

Enhanced Publications

using OAI-ORE

Data Archiving and Networked Services

DANS

Maarten Hoogerwerf, 17-06-2009, OAI6

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Introduction

- Data Archiving & Networked Services
 - Institute from both KNAW and NWO



Magie van wetenschap



- DRIVER II
 - JRU with SURFfoundation and academic institutes
 - WP: Enhanced Publications

Data Archiving and Networked Services

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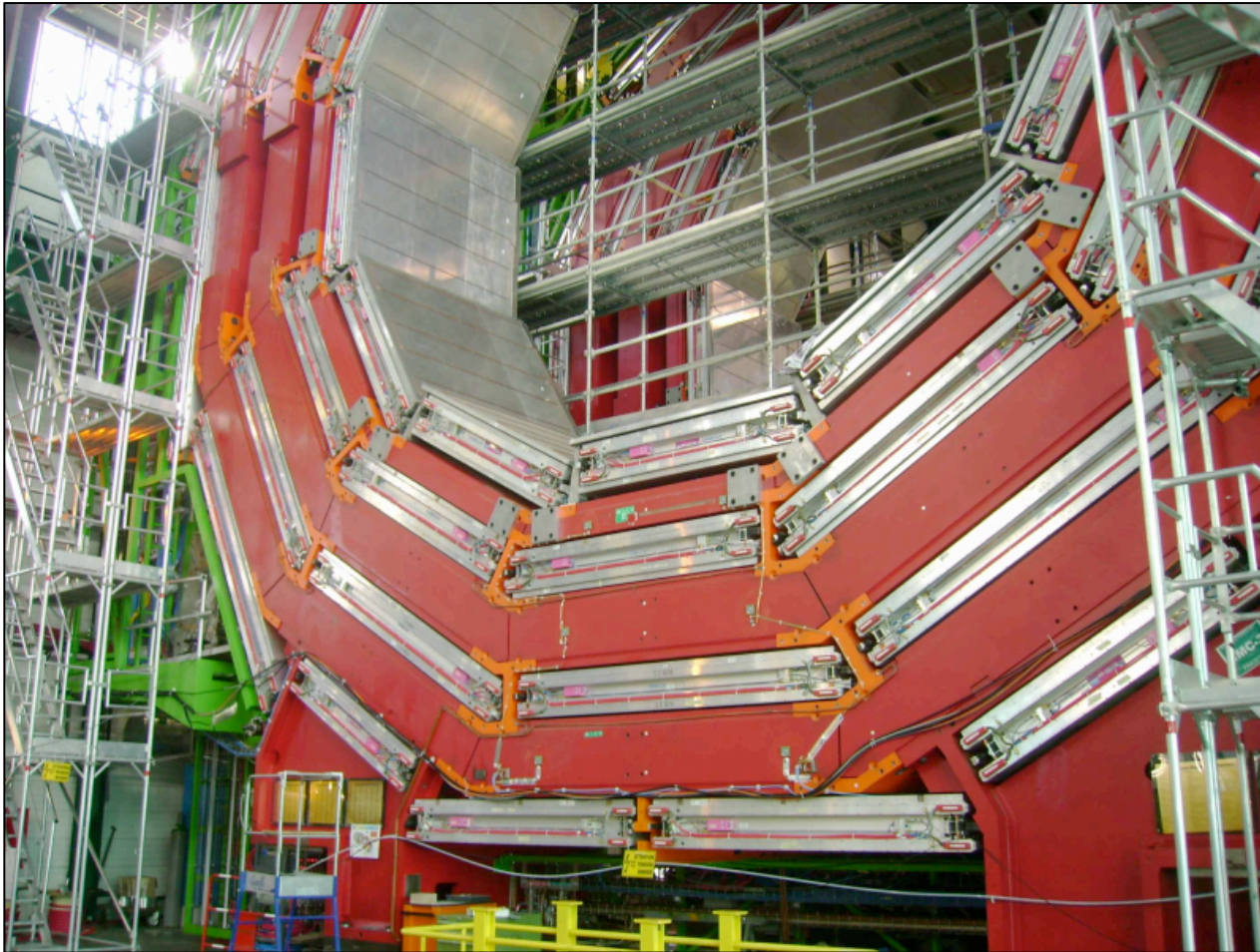
SURF

FOUNDATION



Digital Repository Infrastructure for European Research

A picture is worth a thousand words...



