Treatment of *Key* IEEE RAMLET Information Entities Important to METS

For Digital Libraries 2014 Workshop #7: *METS Now, & Then…Discussions of Current & Future Data Models*

Thursday, September 11 and Friday, September 12 2014

By Nancy J. Hoebelheinrich, Knowledge Motifs LLC

IEEE Standard 1484.13.1-2012

IEEE Standard for Learning Technology—Conceptual Model for *Resource Aggregation for Learning, Education, and Training*

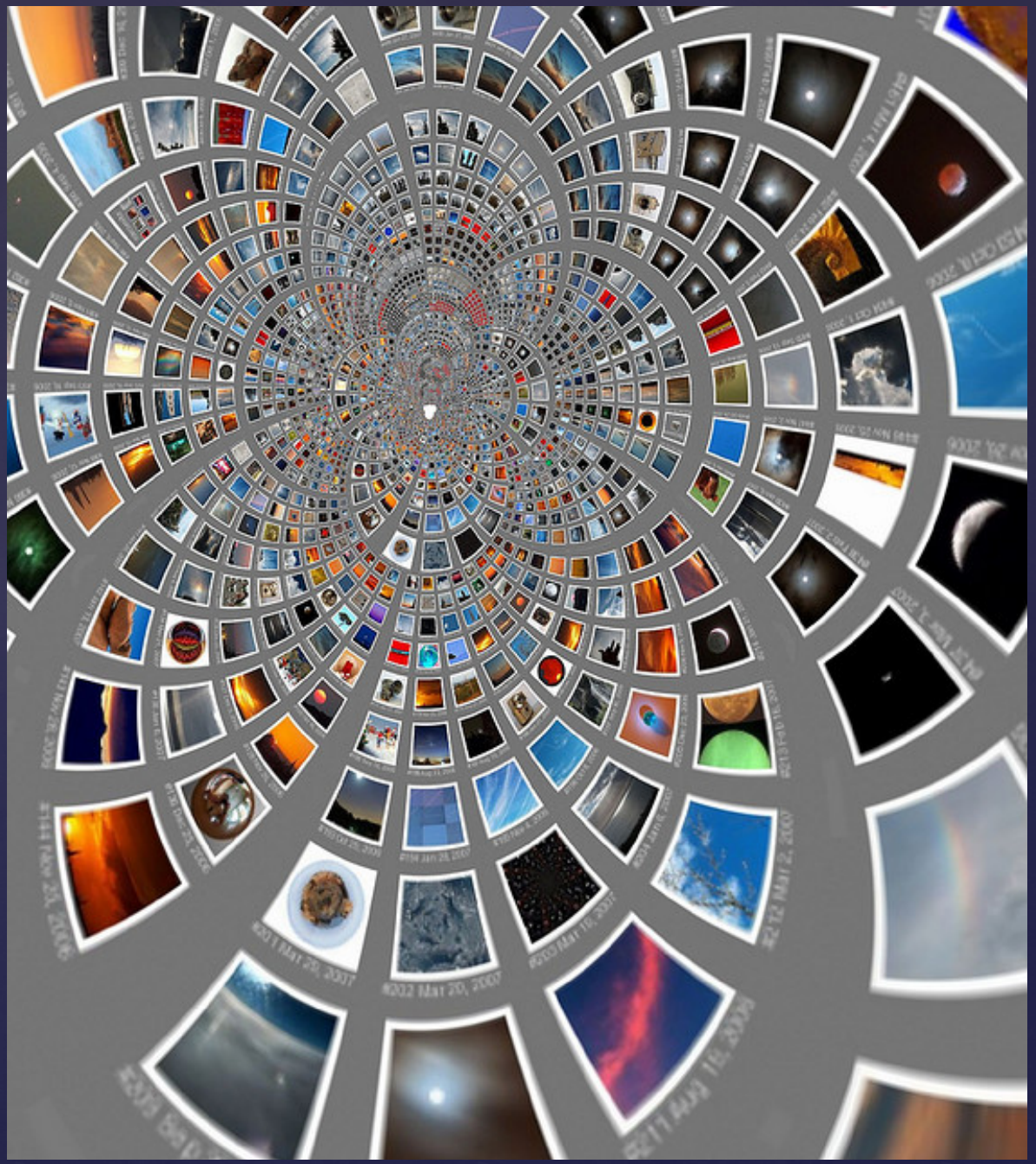
IEEE *RAMLET*

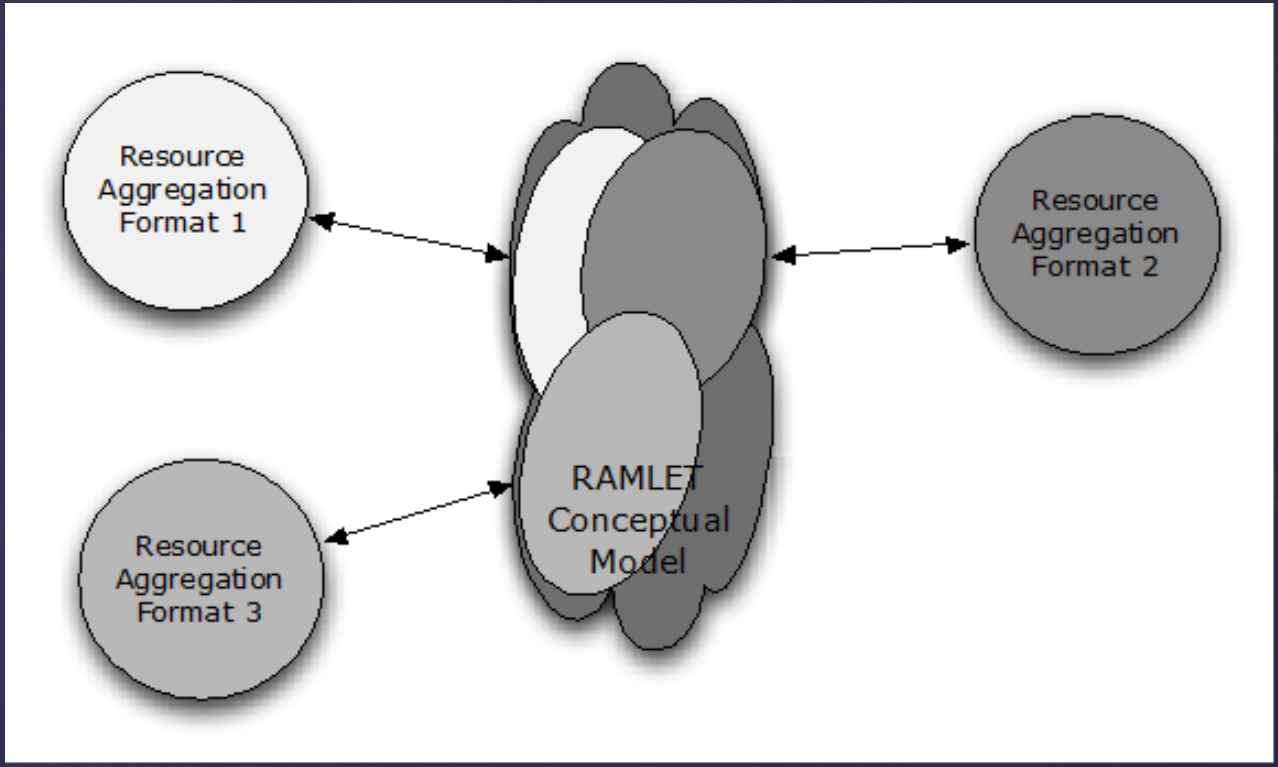
Purpose of RAMLET:

Transformation

from one Aggregation

Format to another





https://mentor.ieee.org/ramlet/dcn/11/ramlet-11-0001-00-Docs-ramlet-conceptual-overview.pdf, Figure 1, p. 3.

