

FRSAD Model

Functional Requirements for Subject Authority Data

A Report prepared by the
Functional Requirements for Subject Authority Records (FRSAR) WG

Presentation by
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Acknowledgement

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- FRSAR Working Group members: Leda Bultrini, Lois Mai Chan, Jonathan Furner, Edward O'Neill, Gerhard Riesthuis, Athena Salaba, Diane Vizine-Goetz, Ekaterina Zaytseva, Marcia Lei Zeng, and Maja Zumer.
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The “FRBR Family”

- **FRBR: *Functional Requirements for Bibliographic Records***
 - Original framework (approved 1997, published 1998)
 - Defines all entities
 - Focus on Group 1 entities
- **FRAR /FRAD: *Functional Requirements for Authority Data***
 - Authority records
 - Focus on Group 2 entities
 - Just published (June 22, 2009)
- **FRSAR /FRSAD: *Functional Requirements for Subject Authority Data***
 - Focus on Group 3 entities
 - Established April 2005
 - Draft Report released for comments (June 23, 2009)
 - <http://nkos.slis.kent.edu/FRSAR/>

Entities in FRBR

- **Group 1**
(products of intellectual and artistic endeavor)
 - Work
 - Expression
 - Manifestation
 - Item
- **Group 2**
(actors related to Group1 entities)
 - Person
 - Corporate Body
 - [Family (added by FRAD)]
- **Group 3**
(subjects of works)
 - All in Groups 1 and 2 plus:
 - Concept
 - Object
 - Event
 - Place

FRSAR Terms of Reference

FRSAR = Functional Requirements for Subject Authority Records

- to build a conceptual model of Group 3 entities within the FRBR framework as they relate to the *aboutness* of works,
- to provide a clearly defined, structured frame of reference for relating the data that are recorded in subject authority records to the needs of the users of those records, and
- to assist in an assessment of the potential for international sharing and use of subject authority data both within the library sector and beyond.

User Tasks

FRBR

Find

Identify

Select

Obtain

FRAD

Find

Identify an entity

Contextualize, place
in context, explore
relationships

Justify the form of an
access point

FRSAD

Find a subject entity
or entities

Identify

Select

Explore relationships,
etc.

