4.2.2 LOINC Term to Expression Reference Set

Introduction

The | LOINC Term to Expression reference set| is an instance of a | Code to expression type reference set| . The general specification of the reference set type is included below and this is followed by specific notes on the | LOINC Term to Expression reference set| .

<h1 id="id-4.2.2LOINCTermtoExpressionReferenceSet-CodetoExpressionTypeReferenceSet">Code to Expression Type Reference Set</h1> <h1 id="id-4.2.2LOINCTermtoExpressionReferenceSet-Purpose">Purpose</h1> The 705109006 | Code to expression type reference set| is designed to enable associations between codes in another code system (other-codes) and SNOMED CT concepts, where the following constraints apply: Some of the other-codes cannot be mapped to an individual SNOMED CT concept. Licensing conditions (or other considerations) prevent addition of new SNOMED CT concepts to represent the same meaning as the other-codes. The other-codes can be logically defined using the SNOMED concept model to represent the same meaning (sufficiently defined) or a similar though less specific meaning (primitive). Other requirements similar for those applicable to mapping may also apply including: An indication of the degree of correlation between the other-code and the SNOMED CT expression. An indication of whether the other-code was created before any single concept representation of that meaning in SNOMED CT or whether the single concept representation in SNOMED CT predated the creation of the association. <h1 id="id-4.2.2LOINCTermtoExpressionReferenceSet-DataStructure">Data Structure</h1> The general approach to the above requirements is to associate each of the other-codes with a representation of the same logic based definition as would have been applied to a SNOMED CT concept with that meaning. However, since the other-code are not identified by an SCTID, the logical definition cannot be represented using defining relationships. There are two potential approaches to this, one would be to use a general purpose description logic language (e.g. OWL) and the other is to use a SNOMED CT expression to represent each definition. The | Code to expression type reference set| is designed to support the expression-based approach. <p class="figure-caption" style="color: #808080; margin: 0px 0px 5px 10px; padding-top: 20px; font-family: 'Open Sans', sans-serif !important; font-size: 14px; font-weight: bold;" id="Table-simple-map-reference-set-data-structure">Table 5.2.3.5-1: Code to Expression Reference Set - Data structure <table class="fixed-table wrapped confluenceTable"><colgroup span="1"><col style="width: 225.0px;" span="1"/><col style="width: 78.0px;" span="1"/><col style="width: 825.0px;" span="1"/><col style="width: 76.0px;" span="1"/><col style="width: 96.0px;" span="1"/></colgroup><tbody><tr><td class="highlight-grey confluenceTd" colspan="1" rowspan="1" data-highlight-colour="grey"> Field </td><td class="highlight-grey confluenceTd" colspan="1" rowspan="1" data-highlight-colour="grey"> Data type </td><td class="highlight-grey confluenceTd" colspan="1" rowspan="1" data-highlight-colour="grey"> Purpose </td><td class="highlight-grey confluenceTd" style="text-align: center;" colspan="1" rowspan="1" data-highlight-colour="grey"> Mutable </td><td class="highlight-grey confluenceTd" style="text-align: center;" colspan="1" rowspan="1" data-highlight-colour="grey">Part of Primary Key</td></tr><tr><td colspan="1" rowspan="1" class="confluenceTd"> id </td><td colspan="1" rowspan="1" class="confluenceTd"> UUID </td><td colspan="1" rowspan="1" class="confluenceTd"> A 128 bit unsigned Integer, uniquely identifying this reference set member. Different versions of a reference set member share the same id but have different effectiveTime. This allows a reference set member to be modified or made inactive (i.e. removed from the active set) at a specified time.
 </td><td class="highlight-red confluenceTd" style="text-align: center;" colspan="1" rowspan="1" data-highlight-colour="red">NO</td><td class="highlight-green confluenceTd" style="text-align: center;" colspan="1" rowspan="1" data-highlight-colour="green">YES (Full /Snapshot)</td></tr><tr><td colspan="1" rowspan="1" class="confluenceTd"> effectiveTime </td><td colspan="1" rowspan="1" class="confluenceTd"> Time </td><td colspan="1" rowspan="1" class="confluenceTd"> The inclusive date or time at which this version of the identified <a href="https://confluence.ihtsdotools.org/display/DOCGLOSS/reference+set+member" title="Glossary link: reference set member" rel="nofollow" class="conf-macro output-

