

A Reference Model Based Interface Terminology for Generic Observations in Anatomic Pathology Structured Reports

G. Haroske, Dresden
T.Schrader, Berlin

Background

- Incremental semantic interoperability (HL7 level 1-3)
- What terminology should be used ??

Natural Language

- Size of a lesion
- Diameter of a lesion
- Distance between a lesion and the nearest resection margin

Resection margin

Distance

Lesion



Terminology

Observable entity

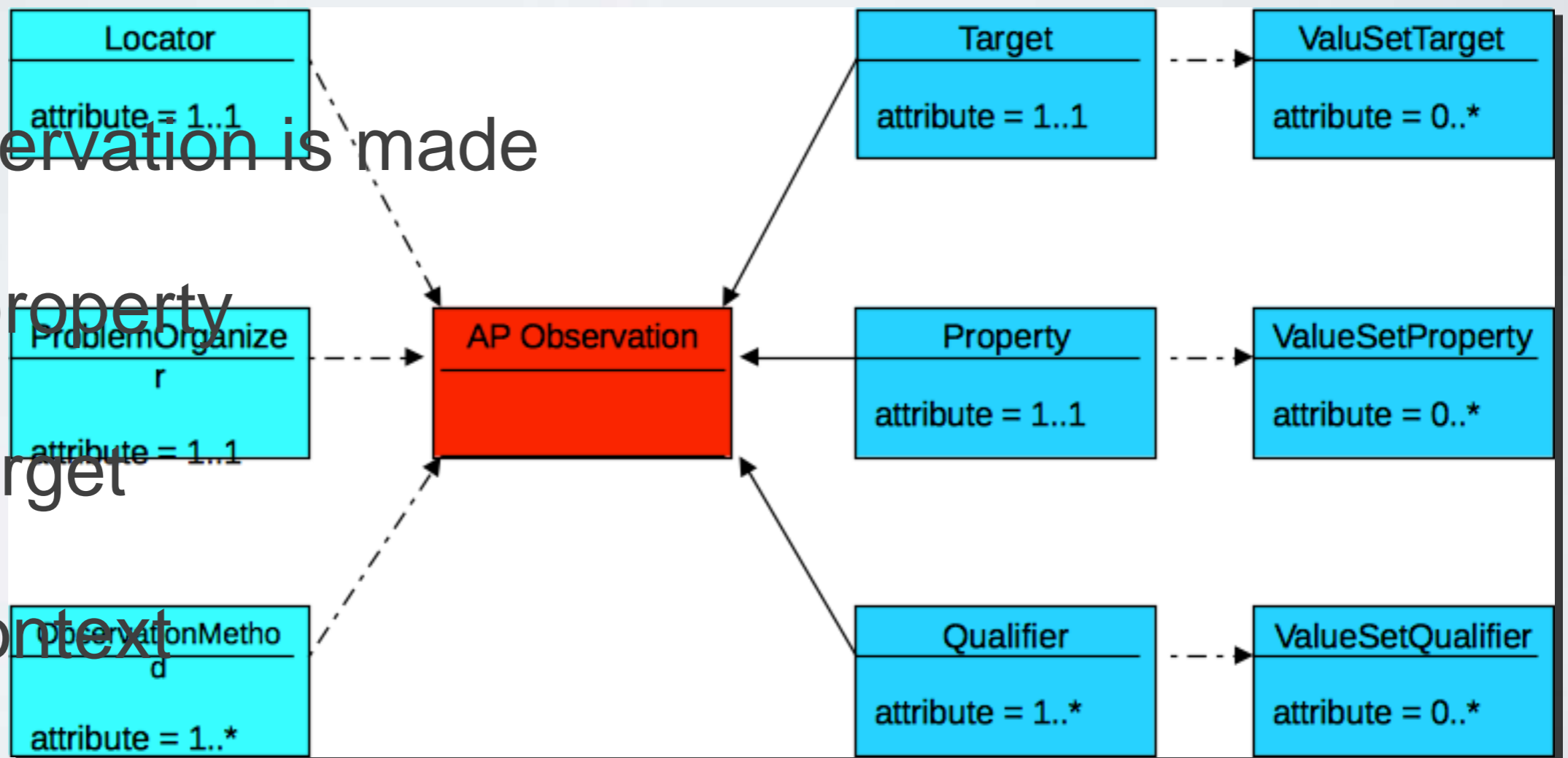
is composed of

- anatomical structure (morphologic abnormality)
- attribute (property)
- maybe some more

