A SNOMED Perspective on Semantic Interoperability

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February 2005 Workshop on Semantic Interoperability
Semantic Interoperability is Hard

- At least 3 major types of standards, and *their interactions*, have to be taken into account
  - Terminologies / ontologies
  - Information models / architectures
  - Standards for decision support rules / guidelines
Standards-based Semantic Interoperability

Decision Support Model & Inference Mechanisms
+ Encoded Guidelines, Rules

Guideline Standards

Interface

SNOMED CT

Interface

Terminology Model
+ Coded Data

Interface

Information Model
+ Patient Data Structure

HL7 RIM

Diagram based on Figure 1 in Rector AL et al. “Interface of Inference Models with Concept and Medical Record Models” AIME 2001: 314-323
Focus: Terminology

- The rest of this presentation will focus on just one of the three points of the triangle
Building Terminology Standards is Time-Consuming and Expensive

- **Read Codes**
  - 34 million pounds through 1999

- **SNOMED RT**
  - 17 million dollars over 5 years 1997-2002

- **Merger of the two -> SNOMED CT**
  - Additional 9 million dollars over 3 years 1999-2002

- Not counting multiple millions of dollars per year in in-kind contributions from Kaiser Permanente and clinical organizations and volunteers
Current Support for SNOMED Maintenance

• US support:
  – NLM contract $5M/year (renewable in 5-year increments)
    • makes it freely available in perpetuity
  – CHI and NCVHS endorsement for gov’t use

• UK adoption for NPfIT

• Other countries
Moving Forward

• Terminology maintenance requires broad-based cooperation
• Cooperation thrives on openness and reciprocity
• SNOMED has already made significant moves in this direction
  – e.g. liberalization of academic licensing
  – e.g. open description of its underlying description logic, and clarification that this DL is non-proprietary
• Additional steps are required if we expect SNOMED to be made “open source” and managed as a “meritocracy”
Need for Change

- SNOMED International recognizes it will be necessary to change its business model and governance, if it is to accommodate growing international interest, especially:
  - EU Interest
  - WHO Interest
- This change must be done with care and due deliberation
- Let’s not have one foot on the dock and the other in the boat, while the boat drifts away . . .
EU Interest
Recommendation 18

• The Commission, should examine the business case for negotiating an EU-wide licence for the EU to use SNOMED CT.
• The study should consider whether there is a justification for a body to provide a channel for EU input into the further development and maintenance of SNOMED since it still needs to be improved.
• The EU should further consider whether there an international agreement could be reached whereby SNOMED could be managed by a global public body.
• The business case should consider support for establishing European interests in creating and maintaining a unified approach to medical terminology in the wider context of world markets and specialist requirements
The Case of eHealth

• Considerable advantages could accrue if SCT became the standard for the EU as a whole.
• However this raises a question of licensing, translations and mechanisms for maintenance whereby EU member states could influence future SNOMED developments and maybe additions to the terminology (some terms may be peculiar to particular member states)

CEN/ISSS report draft V8.2, November 2004
WHO interest

- The FDC (Family Development Committee) accepted that there should be engagement between classifications and terminologies.
- Agreed to consider terminologies in relation to the WHO-FIC.
- The depth of engagement between WHO-FIC and SNOMED-CT now required a stronger structure than the FIC terminologies working group. This would be further discussed by the planning committee.

Draft report WHO FIC Network meeting Reykjavik October 24-30, 2004
What is the Future for SNOMED International?
SNOMED® International business model has two distinct functions

- **STANDARDS ORGANIZATION**
  - IT, Production, Administrative, R&D, Boards

- **Commercial Products related to SNOMED®**
An alternative SNOMED® International business model

GLOBAL GOVERNANCE ORGANIZATION
{IT, Production, Administrative, R&D, Boards}

GLOBAL TERMINOLOGY SERVICE PROVIDER *

and/or

SECRETARIAT **

CAP core competencies
* Terminology producer * QA/Accreditation provider ** Association manager
Barriers

- Governance model: making it concrete and getting buy-in and endorsement
- Mechanisms for support and cooperation: Who pays? Who does the work? Who benefits?
- Localization & translation: how are language translations funded? How are localizations supported? How are the global/local tensions to be adjudicated?
If you would like to make suggestions

• Contact any of us:
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    • Chair, SNOMED International Editorial Board
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    • Chair, SNOMED International Authority
  – Martin Severs, martin.severs@port.ac.uk
    • UK Member, SNOMED Int’l Authority
    • Drafting a discussion document on possible options that could be considered for governance of an international terminology standards organization
Localization & Translation

• Perception: SNOMED is an American (i.e. US) terminology

• Reality: it has always been international
  – But its main countries today are US & UK
  – And its main language is English

• Support for localization and translations is built into the structure of SNOMED
  – Spanish translation provides extremely valuable experience in translation and localization