# 2020-03-25 - SLPG Meeting

Date & Time Goals

20:00 to 22:00 UTC Wednesday 25th March 2020

• To finalize syntax for term searching in ECL

Location

Zoom meeting: https://snomed.zoom.us/j/471420169

**Attendees** 

**Apologies** 

 Chair: Linda Bird
 Project Group: Anne Randorff Højen, Ed Cheetham, Michael Lawley, Rob Hausam Peter Jordan , Kai Kewley

## **Agenda and Meeting Notes**

Description	Owner	Notes
Welcome and agenda	Linda Bird	SNOMED International has announced the cancellation of the face to face April 2020 business meetings. Therefore, the SNOMED Languages meeting on Sunday 5th April is also cancelled.
Concrete values	Linda Bird	<b>ON HOLD</b> : SCG, ECL, STS, ETL - Ready for publication, but on hold until after MAG meeting in April confirming requirement for Boolean datatype.
URIs	Linda Bird	UPDATES NOW PUBLISHED - see http://snomed.org/uri
Expression Constraint Language	Linda Bird	• ADDED TO DRAFT SYNTAX - Child or self (< ) and Parent or self ( >!)  • New examples to be added • TERM SEARCH FILTERS - Syntax currently being drafted

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    Examples

               < 404684003 |Clinical finding (finding)| {{ term = "heart att"}}
               < 404684003 |Clinical finding (finding)| {{ term != "heart att"}} - A concept for which there exists a
                description that does not match - E.g. Find all the descendants of |Fracture| that have a
                description that doesn't contain the word |Fracture|
               <404684003 \ | Clinical \ finding \ (finding)| \ MINUS * \{\{\ term="heart att"\}\}-A \ concept \ which \ does \ not \ have \ any \ descriptions \ matching \ the \ term
               < 404684003 |Clinical finding (finding)| {{ term = match: "heart att" }} - match is word (separated by white space) prefix any order; Words in substrate are ....; Search term delimiters are any mws</p>
< 404684003 |Clinical finding (finding)| {{ term = wild: "heart* *ack" }}</p>
< 404684003 |Clinical finding (finding)| {{ term = ("heart* "att")}}</p>
                < 404684003 |Clinical finding (finding)| {{ term != ("heart" "att") }} - matches concepts with a
                description that doesn't match "heart" or "att"
               <404684003 \ | Clinical finding (finding)| \ \{ \{ TERM = (MATCH: "heart" \ WILD: "*ack") \} \}
               < 404684003 |Clinical finding (finding)| {{ term = "myo", term = wild:"*ack" }} — Exists one term that matches both "myo" and "*ack"
               < 404684003 |Clinical finding (finding)| {{ term = "myo" }} {{ term = wild:"*ack" }} — Exists one term that matches "myo", and exists a term that matches "*ack" (filters may match on either same term,
                or different terms)
               <404684003~|Clinical finding (finding)| {\{ term = "hjärta", language = se \}\}} <404684003~|Clinical finding (finding)| {\{ term = "hjärta", language = SE, typeld = language =
                90000000000013009 |synonym| }}
               < 404684003 [Clinical finding (finding)] {{ term = "hjärta", language = SE, typeld = (9000000000013009 |synonym| 9000000000003001 |fully specified name|)}}
                < 404684003 |Clinical finding (finding)| {{ term = "hjärta", language = SE, typeId!=
                90000000000550004 |Definition|}}
               404684003 | Clinical finding (finding)| {{ term = "hjärta", language = SE, type = syn }}
< 404684003 | Clinical finding (finding)| {{ term = "hjärta", language = SE, type != def }}
< 404684003 | Clinical finding (finding)| {{ term = "hjärta", language = SE, type = (syn fsn) }}
< 404684003 | Clinical finding (finding)| {{ term = "hjärta", language = SE, type != (syn fsn) }}
< 404684003 | Clinical finding (finding)| {{ term = "hjärta", language = SE, type != (syn fsn) }}
< 404684003 | Clinical finding (finding)| {{ term = "cardio", dialectId = 900000000000508004 |GB</pre>
                < 404684003 |Clinical finding (finding)| {{ term = "card", dialectId = (999001261000000100
                 |National Health Service realm language reference set (clinical part)|
                 999000691000001104 |National Health Service realm language reference set (pharmacy part)| ) }}
               < 404684003 |Clinical finding (finding)| {{ term = "card", dialect = en-gb }}</p>
< 404684003 |Clinical finding (finding)| {{ dialect != en-gb }}</p>
               < 404684003 |Clinical finding (finding)| {{ term = "card", dialect = ( en-nhs-clinical en-nhs-
               < 404684003 |Clinical finding (finding)| {{ term = "card", dialect = en-nhs-clinical, acceptabilityId =
                < 404684003 |Clinical finding (finding)| {{ term = "card", dialect = en-nhs-clinical, acceptability =
