Rethinking Numismatic Description at Princeton University

Metadata Analysis and Recommendations

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Project Goals

- Improved performance
- Data interoperability (e.g. OCRE, CRRO)
- Field definitions
- Indexing (e.g. search by weight)
- Exposure in Blacklight, Google

Project Goals: The Role of TS

- Improved performance,
  Field definitions
  → **Develop a Data Model**
- Data interoperability (e.g. OCRE, CRRO)
  → **Map onto Domain-Specific Ontology/ies**
  → **Facilitate output in interoperable metadata format**
- Retrospective data conversion/cleanup

Project Goals: The Role of Systems

- DB implementation
- Indexing
- Exposure in Blacklight, Google

TS Proof of Concept

- Data model: FRBRoo
- Ontology: Nomisma(+)
- Stable Identifiers:
  - Nomisma
  - VIAF
  - LC
  - Wikidata
  - ... mint our own?
- Serialization considerations:
  - NUDS/XML
  - RDF/XML
  - JSON-LD
  - Turtle

Metadata Principles

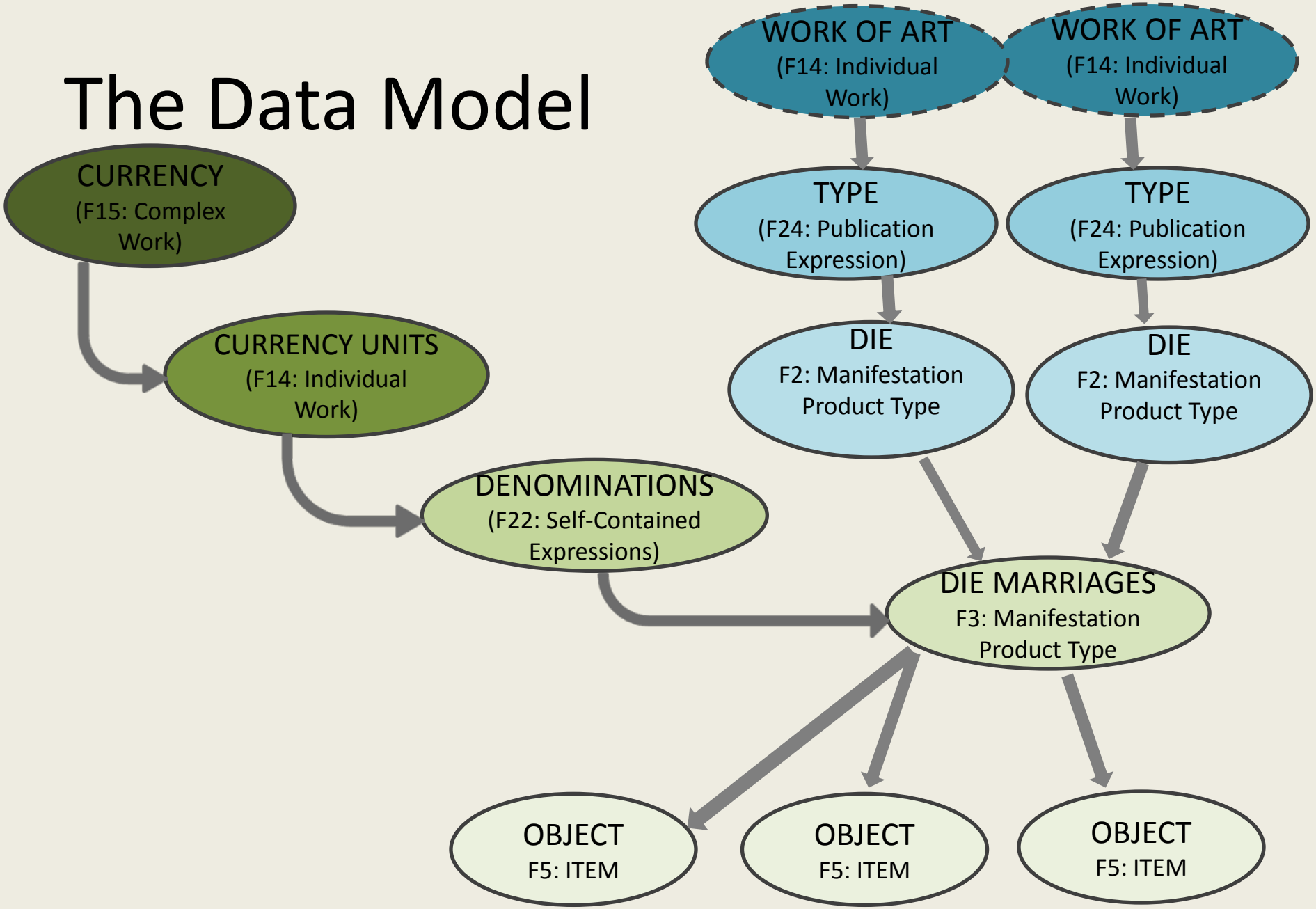
FAIR Data:

