



The Next Generation Repository

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about COAR

Coalition of Open Access Repositories (COAR)

- > 100 organisational members from 35 countries in 5 continents
- **France:**
 - Arts et Métiers
 - Centre National de la Recherche Scientifique (CNRS)
 - Sciences Po
 - Université de Lorraine Library
 - Université de, Lille LILLIAD Learning center Innovation



BIBLIOTHÈQUES
UNIVERSITAIRES



<https://www.coar-repositories.org>

the current generation of
repositories

3 cheers for the current generation of repositories!



cheer #1:

**proven technology,
ubiquitous in our
institutions**



cheer #2:

strong community
support



cheer #3:

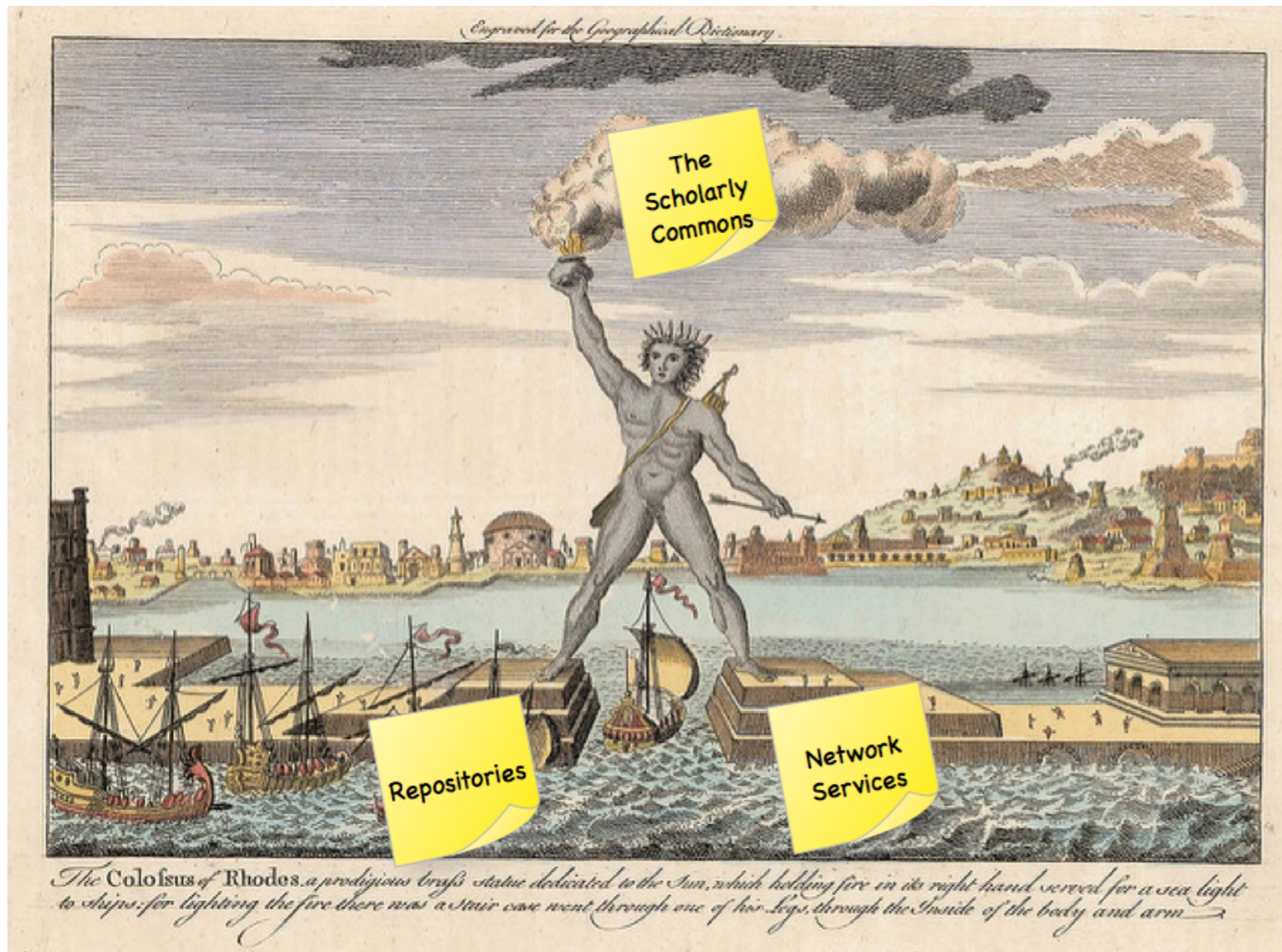
distributed policy

control



about Next Generation Repositories (NGR)

