

Standards & Terminology Services (STS)

**VETS Terminology Deployment Service
Production Release**

User Manual



Version 9.0

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Introduction

This manual describes the Standards & Terminology Services (STS) Terminology Deployment Service (TDS) version 9.0 User Interface (UI) menu options and their functionality. It includes workflows that have systematic instructions for deploying terminology content. The manual is written for users of the Veterans Health Administration (VHA) Enterprise Terminology Services (VETS) who perform the following tasks:

- Review and update functions performed by Domain Reviewers.
- Deployment functions performed by Testing Coordinators and other authorized Deployers.

VETS is a suite of products that deliver standardized terminology content for use across the VA enterprise; including VistA, Clinical Data Repository/Health Data Repository (CHDR), and HealtheVet environments.

- The database used to house the terminology content served by VETS is called VHA Terminology Server (VTS).
- VETS includes three types of terminology content:
 - VHAT: a standardized terminology created and maintained for VA applications. It contains concepts that are unique to the VA as well as concepts that have been derived from authoritative sources such as SNOMED CT or ICD-9-CM.
 - Standard Code Systems (SCS): data retrieved from Standard Development Organizations the authoritative source. This data is viewable in the Terminology Browser.
 - Map Sets: links between terminologies to support VA business needs. Map Sets may be created internally, adopted from a standard, or may be adopted from another entity.
- Terminology Deployment Services (TDS) is the tool used by STS to manage VETS content.

Workflow

The workflow associated with TDS is displayed in the figure below. The following sections describe each column in the diagram.

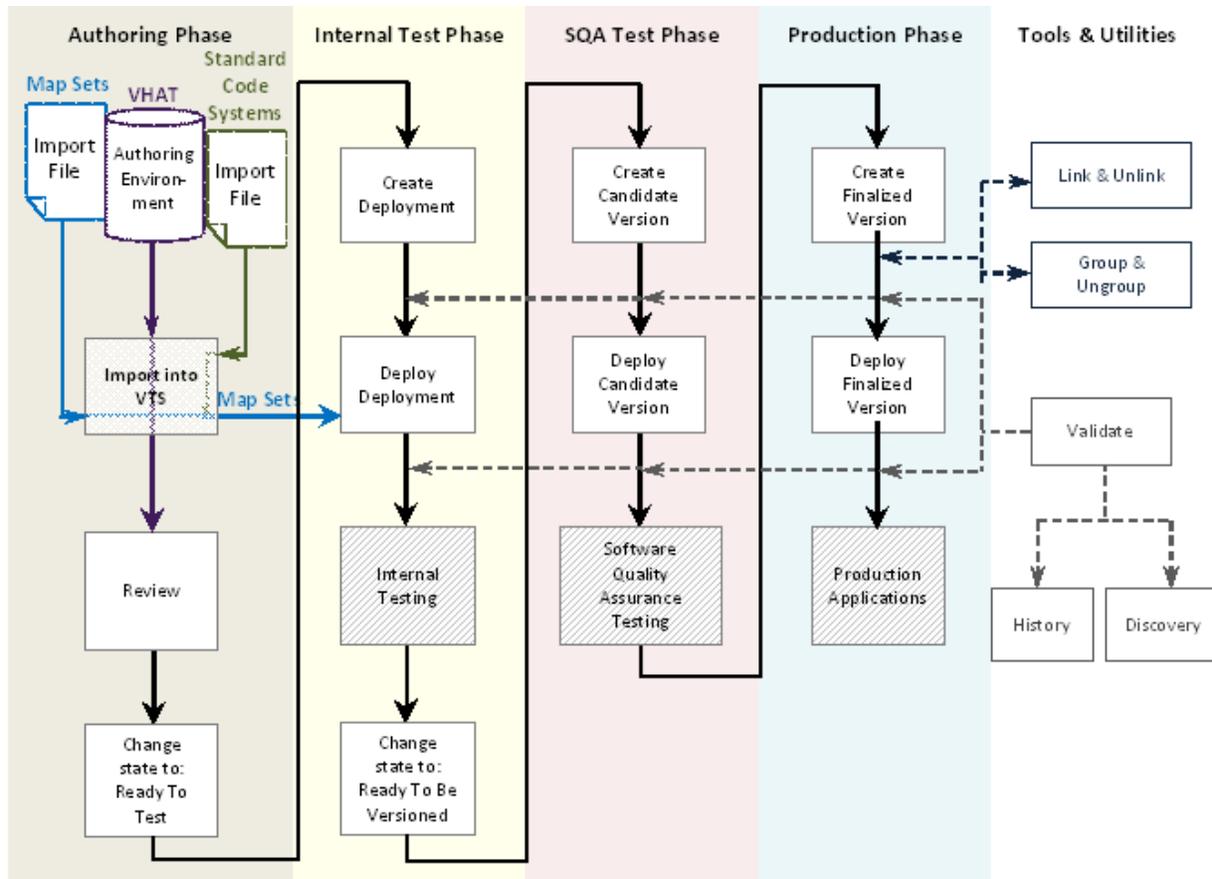


Figure 1. TDS Workflow

Authoring Phase

The first column, Authoring Phase, shows the workflow steps used to import content into VTS and to prepare it for use.

- Map Sets Import Files**
 Map Set content is brought into VETS through XML files. These XML files may be created using a text editor or created through automated scripts which act on source files provided by the Standard Development Organizations (SDO) or third parties.
- VHAT Authoring Environment**
 VHAT content is created in an external, proprietary Terminology Development Environment (TDE).
- Standard Code Systems Import File**
 Content from SCS is brought into VETS through XML files. These XML files may be created by hand using a text editor, or created through automated scripts which act on source files provided by the SDOs or third parties.
- Import into VTS**
 TDS imports content in a way that depends on the nature of the content:

- VHAT content is imported through direct data transfer from the TDE database into VTS. Once imported into VTS, it follows the workflow illustrated by the vertical arrow leaving the import box in the diagram.
- SCS file content is validated against an XML schema then transformed into the VTS database structure.
- Map Sets, like SCS files, are validated against an XML schema. They are also validated against any applicable SCS (shown by the thin line connecting the Map Sets and SCS lines). Map Set content cannot be edited after import. Therefore, once it passes validation, a deployment containing the content is immediately prepared (shown by the horizontal arrow leaving the import box.)

Import files by selecting the Import option under the Update menu.

- Review
During the review step, VHAT content is checked for accuracy and consistency. Each concept imported from VHAT can be reviewed separately.

Review files by selecting the Review option under the Update menu.

- Change State to Ready To Test
Each VHAT concept is given a state parameter which shows its progress along the workflow. On initial import, the state assigned is Created. Once a VHAT concept has passed the review step, its state is changed to Ready To Test. Only concepts with a state of Ready To Test can progress to the next phase of the workflow.

Change the state of files by selecting the Review option under the Update menu.

Internal Test Phase

The second column shows the workflow steps used within STS to test content.

- Create Deployment
A deployment consists of VHAT terms that have been prepared to be sent to the VistA environments. Once VHAT terms are Ready To Test they may be placed into a deployment.

Create a Deployment by selecting the Create option under the Deployment menu.

- Deploy Deployment
Deployments may contain VHAT content (vertical arrow coming into the box) or map sets (horizontal arrow from the Import into VTS box), although they should not contain both types of content at once since this has historically caused unpredictable effects from TDS. Deployments can be sent to any number of VistA environments that are used only for STS testing.

Deploy a Deployment by selecting the Deploy option under the Deployment menu.

- Internal Testing
VistA applications are tested to make sure that the terminology content performs as

intended. The gray shading to this box indicates that Internal Testing is performed external to the TDS application.

- **Change State to Ready To Be Versioned**
Once internal testing is complete; the deployment is given the state of Ready To Be Versioned to indicate that it is ready for the next phase of the workflow.

Change the state of the files by selecting the Manage option under the Deployment menu.

SQA Test Phase

Prior to releasing the content for unrestricted production use, SQA independently tests the process of adding or updating content to VistA and the effects of the edited content on VistA environments.

- **Create Candidate Version**
One or more Deployments that are Ready To Be Versioned may be combined into a single candidate version. Candidate Versions should contain Map Sets or VWHAT content but not both. Versions at this stage of testing are qualified as Candidate Versions to indicate that they have not yet been approved by SQA.

Create a Candidate Version by selecting the Create option under the Version menu.

- **Deploy Candidate Version**
Versions can be sent to any number of VistA environments that are used only for SQA testing.

Deploy the Candidate Version by selecting the Deploy CV option under the Version menu.

- **SQA Testing**
VistA functions are tested to make sure that the terminology content is consumed by VistA applications as intended. The gray shading to this box indicates that SQA Testing is performed external to the TDS application.

Production Phase

Once content has completed SQA testing and has been approved by SQA as ready for unrestricted use by end-user applications, TDS is used to deploy content to VistA applications at VA sites nationwide.

- **Create Finalized Version**
Candidate Versions that have passed SQA testing are re-packaged as Finalized Versions in anticipation of distribution to VistA applications at production sites. For quality control purposes, each Finalized Version should contain only one Candidate Version so that the Finalized Version matches the conditions that the Candidate Version was certified under.

Create a Finalized Version by selecting the Manage option under the Version menu.

- **Deploy Finalized Version**
Final Versions can be sent to any of the 129 VA sites running VistA applications.

Deploy a Finalized Version by selecting the Deploy option under the Version menu.

- **Production Applications**
This box represents the intended end-result of the VETS work flow, which is the application of terminology content for health care, research, teaching, and administrative purposes.

Tools and Utilities

This column shows a number of TDS features that are used on an as-needed basis and may be applied at any point along the work flow.

- **Link and Unlink**
Two or more Finalized Versions can be linked, which causes them to be distributed together as a group. Although we intend to distribute Finalized Versions as single units, there are times when one version is created in order to replace specific content in another version. In this situation, linking the versions ensures that the new content replaces the previous content (and not vice versa). Unlinking simply breaks a link should the need arise; e.g., if two versions were linked in error. Only Finalized Versions (and not Candidate Versions) can be linked.

Link or Unlink the Finalized Versions by selecting the Link or Unlink options in the Tools menu.

- **Group and Ungroup**
VA sites may belong to a group, which is similar to an e-mail distribution list in that it allows a Finalized Version to be distributed to multiple sites by selecting a single group. A site can belong to only one group at a time, so this TDS feature also allows a site to be removed from a group (Ungroup), new groups to be created, and existing groups to be deleted.

Group and Ungroup the sites by selecting the Group Editor option under the Tools menu.

- **Validate**
This option produces a checksum from VTS and compares it with a checksum for the same content from any of the VistA sites. Checksums are hexadecimal strings calculated from data in such a way that mismatched checksums indicate that data does not match between VTS and a VistA site. Checksums can be mismatched either because of data corruption during transport, or intentional or accidental changes at VistA sites. In Figure 1 the dashed line pointing downwards to the next two boxes indicates that they can be used when investigating checksum mismatches. The dashed lines pointing horizontally show that checksums should be compared before and after each deployment.

Validate the checksums by selecting the Test or Production options under the Validate menu.

- **History**
This option shows the date and time that each deployment, candidate version, or finalized

version was sent to any of the internal, SQA, or production sites. It can be used to retrace the steps of deployment when investigating a checksum mismatch.

Check the History by selecting the History option under the Tool menu.

- **Discovery**
Discovery is used to determine the exact data differences leading to checksum mismatches. Differences (commonly referred to as diffs) include map sets or concepts that are present in VTS but not at the site, present at the site but not VTS, or present at both sites but differing in content or attributes.

Discover the diffs by selecting the Test or Production options under the Discovery menu.

Using STS Terminology Deployment Service 9.0

The STS Terminology Deployment Service menu contains options that assist Domain Stewards, Primary Terminology Modelers, Modeling Reviewers, STS Testers, Testing Deployment Coordinators, Deployment Analysts, and SQA Team members to review, prepare, test, and deploy content to VistA sites.

In addition to the menu options, links, and buttons the UI contains several icons. The icons assist in viewing and understanding the concept details. The icons include:

Review

The icons below display on the Concept Details screen in the Delta column when a change is made to the concept's state, properties, or relationships.

 - the white plus means a New Concept; designation, property, or relationship was added.