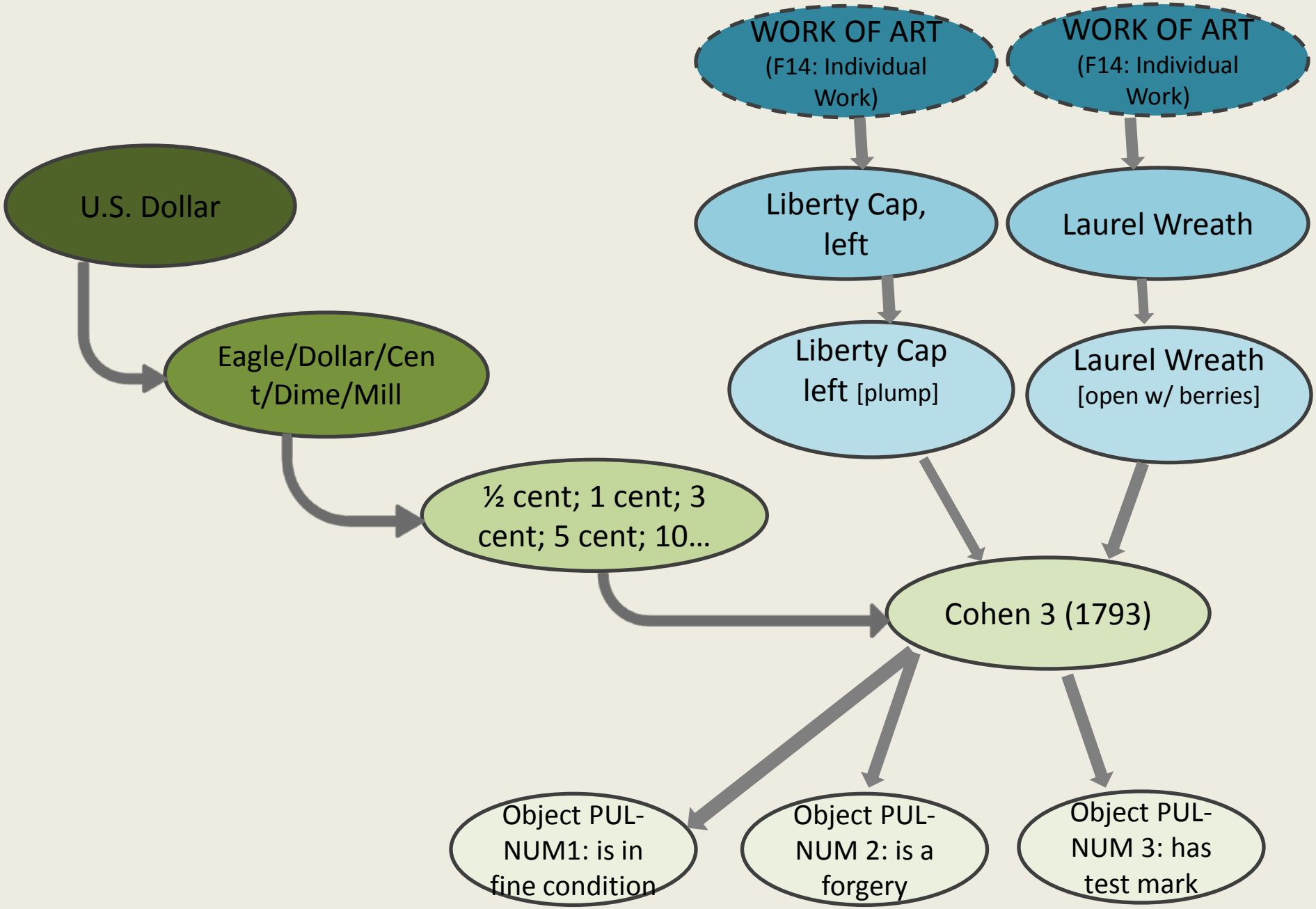
- Findable
- Accessible
- Interoperable
- Re-Usable