a global, distributed *Scholarly Commons*



<https://www.flickr.com/photos/bibliodyssey/2823161216/>

- this is achievable
- it should be a wonder of the world!
- two foundations of a scholarly commons:
 - repositories
 - network services
- **distribution of control of scholarly resources - a way to avoid future monopolies**


“...making the *resource*,
rather than the repository,
the focus of services and
infrastructure.”

repository 'behaviours'

- Exposing Identifiers
- Declaring Licenses at the Resource Level
- Discovery Through Navigation
- Interacting with Resources (Annotation, Commentary, and Review)
- Resource Transfer
- Batch Discovery
- Collecting and Exposing Activities
- Identification of Users
- Authentication of Users
- Exposing Standardised Usage Metrics
- Preserving Resources


outputs

Next Generation Repositories
Behaviours and Technical Recommendations of the COAR
Next Generation Repositories Working Group
November 28, 2017



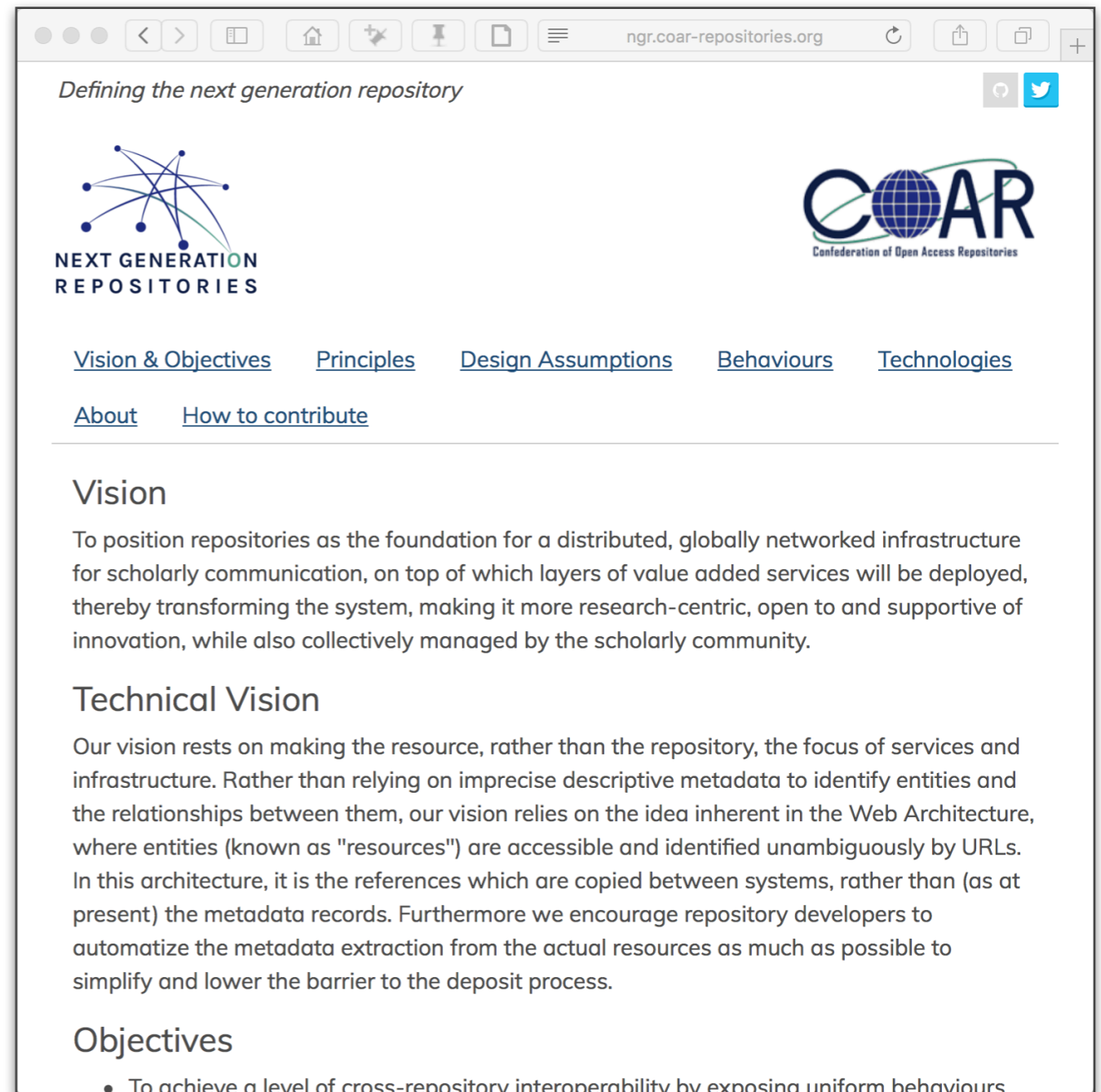
Northern lights, Norway

[#nextgenrepositories](#) [@COAR_eV](#) office@coar-repositories.org





COAR: Building a Global Knowledge Commons

<http://bit.ly/ngr-report>



Defining the next generation repository

[Vision & Objectives](#) [Principles](#) [Design Assumptions](#) [Behaviours](#) [Technologies](#)

[About](#) [How to contribute](#)

Vision

To position repositories as the foundation for a distributed, globally networked infrastructure for scholarly communication, on top of which layers of value added services will be deployed, thereby transforming the system, making it more research-centric, open to and supportive of innovation, while also collectively managed by the scholarly community.

Technical Vision

Our vision rests on making the resource, rather than the repository, the focus of services and infrastructure. Rather than relying on imprecise descriptive metadata to identify entities and the relationships between them, our vision relies on the idea inherent in the Web Architecture, where entities (known as "resources") are accessible and identified unambiguously by URLs. In this architecture, it is the references which are copied between systems, rather than (as at present) the metadata records. Furthermore we encourage repository developers to automatize the metadata extraction from the actual resources as much as possible to simplify and lower the barrier to the deposit process.

Objectives

- To achieve a level of cross-repository interoperability by exposing uniform behaviours

