

Workbench Utilities

Worksheet

Summary

This is a walk-through of functionality available in the Workbench Utilities, primarily covering reference set development, review and release.

The document has been created to allow a user to walk through available functionality without any prior experience of SNOMED CT, reference sets or previous versions of the Workbench Utilities. The guide is meant to be worked through sequentially, as each example builds on previous examples; it's not recommended to start the guide halfway through, even if a user is reasonably proficient in functionality provided by the Utilities.

A user will gain most from working through this guide while trying each example on an installation of the Workbench Utilities. However, enough screen-shots have been provided to give a flavour of the available functionality by simply reading the guide.

The Workbench Utilities can be installed in stand-alone mode using the one-page installation instructions and installation directory provided separately to this guide.

I hope this walkthrough is useful and enjoyable. Please provide any feedback to jgu@ihtsdo.org.

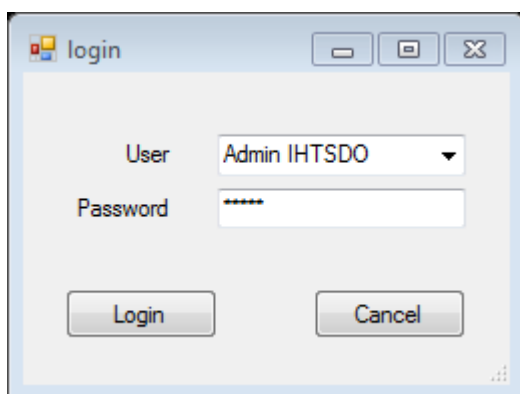
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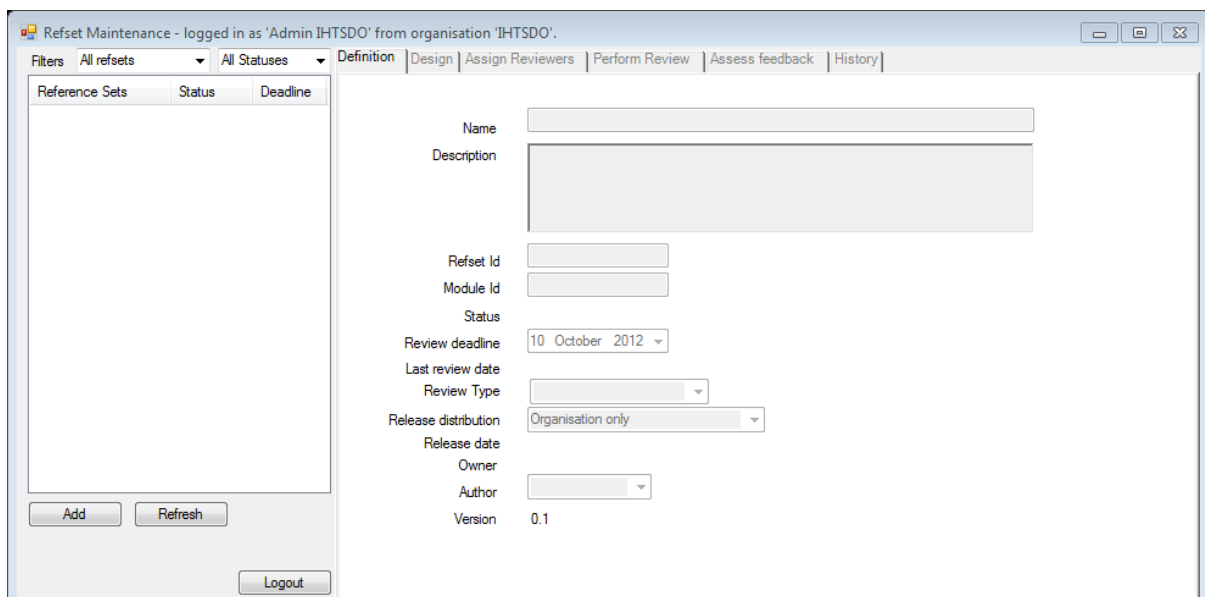
1. Starting the Workbench Utilities

This section describes how to start-up and login to the Workbench Utilities.

- Start the Workbench Utilities by double clicking on the 'Sct Browser' icon on the desktop. Only do this once, otherwise you will start two sessions. The Utilities take about one minute to start up and load the RF2 files.
- The following login screen will appear. Click on the down-arrow icon on the User field and select 'Admin IHTSDO', enter 'Admin' as the password and click on the Login button.



- The 'RefSet Maintenance' screen will then be displayed:



2. Creating and Releasing a Simple Reference Set

This section describes how to define a reference set, specify which concept members to include, and how to produce RF2 release files for the reference set.

- Click on the 'Add' button. This creates a reference set.
- Modify the 'Name' to 'my first refset', and the 'Refset Id' field to '1200024'.
- Click on the 'Save' button.

Reference Sets	Status	Deadline
my first refset	Defining	10 days

Name: my first refset
Description:
Refset Id: NotSet
Module Id:
Status: Defining
Review deadline: 20 October 2012
Last review date:
Review Type: Collaborative Review
Release distribution: Organisation only
Release date:
Owner: Admin IHTSDO (IHTSDO)
Author: Admin IHTSDO (IHTSDO)
Version: 0.1

- The reference set is currently in its 'Defining' stage (where the owner of the reference set can add a description and other defining information). To move on to author the reference set, click on the 'Author' button, and then select the 'Design' tab at the top of the screen.

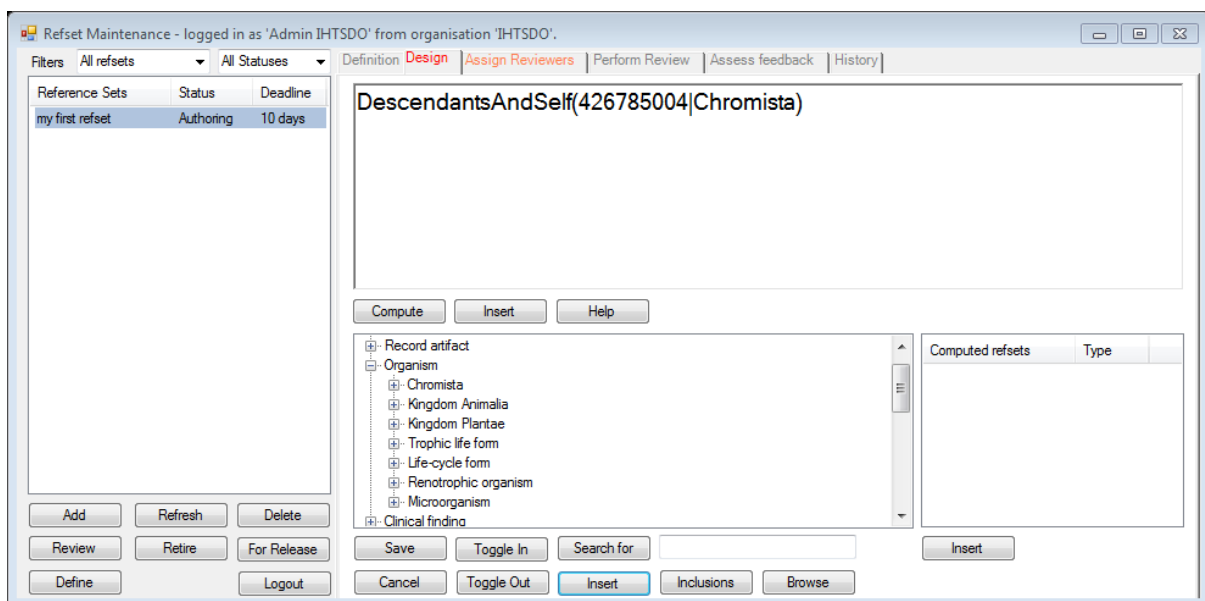
Reference Sets	Status	Deadline
my first refset	Authoring	10 days

Computed refsets

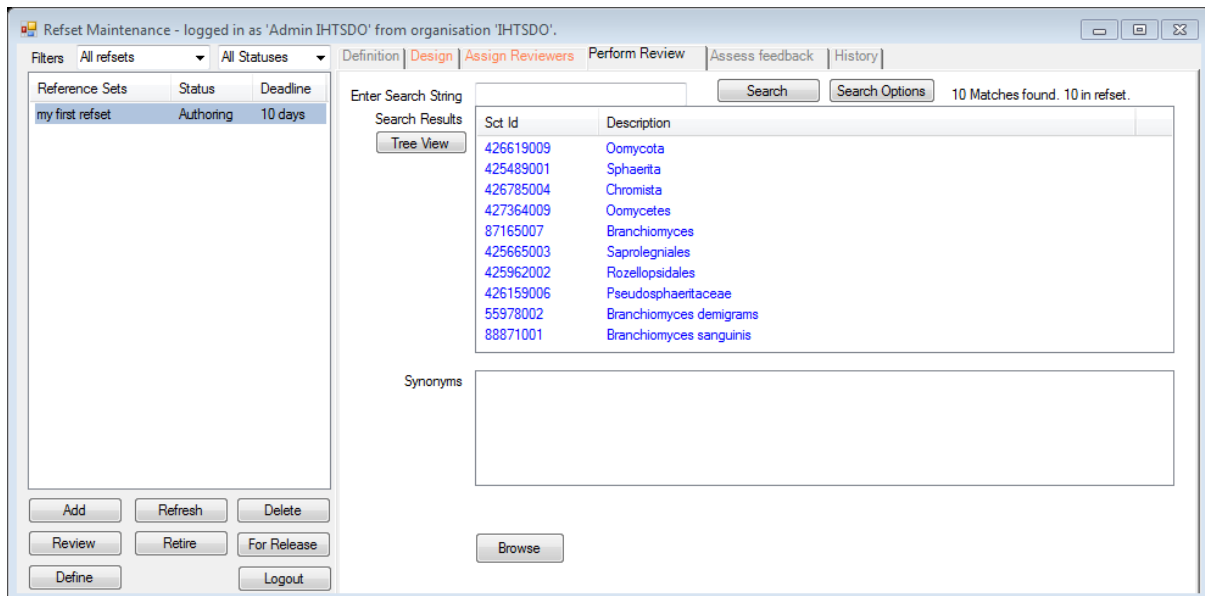
Computed refsets	Type
------------------	------

SNOMED CT Model Component
Record artifact
Organism
Clinical finding
Pharmaceutical / biologic product
Special concept
Observable entity
Qualifier value
Physical force
Procedure

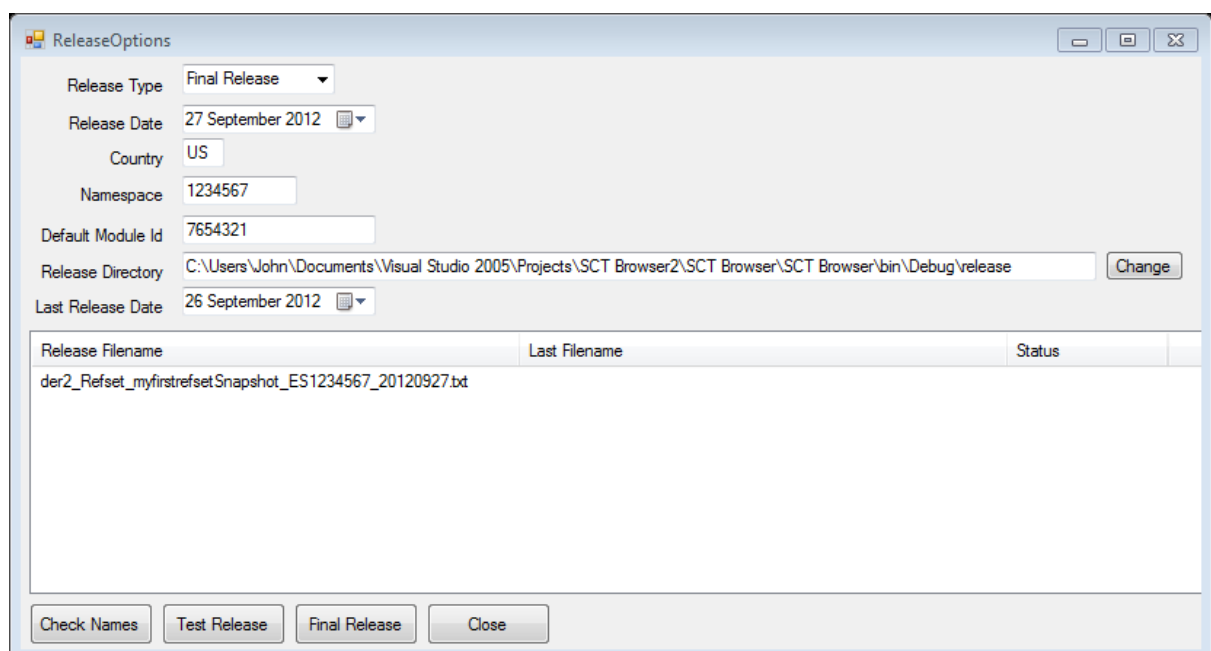
- We will now create a simple reference set specification, including all concepts in the 'Chromista' sub-hierarchy.
- With the cursor in the top right design window, right click to bring up a selection menu. Select 'DescendantAndSelf(a)' from the menu to insert that text into the design window at the current cursor position.
- Now, double click on the 'a' within the brackets so that it's highlighted.
- In the taxonomy view, open the 'Organism' sub-hierarchy by clicking on the '+' symbol to its left, and select 'Chromista'. Then click on the 'Insert' button below the taxonomy window to insert this concept into the design window. As we previously highlighted the 'a', this should be replaced by the concept identifier, as shown below:



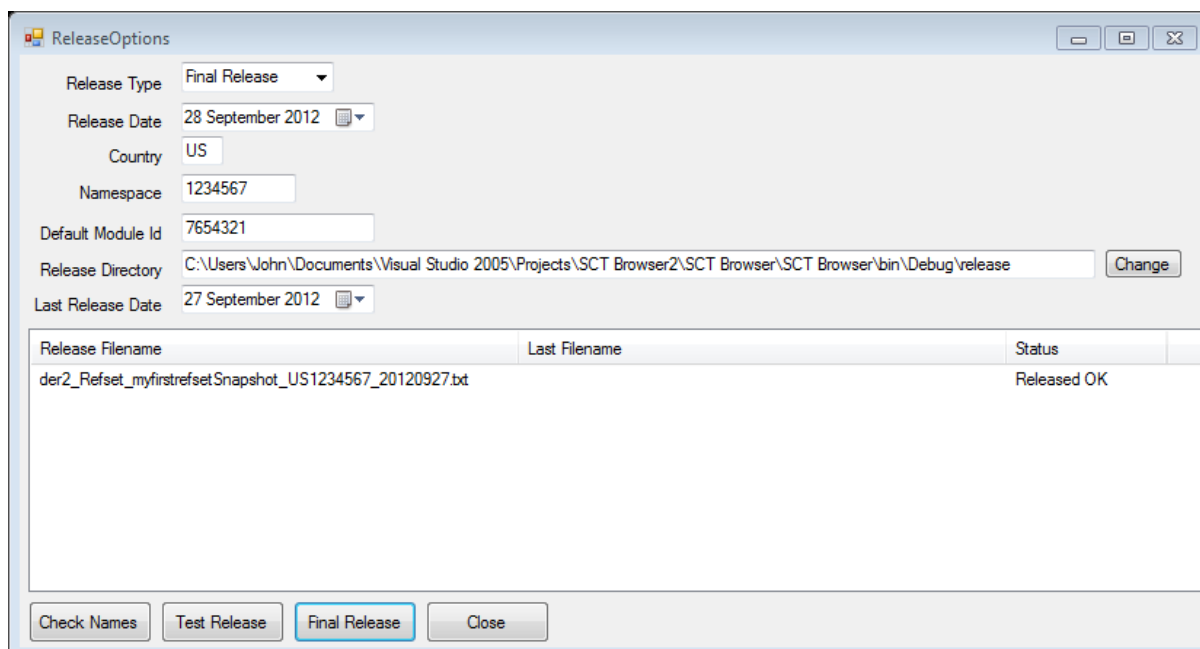
- We can now compute and review the reference set members. To do this, click on the 'Compute' button. The active tab will automatically switch to 'Perform review' and the following screen will be shown (if a different layout is shown, click on the 'Search Options' button, and select 'Tree with all levels shown', under 'Layout of Results'):



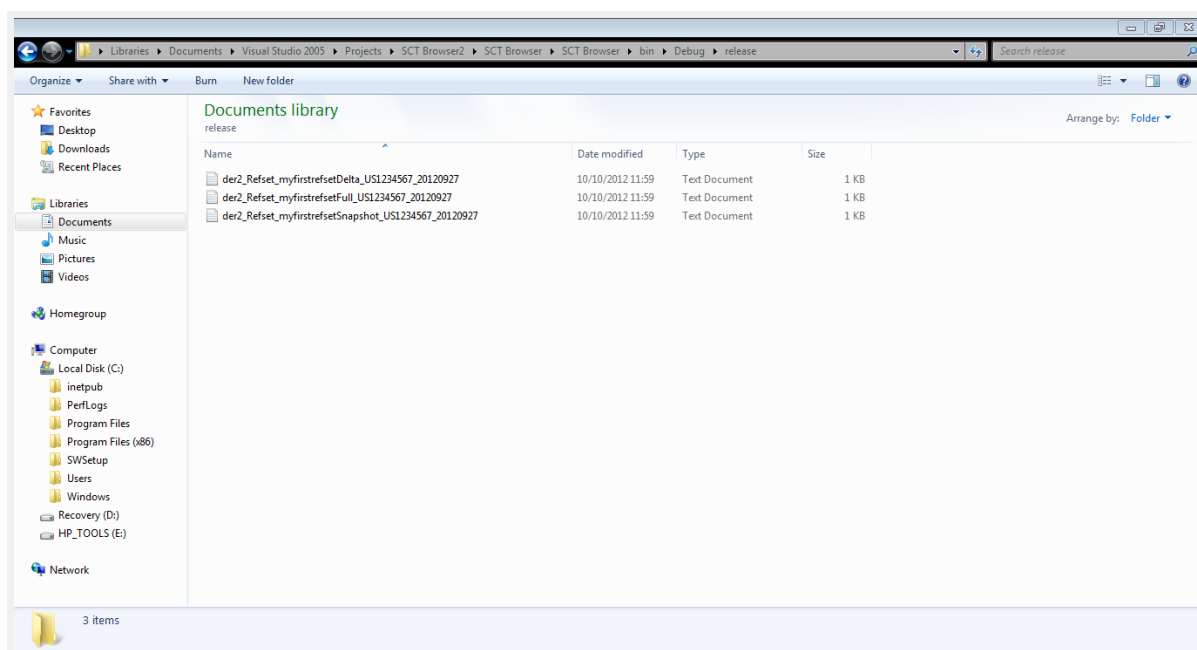
- The top right window shows all members of the reference set. The reference set is now ready for release.
- Click on the 'For Release' button to change the status of the reference to 'Ready'. Then click on the 'Approved' button to move the status of the reference set on to 'Approved'. Finally, click on the 'Release' button to bring up the 'Release Options' screen. This three stage process allows an author to mark a reference set as ready before an owner approves it for an administrator to create the release files. As we're logged in as an administrator, we're performing all three steps in one go.



