharing request (See Figure 4.5.1.2- 2). Click the file name to view the actual contents of the DSS file (See Figure 4.5.1.1- 3).

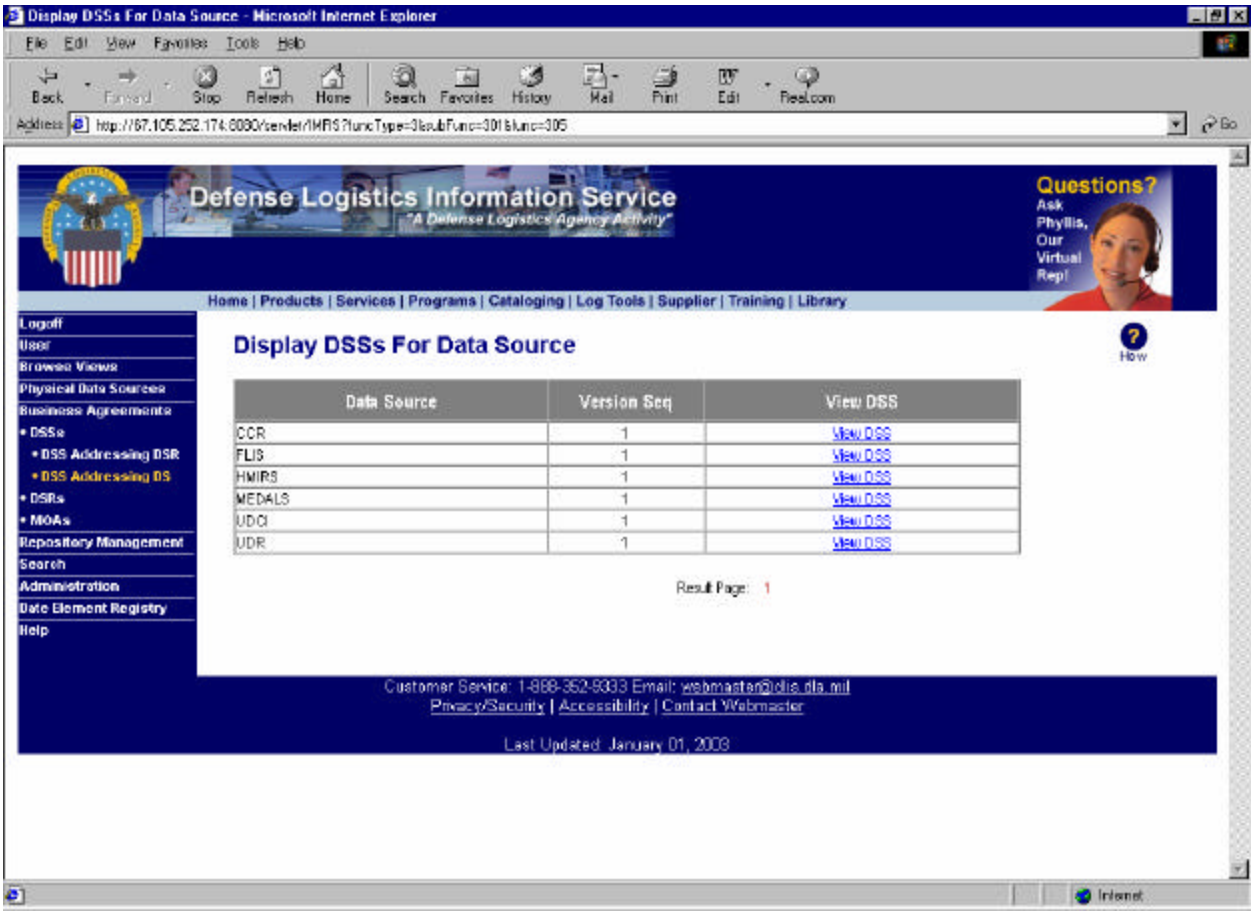


Figure 4.5.1.2- 1 Business Agreements - DSSs (DSS Addressing Data Source) Menu Selection

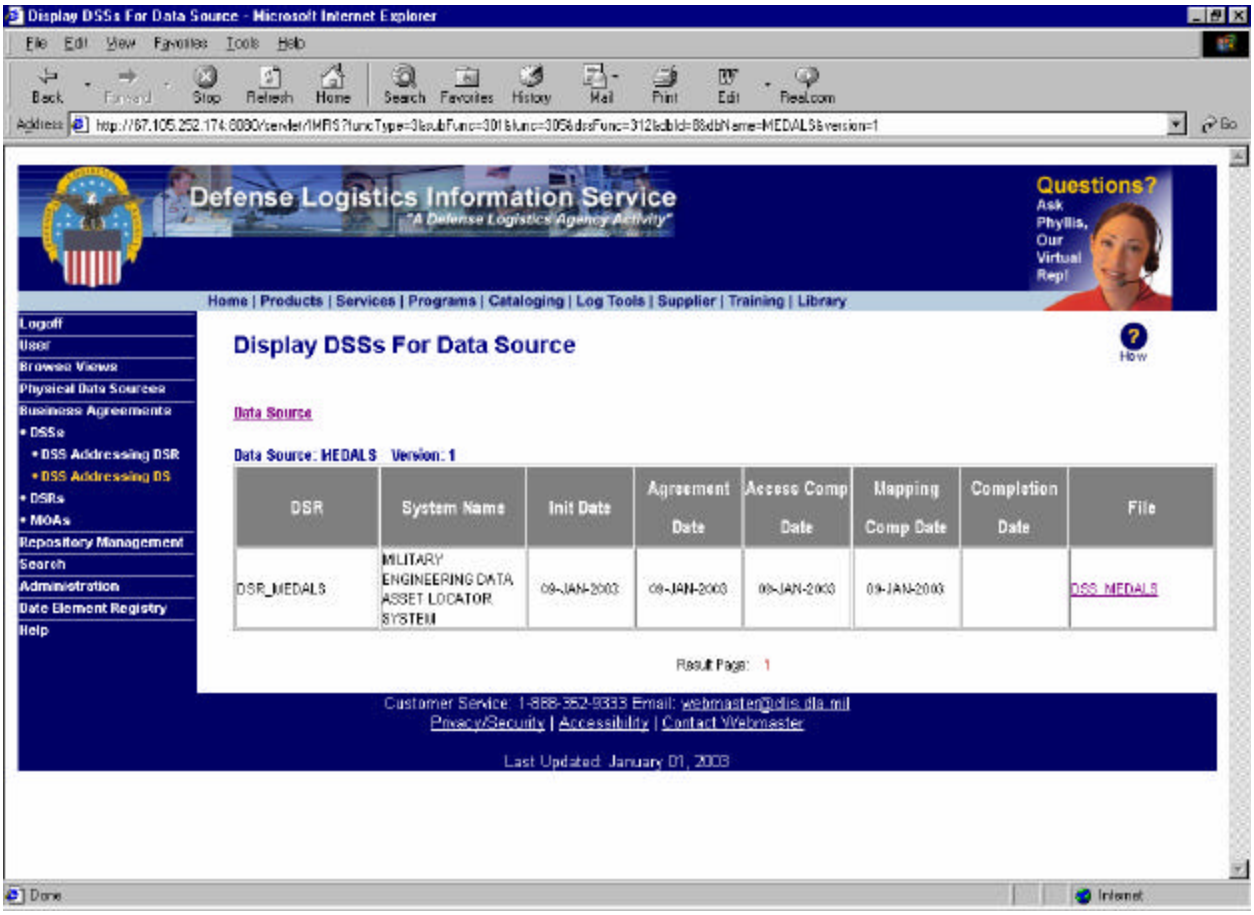
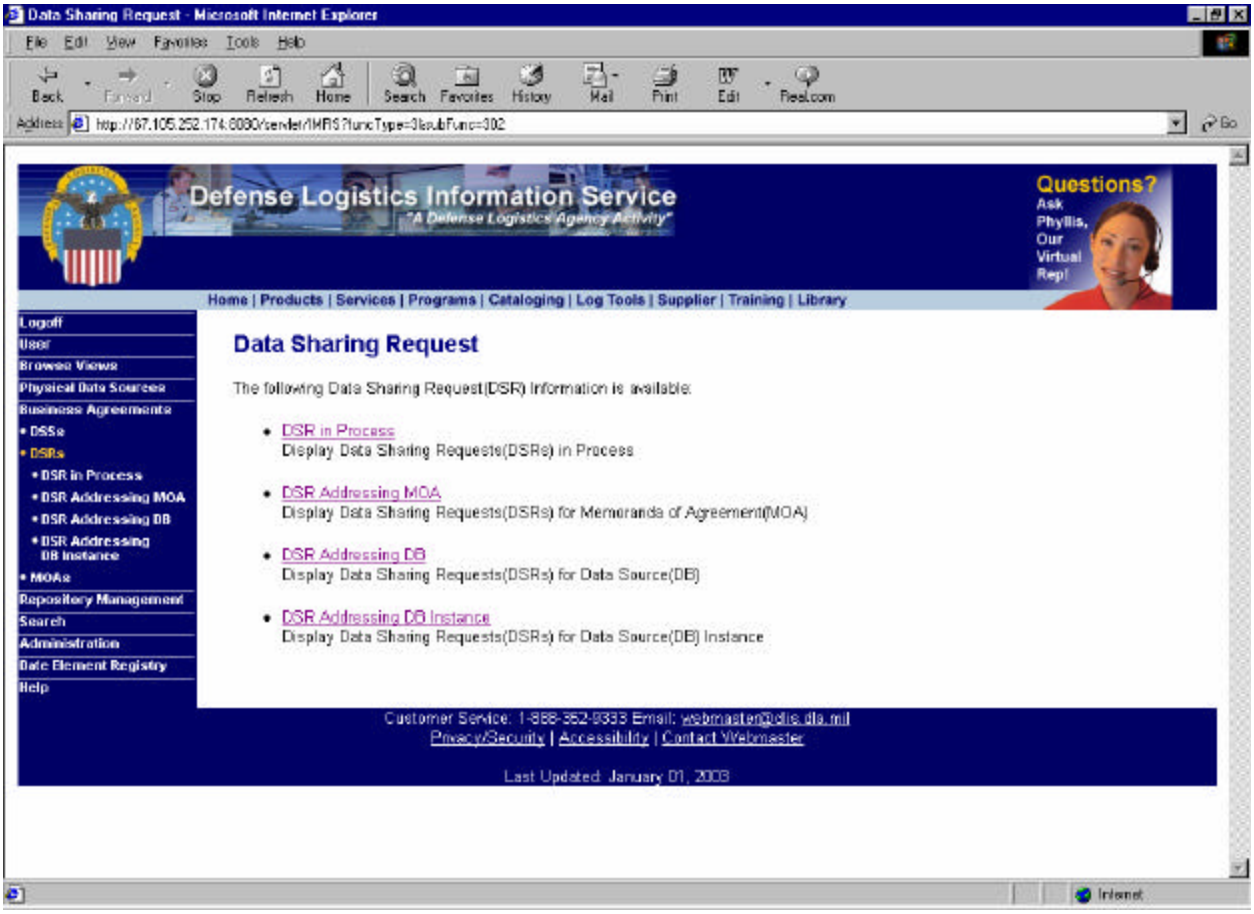


Figure 4.5.1.2- 2 Business Agreements - DSSs (Display DSS for DSR)

4.5.2. Business Agreements - DSRs

This option lists Data Sharing Requests (DSRs) that are in the process of being negotiated into a data sharing specification (See Figure 4.5.2- 1). Associated data sharing request files are also displayed. The Data Sharing Request option provides five selections, including:

- Data Sharing Requests in process
- Data Sharing Requests associated with a memorandum of agreement
- Data Sharing Requests associated with a database



- Data Sharing Requests associated with a database instance.

Figure 4.5.2- 1 Business Agreements - DSRs Menu Selection

4.5.2.1. Data Sharing Requests in Process

A list of DSR information including Provider Name, Provider Activity Name, Subscriber Name, Subscriber Activity Name, and Status is displayed (See Figure 4.5.2.1- 1). It provides links to the detail DSR information and the Data Sharing Specification (DSS). To view the DSR, click the DSR file to display the content of DSR in process (See Figure 4.5.2.1- 2).

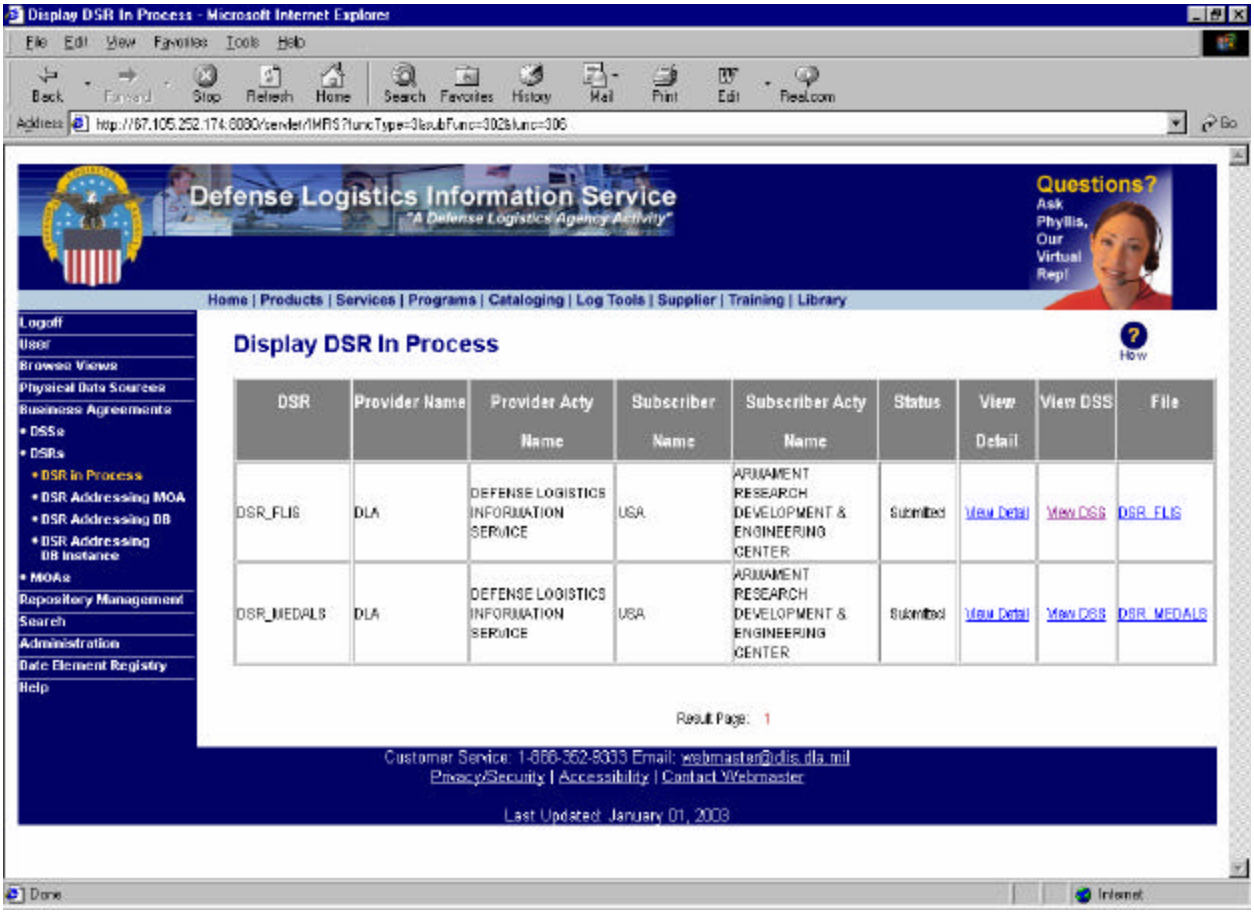


Figure 4.5.2.1- 1 Business Agreements - DSRs (DSR in Process)

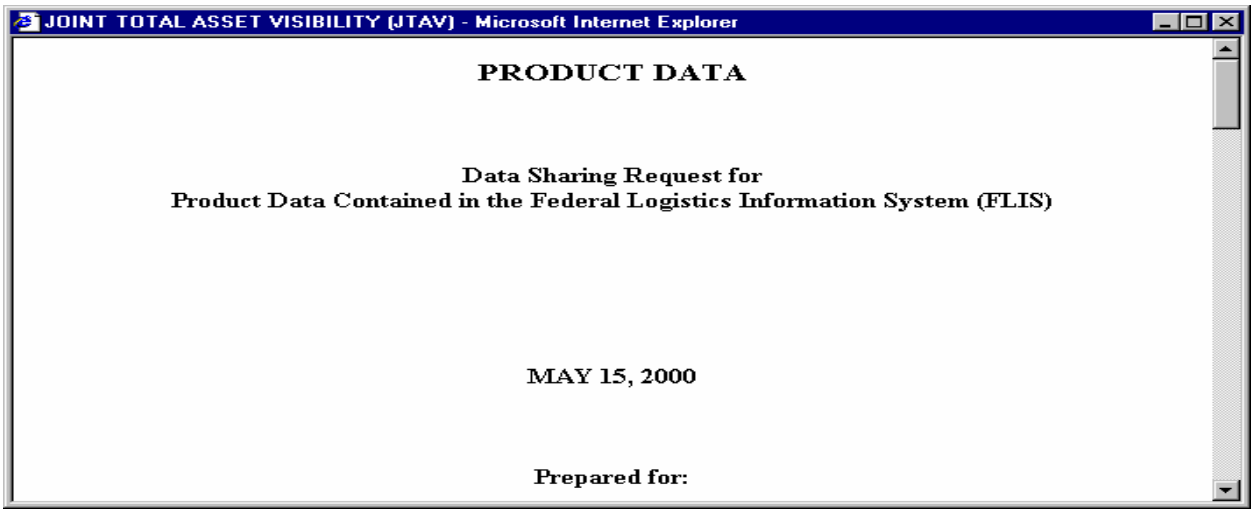


Figure 4.5.2.1- 2 Business Agreements – DSRs (DSR in Process) Detail Data Sharing Request Document

4.5.2.2. DSR Addressing MOA

A list of information for Memoranda of Agreement (MOA), such as Provider Name, Provider Activity Name, Subscriber Name, and Subscriber Activity Name, is displayed (See Figure 4.5.2.2- 1). Click the *View DSR* link for the detail DSR information (See Figure 4.5.2.2- 2). Click the file name to view the actual contents of the DSR file (See Figure 4.5.2.1- 2).

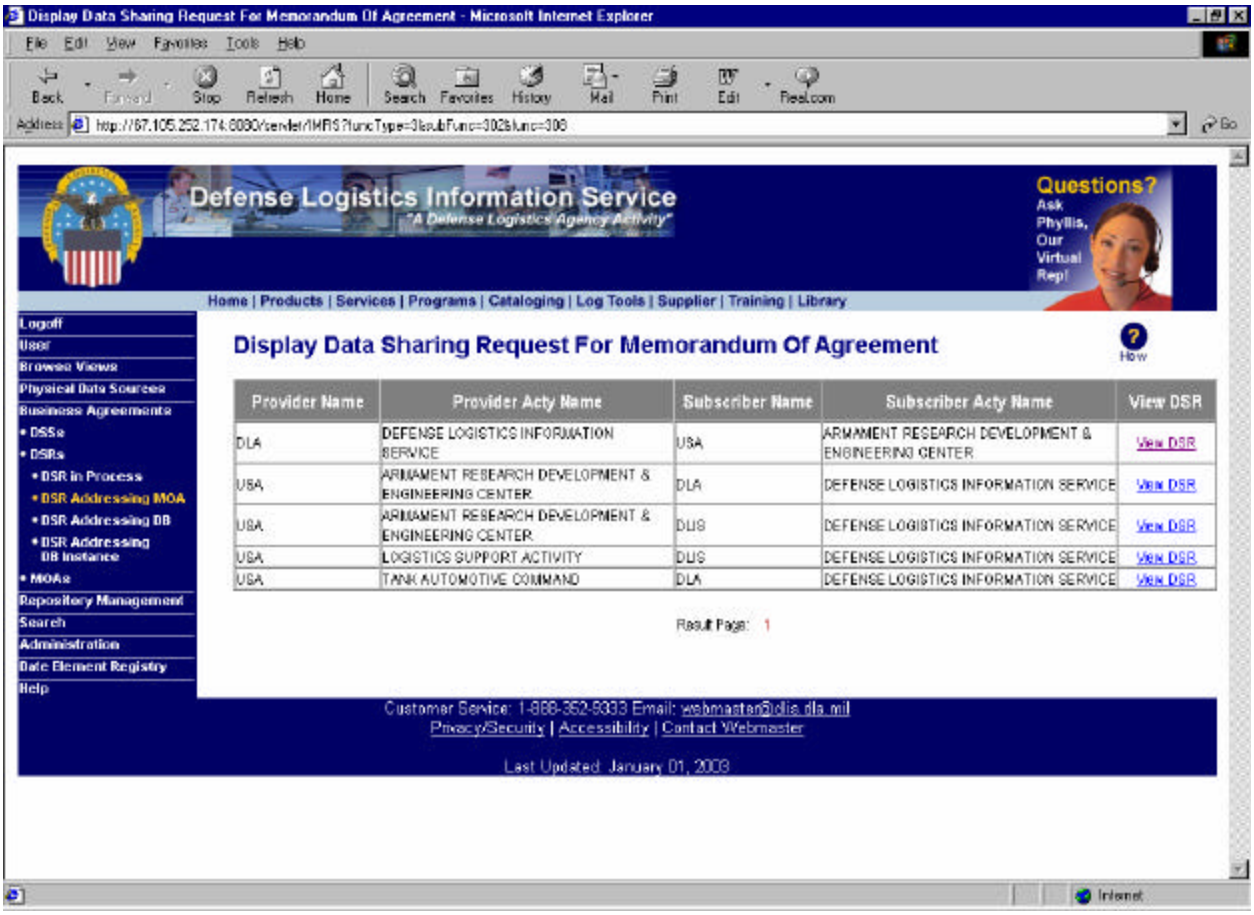


Figure 4.5.2.2- 1 Business Agreements - DSRs (DSR Addressing MOA) Menu Selection

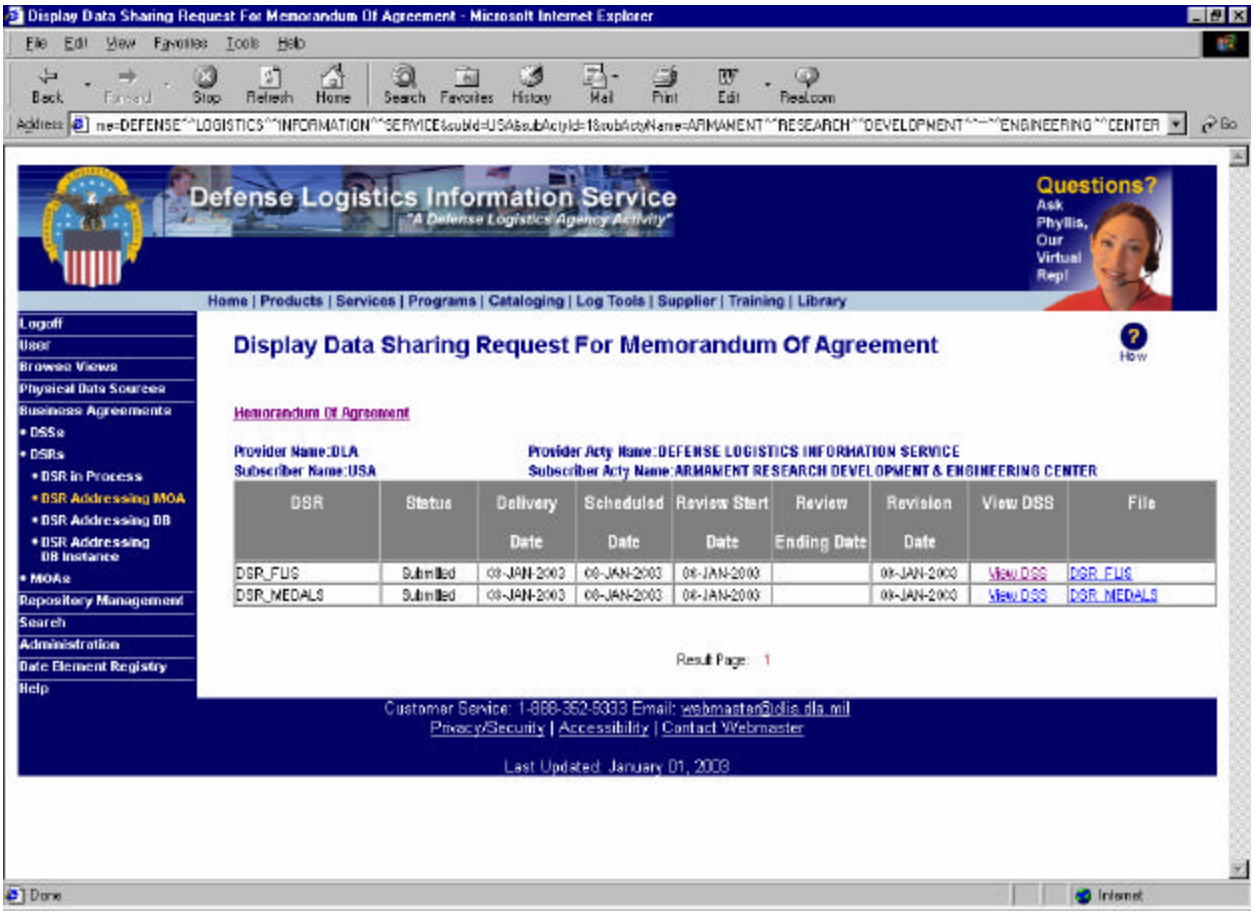


Figure 4.5.2.2- 2 Business Agreements - DSRs (DSR Addressing MOA) MOA Selection

4.5.2.3. DSR Addressing DB

A list of data source and version sequence is displayed (See Figure 4.5.2.3- 1). *Click view DSR* link to see the detail DSR information (See Figure 4.5.2.3- 2). Related DSS information is also available. Click the file name to view the actual DSR file (See Figure 4.5.2.1- 2).

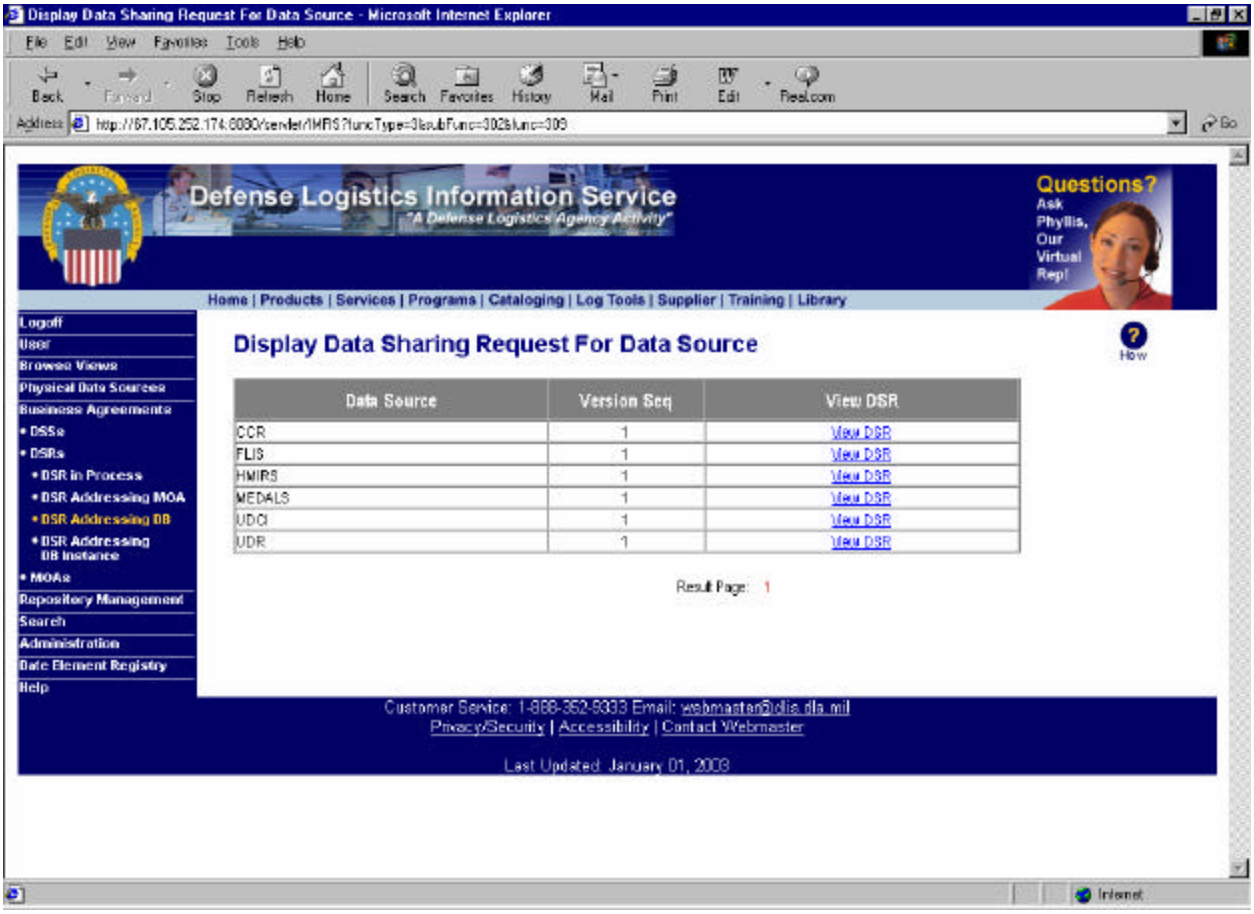


Figure 4.5.2.3- 1 Business Agreements - DSRs (DSR Addressing DB)

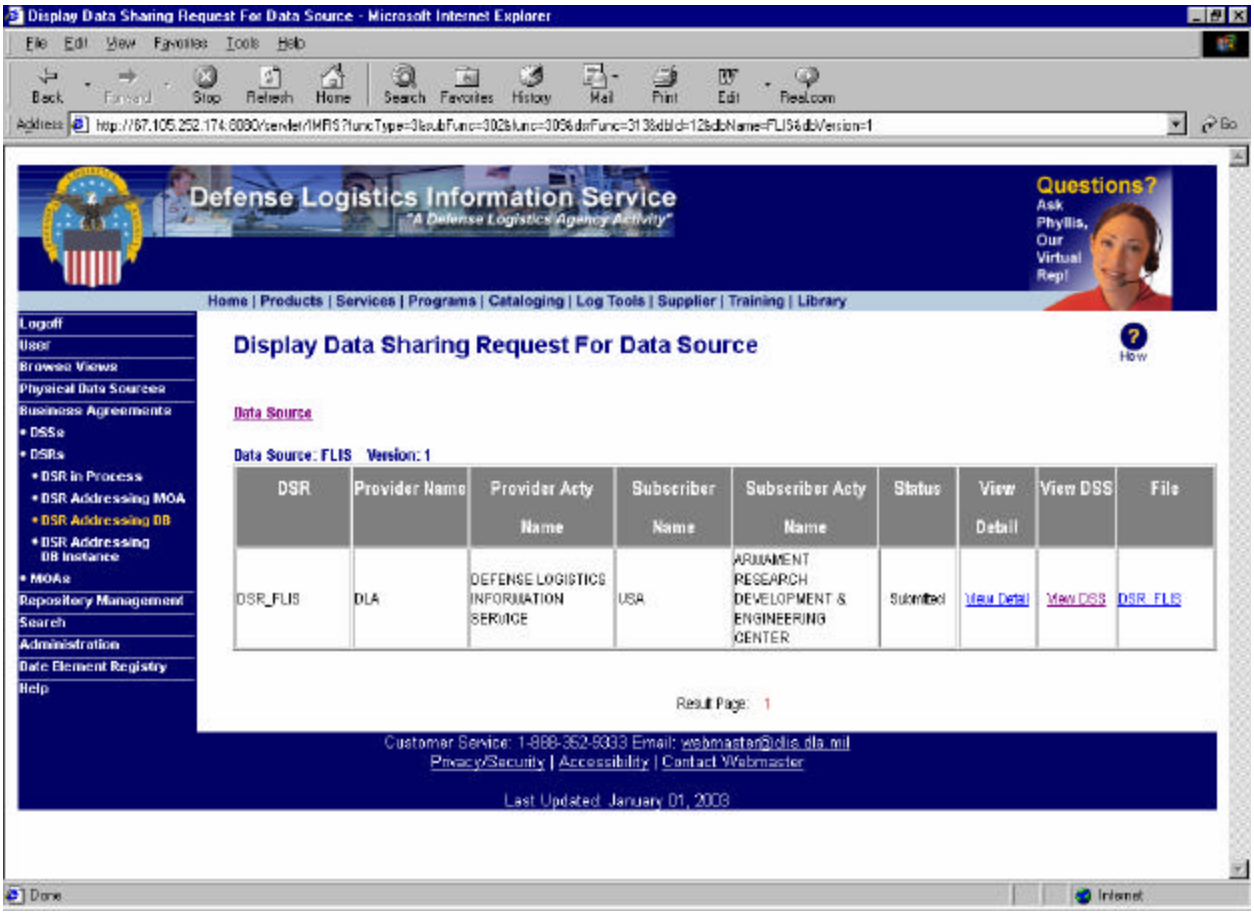


Figure 4.5.2.3- 2 Business Agreements - DSRs (DSR Addressing DB)

4.5.2.4. DSR Addressing DB Instance

A list of Data Source Instance including Data Source Instance Name and Version Sequence number is displayed (See Figure 4.5.2.4 - 1). Click the View DSR for detail Data Sharing Request information (See Figure 4.5.2.1 - 2).

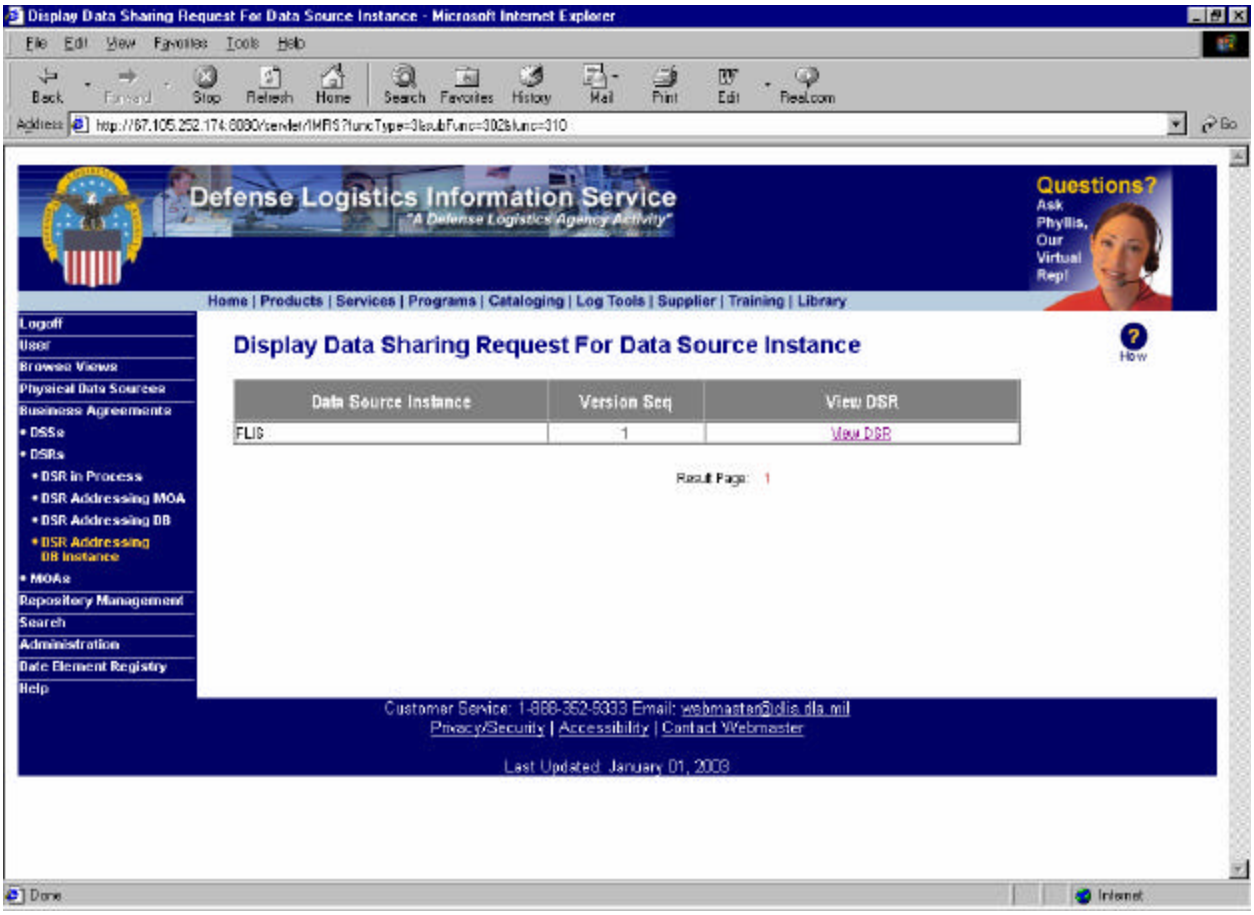


Figure 4.5.2.4- 1 Business Agreements - DSRs (DSR Addressing DB Instance) Menu Selection

4.5.3. Business Agreements - MOAs

The Memorandum of Agreement option lists the memorandum of agreement that is/are in place between components, identifies the parties in each memorandum of agreement and retrieves a participating memorandum of agreement file.

A list of information, such as Provider Name, Provider Activity Name, Subscriber Name, Subscriber Activity Name, MOA Date, Termination Date, Modification Date, Signer Name, and Comment, is displayed for a Memorandum of Agreement (See Figure 4.5.3-1). Click the file name to view the detail documentation (See Figure 4.5.3 - 2).

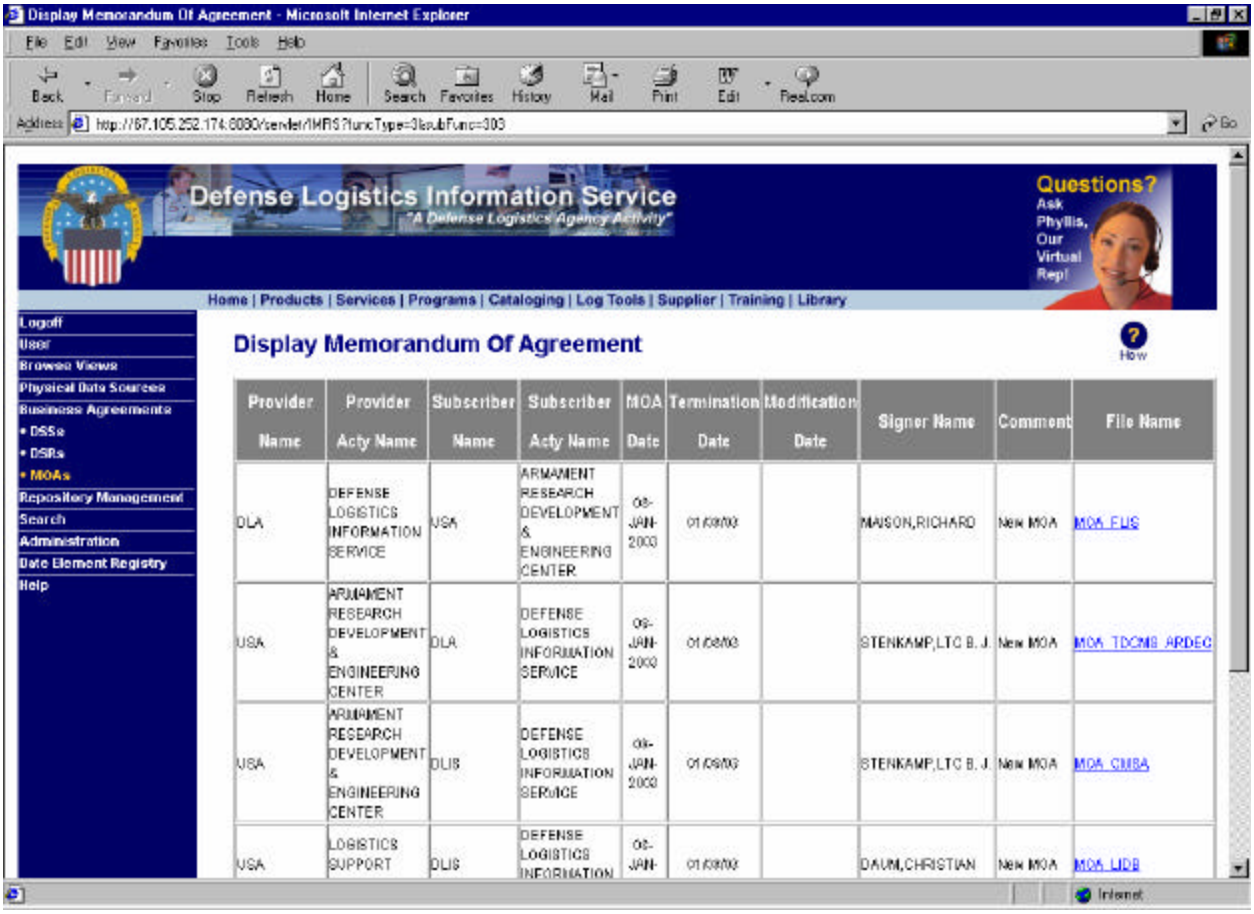


Figure 4.5.3- 1 Business Agreements - MOAs Menu Selection

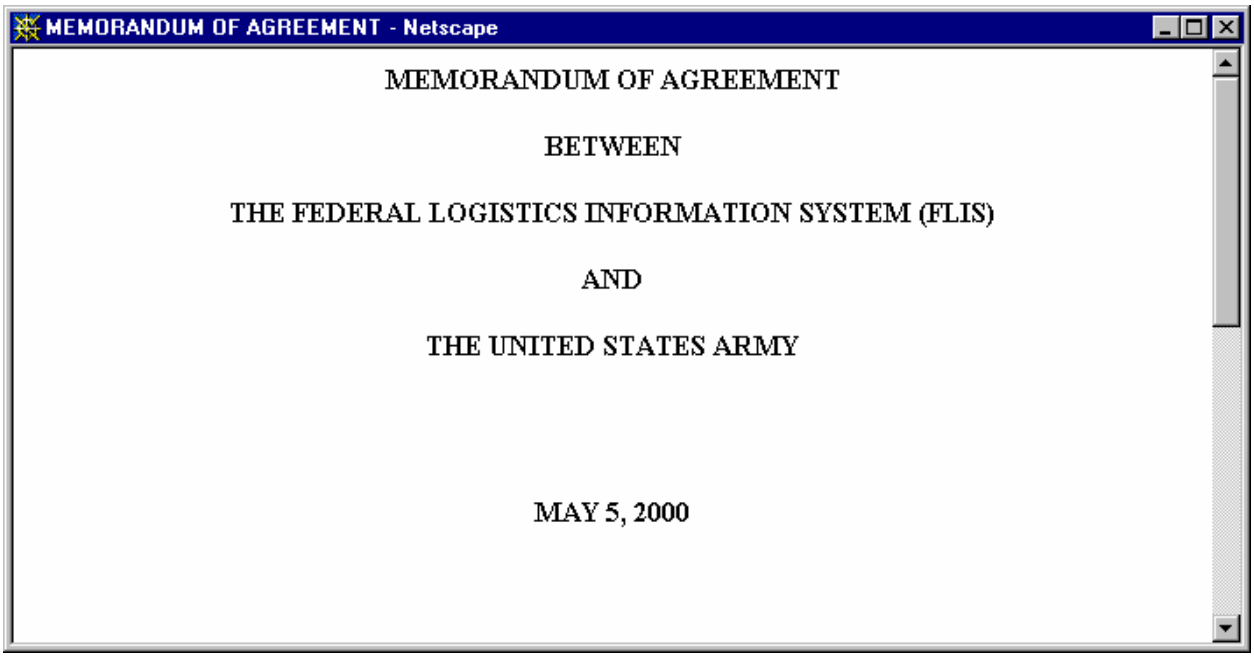


Figure 4.5.3- 2 Business Agreements - MOAs Menu Selection – Detail Memorandum of Agreement Document

4.6. Repository Management

The Repository Management menu link (See Figure 4.6- 1) allows end users to select the following options:

- Configure Data Source
- Configure Mappings
- Configure Dictionary/Directo ry (D/D)
- Configure Reference Data Model (RDM)
- Configure IMRS Repository, or
- Monitor Data Source

The Repository Management option provides end user interface capabilities to update data sources, mappings, D/Ds, the RDM, view the configuration of the IMRS repository, and to monitor data source schema.

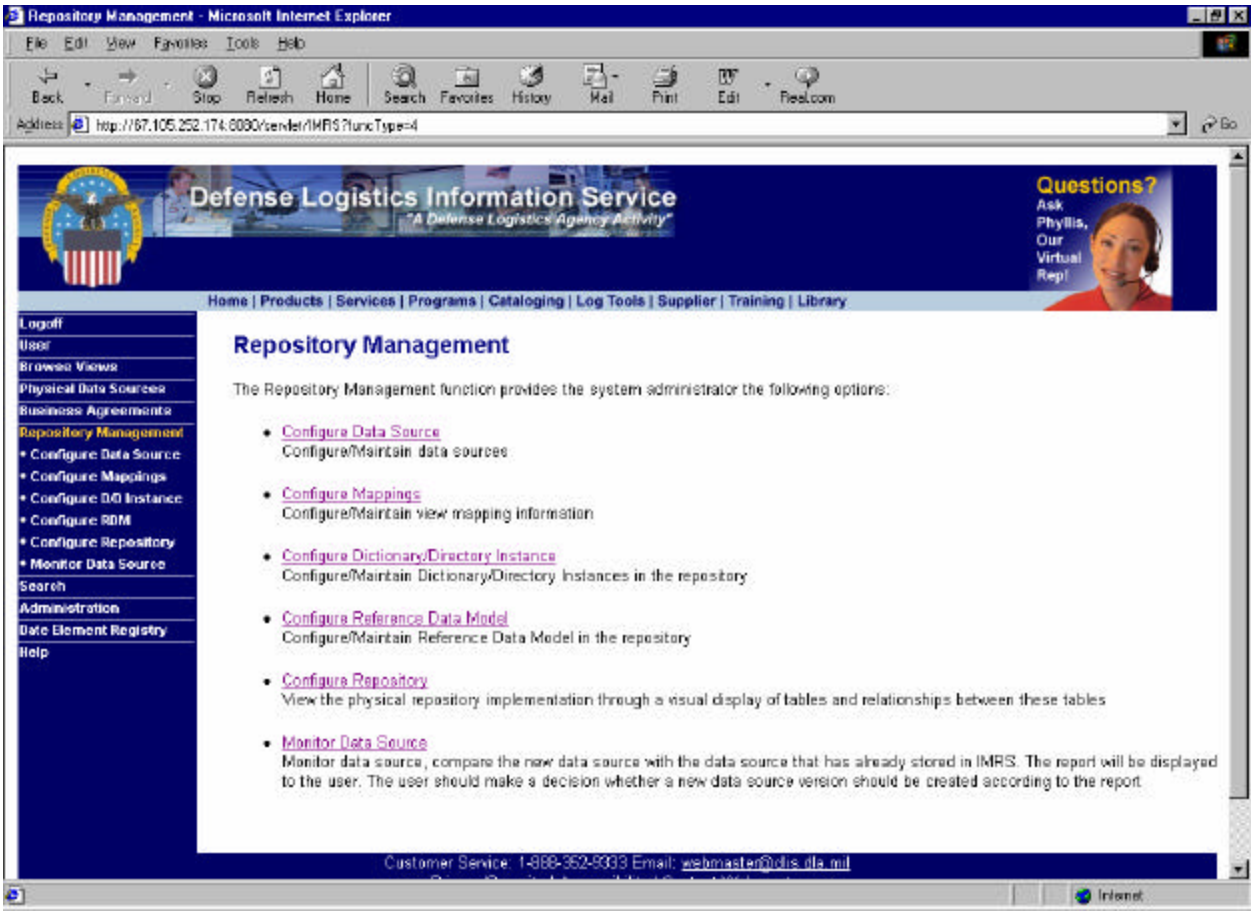


Figure 4.6- 1 Repository Management Menu Selections

4.6.1. Repository Management - Configure Data Source

The Configure Data Source function allows end users to Add/Modify/Delete a data source. The Configure Data Source provides four selections, including (See

Figure 4.6.1- 1):

- Configure data source through remote connection to data source
  Load the data source into the repository through a remote connection to the data source
- Configure data source through Data Definition Language
  Load data source into the repository through the DDL. The DDL should be for an Oracle database
- Configure data source through ASCII File
  Load data source into the repository through an ASCII file. The ASCII file should be saved as a text file with Tab delimiters
- Configure data source step by step
  Load data source into the repository through step-by-step data entry

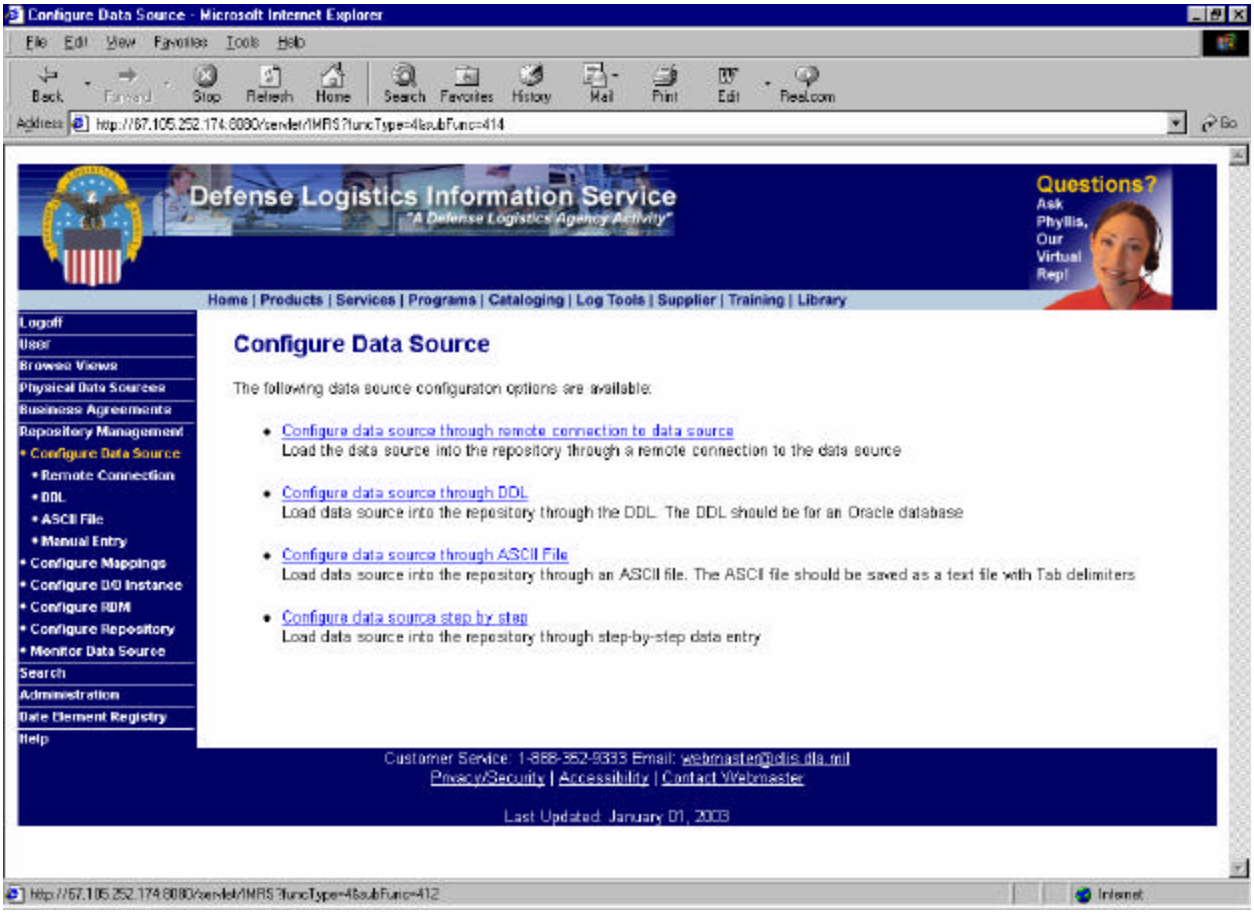


Figure 4.6.1- 1 Repository Management – Configure Data Source

4.6.1.1. Configure data source through remote connection to data source

You have to specify the data source's type (Oracle, DB2, SQL Server, Informix, or Sybase). Then provide the following information to connect to remote data source (See Figure 4.6.1.1- 1).

1. Host: the IP address of the remote data source.
2. Port: the port of the database service (e.g. 1521).
3. Service Name: the database Instance Name (e.g. orcl).
4. Login ID: the database login user ID.
5. Password: the corresponding database logon password for the associated Login Id above.
6. Description: the description for the database.
7. Version Date: the remote database's latest version creation date. If it is not supplied, the system will assign a default date using system date.
8. Colloquial Version: the informal expression of the version.

After you provide the information, click *Load* to connect to the remote data source and the system will load the database schema into the repository.

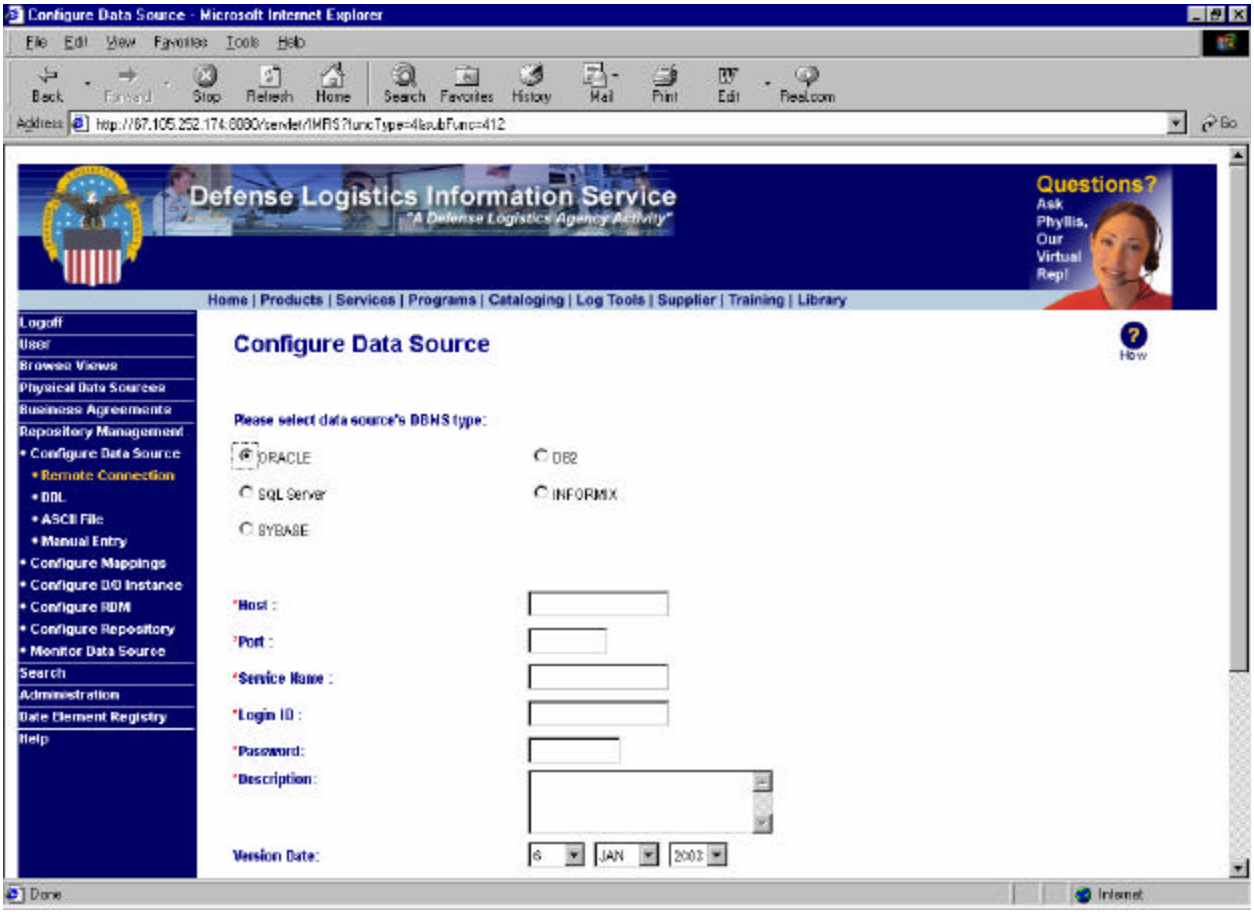


Figure 4.6.1.1- 1 Configure Data Source through Remote Connection

4.6.1.2. Configure data source through Data Definition Language (DDL)

You can load the data source by providing the Data Definition Language. The following information is needed to load data through DDL file (See Figure 4.6.1.2- 1).

1. DDL File: the location of the DDL file.
2. Database Name: the data source name.
3. Description: the description for the database.
4. Version Date: the remote database's latest version creation date. If it is not supplied, the system will assign a default date using system date.
5. Colloquial Version: the informal expression of the version.

After you have supplied the information, click *Load* to load the database schema into the repository.

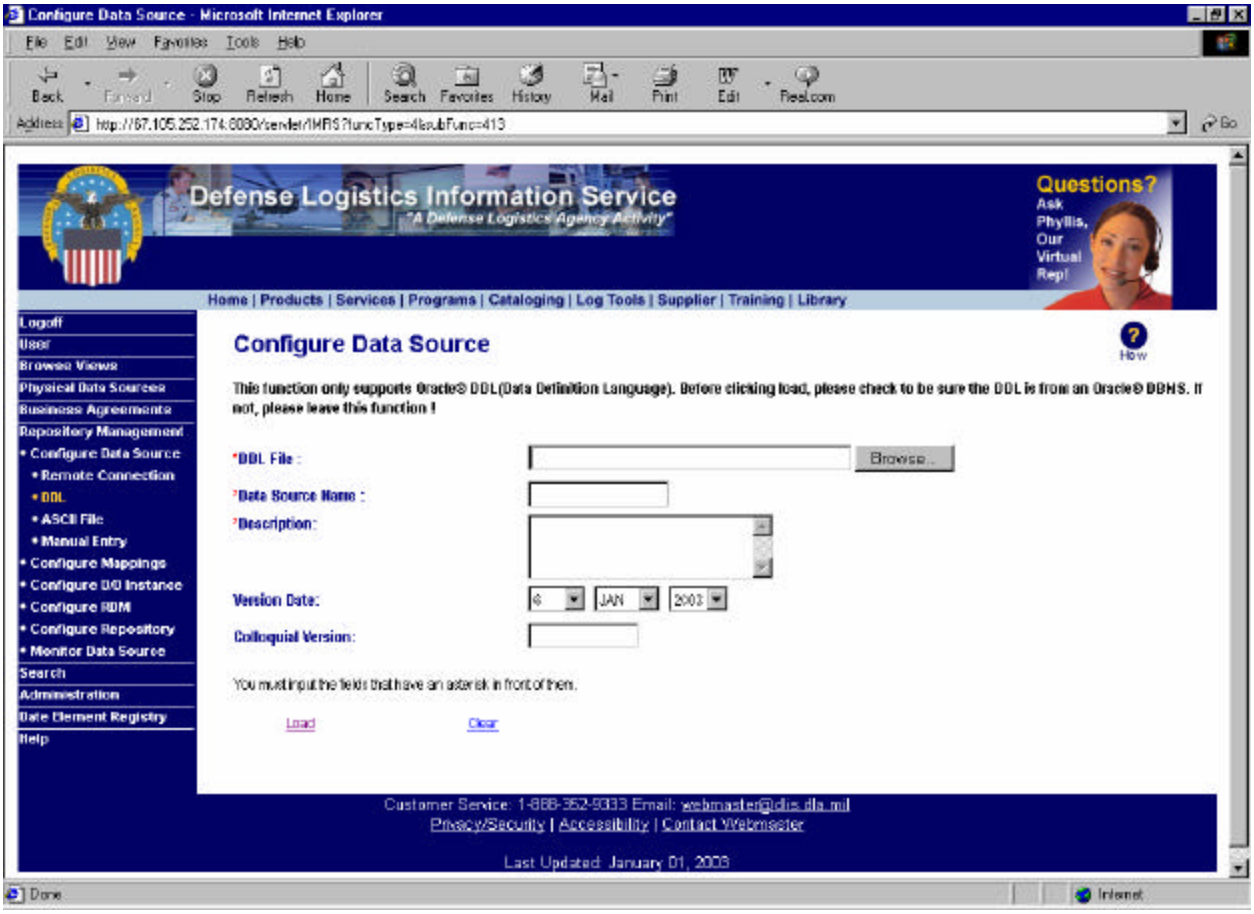


Figure 4.6.1.2- 1 Configure Data Source through DDL

4.6.1.3. Configure data source through ASCII file

You can load the data source through ASCII file. This function only supports ASCII file with a Tab delimiter. The format should be Column Name, Table Name, Data Type, Size, Nullable Flag, Comment, and Description. Nullable Flag and Description are optional. If data type is decimal, real, or number, the data size format should be (5, 3).

The following information is needed to load data through ASCII file (See Figure 4.6.1.3-1).

1. ASCII File: the location of the ASCII file.
2. Database Name: the data source name.
3. Description: the description for the database.
4. Version Date: the remote database's latest version creation date. If it is not supplied, the system will assign a default date using system date.
5. Colloquial Version: the informal expression of the version.

After you have supplied the information, click *Load* to load the database schema into the repository.

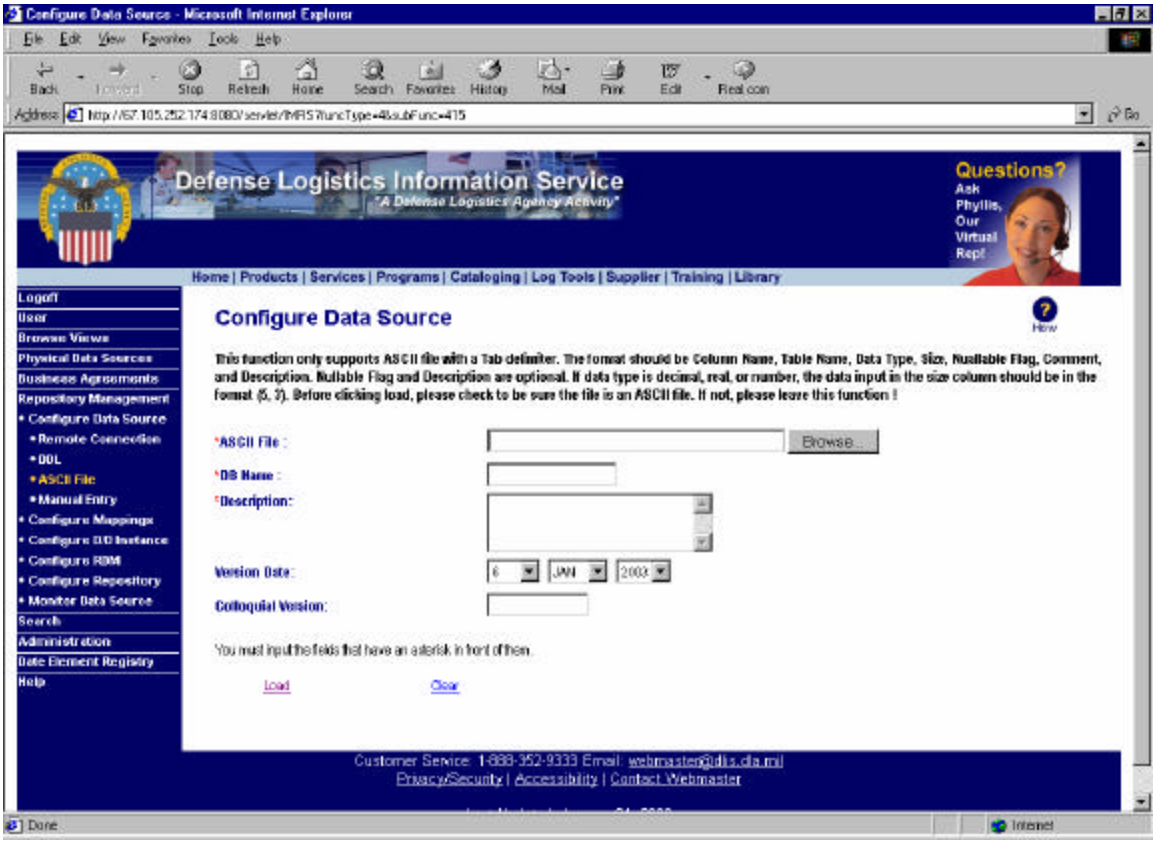


Figure 4.6.1.3- 1 Configure Data Source through ASCII file

4.6.1.4. Configure data source through manual entry

You can manually configure the data source in the repository (See Figure 4.6.1.4 - 1). The Baselined indicator describes the status of a data source version. When the latest versioned data source is baselined, the user will be able to create a new version of the data source with unbaselined status. A deletion operation is not permitted at this point.

When the latest versioned data source is unbaselined, all actions can be performed without the creation of a new version.

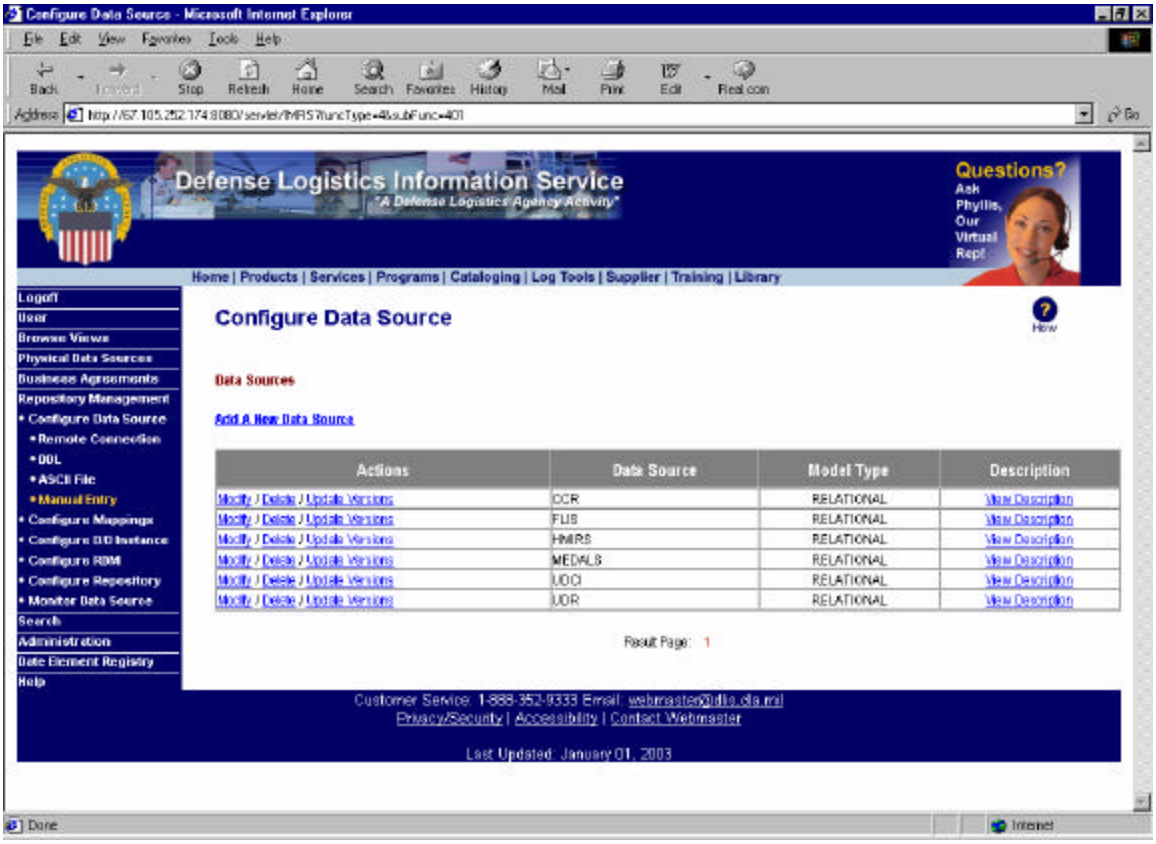


Figure 4.6.1.4- 1 Configure Data Source through manual entry

4.6.1.4.a. add A New Data Source

To supply the metadata through the Web application that is documented in this manual, the new data source must be added, and then each table in the database must be added. Finally, columns must be added for each data element in each table. This process may be quite tedious, if there are more than a few columns and tables for a database.

Click the *Add A New Data Source* link to add a new data source (See Figure 4.6.1.4.a-1). A new window with the “Add A New Data Source” caption will pop up (See Figure 4.6.1.4.a - 2).