                < 404684003 |Clinical finding (finding)| {{ term = "card", dialect = en-nhs-clinical, acceptability !=
                prefer }}
                < 404684003 |Clinical finding (finding)| {{ term = "card", dialect = en-nhs-clinical, acceptability =
                (prefer accept) }
                < 404684003 |Clinical finding (finding)| {{ term = "card", dialect = en-nhs-clinical, acceptability =
                (prefer accept) }}
               < |Clinical finding| MINUS * {{ dialect = en-nhs-clinical}}
< 73211009 |diabetes| MINUS * {{ dialect = en-nz-patient }}</pre>
                < 73211009 |diabetes| MINUS < 73211009 |diabetes| {{ dialect = en-nz-patient }}
               < 73211009 |diabetes| {{ term = "type" }} MINUS < 73211009 |diabetes| {{ dialect = en-nz-
                (< 404684003 |Clinical finding|:363698007|Finding site| = 80891009 |Heart structure|) {{ term =
                  card" }} MINUS < (404684003 |Clinical finding|:363698007|Finding site| = 80891009 |Heart
                structure|) {{ dialect = en-nz-patient }}
               < 73211009 |diabetes| {{ term = "type" }} OR < ??? |Cardiovascular disease| {{ dialect = en-nz-
                patient }}
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#### Questions Term Filter Should we tokenize the search terms within the termSearchString? Separated by ws (i.e. space, tab, carriage return, line feed, comment) What characters should be allowed in the term? Current rules: o searchTermSet = QM ws searchTerm \*(ws searchTerm) ws QM searchTerm = 1\*nonwsNonPipeNonEscapedChar o nonwsNonPipeNonEscapedChar = %x21 / %x23-5B / %x5D-7B / %x7D-7E / UTF8-2 / UTF8-3 / UTF8-4 • Do we extend 'escapedChar' to include the asterisk in order to test for terms containing \*, e.g.: o 738783002 | Human leukocyte antigen A\*31:01 positive (finding) • Should we only escape the asterisk in a search of type "wild"?? So, for example: {{ term = wild:"A\\*31\*" }} Should we allow multiple term search types? • Do we include syntactic sugar for PT? - (Answer: NO) << 64572001 |Disease| {{ term = wild:"\*heart\*", dialect = en-gb, acceptability = prefer }}</p> · <del><< 64572001</del> Case/accent folding + Uni-code collation Next steps Answer above questions, and update brief syntax accordingly Test brief syntax parser Update long syntax and informative comments to match Test long syntax parser Add examples to specification Clarify execution semantics for consistency Document execution semantics in specification SLPG review / Community review Any required updates Publish with PDF o TO DO - Send recommendation to MAG to consider the following 1. Dialect Alias Refset Alternative 1 - Annotation Refset 8004 Example row referencedComponentId = 999001261000000100 o dialectAlias = nhs-clinical Alternative 2 - Add alias as a synonym to the language refset concept Create a simple type refset that refers to the preferred alias for each language refset 2. Constructing a Language Refset from other Language Refset Allowing an intensional definition for a language refset Includes order/precedence of language refsets being combined Potential Use cases - Note some of these will be out of scope for the simple ECL filters Find concepts with a term which matches "car" that is preferred in one language refset and not acceptable in another Find the concepts that ..... have a PT = X in language refset = Y ○ Find the concepts that ..... have a Syn = X in language refset = Y ° Find the concepts that ... have one matching description in one language, and another matching description in another language o Find the concepts that have a matching description that is in language refset X and not in language refset Y Find the concepts that .... have a matching description that is either preferred in one language refset and/or acceptable in another language refset Returning the set of concepts, for which there exists a description that matches the filter o Intentionally define a reference set for chronic disease. Starting point was ECL with modelling; This misses concepts modelled using the pattern you would expect. So important in building out that reference set. Authors quality assuring names of concepts Checking translations, retranslating. Queries for a concept that has one word in Swedish, another word o AU use case would have at most 3 or 4 words in match o Consistency of implementation in different terminology services Authoring use cases currently supported by description templates A set of the "\*ectomy"s and "\*itis"s Querying Linda Proposed syntax to support querying and return of alternative refset attributes (To be included in the SNOMED Refset Bird Query Language Attributes

