

## 5.2.3.5 Code to Expression Reference Set

### Purpose

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:

1. Some of the [other-codes](#) cannot be mapped to an individual SNOMED CT [concept](#).
2. Licensing conditions (or other considerations) prevent addition of new SNOMED CT concepts to represent the same meaning as the [other-codes](#).
3. 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](#)).
4. Other requirements similar for those applicable to mapping may also apply including:
  - a. An indication of the degree of correlation between the [other-code](#) and the SNOMED CT expression.
  - b. 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.

### Data Structure

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.

Table 5.2.3.5-1: Code to Expression Reference Set - Data structure

| Field                | Data type | Purpose                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Mutuable | Part of Primary Key                   |
|----------------------|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------------------------------------|
| id                   | UUID      | A 128 bit unsigned <a href="#">Integer</a> , uniquely identifying this <a href="#">reference set member</a> .<br><br>Different versions of a <a href="#">reference set member</a> share the same <a href="#">id</a> but have different <a href="#">effectiveTime</a> . This allows a <a href="#">reference set member</a> to be modified or made <a href="#">inactive</a> (i.e. removed from the active set) at a specified time.                                                                                            | NO       | YES (Full /Snapshot)                  |
| effectiveTime        | Time      | The inclusive date or time at which this version of the identified <a href="#">reference set member</a> became the current version.<br><br><b>Note:</b> In distribution files the effectiveTime should follow the short ISO date format (YYYYMMDD) and should not include the hours, minutes, seconds or timezone indicator.<br><br>The current version of this <a href="#">reference set member</a> at time <i>T</i> is the version with the most recent <a href="#">effectiveTime</a> prior to or equal to time <i>T</i> . | YES      | YES (Full)<br><br>Optional (Snapshot) |
| active               | Boolean   | The state of the identified <a href="#">reference set member</a> as at the specified <a href="#">effectiveTime</a> .<br><br>If <a href="#">active</a> = 1 (true) the <a href="#">reference set member</a> is part of the current version of the set, if <a href="#">active</a> = 0 (false) the <a href="#">reference set member</a> is not part of the current version of the set.                                                                                                                                           | YES      | NO                                    |
| moduleId             | SCTID     | Identifies the <a href="#">SNOMED CT module</a> that contains this <a href="#">reference set member</a> as at the specified <a href="#">effectiveTime</a> .<br><br>The value must be a <a href="#">subtype</a> of 90000000000043000   Module (core metadata concept)  within the metadata <a href="#">hierarchy</a> .                                                                                                                                                                                                        | YES      | NO                                    |
| refsetId             | SCTID     | Identifies the <a href="#">reference set</a> to which this <a href="#">reference set member</a> belongs.<br><br>In this case, a subtype descendant of: 705109006   Code to expression type reference set                                                                                                                                                                                                                                                                                                                     | NO       | NO                                    |
| referenceComponentId | SCTID     | A reference to the <a href="#">SNOMED CT component</a> to be included in the <a href="#">reference set</a> .<br><br>A subtype of 705113004   Terminology system  identifying the code system from which the code in the <a href="#">mapTarget</a> field is derived. <ul style="list-style-type: none"><li>• For example: 705114005   LOINC Code System .</li></ul>                                                                                                                                                           | NO       | NO                                    |
| mapSource            | String    | The <a href="#">other-code</a> which is mapped to the SNOMED CT expression.                                                                                                                                                                                                                                                                                                                                                                                                                                                  | NO       | NO                                    |

|                    |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |     |    |
|--------------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|
| expression         | String | A <a href="#">SNOMED CT expression</a> that represents the meaning of the <a href="#">other-code</a> . This expression may be a <a href="#">stated</a> or <a href="#">inferred view</a> of the definition provided that documentation of each identified reference set specifies the view provided.<br><br>The expression must conform to the syntax defined in the <a href="#">SNOMED CT Compositional Grammar - Specification and Guide</a> ( <a href="http://snomed.org/scg">http://snomed.org/scg</a> ).                                                                                                                                                                                                                                                                                              | YES | NO |
| definitionStatusId | SC TID | Indicates whether or not the expression contains a sufficient definition of the <a href="#">other-code</a> in the mapSource field. Possible values are the following subtypes of 900000000000444006   Definition status  :<br><br>90000000000074008  Not sufficiently defined by necessary conditions definition status <br>90000000000073002  Sufficiently defined by necessary conditions definition status                                                                                                                                                                                                                                                                                                                                                                                             | YES | NO |
| correlationId      | SC TID | The correlation between the <a href="#">other-code</a> and the SNOMED CT expression. Possible values are the following subtypes of 1193546000   Map source to map target correlation (foundation metadata concept)  :<br><br>1193552004  Map source to map target correlation not specified <br>1193551006  Map source not mappable to map target <br>1193550007  Partial overlap between map source and target <br>1193549007  Narrow map source to broad map target <br>1193548004  Exact match between map source and map target <br>1193547009  Broad map source to narrow map target <br><br>When these values are applied to this reference set type, the phrase " <i>map source</i> " refers to the <a href="#">other-code</a> . and the " <i>map target</i> " refers to the SNOMED CT expression. | YES | NO |
| contentOriginId    | SC TID | Indication of whether the concept was initially in one of the terminologies (SNOMED CT or <a href="#">other-codes</a> ) 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 . .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | YES | NO |

## Metadata

The following metadata [hierarchy](#) supports this [reference set](#):

