

SNOMED CT Managed Service - US Edition Release Notes - September 2020



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Date	20200901
Document Version	1.0
Release Status	PRODUCTION

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1 Introduction

SNOMED CT terminology provides a common language that enables a consistent way of indexing, storing, retrieving, and aggregating clinical data across specialties and sites of care. The SNOMED CT US Edition is a combination of the full July 2020 SNOMED CT International Edition and the US Extension of SNOMED CT. The US Edition eliminates the need for implementers to manually combine the US Extension and International releases.

The International Health Terminology Standards Development Organisation (IHTSDO®), trading as SNOMED International, maintains the SNOMED CT technical design, the content architecture, the SNOMED CT content (includes the concepts table, the descriptions table, the relationships table, a history table, and ICD mappings), and related technical documentation. SNOMED CT US Edition is developed and maintained by the United States National Library of Medicine and is available to authorized Unified Medical Language System (UMLS) Metathesaurus Licensees. This material includes SNOMED CT which is used by permission of the IHTSDO. All rights reserved.

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1.1 Background

This document provides a summarized description of the content changes included in the [September 2020 release of the SNOMED Clinical Terms® US Edition](#).

It also includes technical notes detailing the known issues which have been identified. These are content or technical issues where the root cause is understood, and the fix has been discussed and agreed, but has yet to be implemented.

This document is available as a web resource as well as alongside the September 2020 US Edition release (https://www.nlm.nih.gov/healthit/snomedct/us_edition.html).

1.2 Scope

This document is written for the purpose described above and is not intended to provide details of the technical specifications for SNOMED CT or encompass every change made during the release. These Release Notes should be used **in combination** with the [SNOMED CT July 2020 International Edition - SNOMED International Release notes](#).

2 Content Development Activity

2.1 Summary

The September 2020 SNOMED CT US Edition marks the sixth release with content authoring tooling and release production provided by SNOMED International Managed Service. Quality assurance of the release was completed by both NLM and SNOMED International. Additionally, in October 2017, NLM sunset the United States SNOMED CT Content Request System and migrated to the SNOMED International hosted and maintained US CRS (<https://us-request.ihtsdotools.org>).

New content added for 2019 novel coronavirus

An Interim International Edition Release was produced in March 2020 as part of the ongoing global effort to tackle the Coronavirus outbreak and included the updated Coronavirus descriptions for Members and implementers. A further set of new concepts have been added for the July 2020 International Edition release. Please see section "2.3. COVID-19" in the [SNOMED CT July 2020 International Edition - Release notes](#) for more information.

Updates about content relating to COVID-19 can be found here [SNOMED CT COVID-19 Related Content](#).

In the US Extension in the September 2020 US Edition release, the following concept has been added:

- 462371000124108|Detected in pooled specimen (qualifier value)|

2.1.1 September 2020 US Edition of SNOMED CT Statistics

These statistics include the active content from the July 2020 International Edition and the September 2020 US Edition.

Release	Concept Count	Description Count	Relationship Count
International Edition of SNOMED CT	354384	1228361	1164107
US Edition of SNOMED CT	360915	1245991	1194905

2.2 SNOMED CT derived products

2.2.1 SNOMED CT to ICD-10-CM map

The purpose of the SNOMED CT to ICD-10-CM map is to support semi-automated generation of ICD-10-CM codes from clinical data encoded in SNOMED CT for reimbursement and statistical purposes. All current pre-coordinated SNOMED CT concepts from the US Edition (US Extension + International release) within three hierarchies, (Clinical findings, Events, and Situations with Explicit Context) are potentially in scope for mapping to ICD-10-CM.

The SNOMED CT to ICD-10-CM map is released in RF2 format within the US Edition, as well as a standalone download (https://www.nlm.nih.gov/research/umls/mapping_projects/snomedct_to_icd10cm.html). The map is also available in a human readable format (tts_lcd10cmHumanReadableMap_US1000124_YYYYMMDD.tsv) contained within a standalone download - SNOMED_CT_to_ICD-10-CM_Resources_YYYYMMDD.zip.

The SNOMED CT to ICD-10-CM map is released as Refset 6011000124106 | ICD-10-CM extended map reference set (foundation metadata concept). The map data are in the file xder2_iiscccRefset_ExtendedMapSnapshot_US1000124_YYYYMMDD.txt, which is in the Map folder under Refset in the Snapshot Release Type folder.

PLEASE NOTE: Starting with the 2019 March SNOMED CT US Edition (20190301) release, the SNOMED CT to ICD-10-CM map refset data will be maintained as per the SNOMED CT RF2 specifications.

Additional map refset information can be found in the SNOMED CT to ICD-10-CM Release Notes (doc_lcd10cmMapReleaseNotes_Current-en-US_US1000124_YYYYMMDD.pdf) found in the standalone download or online. Technical information (doc_lcd10cmMapTechnicalSpecifications_Current-en-US_US1000124_YYYYMMDD.pdf) for the map can also be found in the standalone download.

On March 26, 2019, an updated version of the map (6011000124106 | ICD-10-CM complex map reference set (foundation metadata concept)) was released. This updated version included an appending of the previously released mapping refset data, originally pulled from the 20190301 release. The newly released version, which includes all of the previously released data, now includes 260,749 mapped records. This is now considered the baseline for the SNOMED CT to ICD-10-CM map.

2.2.2 Route of administration

The NLM maintained Route of administration reference set (442311000124105 | Route of administration reference set) is located in the file der2_Refset_Simple(Snapshot, Delta, Full)_US1000124_YYYYMMDD.txt, which is in the Content folder under Refset, in each of the three RF2 Release Type folders. The refset contains a set of terms related to the location of administration for clinical therapeutics. The purpose of the Route of Administration refset is to define a portion of which can be used in the Drug Listing section of [Structured Product Labeling \(SPL\)](#), or for documentation and encoding of clinical information regarding substance administrations. Only concepts that are subtypes of the concept 284009009 | Route of administration value (qualifier value) are included in the refset. Please note the 442311000124105 | Route of administration reference set has been in static status since 2014 September US Edition release (20140901).