<http://ngr.coar-repositories.org>

COAR NGR - current status

- recent technical meeting of all the major repository networks in Hamburg in may 2018
 - laying the foundations for interoperability between these networks
- several of the major repository systems providers are starting to adopt some of the recommended behaviours and technologies (*DSpace, Fedora et. al.*)
- Next annual COAR meeting (2019) will be in Lyon! (probably in May)

some characteristics of the
next generation repository

repositories must be *deeply connected*

- **outgoing:**
 - individual *content resources*
 - directly accessible on the network
 - individual *metadata records*
 - not just in batches
 - individual *users*
 - as part of a variety of professional and social networks
- **incoming:**
 - using all appropriate *global identifier systems*
 - accepting *automated deposit* of content and data from other systems (e.g. *scientific instruments*)
 - allowing *external services* to interact with content
 - content mining
 - annotation services
 - etc.

repositories must be *active*

- repositories could become pro-active components in an event-driven scholarly system
- supporting user workflows - providing and accepting data
- publishing ‘**events**’ such as the addition of a new item to one or more **notification** hubs
- third-party systems ‘subscribing’ to these notifications
- would involve very little or no effort by repository administrators
- modest software development



The screenshot shows a blog post from 'Paul Walk's Web'. The header includes social media icons for Instagram, LinkedIn, and Twitter. Below the header is a navigation menu with links for 'home', 'presentations', 'photos', and 'about', along with a search box labeled 'quick search...'. The main content of the post is titled 'The Active Repository Pattern' and is dated 'Monday, October 19, 2015'. A sub-header reads '(This is the first of two posts forming my contribution to [Open Access Week 2015](#).)'. The post is divided into sections: 'Context', 'Institutional repositories', and 'Repositories as infrastructure'. The 'Institutional repositories' section discusses the success of open-access and the challenges of maintaining repositories. The 'Repositories as infrastructure' section concludes that this achievement should be celebrated.

Paul Walk's Web

home presentations photos about quick search...

The Active Repository Pattern

Monday, October 19, 2015

(This is the first of two posts forming my contribution to [Open Access Week 2015](#).)