**Table 5.2.3.5-2: Code to Expression Reference Set in the Metadata Hierarchy**

```
900000000000454005 |Foundation metadata concept|
900000000000455006 |Reference set|
705109006 |Code to expression type reference set|
```

## Reference Set Descriptor and Example Data



### Notes on the tables used to show descriptors and examples

The reference set example tables on this page have been revised as follows to aid clarity and understanding:

- The first four columns which are present in all release files are not shown. The omitted columns ([id](#), [effectiveTime](#), [active](#), [moduleId](#)) are used in the same way in all referenced sets to support identification, versioning and packaging. They do not directly affect the specific features of a particular reference set or reference set type.
- Reference set columns that contain SNOMED CT identifiers are expanded to show details of the concept or description referenced by that identifier. In some cases, the term is shown in the same column using the expression syntax, in other cases an additional column with a name suffix '\_term' has been added. In the standard reference set files only the identifier is present in the column and there is no added column for the term. When using reference sets, the term and other details of the component are looked up from the relevant component release files.

## Descriptor template and examples

The tables below show the descriptors that define examples of [reference sets](#) that follow the 705109006 | Code to expression type reference set (foundation metadata concept)| pattern.

**Table 5.2.3.5-3: Refset Descriptor rows for a Code to Expression Reference Set**

| refsetId                                      | referencedComponentId (Referenced component)                                                          | attributeDescription (Attribute description)                           | attributeType (Attribute type)              | attributeOrder (Attribute order) |
|-----------------------------------------------|-------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|---------------------------------------------|----------------------------------|
| 900000000000456007   Reference set descriptor | 705109006   Code to expression type reference set                                                     | 449608002   Referenced component                                       | 900000000000461009   Concept type component | 0                                |
| 900000000000456007   Reference set descriptor | 705109006   Code to expression type reference set                                                     | 900000000000505001   Map target                                        | 900000000000465000   String                 | 1                                |
| 900000000000456007   Reference set descriptor | 705109006   Code to expression type reference set                                                     | 706999006   Expression                                                 | 706999006   Expression                      | 2                                |
| 900000000000456007   Reference set descriptor | 705109006   Code to expression type reference set   705109006   Code to expression type reference set | 734867002   Expression definition status                               | 900000000000461009   Concept type component | 3                                |
| 900000000000456007   Reference set descriptor | 705109006   Code to expression type reference set                                                     | 447247004   SNOMED CT source code to target map code correlation value | 900000000000461009   Concept type component | 4                                |
| 900000000000456007   Reference set descriptor | 705109006   Code to expression type reference set                                                     | 705116007   Original code system source for linked content value       | 900000000000461009   Concept type component | 5                                |

## Refset Examples

**Table 5.2.3.5-4: Sample Content from a Code to Expression Type Reference Set**

| refsetId                                           | referencedComponentId         | mapSource | expression                                                                                                                                                                       | definitionStatusId                                                                  | correlationId                                                         | contentOriginId                 |
|----------------------------------------------------|-------------------------------|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------|---------------------------------|
| 705110001   LOINC Term to Expression reference set | 705114005   LOINC Code System | 48023-6   | 363787002:<br>246093002=720113009,<br>370134009=123029007,<br>246501002=702675006,<br>704327008=122592007,<br>370132008=117363000,<br>704319004=50863008,<br>704318007=705057003 | 900000000000073002   Sufficiently defined by necessary conditions definition status | 447557004   Exact match map from SNOMED CT source code to target code | 705117003   Originally in LOINC |
| 705110001   LOINC Term to Expression reference set | 705114005   LOINC Code System | 51406-7   | 363787002:<br>704323007=123027009,<br>704321009=718500008,<br>704327008=122575003,<br>704322002=64033007,<br>704318007=118544000,<br>370132008=30766002,<br>704324001=706939009  | 900000000000073002   Sufficiently defined by necessary conditions definition status | 447557004   Exact match map from SNOMED CT source code to target code | 705117003   Originally in LOINC |
| 705110001   LOINC Term to Expression reference set | 705114005   LOINC Code System | 51406-7   | 363787002:<br>370134009=123029007,<br>704327008=122592007,<br>704318007=118556004,<br>370132008=30766002,<br>704319004=50863008,<br>246093002=4546008                            | 900000000000073002   Sufficiently defined by necessary conditions definition status | 447557004   Exact match map from SNOMED CT source code to target code | 705117003   Originally in LOINC |
| 705110001   LOINC Term to Expression reference set | 705114005   LOINC Code System | 59878-9   | 363787002:<br>370134009=123029007,<br>704327008=258459007,<br>704318007=118556004,<br>246093002=273948005,<br>370132008=30766002,<br>704319004=31773000                          | 900000000000073002   Sufficiently defined by necessary conditions definition status | 447557004   Exact match map from SNOMED CT source code to target code | 705117003   Originally in LOINC |
| 705110001   LOINC Term to Expression reference set | 705114005   LOINC Code System | 51921-5   | 363787002:<br>704318007=118539007,<br>370134009=123029007,<br>704326004=703765007,<br>704327008=122592007,<br>370132008=30766002,<br>704319004=50863008,<br>246093002=387067003  | 900000000000073002   Sufficiently defined by necessary conditions definition status | 447557004   Exact match map from SNOMED CT source code to target code | 705117003   Originally in LOINC |

## Related Links

- For further information see Using LOINC with SNOMED CT: [4.2.2 LOINC Term to Expression Reference Set](#).