

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*

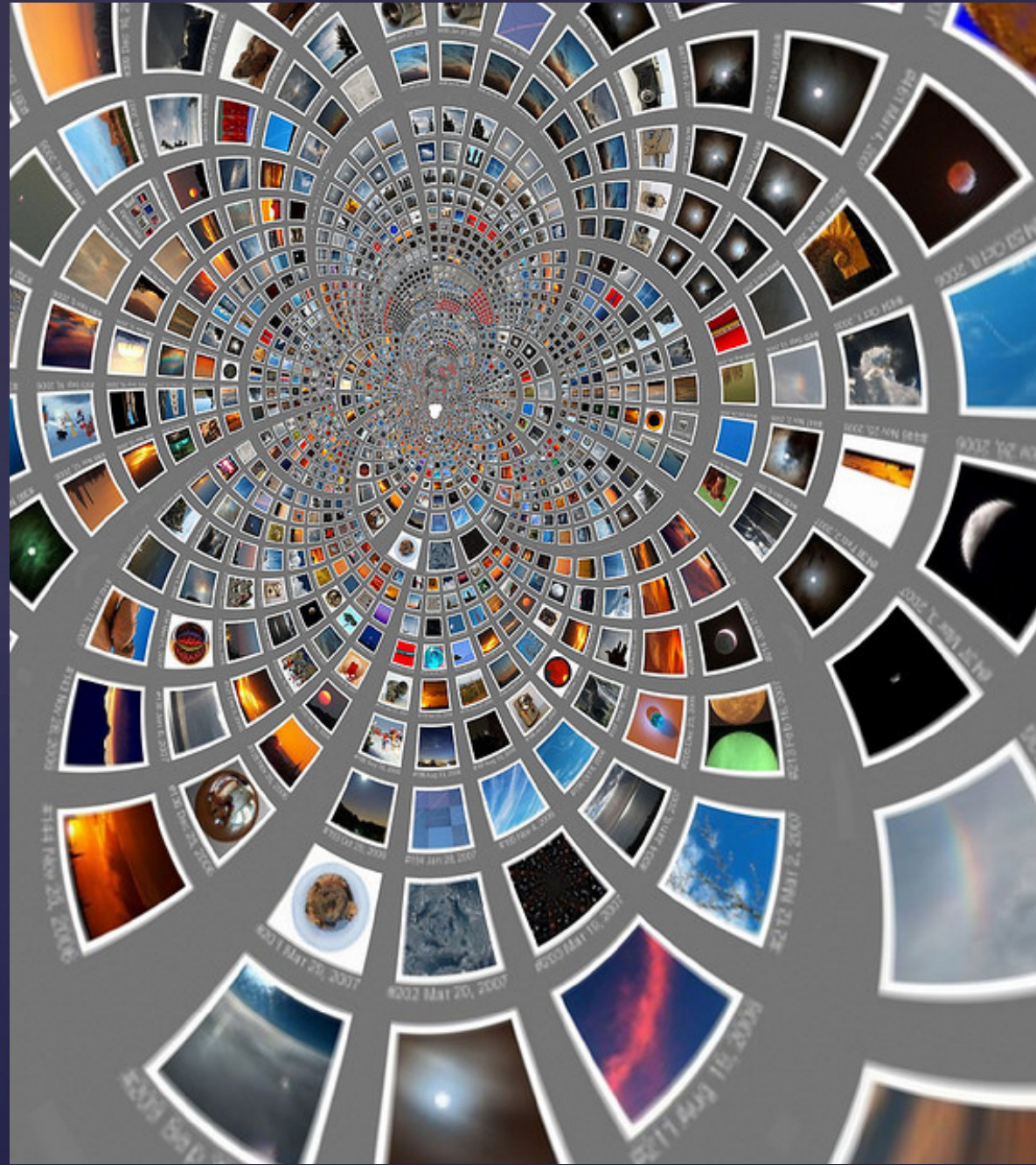
IEEE *RAMLET*

Purpose of
RAMLET:

Transformation

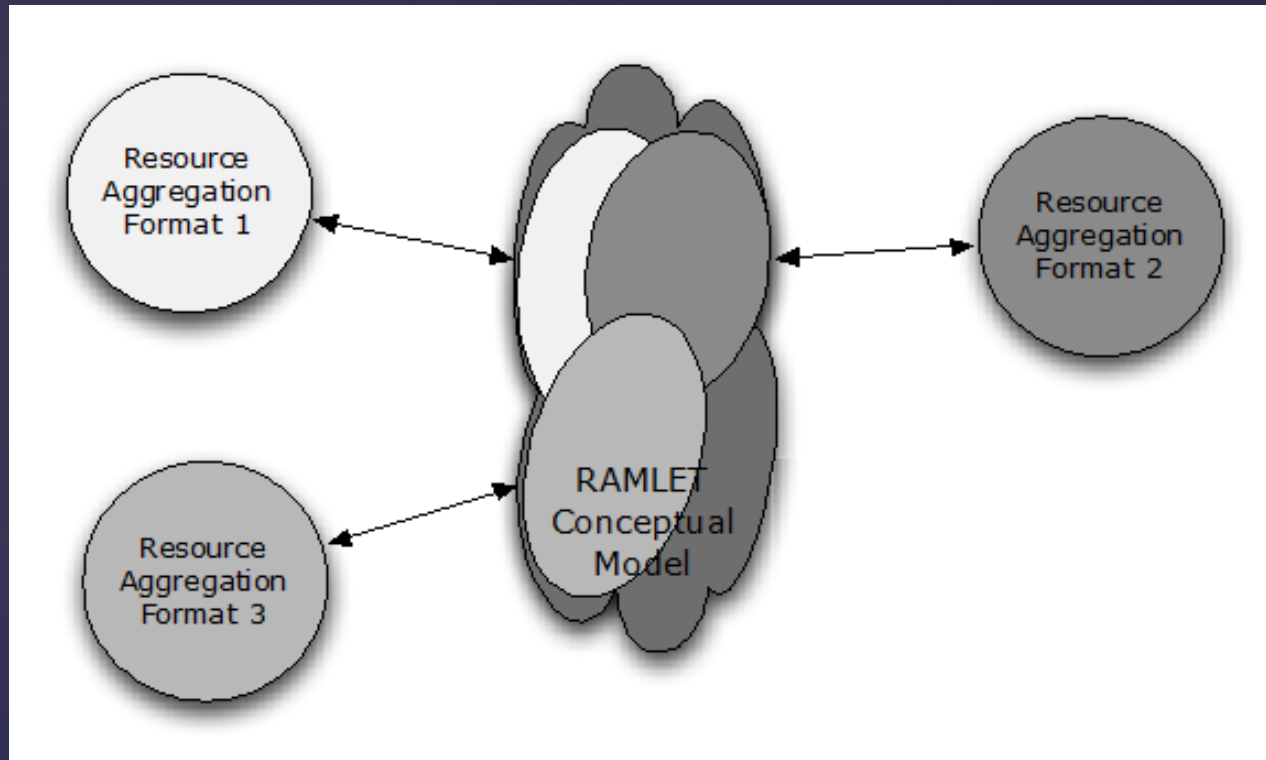
from one Aggregation

Format to another



fdecomite; CCBy 2.0;

<https://www.flickr.com/photos/artmakesmesmile/3158189914/in/photolist-FemHJ-5P5xQf-5NZran-5P5jsE-5P4Ns5-fEHboN-5P17on-dnc8an-4n5tTp-dUAIXL-4cXUsG-hZPFmK-4cHAaF-2yGAZP-5P5wMC-34t9yw-5HxvD9-1ggygN-5fpUyC-348N2e-2yGAZr-5P5pjm-2Y2h48-8FFnKB-Uqbj2-ecKLaQ-eD5EEv-2yGBIr-5P1hdi-5P1V4-5NZp2M-dnc2DK-5P3ULo-dnc4j3-4YV1fb-5NYD5p-dncaWK-dncbQS-5P3WiQ-5P5i6m-5P1awV-5P1dG8-5P1eCD-5P1cST-dnbdWW-5P1fmD-5P19VV-5P18gg-2tnypN-47MoGE/>