Context

Institutional repositories

It is easy to overlook, or take for granted, the way in which the drive towards open-access (over the last decade or more) has succeeded not only in creating several viable ["institutional-repository" software packages](#), but also in encouraging libraries and IT departments in universities to deploy them. It should be recognised that individual universities have shown, and continue to show commitment to maintaining their repositories in spite of shrinking budgets.

While these repository systems are various, they mostly adhere to certain standard protocols, common metadata formats and conventions, allowing for a degree of potential interoperability. It is this potential for interoperation which elevates the institutional repository from a local system, to a networked system.

This achievement should be celebrated!

Repositories as infrastructure

content, metadata, people and their activities

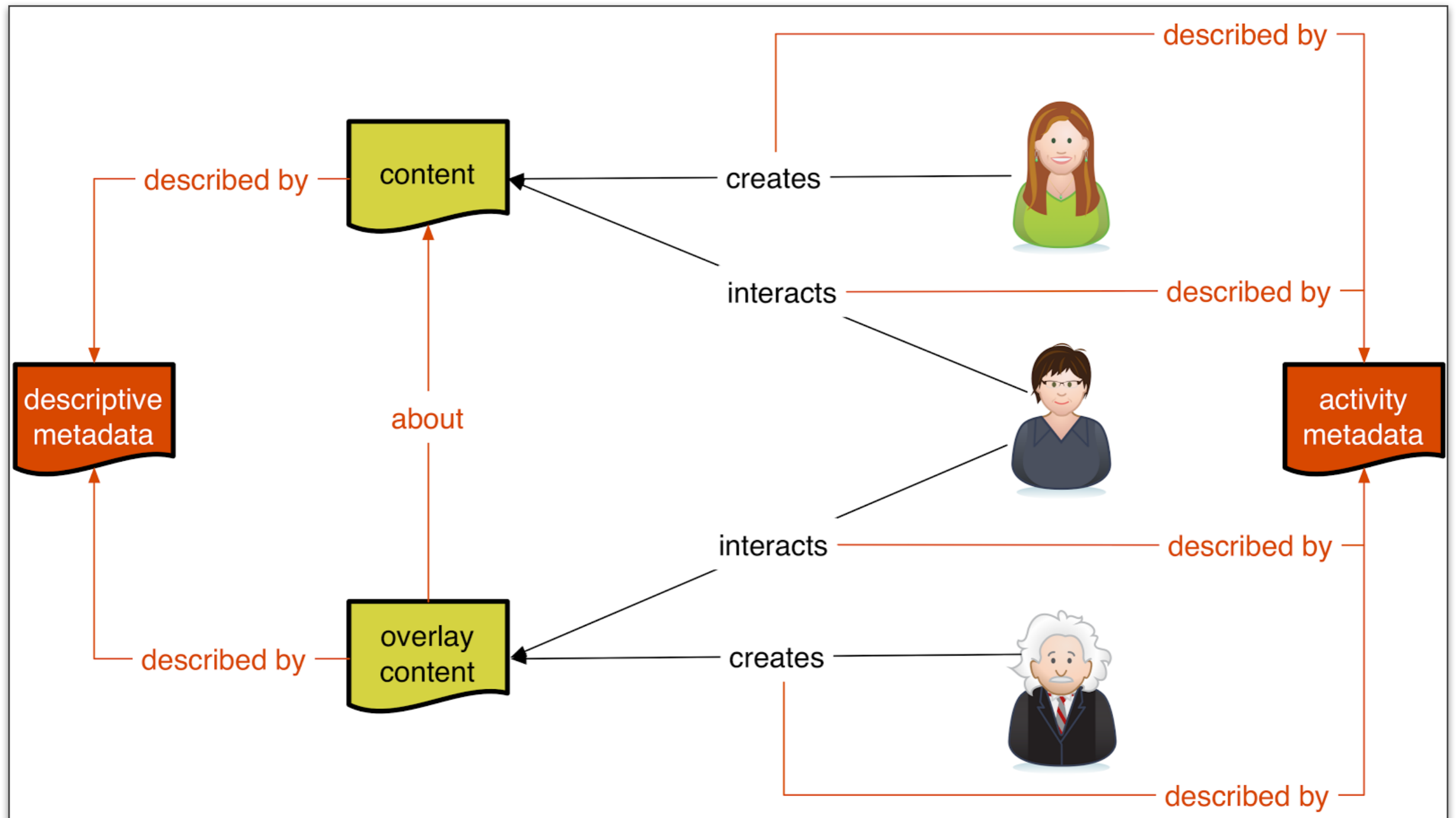
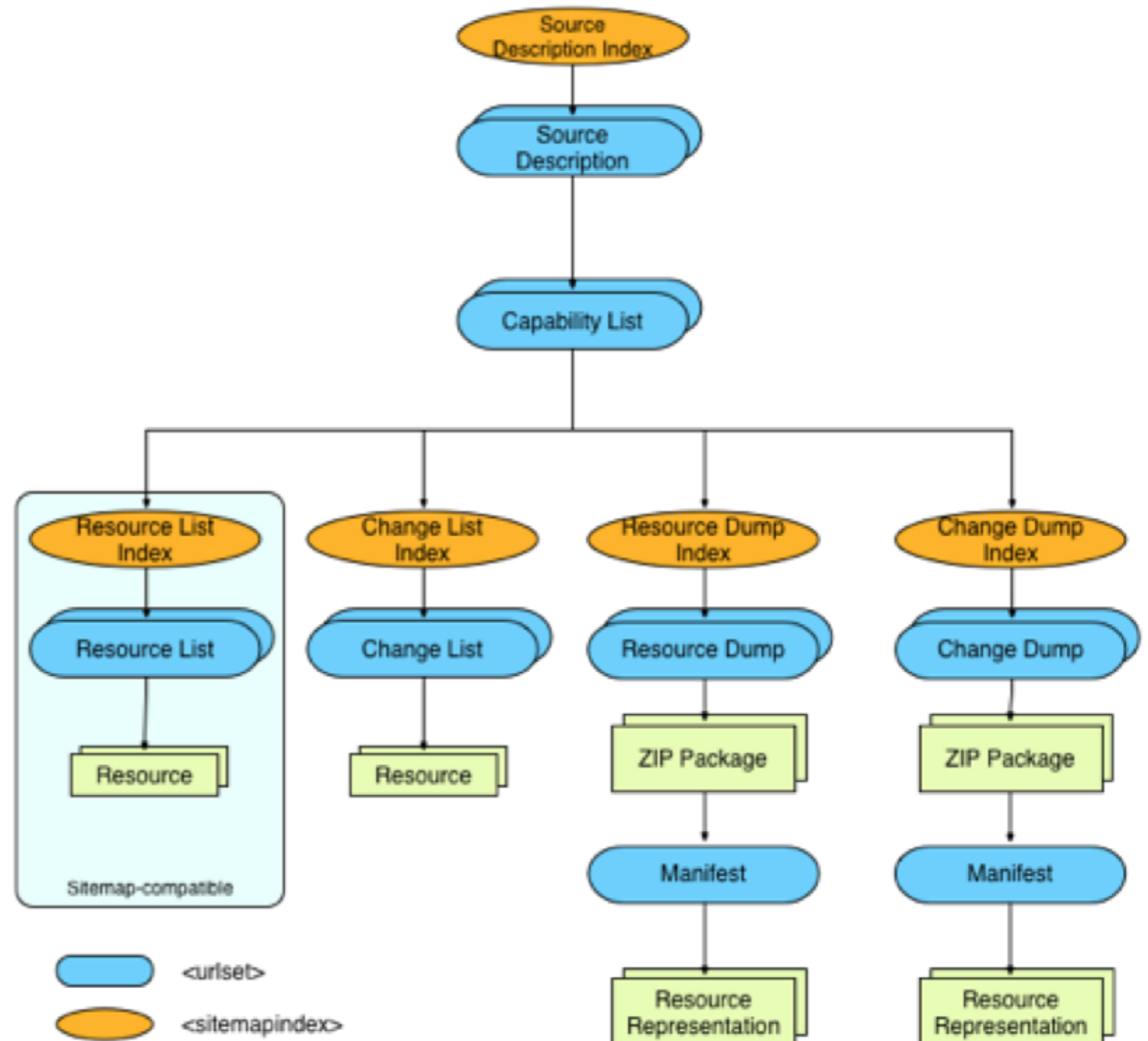


Diagram by Herbert Van de Sompel

3 recommended technologies

adopt *ResourceSync*

- Synchronisation framework for the web allowing other systems to be synchronised with a server's evolving resources.