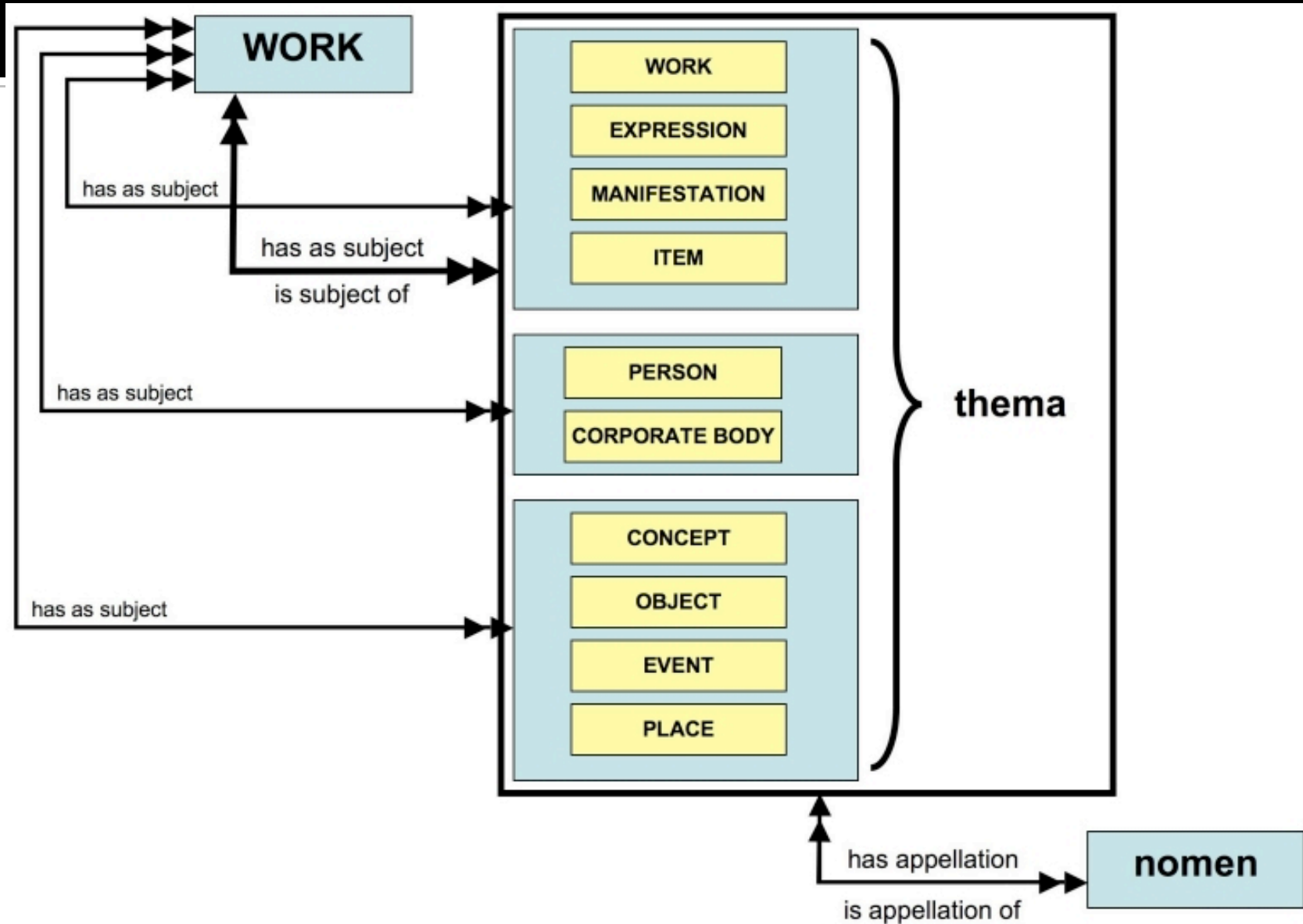
'Issues' with Group 3

- **How to subdivide (if at all)?**
 - **Object, Concept, Event, Place**
 - **Concrete/abstract**
 - **Class/instance**
 - **Other models**

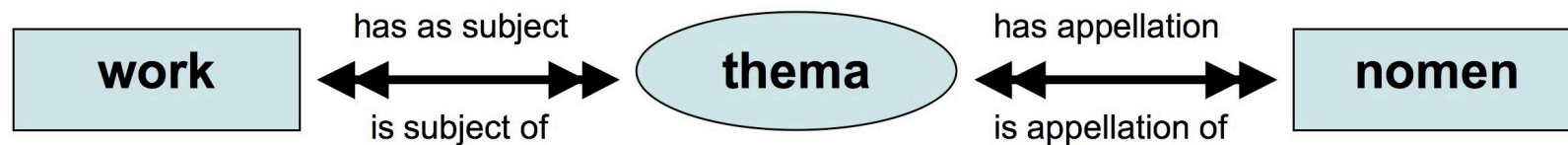
Scenarios discussed

- **“Continuation”**
 - Keep FRBR Group 3 entities and only analyze attributes and relationships.
- **“Expansion”**
 - Add *time* to the FRBR list.
- **“Revision”**
 - Take Ranganathan’s facets as basis.
 - Take <indec> as the basis.
 - Make a pragmatic list of entities. One example is the one by Buizza and Guerrini

FRSAD Relationship to FRBR



FRSAD Conceptual Model: Entities and Relationships



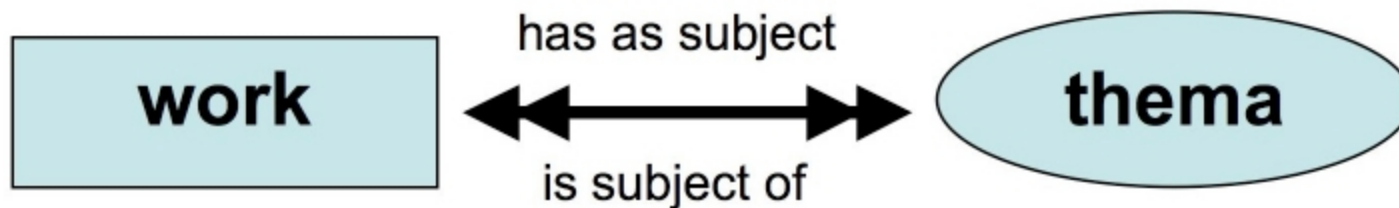
- Entities:

- Thema: any entity used as a subject of a *work*
- Nomen: any sign or sequence of signs (alphanumeric characters, symbols, sound, etc.) by which a thema is known, referred to or addressed