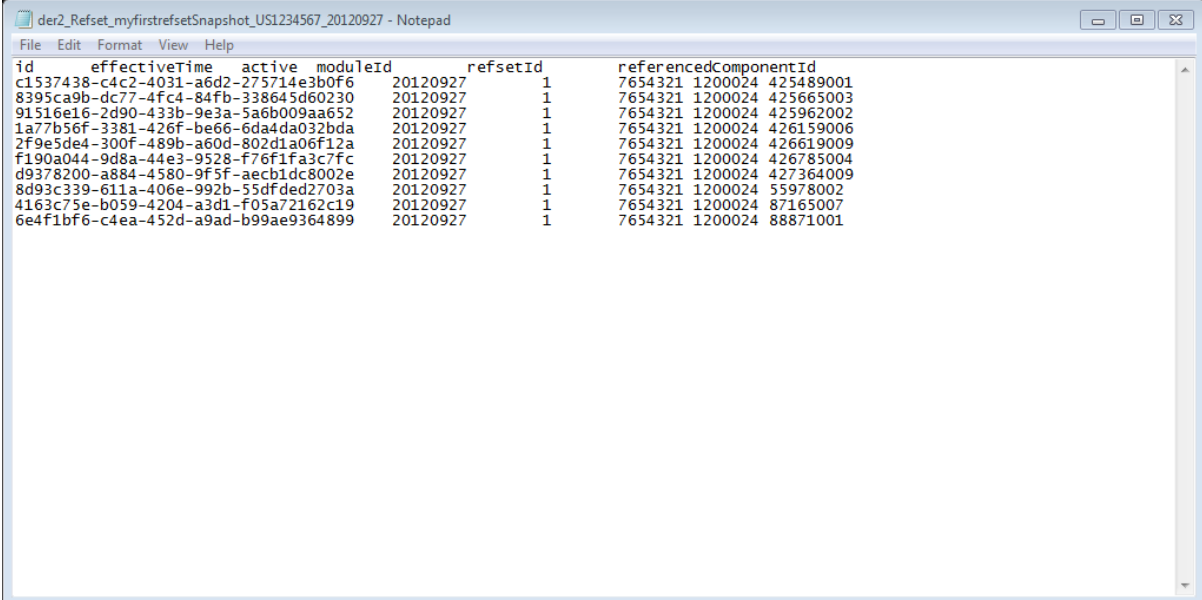
- This screen allows an administrator to manage the release process for one or more reference sets. Click on the 'Final Release' button to produce the RF2 release files for the reference set. The status of the reference set should change to 'Released OK'.



- Now close the 'Release Options' window, highlight 'my first refset' in the reference set browser to the left of the screen, and select the 'Definition' tab at the top of the screen.
- Note that the version number of the reference set has incremented to '1.0', indicating that the reference set has been released.
- Now navigate to the release folder in Windows Explorer, to see the three release files that were created.



- The files are named using the information provided in the 'Release Options' screen, and conform to the IHTSDO file naming convention.
- Click on the Snapshot file, to open it. The file conforms to the RF2 specification, contains one record per concept member in the reference set, and looks as follows:



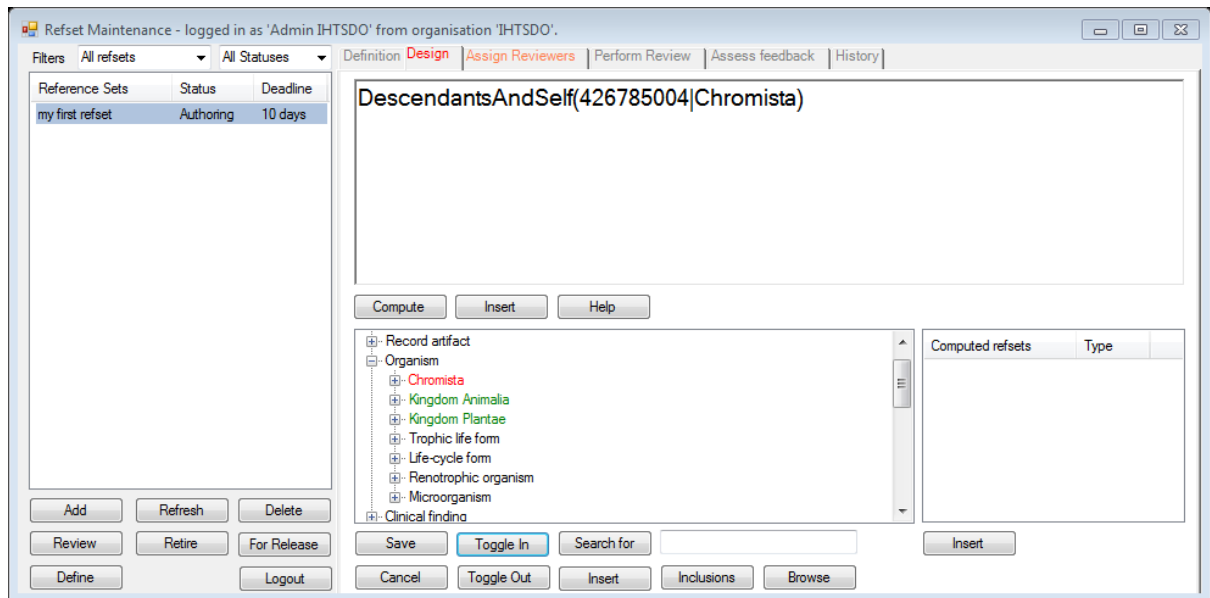
The screenshot shows a Notepad window titled 'der2_Refset_myfirstrefsetSnapshot_US1234567_20120927 - Notepad'. The window contains a table with the following columns: id, effectiveTime, active, moduleId, refsetId, and referencedComponentId. The table lists 14 rows of data, each representing a reference set entry.

id	effectiveTime	active	moduleId	refsetId	referencedComponentId
c1537438-c4c2-4031-a6d2-275714e3b0f6	20120927	1	20120927	1	7654321 1200024 425489001
8395ca9b-dc77-4fc4-84fb-338645d60230	20120927	1	20120927	1	7654321 1200024 425665003
91516e16-2d90-433b-9e3a-5a6b009aa652	20120927	1	20120927	1	7654321 1200024 425962002
1a77b56f-3381-426f-be66-6da4da032bda	20120927	1	20120927	1	7654321 1200024 426159006
2f9e5de4-300f-489b-a60d-802d1a06f12a	20120927	1	20120927	1	7654321 1200024 426619009
f190a044-9d8a-44e3-9528-f76f1fa3c7fc	20120927	1	20120927	1	7654321 1200024 426785004
d9378200-a884-4580-9f5f-aecb1dc8002e	20120927	1	20120927	1	7654321 1200024 427364009
8d93c339-611a-406e-992b-55dfded2703a	20120927	1	20120927	1	7654321 1200024 55978002
4163c75e-b059-4204-a3d1-f05a72162c19	20120927	1	20120927	1	7654321 1200024 87165007
6e4f1bf6-c4ea-452d-a9ad-b99ae9364899	20120927	1	20120927	1	7654321 1200024 88871001

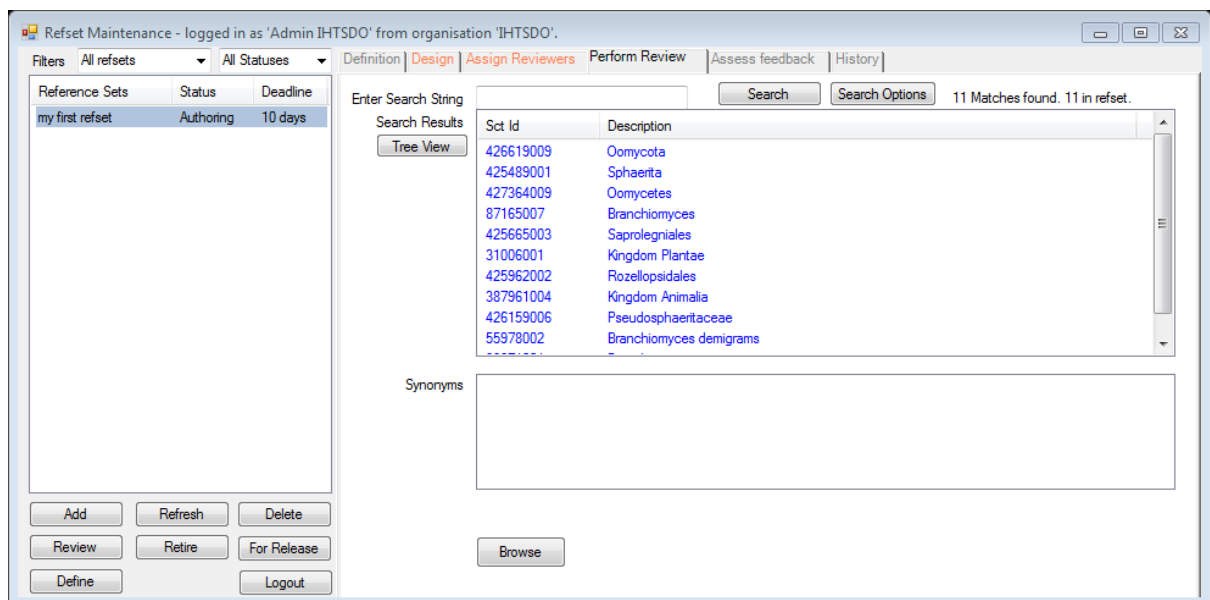
3. Updating an Existing Reference Set

This section describes how to manually add and remove members from a reference set, and how incremental delta, full and snapshot release files can be produced in RF2 format.

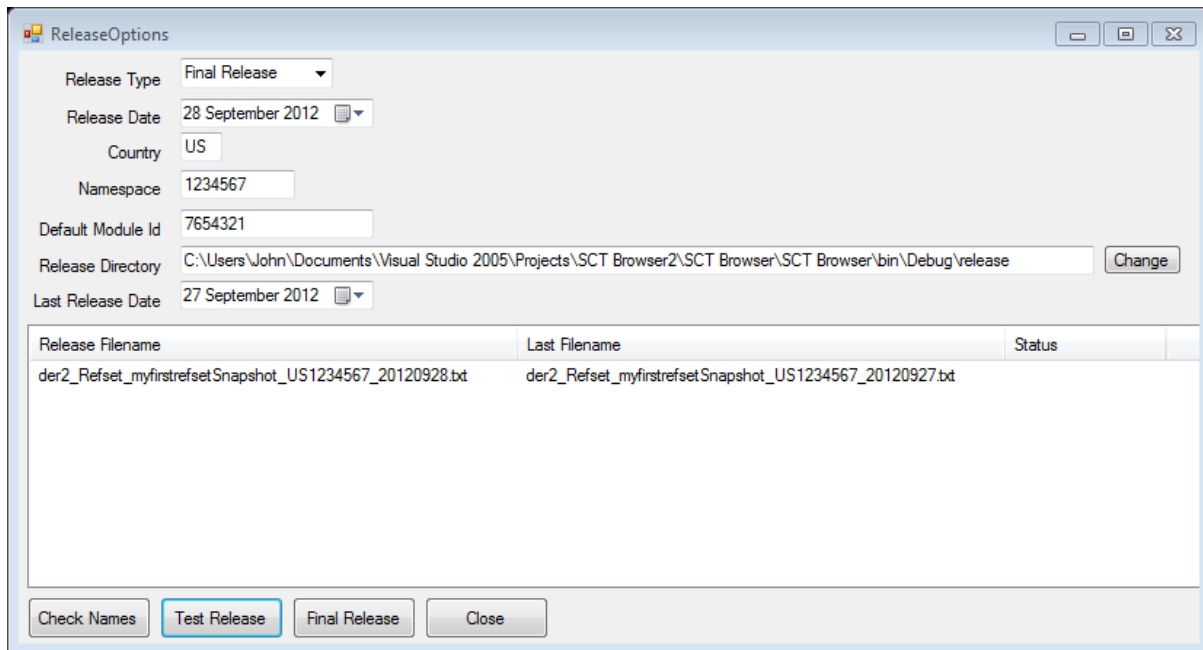
- To update a reference set that has already been released, select the reference set in the reference set browser window on the left, and select the 'Maintain' button. This will move the status of the reference set on from 'Released' to 'Defining'. Do this now with 'my first refset'.
- Note that the version number of the reference set has incremented to '1.1'.
- Click the 'Author' button and select the 'Design' tab to start amendment of the reference set.
- We will now manually add and remove individual concepts from the reference set.
- Expand the 'Organisms hierarchy'. Select 'Chromista' and click on the 'Toggle Out' button, to remove this concept from the reference set.
- Select 'Kingdom Animalia' and click on the 'Toggle In' button to include this concept in the reference set. Also include the 'Kingdom Plantae' concept.



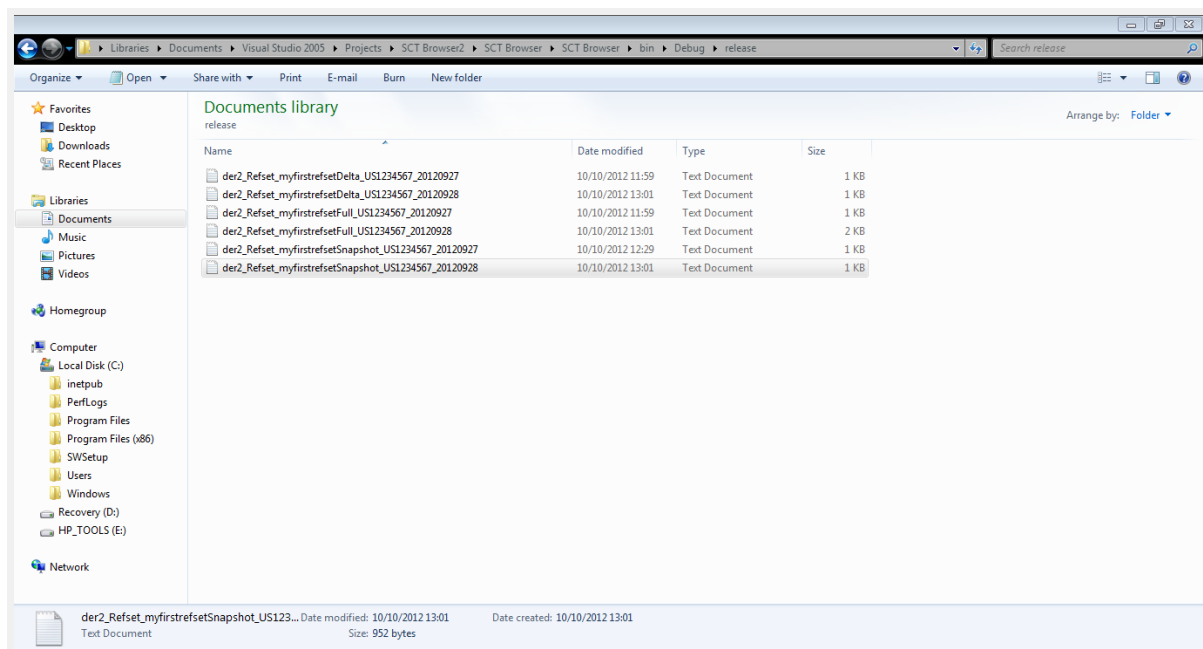
- Now compute the reference set, and note that the removed items are not present and the added items are in the list.



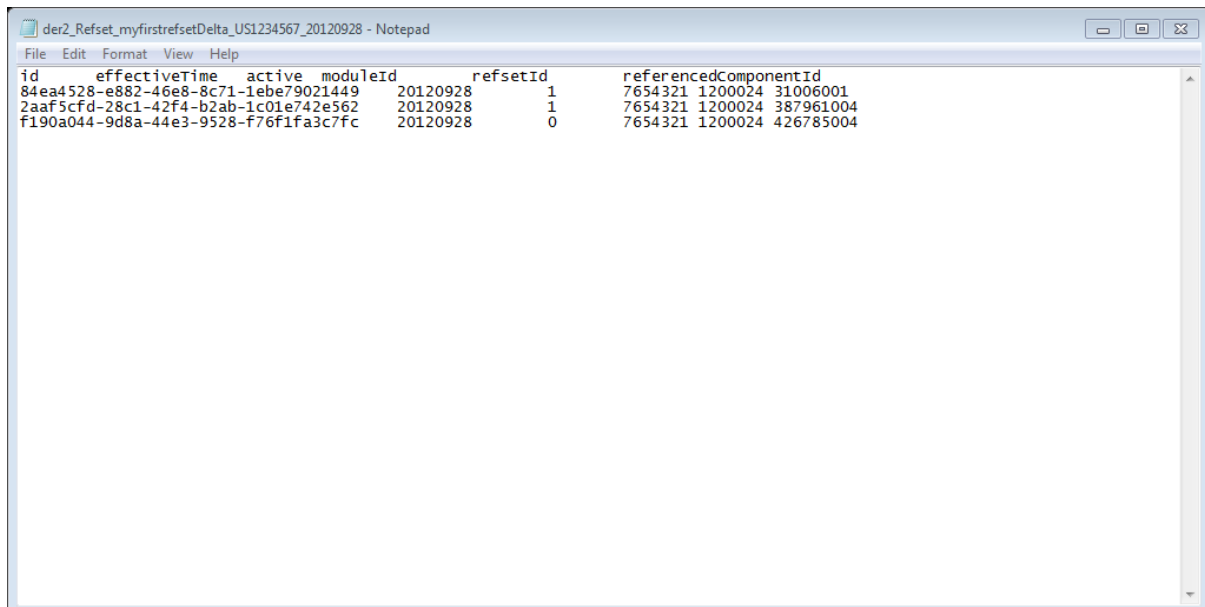
- Select the 'For release' button, select the 'Approved' button, and then select the 'Release' button.