•	Example use cases  Execution of maps from international substance concepts to AMT substance concepts  Find the anatomical parts of a given anatomy structure concept (in  Anatomy structure and part association reference set)
	<ul> <li>Find potential replacement concepts for an inactive concept in record</li> <li>Find the order of a given concept in an Ordered component reference set</li> <li>Find a concept with a given order in an Ordered component reference set</li> </ul>

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Potential syntax to consider (brainstorming ideas)
  SELECT ??

    SELECT 123 |referenced component|, 456 |target component|

          FROM 799 |Anatomy structure and part association refset|
          WHERE 123 |referenced component| = (< 888 |Upper abdomen structure| {{ term = "*heart*" }} )
         SELECT id, moduleld
          FROM concept
          WHERE id IN (< |Clinical finding|)
          AND definitionStatus = |primitive|
         SELECT id, moduleld
          FROM concept, ECL("< |Clinical finding") CF
          WHERE concept.id = CF.sctid
          AND definitionStatus = |primitive|
         SELECT ??? |id|, ??? |moduleId|
          FROM concept ( < |Clinical finding| {{ term = "*heart*" }} {{ definitionStatus = |primitive| }} )
         Question - Can we assume some table joins - e.g. Concept.id = Description.conceptId etc ??
         Examples

    Try to recast relationships table as a Refset table + graph-based extension

    Find primitive concepts in a hierarchy

  ○ ROW ... ?
       ROWOF (|Anatomy structure and part association refset|) ? (|referenced component|, |target
         component|)
              same as: ^ |Anatomy structure and part association refset|
         ROWOF (|Anatomy structure and part association refset|) . |referenced component|
              same as: ^ |Anatomy structure and part association refset|
         ROWOF (|Anatomy structure and part association refset|) {{ |referenced component| = << |Upper
          abdomen structure|}} ? |targetComponentId|
         ROWOF~(<9000000000496009|Simple~map~type~reference~set|~\{\{~term="*My~hospital*"\}\})~\{\{-1,2,3,3,4\}\}
          449608002|Referenced component| = 80581009 |Upper abdomen structure|}}?
         90000000000505001 |Map target|
            • (ROW (< 90000000000496009|Simple map type reference set| {{ term = "*My hospital*"}}) :
              449608002|Referenced component| = 80581009 |Upper abdomen structure| ).
              900000000000505001 |Map target|
  ° #...?
         # |Anatomy structure and part association refset| ? |referenced component\
         # (|Anatomy struture and part association refset| {{|referenced component| = << |Upper abdomen structure|) ? |targetComponentid|
  o ? notation + Filter refinement
       |Anatomy structure and part association refset| ? |targetComponentId|
         |Anatomy structure and part association refset| ? |referencedComponent| (Same as ^ |Anatomy
          (|Anatomy structure and part association refset| {{ |referencedComponent| = << |Upper abdomen
          structure}})? |targetComponentId|
         structure}})? |referencedComponent|
         ( |My ordered component refset|: |Referenced component| = |Upper abdomen structure ) ? |priority
         ? |My ordered component refset| {{ |Referenced component| = |Upper abdomen structure| }}
          . |priority order|
         ? |My ordered component refset| . |referenced component|
              equivalent to ^ |My ordered component refset|
         ? (<|My ordered component refset|) {{ |Referenced component| = |Upper abdomen
          structure| }} . |priority order|
         ? (<|My ordered component refset| {{ term = "*map"}} ) {{ |Referenced component| = |Upper
          abdomen structure| }} . |priority order|
         REFSETROWS (<|My ordered component refset| {{ term = "*map"}} ) {{ |Referenced
          component| = |Upper abdomen structure| }} SELECT |priority order|