<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

IMS Content Packaging

METS v1.7

MPEG-21 DID (Digital Item
Declaration)

Atom

OAI-ORE

“Domains”:

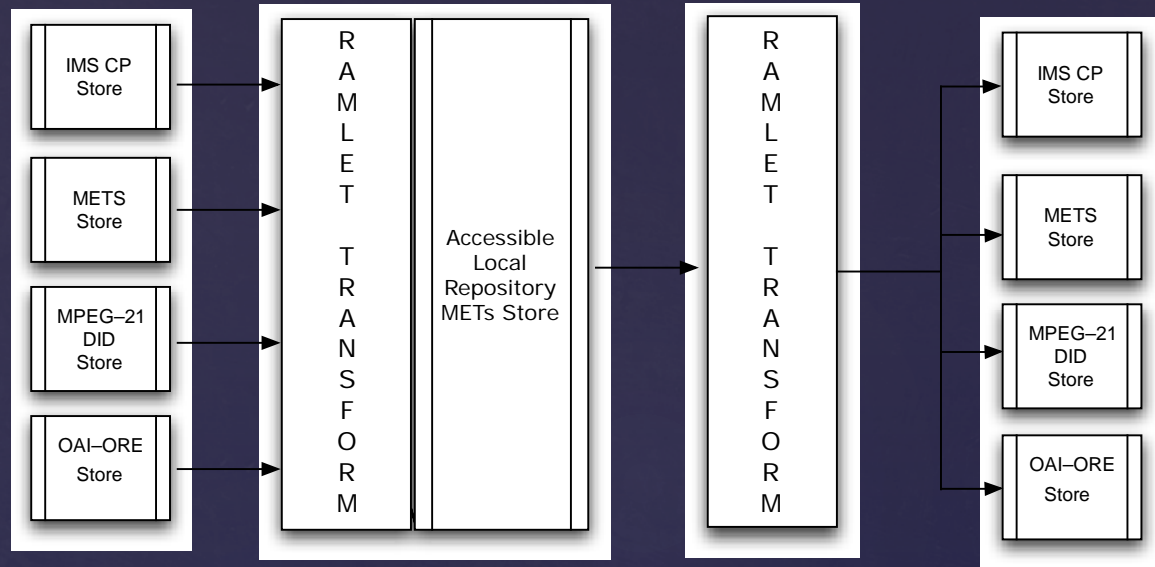
- Education
- Libraries
- Archives
- Museums
- AV content industry
- Content syndication
- Object reuse & exchange

Aggregation Formats analyzed

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

1. describes & isdescribedby
2. hasPart & isPartOf (dcterms:)
3. includes & isincludedby
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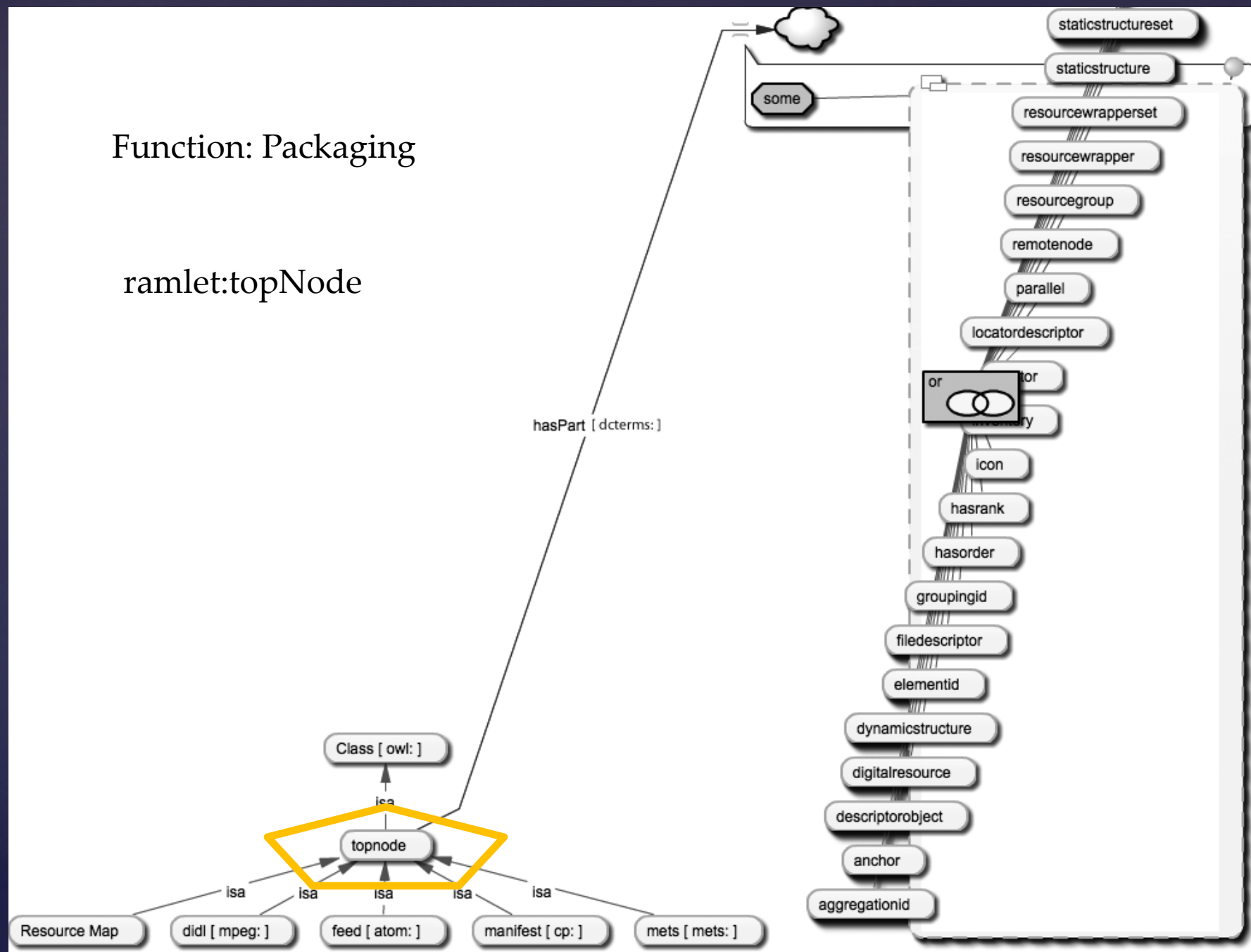
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Ramlet or “borrowed” properties *key* to our discussion

