



A Metadata Application Profile for KOS Vocabulary Registries

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Outline

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1. Background

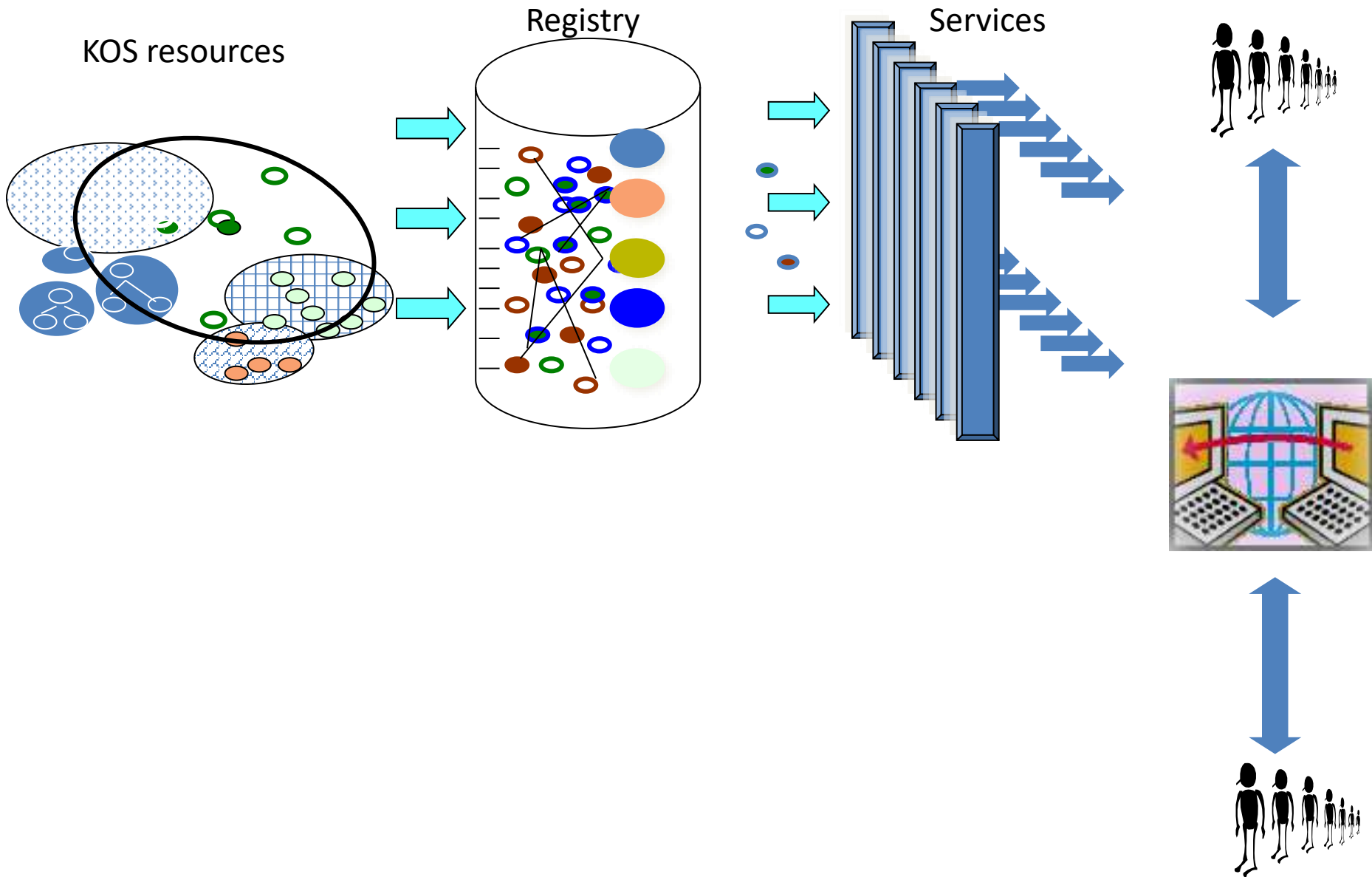
Terminology Registries

- at a minimal level
 - hold scheme information
 - list, describe, identify, and point to sets of KOS and other types of vocabularies available for use in information systems and services
- at a higher level
 - hold the member terms, classes, concepts, and relationships contained in a vocabulary (either monolingual or multilingual)

-- based on several UKOLN studies, [TRSS project](#), etc.