- Note that this time, an existing release of this reference set has been identified, and is displayed in the 'Last Filename' column.
- Click on the 'Final Release' button. The Status of the release file should change to 'Released OK'.
- Using Windows Explorer, navigate to the release directory, and view the files. Note that three additional files have been produced:



- Open the delta file and note that only the changed membership records are shown in this file – one removal (with an active field of '0') and two additions (with an active field on '1').

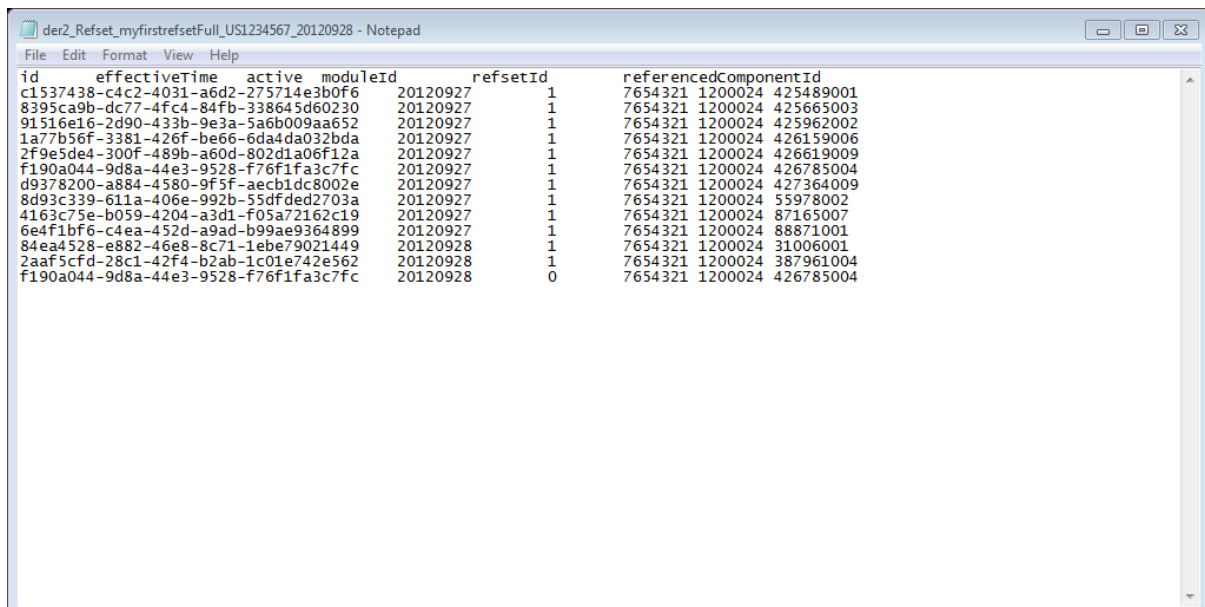


```

der2_Refset_myfirstrefsetDelta_US1234567_20120928 - Notepad
File Edit Format View Help
id effectiveTime active moduleId refsetId referencedComponentId
84ea4528-e882-46e8-8c71-1ebe79021449 20120928 1 7654321 1200024 31006001
2aaf5cfd-28c1-42f4-b2ab-1c01e742e562 20120928 1 7654321 1200024 387961004
f190a044-9d8a-44e3-9528-f76f1fa3c7fc 20120928 0 7654321 1200024 426785004

```

- The full file shows the complete history of membership records, so in this case it shows concept 426785004 (Chromista) twice, once with an active flag of '1', when it was created in the first release, and once with an active flag of '0', as it has been removed in this release.



```

der2_Refset_myfirstrefsetFull_US1234567_20120928 - Notepad
File Edit Format View Help
id effectiveTime active moduleId refsetId referencedComponentId
c1537438-c4c2-4031-a6d2-275714e3b0f6 20120927 1 7654321 1200024 425489001
8395ca9b-dc77-4fc4-84fb-338645d60230 20120927 1 7654321 1200024 425665003
91516e16-2d90-433b-9e3a-5a6b009aa652 20120927 1 7654321 1200024 425962002
1a77b56f-3381-426f-be66-6da4da032bda 20120927 1 7654321 1200024 426159006
2f9e5de4-300f-489b-a60d-802d1a06f12a 20120927 1 7654321 1200024 426619009
f190a044-9d8a-44e3-9528-f76f1fa3c7fc 20120927 1 7654321 1200024 426785004
d9378200-a884-4580-9f5f-aecb1dc8002e 20120927 1 7654321 1200024 427364009
8d93c339-611a-406e-992b-55dfded2703a 20120927 1 7654321 1200024 55978002
4163c75e-b059-4204-a3d1-f05a72162c19 20120927 1 7654321 1200024 87165007
6e4f1bf6-c4ea-452d-a9ad-b99ae9364899 20120927 1 7654321 1200024 88871001
84ea4528-e882-46e8-8c71-1ebe79021449 20120928 1 7654321 1200024 31006001
2aaf5cfd-28c1-42f4-b2ab-1c01e742e562 20120928 1 7654321 1200024 387961004
f190a044-9d8a-44e3-9528-f76f1fa3c7fc 20120928 0 7654321 1200024 426785004

```

- The Snapshot file contains the most recent membership record for each concept. Note that it does contain the two new added concepts, but only one (inactive) record for Chromista - the concept we removed.

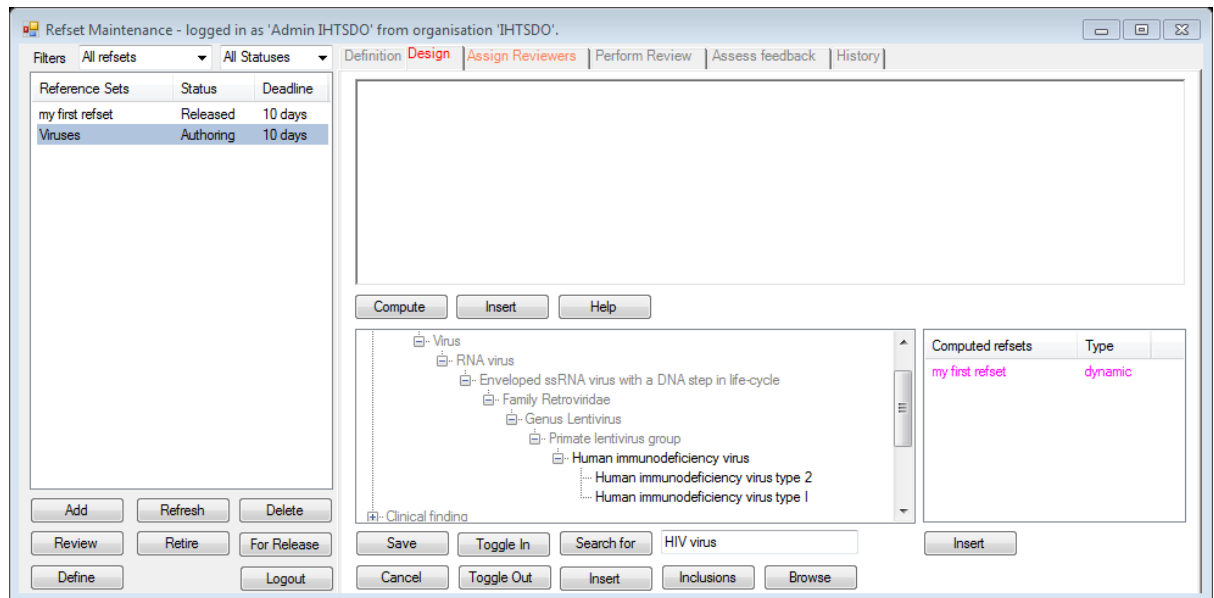
id	effectiveTime	active	moduleId	refsetId	referencedComponentId
c1537438-c4c2-4031-a6d2-275714e3b0f6	20120927	1		7654321	1200024 425489001
8395ca9b-dc77-4fc4-84fb-338645d60230	20120927	1		7654321	1200024 425665003
91516e16-2d90-433b-9e3a-5a6b009aa652	20120927	1		7654321	1200024 425962002
1a77b56f-3381-426f-be66-6da4da032bda	20120927	1		7654321	1200024 426159006
2f9e5de4-300f-489b-a60d-802d1a06f12a	20120927	1		7654321	1200024 426619009
d9378200-a884-4580-9f5f-aecb1dc8002e	20120927	1		7654321	1200024 427364009
8d93c339-611a-406e-992b-55dfded2703a	20120927	1		7654321	1200024 55978002
4163c75e-b059-4204-a3d1-f05a72162c19	20120927	1		7654321	1200024 87165007
6e4f1bf6-c4ea-452d-a9ad-b99ae9364899	20120927	1		7654321	1200024 88871001
84ea528-e882-46e8-8c71-1ebe79021449	20120928	1		7654321	1200024 31006001
2aaf5cfd-28c1-42f4-b2ab-1c01e742e562	20120928	1		7654321	1200024 387961004
f190a044-9d8a-44e3-9528-f76f1fa3c7fc	20120928	0		7654321	1200024 426785004

- Note that the version number of 'my first refset' is now '2.0', and its status is 'Released', indicating this is the second release of the reference set.

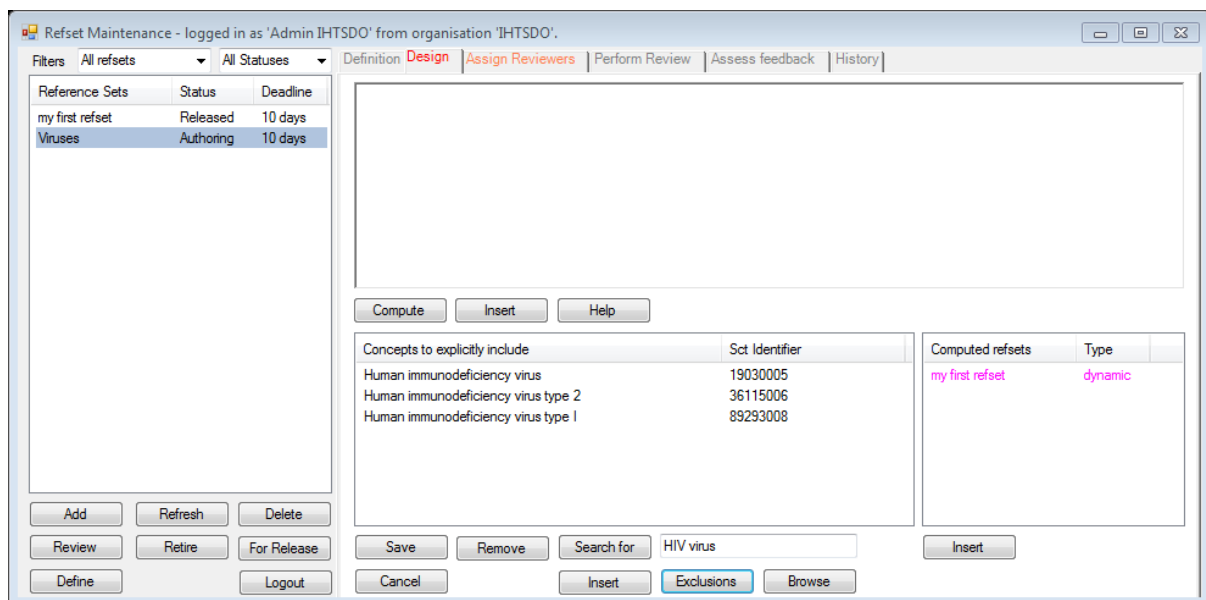
4. Searching and Browsing for Concepts

This section describes how to search and browse concepts included in a reference set, as well as how to search and browse for concepts more widely in SNOMED CT.

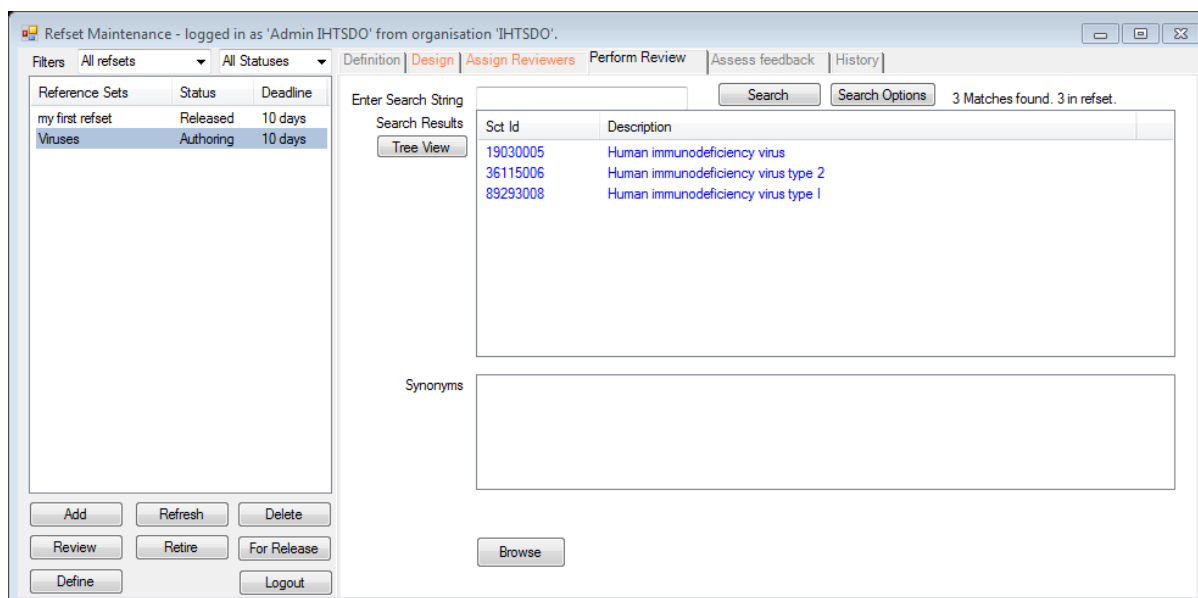
- Add a new reference set and call it 'Viruses', setting its 'Refset Id' to '1200034'.
- Save the reference set and move it on for authoring (by selecting the 'Author' button), and select the design tab.
- Now enter 'HIV virus' in the field to the right of the 'Search For' button, and then click on the 'Search For' button. The taxonomy shows all hierarchies that contain references to 'HIV virus'.
- Expand the Organisms hierarchy to display the concepts that match the search criteria. Concepts in black are matching concepts, and concepts in grey are ancestors of matching concepts.



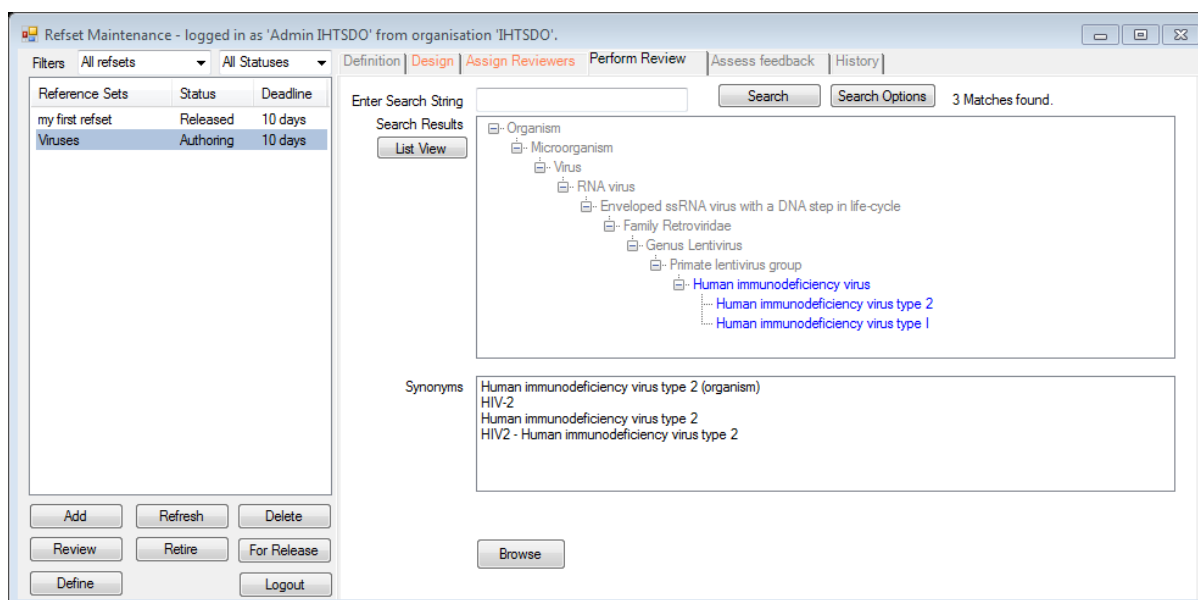
- Now 'Toggle In' to the reference set the three matching concepts. Selecting the 'Inclusions' button will show concepts that have been explicitly included in the reference set in list form:



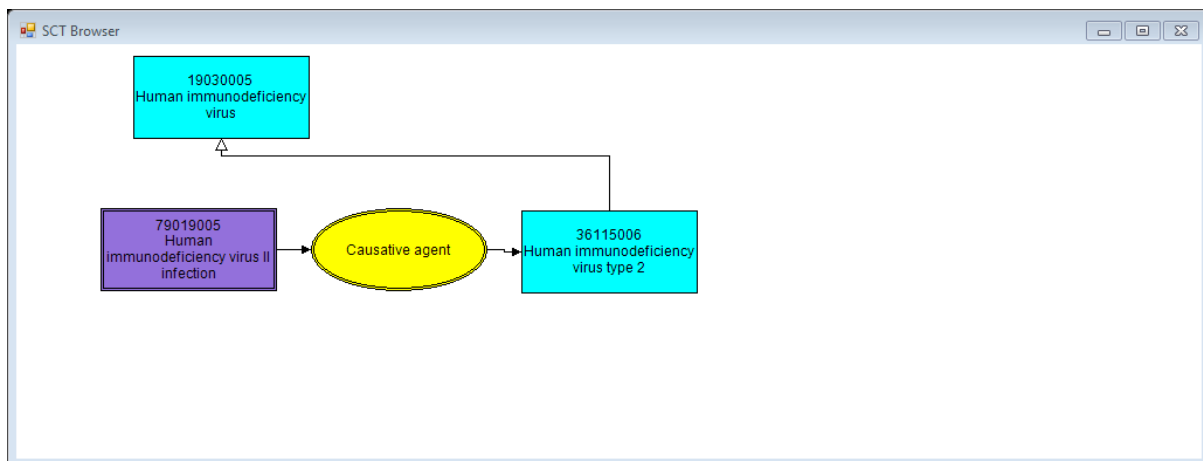
- Click the 'Exclusions' button to show concepts that have been explicitly excluded, and then the 'Tree View' button to get back to the taxonomy view.
- Now select the 'Compute' button to show the reference set members.