 - the white circle means the Concept's state was changed from inactive to active.

 - the blue slash means the concept was already in the system and the state was changed from active to inactive.

 - the white triangle means a change in property or relationship value.

 - the white X means a designation was moved from the Legacy parent concept.

Validation and Discovery

The icons below display during the Validation and Discovery procedures.

 - the red circle x and no data in the Receive Date column means that the Checksum has not been returned from the VistA site.

 - the red x means the site does not have the data or data has not been returned.

 - the green circle checkmark means the Checksum was returned from the VistA site.

 - the green checkmark means the data was received from the site.

 - the blue circle question mark means the VistA Checksum matches a Checksum corresponding to a previous version of VTS. The system displays the previously matching version in the Version column. You only see the question mark from the

Validate Production Sites window.

Miscellaneous

The icons below display on various screens throughout STS Deployment Services 9.0.

 - the plus and minus button expands and collapses the field.

  - the green up and down arrows indicate the column sorted on and allow you to change the sort order. The up arrow indicates the sort order is descending, Z – A. The down arrow indicates the sort order is ascending, A – Z.

Login

Follow the steps below to log in to the STS Deployment Services application:

1. Navigate to the application entry point.
2. Enter your user name and password in the boxes provided.
3. Click the **Login** box or press **Enter** on your keyboard.

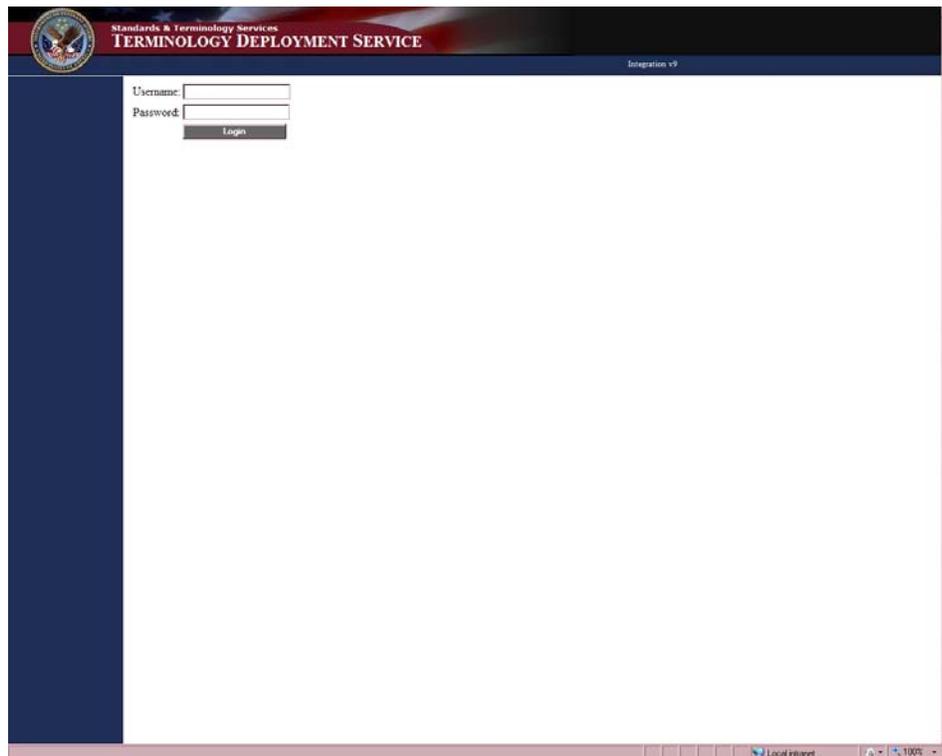


Figure 2. Login Window

When the log in is successful the current system name, the menu on the left, and the environment window display on the screen. Consistent with VHA policy, your session times out after a period of inactivity.

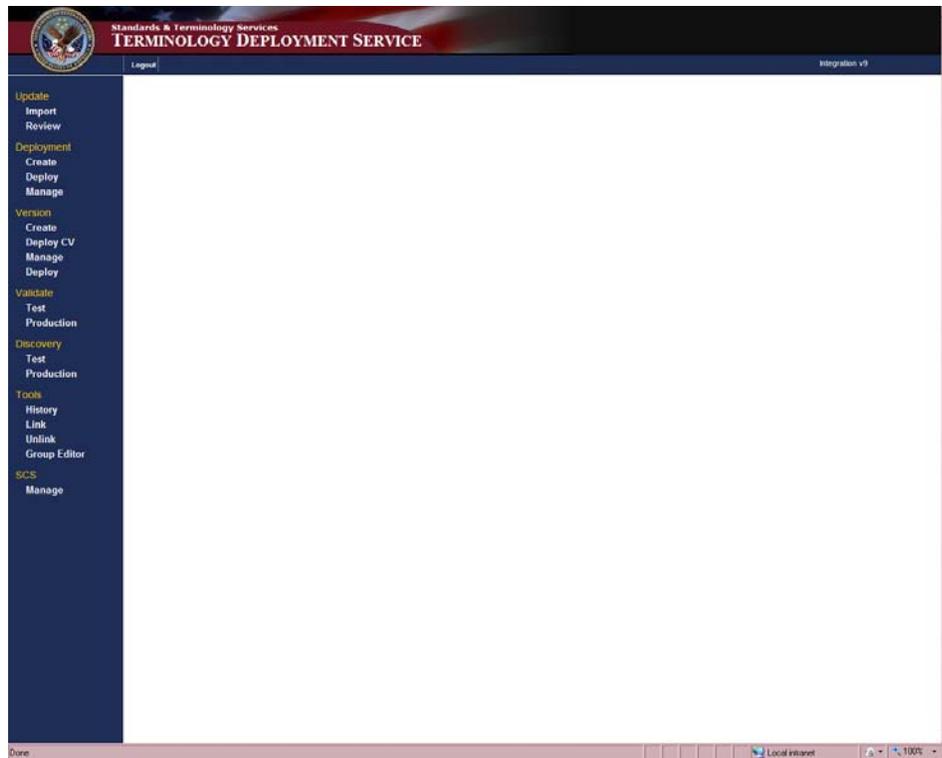


Figure 3. STS Deployment Window

Update Menu

This screen allows you to import new or changed content into the system. Follow the steps to import Standard Coding Systems or Map Sets data.

1. Click **Import** in the left navigation panel under Update.
2. On the Import window, click the **Browse** button to locate:
 - a. A new Standard Coding System or a new version of an existing Standard Coding System. Select the file and click the **Import SCS** button.

When the imported is successful the data is imported and a message is displays indicating a successful import. Imported SCSs data is displayed in the Manage option in the left navigation panel under SCS. SCS data is not deployed and can be only viewed in the Terminology Browser.

<http://vahdrppwls14.aac.va.gov:7204/sts.browser/>

- b. A new Map Set or a new version of an existing Map Set. Select the file and click the **Import Map Sets** button.

When the import is successful the data is imported and a message displays. When a Map Set is imported a deployment is automatically created, one for each Map Set.

3. On the Import window, click the **Refresh** button.

The data differences between the authoring environment and the Terminology Deployment Service are identified and only the differences are imported into TDS. When the refresh is successful, the content is imported and a message displays.

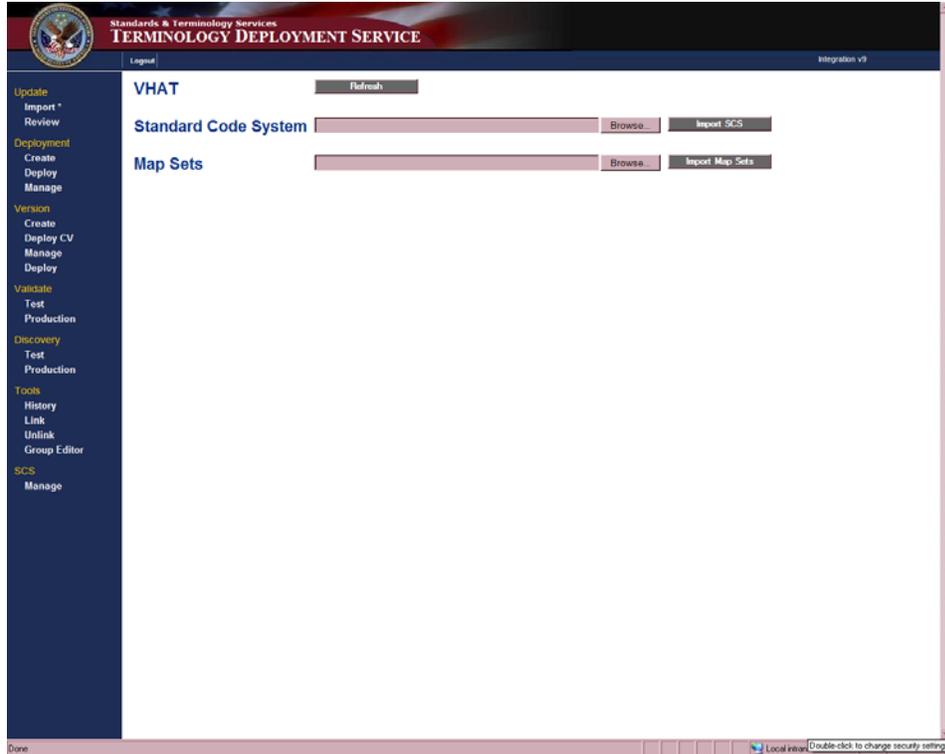


Figure 4. Import Window

If an error is encountered, the process stops, all changes are discarded, and an error message displays. Only the first identified error condition is described in the error message.

Follow the steps below to review the VBAT content changes and promote changes to the Ready To Test state.

1. Click **Review** in the left navigation panel under Update.
2. Select the Domains and States you want to review, and click the **Get Changes** button.

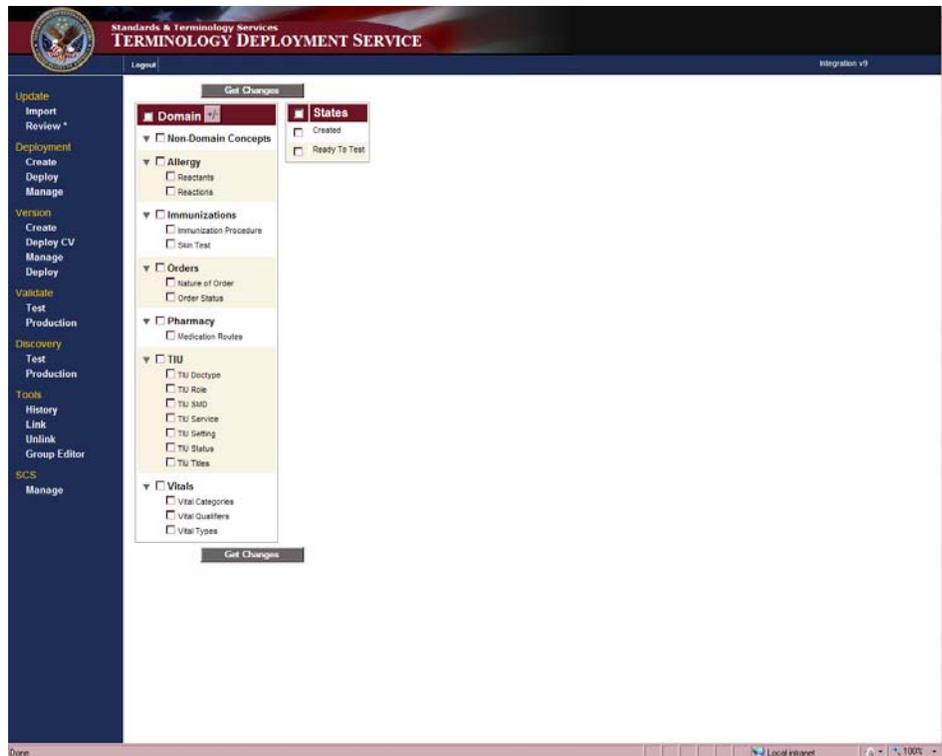


Figure 5. Review Change Set Window

There are two concept states, Created and Ready To Test. When a concept is imported, it is initially granted a Created state. When a modeling reviewer approves a concept they change the state to Ready To Test. This makes the concept available to be included in a deployment.