Reference Model for Generic AP Observation

each observation is made

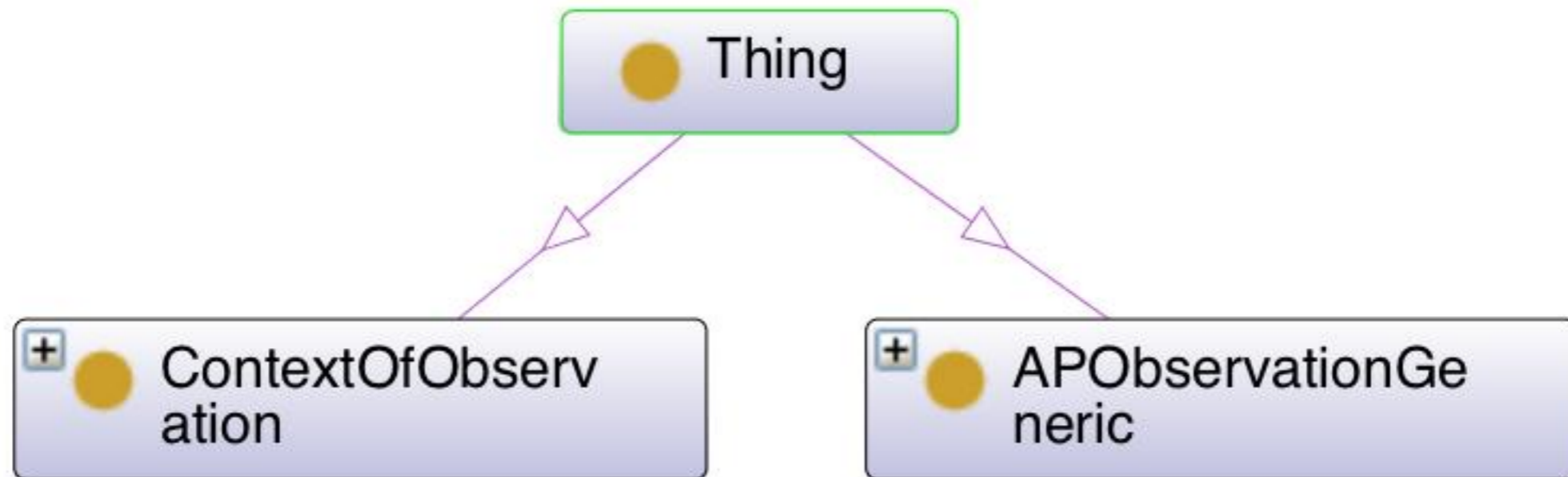
- for a property
- of a target
- in a context