Basis of Conceptual Model: a focus upon structures analyzed by *functional* characteristics

Aggregation Formats analyzed

IMS Content Packaging

METS v1.7

MPEG-21 DID (Digital Item Declaration)

Atom

OAI-ORE

{

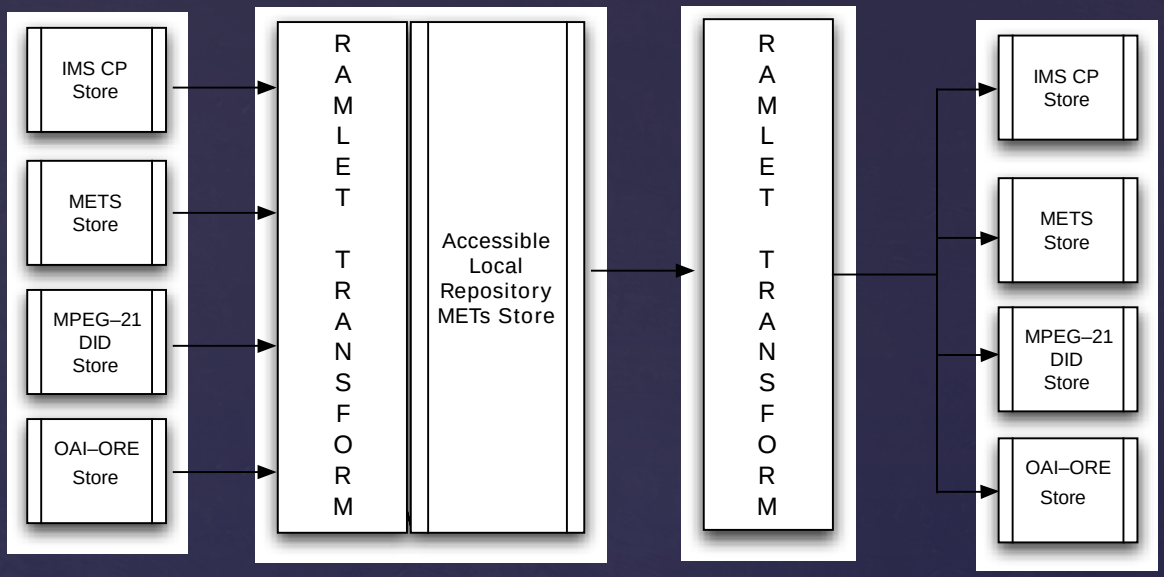
"Domains":

- Education
- Libraries
- Archives
- Museums
- AV content industry
- Content syndication
- Object reuse & exchange

EXAMPLE

Use Case 4 of 8:

- *Retrieving* resources from a variety of digital repositories that each use different resource aggregation formats,
- *Interpreting* the different formats,
- *Storing* the resource packages in a single format, and
- *Providing* the resource aggregates in multiple formats by
- *Interpreting* to the user's preferred resource aggregation format



https://mentor.ieee.org/ramlet/dcn/11/ramlet-11-0002-00-Docs-the-ramlet-project-use-cases.pdf, Figure 4, p. 6.

Scope set by Use Cases

- RAMLET Core
  - Approved as IEEE standard in 2012
  - Print standard available for purchase from IEEE
  - Available for download as RDF & Turtle

- Recommended Practice & Mapping:
  1. Approved:
     - Xlink (2012)
     - Atom (2013)
     - METS (2013)
     - MPEG-21 DID (2013)
  2. In process:
     - OAI-ORE
     - IMS-CP

Expressed as OWL Lite ontologies

RAMLET URI Registry:
https://mentor.ieee.org/ramlet/bp/RAMLET_URI_Registry

Functions:

1. Aggregation packaging
2. Structuring
3. Dividing structures
4. Grouping
5. Resource description
6. Locating
7. Identifying

RAMLET concepts:

1. topNode
2. staticStructure & dynamicStructure
3. structureNode
4. resourceGroup, functionalResourceGroup & groupingID
5. descriptorObject
6. Local & remote locations
7. IDs considered "references" to LOCATIONS, or elementID for XML IDs

RAMLET functions & concepts *key* to our discussion

Properties

1. describes & isdescribedby
2. hasPart & isPartOf (dcterms:)
3. includes & isincludedby
4. references & isreferencedby

Definitions

1. A component describes another & vice versa
2. One resource is included in another, either physically or logically & vice versa
3. Implies parent-child relationship & vice versa (sub property of hasPart & isPartOf from dcterms)
4. Describes an association b/w components signaled by an identifier & vice versa (sub property of has Part & isPartOf from dcterms)

Ramlet or "borrowed" properties *key* to our discussion

Properties

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2. hasPart & isPartOf (dcterms:)
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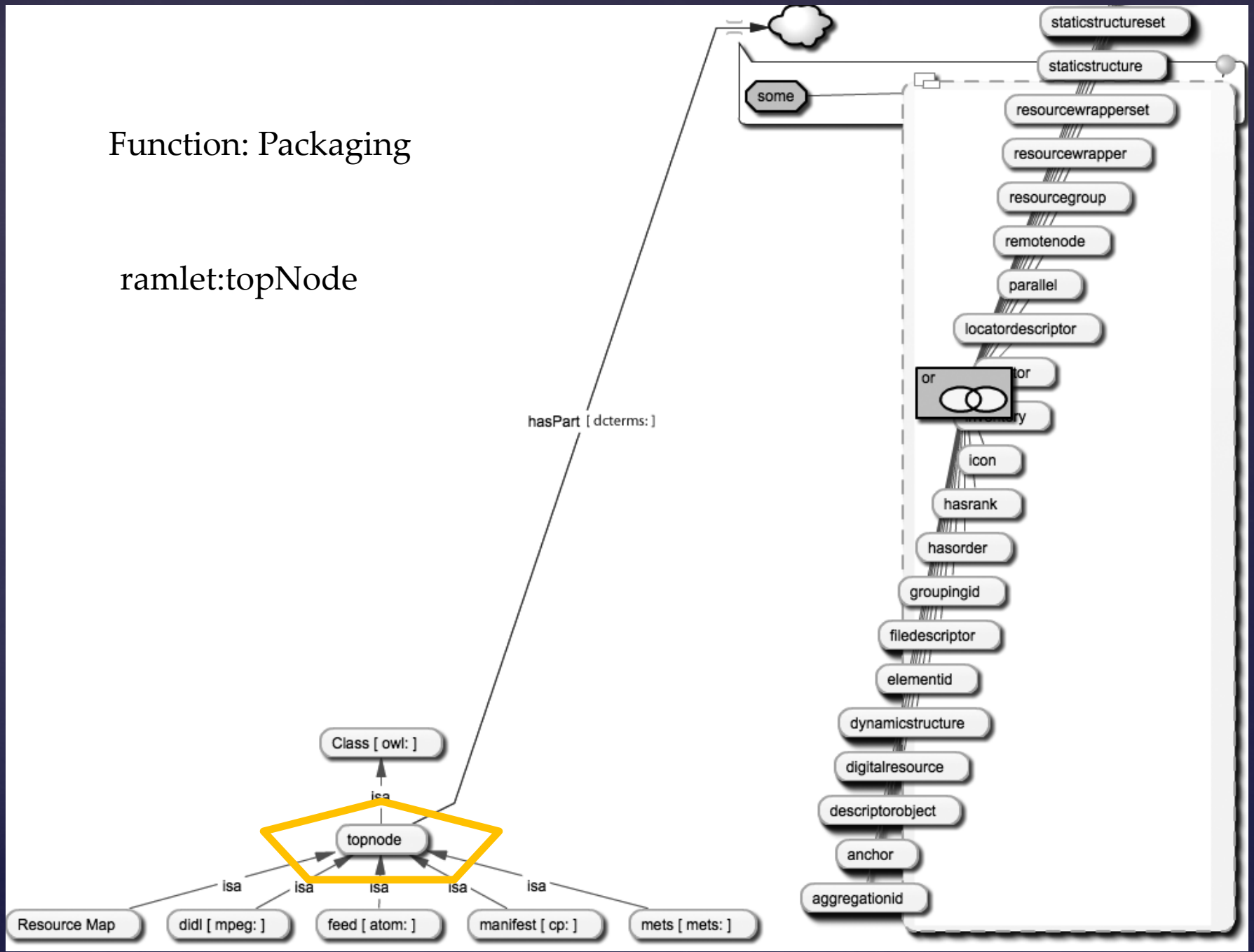
Ramlet or "borrowed" properties *key* to our discussion