FRSAD Part 1:

Work-Thema Relationship

***WORK* has as subject *THEMA* /
THEMA is subject of *WORK***



This model confirms one of the basic relationships defined in FRBR:

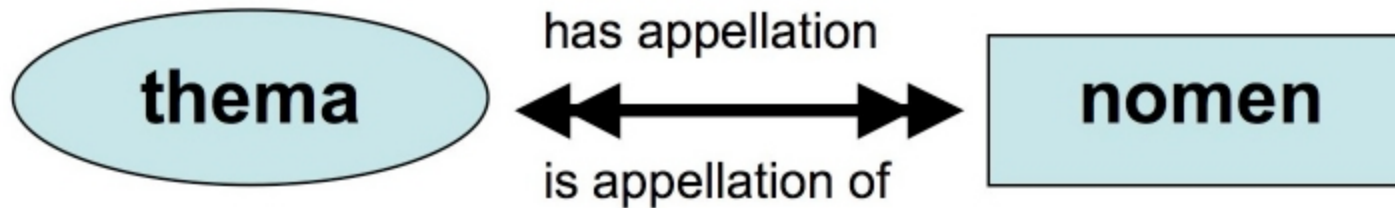
***WORK* has as subject *THEMA* / *THEMA* is subject of *WORK*.**

- *Thema* = "any entity used as a subject of a *work*".
- *Thema* includes any of the FRBR entities:
 - Group 1 and Group 2 entities and,
 - in addition, all other subjects of *works*.

FRSAD Part 2:

Thema-Nomen Relationship

THEMA has appellation ***NOMEN*** /
NOMEN is appellation of ***THEMA***



This model also proposes a new relationship:

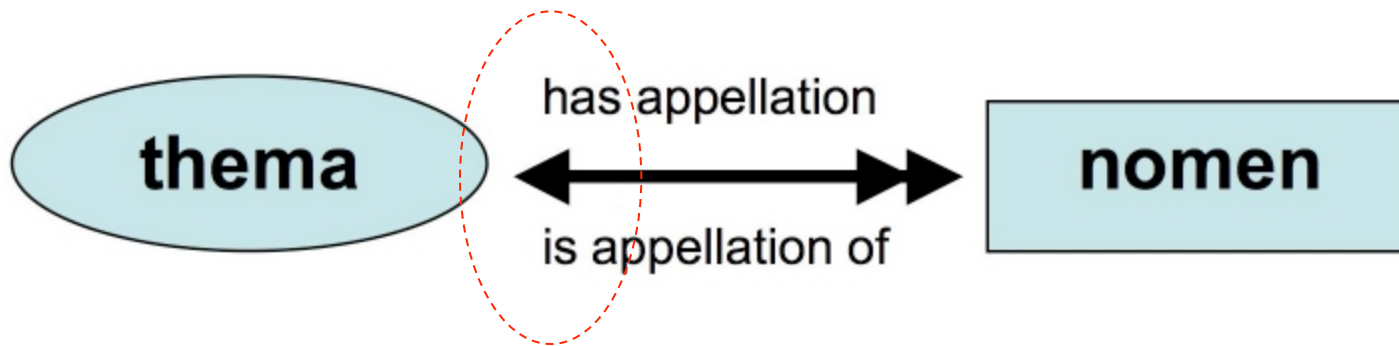
THEMA has appellation ***NOMEN*** / ***NOMEN*** is appellation of ***THEMA***.

- *NOMEN* = any sign or sequence of signs (alphanumeric characters, symbols, sound, etc.) by which a *thema* is known, referred to or addressed

FRSAD Part 2b :

Nomen-Thema

Note: in a given controlled vocabulary and within a domain, a *nomen* should be an appellation of only one *thema*