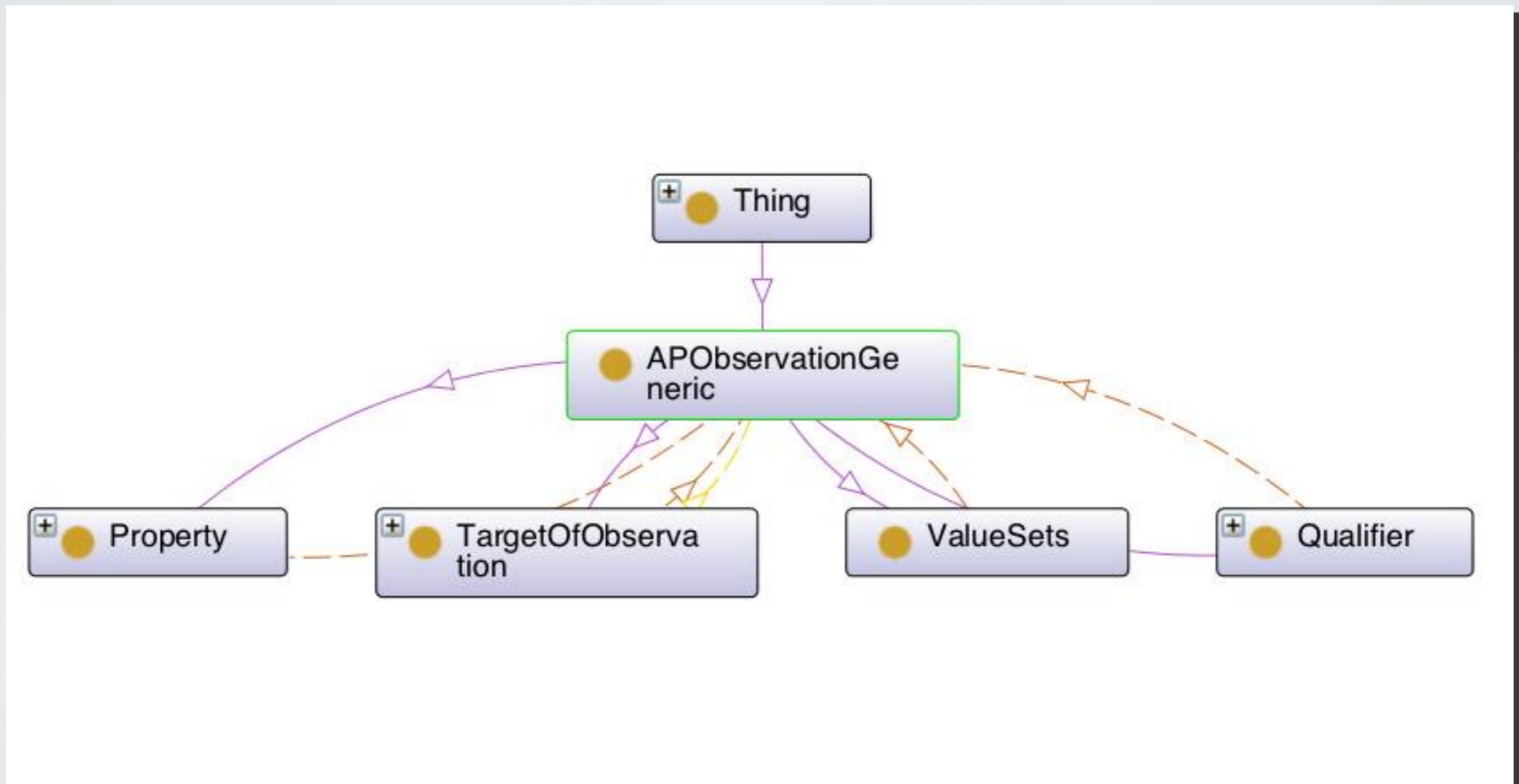
Reference Model

- domain-specific ontology
- interlinked set of clearly defined concepts
- in order to encourage clear communication among members of the same community
- already used for specific HL7 applications (TNM, Assessment Scales, etc.)

