

# IHTSDO Observable and Investigation Model Project

Update for Terminfo 2 Project 2012-06-20

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# Observables... project

- Started ca. 2008
- Lab test in 2009
- Still on-going
- ~ Bi-weekly meetings

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**SNOMED CT Style Guide Observables (July 15, 2010) now Draft IHTSDO Standard for trial use**

Compositional Grammar (Dec 23, 2008)

SNOMED CT Abstract Models and Representational Forms (January 31, 2008)

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SNOMED CT Transformations to Normal Forms (January 31, 2007)

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# Observables model

Observable =

Quality, which is the object of observation

Observation procedure, how the quality is observed

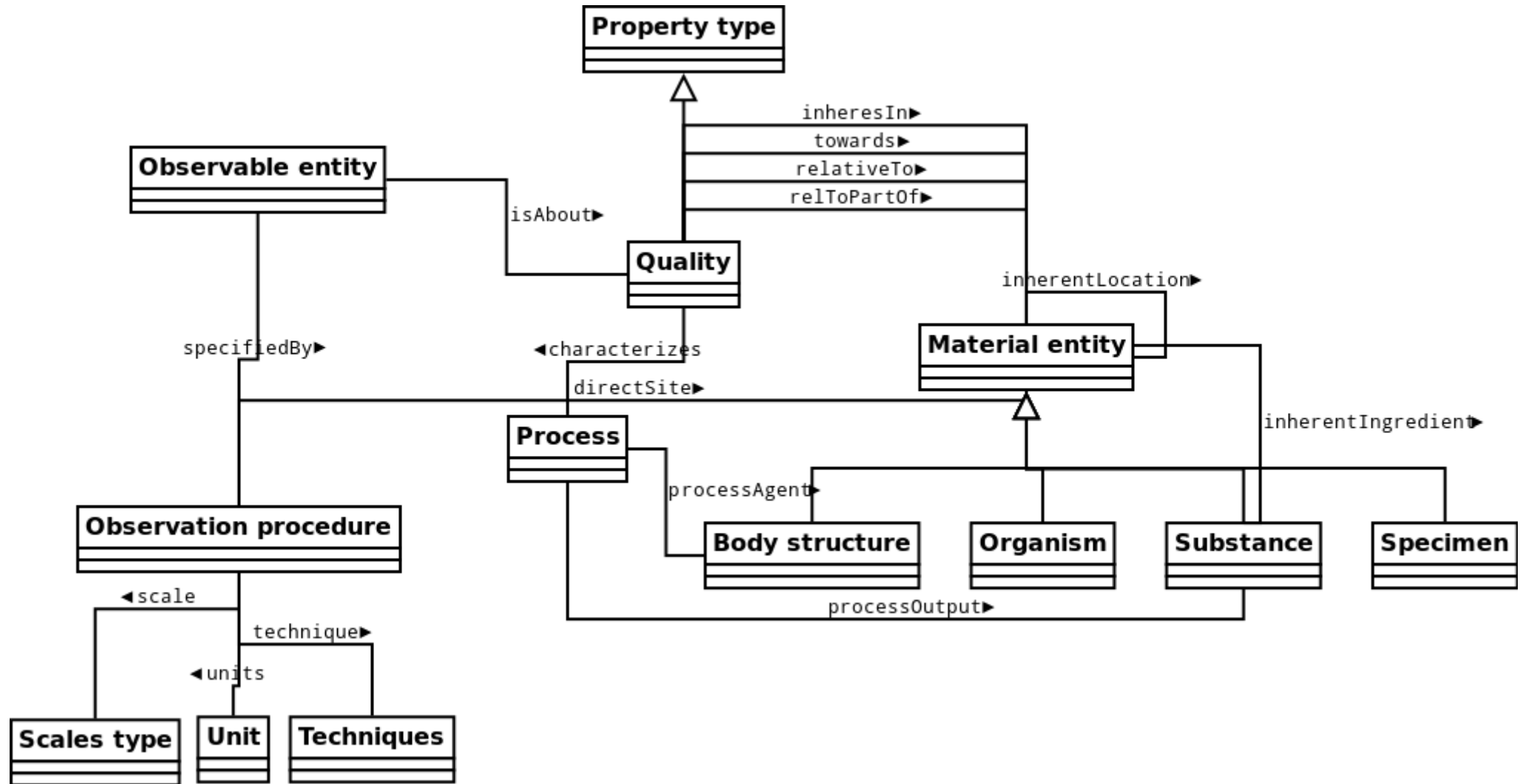
# Observables model

Observable =

PROPERTY TYPE  
INHERES IN (QUALITY OF)  
INHERENT LOCATION  
INHERENT INGREDIENT  
CHARACTERIZES  
PROCESS AGENT  
PROCESS DURATION  
PROCESS OUTPUT  
TOWARDS  
RELATIVE TO  
REL-TO PART-OF  
PRECONDITION

SCALE  
UNITS  
TECHNIQUE  
DIRECT SITE

# Observables model



WARNING! For educational purpose. Not 100 % true to the model.