You can change the concept state back to Created if further review is needed.

On the Change Set Summary window, select the Concepts that have been reviewed and approved, select **Ready To Test** from the pull down menu, and click the **Change State** button.

The concept names in the Concept Name column are links to the Concept Details of each concept. You can click the **Concept Name** link to open the Concept Detail window of the concept you wish to review.

On the Concept Detail window, you can review the concept's details for accuracy. If the details are correct:

3. Select **Ready To Test** in the pull down menu and click the **Change State** button.

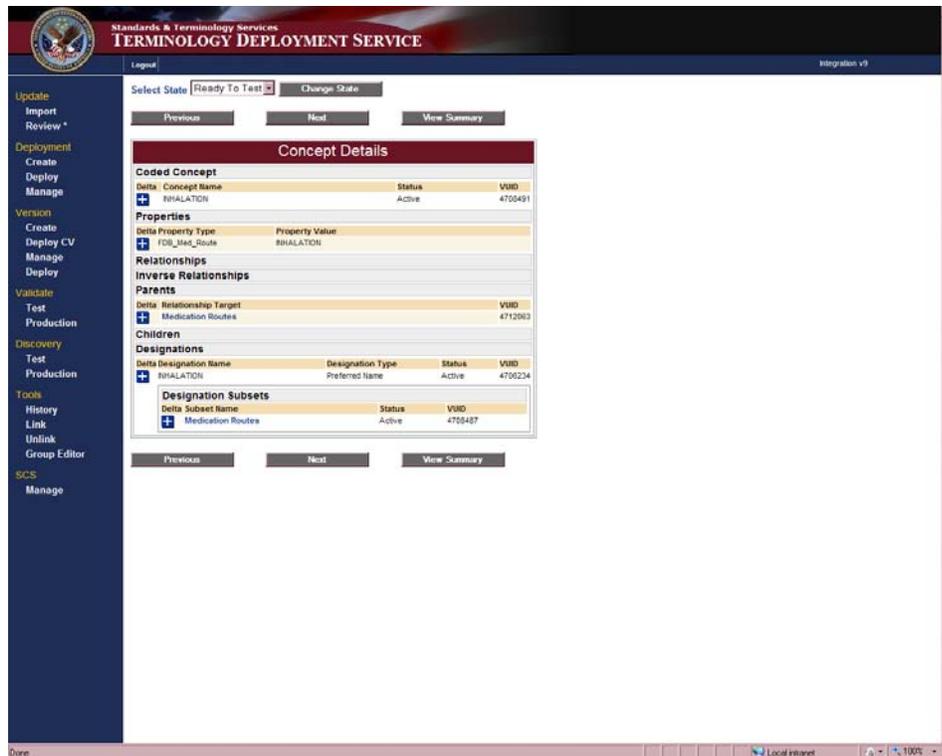


Figure 6. Concept Detail Window

This window also contains buttons to move through the concept list. Click the **Previous** or **Next** buttons to view the Concept Details of other concepts. You can return to the Change Set Summary window by clicking the **View Summary** button.

On the Concept Detail screen, the data in the Relationship Target column is a link. Click the link to open the Associated Concept Detail window. The Associated Concept Detail window contains details about the associated concept's parent and child relationships. The parent and child concept names are also links to those content's Concept Detail windows.

The Concept Detail screen also displays the designations; the textual expression of the concept, any properties associated to that designation, and its participation in a Designation subset. Click the link to open the Associated Subset Detail to view the details of that Subset

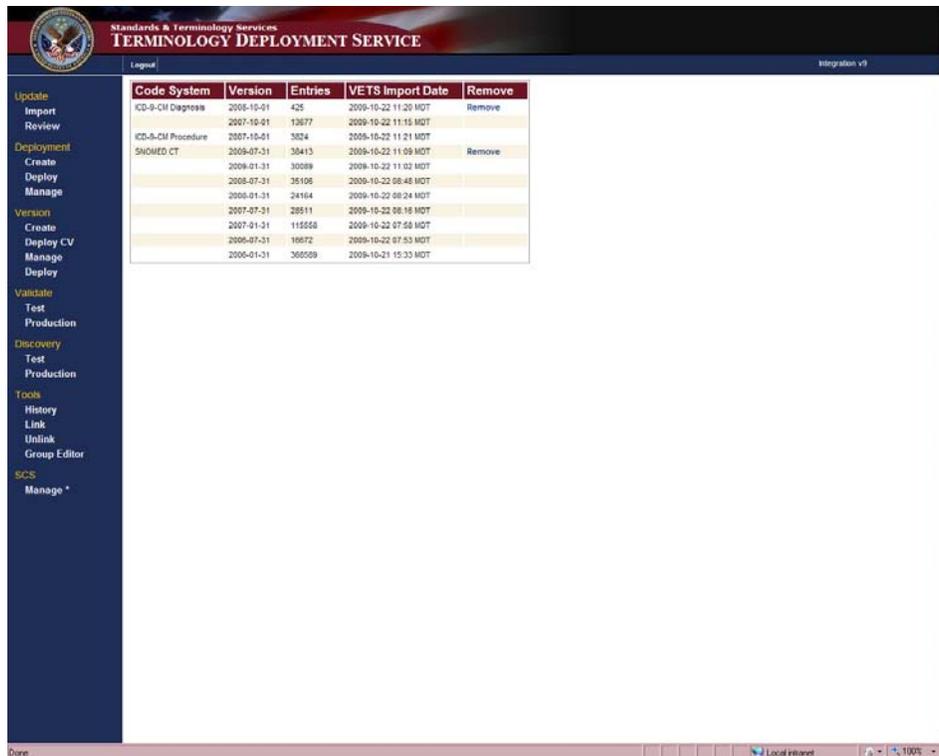


Figure 8. Manage SCS Window

Deployment Menu

This section refers to the set up and preparation for internal testing. Content testing is performed in VistA applications and is not covered in this manual.

Follow the steps below to create a Deployment for internal testing:

1. Click **Create** in the Deployment navigation menu.
2. On the Create Deployment window, select the Ready To Test Concepts you want to deploy for testing and click the **Create Deployment** button.

A successfully created deployments message, Deployment Details, and the size and text of the HL7 message display. The deployment name is the combination of the date and time that it was created.

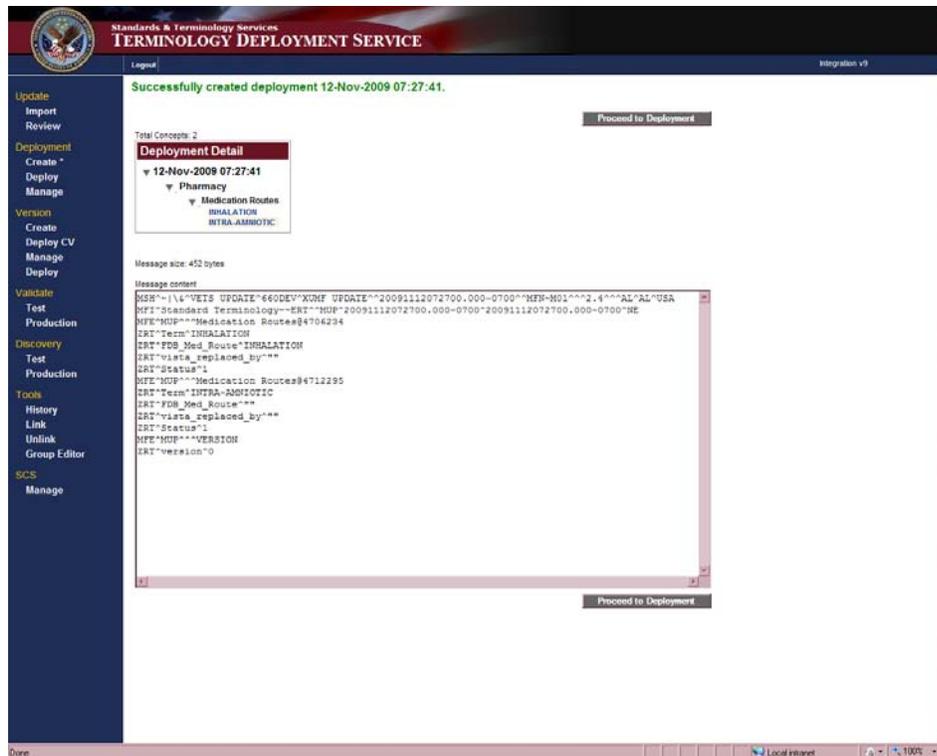


Figure 9. Deployment Created Window

For a non-VistA deployment (content that is not deployed to the VistA sites but needs to be included in the VHAT), no HL7 message is created.

If the deployment was not created successfully, an error message displays.

Note: performing checksum at this point tests for a connection as well as checking for consistency between VTS and VistA sites.

On the Deployment Created window, if a checksum has already been performed, you can click the **Proceed to Deployment** button to jump to the Deploy option.

3. Click **Test** in the Validate navigation menu.
4. On the Validate Internal and SQA Sites window, select the Site, Domain, and Deployment you are checking on, and click the **Request Checksum** button.

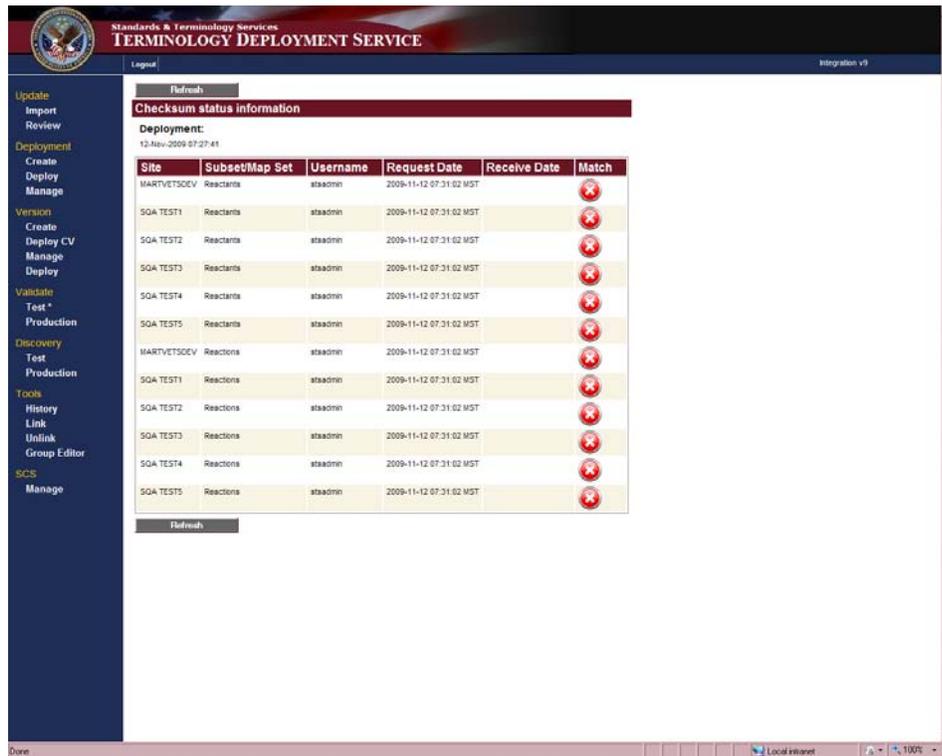
Requesting the Checksum generates and compares new Checksums for the criteria you selected. If the Checksums were previously requested for the criteria you selected and nothing new has been deployed to the VistA site, click the **Compare Checksum** button to view the Checksums.

The Display Checksum Results for Sites window displays the Checksum status information.

- A  and no date in the Receive Date column means that the Checksum has not

been returned from the VistA site.

- A  and a date in the Receive Date column means that the Checksums between VTS and VistA do not match.
- A  means the Checksums between VTS and VistA match.



The screenshot shows the 'Checksum status information' window in the Terminology Deployment Service. The window title is 'Checksum status information' and it includes a 'Refresh' button. Below the title, it says 'Deployment: 12-Nov-2009 07:27:41'. The main content is a table with the following columns: Site, Subset/Map Set, Username, Request Date, Receive Date, and Match. The table contains 15 rows of data, each representing a different site and its deployment status. The 'Match' column contains either a red 'X' icon (indicating a mismatch) or a green checkmark icon (indicating a match). In this screenshot, all 15 rows show a red 'X' icon, indicating that the checksums do not match for any of the listed sites.

