

Creating an Application Profile

Tutorial 3

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What problem do DCAPs solve?

- Implementors adapt standards to context:
 - “DC is too small! We need more terms!”
 - “Some of the terms must be more specific!”
- A Profile describes how an application:
 - Uses generic terms (e.g. Dublin Core)
 - Uses more specialized terms
 - To describe “photographs”, “products”, “collections”...
 - Constrains the use of properties
 - Example: “When using dc:language, values must conform to **RFC 3066!**”

Why do this?

- Document the metadata model of your application
 - Help other implementors design interoperable applications
 - Merge metadata from many sources
 - Promote convergence on “good practice” within communities of use
 - Solve your specific problems while following common standards for interoperability

Examples

- To describe “collections” [NISO Metasearch]
- Government Information [Australian AGLS]
- Agricultural development information [FAO]
- European Environmental Agency
- DC-Education

Basics of DCAPs

- DCAP does not define new terms – it merely cites terms defined elsewhere (e.g., in Dublin Core)
- DCAP is a **set of Property Usages**
- **A Property Usage describes how a (previously declared) Property is used in the metadata of an application.**
- All DCMI Elements and Element Refinements are **Properties**

A Property Usage

- **References** (“uses”) exactly one property defined elsewhere
- May provide **additional documentation** on how property is interpreted
- May give it an **application-specific label**
- May specify **obligation** (e.g., mandatory, optional, conditional)
- May specify **constraints on permitted values** (e.g., “encoding schemes”)

“Readable” DCAPs for use by people

- CEN CWA 14855: “DCAP Guidelines”

- <ftp://ftp.cenorm.be/PUBLIC/CWAs/e-Europe/MMI-DC/cwa14855-00-2003-Nov.pdf>

- Emphasis on Readability

- “Optimal usefulness for the intended audience”

- Can include redundant information, if useful

- Identify terms with “appropriate precision”
(i.e. by URI Reference when possible)

DC-Library Application Profile (DC-Lib) - Mozilla

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Name of Term	subject
Term URI	http://purl.org/dc/elements/1.1/subject
Label	Subject
Defined By	http://dublincore.org/documents/dcmi-terms/
Source Definition	The topic of the content of the resource.
DC-Lib Definition	
Source Comments	Typically, a Subject will be expressed as keywords, key phrases or classification codes that describe a topic of the resource. Recommended best practice is to select a value from a controlled vocabulary or formal classification scheme.
DC-Lib Comments	<p>If a geographic or temporal aspect is recorded use the element Coverage. It may also be repeated in Subject if desired. If there is a subject string with elements in addition to a geographic, include the entire string in Subject with geographic element also in Coverage.</p> <p>It is highly recommended that either freetext or controlled vocabulary be supplied as element Subject in the metadata where appropriate and feasible. It is also recommended that a controlled vocabulary be used with encoding scheme specified. If no encoding scheme is specified, it is treated as keyword.</p> <p>If using qualified DC, always use the encoding scheme(s) for terms from a controlled vocabulary.</p>
Type of term	element
Refines	
Refined By	
Has Encoding Scheme	<p>Library of Congress Subject Headings - http://purl.org/dc/terms/LCSH</p> <p>Medical Subject Headings - http://purl.org/dc/terms/MESH</p> <p>Dewey Decimal Classification - http://purl.org/dc/terms/DDC</p> <p>Library of Congress Classification - http://purl.org/dc/terms/LCC</p> <p>Universal Dewey Classification - http://purl.org/dc/terms/UDC</p> <p>These are encoding schemes currently defined by DCM1. As additional schemes are registered, they will be included.</p> <p>Additional encoding schemes will be registered for those used in the library domain based on the MARC list of subject and classification schemes. Including an identifier to link to a registry where all encoding schemes are defined (e.g. based on RSLP schema) needs to be explored.</p>
Obligation	MA
Occurrence	

Done

No DCAPs without Metadata Vocabularies!