- These can be displayed either in a list view (as above) or in a taxonomy. Highlight the second row in the list view before clicking on the 'Tree View' button.



- Note that the taxonomy auto-expands to show the concept that was highlighted in the list view.
- Also note that the currently selected concept's descriptions are shown in the Synonyms window.
- Now select the 'Browse' button to shown a graphical representation of the currently selected concept:



- This view shows the selected concept in the middle of the screen, its parents above, its children below, relationships from other concepts to it on the left and its relationships to other concepts on the right. The concepts above and to the right therefore define the concept that's in focus; and the concepts to the left and below are ones that are defined using this concept.
- Clicking on another concept within this view will switch that concept to be the current 'in-focus' concept, and show its relationships to other SNOMED CT concepts. The browser can be used to investigate any concepts in the vicinity of a concept of interest.
- The arrow keys (with or without the SHIFT-key accelerator) can be used to scroll through child and parent concepts and relationships; a scrolling demo can also be started, by hitting the TAB key.
- Now close the graphical browser and display the reference set members in list view

Refset Maintenance - logged in as 'Admin IHTSDO' from organisation 'IHTSDO'

Filters: All refsets | All Statuses | Definition | Design | Assign Reviewers | Perform Review | Assess feedback | History

Reference Sets	Status	Deadline
my first refset	Released	10 days
Viruses	Authoring	10 days

Enter Search String: 1

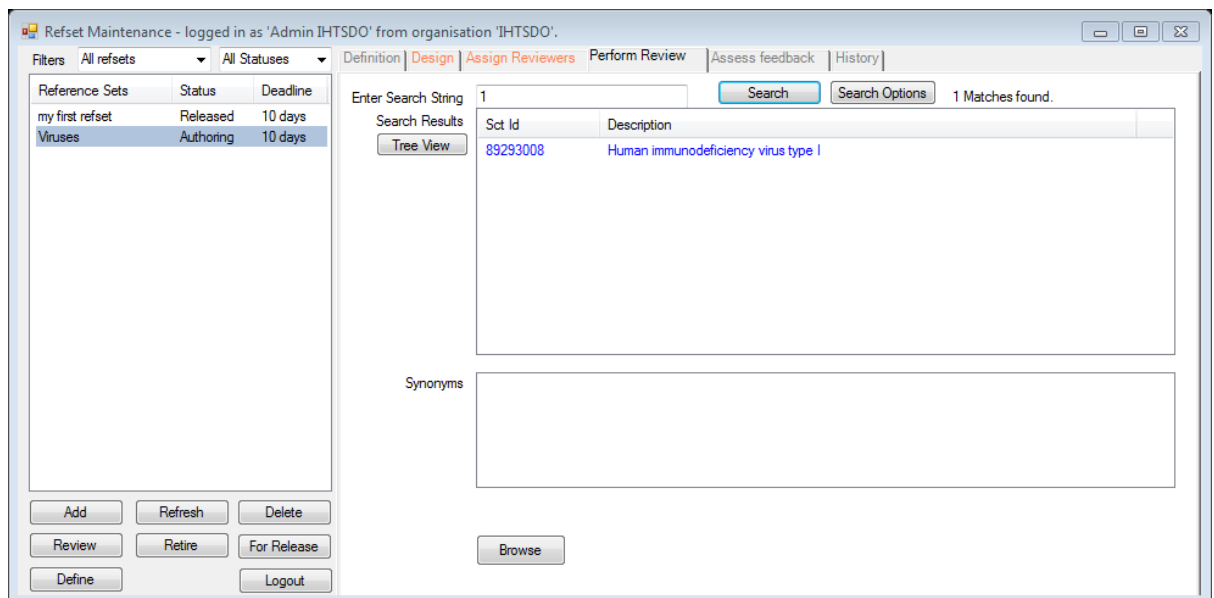
Search Results: 3 Matches found.

Sct Id	Description
19030005	Human immunodeficiency virus
36115006	Human immunodeficiency virus type 2
89293008	Human immunodeficiency virus type 1

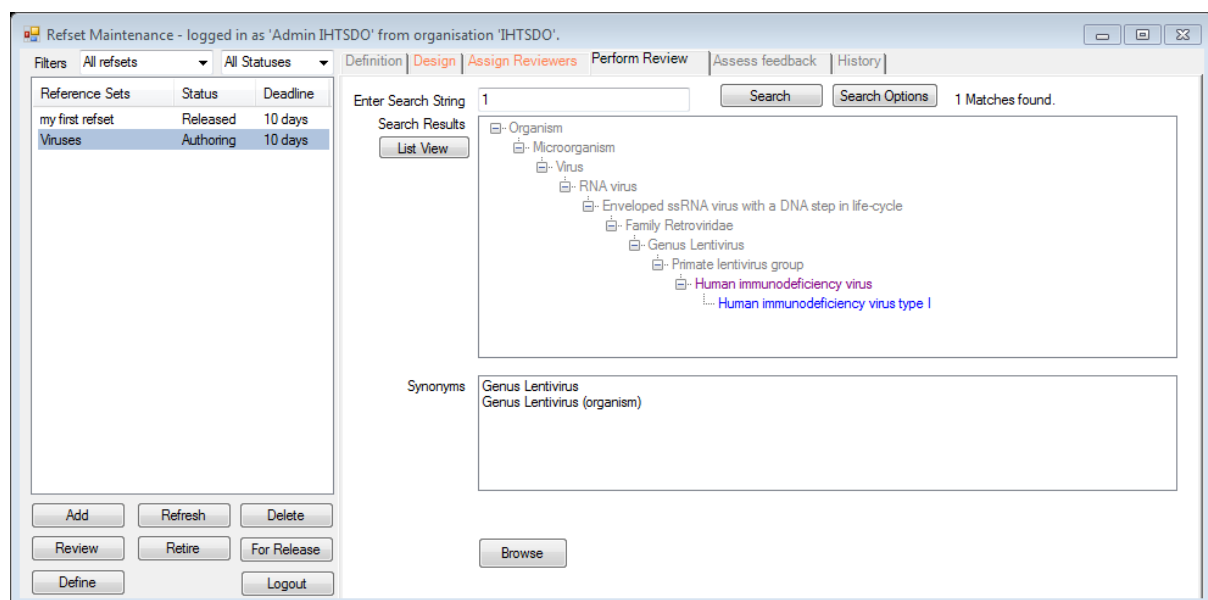
Synonyms: [Empty field]

Buttons: Add, Refresh, Delete, Review, Retire, For Release, Define, Logout, Browse

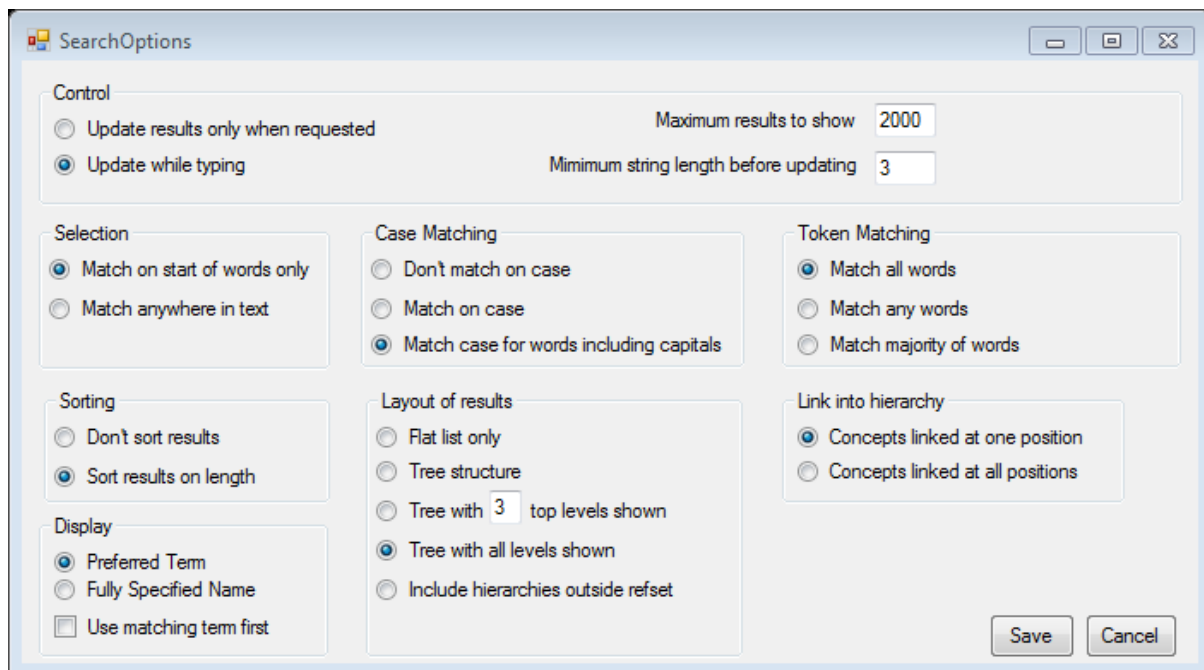
- Enter '1' in the 'Search String' field and click the 'Search' button. This will limit the view to only those reference set members containing '1' in their description:



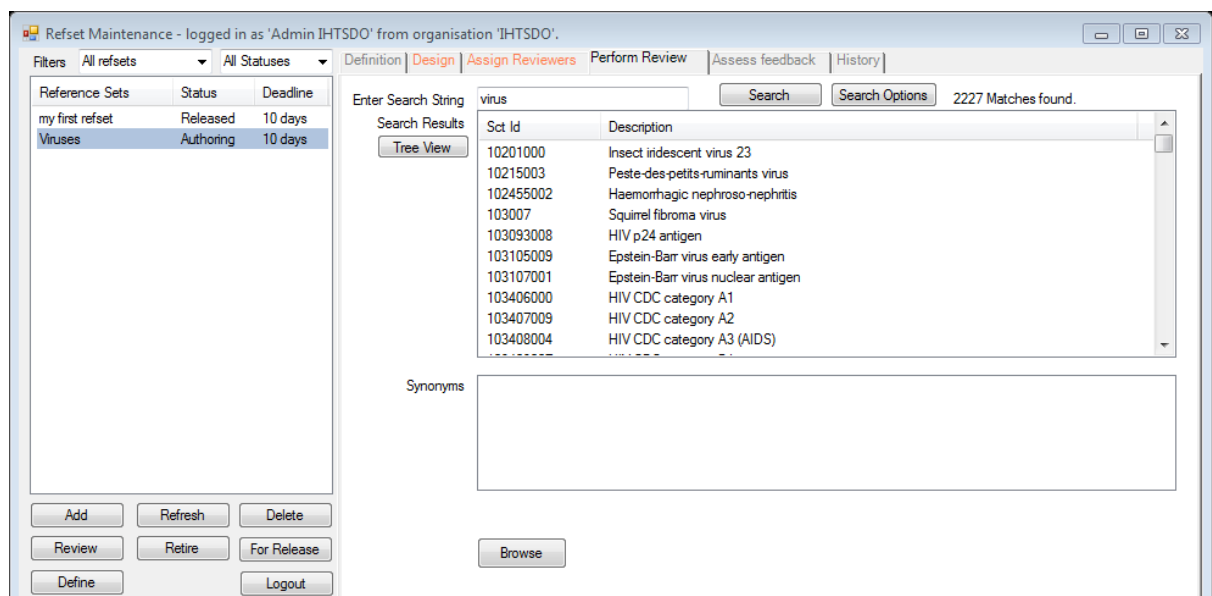
- Switching to 'Tree View' will also limit the view to only those reference set members matching the search criteria:



- Note the different colours used here
 - Blue is used for matching members of the reference set
 - Grey is used for ancestors of matching members
 - Purple is used for ancestors of matching members that are members of the reference set in their own right (but that do not match the search string).
- Now clear the 'Enter Search String' field and click on the 'Search Options' button.



- This screen is used to control the way that searching is performed - particularly useful when reference sets with large numbers of members are being reviewed.
- Select the 'Include hierarchies outside refset' option under 'Layout of Results', save the options, and select the 'List View' button in the main window.
- Type 'virus' in the 'Search String' field. Note that the search window starts to show results as soon as three characters have been entered.



- Note that 2,227 matching SNOMED CT concepts have been found - and that these *are* concepts, and not descriptions. Descriptions for each of these concepts are displayed in the 'Synonyms' window.

- Select 'HIV p24 Antigen' and select the 'Tree View' button to display this in the taxonomy view:

Refset Maintenance - logged in as 'Admin IHTSDO' from organisation 'IHTSDO'.

Filters: All refsets | All Statuses

Reference Sets	Status	Deadline
my first refset	Released	10 days
Viruses	Authoring	10 days

my first refset Released 10 days
Viruses Authoring 10 days

Definition | Design | Assign Reviewers | Perform Review | Assess feedback | History

Enter Search String: virus

Search Results: 2227 Matches found.

Search Results:

- Human T-lymphotrophic virus, type I protein antigen 36
- Human T-lymphotrophic virus, type II protein antigen 32
- Human T-lymphotrophic virus, type I protein antigen 32
- Human T-lymphotrophic virus, type I protein antigen 28
- Varicella-zoster virus antigen
- Influenza virus antigen
- Herpes simplex virus antigen
- Epstein-Barr virus nuclear antigen
- Epstein-Barr virus early antigen
- HIV p24 antigen
- Norwalk virus antigen
- Venezuelan equine encephalomyelitis virus antigen

Synonyms:

- HIV p24 antigen (substance)
- Human immunodeficiency virus p24 antigen (substance)
- Human immunodeficiency virus (HIV) p24 antigen
- Human immunodeficiency virus (HIV) p24 antigen (substance)
- Human immunodeficiency virus p24 antigen
- HIV p24 antigen

Buttons: Add, Refresh, Delete, Review, Retire, For Release, Define, Logout, Browse

- Note that the taxonomy view is expanded to show the 'HIV p24 antigen' concept.
- Now further refine the search by adding text to the search string to make 'virus swine'. Note the search results have been reduced to 10.

Refset Maintenance - logged in as 'Admin IHTSDO' from organisation 'IHTSDO'.

Filters: All refsets | All Statuses

Reference Sets	Status	Deadline
my first refset	Released	10 days
Viruses	Authoring	10 days

my first refset Released 10 days
Viruses Authoring 10 days

Definition | Design | Assign Reviewers | Perform Review | Assess feedback | History

Enter Search String: virus swine

Search Results: 10 Matches found.

