Table of Contents

1. Features ...................................................................................................................................................... 2
   License ........................................................................................................................................................... 2

2. Quick Start Guide ....................................................................................................................................... 3
   2.1 Log in ..................................................................................................................................................... 3
   2.2 Create a New Map ................................................................................................................................. 3
   2.3 Import an Existing Map File ................................................................................................................. 4
   2.4 Manage Tasks ........................................................................................................................................ 7
   2.5 Author Map Rows .................................................................................................................................. 10
   2.6 Review a Map ......................................................................................................................................... 11
   2.7 Export a Map ......................................................................................................................................... 12
   2.8 Create New Version of Map .................................................................................................................. 12
   2.9 Manage Users of a Map ....................................................................................................................... 13
   2.10 Delete a Map ....................................................................................................................................... 14

3. Mapping with Snap2SNOMED .................................................................................................................... 16
   General development process in Snap2SNOMED ...................................................................................... 16
   3.1 Workflow ............................................................................................................................................... 16
   3.2 Projects ............................................................................................................................................... 22
   3.3 Maps .................................................................................................................................................... 22
   3.4 Project Roles and Access ................................................................................................................... 23
   3.5 Tasks ................................................................................................................................................... 24
   3.6 Status .................................................................................................................................................. 25
   3.7 Relationship Types .............................................................................................................................. 26
   3.8 Automated Mapping Assistance ........................................................................................................ 26
   3.9 Bulk Edit .............................................................................................................................................. 27
   3.10 Publication ......................................................................................................................................... 27

Appendix A - FAQs ........................................................................................................................................... 28
SnapSNOMED (https://snap.snomedtools.org) is a mapping tool that supports the collaborative authoring and maintenance of simple maps from other code systems to SNOMED CT. This SnapSNOMED user guide explains the main features of the tool, and how these features can be used to create and maintain maps to SNOMED CT. For information about mapping best practice and guidelines, please refer to the SNOMED CT Mapping Guide. To contribute to future versions of the SnapSNOMED mapping tool, please join the Mapping Tool User Group. To provide feedback on SnapSNOMED, please use the ‘Feedback’ link at the bottom of each page in the tool, or email us at info@snomed.org.

Web browsable version: http://snomed.org/s2sug
SNOMED CT Document Library: http://snomed.org/doc

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1. Features

Snap2SNOMED has been built using a collaborative iterative agile approach. The current release of Snap2SNOMED supports a range of features including

- Ability to create simple maps to SNOMED CT
- Online and easily accessible (requires login from SNOMED International)
- Collaborative workflow features
  - Allows teams of users to author and review a map
  - Dual independent workflow is not yet available
- Automated mapping suggestions are available as a bulk operation and for single source terms
- Map review process available in workflow for map content
- Intuitive UI to make browsing and mapping to SNOMED CT easy and efficient
- Ability to perform map maintenance
- Import your own code sets and maps
- Export to CSV, TSV and XLSX

License

This tool is provided by SNOMED International for use by Members at https://snap.snomedtools.org.

The codebase of Snap2SNOMED is available as open source with a standard Apache 2 license. This allows the software to be used for any purpose, distributed, modified, and for modified versions of the software to be distributed under the terms of the license without concern for royalties (http://en.wikipedia.org/wiki/Apache_License). Please be aware however that the tool depends on Ontoserver, which is not open source.
2. Quick Start Guide

The following sections provide a guide for the Snap2SNOMED for some of the most common functions. It is not intended as a comprehensive guide, but rather a quick guide to help new users get started.

2.1 Log in

To access Snap2SNOMED, you go to the front page of the system: https://snap.snomedtools.org/

To log in, you need a SNOMED International Confluence account, and if you don’t have one, you can request an account via this link: Request a SNOMED International Confluence account

Once you have your Confluence account, you log in to the tool by clicking on the login button. On the next screen, click on “SNOMED”, and then you are taken to a login page, where you can enter your Confluence user name and password.

To finish the login process, you need to click on the ‘Grant Access’ button to give Snap2Snomed consent to use your Confluence account details in the tool.

2.2 Create a New Map

After logging in, you can create a new map by clicking the “Create map” button.