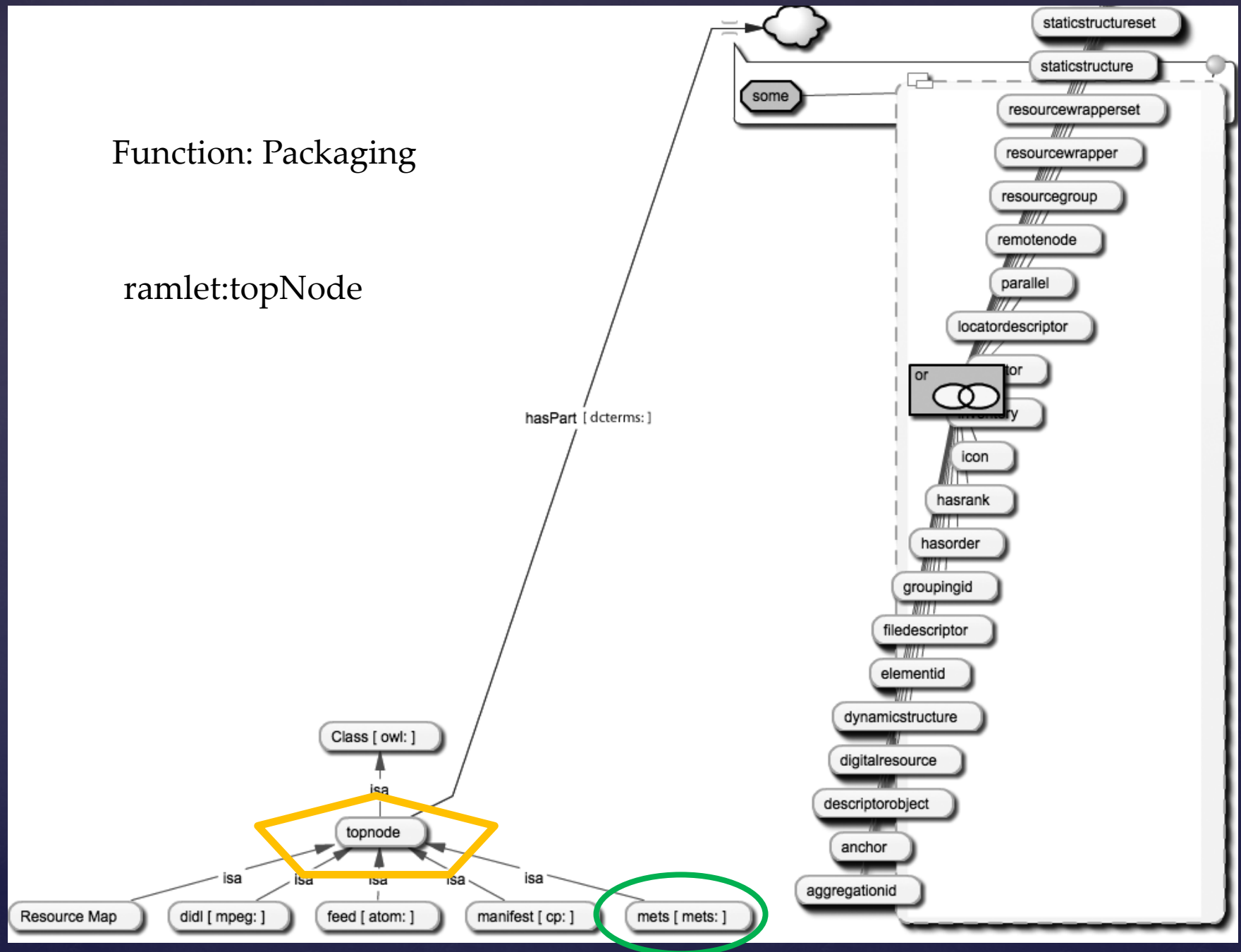
Function: Packaging

ramlet:topNode



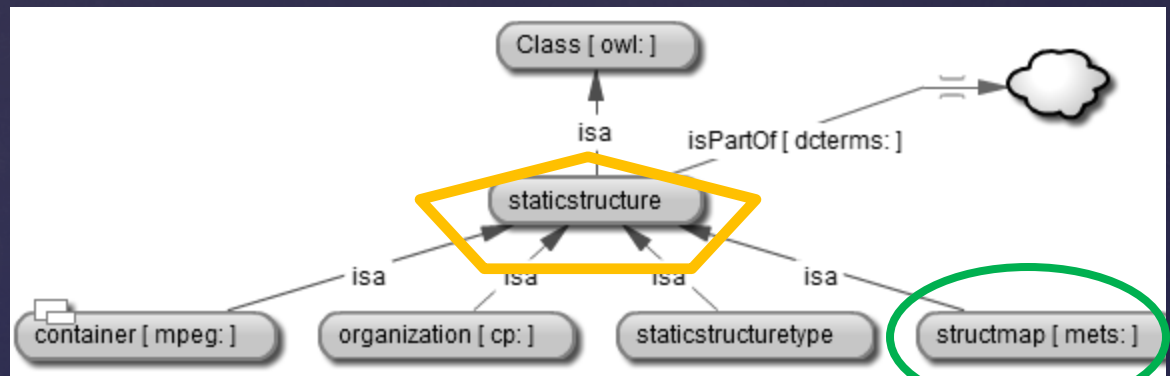
Function: Packaging

ramlet:topNode



Function: Structuring

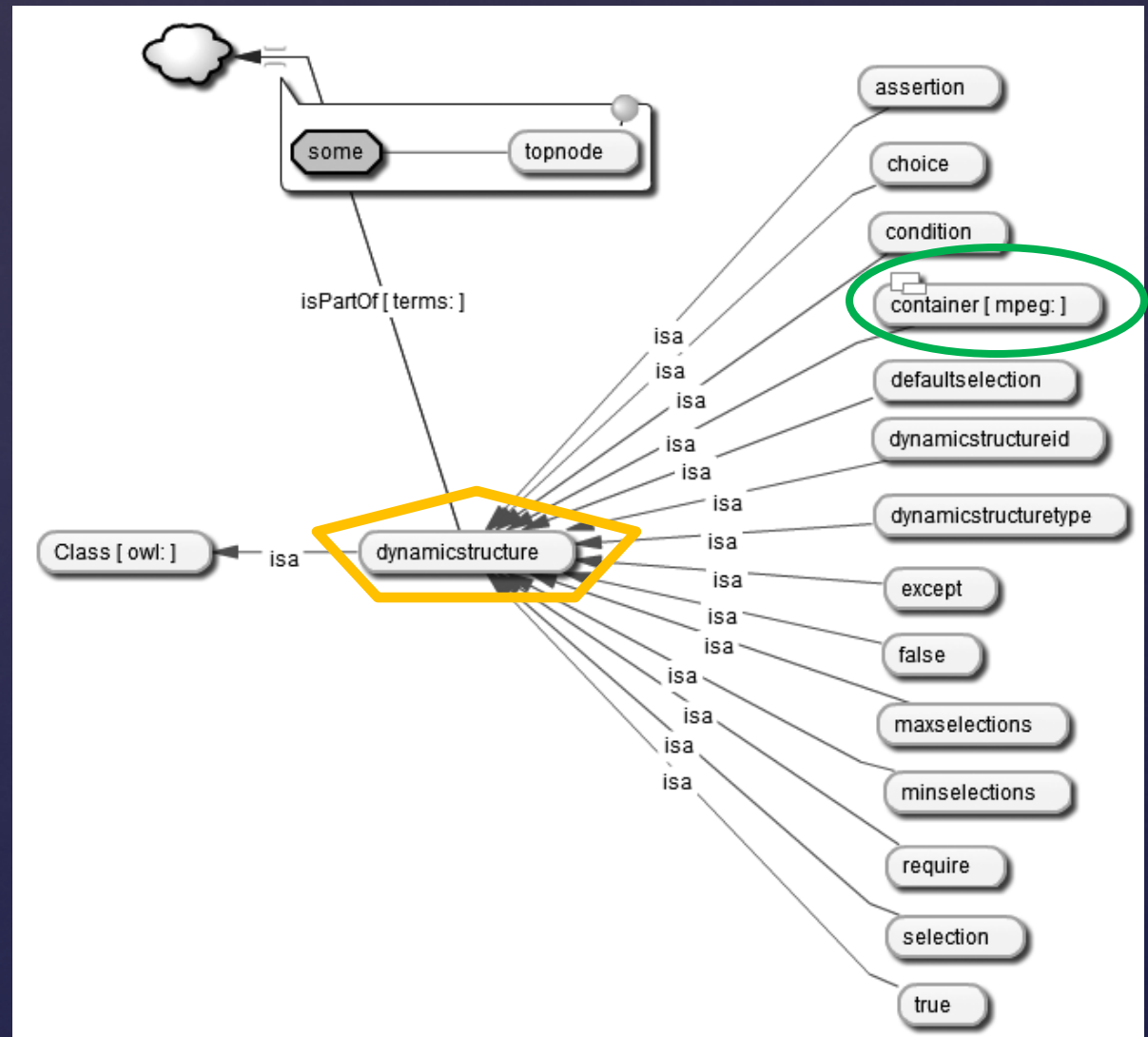
ramlet:staticStructure