Search Results:

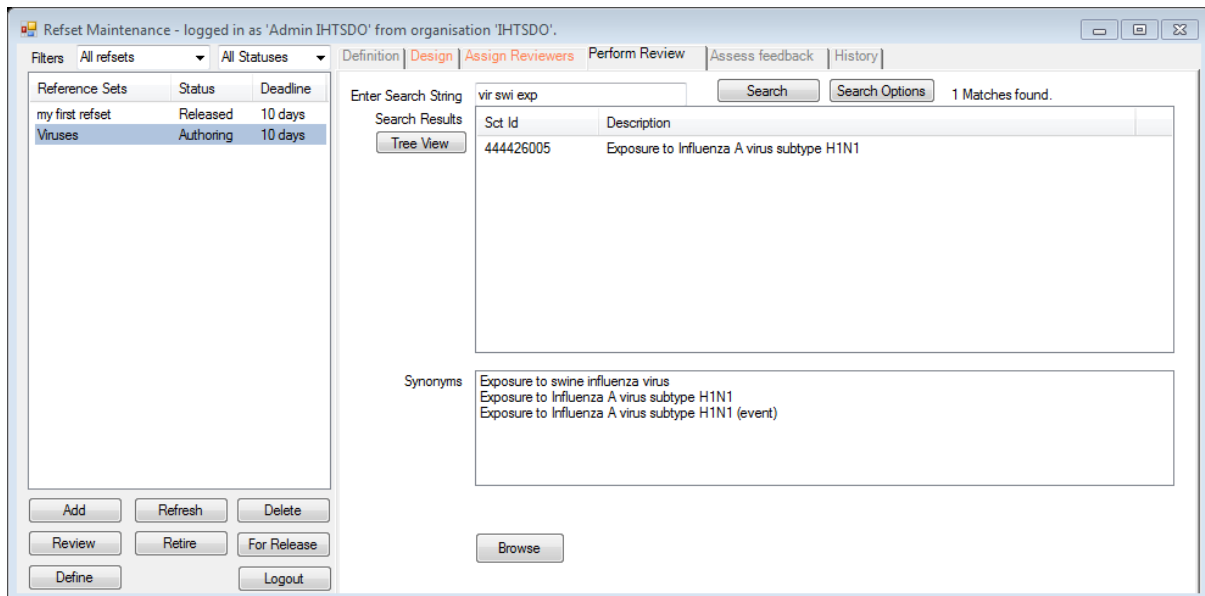
Sct Id	Description
16718007	Vesicular exanthema of swine virus, serotype A
31806000	African swine fever virus
39480001	Suipoxvirus
428771000	Swine influenza virus vaccine
444426005	Exposure to Influenza A virus subtype H1N1
62408001	Human coxsackievirus B5
78639002	Swinepox virus
79386001	Hog cholera virus
80154000	Vesicular exanthema of swine virus
81970008	Swine influenza virus vaccine

Synonyms:

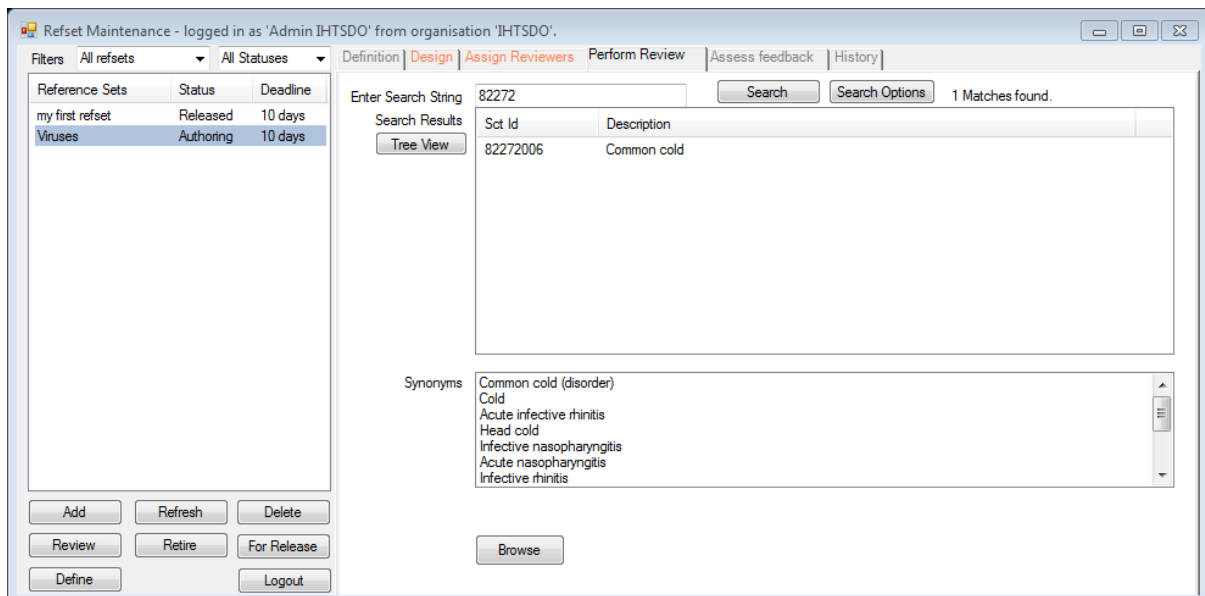
- Human coxsackievirus B5 (organism)
- Swine vesicular disease virus
- Human coxsackievirus B5

Buttons: Add, Refresh, Delete, Review, Retire, For Release, Define, Logout, Browse

- The search string can be used to match for partial words or SctIds, so entering 'vir swin exp' (as short for swine influenza virus exposure) would result in one match:



- And entering '82272' would find a common cold.



- Note that not all of the search options are relevant when 'including hierarchies outside the refset'.

5. Reference Set Chaining

This section describes how the members of one reference set can be included as members in another reference set. This chaining of reference sets together creates a number of dependencies between the reference sets. The Workbench utilities ensure that all reference sets are computed in the right order, and that any dependency cycles are detected as errors and reported.

- Add a new reference set 'More viruses' with a Refset Id or '120005', click the 'Save' button, then the 'Author' button and in the 'Design' window, right click and select MembersOf(NamedRefset).

Refset Maintenance - logged in as 'Admin IHTSDO' from organisation 'IHTSDO'.

Filters All refsets All Statuses

Reference Sets	Status	Deadline
my first refset	Released	10 days
Viruses	Authoring	10 days
more viruses	Authoring	10 days

Definition Design Assign Reviewers Perform Review Assess feedback History

MembersOf(NamedRefset)

Compute Insert Help

Computed refsets	Type
my first refset	dynamic
Viruses	dynamic

Add Refresh Delete

Review Retire For Release

Define Logout

Save Toggle In Search for HIV virus

Cancel Toggle Out Insert Inclusions Browse

Insert

- Now double click on 'NamedRefset' to select it (without selecting the brackets). Then select the 'Viruses' reference set in the 'Computed refsets' window in the bottom right of the window and then click on the 'Insert' button below that window.

Refset Maintenance - logged in as 'Admin IHTSDO' from organisation 'IHTSDO'.

Filters All refsets All Statuses

Reference Sets	Status	Deadline
my first refset	Released	10 days
Viruses	Authoring	10 days
more viruses	Authoring	10 days

Definition Design Assign Reviewers Perform Review Assess feedback History

MembersOf(Viruses)

Compute Insert Help

Computed refsets	Type
my first refset	dynamic
Viruses	dynamic

Add Refresh Delete

Review Retire For Release

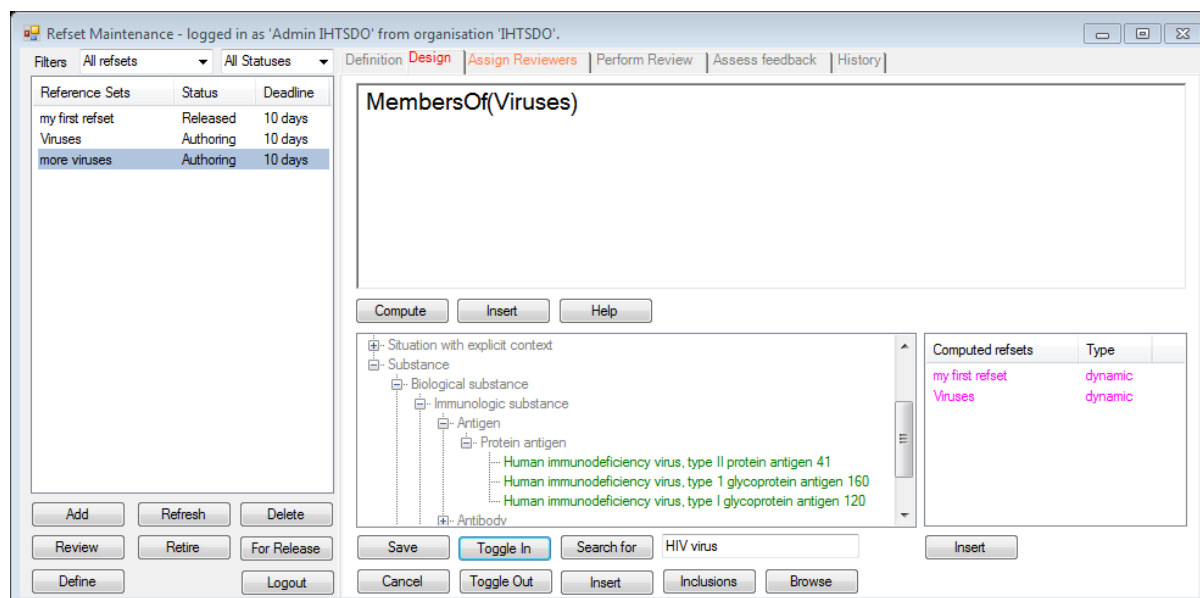
Define Logout

Save Toggle In Search for HIV virus

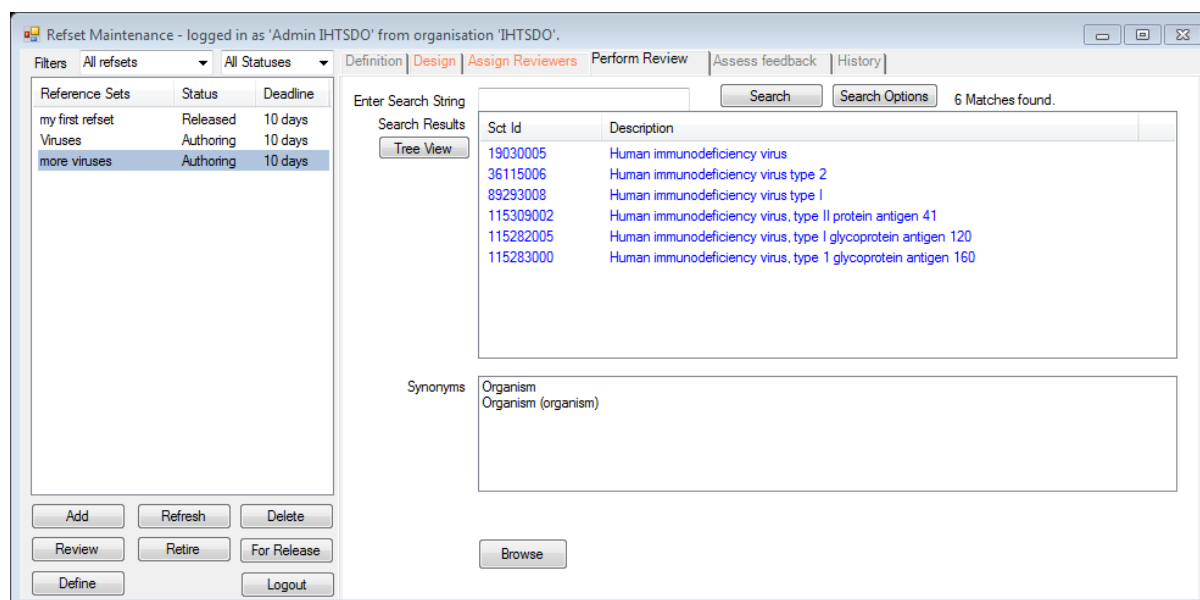
Cancel Toggle Out Insert Inclusions Browse

Insert

- This reference set now includes members of the 'Viruses' reference set.
- Now enter 'HIV virus' in the text field to the right of the 'Search for' button, click the 'Search for' button, expand the Substances hierarchy and 'Toggle In' the three concepts as shown.



- Click the 'Compute' button to review the results (remembering to reselect the 'Tree with all levels shown' option under 'Layout of Results' in the 'Search Options' screen).



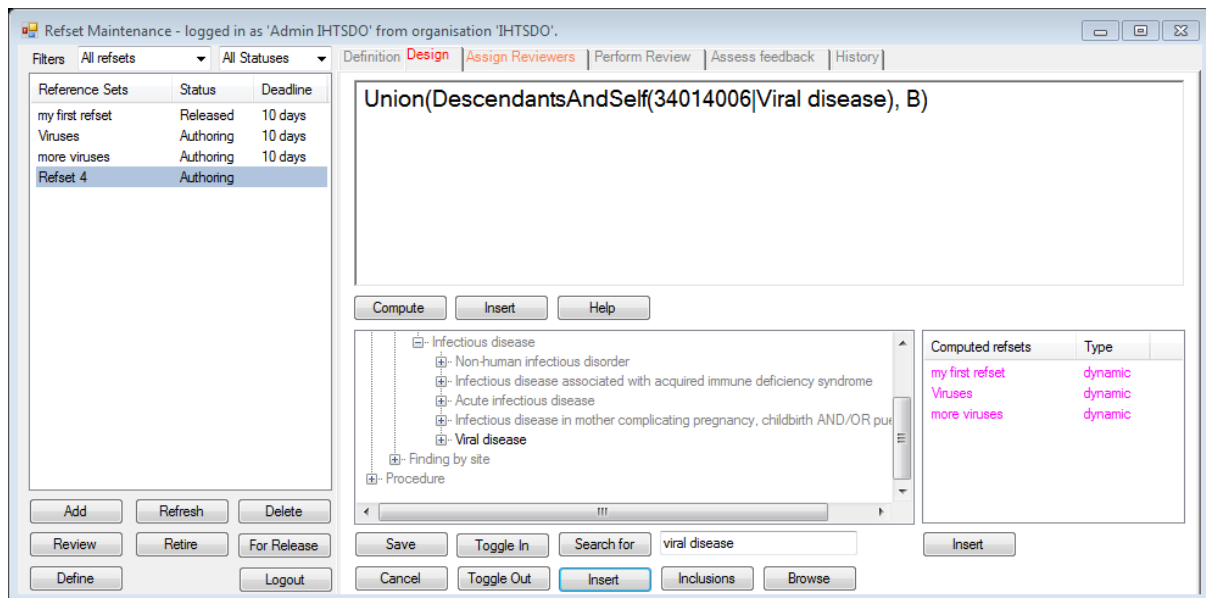
It is also possible to import fixed reference sets (such as the non-human subset), for use in reference set specifications where this is necessary.

6. More complex Specifications

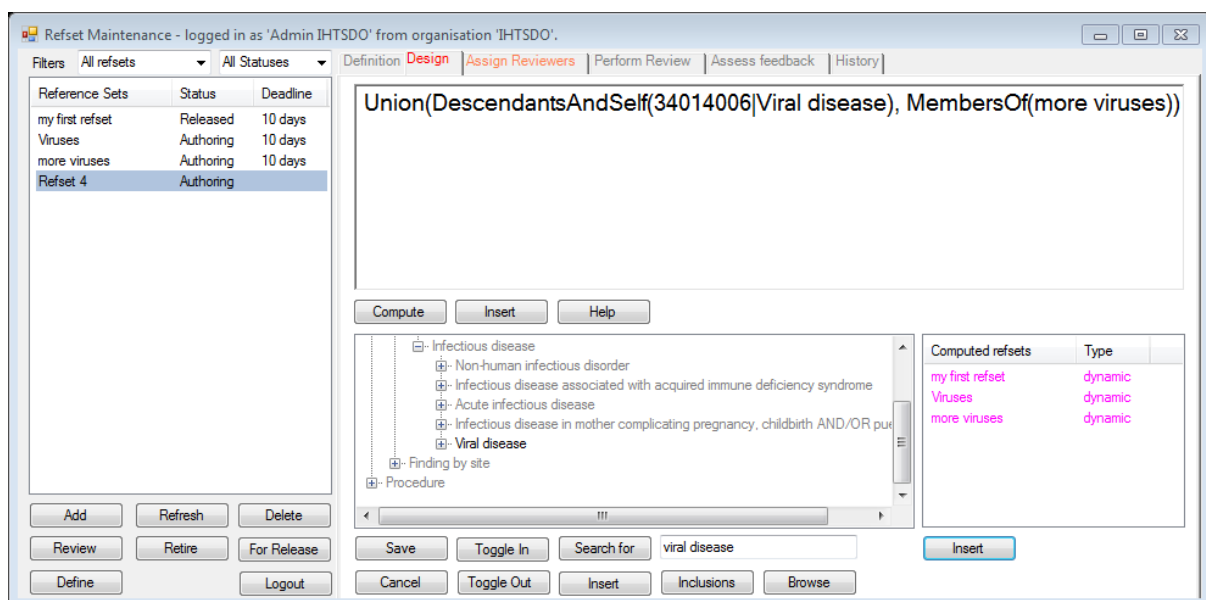
It's possible to develop quite complex specifications for reference sets pretty quickly using the draft IHTSDO Query syntax. An example is provided below:

- Add a new reference set called 'complex refset', give it a Refset Id '100028', and click the 'Author' button to start authoring.
- In the design window, right click and select 'Union(A, B, ..)'

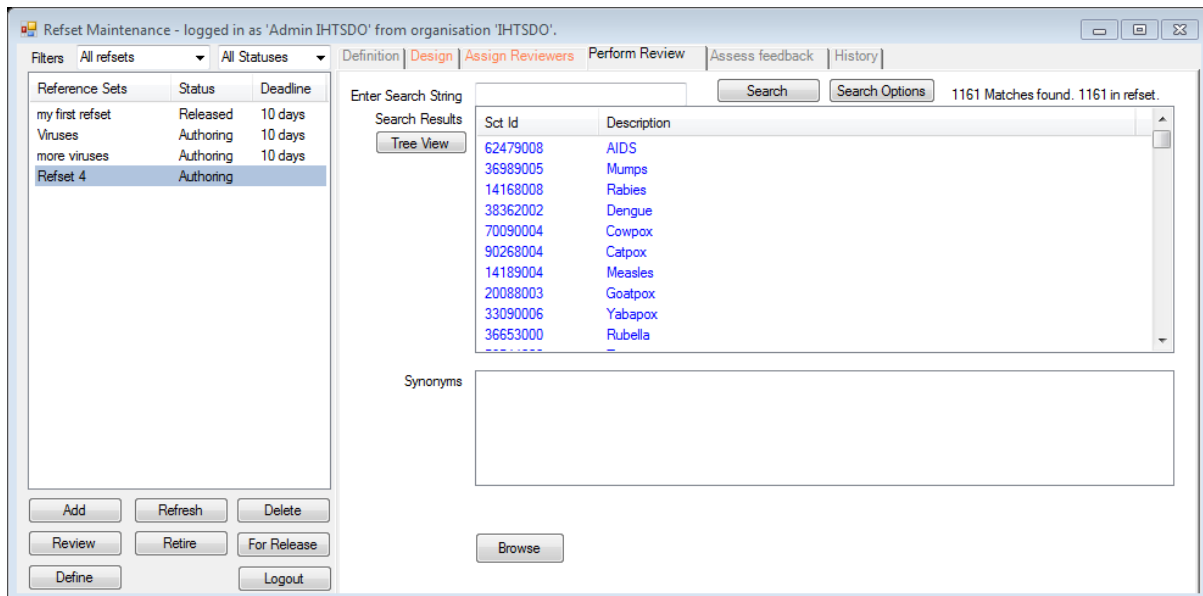
- Double click on 'A'; then right click and select DescendantsAndSelf(a).
- Double click on 'a'; then enter 'viral disease' in the search field and click of the 'Search for' button.
- Expand the clinical findings hierarchy and select 'viral disease' as shown. Then click the 'Insert' button below the taxonomy window.



- Now double click on 'B' in the design window; then right click and select 'MembersOf(NamedRefset)'.
- Double click on 'NamedRefset' in the design window and select 'more viruses' in the 'Computed refsets' window in the bottom right of the screen. Then click the 'Insert' button under that window. The completed specification should look as below. If it doesn't you can either delete the text and start again, or manually edit the text.



- Now compute the reference set. There are 1,161 members this time.

