

# Workbench Utilities

**IHTSDO Conference**  
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**IHTSDO**

International Health Terminology  
Standards Development Organisation



# IHTSDO Workbench Utilities

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## Future Development Options

- Reference set maintenance – enhancements to enable easier maintenance of reference sets.
- Extension maintenance – to allow authoring and maintenance of an extension.
- Mapping functionality – support for mapping from external code sets into SNOMED CT.



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## Reference set maintenance (1)

- Facilities to support collaborative authoring, maintenance, release and optional sharing of reference sets.
- Support for multiple roles, including reference set owners, reference set authors, reviewers, consumers and administrators (responsible for the release process).
- Design of reference set specifications, using lexical constructs and logic constructs using a reference set specification grammar.
- Ability to base evaluation of reference set members on specific version of the International release and/or one or more dependent extensions.



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## Reference set maintenance (2)

- Ability to explicitly include and exclude concepts from the reference set.
- Ability to include or exclude an existing reference set in the specification of a new reference set; support for both static (fixed member) and dynamic (re-evaluated) reference sets.
- Support for reviewing reference sets.
- Ability to select reviewers and track progress of a review.
- Facilities to search for concepts within a reference set, in both list and tree view; ability to search for reference set concepts in the context of the SNOMED CT hierarchy.



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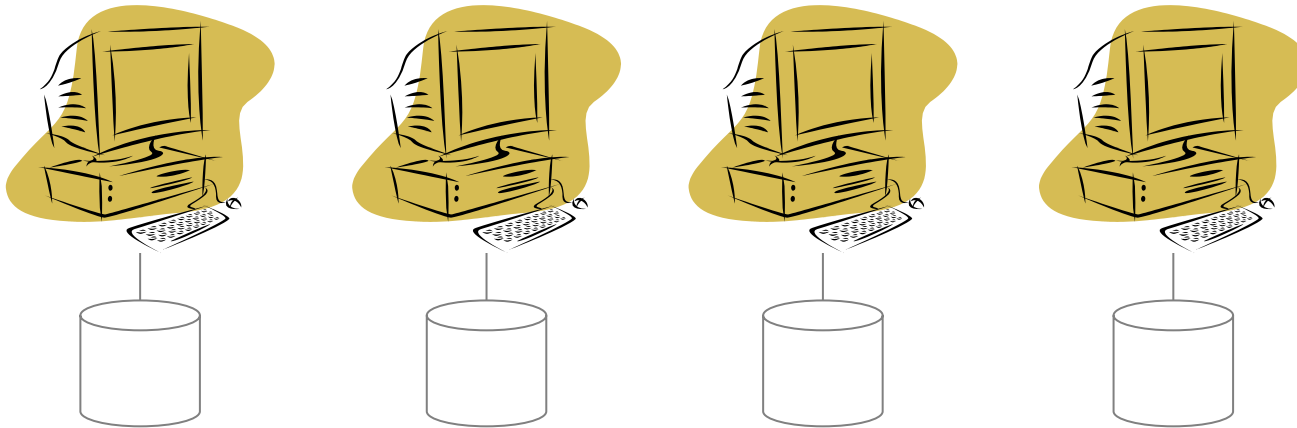
## Reference set maintenance (3)

- Ability for reviewers to suggest inclusions and exclusions to a reference set, adding comments where appropriate.
- Facilities to assess consolidated feedback from one or more reviewers, either accepting or rejecting feedback, with optional justification.
- Configurable workflow.
- History tracking
- Support for releasing reference sets in RF2 format, in full, snapshot and delta formats.
- Multi-lingual support where RF2 Language reference sets exist.