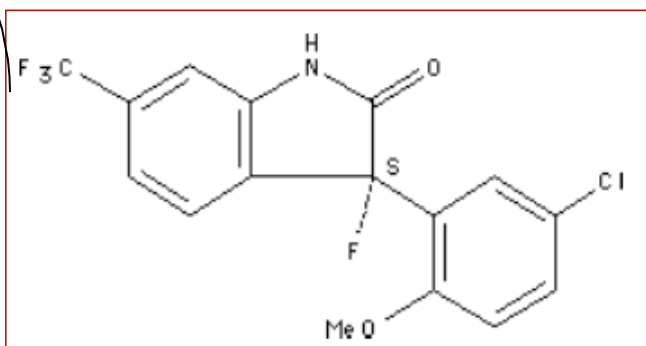
One *Thema*, many *Nomen*

Example: various nomens for the same thema

Accession Number	(AN): 2005:3738 USAN
Publication Year	(PY): 2002
Generic Name	(CN): Flindokalner
OTHER NAMES:	
Chemical Name	(CN): 2H-Indol-2-one, 3-(5-chloro-2-methoxyphenyl)-3-fluoro-1,3-dihydro-6-(trifluoromethyl)-, (3S)-
Chemical Name	(CN): (3S)-3-(5-Chloro-2-methoxyphenyl)-3-fluoro-6-(trifluoromethyl)-1,3-dihydro-2H-indol-2-one
Trade Name	(CN): MaxiPost (Bristol-Myers Squibb)
Code Designation	(CN): BMS-204352
CAS Registry No.	(RN): 187523-35-9
Molecular Formula	(MF): C ₁₆ H ₁₀ Cl F ₄ N O ₂
Lin. Str. Formula (LSF)	(LSF): C ₁₆ H ₁₀ Cl F ₄ N O ₂
Molecular Weight	(MW): 359.71

different types of nomen

Absolute stereochemistry. Rotation (+).



nomen representation="graphic"

Source: STN Database Summary Sheet: USAN
(The USP Dictionary of U.S.
Adopted Names and International Drug Names)

Choice of Terms (thema, nomen)

- Different and overlapping meaning of 'subject', 'topic', 'concept', 'class', etc.
- Different views on granularity
- 'Name' understood as 'proper name'

Therefore:

- Terms from Latin that do not have to be translated and are not loaded with other meanings

General *Thema* Relationships (applicable to all types)

- Hierarchical
 - Partitive
 - Generic
 - Instance
- Associative

Other thema-to-thema relationships are implementation-dependent

Example: Display Record of the AAT Concept "Mercury"

ID: 300011026

Record Type: concept

mercury (<mercury and amalgam>, nonferrous metal, ... Materials)

Note: Pure metallic element having symbol Hg and atomic number 80. It is a colorless, odorless, liquid at ordinary temperatures. Use also for this metal as pre- combination with other substances, to make various objects.

Terms:

- mercury** (preferred, C, D, U, LC, English-P)
- Hg** (C, UF, U, A, English)
- quicksilver** (C, UF, U, English)
- argento vivo** (C, D, U, Italian-P)