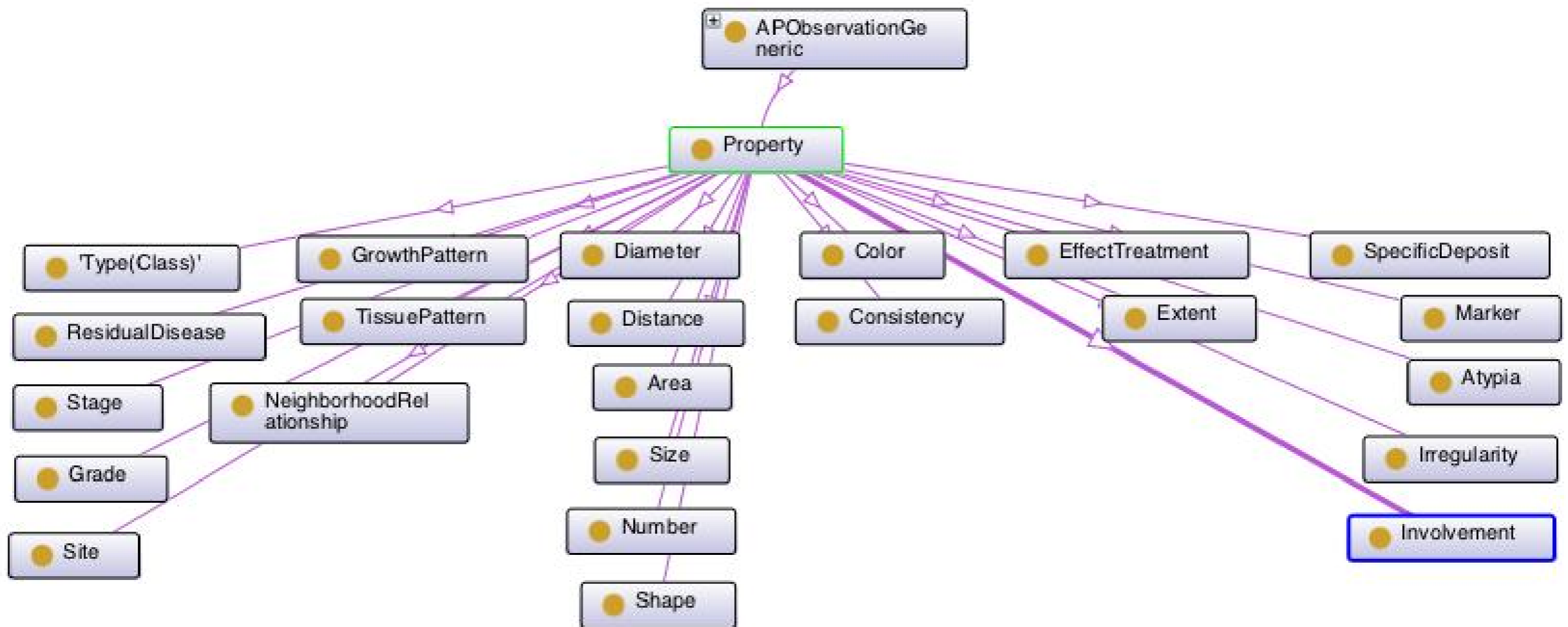
Domain Specific Ontology



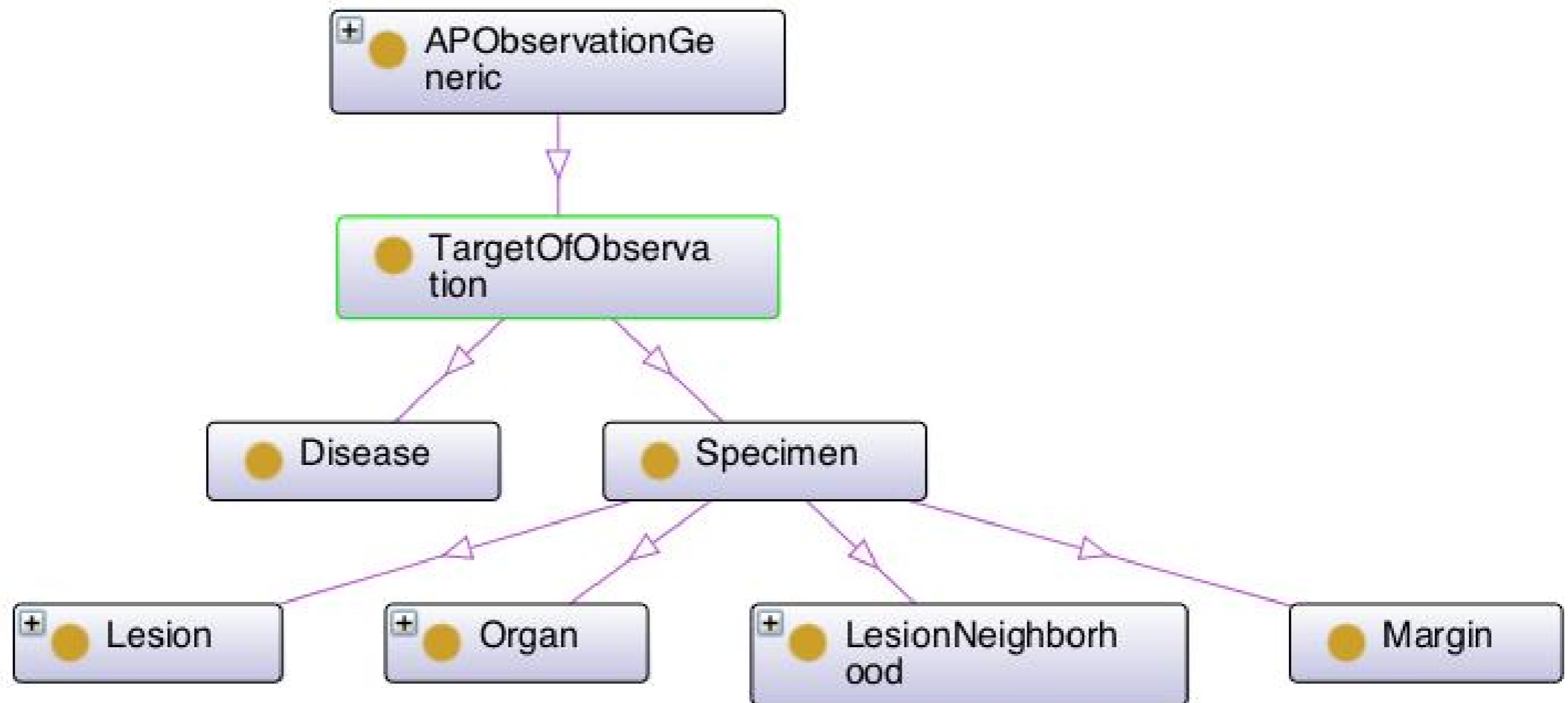
Ontology of Observation



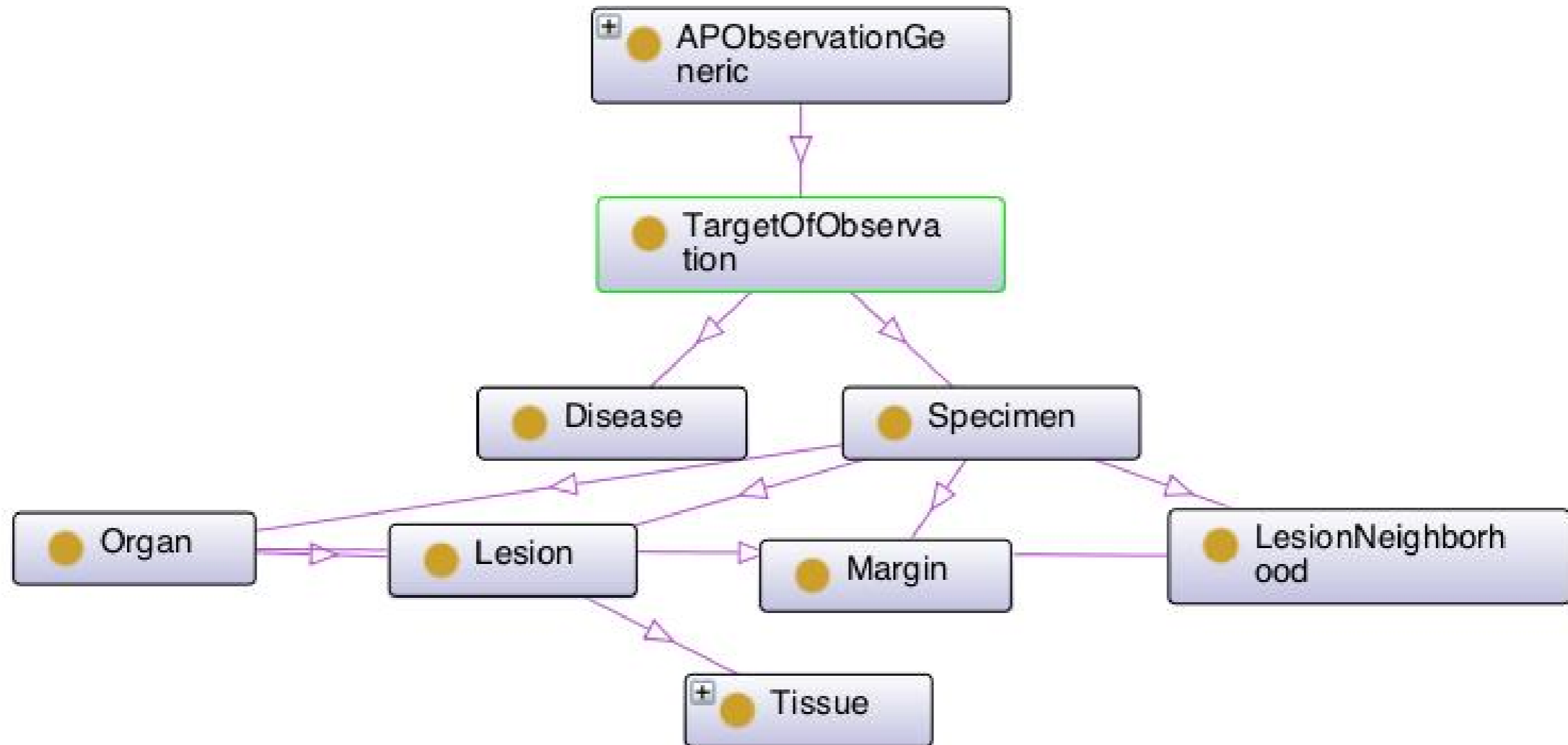
Ontology of Properties



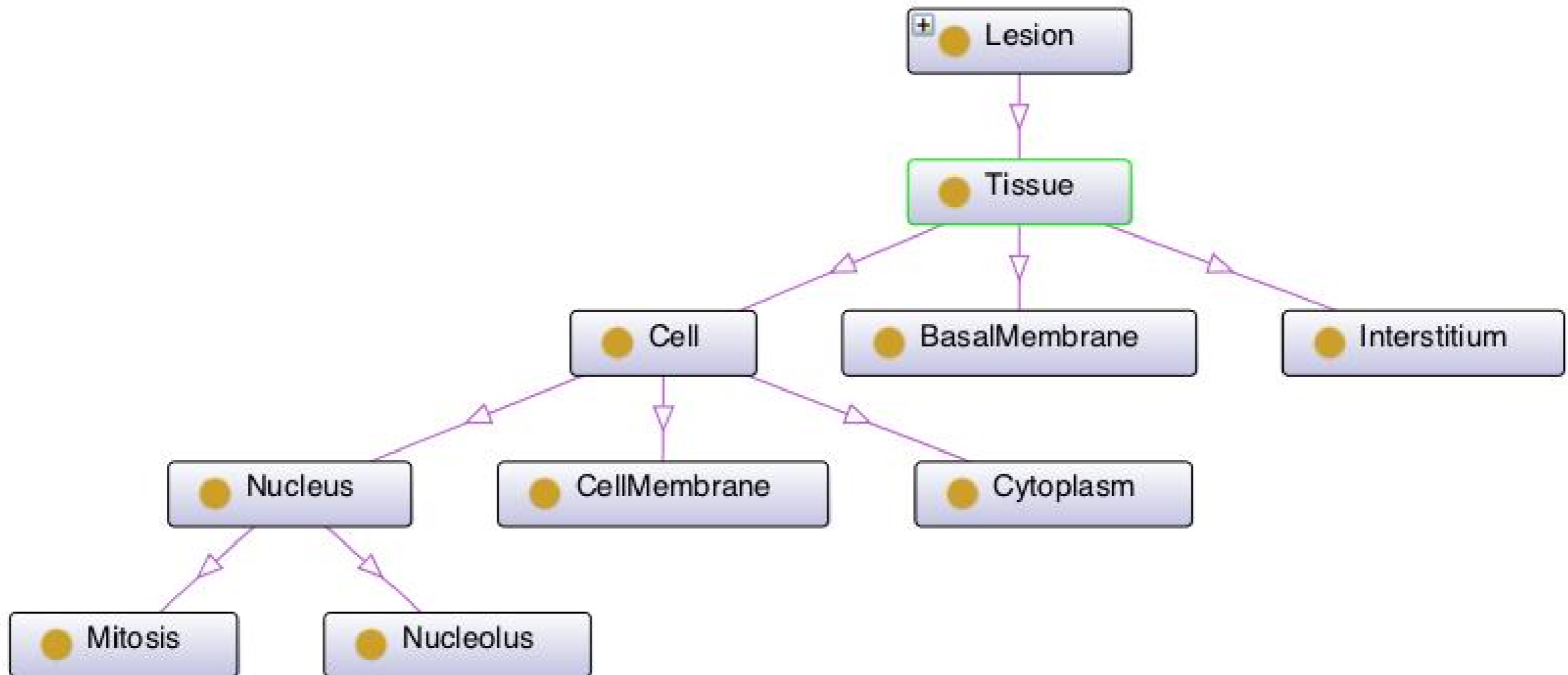
Ontology of Targets



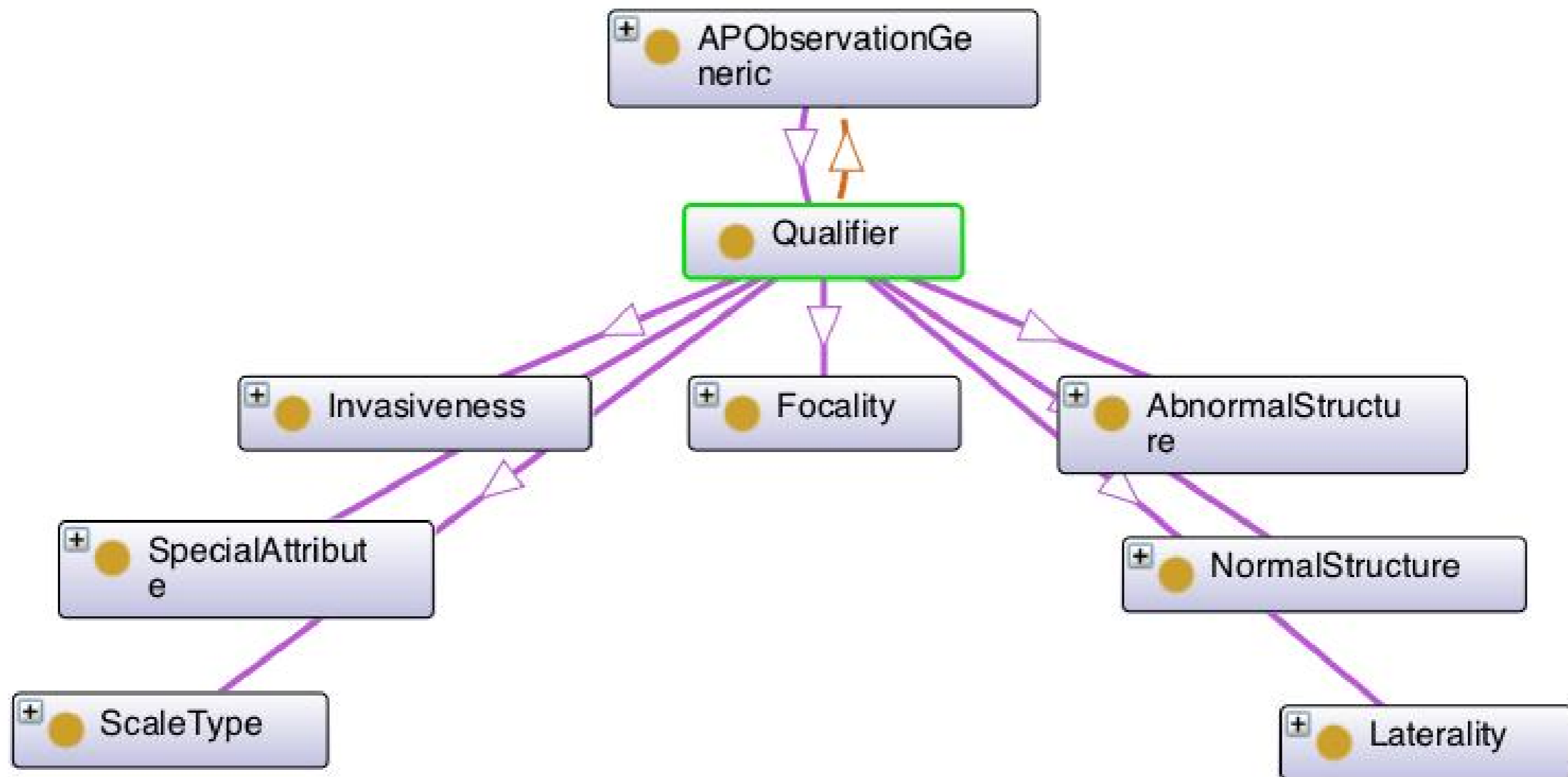
Ontology of Targets



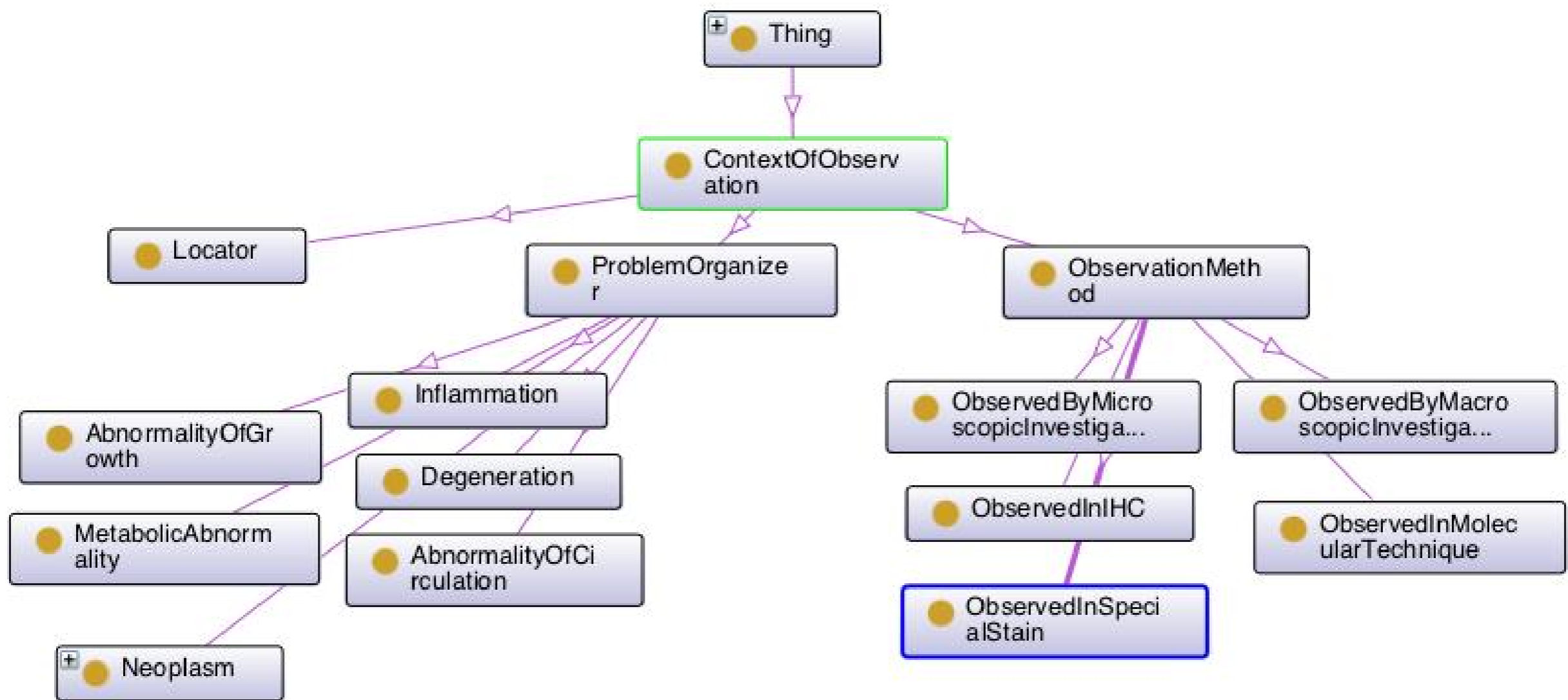