Site	Subset/Map Set	Username	Request Date	Receive Date	Match
MA2VETSCEV	Reactants	ataadmin	2009-11-12 07:31:02 MST		
SOA TEST1	Reactants	ataadmin	2009-11-12 07:31:02 MST		
SOA TEST2	Reactants	ataadmin	2009-11-12 07:31:02 MST		
SOA TEST3	Reactants	ataadmin	2009-11-12 07:31:02 MST		
SOA TEST4	Reactants	ataadmin	2009-11-12 07:31:02 MST		
SOA TEST5	Reactants	ataadmin	2009-11-12 07:31:02 MST		
MA2VETSCEV	Reactions	ataadmin	2009-11-12 07:31:02 MST		
SOA TEST1	Reactions	ataadmin	2009-11-12 07:31:02 MST		
SOA TEST2	Reactions	ataadmin	2009-11-12 07:31:02 MST		
SOA TEST3	Reactions	ataadmin	2009-11-12 07:31:02 MST		
SOA TEST4	Reactions	ataadmin	2009-11-12 07:31:02 MST		
SOA TEST5	Reactions	ataadmin	2009-11-12 07:31:02 MST		

Figure 10. Display Checksum Results for Sites Window

5. Click **Deploy** in the Deployment navigation menu.
6. On the Deploy Deployment window, select the Deployment(s) you want to deploy, the Site(s) you want to deploy to, and click the **Confirm Deployment** button.

The Verify Deployment and Test Sites window displays the selected Deployments, Sites, and the HL7 message and message size. The HL7 message is a visual cue that the deployment was formed correctly.

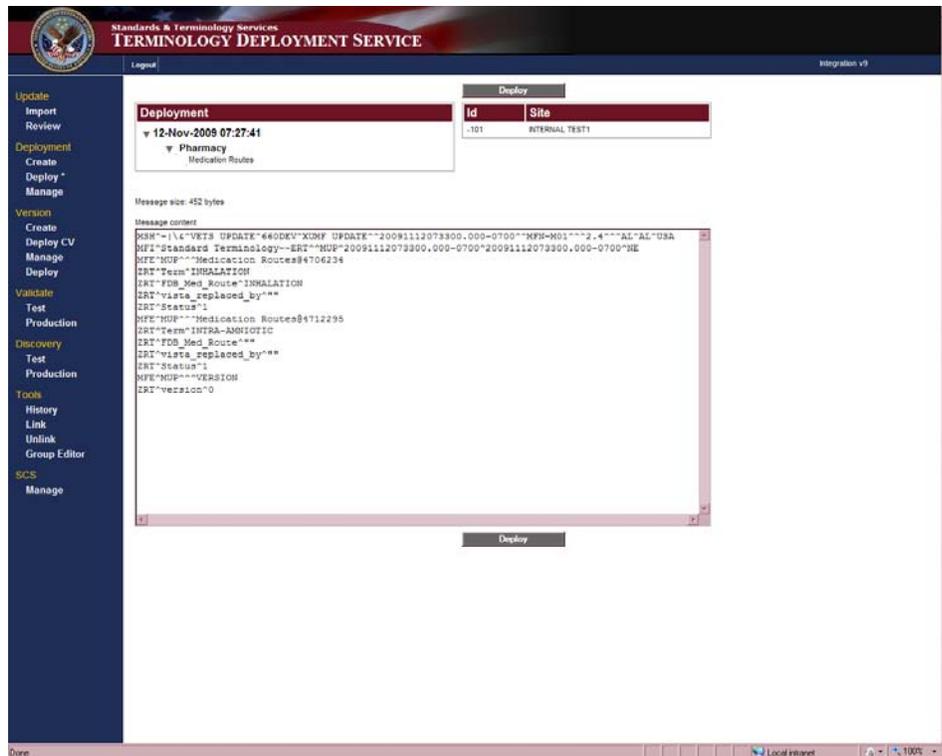


Figure 11. Verify Deployment and Test Sites Window

7. Click the **Deploy** button to deploy to the selected sites.

The Deployment Results window displays a sent message and the deployment information. The acknowledgement (ACK) field is initially empty. Click refresh periodically until it is populated with either:

- Application Acknowledgement (AA) – the message made it to the site and was processed correctly.
- Application Error (AE) – the message was received at the site but was not processed correctly.

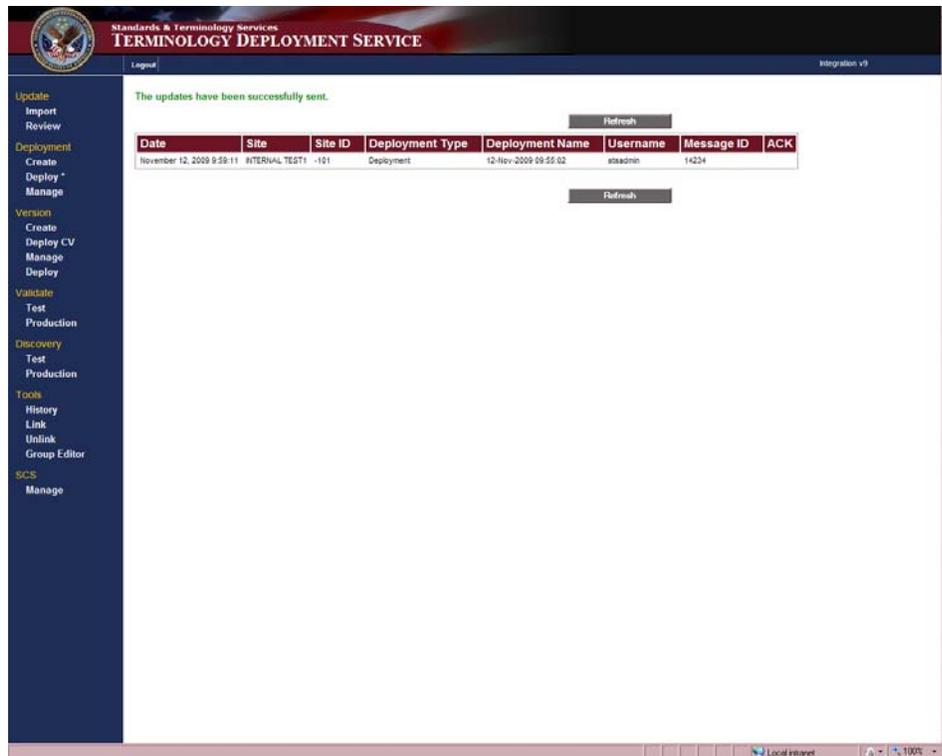


Figure 12. Deployment Results Window with ACK Populated

If the ACK field does not populate after considerable time, there may be a problem with the connection to the site.

8. Click **Manage** in the Deployment navigation menu.
9. On the Manage Deployment window, select the Deployment that is Ready To Be Versioned by putting a checkmark next to the deployment.

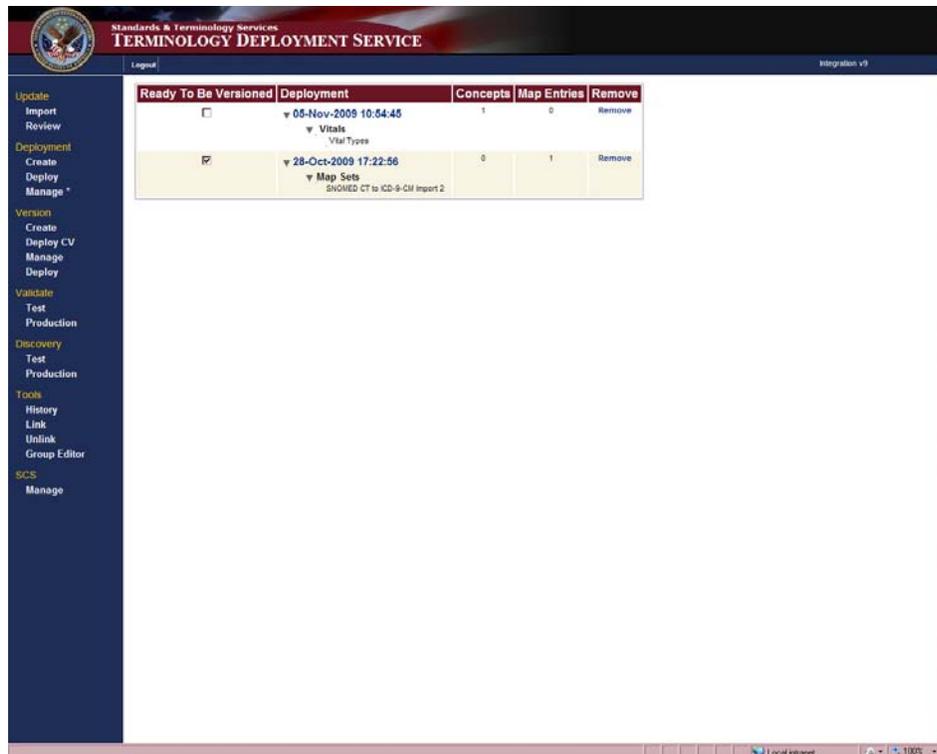


Figure 13. Manage Deployment Window

Checking the Deployment as Ready To Be Versioned makes it eligible for inclusion in a deployment. The Total Concepts column displays the number of concepts in the deployment.

- Click the **Remove** link to remove a subset deployment in that row.

Removing a subset deployment returns all of the concepts in that deployment to the Created state. However, if that deployment was deployed to VistA the system does not remove the update made to VistA. This will cause a checksum mismatch. To ensure checksum match you can remove the updates from VistA in the following ways:

If a concept property, relationship, or status value was updated you can deploy the last finalized version containing concept with its previous values.

If a new concept, designation, property, or relationship was introduced you can inactivate these new values, create a deployment, and deploy this to the test sites.

- Click the **Remove** link to remove a map set deployment in that row.

If a map set deployment is removed and it has been deployed to VistA the system does not remove the update made to VistA. This will cause a checksum mismatch. To ensure checksums match you can remove the updates from VistA in the following ways:

If a status value was updated you must capture the MUID for that map entry and add the MUID to the Import file if it did not exist on the initial import.

If a new map entry was introduced you must capture the MUID for that map entry, add the MUID to the Import file, and inactivate. Once the MUIDs have been added to the existing import file then the file can be imported again.

Version Menu

This section refers to the set up and preparation for SQA testing. Content testing is performed in VistA applications at the SQA sites and is not covered in this manual.

Follow the steps below to create a Candidate Version:

1. Click **Create** in the Version navigation menu.
2. On the Create Candidate Version window, select the Deployments you want to promote to a Candidate Version and click the **Create Candidate Version** button.

The Candidate Version Created window displays a successful message, Candidate Version details, and the HL7 message and the message size. The Candidate Version's name is the date and time that the Candidate Version was created.

If the Candidate Version was not created successfully, an error message displays.

For a non-VistA deployment (content that is not deployed to the VistA sites but needs to be included in the VHAT), no HL7 message is created.