    Specify value to be returned

         ? 449608002 |Referenced component|?
         734139008 | Anatomy structure and part association refset
         ^ 734139008 | Anatomy structure and part association refset| (Same as previous) ? 90000000000533001 | Association target component|?
         734139008 | Anatomy structure and part association refset |
         ? 90000000000533001 |Association target component|?
         734139008 |Anatomy structure and part association refset| :
          449608002 |ReferencedComponent| = << |Upper abdomen structure|
         ? 90000000000533001 |Association target component|?
          734139008 |Anatomy structure and part association refset|
          {{ 449608002 | referencedComponent| = << |Upper abdomen structure| }}
          (? 90000000000533001 |Association target component|?
          734139008 | Anatomy structure and part association refset | :
          449608002 |ReferencedComponent| = (<< |Upper abdomen structure|) : |Finding site| = *)
```

Returning Attributes	Michael Lawley	Proposal (by Michael) for discussion  Currently ECL expressions can match (return) concepts that are either the source or the target of a relationship triple (target is accessed via the 'reverse' notation or 'dot notation', but not the relationship type (ie attribute name) itself.  For example, I can write:
Reverse Member Of	Michael Lawley	<ul> <li>?  Simple map refset . maptarget  ? (^ Simple map refset  AND &lt;  Fracture )</li> <li>Proposal for discussion</li> <li>What refsets is a given concept (e.g. 421235005  Structure of femur ) a member of?</li> <li>Possible new notation for this:         <ul> <li>^ . 421235005  Structure of femur </li> <li>? X ? 421235005  Structure of femur  = ^ X</li> </ul> </li> </ul>

#### Expression Peter G. ON HOLD WAITING FROM IMPLEMENTATION FEEDBACK FROM INTERNAL TECH TEAM Templates Williams WIP version - https://confluence.ihtsdotools.org/display/WIPSTS/Template+Syntax+Specification Added a 'default' constraint to each replacement slot - e.g. default (72673000 |Bone structure (body structure)|) Enabling 'slot references' to be used within the value constraint of a replacement slot - e.g. [[ +id (<< 123037004 |Body structure| MINUS << \$findingSite2) @findingSite1]] Allowing repeating role groups to be referenced using an array - e.g. \$rolegroup[1] or \$rolegroup[! =SFLFI Allow reference to 'SELF' in role group arrays Adding 'sameValue' and 'allOrNone' constraints to information slots - e.g. sameValue (\$site), allOrNone (\$occurrence) See changes in red here: 5.1. Normative Specification Examples: [[+id]]: [[1..\*] @my\_group sameValue(morphology)] { |Finding site| = [[ +id (<<123037004 |Body structure (body structure)| MINUS << \$site[! SELF ] ) @site ]] , |Associated morphology| = [[ +id @my\_morphology ]] } • Implementation feedback on draft updates to Expression Template Language syntax Use cases from the Quality Improvement Project: Multiple instances of the same role group, with some attributes the same and others different. Eg same morphology, potentially different finding sites. Note that QI Project is coming from a radically different use case. Instead of filling template slots, we're looking at existing content and asking "exactly how does this concept fail to comply to this template?" For discussion: [[0..1]] { [[0..1]] 246075003 | Causative agent| = [[+id (< 410607006 | Organism| ) @ Organism]] } Is it correct to say either one of the cardinality blocks is redundant? What are the implications of 1..1 on either side? This is less obvious for the self grouped case. **Road Forward for SI** 1. Generate the parser from the ABNF and implement in the Template Service 2. User Interface to a) allow users to specify template at runtime b) tabular (auto-completion) lookup STL Template Service to allow multiple templates