# IHTSDO Workbench Utilities Configuration Options (1 of 3)



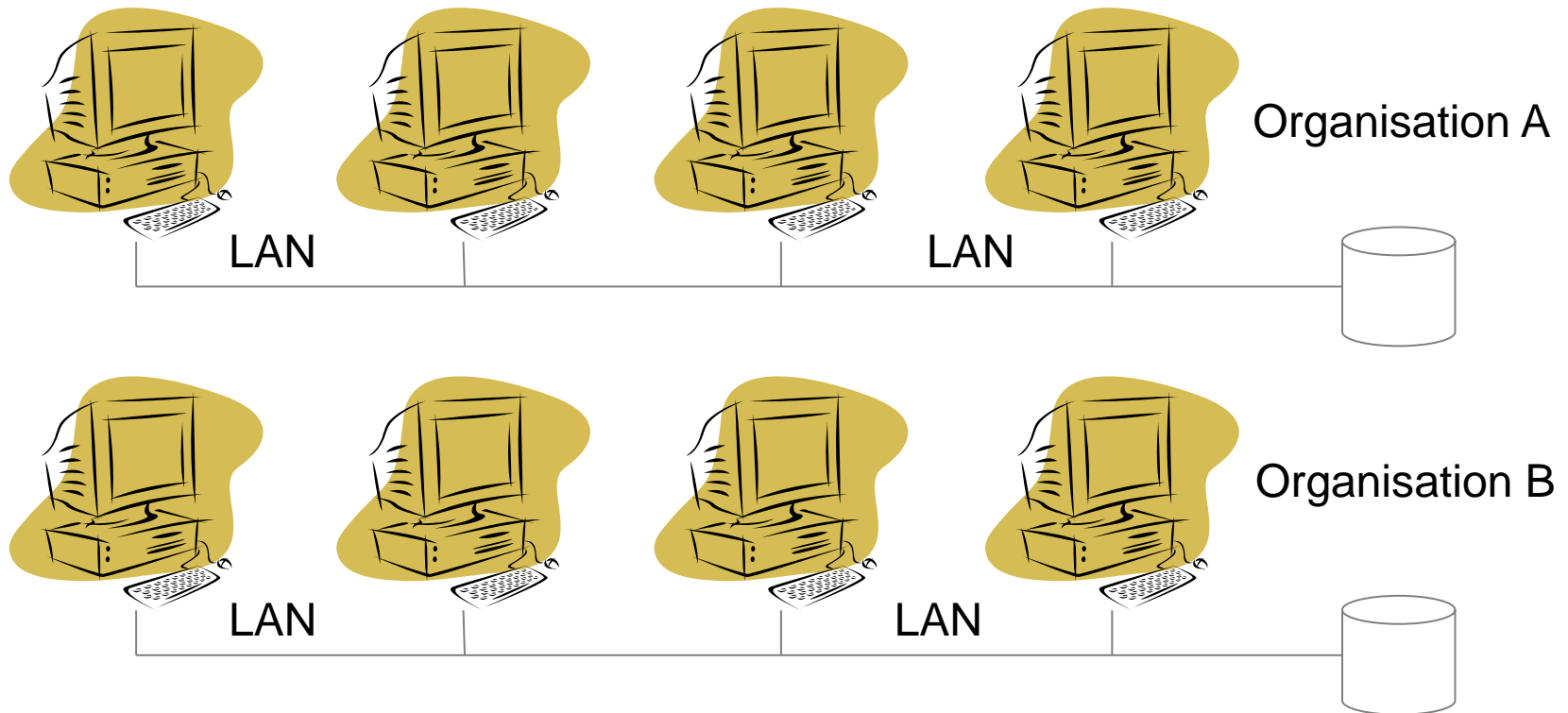
## Utilities – standalone operation