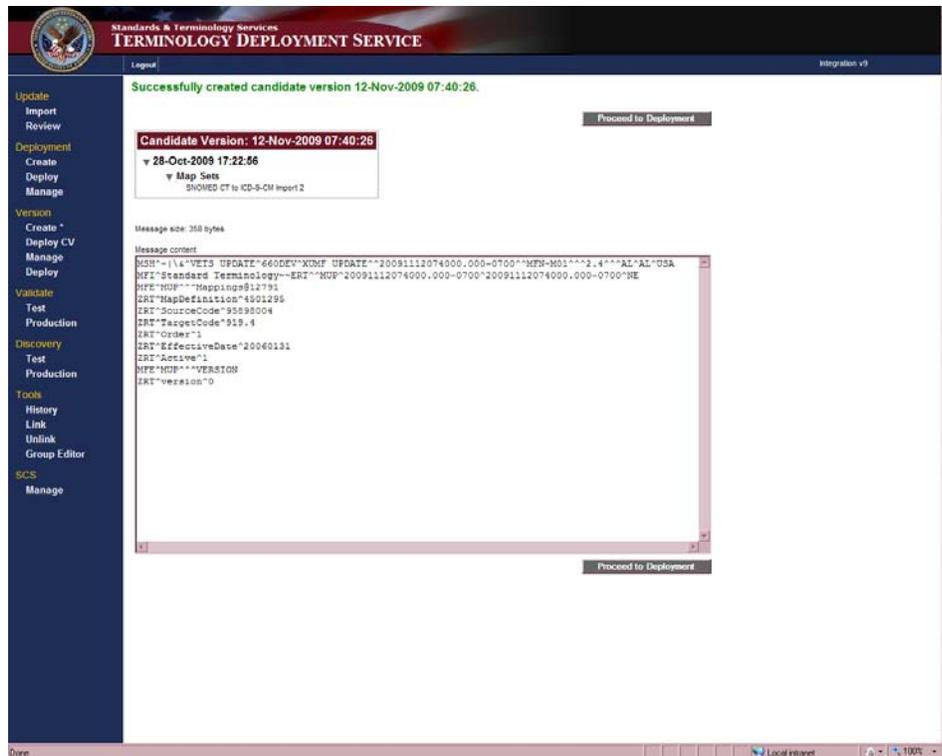


Figure 14. Candidate Version Created Window

If a checksum has already been performed, you can click the **Proceed to Deployment** button to jump to the Deploy option.

Note: performing checksum at this point tests for a connection as well as checking for consistency between VTS and VistA sites.

3. Click **Test** in the Validate navigation menu.
4. On the Validate Internal and SQA Sites window, select the SQA sites; the Domains, subsets, or Map Sets; Deployments, Candidate Versions, or Versions; and click the **Request Checksum** button.

Requesting the Checksum generates and compares new Checksums for the criteria you selected. If the Checksums were previously requested for the criteria you selected and nothing new has been deployed to the VistA site, click the Compare Checksum button to view the Checksums.

The Display Checksum Results for Sites window displays the Checksum status information.

- A  and no date in the Receive Date column means that the Checksum has not been returned from the VistA site.
- A  and a date in the Receive Date column means that the Checksums between VTS and VistA do not match.

- A  means the Checksums between VTS and VistA match.

5. Click **Deploy CV** in the Versions navigation menu.
6. On the Candidate Version Deployment window select one or more Candidate Versions and the SQA sites, and click the **Confirm Deployment** button.

The Verify Candidate Version and Test Sites window displays the selected Candidate Versions, Sites, and the HL7 message and the message size.

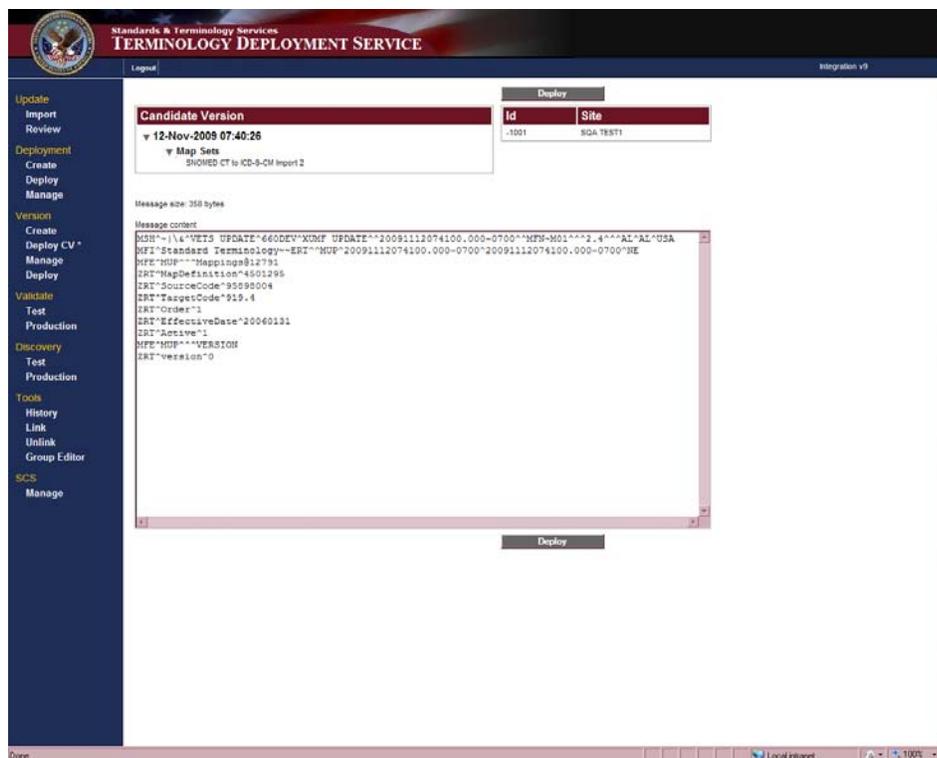


Figure 15. Verify Candidate Versions and Test Sites Window

7. Click the **Deploy** button to deploy the Candidate Version to the selected sites.

The Deployment Result window displays a sent message and the deployment information. The ACK field is initially empty. Click refresh periodically until it is populated with either:

- AA – the message made it to the site and was processed correctly.
- AE – the message was received at the site but was not processed correctly.

If the ACK field does not populate after considerable time, there may be a problem with the connection to the site.

8. Click **Manage** in the Versions navigation menu.

The Candidate Version's date and time stamp is a link to the Deployment Details

window. The Deployment Details window displays Candidate Version details. You can view the HL7 message and export the content.

On the Manage Version window, you can click the **Remove** link to remove the Candidate Version from the deployment list. All of the deployments it contains return to the Ready To Be Versioned state.

However, if that deployment was deployed to VistA the system does not remove the update made to VistA. This will cause a checksum mismatch. To ensure checksum match you can remove the updates from VistA in the following ways:

- If a concept property, relationship, or status value was updated you can deploy the last finalized version containing concept with its previous values
 - If a new concept, designation, property, or relationship was introduced you can inactivate these new values, create a deployment, and deploy this to the test sites.
9. On the Manage Version window, select a Candidate Version you want to finalize and click the **Finalize Version** button.

Finalized Version names are sequential numbers.

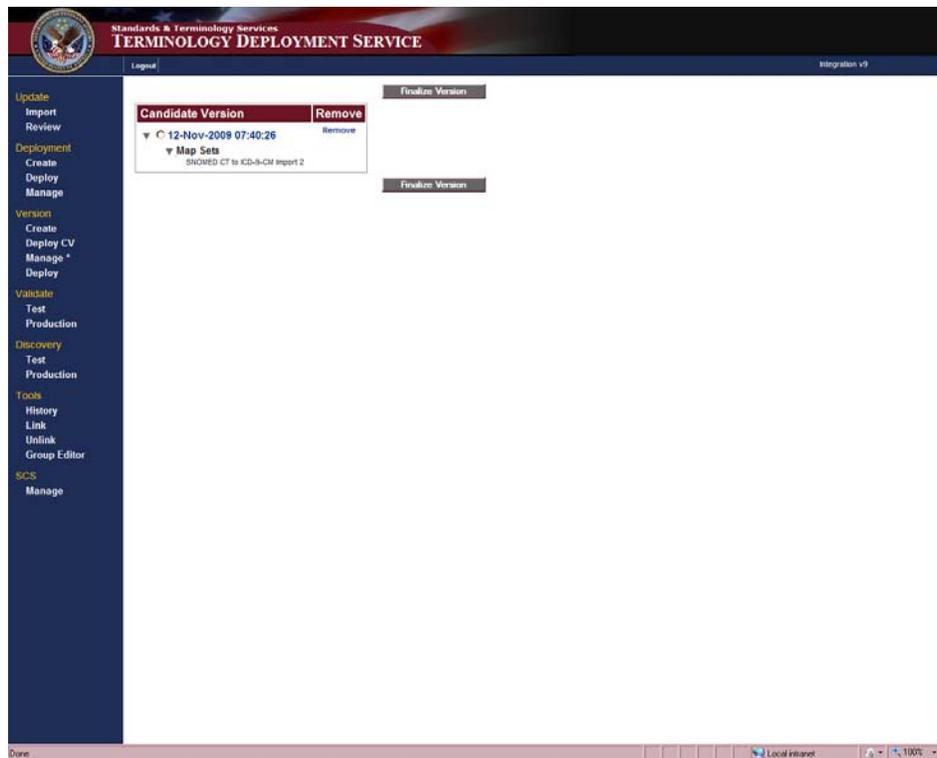


Figure 16. Manage Version Window

If the Candidate Version was successfully promoted to a Finalized Version, a successfully created version message displays.

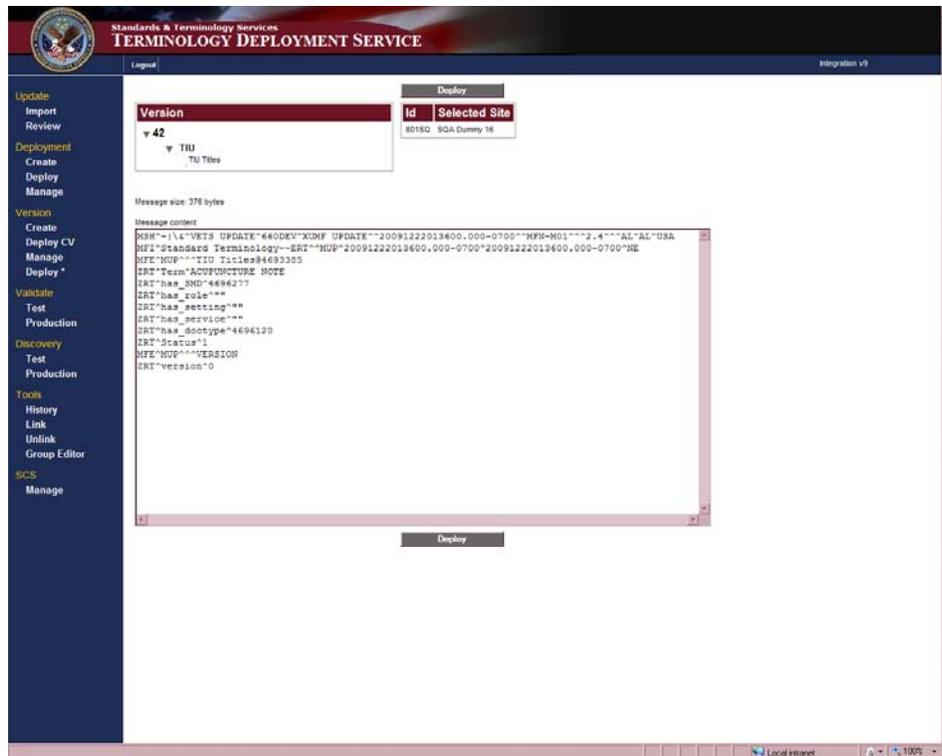


Figure 18. Verify Deployments and Production Sites Window

The Deployment Result window displays a sent message and the deployment information. The ACK field is initially empty. Click refresh periodically until it is populated with either:

- AA – the message made it to the site and was processed correctly.
- AE – the message was received at the site but was not processed correctly.

If the ACK field does not populate after considerable time, there may be a problem with the connection to the site.

5. Click **Production** on the Validate navigation menu.
6. On the Validate Production Sites window select the Group Name or individual Production Site, select the Domain, and click the **Request Checksum** button.