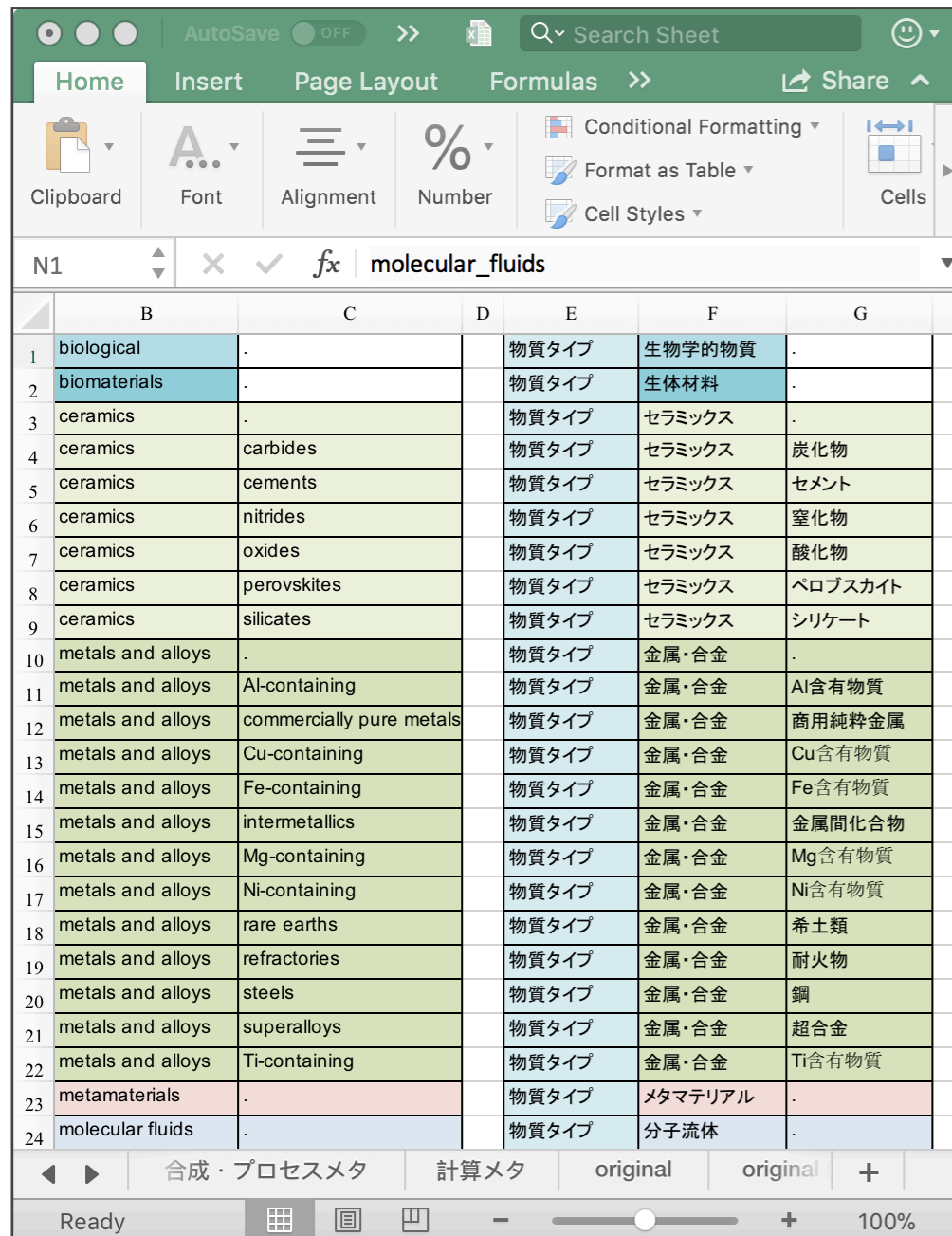
recommendation: adopt *Signposting*

- being of, not just on, the Web
- obvious...but not really done yet
- the ‘splash page’ requiring human mediation is a real problem
- “signposting the scholarly web”
 - link HTTP headers
- would involve very little or no effort by repository administrators
- a small amount of software development in repository systems