to be specified for alignment check (aligns to none-off) Output must clearly indicate exactly what feature of concept caused misalignment, and what condition was not met. Additional note: QI project is no longer working in subhierarchies. Every 'set' of concepts is selected via ECL. In fact most reports should now move to this way of working since a subhierarchy is the trivial case. For a given template, we additionally specify the "domain" to which it should be applied via ECL. This is much more specific than using the focus concept which is usually the PPP eg Disease. FYI Michael Chu Description Kai **Templates** Kewley ON HOLD Previous discussion (in Malaysia) Overview of current use Review of General rules for generating descriptions Removing tags, words Conditional removal of words Automatic case significance Generating PTs from target PTs Reordering terms Mechanism for sharing general rules - inheritance? include? Description Templates for translation Status of planned specification

Query Language	Linda Bird	FUTURE WORK
- Summary from previous		Examples: version and dialect
meetings		
		<pre>^/version/20160131 o &lt;&lt; 64572001  Disease  {{ synonym = "*heart*" }} VERSION http://snomed.info/sct /90000000000207008/version/20180131</pre>
		<< 64572001  Disease  {{ FSN = "*heart*" }} VERSION http://snomed.info/sct/9000000000000000000000000000000000000
		sion/20180131  o < 64572001  Disease  {{ FSN = "*heart*" }} VERSION http://snomed.info/sct/900000000000207008/ver
		sion/20180131, DIALECT W  < <64572001  Disease  {{ preferredTerm = "*heart*"}} VERSION http://snomed.info/sct
		/90000000000207008/version/20180131, <b>DIALECT</b> Y  o << 64572001  Disease  {{ acceptableTerm = "*heart*"}} <b>VERSION</b> http://snomed.info/sct
		/900000000000207008/version/20180131, <b>DIALECT</b> Y  ° (* {{ term = "*heart*" }} <b>VERSION</b> http://snomed.info/sct/9000000000207008/version/20180131, <b>DIAL</b>
		ECT Z) MINUS (* {{ term = "*heart*" }} VERSION http://snomed.info/sct/9000000000207008/version/20170731, DIAL
		ECT W)  × X MINUS Y WHERE X = *, Y = (* {{ term = "*heart*" }}) VERSION http://snomed.info/sct
		/900000000000207008/version/20180131, <b>DIALECT</b> W
		Notes
		<ul> <li>Allow nested where, version, language</li> <li>Scope of variables is inner query</li> </ul>
		Examples: where
		<ul> <li>X MINUS &gt;! X WHERE X = (&lt;&lt; 1234 : 5678 = &lt;&lt; 6547)</li> <li>X MINUS &gt;! X WHERE X = (&lt;&lt; 1234 : 5678 = &lt;&lt; 6547) VERSION http://snomed.info/sct</li> </ul>
		/9000000000000207008/version/20180131  O X MINUS >! Y WHERE X = (<< 1234 : 5678 = << 6547), Y = (<< 1456) VERSION http://snomed.info/sct
		/900000000000207008/version/20180131    X MINUS >! X WHERE X = (<< 1234 : 5678 = << 6547) VERSION http://snomed.info/sct
		/9000000000000207008/version/20180131 , LANGUAGE 90000000000508004  GB English   ° X MINUS >! X WHERE X = (<< 1234 : 5678 = << 6547) VERSION http://snomed.info/sct
		/90000000000207008/version/20180131, <b>LANGUAGE</b> 999001881000000108 GB clinical extension LRS , 9000000000508004  GB English
		X minus >! X WHERE X = ( < M WHERE M = (< 1234))) VERSION http://snomed.info/sct /900000000000207008/version/20180131, DIALECT 999001881000000108 GB clinical extension LRS , 90000000000508004  GB English
		Notes
		<ul> <li>Allow nested variable definitions, but recommend that people don't due to readability</li> <li>Scope of variables is the inner query</li> <li>No recursion e.g X WHERE X = 1234 MINUS X</li> <li>ie can't use a variable in its own definition</li> </ul>
		• ie X is only known on the left of the corresponding WHERE, and not on the right of the WHERE

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Keywords for Term-based searching:

    D.term

       O.term = "*heart*"
      O.term = wild:"*heart*"
      O.term = regex:".*heart.*"