# IHTSDO Workbench Utilities Configuration Options (2 of 3)



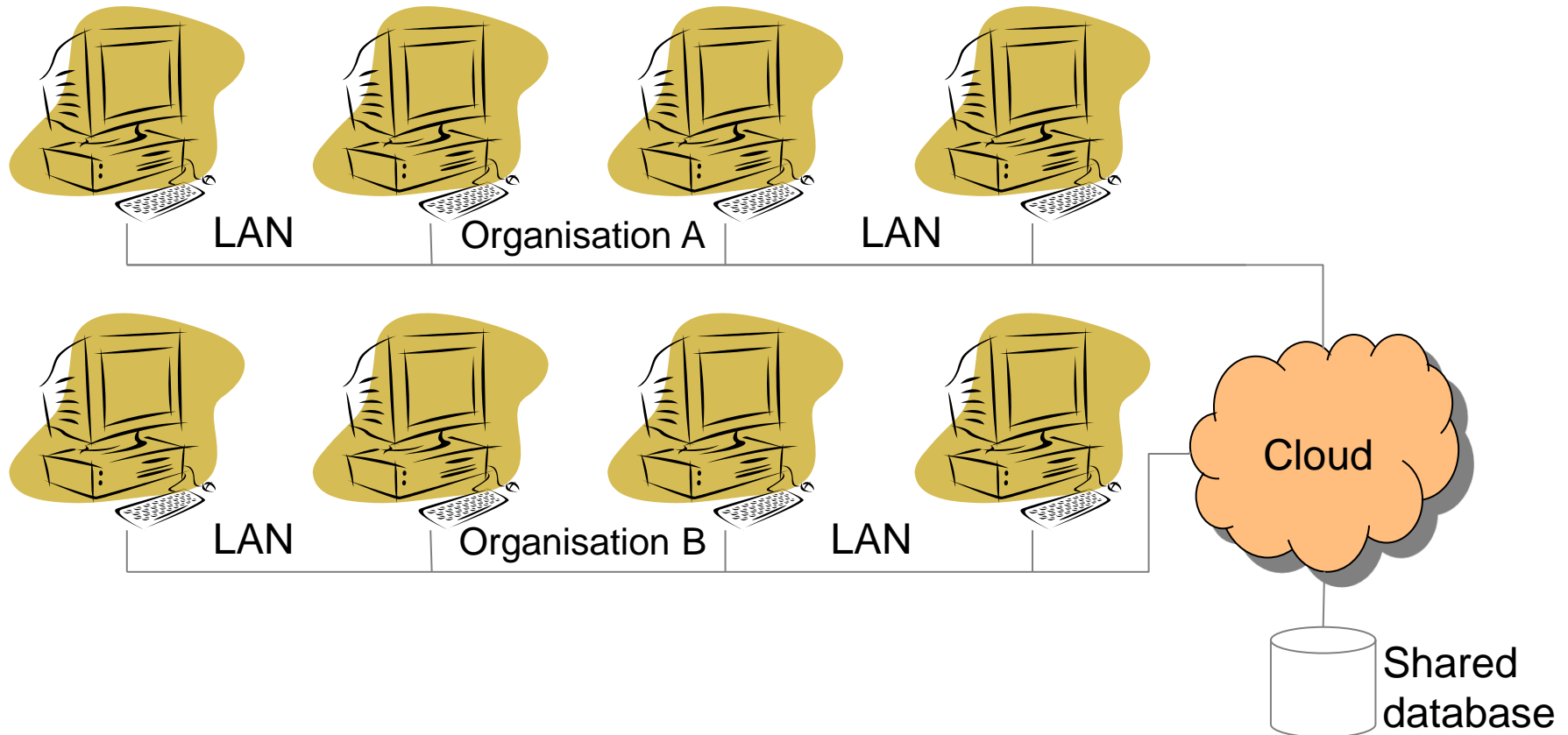
## Utilities – intra-organisation operation