# Example

- |Observable entity|:
  - |Property type| = |Temperature|,
  - |Inheres in/Quality of| = |Body internal region|,
  - |Units| = |degrees C|,
  - |Direct site| = |Mouth|

# Example

- |Observable entity|:
  - |Property type| = |Substance concentration|,
  - |Inheres in/Quality of| = |Plasma|,
  - |Towards| = |Sodium electrolyte|,
  - |Unit| = |mmol/L|,
  - |Direct site| = |Serum sample|



# Example

- |Observable entity|:
  - |Inheres in/Quality of| = |Urine|,
  - |Property type| = |Mass rate|,
  - |Characterizes| = |Excretion|,
  - |Process output| = |Cortisone|,
  - |Process duration| = |24H|,
  - |Scale| = |Quantitative|

# Example

- |Observable entity|:
  - |Property type| = |*Taxon/PRID*|,
  - |Inheres in/Quality of| = |Bacterium|,
  - |Inherent location| = |Urine|,
  - |Scale| = |Nominal|,
  - |Direct site| = |Mid-stream urine sample|

# Observables model

LOINC code	42207-1
Component	IgG.CSF
Quotients	IgG.CSF/IgG.serum
Divisors	IgG.serum
Property	ReIMCnc
System	Ser+CSF
Time aspect	Pt
Scale	Qn

NPU19660

Csf—

Immunoglobulin G;

rel.mass c.(Csf/P) = ? × 10<sup>-3</sup>

Towards

---

Inheres in

---

Relative to

---

Relative to part of

Ig G

---

Csf

---

Ig G

---

Plasma

# Example

- |Observable entity|:
  - |Property type| = |Relative concentration|,
  - |Inheres in/Quality of| = |Cerebrospinal fluid|,
  - |Towards| = |Immunoglobulin G|,
  - |Relative to| = |Immunoglobulin G|,
  - |RelTo Part Of| = |Plasma|

# Potential overlaps

- **Observables.technique vs. Observation.methodCode**
  - Quoting ISO 9000: “a specified way to carry out an activity or a process”. Examples: microscopy, manual count, immunofluorescence, by reference to IRP 75/502, ...

# Observation.methodCode

- The means or technique used to ascertain the observation
- Method is already partially specified by Act.code
  - **Additional** qualifier to specify what may not be known already from the Act.code
  - NEED NOT be used at all
- SHOULD NOT be used to identify the specific device or test-kit material

# methodCode Examples

- Blood pressure measurement method
  - arterial puncture
  - sphygmomanometer (Riva-Rocci)
- Sitting vs. supine position

# Potential overlaps

- Observables.inheresIn,  
Observables.inherentLocation,  
Observables.directSite, etc. vs.  
Observation.targetSiteCode
  - The thing in which the quality inheres (is located in).  
Example: blood, sweat, and tears
  - A code specifying detail about the anatomical site or system that is the focus of the observation if this information is **not already implied** by the observation definition or Act.code.



# Observation.targetSiteCode

- The anatomical site or system that is the focus of the observation
- Used only when the observation target site needs to be refined
- SHALL NOT conflict with what is implied about the target site or system from the observation definition and the Act.code
- Subject may be something other than a human patient or animal
  - e.g., lake (an environmental example)
- Different types of sites available in the Observables model

# targetSiteCode Examples

- Heart
- Hilus of a lymphatic node
- Lake inflow

# Potential overlaps

- **Units** and **PQ Unit** attribute
- **Precondition** and **precondition ActRelationship**
- **Observables.directSite** and **Order, Specimen**

# Example

- |Observable entity|:
  - |Property type| = |Pressure|,
  - |Inheres in/Quality of| = |Blood|,
  - |Inherent location| = |Cardiovascular system|,
  - |Technique| = |Non-invasive|,
  - |Units| = |mmHg|,
  - |Direct site| = |Left arm|

# Unit attribute

- Property of PQ (PhysicalQuantity) Datatype
- Unit of measure specified in the Unified Code for Units of Measure (UCUM)
  - default unit is 1

# Example

- |Observable entity|:
  - |Property type| = |Mass concentration|,
  - |Inheres in/Quality of| = |(Whole) Blood|,
  - |Towards| = |Glucose|,
  - |Precondition| = |Fasting patient|

# Preconditions

- Modeled in Specimen and Orders domains
- Composite Order topic
- precondition ActRelationship and Criterion Act

# Non-overlaps

- Observation.value and Observation.interpretationCode
- Act.code
  - Will be an **Observable** for many **Observations**?
  - Issue of **Observables** vs. **Evaluation procedures**
    - **Procedures** for ordering and **Observables** for reporting?
- Act.moodCode