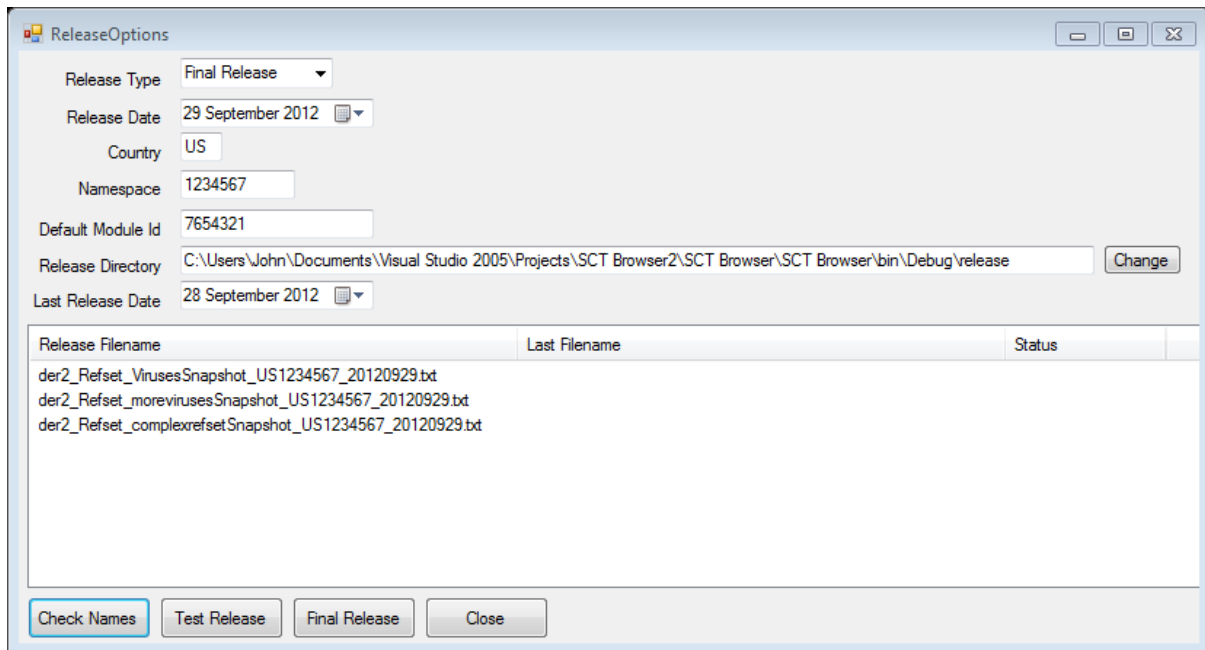


- Switch to 'Tree View' and you should be able to identify the three sets of concept members that we designed independently and that are now included in this reference set.
- Switch back to 'List View' and enter 'mumps' in the 'Search String' field. 21 results are returned. Experiment with selecting concepts and switching between List and Tree views, remembering what the colours represent.

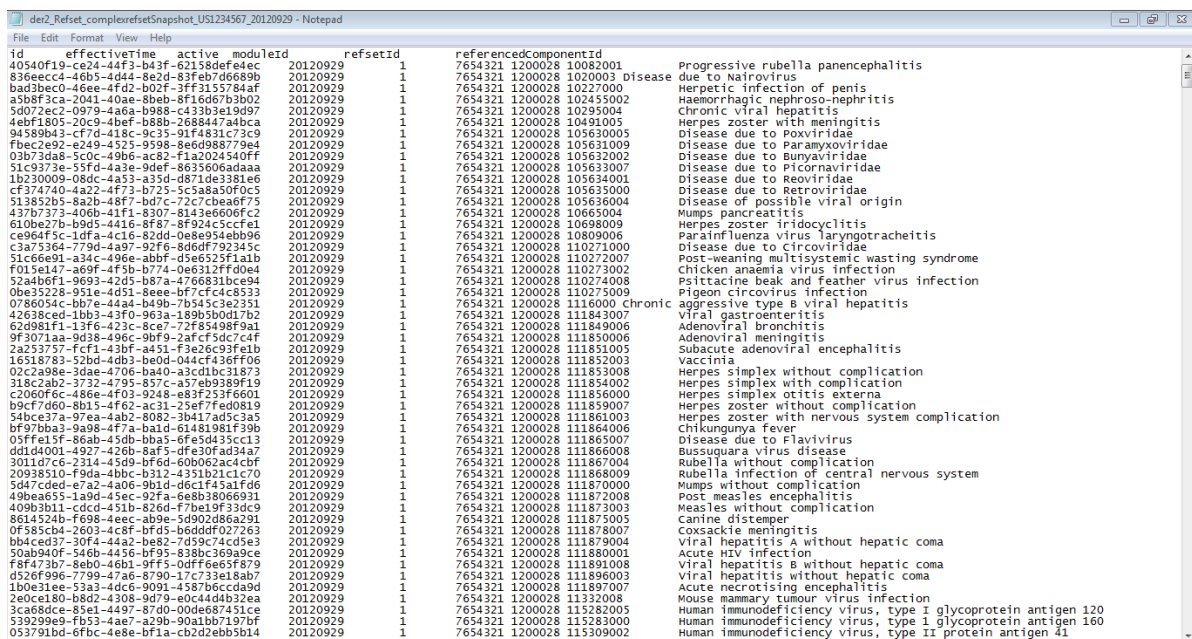
7. Releasing Multiple Reference Sets at one Time

This section covers how multiple reference sets can be released at one time.

- If you've been following the exercise, you should now have four reference sets, one with status 'Released' the others with status 'Authoring'.
- Mark the three unreleased reference sets as approved for release, by selecting each of them in turn and clicking first the 'For Release' button, and then the 'Approved' button.
- Now click the 'Release' button while one of the approved reference sets is highlighted.



- The Workbench Utilities allow you to produce a test release (for checking purposes) before the final release is produced. On inspecting the release files, if corrections are required, the release can be suspended (by clicking the 'Close' button). One or more reference sets may then be removed from the release (either permanently, or for correction before re-approval).
- Click on the 'Test Release' button. Note that the system will ensure that reference sets are computed in the right order, and that any cycles are detected and displayed as errors.
- The Status of all the reference sets should change to 'Released OK'.
- Go to the release folder and view the complex refset snapshot file that was produced. It should look like the following:



- Note that when producing test release files, the concept's Fully Specified Name is displayed at an additional field in each row – to aid checking.

- Producing a test release does not increment the version number of a reference set.
- Now click the 'Check Names' button, and note that all the rows turn red. This signifies that if a release is made, then existing release files (in this case the test files) will be overwritten.
- Assuming the files are okay, go ahead and click the 'Final Release' button and close the 'Release Options' form.
- Note that the status of all the reference sets are now 'Released' and the three reference sets that we've just created have a version number of '1.0', indicating that this is their first release.

8. Tracking History

A history of reference set changes is kept. This section shows how the reference set history can be reviewed.

- Highlight 'my first refset' in the left-hand reference set browser window, and select the 'History' tab at the top right of the window. There are three versions of this reference set – the initial version that was authored (version 0.1), the version that was released the first time (version 1.0), and the version that was authored prior to the second release (version 1.1). Note that the currently active release (version 2.0) will not be shown in the history until a new version of the reference set is created.
- Now select the first line of the version history (version 0.1 of the reference set), and select the 'Details' tab below.

The screenshot shows the 'Refset Maintenance' window for 'Admin IHTSDO'. The 'History' tab is selected, displaying a table of reference set versions:

Version	Description	Owner	Author	Date
0.1		Admin IHTSDO	Admin IHTSDO	
1.0		Admin IHTSDO	Admin IHTSDO	
1.1		Admin IHTSDO	Admin IHTSDO	

The 'Details' tab is also visible, showing the following information for the selected version (0.1):

- Refset Id: NotSet
- Module Id: [Empty]
- Status: [Empty]
- Review deadline: 20 October 2012
- Last review date: [Empty]
- Release date: 10/10/2012
- Owner: Admin IHTSDO
- Author: Admin IHTSDO
- Version: 0.1

- Each of the tabs shows a different aspect of the history. Note that a history of the specification and manual inclusions and exclusions is kept, but not a history of the reference set members themselves.
- In this reference set, the main change that we made was to add two inclusions and one exclusion after the first release. Therefore, you can see that version 1.0 does not have any inclusions:

Refset Maintenance - logged in as 'Admin IHTSDO' from organisation 'IHTSDO'.

Filters: All refsets | All Statuses

Reference Sets	Status	Deadline
my first refset	Released	10 days
Viruses	Released	10 days
more viruses	Released	10 days
complex refset	Released	10 days

Buttons: Add, Refresh, Delete, Retire, Maintain, Logout

Version	Description	Owner	Author	Date
0.1		Admin IHTSDO	Admin IHTSDO	
1.0		Admin IHTSDO	Admin IHTSDO	
1.1		Admin IHTSDO	Admin IHTSDO	

Navigation: Definition | Design | Assign Reviewers | Perform Review | Assess feedback | History

Sub-navigation: Details | Specification | Inclusions | Exclusions | Feedback

Concepts	Identifier

- But version 1.1 of the history has two inclusions:

Refset Maintenance - logged in as 'Admin IHTSDO' from organisation 'IHTSDO'.

Filters: All refsets | All Statuses

Reference Sets	Status	Deadline
my first refset	Released	10 days
Viruses	Released	10 days
more viruses	Released	10 days
complex refset	Released	10 days

Buttons: Add, Refresh, Delete, Retire, Maintain, Logout

Version	Description	Owner	Author	Date
0.1		Admin IHTSDO	Admin IHTSDO	
1.0		Admin IHTSDO	Admin IHTSDO	
1.1		Admin IHTSDO	Admin IHTSDO	

Navigation: Definition | Design | Assign Reviewers | Perform Review | Assess feedback | History

Sub-navigation: Details | Specification | Inclusions | Exclusions | Feedback

Concepts	Identifier
Kingdom Plantae	31006001
Kingdom Animalia	387961004

9. Support for Roles, Organisations, Collaboration and Sharing

Four main roles are supported within the Workbench Utilities:

- **Admin** – this role is responsible for managing the release process, but can also do anything the other roles can do.
- **Owner** – this role is responsible for creating new reference sets, assigning authors and reviewers, and managing the reference set through the workflow process.
- **Staff** – this role can view reference sets that are made available within an organisation, or on the Member Exchange.
- **Consumer** – this role can view reference sets that are made available by a Member within their country, or on the Common Exchange.

In addition, the owner of a reference set can allocate two further roles to users on a per-reference set basis, as follows:

- **Author** – this role is responsible for designing the reference set specification in the design window, including the definition of an expression to evaluate reference set members and any explicit inclusions and exclusions. It is also responsible for dealing with any feedback from the reviewers. A single user is designated as author of each reference set by the owner of that reference set, as part of its definition.
- **Reviewer** – this role is responsible for providing feedback to the author of a reference set. Multiple reviewers can be assigned to a reference set by the owner or the author, prior to initiating a review of the reference set.

Note that roles are specified per organisation, and that multiple organisations may be hosted on a single platform, allowing collaboration during the authoring and review process, and easy sharing of reference set definitions and releases, both among Members and more widely. This section provides an introduction to roles and collaboration and sharing services within the Workbench Utilities.

- Click the 'Logout' button to log out of the Workbench utilities as the IHTSDO Administrator.
- Log in as 'Susan – US owner'; password is 'Susan'.
- Note that no reference sets are currently visible to Susan. That's because the reference sets created by 'Admin IHTSDO' were marked with a 'Release Distribution' of 'Organisation only'.
- Click 'Add' to create a reference set called 'susans refset'. Set the author to 'Jim- US Consumer'.
- Set the 'Release Distribution' to 'Organisation and Consumers'. This will make the reference set available to all staff within the organisation, and all consumers associated with the organisation.
- Now click the 'Save' button, and then the 'Author' button to send the reference set for authoring.

Reference Sets	Status	Deadline
susans refset	Defining	8 days

Name: susans refset

Description: [Empty]

Refset Id: NotSet

Module Id: [Empty]

Status: Defining

Review deadline: 20 October 2012

Last review date: [Empty]

Review Type: Collaborative Review

Release distribution: Organisation and Consumers

Release date: [Empty]

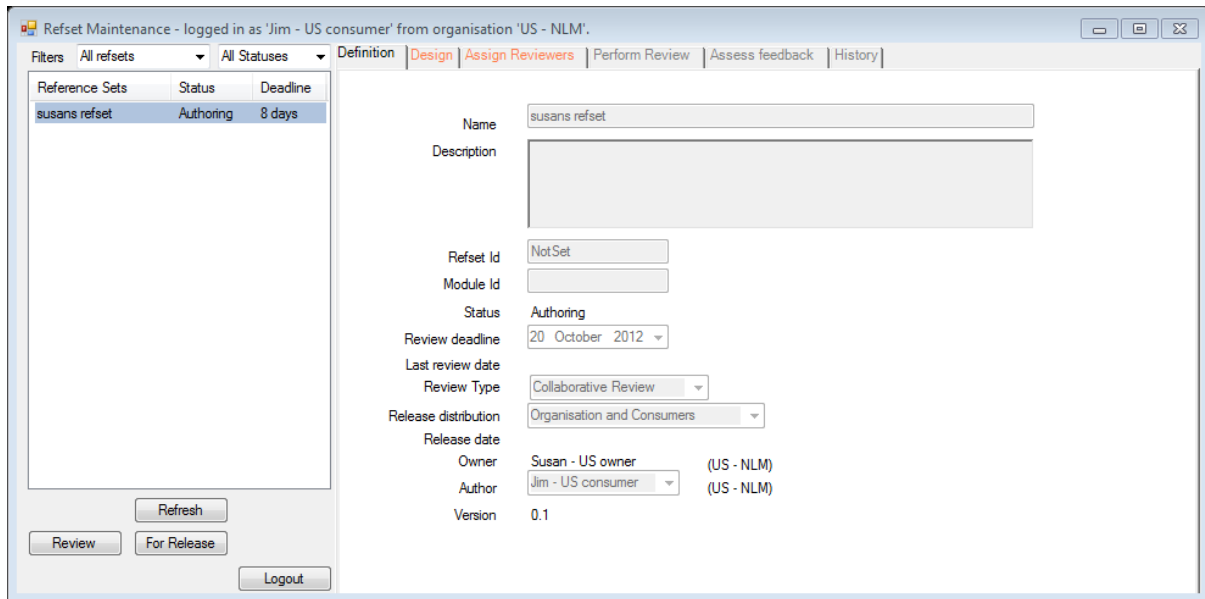
Owner: Susan - US owner (US - NLM)

Author: Jim - US consumer (US - NLM)

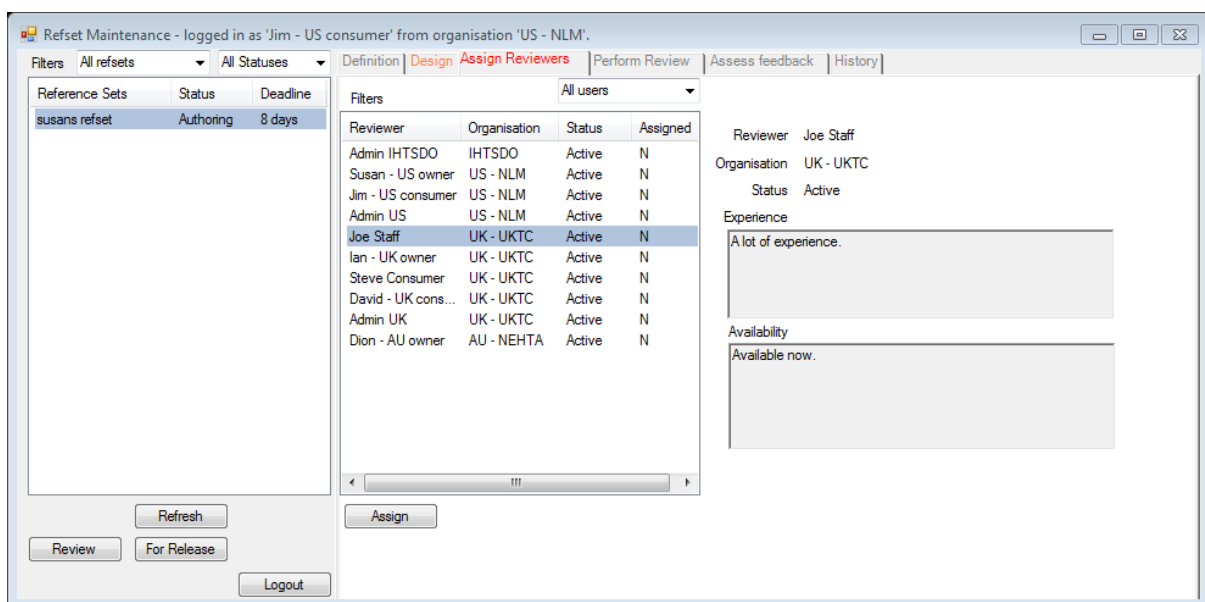
Version: 0.1

Buttons: Add, Refresh, Delete, Author, Approved, Retire, Save, Cancel, Logout

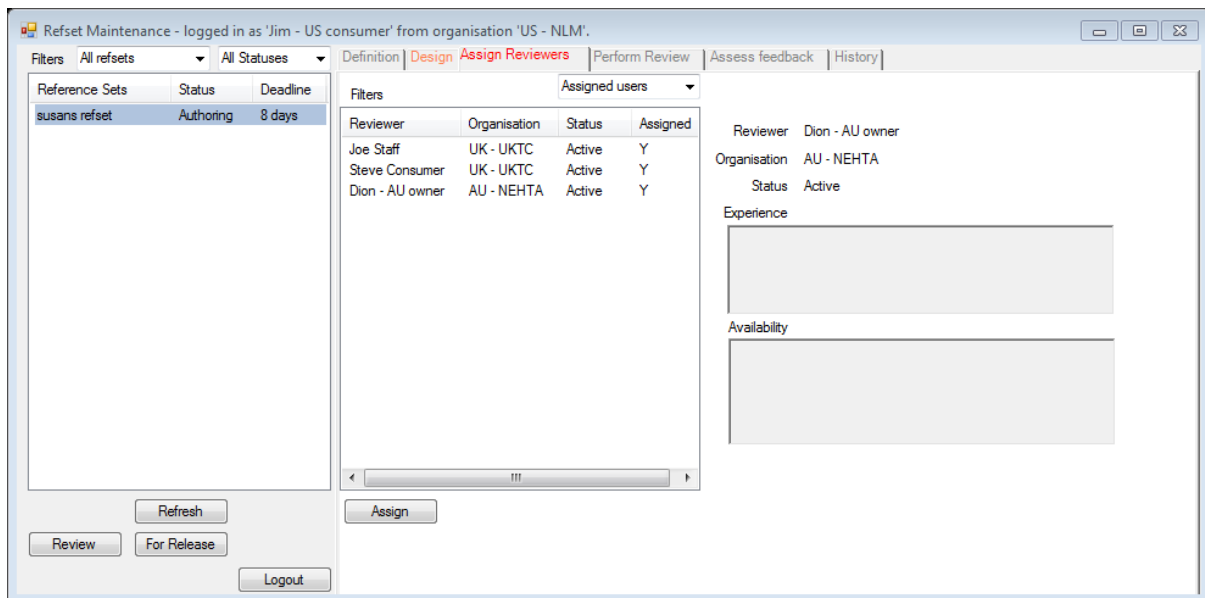
- Note that the 'Design' tab is grey and not red, indicating that Susan does not have access to the 'Design' tab. As owner, she can retire the reference set or take it back from authoring to further define it, but she cannot author it, as she's set Jim up to be the author.
- Now log out as Susan, log in as 'Jim – US consumer' (password Jim), and select 'susans refset'.