inline" data-hasbody="false" data-macro-name="gloss">reference set member became the current version. Note<
/strong>: In distribution files the effectiveTime should follow the short ISO date format (<span style="color: rgb(122,134,154);"
>YYYYMMDD) and should not include the hours, minutes, seconds or timezone indicator.<
/span> The current version of this <a href="https://confluence.ihtsdotools.org/display/DOCGLOSS/reference+set+member" title="Glossary
link: reference set member" rel="nofollow" class="conf-macro output-inline" data-hasbody="false" data-macro-name="gloss">reference set
member at time T is the version with the most recent <a href="https://confluence.ihtsdotools.org/display/DOCRELFMT
/effectiveTime+(field)" title="Reference term: effectiveTime ((field))" rel="nofollow" class="conf-macro output-inline" data-hasbody="false" data-
macro-name="specref">effectiveTime prior to or equal to time T . <div id="mark_effectivetime" style="display:none" class="
conf-macro output-inline" data-hasbody="false" data-macro-name="bookmarker">
 </td><td class="highlight-green
confluenceTd" style="text-align: center;" colspan="1" rowspan="1" data-highlight-colour="green">YES</td><td class="highlight-green
confluenceTd" style="text-align: center;" colspan="1" rowspan="1" data-highlight-colour="green"> YES (Full) <p
style="text-align: center;">Optional (Snapshot) </td></tr><tr><td colspan="1" rowspan="1" class="confluenceTd"><div class="content-wrapper"
> <a href="https://confluence.ihtsdotools.org/display/DOCRELFMT/active+(field)" title="Reference term: active ((field))" rel="nofollow" class="
conf-macro output-inline" data-hasbody="false" data-macro-name="specref">active </td><td colspan="1" rowspan="1" class="
confluenceTd"> <a href="https://confluence.ihtsdotools.org/display/DOCRELFMT/Boolean+(data+type)" title="
Reference term: Boolean ((data type))" rel="nofollow" class="conf-macro output-inline" data-hasbody="false" data-macro-name="specref">Boolean<
/a> </td><td colspan="1" rowspan="1" class="confluenceTd"> The state of the identified <a href="
https://confluence.ihtsdotools.org/display/DOCGLOSS/reference+set+member" title="Glossary link: reference set member" rel="nofollow" class="
conf-macro output-inline" data-hasbody="false" data-macro-name="gloss">reference set member as at the specified <a href="
https://confluence.ihtsdotools.org/display/DOCRELFMT/effectiveTime+(field)" title="Reference term: effectiveTime ((field))" rel="nofollow" class="
conf-macro output-inline" data-hasbody="false" data-macro-name="specref">effectiveTime . If <a href="https://confluence.ihtsdotools.
org/display/DOCRELFMT/active+(field)" title="Reference term: active ((field))" rel="nofollow" class="conf-macro output-inline" data-hasbody="false"
data-macro-name="specref">active = 1 (true) the <a href="https://confluence.ihtsdotools.org/display/DOCGLOSS/reference+set+member"
title="Glossary link: reference set member" rel="nofollow" class="conf-macro output-inline" data-hasbody="false" data-macro-name="gloss"
>reference set member is part of the current version of the set, if <a href="https://confluence.ihtsdotools.org/display/DOCRELFMT/active+
(field)" title="Reference term: active ((field))" rel="nofollow" class="conf-macro output-inline" data-hasbody="false" data-macro-name="specref"
>active = 0 (false) the <a href="https://confluence.ihtsdotools.org/display/DOCGLOSS/reference+set+member" title="Glossary link: reference
set member" rel="nofollow" class="conf-macro output-inline" data-hasbody="false" data-macro-name="gloss">reference set member is not part
of the current version of the set. <div id="mark_active" style="display:none" class="conf-macro output-inline" data-hasbody="false" data-macro-
name="bookmarker">
 </td><td class="highlight-green confluenceTd" style="text-align: center;" colspan="1" rowspan="1" data-
highlight-colour="green">YES</td><td class="highlight-red confluenceTd" style="text-align: center;" colspan="1" rowspan="1" data-highlight-
colour="red">NO</td></tr><tr><td colspan="1" rowspan="1" class="confluenceTd"> <a href="https://confluence.
ihtsdotools.org/display/DOCRELFMT/moduleId+(field)" title="Reference term: moduleId ((field))" rel="nofollow" class="conf-macro output-inline"
data-hasbody="false" data-macro-name="specref">moduleId </td><td colspan="1" rowspan="1" class="confluenceTd"><div class="
content-wrapper"> <a href="https://confluence.ihtsdotools.org/display/DOCRELFMT/SCTID+(data+type)" title="Reference term: SCTID ((data
type))" rel="nofollow" class="conf-macro output-inline" data-hasbody="false" data-macro-name="specref">SCTID </td><td colspan="
1" rowspan="1" class="confluenceTd"> Identifies the <a href="https://confluence.ihtsdotools.org/display
/DOCGLOSS/SNOMED+CT+module" title="Glossary link: SNOMED CT module" rel="nofollow" class="conf-macro output-inline" data-hasbody="