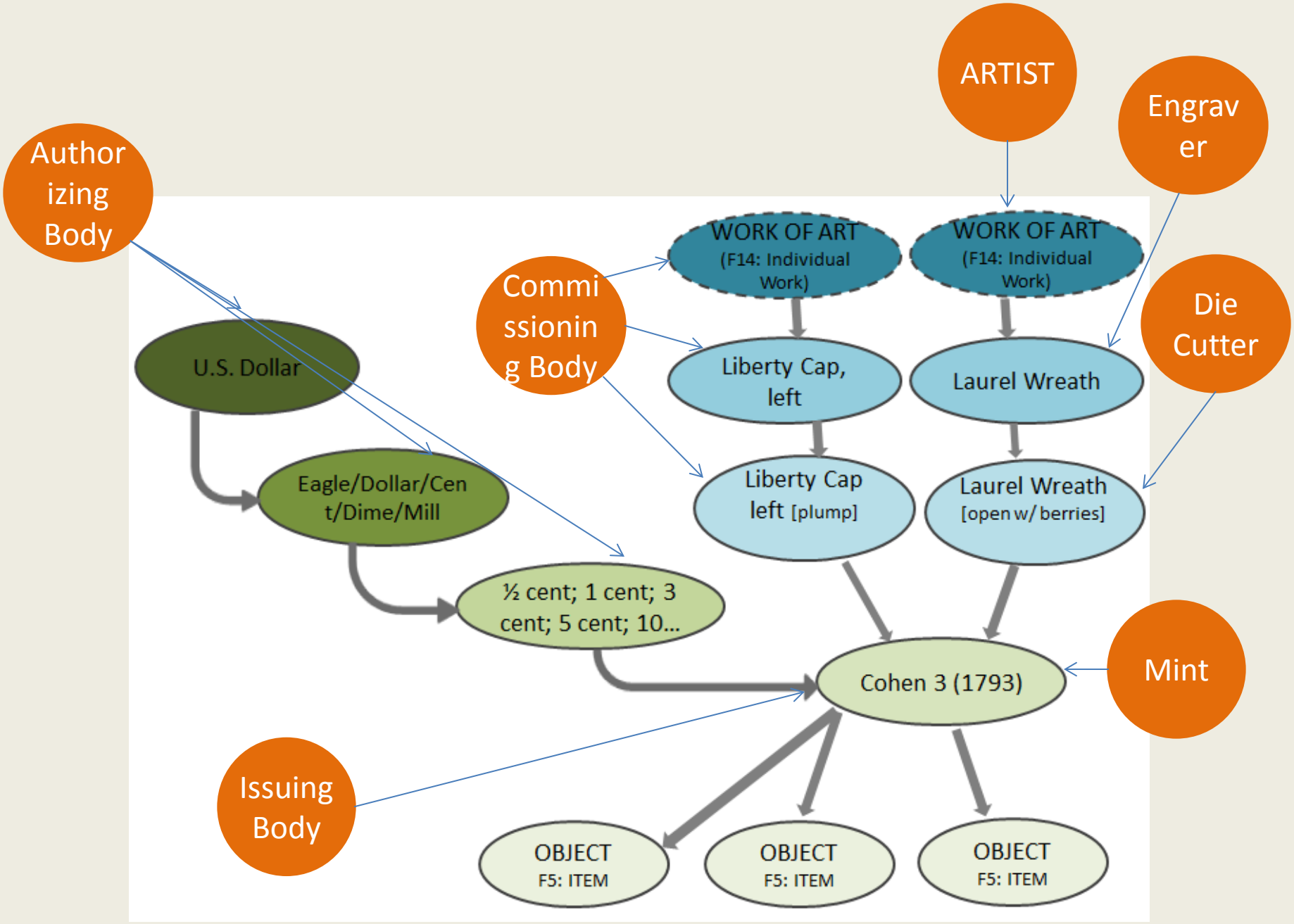
About Linked Open Data

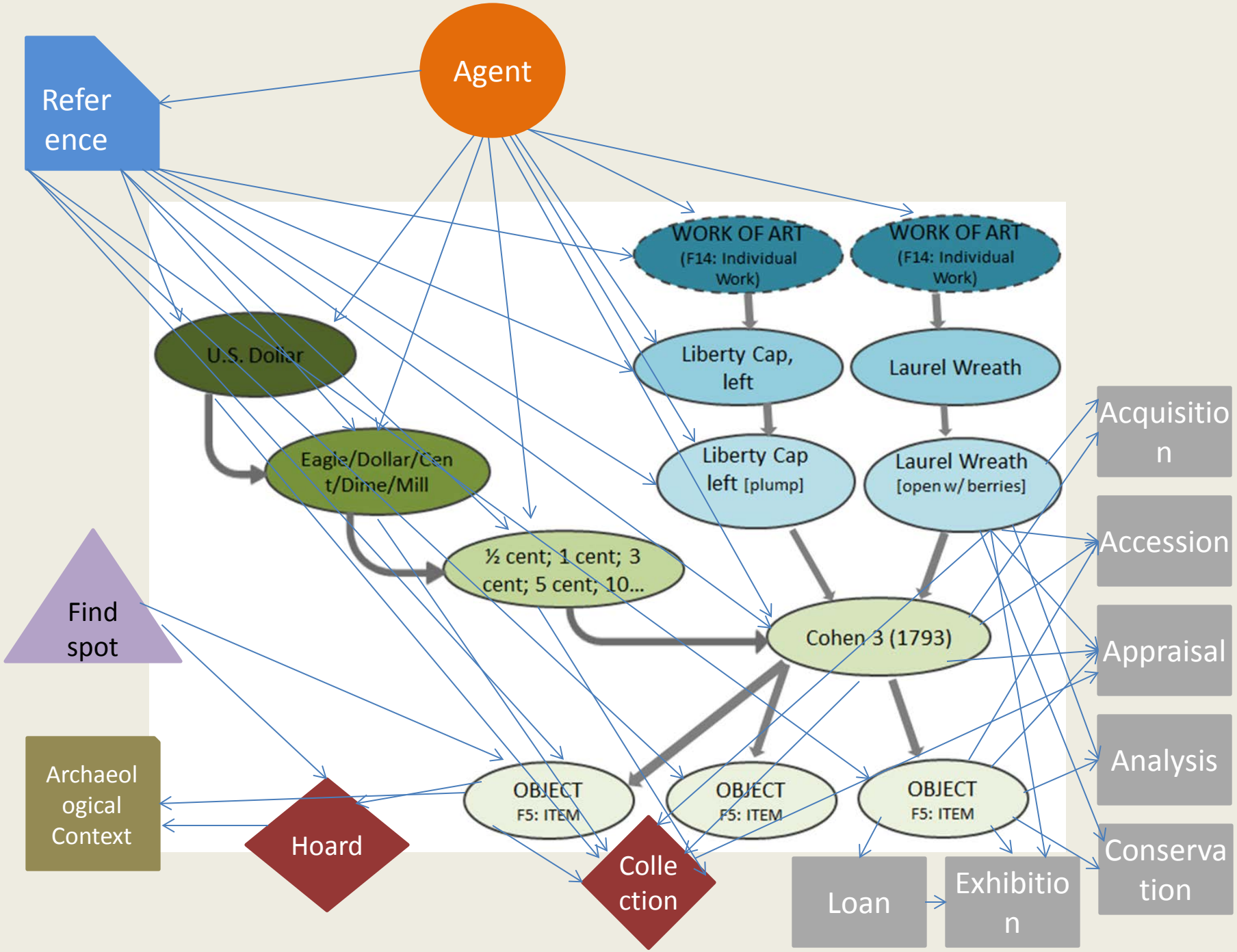
- Conceptual “things” are identified by HTTP URIs
- Statements about things are in machine-readable subject-verb-object format (“triples”)
- This facilitates semantic queries of multiple external data sources