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Function: Structuring

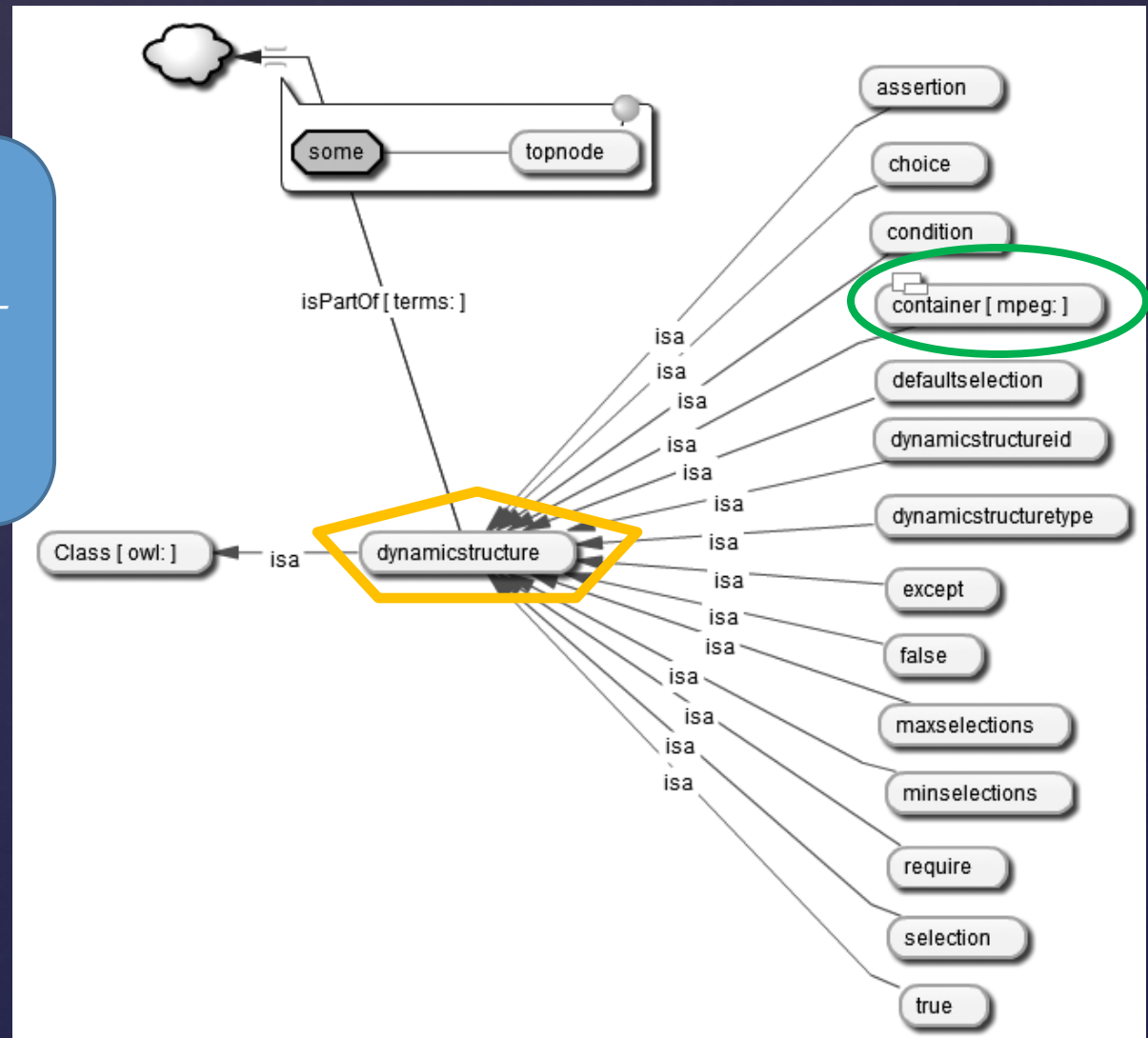
ramlet:dynamicStructure



Function: Structuring

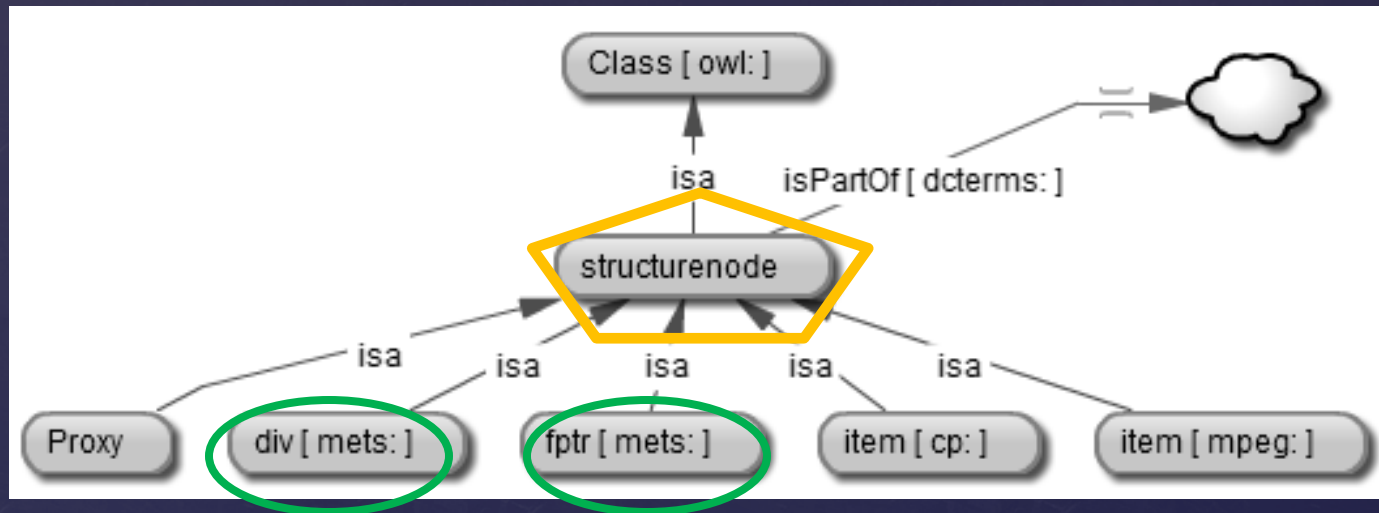
ramlet:dynamicStructure

No METS equivalent -
- should be?