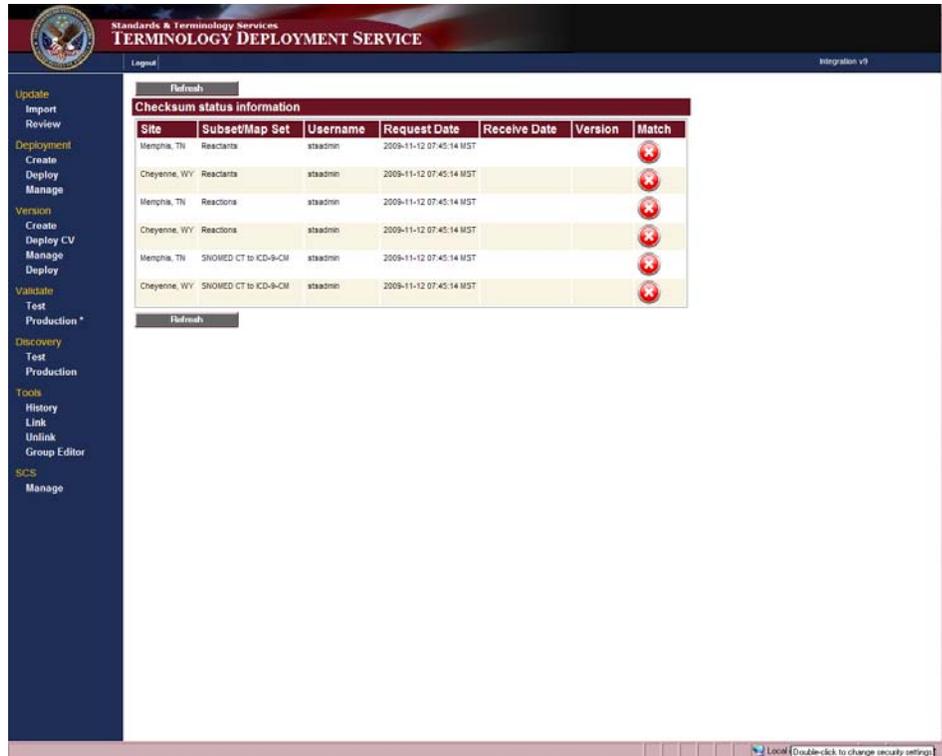


Figure 19. Production Validation Window

The Display Checksum Results for Sites window displays the Checksum status information.

- A and no data in the Receive Date column means that the Checksum has not been returned from the VistA site.
- A and a date in the Receive Date column means that the Checksums between VTS and VistA do not match.
- A means the Checksums between VTS and VistA match.
- A means the VistA Checksum matches a Checksum corresponding to a previous version of VTS. The system displays the previously matching version in the Version column.

Logout

Click the **Logout** link at the top of the environment window to log out of the system.

Troubleshooting

The information in this section describes how to use the Tools in STS Terminology Deployment Service 9.0.

Discovery

The Discovery menu contains options for Test and Production information. The process to obtain the data is the same for both the Test and Production menu options. The only difference is that in the Test Discovery you select Deployment and candidate version along with finalized version, and Internal or SQA sites to discover the data each contains. In the Production Discovery you select Version and Production sites to discover the data they contain. In this section the Test Discovery path is described.

To display the actual content differences, follow the directions below:

Click the **Test** option in the Discovery menu to open the Discovery – Select Subsets/Map Sets Test window. In this window, select the Subset or Map Set you want to view and click the **Proceed to Deployment Selection** button.

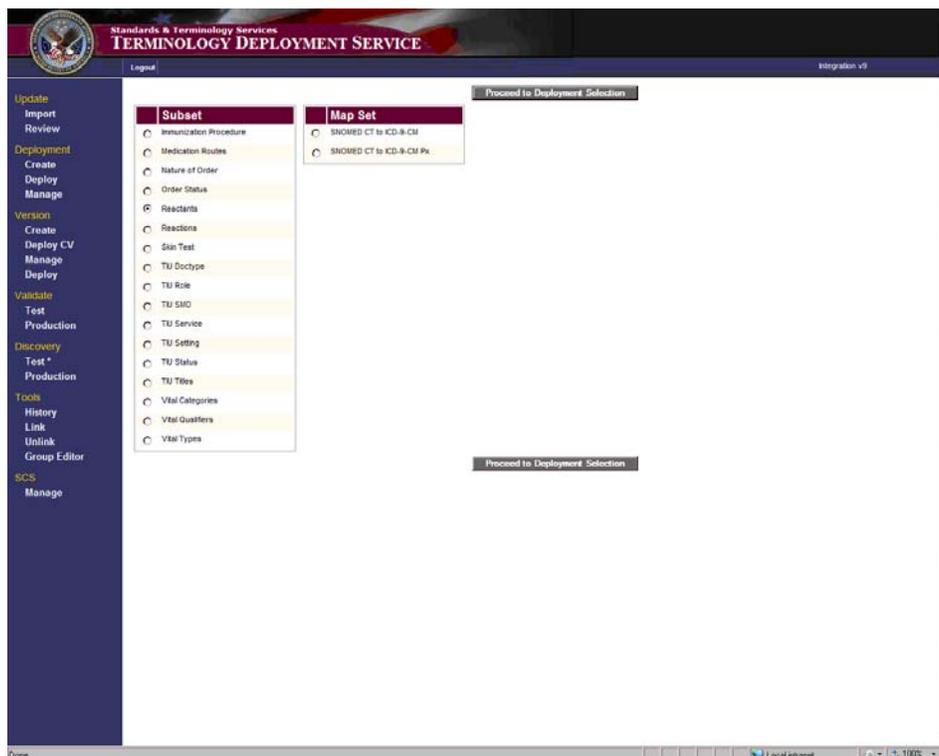


Figure 20. Discovery – Select Subsets/Map Sets Window

The Discovery – Select Deployment, Candidate, or Version Test window displays the Deployments, Candidate Versions, and Versions associated with the Subset or Map Set you

selected. Select Deployment(s), Candidate Version(s), and Version, and click the **Proceed to Site Selection** button. The Versions are cumulative so selecting higher numbered versions includes content created for that version and everything in the prior versions.

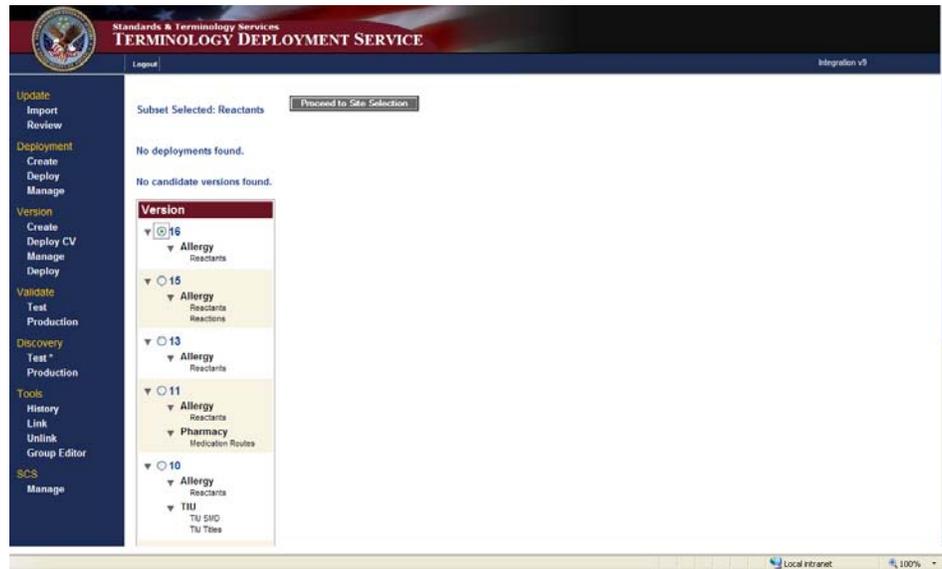


Figure 21. Discovery – Select Deployment, Candidate, or Version Test Window

The Discovery – Select Sites Test window displays a list of SQA and Internal Sites. The date and time stamp in the Retrieved column corresponding to a site indicates the last time data was requested for the site.

Select one or more Sites and click the **Request Data** button.



Figure 22. Discovery – Select Sites Test Window

The Discovery Results window displays if the site selected has returned data.

- A  indicates data has been returned from the VistA site.
- A  indicates data has not yet returned.

To view the differences between the results, click the **View Differences** button. Click the **Refresh** button to update the information.

Note: All sites should return data before you click the View Differences button. Otherwise, data that has not yet returned might be misinterpreted as data that is missing from the VistA site.

View Differences displays a table showing differences between VTS and site data.



Figure 23. Discovery Results Test Window

The bottom tables in Figure 24 and 25 show differences between VHA Terminology Server (VTS) and site data. There are three situations leading to data discrepancies:

- In Figure 24 in the top three rows, the VTS column contains values, but the VistA column is blank. This means that some VTS data is not present at the VistA site.
- In Figure 25 the next seven rows display data that is present in VistA but not in VTS.
- In Figure 25 the following rows display the Field Name differences between VTS and VistA sites.

Rows only display if there are data differences. If there are no differences between VTS and the VistA site, then the second table does not display. Instead, a message displays stating that there are no data differences.

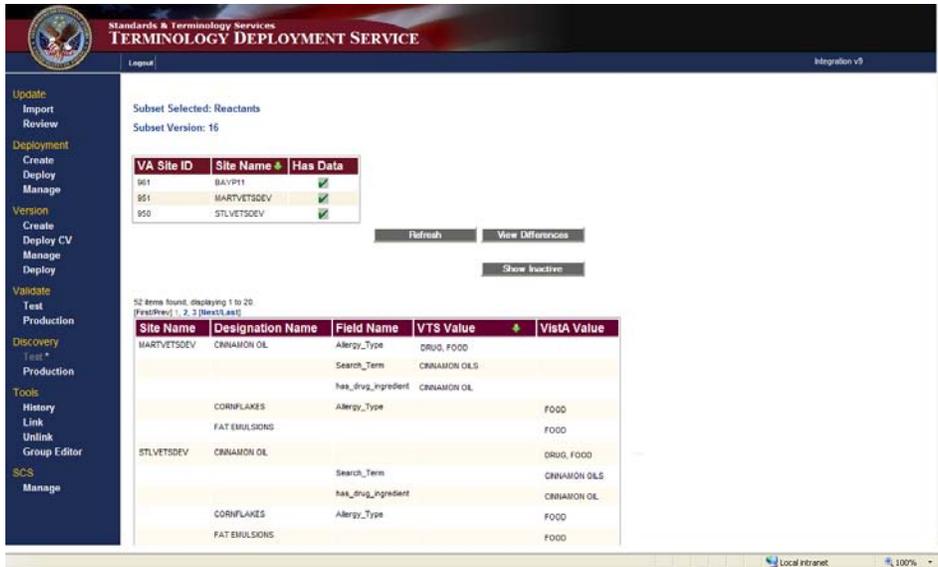


Figure 24. Discovery Results Window



Figure 25. Discovery Results Window

Only differences for active designations display initially. To display differences for inactive designations, click the **Show Inactive** button.

History

To view a summary of deployments that were sent to a site and whether or not the deployments were processed without error at the receiving site, follow the directions below:

Click the **History** option in the Tools menu to open the Deployment History – Select Deployments window. This window displays a list of Deployments, Candidate Versions, and Versions. The names of Deployments, Candidate Versions, and Version numbers are links

that opens a details window showing the content. Select the item you want to view and click the **Proceed to Site Selection** button.



Figure 26. Deployment History – Select Deployments Window

The Deployment History – Select Sites window displays a list of Internal, SQA, and Production sites. Select the Sites you want to view and click the **View History** button.

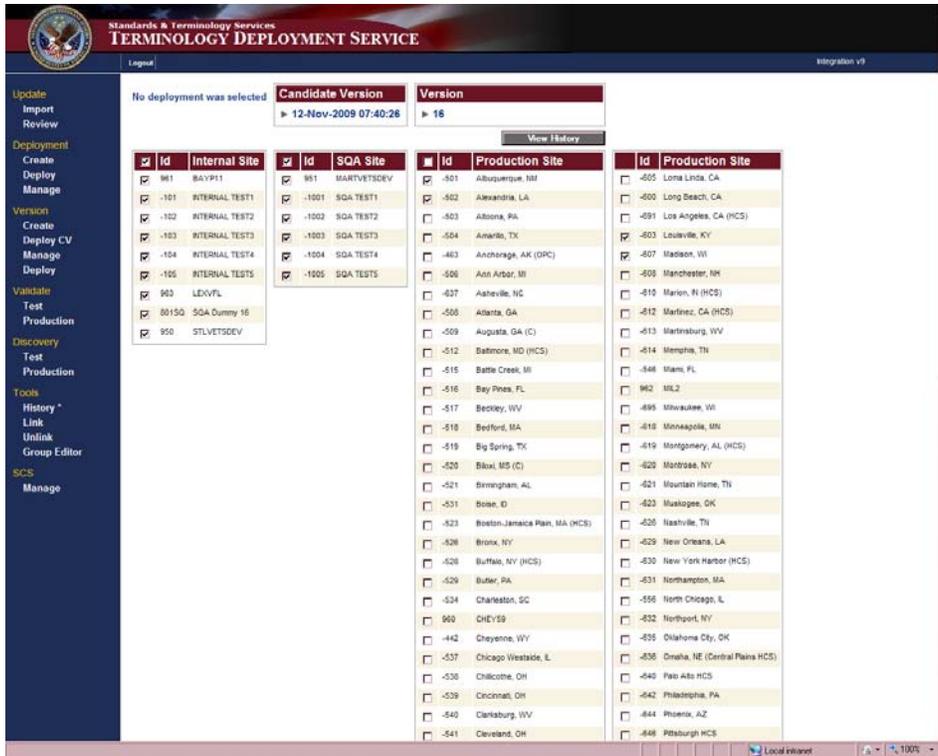


Figure 27. Deployment History – Select Sites Window

The Deployment History – Results window displays the history of the Sites selected. The Description field indicates the subsets that were deployed to the selected site. A partial version deployment is indicated if the Description field does not display all of the domains and subsets contained in the Version selected. Click the **Refresh** button to update the information.