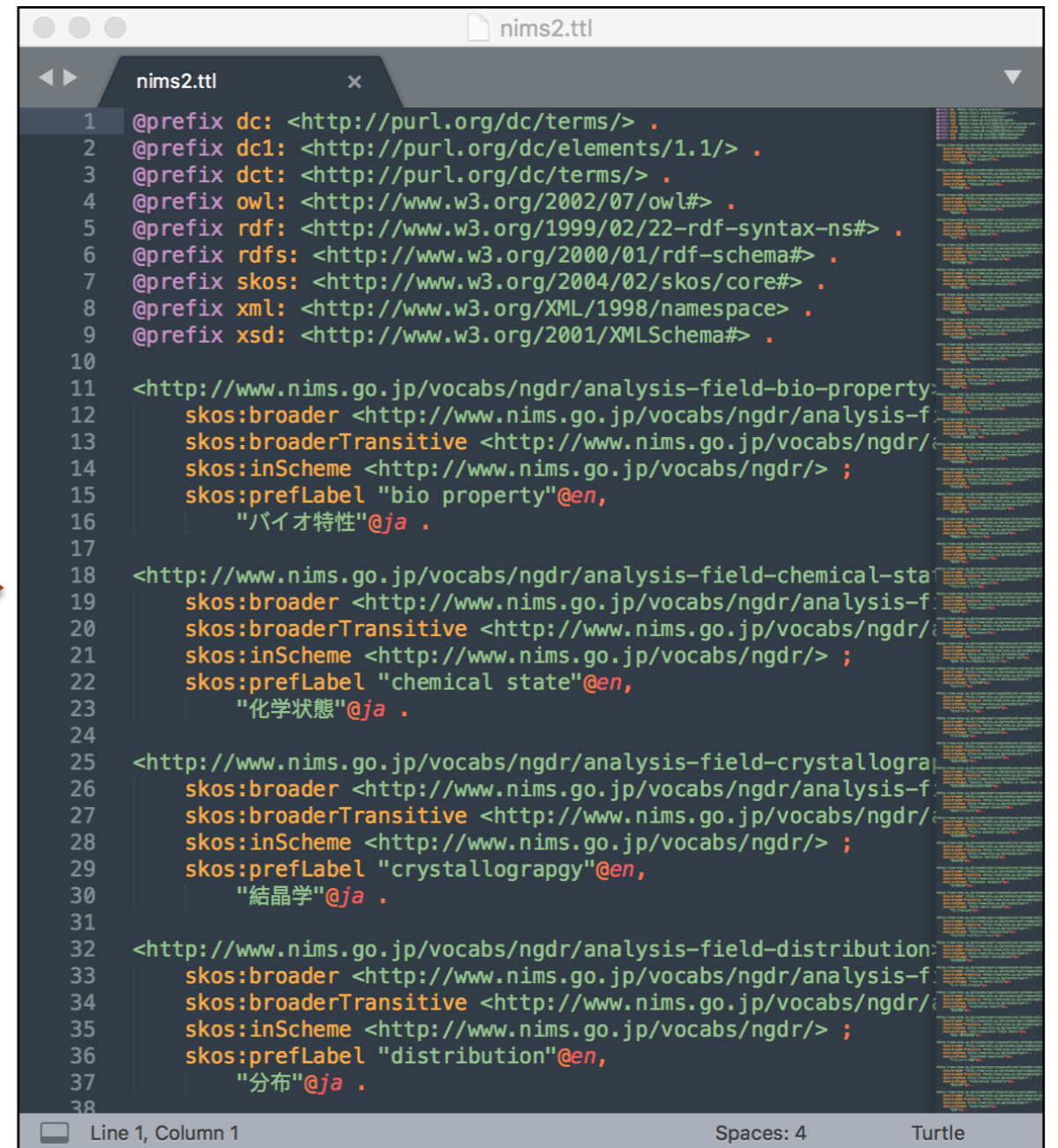
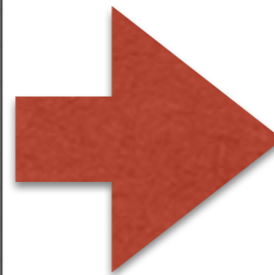


<http://signposting.org>

use controlled vocabularies!