Function: Dividing Structures

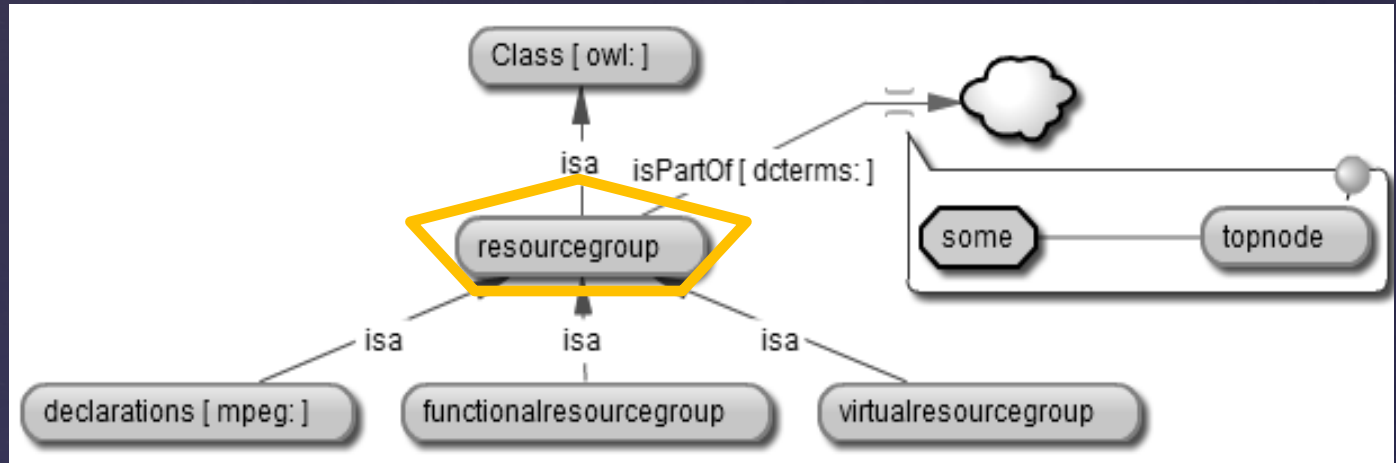
ramlet:structureNode



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Function: Grouping

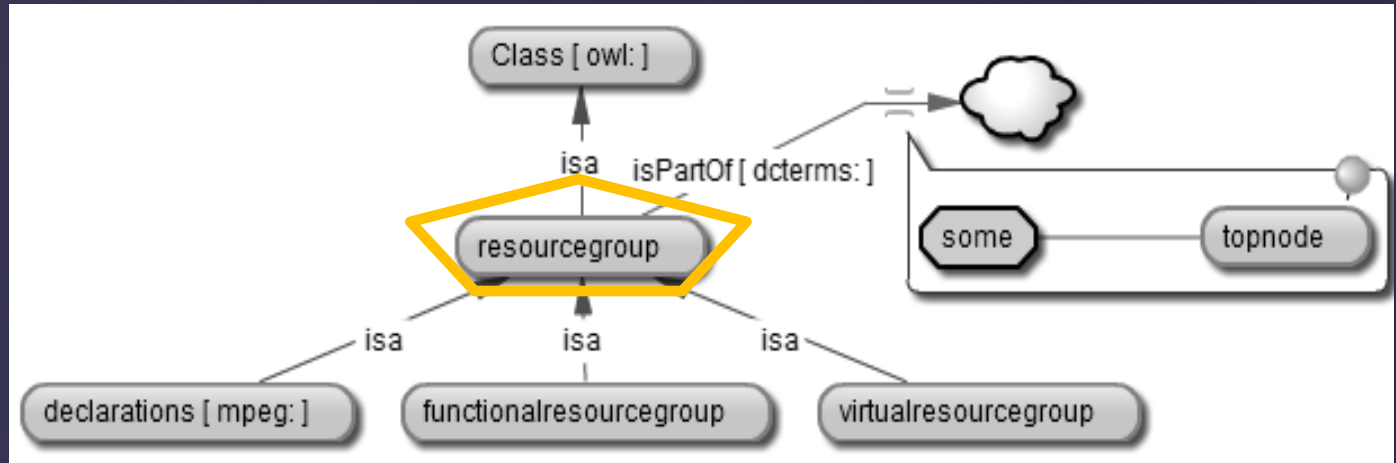
ramlet:resourceGroup



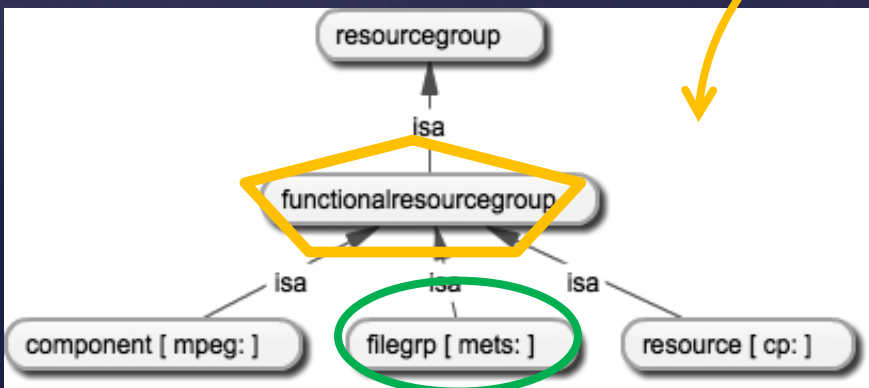
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Function: Grouping

ramlet:resourceGroup

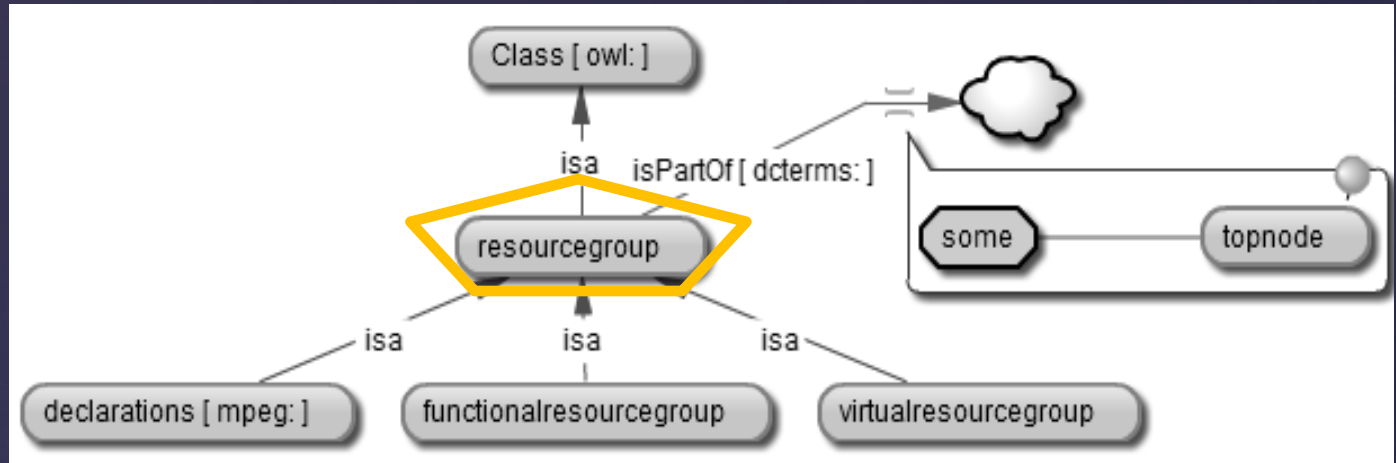


ramlet:functionalResourceGroup



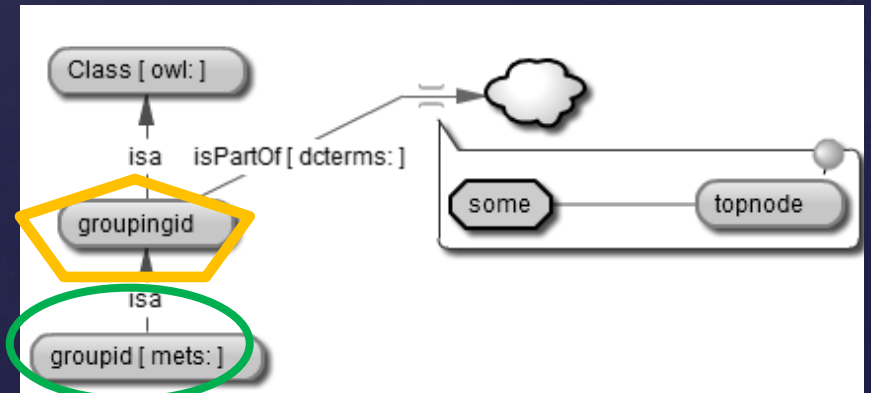
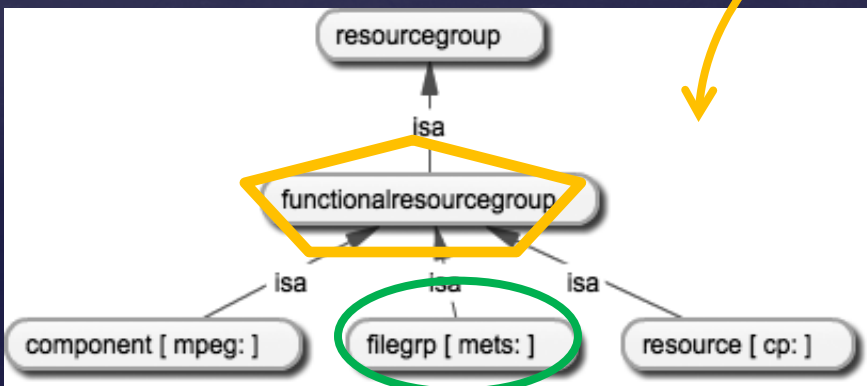
Function: Grouping