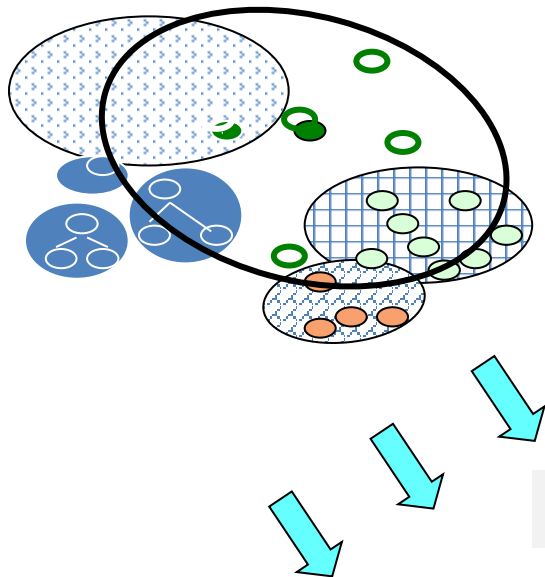
The need for describing and accessing KOS resources

Terminology registries and services



The need for describing and accessing KOS resources

KOS resources



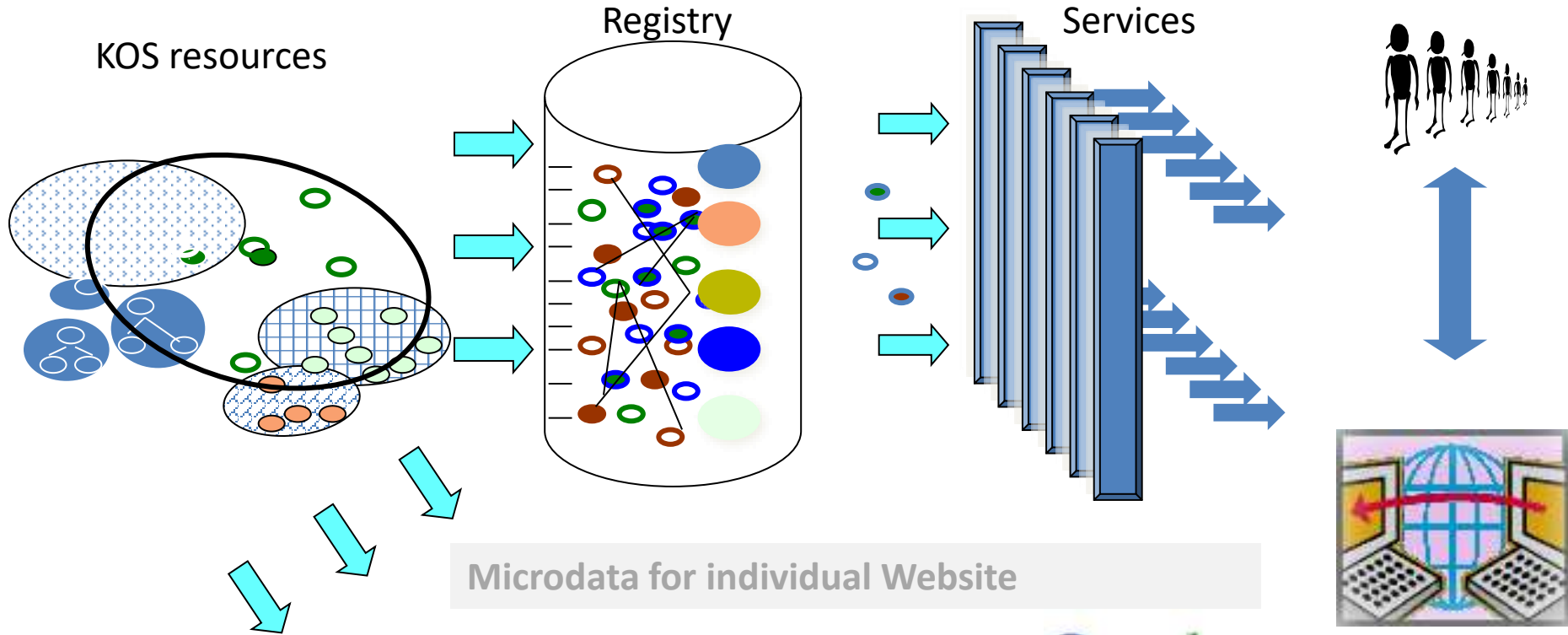
Microdata for individual Website

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<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01//EN" "http://www.w3.org/TR/html4/strict.dtd">
<html>
<head>
<meta name="TITLE" content="...">
<meta name="KEYWORDS" content="...">
<meta name="DESCRIPTION" content="...">
<link rel="stylesheet" href="...">
<script language="javascript" type="text/javascript">
</head>
<body bgcolor="#ffffff" style="font-family: sans-serif; font-size: 12pt; margin: 0px; padding: 0px;">
width="100%">
```



The need for describing and accessing KOS resources

Terminology registries and services



Microdata for individual Website



Efforts of the NKOS Community

NKOS efforts for developing the specification of the minimum (core) set of data elements to be used to describe structured vocabularies in a KOS registry since 1998:

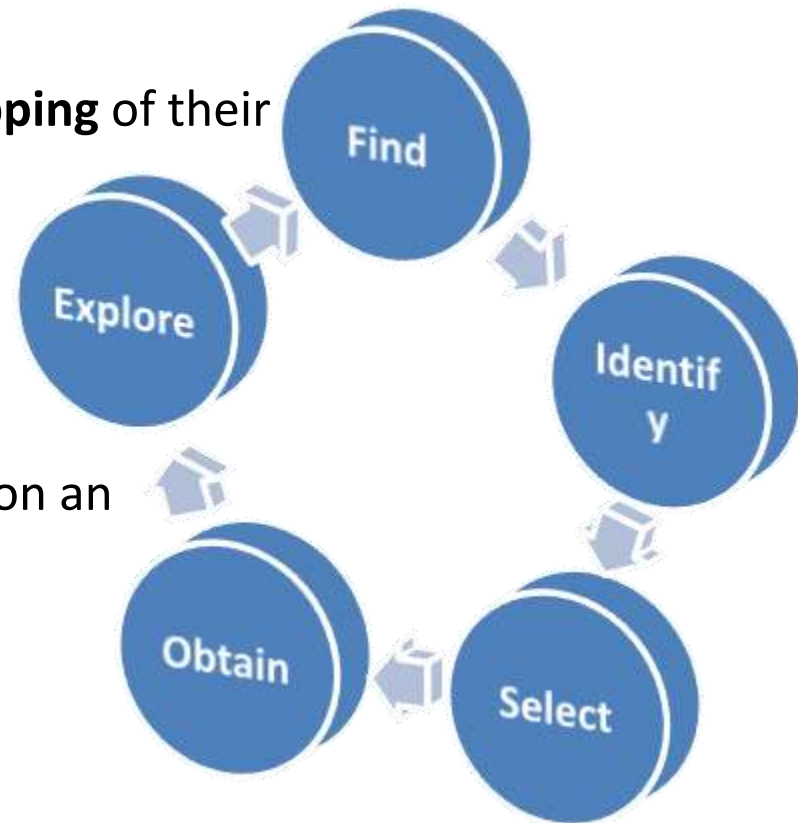
- *NKOS Registry – Draft Set of Thesaurus Attributes* of 1998 (NKOS, 1998)
- Dublin Core (DC)-based *NKOS Registry – Reference document for data elements* of 2001 (Vizine-Goetz, 2001)
- *JISC Terminology Registry Scoping Study (TRSS)* report (Golub and Tudhope, 2008)
- DCMI-NKOS Application Profile Task Group established in 2009 (Zeng & Hodge, 2011)
 - developing a Dublin Core application profile for describing and accessing KOS resources (KOS-AP) since 2009



2. Developing the KOS Application Profile

2.1 Use Scenarios

- The owner(s)/creator(s) of a KOS:
 - **publish, share, and allow reuse and mapping** of their product(s);
 - **expose** the KOS product(s)
- Other KOS developers
 - **reuse** a KOS;
 - **get an example** of good practice.