Function: Packaging

ramlet:topNode



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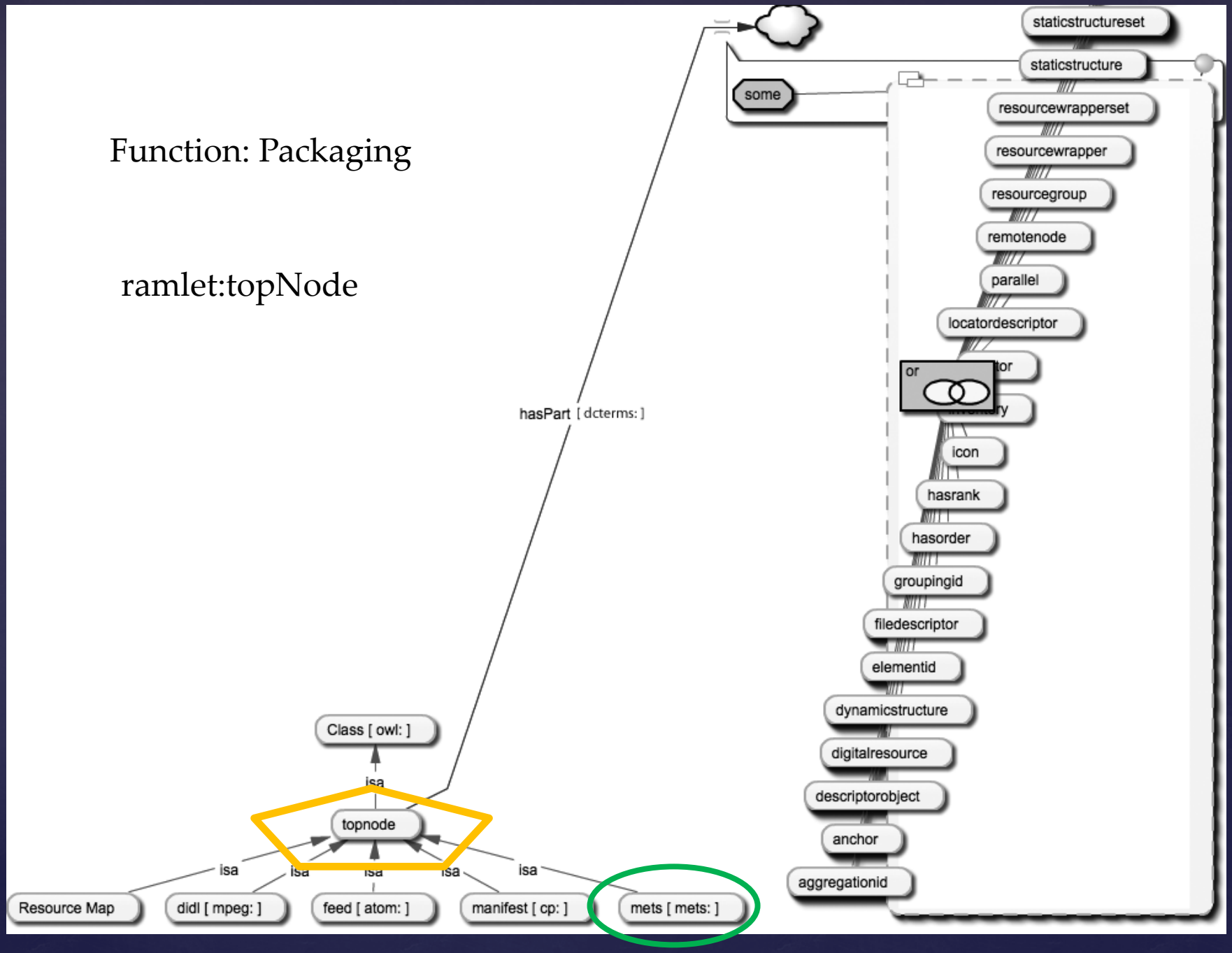
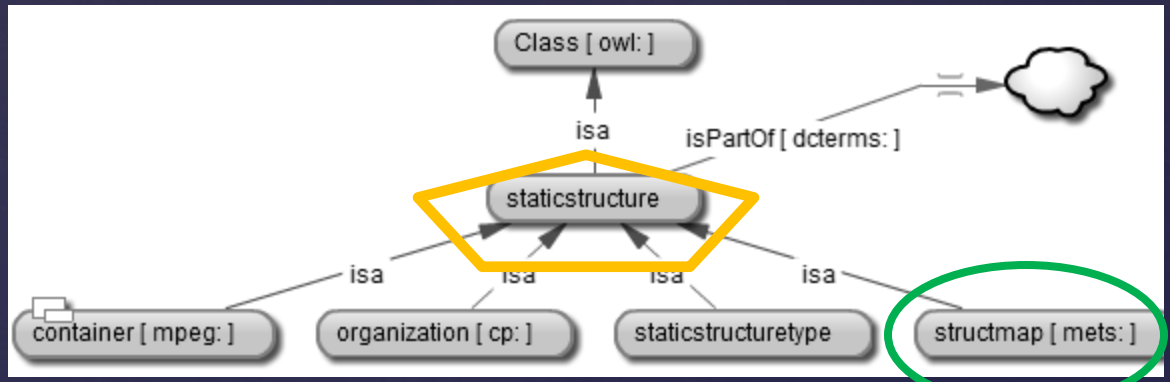