This will open a dialogue to allow you to define and upload the metadata for the map (e.g. title, version, source, target, etc)
Once you have filled in all mandatory (*) fields, click the "Save" button to create your new map.

2.3 Import an Existing Map File

It is possible to import a map file in one of two ways:

1. During the map creation process
2. From the view screen of an existing map

This page explains the expected map file format, and the two import approaches.

Import Map File Format

An existing mapping file used to import a map into Snap2SNOMED must:

- Be a CSV or TSV file
- Have a header row
- Be in one of the following formats
• `source_code`, `target_code`, `target_display`, `relationship_type`
  • `source_code`, `source_display`, `target_code`, `target_display`, `relationship_type`

Note: This second format is the same as Snap2SNOMED’s Export file format

Relationship type values in the map import file must be one of the following codes (from the first column of the table below):

<table>
<thead>
<tr>
<th>Relationship Type Codes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TARGET_EQUIVALENT</td>
<td>Target is equivalent to source</td>
</tr>
<tr>
<td>TARGET_INEXACT</td>
<td>Target is inexact to source</td>
</tr>
<tr>
<td>TARGET_BROADER</td>
<td>Target is broader than source</td>
</tr>
<tr>
<td>TARGET_NARROWER</td>
<td>Target is narrower than source</td>
</tr>
</tbody>
</table>

Import during map creation

You can import an existing map using the "Create map" dialogue. The "Import existing map" button will appear after uploading and/or selecting your source file.

Note: Large maps can take long to import, please do not refresh your browser while the import is running.

If there is an error in your imported map file, the import will fail, but a map with only the source code will be created. After correcting any errors, you can attempt to re-import your map file from within the new map (see 'Import into an existing map' below).

Import into an existing map

To import a map file into a map that has already been created in Snap2SNOMED, open/view the map, and click the IMPORT button near the top of the page (see screen shot below).
What happens if map targets are inactive upon import?

If you import an existing map and some of the map targets contain errors, e.g. if some of the concepts are inactive, or not available in the selected Edition, a red flag will show for the involved map records (see image below).

Within the authoring task, you can see, in the Target properties section, that the concept is inactive.
What happens if the source code sets includes redundant codes?
The system checks for duplicate source code pairs and an import error occurs if two rows in the source code set contain the same code. An example of this is shown in the image below.

2.4 Manage Tasks

To start working within a map project in Snap2SNOMED, tasks will need to be created, as all mapping work is performed within a task. One Member of the map project can be assigned to each task. Owners of a map project can create tasks, and assign these to the members of the project. Members of a mapping project can create tasks for themself.

Snap2SNOMED supports two types of mapping tasks; ‘authoring’ tasks and ‘review’ tasks. Within an authoring task, members can select map targets and update the details for the individual map records. Within a review task, members can accept or reject the map targets and relationships proposed by the author.
Create Task
To create a task, open the 'Tasks' panel by clicking on the 'Tasks' button from within the view of a map project.

To start creating the task, open the 'New Task' tab:

In the 'New Task' panel, a description, an assigned member, and the type of task should be specified. Furthermore, you also need to specify whether all or a selected number of the map rows should be included in the task. As shown in the diagram below, you can manually select the rows of the map to be included in the task. This will allow the mapping work to be split between a number of members of a mapping project.

View Tasks
Once tasks have been created, these are visible from the Tasks panel in the Author and Review tab respectively. Here, Owners and Members can see the progress of the tasks as a percentage, and they can delete or close the task.
To start working on a task, the member needs to select the task from the drop-down list at the top of the 'View Map' screen.

Delete Tasks

A task can be deleted by clicking on the red icon within the task view.
2.5 Author Map Rows

Once a new map has been created, users of the map can then create an Author task to begin working on the map. Users need to have the appropriate role to create tasks. Alternatively, tasks can be created by owners of the map and assigned to other users.

Please note that within an Author task, only those rows with a status of 'Unmapped', 'Draft', 'Mapped' and 'Rejected' may be edited. To restrict the map view to only these rows, please apply a filter to the Status field with the required status values.