	B	C	D	E	F	G
1	biological	.	物質タイプ	生物学的物質	.	
2	biomaterials	.	物質タイプ	生体材料	.	
3	ceramics	.	物質タイプ	セラミックス	.	
4	ceramics	carbides	物質タイプ	セラミックス	炭化物	
5	ceramics	cements	物質タイプ	セラミックス	セメント	
6	ceramics	nitrides	物質タイプ	セラミックス	窒化物	
7	ceramics	oxides	物質タイプ	セラミックス	酸化物	
8	ceramics	perovskites	物質タイプ	セラミックス	ペロブスカイト	
9	ceramics	silicates	物質タイプ	セラミックス	シリケート	
10	metals and alloys	.	物質タイプ	金属・合金	.	
11	metals and alloys	Al-containing	物質タイプ	金属・合金	Al含有物質	
12	metals and alloys	commercially pure metals	物質タイプ	金属・合金	商用純粋金属	
13	metals and alloys	Cu-containing	物質タイプ	金属・合金	Cu含有物質	
14	metals and alloys	Fe-containing	物質タイプ	金属・合金	Fe含有物質	
15	metals and alloys	intermetallics	物質タイプ	金属・合金	金属間化合物	
16	metals and alloys	Mg-containing	物質タイプ	金属・合金	Mg含有物質	
17	metals and alloys	Ni-containing	物質タイプ	金属・合金	Ni含有物質	
18	metals and alloys	rare earths	物質タイプ	金属・合金	希土類	
19	metals and alloys	refractories	物質タイプ	金属・合金	耐火物	
20	metals and alloys	steels	物質タイプ	金属・合金	鋼	
21	metals and alloys	superalloys	物質タイプ	金属・合金	超合金	
22	metals and alloys	Ti-containing	物質タイプ	金属・合金	Ti含有物質	
23	metamaterials	.	物質タイプ	メタマテリアル	.	
24	molecular fluids	.	物質タイプ	分子流体	.	



```
nims2.ttl
1 @prefix dc: <http://purl.org/dc/terms/> .
2 @prefix dc1: <http://purl.org/dc/elements/1.1/> .
3 @prefix dct: <http://purl.org/dc/terms/> .
4 @prefix owl: <http://www.w3.org/2002/07/owl#> .
5 @prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> .
6 @prefix rdfs: <http://www.w3.org/2000/01/rdf-schema#> .
7 @prefix skos: <http://www.w3.org/2004/02/skos/core#> .
8 @prefix xml: <http://www.w3.org/XML/1998/namespace> .
9 @prefix xsd: <http://www.w3.org/2001/XMLSchema#> .
10
11 <http://www.nims.go.jp/vocabs/ngdr/analysis-field-bio-property-
12   skos:broader <http://www.nims.go.jp/vocabs/ngdr/analysis-f
13   skos:broaderTransitive <http://www.nims.go.jp/vocabs/ngdr/
14   skos:inScheme <http://www.nims.go.jp/vocabs/ngdr/> ;
15   skos:prefLabel "bio property"@en,
16     "バイオ特性"@ja .
17
18 <http://www.nims.go.jp/vocabs/ngdr/analysis-field-chemical-sta
19   skos:broader <http://www.nims.go.jp/vocabs/ngdr/analysis-f
20   skos:broaderTransitive <http://www.nims.go.jp/vocabs/ngdr/
21   skos:inScheme <http://www.nims.go.jp/vocabs/ngdr/> ;
22   skos:prefLabel "chemical state"@en,
23     "化学状態"@ja .
24
25 <http://www.nims.go.jp/vocabs/ngdr/analysis-field-crystallograp
26   skos:broader <http://www.nims.go.jp/vocabs/ngdr/analysis-f
27   skos:broaderTransitive <http://www.nims.go.jp/vocabs/ngdr/
28   skos:inScheme <http://www.nims.go.jp/vocabs/ngdr/> ;
29   skos:prefLabel "crystallograpy"@en,
30     "結晶学"@ja .
31
32 <http://www.nims.go.jp/vocabs/ngdr/analysis-field-distribution
33   skos:broader <http://www.nims.go.jp/vocabs/ngdr/analysis-f
34   skos:broaderTransitive <http://www.nims.go.jp/vocabs/ngdr/
35   skos:inScheme <http://www.nims.go.jp/vocabs/ngdr/> ;
36   skos:prefLabel "distribution"@en,
37     "分布"@ja .
38
```

SKOS = “Simple Knowledge Organisation System”



Thank you!

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