The Route of Administration concepts are now maintained as a [value set](#) on the NLM Value Set Authority Center (VSAC) (<https://vsac.nlm.nih.gov/valueset/2.16.840.1.113762.1.4.1018.98/expansion>). Users are required to have a UMLS account to access VSAC. If you don't have a UMLS account, you can request one here: <https://uts.nlm.nih.gov/license.html>

2.2.3 Transitive closure file

NLM provides a transitive closure script and generated transitive closure table within the SNOMED CT US Edition release. The transitive closure is the complete set of relationships between every concept and each of its super-type concepts (parents and ancestors). The transitive closure files can be used to support SQL queries when created and stored as a table in a relational database. If applied in a full release, it will contain the full history and allow for subsumption queries to be applied based on any release. The NLM transitive closure script provides a comprehensive view of all of the supertype ancestors of a concept derived by traversing all the 116680003 | is a | relationships between that concept and the root concept. The transitive closure table represents the transitive closure of the 116680003 | is a | relationships of all active concepts. NLM provides the transitive closure table in the US Edition release to provide support for easier implementation and a reference against which to check alternative algorithms.

As of the March 2020 release, the Transitive Closure script, `tls2_TransitiveClosure_US1000124_YYYYMMDD.pl`, and the Transitive Closure table `res2_TransitiveClosure_US1000124_YYYYMMDD.txt`, are located in a separate bundled zip file (`SnomedCT_TransitiveClosureResourcesRF2_PRODUCTION_YYYYMMDDT120000Z.zip`) on the [NLM US Edition page](#). For the table, the superTypeid is the id of the concept playing the supertype role, set to an Identifier of a concept. The subTypeid - Id of the concept playing the subtype role. Set to an Identifier of a concept.

3 Technical Notes

3.1 Known Issues

Known Issues are content or technical issues where the root cause is understood, and the resolution has been discussed and agreed but has yet to be implemented. This can be due to a number of reasons, from lack of capacity within the current editing cycle, to the risk of impact to the stability of SNOMED CT if the fix were to be deployed at that stage in the Product lifecycle.

In addition to the Known Issues reported by the IHTSDO for SNOMED CT International Edition ([SNOMED CT July 2020 International Edition - SNOMED International Release notes](#)), the following are Known Issues for the SNOMED CT US Edition that have been identified and will be resolved in the next editing and production cycle:

Key	Summary	Description
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ISRS-817	RVF Assertion failure: c3249e80-84f0-11e1-b0c4-0800200c9a66	<p>assertionUuid: "c3249e80-84f0-11e1-b0c4-0800200c9a66", assertionText: "Terms that contain en-us specific words are in the en-us language refset.", queryInMilliseconds: 1098, failureCount: 7, firstNInstances: [</p> <ul style="list-style-type: none"> • {conceptId: "15698881000119100", detail: "DESCRIPTION: id=3901312018: Synonym is preferred in en-us language refset but refers to a word that has en-gb spelling: acanthamoeba"} • {conceptId: "15698841000119105", detail: "DESCRIPTION: id=3901342015: Synonym is preferred in en-us language refset but refers to a word that has en-gb spelling: acanthamoeba"} • {conceptId: "840484006", detail: "DESCRIPTION: id=3914867019: Synonym is preferred in en-us language refset but refers to a word that has en-gb spelling: acanthamoeba"} • {conceptId: "15693241000119100", detail: "DESCRIPTION: id=3944777019: Synonym is preferred in en-us language refset but refers to a word that has en-gb spelling: acanthamoeba"} • {conceptId: "15693281000119105", detail: "DESCRIPTION: id=3944800014: Synonym is preferred in en-us language refset but refers to a word that has en-gb spelling: acanthamoeba"} • {conceptId: "15693201000119102", detail: "DESCRIPTION: id=3944807012: Synonym is preferred in en-us language refset but refers to a word that has en-gb spelling: acanthamoeba"} • {conceptId: "840444002", detail: "DESCRIPTION: id=3977842014: Synonym is preferred in en-us language refset but refers to a word that has en-gb spelling: acanthamoeba"} <p>KNOWN ISSUE: The US NRC confirmed that this item should be white-listed permanently in the US Edition. "Acanthamoeba" is bacteria and both US and GB should conform to latin spelling of the organism.</p>
ISRS-818	RVF Assertion failure: e658fb00-7e9a-11e1-b0c4-0800200c9a66	<p>assertionUuid: "e658fb00-7e9a-11e1-b0c4-0800200c9a66", assertionText: "Descriptions in a language refset are unique for a given concept.", queryInMilliseconds: 4921, failureCount: 1, firstNInstances: [</p> <ul style="list-style-type: none"> • {conceptId: "454951000124103", detail: "CONCEPT: id=454951000124103: Concept has duplicate terms within a single language refset."} <p>KNOWN ISSUE: This concept was promoted and hit an issue which results in any fix creating an inactive language refset entry, which is not desirable. This specific concept (454951000124103) has therefore been permanently whitelisted for this assertion.</p>
ISRS-819	RVF Assertion failure: eead9964-67ce-11e7-b7e7-3c15c2c6e32e	<p>assertionUuid: "eead9964-67ce-11e7-b7e7-3c15c2c6e32e", assertionText: "There is only one active member per description per dialect in the language refset snapshot file.", queryInMilliseconds: 2880, failureCount: 1, firstNInstances: [</p> <ul style="list-style-type: none"> • {conceptId: "454951000124103", detail: "Description: id=753711000124113: has multiple active language refset members for a given dialect."} <p>KNOWN ISSUE: This concept was promoted and hit an issue which results in any fix creating an inactive language refset entry, which is not desirable. This specific concept (454951000124103) has therefore been permanently whitelisted for this assertion.</p>