- In foregoing example, DC-Libraries profile “uses” the Dublin Core element “Subject”
 - DCMI declares this and other elements in a **Metadata Vocabulary**
- **dc:subject** uniquely identified by DCMI with URI reference
<http://purl.org/dc/elements/1.1/subject>
- **Note that some information from DCMI “source” document is redundantly included in the DCAP**

Term Name:subject

URI: <http://purl.org/dc/elements/1.1/subject>

Label: Subject and Keywords

Definition: The topic of the content of the resource.

Comment: Typically, a Subject will be expressed as keywords, key phrases or classification codes that describe a topic of the resource. Recommended best practice is to select a value from a controlled vocabulary or formal classification scheme.

Type of Term: [element](#)

Status: [recommended](#)

Date Issued: 1999-07-02

Term Name:title

URI: <http://purl.org/dc/elements/1.1/title>

Label: Title

Definition: A name given to the resource.

Comment: Typically, a Title will be a name by which the resource is formally known.

Type of Term: [element](#)

Status: [recommended](#)

Towards DCAPs for use by machines

- CEN CWA on “machine-processable” DCAPs in December 2004
- Formal model of DCAPs under development
 - In context of broader effort to articulate the Abstract Model underlying Dublin Core metadata
 - Influenced by W3C Semantic Web activity
 - DCAPs can be represented in Resource Description Framework (RDF)
 - RDF representations are expressed in RDF/XML

Guidelines for machine-processable representation of Dublin Core Application Profiles - Mozilla