To author map rows:

1. Open the map to be authored
2. Create a task containing the rows required to be mapped
3. Open the task, and begin mapping process.
   - Work can be completed in the table view by searching for concepts and dragging them into the map.
   - The detailed view can also be used to populate the map.
   - Once populated, the status can be changed by using the drop down fields in the table view and the buttons in the detailed view.

2.6 Review a Map

Once a new map has been mapped, users of the map can then create a Review task to begin reviewing the map.

Users need to have the appropriate role to create tasks. Alternatively, tasks can be created by owners of the map and assign them to other users.

Please note that within a Review task, only those rows with a status of 'Mapped', 'In review', 'Accepted' and 'Rejected' may be edited. To restrict the map view to only these rows, please apply a filter to the Status field with the required status values.

To review map rows:

1. Open the map to be reviewed.
2. Create a task containing the rows required to be reviewed.
3. Open task and begin reviewing.

Reviewing can be done

- in the table view of the map by changing the status
- in the detailed view by clicking the status buttons

Please note: Map rows need to be have an appropriate status to be able to be reviewed even when assigned to a review task

2.7 Export a Map

Snap2SNOMED allows maps to be exported in CSV, TSV and XLSX file formats.

To export a map, log in and open/view the required map. Then click EXPORT (near the top of the screen) and select the required export format:

- Comma separated (CSV)
- Tab separated (TSV)
- Excel (XLSC)

2.8 Create New Version of Map

An owner can create a new version of a map within the Snap2SNOMED tool as part of maintenance.

After logging in

1. In the list of projects, select the version of the map from which you want to make a new version. Click the New Version button.

2. Update scope and target where required, then click save. This will migrate all the relevant map rows into the new map version.
3. To make updates to maps that are already in the 'Accepted' state, please first change the status of each row to 'Rejected' - either in the individual map rows, or as a 'Bulk edit' operation. This will allow the map authoring process to be restarted in the new map version.

2.9 Manage Users of a Map

You can manage the membership as an owner of a map. To do this, click the EDIT button from within a map. This will give you a dialogue to manage the membership.
2.10 Delete a Map

To remove a map from your list of maps, please follow these steps:

1. Open the map by clicking on the 'View' button:
   ![View button](image)

2. Edit the map by clicking on the 'Edit' button:
   ![Edit button](image)

3. Click the 'Tasks' button

   and delete all Author and Review tasks, by clicking on the 'Delete task' red circle (as shown below).
   ![Delete task](image)
For each task being deleted, click 'OK' to confirm the task deletion.

Confirm Delete Task

Authoring task (*)

Please confirm as this will permanently delete the task

OK  CANCEL

4. Under 'Project roles' change the role of the "S2S System Access" user to "Owner"

<table>
<thead>
<tr>
<th>Name</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>S2S</td>
<td></td>
</tr>
<tr>
<td>S2S System Access</td>
<td>Owner</td>
</tr>
</tbody>
</table>

5. Change the role of all other users to "None"

This will remove the map from the map list for all users, and identify the map for deletion.

Please note that this process is expected to change in the future, as new deletion functionality is implemented in the tool.
3. Mapping with Snap2SNOMED

Mapping is the process of defining a relationship between the source and target codes, concepts or terms.

General development process in Snap2SNOMED

<table>
<thead>
<tr>
<th>Map development</th>
<th>Map maintenance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3.1 Workflow

How Snap2SNOMED can fit into your mapping business processes

There are many different requirements for workflow and processes for people developing maps depending on their business situation.

A wide variety of different team sizes, management styles and business processes are in use and so Snap2SNOMED has been designed to provide workflow support for collaborative authoring and reviewing tasks when developing a map while remaining flexible enough to support as many different workflows as possible.

3.1.1 Workflow management

Snap2SNOMED supports the requirements of managing a variety of different workflows. Depending on business requirements and availability of personnel, a project owner can assign different roles to users to achieve different levels of control.