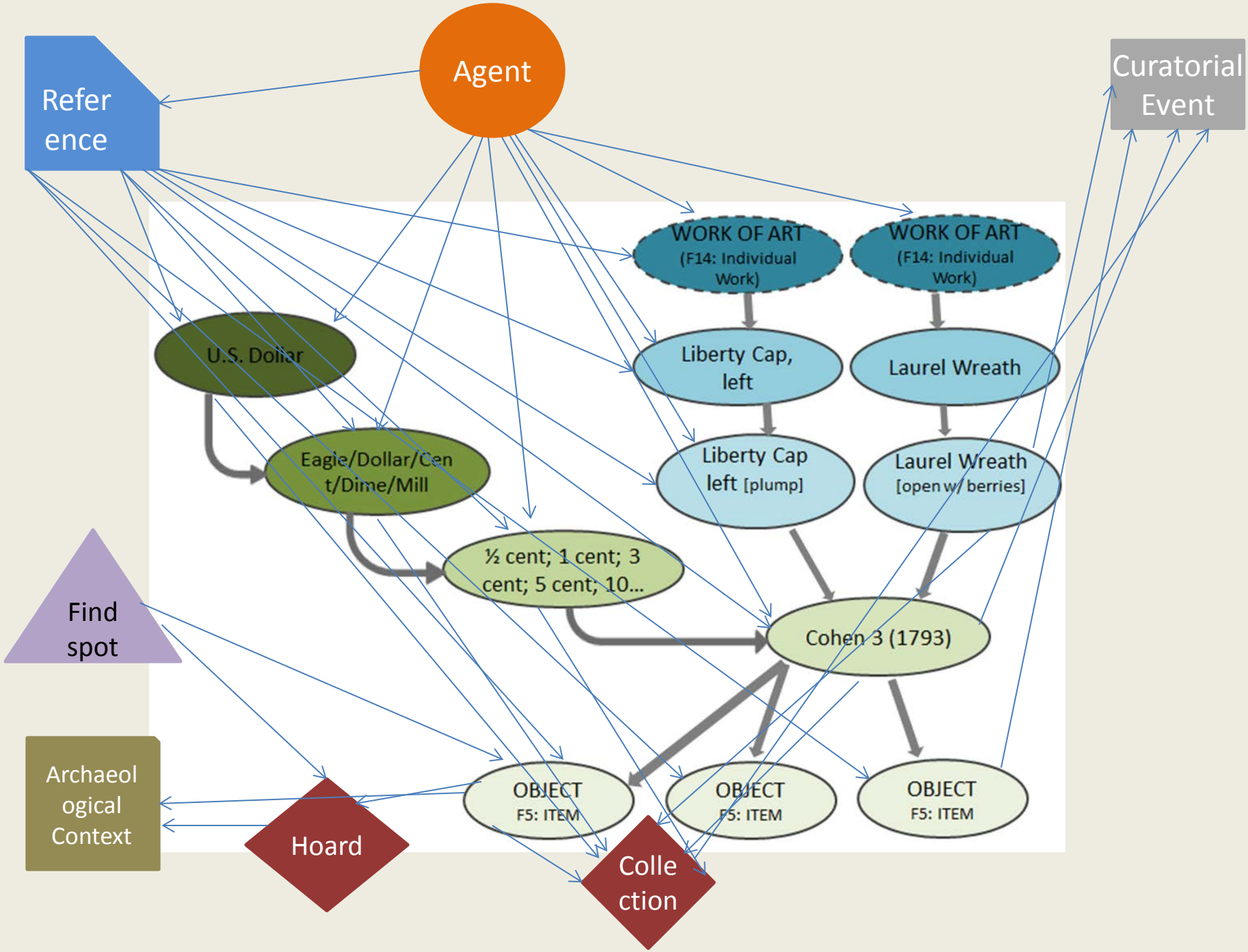
The Data Model

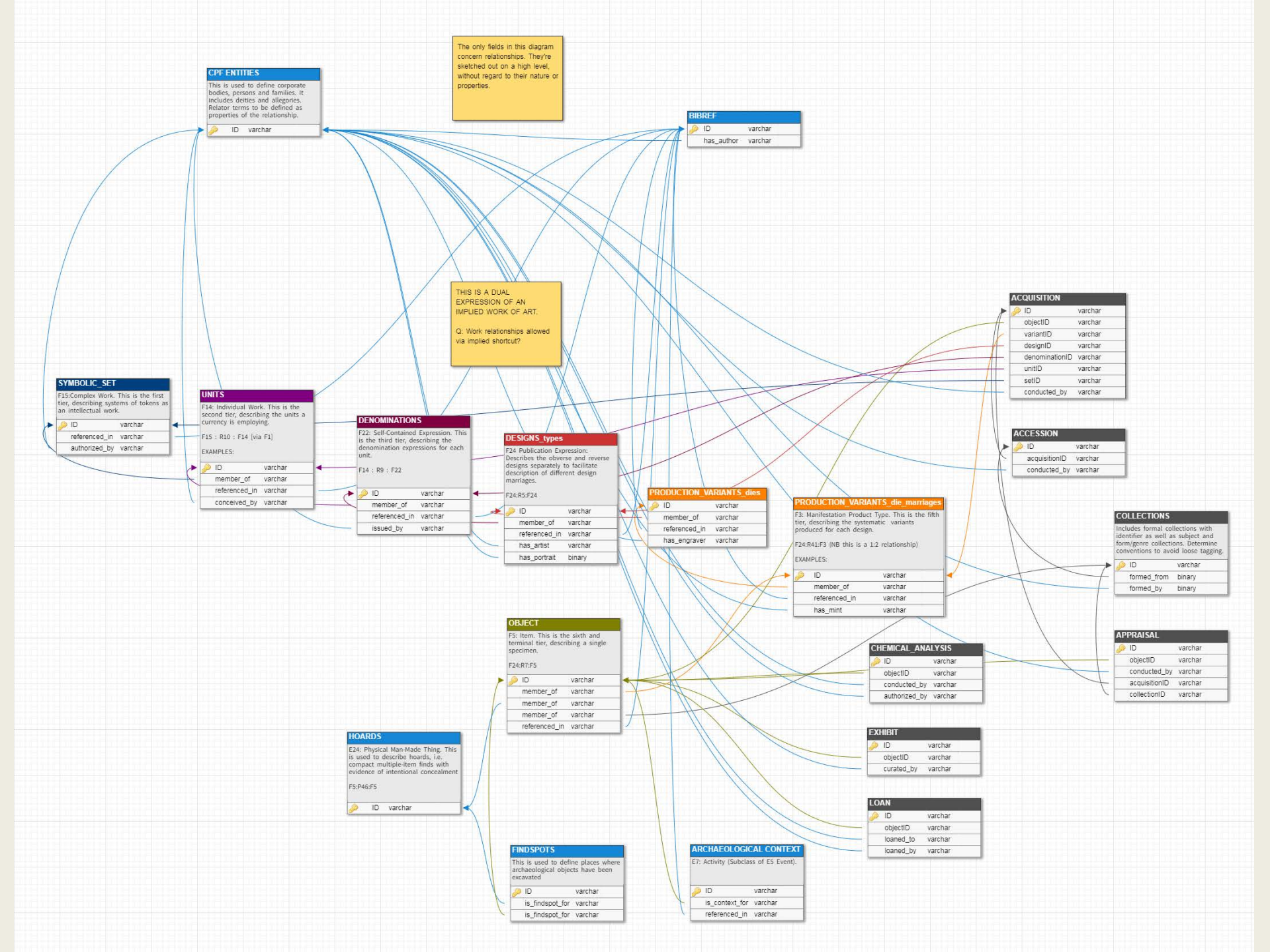



WORK OF ART (F14: Individual Work)
WORK OF ART (F14: Individual Work)
U.S. Dollar
Liberty Cap, left
Laurel Wreath
Eagle/Dollar/Cent/Dime/Mill
Liberty Cap left [plump]
Laurel Wreath [open w/ berries]
½ cent; 1 cent; 3 cent; 5 cent; 10…
Cohen 3 (1793)
Object PUL-NUM1: is in fine condition
Object PUL-NUM 2: is a forgery
Object PUL-NUM 3: has test mark

