## 2016-11-09 - SLPG Meeting

### Date & Time

20:00 UTC Wednesday 9th November 2016

### GoToMeeting Details

[Click here to see GoToMeeting joining information](#)

### Goals

- To discuss Compositional Grammar document migration and feedback
- To report on progress with Expression Constraint Language v1.1
- To discuss outcomes of SNOMED URI discussions in Wellington
- To progress SNOMED Template Syntax

### Attendees

- **Chair:** Linda Bird
- **Project Group:** Michael Lawley, Alejandro Lopez Osornio, Brian Carlsen, Ed Cheetham, Harold Solbrig

### Apologies

- Daniel Karlsson

### Observers

- Andrew Perry

### Agenda and Meeting Notes

<table>
<thead>
<tr>
<th>Description</th>
<th>Owner</th>
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<tbody>
<tr>
<td>Welcome, introductions and apologies</td>
<td>Linda Bird</td>
<td>Review agenda for today's meeting</td>
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<tr>
<td>Agenda review</td>
<td>Linda Bird</td>
<td>Review agenda for today's meeting</td>
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<tr>
<td>Compositional Grammar</td>
<td>Linda Bird</td>
<td>- Document migration to <a href="http://snomed.org/scg">http://snomed.org/scg</a></td>
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<td>- Feedback</td>
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<td>- numericValue = decimalValue / integerValue</td>
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<td>- integerValue = ([&quot;-&quot;/&quot;+&quot;] digitNonZero *digit) }/ zero</td>
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<td></td>
<td></td>
<td>- decimalValue = integerValue .* 1*digit</td>
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<td></td>
<td>- How to represent -0.5</td>
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<td></td>
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<td>- Solution A (which allows &quot;+0&quot; and &quot;-0.00&quot;)</td>
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<td></td>
<td>- numericValue = ([&quot;-&quot;/&quot;+&quot;] (decimalValue / integerValue))</td>
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<tr>
<td></td>
<td></td>
<td>- integerValue = (digitNonZero *digit) }/ zero</td>
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<td>- decimalValue = integerValue .* 1*digit</td>
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<td>- Solution B (which does not allow &quot;+0&quot; and &quot;-0.00&quot;)</td>
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<td>- numericValue = decimalValue / integerValue</td>
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<td>- integerValue = ([&quot;-&quot;/&quot;+&quot;] digitNonZero *digit) }/ zero</td>
</tr>
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<td></td>
<td>- decimalValue = (integerValue .* 1<em>digit) }/ ([&quot;-&quot;/&quot;+&quot;] zero .</em> 1*zero digitNonZero *digit)</td>
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<tr>
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<td></td>
<td>- Outcome - The group decided to go with Solution A</td>
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<td>- Requires parser update (<a href="http://apg.ihtsdotools.org">http://apg.ihtsdotools.org</a>) and github update (parser)</td>
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| Expression Constraint Language v1.1    | Linda Bird    | - Published to [http://snomed.org/ecl](http://snomed.org/ecl)        |
|                                        |               | - Announcement for ECL v1.1 made                                      |
|                                        |               | - Patch required for concrete values (as above) - v1.1.1             |
|                                        |               | - Requires parser update ([http://apg.ihtsdotools.org](http://apg.ihtsdotools.org)) and github update (parser and examples) |
URI Standard | Linda Bird
---|---

**URIs for SNOMED syntaxes**

- **SCG** - SNOMED Compositional Grammar (with version option)
  - [http://snomed.info/syntax/scg](http://snomed.info/syntax/scg)
  - [http://snomed.info/syntax/scg/version/2.1](http://snomed.info/syntax/scg/version/2.1)
- **ECL** - Expression Constraint Language (with version option)
  - [http://snomed.info/syntax/ecl](http://snomed.info/syntax/ecl)
  - [http://snomed.info/syntax/ecl/version/1.1](http://snomed.info/syntax/ecl/version/1.1)
- **QRL** - SNOMED Query Language (with version option)
  - [http://snomed.info/syntax/qrl](http://snomed.info/syntax/qrl)
  - [http://snomed.info/syntax/qrl/version/1.0](http://snomed.info/syntax/qrl/version/1.0)
- **STS** - SNOMED Template Syntax (with version option)
  - [http://snomed.info/syntax/sts](http://snomed.info/syntax/sts)
  - [http://snomed.info/syntax/sts/version/1.0](http://snomed.info/syntax/sts/version/1.0)
- **ETL** - Expression Template Language (with version option)
  - [http://snomed.info/syntax/etl](http://snomed.info/syntax/etl)
  - [http://snomed.info/syntax/etl/version/1.0](http://snomed.info/syntax/etl/version/1.0)
- **CTL** - Expression Constraint Template Language (with version option)
  - [http://snomed.info/syntax/ctl](http://snomed.info/syntax/ctl)
  - [http://snomed.info/syntax/ctl/version/1.0](http://snomed.info/syntax/ctl/version/1.0)
- **QTL** - Query Template Language (with version option)
  - [http://snomed.info/syntax/qtl](http://snomed.info/syntax/qtl)
  - [http://snomed.info/syntax/qtl/version/1.0](http://snomed.info/syntax/qtl/version/1.0)