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```
<dcap:PropertyUsage rdf:about="http://www.rdn.ac.uk/ap/rdn_dc#2">
<dcap:uses rdf:resource="&dcns;creator"/>
<rdfs:label>Creator</rdfs:label>
<dc:description>Enter personal names, where possible, in the order suggested by AACR2
chapter 22 for headings of persons. Enter corporate names, where possible, in the order
suggested by AACR2 chapter 24 for headings for corporate bodies. The inclusion of
personal and corporate name headings from authority lists constructed according to
AACR2, e.g. the Library of Congress Name Authority File (LCNA), is also
acceptable.</dc:description>
<dcap:obligation rdf:resource="&dcapns;Obligation/optional"/>
<dcap:maxOccurs>Unbounded</dcap:maxOccurs>
<dcap:isMemberOf rdf:resource="http://www.rdn.ac.uk/ap/rdn_dc"/>
<rdfs:isDefinedBy rdf:resource="" />
</dcap:PropertyUsage>
<dcap:PropertyUsage rdf:about="http://www.rdn.ac.uk/ap/rdn_dc#3">
<dcap:uses rdf:resource="&dcns;subject"/>
<rdfs:label>Subject and Keywords</rdfs:label>
<dc:description>For keywords either enter terms as free-text with a semi-colon
separating each keyword; or as multiple (repeating/variant) fields. There are no
requirements regarding the capitalization of keywords though internal (within Hub)
consistency is recommended. The RDNC can provide scripts to convert records that use
alternate separators, eg. commas. Where terms are taken from a standard subject scheme:
enter a shortened version of the scheme used as a value qualifier and then enter the
