



NCTIS Terminology Product Releases

Release Cycles and Versioning

Version — 1.0

Final

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1 Introduction

1.1 Purpose

This document explains the release cycle and versioning for National Clinical Terminology and Information Service (NCTIS) terminology products.

1.2 Intended audience

This document is directed towards the consumers of NCTIS terminology product releases. It also will inform vendors who are investigating the possible use of NCTIS terminology products.

1.3 Scope

This document covers the requirements for and structure of the NCTIS terminology product release cycle and versioning, namely:

- Version numbering
- File naming
- Release frequency
- Release timing
- Change history
- Change control
- Consumer upgrade policies
- Impact on stakeholders – business requirements and downstream issues

This document does not cover:

- Detailed technical guidance on history tracking mechanisms.

As the products further develop, changes will require updates to this document.

1.4 Questions and feedback

The NCTIS values your feedback and encourages questions, comments or suggestions. Please direct your correspondence to <terminologies@nehta.gov.au>.

2 Constraints

This section provides a list of the key constraints that have guided and shaped the NCTIS release cycle and versioning scheme. Any future changes to the release cycle or versioning scheme will be driven via updates to the constraints listed in this section.

2.1 Release cycle constraints

- The NCTIS release cycle will allow for one release per month for each product, although not all NCTIS terminology products will be released this frequently.
- The NCTIS release cycle will allow for more than one release per month if required (patch releases for example).
- The NCTIS release cycle will not allow for multiple releases of the same product on the same day.
- An NCTIS policy must exist for NCTIS terminology products used within a live implementation which:
 - minimises clinical risk;
 - enables continuity of national statistical reporting; and
 - clearly states licence holders' obligations.

2.2 Versioning constraints

- The NCTIS will follow the IHTSDO¹ file naming convention for SNOMED CT[®] release files [IHTS2010a].
- Release numbers for NCTIS terminology products are dates in YYYYMMDD format².
- All NCTIS terminology product releases will use the same version-numbering scheme.
- Changes between releases must be identifiable.
- Product change management must be transparent to consumers.

¹ IHTSDO[®] and SNOMED CT[®] are registered trademarks of the International Health Terminology Standards Development Organisation.

² This requirement is inherited from [IHTS2010a] Section 7.

3 Release cycle

NCTIS terminology product releases are based around a single ordinary monthly release window for each NCTIS terminology product, published at a predictable time of the month. However, each product has differing characteristics and may not make use of all of these release windows. The following sections contain details of product-specific release cycles.

While planned releases for each product are limited to a single release per month, extraordinary releases (for example patch releases) may be performed at any time and may occur more than once in a month if necessary.

3.1 SNOMED CT International

As the Australian Member Organisation of the IHTSDO, the NCTIS releases SNOMED CT International to Australia. As the release is performed on behalf of IHTSDO, all release content is released as received from IHTSDO.

3.1.1 Release types

At present the only type of SNOMED CT International release is in RF1 format.

3.1.2 Release frequency and timing

This release is made available twice a year, at the end of January and July respectively.

3.2 SNOMED CT-AU

SNOMED CT³-AU is the Australian extension to SNOMED CT; the integrated national release of SNOMED CT for implementation in Australian deployed clinical IT systems.

3.2.1 Release types

Releases are performed biannually following each SNOMED CT International release and include:

- an upgrade to the most recent SNOMED CT International edition;
- SNOMED CT-AU content adjusted and revalidated against the latest SNOMED CT International edition; and
- SNOMED CT-AU content enhancements.

Out-of-cycle SNOMED CT-AU releases may also be performed between these two releases to provide content fixes or enhancements. However these releases will NOT contain an upgrade to a SNOMED CT International edition published since the last SNOMED CT-AU major release.

Biannual and out-of-cycle releases therefore only vary in scope and frequency – in structure and format they are identical. SNOMED CT-AU is released in both RF1 and RF2.

³ SNOMED CT[®] is a registered trademark of the International Health Terminology Standards Development Organisation.

3.2.2 Release frequency and timing

SNOMED CT-AU releases will be published biannually at the end of May and November.

Out-of-cycle SNOMED CT-AU releases may occur at any time throughout the year to provide urgent fixes.

3.3 AMT

The Australian Medicines Terminology (AMT) delivers standardised identification of brand (trade) products and equivalent generic medicines. While not part of SNOMED CT-AU, AMT currently utilises its data structure and delivery format. Future development is planned to integrate AMT as a true extension to SNOMED CT-AU.

3.3.1 Release types

AMT currently is released in a hybrid SNOMED CT release format. Future versions of AMT will be released in SNOMED CT RF2.

3.3.2 Release frequency and timing

AMT is published at the end of every calendar month with content additions and updates.

Out-of-cycle AMT releases may also be performed between these releases to address urgent content changes or enhancements.