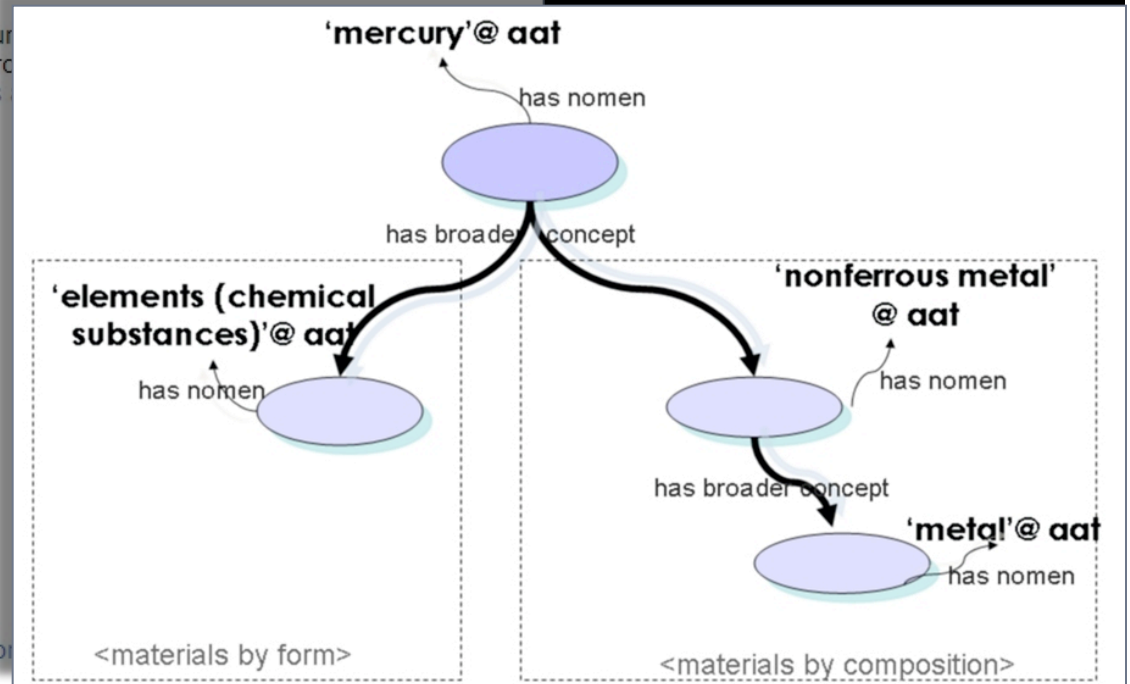
Facet/Hierarchy Code: M.MT

Hierarchical Position:

- Materials Facet
- ... Materials
- materials
- <materials by composition>
- inorganic material
- <metal and metal products>
- metal
- <metal by composition or other form>
- nonferrous metal
- <mercury and amalgam>
- mercury

Additional Parents:

- Materials Facet
- ... Materials
- materials
- <materials by form>
- <materials by chemical form>
- elements (chemical substances)
- mercury



Source: Art and Architecture Thesaurus Online

Example: From WebDewey, a record for classes related to "Mercury" (element)

Class Number: 669.71
 Segmented Number: 669/.71
 Caption: Mercury

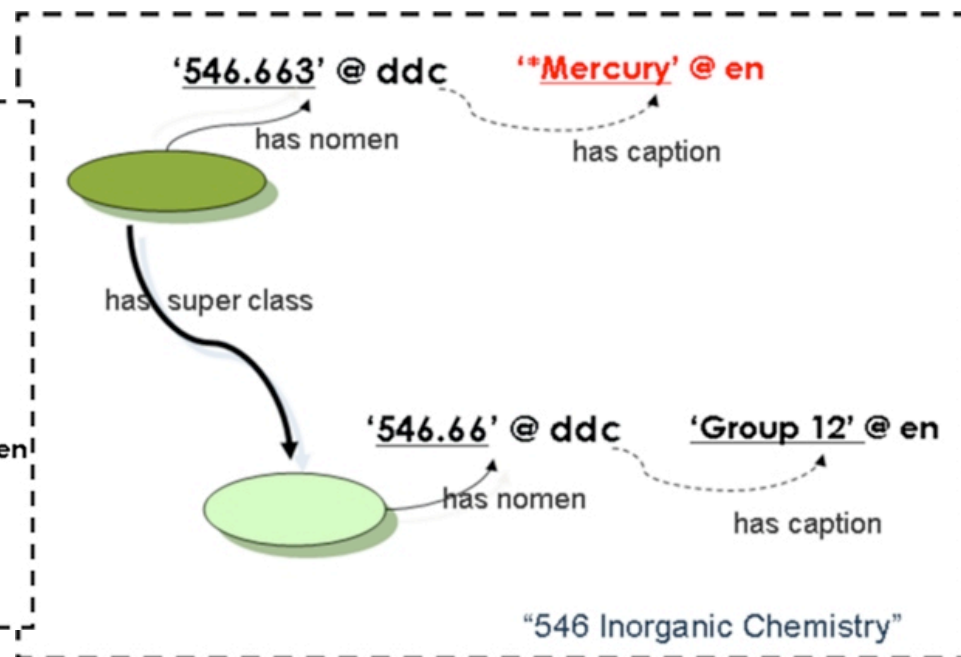
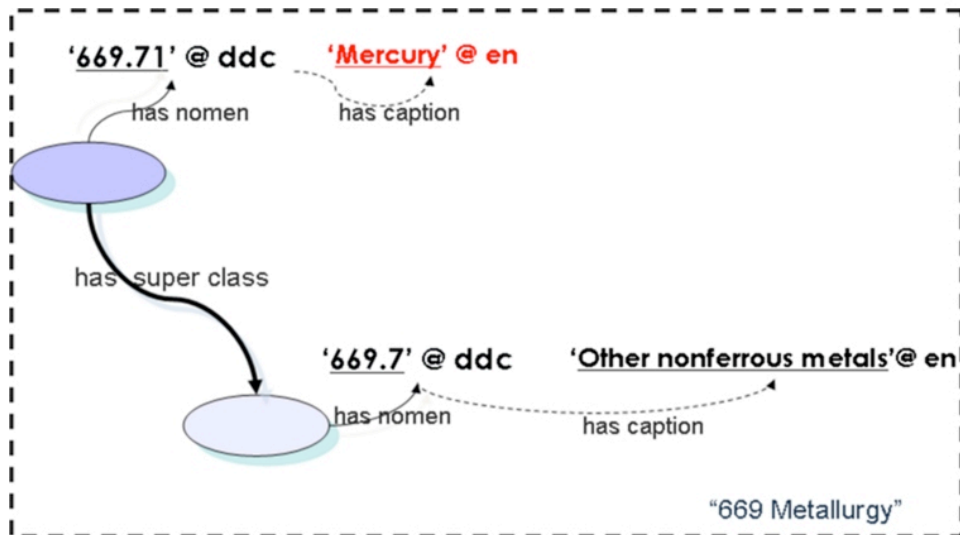
Main Classes