Participants can have one of three roles within a project:

<table>
<thead>
<tr>
<th>Role</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owner</td>
<td>An owner has full permissions within a project. They are able to completely manage project membership and project workflow. A project must have at least one owner.</td>
</tr>
<tr>
<td>Member</td>
<td>A member has some permissions within a project. They are able to manage their own workflow within a project</td>
</tr>
<tr>
<td>Guest</td>
<td>A guest has limited permissions within a project. They have read access to the project and are unable to manage any workflow. They can only complete tasks that are assigned to them by the owner(s)</td>
</tr>
</tbody>
</table>

Some example scenarios

<table>
<thead>
<tr>
<th>Size of team</th>
<th>Scenario</th>
<th>Solution</th>
<th>Result</th>
<th>Work and tasking management</th>
<th>Membership management</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Single user project</td>
<td>By default, a single user project has one owner. No other settings are required</td>
<td>The “Owner” is able to self-select work and manage membership to project</td>
<td>Full control of owner</td>
<td>1 user (owner) controlling membership</td>
</tr>
<tr>
<td>Size of team</td>
<td>Scenario</td>
<td>Solution</td>
<td>Result</td>
<td>Work and tasking management</td>
<td>Membership management</td>
</tr>
<tr>
<td>-------------</td>
<td>----------</td>
<td>----------</td>
<td>--------</td>
<td>-----------------------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>2+</td>
<td>Project owner wishes to direct the workflow of all author and review work and specify who does what and in what order. Project owner wants to have full control of project membership</td>
<td>Project owner can assign all participants in the project as “Guests”.</td>
<td>Project owner can then create tasks and assign them to each “Guest” as required to complete the work “Guests” cannot self-select work, but need to be assigned tasks by the owner</td>
<td>High level of control of owner</td>
<td>1 user (owner) controlling membership</td>
</tr>
<tr>
<td>2+</td>
<td>Project owner wishes to allow some users to self-select and complete work, but direct work specifically to other users. Project owner wants to have full control of project membership</td>
<td>Project owner can assign some participants as “Members” and some users as “Guests”</td>
<td>“Members” are able to self-select work “Guests” cannot self-select work, but need to be assigned tasks by the owner</td>
<td>Moderate level of control of owner</td>
<td>1 user (owner) controlling membership</td>
</tr>
<tr>
<td>2+</td>
<td>Project owner wishes all users to self-select and complete work. Project owner wants to have full control of project membership</td>
<td>Project owner can assign all participants as “Members”</td>
<td>“Members” are able to self-select work</td>
<td>Low level of control of owner</td>
<td>1 user (owner) controlling memberships</td>
</tr>
<tr>
<td>2+</td>
<td>Project owner wishes all users to self-select and complete work. Project owner wants assistance in controlling of project membership.</td>
<td>Project owner can assign some participants as “Owners” and some users as “Members”</td>
<td>“Owners” are able to self-select work and manage membership to project “Members” are able to self-select work</td>
<td>Low level of control of owner</td>
<td>Multiple users (owners) controlling memberships</td>
</tr>
<tr>
<td>2+</td>
<td>Project owner wishes all users to self-select and complete work and to allow other participants to manage membership.</td>
<td>Project owner can assign all participants as “Owners”</td>
<td>“Owners” are able to self-select work and manage membership to project</td>
<td>Low level of control of owner</td>
<td>Multiple users (owners) controlling memberships</td>
</tr>
<tr>
<td>Size of team</td>
<td>Scenario</td>
<td>Solution</td>
<td>Result</td>
<td>Work and tasking management</td>
<td>Membership management</td>
</tr>
<tr>
<td>-------------</td>
<td>----------</td>
<td>----------</td>
<td>--------</td>
<td>-----------------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>2+</td>
<td>Project owner wishes to allow some users to self-select and complete work, but direct work specifically to other users. Project owner wants assistance in controlling of project membership.</td>
<td>Project owner can assign some participants as &quot;Owners&quot;, some users as &quot;Members&quot;, and some users as &quot;Guests&quot;.</td>
<td>&quot;Owners&quot; are able to self-select work and manage membership to project. They can also create tasks and assign them to other users. &quot;Members&quot; are able to self-select work. &quot;Guests&quot; cannot self-select work, but need to be assigned tasks by the owner.</td>
<td>Moderate level of control of owner</td>
<td>Multiple users (owners) controlling membership</td>
</tr>
</tbody>
</table>

### 3.1.2 Collaborative workflow

Snap2SNOMED is designed for collaborative map development. Currently, it supports multiple users working simultaneously on a map in a single author, single reviewer per source code manner. This means that work can be divided across a number of personnel to get work done.