4 Version numbering

NCTIS terminology products will be consistently versioned using IHTSDO's date-based versioning scheme. This scheme's version number is a date in the format YYYYMMDD where:

- YYYY is a four-digit representation of the year, for example 2010.
- MM is a two-digit representation of the month, for example 07 for July.
- DD is a two-digit representation of the date, for example 08 for the 8th.

By convention the version number is set to the last day of January and July for IHTSDO's biannual SNOMED CT releases.

The current AMT convention uses a sequence number followed by the year of publication and an incremental version number.

The NCTIS is currently working on applying this versioning scheme to all NCTIS terminology products including SNOMED CT-AU and AMT.

4.1 Version date calculation

As stated above, product releases will be versioned with IHTSDO's YYYYMMDD date-based version number (excluding AMT at present).

Scheduled releases of NCTIS products will follow the convention described above using a version set to the last day of the month of publication. Products may be published on an earlier date, particularly when the last day of the month is not a business day.

Out-of-cycle releases may have a version set to any day of the month as required.

Due to the time taken for verification, validation, acceptance and publication of a release the effective date may be earlier or later than the date of publication.

4.2 Release version and RF2 effective time

RF2 terminology files contain a new version of every entity modified within or added to a release. The 'effective time' field for each of these versions contains a point in time when these versions become effective, and any earlier versions are superseded.

All components created or edited within an NCTIS terminology product published in RF2 format will have their effective date set the same date as a release version.

4.3 Version numbers for artefacts within a release

All of the individual artefacts within a product release (such as documentation, terminology files, supporting tools etc) are versioned with their parent product and do not have their own version number. Therefore the version number associated with each artefact is the release version number the artefact was published with and with which it is validated for use.

Note that it is possible that individual artefacts may not change between release versions, however their version numbers will still be increased to indicate that they are fit for use with the newer release version.

This approach is consistent with IHTSDO's release versioning and file naming scheme.

5 Release structures and file naming

Release structures and file naming conventions for terminology products follow the IHTSDO file naming convention for SNOMED CT release files [IHTS2010a].

AMT files currently do not conform to this naming convention but the NCTIS is working on applying these naming conventions to all terminology products.

5.1 NEHTA document identifier

Every file released by the NCTIS is released with a NEHTA document identifier, which uniquely identifies the file in question amongst all the files NEHTA publishes.

The NEHTA document identifier conforms to the format

NEHTA XXXX:YYYY

where:

- XXXX is a centrally coordinated sequence number; and
- YYYY is the year of publication.

As an example, the SNOMED CT-AU May 2010 terminology release bundle file identifier was NEHTA 0611:2010.

5.2 Release file naming

Files released by the NCTIS are named in conformance with NEHTA release file naming conventions.

SNOMED CT-AU files are named using the following pattern:

<NEHTA document identifier>_<NCTIS product name>_<artefact name>_<version>.<extension>

As an example, the SNOMED CT-AU May 2010 terminology release bundle file was named:

NEHTA6112010_SNOMED_CT-
AU_TerminologyReleaseFileBundle_20100531.zip

That is:

NEHTA document identifier	NEHTA 0611:2010
NCTIS product name	SNOMED_CT-AU
Artefact name	TerminologyReleaseFileBundle
Version	20100531

AMT files are named using the following pattern:

<NEHTA document identifier>_<AMT>_<version>.<extension>

As an example, AMT release 2.13 release bundle file was named:

NEHTA_0657_2010_AMT_Data_v2.13.zip

5.3 Published artefacts

Each NCTIS terminology product has an associated set of files that are published.

In general, NCTIS terminology product releases consist of the following, which can be downloaded from the NCTIS secure website⁴:

- a product bundle – a zip file containing the product contents;
- a release note; and optionally
- supporting materials such as terminology viewers.

The NCTIS is working towards all products including a MD5 checksum being published for each of the release files that can be independently downloaded from the NCTIS secure website.

5.3.1 Product bundle

The primary published file for any NCTIS terminology product is a bundle file (in ZIP format⁵). These files contain:

- the core product files;
- supporting documentation and specifications; and
- a 'manifest.md5' file containing an MD5 hash for every file within the bundle (not currently supported in AMT).

The 'manifest.md5' provides a complete listing of all the files that should be within the zip file, and a hash that can be used to check the individual files' integrity.

5.3.1.1 Product bundle artefact naming

Within the bundle itself, files are named in line with the IHTSDO's file naming convention for SNOMED CT release files [IHTS2010a].

5.3.2 Product bundle structure

NCTIS terminology product bundles conform to a standard structure to aid finding artefacts of interest.

Terminology products conform to the following directory structure where <product name> is SNOMED CT-AU.

```
<product name>
  Documentation
    Current
    Draft
  Reference Sets
    Clinical
    Structural
  Terminology
```

AMT currently delivers all files in the one directory (there are no subdirectories).