- 600 Technology
- 660 Chemical engineering
- 669 Metallurgy
- 669.1-669.7 Metallurgy of specific metals and their alloys
- 669.2-669.7 Nonferrous metals
- 669.7 Other nonferrous metals
- 669.71 **Mercury**

Class Number: 546.663
 Segmented Number: 546/.663
 Caption: *Mercury

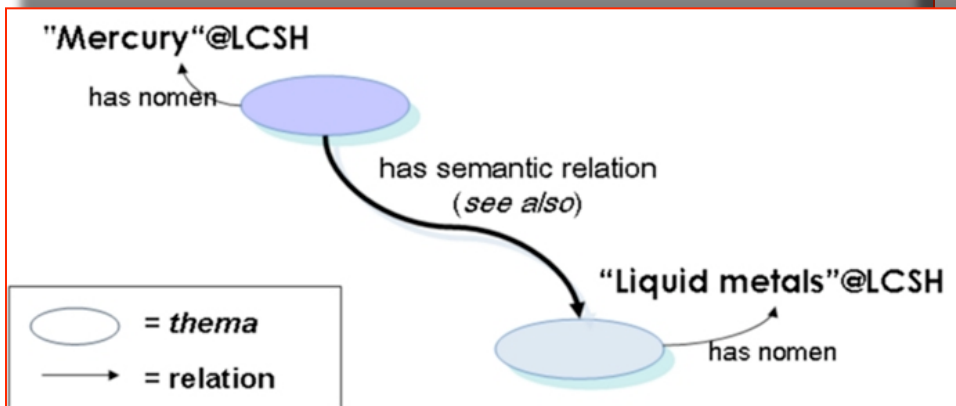
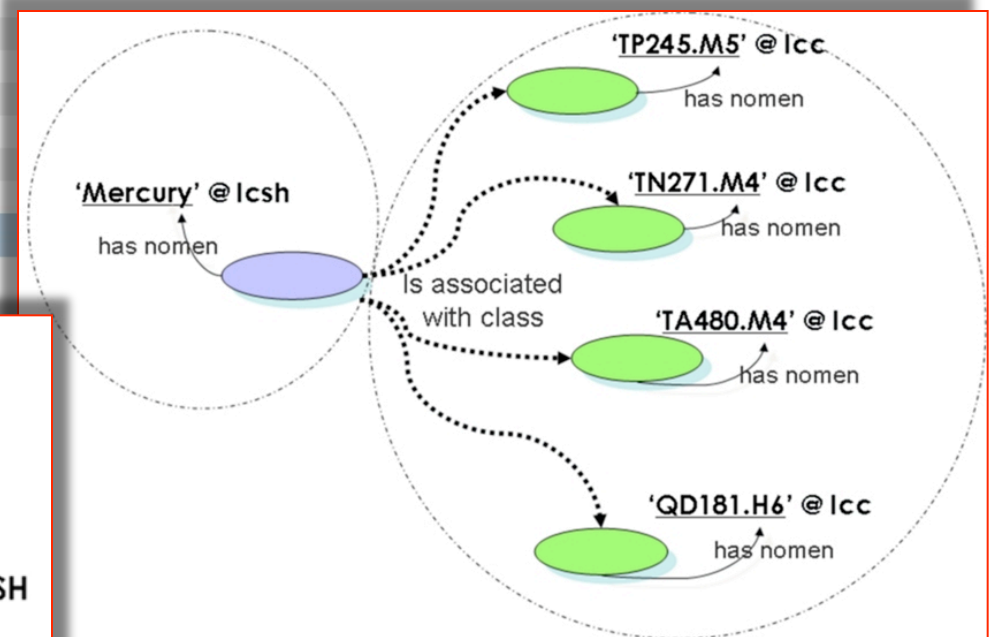
Main Classes