ramlet:resourceGroup

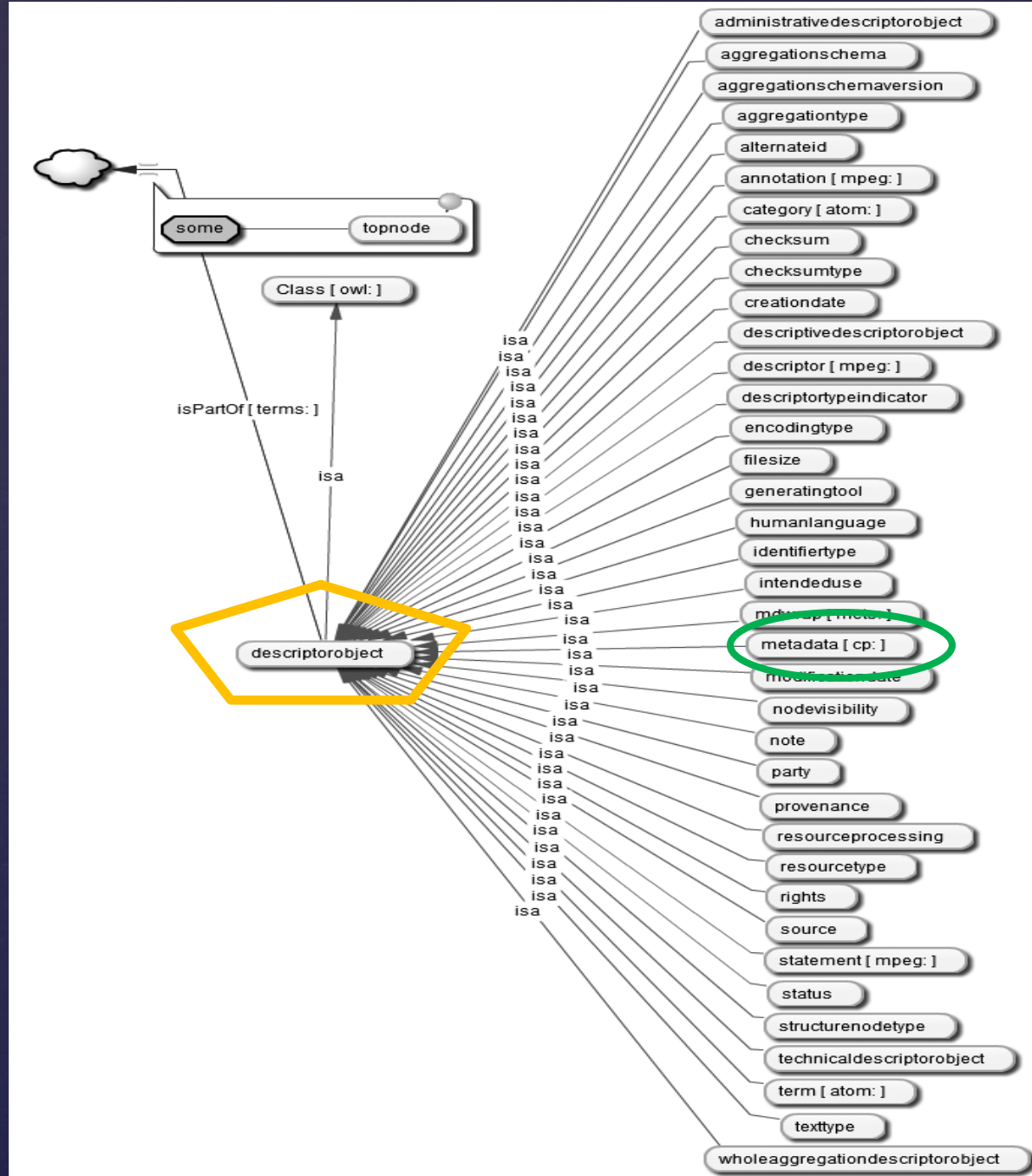


ramlet:functionalResourceGroup

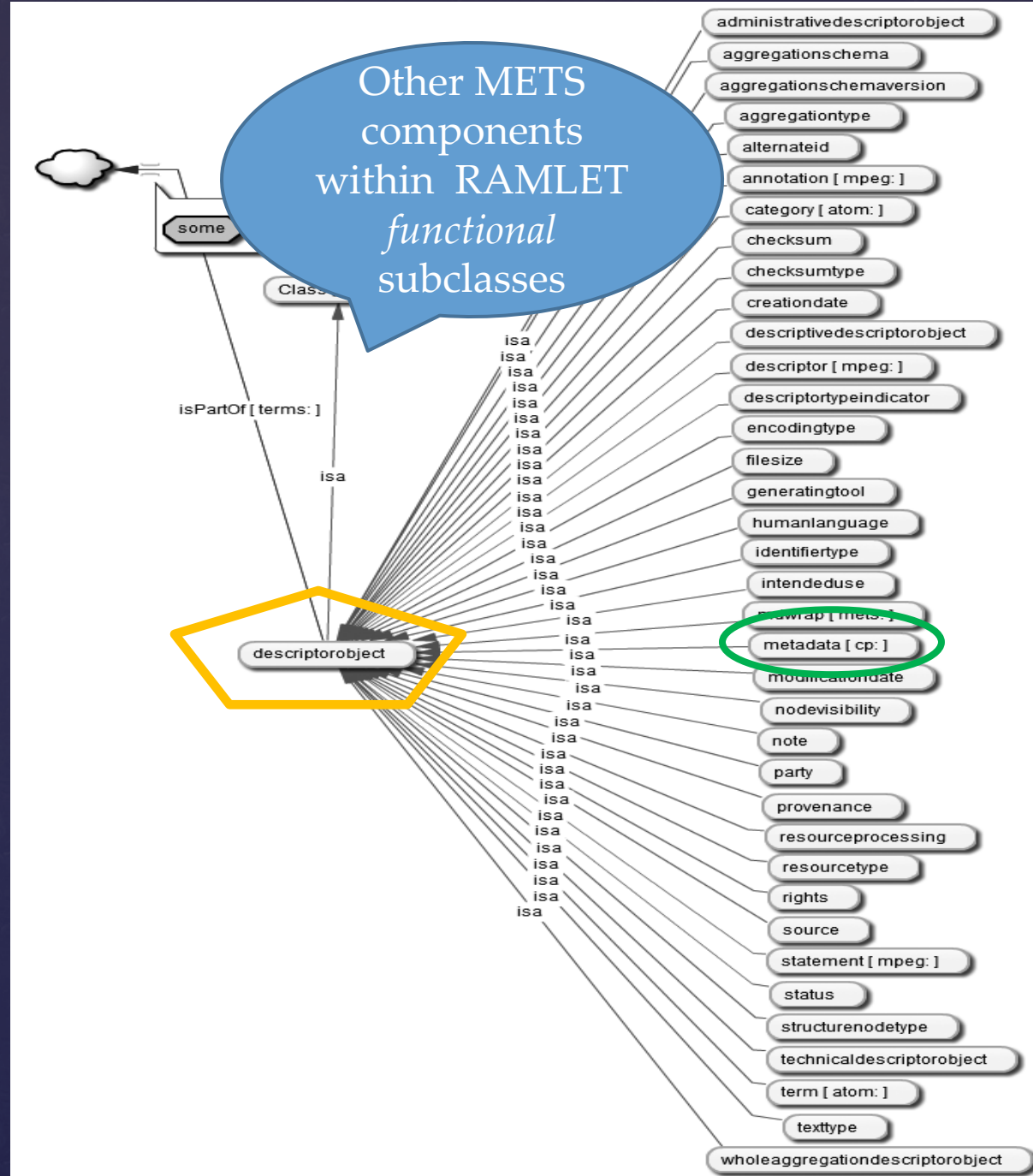
ramlet:groupingID



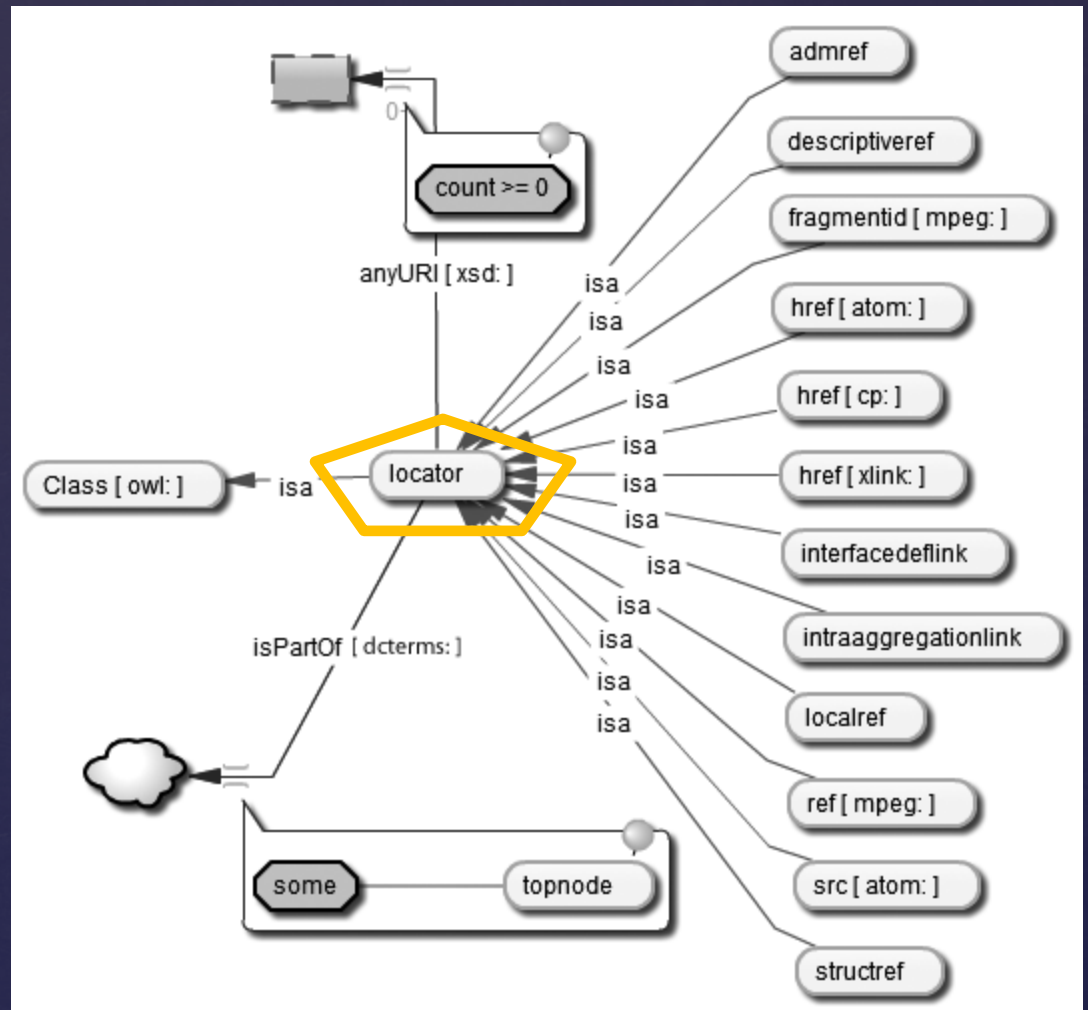
Function:
Resource Description
ramlet:descriptorObject