⁴ <<https://nehta.org.au/aht/>>

⁵ For more information about ZIP format, see <[http://en.wikipedia.org/wiki/ZIP_\(file_format\)](http://en.wikipedia.org/wiki/ZIP_(file_format))>.

5.3.3 Release notes

Each NCTIS terminology product release is accompanied by a release note document in PDF format.

Product release notes conform to a common format and contain:

- a description of the product and the specific release;
- a list and description of new features/content in the release;
- a list of issues resolved by the release;
- a list of known issues in the release; and
- a list of artefacts within the release and a description of each.

5.3.4 Supporting materials

NCTIS terminology products may be released with supporting materials. These are typically useful materials intended to aid the use of the product, but are not essential to the product themselves.

Examples of such materials include the terminology viewer applications that ship with SNOMED CT-AU and AMT releases.

6 Publication

6.1 Secure website

All NCTIS products are published via the NCTIS secure website. This website requires that users apply for an account and accept licence agreements before accessing NCTIS product releases or documentation.

6.2 Licences

Files made available on the NCTIS secure website are provided under the conditions outlined in the following licences:

- SNOMED CT Affiliate Licence Agreement; and
- Australian National Terminology Release Licence Agreement.

For licence details please see the Licence Overview⁶ on the NCTIS secure website.

6.3 Notifications

Notifications of NCTIS releases are sent via a number of channels, as detailed below.

6.3.1 Email

Email notification of a product release is sent to:

- SNOMED CT organisational licence holders
- SNOMED CT organisational licence additional contacts (additional contacts to the organisational licence)
- SNOMED CT individual licence holders
- NCTIS Service Desk contacts – (individuals that are not licence holders, but have an interest in the product releases)

6.3.2 NEHTA RSS news feed

The NEHTA RSS news feed is updated with each NCTIS public release. Subscribers will receive notification upon release.

6.3.3 NEHTA Public Website

The NEHTA Public Website contains a scrolling rendering of the NEHTA RSS news feed where notifications of NCTIS product releases can be found.

6.3.4 Australian Clinical Terminologies User Group (ACT-UG)

The ACT-UG is an Australian group focussed on the use of terminologies within Australian health informatics. A message is posted in a category specific to product releases on the user group's web-based forum portal at <<https://industry.ehealthcollaborate.com.au/group/australian-clinical-terminology-user-group-shared/nctis-releases>> whenever a NCTIS terminology product release is performed.

⁶ <https://nehta.org.au/aht/index.php?option=com_content&task=view&id=14&Itemid=37>

6.4 Archiving

Once superseded by a new product release, product releases will be moved to an 'Archived' area. Product releases published on the NCTIS secure website will be maintained in the 'Archived' area and available for download.

If removed from the NCTIS secure website, historical product releases are available upon request to <terminologies@nehta.gov.au>.

7 Release change history

NCTIS terminology product releases are published with a change history embedded to ensure consumers can determine if areas of interest have been modified.

This section outlines where the change history can be found within releases.

7.1 Release notes

Each product release bundle is accompanied by a release note PDF document as specified in Section 5.3.3.

In terms of change history the release note supplies:

- A list of artefacts/features/content that are new to the product in the release.
This allows consumers to determine newly implemented features and fixes.
- A list of issues resolved in the release.
- A list of known issues with the release.

These are defects that were known to exist at the time of publication.

7.2 Terminology Files

The format of terminology data files published by the NCTIS contains the history of changes to the product's content across releases. However the representation of that history varies between these data formats.

The following sections describe broadly how product history is encoded within the terminology release files.

7.2.1 SNOMED CT Release Format 1 (RF1)

Note: The SNOMED CT RF1 format is scheduled to be discontinued by IHTSDO from their July 2011 release onward. The NCTIS intends to follow IHTSDO's RF1 to RF2 migration timetable.

RF1 files contain the history of changes made to content within the terminology by never removing content from a release once it has been published. However content may be logically deleted by changing its status.

RF1 release files are intrinsically a 'snapshot' of the content, in that the RF1 files will always contain exactly one row for every distinct entity ever published – its latest status.

For more details on how this can be achieved see [IHTS2010b].

SNOMED CT and SNOMED CT-AU are both published in RF1 format, although both products will discontinue RF1 publication in favour of RF2 in 2011.

7.2.2 SNOMED CT Release Format 2 (RF2)

Similarly to RF1, RF2 contains the history of content changes over time. Unlike RF1, RF2 has three possible release types, each with different history characteristics.

- Full – this release type contains every version of every component (concept, description, relationship, reference set member or identifier) ever published.
- Snapshot – similar to RF1, this release type contains only the most recent state of every component ever published.
- Delta – this release type contains only the new and changed components between one release and the next.