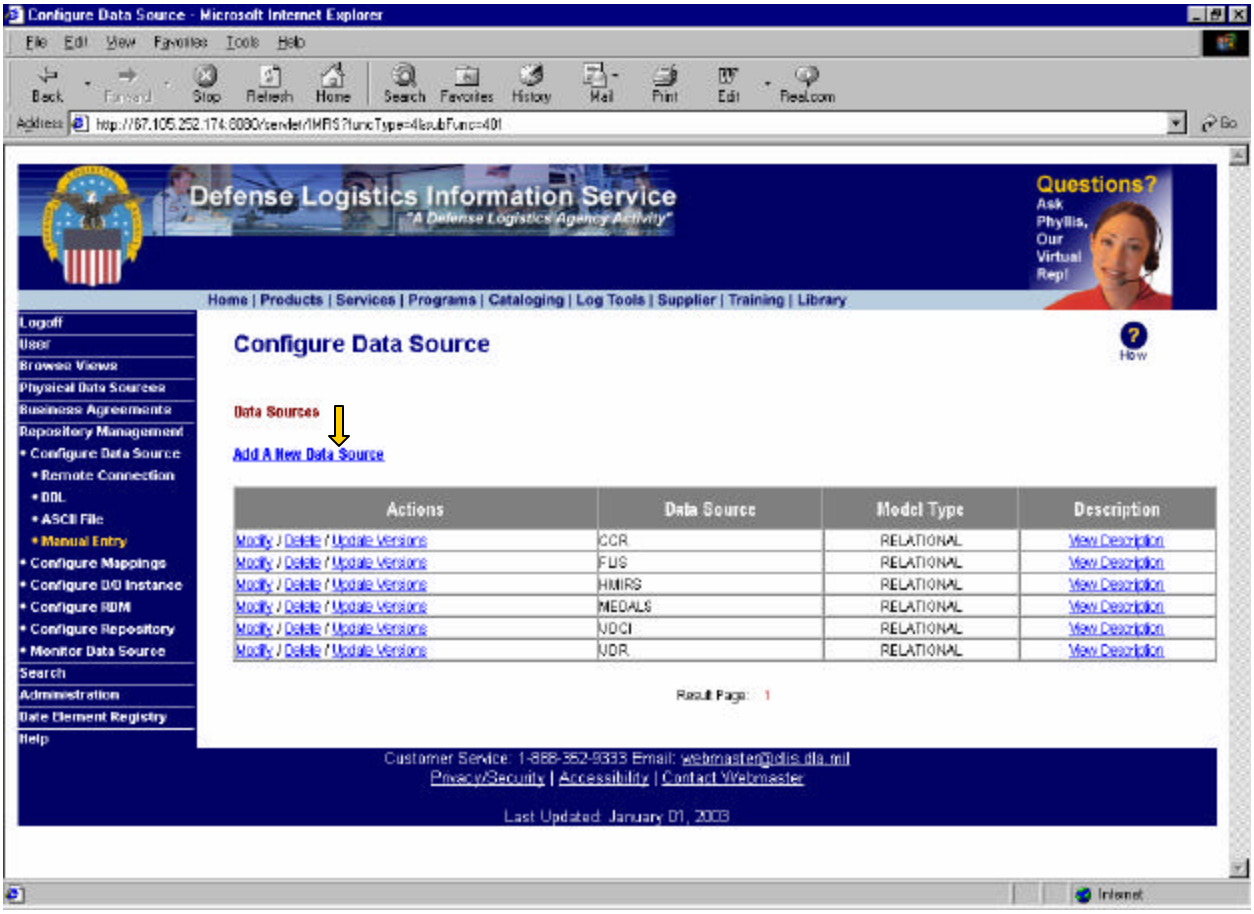


Figure 4.6.1.4.a- 1 Configure Data Source - Manual Entry (Add A New Data Source)

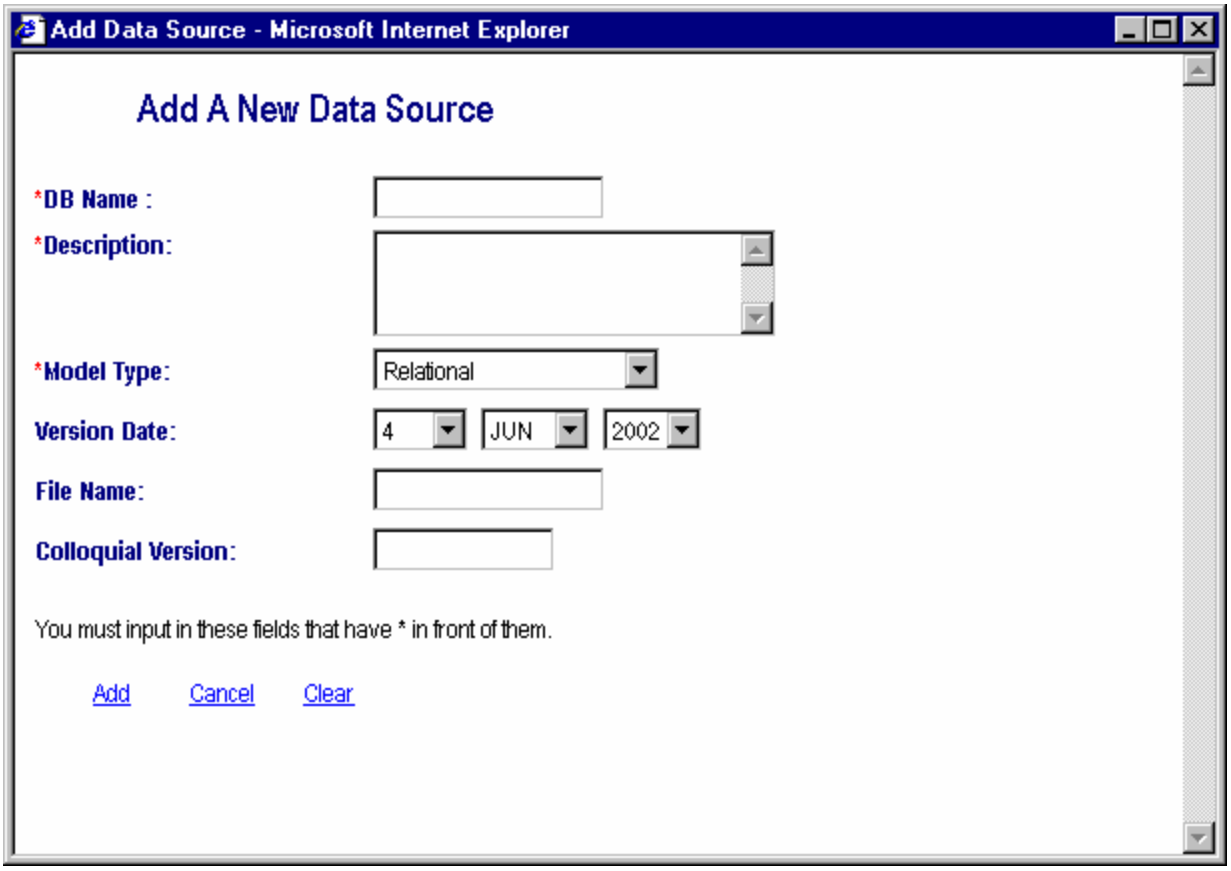


Figure 4.6.1.4.a- 2 Add A New Data Source

Not all of the fields on this window are required. Refer to the Table 1 to identify the required fields and other important parameters.

Table 1 Add A New Data Source

Field	Requirements
DB Name	**Required** Enter the name by which the new data source will be known. (20 characters)
Description	**Required** Enter a brief description of the new data source. (100 characters)
Model Type	**Required** (20 characters, use drop down list to select)
Version Date	Optional (default value is System Date)
File Name	Optional (255 characters)

Colloquial Version	Optional (20 characters)

Click *Add* to store the new data source as Version 1 with an unbaselined indicator.

If any data does not meet the field requirements, an error dialog box will pop up with a detailed message as to why the error have occurred (See Figure 4.6.1.4.a - 3). Click the OK button to close the dialog box; otherwise, the new data entry window will be closed. Alternatively, click the Cancel link to cancel the modifications and close the window. Click the Clear link to erase all entered data.

Figure 4.6.1.4.a- 3 Configure Data Source – Add A New Data Source Error Message

4.6.1.4.b. Modify A Data Source

Click the *Modify* link to modify the data source information (See Figure 4.6.1.4.b- 1). A new window with the “Modify Data Source” caption will pop up (See Figure 4.6.1.4.b- 2).

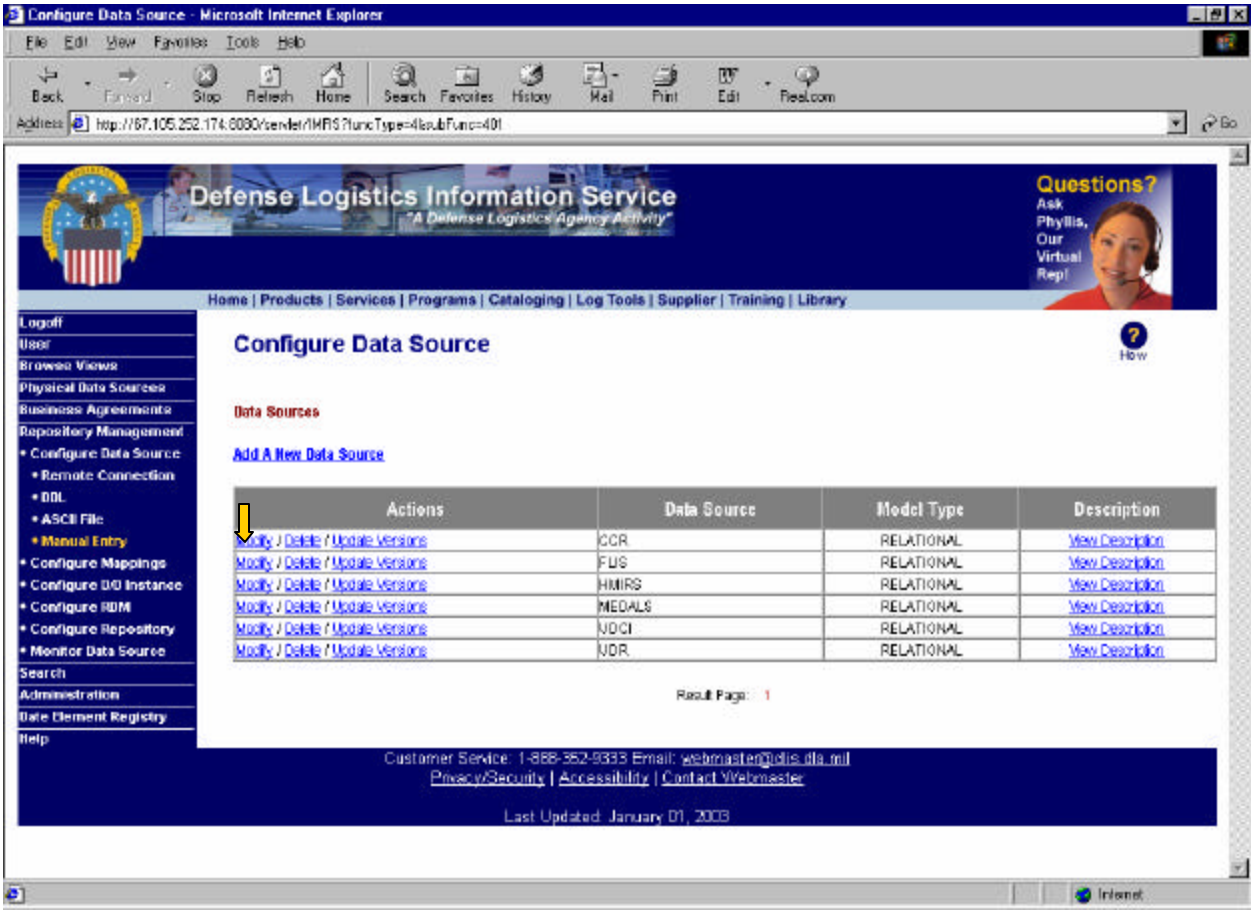


Figure 4.6.1.4.b- 1 Configure Data Source - Manual Entry (Modify Data Source)

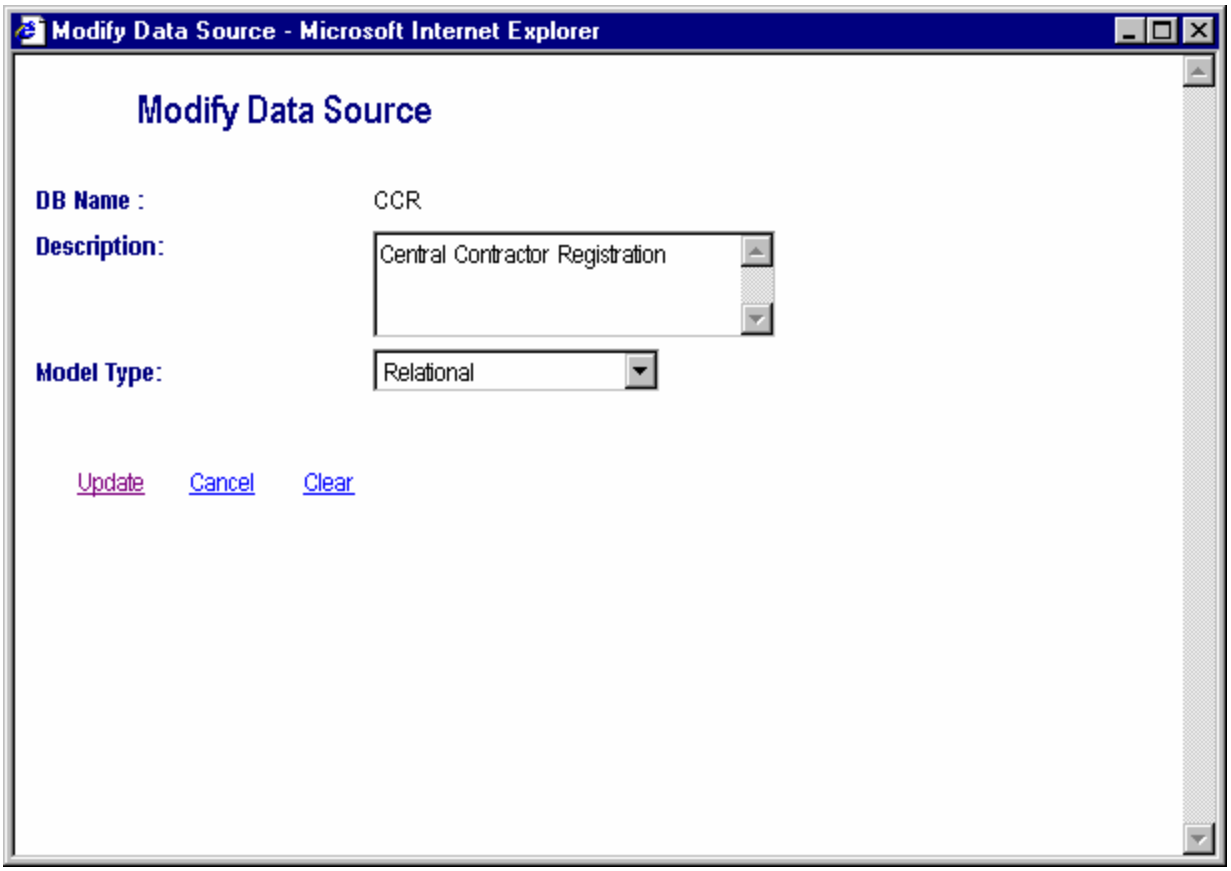


Figure 4.6.1.4.b- 2 Configure Data Source – Modify Data Source

Click the *Update* link to save the change, which will close the window. Alternatively, click the Cancel link to cancel the modifications and close the window. Click the *Clear* link to erase all data in all of the boxes including previously stored data.

4.6.1.4.c. Delete A Data Source

Click the *Delete* link under the Actions heading next to the data source name to delete a data source from the database (See Figure 4.6.1.4.c- 1). If that data source does not have any versions, then it will be deleted at this point; otherwise, a dialog box will pop up with a detailed message as to why the data source cannot be deleted (See Figure 4.6.1.4.c- 2). Click the *OK* button to close the dialog box.

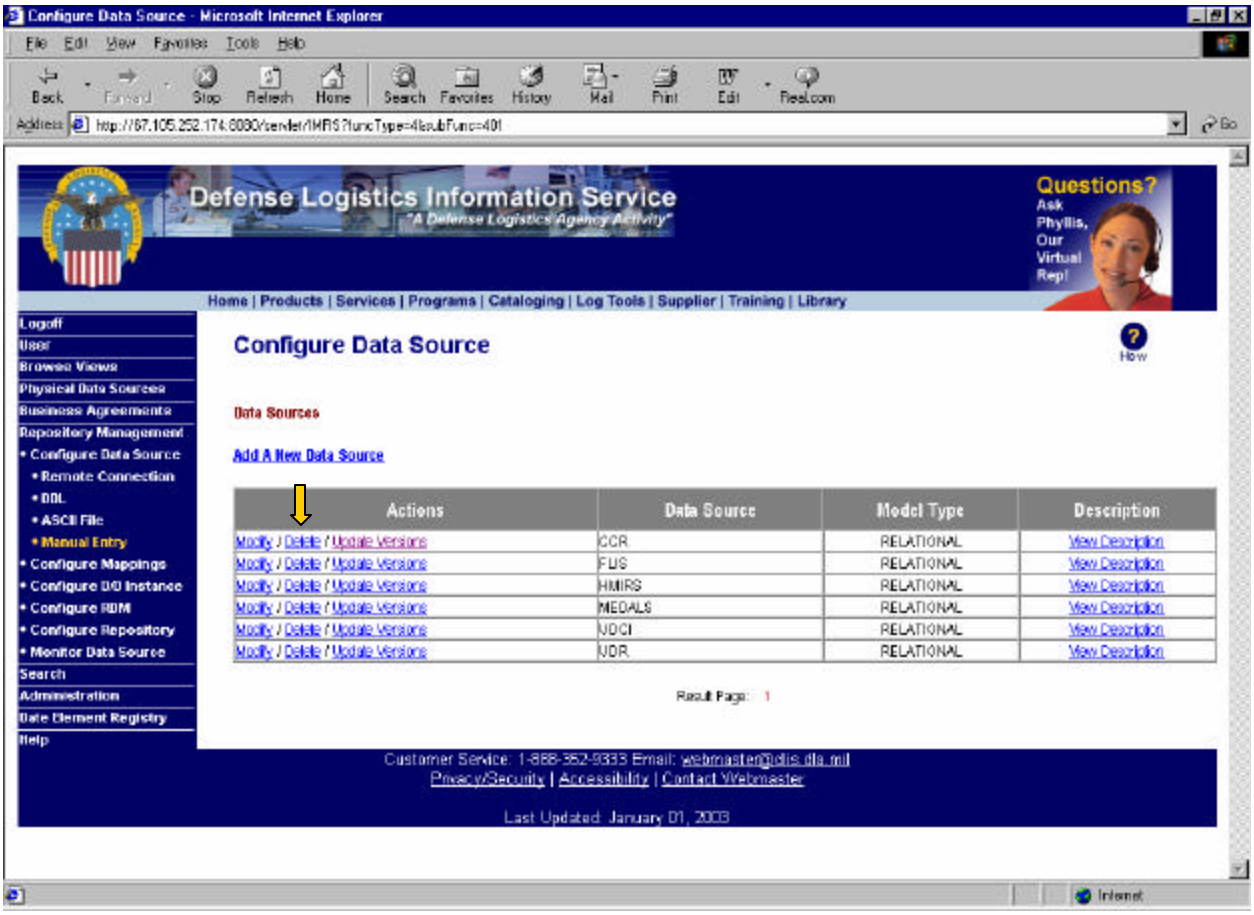


Figure 4.6.1.4.c- 1 Configure Data Source - Manual Entry (Delete Data Source)

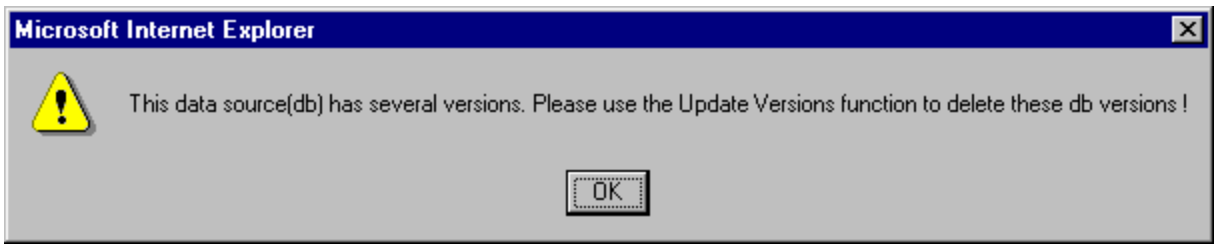


Figure 4.6.1.4.c- 2 Configure Data Source – Delete A New Data Source Error Message

4.6.1.4.d. Update Versions

Click the *Update Versions* link under the Actions heading next to the data source name to update a versioned data source (See Figure 4.6.1.4.d- 1).

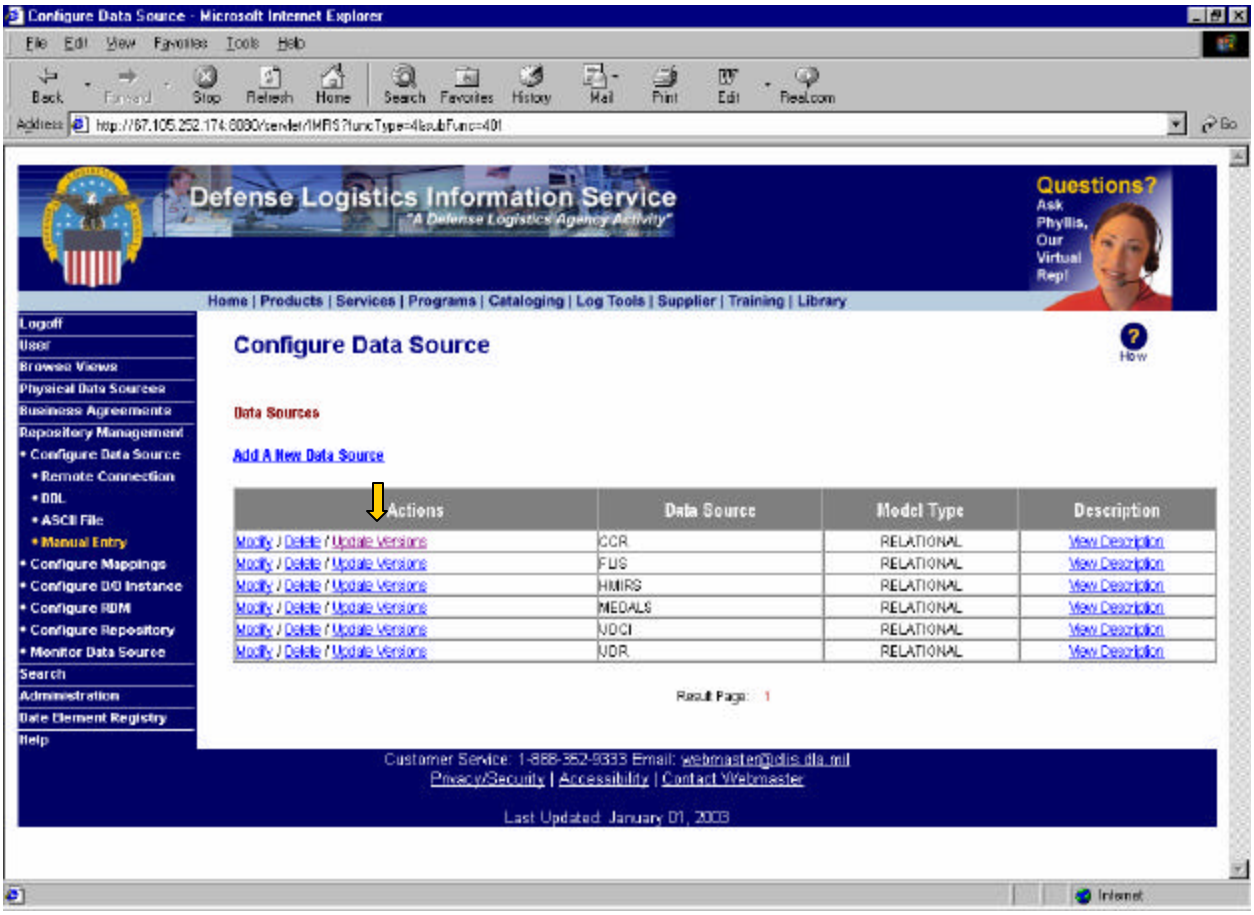


Figure 4.6.1.4.d- 1 Configure Data Source - Manual Entry (Update Versions)

Each data source has version(s), starting with 1, which then increase by increment of 1 for each additional version.

If the data source is baselined, the user can Add A New Version, Modify, and View Tables (See Figure 4.6.1.4.d- 2).

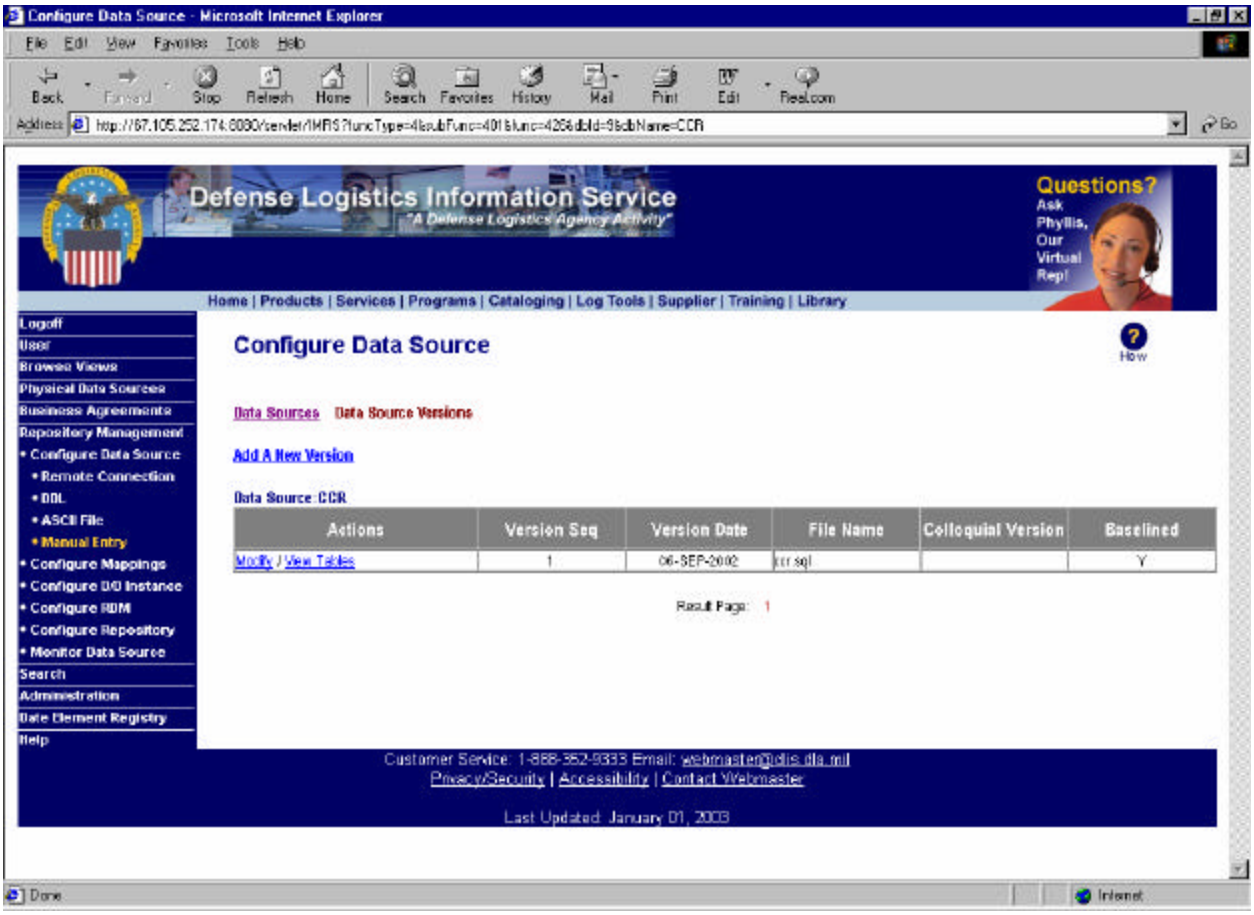


Figure 4.6.1.4.d- 2 Configure Data Source – Update Versions (baselined)

If the data source is unbaslined, the user can modify, Delete, or Update Tables in the data source (See Figure 4.6.1.4.d- 3).

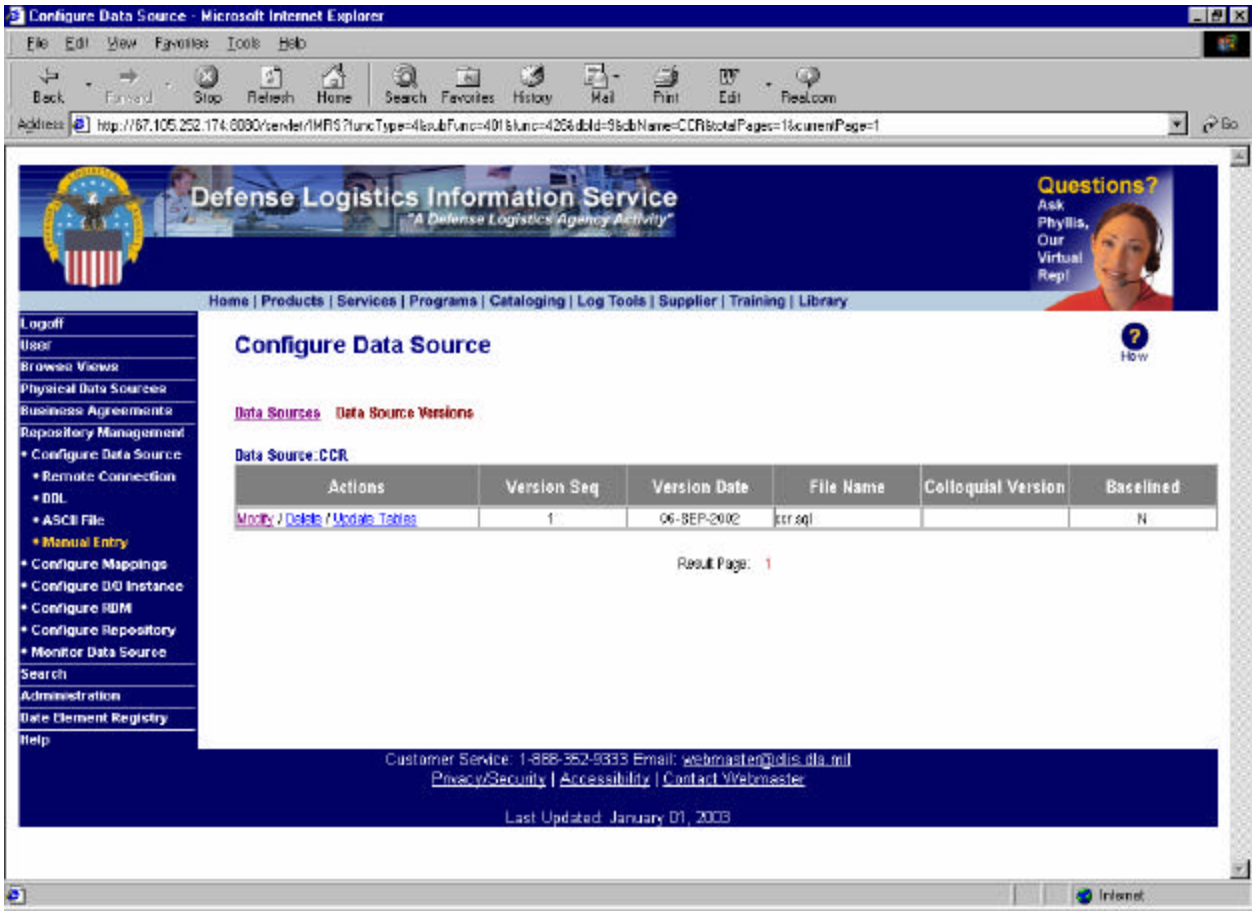


Figure 4.6.1.4.d- 3 Configure Data Source – Update Versions (unbaselined)

4.6.1.4.e. Add A New Version

Only if the latest version of the selected data source is baselined (that is, if the baselined indicator's value is set to 'Y'), can the user create a new version for a data source.

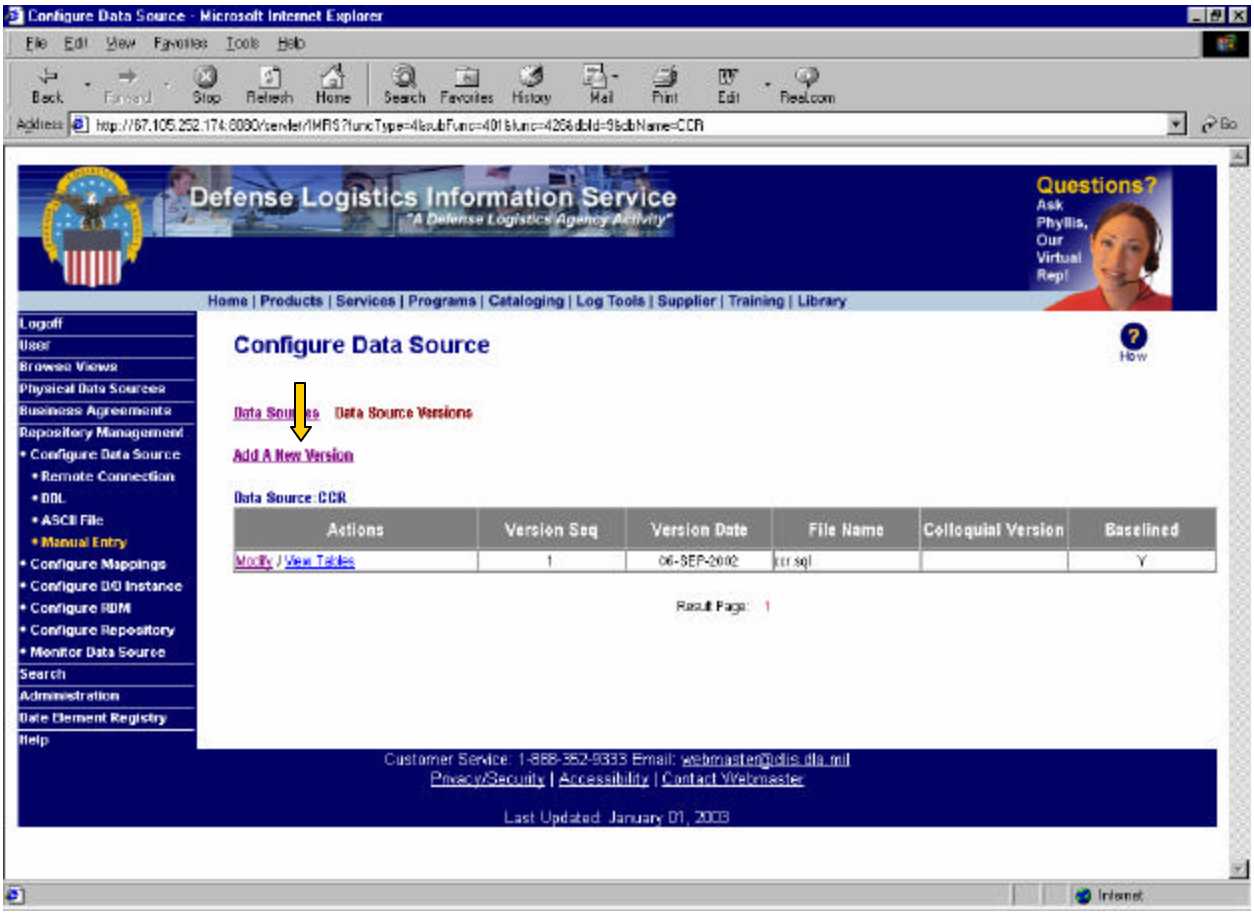


Figure 4.6.1.4.e- 1 Configure Data Source – Add A New Version

Click the *Add A New Version* link to add a new version for a selected data source (See Figure 4.6.1.4.e- 1. A new window with the caption “Add Data Source New Version” will pop up (See Figure 4.6.1.4.e- 2).

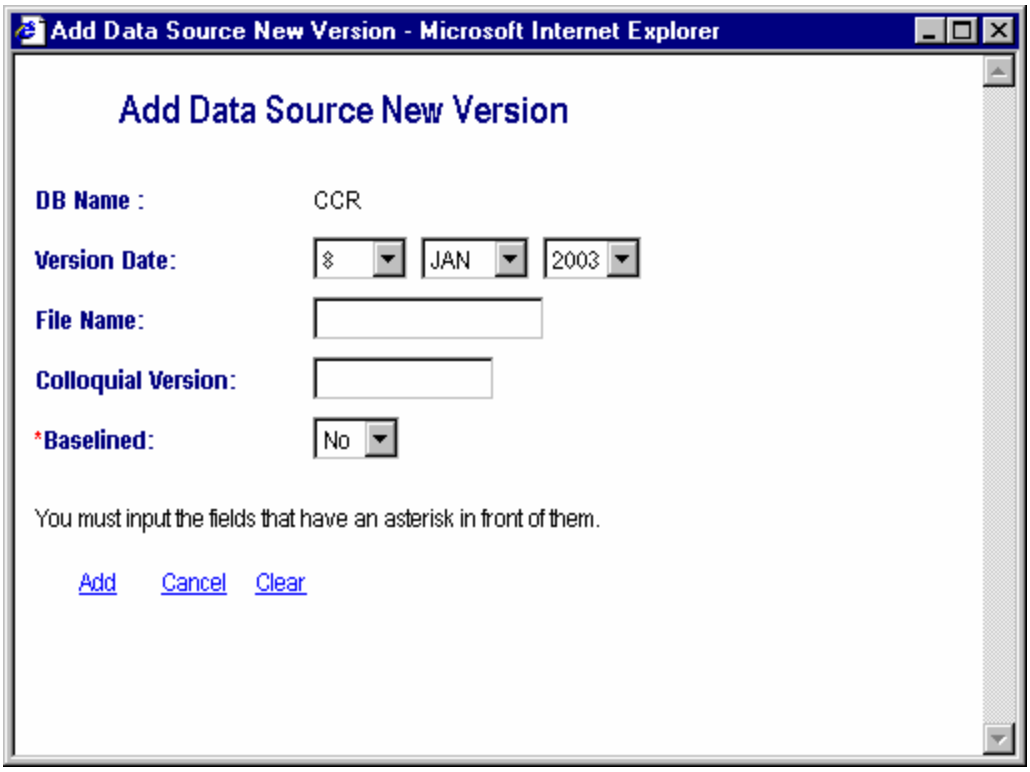


Figure 4.6.1.4.e- 2 Configure Data Source – Add Data Source New Version

Not all of the fields on this window are required. Refer to Table 2 to identify required fields and other important parameters.

Table 2 Add Data Source New Version

Field	Requirements
DB Name	Display
Version Date	Optional (default System Date)
File Name	Optional (255 characters)
Colloquial Version	Optional (20 characters)
Baselined	**Required** (1 character, use drop down list to select)

Click *Add* to store the information and close the window. Alternatively, click the *Cancel* link to cancel the modifications and close the window. Click the *Clear* link to erase all data in all of the boxes (including previously stored data).

4.6.1.4.f. Modify a Versioned Data Source

To modify a versioned data source, click the *Modify* link under the Actions heading next to the data source version sequence to change the versioned data source information (See Figure 4.6.1.4.f- 1).

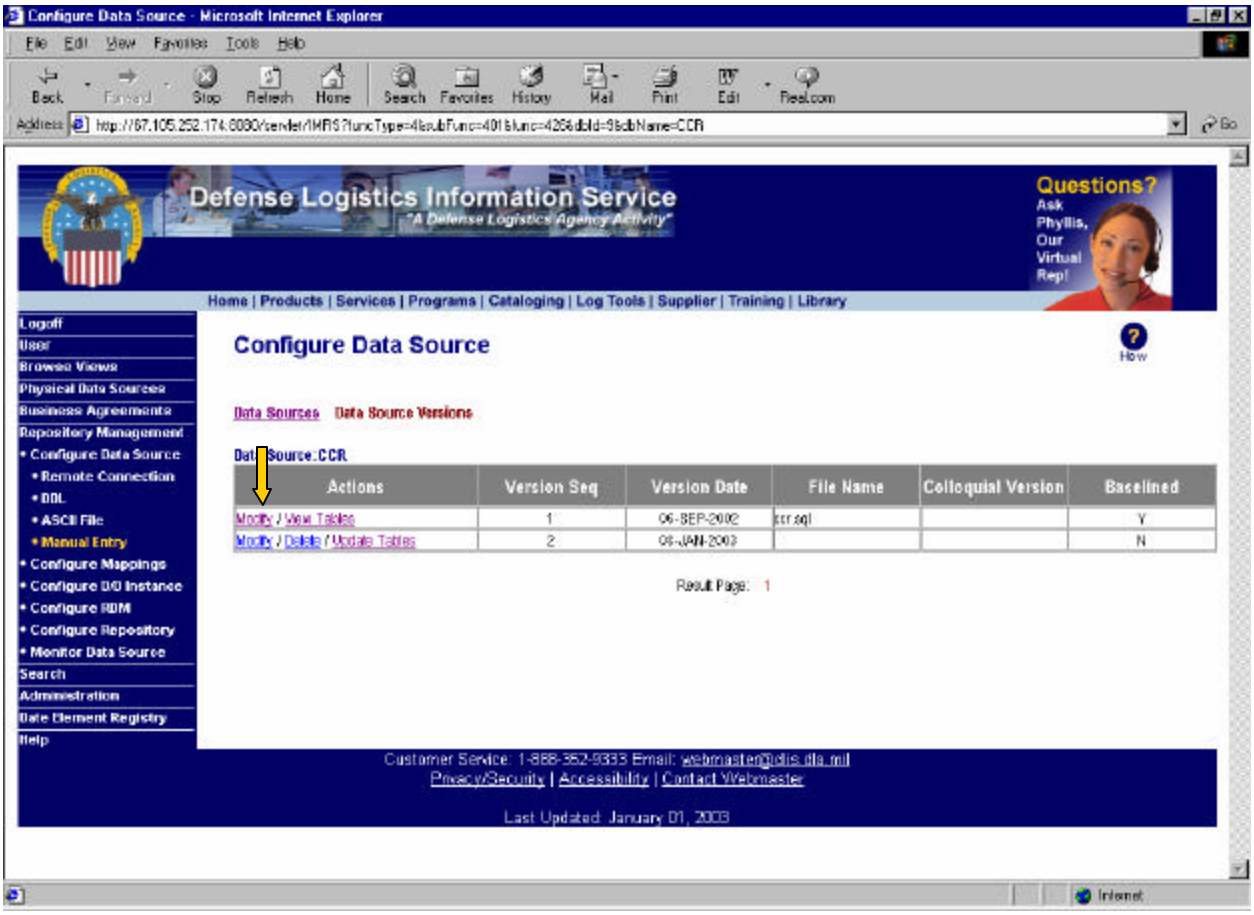


Figure 4.6.1.4.f- 1 Configure Data Source - Modify a Versioned Data Source

A window with the caption “Modify Data Source Version” will pop up (See Figure 4.6.1.4.f- 2). Click *Update* to save the changed information and to close the window. Alternatively, click the *Cancel* link under the Actions heading to cancel the modifications and close the window. Click the *Clear* link to erase all data in all of the boxes (including previously stored data).

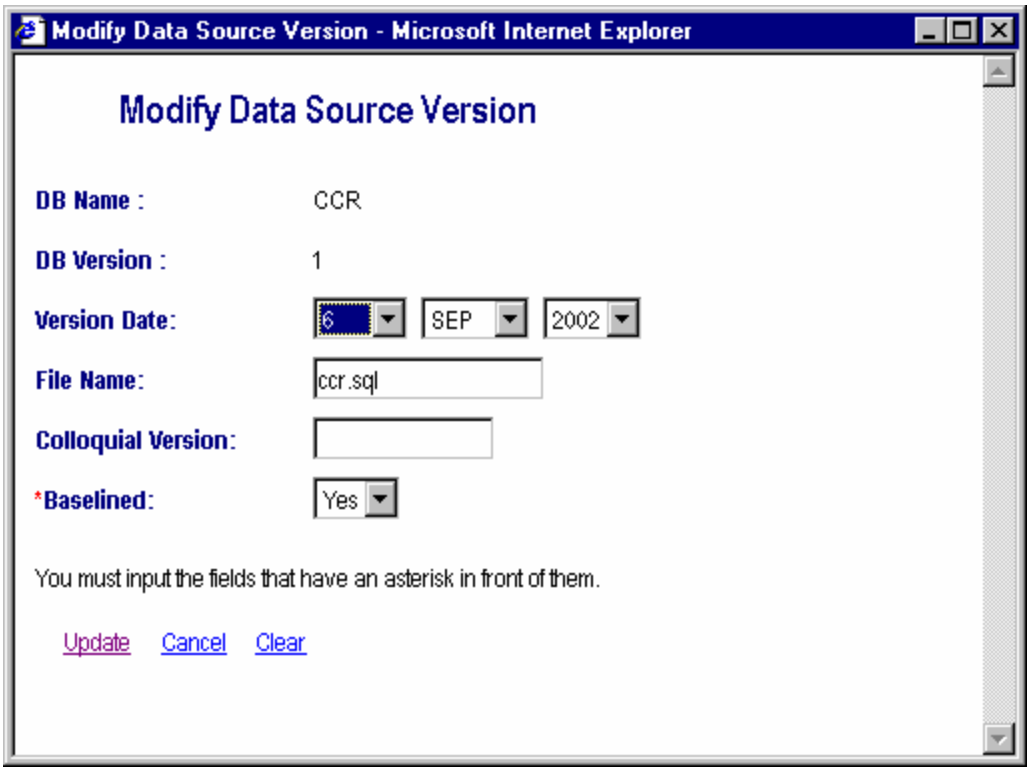


Figure 4.6.1.4.f- 2 Configure Data Source – Modify Data Source Version

4.6.1.4.g. View Tables

The user can view the table and column information for all old versioned data source.

After clicking on the *Configure data source step-by-step* link, click on the *Update Versions* link, and then click the *View Tables* link under the Actions heading next to the data source version sequence to view table information (See Figure 4.6.1.4.g- 1 and Figure 4.6.1.4.g- 2). Click the *View Columns* link to view column information for each table (Figure 4.6.1.4.g- 3).

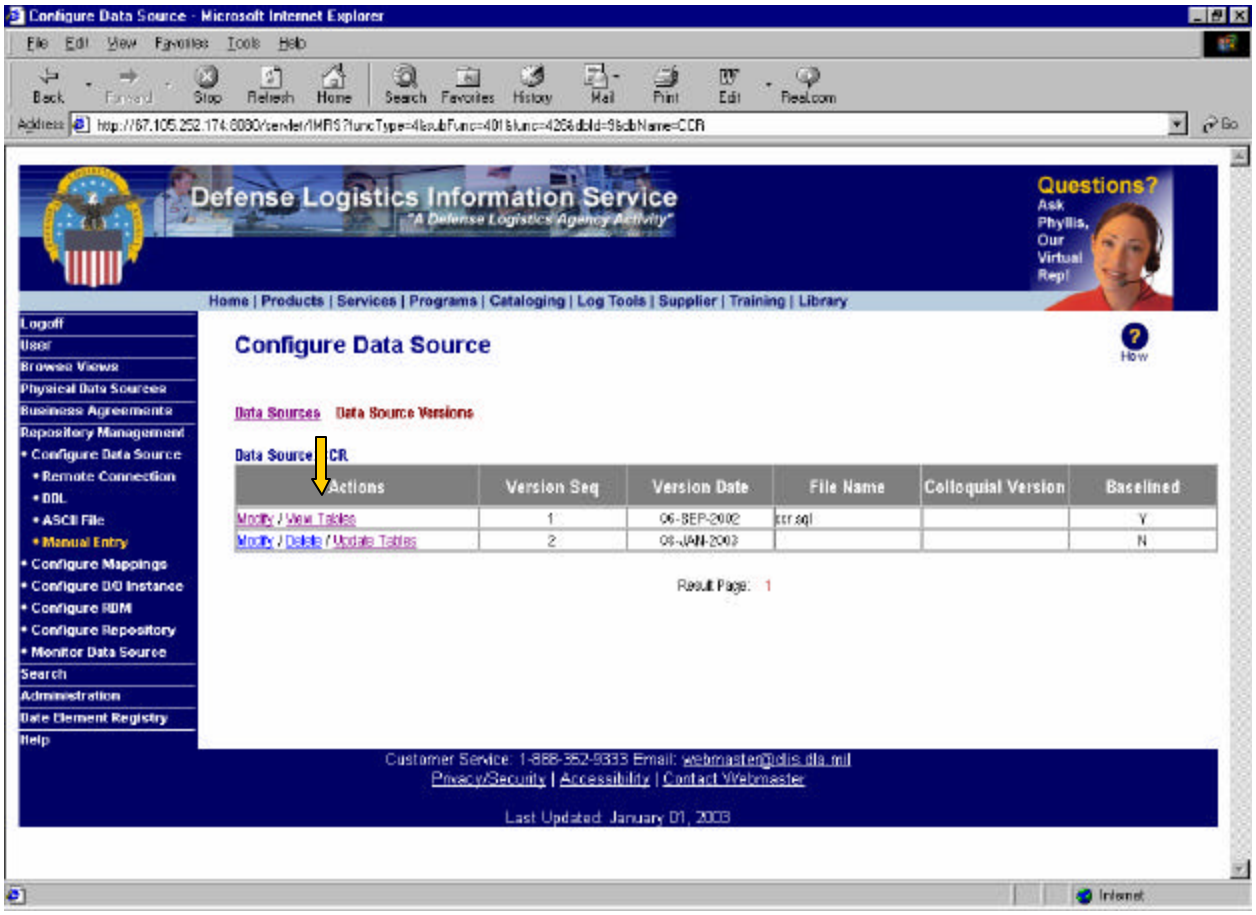


Figure 4.6.1.4.g- 1 Configure Data Source – View Tables

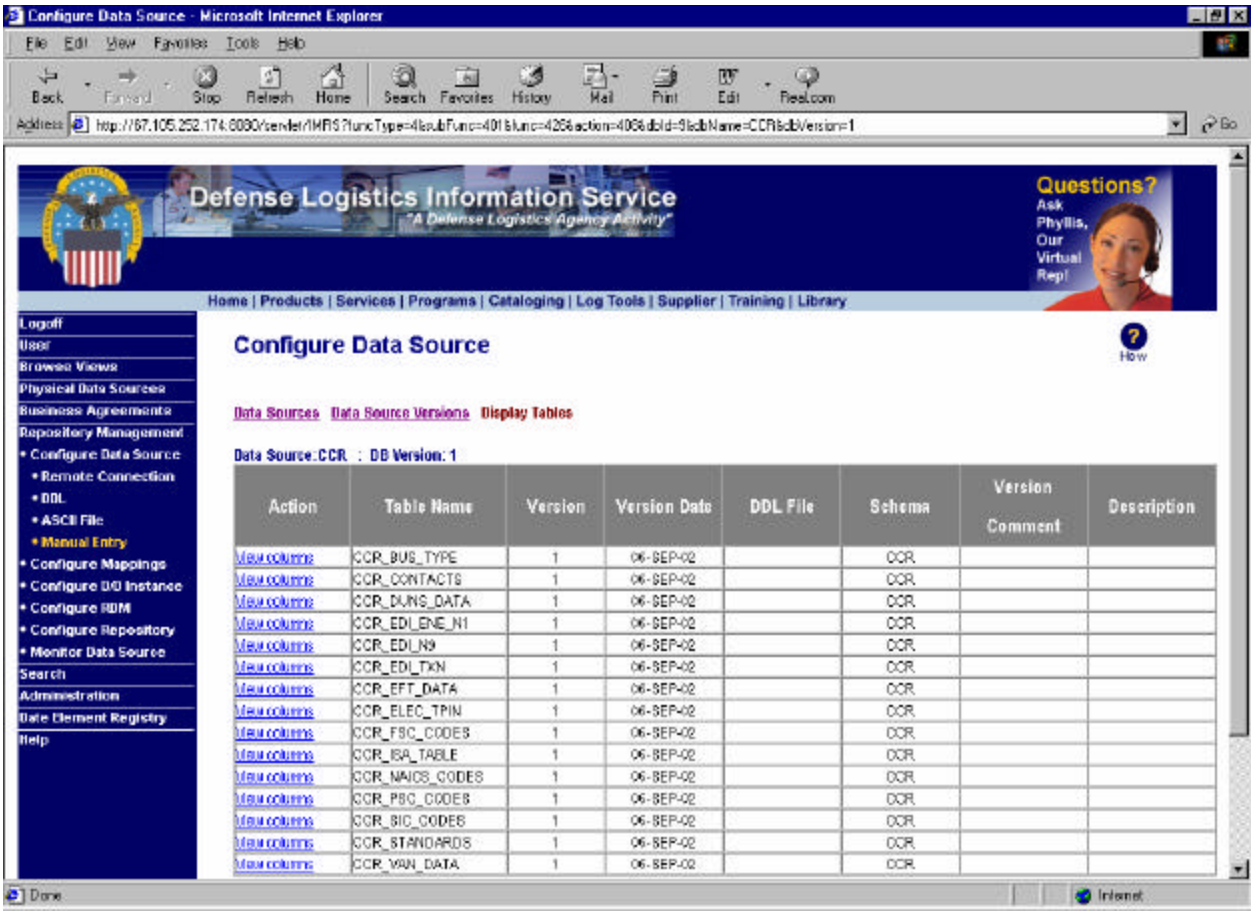


Figure 4.6.1.4.g- 2 Configure Data Source – View Tables

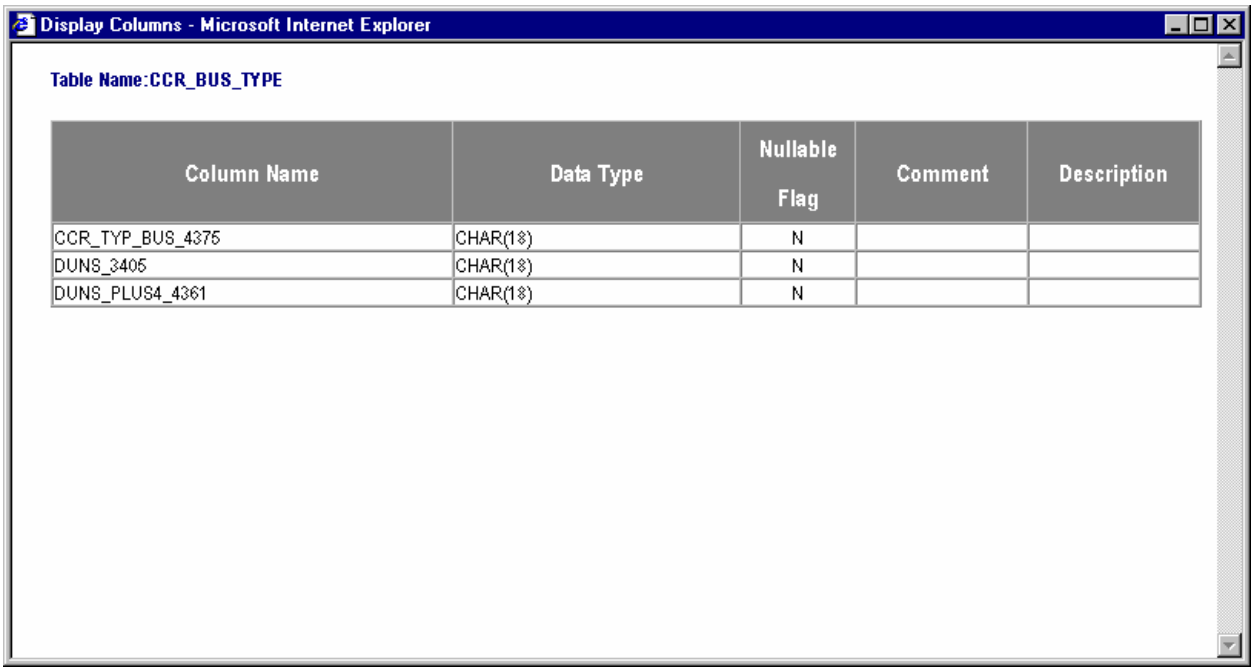


Figure 4.6.1.4.g- 3 Configure Data Source – View Tables Columns

4.6.1.4.h. Delete A Versioned Data Source

Only if the latest versioned data source is unbaselined (that is, if the baselined indicator's value is set to 'N'), can the end user delete the data source with the *Delete* function.

After clicking on the *Configure data source step-by-step* link, click on the *Update Versions* link, and then click the *Delete* link under the Actions heading next to the data source version sequence to delete a versioned data source (See

Figure 4.6.1.4.h- 1).

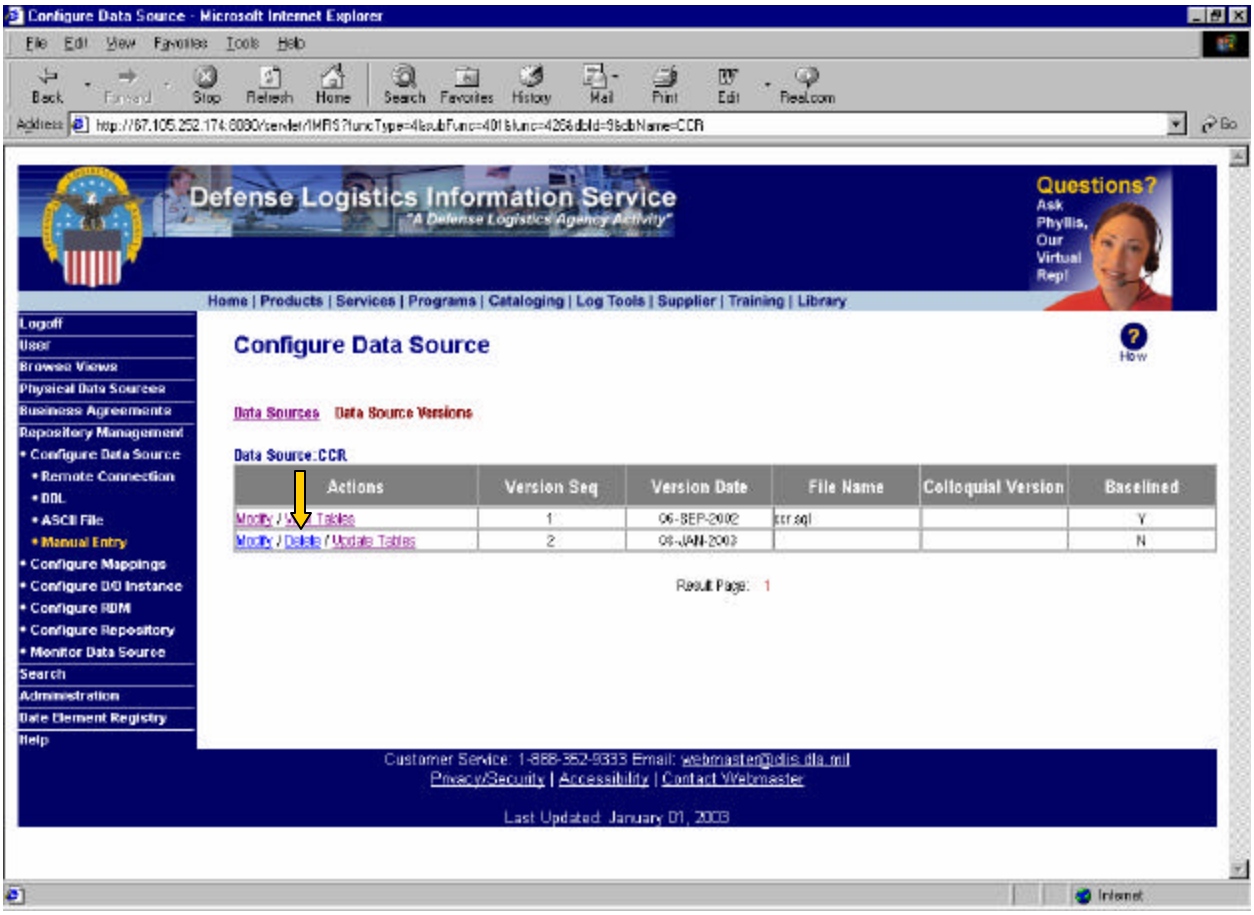


Figure 4.6.1.4.h- 1 Configure Data Source - Delete A Versioned Data Source

If there were any tables created specifically for this latest version (that is, not copied from a previously versioned data source), those tables cannot be deleted by this function. The user must explicitly delete those tables. In this case a dialog box will pop up to explain why this versioned data source cannot be deleted and will give additional instructions on what needs to be done in order to remove it. Click the *OK* button to close the dialog box (See Figure 4.6.1.4.h- 2).

Figure 4.6.1.4.h- 2 Configure Data Source – Delete Versioned Data Source Message

4.6.1.4.i. Update Tables

After clicking on the *Configure data source step-by-step* link, click on the *Update Versions* link and then click on the *Update Tables* link under the Actions heading next to the data source version sequence to Add/Modify/Delete table information for a versioned data source (See Figure 4.6.1.4.i- 1).

Only the latest versioned data source will allow the end user to update its tables.

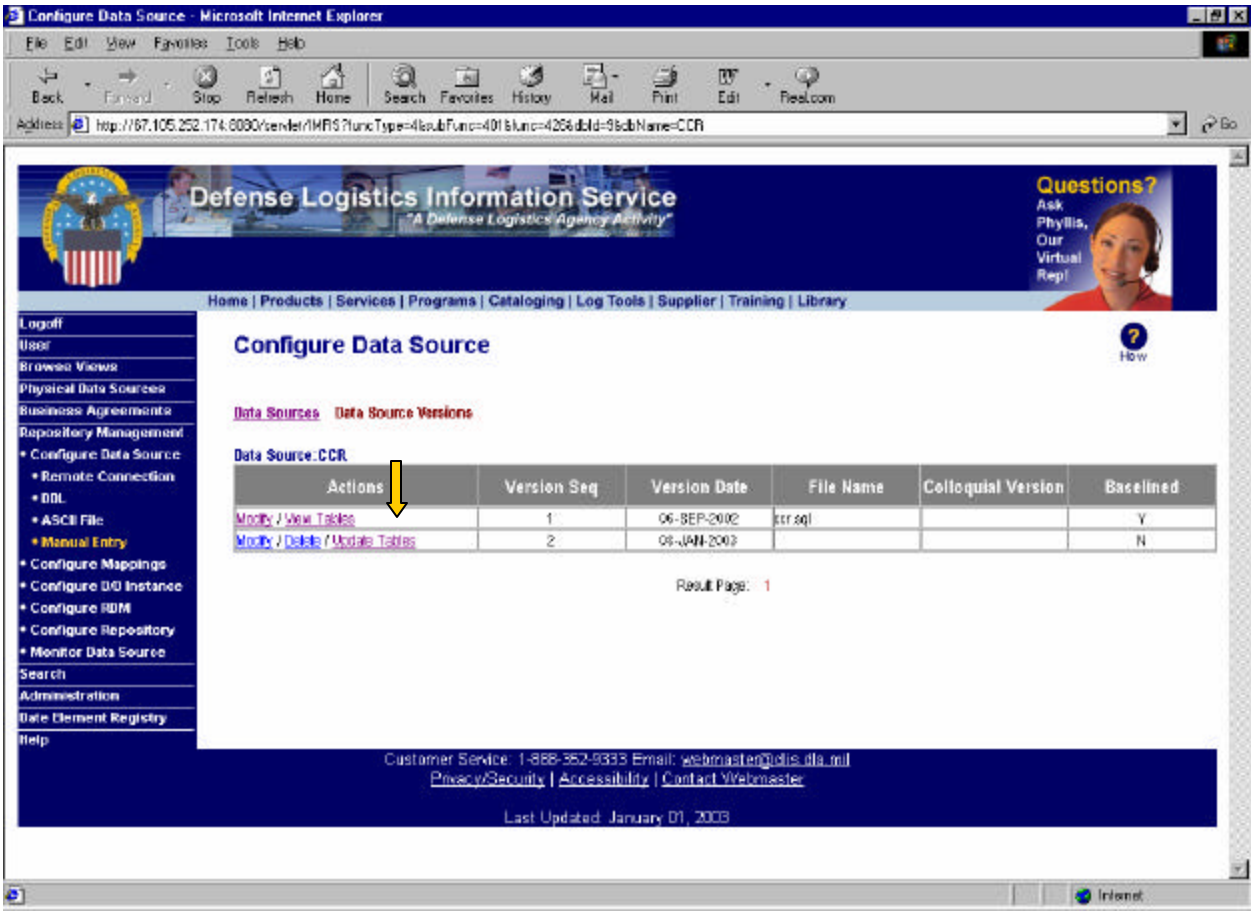


Figure 4.6.1.4.i- 1 Configure Data Source – Update Tables

4.6.1.4.j. Add a New Table

After clicking on the *Configure data source step-by-step* link, click on the Update Versions link, the Update Tables link, and then click on the Add A New Table link to add a table to a versioned data source (See Figure 4.6.1.4.j- 1). Then a window with the caption “Add a New Table” will pop up (See Figure 4.6.1.4.j- 2).

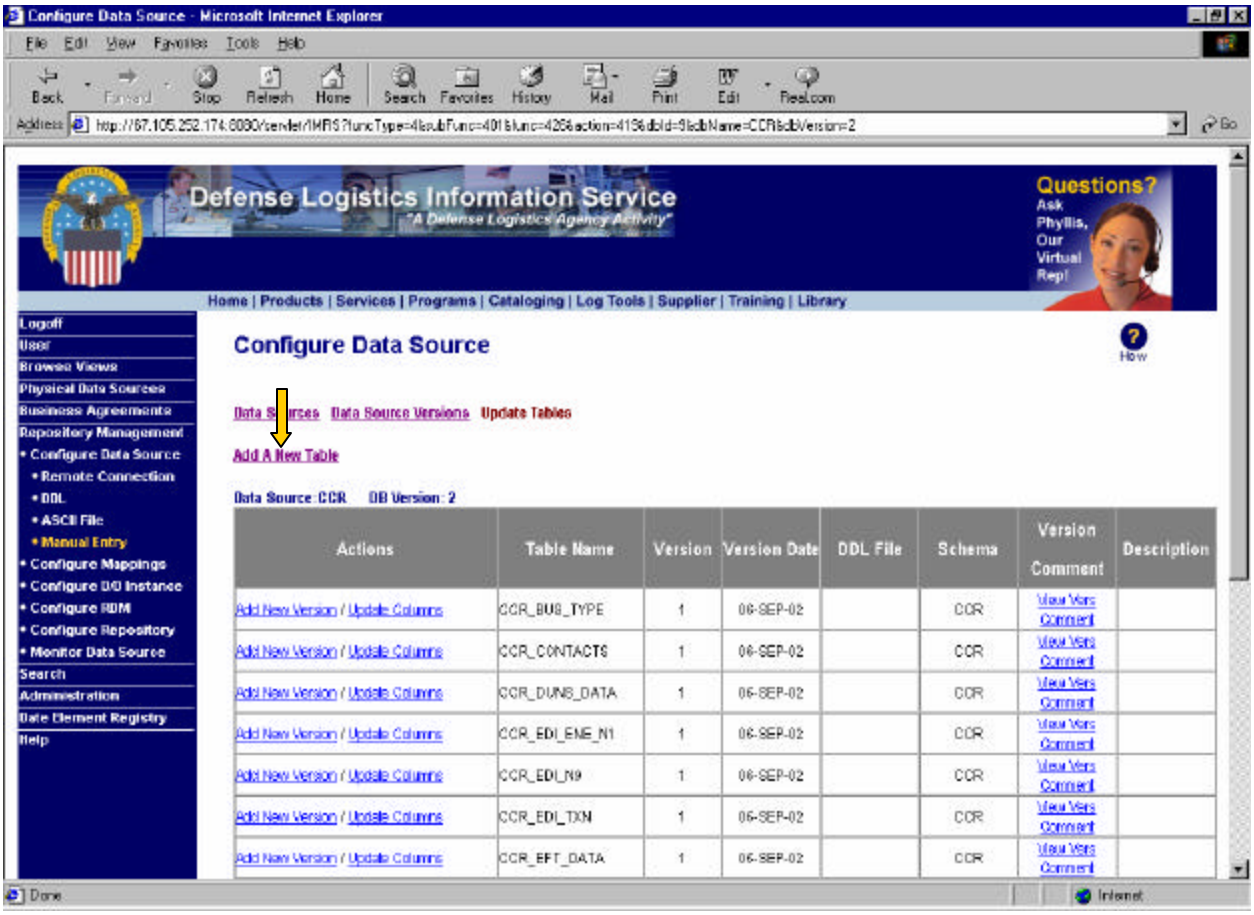


Figure 4.6.1.4.j- 1 Configure Data Source – Update Tables (Add A New Table)

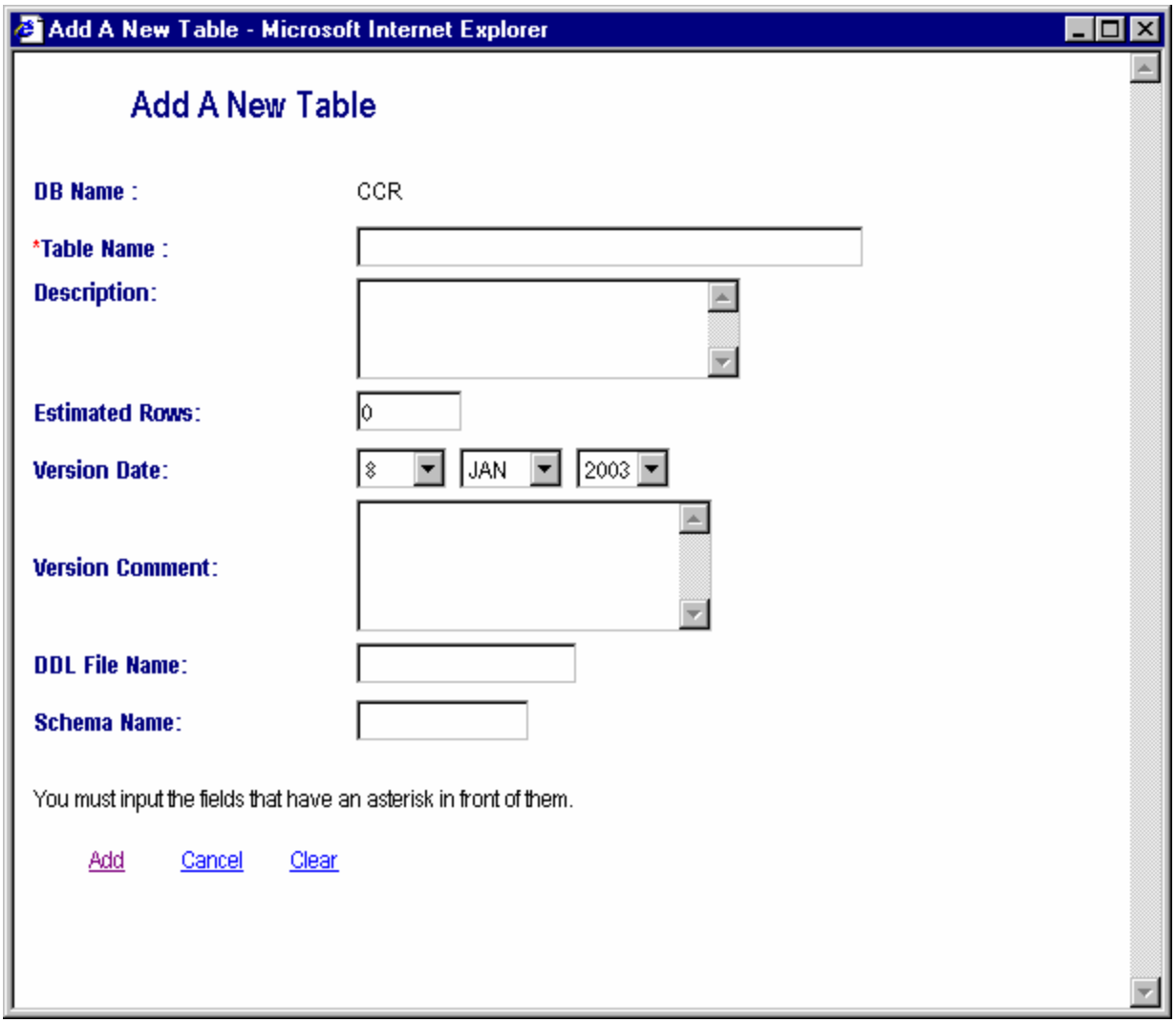


Figure 4.6.1.4.j- 2 Configure Data Source – Add A New Table

Not all of the fields on this window are required. Refer to Table 3 to identify the required fields and other important parameters.

Table 3 Add A New Table Field Parameters

Field	Requirements
DB Name	Display
Table Name	**Required** This name should match the name of the table in the schema of the new data source. (70 characters)
Description	Optional (2000 characters)
Estimated Rows	Optional (Integer Number)
Version Date	Optional (Default System Date)
Version Comment	Optional (100 characters)
DDL File Name	Optional (255 characters)
Schema Name	Optional (30 characters)

Click *Add* to store the new table with table version sequence 1. Alternatively, click the *Cancel* link to cancel the modifications and close the window. Click the *Clear* link to erase all data in all of the boxes (including previously stored data).

If not all data meets the field requirements, then an error dialog box will pop up with a detailed explanation as to why the error has occurred. Click the OK button to close the dialog; otherwise, the new window will be closed (See Figure 4.6.1.4.j- 3).

Figure 4.6.1.4.j- 3 Configure Data Source – Add A New Table Error Message

4.6.1.4.k. Add A New Table Version

If the table came from a previously versioned data source, the user can add a new version to change its schema.

After clicking on the *Configure data source step-by-step* link, click on the Update Versions link, the Update Tables link, and then click on the Add New Version add a new table version to a versioned data source table (See Figure 4.6.1.4.k- 1). The table version sequences will be incremented by 1.