term/s. The shortened version of the scheme used should be taken from this enumerated
list. The value(s) consist(s) of the subject term(s). Transcribe complete subject
descriptor according to the relevant scheme. Use the punctuation and capitalisation used
in the original scheme.</dc:description>
```

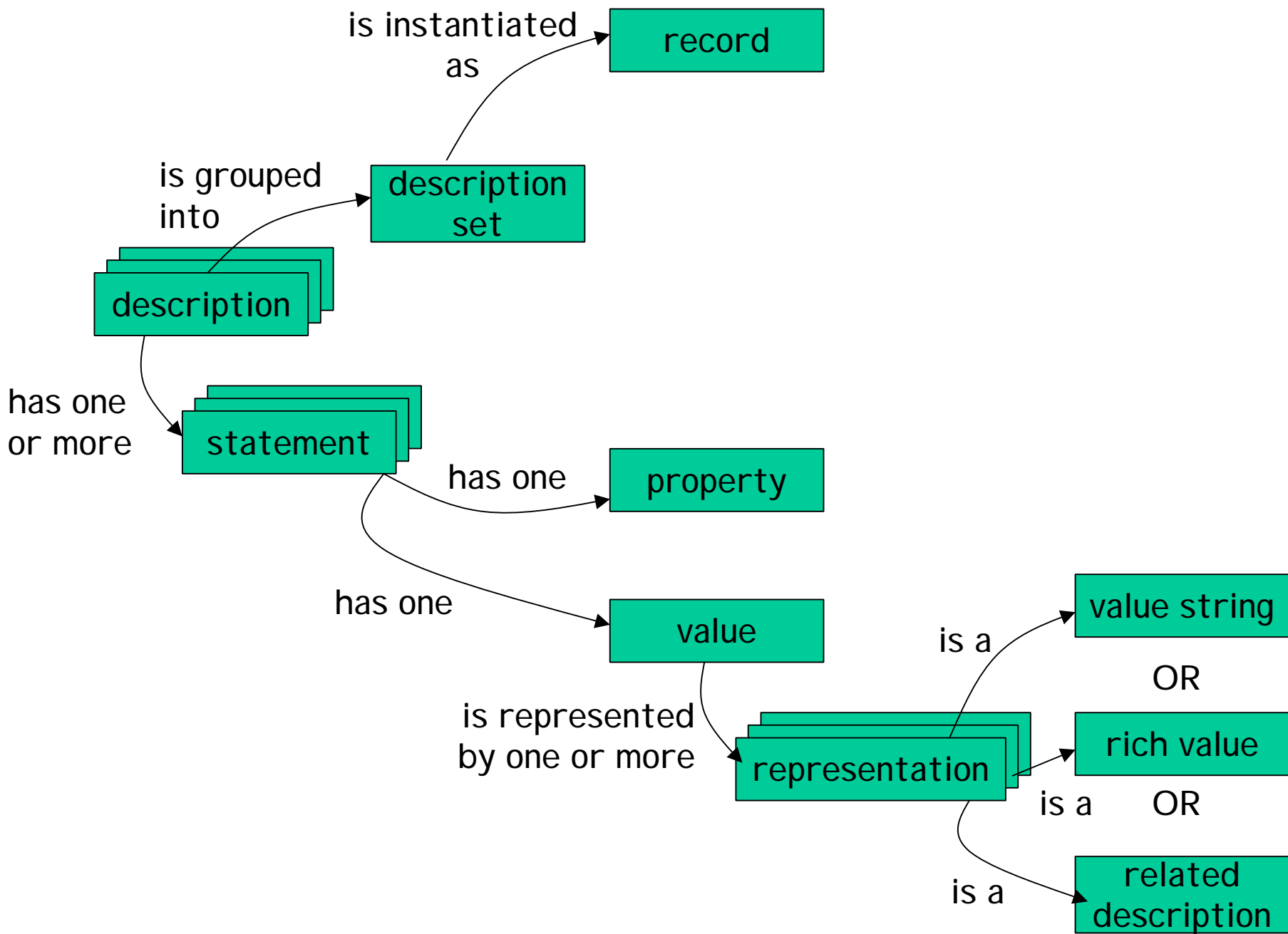
Done

Precise, machine- processable statements!

- Information declared (redundantly) in a Metadata Vocabulary is not included
- Only includes information which is particular to the Application Profile
- Use of formal schema language supports resolution of cross-references and merging of data

DCMI Abstract Model

- Draft of the DCMI Architecture Working Group