Function:
Resource Description
ramlet:descriptorObject



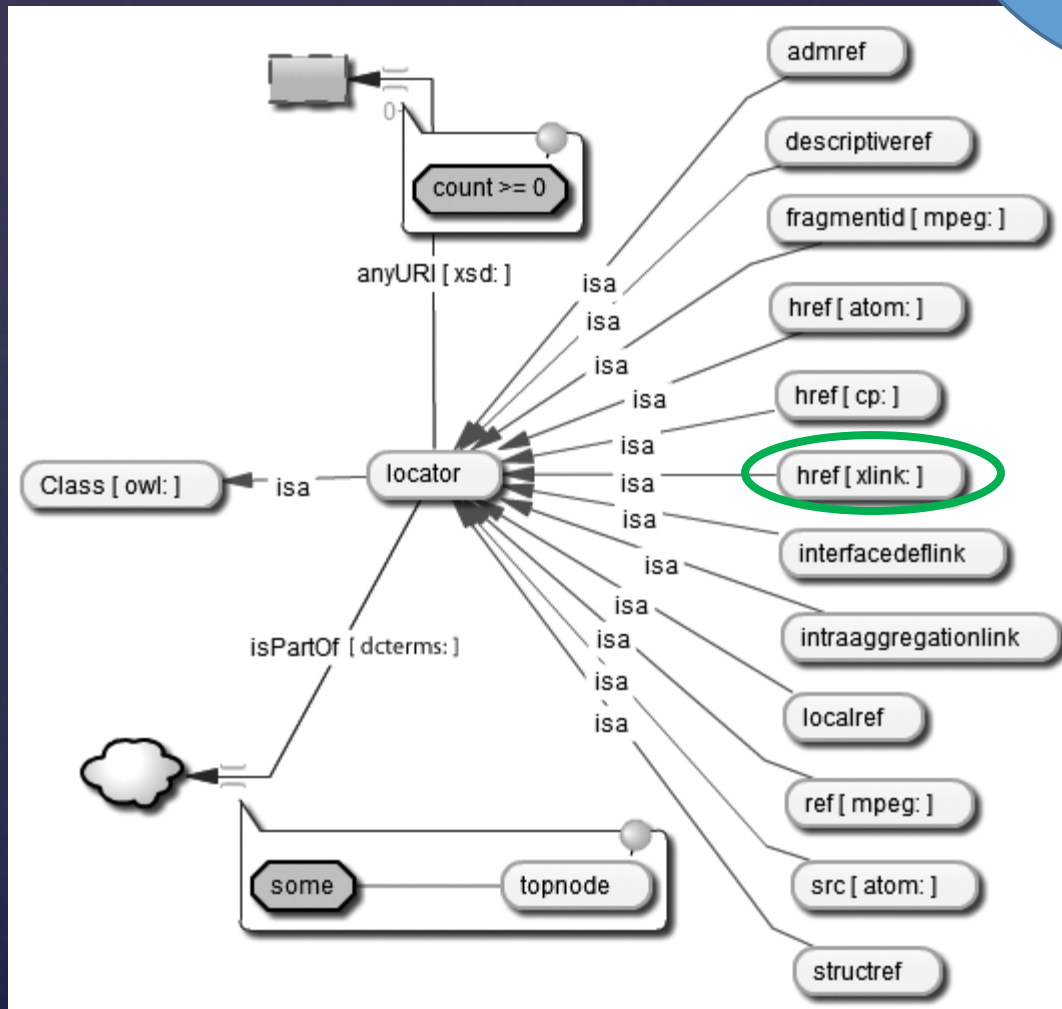
Function: Locating ramlet:locator



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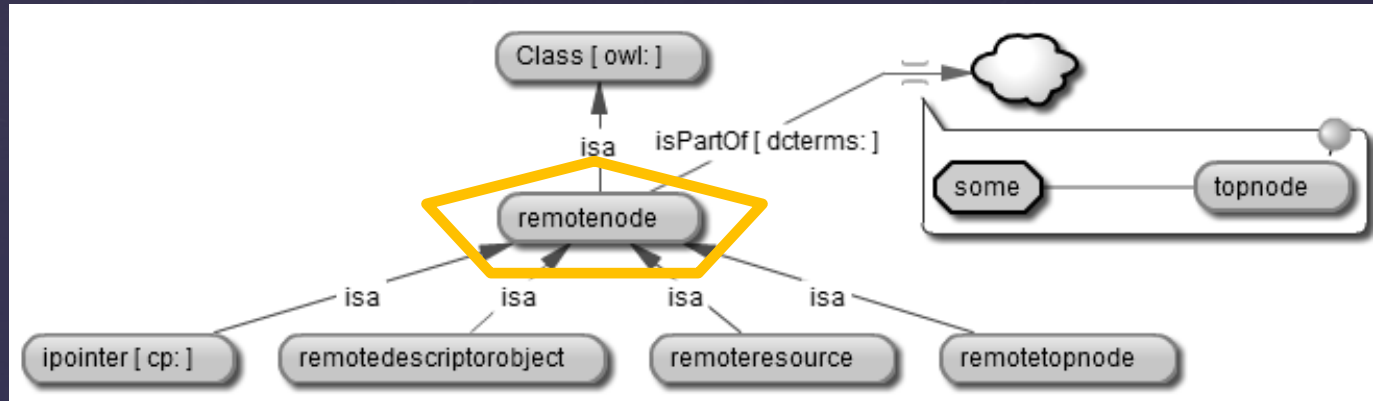
Function: Locating ramlet:locator

Other METS
components
within RAMLET
functional
subclasses



Function: Locating

ramlet:remoteNode



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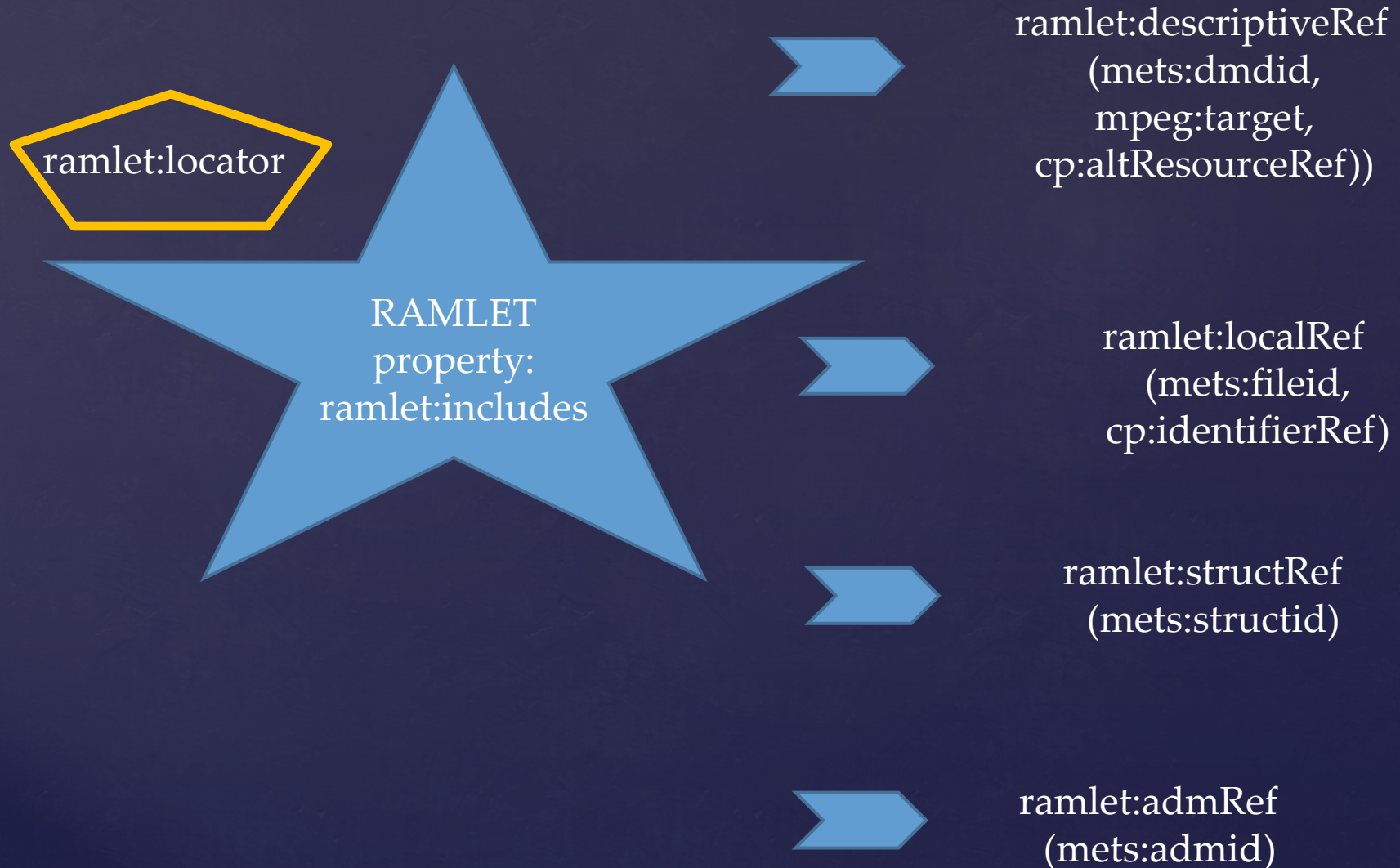