**URIs for SNOMED syntax instances**

- **ID** - Expression (either precoordinated or postcoordinated)
  - [http://snomed.info/id/404684003](http://snomed.info/id/404684003)
  - The concept "404684003 Clinical finding"  
  - [http://snomed.info/id/404684003%3A47429007%3D79654002](http://snomed.info/id/404684003%3A47429007%3D79654002)
    - The expression "404684003 Clinical finding : 47429007 Associated with = 79654002 Edema"
- **ECL** - Expression Constraint
  - [http://snomed.info/ecl/%3C404684003%3C%3C47429007%3D%3C%3C79654002](http://snomed.info/ecl/%3C404684003%3C%3C47429007%3D%3C%3C79654002)
  - The expression constraint "<404684003 Clinical finding : <47429007 Associated with <79654002 Edema>"
- **QRL** - Query
- **ETL** - Expression Template
- **CTL** - Expression Constraint Template
- **QTL** - Query Template

**URIs for SNOMED syntax instances - with versioning**

- **SNOMED syntax instance using versioned edition**
  - **ID (pre)** - [http://snomed.info/sct/900000000000207008/version/20160731/id/404684003](http://snomed.info/sct/900000000000207008/version/20160731/id/404684003)
  - **ID (post)** - [http://snomed.info/sct/900000000000207008/version/20160731/id/404684003%3A47429007%3D79654002](http://snomed.info/sct/900000000000207008/version/20160731/id/404684003%3A47429007%3D79654002)
  - **ECL** - [http://snomed.info/sct/900000000000207008/version/20160731/ecl/%3C404684003%3C%3C47429007%3D%3C%3C79654002](http://snomed.info/sct/900000000000207008/version/20160731/ecl/%3C404684003%3C%3C47429007%3D%3C%3C79654002)
- **SNOMED syntax instance using syntax version**
  - **ID (pre)** - [http://snomed.info/syntax/scg/version/2.0](http://snomed.info/syntax/scg/version/2.0)
  - **ID (post)** - [http://snomed.info/syntax/scg/version/2.0](http://snomed.info/syntax/scg/version/2.0)
  - **ECL** - [http://snomed.info/syntax/ecl/version/1.1](http://snomed.info/syntax/ecl/version/1.1)
- **SNOMED syntax instance using versioned edition and syntax version**
  - **ID (pre)** - [http://snomed.info/sct/900000000000207008/version/20160731/syntax/scg/version/2.0](http://snomed.info/sct/900000000000207008/version/20160731/syntax/scg/version/2.0)
  - **ID (post)** - [http://snomed.info/sct/900000000000207008/version/20160731/syntax/ecl/version/1.1](http://snomed.info/sct/900000000000207008/version/20160731/syntax/ecl/version/1.1)
Upgrade "SNOMED URI Standard" to "SNOMED IRI Standard"?

- URIs work with ASCII characters
- IRIs work with Unicode character sets
- Wikipedia (IRI)

The Internationalized Resource Identifier (IRI) was defined by the Internet Engineering Task Force (IETF) in 2005 as a new internet standard to extend upon the existing Uniform Resource Identifier (URI) scheme. The new standard was published in RFC 3987. While URIs are limited to a subset of the ASCII character set, IRIs may contain characters from the Universal Character Set (Unicode/ISO 10646), including Chinese or Japanese kanji, Korean, Cyrillic characters, and so forth.