# IHTSDO Workbench Utilities Configuration Options (3 of 3)



## Utilities – inter-organisation operation

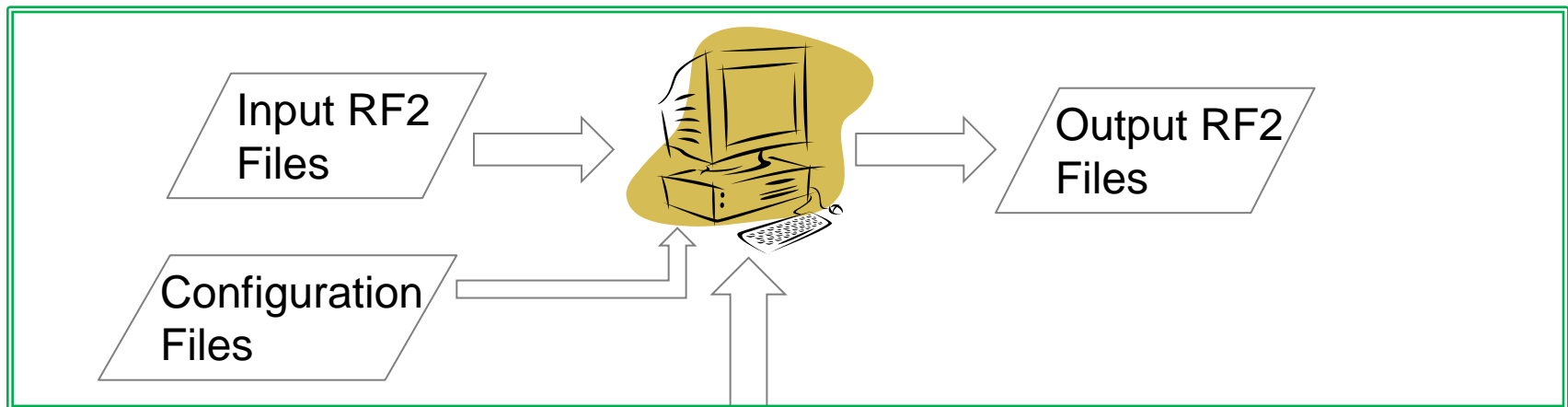






# IHTSDO Workbench Utilities

## Utilities – Integration Architecture



### Configuration files:

- Batch control file
- Search options
- Workflow files
- Release options

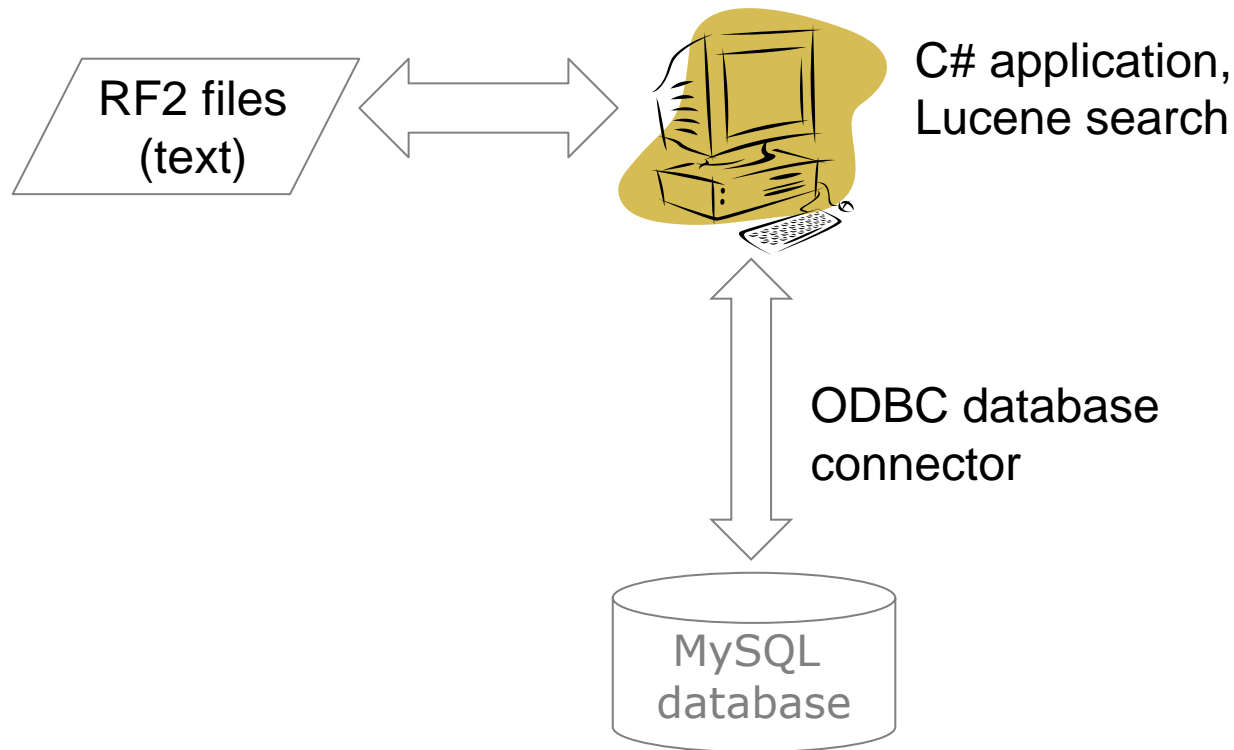
### Database holds:

- Reference set definition
- Specification
- Explicit inclusions and exclusions
- Assignment of reviewers
- Review feedback