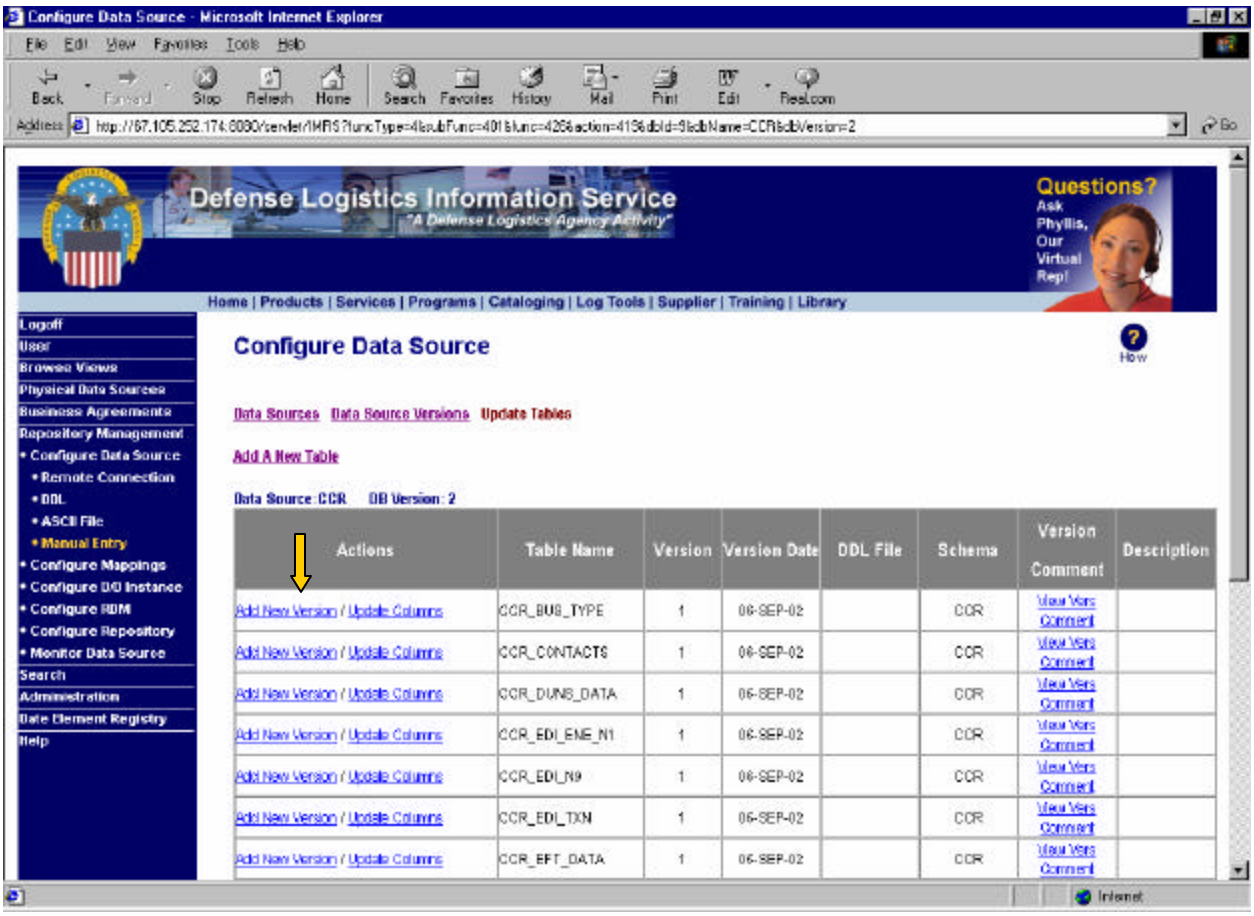


Figure 4.6.1.4.k- 1 Configure Data Source – Add A New Table Version

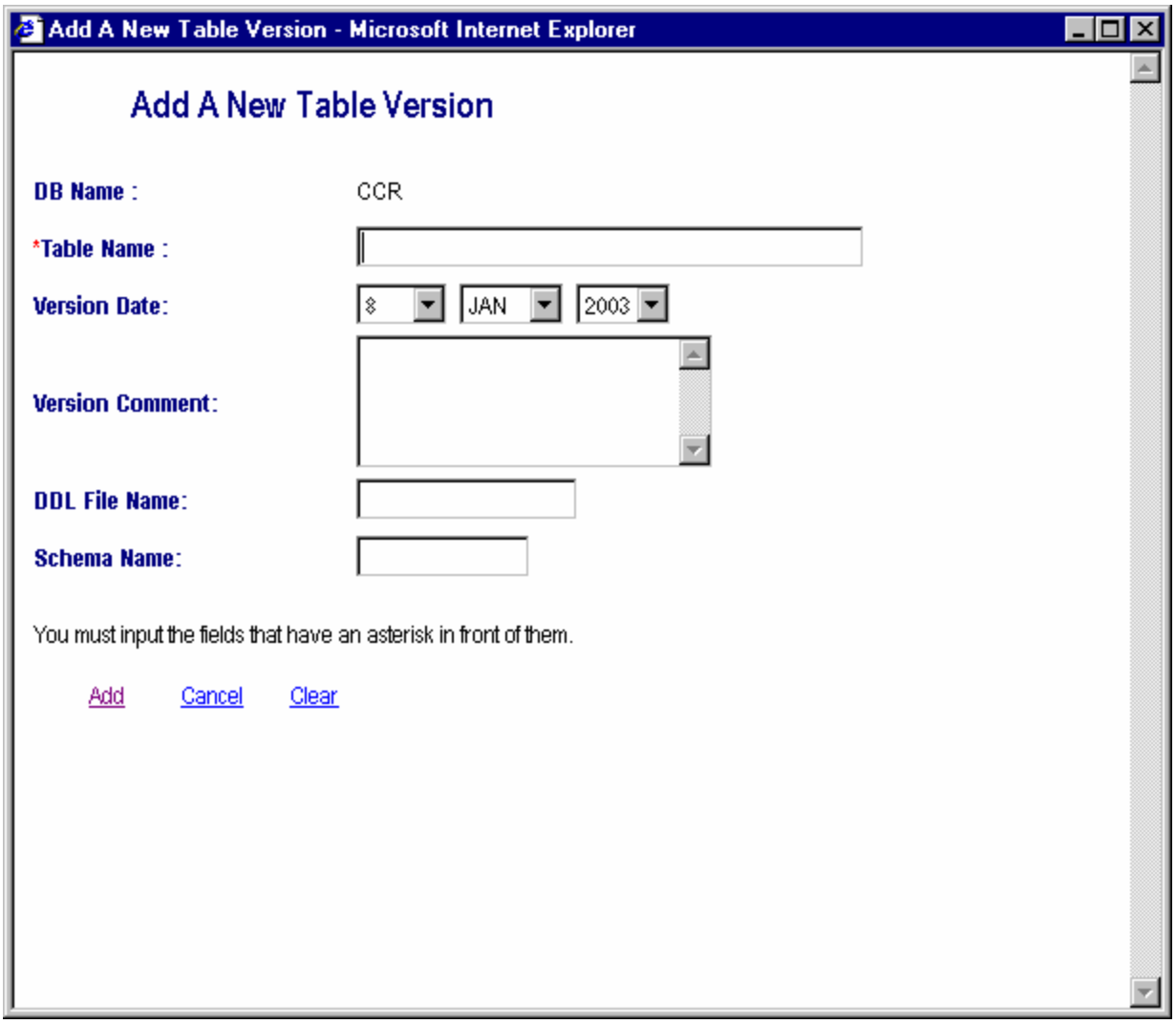


Figure 4.6.1.4.k- 2 Configure Data Source – Add A New Table Version

Then a window with the caption “Add a New Table” will pop up (See Figure 4.6.1.4.k- 2). Not all of the fields on this window are required. Refer to Table 4 to identify the required fields and other important parameters.

Table 4 Add A New Table Version

Field	Requirements
DB Name	Display
Table Name	**Required** This name should match the name of the table in the schema of the new data source. (70 characters)
Version Date	Optional (Default System Date)
Version Comment	Optional (100 characters)
DDL File Name	Optional (255 characters)
Schema Name	Optional (30 characters)

Click *Add* to store the information with a table version incremented by 1.

If some fields do not meet the requirement, then an error dialog box will pop up to inform the user of the error (See Figure 4.6.1.4.k- 3). Click the *OK* button to close the dialog box; otherwise, the new window will be closed.

Figure 4.6.1.4.k- 3 Configure Data Source – Add A New Table Version Error Message

4.6.1.4.l. Modify A Table

If the latest versioned data source is unbaselined (that is the baselined indicator's value is set to 'N'), the user can modify table information.

After clicking on the *Configure data source step-by-step* link, click on the *Update Versions* link, the *Update Tables* link, and then click on the *Modify* link under the Actions heading next to the table name to modify table information (See Figure 4.6.1.4.l- 1).

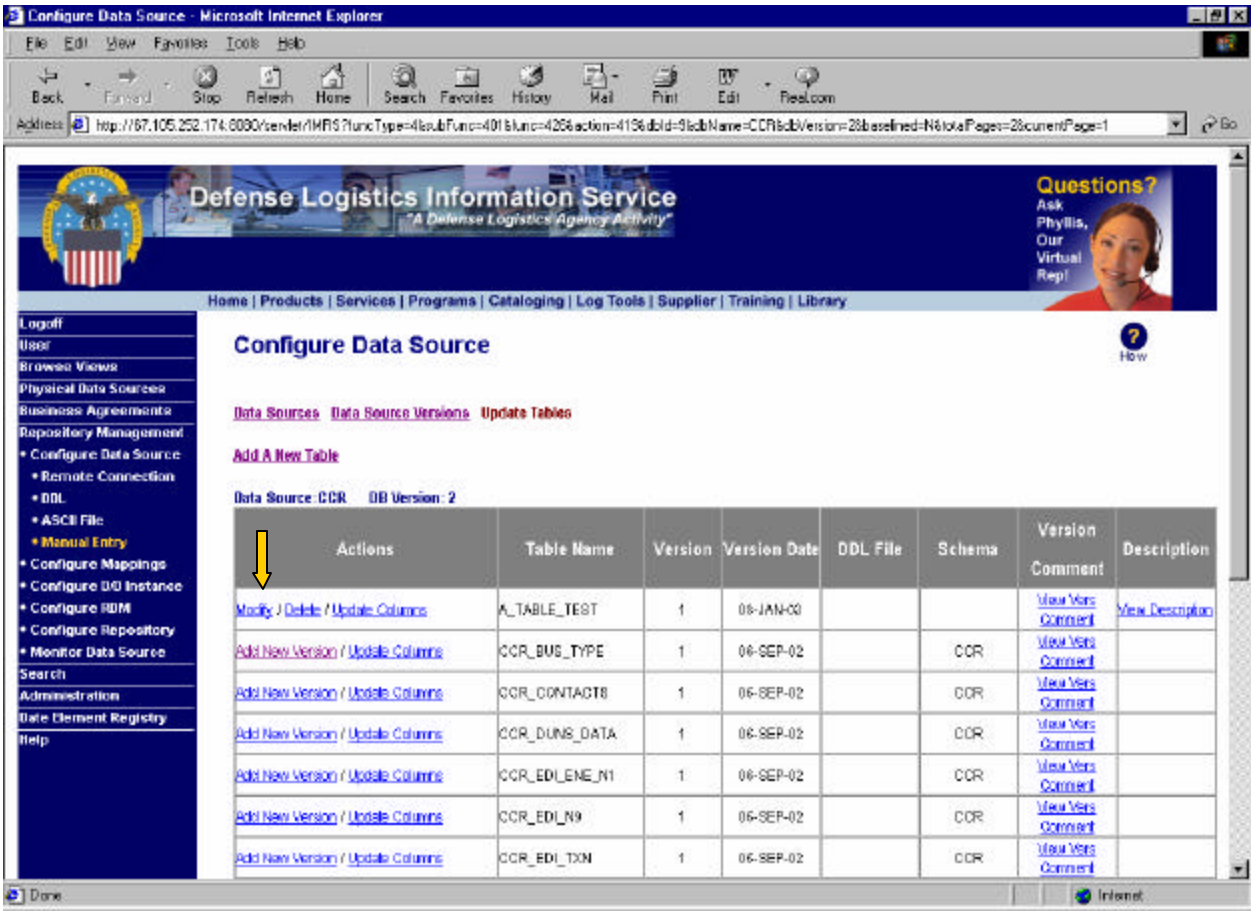


Figure 4.6.1.4.l- 1 Configure Data Source – Modify A Table

A new window with caption “Modify A Table” will pop up (See Figure 4.6.1.4.l- 2). Click *Update* to save it and close the new window.

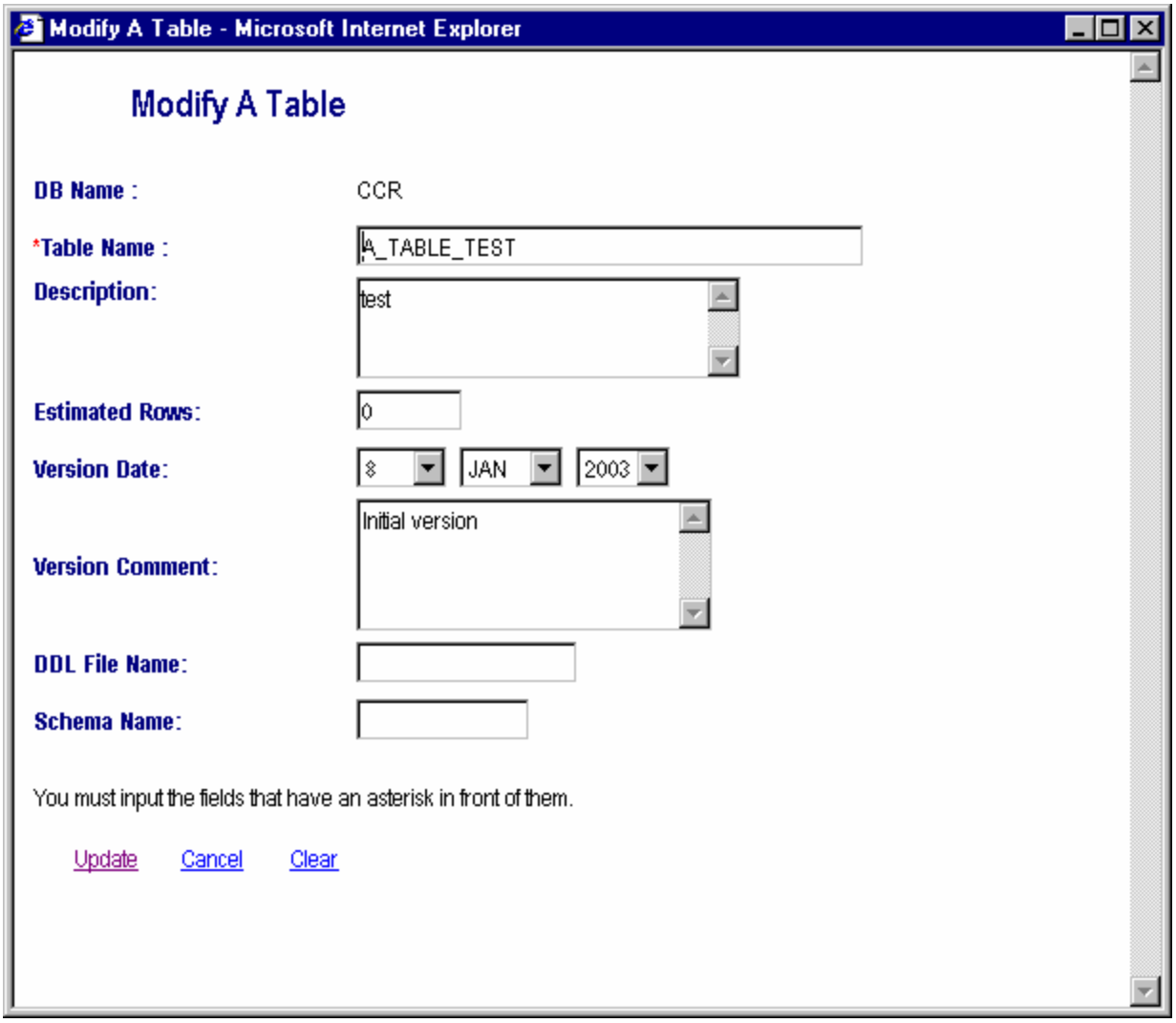


Figure 4.6.1.4.l- 2 Configure Data Source – Modify A Table

4.6.1.4.m. Delete A Table

If the latest versioned data source is unbaselined (that is, the baselined indicator's value is set to 'N'), the user can delete table information.

After clicking on the *Configure data source step-by-step* link, click on the *Update Versions* link, the *Update Tables* link, and then click on the *Delete* link under the Actions heading next to the table name to delete a table (See Figure 4.6.1.4.m- 1). All information mapped to this table will be lost.

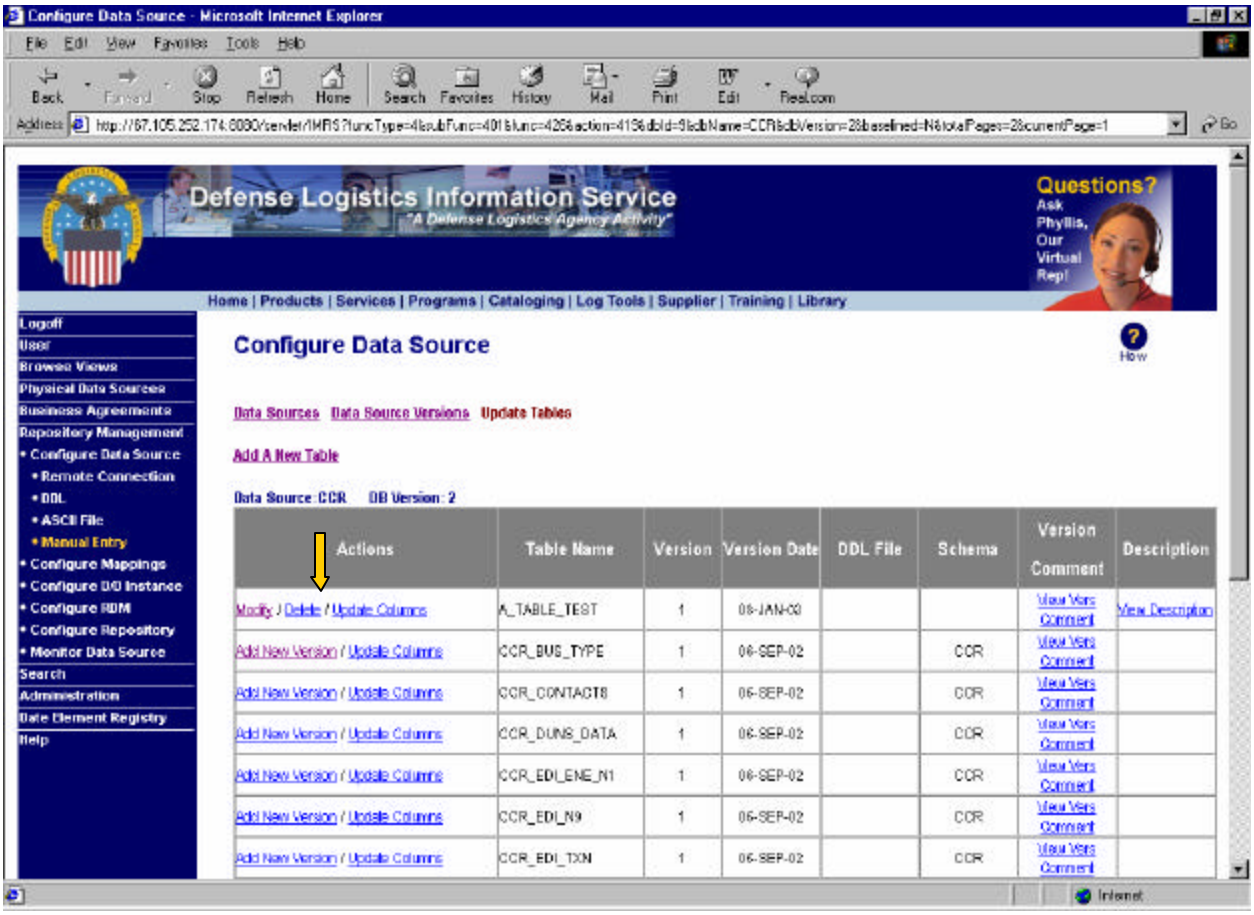


Figure 4.6.1.4.m- 1 Configure Data Source – Delete A Table

A dialog box will pop up to verify the delete operation (See Figure 4.6.1.4.m- 2). Click the *OK* button to delete this table and all information mapped to this table. Click *Cancel* to cancel this operation. If the information is deleted, it cannot be recovered.

If a table's latest table version sequence number is greater than 1, then deleting the table will make the previous version the latest version.

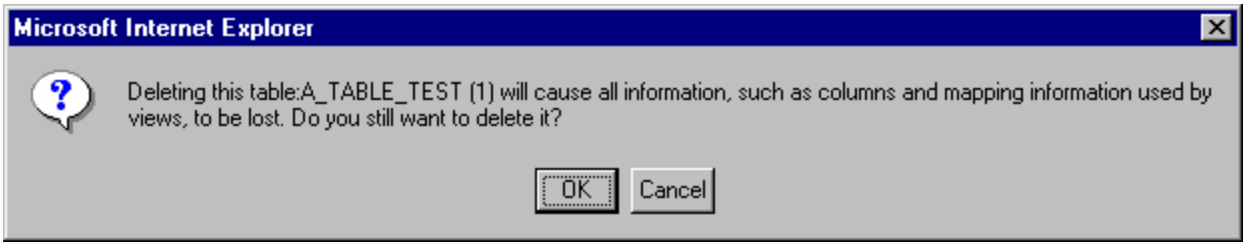


Figure 4.6.1.4.m- 2 Configure Data Source – Delete A Table (message)

4.6.1.4.n. Update Columns

After clicking on the *Configure data source step by step* link, click on the *Update Versions* link, the *Update Tables* link, and then click on the *Update Columns* link under the Actions heading next to the table name to Add/Modify/Delete column information (See Figure 4.6.1.4.n- 1).

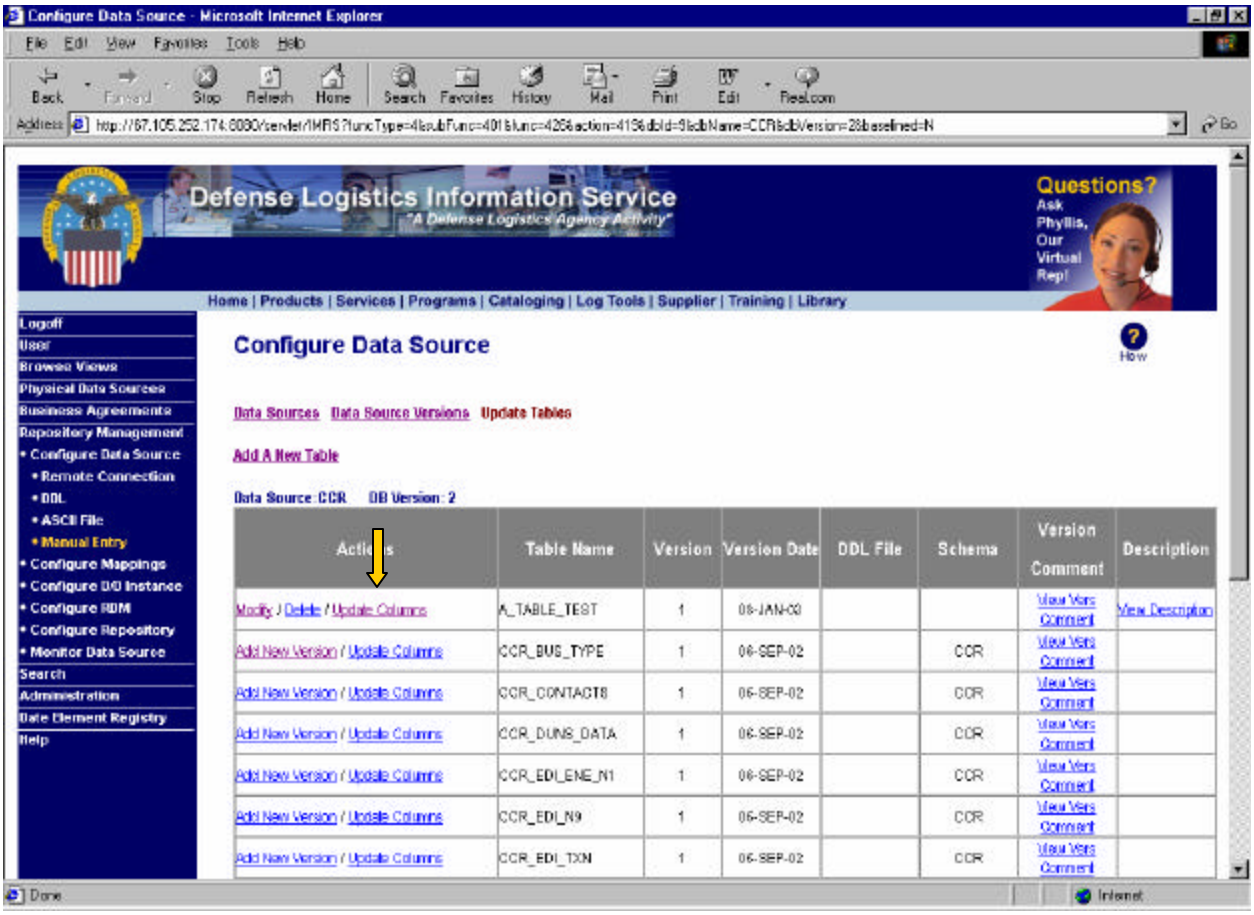


Figure 4.6.1.4.n- 1 Configure Data Source – Update Columns (Unbaselined)

4.6.1.4.o. Add A new Column

After clicking on the *Configure data source step-by-step* link, click on the *Update Versions* link, the *Update Tables* link, the *Update Columns* link, and then click on the *Add a New Column* link to add a column to a table (See Figure 4.6.1.4.o- 1).

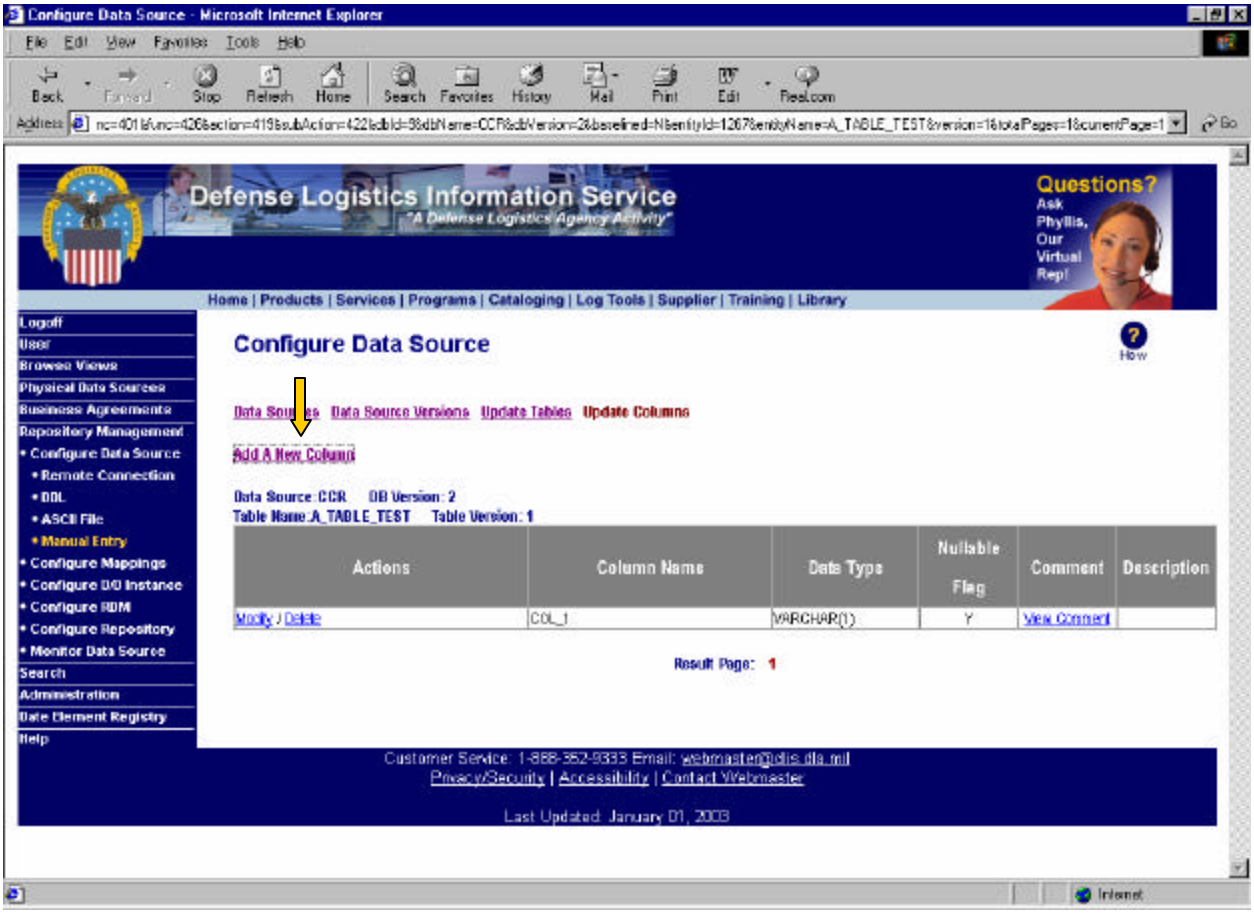


Figure 4.6.1.4.o- 1 Configure Data Source - Add A New Column

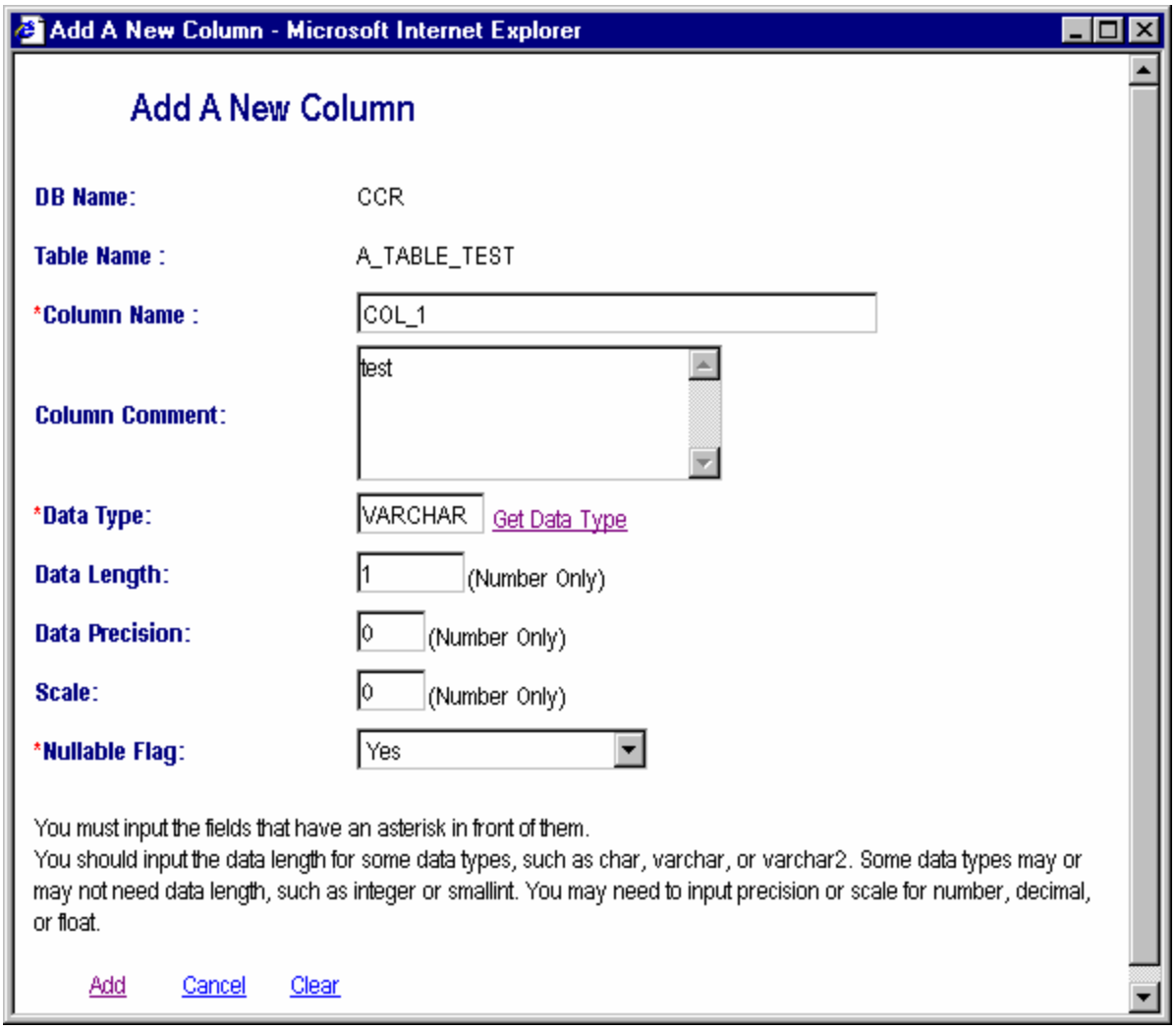


Figure 4.6.1.4.o- 2 Configure Data Source – Add A New Column

Not all of the fields on this window are required (See Figure 4.6.1.4.o- 2). Refer to Table 5 to identify required fields and other important parameters.

For the data types TIMESTAMP and Data Length, the data precision and scale are not meaningful.

For the data types INTEGER and SMALLINT the data precision and scale are not meaningful; the data length may be either used or not used. For example: INTEGER, INTEGER(5).

For the data type DATE, only the data length is used and its value needs to be less than 9. For example: DATE(7), DATE.

For the data types VARCHAR, VARCHAR2, and CHAR only data length is used; its value needs to be greater than 0 (zero). For example: VARCHAR2(5).

For other data types, such as NUMBER, DECIMAL, FLOAT, and SERIEL, data precision are used, but scale may or may not be used. For example: NUMBER(5), NUMBER(5, 2).

Table 5 Add A New Column Field Parameters

Field	Requirements
DB Name	Display
Table Name	Display
Column Name	**Required** (100 characters)
Column Comment	Optional (2000 characters)
Data Type	**Required** (20 character3, user drop down list to select)
Data Length	Optional (Integer Number)
Data Precision	Optional (Integer Number)
Scale	Optional (Integer Number)
Nullable Flag	**Required** (1 character, use drop down list to select)

Click *Add* to save it.

If some fields do not meet the requirement, then an error dialog box will pop up to inform the user of the error. Click the *OK* button to close the dialog box; otherwise, the new window will be closed (See Figure 4.6.1.4.o- 3).

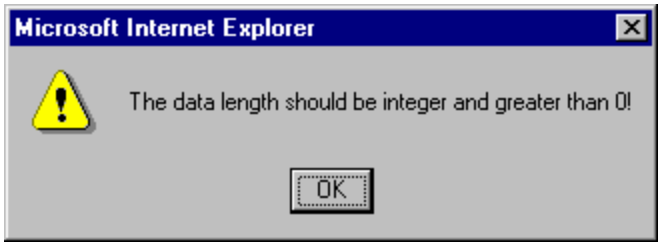


Figure 4.6.1.4.o- 3 Configure Data Source – Add A New Column Error Message

4.6.1.4.p. Modify A Column

After clicking on the *Configure data source step-by-step* link, click on the *Update Versions* link, the *Update Tables* link, the *Update Columns* link, and then click on the *Modify* link under the Action heading next to the column name to modify column information (See Figure 4.6.1.4.p- 1). A new window with the caption “Modify A Column” will pop up. Click *Update* to save it and close the new window Figure 4.6.1.4.p- 2).

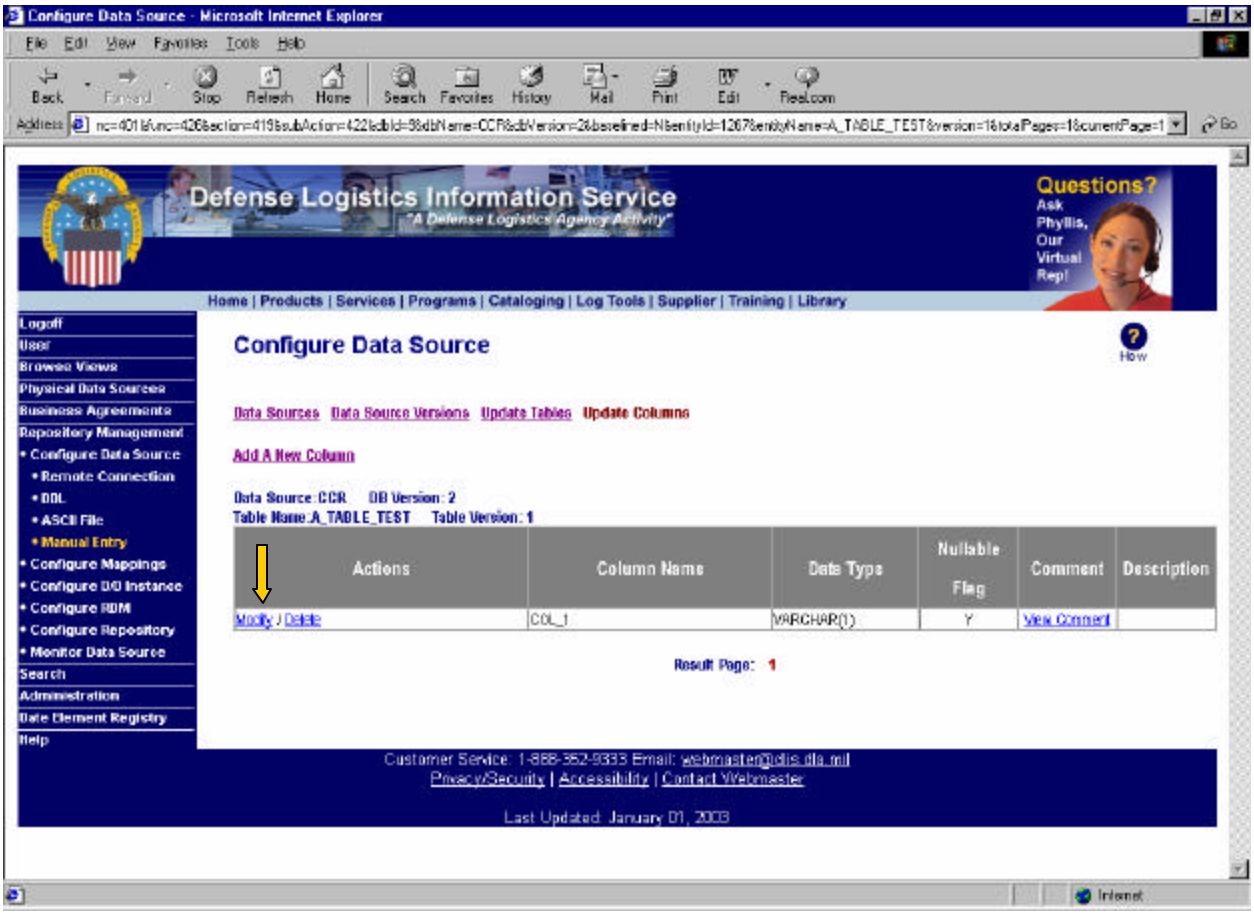


Figure 4.6.1.4.p- 1 Configure Data Source – Modify A Column

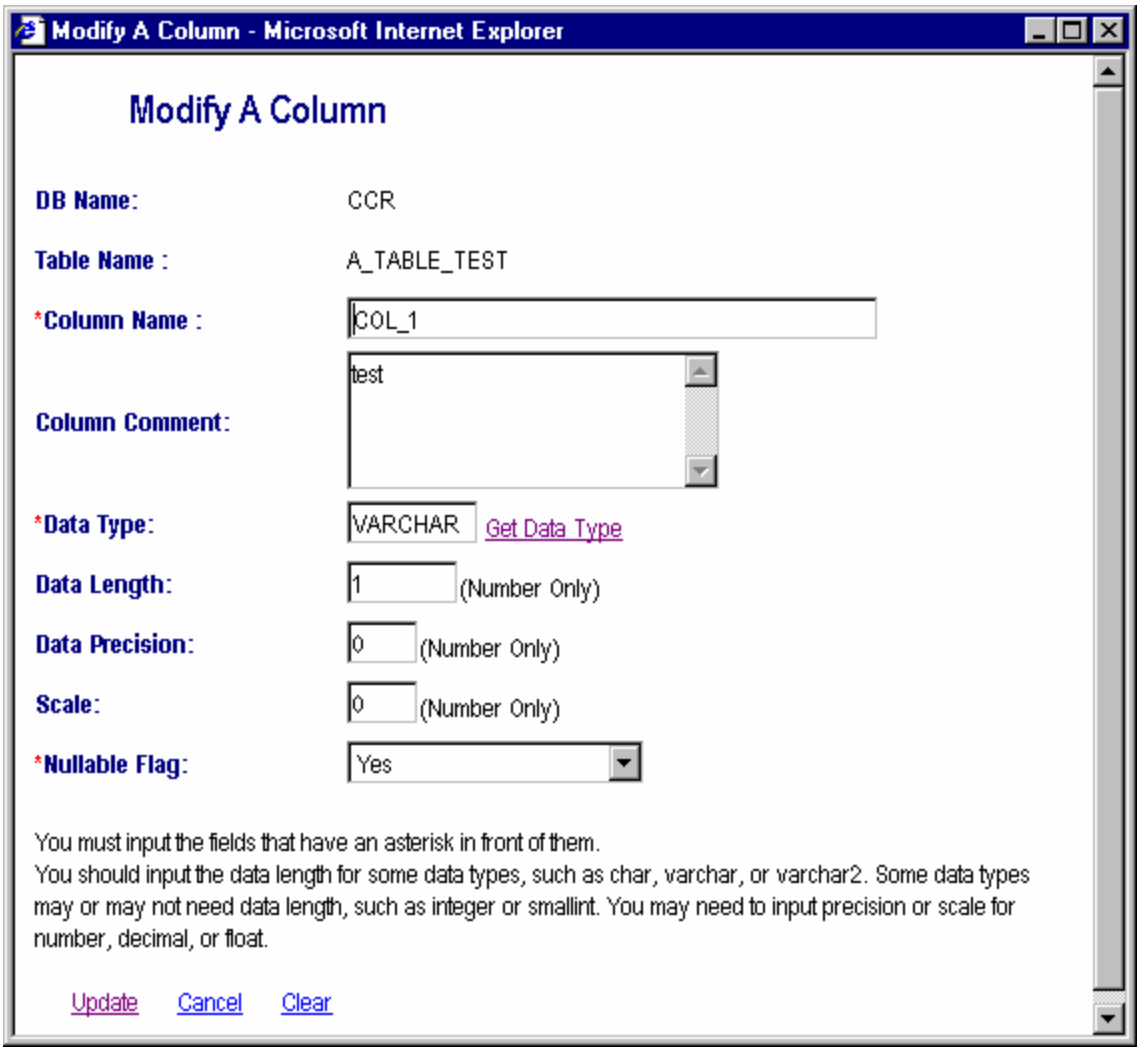


Figure 4.6.1.4.p- 2 Configure Data Source – Modify A Column

4.6.1.4.q. Delete A Column

If the latest versioned data source is unbaselined (that is, the baselined indicator's value is set to 'N') and the table was created for this data source, the user can delete column information.

After clicking on the *Configure data source step-by-step* link, click on the *Update Versions* link, the *Update Tables* link, the *Update Columns* link, and then click on the *Delete* link under the Action heading next to the column name to delete column information (See Figure 4.6.1.4.q- 1).

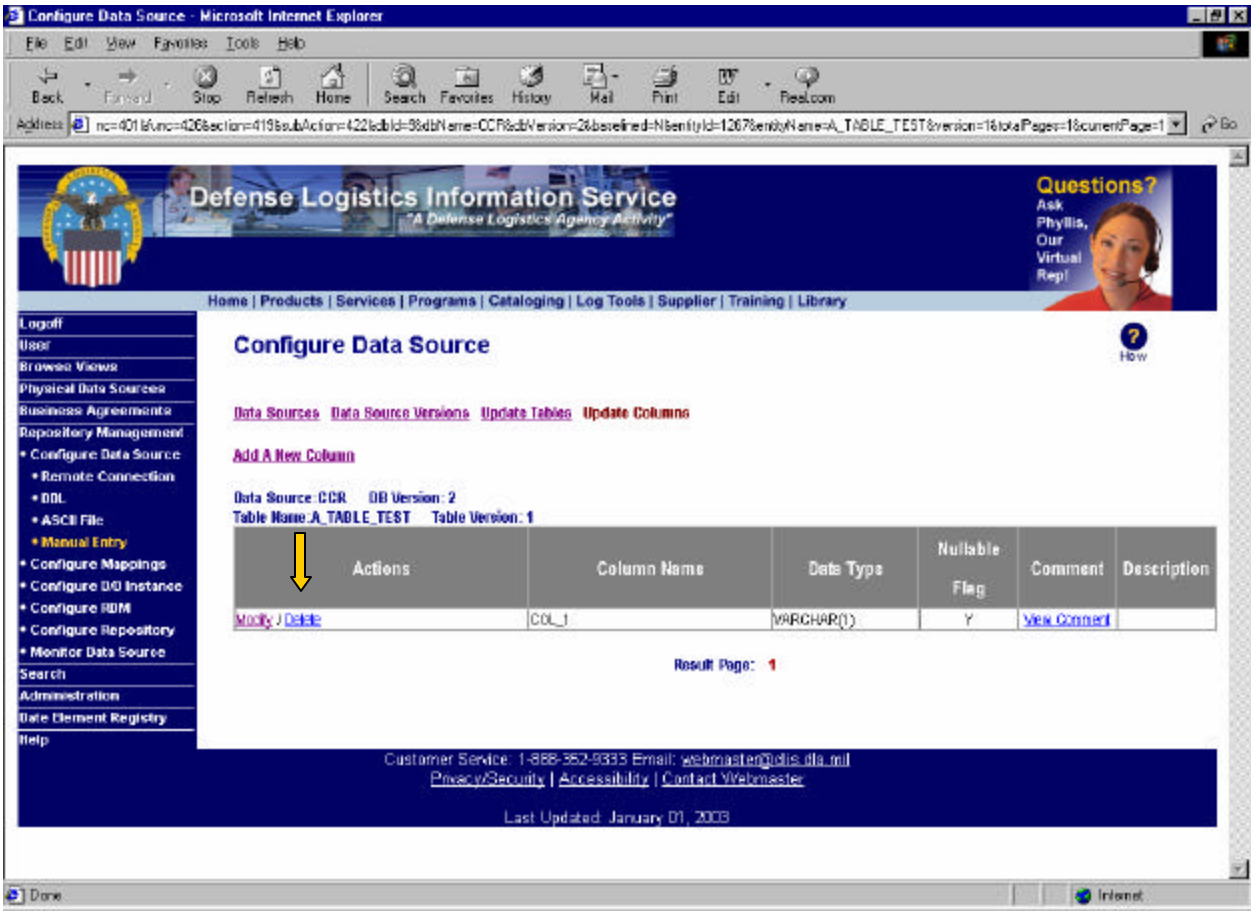


Figure 4.6.1.4.q- 1 Configure Data Source – Modify A Column

A dialog box will pop up to verify the delete operation. Click the *OK* button to delete this column; all information mapped to this column will also be lost. Click the *Cancel* button to cancel this operation. If any information is deleted, it cannot be recovered (See Figure 4.6.1.4.q- 2).

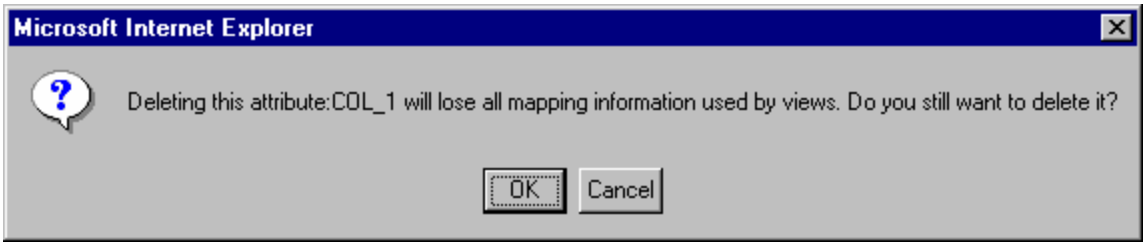


Figure 4.6.1.4.q- 2 Configure Data Source – Delete A Column

4.6.2. Repository Management - Configure Mappings

Each group includes three different types of models: TRANSLATION_MODEL, REFERENCE_MODEL, and USER_MODEL (See Figure 4.6.2- 1). The Translation model stores virtual views. The Reference Model and User Model store both virtual and union views.

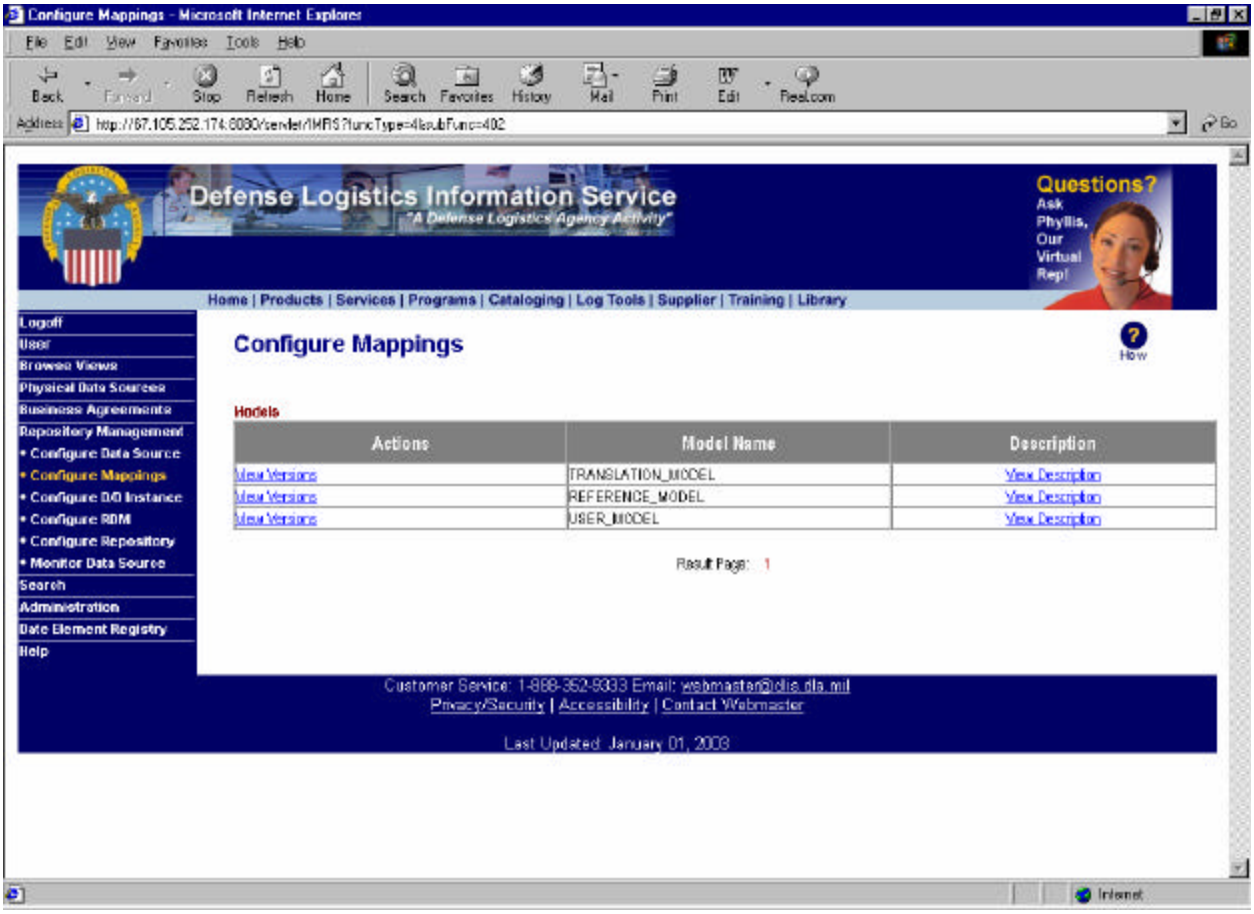


Figure 4.6.2- 1 Repository Management - Configure Mappings

4.6.2.1. View Versions

After clicking on the *Configure Mappings* link, click on the *View Versions* link under the Actions heading to view a listing of versioned model information (See Figure 4.6.2.1- 1).

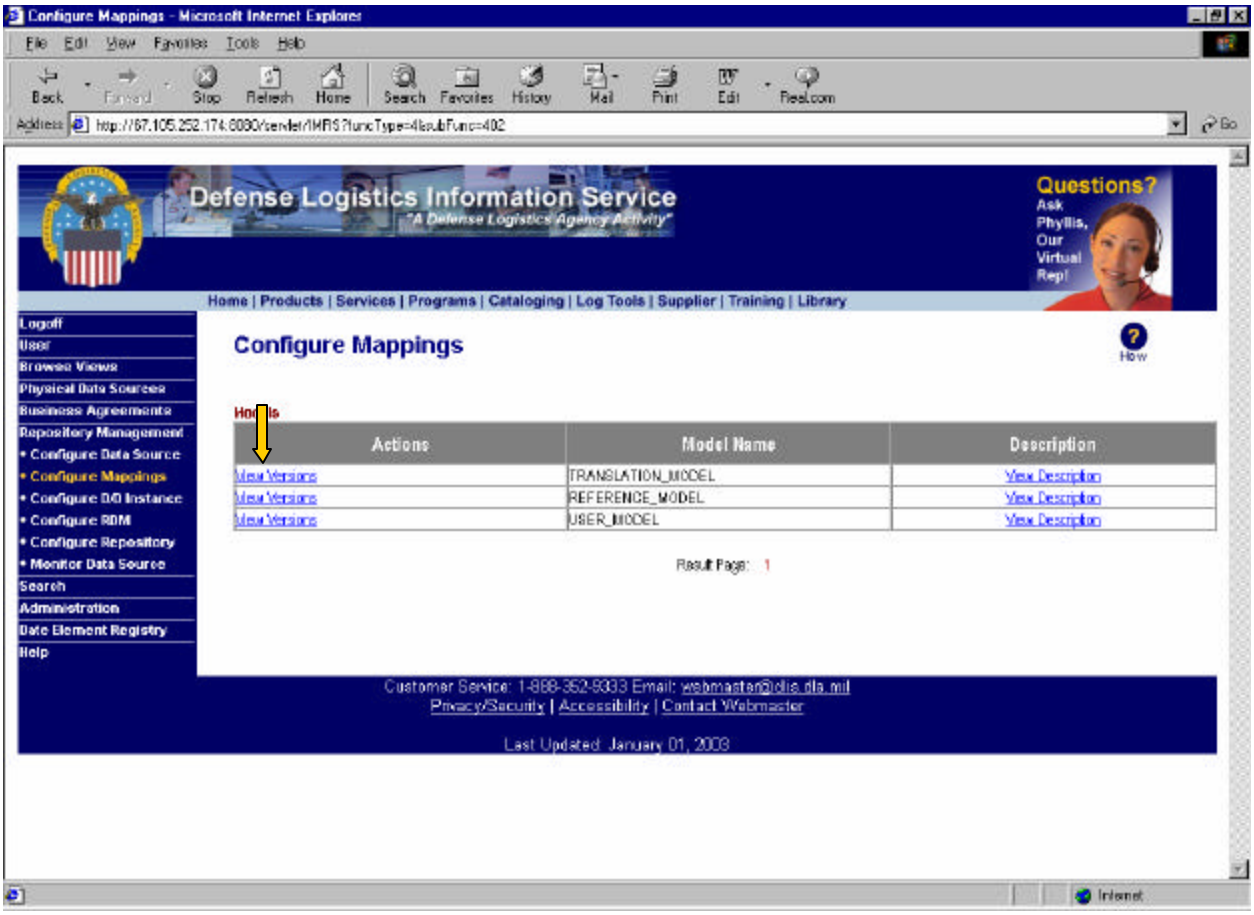


Figure 4.6.2.1- 1 Configure Mappings – View Versions

4.6.2.2. Display Views

A baselined model will only allow the end user to browse view information, including the view schema or view mapping information for both the physical and RDM models.

Click on the *Configure Mappings* link and *View Versions* link, click on the *Display Views* link under the Actions heading to show the available views (See Figure 4.6.2.2 - 1). If the model's baseline indicator is set to Y, the options available on this screen are *Display Mapping*, *Display RDM Mapping*, and *Display Columns*. Click on the associated link under the Actions heading to perform these functions (See Figure 4.6.2.2 - 2 to Figure 4.6.2.2 - 5).

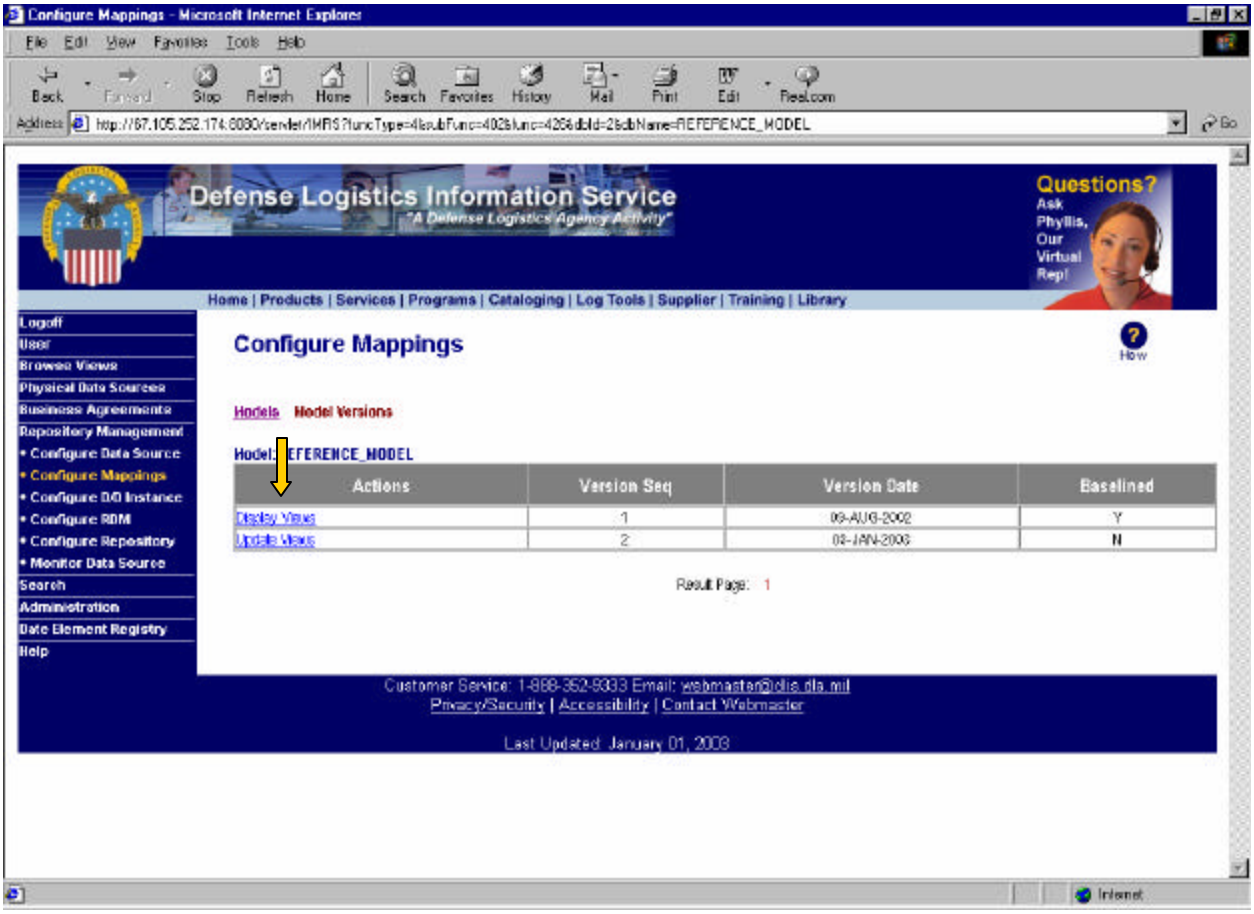


Figure 4.6.2.2- 1 Configure Mappings – Display Versions (baselined)

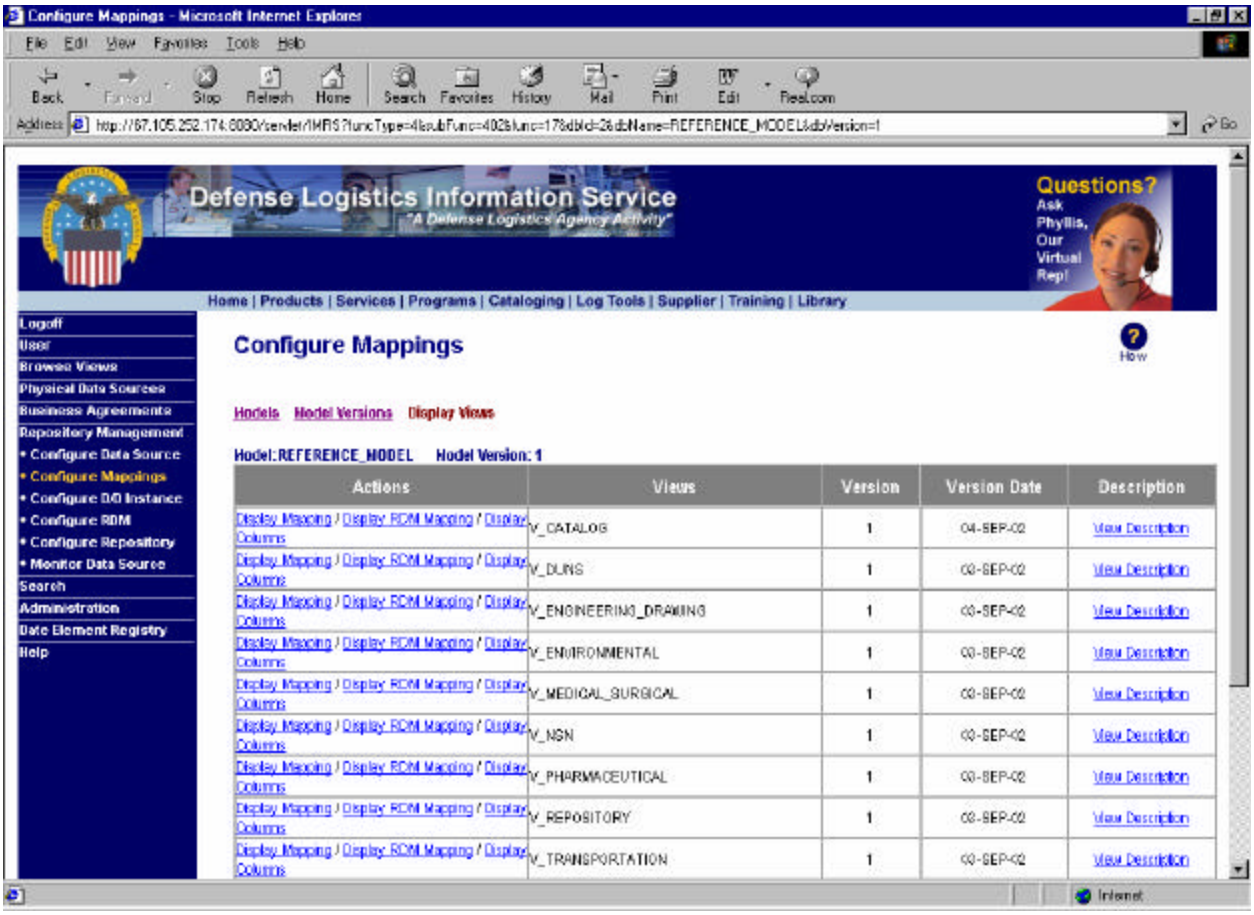


Figure 4.6.2.2- 2 Configure Mappings – Display Views (Baselined)

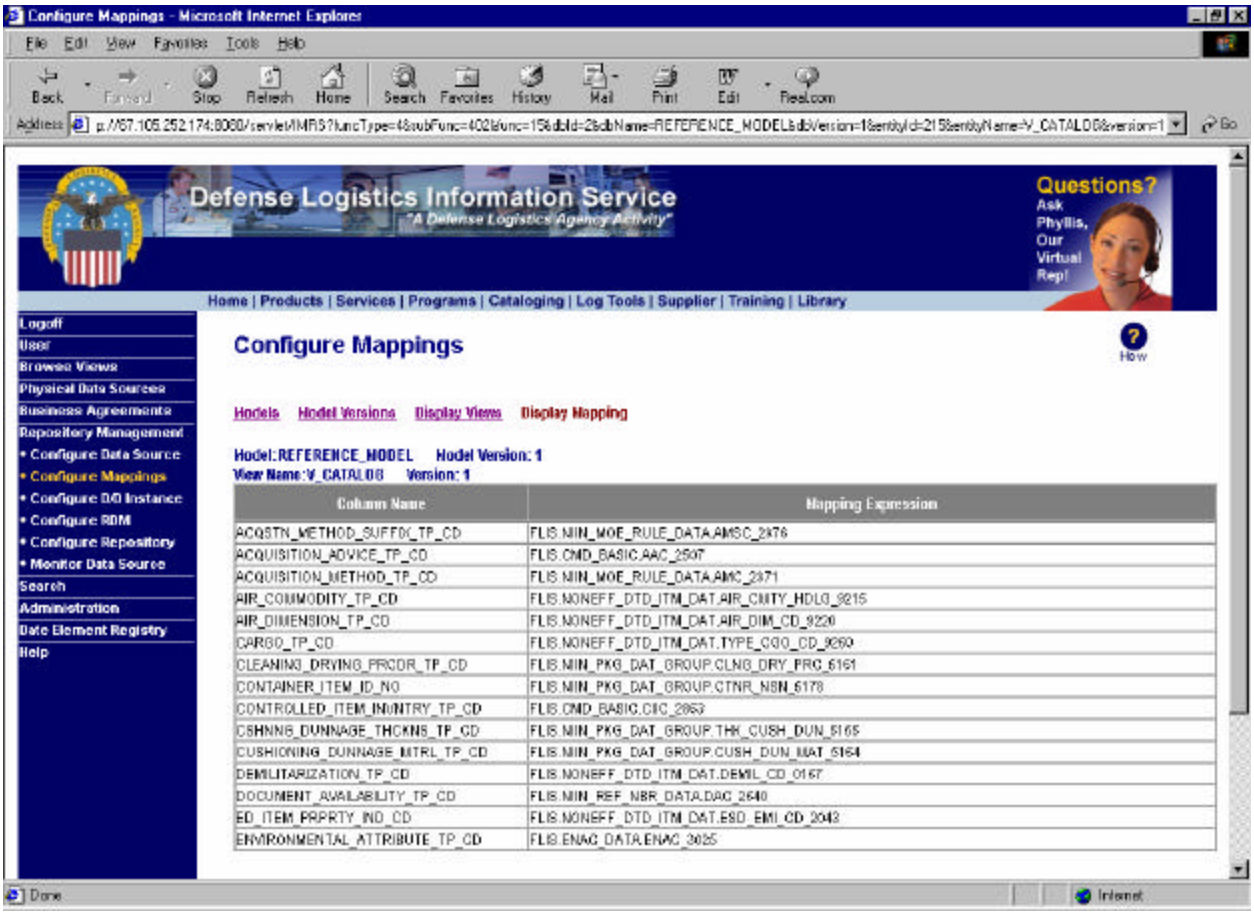


Figure 4.6.2.2- 3 Configure Mappings – Display Mapping

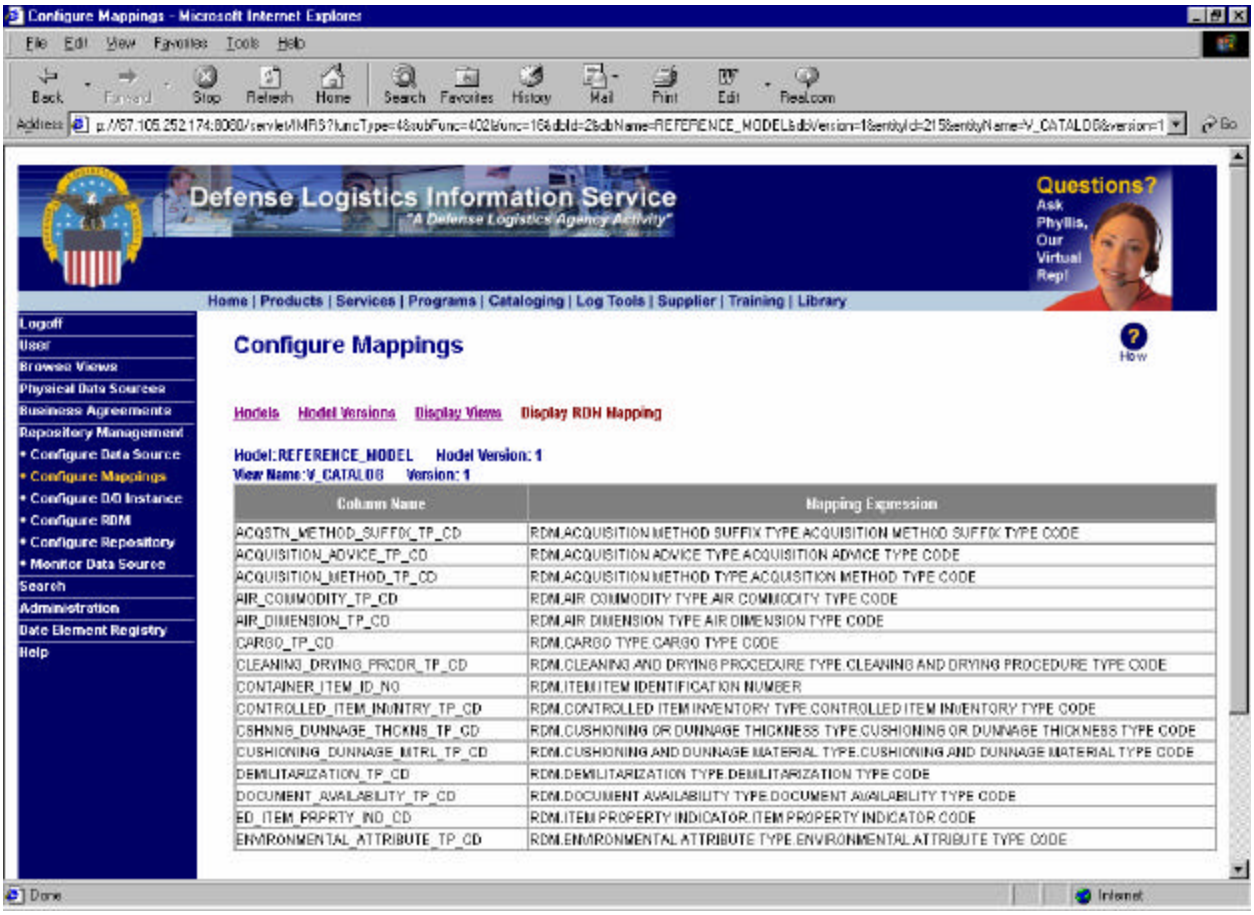


Figure 4.6.2.2- 4 Configure Mapping – Display Reference Data Model (RDM) Mapping

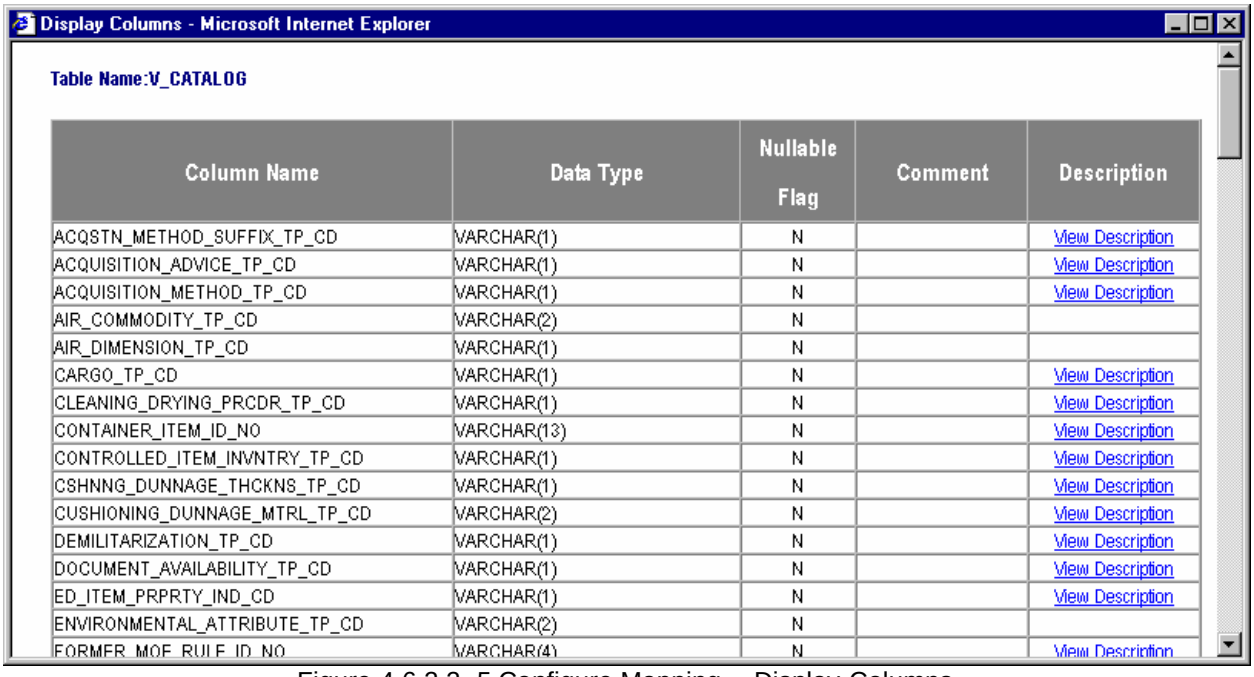


Figure 4.6.2.2- 5 Configure Mapping – Display Columns

4.6.2.3. Update Views

If the latest version's baseline indicator is set to N, the user can update view information.