ISRS-821	RVF Assertion failure: 03cf9850-7857-11e1-b0c4-0800200c9a66	<p>assertionUuid: "03cf9850-7857-11e1-b0c4-0800200c9a66", assertionText: "Preferred Term exists exactly once in each language refset for each concept.", failureCount: 4, firstNInstances: [</p> <ul style="list-style-type: none"> • {conceptId: "10737281000119109", detail: "Concept: id=10737281000119109 has duplicate language refsets for description id=695591000124114"} • {conceptId: "10737321000119104", detail: "Concept: id=10737321000119104 has duplicate language refsets for description id=695621000124111"} • {conceptId: "15632731000119103", detail: "Concept: id=15632731000119103 has duplicate language refsets for description id=738901000124118"} • {conceptId: "1481000124102", detail: "Concept: id=1481000124102 has multiple active preferred terms in language refset=90000000000509007"} <p>KNOWN ISSUE: These minor issues will resolve themselves next time the language records in question are amended, and therefore the NLM have decided to flag these as Known Issues until they are resolved.</p>
ISRS-833	DROOLS Assertion failure: Active Concept should not have duplicate axioms	<p>testType: "DROOL_RULES", assertionText: "Active Concept should not have duplicate axioms.", failureCount: 1, firstNInstances: [</p> <ul style="list-style-type: none"> • {conceptId: "1231000119100", conceptFsn: "History of aortic valve replacement (situation)", detail: "Active Concept should not have duplicate axioms."} <p>KNOWN ISSUE: The US NRC confirmed that this item will be carried over for this September 2020 version of the US Edition. The target will be to resolve it in the next editing cycle, in time for the March 2021 release.</p>
ISRS-844	MRCM issues: 04a6c94d-879d-44ea-bc39-6207bc92b2b6	<p>17 concepts have been found to have in group cardinality issues. The <i>Finding site</i> attribute must only be used once in a group.</p> <ol style="list-style-type: none"> 1. 11309761000119104 Pathological fracture of left patella (disorder) 2. 15733641000119102 Chronic partial detachment of retina of bilateral eyes (disorder) 3. 679321000119105 Mucopurulent conjunctivitis of bilateral eyes (disorder) 4. 349271000119106 Conjunctival hemorrhage of bilateral eyes (disorder) 5. 15736881000119101 Cataract of lens capsule of bilateral eyes (disorder) 6. 15637831000119108 Bilateral ganglion cyst of wrists (disorder) 7. 15981911000119105 Chronic bilateral maxillary sinusitis (disorder) 8. 1.5736E+16 Infiltrate of cornea of bilateral eyes (disorder) 9. 15710881000119109 Macroaneurysm of retina of bilateral eyes (disorder) 10. 346451000119107 Ulcer of cornea of bilateral eyes (disorder) 11. 15669561000119103 Congenital absence of right upper limb (disorder) 12. 15734561000119102 Old retinal detachment of bilateral eyes (disorder) 13. 15736241000119107 Edema of cornea of bilateral eyes (disorder) 14. 10837861000119103 Open fracture of right calcaneus (disorder) 15. 15740361000119103 Exophthalmos of bilateral eyes (disorder) 16. 431911000124102 Gnathic osteosarcoma (disorder) 17. 15732241000119108 Trichiasis of right eyelid (disorder) <p>KNOWN ISSUE: The NLM confirmed that these concept require careful consideration to re-model them, as as such they will be carried over as Known Issues to the next editing cycle, to be fixed in time for the March 2021 release.</p>

ISRS-859	DROOLS assertion failure: "Active descriptions must not have the same term as another within the concept unless the language code is different. There is another description with the same term but different case."	<p>US Edition Specific failures:</p> <p>assertionText: "Active descriptions must not have the same term as another within the concept unless the language code is different. There is another description with the same term but different case. Please remove the other description or make it inactive.", failureCount: 554, firstNInstances: [</p> <ul style="list-style-type: none"> {conceptId: "259067004", conceptFsn: "Liter/second/kilopascal (qualifier value)", detail: "Active descriptions must not have the same term as another within the concept unless the language code is different. There is another description with the same term but different case. Please remove the other description or make it inactive."} {conceptId: "259067004", conceptFsn: "Liter/second/kilopascal (qualifier value)", detail: "Active descriptions must not have the same term as another within the concept unless the language code is different. There is another description with the same term but different case. Please remove the other description or make it inactive."} {conceptId: "455691000124104", conceptFsn: "United States Military Commissioned Officer O6 (qualifier value)", detail: "Active descriptions must not have the same term as another within the concept unless the language code is different. There is another description with the same term but different case. Please remove the other description or make it inactive."} {conceptId: "15692081000119109", conceptFsn: "Adult Kienbocks disease of right lunate (disorder)", detail: "Active descriptions must not have the same term as another within the concept unless the language code is different. There is another description with the same term but different case. Please remove the other description or make it inactive."} <p>KNOWN ISSUE: The US NRC confirmed that this item will be carried over for this September 2020 version of the US Edition, with the aim to resolve it in future editing cycles.</p>
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7 issues

3.2 Resolved Issues

Resolved issues are Known Issues which were not fixed as part of the previous release lifecycle, but which have now been resolved for this September 2020 US Edition. These can be issues found during the Pre-Production or Production phases of the testing of the current release, which were resolved before the final deployment of the final production release. Finally these can be issues which were reported or found during the testing phase, but which have been closed without any action taken.

In addition to the Resolved Issues reported by the IHTSDO for SNOMED CT International Edition ([SNOMED CT July 2020 International Edition - SNOMED International Release notes](#)), the following Resolved Issues for the SNOMED CT September 2020 US Edition:

Key	Summary	Description	Resolved
ISRS-816	RVF Assertion failure: 8e70ea3e-c4dd-4ae3-8b75-0f0567e42f71	<p>testType: "SQL", assertionUuid: "8e70ea3e-c4dd-4ae3-8b75-0f0567e42f71", assertionText: "Active extended IFA rule maps reference active concepts and terms", failureCount: 4, firstNInstances: [</p> <ul style="list-style-type: none"> {conceptId: "285201000119100", detail: "ExtendedMap: id=0681ce01-c905-57c2-a37a-f17e585fa417 : IFA rule references an inactive concept"} {conceptId: "285191000119103", detail: "ExtendedMap: id=56ec286f-72cb-5125-b9f8-10e0d764d5c3 : IFA rule references an inactive concept"} {conceptId: "285201000119100", detail: "ExtendedMap: id=0681ce01-c905-57c2-a37a-f17e585fa417 : IFA map rule references an inactive term"} {conceptId: "285191000119103", detail: "ExtendedMap: id=56ec286f-72cb-5125-b9f8-10e0d764d5c3 : IFA map rule references an inactive term"} <p>RESOLUTION: Resolved in time for the September 2020 US Edition release.</p>	2021-Mar-02