### Remove slots and replace slots

- **Remove slot**
  
  ```
  [[ 1..1 ]], [[ 1..1 @slotName ]]
  ```

- **Replace slot**
  
  ```
  [[ +id (<<138875005 |SNOMED CT concept|) ]], [[ +id ]], [[ + ]], [[ +id(<<138875005 |SNOMED CT concept) @slotName $valueReference ]]]
  ```

Example: CT of X

```mermaid
tg
71388002 |Procedure| : [[1..1 @roleGroup1]]
260868004 |Method| = 312251004 |Computed tomography imaging action|
405813007 |Procedure site - Direct| = [[+id(<<442083009 |Anatomical or acquired body structure|)]]@site)
```
Replace slots - Type of replacement

- Replace with precoordinated expression (ie concept): \[
[ +id ] \] ?? \[
[ +cpt ] 
\]
- Replace with any expression: \[
[ +id ] 
\]
- Replace with an expression constraint: \[
[ +ecl ] 
\]
- Replace with a character string: \[
[ +str ] 
\]

Use cases include replacing comparison operators "=" and "\="

**Example 1:** MRCM domainTemplateForPrecoordination (Finding with explicit context)

- Use cases include replacing comparison operators "=" and "\="
- Example 1:
  - MRCM domainTemplateForPrecoordination (Finding with explicit context)
  - \[
  [ +id(<< 243796009 |Situation with explicit context (situation)|: [0..0] 408730004 |Procedure context| = *, [0..0] 363589002 |Associated procedure| = *)
  \]
  - \[
  [0..*] \]
  - \[
  [1..*] \]
  - \[
  |Finding context| = \[
  [ +id(<< 410514004 |Finding context value (qualifier value)|)
  \]
  - \[
  [1..*] \]
  - \[
  = \[
  [ +id(<< 408729000 |Clinical finding (finding)| OR << 272379006 |Event (event)|)
  \]
  - \[
  [0..*] \]
  - \[
  [ +id(<< 410514004 |Finding context value (qualifier value)|)
  \]
  - \[
  [0..*] \]
  \]
- Example 2:
  - MRCM domainTemplateForPostcoordination (Finding with explicit context)
  - \[
  [ +id(<< 243796009 |Situation with explicit context (situation)|: [0..0] 408730004 |Procedure context| = *, [0..0] 363589002 |Associated procedure| = *)
  \]
  - \[
  [0..*] \]
  - \[
  [1..*] \]
  - \[
  |Finding context| = \[
  [ +scg(<< 410510008 |Temporal context value (qualifier value)|)
  \]
  - \[
  [0..*] \]
  - \[
  = \[
  [ +scg(<< 404684003 |Clinical finding (finding)| OR << 272379006 |Event (event)| OR << 363787002 |Observable entity (observable entity)| OR << 416698001 |Link assertion (link assertion)| OR << 71388002 |Procedure (procedure)|)
  \]
  - \[
  [0..*] \]
  - \[
  [ +scg(<< 410514004 |Finding context value (qualifier value)|)
  \]
  - \[
  [0..*] \]
  \]

**Cardinality**

- Cardinality of relationship group
  - Pattern: \[
  [ 1..* ] \{ .. \}
  \]
  - Default operator between repeats: "\*" / "\*AND"
  - Example: CT of X
    - 71388002 |Procedure| = [1..1] 260686004 |Method| = 312251004 |Computed tomography imaging action|
    - 405813007 |Procedure site - Direct| = \[
      [ +id (<<442083009 |Anatomical or acquired body structure|)
      @site]
    \]
- Cardinality of attribute value pair
  - Pattern: \[
  [ 1..* ] 123345 |Attribute| = 234456 |Value|
  \]
  - Default operator between repeats: "\*" / "\*AND"
  - Example: CT of X
    - 71388002 |Procedure| : \[
      [ 260686004 |Method| = 312251004 |Computed tomography imaging action|
      405813007 |Procedure site - Direct| = \[
        [ +id (<<442083009 |Anatomical or acquired body structure|)
        @site]
      \]
    \]
- Cardinality of focus concepts
  - Pattern: \[
  [ \* \* ] 1..* \]
  - Default operator between repeats: "\*" / "\*AND"
  - Example:
    - How would we achieve an operator of "OR" in an Expression Constraint? - e.g. \[
      [ +ecl 1..* ] \]
    - A OR B OR C
    - Example:
      - \[
        [ +id(<< 404684003 |Clinical finding|)
        [1..*] \]
    \]
- Other types of cardinalities?

**Other Topics raised by Ed**

- The fact that a template processor would need to 'clean-up' any left over characters, such as ":". I suggest that we try to document the steps that a template processor should follow to turn a template into an expression, constraint etc.
| Confirm next meeting date /time | Linda Bird | Next meeting to be held at 20:00 UTC on Wednesday 7th December |

**Meeting Files**

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