- 500 Science
- 540 Chemistry
- 541-547 Chemistry
- 546 Inorganic chemistry
- 546.6 Groups 8, 9, 10, 11, 12, 13, 14
- 546.66 Group 12
- 546.663 ***Mercury**
- 546.6635 Mercury (Element)--physical chemistry



Example: An online display record of the LCSH Concept "Mercury" and associated LC Classification classes

Authority File: Mercury		MARC Help	
ARN	2015071		
Rec stat	c	Entered	19860211
Type	z	Replaced	19900221112154.6
Roman		Upd status	a
Govt agn		Enc lvl	n
Series	n	Mod rec	
Ser num	n	Subj	a
		Geo subd	i
		Subdiv tp	n
		Source	
		Name use	b
		Subj use	a
		Ser use	b
		Rules	n
010	sh 85083794		
040	DLC ‡b eng ‡c DLC ‡d DLC		
053	QD181.H6 ‡c Chemistry		
053	TA480.M4 ‡c Engineering materials		
053	TN271.M4 ‡c Prospecting		
053	TP245.M5 ‡c Chemical technology		
150	Mercury		
450	Hydrargyrum		
450	Quicksilver		
550	Liquid metals ‡w g		



Nomen-to-Nomen Relationships (include but are not limited to)

■ Equivalence

Equivalence can be specified further, e.g.:

- replaces/is replaced by
- has variant form/is variant form
- has derivation/is derived from
 - has acronym/is acronym for
 - has abbreviation/is abbreviation of
 - has transliterated form/is transliteration of

■ Partitive

Importance of *THEMA-NOMEN* Model to Subject Authority Data

- to separate what are usually called *concepts* (or *topics, subjects, concepts, classes [of concepts]*) from what they are known by, referred to, or addressed.

Entity Attributes: *Thema*

- **Type**
 - attributes are implementation-dependent. *Type* is therefore the only *general* attribute, but its values are, again, implementation-dependent.
 - In most implementations we can organize *thema* according to their kind or type.

Thema Attribute: "Type" examples

- *Unified Medical Language System (UMLS) semantic types*

Entities

Physical Object

Organism

Anatomical Structure

Manufactured Object

Substance

Conceptual Entity

Idea or Concept

Finding

Organism Attribute

Intellectual Product

Language

Occupation or Discipline

Organization

Group Attribute

Group

Events

Activity

Phenomenon or Process

- *Art and Architecture Thesaurus (AAT) facets*

[Top of the AAT hierarchies]

Associated Concepts

Physical Attributes

Styles and Periods

Agents

Activities

Materials

Objects

Attributes: *Nomen*

- **Type:** type of *nomen*, such as identifier, controlled name
- **Scheme:** scheme in which the *nomen* is established
- **Reference source:** source in which the *nomen* is found
- **Representation:** way in which the *nomen* is expressed such as picture, letters, symbols, sound
- **Language:** language of a *nomen*
- **Script:** script used for the *nomen*
- **Transcription/Transliteration:** rules, system, or standard used to render the *nomen* in a different representation

Attributes: *Nomen* (cont.)

- **Encoding:** Any character set, used for a *nomen*, will be encoded according to a particular standard
- **Form:** additional information, which helps to interpret the *nomen*
- **Time of validity:** time period, in which a particular instance of *nomen* is/was used or is/was valid within a scheme
- **Audience:** community or user group for which this *nomen* is the preferred form
- **Status:** status of a particular *nomen* in a controlled vocabulary

Attributes: *Nomen* (cont.)

- Report lists the most common generally applicable attributes
- Not all are applicable in all cases
- Additional, implementation-specific attributes may be defined
- Elements such as notes and/or administrative data are currently included in subject authority records
- Records: may merge *thema* and *nomen* (or even a set of *nomen*) descriptions into one record.

Invitation for Expert Review:

"Functional Requirements for Subject Authority Data (FRSAD) -- Draft Report"

- Available through:

<http://nkos.slis.kent.edu/FRSAR/index.html>

- or directly from:

<http://nkos.slis.kent.edu/FRSAR/report090623.pdf>

- Comments deadline: July 31, 2009 to mzeng@kent.edu and asalaba@kent.edu