ISRS-820	RVF Assertion failure: eff30fb0-7856-11e1-b0c4-0800200c9a66	<p>assertionUuid: "eff30fb0-7856-11e1-b0c4-0800200c9a66", assertionText: "All language refset members inactivated in current snapshot must have been active in the previous release.", failureCount: 22, firstNInstances: [</p> <ul style="list-style-type: none"> • {conceptId: "3947186012", detail: "Language Refset: id=92692b8e-3e01-41df-b7f2-892f09475917 is inactive but no active state found in previous release."} • {conceptId: "3947197012", detail: "Language Refset: id=9e143c2c-9f5b-462a-ac92-5bebf8a9ca03 is inactive but no active state found in previous release."} • {conceptId: "3947178012", detail: "Language Refset: id=a0eb1884-3e69-4280-85aa-2a93c6c7cdce is inactive but no active state found in previous release."} • {conceptId: "3947180018", detail: "Language Refset: id=c34bdc44-2796-442b-aacc-f5481ac42180 is inactive but no active state found in previous release."} • {conceptId: "3947198019", detail: "Language Refset: id=c4ca78e9-887e-457f-b2a3-61feddd304aa is inactive but no active state found in previous release."} • {conceptId: "3947198019", detail: "Language Refset: id=c8c7788f-5db9-4fb9-b098-46163ec52a2e is inactive but no active state found in previous release."} • {conceptId: "3947178012", detail: "Language Refset: id=e95d7188-beaa-48be-b922-55b007d9146a is inactive but no active state found in previous release."} • {conceptId: "3947183016", detail: "Language Refset: id=e9776d4b-d2dc-4125-ab37-b0a30c4b8138 is inactive but no active state found in previous release."} • {conceptId: "3947186012", detail: "Language Refset: id=f76fabae-3fc5-4dd2-ba94-93a2c69566b0 is inactive but no active state found in previous release."} • {conceptId: "3947196015", detail: "Language Refset: id=f7739509-931d-49d4-8951-d35768535469 is inactive but no active state found in previous release."} • {conceptId: "3947183016", detail: "Language Refset: id=05655622-bc1e-4b44-bc2b-a7f021d6d496 is inactive but no active state found in previous release."} • {conceptId: "3947188013", detail: "Language Refset: id=1131d7b2-d8bc-4294-8f14-c2992c3abcbd is inactive but no active state found in previous release."} • {conceptId: "3947188013", detail: "Language Refset: id=2ca405e3-c715-499c-ba8c-c4730e30343c is inactive but no active state found in previous release."} • {conceptId: "3947181019", detail: "Language Refset: id=3a84eaab-167d-4569-b963-6479c6a8afa9 is inactive but no active state found in previous release."} • {conceptId: "3947196015", detail: "Language Refset: id=46450fda-8c35-4aa8-9d85-1040f3baa7ec is inactive but no active state found in previous release."} • {conceptId: "3947197012", detail: "Language Refset: id=47853dd4-4247-45f2-8a7d-8998b59aaa7c is inactive but no active state found in previous release."} • {conceptId: "3947181019", detail: "Language Refset: id=4b9e6179-3b9a-4368-9bc2-5d55b20159c6 is inactive but no active state found in previous release."} • {conceptId: "3947184010", detail: "Language Refset: id=6293475e-d43c-4f4b-8ba3-74bdd10b5bfc is inactive but no active state found in previous release."} • {conceptId: "3947177019", detail: "Language Refset: id=6d280f2b-00bd-4de4-9391-d49aacdd4a2a is inactive but no active state found in previous release."} • {conceptId: "3947180018", detail: "Language Refset: id=703a5a07-5dee-4a5f-a4d4-2fd17cf4f03b is inactive but no active state found in previous release."} • {conceptId: "3947177019", detail: "Language Refset: id=71a74e89-a45b-4a43-8350-a2a4b5f27799 is inactive but no active state found in previous release."} • {conceptId: "3947184010", detail: "Language Refset: id=77d0fb3c-4656-4f9e-8cff-5e886014f1d5 is inactive but no active state found in previous release."} <p>RESOLUTION: SNOMED International Development team confirmed that these are false positives as a result of the March 2020 Interim International release. These therefore require no action, and this ticket can be closed down.</p>	2020-Aug-03
ISRS-822	RVF Assertion failure: 041dcf55-4c9c-4dd4-baa7-584eb0e53d5a	<p>assertionUuid: "041dcf55-4c9c-4dd4-baa7-584eb0e53d5a", assertionText: "Concept should not have any duplicated historical association indicators.", failureCount: 1, firstNInstances: [</p> <ul style="list-style-type: none"> • {conceptId: "1111000119100", detail: "MEMBER: id=d581e921-ab26-5818-9ffc-935a10864383 in historical association refset member has a duplicated indicator with MEMBER id= 281c9d28-a40b-59ab-a3bf-0c823bd5b599"} <p>RESOLUTION: This is a permanent whitelisted issue in the US Edition - and can be ignored permanently for all future US releases, as per ISRS-322</p>	2020-Jul-22