# IHTSDO Workbench Utilities

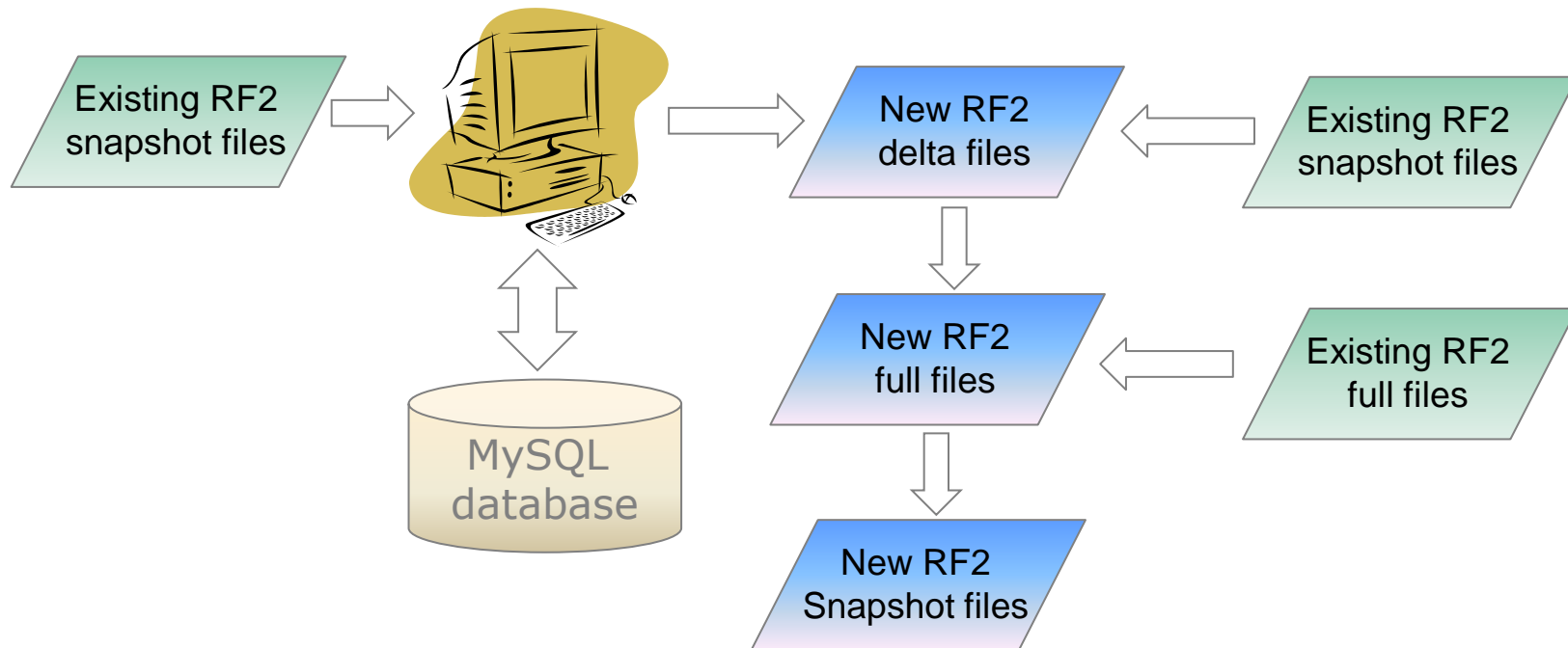
## Utilities – Technical Architecture





# IHTSDO Workbench Utilities

## Utilities – Release Architecture





## Configuration Files – batch control file setup

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This batch control file loads SNOMED CT from RF2 files, selects International English as the display language and runs the reference set maintenance utility:

```
LoadConcepts "sct2_Concept_Snapshot_INT_20120731.txt"  
LoadDescriptions "sct2_Description_Snapshot-en_INT_20120731.txt"  
LoadRelationships "sct2_StatedRelationship_Snapshot_INT_20120731.txt"  
  
// load up the International language reference set (LRS)  
LoadLRS "der2_cRefset_LanguageSnapshot-en_INT_20120731.txt" EN-INT  
  
// set the language to display terms in.  
SetLanguage EN-INT  
  
// start a utility to maintain reference sets  
RunRefsetMaintenance
```

# IHTSDO Workbench Utilities

## User Interface – Reference Set Design



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
more viruses	Authoring	10 days

### MembersOf(Viruses)

Compute | Insert | Help

- Situation with explicit context
  - Substance
    - Biological substance
      - Immunologic substance
        - Antigen
          - Protein antigen
            - Human immunodeficiency virus, type II protein antigen 41
            - Human immunodeficiency virus, type 1 glycoprotein antigen 160
            - Human immunodeficiency virus, type I glycoprotein antigen 120
          - Antibody