false" data-macro-name="gloss">SNOMED CT module that contains this <a href="https://confluence.ihtsdotools.org/display/DOCGLOSS
/reference+set+member" title="Glossary link: reference set member" rel="nofollow" class="conf-macro output-inline" data-hasbody="false" data-
macro-name="gloss">reference set member as at the specified <a href="https://confluence.ihtsdotools.org/display/DOCRELFMT
/effectiveTime+(field)" title="Reference term: effectiveTime ((field))" rel="nofollow" class="conf-macro output-inline" data-hasbody="false" data-
macro-name="specref">effectiveTime . The value must be a <a href="https://confluence.ihtsdotools.org/display/DOCGLOSS/subtype"
title="Glossary link: subtype" rel="nofollow" class="conf-macro output-inline" data-hasbody="false" data-macro-name="gloss">subtype of <a
href="http://snomed.info/id/900000000000443000" title="900000000000443000 | Module (core metadata concept) |" class="external-link" rel="
nofollow" data-hasbody="false" data-macro-name="concept"> 900000000000443000 <span
style="color: #00ccff;" class="sctpipe">| Module (core metadata concept)<span style="
color: #00ccff;" class="sctpipe">| within the metadata <a href="https://confluence.ihtsdotools.org/display/DOCGLOSS/hierarchy" title="
Glossary link: hierarchy" rel="nofollow" class="conf-macro output-inline" data-hasbody="false" data-macro-name="gloss">hierarchy. <div
id="mark_moduleid" style="display:none" class="conf-macro output-inline" data-hasbody="false" data-macro-name="bookmarker">
 <p
/> </td><td class="highlight-green confluenceTd" style="text-align: center;" colspan="1" rowspan="1" data-highlight-colour="green">YES<
/td><td class="highlight-red confluenceTd" style="text-align: center;" colspan="1" rowspan="1" data-highlight-colour="red">NO</td></tr><tr><td
colspan="1" rowspan="1" class="confluenceTd"> <a href="https://confluence.ihtsdotools.org/display/DOCRELFMT
/refsetId+(field)" title="Reference term: refsetId ((field))" rel="nofollow" class="conf-macro output-inline" data-hasbody="false" data-macro-name="
specref">refsetId </td><td colspan="1" rowspan="1" class="confluenceTd"> <a href="
https://confluence.ihtsdotools.org/display/DOCRELFMT/SCTID+(data+type)" title="Reference term: SCTID ((data type))" rel="nofollow" class="conf-
macro output-inline" data-hasbody="false" data-macro-name="specref">SCTID </td><td colspan="1" rowspan="1" class="
confluenceTd"> Identifies the <a href="https://confluence.ihtsdotools.org/display/DOCGLOSS/reference+set"
title="Glossary link: reference set" rel="nofollow" class="conf-macro output-inline" data-hasbody="false" data-macro-name="gloss">reference set<
/a> to which this <a href="https://confluence.ihtsdotools.org/display/DOCGLOSS/reference+set+member" title="Glossary link: reference set
member" rel="nofollow" class="conf-macro output-inline" data-hasbody="false" data-macro-name="gloss">reference set member belongs.<
/p> In this case, a subtype descendant of: <a href="http://snomed.info/id/705109006" title="705109006 |
Code to expression type reference set |" class="external-link" rel="nofollow" data-hasbody="false" data-macro-name="concept"> <span style="
color: #606060;" class="sctid">705109006 | <span style="color: #000000;" class="
sctid">Code to expression type reference set| </td><td
class="highlight-red confluenceTd" style="text-align: center;" colspan="1" rowspan="1" data-highlight-colour="red">NO</td><td class="highlight-red
confluenceTd" style="text-align: center;" colspan="1" rowspan="1" data-highlight-colour="red">NO</td></tr><tr><td colspan="1" rowspan="1"
class="confluenceTd"> <a href="https://confluence.ihtsdotools.org/display/DOCRELFMT
/referencedComponentId+(field)" title="Reference term: referencedComponentId ((field))" rel="nofollow" class="conf-macro output-inline" data-
hasbody="false" data-macro-name="specref">referencedComponentId </td><td colspan="1" rowspan="1" class="confluenceTd"
> <a href="https://confluence.ihtsdotools.org/display/DOCRELFMT/SCTID+(data+type)" title="Reference term:
SCTID ((data type))" rel="nofollow" class="conf-macro output-inline" data-hasbody="false" data-macro-name="specref">SCTID <
/td><td colspan="1" rowspan="1" class="confluenceTd"> A reference to the <a href="https://confluence.
ihtsdotools.org/display/DOCGLOSS/SNOMED+CT+component" title="Glossary link: SNOMED CT component" rel="nofollow" class="conf-macro
output-inline" data-hasbody="false" data-macro-name="gloss">SNOMED CT component to be included in the <a href="https://confluence.
ihtsdotools.org/display/DOCGLOSS/reference+set" title="Glossary link: reference set" rel="nofollow" class="conf-macro output-inline" data-
hasbody="false" data-macro-name="gloss">reference set. A subtype of <a href="http://snomed.info/id
/705113004" title="705113004 | Terminology system |" class="external-link" rel="nofollow" data-hasbody="false" data-macro-name="concept">
705113004 | <span style="color:

#000000;" class="sctid">Terminology system| identifying the code system from which the code in the mapTarget field is derived. For example: 705114005 | LOINC Code System| . </td><td class="highlight-red confluenceTd" style="text-align: center;" colspan="1" rowspan="1" data-highlight-colour="red">NO</td><td class="highlight-red confluenceTd" style="text-align: center;" colspan="1" rowspan="1" data-highlight-colour="red">NO</td></tr><tr><td colspan="1" class="confluenceTd"> mapSource </td><td colspan="1" class="confluenceTd"> String </td><td colspan="1" class="confluenceTd"> The other-code which is mapped to the SNOMED CT expression. </td><td class="highlight-red confluenceTd" style="text-align: center;" colspan="1" data-highlight-colour="red">NO</td><td class="highlight-red confluenceTd" style="text-align: center;" colspan="1" data-highlight-colour="red">NO</td></tr><tr><td colspan="1" class="confluenceTd"> expression </td><td colspan="1" class="confluenceTd"> String </td><td colspan="1" class="confluenceTd"> A SNOMED CT expression that represents the meaning of the other-code. This expression may be a stated or inferred view of the definition provided that documentation of each identified reference set specifies the view provided. The expression must conform to the syntax defined in the SNOMED CT Compositional Grammar - Specification and Guide (http://snomed.org/scg). </td><td class="highlight-green confluenceTd" style="text-align: center;" colspan="1" data-highlight-colour="green">YES</td><td class="highlight-red confluenceTd" style="text-align: center;" colspan="1" data-highlight-colour="red">NO</td></tr><tr><td colspan="1" class="confluenceTd"> definitionStatusId
 </td><td colspan="1" class="confluenceTd"> SCTID </td><td colspan="1" class="confluenceTd"> Indicates whether or not the expression contains a sufficient definition of the other-code in the mapSource field. <br class="atl-forced-newline"/>Possible values are the following subtypes of 900000000000444006 | Definition status| :   900000000000074008 |Not sufficiently defined by necessary conditions definition status|
    900000000000073002 |Sufficiently defined by necessary conditions definition status| </td><td class="highlight-green confluenceTd" style="text-align: center;" colspan="1" data-highlight-colour="green">YES</td><td class="highlight-red confluenceTd" style="text-align: center;" colspan="1" data-highlight-colour="red">NO</td></tr><tr><td colspan="1" class="confluenceTd"> correlationId </td><td colspan="1" class="confluenceTd"> SCTID </td><td colspan="1" class="confluenceTd"> The correlation between the other-code and the SNOMED CT expression. Possible values are the following subtypes of 1193546000 | Map source to map target correlation (foundation metadata concept)| : 1193552004 |Map source to map target correlation not specified|
  1193551006 |Map source not mappable to map target|
  1193550007 |Partial overlap between map source and target|
 <a href="http://snomed.info/id/1193549007" title="1193549007 | Narrow map source to broad map target |" class="