ISRS-823	RVF Assertion failure: 1a4e40a9-cf14-4703-b206-9f2fbeb56c7f	<p>assertionUuid: "1a4e40a9-cf14-4703-b206-9f2fbeb56c7f", assertionText: "All active Refset records are valid.", failureCount: 9, firstNInstances: [</p> <ul style="list-style-type: none"> • {conceptId: "59751000119108", detail: "Reference component id:59751000119108 for refset id: 6011000124106 in extended map refset must be valid."} • {conceptId: "10662551000119100", detail: "Reference component id: 10662551000119100 for refset id: 6011000124106 in extended map refset must be valid."} • {conceptId: "10662431000119107", detail: "Reference component id: 10662431000119107 for refset id: 6011000124106 in extended map refset must be valid."} • {conceptId: "138451000119102", detail: "Reference component id: 138451000119102 for refset id: 6011000124106 in extended map refset must be valid."} • {conceptId: "12471000119106", detail: "Reference component id:12471000119106 for refset id: 6011000124106 in extended map refset must be valid."} • {conceptId: "450091000124100", detail: "Reference component id: 450091000124100 for refset id: 6011000124106 in extended map refset must be valid."} • {conceptId: "293821000119107", detail: "Reference component id: 293821000119107 for refset id: 6011000124106 in extended map refset must be valid."} • {conceptId: "89461000119108", detail: "Reference component id:89461000119108 for refset id: 6011000124106 in extended map refset must be valid."} • {conceptId: "138441000119104", detail: "Reference component id: 138441000119104 for refset id: 6011000124106 in extended map refset must be valid."} <p>RESOLUTION: Resolved in time for the September 2020 US Edition release.</p>	2021-Mar-02
ISRS-824	RVF Assertion failure: 2b193a88-8dab-4d19-b995-b556ed59398d	<p>assertionUuid: "2b193a88-8dab-4d19-b995-b556ed59398d", assertionText: "New inactive states follow active states in the DESCRIPTION snapshot.", failureCount: 11, firstNInstances: [</p> <ul style="list-style-type: none"> • {conceptId: "840535000", detail: "DESCRIPTION: id=3947177019 is inactive but no active state found in the previous snapshot."} • {conceptId: "840535000", detail: "DESCRIPTION: id=3947178012 is inactive but no active state found in the previous snapshot."} • {conceptId: "840536004", detail: "DESCRIPTION: id=3947180018 is inactive but no active state found in the previous snapshot."} • {conceptId: "840536004", detail: "DESCRIPTION: id=3947181019 is inactive but no active state found in the previous snapshot."} • {conceptId: "840539006", detail: "DESCRIPTION: id=3947183016 is inactive but no active state found in the previous snapshot."} • {conceptId: "840539006", detail: "DESCRIPTION: id=3947184010 is inactive but no active state found in the previous snapshot."} • {conceptId: "840546002", detail: "DESCRIPTION: id=3947186012 is inactive but no active state found in the previous snapshot."} • {conceptId: "840546002", detail: "DESCRIPTION: id=3947188013 is inactive but no active state found in the previous snapshot."} • {conceptId: "840544004", detail: "DESCRIPTION: id=3947196015 is inactive but no active state found in the previous snapshot."} • {conceptId: "840544004", detail: "DESCRIPTION: id=3947197012 is inactive but no active state found in the previous snapshot."} • {conceptId: "138875005", detail: "DESCRIPTION: id=3947198019 is inactive but no active state found in the previous snapshot."} <p>RESOLUTION: The 1 original valid issue has been resolved in time for the September 2020 US Edition release. These remaining 11 failures are false positives, being reported as a result of the March 2020 International Interim release and the way that the RVF handles the International dependency releases. No further action is therefore required.</p>	2021-Mar-02
ISRS-825	RVF Assertion failure: 2ddc9a28-150d-47a4-9b0e-7dbff2efdd72	<p>assertionUuid: "2ddc9a28-150d-47a4-9b0e-7dbff2efdd72", assertionText: "There is a 1:1 relationship between the id and the key values in the ASSOCIATION REFSET snapshot file.", failureCount: 1, firstNInstances: [</p> <ul style="list-style-type: none"> • {conceptId: "1111000119100", detail: "ReferencedComponentId:1111000119100 targetComponentId:52298009 and refsetId:900000000000527005 are duplicated in the association refset snapshot file."} <p>RESOLUTION: This is a permanent whitelisted issue in the US Edition - and can be ignored permanently for all future US releases, as per ISRS-332</p>	2020-Jul-22

ISRS-828	DROOLS Assertion failure: An FSN must be represented in at least one dialect	<p>testType: "DROOL_RULES", assertionText: "An FSN must be represented in at least one dialect.", failureCount: 2, firstNInstances: [</p> <ul style="list-style-type: none"> • {conceptId: "840533007", conceptFsn: "2019 novel coronavirus (organism)", detail: "An FSN must be represented in at least one dialect."} • {conceptId: "840534001", conceptFsn: "2019 novel coronavirus vaccination (procedure)", detail: "An FSN must be represented in at least one dialect."} <p>RESOLUTION: Automated validation assertion refined to exclude international content.</p>	2021-Mar-02
ISRS-829	DROOLS Assertion failure: Active concepts must have at least one IS A relationship	<p>testType: "DROOL_RULES", assertionText: "Active concepts must have at least one IS A relationship.", failureCount: 1, firstNInstances: [</p> <ul style="list-style-type: none"> • {conceptId: "138875005", conceptFsn: "SNOMED CT Concept (SNOMED RT+CTV3)", detail: "Active concepts must have at least one IS A relationship."} <p>RESOLUTION: SNOMED International Content Team confirmed that as this is the root concept (138875005 [SNOMED CT Concept (SNOMED RT+CTV3)]) it is the only exception to this rule, and will therefore never have an IS_A relationship. This one concept just needs to be MANUALLY WHITELISTED in all future validation runs (as per ISRS-647).</p>	2020-Jul-22
ISRS-830	DROOLS Assertion failure: An axiom marked as defined must have one or more defining relationship, i. e., not is-a type relationships	<p>testType: "DROOL_RULES", assertionText: "An axiom marked as defined must have one or more defining relationship, i.e., not is-a type relationships.", failureCount: 1619, firstNInstances: [</p> <ul style="list-style-type: none"> • {conceptId: "46151002", conceptFsn: "Open wound of scapular region without complication (disorder)", detail: "An axiom marked as defined must have one or more defining relationship, i.e., not is-a type relationships."} • {conceptId: "410017000", conceptFsn: "Post-phlebotic lipodermatosclerosis (disorder)", detail: "An axiom marked as defined must have one or more defining relationship, i.e., not is-a type relationships."} <p>RESOLUTION: DROOLS Rule proven to be showing false positives for the US Edition, which are actually only relevant to the International Edition. The automated validation rule therefore needs refinement (this will be actioned in VAL-103), but no further action is required for this ticket.</p>	2020-Aug-03
ISRS-831	DROOLS Assertion failure: A concept must have one Preferred Synonym in the GB-EN dialect	<p>testType: "DROOL_RULES", assertionText: "A concept must have one Preferred Synonym in the GB-EN dialect.", failureCount: 5099, firstNInstances: [</p> <ul style="list-style-type: none"> • {conceptId: "15738561000119107", conceptFsn: "Total cataract of lens of bilateral eyes (disorder)", detail: "A concept must have one Preferred Synonym in the GB-EN dialect."} • {conceptId: "11824881000119105", conceptFsn: "Contusion of left shoulder (disorder)", detail: "A concept must have one Preferred Synonym in the GB-EN dialect."} <p>RESOLUTION: Resolved through the use of new, US-specific assertion groups for DROOLS</p>	2020-Jul-23
ISRS-832	DROOLS Assertion failure: An active concept should have one active preferred FSN in the GB-EN dialect	<p>testType: "DROOL_RULES", assertionText: "An active concept should have one active preferred FSN in the GB-EN dialect.", failureCount: 5081, firstNInstances: [</p> <ul style="list-style-type: none"> • {conceptId: "15738561000119107", conceptFsn: "Total cataract of lens of bilateral eyes (disorder)", detail: "An active concept should have one active preferred FSN in the GB-EN dialect."} • {conceptId: "11824881000119105", conceptFsn: "Contusion of left shoulder (disorder)", detail: "An active concept should have one active preferred FSN in the GB-EN dialect."} <p>RESOLUTION: Resolved through the use of new, US-specific assertion groups for DROOLS</p>	2020-Jul-23