Data Archiving and Networked Services

<http://dorigo.wordpress.com/2007/04/24/>

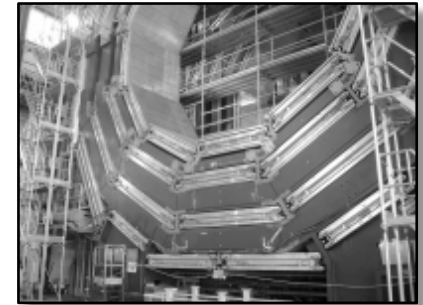
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But why...

- Only a few number of small, low-resolution black & white, still images? No moving images, no dynamic visualizations? No data?
- Enormous possibilities to share and discover results using Internet and (e.g.) DRIVER infrastructure



Enhanced Publications

- Publications combined with research data, visualizations, etc.
- Combine by:
 - Linking publication and data externally
 - Linking data from within publication
 - Integrating data into publication

demonstrate their results and helps their peers to verify these results. It also makes other researchers aware of the availability of these resources, which may lead to their reuse, saving other researchers the work of e.g. recollecting research data. They also enable creating indirect links between different publications that are possibly related. The internet provides an infrastructure to publish text with visualizations, animations, research data etc. Woutersen-Windhouwer and Brandsma (2008) indicated several initiatives for publishing enhanced publications on the web, but showed that these initiatives are not easily applicable: they don't fit into existing repository systems, there is little scientific awarding for the additional efforts required for this type of publication and archives do not know how to ingest this material. More generic solutions are needed to overcome these issues.

C	D	E	F	G	H			
0.0002	0.0006	0.0006	0.0161	0.0096	0.0			
0.0091	0.0091	0.0091	0.0196	0.0091	0.0			
0.0001	-0.0001	-0.0001	-0.0196	-0.0001	-0.0			
0.0001	-0.0001	-0.0001	-0.0161	-0.0001	-0.0			
0.0045	-0.0024	0.0036	0.0078	0.0068	-0.0			
8	6272005	0.0713	0.0038	-0.003	0.0036	0.0047	0.0029	-0.0
9	6272005	0.0722	0.0014	-0.0034	0.0033	0.0055	0.0016	-0.0
10	6272005	0.0732	0.0032	-0.0038	0.0016	-0.0019	0.0032	-0.0
11	6272005	0.0739	0.0027	-0.0029	0.0039	0.0019	0.004	-0.0
12	6272005	0.0759	0.0028	-0.0036	0.0022	0.0012	0.003	-0.0
13	6272005	0.0808	0.0012	-0.0045	0.0022	0.0021	0.0025	-0.0
14	6272005	0.0815	0.004	-0.0019	0.0036	0.0103	0.0023	-0.0
15	6272005	0.0824	0.0031	-0.0029	0.0034	0.0038	0.0033	-0.0
16	6272005	0.0830	0.0031	-0.0028	0.0036	0.0032	0.004	-0.0
17	6272005	0.0839	0.0040	-0.0034	0.0044	0.0043	0.0042	-0.0