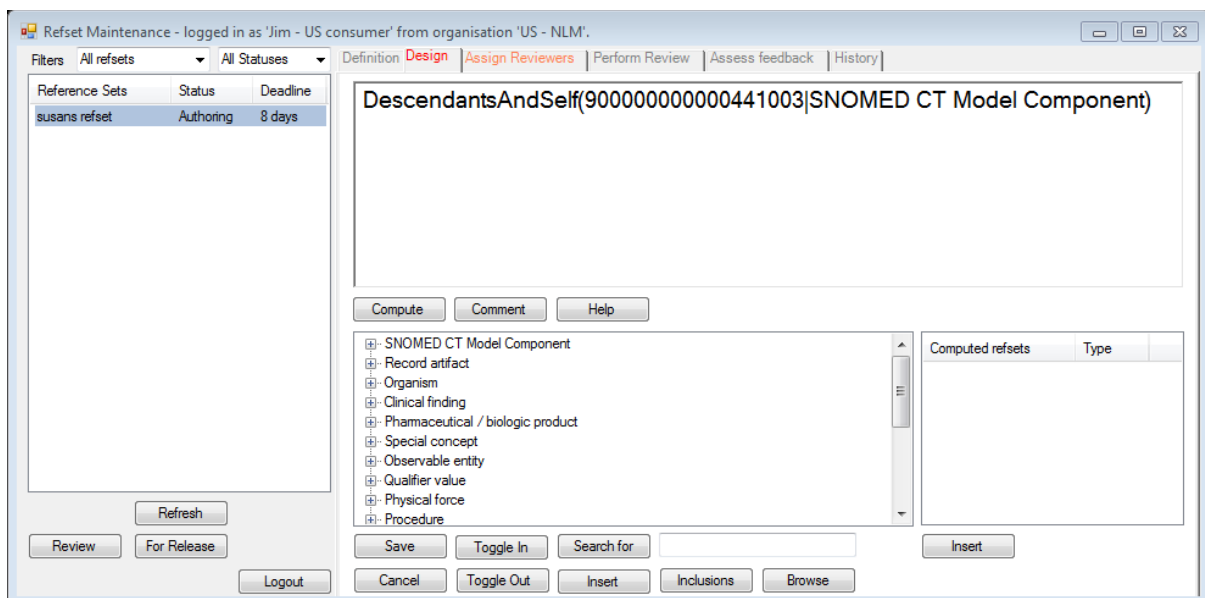
- Note that as the author of this reference set, Jim has access to the Design tab and also to the Assign Reviewers tab. In addition, Jim can mark this reference set as ready for review (using the 'Review' button) or as ready for Release, using the 'For Release' button.
- Jim cannot re-define this reference set, or create another reference set, as he is not an owner.
- Now select the 'Assign Reviewers' tab and select 'Joe Staff'.



- This screen allows an owner or author to assign other users to review a reference set when it is ready for review.
- Click the 'Assign' button to assign Joe as a reviewer. Also assign Steve and Dion as reviewers. Note that reviewers need not be in the same organisation as the reference set owner.
- Now change the Filter in the top middle of the screen from 'All Users' to 'Assigned Users'.



- Only users that have been assigned to review this reference set are now shown.
- Now switch to the 'Design' tab and enter the following specification for the reference set: DescendantsAndSelf(90000000000441003|SNOMED CT Model Component) - (hint: use right-click for the function name and the 'Insert' button to insert a selected concept from the hierarchy).



- Login as Susan again, and create two more reference sets:

- 'for members' – with a 'Release Distribution' of 'Members Exchange'
- 'for all' – with a 'Release Distribution' of 'Common Exchange'

Refset Maintenance - logged in as 'Susan - US owner' from organisation 'US - NLM'.

Filters: All refsets | All Statuses

Reference Sets	Status	Deadline
susans refset	Authoring	8 days
for members	Defining	10 days
for all	Defining	10 days

Name: for members

Description:

Refset Id: NotSet

Module Id:

Status: Defining

Review deadline: 22 October 2012

Last review date:

Review Type: Collaborative Review

Release distribution: Member Exchange

Release date:

Owner: Susan - US owner (US - NLM)

Author: Susan - US owner (US - NLM)

Version: 0.1

Buttons: Add, Refresh, Delete, Author, Approved, Retire, Logout, Save, Cancel

- Now login as Jim again and select the 'for all' reference set.

Refset Maintenance - logged in as 'Jim - US consumer' from organisation 'US - NLM'.

Filters: All refsets | All Statuses

Reference Sets	Status	Deadline
susans refset	Authoring	8 days
for all	Defining	10 days

Name: for all

Description:

Refset Id: NotSet

Module Id:

Status: Defining

Review deadline: 22 October 2012

Last review date:

Review Type: Collaborative Review

Release distribution: Common Exchange

Release date:

Owner: Susan - US owner (US - NLM)

Author: Susan - US owner (US - NLM)

Version: 0.1

Buttons: Refresh, Logout

- Note that Jim only has access to two reference sets:
 - 'susans refset' - because it has a 'Release Distribution' of 'Organisation and Consumers' and Jim is a Consumer of 'US-NLM'; and
 - 'for all' – because it has a 'Release Distribution' of 'Common Exchange', and so is available to all users registered on the system.
- Jim doesn't have access to the 'for members' reference set as that has a 'Release Distribution' of 'Members Exchange', meaning that it is only available to users registered as staff within a Member organisation registered on the system.

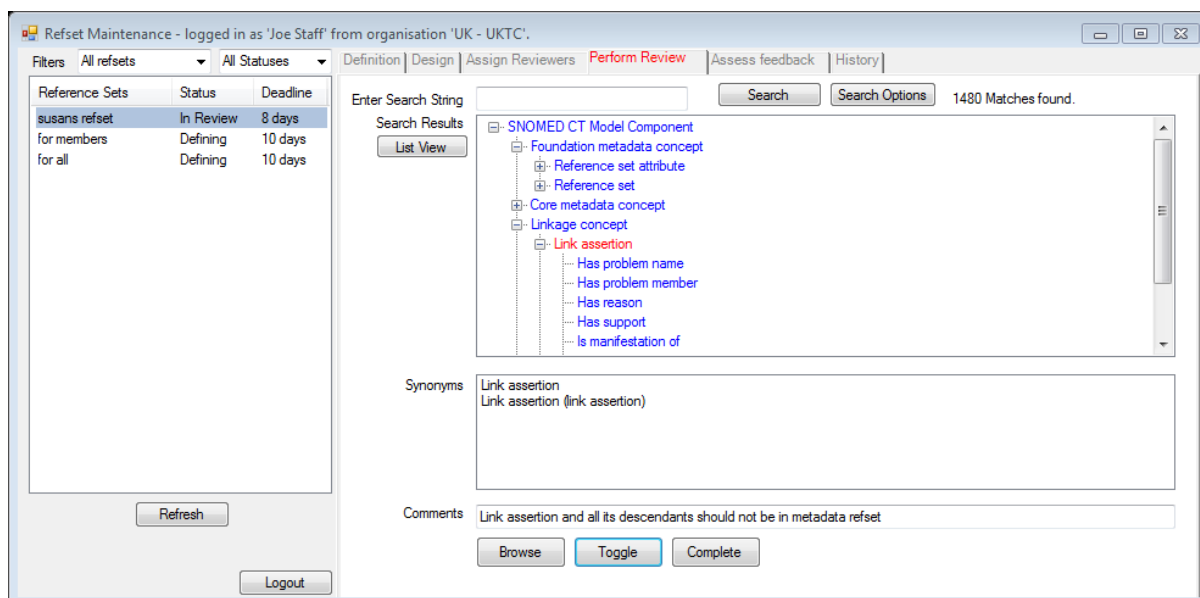
- Now experiment with the 'Filters' at the top of the reference set browser in the top left of the screen. Note that there are two local reference sets, but only one reference set to be authored by Jim, and no reference sets assigned to Jim for review.

10. Reviewing Reference Sets

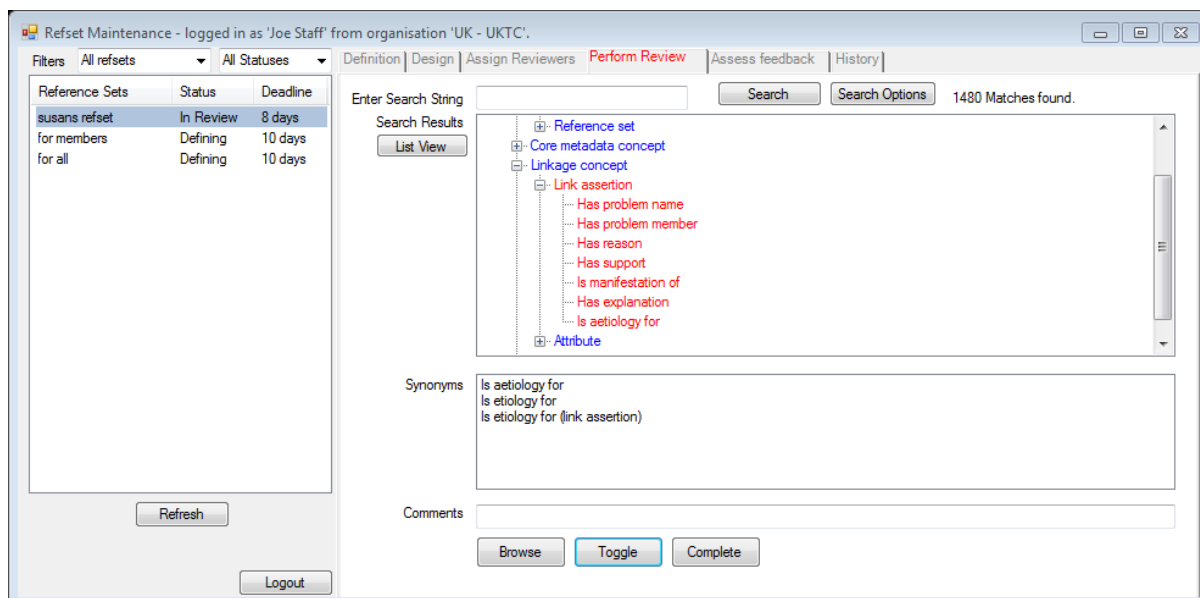
This section will walk you through the reference set review process.

- While logged in as a Jim, select 'susans refset' and click the 'Review' button to mark this reference set as ready for review. If 'susans refset' isn't shown in the list, remember to check the filters.
- Note that all the tabs have now gone grey, and Jim can do nothing further with the reference set until control is returned to him.
- Now login as Susan, select 'susans refset' and select the 'Assign Reviewers' tab to confirm who is reviewing the reference set – it should read as Joe, Steve and Dion. Now click on the 'Start Review' button to initiate the review of the reference set.
- Let's log in as Joe first (password 'Joe') and do his review. Select 'susans refset', and select the 'Perform Review' tab. The display shows that there are 1,480 members in this reference set.
- Expand the taxonomy to show all the children of Link Assertion, as shown:

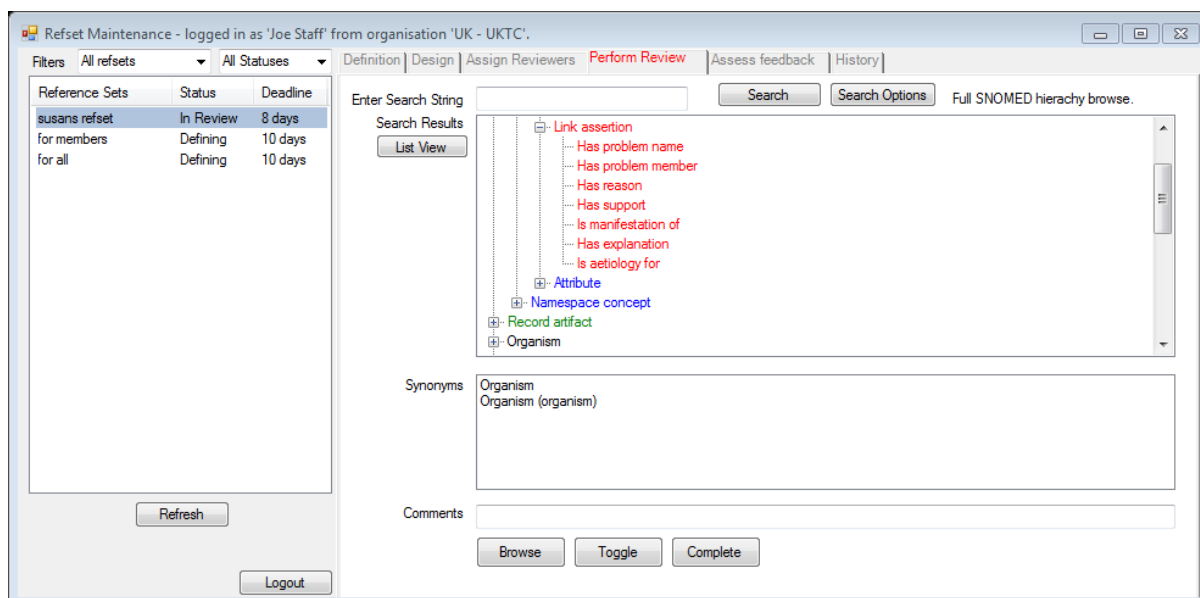
- Let's assume that Joe doesn't think these concepts should be members of the reference set. To provide this feedback, select the 'Link assertion' member row, enter a comment "Link assertion and all its descendants should not be in metadata refset" into the 'Comments' field, and then click the Toggle button to mark this member as suggested for removal from the reference set. Note that members marked for removal are highlighted in red.



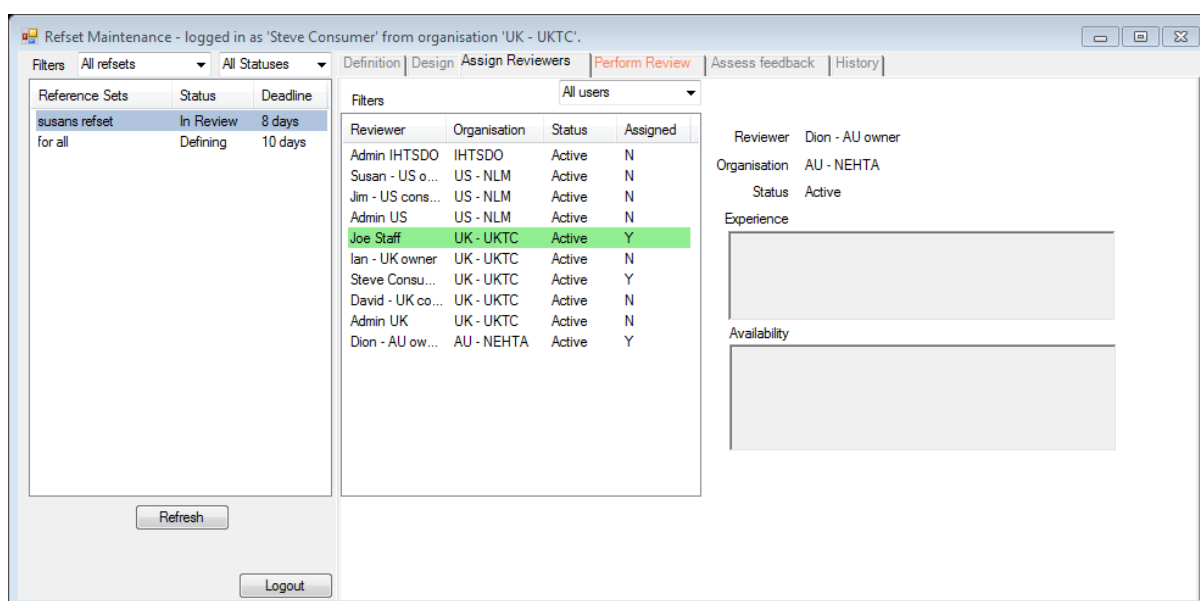
- Now select each of 'Link assertions' children in turn and click the 'Toggle' button for each one.



- Note that any comments that you entered against a reference set member row will be re-displayed if that row is reselected.
- Let's assume that Joe also wants to suggest that the top level concept 'Record artifact' is also added to the reference set. To do this, click the 'Search Options' button and select 'Include hierarchies outside refset', under 'Layout of Results', before closing the 'Search Options' window.
- Now, highlight the 'Record artifact' row and click the 'Toggle' button.

