

iSamples Metadata Scheme

Stephen M. Richard, USGIN smrTucson@gmail.com

Objective

 Develop core sample description scheme applicable to material samples from any of the partner systems.



Approach

Study existing sample descriptions

- OpenContext: Samples from archaeology sites
- GEOME Genomic samples
- SESAR --- Earth Science samples
- Smithsonian various, mostly biological samples
- Review models
 - IGSN GeoSciML SESAR
 ODM2 TDWG W3CSSN



Identifiers

Thing in the world

Material Sample

Thing in information system

Metadata Sample Description ('Digital Specimen')

Identifier

Identifier

Identifier for material sample dereferences to the sample metadata record The metadata record is the digital representation of the material object, Also known as 'Digital Specimen'

Basic discovery

Sample Label and Description (Text)

Sample Description

What is it

What is it composed of

What is the sampled feature (Context)

Keywords



The Other Stuff...

Sampling Event

Where? How? Who? When?

Sample Description

Curation

Where is the sample now? Can I access the sample? How do I access the sample? How has it been modified?

Other **Properties**

Key-value pairs e.g. dimensions, mass, origin age

Domain-specific categories

Scoped Names e.g. Rock type, Biologic taxon, Culture

Related Resources

6

•

Based on the sample

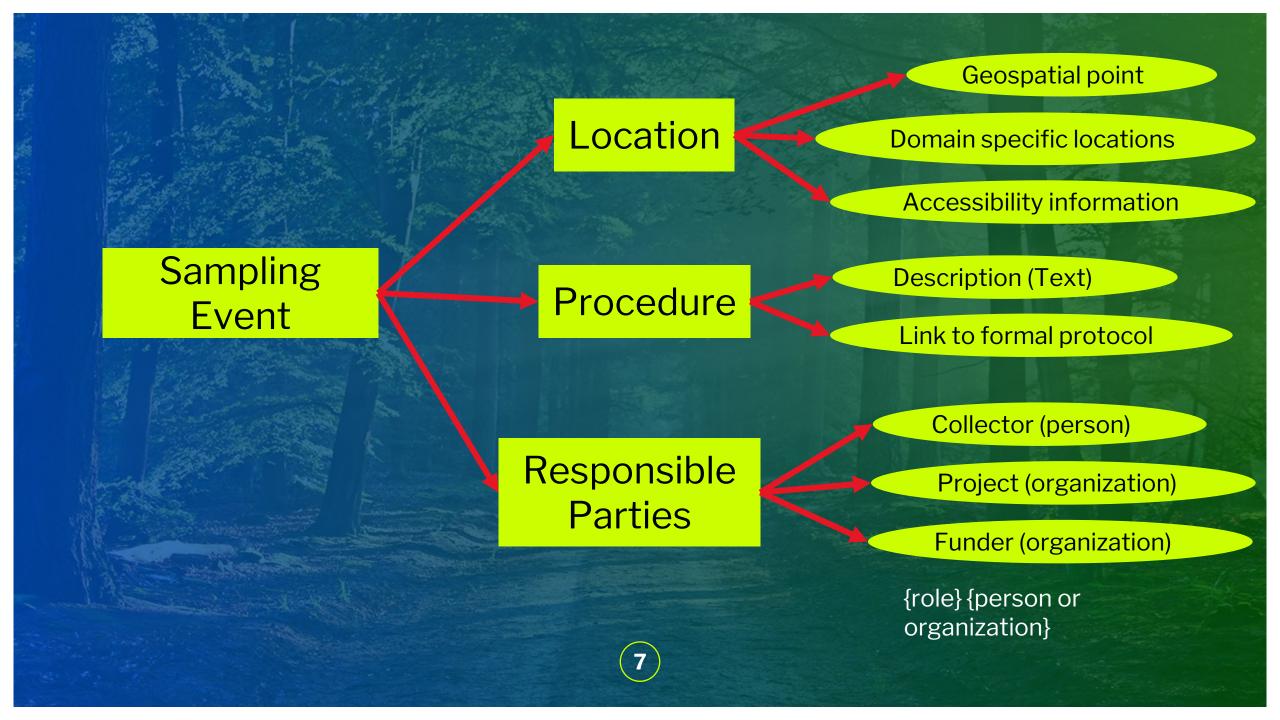
• About the sample

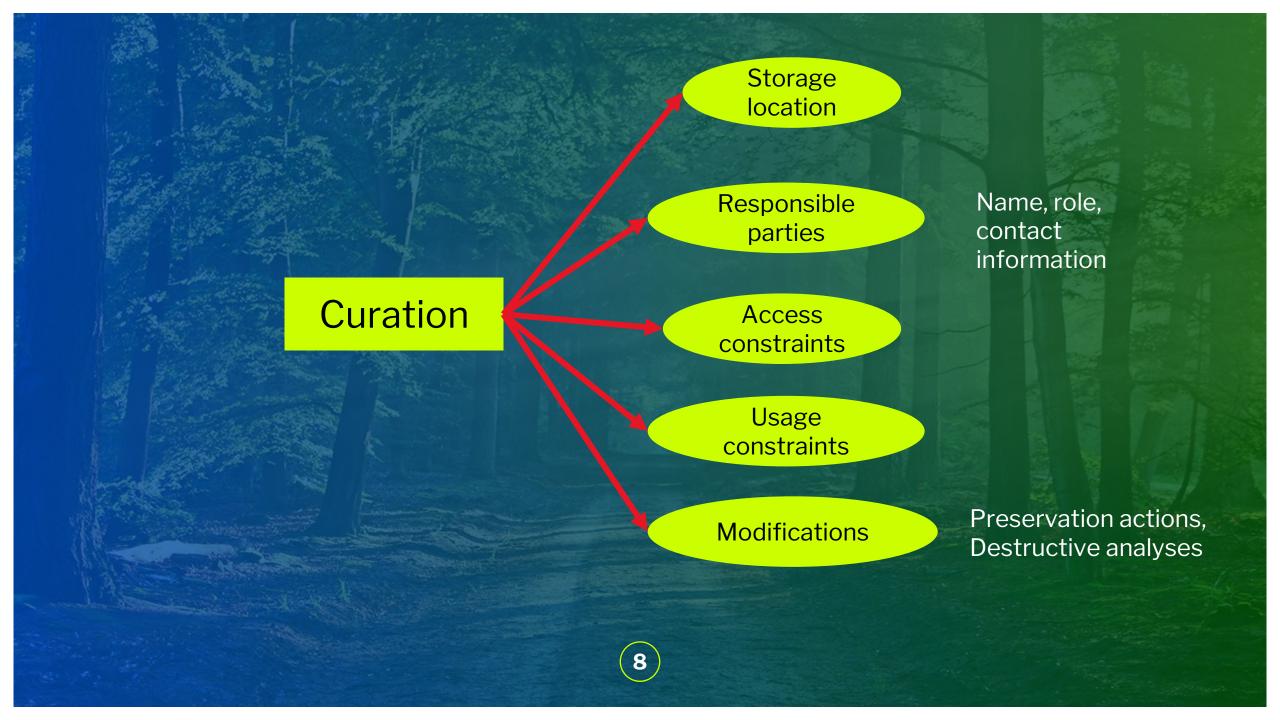
- Datasets •
- **Collection membership**

Derived from relations

('parent', 'child')

Publications





Parent/Child sample

Related Resources

{RelationshipTypeID, Label, Target Identifier}

Collection

Dataset

Publication



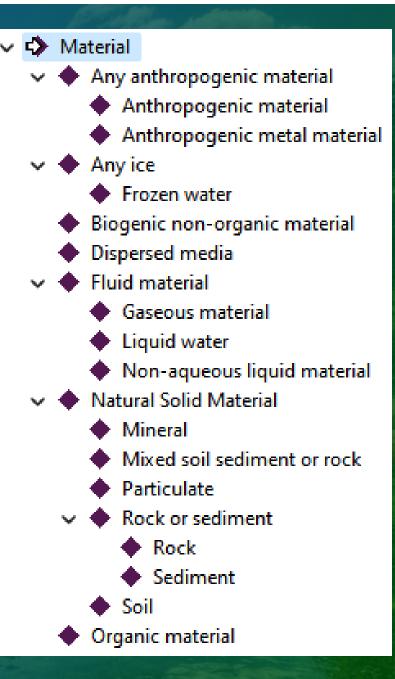


Material Type Vocabulary

10

 What is the sample composed of – what is the 'substance'





Specimen Type Vocabulary

What kind of object is the sample?