Data Archiving and Networked Services



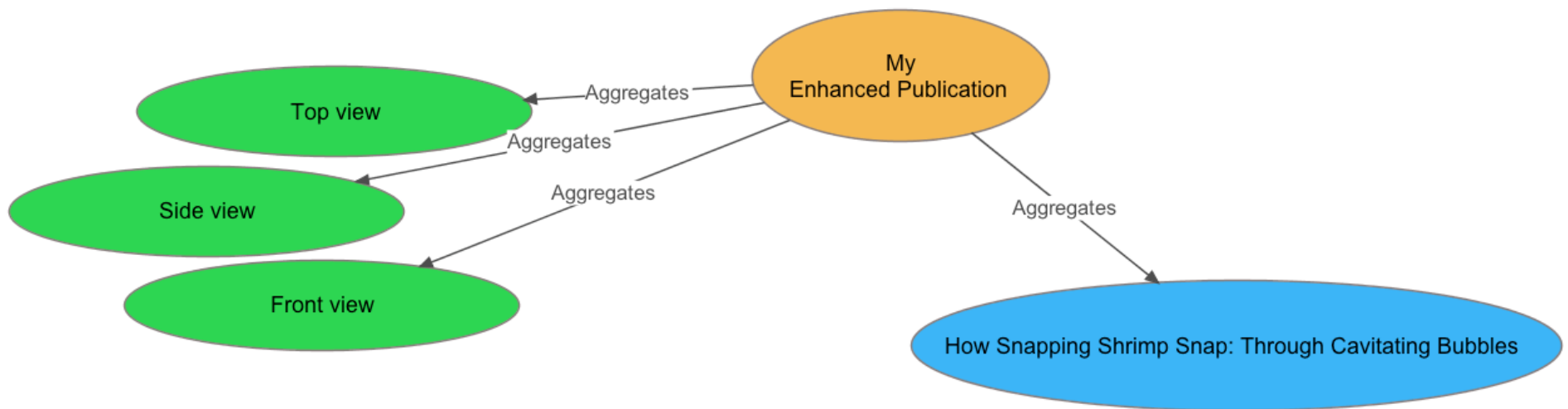
Demonstrator - Goals

- ~~Suggest the perfect solution~~
- Show the opportunities and challenges
- Help people think about requirements and solutions



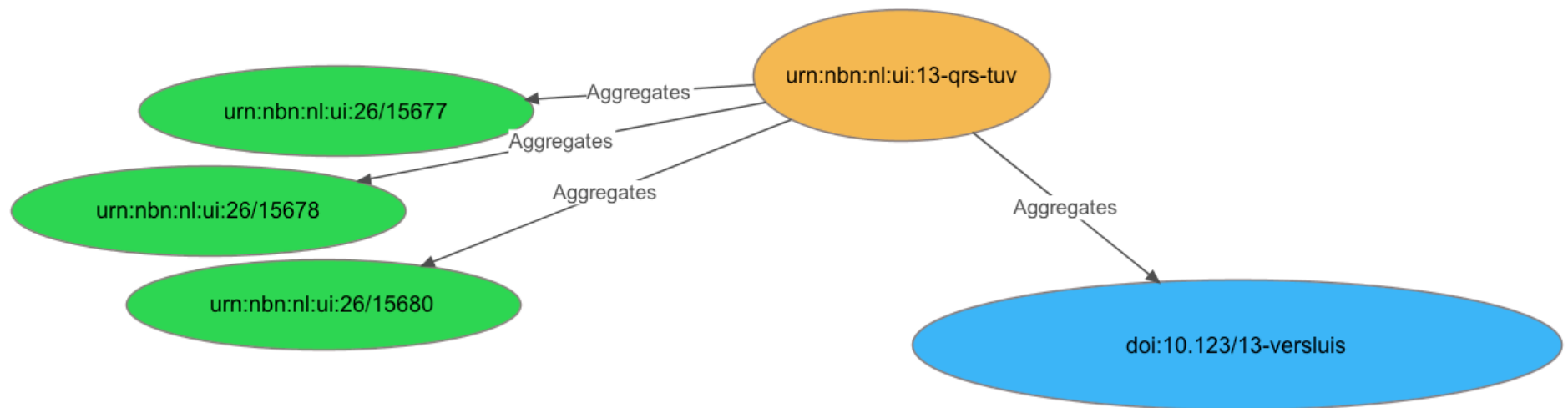
Approach

- Collect publication, data and metadata
 - define and identify aggregations of (web) resources using OAI-ORE



Approach

- ... in a durable way
 - using persistent identifiers, digital author identifiers (DAI), vocabularies, etc.