There are future plans to support dual independent mapping processes.

A variety of workflows are currently supported, including:

<table>
<thead>
<tr>
<th>Workflow</th>
<th>Description</th>
<th>Process flow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single user author + review</td>
<td>A single user completes all author tasks for the map and then completes a review process on all mapped rows</td>
<td><img src="image" alt="Single user author + review" /></td>
</tr>
<tr>
<td>Single user author (no review)</td>
<td>A single user completes all author tasks for the map. No review process is required.</td>
<td><img src="image" alt="Single user author (no review)" /></td>
</tr>
<tr>
<td>Single author + single review</td>
<td>A single author completes all author tasks for the map. A second user, the reviewer, will complete a review process on all mapped rows.</td>
<td><img src="image" alt="Single author + single review" /></td>
</tr>
</tbody>
</table>
1. **Workflow**  
   Description  
   Process flow

<table>
<thead>
<tr>
<th>Workflow</th>
<th>Description</th>
<th>Methodology</th>
</tr>
</thead>
</table>
| Multiple author + multiple review | Two or more authors create mappings for each source code of the map. Two or more reviewers completes the review processes on all mapped rows. NOTE: A user can act as both an author and reviewer within the overall map (as assigned in a task), however rules have been implemented to discourage the scenario of a user to reviewing their own authoring work. This can be overridden by an owner if required. In the example flow shown, User 1 and User 4 can be the same person, ideally only reviewing the work of Users 1+2. | 1. Authoring tasks are created  
2. Once all rows in the source code set have been mapped and all authoring tasks completed, review tasks are created  
3. Review tasks are completed  
4. Where there are rejected map rows, new author tasks can be created containing those filtered rows and assigned to user(s) to author/update  
5. New review tasks are created containing those newly mapped/updated rows and assigned to user(s) to review  
6. Steps 4-5 repeated until all rows are approved  
Note: Once an author task is completed, if rows have been rejected by a reviewer, then a new author task needs to be created. |

**Tips on using tasks**

- Source codes can only be assigned to one task of each type at a time, however they can be assigned to both an author and a review task at the same time. This means that a source code needs to be released (task completed or cancelled) before it can be assigned to another task of the same type.
- You can use tasks to group together similar content to ensure that users are looking at similar things at the same time and improve efficiency and consistency of mappings.

**3.1.3 Mapping process - author and review workflow**

Depending on personnel resourcing availability and internal business requirements, there are different ways to set the author/review workflow.
<table>
<thead>
<tr>
<th>Workflow</th>
<th>Description</th>
<th>Methodology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parallel</td>
<td>While authoring is being completed, review is occurring simultaneously. This may be useful when time efficiency is required as processes can occur in parallel. It may also be useful where you do not have dedicated team members who can only spend shorter periods of time working on map development. It may be more difficult to maintain consistency, so clear, updated documentation and communication on mapping rules between team members is important.</td>
<td>1. Authoring tasks are created 2. As authoring begins review can begin. Review tasks can be created assigned  - At the beginning containing all rows - users can check their review tasks periodically and review rows belonging to the task that are in the appropriate state (MAPPED), returning back and checking again until complete; OR  - as required, filtering map rows that are ready to be reviewed (in a MAPPED state) to create a review task. This can be done periodically until all reviews are complete. 3. As reviews are being completed and there are any REJECTED rows that belong to an active author tasks, the assigned author can update as required  - do not belong to an active author task (as it has been completed or cancelled), then these can be filtered and assigned to a user(s) to author/update 4. This process is continued until all rows are approved</td>
</tr>
<tr>
<td>Hybrid</td>
<td>Mix of series and parallel workflows can be used. This can be a combination of completing authoring prior to review, and having some tasks open and close as resources such as specialised reviewers become available. A hybrid approach would require close management by the map owner to ensure all work is completed. This may be useful when you have a varying team with different resourcing availabilities. It may be more difficult to maintain consistency, so clear, updated documentation and communication on mapping rules between team members is important.</td>
<td>Note: there is currently no notification system available to notify users that work has been done or comments have been left. Manual monitoring needs to be done to keep track of workflow by users within a project.</td>
</tr>
</tbody>
</table>

3.1.4 Maintenance workflow

Snap2SNOMED supports maintenance of maps that have been created within the tool and also allows upload of simple maps in a defined format for maintenance.