ISRS-834	DROOLS Assertion failure: A concept must have one Preferred Synonym in the US-EN dialect	<p>testType: "DROOL_RULES", assertionText: "A concept must have one Preferred Synonym in the US-EN dialect.", failureCount: 1, firstNInstances: [</p> <ul style="list-style-type: none"> • {conceptId: "1481000124102", conceptFsn: "Wound dressing observable (observable entity)", detail: "A concept must have one Preferred Synonym in the US-EN dialect."} <p>RESOLUTION: NLM fixed in time for the September 2020 US Edition release.</p>	2020-Jul-22
ISRS-835	DROOLS Assertion failure: An active concept should have one active preferred FSN in the US-EN dialect.	<p>testType: "DROOL_RULES", assertionText: "An active concept should have one active preferred FSN in the US-EN dialect.", failureCount: 6, firstNInstances: [</p> <ul style="list-style-type: none"> • {conceptId: "840546002", conceptFsn: "Exposure to 2019 novel coronavirus (event)", detail: "An active concept should have one active preferred FSN in the US-EN dialect."} • {conceptId: "1481000124102", conceptFsn: "Wound dressing observable (observable entity)", detail: "An active concept should have one active preferred FSN in the US-EN dialect."} • {conceptId: "840535000", conceptFsn: "Antibody to 2019 novel coronavirus (substance)", detail: "An active concept should have one active preferred FSN in the US-EN dialect."} • {conceptId: "840544004", conceptFsn: "Suspected disease caused by 2019 novel coronavirus (situation)", detail: "An active concept should have one active preferred FSN in the US-EN dialect."} • {conceptId: "840539006", conceptFsn: "Disease caused by Severe acute respiratory syndrome coronavirus 2 (disorder)", detail: "An active concept should have one active preferred FSN in the US-EN dialect."} • {conceptId: "840536004", conceptFsn: "Antigen of Severe acute respiratory syndrome coronavirus 2 (substance)", detail: "An active concept should have one active preferred FSN in the US-EN dialect."} <p>RESOLUTION: Resolved by including the March 2020 International Interim release in the previously published content.</p>	2021-Mar-02

ISRS-836	DROOLS Assertion failure: Active descriptions must not have the same term as another within the concept unless the language code is different. Please remove one of the descriptions.	testType: "DROOL_RULES", assertionText: "Active descriptions must not have the same term as another within the concept unless the language code is different. Please remove one of the descriptions.", failureCount: 12, firstNInstances: [• {conceptId: "435611000124105", conceptFsn: "Multivitamin, multimineral supplement therapy (regime/therapy)", detail: "Active descriptions must not have the same term as another within the concept unless the language code is different. Please remove one of the descriptions."} • {conceptId: "435611000124105", conceptFsn: "Multivitamin, multimineral supplement therapy (regime/therapy)", detail: "Active descriptions must not have the same term as another within the concept unless the language code is different. Please remove one of the descriptions."} • {conceptId: "439031000124108",conceptFsn: "Dietary liquid consistency - honey thick liquid (regime/therapy)", detail: "Active descriptions must not have the same term as another within the concept unless the language code is different. Please remove one of the descriptions."} • {conceptId: "439031000124108",conceptFsn: "Dietary liquid consistency - honey thick liquid (regime/therapy)", detail: "Active descriptions must not have the same term as another within the concept unless the language code is different. Please remove one of the descriptions."} • {conceptId: "439101000124101",conceptFsn: "Easy to chew diet (regime /therapy)", detail: "Active descriptions must not have the same term as another within the concept unless the language code is different. Please remove one of the descriptions."} • {conceptId: "439101000124101",conceptFsn: "Easy to chew diet (regime /therapy)", detail: "Active descriptions must not have the same term as another within the concept unless the language code is different. Please remove one of the descriptions."} • {conceptId: "439081000124109",conceptFsn: "Dietary liquid consistency - thin liquid (regime/therapy)", detail: "Active descriptions must not have the same term as another within the concept unless the language code is different. Please remove one of the descriptions."} • {conceptId: "439081000124109",conceptFsn: "Dietary liquid consistency - thin liquid (regime/therapy)", detail: "Active descriptions must not have the same term as another within the concept unless the language code is different. Please remove one of the descriptions."} • {conceptId: "435801000124108",conceptFsn: "Texture modified diet (regime /therapy)", detail: "Active descriptions must not have the same term as another within the concept unless the language code is different. Please remove one of the descriptions."} • {conceptId: "435801000124108",conceptFsn: "Texture modified diet (regime /therapy)", detail: "Active descriptions must not have the same term as another within the concept unless the language code is different. Please remove one of the descriptions."}] RESOLUTION: Resolved by the NLM in time for the September 2020 US Edition release.	2021-Mar-02
ISRS-837	DROOLS Assertion failure: It is not allowed to add a subtype as a parent	testType: "DROOL_RULES", assertionText: "It is not allowed to add a subtype as a parent.", failureCount: 3, firstNInstances: [• {conceptId: "450271000124107", conceptFsn: "Perioperative administration of steroid (procedure)", detail: "It is not allowed to add a subtype as a parent."} • {conceptId: "5411000124106", conceptFsn: "Ethanol 70% (product)", detail: "It is not allowed to add a subtype as a parent."} • {conceptId: "436641000124104", conceptFsn: "Zinc sulfate in polyvinyl alcohol (product)", detail: "It is not allowed to add a subtype as a parent."}] RESOLUTION: NLM resolved in time for the September 2020 US Edition.	2021-Mar-02