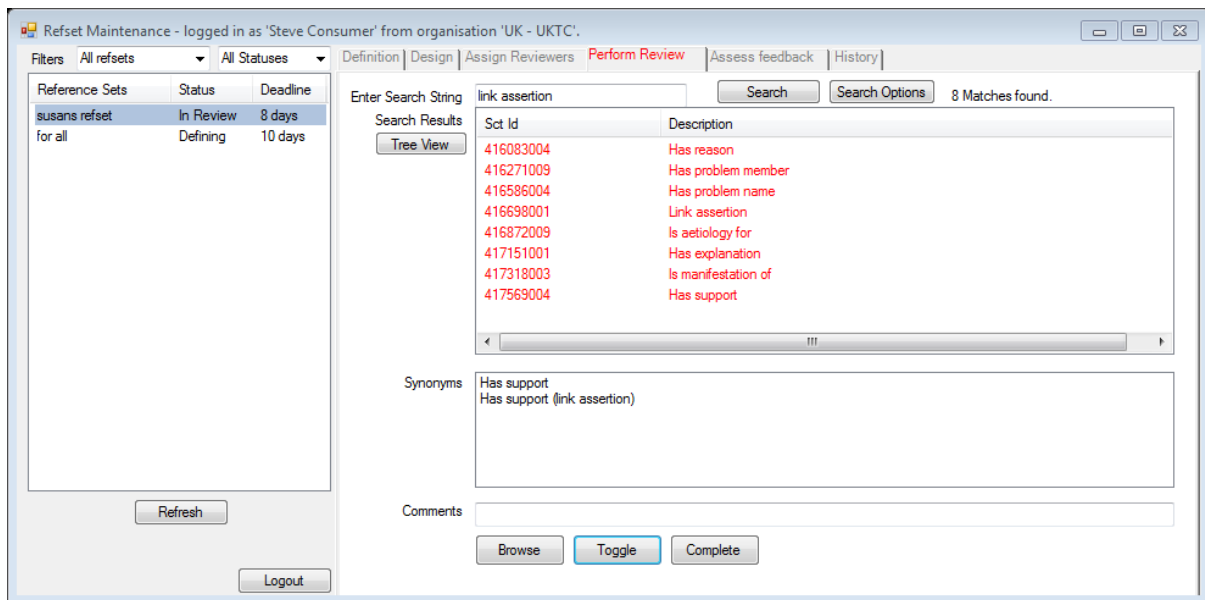


- Note the different colours used. Blue indicates concepts in the reference set and black indicates concepts outside the reference set; red indicates concepts that Joe suggests should be removed from the reference set, and green indicates concepts that Joe suggests should be included in the reference set.
- Now click on the 'Complete' button to indicate that Joe has completed his review.
- Now login as Steve (password 'Steve'), highlight 'susans refset' and select the 'Assign Reviewers' tab. Note that although Steve cannot change the assigned reviewers -only the author and owner can do that – he can see the other reviewers that have been assigned.
- Note that Steve's assignment line is highlighted in green as he has completed his review already.

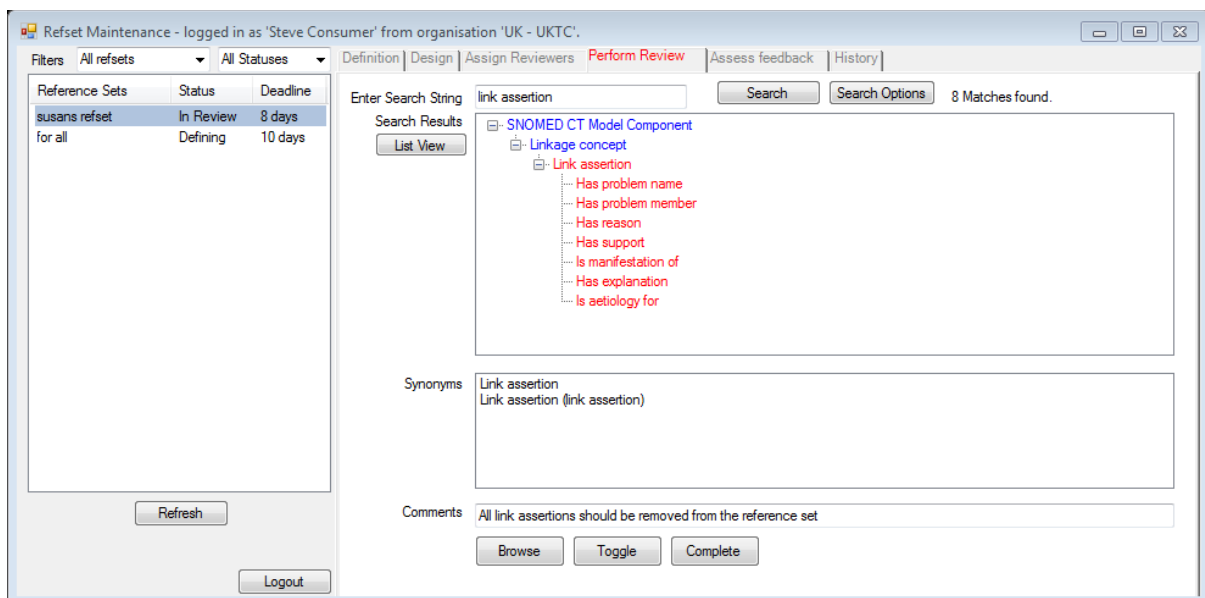


- Select the 'Perform review' tab, select the 'List View' button, and type 'link assertion' into the 'Search String'.

- Toggle the eight concepts that were found out of the reference set.



- Now click the 'Tree View' button to see the concepts in the context of the SNOMED CT hierarchy. All the concepts are in one sub-hierarchy with 'Link assertion' at the top.
- Highlight the 'Link assertion' concept and type in a comment, as justification for removal of the sub-hierarchy from the reference set.



- Now select the 'Assess feedback' tab, and highlight the 'Link assertion' row.

Reference Sets	Status	Deadline	Suggested Inclusions and Exclusions	Decision	JStaff	SConsumer
susans refset	In Review	8 days	Has reason	Exclude	Exclude	
for all	Defining	10 days	Has problem member	Exclude	Exclude	
			Has problem name	Exclude	Exclude	
			Link assertion	Exclude	Exclude	
			Is aetiology for	Exclude	Exclude	
			Has explanation	Exclude	Exclude	
			Is manifestation of	Exclude	Exclude	
			Has support	Exclude	Exclude	
			Record artifact	Include		

- Note that although Steve can't formally assess feedback using this tab, he can still see feedback from the other reviewers, together with his own feedback. This is because Susan set the 'Review Type' of the reference set in the 'Definition' tab to 'Collaborative Review'. If the 'Review Type' had been set to 'Blind Review', then reviewers would not be able to see each other's feedback in this way.
- Re-select the 'Perform Review' tab and click the 'Complete' button, indicating that Steve has completed his review.
- Now log in as Dion (password Dion), select 'susans refset', clear the 'Search String' field, and navigate down to the 'Linkage assertion' hierarchy in the taxonomy.
- Mark the children of 'Link assertion' for exclusion, but leave the parent concept as is, and add a comment to this row: "Children should be removed, but parent should remain in refset".

Enter Search String: Search Search Options Full SNOMED hierarchy browse.

Search Results:

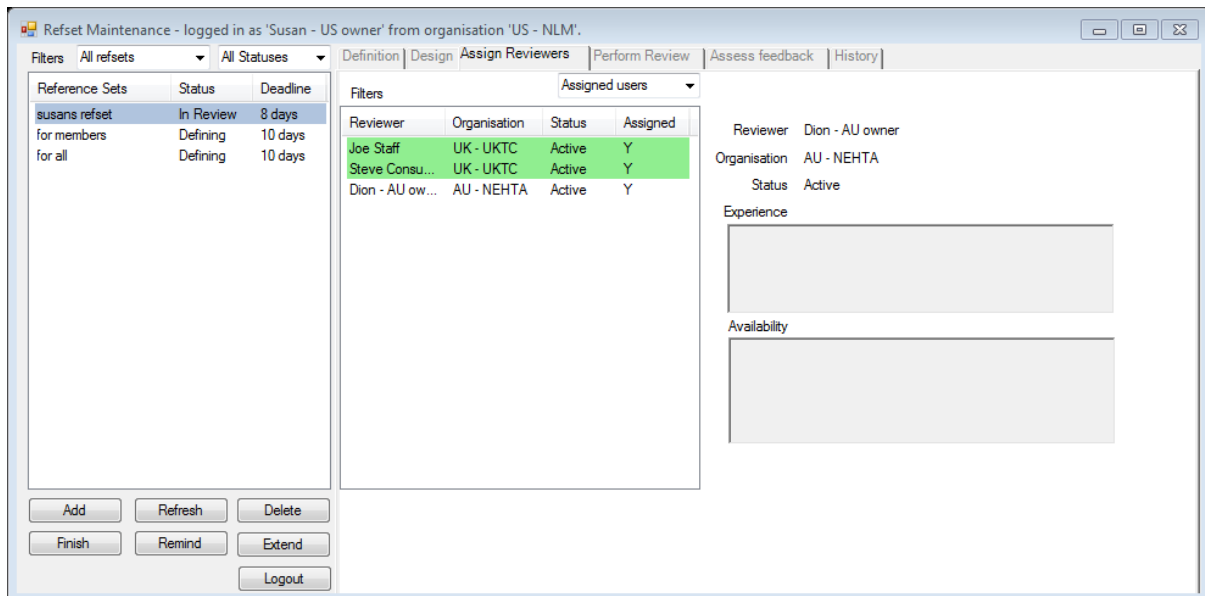
- Foundation metadata concept
 - Core metadata concept
 - Linkage concept
 - Link assertion
 - Has problem name
 - Has problem member
 - Has reason
 - Has support
 - Is manifestation of
 - Has explanation
 - Is aetiology for
 - Attribute

Synonyms: Link assertion
Link assertion (link assertion)

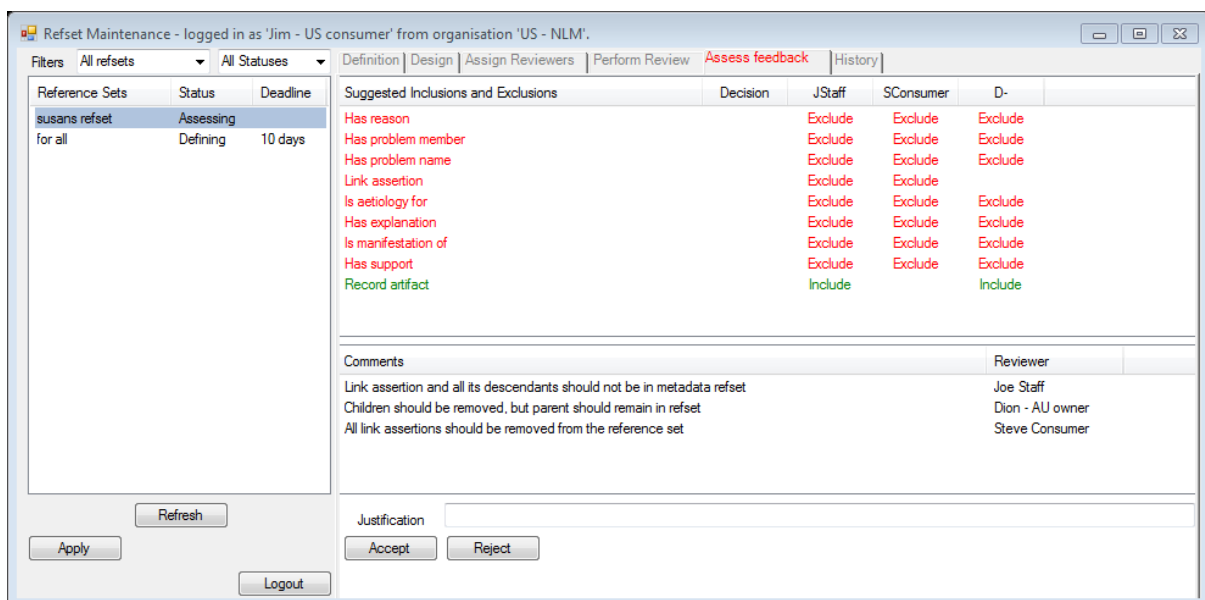
Comments: Children should be removed, but parent should remain in refset

- Also toggle 'Record artifact' concept for inclusion in the reference set.

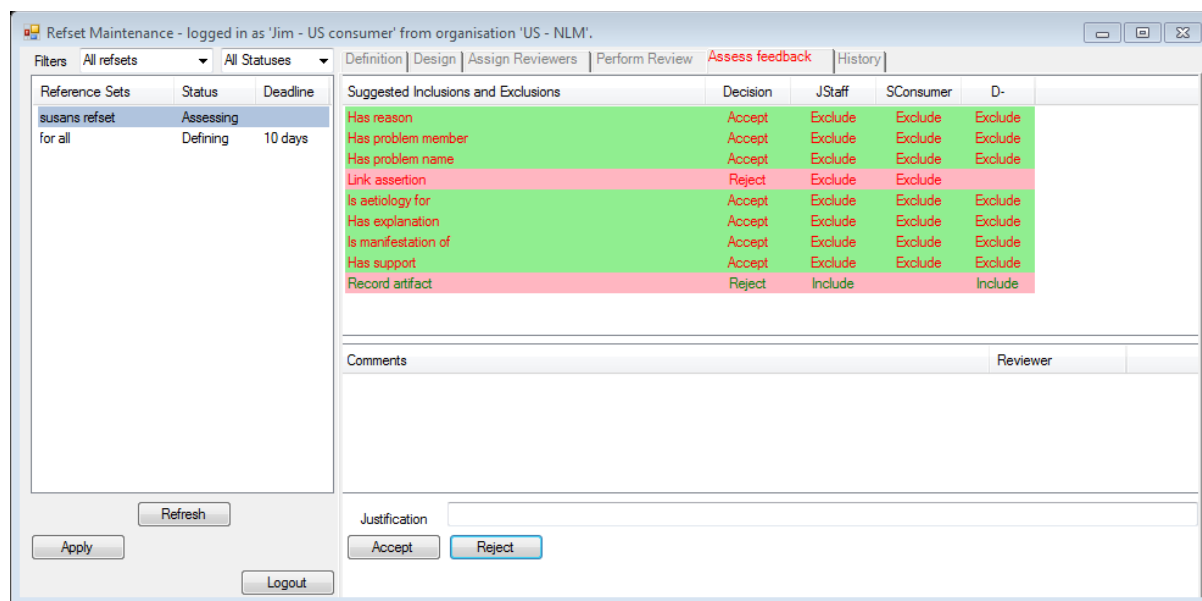
- Now log in as Susan again and select 'susans refset'.
- Select the 'Assign reviewers' tab and set the filter to 'Assigned users'



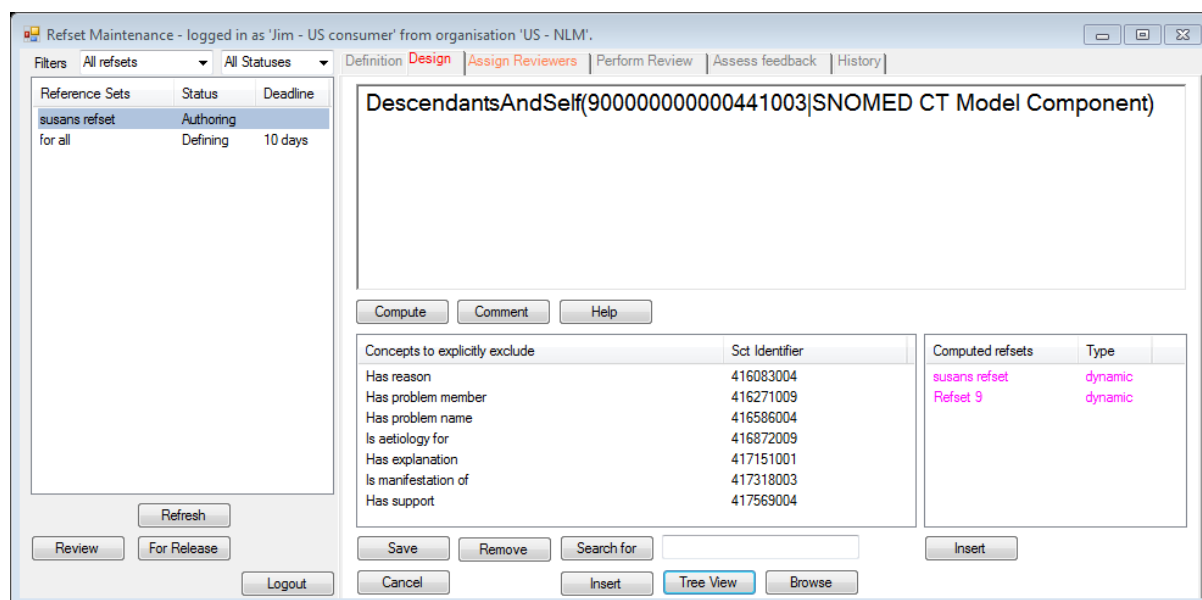
- Note that Susan can see who has completed the review, and whose work is still outstanding. In this case, Dion has forgotten to mark the reference set review as complete, but Susan can see from the 'Assess feedback' tab that he has provided some review feedback, so she may decide, after checking, to finish the review.
- To formally finish the review, click the 'Finish' button. Note that Susan may have also decided to extend the review and/or remind the reviewer team of the review deadline.
- Once Susan, as the owner, marks the review as complete, control of the reference set passes back to the author (Jim) to assess any feedback that has been provided.
- Now log in as Jim (password Jim), highlight 'susans refset' and select the 'Assess feedback' tab.



- Now highlight the top row 'Has Reason' and work down the list, by clicking the 'Accept' or 'Reject' button for each suggestion. Note that the system will move on to the next suggestion automatically. Where there is a difference of views in the review team, the author may choose to enter a justification for the decision he makes.



- Once all the feedback has either been accepted or rejected, click the 'Apply' button to apply these changes automatically to the reference set.
- Select the 'Definition' tab and note that the version of the reference set has been incremented to 0.2. The version number is incremented by a minor number on each review cycle, and a major number for each formal release, so 1.3 implies the third review cycle following the first release.
- Now select the 'Design' tab and click the 'Inclusions' button, then the 'Exclusions' button, to show the explicit inclusions and exclusions that have been made to the reference set as a result of the review.



- After this review, the reference set can be released in the normal way.
- Alternatively, the reference set may be sent for any number of additional reviews (to the same review team or to a different review team) until it is ready for release.

--- ends ---