      O.term = match:"hear att"
       O.term = (sv) wild: "*heart*"

    D.languageCode

       D.languageCode = "en"
       D.languageCode = "es"

    D.caseSignificanceId

         D.caseSignificanceId = 90000000000448009 |entire term case insensitive|
       • D.caseSignificanceId = 90000000000017005 |entire term case sensitive|

    D.caseSignificance

    D.caseSignificance = "insensitive"

    D.caseSignificance = "sensitive"
    D.caseSignificance = "initialCharInsensitive"

    D.typeld

       D.typeId = 9000000000000001 |fully specified name|
       D.typeId = 9000000000013009 |synonym|

    D.typeId = 90000000000550004 |definition|

    D.type

         D.type = "FSN"
       D.type = "fullySpecifiedName"
      D.type = "synonym"D.type = "textDefinition"

    D.acceptabilityld

    D.acceptabilityId = 90000000000549004 |acceptable|

       O.acceptabilityId = 9000000000548007 |preferred|

    D.acceptability

       D.acceptability = "acceptable"
       D.acceptability = "preferred"
Additional Syntactic Sugar

    FSN

       ○ FSN = "*heart"

    D.term = "*heart", D.type = "FSN"
    D.term = "*heart", D.typeId = 9000000000000001 |fully specified name|

      • FSN = "*heart" LANGUAGE X

    D.term = "*heart", D.type = "FSN", D.acceptability = * LANGUAGE X
    D.term = "*heart", D.typeId = 90000000000000001 |fully specified name|, acceptabilityId = * LAN

              GUAGE X
  synonym
       o synonym = "*heart"

    D.term = "*heart", D.type = "synonym"
    D.term = "*heart", D.typeld = 9000000000013009 |synonym|

       synonym = "*heart" LANGUAGE X
            D.term = "*heart", D.type = "synonym", D.acceptability = * LANGUAGE X
              D.term = "*heart", D.typeId = 90000000000013009 |synonym|, (D.acceptabilityId =
              9000000000549004 |acceptable| OR D.acceptabilityId = 9000000000548007 |preferred|) LAN
              GUAGE X

    synonymOrFSN

       synonymOrFSN = "*heart"
            synonym = "*heart" OR FSN = "*heart"
            D.term = "*heart", (D.type = "synonym" OR D.type = "fullySpecifiedName")
       synonymOrFSN = "*heart" LANGUAGE X
            synonym = "*heart" OR FSN = "*heart" LANGUAGE X

D.term = "*heart", (D.type = "synonym" OR D.type = "fullySpecifiedName"), D.acceptability = * LAN
              GUAGE X

    textDefinition

    textDefinition = "*heart"
    D.term = "*heart", D.type = "definition"

            D.term = "*heart", D.typeId = 9000000000550004 |definition|
      textDefinition = "*heart" LANGUAGE X
            ■ D.term = "*heart", D.type = "definition", D.acceptability = * LANGUAGE X
            D.term = "*heart", D.typeId = 900000000000550004 |definition|, D.acceptabilityId = * LANGUAGE

    Unacceptable Terms

       ○ (D.term = "*heart") MINUS (D.term = "*heart", D.acceptability = * LANGUAGE X)
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		Language preferences using multiple language reference sets  • LRSs that use the same Language tend to use 'Addition' - i.e. child LRS only includes additional
		acceptable terms, but can override the preferred term  • E.g. Regional LRS that adds local dialect to a National LRS  • E.g. Specialty-specific LRS  • E.g. Irish LRS that adds local preferences to the en-GB LRS
		<ul> <li>99999900  Irish language reference set  PLUS  GB English reference set </li> <li>LRSs that define a translation to a different language tend to use 'Replacement' - i.e. child LRS replaces set of acceptable and preferred terms for any associated concept</li> </ul>
		<ul> <li>E.g. Danish LRS that does a partial translation of the International Release</li> <li>999999  Danish language reference set  ELSE  GB English reference set </li> </ul>
Confirm next meeting date /time	Linda Bird	Next meeting is scheduled for Wednesday 1st April 2020 at 20:00 UTC.

### File Modified

No files shared here yet.