ISRS-839	RVF Assertion failure: 910844a8-97e5-4096-add2-e1734b941e10	<p>assertionUuid: "910844a8-97e5-4096-add2-e1734b941e10"</p> <p>assertionText: "There must be actual changes made to previously published OWL Expression files in order for them to appear in the current delta.",</p> <p>failureCount: 1,</p> <p>firstNInstances:</p> <p>{conceptId: "1481000124102", detail: "OWL Expression: id=9b7125ce-383f-4985-b79d-970613ea724a is in the delta file, but no actual changes made since the previous release."}</p> <p>RESOLUTION: Donated content resolved in time for the September 2020 US Edition release.</p>	2021-Mar-02
ISRS-840	RVF Assertion failure: bd27d80a-42f1-4412-8111-fdf72fa32904	<p>assertionUuid: "bd27d80a-42f1-4412-8111-fdf72fa32904"</p> <p>assertionText: "The current data in the Language refset snapshot file are the same as the data in the current delta file.",</p> <p>failureCount: 4,</p> <p>firstNInstances:</p> <ul style="list-style-type: none"> • {conceptId: "3957556019",detail: "LANGUAGE REFSET: id=cd9fb001-b360-4b12-84f4-9cec55841ef0 is in delta but not in snapshot file."} • {conceptId: "3957555015",detail: "LANGUAGE REFSET: id=e1793648-5ab0-4a78-b00e-306f0a1f85f6 is in delta but not in snapshot file."} • {conceptId: "3957556019",detail: "LANGUAGE REFSET: id=f58eafd9-67b8-417c-a119-64ae5a1f621e is in delta but not in snapshot file."} • {conceptId: "3957555015",detail: "LANGUAGE REFSET: id=020645fc-4aec-4a18-b68b-51d6ae43b2be is in delta but not in snapshot file."} <p>RESOLUTION: Donated content resolved in time for the September 2020 US Edition release.</p>	2021-Mar-02
ISRS-841	RVF Assertion failure: d76f1430-7e9a-11e1-b0c4-0800200c9a66	<p>assertionUuid: "d76f1430-7e9a-11e1-b0c4-0800200c9a66"</p> <p>assertionText: "Lang refset members are active for inactive descriptions in the language refset snapshot file.",</p> <p>failureCount: 1,</p> <p>firstNInstances:</p> <p>{conceptId: "1481000124102",detail: "MEMBER: id=2c517971-7cda-5029-946b-4ccb2990cf7: Language refset member is active for an inactive description."}</p> <p>RESOLUTION: Donated content resolved in time for the September 2020 US Edition release.</p>	2021-Mar-02
ISRS-842	RVF Assertion failure: 13d797e0-e67d-46a7-96e9-761c3c2c84d5	<p>assertionUuid: "13d797e0-e67d-46a7-96e9-761c3c2c84d5"</p> <p>assertionText: "The current data in the OWL Expression snapshot file are the same as the data in the current delta file. ",</p> <p>failureCount: 1,</p> <p>firstNInstances:</p> <p>{conceptId: "1481000124102",detail: "OWL Expression: id=9b7125ce-383f-4985-b79d-970613ea724a is in delta but not in snapshot file."}</p> <p>RESOLUTION: Donated content resolved in time for the September 2020 US Edition release.</p>	2021-Mar-02
ISRS-843	New concept added for COVID-19 "Detected in pooled specimen"	<p>New concept requested at the last minute to assist with COVID-19 specimen qualifying. A request has also been submitted to SNOMED International Content Team to have this concept promoted to the International Edition for the January 2021 release to support ongoing international standardization of SARS-CoV-2 laboratory test result codes.</p> <p>RESOLUTION: NLM confirmed the new concept has now been added to the US Edition in time for the September 2020 Production release:</p> <p>462371000124108 Detected in pooled specimen (qualifier value) has been added and will be included in the 20200901 US Edition of SNOMED CT.</p>	2021-Mar-02

ISRS-849	Classification failures after versioning	<p>After versioning the US content, we found 11 unexpected classification results. This was a result of redundant inferred relationships. Seven of them were inactive in the previously published release but were incorrectly active in the US MAIN branch. Four were duplicate relationships where again one relationship was inactive in the previously published release but the other was incorrectly active in the US MAIN branch.</p> <p>RESOLUTION: This was resolved by restoring the correct rows in the Production US release branch.</p>	2021-Mar-02
ISRS-871	RVF Assertion failure: 57d910b4-b5c9-459e-8bae-ae0ea9035585	<p>assertionUuid: "57d910b4-b5c9-459e-8bae-ae0ea9035585", assertionText: "No active Terms contain leading or trailing spaces.", failureCount: 1, firstNInstances: [</p> <ul style="list-style-type: none"> • {conceptId: "428191000124101", detail: "Description: id=610361000124115 has active term with leading or trailing spaces."} <p>KNOWN ISSUE: NLM confirmed that this minor issue will be carried over as Known Issues to be fixed in future editing cycles.</p>	2020-Sep-04

22 issues

3.3 Technical Updates

In addition to the Technical Updates reported in the [SNOMED CT July 2020 International Edition - SNOMED International Release notes](#), the following technical updates pertain to the US Edition:

3.3.1 Previous Changes made in the March 2020 US Edition

As reported in [March 2020](#), to continue to align with the SNOMED CT International Edition, the following changes have been implemented in the March 2020 US Edition. These changes will allow for the continued efforts towards having a zip file including only data with additional supplemental documentation and artifacts available separately.

- **Deprecation of the Resources folder**
 - This aligns with the SNOMED CT International Edition release package which no longer includes a Resources folder.
- **Removal of Transitive Closure resources from the US Edition release zip file**
 - The Transitive Closure resources will be made available alongside the US Edition of SNOMED CT as a bundled zip download - `SnomedCT_TransitiveClosureResourcesRF2_PRODUCTION_YYYYMMDDT120000Z.zip`. The following resources will be updated and bundled together and made available with each new US Edition release:
 - `res2_TransitiveClosure_US1000124_YYYYMMDD.txt`
 - `tls2_TransitiveClosure_US1000124_YYYYMMDD.pl`

Any questions or comments regarding these upcoming changes can be sent to [NLM Customer Support - https://support.nlm.nih.gov/](https://support.nlm.nih.gov/).

3.3.2 Previous Changes made in the September 2019 US Edition

3.3.2.1 File changes in the September 2019 US Edition

As reported in [March 2019](#), to continue to align with the SNOMED CT International Edition, the following changes have been implemented in the September 2019 US Edition. These changes will allow for the continued efforts towards having a zip file including only data with additional supplemental documentation and artifacts available separately.