After clicking on the *Configure Mappings* link, click on the *Update Versions* link, and then click on the *Update Views* link to Create/Delete/Update views and modify the view mapping information (See Figure 4.6.2.3- 1).

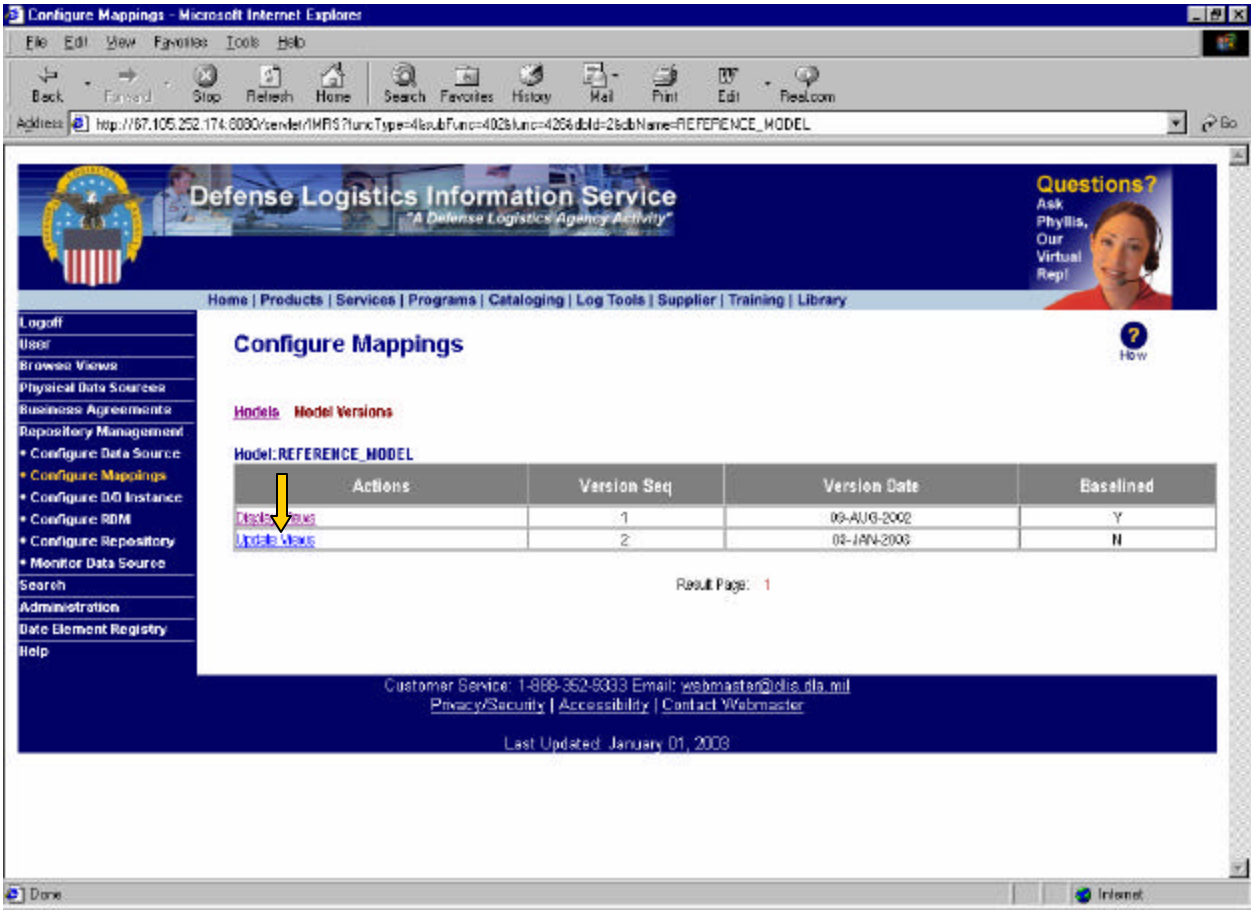


Figure 4.6.2.3- 1 Configure Mappings – Update Views

From the Update Views Screen, the user can add new views through several ways: Manually Add A New View, Add Views from Previous Model, Add New Views From DDL, and Add New Views From ASCII File. There are also some actions that the user can perform on each view: Redo Mapping, Delete View, Modify General Information of the View, Update Mapping, Update RDM Mapping, and Update Columns. Each action will be detailed in the following paragraphs.

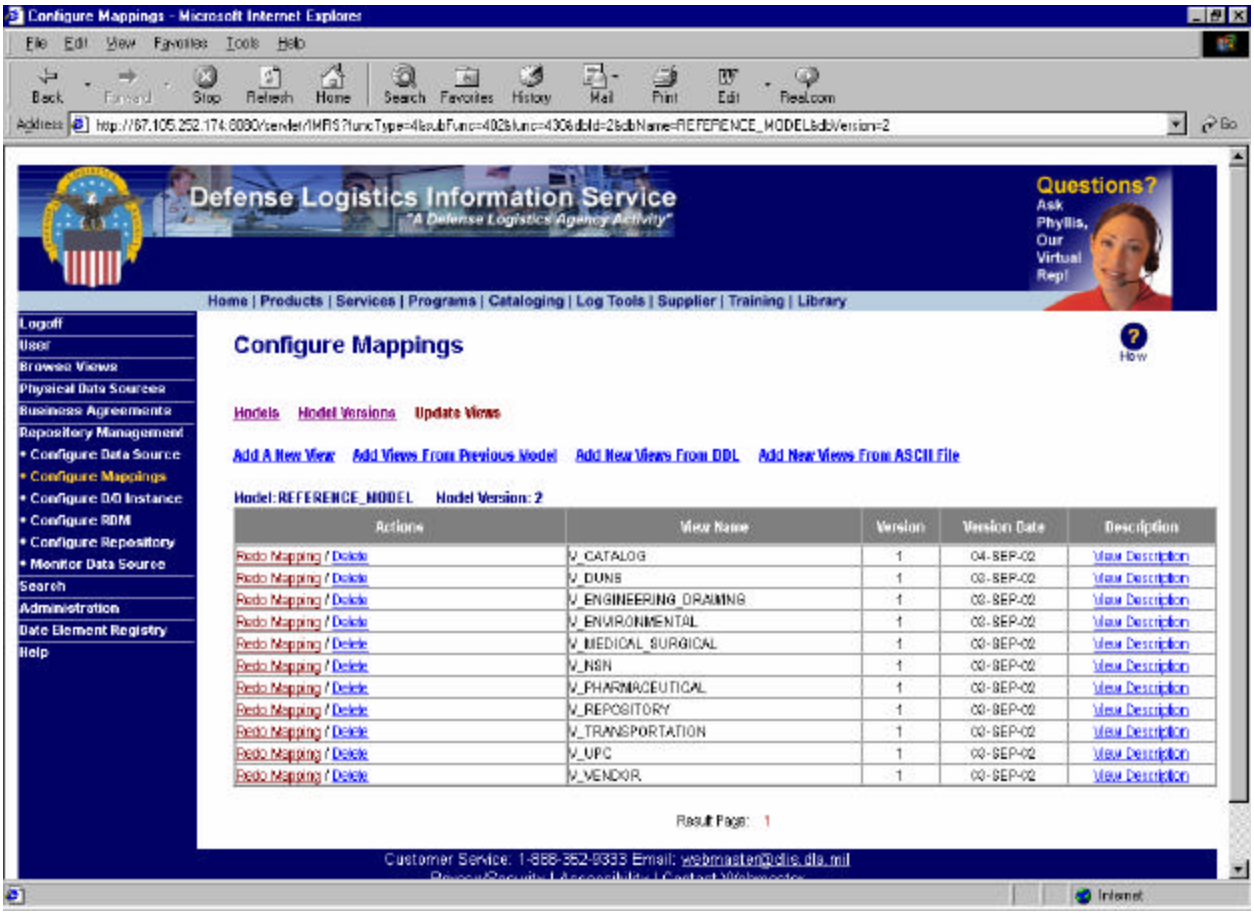


Figure 4.6.2.3- 2 Configure Mappings – Update Views

After clicking on the *Configure Mappings* link and *Update Versions* link, click on the *Update Views* link, and then click on the *Add A New View* link to add a new view to this model. A new window with the caption “Add A New View” will pop up (See Figure 4.6.2.3- 3).

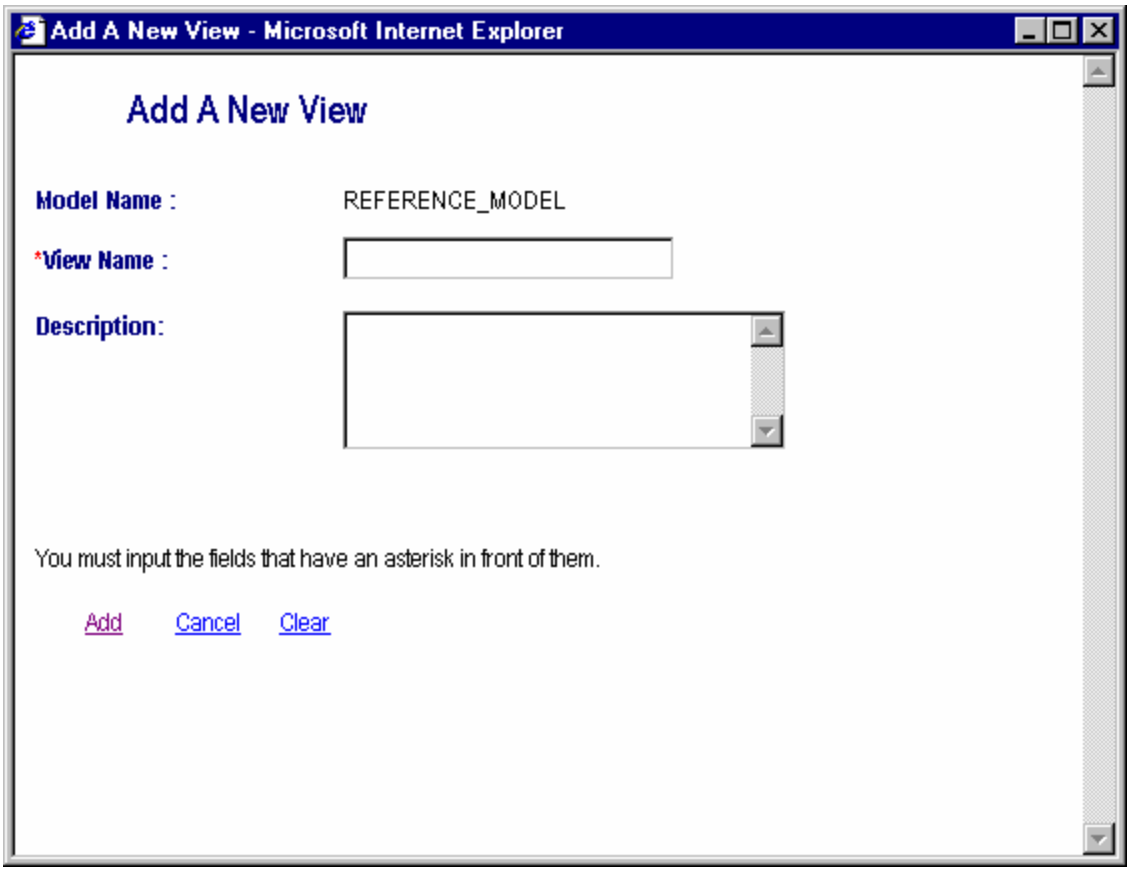


Figure 4.6.2.3- 3 Configure Mappings – Add A New View

Not all of the fields on this window are required. Refer to Table 6 to identify required fields and other important parameters.

Table 6 Add A New View Field Parameters

Field	Requirements
Model Name	Display
View Name	**Required** (70 characters)
Description	Optional (2000 characters)

Click *Add* to store the view as view version sequence 1.

4.6.2.3.a. Add views from previous model

Click on the *Add Views from Previous Model* link to include any view from previous model (See Figure 4.6.2.3.a- 1).

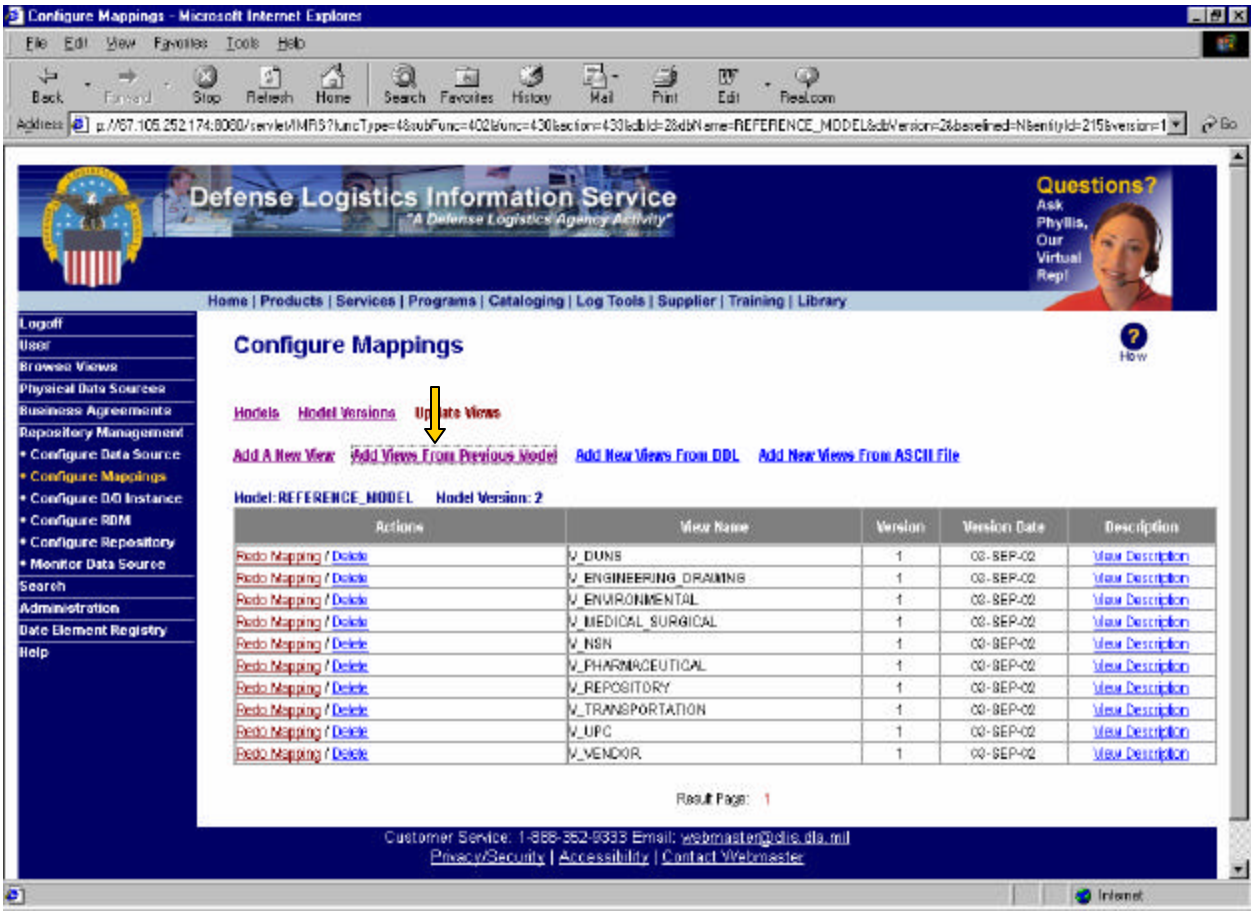


Figure 4.6.2.3.a- 1 Configure Mappings – Add Views from Previous Model

Check the view name you want to add to your model. Click *Add* to save it (See Figure 4.6.2.3.a- 2).

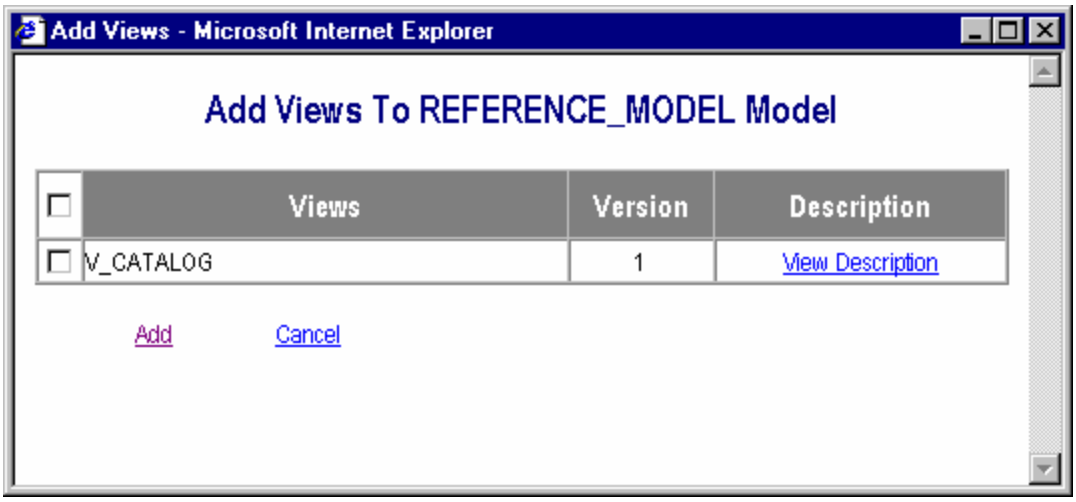


Figure 4.6.2.3.a- 2 Add Views from Previous Model

4.6.2.3.b. Add new views from Data Definition Language (DDL)

Click on the *Add New Views from DDL* to load the view from Data Definition Language file (See Figure 4.6.2.3.b - 1).

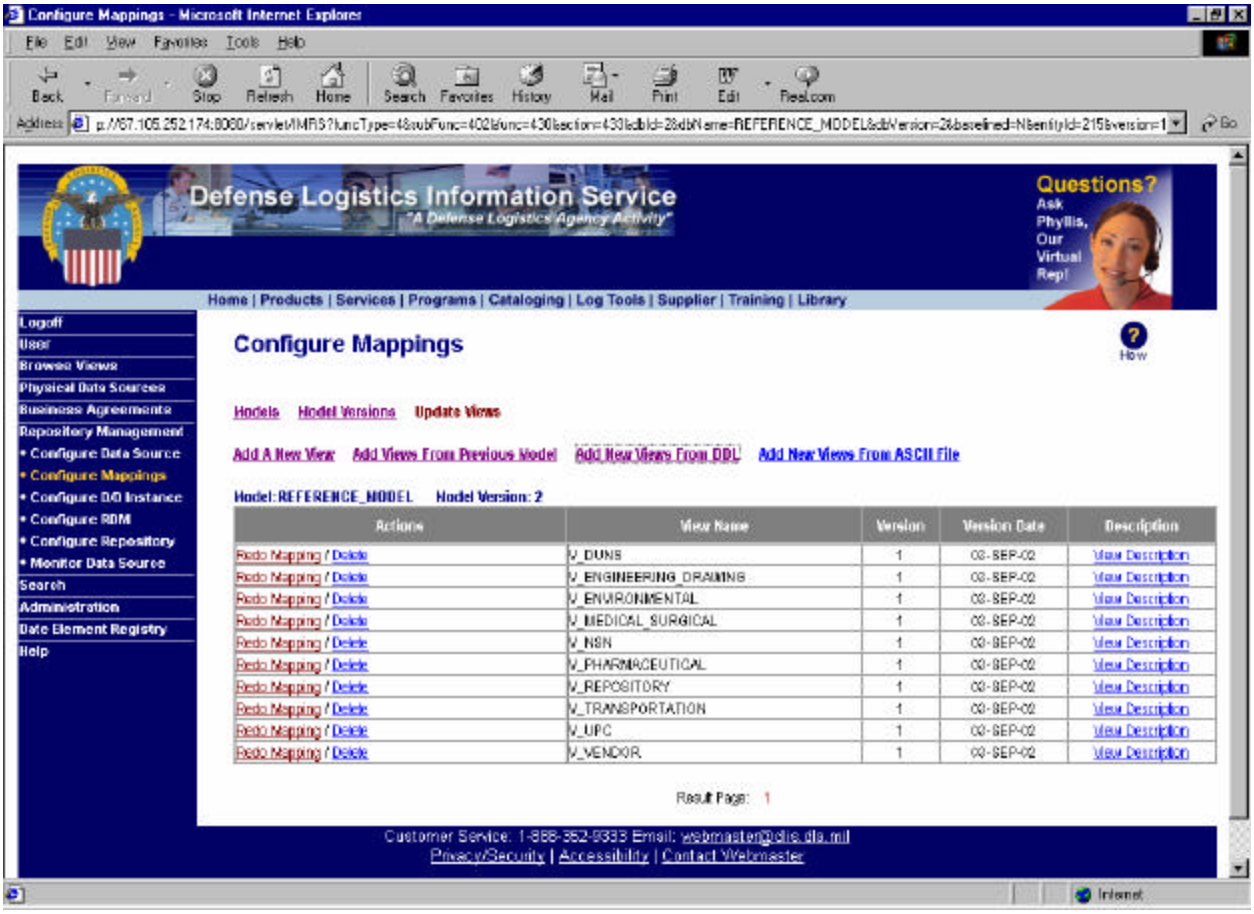


Figure 4.6.2.3.b- 1 Configure Mappings – Add Views from Previous Model

Specify the location of the DDL file and click Load to add the views (See Figure 4.6.2.3.b - 2).

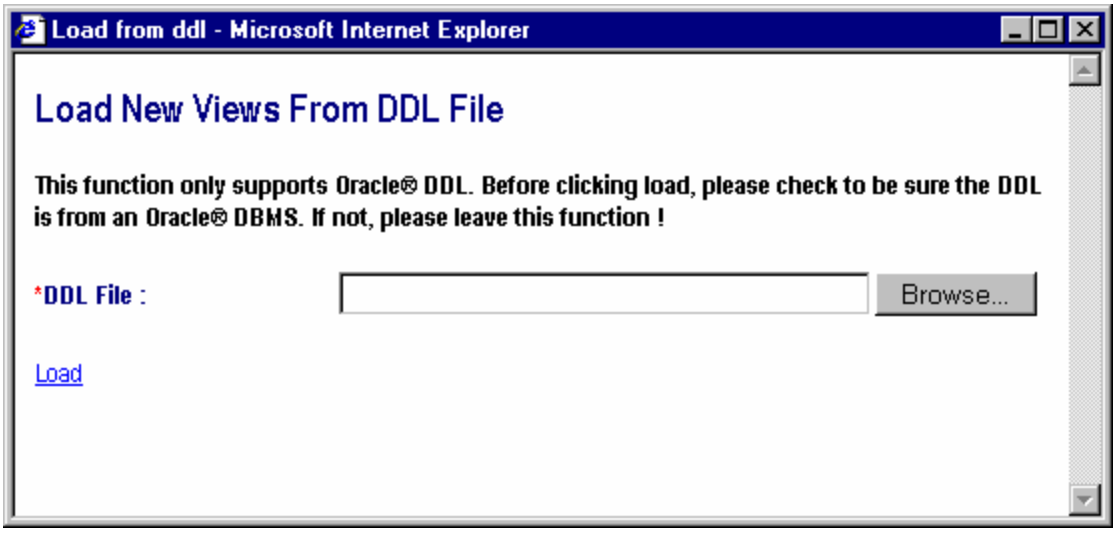


Figure 4.6.2.3.b- 2 Load New Views from DDL

4.6.2.3.c. Add new views from ASCII file

Click on the *Add New Views from ASCII file* to load the view from ASCII file (See

Figure 4.6.2.3.c- 1). A new window with the caption “Load New Views from ASCII File” will pop up (See Figure 4.6.2.3.c- 2). Specify the location of the ASCII file and click *Load* to add the new views.

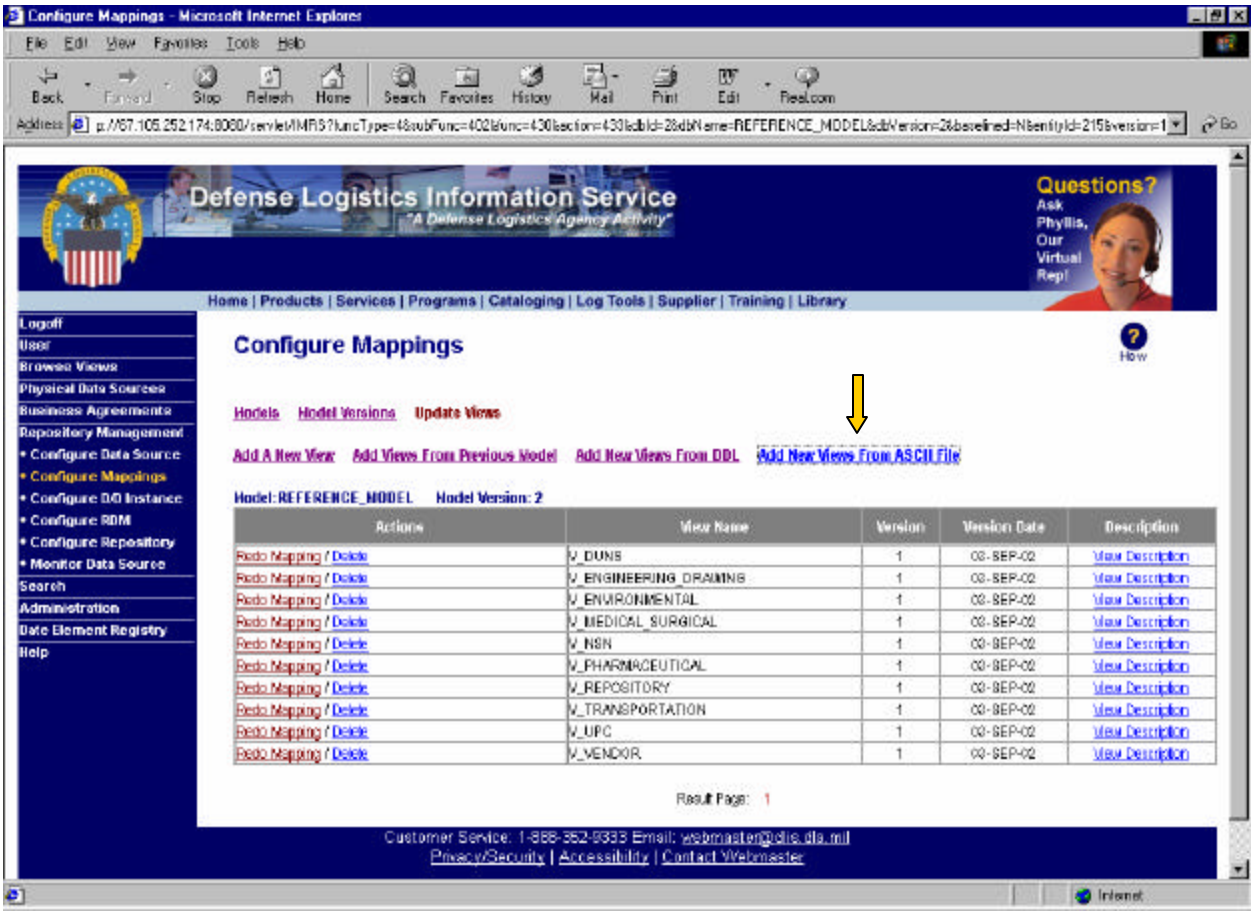


Figure 4.6.2.3.c- 1 Load New Views from ASCII File

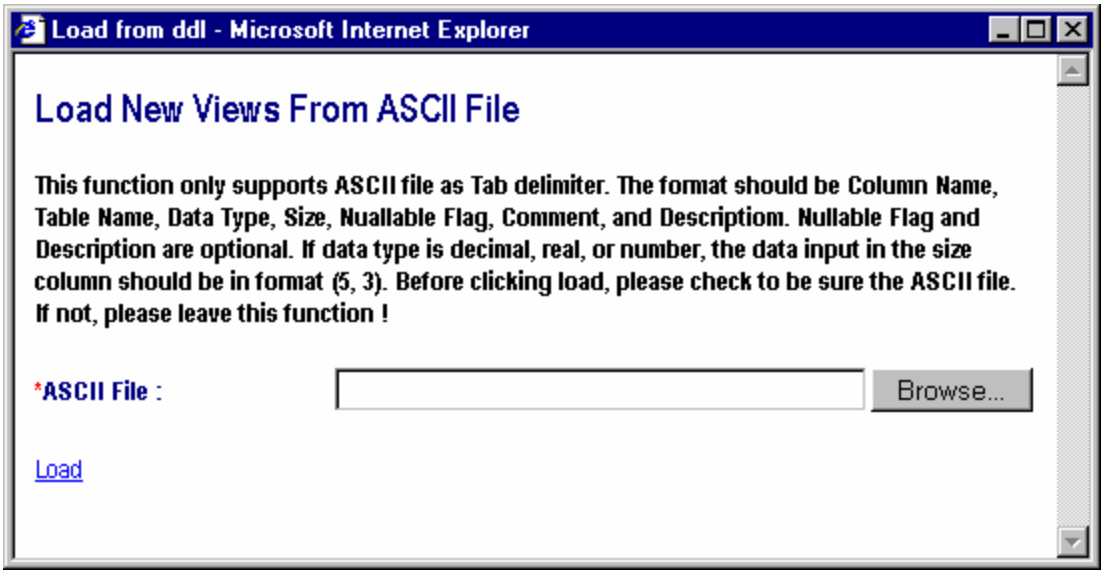


Figure 4.6.2.3.c- 2 Load New Views from ASCII File

4.6.2.3.d. Modify A View

After clicking on the *Configure Mappings* link from menu, click *View Versions.* Click the *Update Views* link under the Actions heading, and then click the *Modify* link to modify view information (See Figure 4.6.2.3.d- 1). A new window with the caption “Modify A View” will pop up (See Figure 4.6.2.3.d- 2). Click the *Update* link to save the modifications and close the new window. Alternatively, click the *Cancel* link to cancel the modifications and close the window. Click the *Clear* link to remove all data in all of the boxes (including previously stored data).

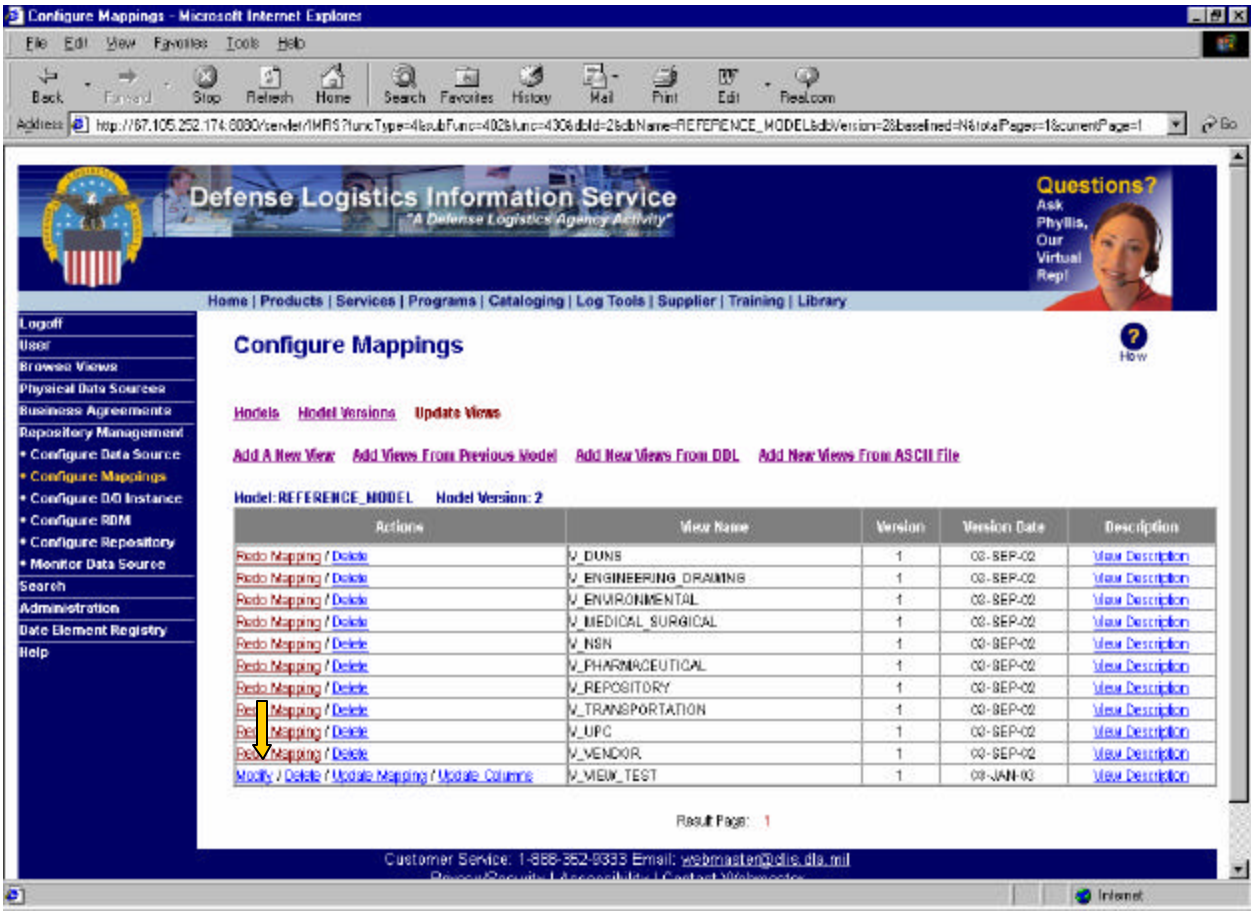


Figure 4.6.2.3.d- 1 Configure Mappings – Modify A View

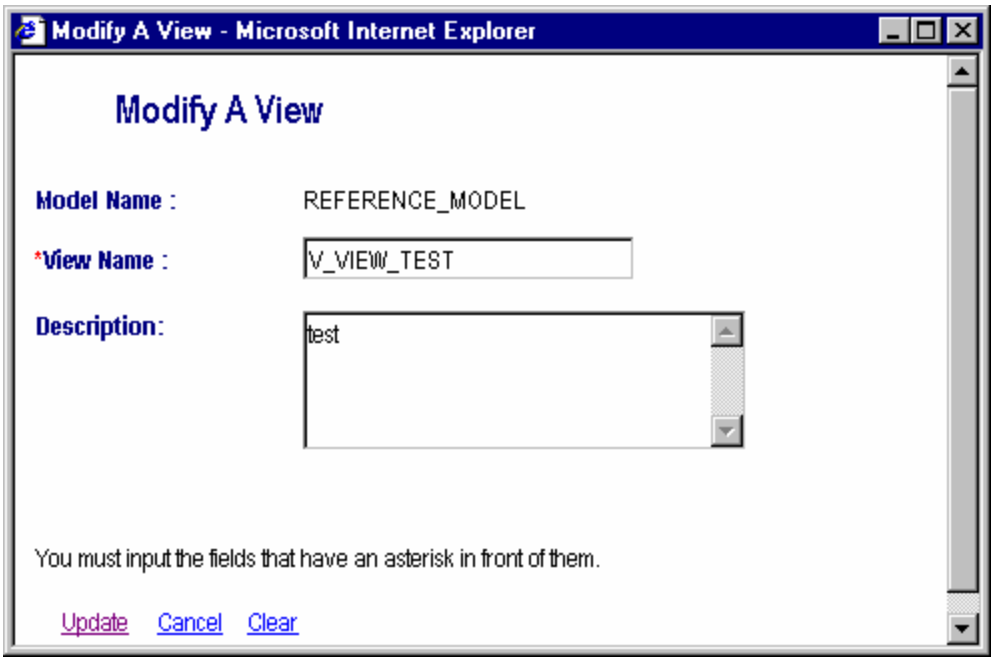


Figure 4.6.2.3.d- 2 Configure Mapping - Modify A View

4.6.2.3.e. Delete A View

After clicking on the *Configure Mappings* link from menu, click *View Versions.* Click on the *Update Views* link under the Actions heading, and then click the *Delete* link to delete a view and its associated mapping information operation (See Figure 4.6.2.3.e- 1). A dialog box will pop up to verify the delete Click the *OK* button to delete the view (See Figure 4.6.2.3.e- 2). Click the *Cancel* button to abandon the operation. If a view's latest view version sequence number is greater than 1, then deleting this view will turn in its previous version.

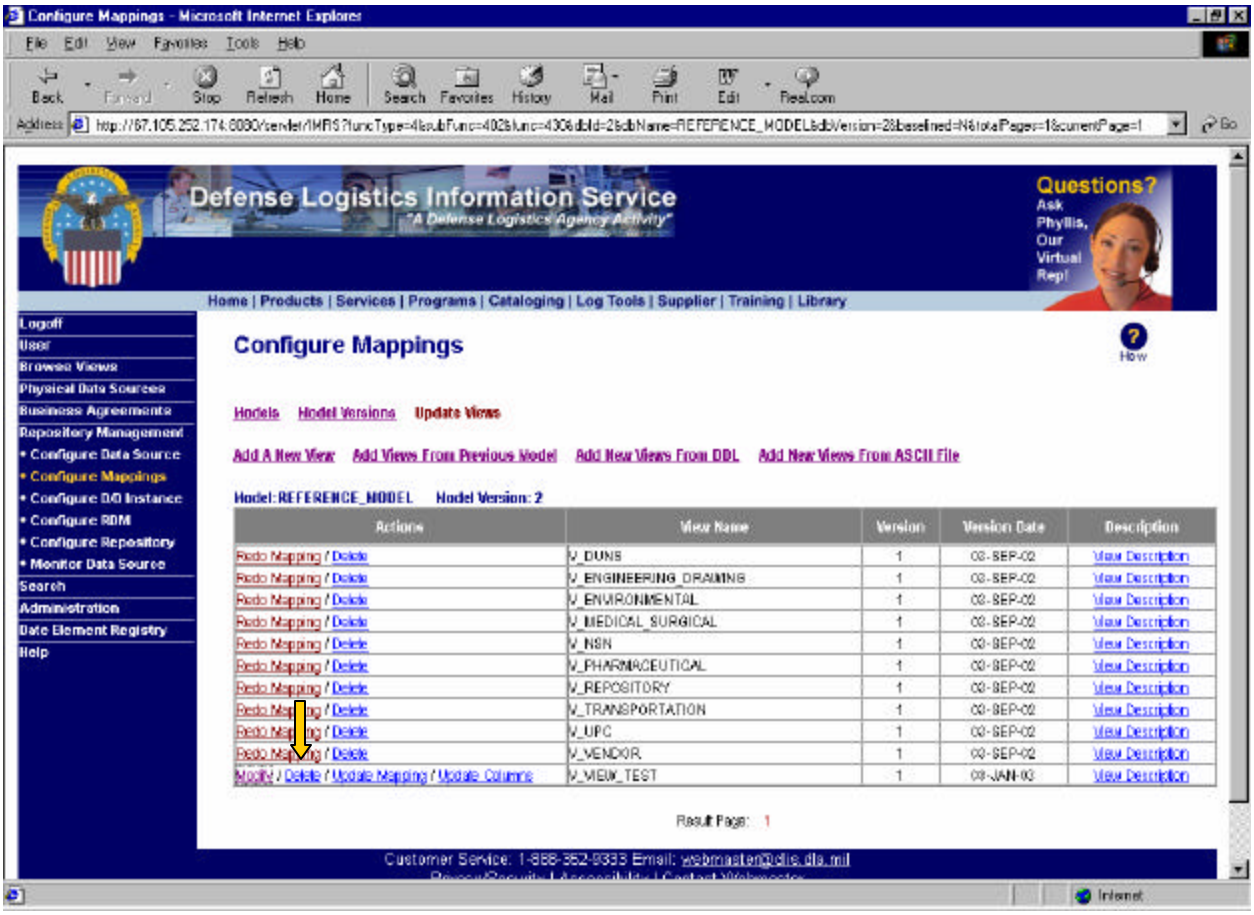


Figure 4.6.2.3.e- 1 Configure Mappings – Delete A View

Figure 4.6.2.3.e- 2 Configure Mappings – Delete A View (Dialog)

4.6.2.4. Update Columns

After clicking on the *Configure Mappings* link from menu, click *View Versions.* Click on the *Update Views* link under the Actions heading, and then click on the *Update Columns* link to Add/Modify/Delete column information (See Figure 4.6.2.4- 1 Figure 4.6.2.4- 2).

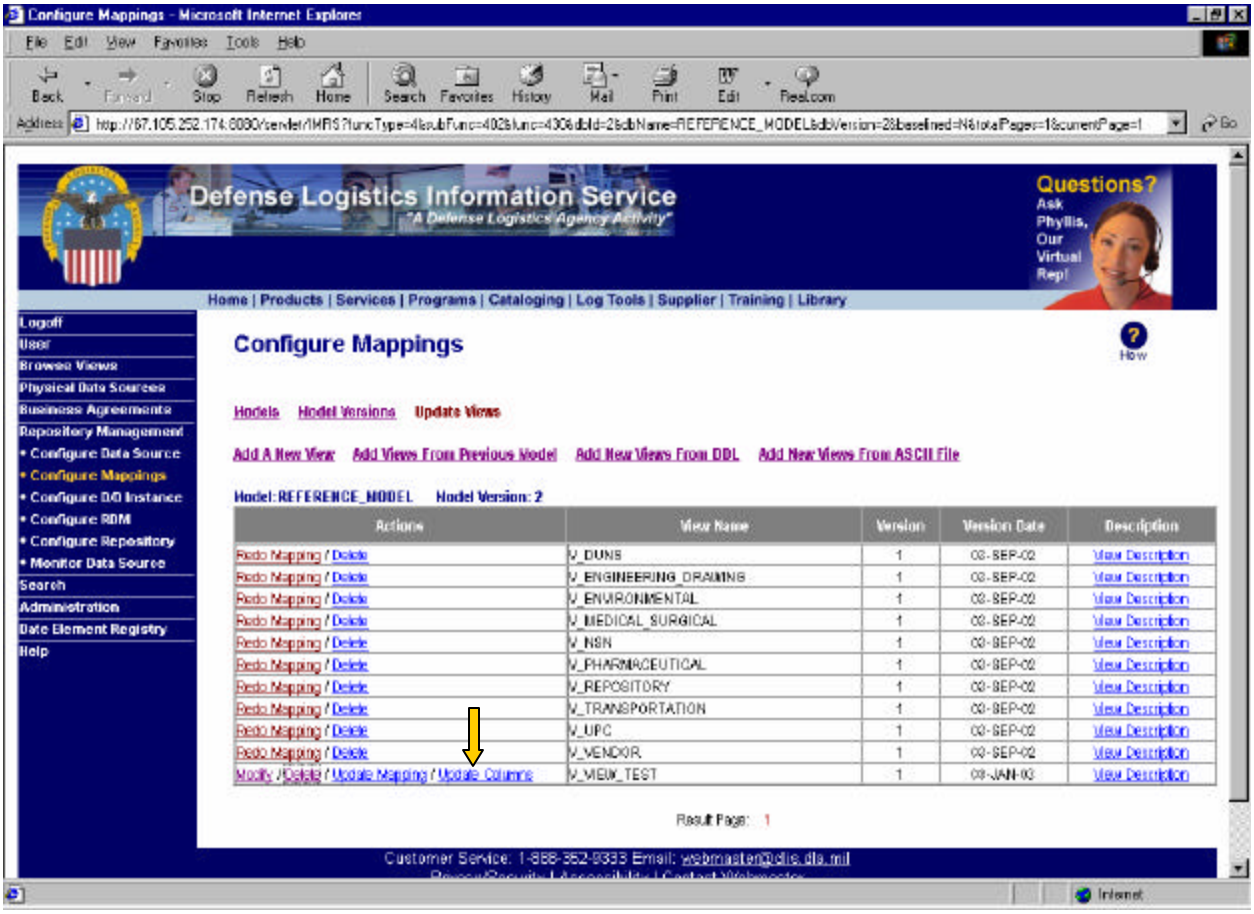


Figure 4.6.2.4- 1 Configure Mappings – Update Columns

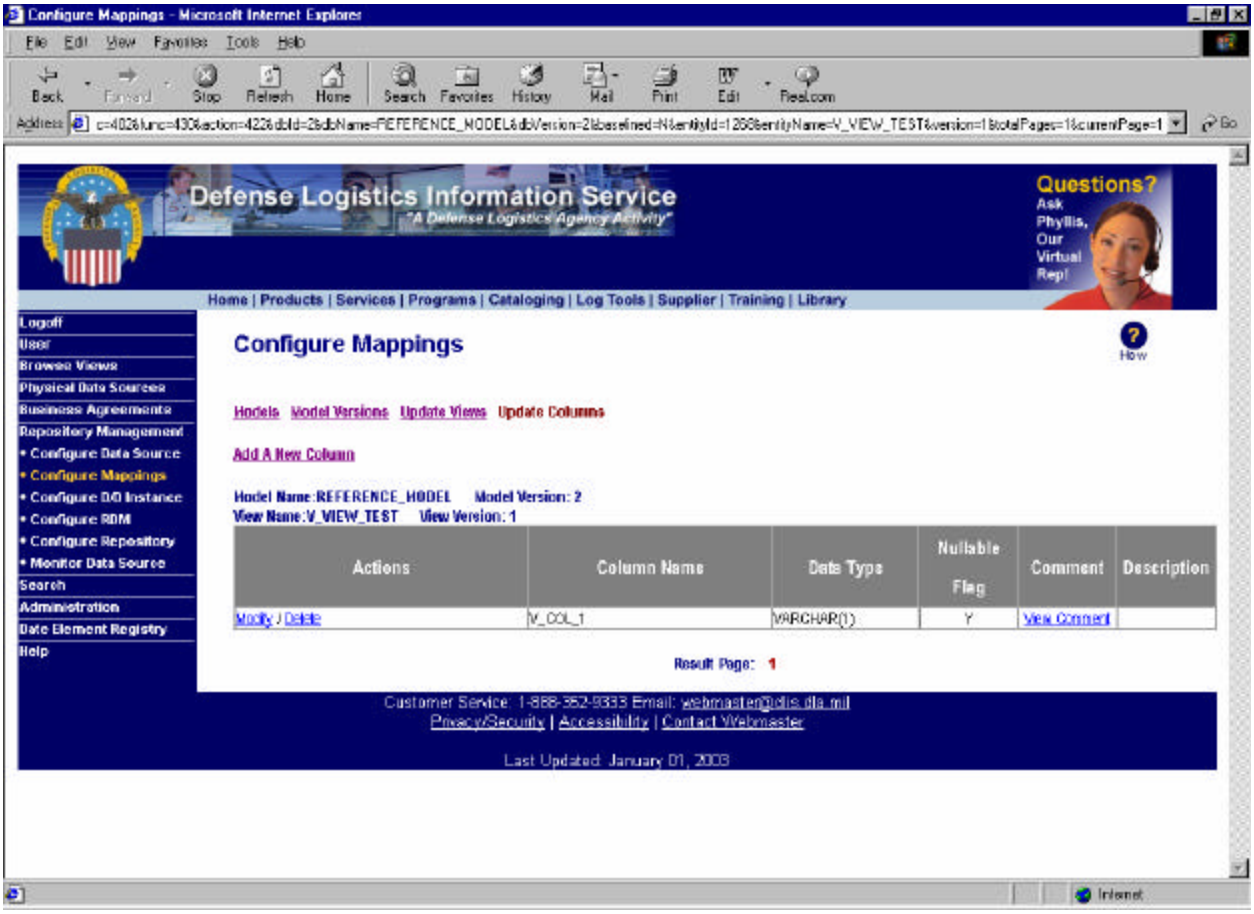


Figure 4.6.2.4- 2 Configure Mappings – Update Columns

4.6.2.4.a. Add A New Column

From Update Column Screen (See Figure 4.6.2.4- 2), click on the *Add A New Column* link to add a new colum n to this view. A new window with the caption “Add A New Column” will pop up (See Figure 4.6.2.4.a- 1).

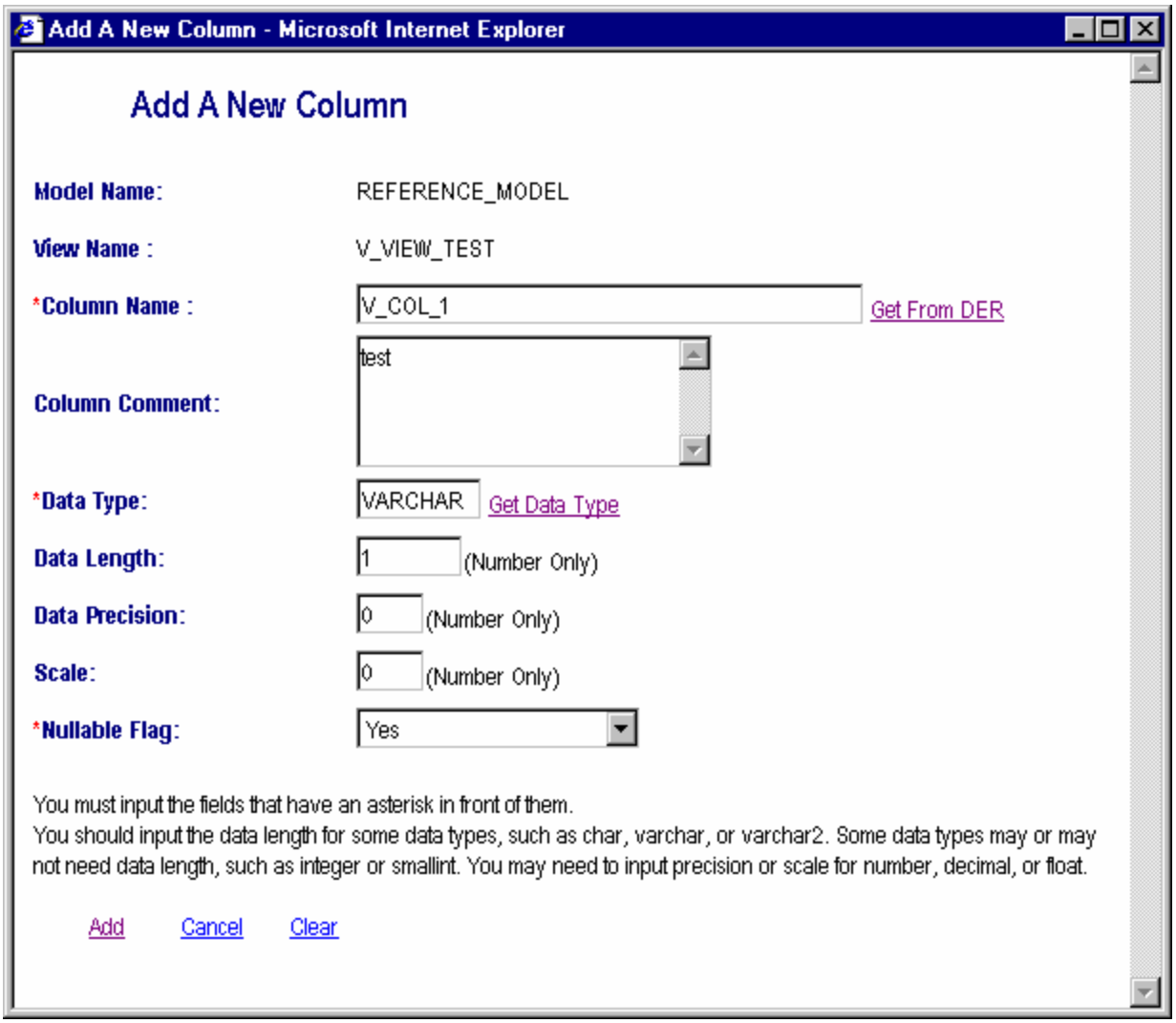


Figure 4.6.2.4.a- 1 Configure Mappings – Add A New Column

Not all of the fields on this window are required. Refer to Table 7 to identify required fields and other important parameters.

For the data types INTEGER and SMALLINT the data precision and scale are not meaningful, and the data length is either used or not used. For example: INTEGER, INTEGER(5).

For the data type DATE, only the data length is used and its value needs to be less than 9. For example: DATE(7), DATE.

For the data types VARCHAR, VARCHAR2, and CHAR only the data length is used and its value needs to be greater than 0 (zero). For example: VARCHAR2(5).

For other data types, such as NUMBER, DECIMAL, FLOAT, the data precision is used and scale may or may not be used. For example: NUMBER(5), NUMBER(5, 2).

Click *Add* to save it.

Table 7 Add A New Column Field Parameters

Field	Requirements
Model Name	Display
View Name	Display
Column Name	**Required** (100 characters)
Column Comment	Optional (2000 characters)
Data Type	**Required** (20 character3, user drop down list to select)
Data Length	Optional (Integer Number)
Data Precision	Optional (Integer Number)
Scale	Optional (Integer Number)
Nullable Flag	**Required** (1 character, use drop down list to select)

If any of the fields does not meet the requirement, then a dialog box will inform the user of the error (See Figure 4.6.2.4.a- 2). Click the *OK* button to close the dialog box; otherwise, the new window will be closed.

Figure 4.6.2.4.a- 2 Configure Mappings – Add A New Column Error Message

4.6.2.4.b. Modify A Column

From Update Column Screen (See Figure 4.6.2.4- 2), click the *Modify* link under the Actions heading to modify column information for this view. A new window with the caption “Modify A New Column” will pop up (See Figure 4.6.2.4.b- 1). Click on the link “Get from CDE” to import a column name from the Core Data Element Repository (See Figure 4.6.2.4.b- 2).

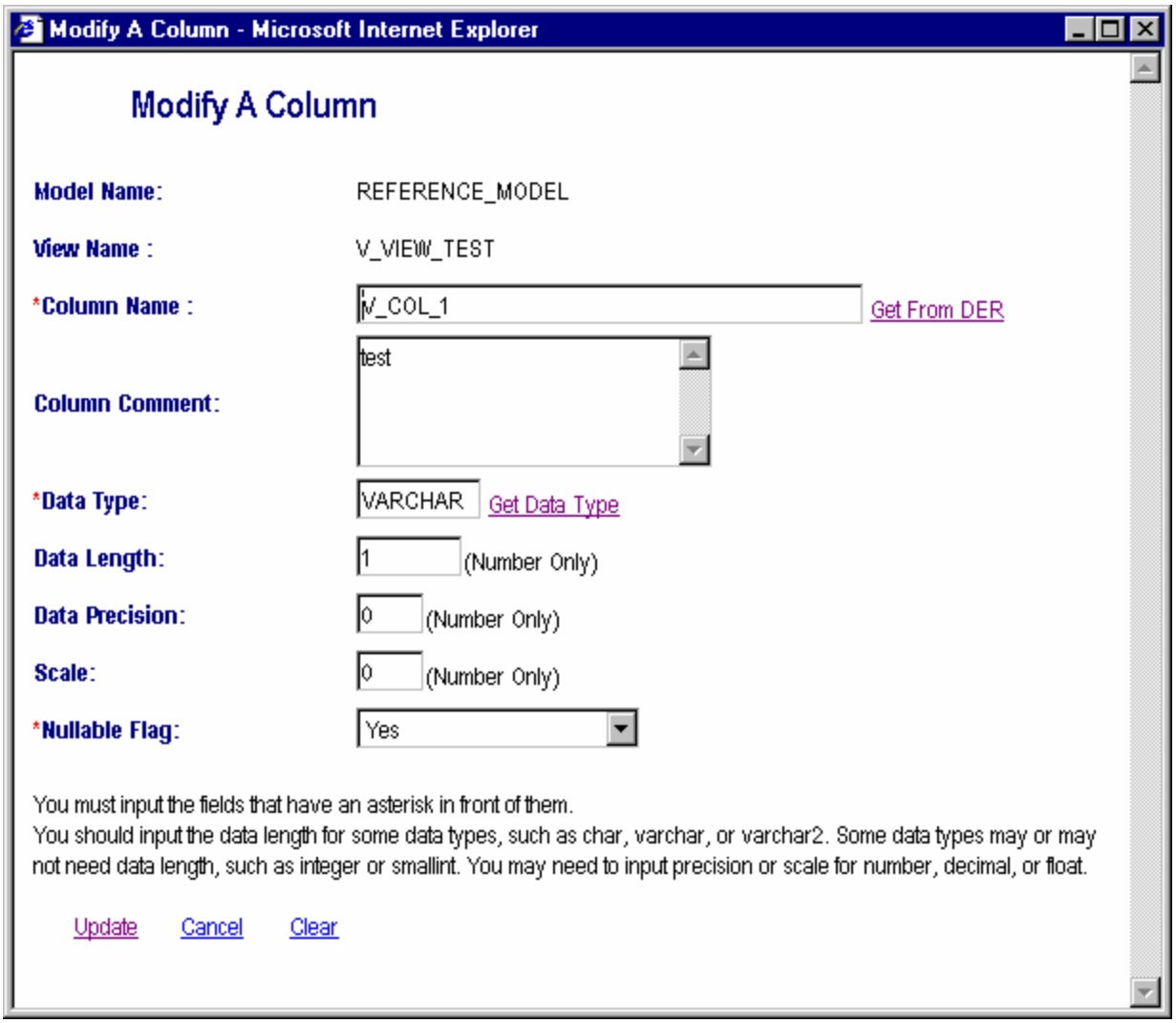


Figure 4.6.2.4.b- 1 Configure Mappings – Modify A Column

When the “Select a Core Data Element” page displays, click on the radio box next to the core data element you want to select. Click the *Update* link to save it and close the new window.

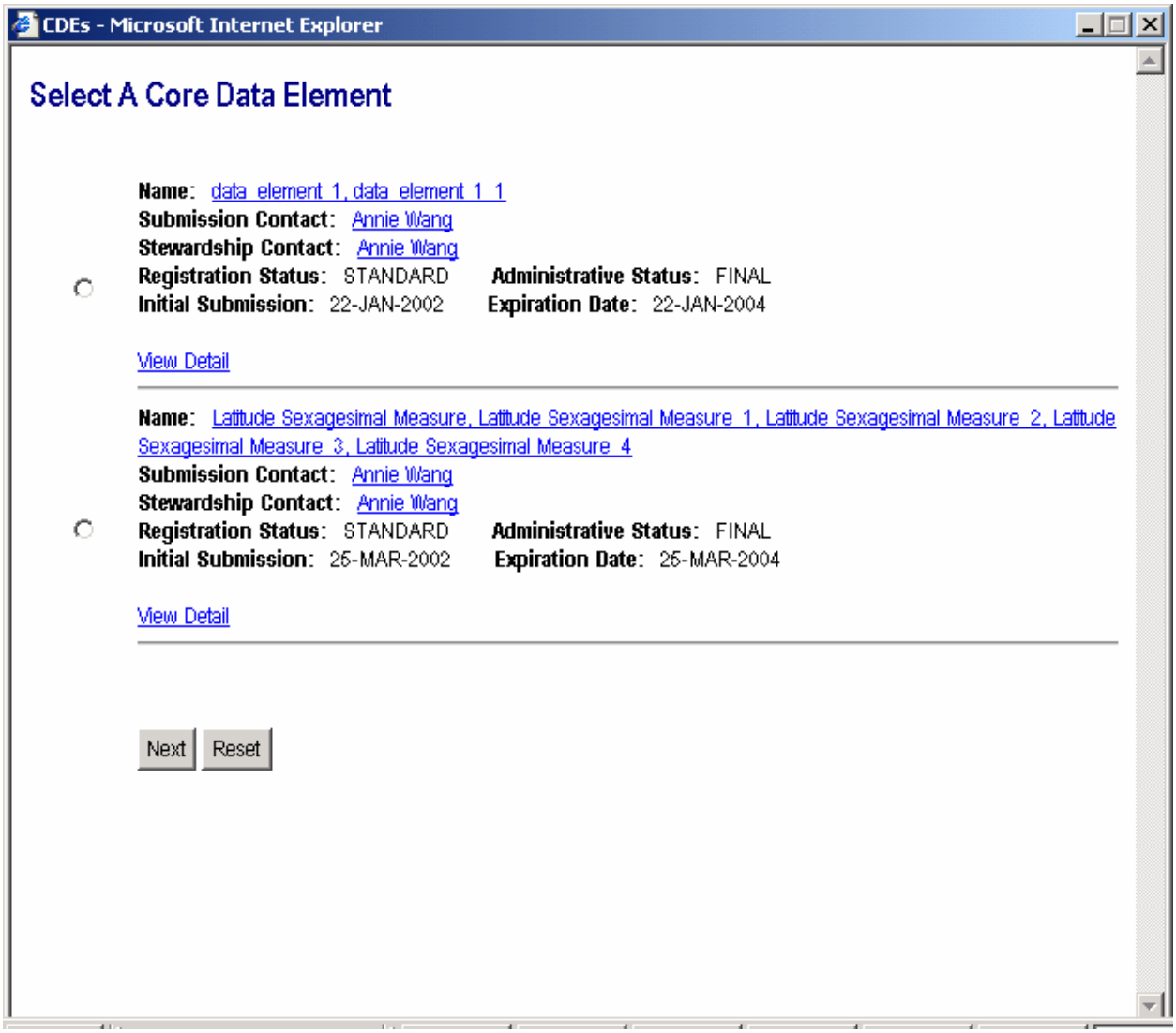


Figure 4.6.2.4.b- 2 Configure Mappings – Modify A Column – Select a Core Data Element

4.6.2.4.c. Delete A Column

From Update Column Screen (See Figure 4.6.2.4- 2), click on the *Delete* link under the Actions heading on the row beside the column name to delete the column and its associated information. A dialog box with an explanatory message will pop up to confirm the deletion. Click on the *OK* button to delete the column (See Figure 4.6.2.4.c- 1). The column's mapping information and all information mapped to this column will also be lost. Click the *Cancel* button to cancel this deletion. If the information is deleted, it cannot be recovered.

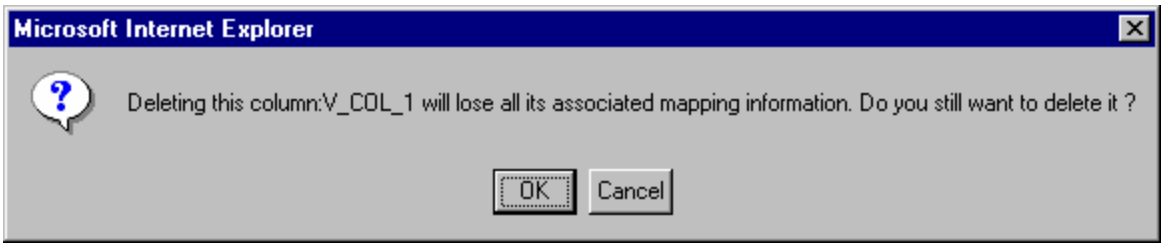


Figure 4.6.2.4.c- 1 Configure Mappings – Delete A Column

4.6.2.5. Update Mapping for Virtual View

After clicking on the *Configure Mappings* link from left menu, click on the *View Versions.* Click on the *Update Views* link, and then click on the *Update Mapping* link to update mapping information (See Figure 4.6.2.5- 1). This refers to the physical mapping, not the RDM mapping.

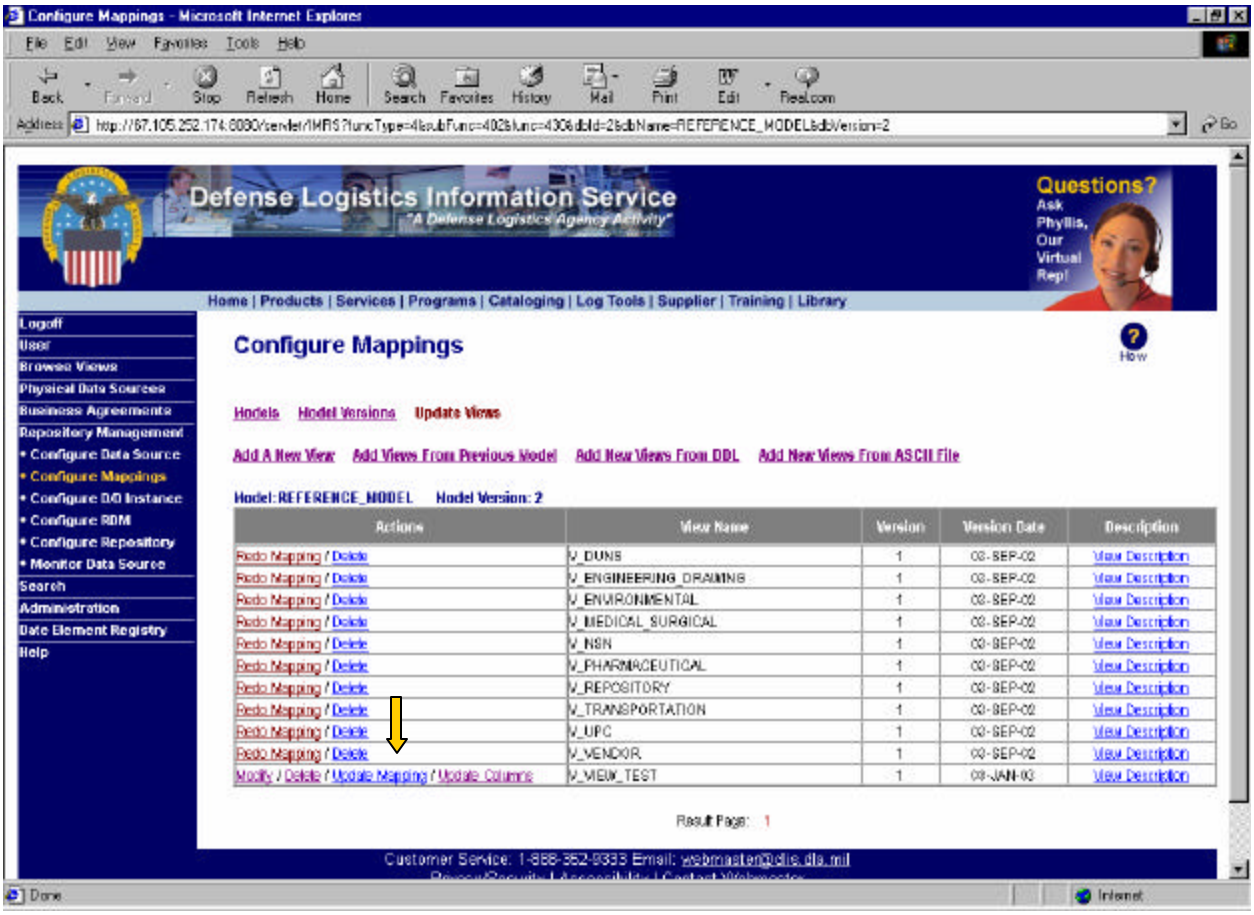


Figure 4.6.2.5- 1 Configure Mappings - Update Mapping

If the view does not have any columns, then a dialog box will pop up with an explanatory message to remind the end user to add the columns first. Click the *OK* button to close the dialog box; then the "Update Columns" screen will appear (See Figure 4.6.2.5- 2).

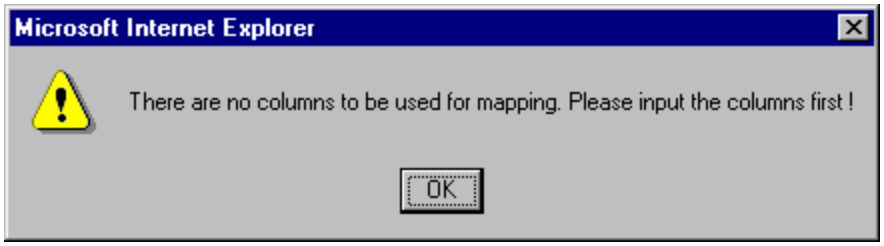


Figure 4.6.2.5- 2 Configure Mappings – Update Mapping Dialog

If the Model is a REFERENCE_MODEL or a USER_MODEL and the view is newly created, then a new window with the caption "Select Virtual or Union View" will pop up to ask the user to select either Virtual or Union view from a box (See Figure 4.6.2.5 - 3).

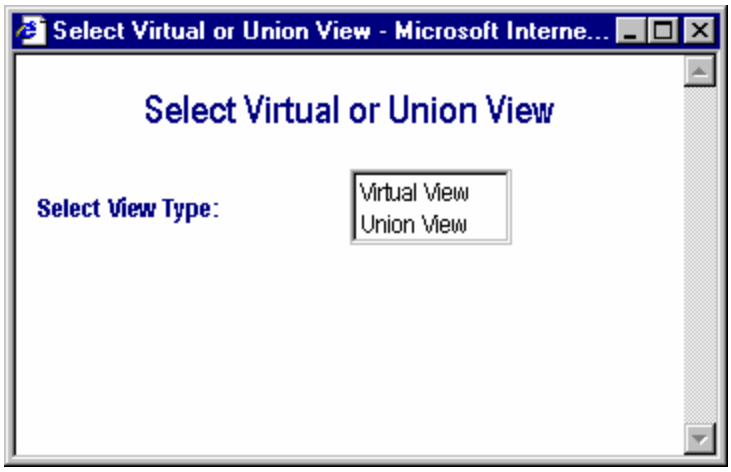


Figure 4.6.2.5- 3 Configure Mappings – Update Mapping: Select Virtual or Union View

The Update Mapping screen will appear in the following cases:

1. If the Model is Translation_Model (newly created or already created Virtual Views) (See Figure 4.6.2.5- 4 and Figure 4.6.2.5- 5),

2. If the Model is Reference_Model or User_Model (after select Virtual or Union View for newly created view) (See Figure 4.6.2.5 - 6 and Figure 4.6.2.5 - 7).

3. If the Model is Reference_Model or User_Model (already created Virtual or Union View) (See Figure 4.6.2.5- 8 and Figure 4.6.2.5- 9).