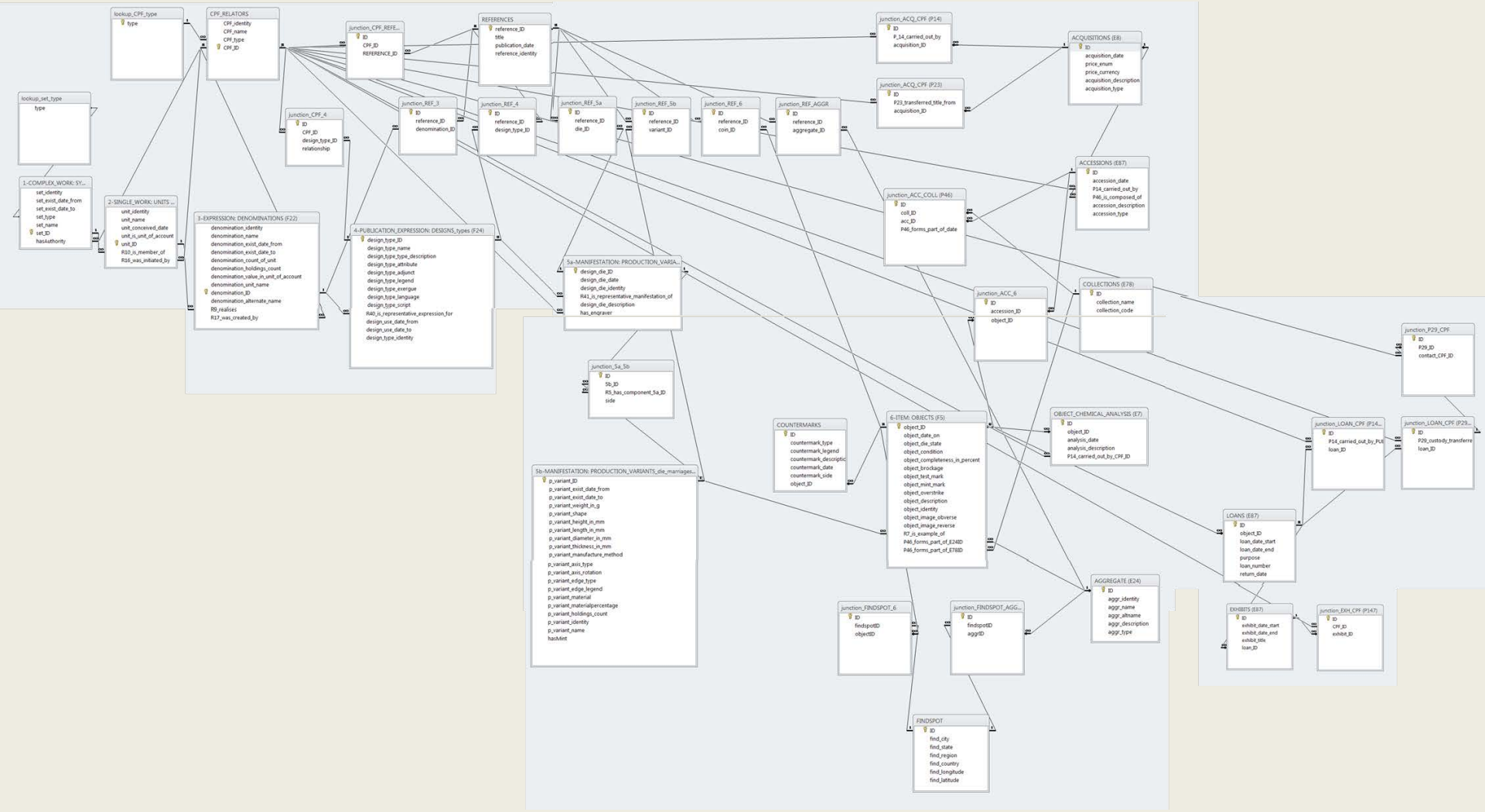

ARTIST
Engrav er
Author izing Body
WORK OF ART (F14: Individual Work)
WORK OF ART (F14: Individual Work)
Commi ssionin g Body
Die Cutter
U.S. Dollar
Liberty Cap, left
Laurel Wreath
Eagle/Dollar/Cen t/Dime/Mill
Liberty Cap left [plump]
Laurel Wreath [open w/ berries]
½ cent; 1 cent; 3 cent; 5 cent; 10...
Mint
Cohen 3 (1793)
Issuing Body
OBJECT F5: ITEM
OBJECT F5: ITEM
OBJECT F5: ITEM


Agent
Refer ence
WORK OF ART (F14: Individual Work)
WORK OF ART (F14: Individual Work)
U.S. Dollar
Liberty Cap, left
Laurel Wreath
Eagle/Dollar/Cen t/Dime/Mill
Liberty Cap left [plump]
Laurel Wreath [open w/ berries]
½ cent; 1 cent; 3 cent; 5 cent; 10...
Cohen 3 (1793)
Find spot
Archaeol ogical Context
Hoard
OBJECT F5: ITEM
OBJECT F5: ITEM
OBJECT F5: ITEM
Colle ction
Loan
Exhibitio n
Acquisitio n
Accession
Appraisal
Analysis
Conserva tion