- **Deprecation of the Documentation folder**
 - This aligns with the SNOMED CT International Edition release package which no longer includes a Documentation file.
- **Deprecation of the doc_lcd10MapTechnicalGuideExemplars_[date].xlsx file**
 - This follows the decision by SNOMED International, first announced with the July 2018 International Edition (see [3.3.4 - Deprecation of the Technical Guide Exemplars document from the International Edition package](#)). Going forward the file will be available from SNOMED International (<http://snomed.org/icd10map>).
- **Removal of SNOMED CT to ICD-10-CM documentation and resources from the US Edition release zip file**
 - The SNOMED CT to ICD-10-CM documentation and resources will be made available alongside the US Edition of SNOMED CT as a bundled download - `SNOMED_CT_to_ICD-10-CM_Resources_20190901.zip`. The following resources will be updated and bundled together and made available with each new US Edition release:

- doc_lcd10cmMapReleaseNotes_Current-en-US_US1000124_20190901.pdf (will be available as an online resources and in the download)
- doc_lcd10cmMapTechnicalGuideExemplars_Current-en-US_US1000124_20190901.xlsx
- doc_lcd10cmMapTechnicalSpecifications_Current-en-US_US1000124_20190901.pdf (will be available as an online resource and in the download)
- t1s_lcd10cmHumanReadableMap_US1000124_20190901.tsv

Any questions or comments regarding these upcoming changes can be sent to NLM Customer Support: <https://support.nlm.nih.gov/>.

3.3.2.2 Combination of two new refsets - OWL Axiom and OWL Ontology

The US Edition is following the International Edition with the changes to the Stated Relationships and two new OWL refsets.

Please see section "6.3.3. Combination of two new refsets - OWL Axiom and OWL Ontology" in the [SNOMED CT July 2019 International Edition - Release notes](#) for full details of the reason behind the introduction of these new refsets. After the September 2018 Demonstration release, it was agreed to combine these two files into one "OWL Expression" file, which now contains both OWL Axiom + OWL Ontology refsets in the same file, in each section of the International Release package (Full, Snapshot and Delta):

- sct2_sRefset_OWLExpressionFull_INT_20190731.txt
- sct2_sRefset_OWLExpressionSnapshot_INT_20190731.txt
- sct2_sRefset_OWLExpressionDelta_INT_20190731.txt

The decision was taken to place the files in the "Terminology" folder in the release package (as opposed to the "Refset" folder), because these files are designed to eventually replace the Stated relationship files, and therefore contain core content which needs to be included in the Terminology folder.

3.3.2.3 RF2 package format

Similar to the International Edition, the US Edition will follow the technical specifications for RF2 packaging format.

For future reference, the RF2 package convention dictates that it contains all relevant files, regardless of whether or not there is content to be included in each particular release. Therefore, the package contains a mixture of files which contain both header rows and content data, and also files that are intentionally left blank (including only a header record). The reason that these files are not removed from the package is to draw a clear distinction between

1. ...files that have been deprecated (and therefore removed from the package completely), due to the content no longer being relevant to RF2 in this or future releases, and
2. ...files that just happen to contain no data in this particular release (and are therefore included in the package but left blank, with only a header record), but are still relevant to RF2, and could therefore potentially contain data in future releases.

This allows users to easily distinguish between files that have purposefully been removed or not, as otherwise if files in option 2 above were left out of the package it could be interpreted as an error, rather than an intentional lack of content in that release.

3.3.2.4 Replacement of the Stated Relationship files with the new OWL Axiom refset files

In the September 2019 release:

- The International Edition and US Edition packages will include both inactive Stated Relationships plus a *complete* OWL file (combined) from July 2019 (International content) and September 2019 (US Extension content) effectiveTime onwards (ie) with NO history of OWL records that weren't included in the January 2019 International Edition and March 2019 US Edition package (as opposed to the *optional* package).
- A separate *optional* package containing an OWL (combined) Delta file, identifying which of the concepts have had modelling changes in relation to the optional package detailed in [section 3.3.3 of the International Release notes](#) ("Optional "on demand" package in addition to the January 2019 International edition").
- No support for Stated Relationships will be provided from this point onwards, however we will continue to include the inactivated Stated Relationships in future International Edition packages, until it is decided that this is no longer required.
- Anyone who isn't yet ready to move forward with OWL will therefore remain on the March 2019 US Edition until they are ready to update to OWL with the September 2019 version onwards.
- The inferred relationship file will maintain the same format and structure, though it will no longer contain all necessary and sufficient conditions. The inferred relationship file is represented in Necessary Normal Form for distribution of relationships. It is a collection of all the necessary conditions and represents a subset of the full semantics from the 2018 July release and onwards. Most users will benefit from the improvements in the inferred relationships without requiring changes to their existing systems.

A set of documentations has been developed to support the Logic Profile Enhancements.

- SNOMED DL Profile Enhancements - <https://docs.google.com/document/d/1tqNEA6S4fEF4fgj15OPabYA2E0VTz8epxvRRwczKizQ/edit?usp=sharing>

- SNOMED CT Logic Profile Specification - <http://snomed.org/lps>
- SNOMED CT OWL Guide (OWL Refsets specification) - <http://snomed.org/owl>
- Necessary Normal Form for Inferred Relationships - https://docs.google.com/document/d/1dt0r0aetwpmHOiT9wt0EVukVLRvVjXYUn_vq-QhIM/edit?usp=sharing
- Snomed OWL Toolkit - <https://github.com/IHTSDO/snomed-owl-toolkit>
- Classifying SNOMED CT using the Snomed OWL Toolkit - <https://youtu.be/-91egY9mJqA>
- Creating an OWL file containing SNOMED CT - https://youtu.be/sfFbMMioA_4

3.4 Feedback and suggestions

We welcome questions, comments or suggestions to improve the quality, accuracy and usability of the SNOMED CT US Edition. Please send feedback to NLM Customer Support <https://support.nlm.nih.gov/>.

Approvals

Final Version	Date	Approver	Comments
1.0		Terance Shird	
1.0		Rory Davidson	
1.0		Nick McGraw	

Draft Amendment History

Version	Date	Editor	Comments
0.1	21/07/2020	Andrew Atkinson	Initial draft created
1.0	26/08/2020	Nick McGraw	Final Production updates