The screenshot displays the 'TERMINOLOGY DEPLOYMENT SERVICE' interface. On the left is a navigation menu with categories like Update, Deployment, Version, and Discovery. The main content area is divided into several sections:

- Deployment:** A list of deployment events with timestamps, such as '02-Mar-2010 19:00:03' and '01-Mar-2010 10:35:28'.
- Version:** A list of version numbers including 36, 34, 33, 32, and a group '27 & 28 & 29 & 30 & 31'.
- Internal Site / SOA Site:** Two small tables listing site IDs and names like 'BAYPH1', 'BFL-STLSTS', and 'MARTVETSDEV'.
- Production Sites:** A section stating 'No production sites found.'
- Deployment History Table:** A detailed table with columns: Deployment Date, Site Name, Site ID, Deployment Type, Deployment Name, Description, Username, Message ID, and ACK. It lists several candidate and deployment versions.
- Export options:** A link to 'CSV' for exporting the data.

Figure 28. Deployment History – Results Window

At the bottom of the Deployment History – Results window you have an Export option: CSV. This option allows you to export the history as a Comma-Separated Value (CSV) file. How you view the file depends on what application you use to read a .csv file.

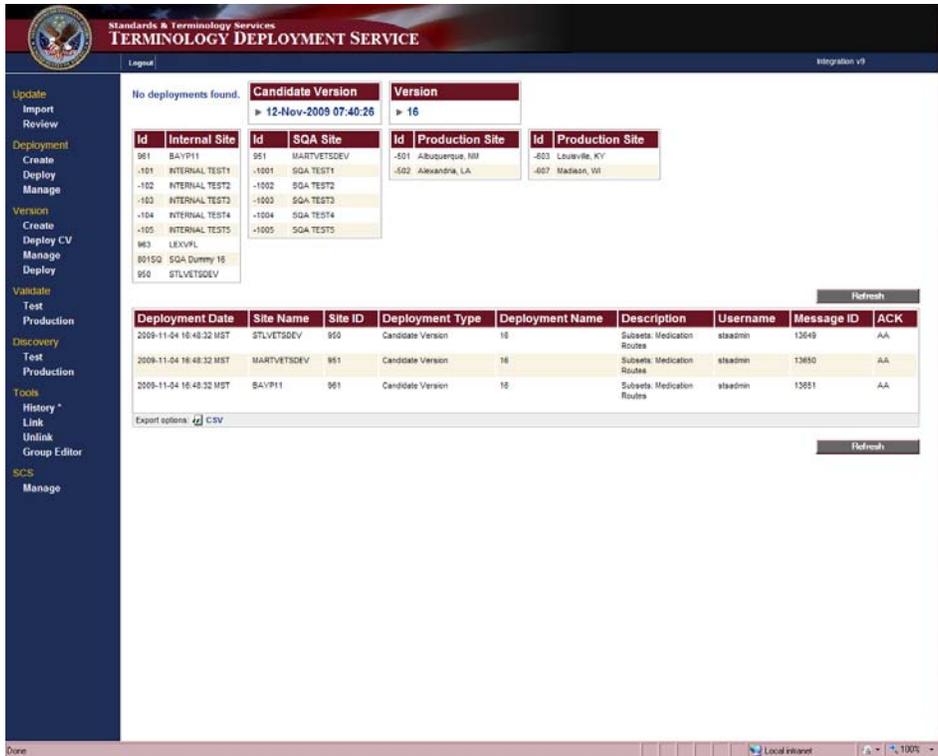


Figure 29. Deployment History – Results Window

Link and Unlink

To Link or Unlink versions, follow the directions below:

Click the **Link** option to open the Link Versions window. The Link Versions window displays a list of unlinked Versions. Select the versions to link and click the **Link Versions** button.



Figure 30. Link Versions Window

Once a version is finalized, its content cannot be edited. If corrections to a Finalized Version are required, a subsequent version containing the revised content must be finalized and linked to the incorrect Finalized Version. This ensures the corrected content always deploys with the version that contained the mistake.

Subsets within linked Versions can be deployed separately. For example, see Figure 29. The Version Deployment – Select Versions to Deploy window displays linked versions 40, 41, and 42. These versions contain content for two subsets: Nature of Order and TIU Titles. Selecting the checkbox by Nature of Order ensures that only the content for this subset deploys.



Figure 31. Partial Deployment of a Linked Version from Version Deployment – Select Versions to Deploy Window

Click the **Unlink** option to open the Unlink Versions window. This window displays a list of Linked Versions. Select the Linked Versions that you want to unlink and click the **Unlink Versions** button.

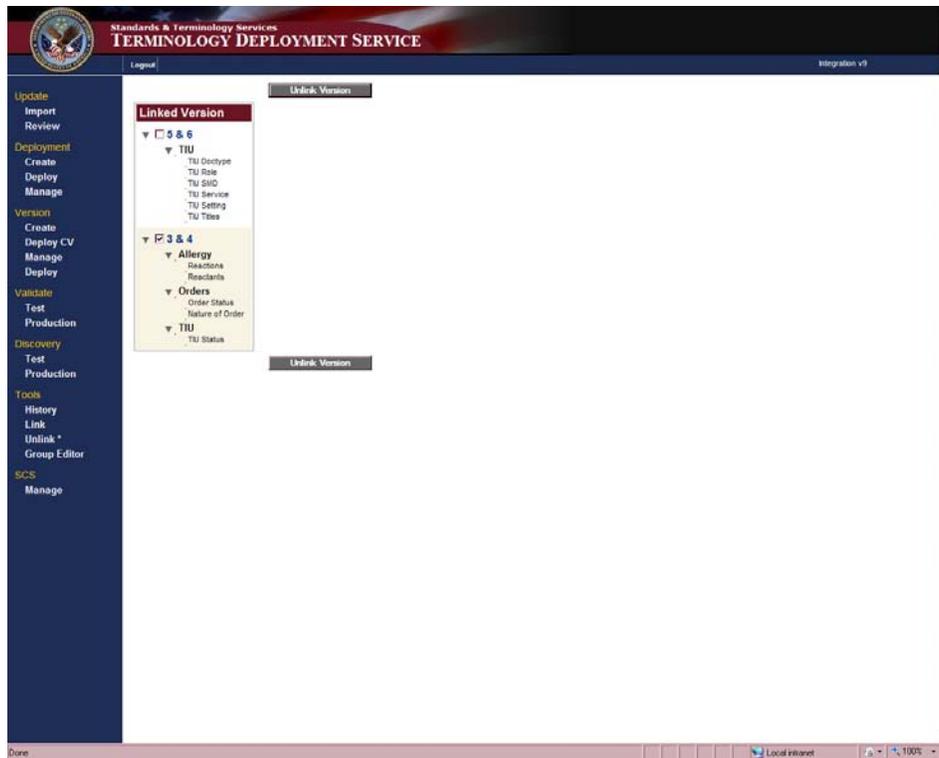


Figure 32. Unlink Version Window

Group Editor

To create, edit, or delete a Group, follow the directions below:

Click the **Group Editor** option to open the Group Editor window. The Group Editor window displays lists of previously created groups and Production Sites.

To create a new group click the **Create Group** checkbox, enter a group name in the box provided, select the sites you want to include in your group, and click the **Save Group** button. A site can only belong to one group at a time. The name of your group displays in the Group Name box. When you select your Group, the sites you included are also selected.

Note: You cannot include apostrophes in Group Names, i.e. Jane Doe's Group should be Jane Does Group.

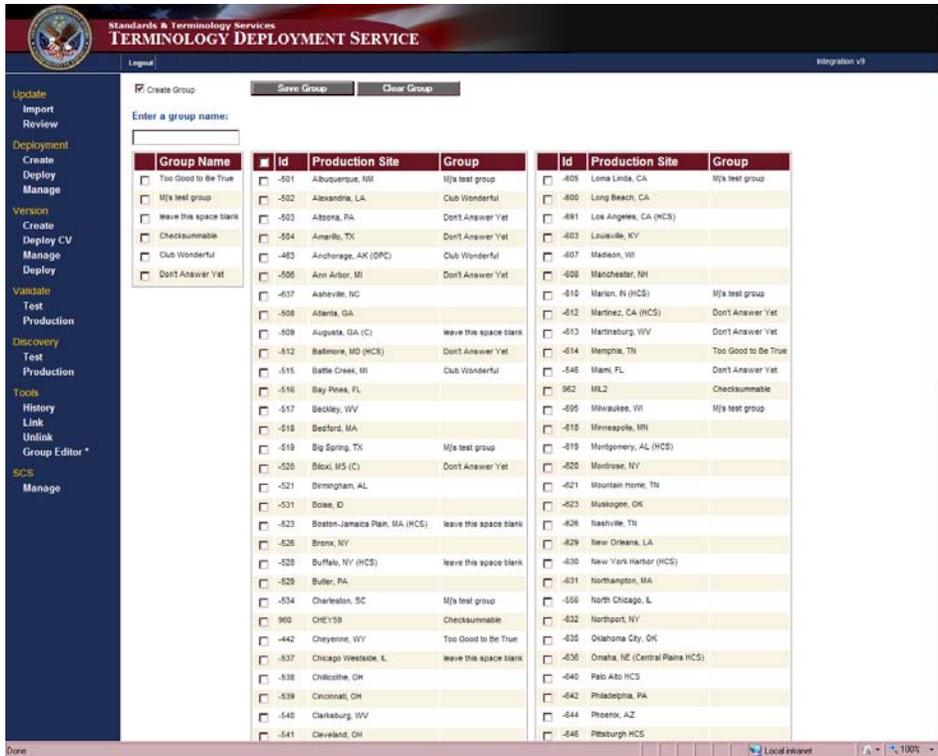


Figure 33. Group Editor Window

To add new sites to a Group, check the Group Name, select new sites to add, and click the **Save Group** button.

To remove a site from a group, check the site and click **Remove Group from Site(s)** button. This will display a warning message. Click the OK button to continue removing the site from the group.

To delete an entire Group, select the Group Name and click the **Remove Group from Site(s)** button. This will display a warning message. Click the **OK** button to continue the deletion of the group.

Note: A group must have at least one member site. Removing all the member sites from a group results in the group being deleted.

Glossary

The Glossary contains terms and acronyms referenced in the STS Deployment Services 9.0 Users Manual and software.