Physical specimen Any aggregation specimen Aggregation Anthropogenic aggregation Biome aggregation sample Bundle biome aggregation Slurry biome aggregation Any biological specimen Biome aggregation sample Bundle biome aggregation Slurry biome aggregation Organism part Organism product Whole organism specimen Artifact Fluid in container Fossil Other solid object Research product Analytical preparation Experiment product

11

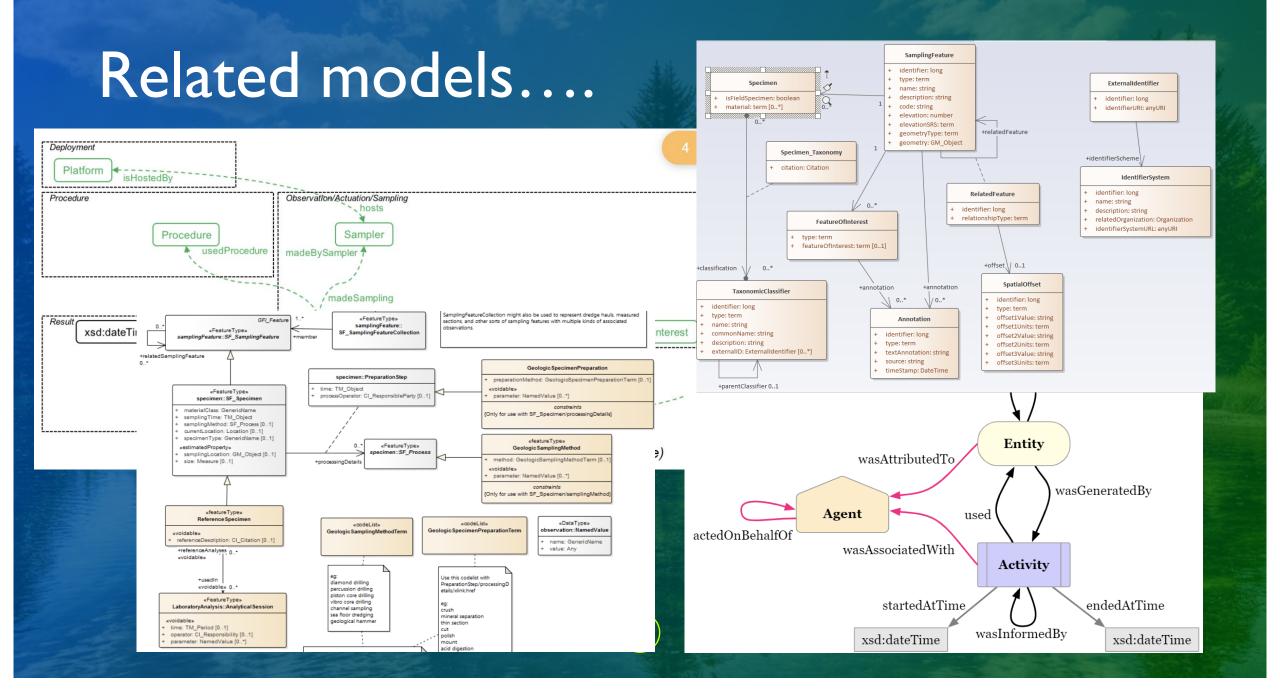
Sampled Feature type Vocabulary

 High level categories for the context— What is the sample supposed to represent?

12

ADD A FOOTER

Any sampled feature Anthropogenic environment Active human occupation site Experiment setting Laboratory or curatorial environment Site of past human activities Earth environment Atmosphere Earth interior Earth Surface Lake river or stream bottom Marine water body bottom Subaerial surface environment Glacier environment Subsurface fluid reservoir Water body Marine environment Terrestrial water body Extraterrestrial environment



Links

- Github Repository: https://github.com/isamplesorg/metadata/
 - Current JSON schema: iSamplesSchemaBasic0.3.json
 - Vocabularies: /vocabulary subdirectory
 - Decision trees:
 - SpecimenTypeDecisionTreev2.pdf
 - MaterialTypeDecisionTreev3.pdf
 - <u>SampledFeatureDecisionTreeV4.pdf</u>
 - Turtle (.ttl) files are skos versions.
- Card sorting exercise to test vocabularies (not active)
 - Specimen type: <u>https://x12745x3.optimalworkshop.com/optimalsort/3x1kqnv2</u>
 - Material type: <u>https://x12745x3.optimalworkshop.com/optimalsort/ud4300c4-0</u>
 - Sampled feature/context: https://x12745x3.optimalworkshop.com/optimalsort/qf1254qw