Refer ence
Agent
Curatorial Event
WORK OF ART (F14: Individual Work)
WORK OF ART (F14: Individual Work)
U.S. Dollar
Liberty Cap, left
Laurel Wreath
Eagle/Dollar/Cen t/Dime/Mill
Liberty Cap left [plump]
Laurel Wreath [open w/ berries]
½ cent; 1 cent; 3 cent; 5 cent; 10...
Find spot
Cohen 3 (1793)
Archaeol ogical Context
OBJECT F5: ITEM
OBJECT F5: ITEM
OBJECT F5: ITEM
Hoard
Colle ction


The only fields in this diagram concern relationships. They're sketched out on a high level, without regard to their nature or properties.
CPF ENTITIES
This is used to define corporate bodies, persons and families. It includes deities and allegories. Relator terms to be defined as properties of the relationship.
ID varchar
BIBREF
ID varchar
has_author varchar
THIS IS A DUAL EXPRESSION OF AN IMPLIED WORK OF ART.
Q. Work relationships allowed via implied shortcut?
ACQUISITION
ID varchar
objectID varchar
variantID varchar
designID varchar
denominationID varchar
unitID varchar
setID varchar
conducted_by varchar
SYMBOLIC_SET
F15:Complex Work. This is the first tier, describing systems of tokens as an intellectual work.
ID varchar
referenced_in varchar
authorized_by varchar
UNITS
F14: Individual Work. This is the second tier, describing the units a currency is employing.
F15 : R10 : F14 [via F1]
EXAMPLES:
ID varchar
member_of varchar
referenced_in varchar
conceived_by varchar
DENOMINATIONS
F22: Self-Contained Expression. This is the third tier, describing the denomination expressions for each unit.
F14 : R9 : F22
ID varchar
member_of varchar
referenced_in varchar
issued_by varchar
DESIGNS_types
F24 Publication Expression: Describes the obverse and reverse designs separately to facilitate description of different design marriages.
F24:R5:F24
ID varchar
member_of varchar
referenced_in varchar
has_artist varchar
has_portrait binary
ACCESSION
ID varchar
acquisitionID varchar
conducted_by varchar
PRODUCTION_VARIANTS_dies
ID varchar
member_of varchar
referenced_in varchar
has_engraver varchar
PRODUCTION_VARIANTS_die_marriages
F3: Manifestation Product Type. This is the fifth tier, describing the systematic variants produced for each design.
F24:R41:F3 (NB this is a 1:2 relationship)
EXAMPLES:
ID varchar
member_of varchar
referenced_in varchar
has_mint varchar
COLLECTIONS
Includes formal collections with identifier as well as subject and form/genre collections. Determine conventions to avoid loose tagging.
ID varchar
formed_from binary
formed_by binary
OBJECT
F5: Item. This is the sixth and terminal tier, describing a single specimen.
F24:R7:F5
ID varchar
member_of varchar
member_of varchar
member_of varchar
referenced_in varchar
CHEMICAL_ANALYSIS
ID varchar
objectID varchar
conducted_by varchar
authorized_by varchar
APPRAISAL
ID varchar
objectID varchar
conducted_by varchar
acquisitionID varchar
collectionID varchar
HOARDS
E24: Physical Man-Made Thing. This is used to describe hoards, i.e. compact multiple-item finds with evidence of intentional concealment
F5:P46:F5
ID varchar
EXHIBIT
ID varchar
objectID varchar
curated_by varchar
LOAN
ID varchar
objectID varchar
loaned_to varchar
loaned_by varchar
FINDSPOTS
This is used to define places where archaeological objects have been excavated
ID varchar
is_findspot_for varchar
is_findspot_for varchar
ARCHAEOLOGICAL CONTEXT
E7: Activity (Subclass of E5 Event).
ID varchar
is_context_for varchar
referenced_in varchar

A (Very) Dirty Implementation in Access



Next Steps

- Review/final revisions by Numismatics staff
- Review by RBSC-SSC for Implementation
- Consult with Systems during Implementation
- Retrospective data cleanup for ingestion in new System

Timeline

- Curatorial review – short?
- Lead to SSC approval – short? (hard to say)
- Implementation – (depends on Systems; my guess would be 6-12 months from start of work)
- Data cleanup – (concurrent with Systems implementation; estimated 6-12 months)

Alternative: Linked Open Data Editors

cedar.metadatacenter.org