 - They may create derivative works based on an existing KOS.
- Information retrieval system (IRS) developers
 - **reuse, implement, and evaluate** a KOS,
 - **apply** a KOS to a collection to support searching and/or navigation.
- End users and researchers
 - may be involved in terminology-related **research and exploration** within a subject domain
 - **evaluate, align, or compare** KOS resources



2. Developing the KOS Application Profile

2.2 The Conceptual Model

- A model built based on the characteristics of the KOS resources
 - The **continuity** of KOS works
 - The **diversity** of the ‘family’ members
 - The **shared authorship**
 - The **complexity** of relations among KOS resources
 - **Tendency towards micro-level** management



continuity, diversity, shared authorship, complexity ... towards micro-level management

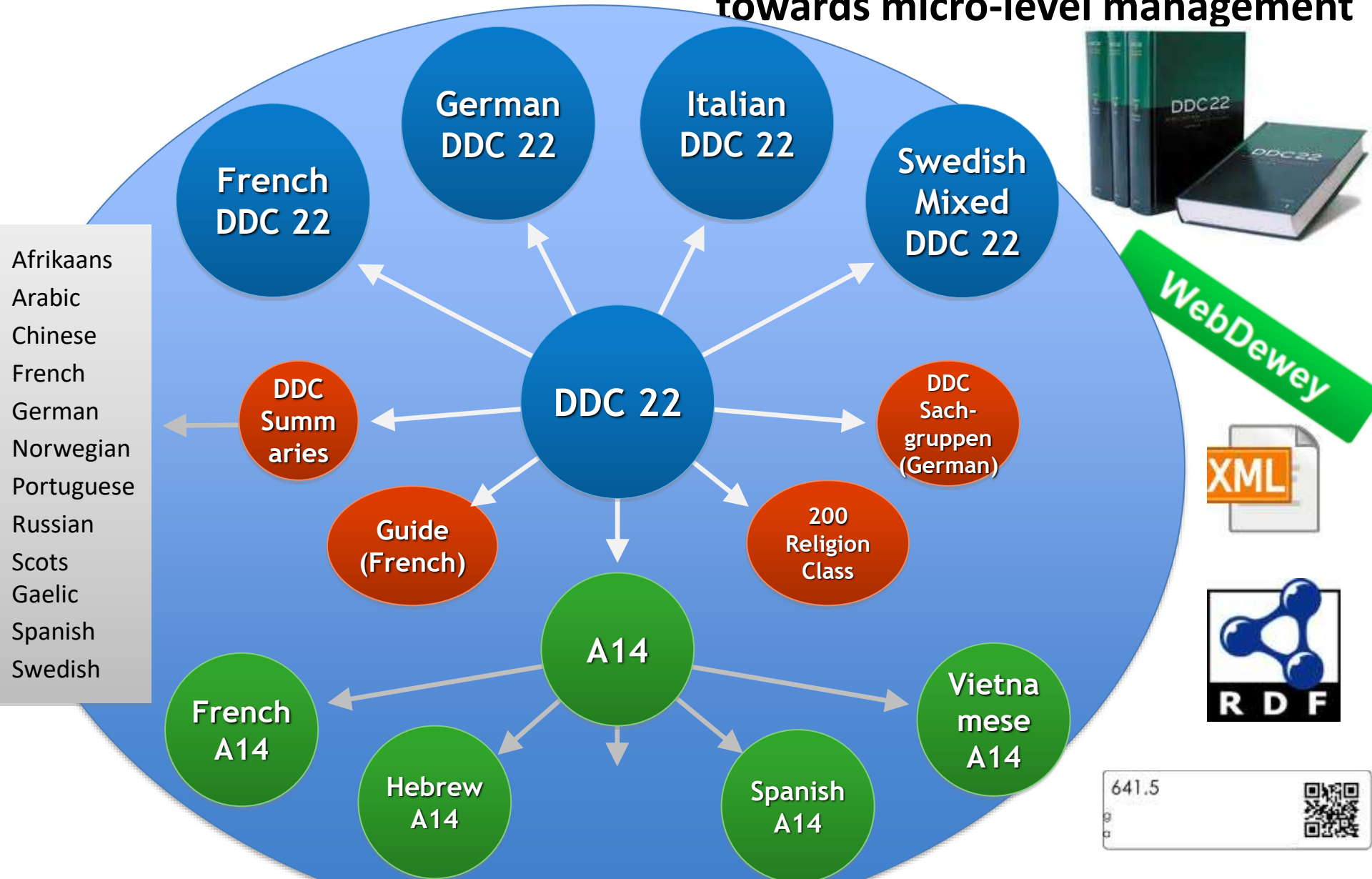
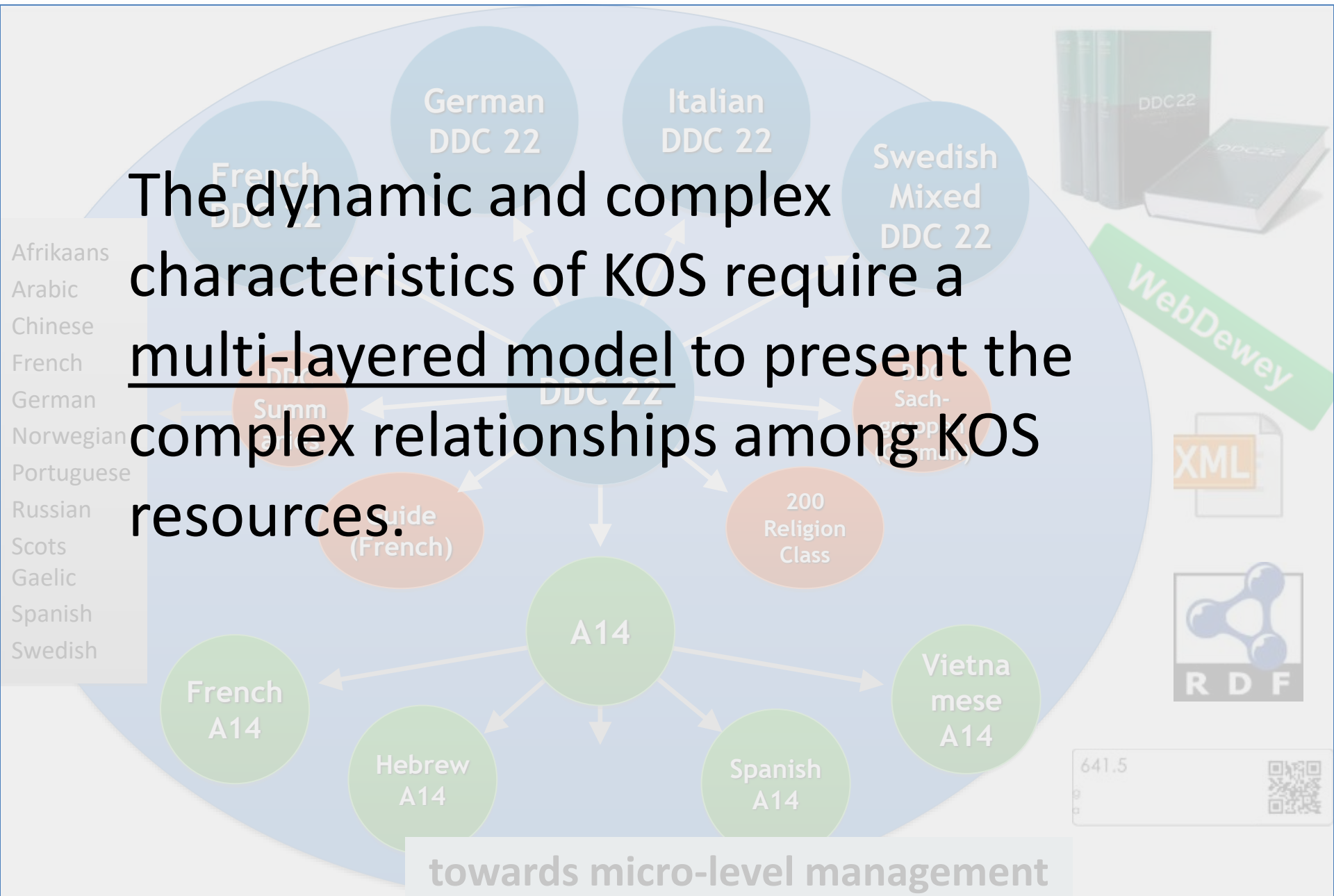
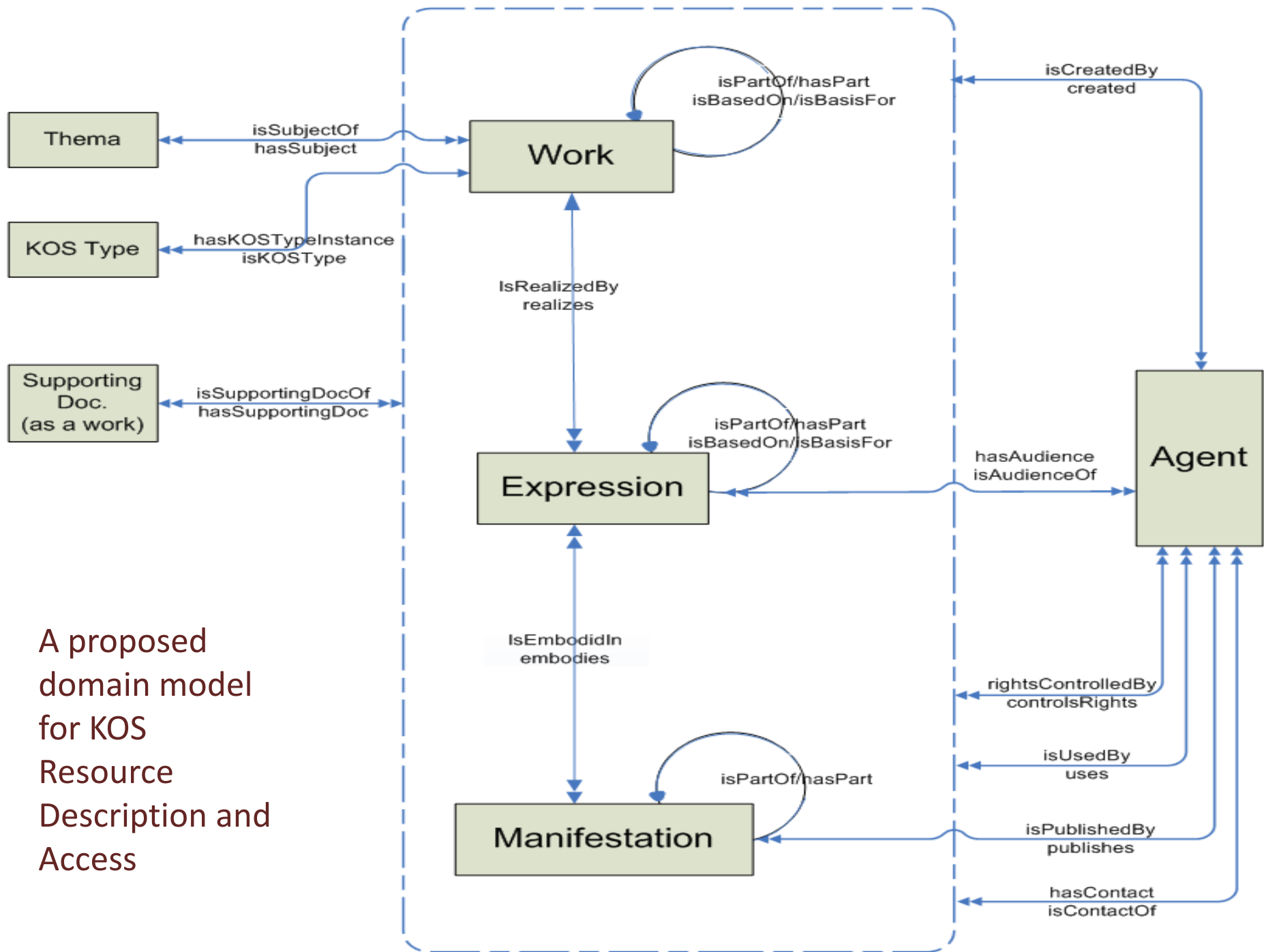


Image based on: Mitchell, Zeng, and Žumer, 2011.

continuity, diversity, shared authorship, complexity ...

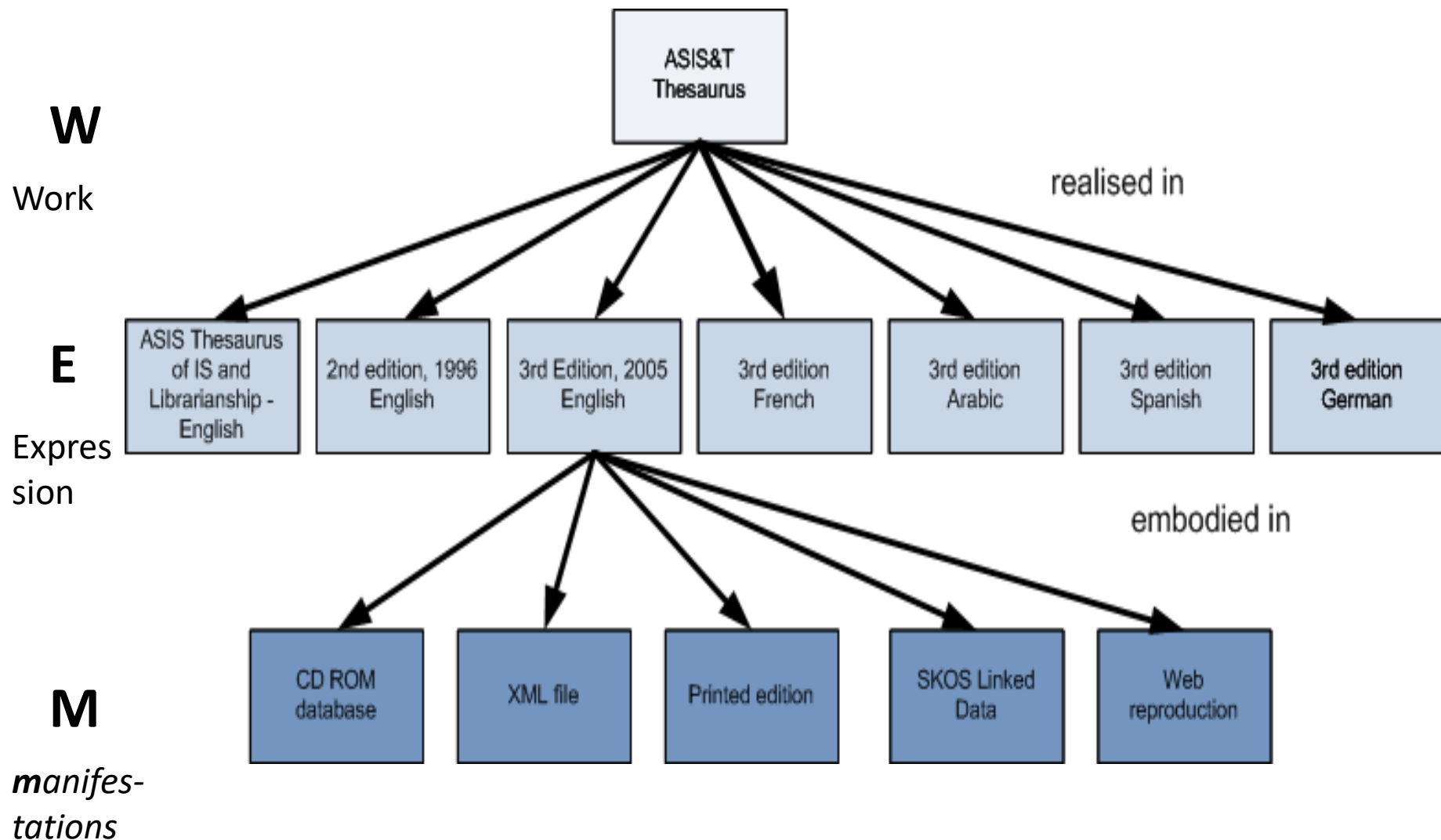
The dynamic and complex characteristics of KOS require a multi-layered model to present the complex relationships among KOS resources.