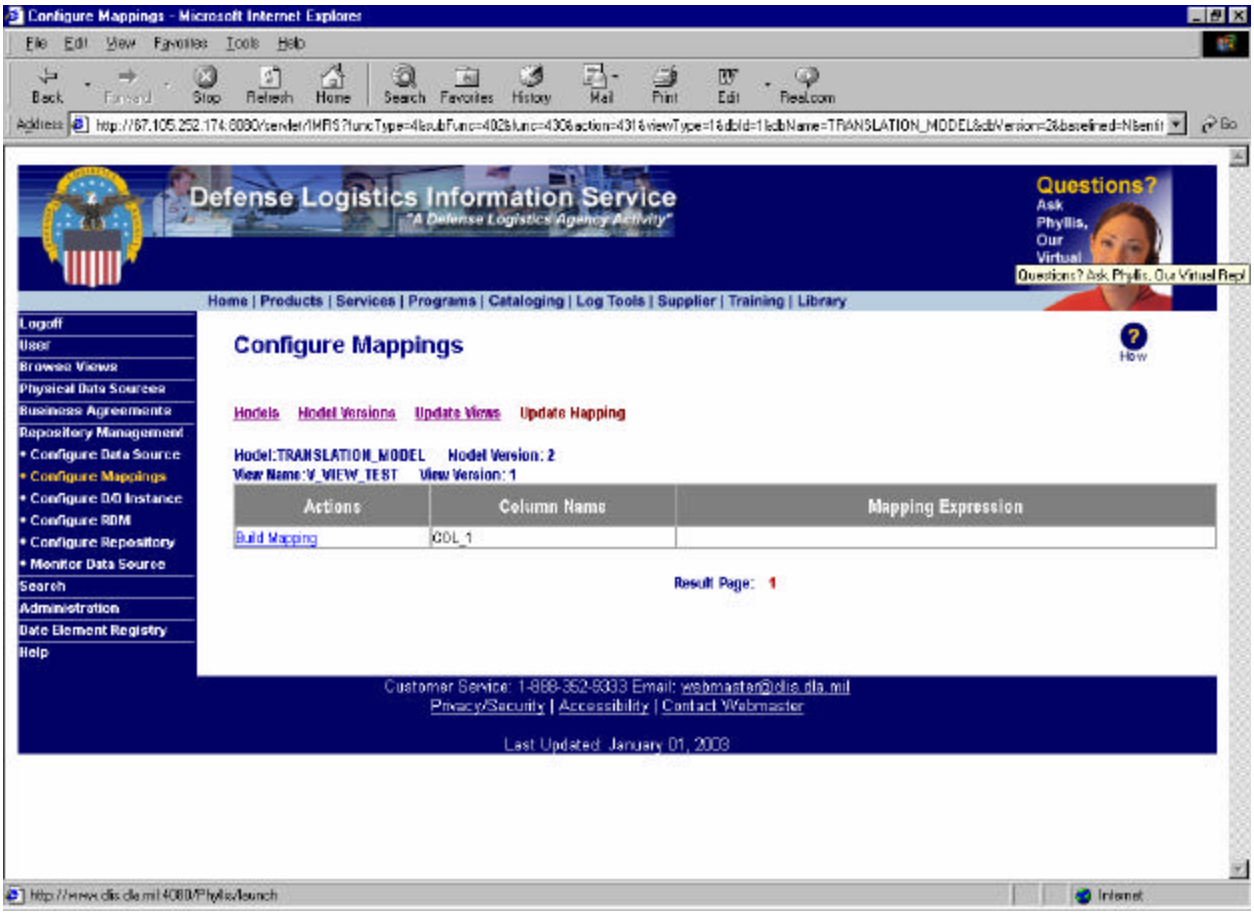


Figure 4.6.2.5- 4 Configure Mapping - Update Mapping for Translation Model (newly create Virtual View)

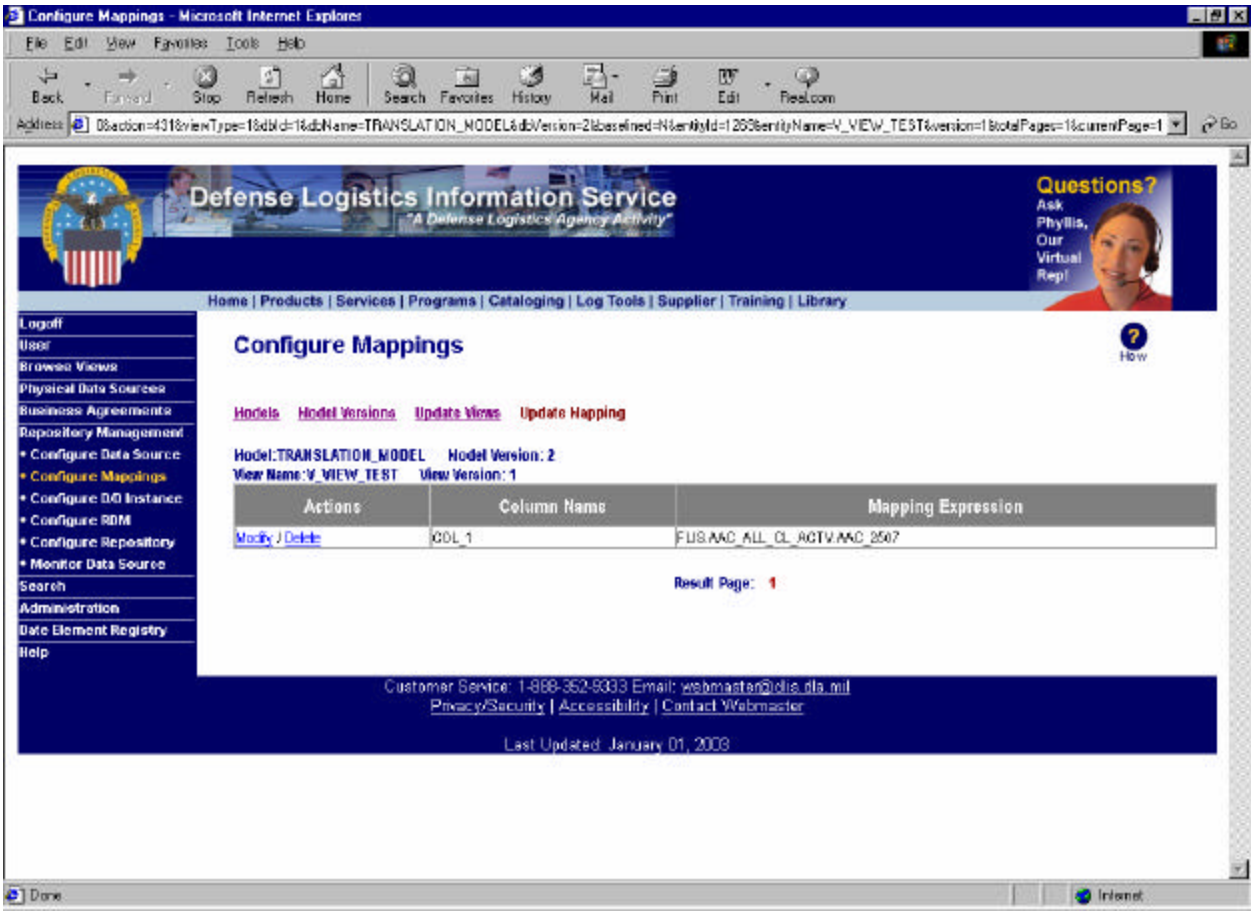


Figure 4.6.2.5- 5 Configure Mapping - Update Mapping for Translation Model (already created Virtual View)

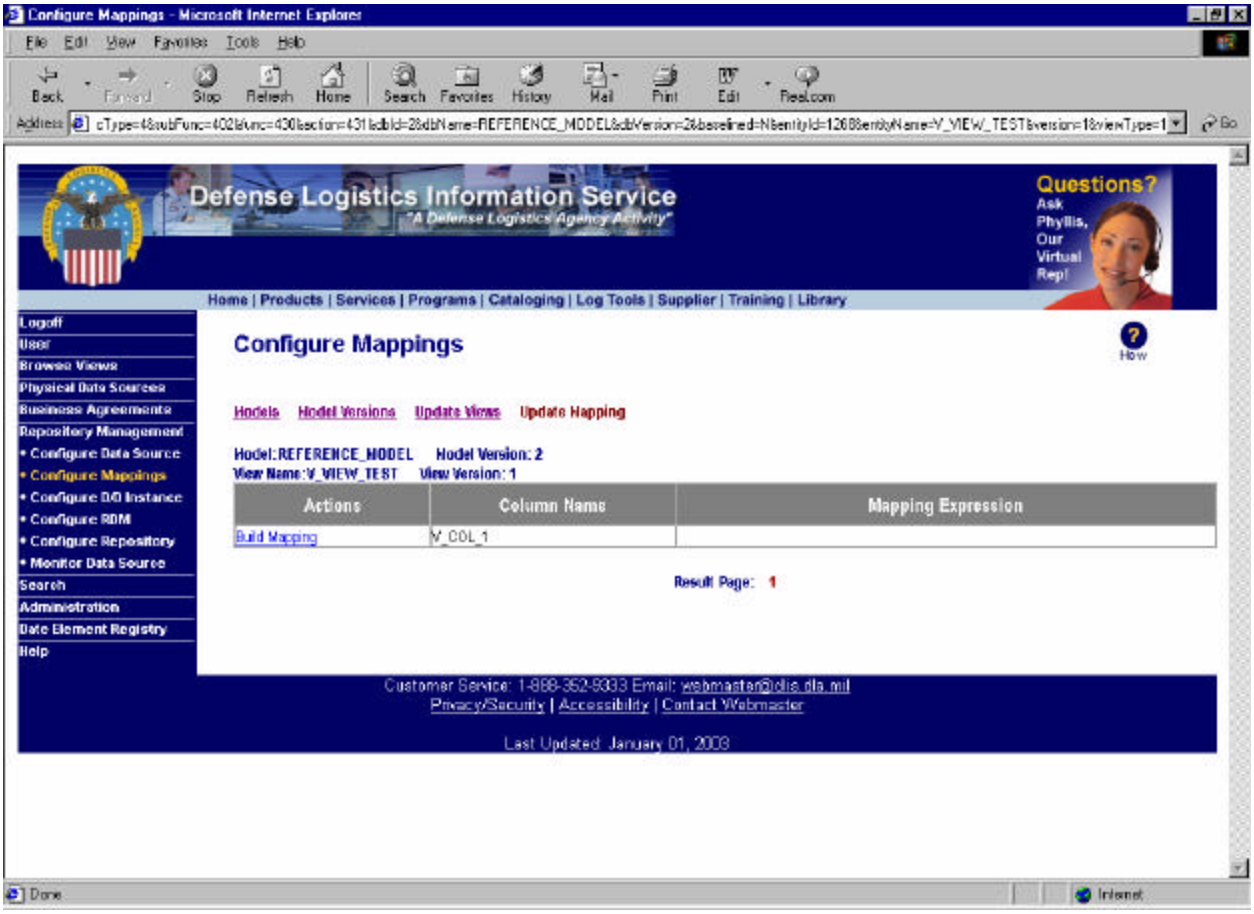


Figure 4.6.2.5- 6 Configure Mapping - Update Mapping for Reference Model (newly created Virtual View)

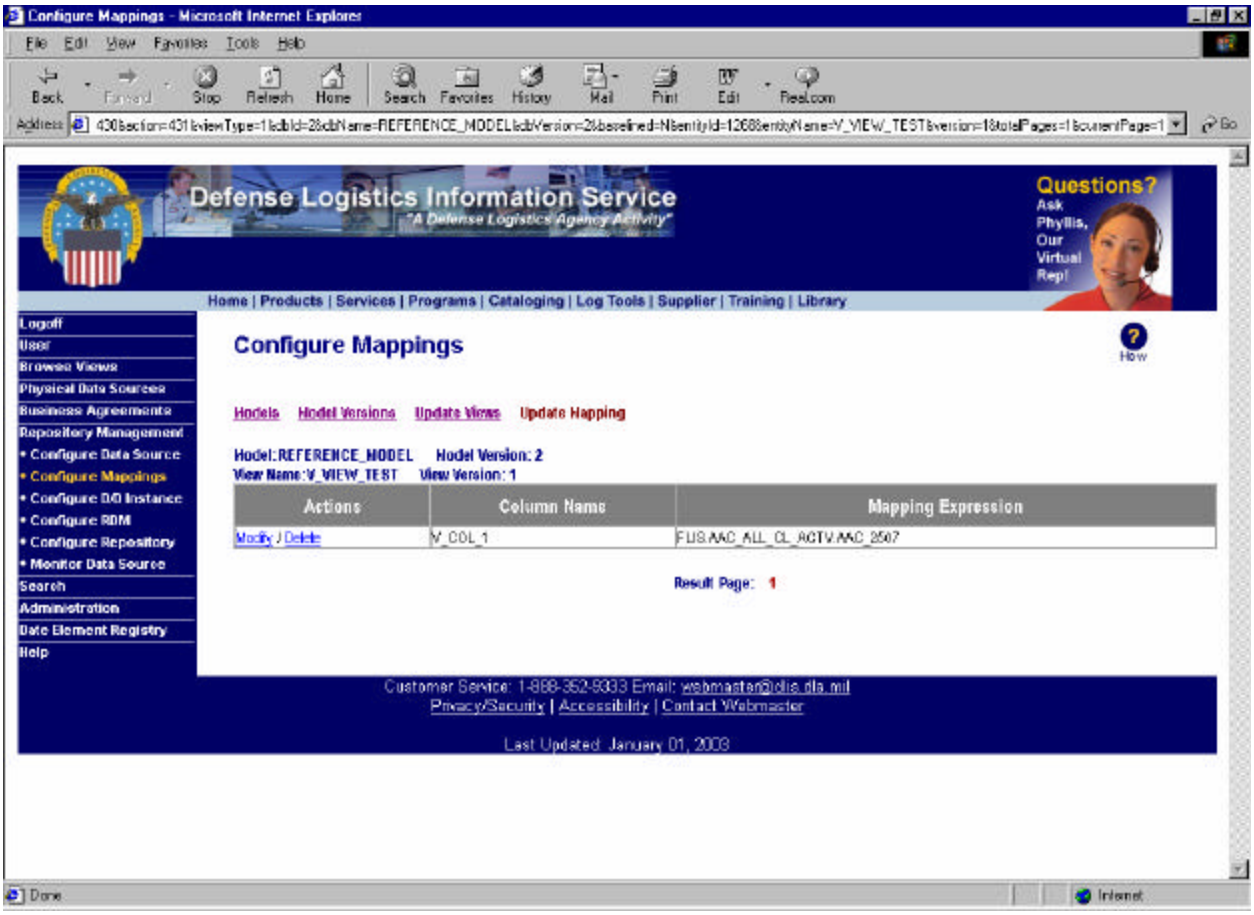


Figure 4.6.2.5- 7 Configure Mapping - Update Mapping for Reference Model (already created Virtual View)

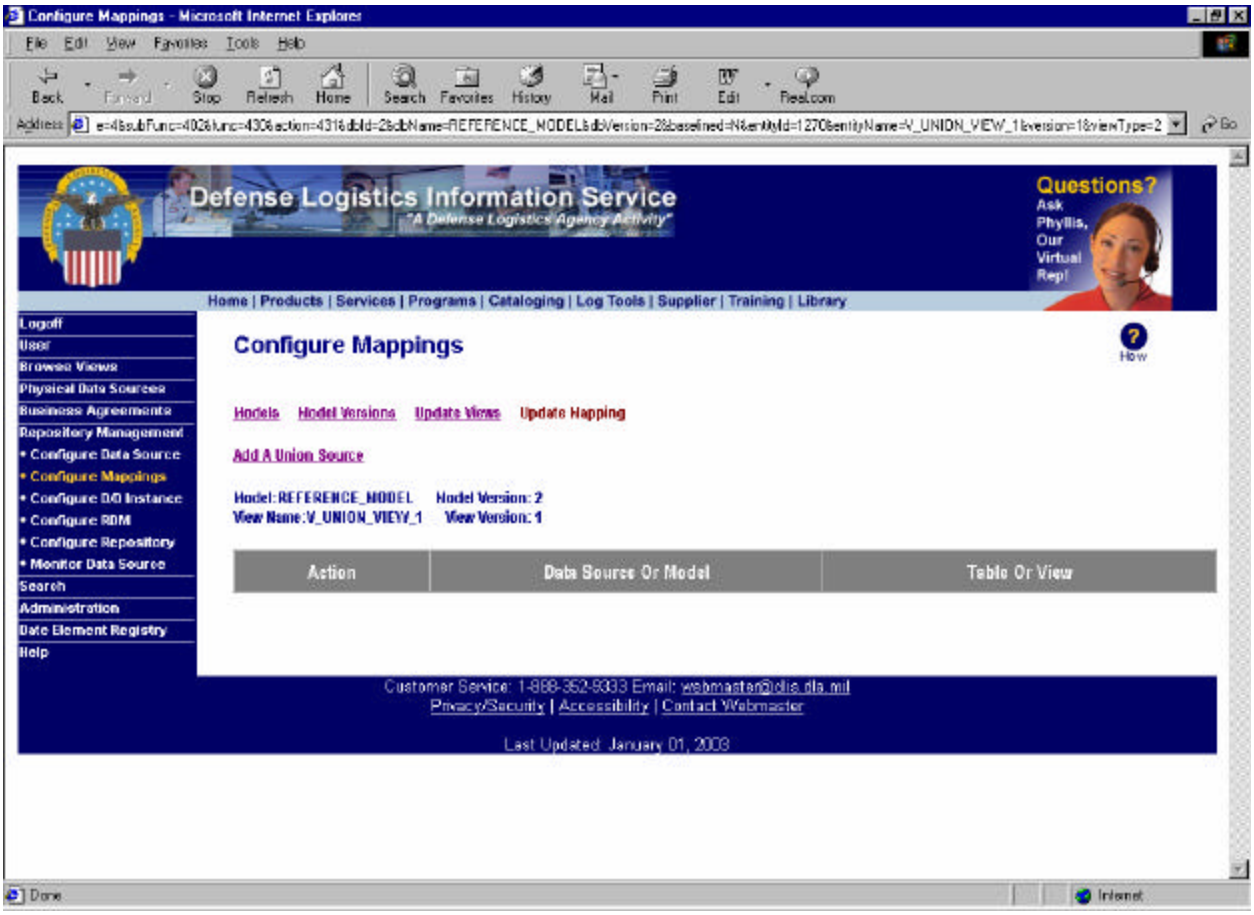


Figure 4.6.2.5- 8 Configure Mapping - Update Mapping for Reference Model (newly created Union View)

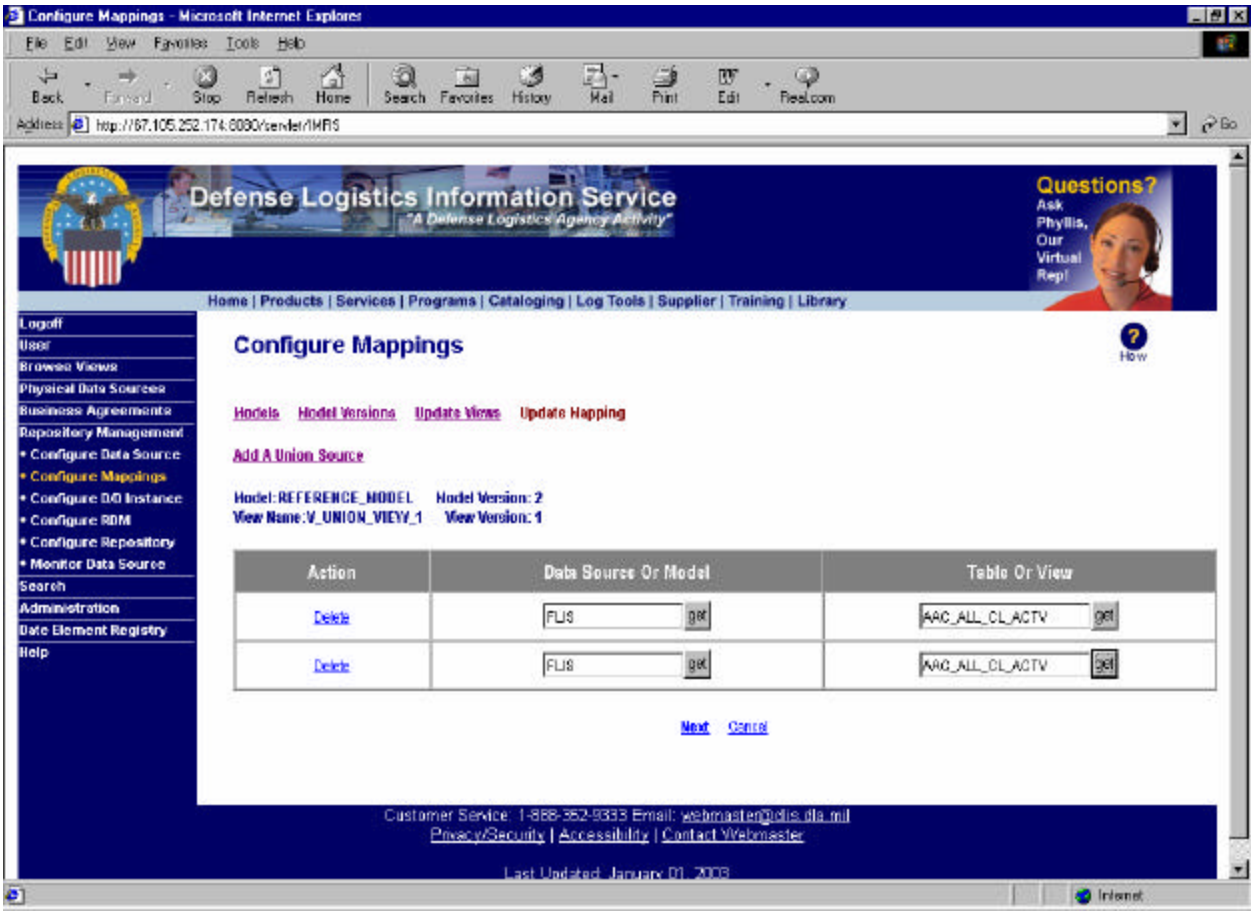


Figure 4.6.2.5- 9 Configure Mapping - Update Mapping for Reference Model (already created Union View)

4.6.2.5.a. Build Mapping

After clicking on the *Configure Mappings* link, click the *View Versions* link. Click on the Update Mapping link, then click on the *Build Mapping* link under the Actions heading to create mapping information for a selected column. A new window with the caption “Building Mapping Expression” will pop up (See Figure 4.6.2.5.a- 1).

Click the Add Mapping Data Source link to add a data source that can be used to build a mapping expression that relates a data source, a table, and a column (See Figure 4.6.2.5.a- 2).

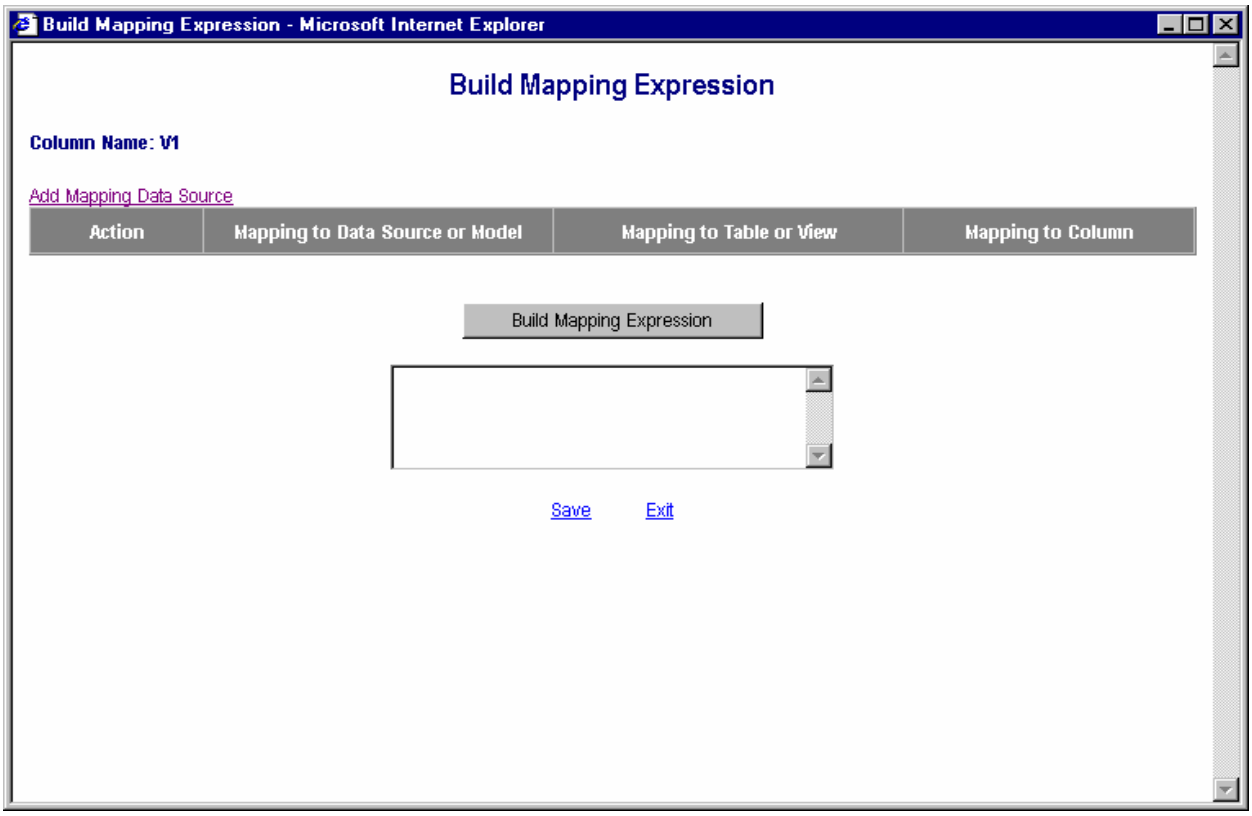


Figure 4.6.2.5.a- 1 Configure Mappings – Build Mapping Expression

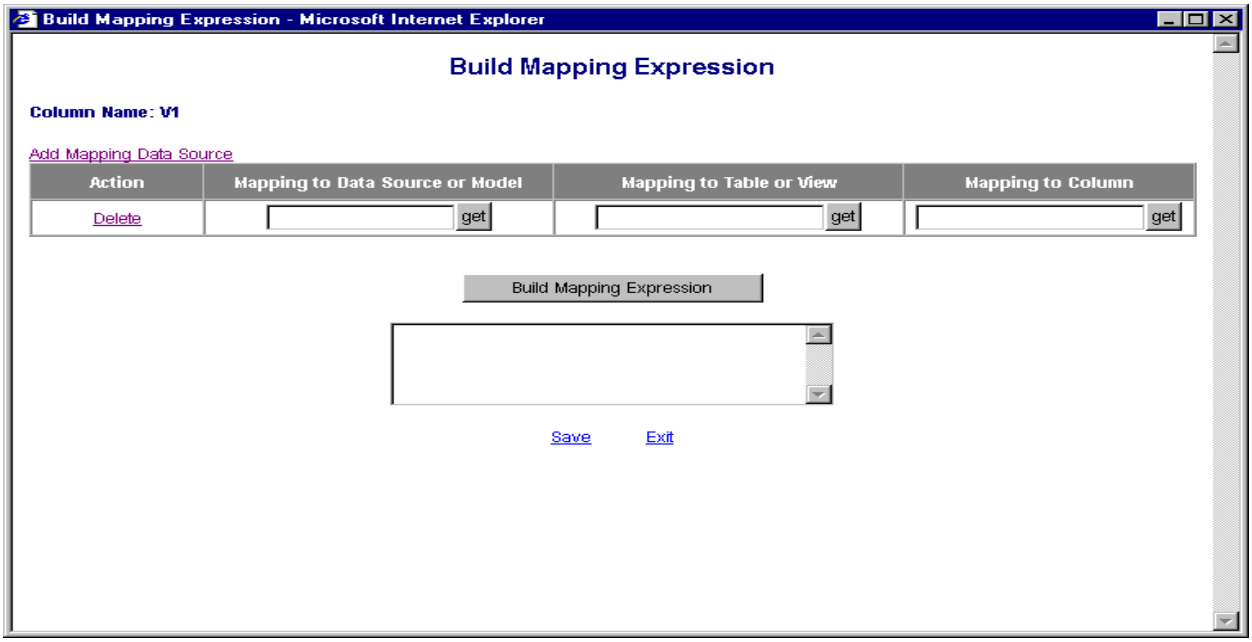


Figure 4.6.2.5.a- 2 Configure Mappings – Build Mapping Expression: Add Mapping Data Source

Click the *get* buttons to select a data source, a table and a column to complete a mapping (See Figure 4.6.2.5.a - 3 to Figure 4.6.2.5.a - 5).

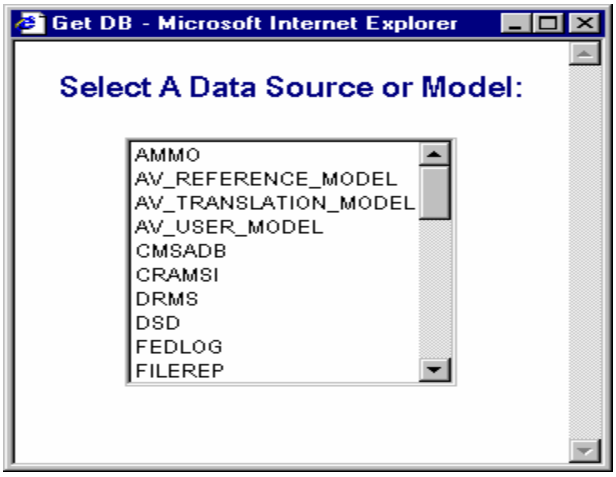


Figure 4.6.2.5.a- 3 Configure Mappings – Build Mapping Expression: Get Data Source or Model

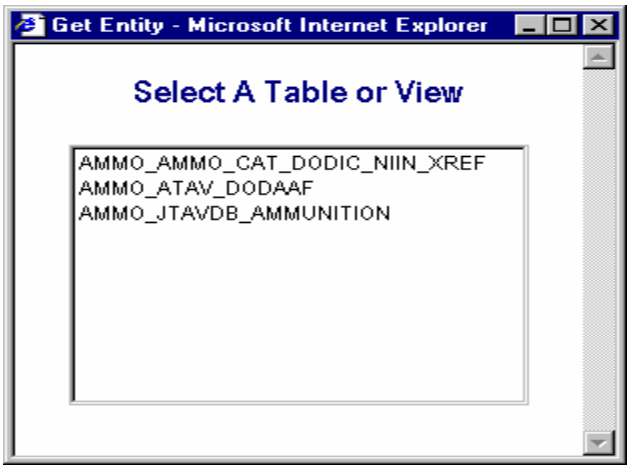


Figure 4.6.2.5.a- 4 Configure Mappings – Build Mapping Expression: Get Table or View

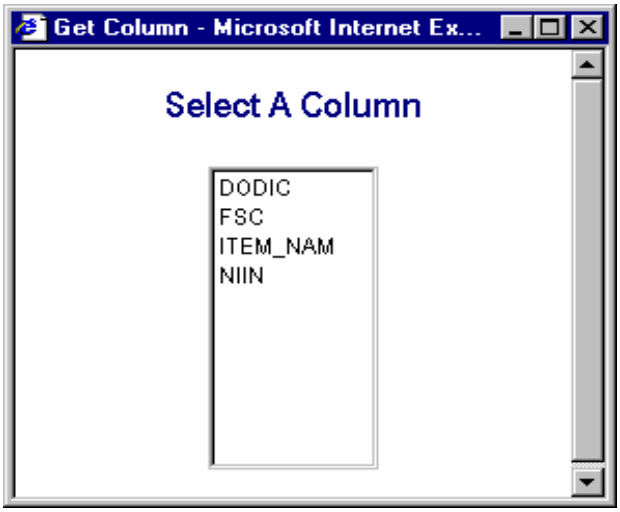


Figure 4.6.2.5.a- 5 Configure Mappings – Build Mapping Expression: Get Column

The mapping expression is displayed in the text area under the Build Mapping Expression button (See Figure 4.6.2.5.a- 6). The user can edit the data, if necessary, for reasons such as data converting, arithmetic operation, etc.

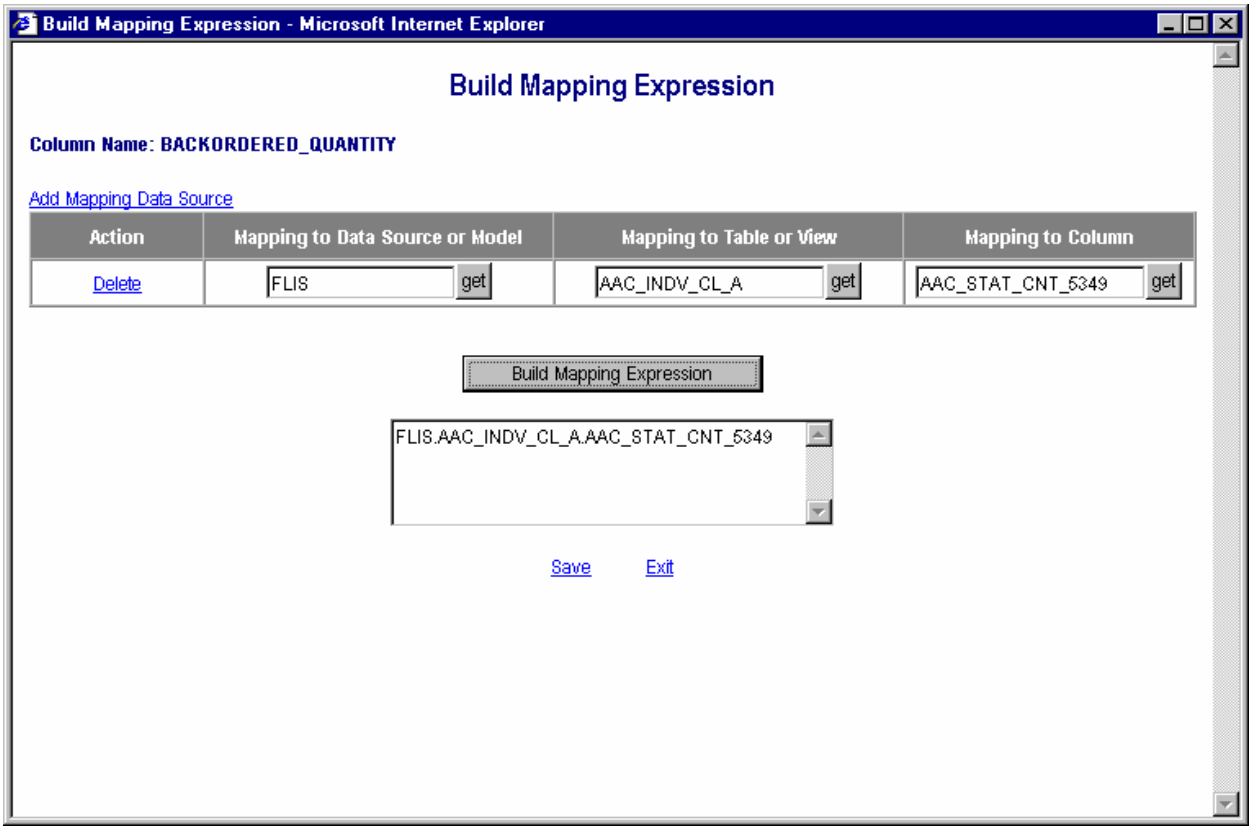


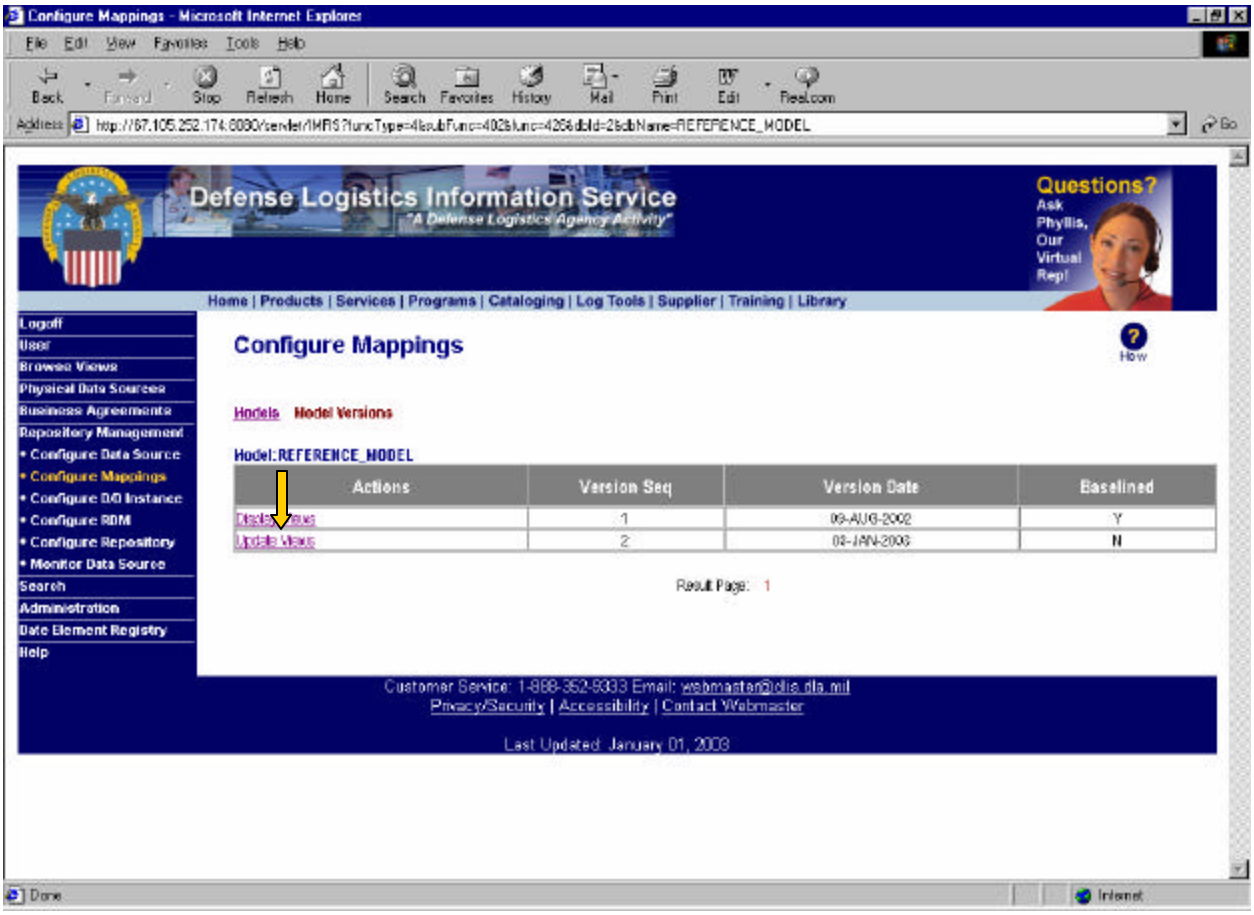
Figure 4.6.2.5.a- 6 Configure Mappings – Build Mapping Expression: Build Mapping Expression

To save the modification, click on the *Save* link. Alternatively, click on the *Exit* link to leave the screen without saving the entered data.

4.6.2.5.b. Modify Mapping

After clicking on the *Configure Mapping* from left menu, click *Update Versions* Link, a list of versions pertaining to one model is displayed. Click on the *Update Views* link (See Figure 4.6.2.5.b- 1), and a screen contain all the update actions will display (See

Figure 4.6.2.5.b- 2). Click on the *Update Mapping* link, and then click the *Modify* link under the Actions the mapping information for the selected column (See Figure 4.6.2.5.b - 3). A new window with the caption “Build Mapping Expression” will pop up



with the mapping information that the user needs to modify (See Figure 4.6.2.5.b - 4).

Figure 4.6.2.5.b- 1 Configure Mappings

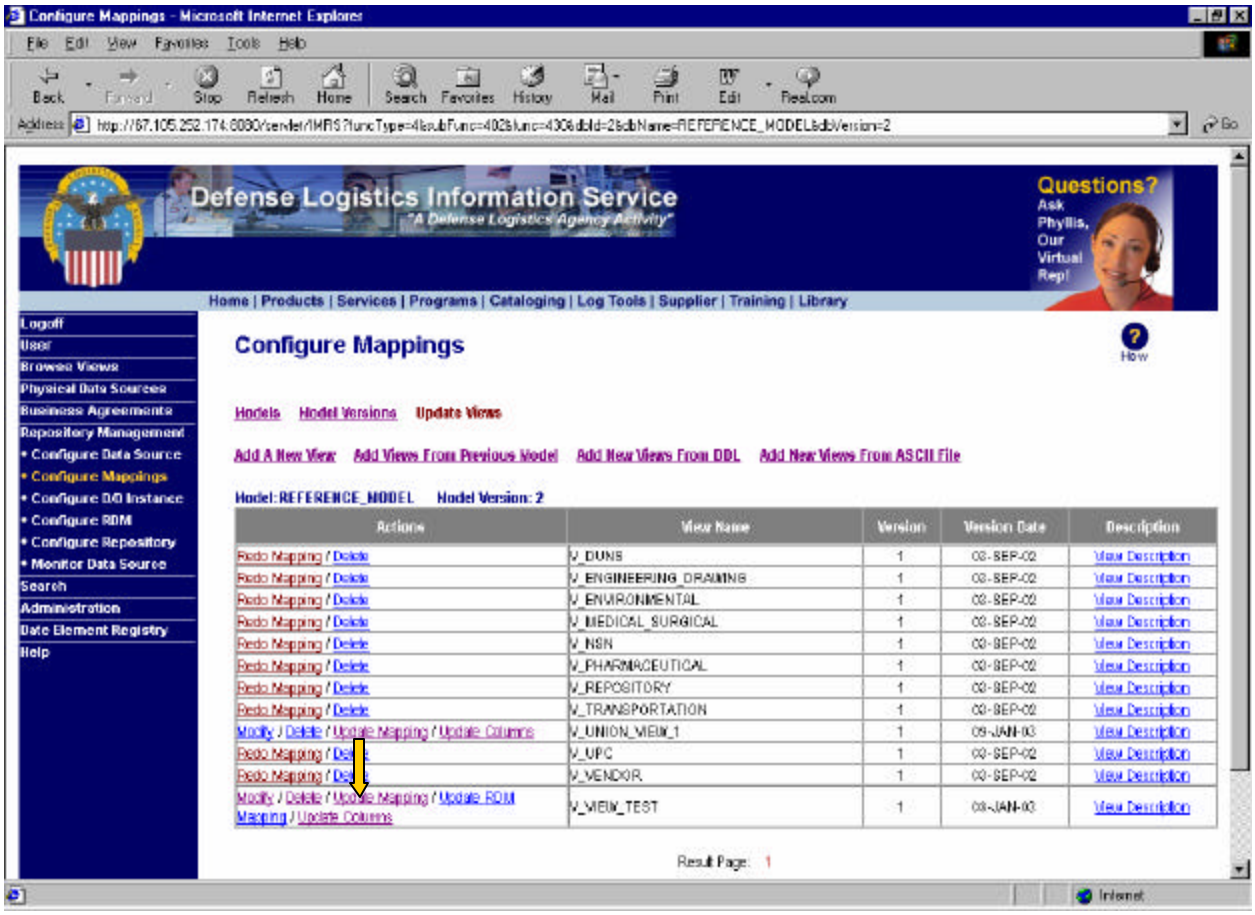


Figure 4.6.2.5.b- 2 Configure Mappings – Update Mapping

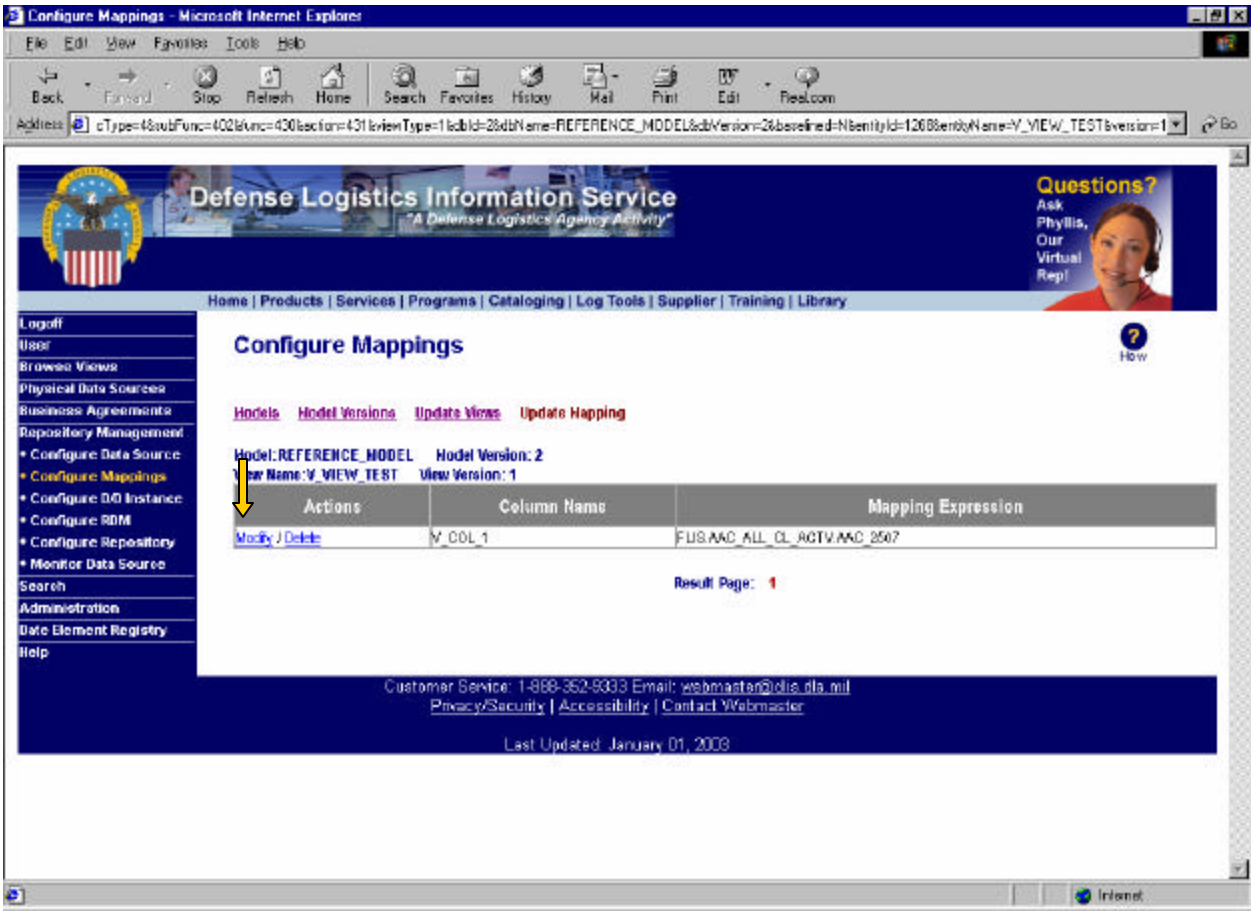


Figure 4.6.2.5.b- 3 Configure Mappings – Modify Mapping

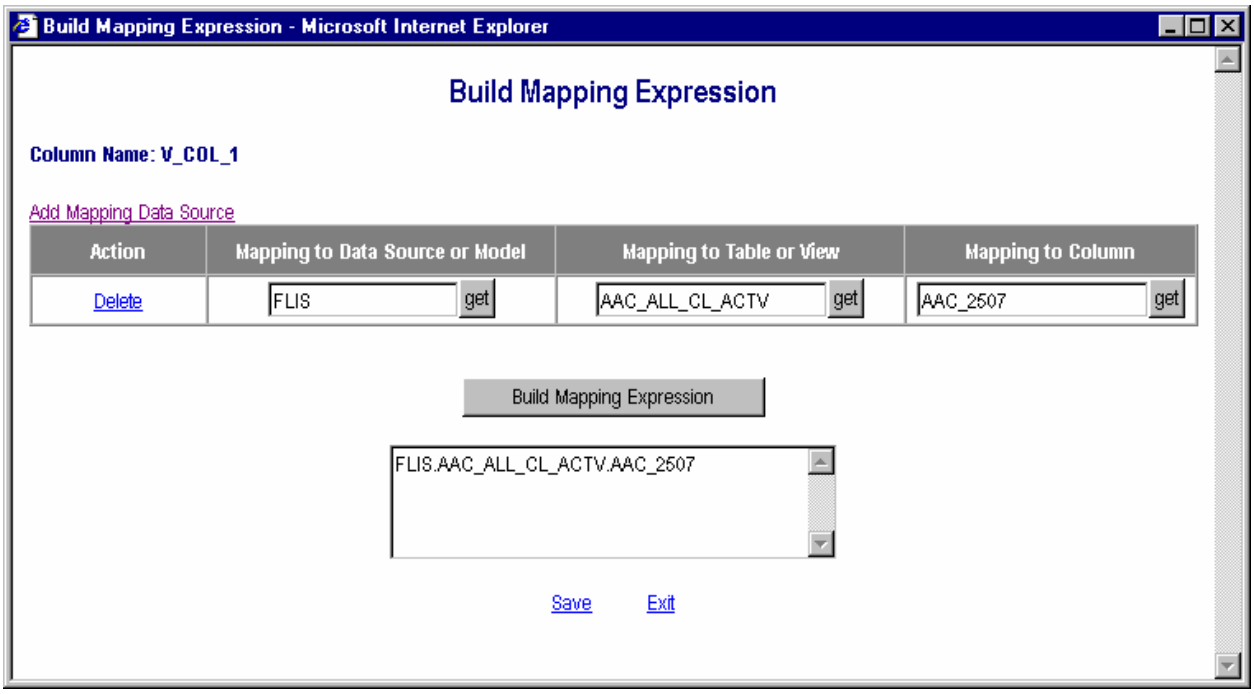


Figure 4.6.2.5.b- 4 Configure Mappings – Modify Mapping

Each link has the same function as the Build Mapping section. Refer to section 4.6.2.5.a Build Mapping for detail information.

4.6.2.5.c. Delete Mapping

From the same selection screen of Modify Mapping (See Figure 4.6.2.5.b- 3), click on the *Delete* link under the Actions heading to delete the mapping information for a selected column.

4.6.2.5.d. Build Where Clause

If the view is mapped to more than one data source, then a screen with the caption "Build Where Clause" will appear to let the end user build the where clause (See Figure 4.6.2.5.d- 1).

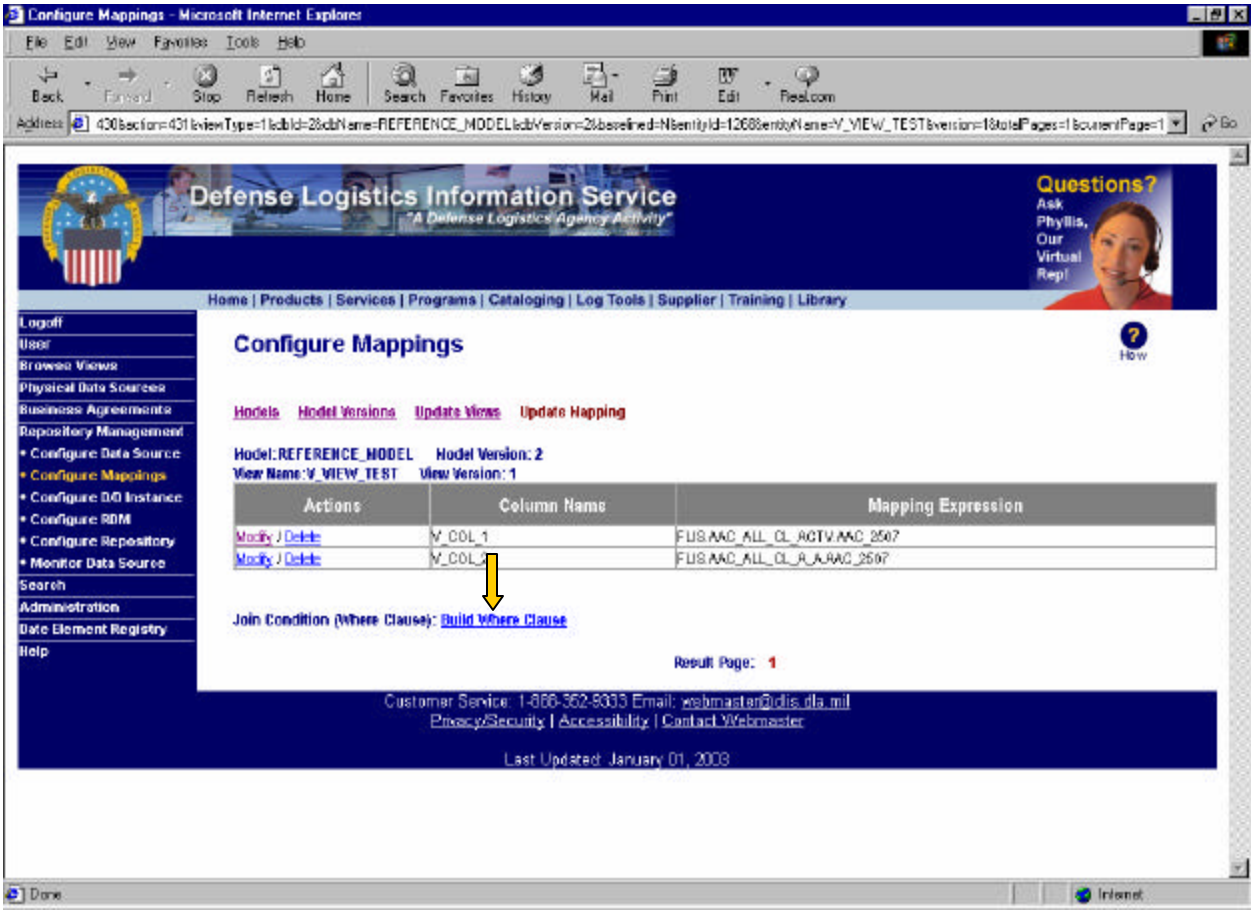


Figure 4.6.2.5.d- 1 Configure Mappings – Build Where Clause

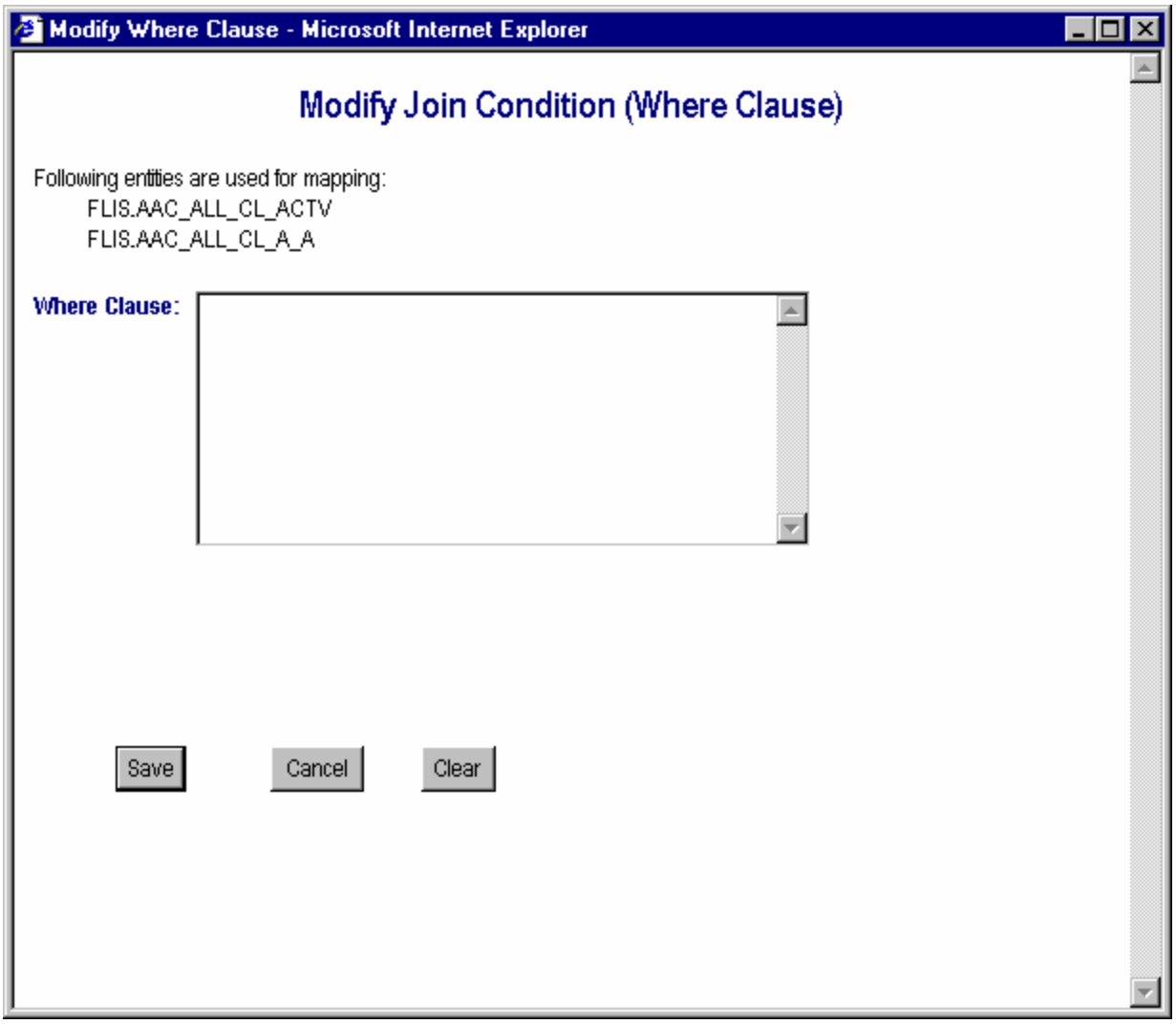


Figure 4.6.2.5.d- 2 Configure Mappings – Update Mapping with Build Where Clause

Type the Where Clause in the text box and click on the *Save* button to save the join condition input in the text area and to close the window.

4.6.2.6. Update Mapping for Union View

After clicking on the *Configure Mapping* link, click on *View Versions* for any of the Reference Model (See Figure 4.6.2.6- 1). Click on *Update Views* link on the latest unbaselined version and a screen is displayed (See Figure 4.6.2.6- 2). Click on *Update Mapping* for a union view page Click on the *Add A Union Source* link to add a union data source (See Figure 4.6.2.6- 3 and Figure 4.6.2.6- 4).

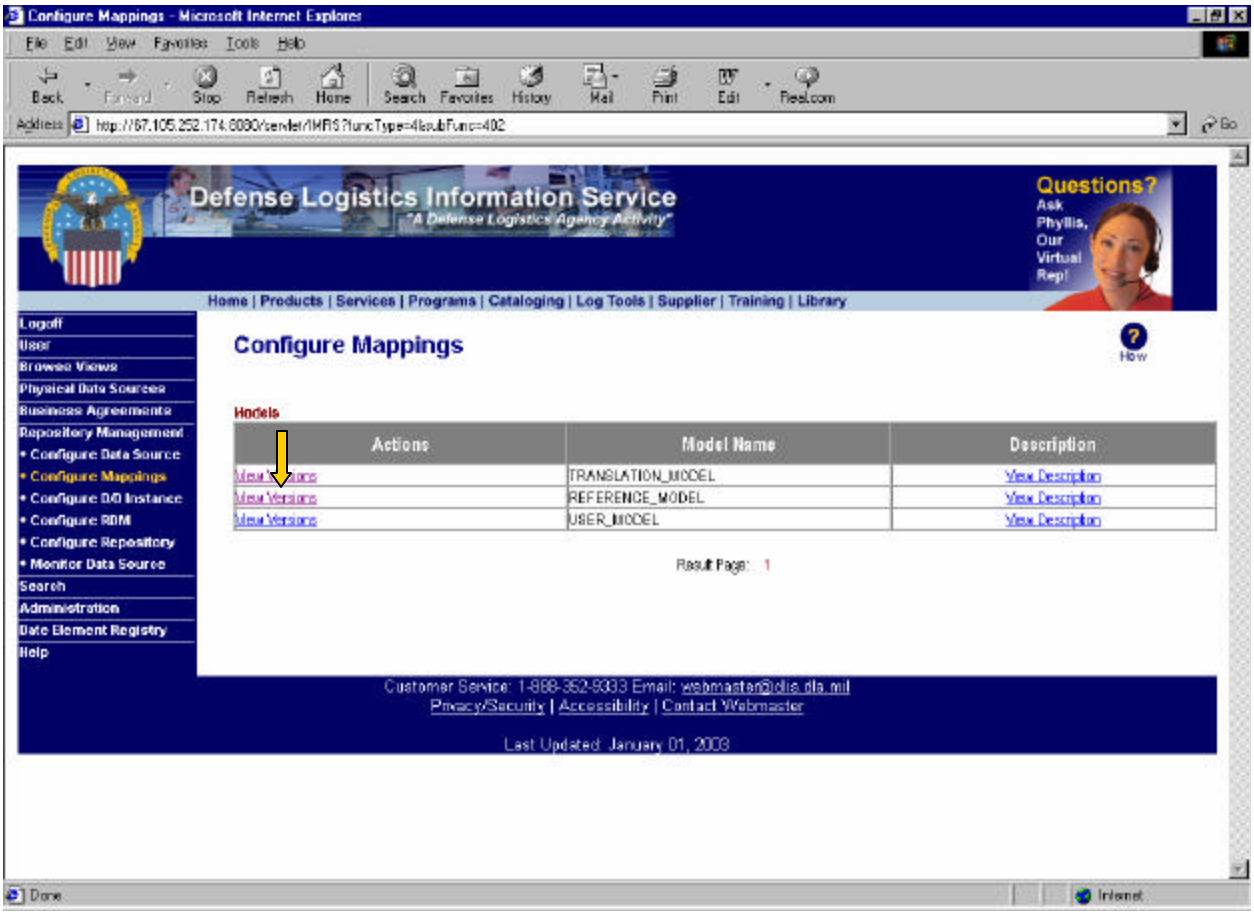


Figure 4.6.2.6- 1 Configure Mapping – (Update Mapping for newly created Union View)

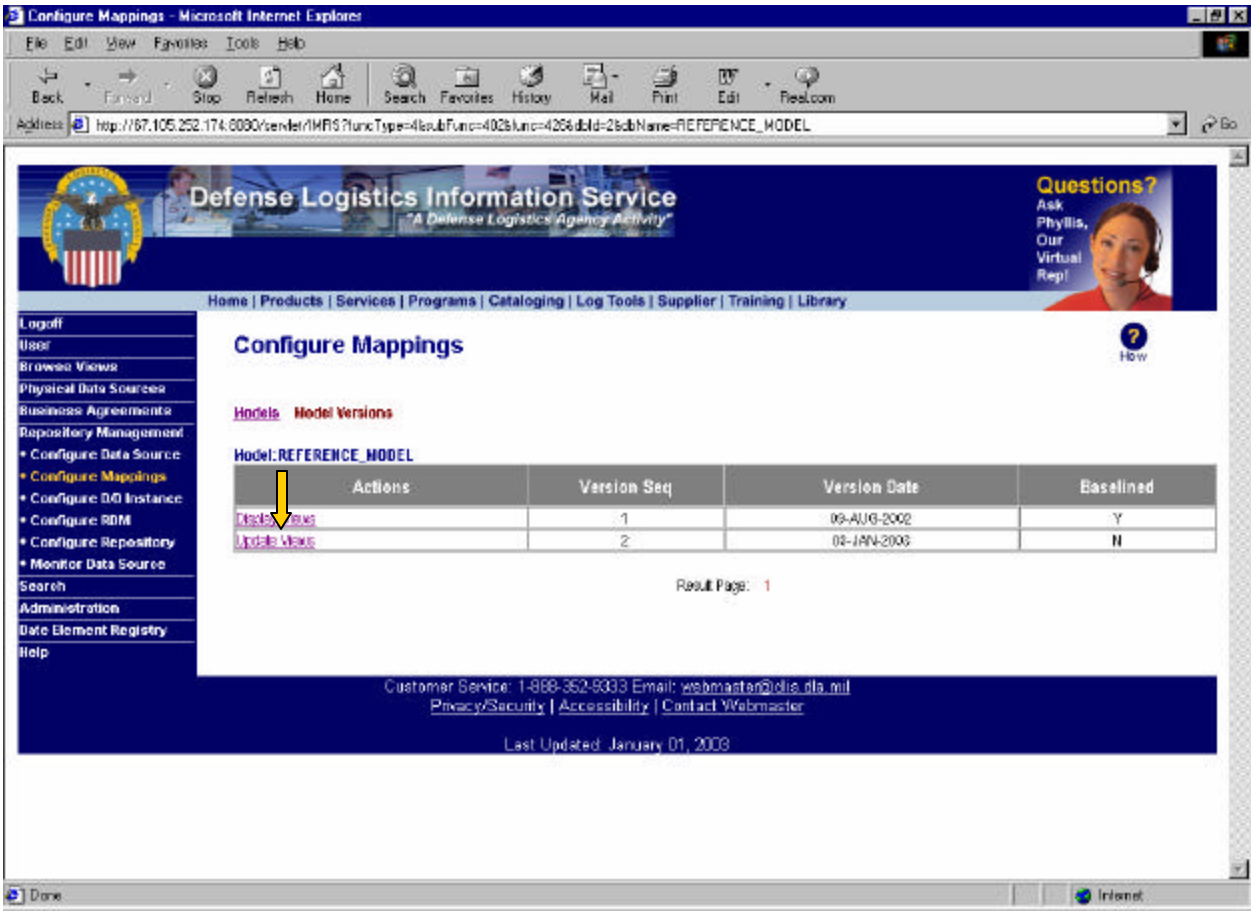


Figure 4.6.2.6- 2 Configure Mappings – Update Mapping for Union View (Newly Created)

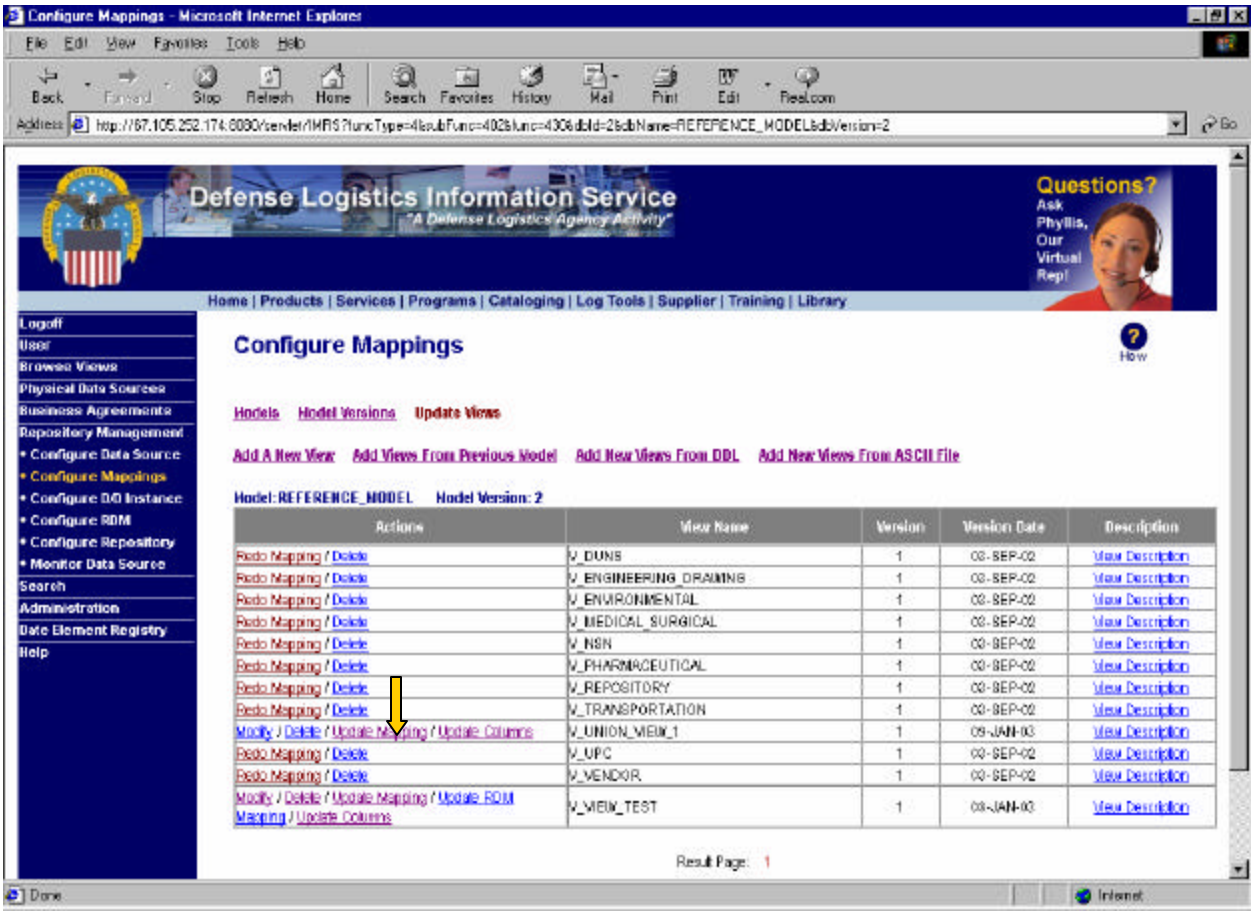


Figure 4.6.2.6- 3 Configure Mappings – Update Mapping for Union View

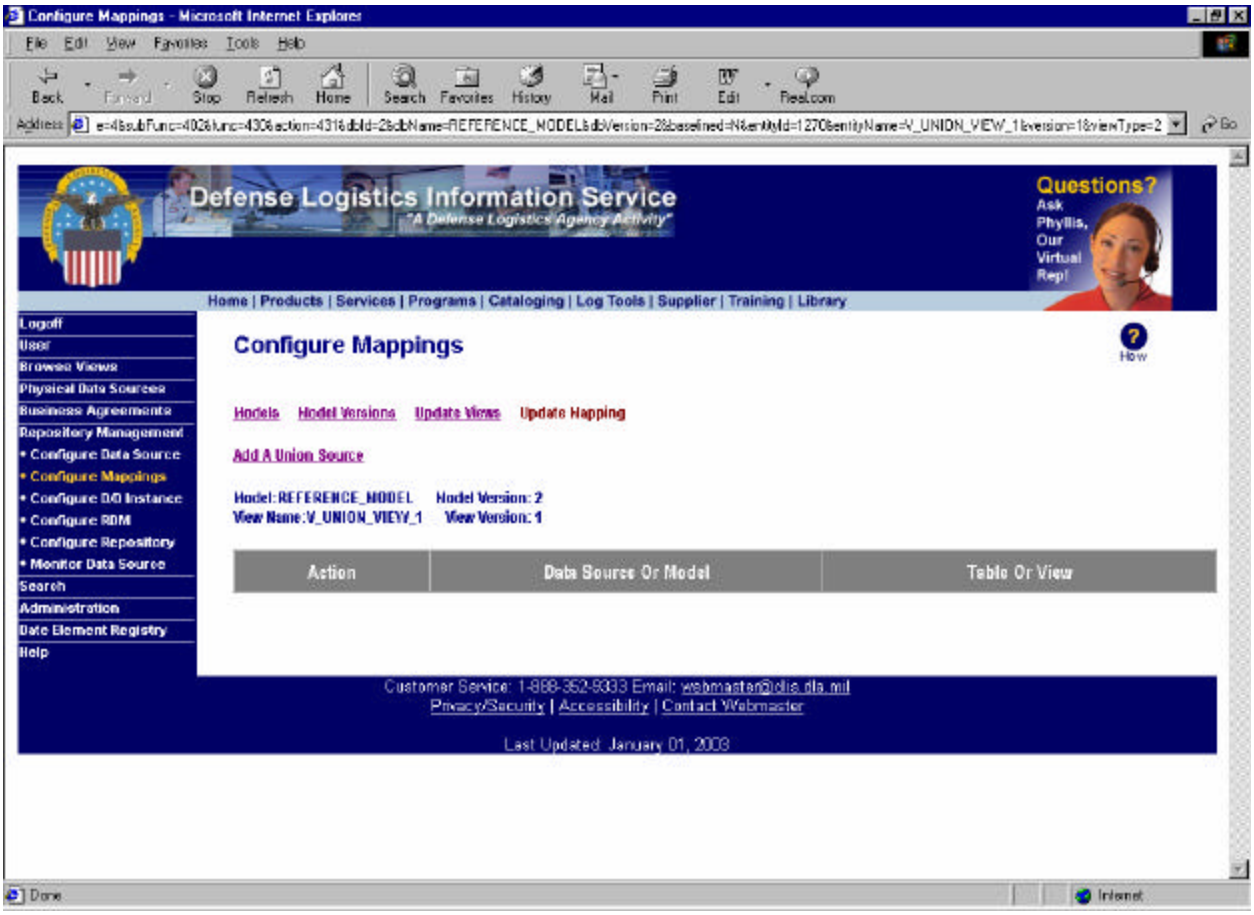


Figure 4.6.2.6- 4 Configure Mappings – Update Mapping for Union View: Add A Union Source

Click the *get* button under the column named “Data Source Or Model” and a window will pop up with a list of data sources. Select a data source for a union data from the list (See Figure 4.6.2.6- 5).