Approach

- ... in an exchangeable format
 - describe aggregations as triple-relations using RDF

```
<!-- SIMPLIFIED ORE FOR DEMO ONLY -->>
<rdf:Description rdf:about="urn:nbn:nl:ui:13-qrs-tuv">
  <rdf:type rdf:resource="http://www.openarchives.org/ore/terms/Aggregation"/>
  <dans:eptype dans:resource="info:eu-repo/semantics/enhanced_publication"/>
  <ore:aggregates rdf:resource="doi:10.123/13-versluis"/>
  <ore:aggregates rdf:resource="urn:nbn:nl:ui:26/15677"/>
  <ore:aggregates rdf:resource="urn:nbn:nl:ui:26/15678"/>
  <ore:aggregates rdf:resource="urn:nbn:nl:ui:26/15680"/>
  <dc:title>How Snapping Shrimp Snap: Through Cavitating Bubbles</dc:title>
  <dcterms:creator rdf:parseType="Resource">
    <foaf:name>M. Versluis</foaf:name>
    <dai:identifier>info:eu-repo/dai/nl/298870398</dai:identifier>
  </dcterms:creator>
  <!-- etc -->
</rdf:Description>
```

Approach

- ...visualize in browser
 - translate RDF to HTML using XSLT

The screenshot shows a web browser window with the address bar containing the URL `http://driver2.dans.knaw.nl/demonstrator/eps/pof-science.xml#aggregation`. The browser title is "Resource Map for ./pof-science.xml#aggregation". The page content is organized into several sections:

- Content**: A tabbed interface with "Content" selected. The main heading is "How Snapping Shrimp Snap: Through Cavitating Bubbles". Below the heading is a paragraph of text: "The snapping shrimp (*Alpheus heterochaelis*) produces a loud snapping sound by an extremely rapid closure of its snapper claw. One of the effects of the snapping is to stun or kill prey animals. During the rapid snapper claw closure, a high-velocity water jet is emitted from the claw with a speed exceeding cavitation conditions. Hydrophone measurements in conjunction with time-controlled high-speed imaging of the claw closure demonstrate that the sound is emitted at the cavitation bubble collapse and not on claw closure. A model for the bubble dynamics based on a Rayleigh-Plesset-type equation quantitatively accounts for the time dependence of the bubble radius and for the emitted sound." Below this text is a metadata table:

Author	M. Versluis (298870398)
Persistent ID	urn:x-driver:709004
Created	2008-10-27
Modified	2008-10-27
Rights	RestrictedAccess
- PDF at Science Magazine**: A section with a "pdf" icon. It contains a metadata table:

Persistent ID	urn:x-driver:709014
Type	article
Modified	2000-09-22

Below the table are "Open" and "Preview" buttons.
- PDF at Twente University**: A section with a "pdf" icon. It contains a metadata table:

Persistent ID	urn:x-driver:709016
Type	article
Modified	2000-09-22

Below the table are "Open" and "Preview" buttons.
- Resources**: A list of links with "+" icons:
 - Startpage at Science Magazine
 - Startpage at Twente University
 - Top view (video)
 - Side view 1 (video)
 - Side view 2 (video)
 - Frontal view 1 (video)
 - Frontal view 2 (video)
 - Frontal view 3 (video)

Demonstration

<http://driver2.dans.knaw.nl>

Challenges

- Contents
 - Fixed, Quality, Durability
- Presentation
 - Standardized and generic or custom-made
- (Persistent) Identification
 - Granularity, level of persistence, use with ORE
- Long Term Preservation
 - Who?
- Creation
 - The need for tools
- ...

Conclusions

- OAI-ORE can be used to aggregate components of an enhanced publication
 - Further community-specific agreements required
- Durability aspect needs to be solved
 - What to aggregate and how to aggregate?
- Tools

Future

- SURFshare tender projects
 - Dataplus
 - JALC
 - Veteran Tapes VP
 - ESCAPE
 - Proefschriften Plus

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Thank you!

- Questions?

FAQ:

- Is the demonstrator online?
 - Yes, <http://driver2.dans.knaw.nl>

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