These three formats reflect the same terminology updates in different ways, which are useful in different use cases.

SNOMED CT-AU and reference sets are published in RF2 format. To date, only the Snapshot release type has been published for all products.

7.2.3 AMT V2

AMT is currently published in a format that is neither RF1 nor RF2. However, this format behaves very much like RF1, since it is a modified version of SNOMED CT's RF1 format. For more detail on using AMT's content history see [IHTS2010b].

7.3 Documents

Documents published along with NCTIS terminology product releases conform to the NCTIS Editorial Policy, which dictates that they contain a Document Control section, as this document does.

This section contains a record of the revisions of the document, and what changes were made to the document in each revision.

It is also possible to directly compare documents between release versions for a more granular view of the changes made.

8 Consumer upgrade policy

Each NCTIS terminology product will provide regular content releases to licence holders. Similar to software products, it is important that consumers do not become too far out of date with the latest release version. Common issues that arise due to delayed upgrades are:

- failure of interoperability with systems using different versions;
- unnecessary perpetuation of problematic content that has been addressed in a later version; and
- the inability to take advantage of improvements made available by later releases.

This section describes the minimum upgrade policy for consumers for each NCTIS terminology product.

8.1 Terminology

8.1.1 SNOMED CT International

The IHTSDO upgrade policy for SNOMED CT Licence holders is stated in Section 6.2 of the SNOMED CT Affiliate License Agreement:

Within one-hundred and eighty (180) days after the Licensor has notified the Licensee of the release of a new version of the International Release, the Licensee must upgrade the version of the International Release in its own systems and in the Licensee Products to that new version (or alternatively, if a subsequent version of the International Release is or has been released during the 180-day period, to that subsequent version at the Licensee's option).

8.1.2 SNOMED CT-AU

Following the IHTSDO policy, the NCTIS upgrade policy for SNOMED CT-AU Licence holders is stated in Section 6.2 of the Australian National Terminology Release Licence Agreement:

Within one-hundred and eighty (180) days after NEHTA has notified the Licensee of the release of a new version of the National Release, the Licensee must upgrade the version of the National Release in its own systems and in the Licensee Products to that new version (or alternatively, if a subsequent version of the National Release is or has been released during the 180-day period, to that subsequent version at the Licensee's option).

However, as SNOMED CT-AU may publish an out-of-cycle release which may contain a fix to problems, the NCTIS would recommend that licensees upgrade to that release as soon as practical to do so.

8.1.3 AMT

AMT is published under the same licence as SNOMED CT-AU (i.e. the Australian National Terminology Release Licence Agreement) and is therefore subject to the same obligations.

However AMT content releases are consistently produced monthly due to the higher rate of change in medicines than other areas of clinical terminology. Due to this rate of change, the NCTIS recommends that consumers update AMT versions with each release. If it is not feasible to update AMT at this frequency, then every three months should be considered the minimum standard.

8.2 Interoperability implications for different versions

Clearly, clinical systems running different versions for NCTIS terminology products are subject to interoperability issues. This section describes these issues and mitigating steps that should be taken in implementations. Further issues and scenarios will be described in subsequent releases of this document.

8.2.1 Terminology

The most obvious implication is one system sending an identifier belonging to a terminology version newer than the receiving system has loaded. In this case the receiving system:

- will not be able to validate the identifier;
- must present the description encoded in the message – it will not be able to display local preferred terms; and
- automated processing (such as decision support or reporting which is based on identifiers) may not function.

Under these circumstances the receiving system should warn system administrators and should also warn clinicians using this record of any automated processes that will not be functioning.

Another implication is that any components introduced (created) in a release are unrecognisable to systems using previous versions of the terminology.

8.3 National statistical reporting implications

Changes to clinical information specifications and terminology sets can break or invalidate statistical reporting if not carefully managed.

The NCTIS will work with relevant bodies such as AIHW in the requirements, development and change management phases to ensure that resultant issues are kept to a minimum. However it remains critical that when data is delivered for statistical analysis, it is stated which clinical information specification and terminology version was in effect for that period. Unless the version information is captured with the recorded data, it may not be possible to correctly analyse the data.

Upgrade timing of clinical information specifications and terminologies within clinical systems should therefore take account of reporting cycles. Such changes should be implemented at suitable times within the reporting period to not affect statistical analysis. Changes made within the reporting period must be carefully analysed and change managed to ensure accuracy of statistical reporting.

9 References

- [IHTS2010a] International Health Terminology Standards Development Organisation, SNOMED Clinical Terms File Naming Convention for SNOMED CT Release Files, July 2010 International Release, IHTSDO, Copenhagen.
- [IHTS2010b] International Health Terminology Standards Development Organisation, SNOMED Clinical Terms Technical Implementation Guide, July 2010, Alpha Release, IHTSDO, Copenhagen.