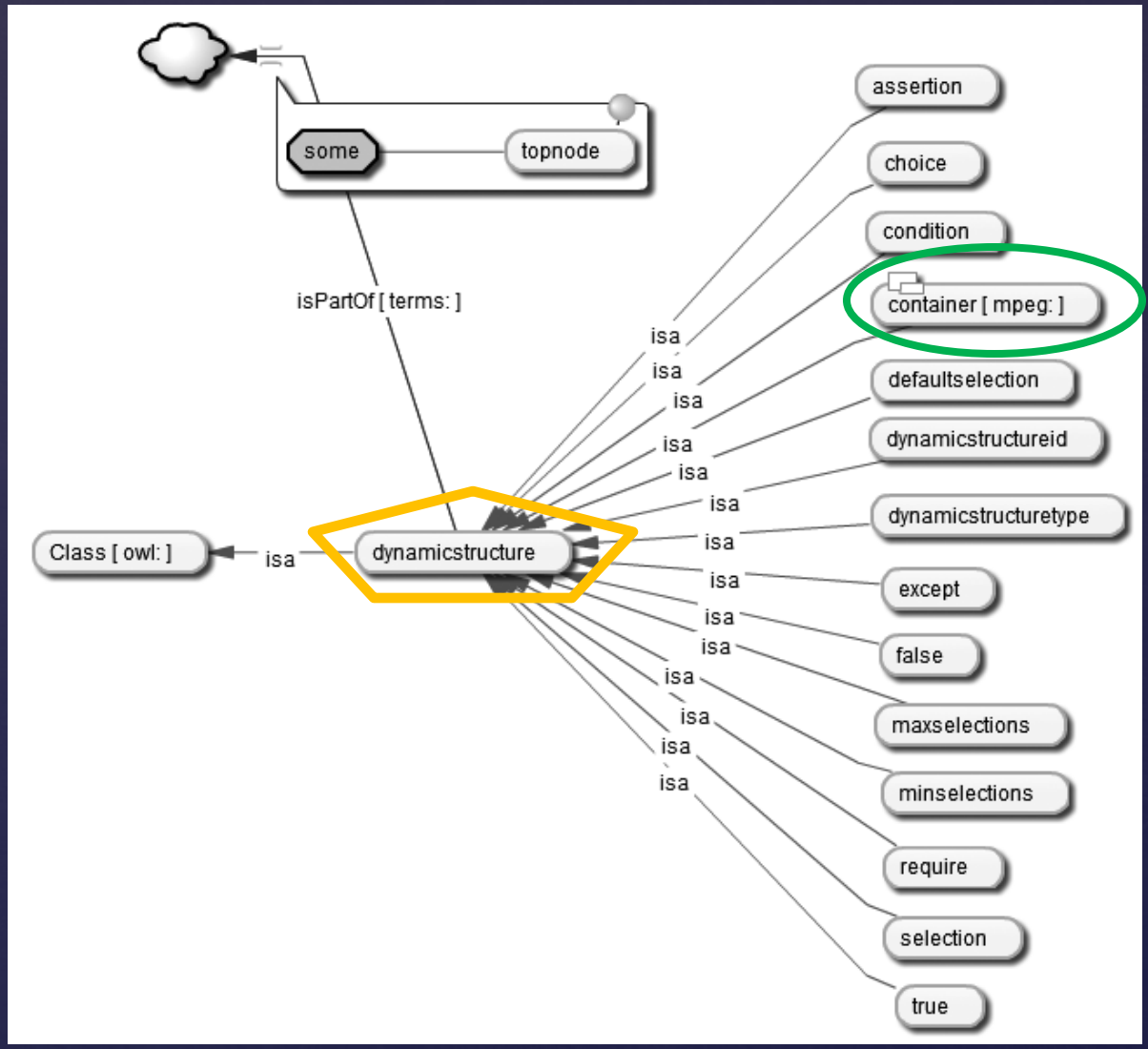
Function: Structuring

ramlet:staticStructure



Function: Structuring

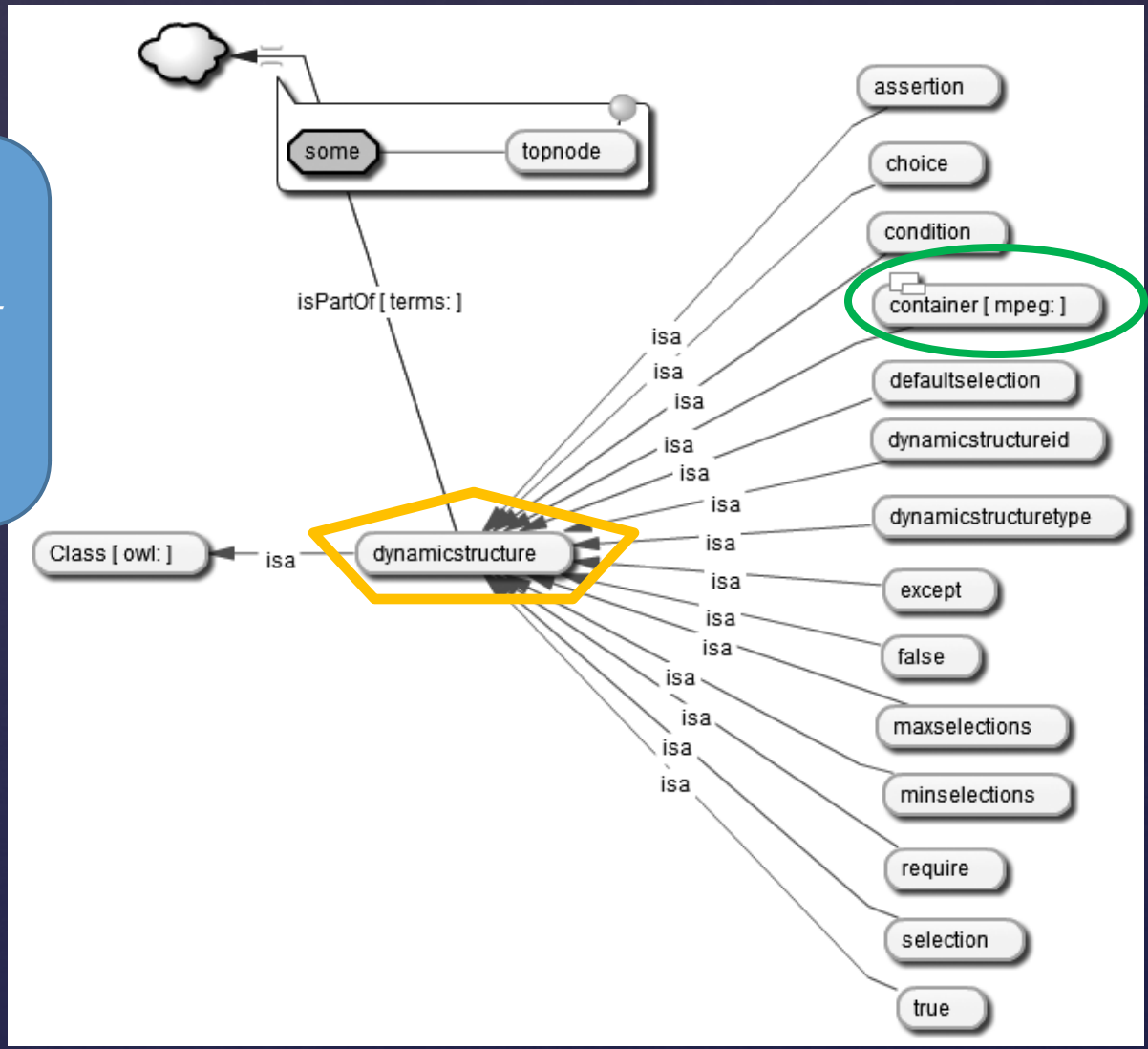
ramlet:dynamicStructure



Function: Structuring

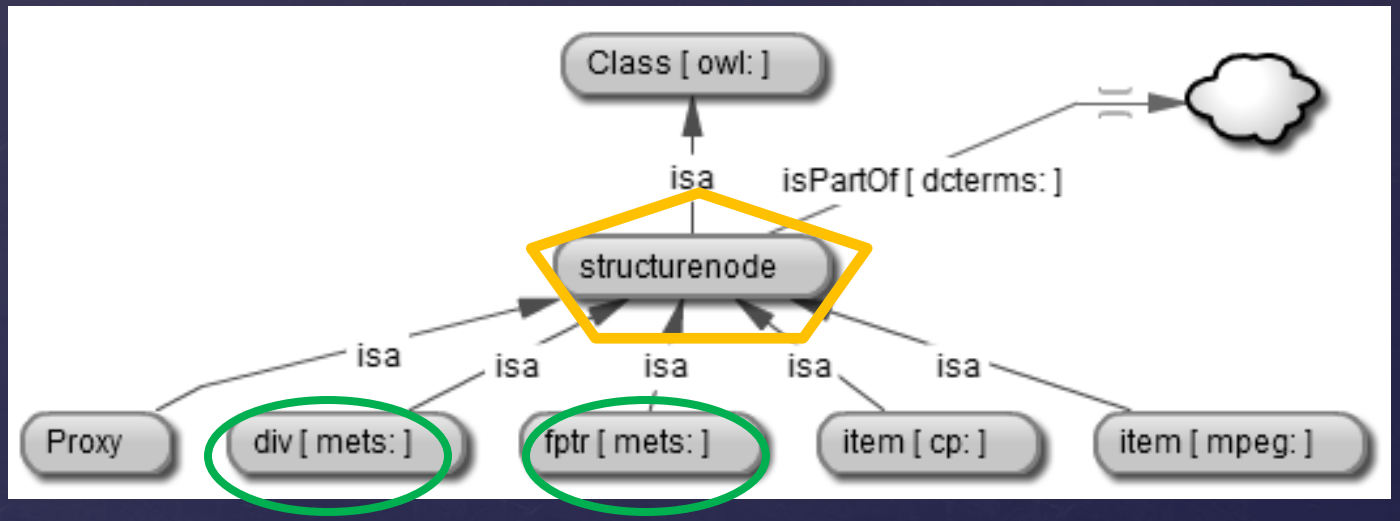
ramlet:dynamicStructure

No METS equivalent -- should be?