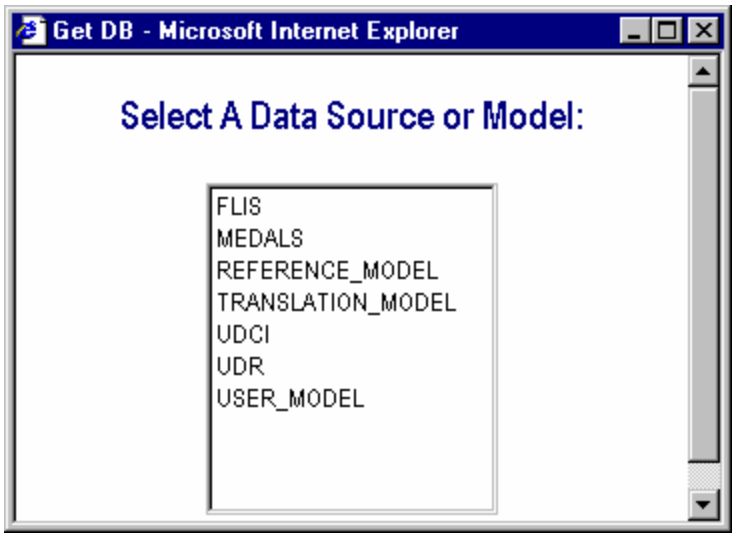


Figure 4.6.2.6- 5 Configure Mappings – Update Mapping for Union View: Get Data Source or Model

Click the *get* button under the column named “Table Or View” and a window will pop up with a list of tables or views. Select a table for a union data from the list (See Figure 4.6.2.6- 6).

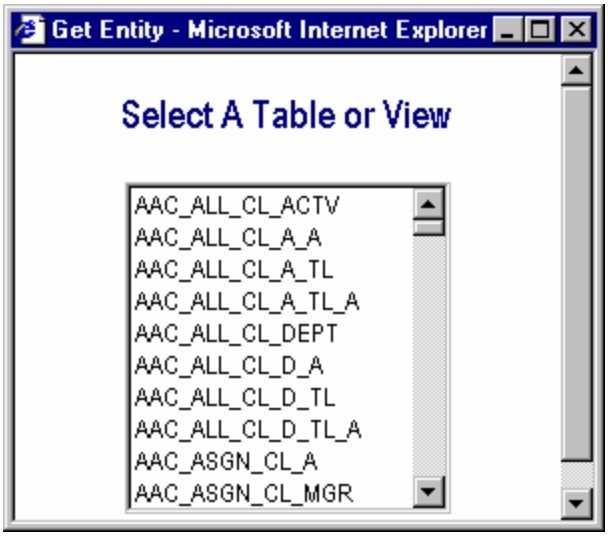


Figure 4.6.2.6- 6 Configure Mappings – Update Mapping for Union View: Get Table or View

Remember, at least two union sources should be selected. Otherwise, a dialog box with an explanatory message will pop up to remind the end user to choose at least two union sources. Click the *OK* button to close the dialog box (See Figure 4.6.2.6- 7)

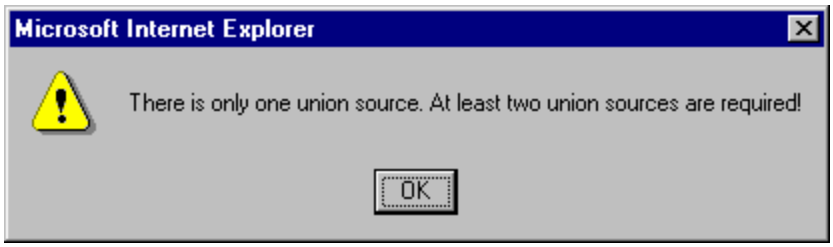


Figure 4.6.2.6- 7 Configure Mappings – Save Union Sources Error Message

Click the *Next* link to save it and continue.

Click the *Delete* link under the Actions heading to delete a union data source.

For each column in the union view, select a corresponding column from the drop down list for each union data source. Click the *Save* link to save the mapping information and to go to the *Update Views* page (See Figure 4.6.2.6- 8).

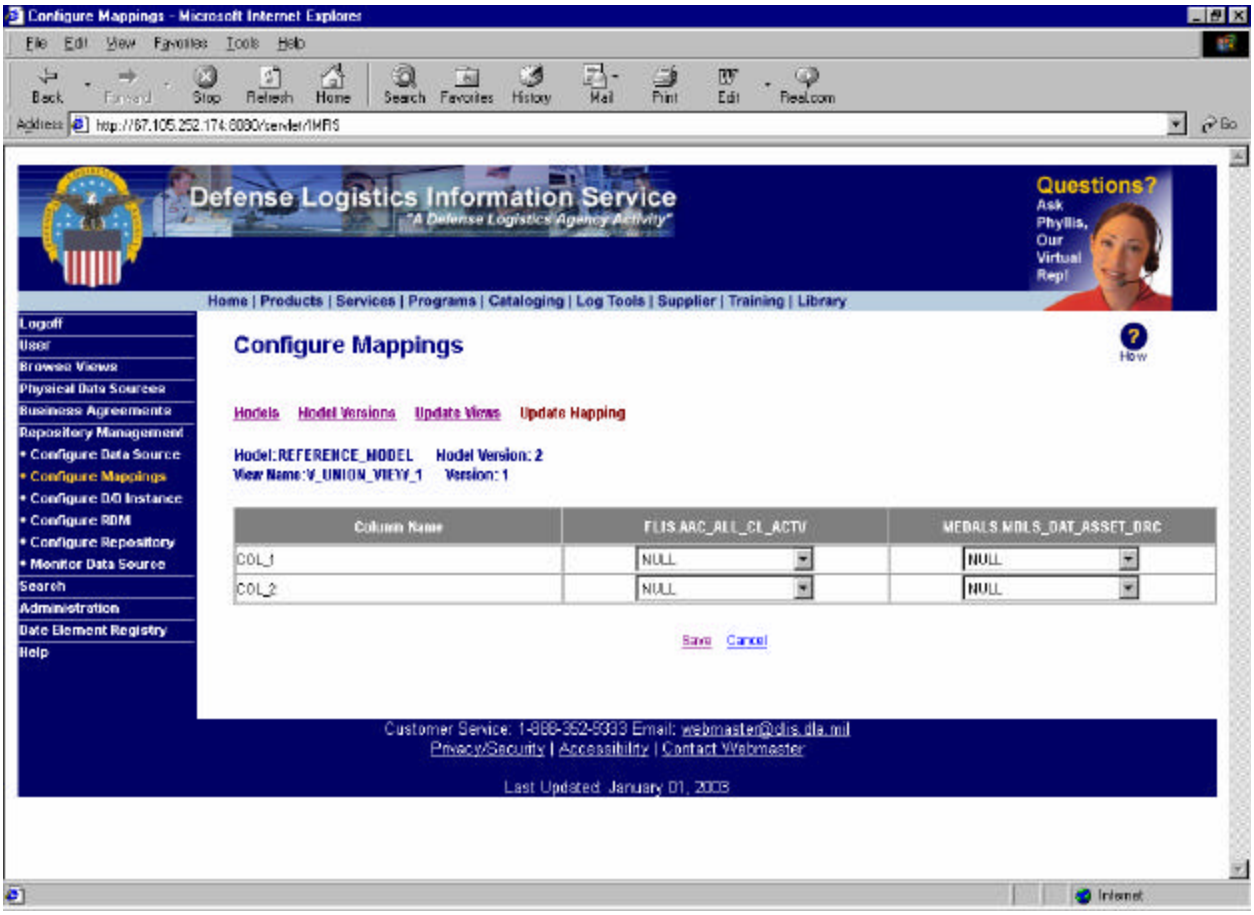


Figure 4.6.2.6- 8 Configure Mapping – Mapping Column to Union Sources

4.6.2.7. Redo Mapping

Only if the latest versioned model is unbaselined and the view was copied from a previous model will the user be allowed to redo the mapping to update the view, its column information, and its associated physical and RDM mappings (See Figure 4.6.2.7- 1). After clicking *Redo Mapping*, the user can Modify Views, Delete Views, Update Mapping in the Views, and Update RDM Mapping in the views (See Figure 4.6.2.7- 2).

If the view and its column information do not need to be updated, the user can decide whether to redo the physical mapping and the RDM mapping due to a new version creation for either the data source or the RDM. Click on the link *Display Views* from the View Versions page to check the view information (See Figure 4.6.2.5.b - 1).

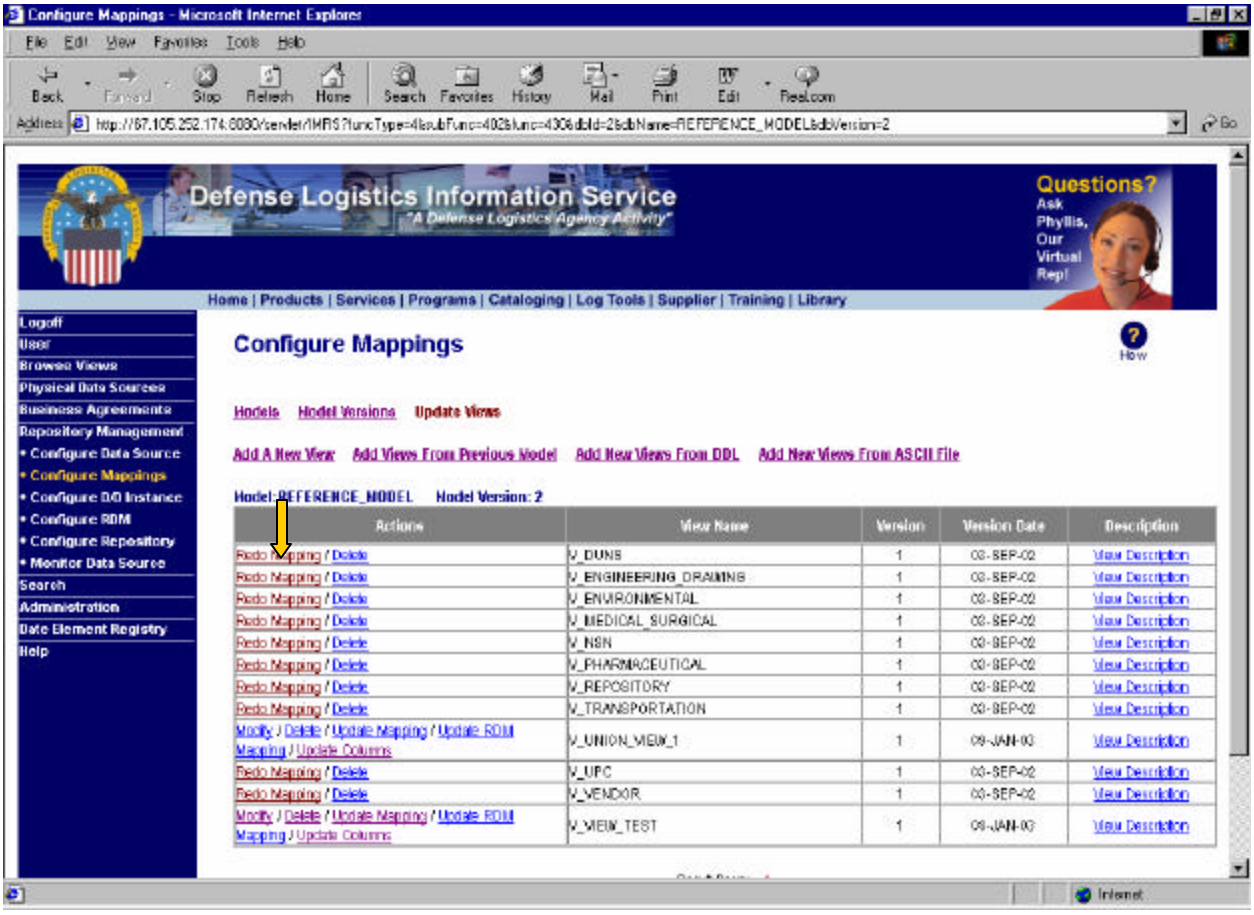


Figure 4.6.2.7- 1 Configure Mappings – Update Views (Redo Mapping)

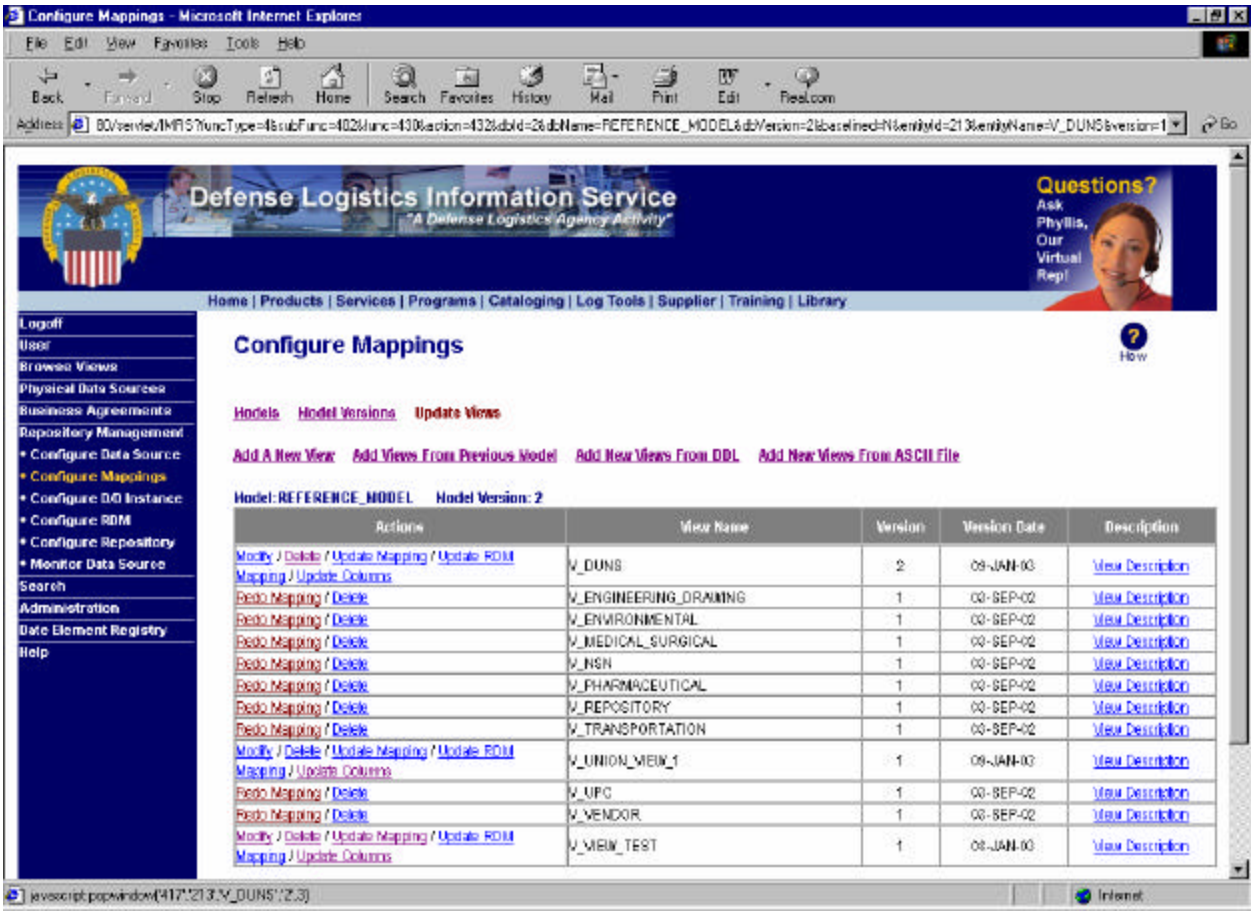


Figure 4.6.2.7- 2 Configure Mappings – Update Views (After Click Redo Mapping)

4.6.2.8. Update RDM Mapping

The end user will be allowed to update the RDM mapping only if the view is mapped directly to physical data. (See Figure 4.6.2.8 - 1)

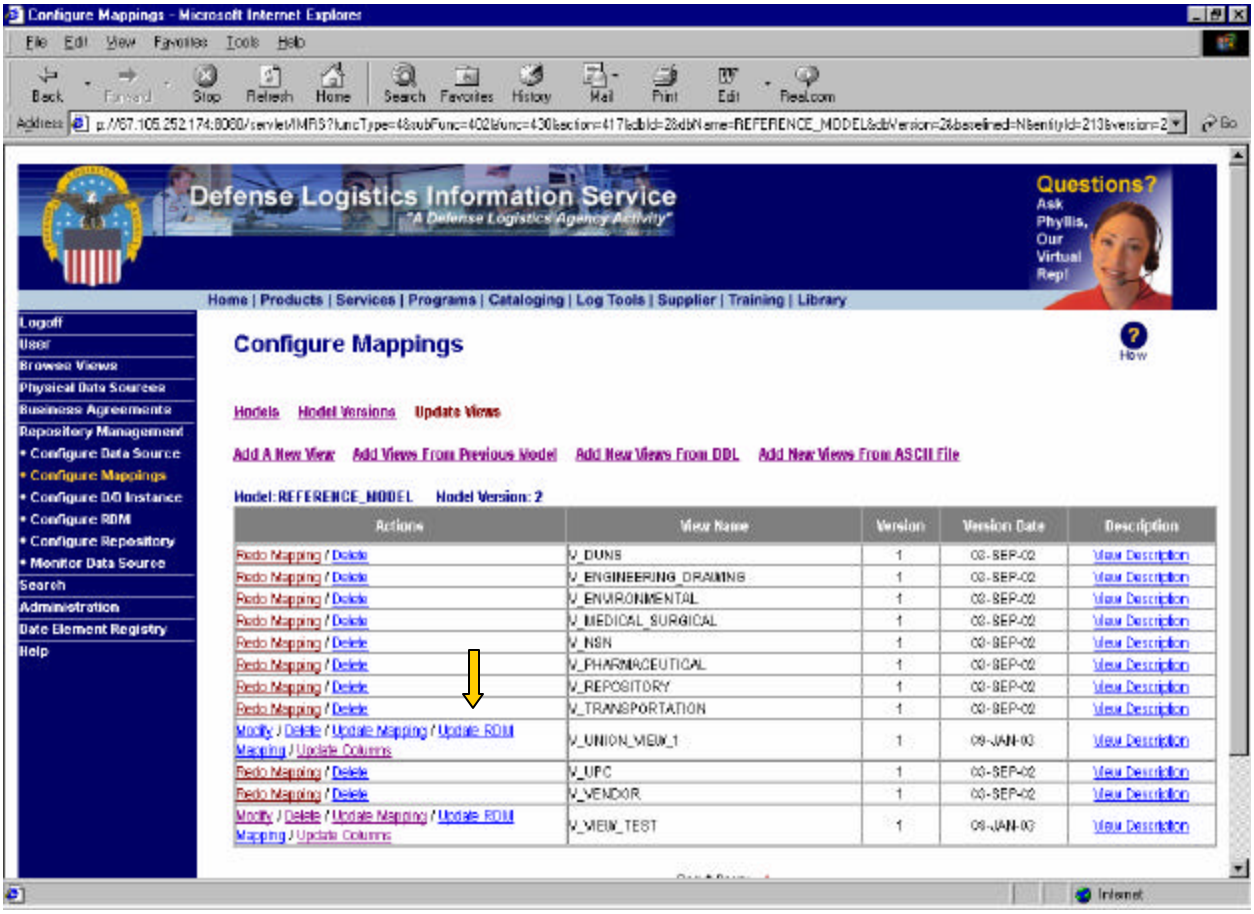


Figure 4.6.2.8- 1 Configure Mapping – Update RDM Mapping

The Update RDM Mapping function has procedures similar to the Update Mapping for Virtual View function, except that in the Update RDM Mapping function the Reference Data Model replaces the data sources (See Figure 4.6.2.8- 2).

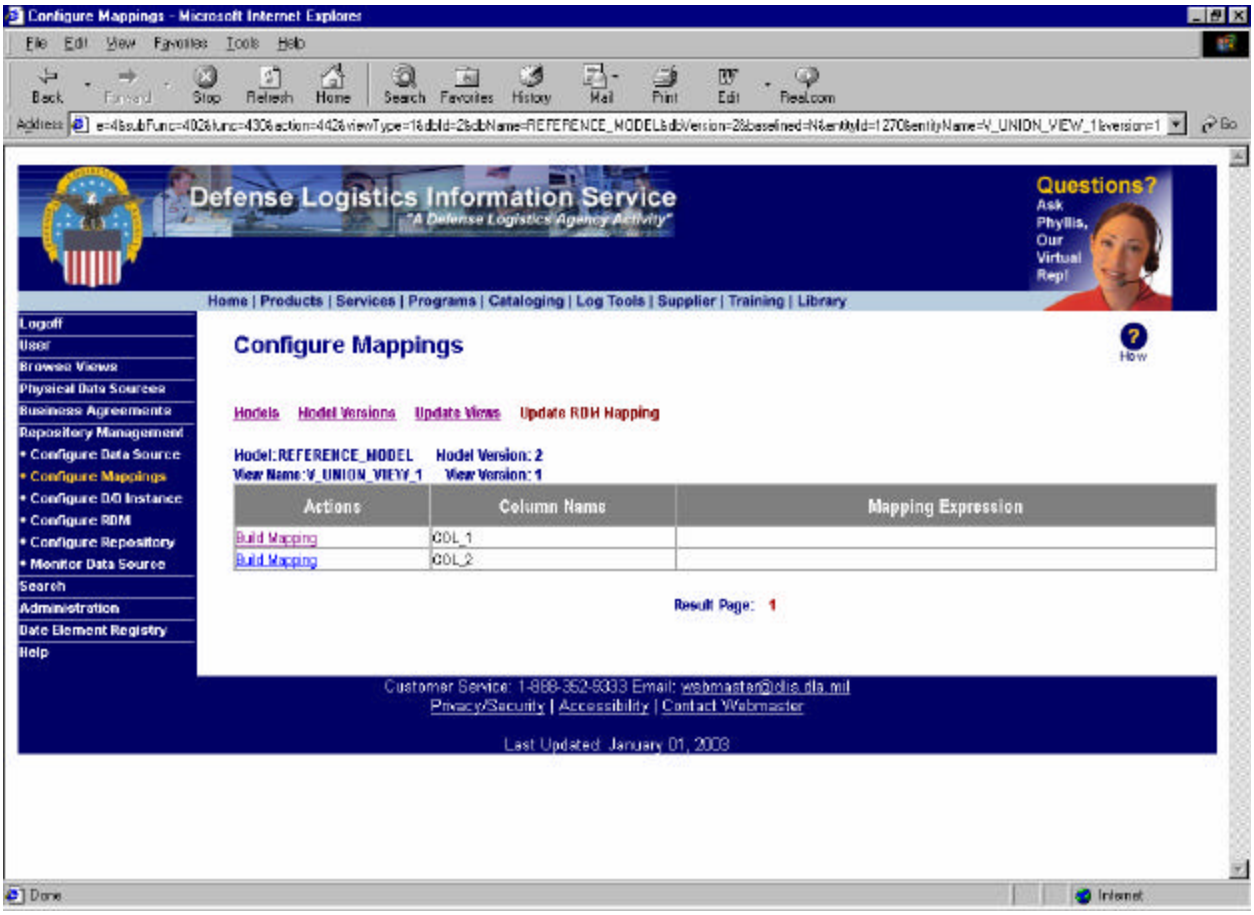


Figure 4.6.2.8- 2 Configure Mappings – Update RDM Mapping

4.6.3. Repository Management - Configure D/D Instance

The Configure D/D Instance function provides user interface capability to Add/Modify/Delete a D/D Instance and to group the views with a D/D Instance (See Figure 4.6.3- 1). (CAUTION: Only the views under the latest versioned model can be grouped in a D/D Instance).

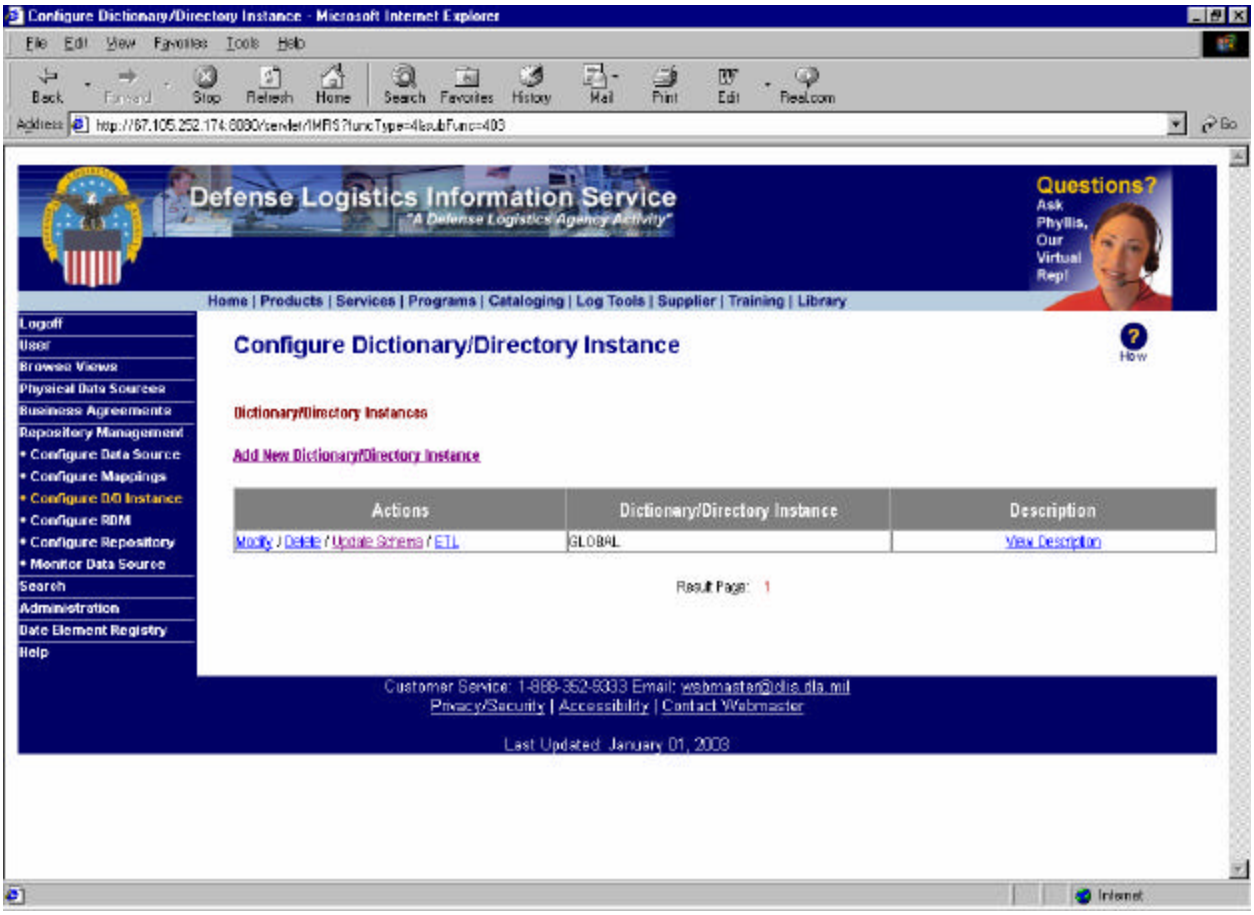


Figure 4.6.3- 1 Repository Management - Configure D/D Instance

4.6.3.1. Add New D/D Instance

Click on the *Configure D/D Instance* link and click on the *Add New D/D Instance* link (See Figure 4.6.3.1- 1). A new window with the caption “Add New Dictionary/Directory” will pop up (See Figure 4.6.3.1- 2).

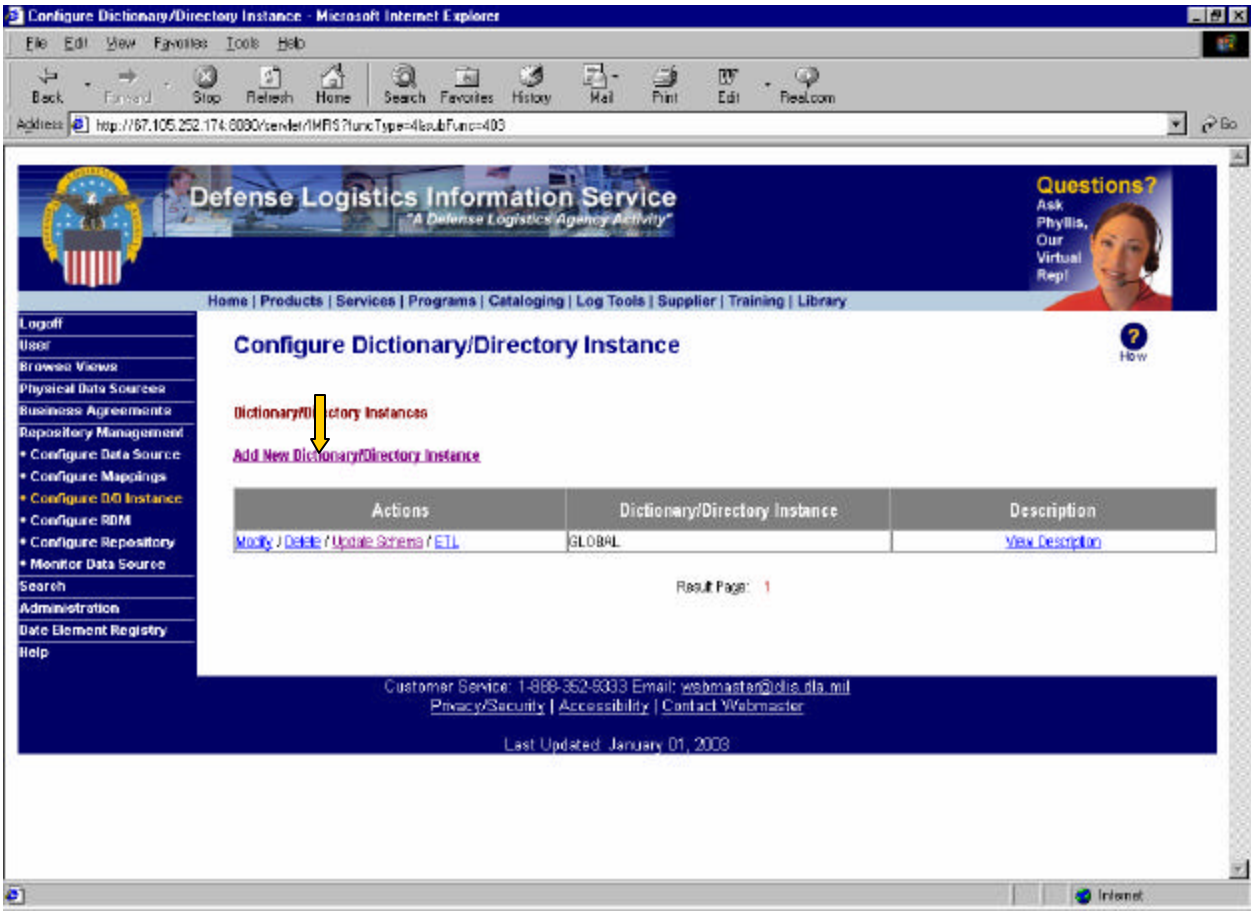


Figure 4.6.3.1- 1 Configure D/D Instance – Add New D/D Instance

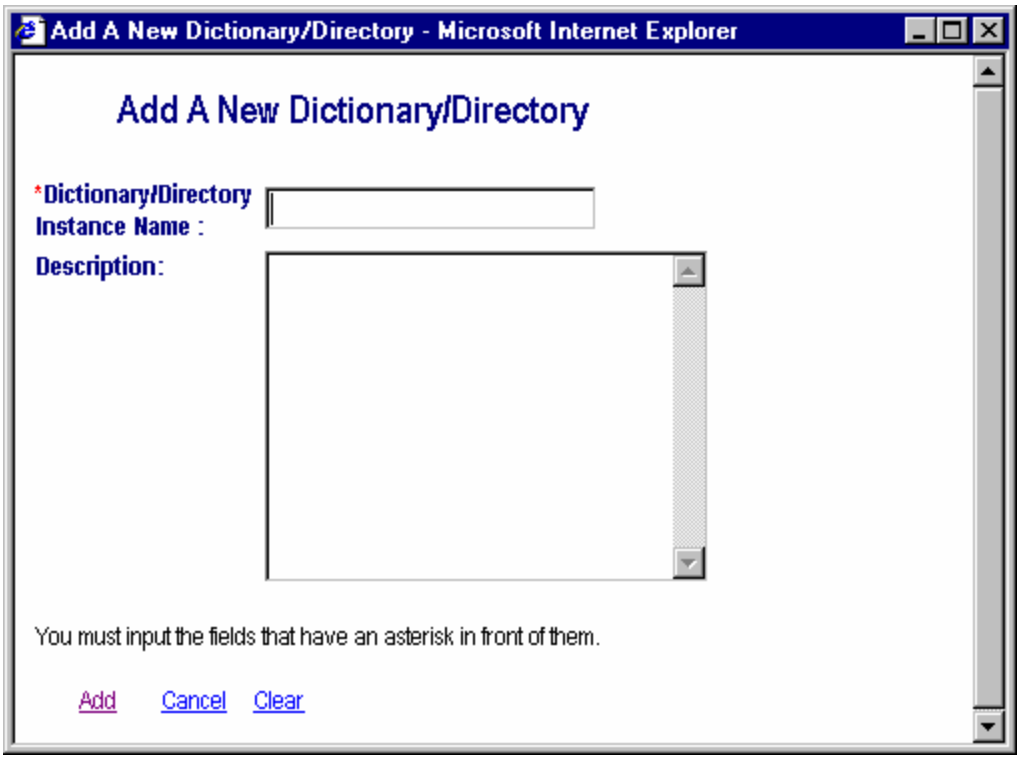


Figure 4.6.3.1- 2 Configure D/D Instance – Add New D/D Instance

Not all of the fields on this window are required. Refer to Table 8 to identify required fields and other important parameters.

Table 8 Add D/D Instance Field Parameters

Field	Requirements
D/D Instance Name	Required (30 characters)
Description	Optional (2000 characters)

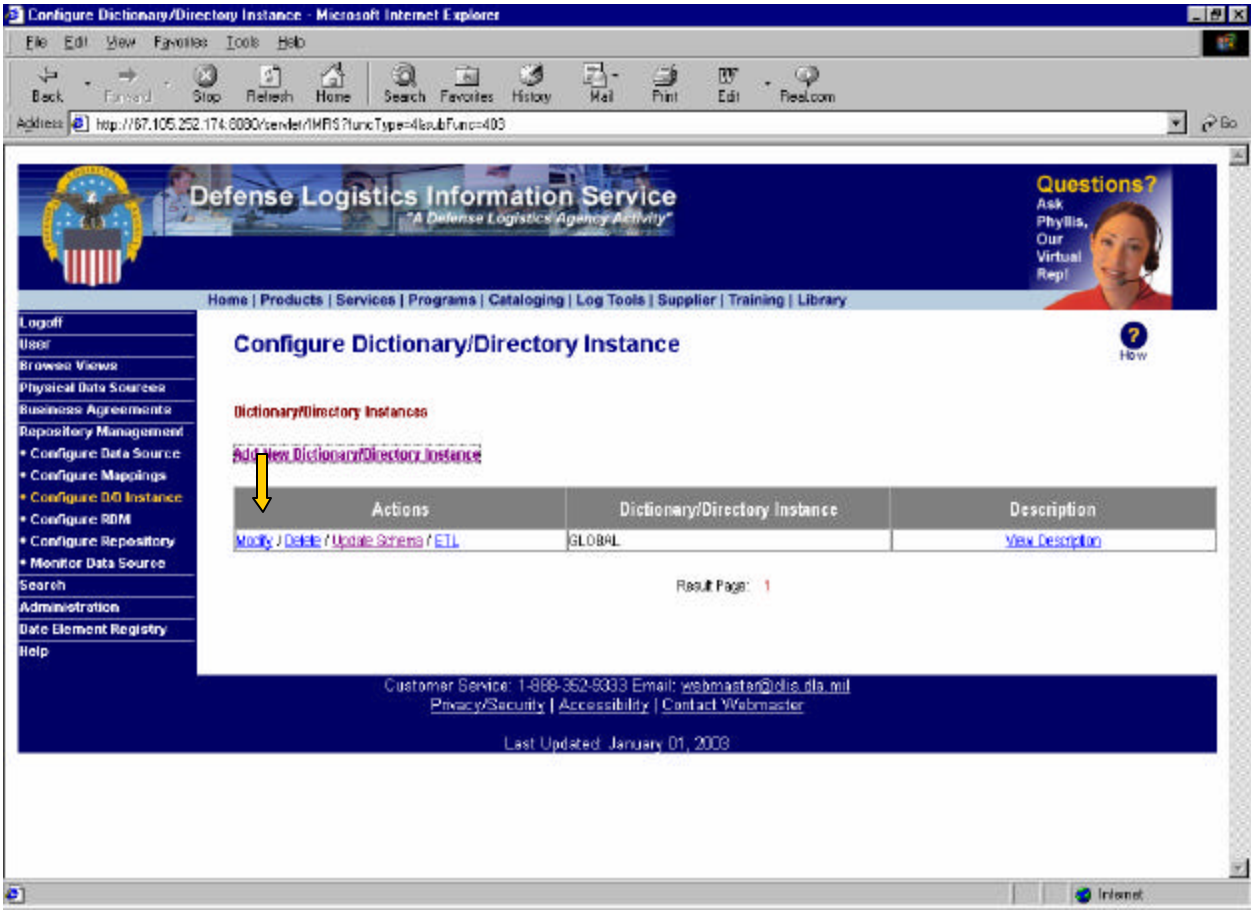
If any of the data does not meet the field requirements, then an error dialog box will pop up with a detailed explanation as to why the error has occurred. Click the *OK* button to close the dialog; otherwise, the new window will be closed (See Figure 4.6.3.1- 3).

Figure 4.6.3.1- 3 Configure D/D Instance – Add New D/D Instance Error Message

4.6.3.2. Modify D/D Instance

Click on the *Configure D/D Instance* link, and then click on the *Modify* link under the Actions heading to update D/D instance information (See Figure 4.6.3.2- 1). A new window with the caption “Modify a Dictionary/Directory” will pop up (See

Figure 4.6.3.2- 2). Click on the *Update* link to save the D/D Instance description, and



then the new window will be closed.

Figure 4.6.3.2- 1 Configure D/D Instance – Modify A D/D Instance

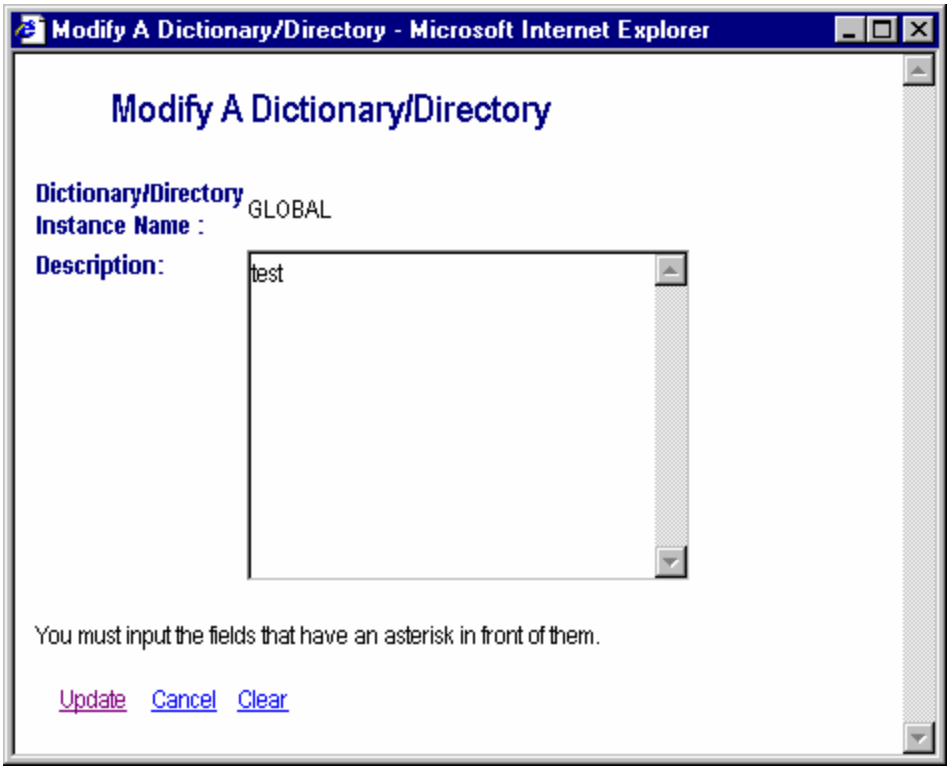


Figure 4.6.3.2- 2 Configure D/D Instance – Modify A D/D Instance

4.6.3.3. Delete D/D Instance

Click on the *Configure D/D Instance* link, and then click the *Delete* link to delete a D/D Instance (See Figure 4.6.3.3- 1). A dialog box will pop up with an explanatory message to remind the user that the delete function is permanent. The data is not recoverable. Click the *OK* button to delete the D/D Instance; otherwise click the *Cancel* button to cancel the delete operation (See Figure 4.6.3.3- 2).

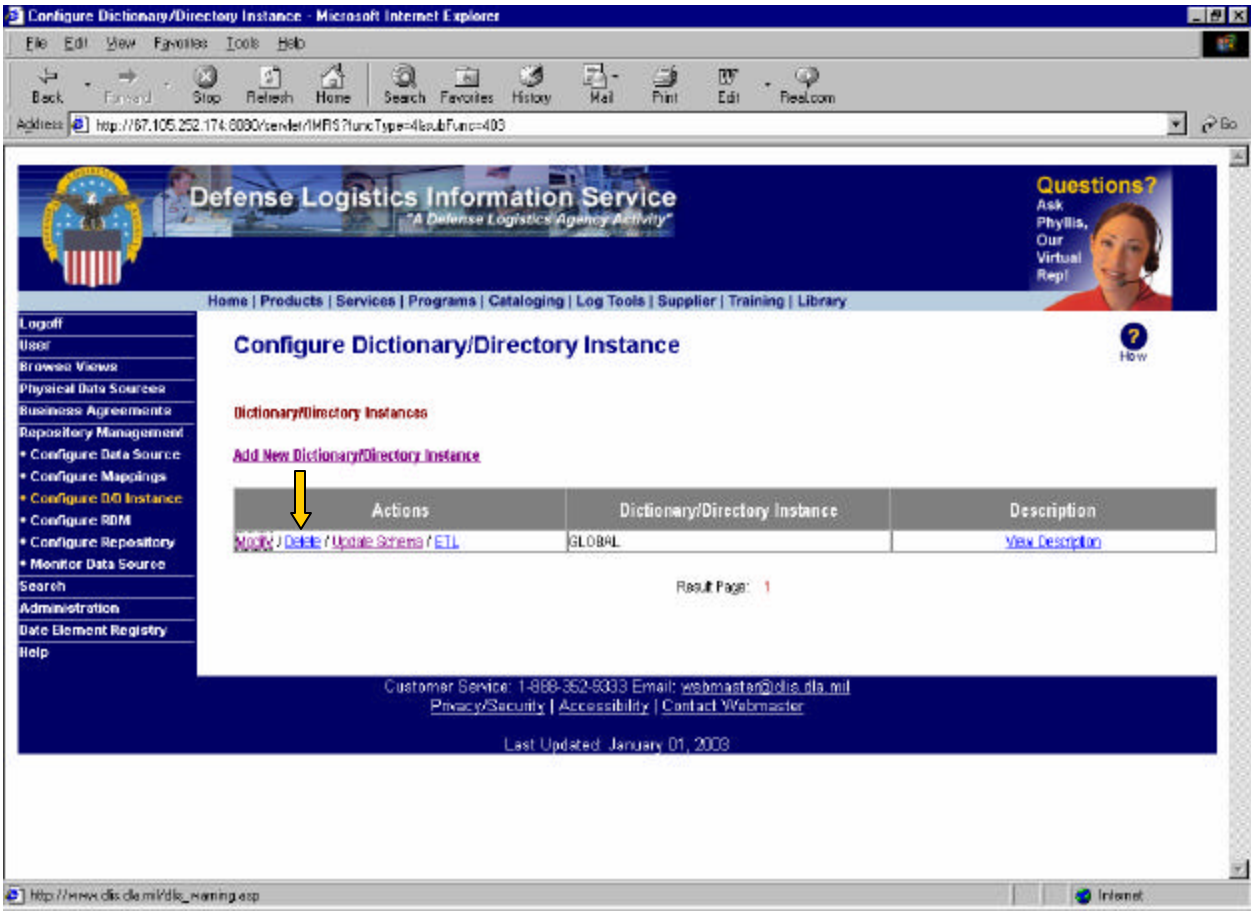


Figure 4.6.3.3- 1 Configure D/D Instance – Delete A D/D Instance

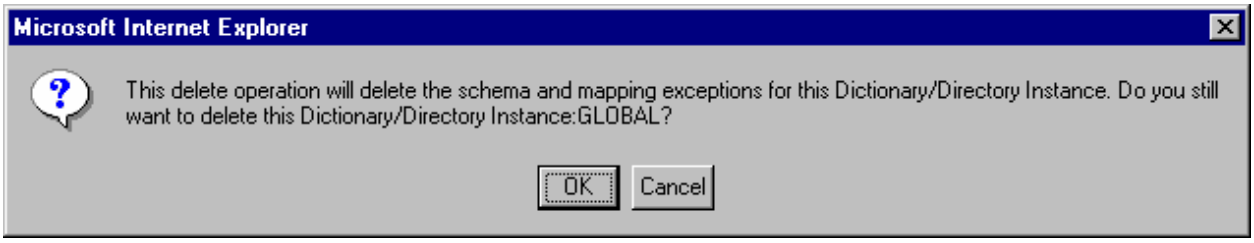


Figure 4.6.3.3- 2 Configure D/D Instance – Delete A D/D Instance

4.6.3.4. Update Schema

After clicking on the *Configure D/D Instance* link, click on the *Update Schema* link under the Actions heading to see the entire group of views in a D/D Instance (See

Figure 4.6.3.4- 1).

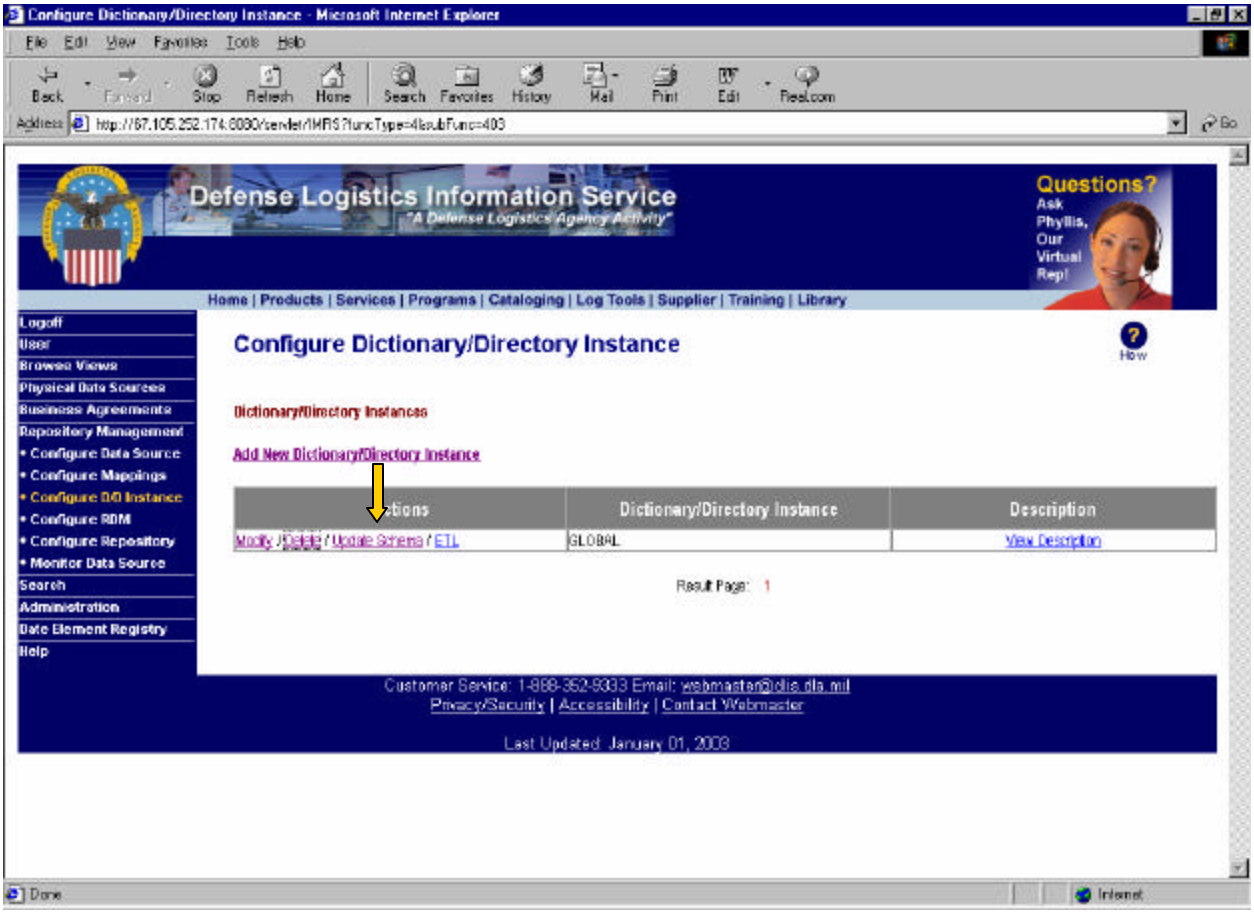


Figure 4.6.3.4- 1 Configure D/D Instance – Update Schema

4.6.3.4.a. Add Views

Only the views under the latest versioned model can be added to the Dictionary/Directory Instance.

Click on the Add Views link to add views to a Dictionary/Directory Instance (See Figure 4.6.3.4.a- 1). A new window with the caption “Add Views To Dictionary/Directory” will pop up (See Figure 4.6.3.4.a- 2).

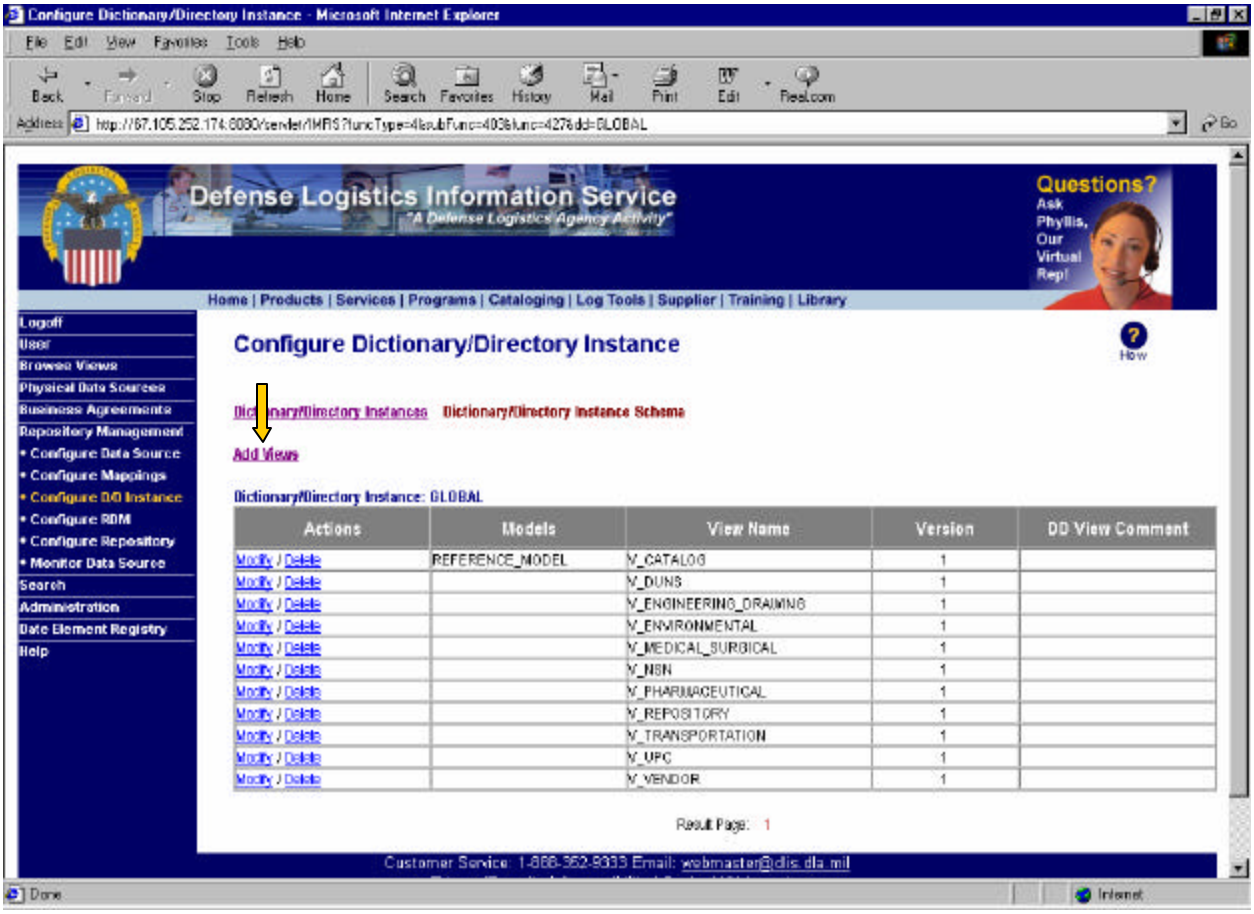


Figure 4.6.3.4.a- 1 Configure D/D Instance – Add Views

Click the check box to include views in the Dictionary/Directory Instance. Click *Add* to add the checked views to the Dictionary/Directory Instance.

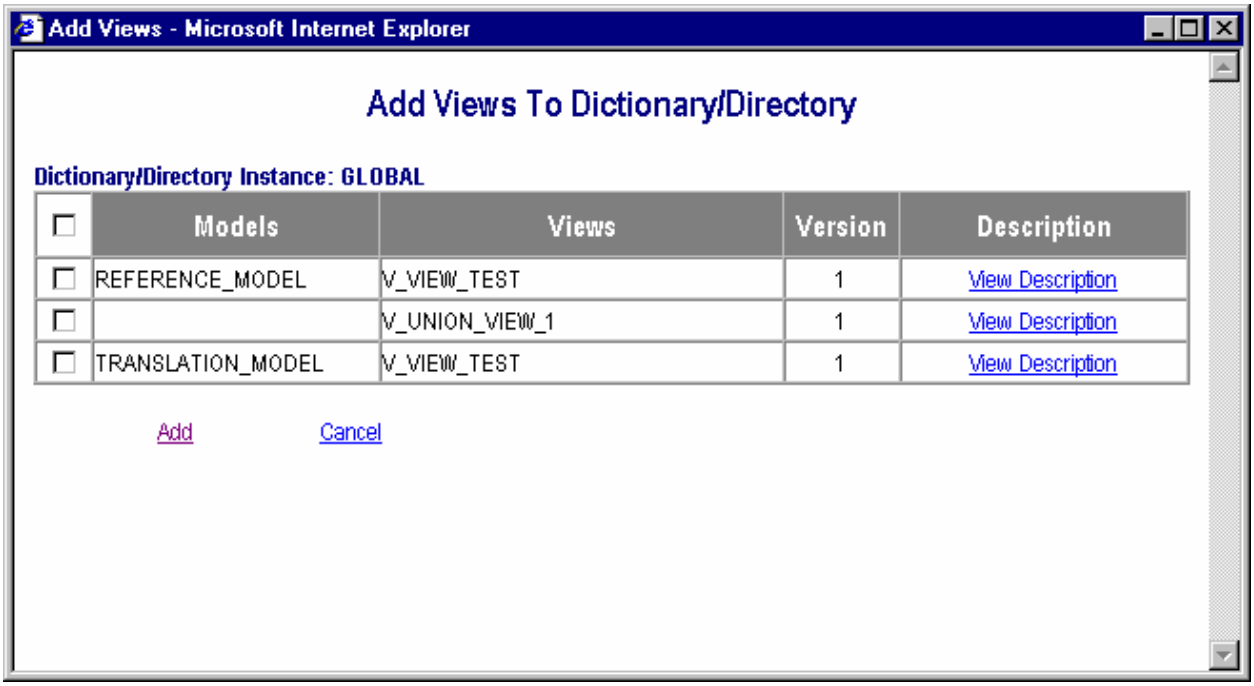


Figure 4.6.3.4.a- 2 Configure D/D Instance – Add Views

4.6.3.4.b. Modify Dictionary/Directory View Comment

Click on the *Update Schema* link, and then click on the *Modify* link to update the Dictionary/Directory View Comment (See Figure 4.6.3.4.b- 1).

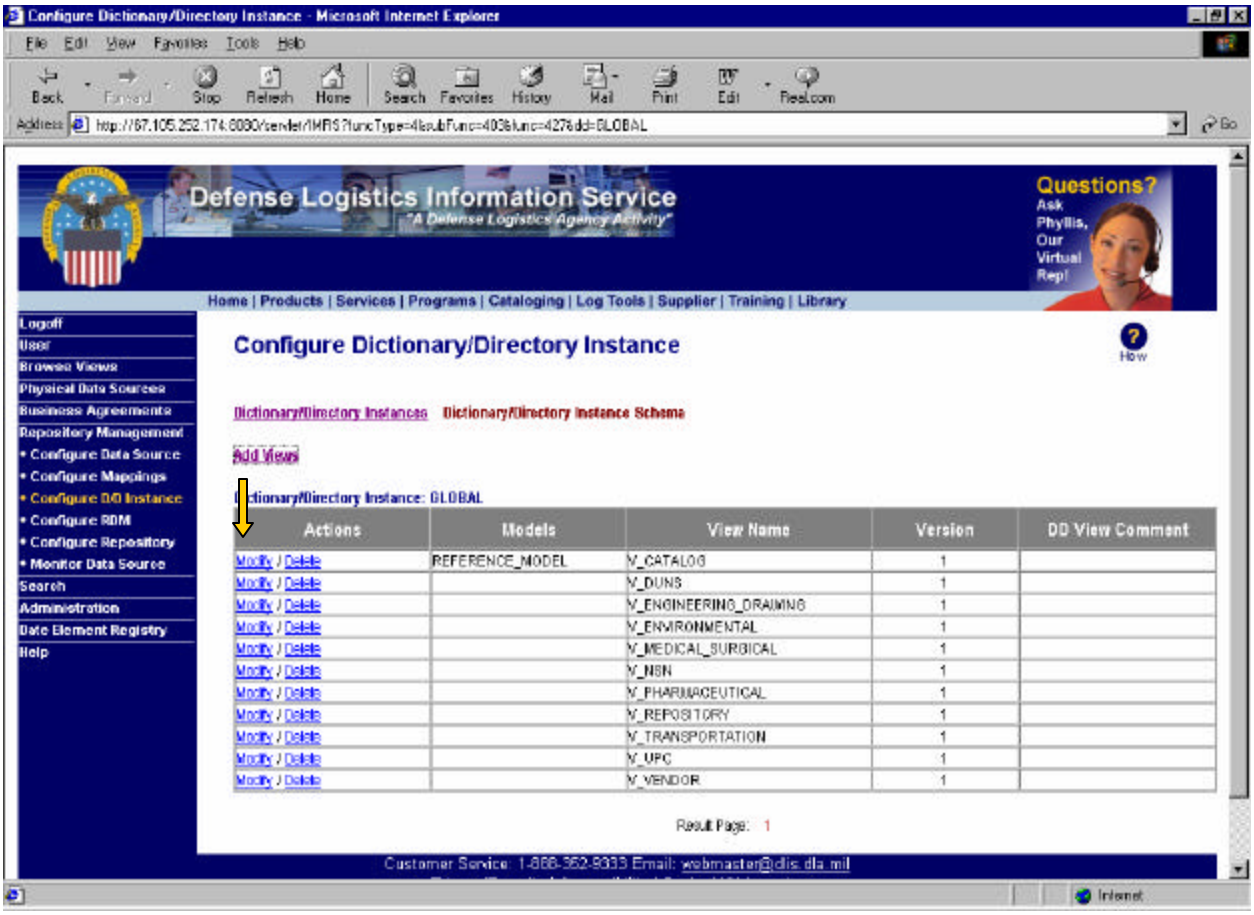


Figure 4.6.3.4.b- 1 Configure D/D Instance – Modify D/D View

The Dictionary/Directory View Comment is used to describe the need for inclusion of this view in the Dictionary/Directory Instance. The comment field is optional and has 2000 characters (See Figure 4.6.3.4.b- 2).

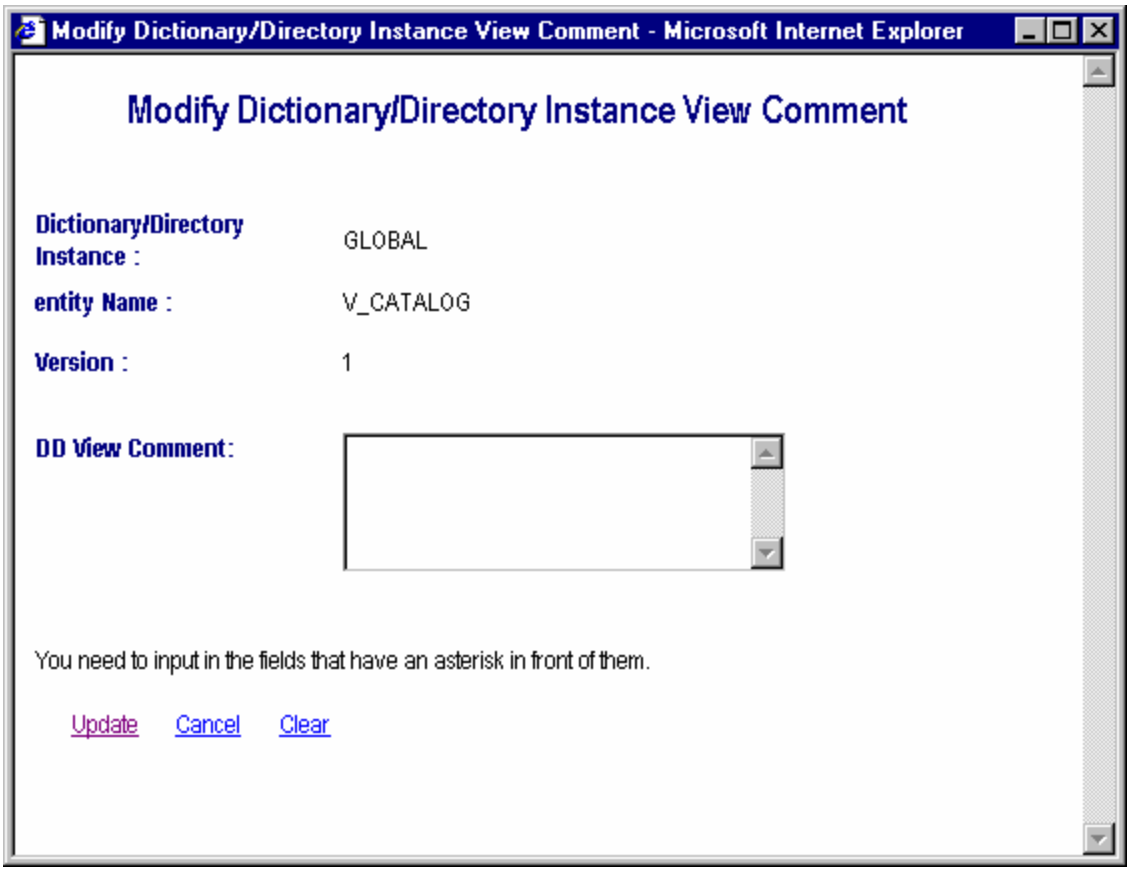


Figure 4.6.3.4.b- 2 Configure D/D Instance – Modify D/D View Comment

4.6.3.4.c. Delete View From Dictionary/Directory Instance

Click on *Delete* link to delete the view from the Dictionary/Directory Instance (See Figure 4.6.3.4.c- 1).

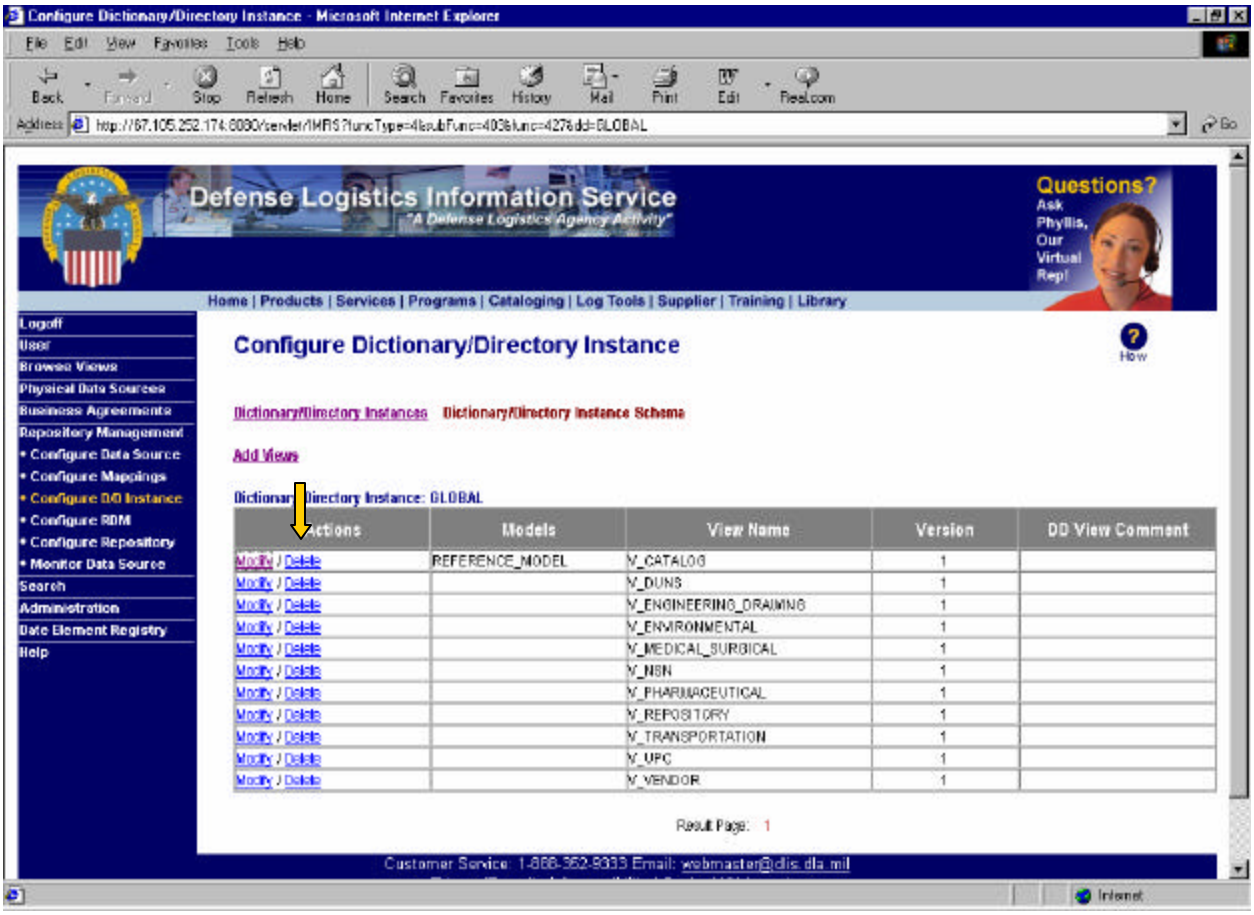


Figure 4.6.3.4.c- 1 Configure D/D Instance – Modify D/D

4.6.3.5. Extract Transform Load (ETL)

ETL is a common term for the warehouse load process comprising a set of data movement operations. The ETL Scenario starts by defining a CWM Transformation model for movement from a data source to a data target.

Click on *ETL* link to show the ETL input screen (See Figure 4.6.3.5- 1).

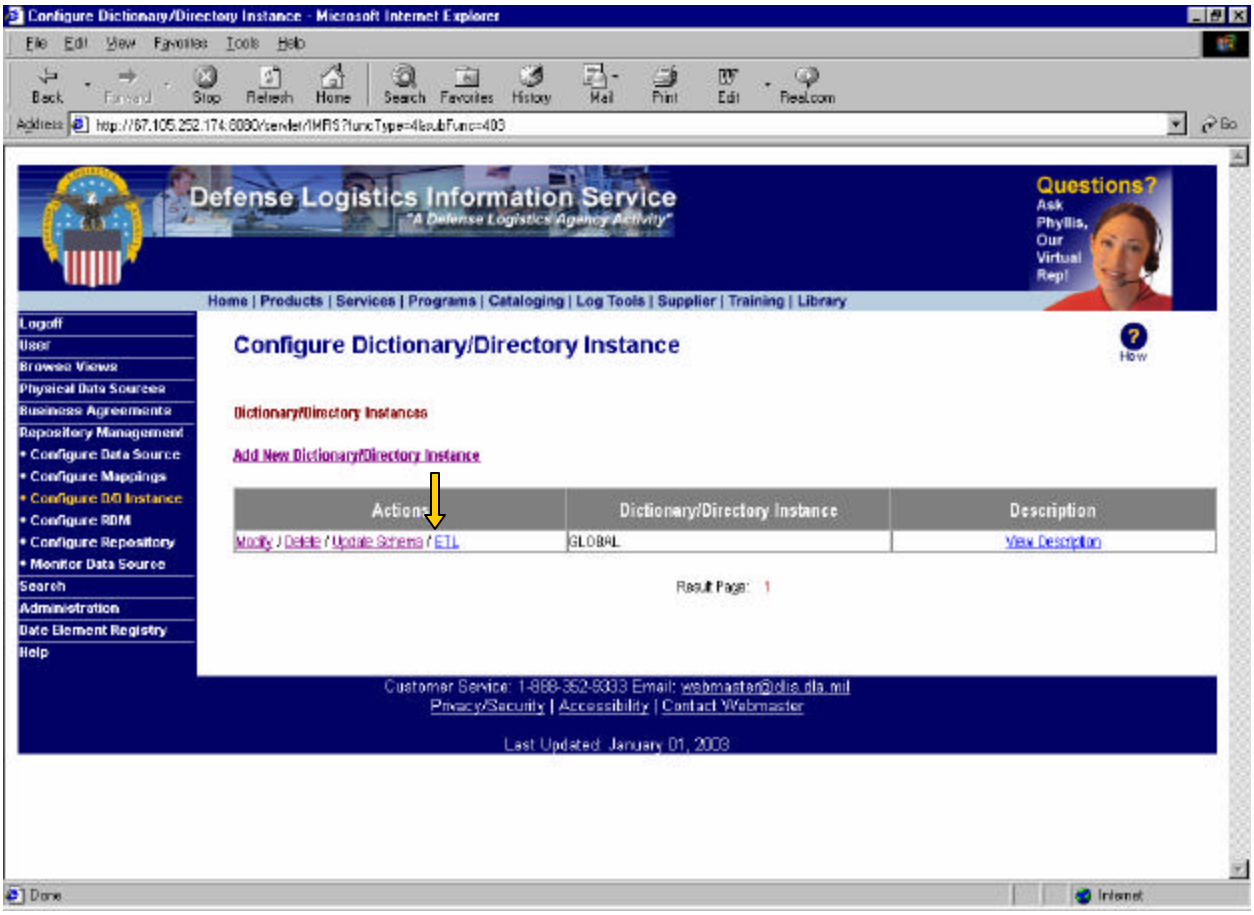


Figure 4.6.3.5- 1 Configure D/D Instance – ETL

On ETL screen, you have to provide the file name that will be used to store the data (See Figure 4.6.3.5- 2).