Maintenance is supported through the following workflows
<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
</table>
| Create new version of an existing map, update source scope (code system), target scope (code system) and migrate existing map rows | A new version of an existing map in the tool can be created through the project list by selecting the version to be copied and then creating a new version.  
• For map rows that are copied, the tool will migrate  
  ▪ source  
  ▪ target  
  ▪ relationship  
  ▪ status (e.g. DRAFT, MAPPED, ACCEPTED, etc.)  
  ▪ last author/reviewer data |
| Identify changes in map due to change in source scope | Removed or retired codes in the source  
• tool will remove the rows from the map  
New codes in the source  
• tool will create rows for the new source codes, with an empty target  
• Owners or members can filter empty target fields to create a task to complete mapping process |
| Identify changes in map due to change in target scope | Out of scope or retired codes in the target  
• Owners can use VALIDATE function in tool to identify out of scope codes  
• Owners or members can filter identified rows to create a task to update map targets and complete mapping process  
New target codes in code system  
• Owners or members can filter relationship type for any type except for equivalent to create a task to review and update map targets and complete mapping process |
| Upload existing map | An existing map can be uploaded into the tool to then be updated. |
3.2 Projects

A project is a collection of one or more map versions that have the same source and target code systems (but not necessarily the same code system versions).

For example a single project could contain 2 maps: ACME codes to SNOMED map v1 (source: ACME code system v1.0, target: SNOMED CT International version 20210131) and ACME codes to SNOMED map v2 (source: ACME code system v1.0, target SNOMED CT International version 202107031).

When creating a new map, a project is automatically created. When a new version of an existing map is created within the tool, it will be placed into the same project as the original version that has been copied.

3.3 Maps

Snap2SNOMED supports the creation of mappings between source codes and SNOMED CT target codes in the form of a map.

A map is a tabular form of the associations between source codes and target codes, and the relationship between them.

A new map is automatically created when creating a new project. A new map version can also be created from an existing map in the tool.

Maps require a

- Name
- Version
- Source scope (upload a source code set)
• Target scope (SNOMED CT version and ECL subset)
Maps can be authored/updated in Snap2SNOMED and workflow is managed through tasks.

Authoring
Within an author task, the tool allows you to edit a row by interacting with the map table or by using the detailed view.
The map table view allows you to interact with the table directly (dragging and dropping terms from the search, selecting relationship and status from the drop downs etc.).
The detailed view is another view of a mapping which shows one source code and its associated information at a time. In this view you can add one or more target codes, update target codes, relationships and status.

Reviewing
Within a review task, much like authoring, the tool allows you to edit a row by interacting with the map table or by using the detailed view.
The map table view allows you to interact with the table directly (changing status to review).
The detailed view is another view of a mapping which shows one source code and its associated information at a time. In this view you can change status to review, leave comments and flag targets.

3.4 Project Roles and Access
Roles are used to grant permissions to users to provide access to a project and to perform specific tasks within a project.
Users are unable to see projects until they have been given a role within a project by an owner.

There are three roles being used in the tool.

<table>
<thead>
<tr>
<th>Role</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owner</td>
<td>An owner has full permissions within a project. They are able to completely manage project membership and project workflow. A project must have at least one owner.</td>
</tr>
<tr>
<td>Member</td>
<td>A member has some permissions within a project. They are able to manage their own workflow within a project</td>
</tr>
<tr>
<td>Guest</td>
<td>A guest has limited permissions within a project. They have read access to the project and are unable to manage any workflow. They can only complete tasks that are assigned to them by the owner(s)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Role permissions</th>
<th>Owner</th>
<th>Member</th>
<th>Guest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project membership management</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adding or removing users from a project</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Assigning roles to users in a project</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Tasking actions</td>
<td>Owner</td>
<td>Member</td>
<td>Guest</td>
</tr>
<tr>
<td>Create tasks for any user in project</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Create tasks for self</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Be an assignee for a task</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>
3.5 Tasks
Tasks are the way that Snap2SNOMED manages the workflow. All work being done within a map should be done through the tasking process.