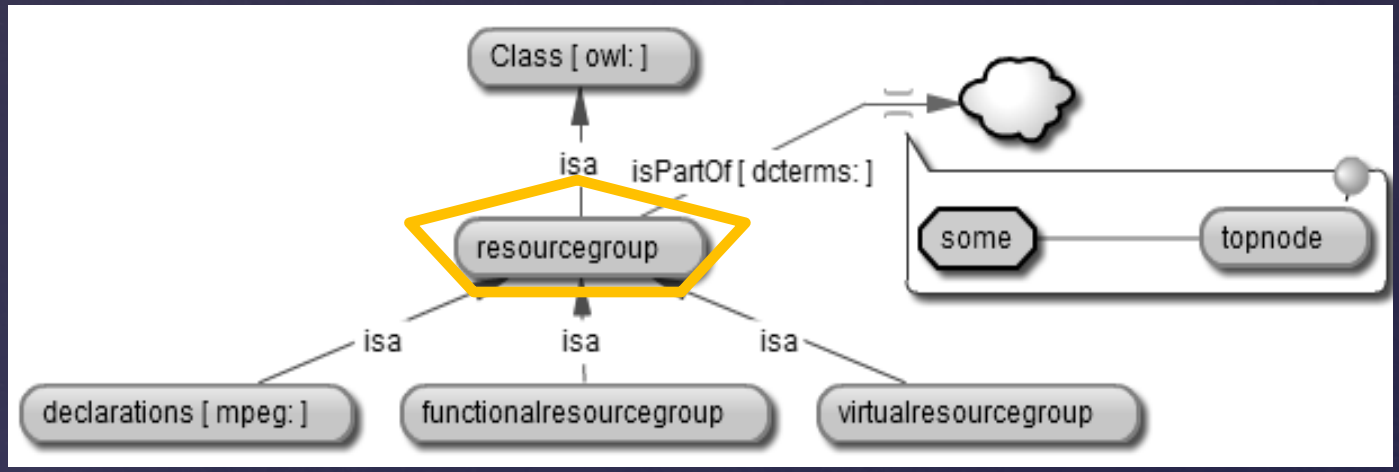
Function: Dividing Structures

ramlet:structureNode



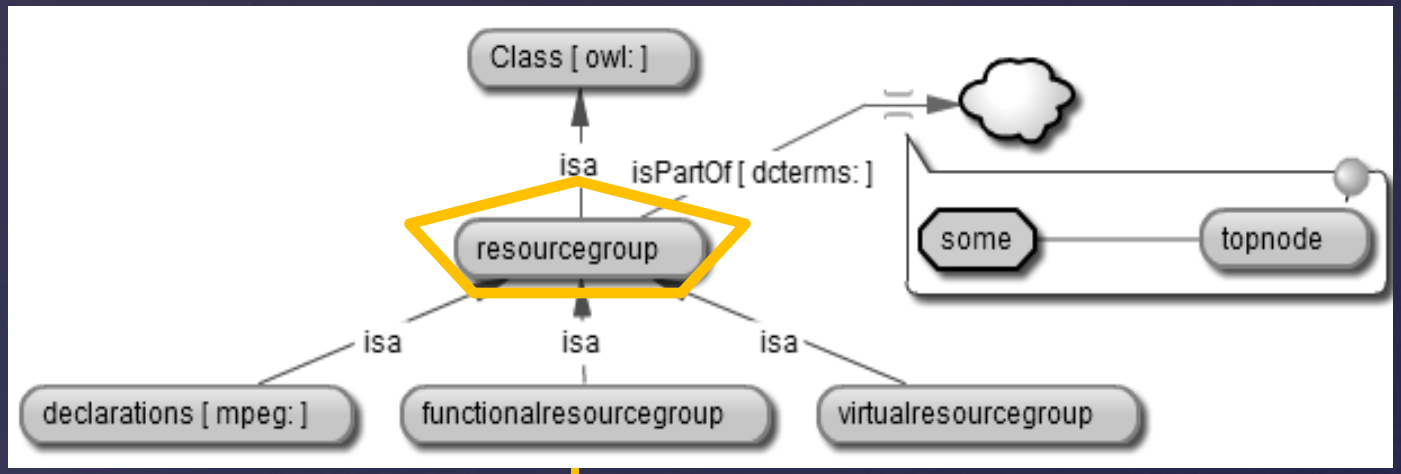
Function: Grouping

ramlet:resourceGroup

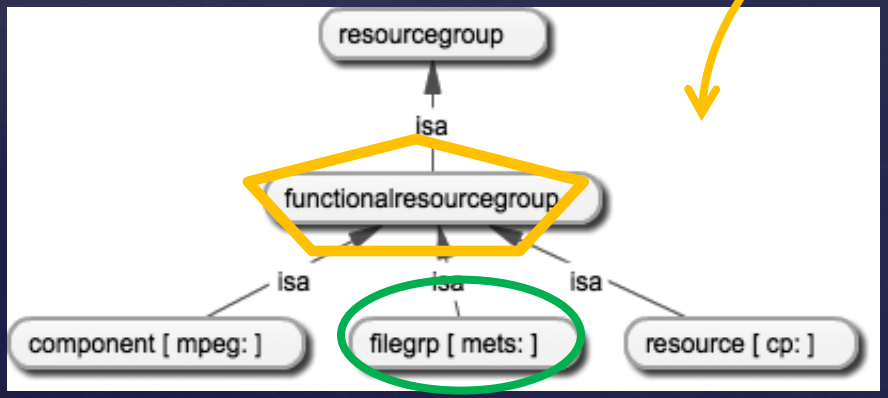


Function: Grouping

ramlet:resourceGroup