The data will be transformed into .xml format and will be stored in web server under Dlis/ETLFiles (See Figure 4.6.3.5- 3).

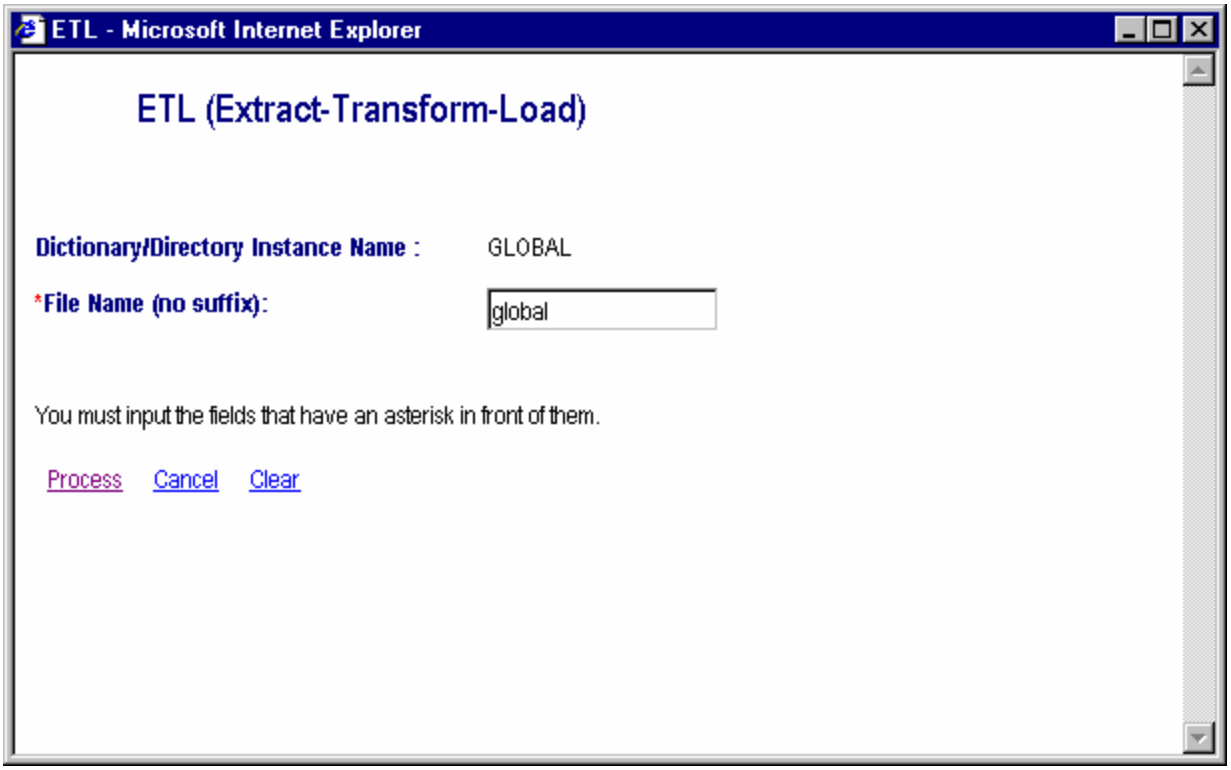


Figure 4.6.3.5- 2 Configure D/D Instance – ETL

Click on file link to see the content of the data (See Figure 4.6.3.5- 4). If you want to download the file, point the cursor on to the file link and right click the mouse to save the file to your local machine.

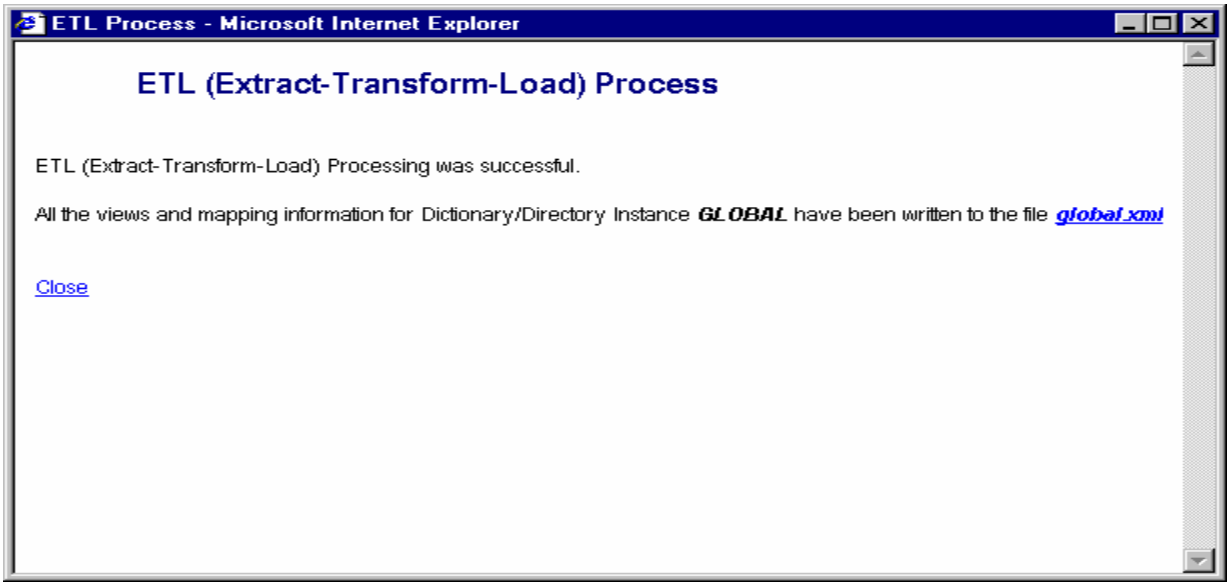


Figure 4.6.3.5- 3 Configure D/D Instance – ETL

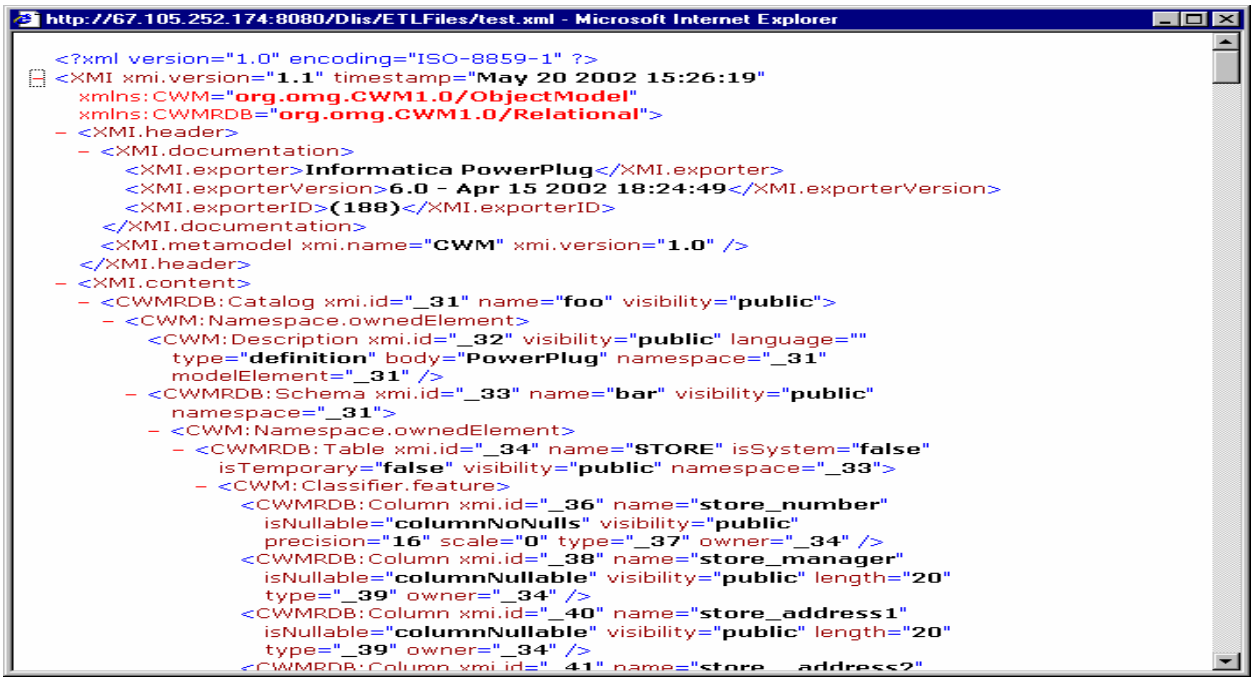


Figure 4.6.3.5- 4 Configure D/D Instance – ETL

4.6.4. Repository Management - Configure Reference Data Model

The Configure Reference Data Model function allows the user to maintain the Reference Data Model.

4.6.4.1. Baseline Indicator

The Baselined indicator describes the status of the versioned data source.

When the latest versioned Reference Data Model is baselined, the user can create a new version of the model with unbaselined status.

4.6.4.2. RDM Versions

Click the *Reference Data Model* link to Add/Modify/Delete the Reference Data Model (RDM) (See Figure 4.6.4.2- 1).

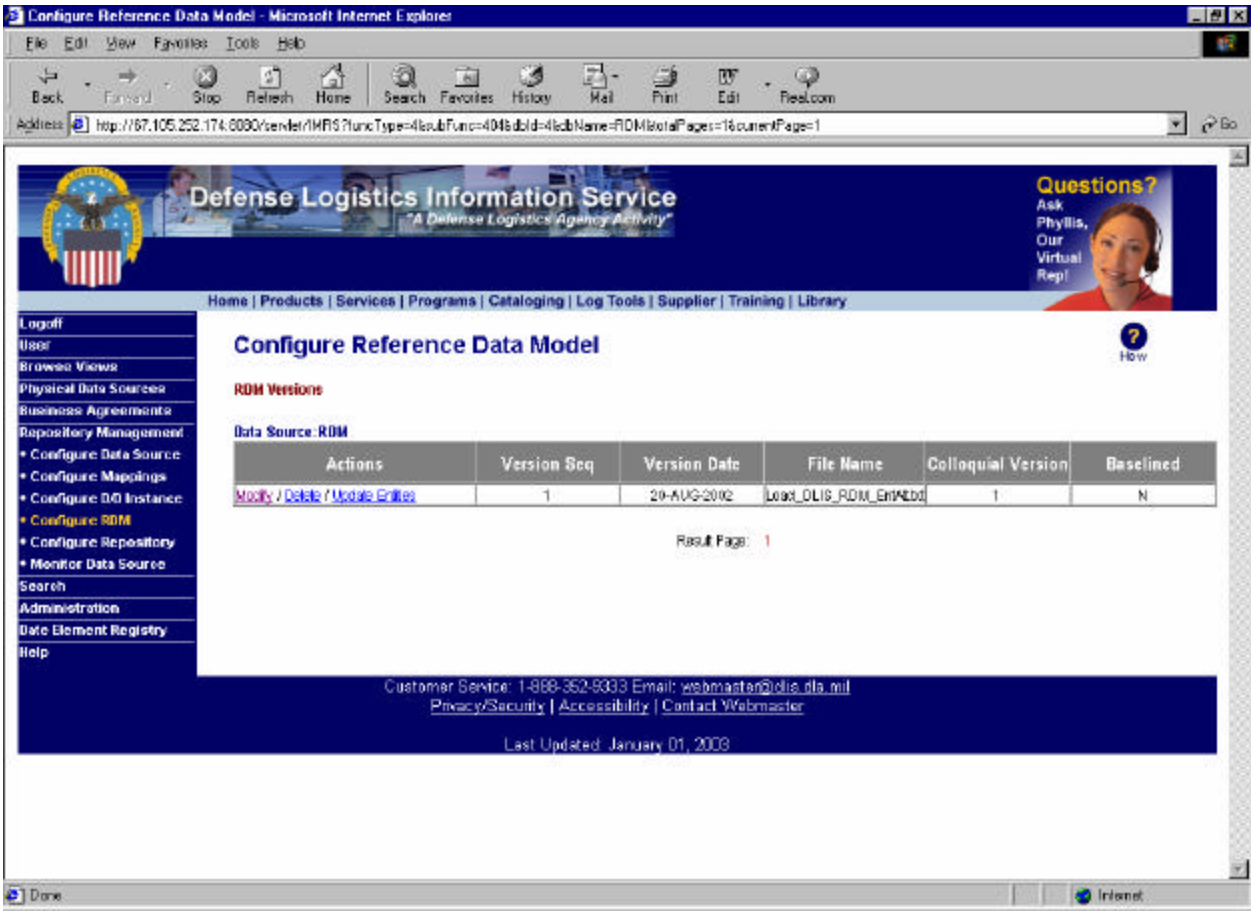


Figure 4.6.4.2- 1 Configure Reference Data Model (Unbaselined)

4.6.4.2.a. Add A New Version

Only if the latest version of the Reference Data Model (RDM) is baselined, (that is, if the baseline indicator's value is set to 'Y'), can the user add a new RDM version. Click the *Reference Data Model* link, and then click the *Add A New Version* link (See Figure 4.6.4.2.a- 1). A new window with the caption "Add Reference Data Model New Version" will pop up (See Figure 4.6.4.2.a- 2).

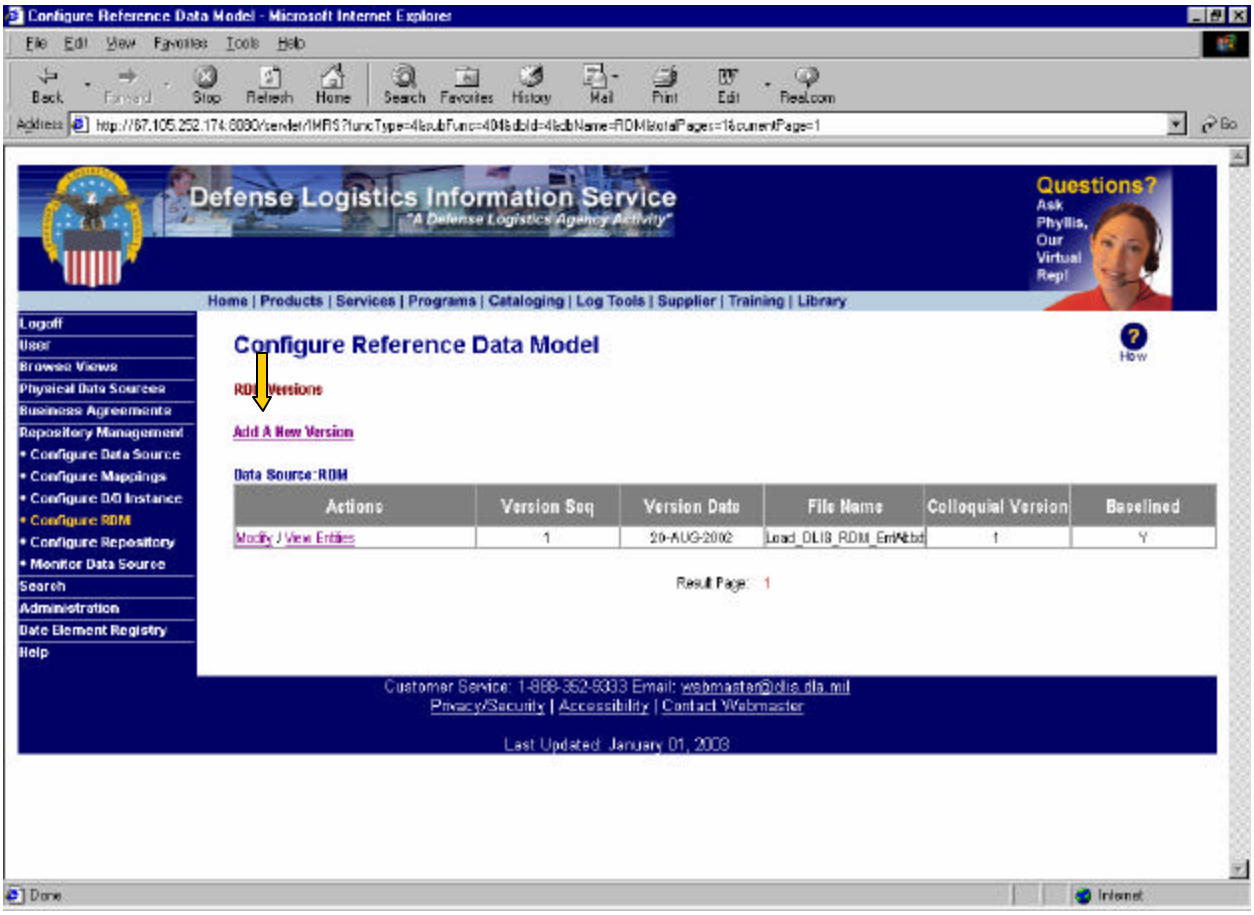


Figure 4.6.4.2.a- 1 Configure Reference Data Model – Add A New Version

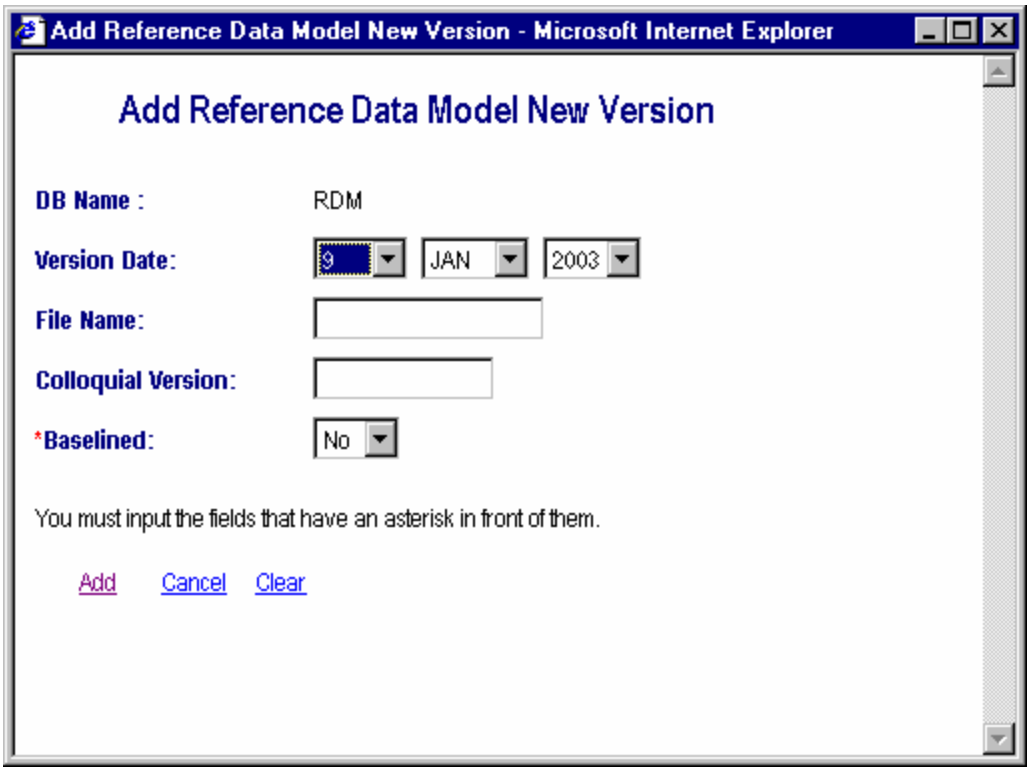


Figure 4.6.4.2.a- 2 Configure Reference Data Model – Add A New Version

Not all of the fields on this window are required. Refer to Table 9 to identify required fields and other important parameters.

Table 9 Adding A New Version Field Parameters

Field	Requirements
DB Name	Display
Version Date	Optional (default System Date)
File Name	Optional (255 characters)
Colloquial Version	Optional (20 characters)
Baselined	**Required** (1 character, use drop down list to select)

Click *Add* to store the new RDM version with an unbaselined indicator.

4.6.4.2.b. Modify RDM Version

After clicking on the *Reference Data Model* link, then click the *Modify* link under the Actions heading next to the RDM version sequence to change the versioned RDM information (See Figure 4.6.4.2.b- 1).

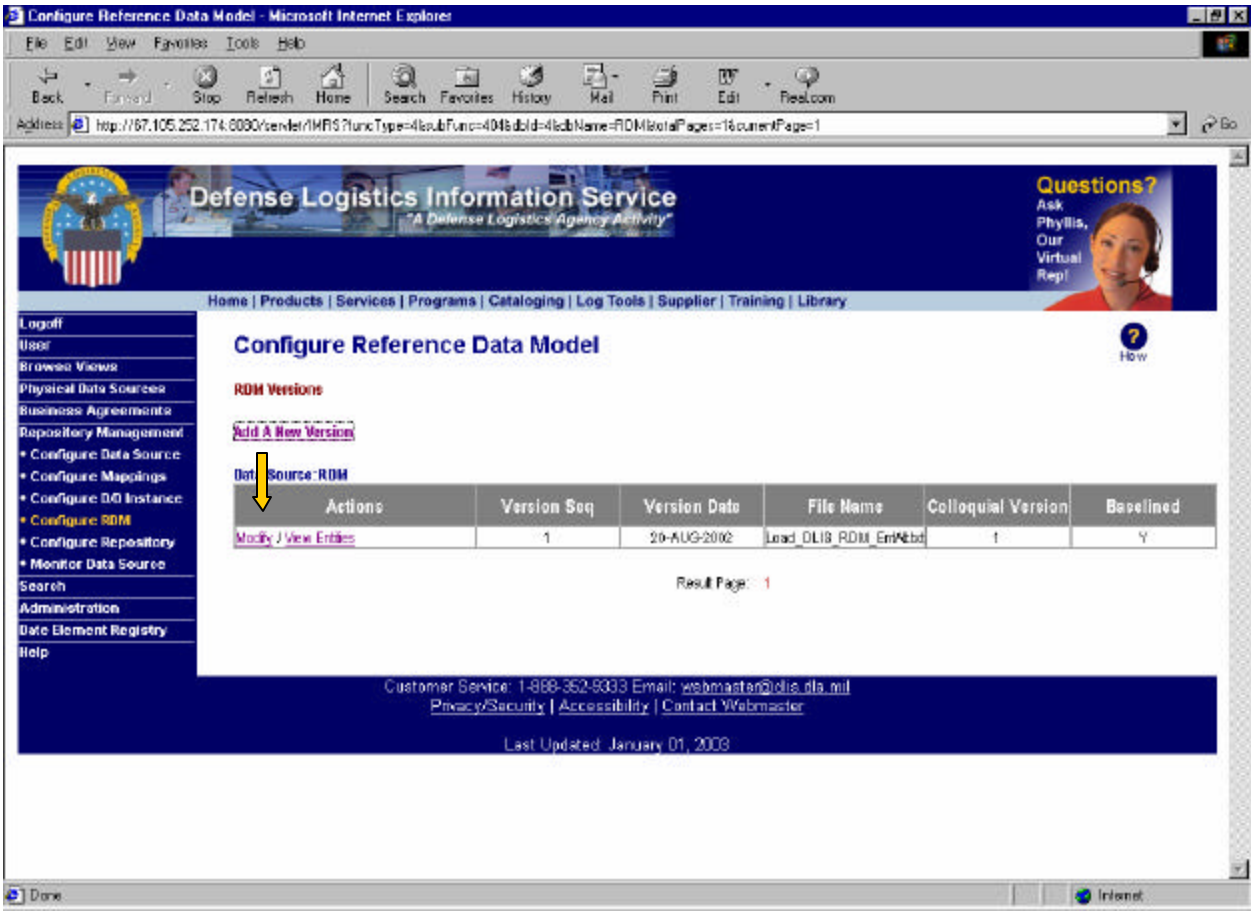


Figure 4.6.4.2.b- 1 Configure Reference Data Model - Modify RDM Version

A window with the caption “Modify Reference Data Model Version” will pop up. Click the *Update* link to save the changed information and to close the window (See Figure 4.6.4.2.b- 2). Alternatively, click the *Cancel* link under the Actions heading to cancel the modifications and close the window. Click the *Clear* link to remove all data from all of the boxes (including previously stored data).

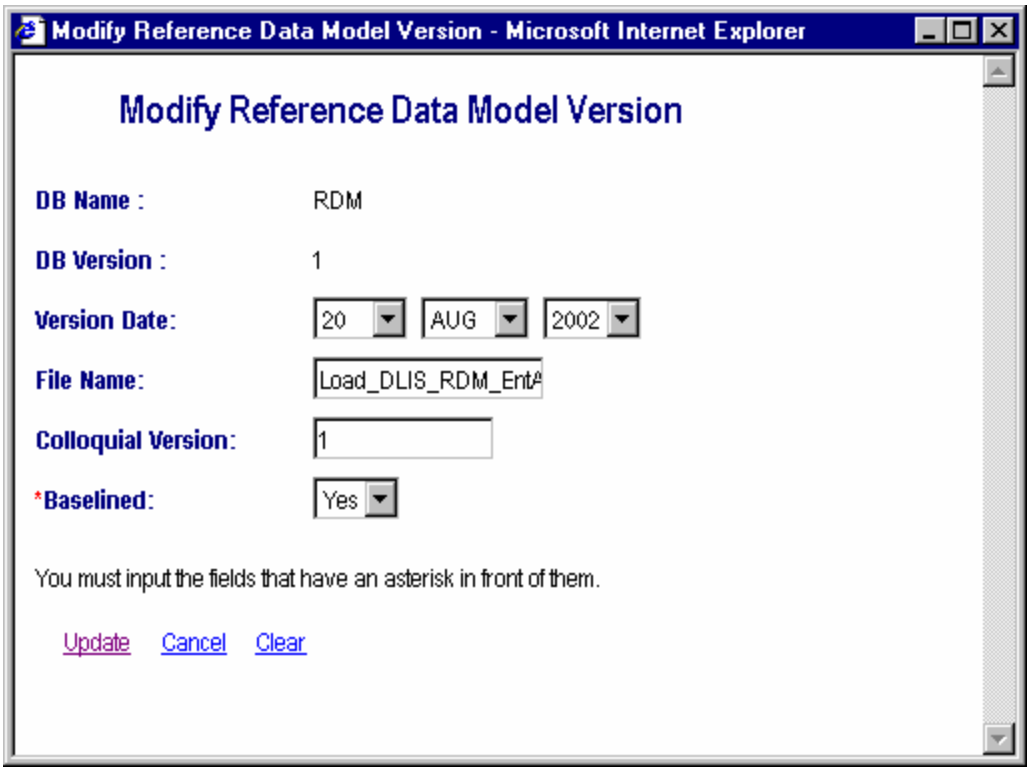


Figure 4.6.4.2.b- 2 Configure Reference Data Model - Modify RDM Version

4.6.4.2.c. Delete Versioned RDM

If the latest versioned RDM is unbaselined (that is, the baselined indicator's value is set to 'N'), the user can delete the RDM.

After clicking on the *Reference Data Model* link, then click the *Delete* link under the Actions heading next to the RDM version sequence to delete a versioned RDM (See Figure 4.6.4.2.c- 1).

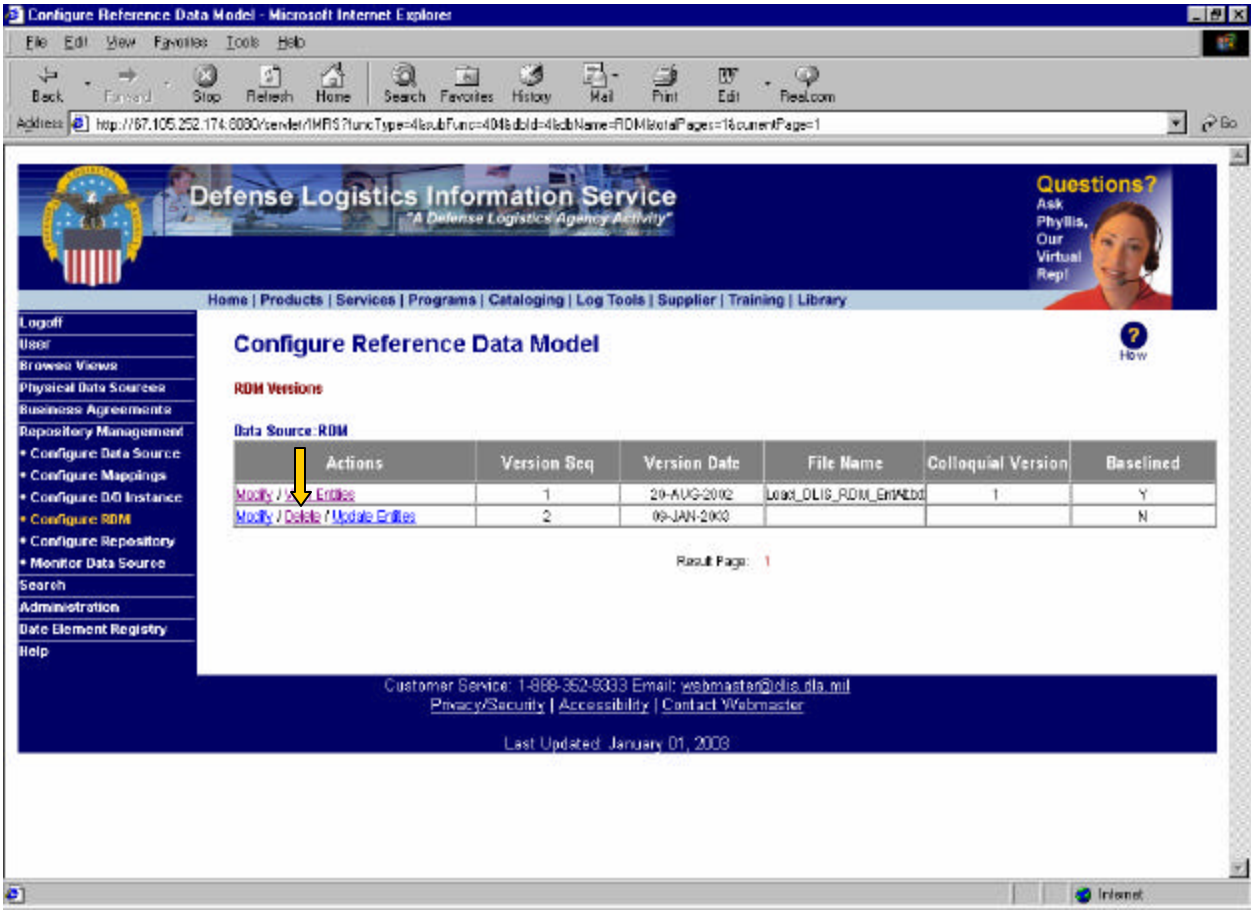


Figure 4.6.4.2.c- 1 Configure Reference Data Model - Delete Versioned RDM

If there were any entities created specifically for this latest, those entities cannot be deleted by this function. The user must explicitly delete those entities. In this case a dialog will pop up to explain why this versioned RDM cannot be deleted and will give additional instructions on what needs to be done in order to remove it. Click the *OK* button to close the dialog box (See Figure 4.6.4.2.c- 2).

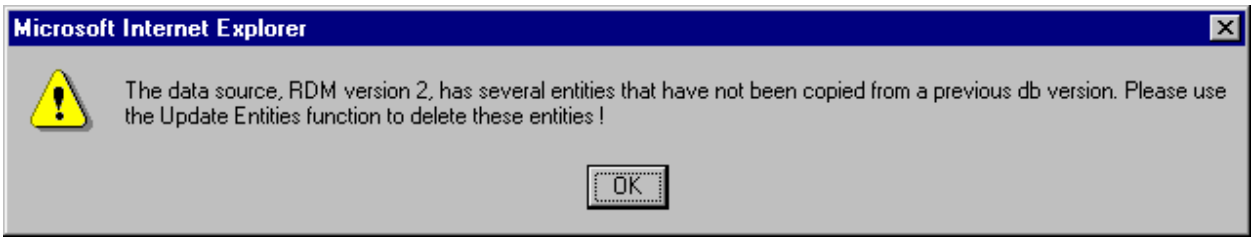


Figure 4.6.4.2.c- 2 Configure Reference Data Model - Delete Versioned RDM

4.6.4.3. Update Entities in RDM

After clicking on the *Configure RDM* from left menu, then click on the *Update Entities* link under the Actions heading next to the RDM version sequence to Add/Modify/Delete entity information for a versioned RDM (See Figure 4.6.4.3- 1).

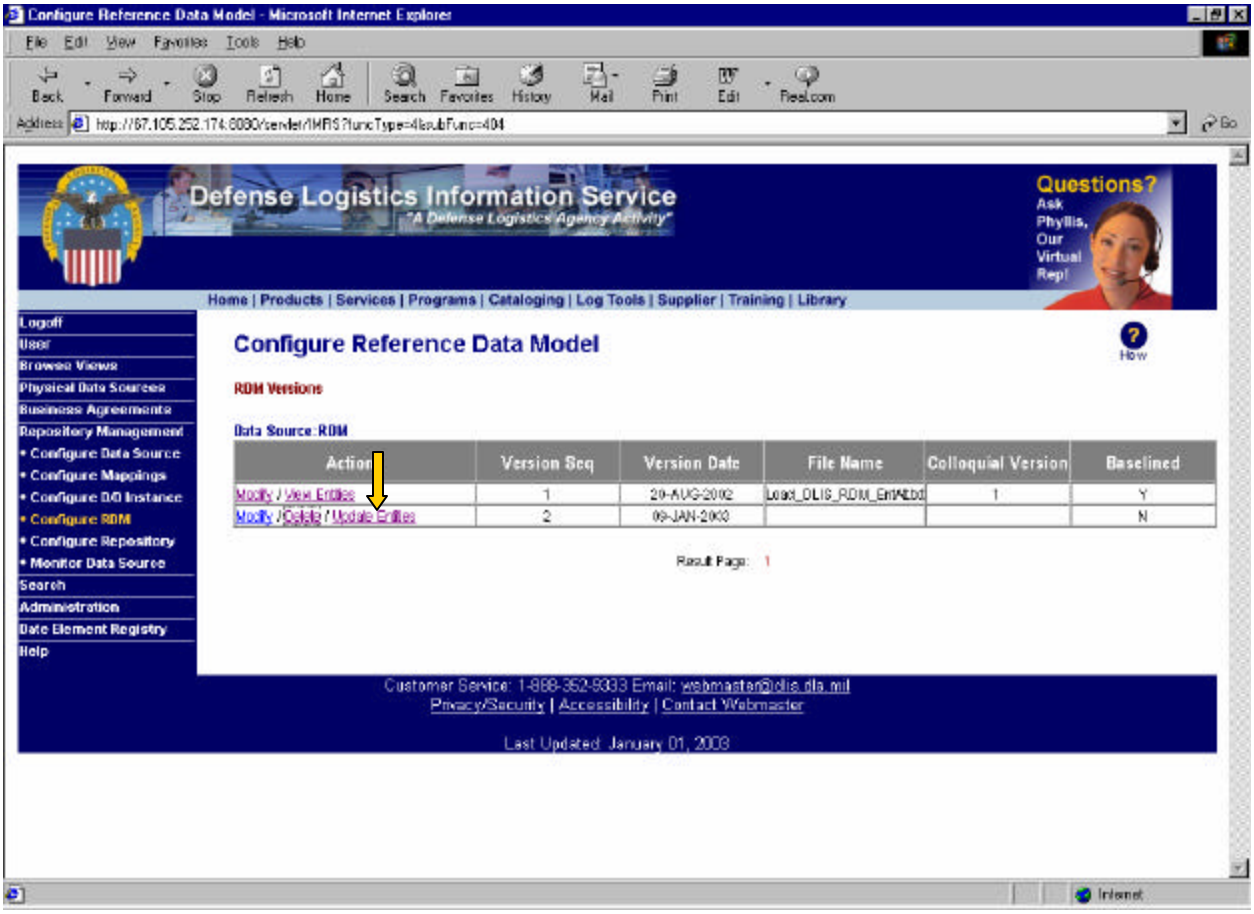


Figure 4.6.4.3- 1 Configure Reference Data Model - Update Entities

Only the latest versioned RDM will allow the end user to update its entities.

4.6.4.3.a. Add A New Entity

After clicking on the *Configure RDM* from left menu, click on the *Update Entities* link (The *Update Entities* link shows only when the RDM is unbaselined), and then click the *Add A New Entity* link to add an entity to a versioned RDM (See Figure 4.6.4.3.a- 1).

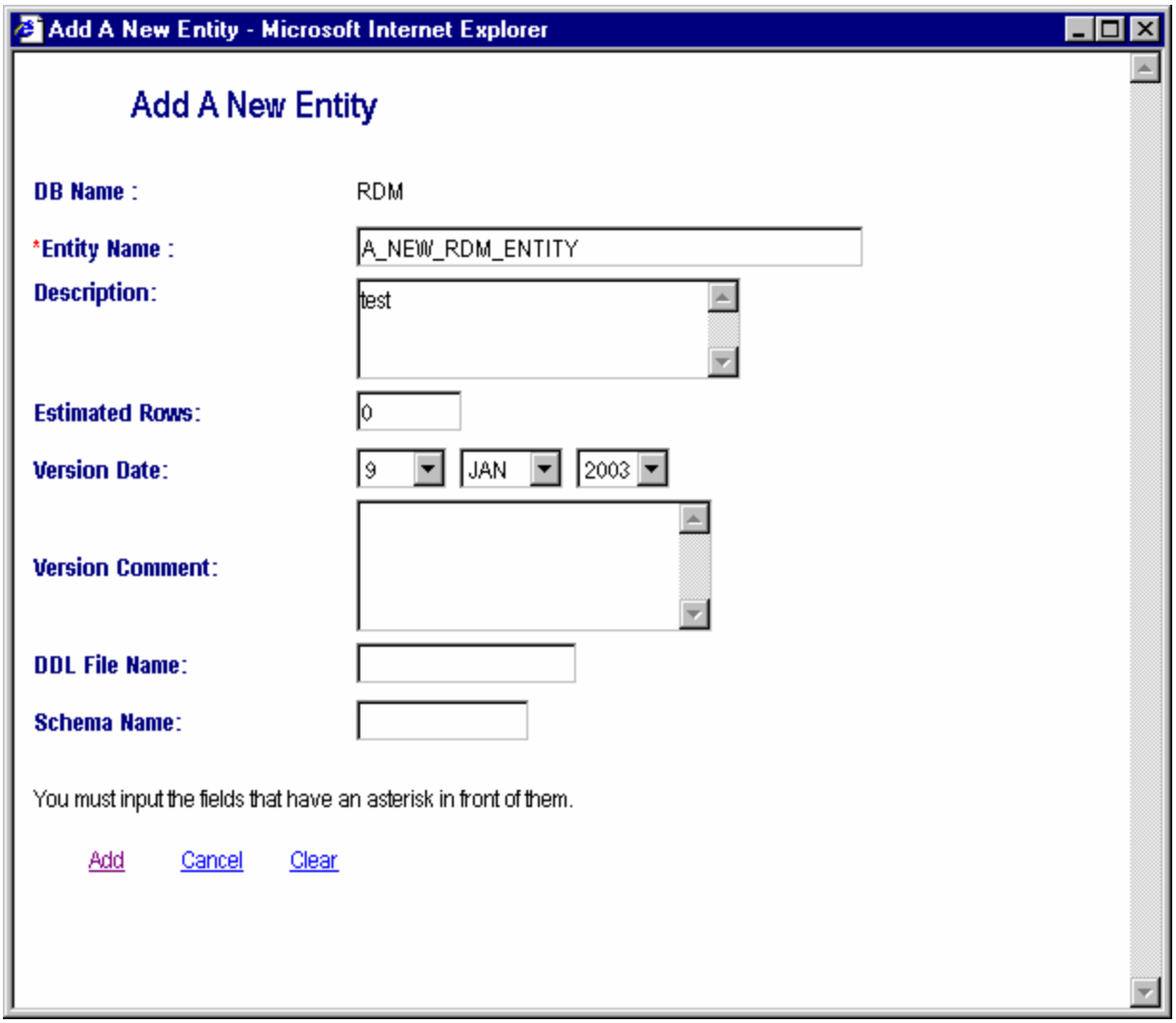


Figure 4.6.4.3.a- 1 Configure Reference Data Model - Add A New Entity

Not all of the fields on this window are required. Refer to Table 10 to identify the required fields and other important parameters.

Table 10 Adding A New Entity Field Parameters

Field	Requirements
DB Name	Display
Entity Name	**Required** (70 characters)
Description	Optional (2000 characters)
Estimated Rows	Optional (Integer Number)
Version Date	Optional (default System Date)
Version Comment	Optional (100 characters)
DDL File Name	Optional (255 characters)
Schema Name	Optional (30 characters)

Click *Add* to store the new entity with entity version sequence 1. Alternatively, click the *Cancel* link to cancel the modifications and close the window. Click the *Clear* link to erase all data in all of the boxes (including previously stored data).

If any of the data does not meet the field requirements, then an error dialog box will pop up with a detailed explanation as to why the error has occurred. Click the *OK* button to close the dialog; otherwise, the new window will be closed (See Figure 4.6.4.3.a- 2).

Figure 4.6.4.3.a- 2 Configure Reference Data Model – Add A New Entity Error Message

4.6.4.3.b. Add New Entity Version

If the entity came from a previously versioned RDM, the user can add a new version to change its schema.

After clicking on the *Reference Data Model* link, click on the *Update Entities* link, and then click on the *Add A New Version* to add a new version for an entity; the entity version sequence will be incremented by 1 (See Figure 4.6.4.3.b- 1, Figure 4.6.4.3.b - 2).

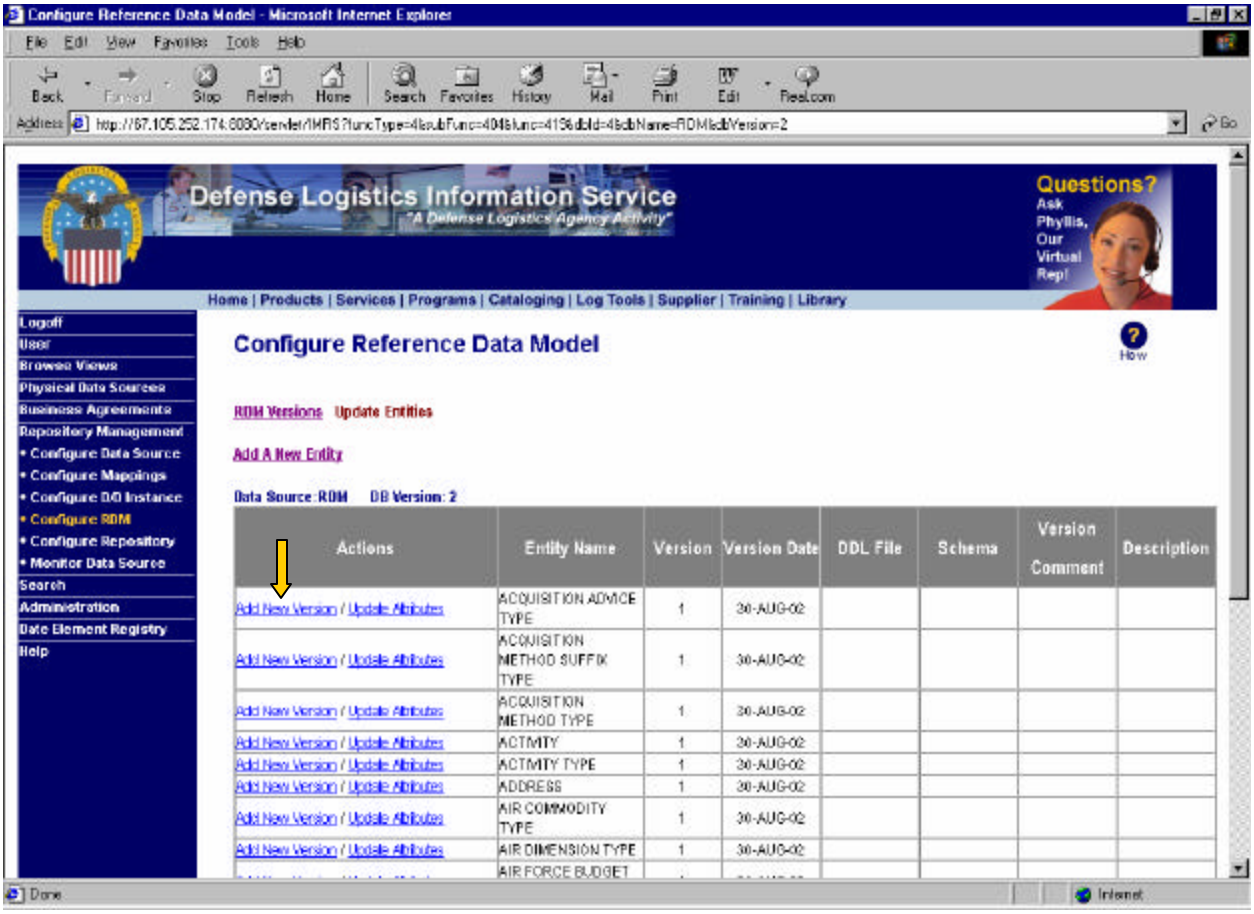


Figure 4.6.4.3.b- 1 Configure Reference Data Model - Add A New Entity Version

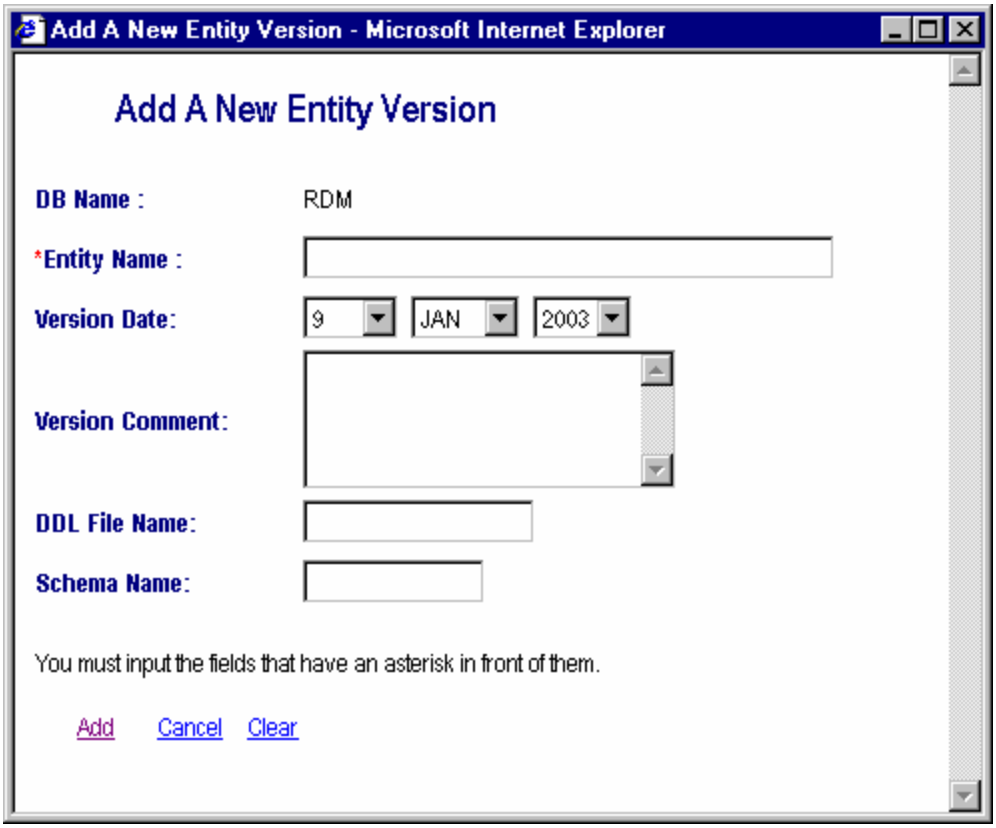


Figure 4.6.4.3.b- 2 Configure Reference Data Model - Add A New Entity Version

Not all of the fields on this window are required. Refer to Table 10 to identify required fields and other important parameters.

Click *Add* to store it with entity version incremented by 1. If any field does not meet the requirement, an error dialog box will pop up to inform the user of the error. Click the *OK* button to close the dialog box; otherwise, the new window will be closed (See Figure 4.6.4.3.b- 3).

Figure 4.6.4.3.b- 3 Configure Reference Data Model – Add A New Entity Version Error Message

4.6.4.3.c. Modify An Entity

After clicking on the *Reference Data Model* link, click on the *Update Entities* link. And then click on the *Modify* link under the Actions heading next to the entity name to modify entity information (See Figure 4.6.4.3.c- 1).

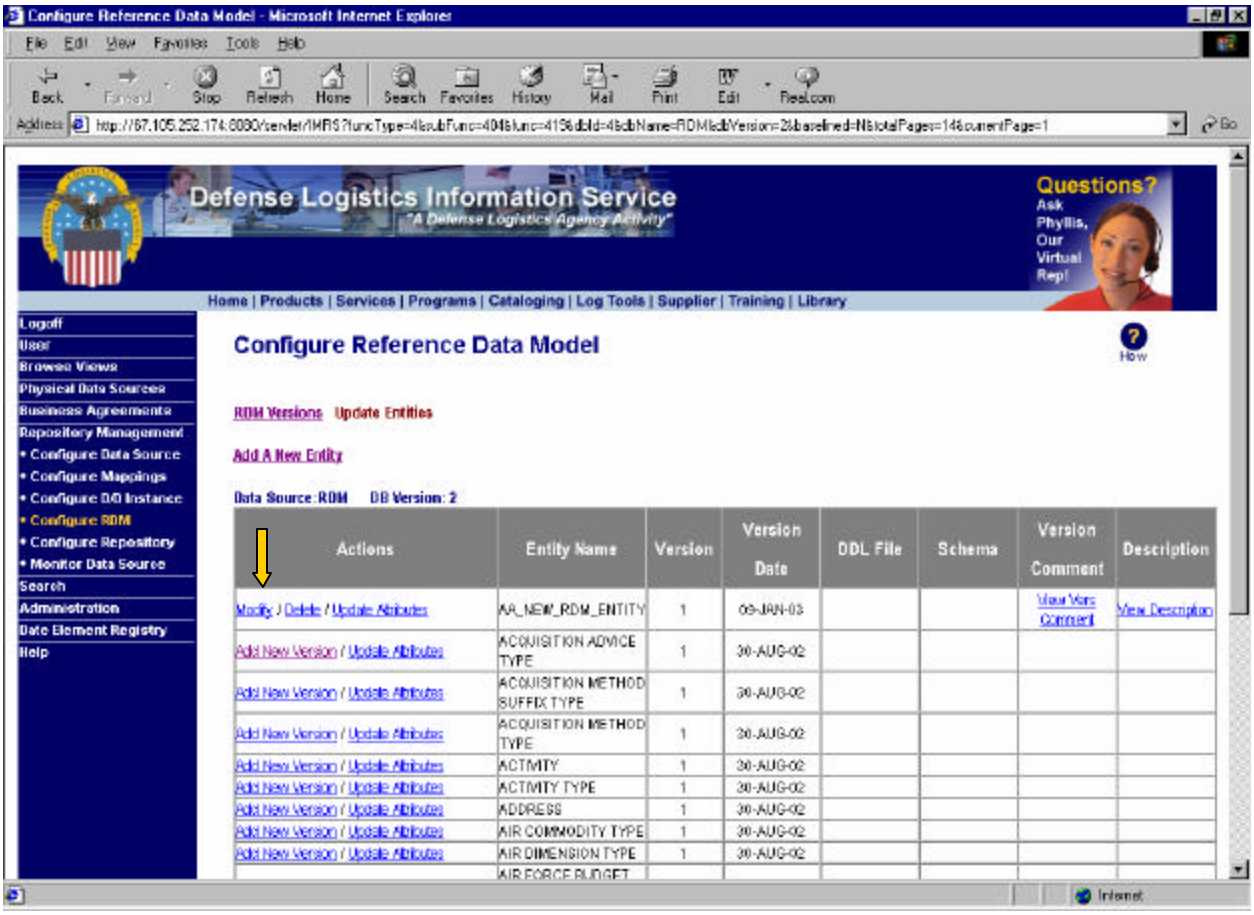


Figure 4.6.4.3.c- 1 Configure Reference Data Model - Modify An Entity

A new window with the caption “Modify An Entity” will pop up. Click the *Update* link to save the change and close the new window (See Figure 4.6.4.3.c- 2).

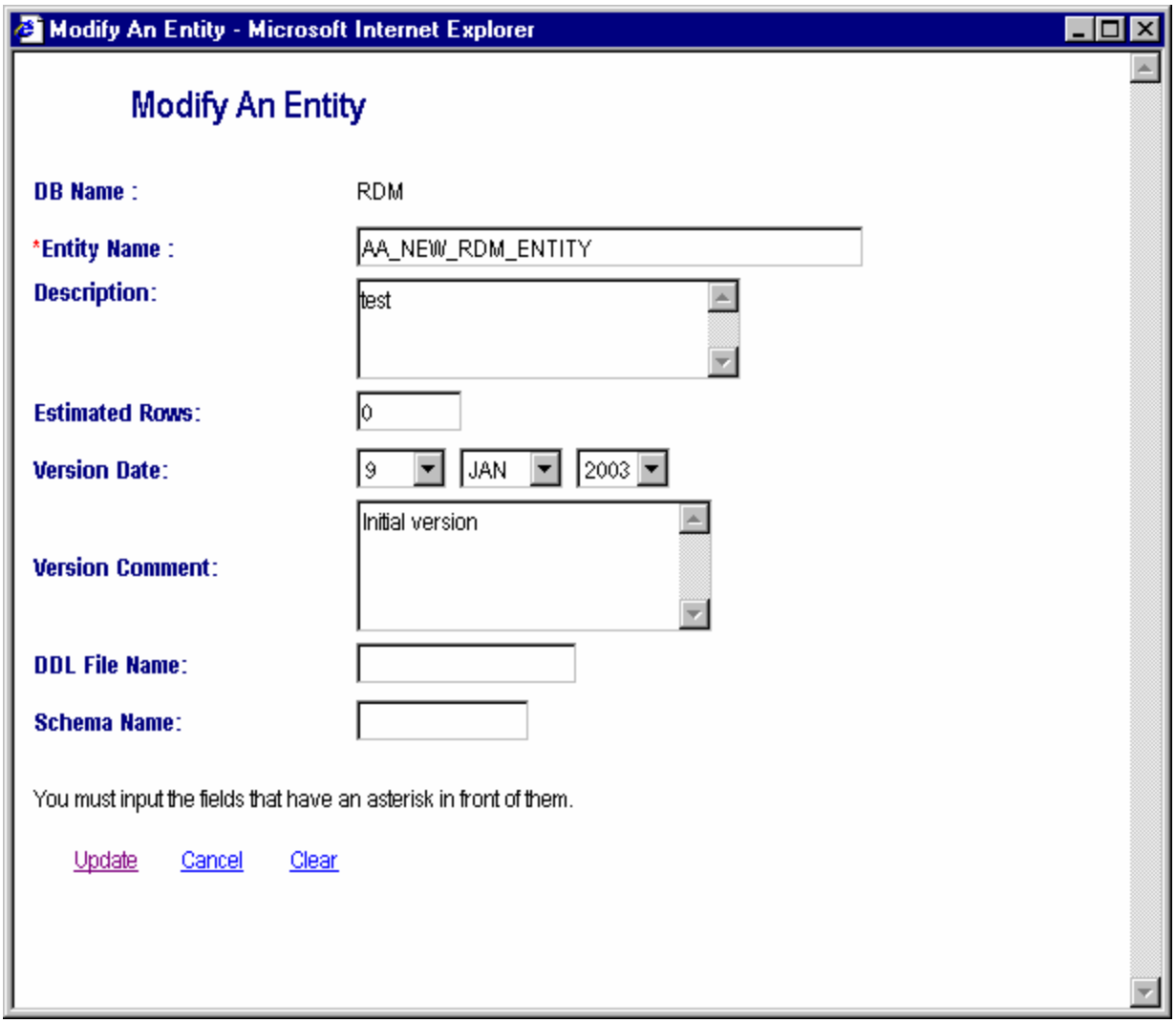


Figure 4.6.4.3.c- 2 Configure Reference Data Model - Modify An Entity

4.6.4.3.d. Delete An Entity

Only if the latest versioned RDM is unbaselined (that is, with the baseline indicator's value set to 'N') will the end user be allowed to delete entity information. That entity may only be created specifically for this data source version (that is, it was not copied from nor did it come from a previous data source version).

After clicking on the *Reference Data Model* link, click on the *Update Entities* link, and then click on the *Delete* link under the Actions heading next to the entity name to delete an entity. All information mapped to this entity will be lost. A dialog will pop up to verify the delete operation. Click the *OK* button to delete this entity; all information mapped to this entity will also be lost. Click *Cancel* to cancel this operation. If the information is deleted, it cannot be recovered (See Figure 4.6.4.3.d- 1).

If an entity's latest entity version sequence number is greater than 1, then deleting this entity will cause the previously versioned entity to be the latest versioned entity.

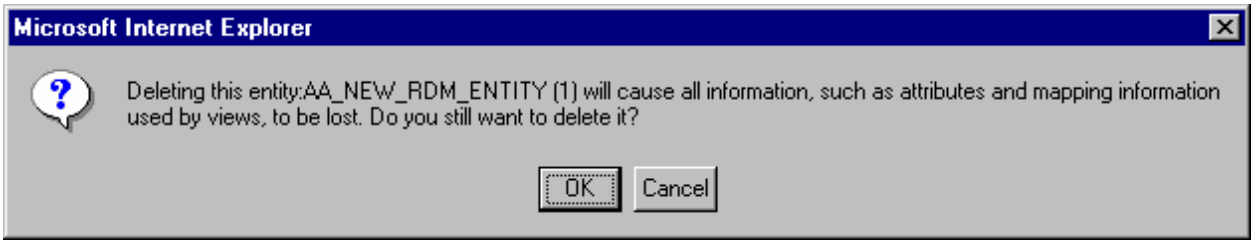


Figure 4.6.4.3.d- 1 Configure Reference Data Model - Delete An Entity

4.6.4.4. View Entities in RDM

If the Reference Data Model is baselined, the user can view its entity and attribute information (See Figure 4.6.4.4- 1).

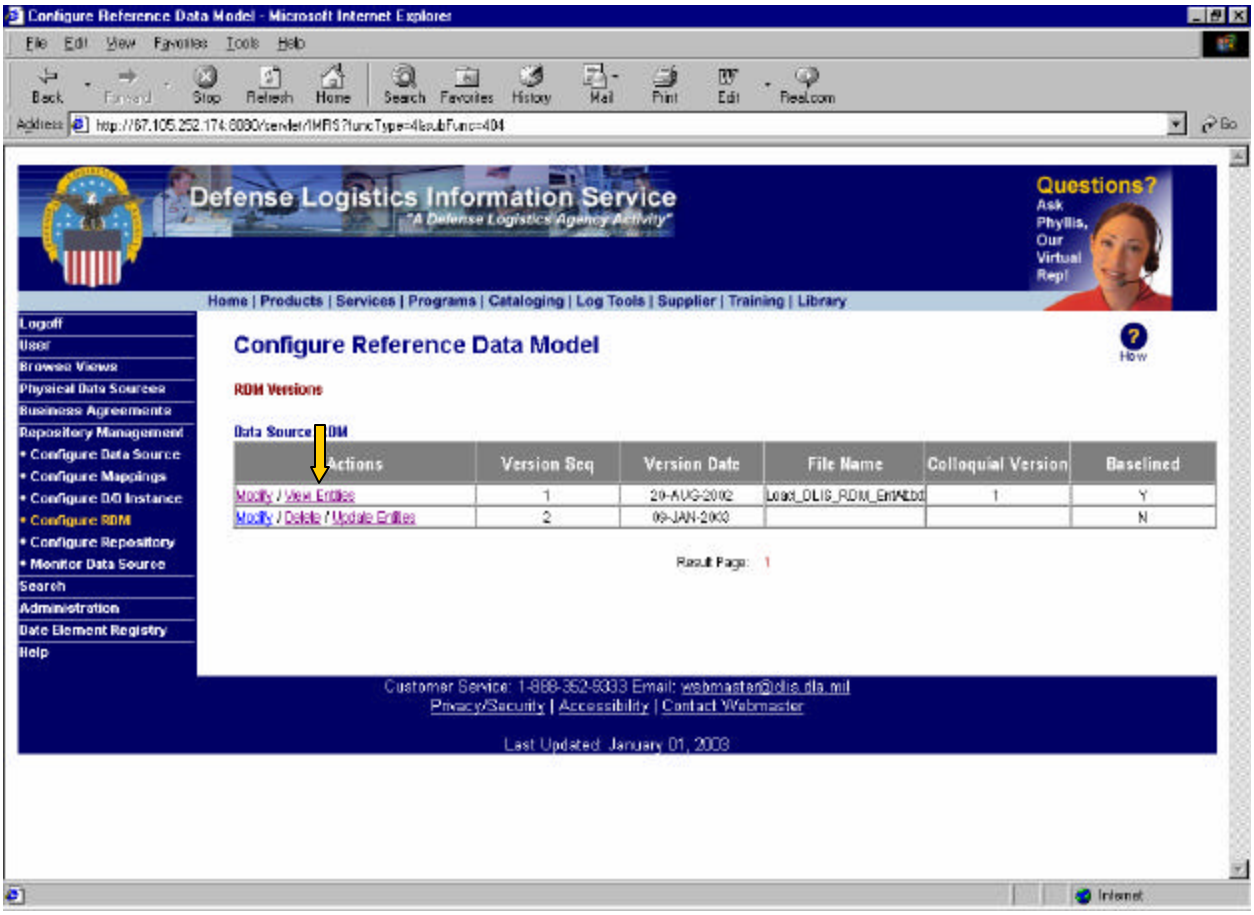


Figure 4.6.4.4- 1 Configure Reference Data Model - View Entities in RDM

A list of entities is displayed (See Figure 4.6.4.4- 2). Click the *View Attributes* link to see the attribute information for each entity (See Figure 4.6.4.4- 3).

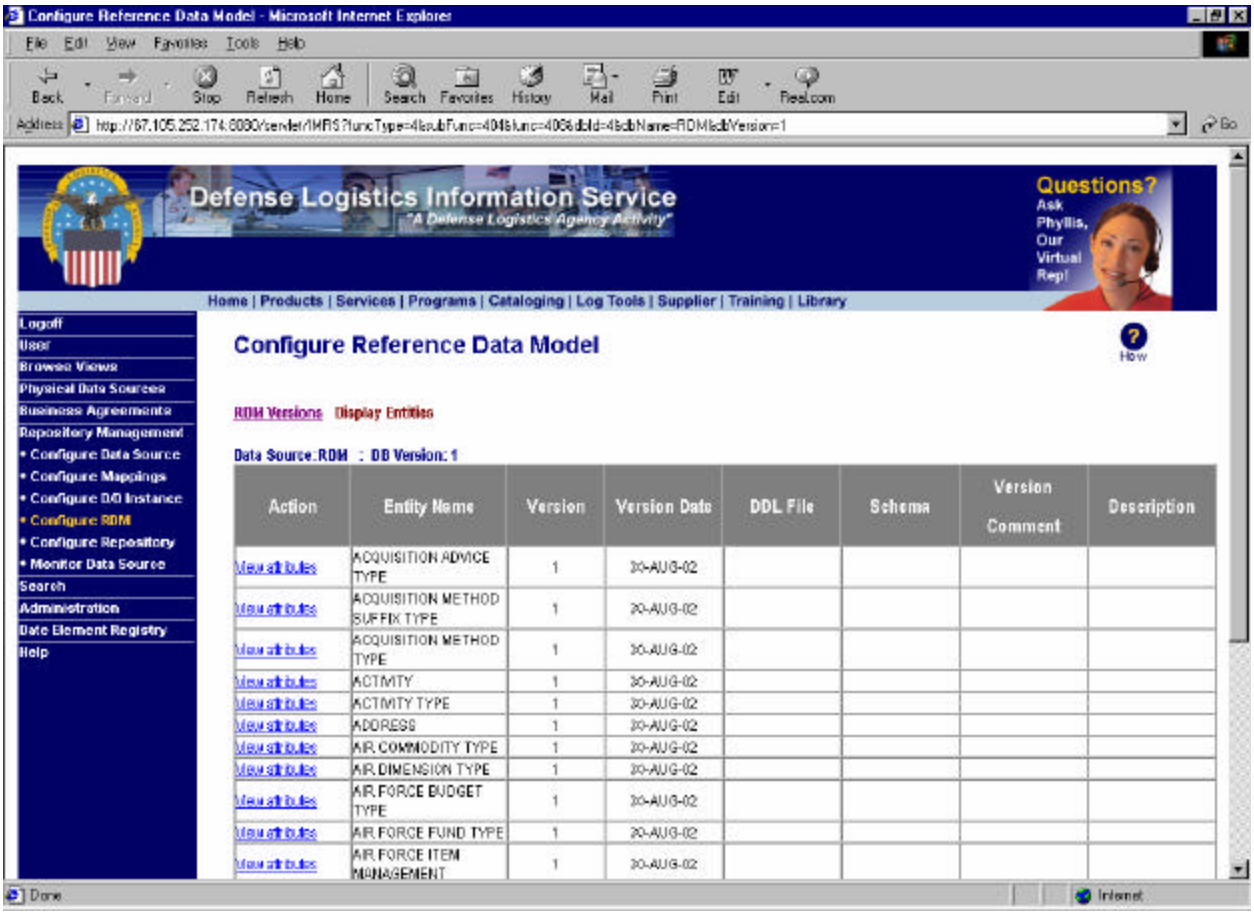


Figure 4.6.4.4- 2 Configure Reference Data Model - View Entities in RDM

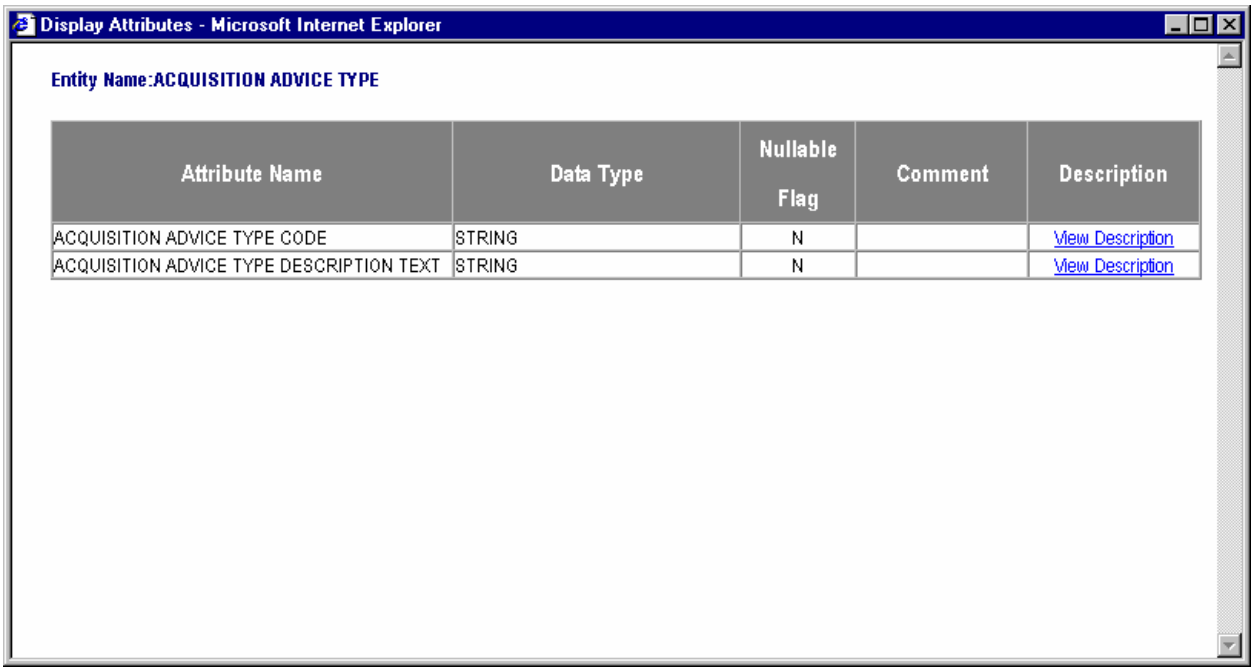


Figure 4.6.4.4- 3 Configure Reference Data Model - View Attributes in RDM

4.6.4.5. Update Attributes in RDM

After clicking on the *Configure RDM* from left menu, click on the *Update Entities* link, and then click on the *Update Attributes* link under the Actions heading next to the entity name to Add/Modify/Delete attribute information (See Figure 4.6.4.5- 1).

Only the latest versioned RDM will allow the user to update attributes for the entity (See Figure 4.6.4.5- 2).