external-link" rel="nofollow"> 1193549007 |< /span>Narrow map source to broad map target|< /span>
  1193548004< /span> |Exact match between map source and map target|
  1193547009 |Broad map source to narrow map target| When these values are applied to this reference set type, the phrase "map source" refers to the other-code. and the "map target" refers to the SNOMED CT expression. </td><td class="highlight-green confluenceTd" style="text-align: center;" colspan="1" data-highlight-colour="green">YES</td><td class="highlight-red confluenceTd" style="text-align: center;" colspan="1" data-highlight-colour="red">NO</td></tr><tr><td colspan="1" class="confluenceTd"> contentOriginId </td><td colspan="1" class="confluenceTd"> SCTID </td><td colspan="1" class="confluenceTd"> Indication of whether the concept was initially in one of the terminologies (SNOMED CT or other-codes) and added to the other as part of mapping or was in both terminologies at the outset. Values are subtypes of 705116007 | Original code system source for linked content value| . </td><td class="highlight-green confluenceTd" style="text-align: center;" colspan="1" data-highlight-colour="green">YES</td><td class="highlight-red confluenceTd" style="text-align: center;" colspan="1" data-highlight-colour="red">NO</td></tr></tbody></table>

Specific Notes on the LOINC Term to Expression Reference Set

Rationale for Using a Code to Expression Type Reference Set

The | Code to expression type reference set| was designed to meet the known requirements for associating LOINC Terms with SNOMED CT expressions, in accordance with the terms of the cooperation agreement. The main reason for using expressions rather than OWL to represent the definitions, is that expressions can precisely represent all aspects of the definitions represented by SNOMED CT defining relationships. An additional factor was the relative human-readability of this format for review as demonstrated by the expression tab in the SNOMED International online browser (http://snomed.org/browser).

LOINC Associations

Each LOINC Term Code within the scope of the cooperative work completed to date is associated with a SNOMED CT expressions that represent its formal logical definition. The definition is represented in accordance with the SNOMED CT concept model and thus each LOINC Term code in related directly to the SNOMED CT concepts that define it. The same definition could a expression to represent the definition. If a LOINC Term is recognized as having the same meaning as an existing SNOMED CT concept the associated expression may in future be supplemented by a direct map.

Expression Format

Each expression conforms to the SNOMED CT Composition Grammar. For further details of the syntax please see the Compositional Grammar - Specification and Guide (http://snomed.org/scg). The expression represents the SNOMED CT definition of the LOINC Term based in the recently developed concept model for the | Observable entity| domain. Note that the expression that represents a LOINC Term does not include any inferred relationships with other LOINC Terms. Furthermore, since the new | Observable entity| has not yet been applied to many SNOMED CT concepts, the LOINC Terms are defined as subtypes | Observable entity| with an appropriate set of attribute relationships. Thus the expressions released in the beta release on 2017-03-31 included only stated relationships.

LOINC Term Code Status Changes

Deprecated statuses will cause the expression associations to be marked as inactive but trial use status will not be represented. LOINC Terms that were already deprecated at the time of initial mapping will not be included in maps and associations. However, dependent on demand and priority to assessments, it is possible these may be added later.

Values Specific to LOINC Term Expression Associations

The following values are used in this reference set.

Value for refsetId

- 705110001 | LOINC Term to Expression reference set|

Value for referencedComponentId

- 705114005 | LOINC Code System|

Values for contentOriginId

705117003 | Originally in LOINC|
705118008 | Originally in SNOMED CT|
705119000 | Originally in both LOINC and SNOMED CT|

Other Values

All other values are as specified for the | Code to expression type reference set| .