Each task has a task type, an assigned user and assigned rows. Permissions for creating tasks is determined by the user’s role (see table X)

Task types
There are two different task types
- Author tasks
- Review tasks

Author tasks
Author tasks allow an assigned user to edit a source code mapping by adding or updating target codes, or adding "No Map" flags.

Review tasks
Review tasks allow an assigned users to review mapped source codes by giving them statuses of ACCEPTED and REJECTED.

Task assigned user
This is the user who is able to complete the task. Users who are not the assigned user are not able to access the task.

<table>
<thead>
<tr>
<th>Tasking actions</th>
<th>Owner</th>
<th>Member</th>
<th>Guest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create tasks to re-allocate rows that have already been allocated to a user for the same task type/action</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Create tasks to allow same user to author and review the same row</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Complete a task assigned to self</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Cancel a task assigned to self</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Cancel a task assigned to any user in project</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other actions</th>
<th>Owner</th>
<th>Member</th>
<th>Guest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Author actions within an assigned author task</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Author actions outside of an assigned author task</td>
<td>Yes - limited through bulk edit</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Review actions within an assigned review task</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Review actions outside of an assigned review task</td>
<td>Yes - limited through bulk edit</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Create new version of a map within a project, update source and/or target scopes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Export map</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Task assigned rows
These are the rows that are assigned to a task. They allow users to interact with these rows within the task.

3.6 Status
Status denotes the state of the mapping of a source code (not specifically to the targets).

<table>
<thead>
<tr>
<th>Status</th>
<th>Definition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNMAPPED</td>
<td>Source code has neither a target or &quot;No map&quot; flag assigned</td>
<td>This is the default status when a map has been created and a target is yet to be assigned. It will also occur when a &quot;No map&quot; flag has been removed.</td>
</tr>
<tr>
<td>DRAFT</td>
<td>Source code has one or more target codes or a &quot;No map&quot; flag assigned and is in a draft state</td>
<td>The status will automatically change to draft when a map row has been edited. Examples: when a target code has been added to source code with a status of UNMAPPED when a target code is changed for a source code with a status of MAPPED when a No Map flag is added to a source code</td>
</tr>
<tr>
<td>MAPPED</td>
<td>Source code has one or more target codes or a &quot;No map&quot; flag assigned and is in a completed map state.</td>
<td>This is a manual status change by an author to denote when the authoring of a mapping of a source code is complete and ready for review (if a review process is being used). When a source code has this status, it can be reviewed if required</td>
</tr>
<tr>
<td>IN REVIEW</td>
<td>Source code and its mapping(s) is currently being reviewed</td>
<td>This is a manual status change by a reviewer to lock the source code from any changes by an author.</td>
</tr>
<tr>
<td>ACCEPTED</td>
<td>Source code and its mapping(s) have been accepted by the reviewer and mapping is complete</td>
<td>This is a manual status change by a reviewer to accept the mapping and is now locked for any changes by an author</td>
</tr>
<tr>
<td>REJECTED</td>
<td>Source code and its mapping(s) have been rejected by the reviewer and needs remapping by an author</td>
<td>This is a manual status change by a reviewer to reject the mapping and should be remapped by an author.</td>
</tr>
</tbody>
</table>

The statuses used in this tool are split between the two task types, mapping and reviewing.

- Mapping statuses are UNMAPPED, DRAFT and MAPPED.
- Reviewing statuses are IN REVIEW, ACCEPTED and REJECTED.

In a mapping task, a user is able to transition a source code's status between UNMAPPED, DRAFT and MAPPED and where a source code has been rejected by a reviewer, the user can also change REJECTED to DRAFT or MAPPED. If a review process is being used, a status of MAPPED can also be considered the same as “ready for review”.