A proposed domain model for KOS Resource Description and Access

Using ASIS&T Thesaurus as an example



The Entities and Relationships

Work, Expression, and Manifestation

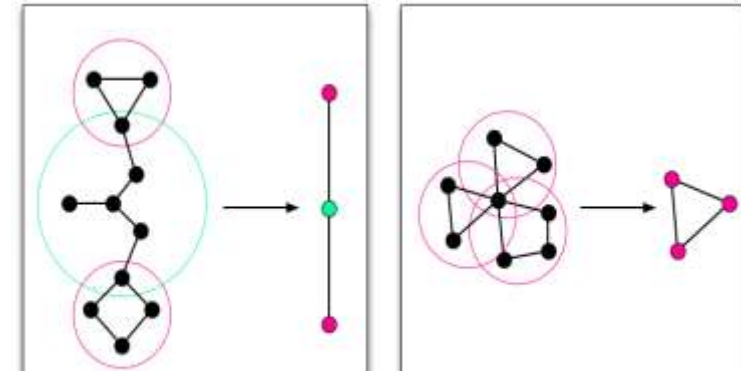
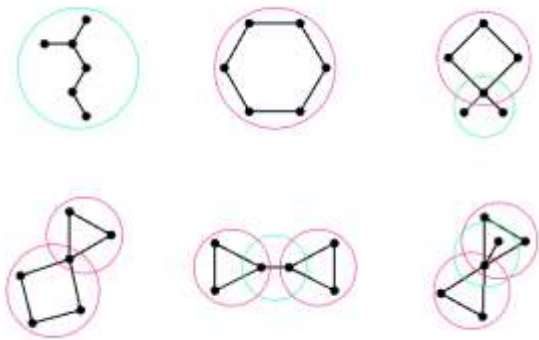
Relationships between entities

- of different types
 - W-E, E-M
- of the same type
 - W-W, E-E

(E) realizes (W)
(M) embodies (E)

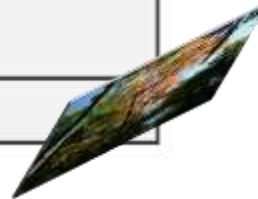
dct:relation

- based on
- part of
- other relation



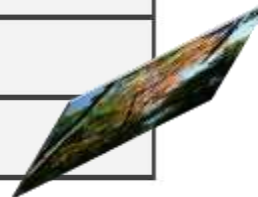
Relation Sub-types (1)

Relation Type	Definition	Element	Example	
<i>part-of:</i>			A	B
is part of	A is part of B.	dct:isPartOf	Class H - Social Sciences of <i>Library of Congress Classification (LCC)</i>	<i>LCC</i>
	B has part A.	dct:hasPart		
. outline of	A is outline of B.	nkos:isOutlineOf	<i>DDC Summaries</i>	<i>DDC</i>
	B has outline A	nkos:hasOutline		
. excerpt of	A is excerpt of B.	nkos:isExerptOf	Table G (Geographic Notation) of the <i>National Library of Medicine (NLM) Classification</i>	<i>NLM Classification</i>
	B has excerpt A	nkos:hasExcerpt		
. fragment of	A is fragment of B.	nkos:isFragmentOf	entries from a scheme	a scheme
	B has fragment A	nkos:hasFragment		
. sample	A is sample of B.	nkos:isSampleOf	a sample entry or a page from a scheme	a scheme
	B has sample A.	adms:sample		



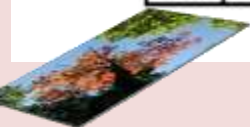
Relation Sub-types (2)

Relation Type	Definition	Element	Example	
<i>based-on:</i>			A	B
is based on	A is based on B.	nkos:isBasedOn	<i>Canadian Subject Headings (CSH)</i>	<i>Library of Congress Classification(LCSH)</i>
is basis for	B is basis for A.	nkos:isBasisFor		
.translation of	A is translation of B.	nkos:isTranslationOf	<i>Dewey-Dezimalklassifikation 22</i>	<i>DDC 22</i>
	B has translation A.	adms:translation		
.abridgment of	A is abridgment of B.	nkos:isAbridgmentOf	<i>DDC Abridged Edition 15</i>	<i>DDC 23</i>
	B has abridgment A.	nkos:hasAbridgment		
.extension of	A is extension of B.	nkos:isExtensionOf	<i>A localized version of NLM Classification</i>	<i>NLM Classification</i>
	B has extension A.	nkos:hasExtention		
.version of	A is version of B.	dct:isVersionOf	<i>DDC 23</i>	<i>DDC</i>
	B has version A.	dct:hasVersion		



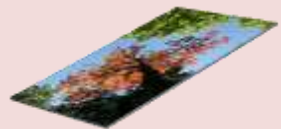
3. Core Elements

CORE ELEMENTS	NEEDED FOR:			TO SUPPORT USERS TO:				
	<i>Work</i>	<i>Expression</i>	<i>Manifestation</i>	Find	Identify	Select	Obtain	Explore
title	x	x	x	x	x			
identifier	x	x	x	x				
contact		x	x				x	