Computed refsets	Type
my first refset	dynamic
Viruses	dynamic

Save | **Toggle In** | Search for: HIV virus | Insert

Cancel | Toggle Out | Insert | Inclusions | Browse

Add | Refresh | Delete

Review | Retire | For Release

Define | Logout



# IHTSDO Workbench Utilities

## SNOMED CT Search Options



SearchOptions

Control

Update results only when requested

Update while typing

Maximum results to show

Minimum string length before updating

Selection

Match on start of words only

Match anywhere in text

Case Matching

Don't match on case

Match on case

Match case for words including capitals

Token Matching

Match all words

Match any words

Match majority of words

Sorting

Don't sort results

Sort results on length

Layout of results

Flat list only

Tree structure

Tree with  top levels shown

Tree with all levels shown

Include hierarchies outside refset

Link into hierarchy

Concepts linked at one position

Concepts linked at all positions

Display

Preferred Term

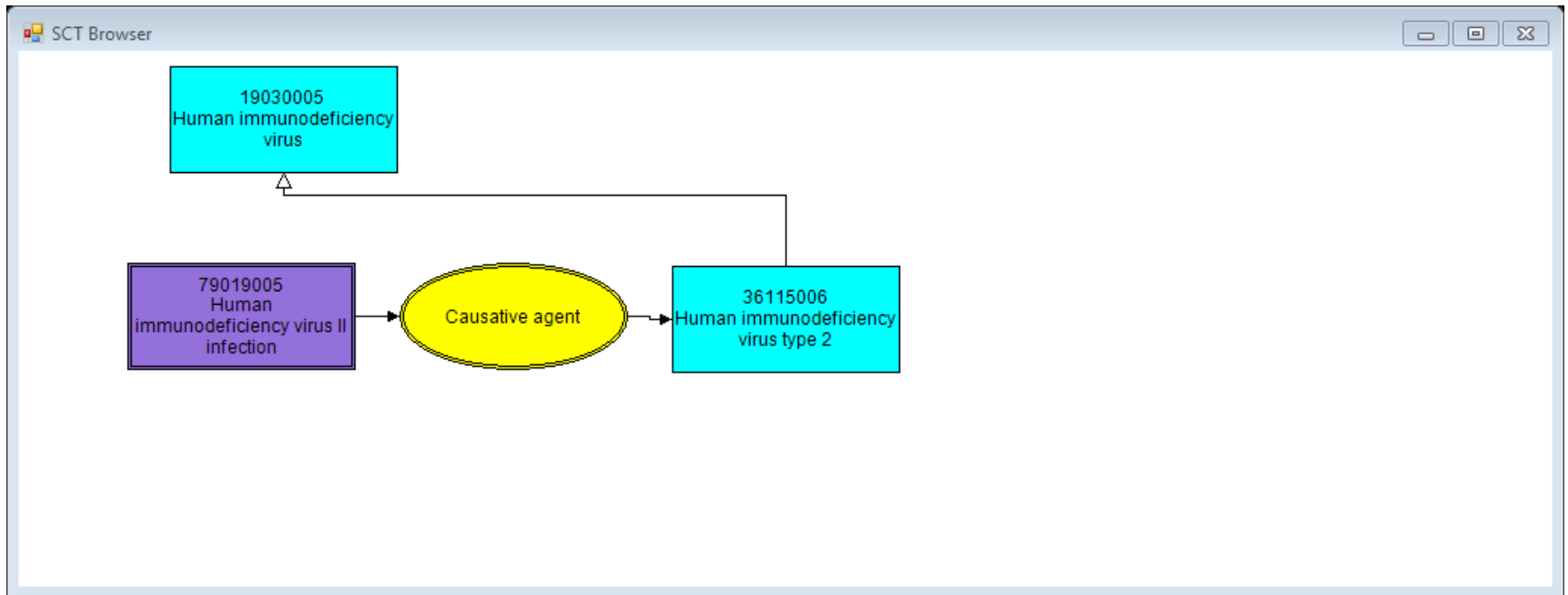
Fully Specified Name

Use matching term first

Save Cancel

# IHTSDO Workbench Utilities

## SNOMED CT Graphical Browsing





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## Release Options



The screenshot shows a Windows-style dialog box titled "ReleaseOptions". It contains several input fields and a table. The fields are: "Release Type" (dropdown menu set to "Final Release"), "Release Date" (calendar icon, set to "29 September 2012"), "Country" (text box with "US"), "Namespace" (text box with "1234567"), "Default Module Id" (text box with "7654321"), "Release Directory" (text box with "C:\Users\John\Documents\Visual Studio 2005\Projects\SCT Browser2\SCT Browser\SCT Browser\bin\Debug\release" and a "Change" button), and "Last Release Date" (calendar icon, set to "28 September 2012"). Below these fields is a table with three columns: "Release Filename", "Last Filename", and "Status". The table contains three rows of data. At the bottom of the dialog are four buttons: "Check Names", "Test Release", "Final Release", and "Close".