In a review task, a user is able to transition a MAPPED source code to IN REVIEW, ACCEPTED and REJECTED. The IN REVIEW status is designed to be like a lock for the source code so no further changes can be made by the author. A reviewer can choose to bulk change all the status of the valid rows in their task to IN REVIEW if they wish to lock them while they are working.
3.7 Relationship Types

Each map between source and target should have a defined type of map relationship describing the type of relationship or degree of equivalence of source and target code.

Snap2SNOMED uses the following definitions

<table>
<thead>
<tr>
<th>Relationship type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equivalent</td>
<td>The definitions of the concepts mean the same thing (including when structural implications of meaning are considered) (i.e. extensionally identical).</td>
</tr>
<tr>
<td>Broader</td>
<td>The target mapping is broader in meaning than the source concept.</td>
</tr>
<tr>
<td>Narrower</td>
<td>The target mapping is narrower in meaning than the source concept.</td>
</tr>
<tr>
<td>Inexact</td>
<td>The target mapping overlaps with the source concept, but both source and target cover additional meaning, or the definitions are imprecise and it is uncertain whether they have the same boundaries to their meaning.</td>
</tr>
<tr>
<td>No match/ unmatched</td>
<td>There is no match for this concept in the target code system.</td>
</tr>
</tbody>
</table>

3.8 Automated Mapping Assistance

Snap2SNOMED has two features to assist with mapping

**Bulk Automap Feature**

This feature is available to users within an author task.

The bulk automap feature will attempt to return a match within the target scope of the map. If no map can be found, the target will remain blank.

All matches found will be set with a relationship type of "INEXACT". This is because the automap feature is unable to determine the level of equivalency of the match.

It is strongly recommended that all matches suggested by the automap feature are checked by a human mapper.
Automated Match Suggestions

This feature is available in the detailed view of a source code. Users can use these suggestions for mapping by dragging and dropping their choices into the relationship box.

3.9 Bulk Edit

In order to facilitate efficient mapping and assist workflow, a bulk edit feature has been provided.

Within a task, the bulk edit feature allows users to bulk change all rows or a selection of rows.

A user can

- Change relationship types
- Change mapping status
- Mark all as "No map"
- Remove all "No map"
- Clear targets

The bulk edit feature only allows one operation at a time, and can only enact changes on rows that have a valid starting point to allow that change when following a normal mapping process.

Examples:

- Within an author task, a user is not able to change any status to APPROVED or IN REVIEW as these belong to review tasks only
- Within an author task, if the starting status is UNMAPPED (and so has no target assigned), then the bulk change will not be able to change the status to MAPPED
- Within a review task, a user is not able to change any status to MAPPED as these belong to author tasks only

NOTE: It is intended that the bulk edit function is used only within a task, however there is a bulk edit function available to Owners from the map view to allow Owners to manage workflow.

The bulk edit function in the map view will adhere to the normal rules for changing status. This means the Owner must complete a sequence of bulk actions in line with the status change rules.

For example, to clear all the content of a to a row containing a target code cannot be changed to UNMAPPED, a status of DRAFT cannot be changed to ACCEPTED

3.10 Publication

Publication of maps is out of scope of Snap2SNOMED. Therefore any publishing processes need to be completed outside this tool. However an export function is available for users to download their map in CSV, TSV or XLSX format from the tool.

Quality assurance and final testing should also be performed outside the tool prior to publishing.
Appendix A - FAQs

What happens if map targets are inactive upon import?

If you import an existing map and some of the map targets contain errors, e.g. if some of the concepts are inactive, or not available in the selected Edition, a red flag will show for the involved map records (see image below).

Within the authoring task, you can see, in the Target properties section, that the concept is inactive.

What happens if the source code sets includes redundant codes?

The system checks for duplicate source code pairs and an import error occurs if two rows in the source code set contain the same code. An example of this is shown in the image below.
Warning! This operation will clear and override all existing mapping!

The mapping import file must include a header row and it must be in one of the following formats:
- `source_code` | `target_code` | `display` | `relationship`
- `source_code` | `source display` | `target code` | `target display` | `relationship type` | `code`

Large maps can take long to import, please do not refresh your browser while the import is running.

Source file
Choose file...

Pairs diseases to SNOMED CT Map with duplicate...

CSV or TSV only Max upload size: 200MB

File contains duplicate source and target code pairs

Import existing map

[ TAB ]