RAMLET
property:
ramlet:includes

ramlet:remoteDescriptorObject
(mets:mdRef)

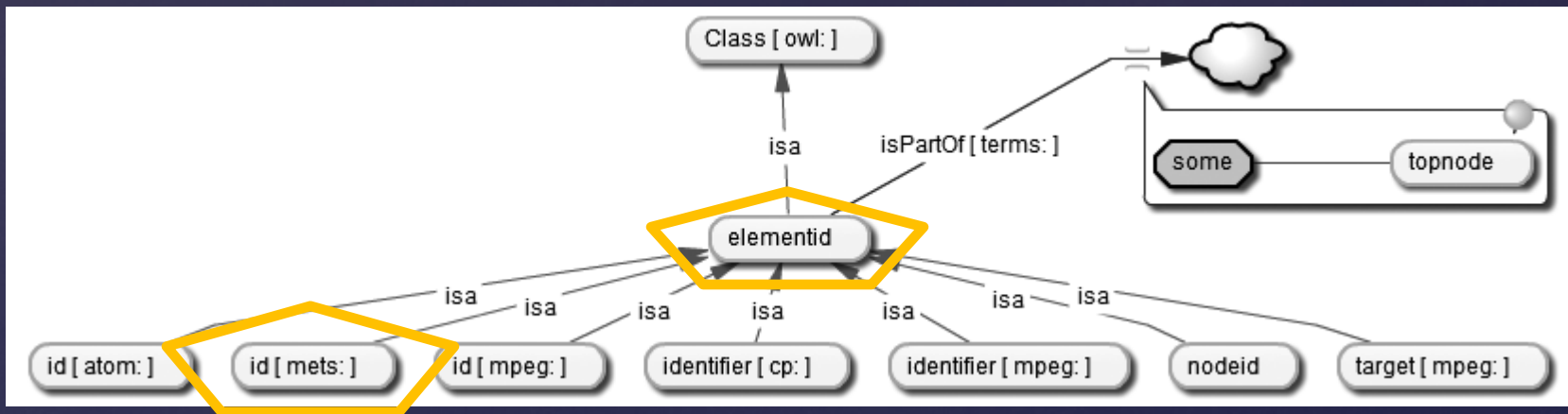
ramlet:remoteNode
(mets:mptr)

ramlet:remoteTopNode
(mets:flocat)

Function: Identifying – using identifiers as LOCATORS



Function: Identifying ramlet:elementID



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- ⌘ 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???

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