STS Terminology Glossary

Term	Definition
Application Program Interface (API)	An API is: <ol style="list-style-type: none"> 1. The interface or set of functions, between the application software and the application platform. 2. The means by which an application designer enters and retrieves information.
archetype	An archetype is: <ol style="list-style-type: none"> 1. A syntactically and semantically structured aggregation of vocabulary or other data that is the basic unit of clinical information. See also: template. 2. A formal, reusable model of a concept for a given domain.
attribute	A named characteristic of a concept that can be assigned a value. See also: property (preferred).
authoring	The process of creating and editing terminology content. See also: development environment.
candidate version	Terminology Deployment Server (TDS) content that has passed internal testing and is sent to Software Quality Assurance (SQA) for quality assurance testing.
change set	A generic term for any terminology content that is deployed by TDS; specifically an Initial Deployment, a Candidate Version, or a Finalized Version.
characteristic	An attribute or behavior of something. See also: property.
child	The subtype in a parent-child relationship. The child (subtype) is narrower and more specific while the parent (supertype) is broader and more general. The child inherits the characteristics of the parent.
classification	Groupings of concepts for a given purpose where entries are found in one category.
code set	Any set of codes used for encoding data elements, such as tables of terms, medical concepts, medical diagnosis codes, or medical procedure codes.
component	An identifiable item in the main body of SNOMED CT or in an authorized extension. Components include: concepts, descriptions, relationships, subsets, histories, and extensions.
Computerized Patient Record System (CPRS)	The CPRS is the people, data, rules and procedures, processing and storage devices, and communication and support facilities that provide the capture, storage, processing, communication, security, and presentation of computer-based patient record information.
concept	An abstract unit of thought.
concept equivalence	Concept equivalence occurs when two concepts have the same meaning.
concept to concept linking	Concept to concept linking is when one concept is explicitly associated with another concept. Types of concept to concept linking are the creation of Map Sets, Translation Services, and Pre and Post Coordinated terms.

Term	Definition
context	A context can be: <ol style="list-style-type: none"> 1. The environment in which it is appropriate to display a specific designation for a concept. 2. A specified part or field of a patient record, application, protocol, query, or communication in SNOMED CT.
data cleanup	Activities that are taken to correct, normalize, and eliminate terms from a reference file before it is matched to a new standard. See also: standardization.
data model	A schema that describes the way data is represented.
data standardization	The process of defining, creating, deploying, and maintaining a common terminology resource.
datatype	A data storage format that can contain a specific type or range of values.
deploy	Deploy means: <ol style="list-style-type: none"> 1. Within general software development, to send electronically as a unit. 2. Within STS, to publish terminology content from the development to production environments.
deployment	A deployment is: <ol style="list-style-type: none"> 1. The process of publishing terminology content from the development environment to the production environment. 2. Groups of concepts that are ready to be tested and potentially added to the terminology.
description	The text that represents a concept in human readable form. See also: designation (preferred).
designation	A representation of a concept. See also: description, display form, expression, surface form, term.
development environment	All the software and hardware components needed to create or edit a terminology. See also: authoring.
display form	A representation of a concept. See also: designation (preferred), description, expression, surface form, term.
domain	A domain is: <ol style="list-style-type: none"> 1. A specialized discipline of medicine. 2. A set of terms belonging to a specialized discipline of medicine. 3. A set of terms associated within a VistA application.
entity relationship model	A graphical representation of work or information flow. Consists of entities (things), attributes (data), and relationships (connections between entities). Often used to model basic work or information flow. See also: information model, terminology model.
Enterprise Terminology Services (ETS)	The term ETS is no longer used. This team is now referred to as Standardization and Terminology Services (STS).
expression	Human readable representation of a concept or the name of a concept. See also: designation (preferred), description, surface form.
finalized version	TDS content that has passed SQA testing and is sent to production sites for field use.

Term	Definition
Health Data Repository (HDR)	The HDR is a repository of clinical information normally residing on one or more independent platforms for use by clinicians and other personnel in support of patient-centric care.
Health Level Seven (HL7)	HL7 is: <ol style="list-style-type: none"> 1. One of the American National Standards Institute (ANSI) accredited Standards Developing Organizations (SDO) operating in the healthcare arena. 2. An interoperability specification for transactions produced and received by computer systems.
homophone	One of two or more words pronounced alike but different in meaning, derivation, or spelling.
homonym	One of two or more words spelled and pronounced alike but different in meaning.
International Classification of Diseases – 9th edition (ICD-9)	ICD-9 classifies morbidity and mortality information for statistical purposes and for indexing of hospital records by disease and operations for data storage and retrieval.
International Classification of Diseases – 9th edition – Clinical Modification (ICD-9-CM)	ICD-9-CM is a clinical modification of the World Health Organization’s ICD-9. Its purpose is to classify morbidity data for indexing medical records, medical care review, and ambulatory and other medical care programs as well as for basic health statistics.
initial deployment	TDS content that has passed initial review and is sent to testing sites for internal evaluation.
Internal Entry Number (IEN)	A number used to identify an entry within a file. Every record has a unique internal entry number. In a Vista file, an IEN is a numerical identifier.
information model	A structured specification, expressed graphically and/or narratively, of the information requirements of a domain. An information model describes the required classes of information and the properties of those classes, optionally including attributes, relationships, and other essential information. See also: entity relationship model, terminology model.
lexicon	A lexicon is: <ol style="list-style-type: none"> 1. The vocabulary of a language. See: terminology 2. Commonly used to refer to Vista’s Lexicon Utility.
Logical Observation Identifiers, Names, And Codes (LOINC)	The LOINC database provides a set of universal names and ID codes for identifying laboratory and clinical observations. LOINC codes are used to facilitate the exchange and pooling of clinical laboratory results, such as blood hemoglobin or serum potassium, for clinical care, outcomes management, and research.
map entry	The link between concepts from a source code system to one or more concepts from a target code system. Map entries may be from two standard code systems or from within the same code system. A map entry is an instance of the data in a map set.
map entry order	The numeric order of the target code(s) for a source code.
map set	A collection of map entries with associated metadata.
metadata	Attributes that describe the format and content of information to enable sharing of information between users and applications.

Term	Definition
modifier	A word or phrase associated with a concept that changes its meaning.
nomenclature	A system of names and groupings, which is structured according to pre-established naming rules. See also: classification, taxonomy.
non-domain	Content that is not part of a clinical domain.
non-VistA	Content that is not deployed to VistA.
normalization	The process of identifying lexical variations of concepts that may include identification of synonyms.
ontology	Ontology is: <ol style="list-style-type: none"> 1. An explicit formal specification of how to represent the objects, concepts, and other entities that are assumed to exist in some area of interest and the relationships that hold among them. See also: terminology. 2. All terms in a domain including the relationships among them.
parent	The supertype in a parent-child relationship. The child (subtype) is narrower and more specific while the parent (supertype) is broader and more general. The child inherits the characteristics of the parent.
partial deployment	Deploying one or more subsets within a Version instead of deploying the entire Version.
post-coordination	The representation of a complex concept as a combination of two or more concepts. See also: pre-coordination.
pre-coordination	The representation of a complex concept as a single concept. See also: post-coordination.
preferred term	The preferred human readable representation of a concept or the preferred name of a concept. Often used as the default display form of a concept. Synonyms: preferred designation, preferred expression.
production environment	The software and hardware that is used by end users, as opposed to developers and testers, to access terminology services in the VHA enterprise.
property	A named characteristic of a concept that can be assigned a value.
qualifier	A word or phrase associated with a concept that does not change its meaning.
reference file	Non-patient VistA data file that contains reference or Terminology information not Patient Data.
reference terminology	Reference terminology is: <ol style="list-style-type: none"> 1. A comprehensive, consistent, and logically organized set of concepts that is designed to completely embody the expressive detail of a given domain, supported by a set of relationships that defines the elements within the domain and shows how their meanings relate to each other. 2. A controlled medical vocabulary intended for use as a reference to enable storage, retrieval, and analysis of clinical data.
relationship	An association between concepts. See also: semantics, semantic relationship.
Standards Development Organization (SDO)	Any entity whose primary activities are developing and maintaining standards that address the interests of a wide base of users outside the SDO.
semantics	The meanings assigned to terminology content. See also: semantic relationship.

Term	Definition
semantic relationship	An association between two concepts that has a specific meaning.
service oriented architecture (SOA)	The Health _e Vet-VistA architecture is an SOA whereby applications that provide functionality for use by other applications are created as a service that conforms to a set of VHA standardized design patterns.
Systemized Nomenclature of Medicine (SNOMED) Clinical Terms (CT)	SNOMED CT is a dynamic, scientifically validated clinical reference terminology that makes health care knowledge more usable and accessible.
standard code system (SCS)	An organized collection of terms or concepts established by an authoritative source such as an SDO.
standardization	The process of defining, creating, deploying, and maintaining a common terminology resource.
Standards and Terminology Services (STS)	STS includes project teams that were previously known as Data Standardization (DS) and ETS as well as the VETS and Enterprise Reference Terminology (ERT) subproject teams.
subset	A collection of concepts or designations that share a specified purpose or set of characteristics.
subtype	The child in a parent-child relationship. The subtype (child) is narrower and more specific while the supertype (parent) is broader and more general. The subtype contains all the characteristics of the supertype.
supertype	The parent in a parent-child relationship. The supertype (parent) is broader and more general while the subtype (child) is narrower and more specific. All the characteristics of the supertype are included in the subtype.
surface form	The term that 3M uses for a human readable representation of a concept, or the name of a concept. See also: designation (preferred).
synonym	A term or an expression that is an acceptable alternative to the preferred designation.
taxonomy	A hierarchical classification of concepts.
template	A template is: <ol style="list-style-type: none"> 1. A structured aggregation of one or more archetypes, with optional order, to represent clinical data. An HL7 template is a data structure, based on the HL7 RIM that expresses the data content that is needed in a specific clinical or administrative context. Templates are drawn from the Reference Information Model (RIM) and make use of HL7 vocabulary domains. Templates are also described as constraints on HL7 artifacts. 2. A locally produced constraint specification that specifies which archetypes go together in an application dialog or message specification.
term	A human readable representation of a concept or name of a concept. See also: designation (preferred).
terminology	Set of concepts, designations, and relationships for a specialized subject area. The terms that are characterized by special reference within a discipline are called the terms of the discipline and, collectively, they form the terminology. Terms that function in general reference over a variety of languages are simply words and their totality is a vocabulary.

Term	Definition
terminology deployment services	Central distribution point for all terminology services. Updates are uploaded to the terminology deployment server, which in turn distributes them to targeted VistA sites.
terminology model	A terminology model provides a consistent structure and specifies the formal representation of a concept. The STS terminology model comprises of components such as concepts, designations, properties, and relationships. Other components of the STS terminology model include Subsets and Concept to Concept linking.
terminology server	The software application and hardware that provide access to terminology content through a published set of API.
test environment	The software and hardware that is used by developers and testers as opposed to end users to test terminology services in the VHA enterprise.
translation	After two terminologies have been mapped, a translation between the two is possible.
Unified Medical Language System (UMLS) Metathesaurus	The UMLS Metathesaurus is a very large, multi-purpose, and multi-lingual vocabulary database that contains information about biomedical and health related concepts, their various names, and the relationships among them. It reflects and preserves the meanings, concept names, and relationships from its source vocabularies. It also supplies information that computer programs can use to create standard data, interpret user inquiries, interact with users to refine their questions, and convert the users' terms into the vocabulary used in relevant information sources.
value	A quantitative or qualitative state that is assigned to a property.
value domain	All allowable values for a terminology, datatype, or value set. May be an infinite set of values.
value set	A finite set of allowable values. Typically, a value set has a small number of values. If it has a large number of values, it may be a terminology.
version	A version is: <ol style="list-style-type: none"> 1. Formal changes in a terminology. May be used to find and track inactivated codes, determine the current code set, or track the history of a concept. 2. Also applies to formal revisions in computer code or programs. 3. An STS deployment that has passed internal testing. Can refer to a Candidate Version or a Finalized Version.
Veterans Health Administration (VHA) Enterprise Terminology Services (VETS)	VETS focuses on requirements for the deployment of and runtime access to terminology content in ERT for all VHA clinical applications.
VHA Terminology (VHAT)	VHAT is the terminology that is created and maintained by STS, in which Department of Veterans Affairs (VA) Unique Identifiers (VUID) are used to enable consistent, enterprise-wide use throughout the VHA.
Veterans Health Information Systems and Technology Architecture (VistA)	VistA is a term used to describe the VA's health care information system. It encompasses in-house developed applications developed by VA staff, office automation applications, locally developed applications, and commercial-off-the-shelf applications.
vocabulary	A list of words or phrases with their meanings. See also: terminology.

Term	Definition
VHA Terminology Server (VTS)	The VTS is used to house terminology served by VETS.
Web Services Description Language (WSDL)	WSDL is an XML-based language that provides a model for describing Web services. The meaning of the acronym has changed from version 1.2 where the D meant Definition.

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