description	x	x	x		x	x		
type (of KOS)	x			x	x	x		
creator	x	x	x	x	x			
language		x		x	x	x		
publisher			x		x	x		
format			x	x	x	x		
size (of vocabulary)		x			x	x		
rights	x	x	x	x		x	x	
date (created)	x	x	x	x		x		
date (updated)		x		x		x		
subject	x			x	x	x		
relation (to other)	x	x	x					x
sample (a relation)					x	x		



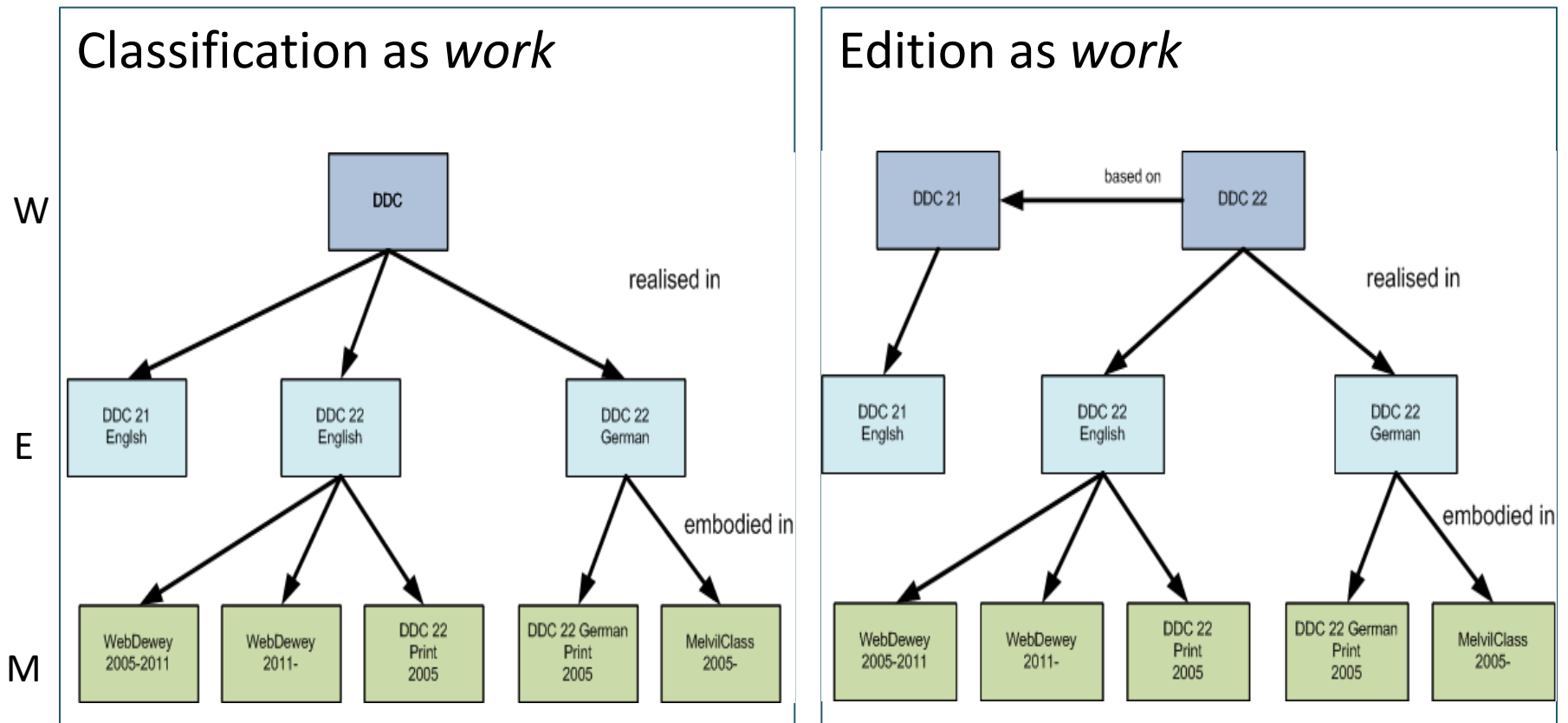
Additional elements


CORE ELEMENTS		NEEDED FOR:			TO SUPPORT USERS TO:		
Additional elements (Could be included in 'description')							
services offered			X			X	
used by (a relation)	X		X			X	
frequency of update	X					X	
audience	X	X		X	X	X	
supplementary doc (a relation)	X	X		X		X	



3. Discussion of Some Issues

What is the basic *work* when we try to describe the various products of DDC22?



 **lettering pens** (pens (drawing and writing), <drafting, drawing and writing equipment by specific type>, ... Furnishings and Equipment (Hierarchy Name))

Note: Pens, generally dip pens, consisting of a shaft or holder and a metal or glass pen point, often interchangeable with any in a set of specially shaped pen points, ranging in size and shape from broad and flat to narrow and pointed. These pens are used in calligraphy, lettering, and drawing. Similar devices with metal pen points were known in Classical times but were used much less than the reed and quill prior to the 19th century. An ancient example is a bronze pen that was found in the ruins of Pompeii.

Terms:

lettering pens (**preferred**,C,U,English-P,D,U,PN)
lettering pen (C,U,English,AD,U,SN)
pens, lettering (C,U,English,UF,U,N)
calligraphy pens (C,U,English,UF,U,N)
calligraphic drawing pens (C,U,English,UF,U,N)
 沾水筆 (C,U,Chinese (traditional)-P,D,U,U)
 書法用鋼筆尖 (C,U,Chinese (traditional),UF,U,U)
 繪圖水筆 (C,U,Chinese (traditional),UF,U,U)
 書法用鋼筆 (C,U,Chinese (traditional),UF,U,U)
 zhān shuǐ bǐ (C,U,Chinese (transliterated Hanyu Pinyin)-P,UF,U,U)
 zhan shui bi (C,U,Chinese (transliterated Pinyin without tones)-P,UF,U,U)
 chan shui pi (C,U,Chinese (transliterated Wade-Giles)-P,UF,U,U)
tekenpennen (C,U,Dutch-P,D,U,U)
tekenpen (C,U,Dutch,AD,U,U)
portaplumas (C,U,Spanish-P,D,U,PN)

Note:


English [VP]
 [Encyclopedia Britannica Online \(2002-\)](#) "Pen" and "Drawing,"
 accessed 15 May 2007

Chinese
 (traditional) [TELDAP]
 [TELDAP database \(2009-\)](#)
 Dutch [Bureau AAT]
 [AAT-Ned \(1994-\)](#)

2. In the current information environment where KOS editions are disappearing, does it make sense to declare a particular edition a *work*?