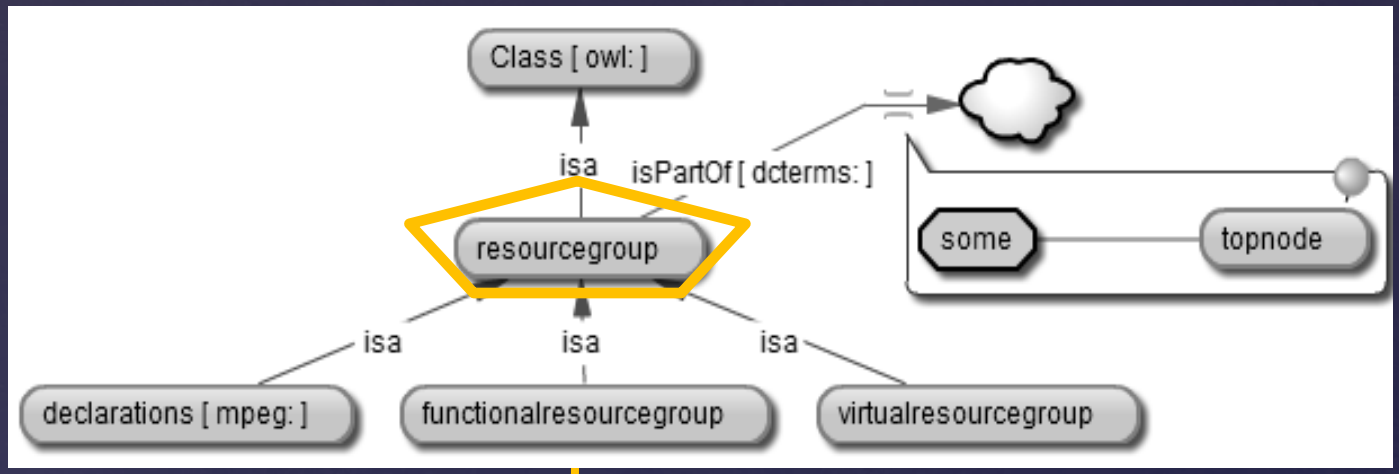


ramlet:functionalResourceGroup

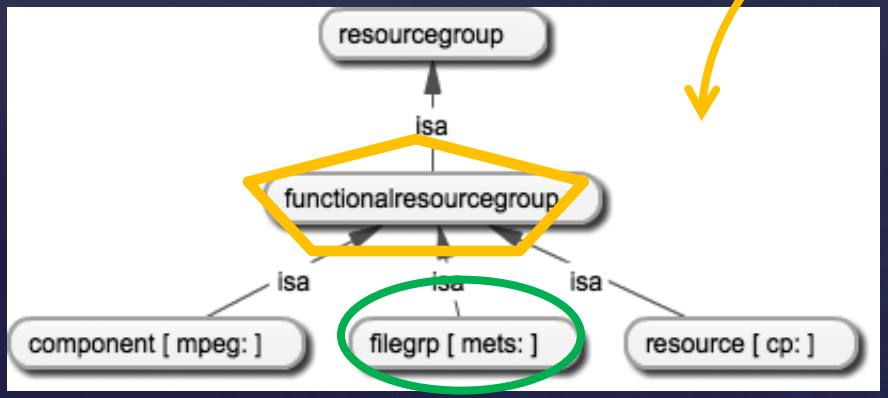


Function: Grouping

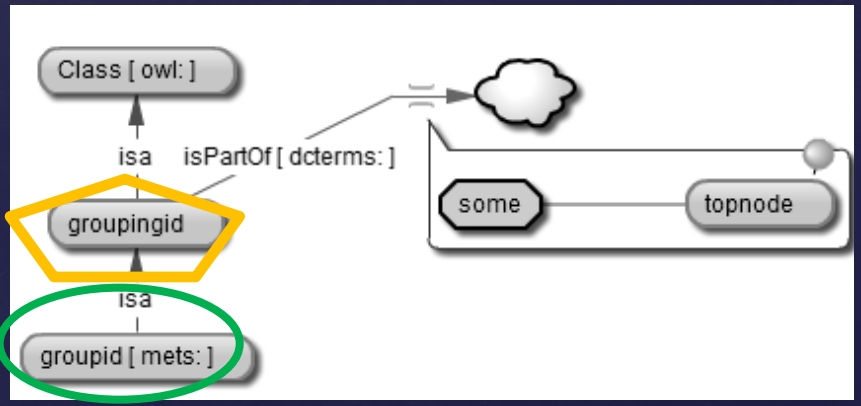
ramlet:resourceGroup



ramlet:functionalResourceGroup