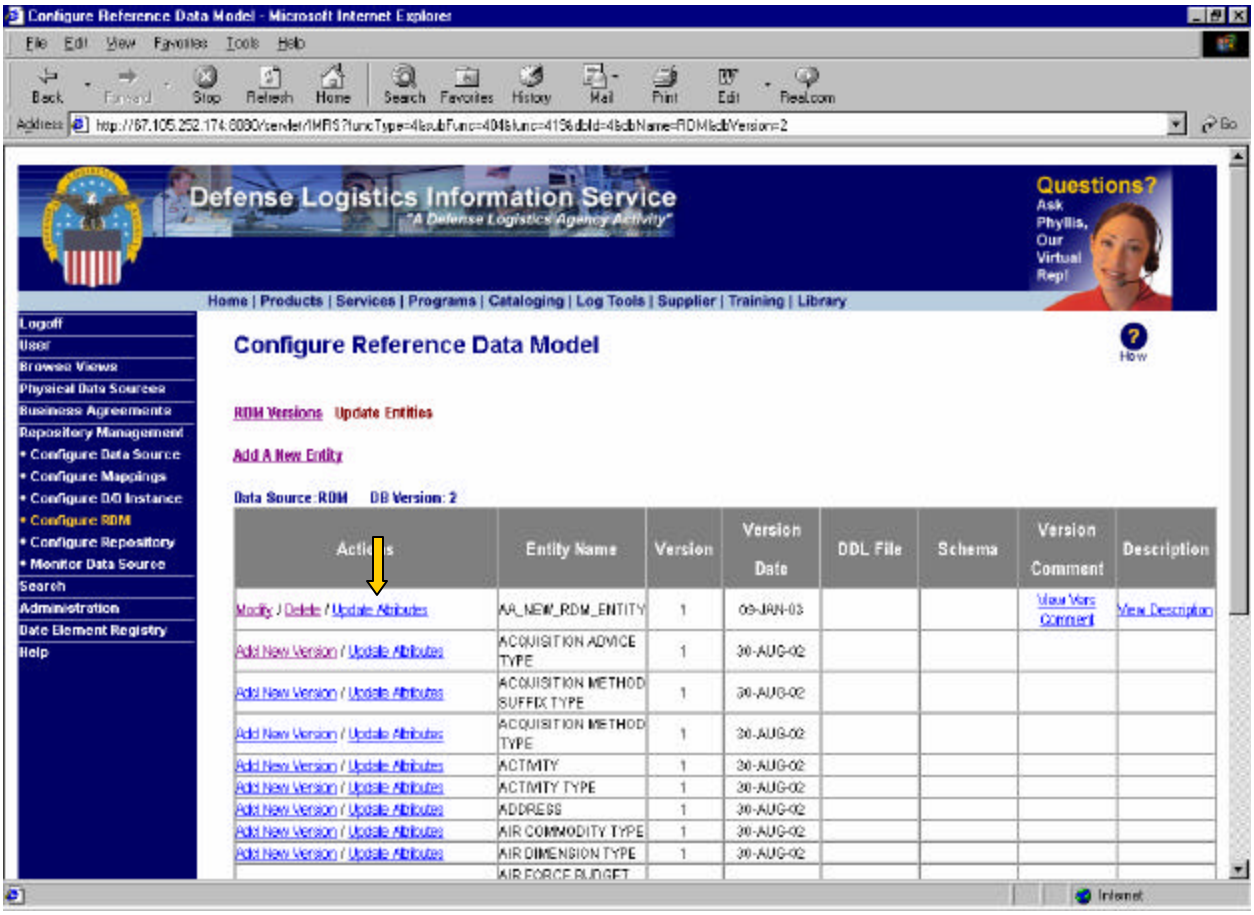


Figure 4.6.4.5- 1 Configure Reference Data Model - Update Attributes in RDM

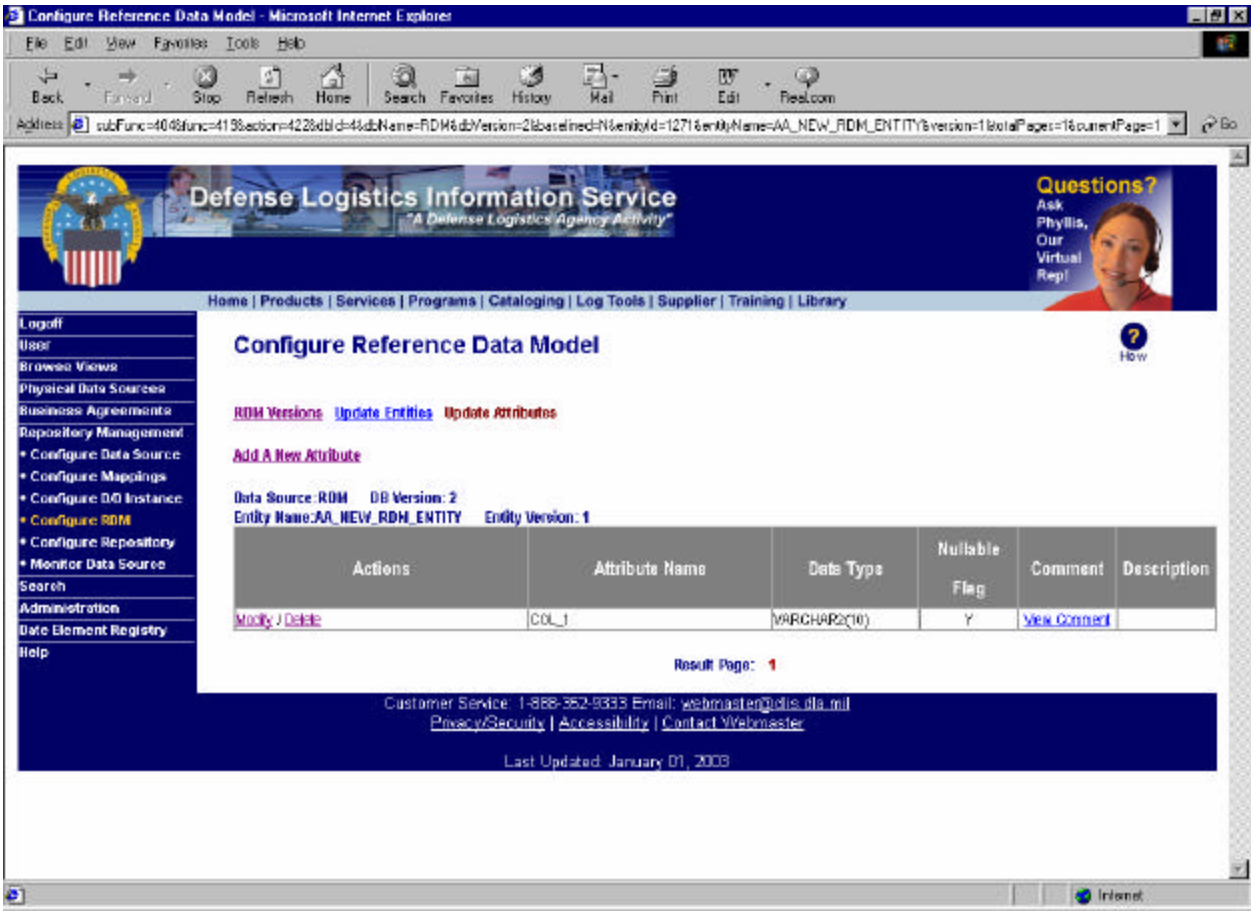


Figure 4.6.4.5- 2 Configure Reference Data Model - Update Attributes in RDM

4.6.4.5.a. Add A New Attribute

From Update Attributes Screen (See Figure 4.6.4.5- 2), click on the *Add A New Attribute* link to add an attribute to an entity. A new window with the caption “Add A New Attribute” will pop up (See Figure 4.6.4.5.a- 1).

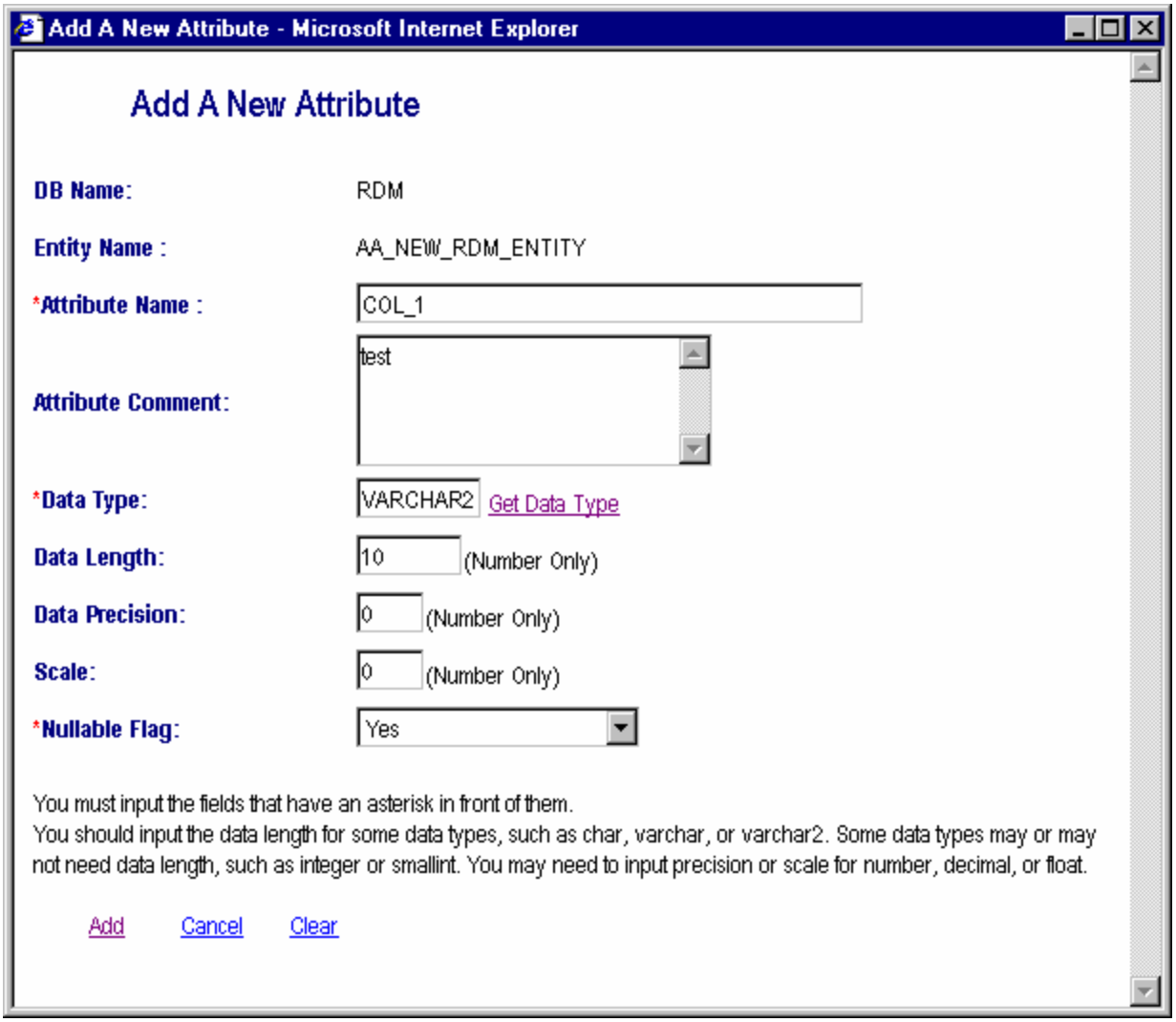


Figure 4.6.4.5.a- 1 Configure Reference Data Model – Add A New Attribute

Not all of the fields on this window are required. Refer to Table 11 to identify required fields and other important parameters.

Table 11 Add A New Attribute Field Parameters

Field	Requirements
DB Name	Display
Entity Name	Display
Attribute Name	**Required** (100 characters)
Attribute Comment	Optional (2000 characters)
* Data Type	**Required** (20 character3, user drop down list to select)
Data Length	Optional (Integer Number)
Data Precision	Optional (Integer Number)
Scale	Optional (Integer Number)
Nullable Flag	**Required** (1 character, use drop down list to select)

For the data types TIMESTAMP and data length the data precision and scale are not meaningful.* For the data types INTEGER and SMALLINT the data precision and scale are not meaningful; the data length may be either used or not used. For example: INTEGER, INTEGER(5).

* For the data type DATE, only the data length is used and its value needs to be less than 9. For example: DATE(7), DATE.

* For the data types VARCHAR, VARCHAR2, and CHAR, only data length is used; its value needs to be greater than 0 (zero). For example: VARCHAR2(5).

* For other date types such as NUMBER, DECIMAL, FLOAT, and SERIEL, data precision is used, but scale may or may not used. For example: NUMBER(5), NUMBER(5, 2).

Click *Add* to save it. If any field does not meet the requirement, an error dialog box will pop up to inform the user of the error (See Figure 4.6.4.5.a- 2). Click the *OK* button to close the dialog box; otherwise, the new window will be closed.

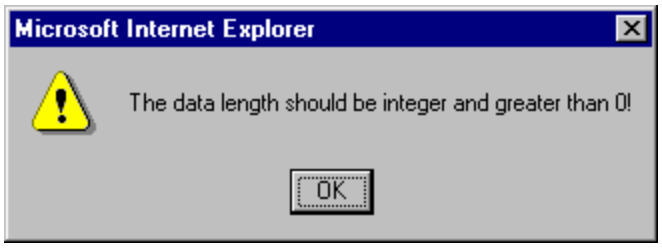


Figure 4.6.4.5.a- 2 Configure Data Source – Add A New Attribute Error Message

4.6.4.5.b. Modify An Attribute

From Update Attributes Screen (See Figure 4.6.4.5- 2), click on the *Modify* link under the Actions heading next to the attribute name to modify attribute information. A new window with the caption “Modify An Attribute” will pop up. Click the *Update* link to save it and close the new window (See Figure 4.6.4.5.b- 1).

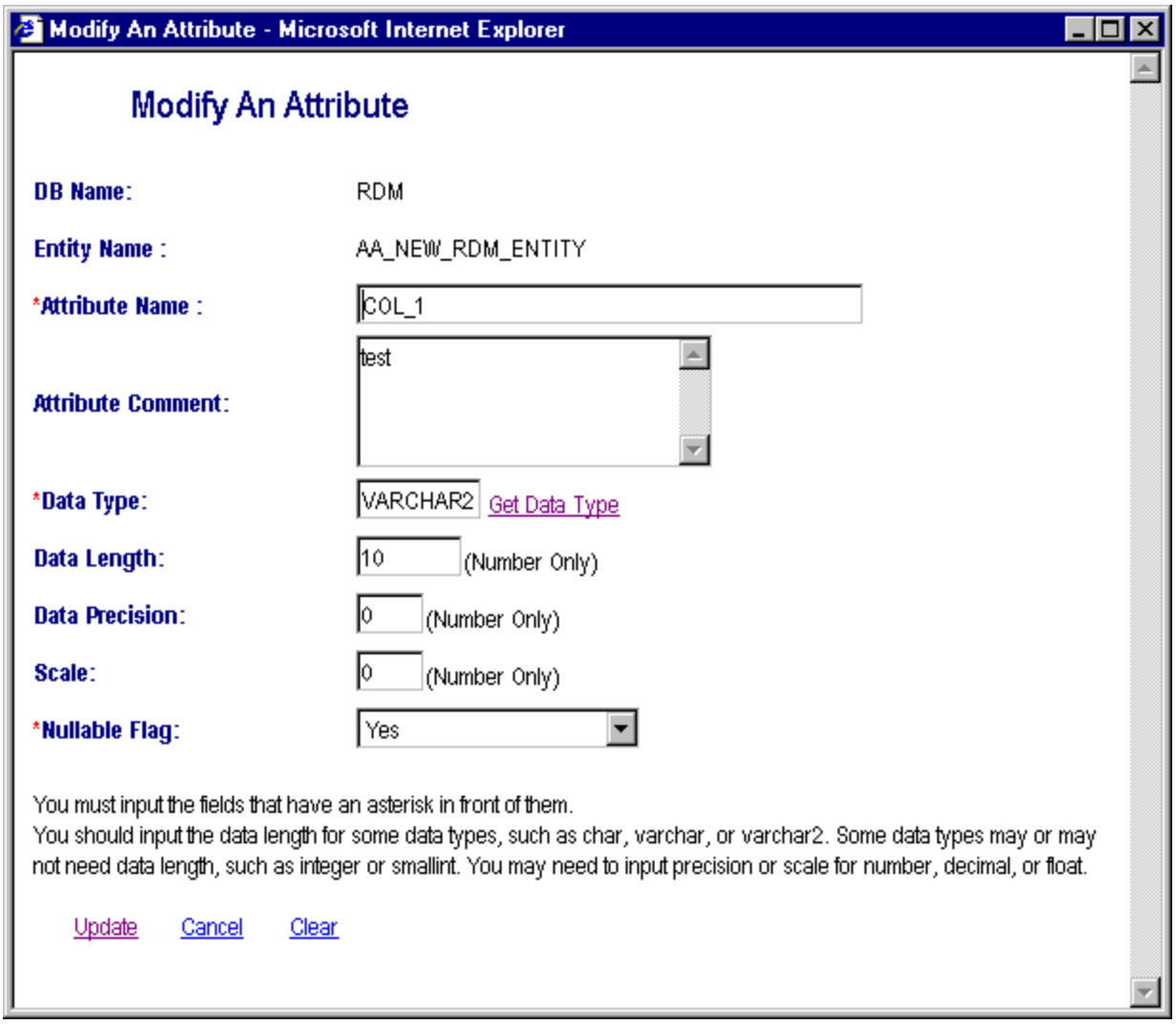


Figure 4.6.4.5.b- 1 Configure Reference Data Model - Modify An Attribute

4.6.4.5.c. Delete Attribute

If the latest versioned RDM is unbaselined (that is, the baselined indicator's value is set to 'N') and the entity was created specifically for this latest RDM (that is, was not copied from a previous RDM), the user can delete the attribute information. (This is the same as Modify An Attribute.)

After clicking on the *Configure RDM* link from left menu, click on the *Update Entities* link, the *Update Attributes* link, and click on the *Delete* link under the Actions heading next to the attribute name to delete attribute information. A dialog box will pop up to verify the delete operation. Alternatively, click the *OK* button to delete this attribute; all information mapped to this attribute will also be lost. Click the *Cancel* link to cancel this operation. If the information is deleted, it cannot be recovered (See Figure 4.6.4.5.c- 1).

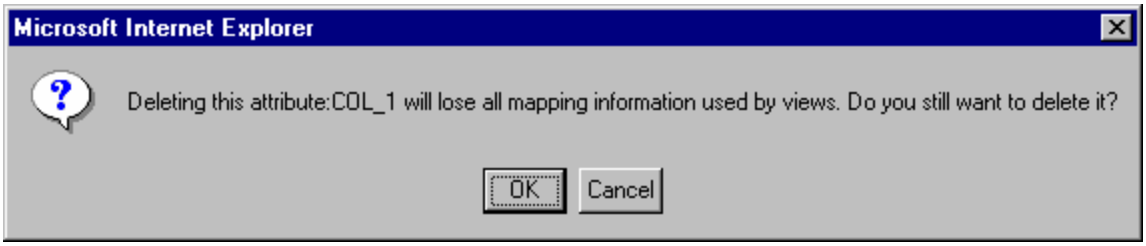


Figure 4.6.4.5.c- 1 Configure Reference Data Model - Delete An Attribute Dialog

4.6.5. Repository Management - Configure Repository

The Configure Repository function provides the user interface capability to view the physical repository implementation through a visual display of tables and relationships between these tables. Valid repository management types are following:

- The data source information
- The reference views and user views
- The mapping and conversion algorithm
- The views used by applications
- The system information
- The DSR Information
- The product data information

To see a display listing repository configuration information for a specific repository management type, refer to Figure 4.6.5- 1. Click *View Configure Items* link for the related configuration items (See Figure 4.6.5- 2).

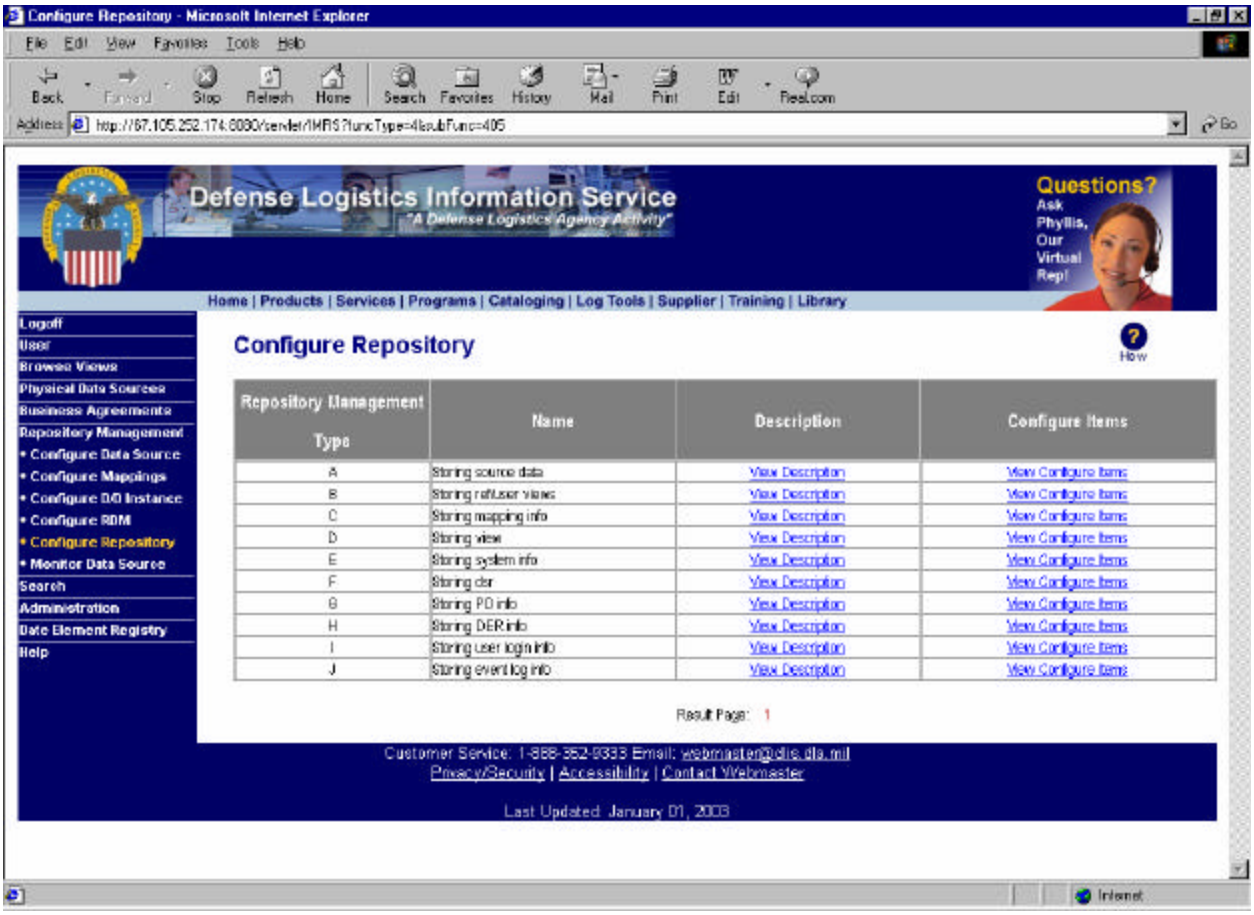


Figure 4.6.5- 1 Configure Repository - Repository Management Types Menu Selection

The associated parent and child information is also displayed for each repository table (See Figure 4.6.5- 3 and Figure 4.6.5 - 4).

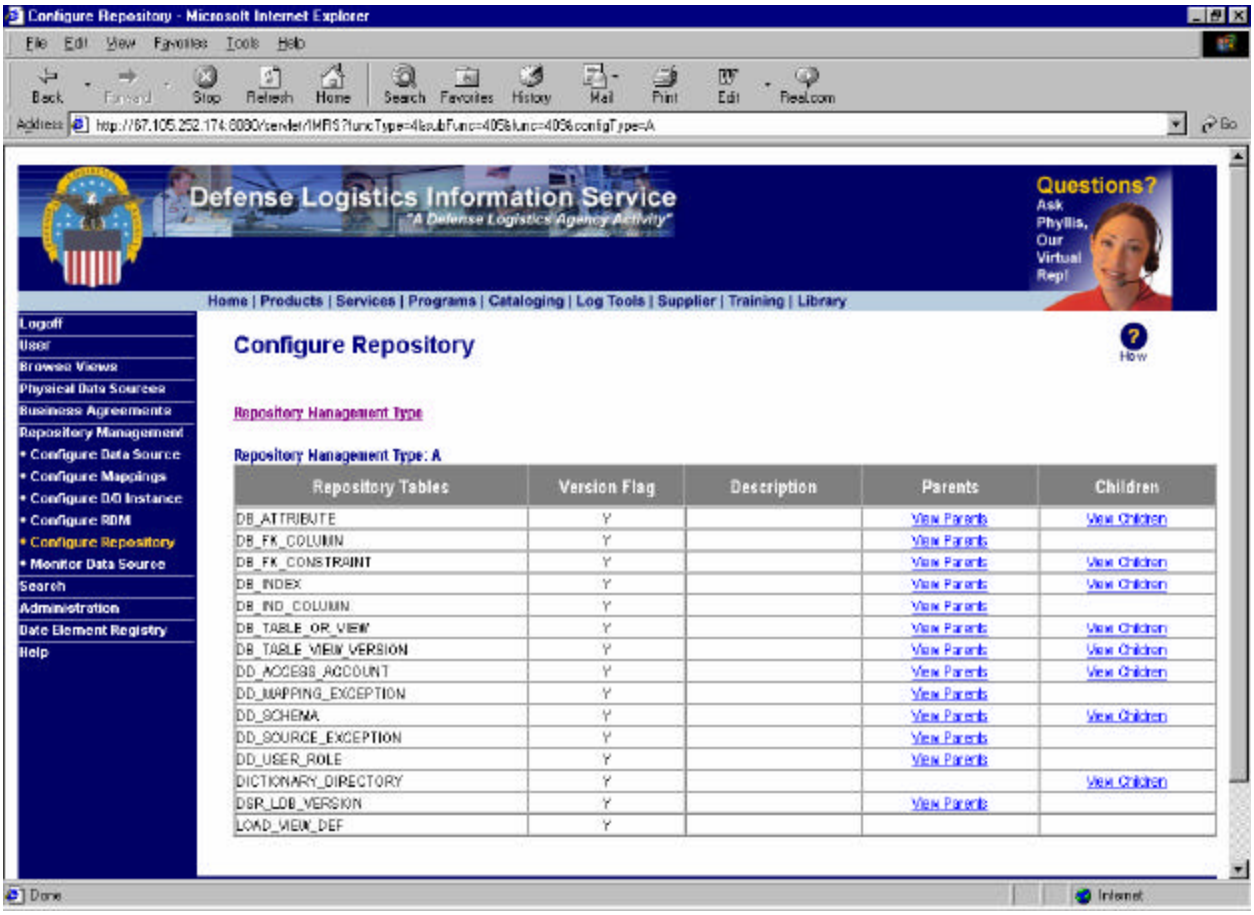


Figure 4.6.5- 2 Configure Repository

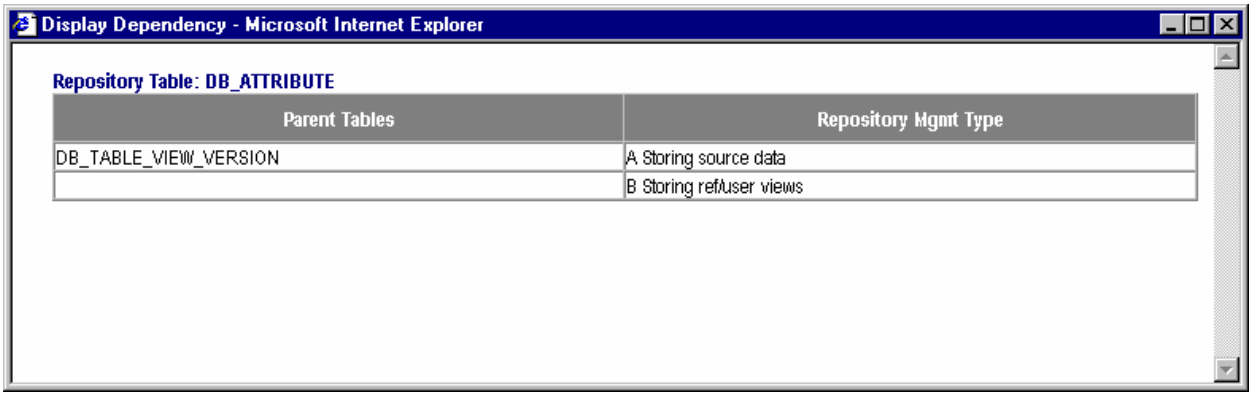


Figure 4.6.5- 3 Configure Repository - Parent Tables

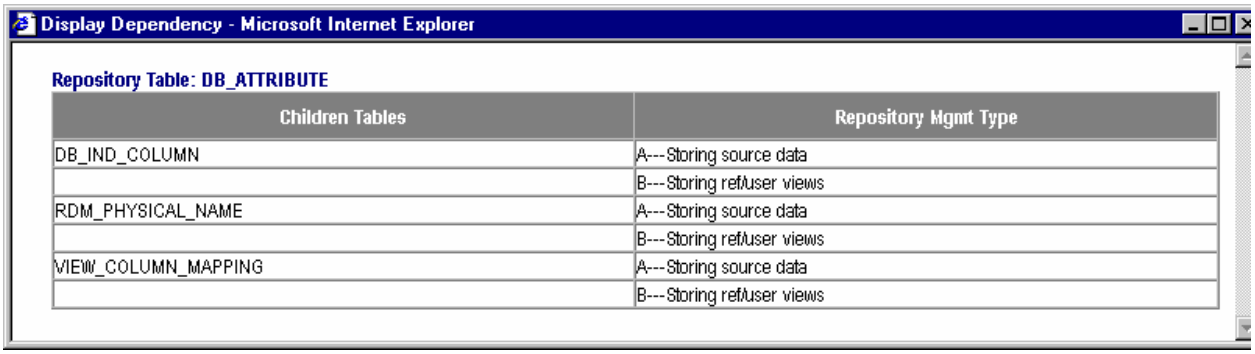


Figure 4.6.5- 4 Configure Repository - Child Tables

4.6.6. Repository Management - Monitor Data Source

The Monitor Data Source function provides user the interface to compare the schema in the remote data source and the schema in the repository.

Click the Monitor Data Source from the left menu. On the input screen (see Figure 4.6.6- 1), select the current schema in the repository from the drop down list. Input the remote data source information such as Data Source's DBMS Type, Host, Port, Service Name, Login ID, and Password. Click Monitor to retrieve the report (See Figure 4.6.6-2).

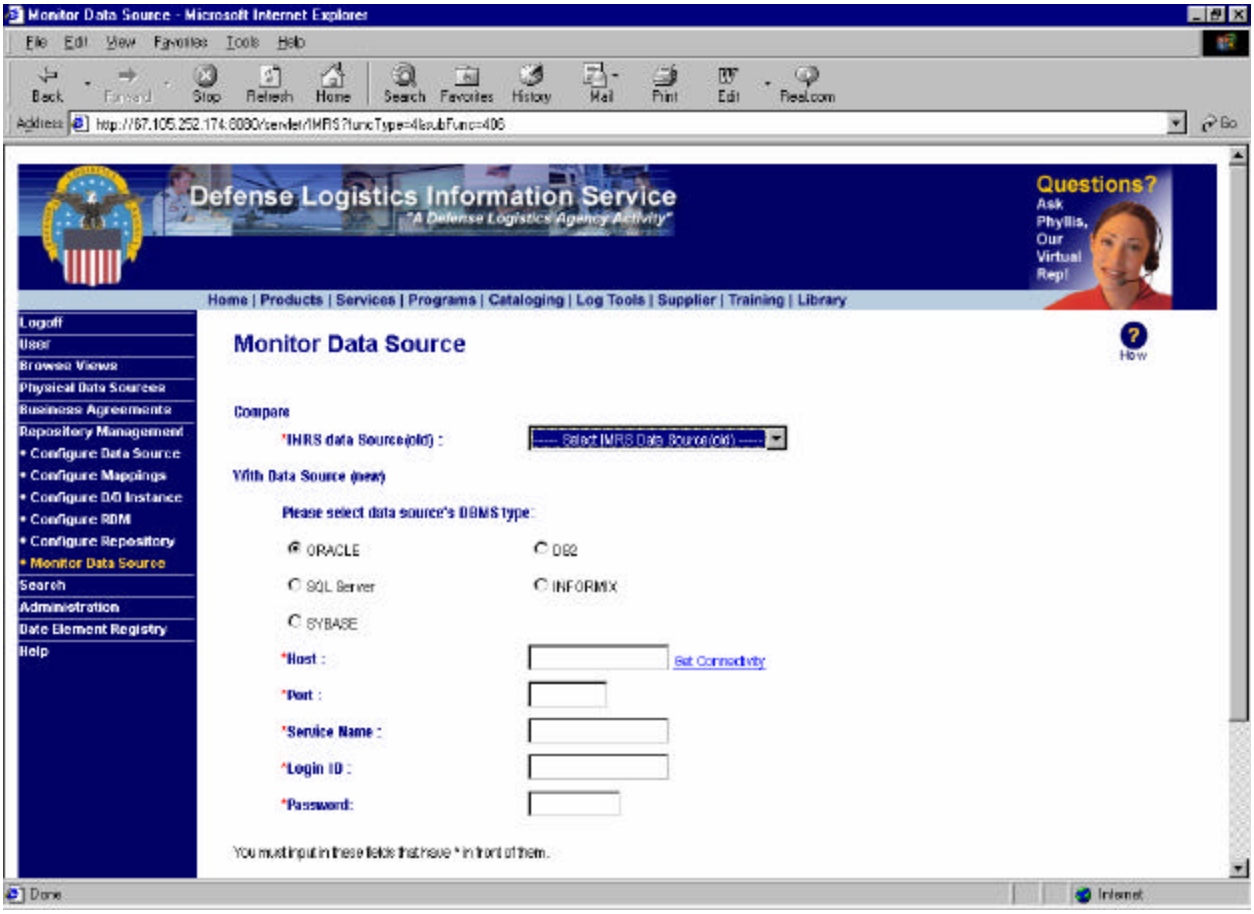


Figure 4.6.6- 1 Monitor Data Source

If you want to print the report, click the SEND TO PRINTER button to print the report.

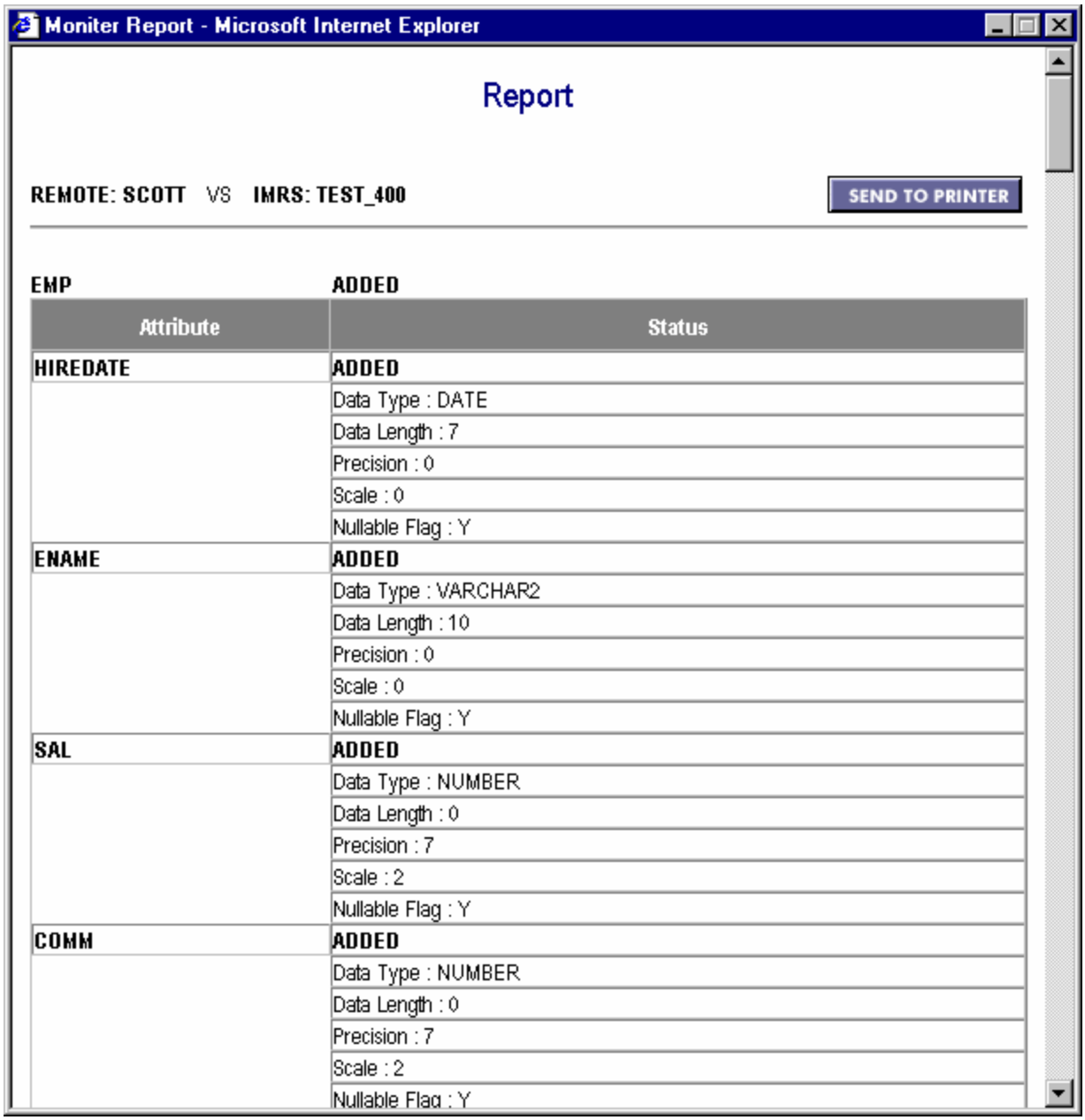


Figure 4.6.6- 2 Monitor Data Source – Result Report

4.7. Search

The Search function provides the user the Interface to locate the information in the repository. There are two functions available from Search Screen (See Figure 4.7- 1).

1. Search Data Source, Dictionary/Directory Instance, View, Tables, and Data Element.

2. Search Information about Business Agreement.

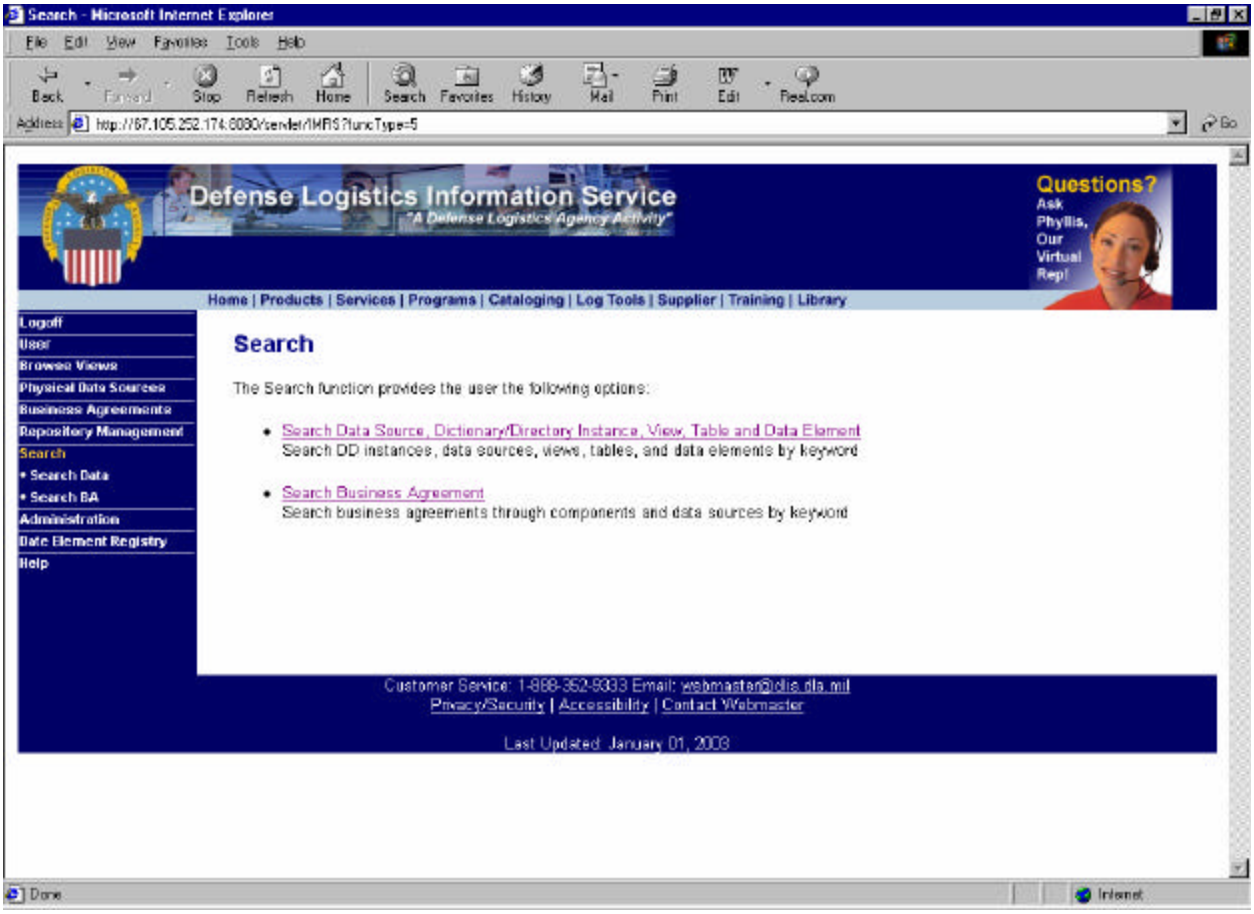


Figure 4.7- 1 Search

4.7.1. Search Data

This function provides user the interface to search Dictionary/Directory Instances, Data sources, Views, Tables and Data Elements by keyword.

Type a keyword and select the search area, if you are searching for data element, specify the tables, views, or data source so the system will search in different area (See Figure 4.7.1- 1).

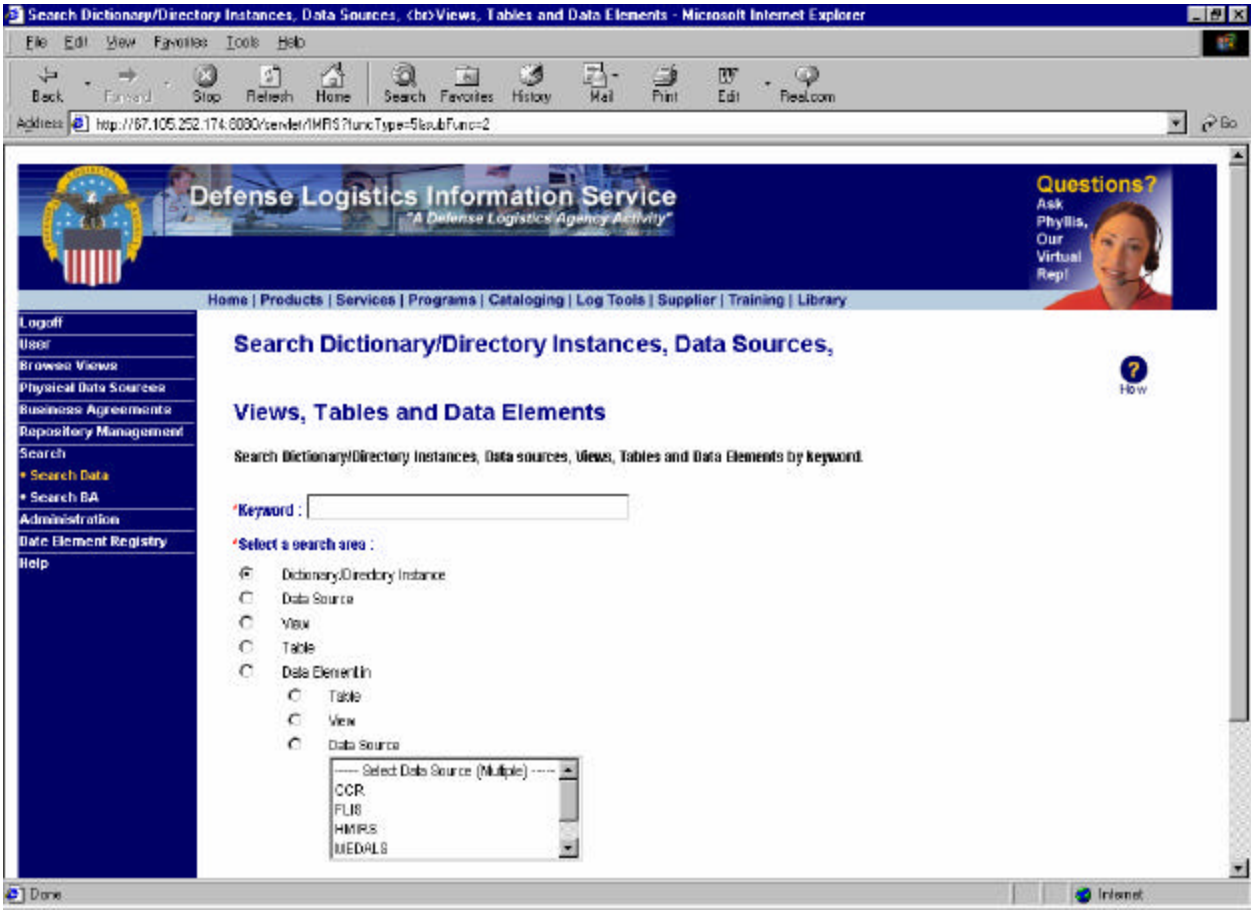


Figure 4.7.1- 1 Search Data

The result of the search will display (See Figure 4.7.1 - 2). If you want to print a report of the result, click *get report* link to see the report and print it by clicking *send to printer* button (See Figure 4.7.1- 3).

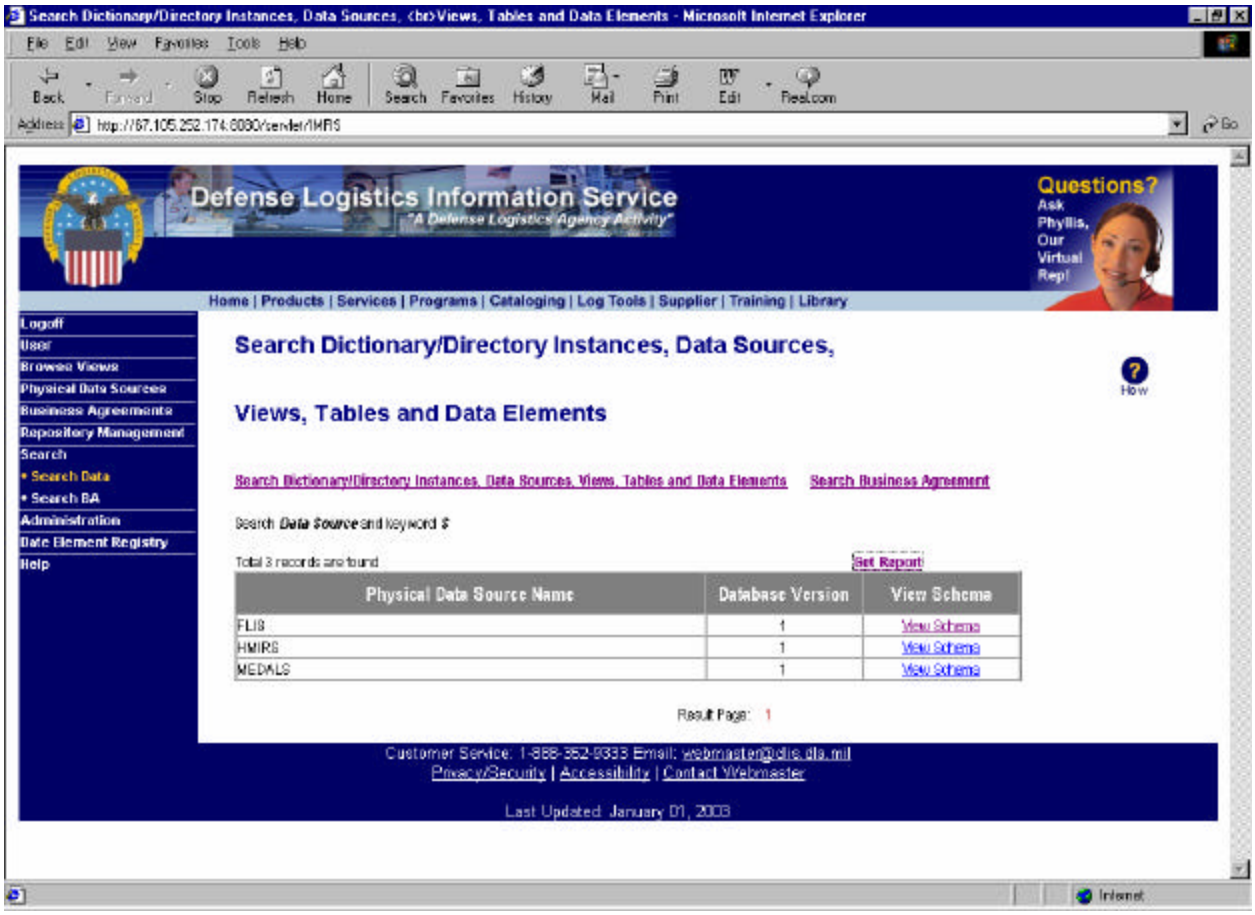


Figure 4.7.1- 2 Search Data –Search Result

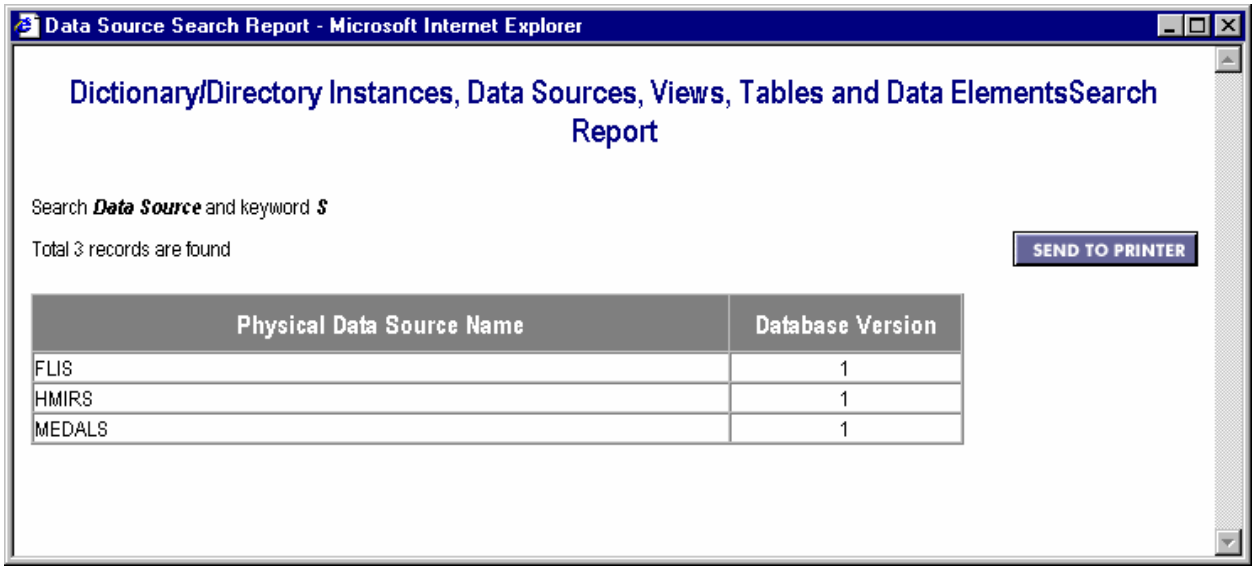


Figure 4.7.1- 3 Search Data – Result Report

4.7.2. Search Business Agreement

This search Business Agreement screen provides user the interface to search business agreement through components and data sources by keyword.

Type a keyword and select the search area (See Figure 4.7.2 - 1). The result of the search with other detail information will be displayed (See Figure 4.7.2 - 2).

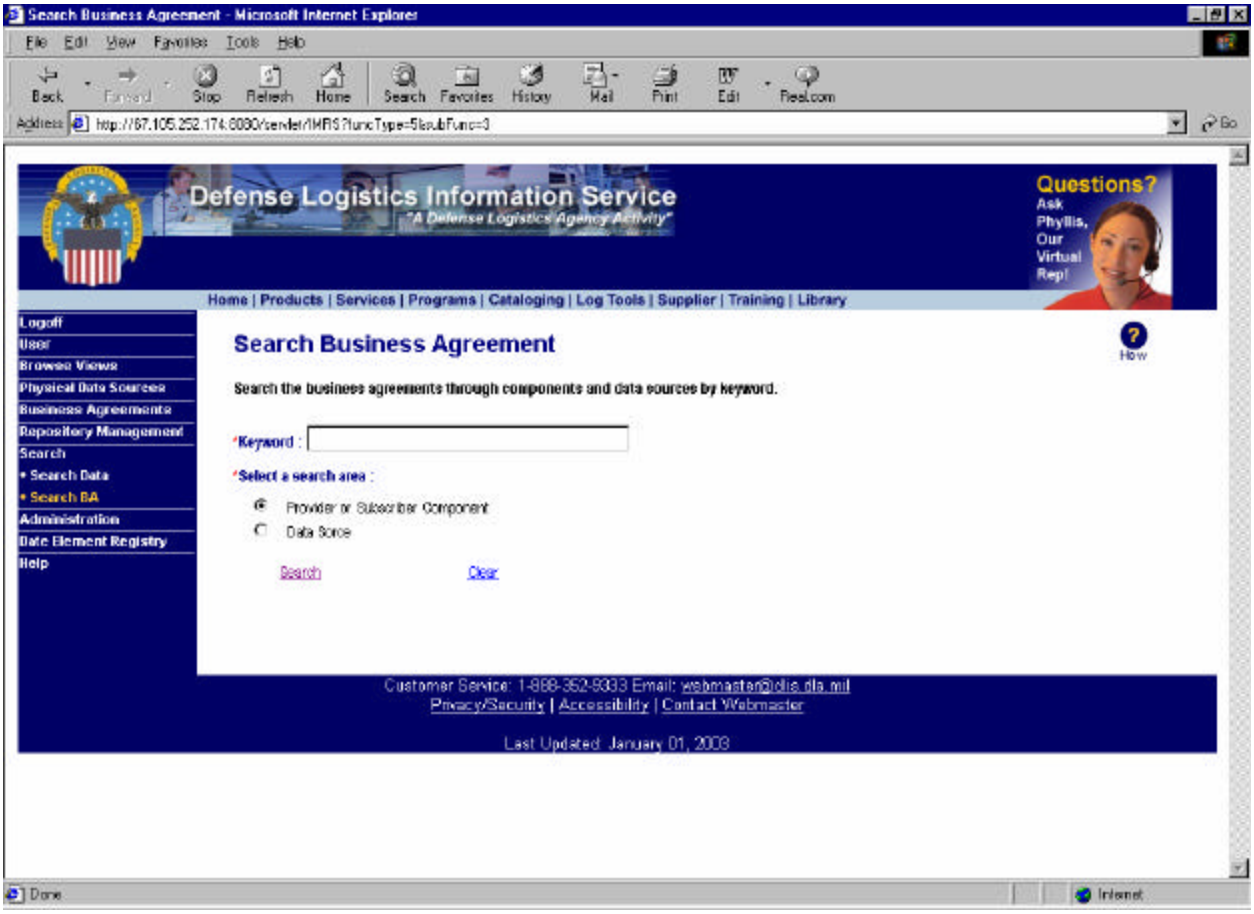


Figure 4.7.2- 1 Search Business Agreement

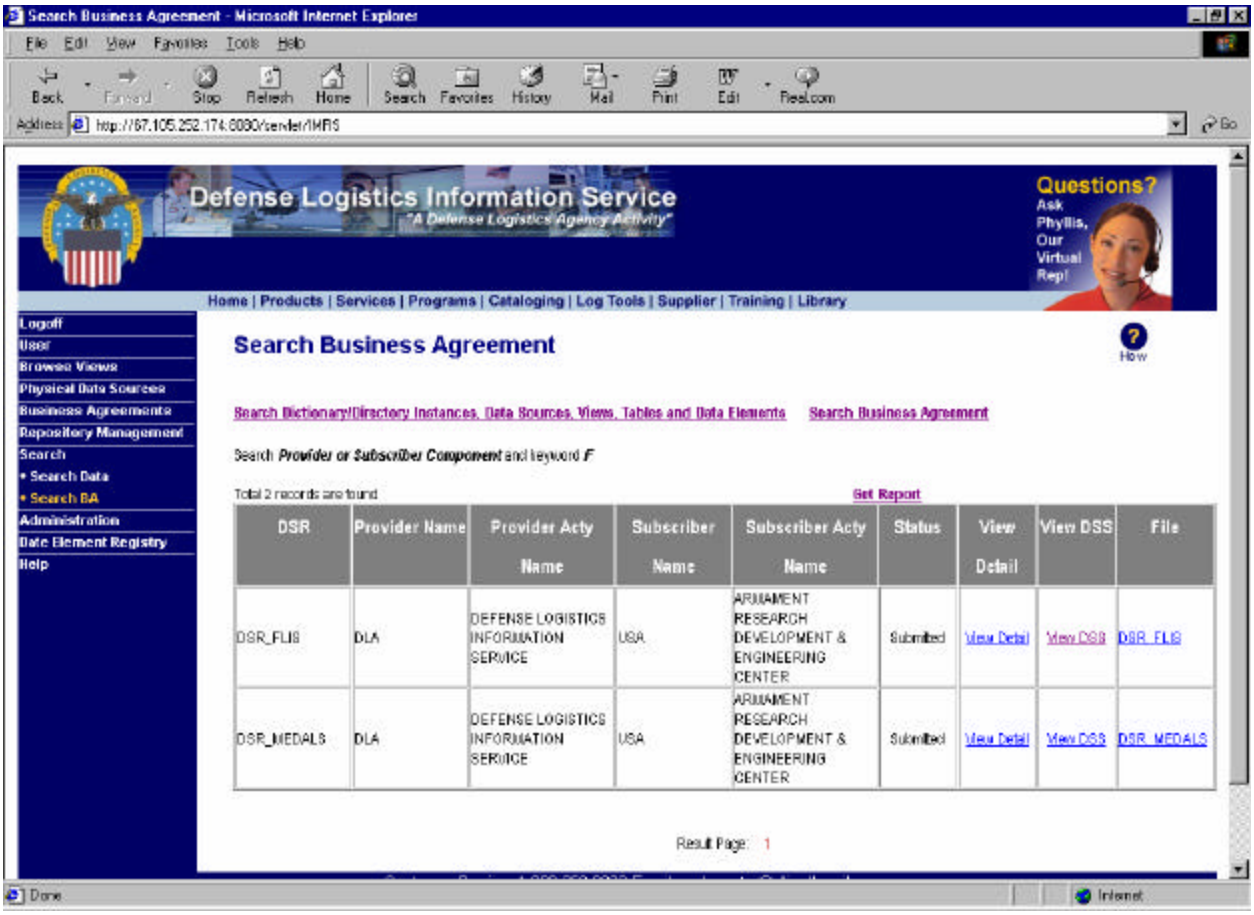
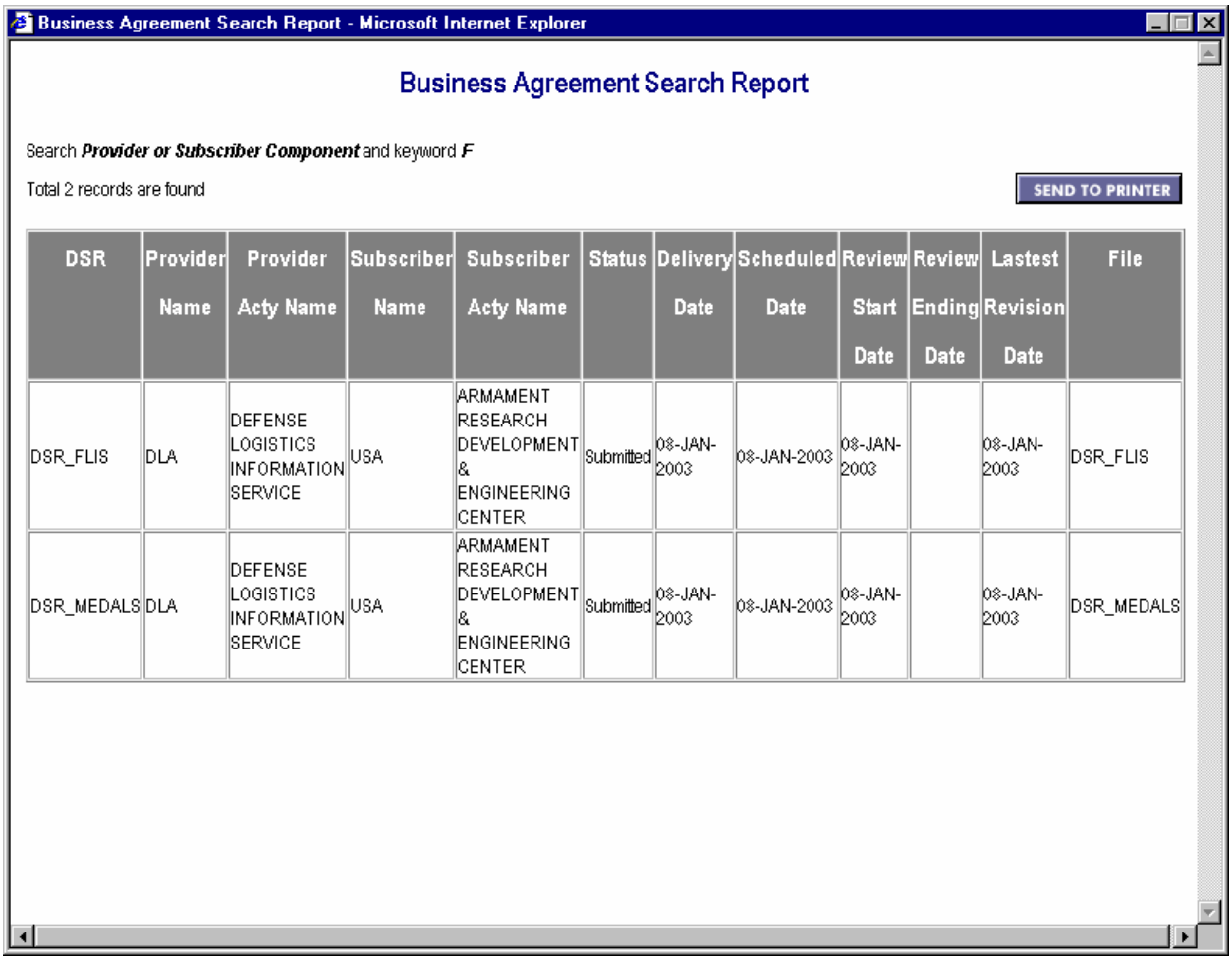


Figure 4.7.2- 2 Search Business Agreement - Result

If you want to print a report of the result, click *get report* link to see the report and print it by clicking *SEND TO PRINTER* button (See Figure 4.7.2 - 3).



DSR	Provider Name	Provider Acty Name	Subscriber Name	Subscriber Acty Name	Status	Delivery Date	Scheduled Date	Review Start Date	Review Ending Date	Lastest Revision Date	File
DSR_FLIS	DLA	DEFENSE LOGISTICS INFORMATION SERVICE	USA	ARMAMENT RESEARCH DEVELOPMENT & ENGINEERING CENTER	Submitted	08-JAN-2003	08-JAN-2003	08-JAN-2003		08-JAN-2003	DSR_FLIS
DSR_MEDALS	DLA	DEFENSE LOGISTICS INFORMATION SERVICE	USA	ARMAMENT RESEARCH DEVELOPMENT & ENGINEERING CENTER	Submitted	08-JAN-2003	08-JAN-2003	08-JAN-2003		08-JAN-2003	DSR_MEDALS

Figure 4.7.2- 3 Search Business Agreement – Result Report

4.8. Help Facility

This System provides a Help Facility. It helps the user find out the information about using the system (See Figure 4.8- 1).

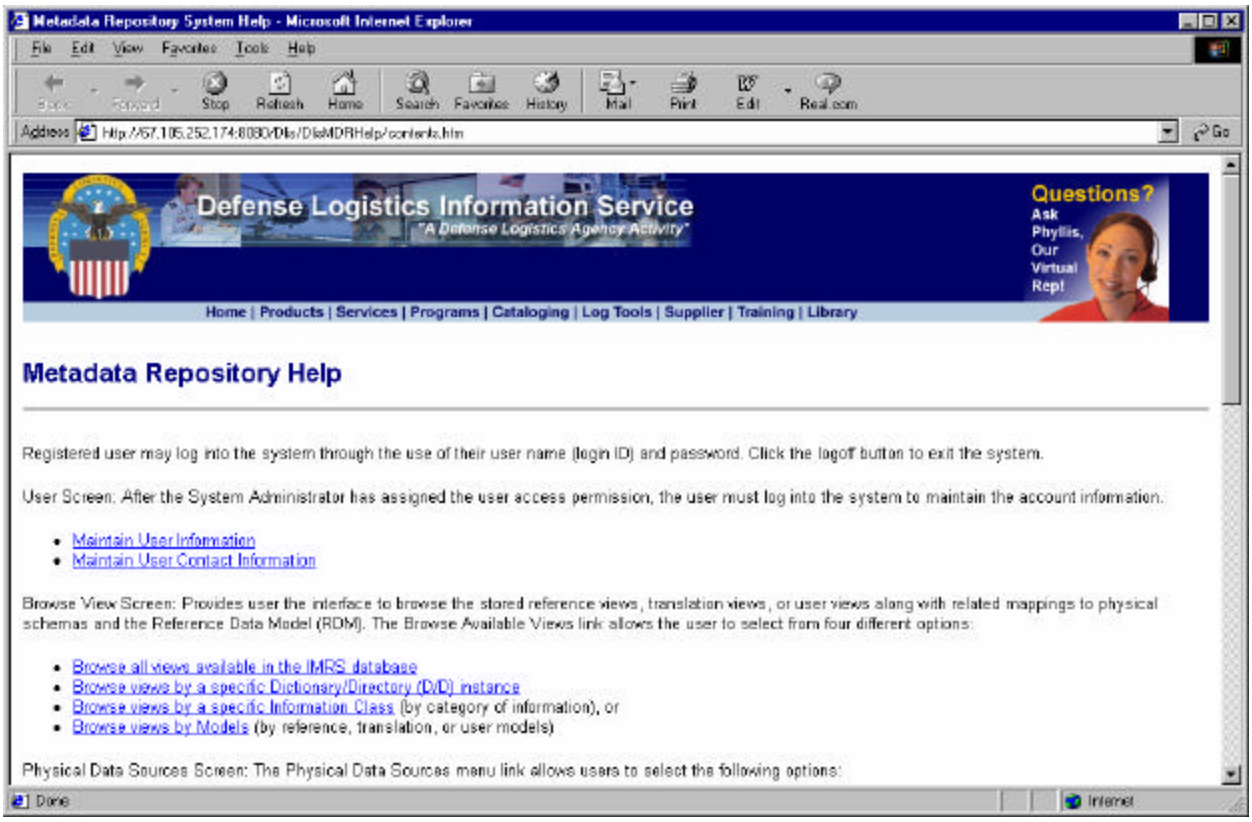


Figure 4.8- 1 Help Page

5. USER TERMINAL PROCESSING PROCEDURES

This section provides the user with information on the use of PC workstations to accomplish processing using the IMRS.

5.1. Available Capabilities

Data maintained in the IMRS can be retrieved, displayed, and updated through a Web-based interface customized for a specific user. Tailored views allow users to focus and concentrate on the information and data that is most important to their mission objectives and goals.

Basic menu processing is accomplished via any standard Web Browser.

5.2. Access Procedures

The sequence of steps for accessing the IMRS is detailed in paragraph 4.1.

5.3. Display, Updates, and Retrieval Procedures

Refer to paragraphs 4.2 to 4.6.

5.4. Communications Diagnostics

To diagnose communication problems to or from a client or server, obtain the IP address of the server. A "ping" can be initiated to determine if the server is responding by following these procedures:

1. Select the *Run* option from the Windows Start button.
2. Type in *ping* and the *IP address* you want to ping.
3. Observe the communication information and messages as they display in the dialog box
4. Type *exit* to close the dialog box and return to the Windows desktop.

Should the message, "Reply timed out" message appear, a server is down and the user should try to reconnect later. Sometimes the user need only wait a few minutes and is able to reestablish and maintain a connection to a network server.

In the event communication is disrupted and the user is disconnected from IMRS, the user must login to the database after re-initializing the Web Browser to reconnect to the IMRS database.

5.5. Recovery and Error Correction Procedures

The following lists basic error conditions and correction/recovery procedures:

Message	Solution
If the wrong item or option is selected.	Click on the Stop button or Back button on the Web Browser toolbar.
Disconnected by remote computer	Reinitialize Web Browser and login again.
Display seems "frozen" or is not responding	Click on the Refresh button on the Web Browser toolbar. Press ALT F4 to exit completely and reinitialize user session.
Invalid user id and password!	Re-enter Login ID and password.
Add A New Data Source (DB)	
The DB name and Description are mandatory!	Input DB Name and Description.
The description you have input is too long. You can only input 100 characters!	Input 100 characters for Description.
This data source has already existed. Would you like to save it as a duplicate?	Input another DB Name or save it as a duplicate.
This data source (db) has several versions. Please use Update Versions function to delete these db versions!	Click Update Versions to delete these db versions.
Delete A Data Source	
This data source (db) has several versions. Please use Update Versions function to delete these db versions!	Click Update Versions to delete these versions.
Add A New Table	

Message	Solution
The new *table name* will be added in a newly created db version *newversion seq number*, not in the *old version seq number*. Click the newly created db version to check the newly *table name*!	The dialog is used to remind the user where and how to check the newly created table.
Another table in this data source has already used this name!	Input a different table name.
The estimated rows should be integer number!	Input integer number.
The table name and version date are mandatory!	Input table name and select version date from drop down list.
The description you have input is too long. You can only input 2000 characters!	Input description at most 2000 characters.
The version comment you have input is too long. You can only input 100 characters!!	Input version comment at most 100 characters.
Delete A Table	
Deleting this *table name* and *table version seq number* will lose all the information such as columns and mapping information used by views. Do you still want to delete it?	The dialog is used to verify the Delete operation.
Create A New Table Version	
The new version of this *table name* will be added in a newly created db version *new db version seq number*, not in db version *old db version seq number.* Click the newly created db version to check the newly created" *table name* version!	The dialog is used to remind the user where and how to check the newly created table version.
Add A New Column	

Message	Solution
The new column name will be added in the newly created db version *new db version seq number* and in the newly created *table name* version seq *new table version seq number*, not in db version *old db version seq number* and table name version seq *old table version seq number*. Click the newly created db version and table version to check the newly created column!	The dialog is used to remind the user where and how to check the newly created column.
The new column will be added in the same db version *db version seq number* and in the newly created *table name* version seq *new table version seq number,* not in the old entity version seq *old table version seq number*. Click the newly created table version to check the newly created column!	The dialog is used to remind the user where and how to check the newly created column.
Column name should not be empty!	Input column name.
This table already has a column with this name.	Input a different column name.
The data length should be integer and greater than 0!	Input integer number
The data length should be integer number and less than 9!	Input integer number and less than 9
The precision should be integer number!	Input integer number
The scale should be integer number!	Input integer number
You should select the nullable flag either Yes or No!	Select nullable flag
The column comment you have input is too long. You can only input 2000 characters!	Input column comment at most 2000 characters.
Delete A Table	
Deleting this attribute *attributeName w*ill lose all mapping information used by views. Do you still want to delete it?	The dialog is used to verify the delete operation.
Add A New View	
The view name is mandatory!	Input view name.

Message	Solution
This view name has already existed. Please input a different view name!	Input a different view name.
The description you have input is too long. You can only input 200 characters!	Input description at most 200 characters.
Delete A View	
Deleting this view: *viewName* and version seq versionSeq will lose all the information such as columns, and mapping information used by views. Do you still want to delete it?	The dialog is used to verify the delete operation.
This view *name* version seq *view version seq number* was copied from the previous *model name* with version *model version seq number*. Do you still want to delete it?	The dialog is used to verify the delete operation.
Delete A Column	
Deleting this column: *column name* will lose all its associated mapping information. Do you still want to delete it?	The dialog is used to verify the delete operation.
Update Mapping (Virtual View)	
There are no columns to be used for mapping. Please input the columns first!	The Dialog is used to remind the user to input columns first.
On line *lineNumber*: Data Source, Table, or Column should not be empty!	Select the data source, tables, and columns from the drop down list
The mapping expression should not be empty except there is no data source!	Select the data source, tables, and columns from the drop down list, then click Build Mapping Expression button to get the mapping expression.
Update Mapping (Union View)	
On line *lineNumber*: Data Source and table are mandatory!	Select data source and Table from the drop down list

Message	Solution
There is only one union source. At least two union sources are required!	Add at least two union sources.
Do you want save before going to the previous page?	The dialog is used to remind the user to save it and go to the previous page.
Add A New D/D Instance	
The D/D Instance Name is mandatory!	Input D/D Instance name.
This D/D Instance Name has already existed. Please input different name!	Input a different D/D Instance name.
The description you have input is too long. You can only input 2000 characters!	Input description at most 2000 characters.
Add Views	
The D/D view comment you are input is too long. You can only input 2000 characters!	Input D/D view comment at most 2000 characters.
Delete A D/D Instance	
This delete operation will delete the schema and mapping exceptions for this D/D Instance. Do you still want to delete this D/D Instance: *D/D instance?*	The dialog is used to verify the delete operation.

5.6. Termination Procedures

To terminate a user session from anywhere in the IMRS database, press ALT F4 or select close on the file pull-down menu bar.

APPENDIX A - ACRONYMS AND ABBREVIATIONS

CDE	Collaborative Data Environment
CPU	Central Processing Unit
CWM	Common Warehouse Metadata
CWMI	Common Warehouse Metadata Interchange
DAS	Data Access Servers
DER	Data Element Registry
D/D	Data Dictionary/Directory
DDL	Data Definition Language
DLA	Defense Logistics Agency
DLIS	Defense Logistics Information Service
DNC	Data Networks Corporation
DoD	Department of Defense
DSC	Data Source Connectivity
DSR	Data Sharing Request
DSS	Data Sharing Specification
FEDSIM	Federal Systems Integration and Management
GSA	Government Services Administration
GUI	Graphical User Interface
HTML	Hyper Text Markup Language
ID	Identification
IDE	Integrated Data Environment
IMRS	Integrated Metadata Repository System

IP	Internet Protocol
MDR	Metadata Repository
MOA	Memoranda of Agreement
OITI	Office of Information Technology Integration
OMG	Object Management Group
RDBMS	Relational Data Base Management System
RDM	Reference Data Model
SVD	Software Version Description