- Seeks to make explicit the data model which has emerged in DCMI
- Formal model against which different methods for “encoding” DC metadata can be compared



record (encoded as XHTML, XML or RDF/XML)

description set

description (about a resource (URI))

statement

property (URI)

vocabulary encoding scheme (URI)

value (URI)

syntax encoding scheme (URI)

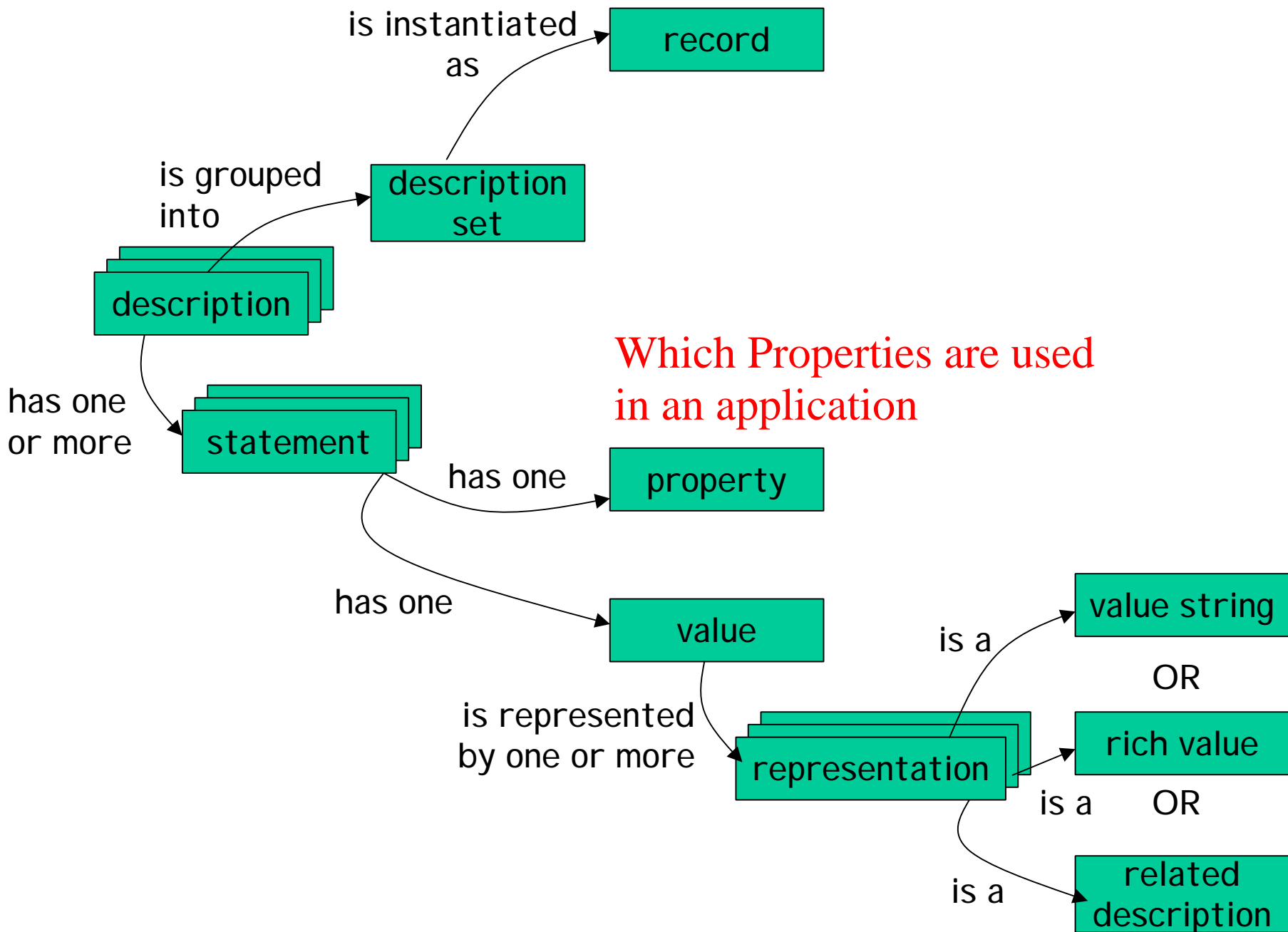
representation

value string

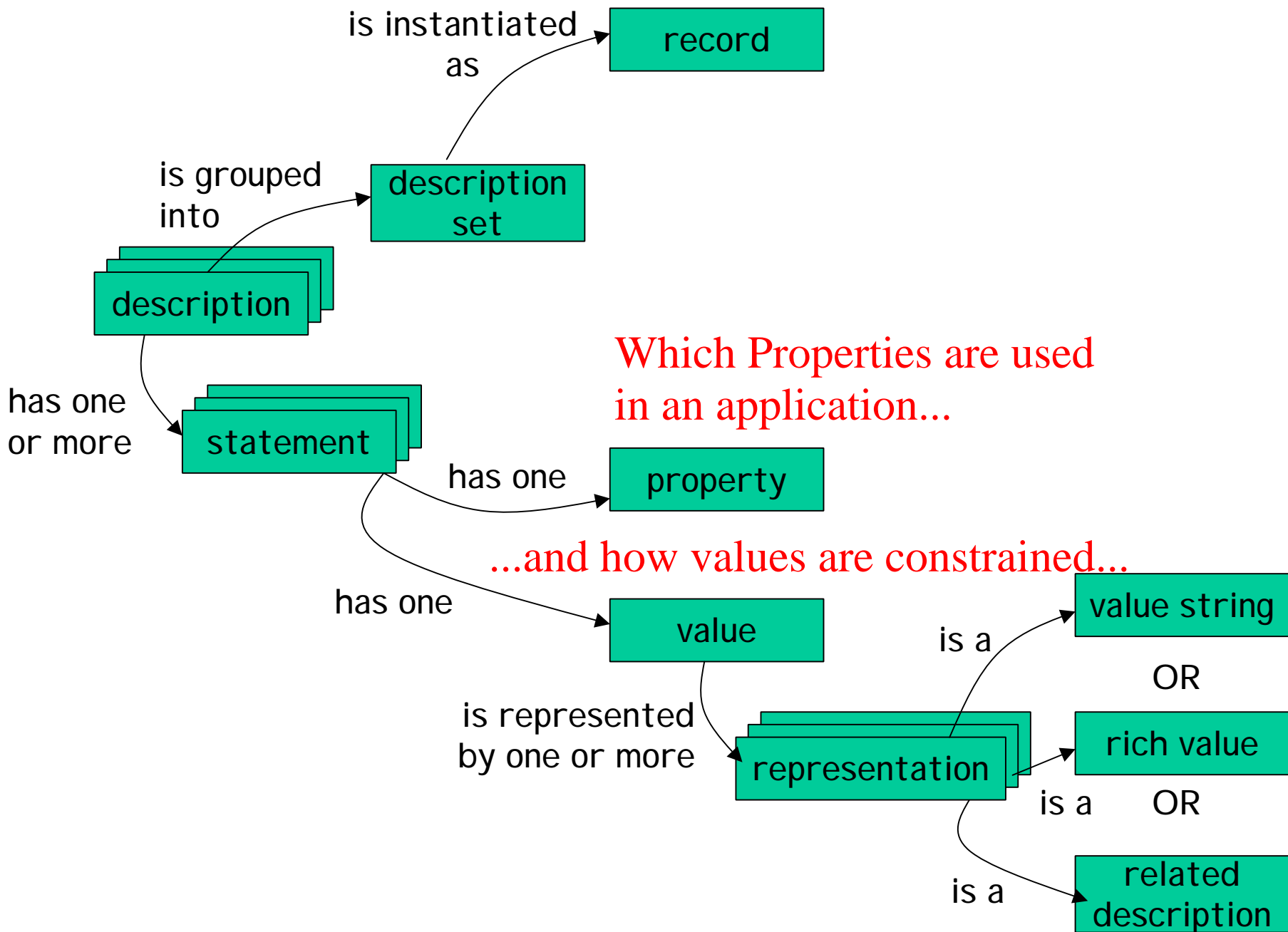
language (e.g. en-GB)

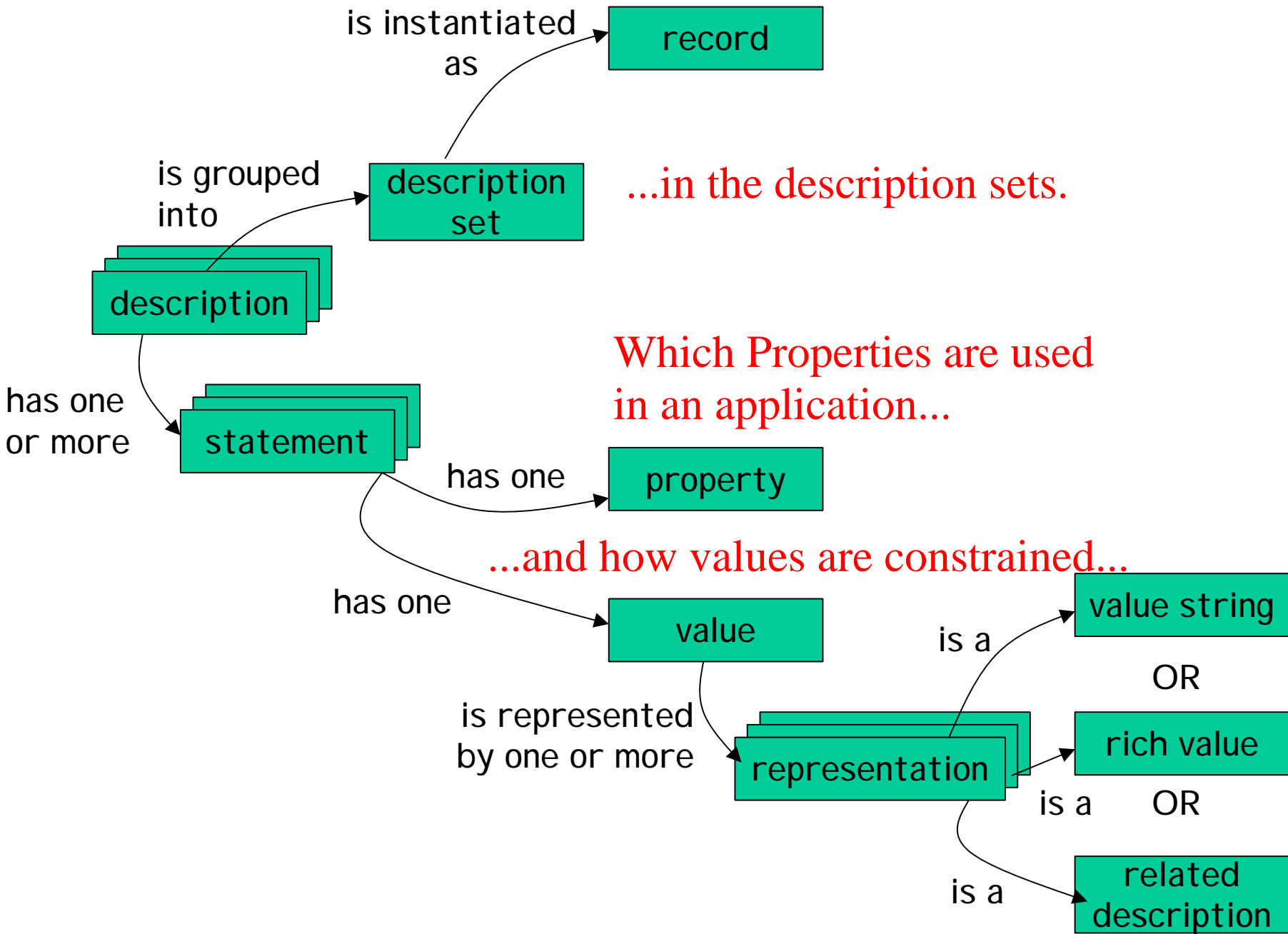
OR rich value

OR related description



Which Properties are used in an application





...in the description sets.

Which Properties are used in an application...

...and how values are constrained...