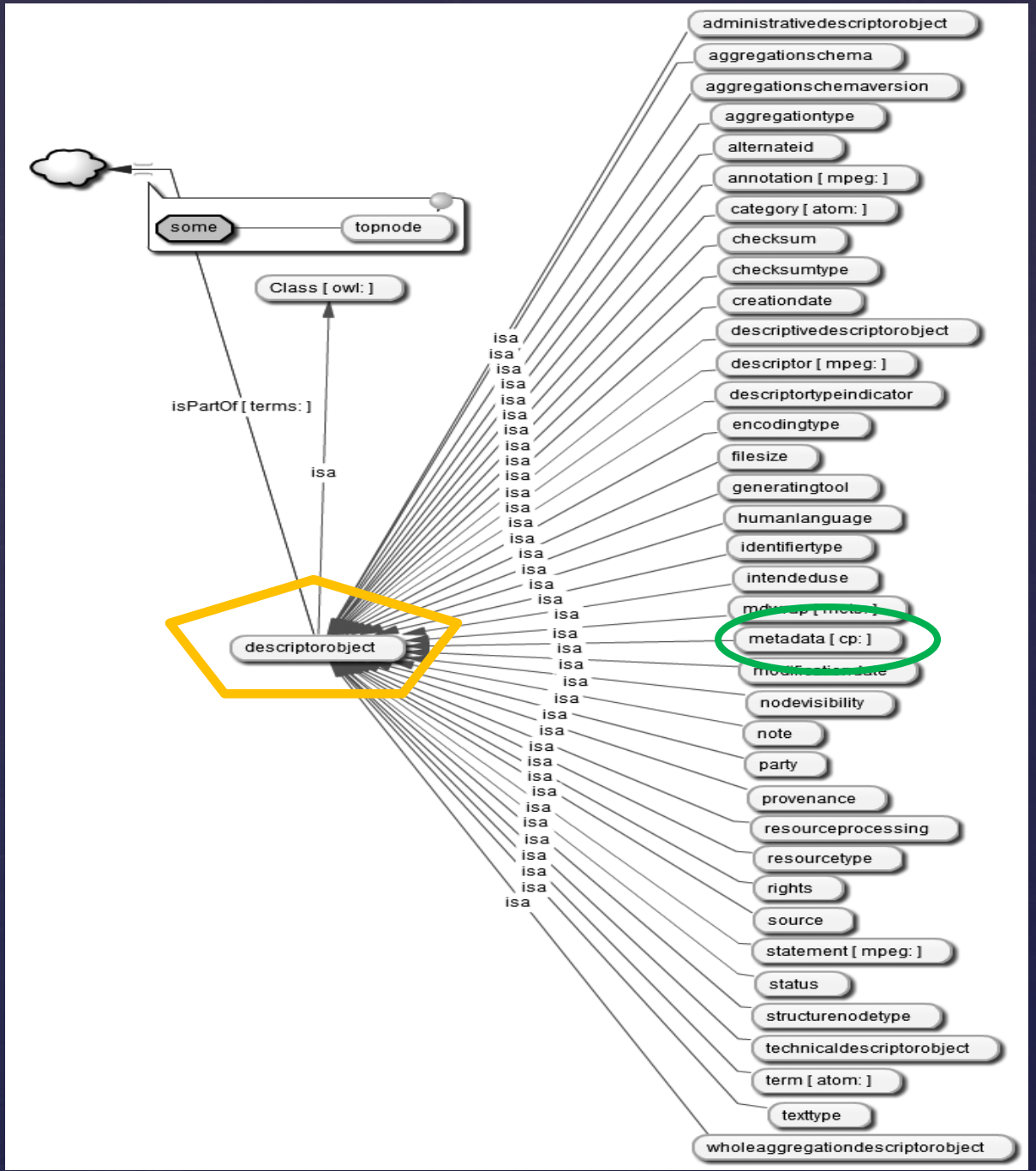


ramlet:groupingID



Function:
Resource Description

ramlet:descriptorObject



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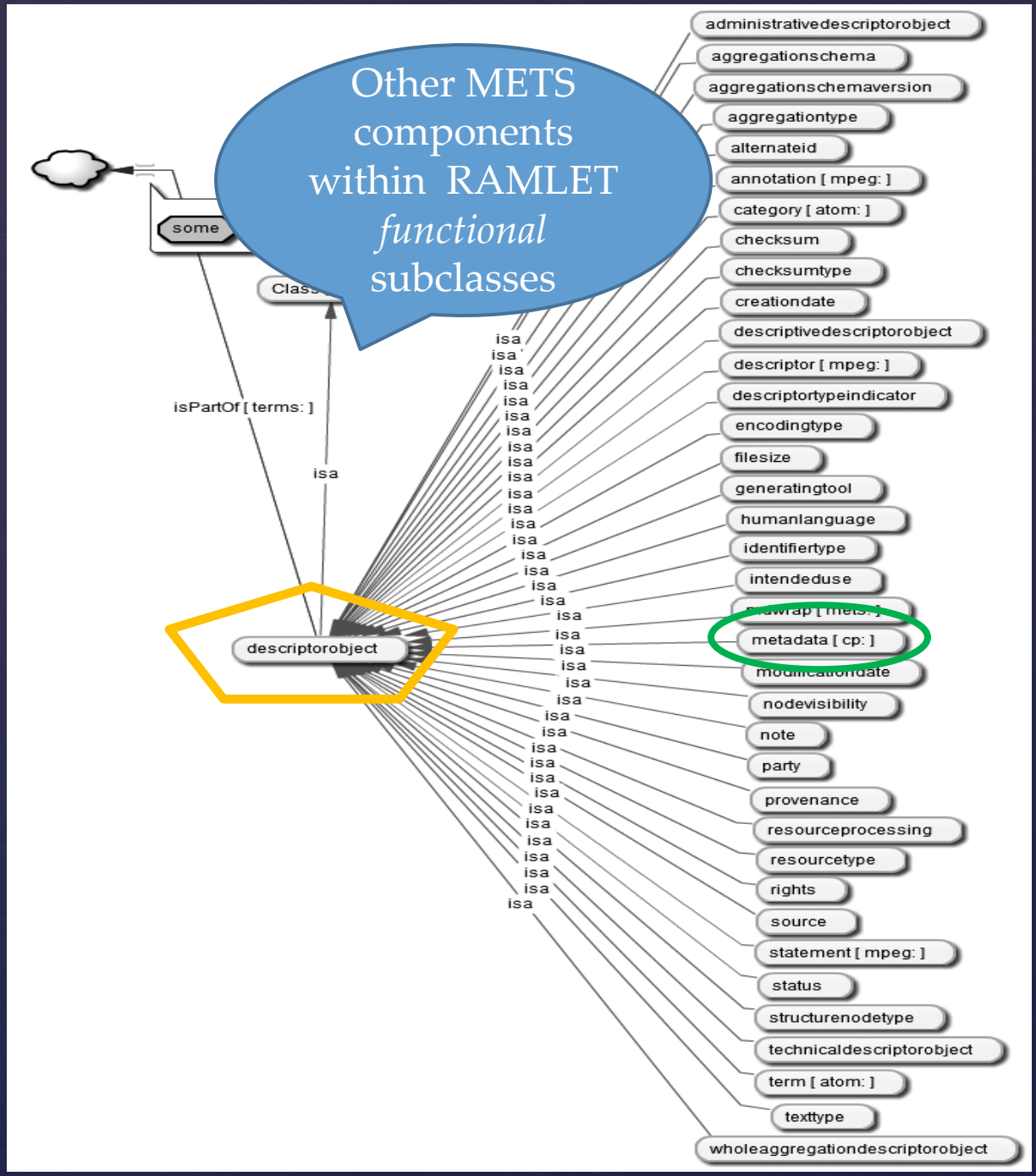
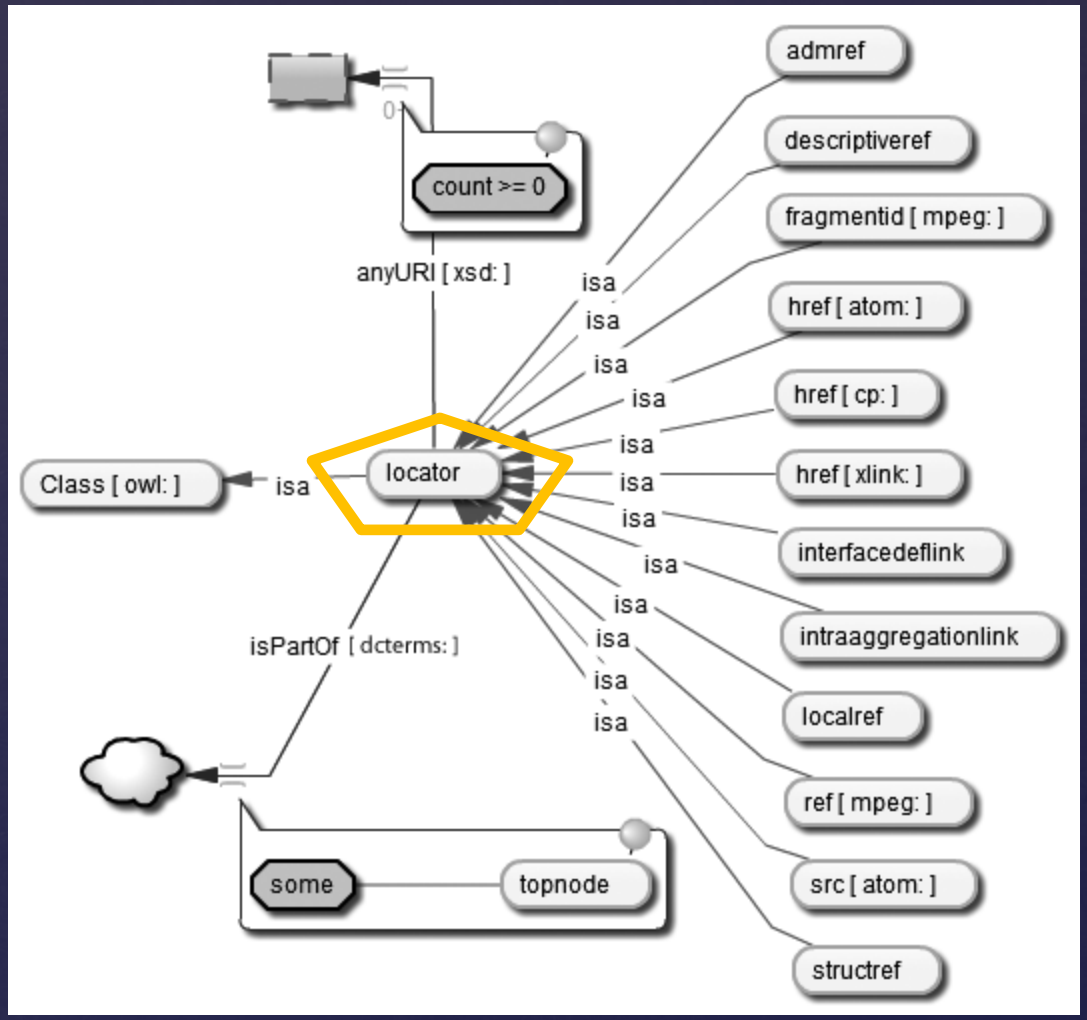
Resource Description