Release Filename	Last Filename	Status
der2_Refset_VirusesSnapshot_US1234567_20120929.txt		
der2_Refset_morevirusesSnapshot_US1234567_20120929.txt		
der2_Refset_complexrefsetSnapshot_US1234567_20120929.txt		

# IHTSDO Workbench Utilities

## History of Reference Set Maintenance



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	Released	10 days
more viruses	Released	10 days
complex refset	Released	10 days

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

Details | Specification | Inclusions | Exclusions | Feedback

Concepts	Identifier
Kingdom Plantae	31006001
Kingdom Animalia	387961004

Add Refresh Delete

Retire Maintain

Logout

# IHTSDO Workbench Utilities

## Workflow configuration - States



Workflow states are configurable and are defined in an XML file – see the example below:

```
<state>
  <stateCode>I</stateCode>
  <stateDescription>Defining</stateDescription>
  <role>owner</role>
  <activeTab1>Definition</activeTab1>
  <activeTab2>Assign Reviewers</activeTab2>
  <activeTab3></activeTab3>
</state>
<state>
  <stateCode>A</stateCode>
  <stateDescription>Authoring</stateDescription>
  <role>author</role>
  <activeTab1>Design</activeTab1>
  <activeTab2>Assign Reviewers</activeTab2>
  <activeTab3></activeTab3>
</state>
```



## Workflow configuration – Transition Buttons

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Workflow transitions represent workflow buttons on the screen, and are also defined in an XML file – see the example below:

```
<transition>
```

```
  <currentState>I</currentState>
```

```
  <action>Author</action>
```

```
  <nextState>A</nextState>
```

```
  <operation>0</operation>
```

```
  <role>owner</role>
```

```
</transition>
```

```
<transition>
```

```
  <currentState>A</currentState>
```

```
  <action>Define</action>
```

```
  <nextState>I</nextState>
```

```
  <operation>0</operation>
```

```
  <role>owner</role>
```

```
</transition>
```



## Configuration Files – batch control file (1)

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This example allows a user to browse new concepts that have been added to the latest release of SNOMED CT.

```
// load up SNOMED CT January 2012 concepts snapshot release  
LoadConcepts "sct2_Concept_Snapshot_INT_20120131.txt"
```

```
// and load up SNOMED CT July 2012 concepts delta release  
LoadDeltaConcepts "xsct2_Concept_Delta_INT_20120731.txt" July12DeltaRefset
```

```
// load up SNOMED CT July 2012 descriptions and relationships snapshot release  
LoadDescriptions "xsct2_Description_Snapshot-en_INT_20120731.txt"  
LoadRelationships "xsct2_Relationship_Snapshot_INT_20120731.txt"  
LoadLRS "xder2_cRefset_LanguageSnapshot-en_INT_20120731.txt" EN-INT  
SetLanguage EN-INT
```

```
// allow browsing and searching on the refset that has been produced.  
RunRefsetMaintenance
```



## Configuration Files – batch control file (2)

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This example allows a user to browse concepts in an extension, loaded from RF1 files. Swedish descriptions are displayed in preference.

```
// load up SNOMED CT January 2012 snapshot release
LoadConcepts "sct2_Concept_Snapshot_INT_20120131.txt"
LoadDescriptions "sct2_Description_Snapshot-en_INT_20120131.txt"
LoadRelationships "sct2_Relationship_Snapshot_INT_20120131.txt"
LoadLRS "der2_cRefset_LanguageSnapshot-en_INT_20120131.txt" EN-INT

// read in the Swedish RF1 files
ReadRF1Concepts "sct_concepts_20120608T160129.txt" SwedishConceptsRefset
ReadRF1Descriptions "sct_descriptions_20120608T160129.txt" sv-SE
ReadRF1Relationships "sct_relationships_20120608T160129.txt"

// set the order language preferences to display terms in.
SetLanguage sv-SE EN-INT

RunRefsetMaintenance
```