Ontology of Targets

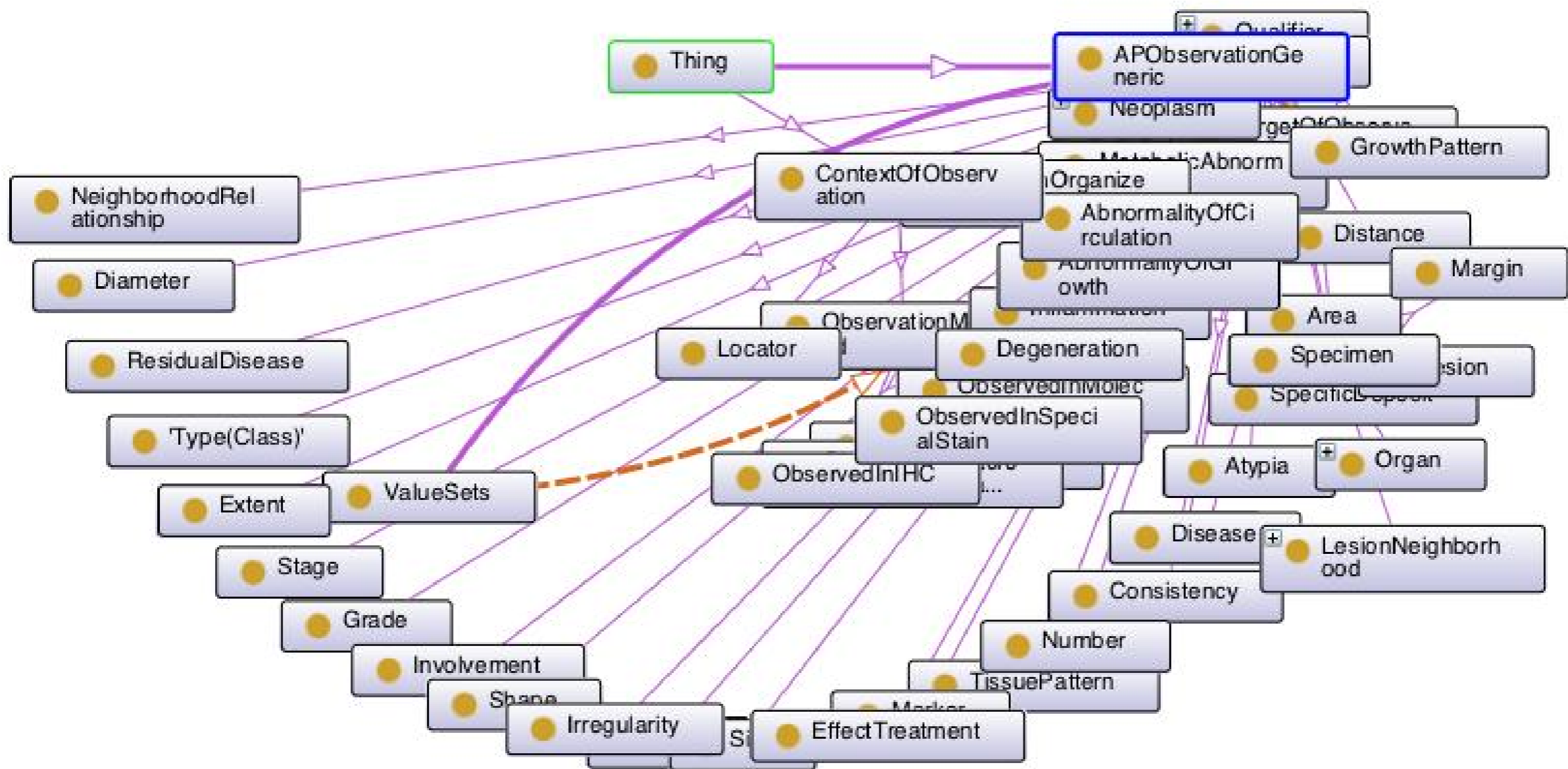


Ontology of Qualifiers



Ontology of Context





Definitions

- Terminology

- terms which give specific meanings in specific contexts

- Nomenclature

- plus rules for building of terms

- Classification

- grouping of terms according properties

- Ontology

- formal, explicit specification of a conceptualization

Terminologies

consist of

- concepts
- terms

for exact representation of (pathologic) data.

Relations between concepts make a terminology to an ontology

Concepts

A concept is a clearly separable content, that

- is unambiguously identified by a never changing number (ConceptID)
- has an unambiguous name (fully specified name)
- is linked by a set of relations with other concepts (Linkages)
- has a set of synonyms

Requirements for Terminologies

- comprehensive
- scalable
- expressing relations Darstellbarkeit von Beziehungen
- **easily adaptable to new medical developments**
- capable of handling synonyms
- ready for many languages

Dudeck 2005

Conclusions

a reference model

- makes a terminology systematic
- is basis for a style guide
- avoids multiplications of terms
- is easily to use in templates

Conclusions

generic terms for AP observations

- should be used if ever possible
- should not replace existing reference model based templates
- will make PathLex a realistic SNOMED CT extension for Anatomic Pathology