ramlet:descriptorObject



Function: Locating

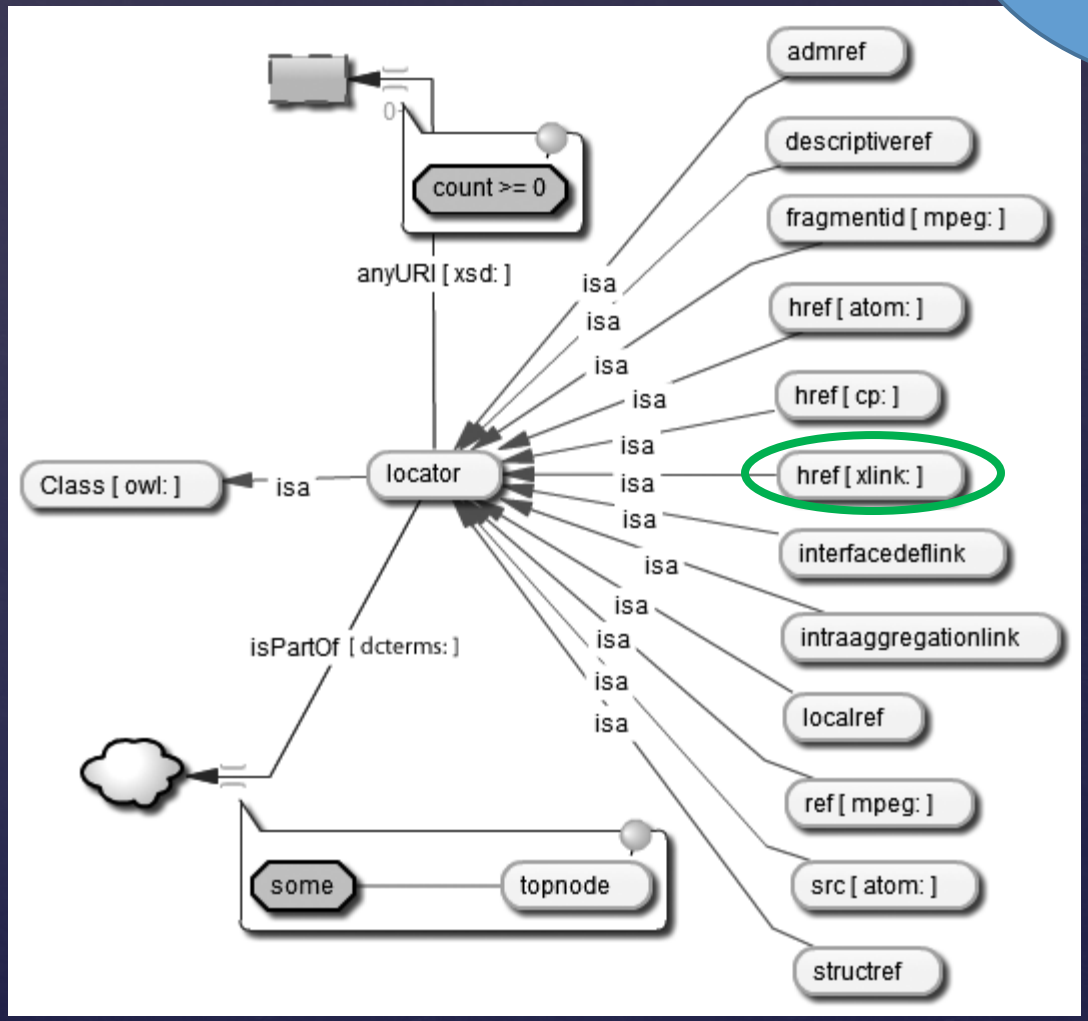
ramlet:locator



Function: Locating

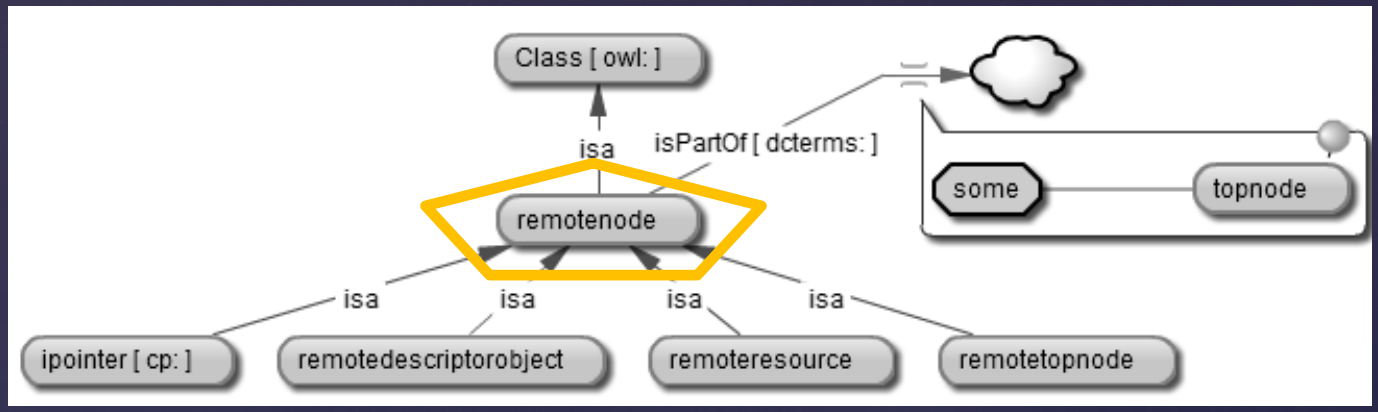
ramlet:locator

Other METS components within RAMLET *functional* subclasses



Function: Locating

ramlet:remoteNode



RAMLET property: ramlet:includes

ramlet:remoteDescriptorObject (mets:mdRef)

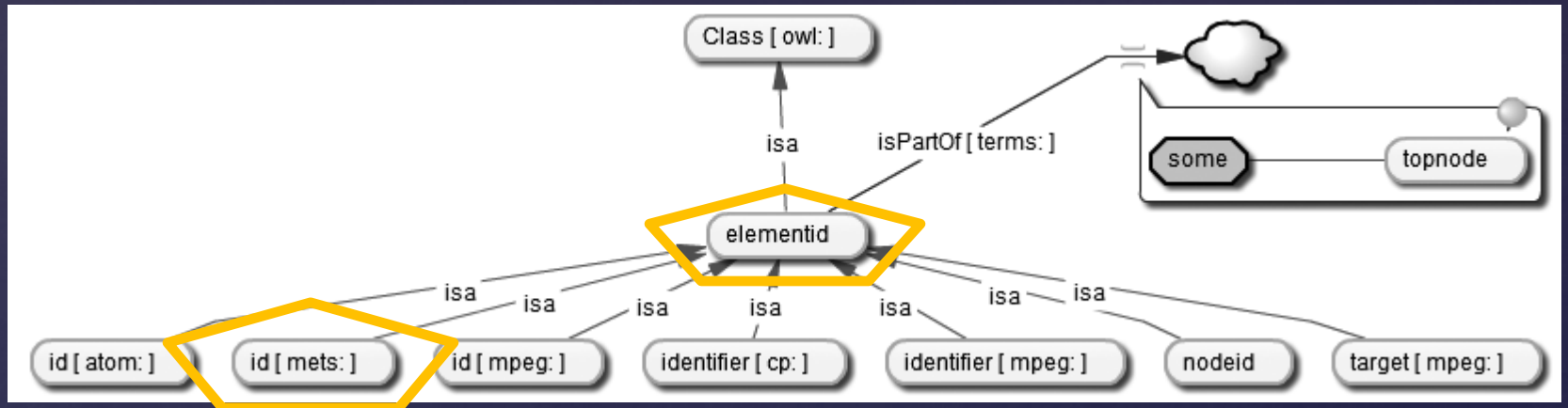
ramlet:remoteNode (mets:mptr)

ramlet:remoteTopNode (mets:flocat)

Function: Identifying – using identifiers as LOCATORS

Function: Identifying

ramlet:elementID



- Flattening of schema structure with relationships described by properties
- Any advantage to differentiating between “static “ & “dynamic” structures ?
- Still useful to distinguish b/w local & remote locations / approaches to resource aggregation & description?
- Advantages of identifying by reference using SemWeb identification mechanisms (URIs, other technologies?)

Summary & approaches to keep in mind?

RAMLET URI Registry at IEEE:
https://mentor.ieee.org/ramlet/bp/RAMLET_URI_Registry

The RAMLET Project Conceptual Overview:
https://mentor.ieee.org/ramlet/dcn/11/ramlet-11-0001-00-Docs-ramlet-conceptual-overview.pdf

The RAMLET Project – Use Cases:
https://mentor.ieee.org/ramlet/dcn/11/ramlet-11-0002-00-Docs-the-ramlet-project-use-cases.pdf

RAMLET Implementation Study Report (Kraan):
http://ubir.bolton.ac.uk/id/eprint/310

Acknowledgements / References

thank you!

questions???

Nancy J. Hoebelheinrich
nhoebel@kmotifs.com

Knowledge Motifs LLC

Mapping sensible data relationships