http://www.getty.edu/vow/AATFullDisplay?find=calligraphy&logic=AND¬e=&english=N&prev_page=1&subjectid=300022456


The Library of Congress > Linked Data Service
> LC Subject Headings

 **Smartphones**

URI(s)

- > <http://id.loc.gov/authorities/subjects/sh2007006251>
- > <info:lc/authorities/sh2007006251>
- > <http://id.loc.gov/authorities/sh2007006251#concept>

Instance Of

- > [MADS/RDF Topic](#)
- > [MADS/RDF Authority](#)
- > [SKOS Concept](#) 



Scheme Membership(s)

- > [Library of Congress Subject Headings](#)

Collection Membership(s)

- > [LCSH Collection - Authorized Headings](#)
- > [LCSH Collection - General Collection](#)
- > [LCSH Collection - May Subdivide Collection](#)

Variants

- >  Smart cell phones
- >  Smart phones

2. In the current information environment where KOS editions are disappearing, does it make sense to declare a particular edition a *work*?

Sources

- > found: Wikipedia, Aug. 6, 2007 (smartphone: full-featured mobile phone with the functionality of a complete personal organizer; can be noted by several modem capabilities on top of the default phone characteristics)
- > found: MobileTechReview WWW Home page, Aug. 6, 2007 (Smartphone: P
- > found: CNET reviews Home page, Aug. 6, 2007 (smart phones)
- > found: Google search, May 4, 2011: (1,070,000 hits on "smart cell phones")

Change Notes

- > 2007-08-06: new
- > 2011-07-18: revised

Source: <http://id.loc.gov/authorities/subjects/sh2007006251.html>

4. Conclusion

- It is real: a Dublin Core Application Profile for KOS Resources (KOS-AP) developed by a DCMI Task Group is developed and will ask for comments soon.
- It is useful: in addition to general uses, it is essential for Linked Data, which success depends heavily on using, sharing, and interlinking of standardized value vocabularies.
- It is applicable: for
 - KOS registries
 - Microdata of individual KOS websites
 - Other types of resources (frequently updated, translated, and derived handbooks, technical manuals, and schemas)



For more information

- DCMI NKOS Task Group Wiki site
 - http://wiki.dublincore.org/index.php/DCMI_NKOS_Task_Group
 - KOS AP Worksheet. (Last updated March, 2013)
http://wiki.dublincore.org/index.php/NKOS_AP_Worksheet
 - Core Elements. (Last updated March 2013)
http://wiki.dublincore.org/index.php/Core_Elements
 - KOS example
http://wiki.dublincore.org/index.php/KOS_example
 - NKOS Vocabularies
http://wiki.dublincore.org/index.php/NKOS_Vocabularies

References

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- *Functional Requirements for Bibliographic Records - Final Report*. (1998). IFLA Study Group on the Functional Requirements for Bibliographic Records (FRBR). Munich: K.G. Saur.
- Golub, Koraljka and Tudhope, Douglas. (2008). JISC Terminology Registry Scoping Study (TRSS) report. <http://www.jisc.ac.uk/media/documents/programmes/sharedservices/trss-report-final.pdf>
- Mitchell, Joan S., Marcia Lei Zeng, and Maja Žumer. 2011. Extending Models for Controlled Vocabularies to Classification Systems: Modeling DDC with FRSAD. International UDC Seminar 2011, Classification & Ontology, The Hague, The Netherlands, Sept. 19-20, 2011. http://www.udcds.com/seminar/2011/media/slides/UDCSeminar2011_Mitchell_Zeng_Zumer.pdf
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- Žumer, Maja, Marcia Lei Zeng, and Marjorie MK Hlava. (2012). A Domain model for describing and accessing KOS resources: Report of processes in developing a KOS description metadata application profile. In: *Metadata for Meeting Global Challenges. Proceedings of the 2012 International Conference on Dublin Core and Metadata Applications, Kuching, Sarawak, Malaysia, Sept. 3-7, 2012* <http://dcpapers.dublincore.org/pubs/article/view/3656>

KOS References

- *Art & Architecture Thesaurus*. (1994). Second Edition. Edited by Toni Petersen. New York: Oxford University Press.
- *Art & Architecture Thesaurus® Online*. (1998-). Los Angeles, Calif. : J. Paul Getty Trust. Retrieved June 24, 2013, from <http://www.getty.edu/research/tools/vocabularies/aat/index.html>
- *ASIS&T Thesaurus of Information Science, Technology, and Librarianship*. (2005). Third Edition. Edited by Alice Redmond-Neal and Marjorie M. K. Hlava. Information Today, Inc.
- *Dewey Decimal Classification and Relative Index*. Ed. 22. (2003). Melvil Dewey. Edited by Joan S Mitchell *et al.* Dublin, Ohio: OCLC.
- *Library of Congress Subject Headings*. Linked Data version based on Edition 32. (2008?-). Washington, D.C.: Library of Congress. Available from LC [Linked Data Service: Authorities and Vocabularies \(id.loc.gov\)](http://id.loc.gov).