Breakout session OAI6 2009

The future of scholarly communication:
Enhanced Publications

Saskia Woutersen
University of Amsterdam

Contents

1. What is an enhanced publication?
2. Examples / current state
3. Challenges
4. Discussion
5. Feedback

Definition

1. “classical” linear publication (*outline*)
2. research data (*evidence of the research*)
3. extra materials (*to illustrate or to clarify*)
4. post-publication data (*commentaries, ranking*)

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Molecular Microbiology

Volume 61 Issue 1 Page 219-231, July 2006

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Free Content

Abstract

ABC transporter-mediated release of a haem chaperone allows cytochrome *c* biogenesis

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Abstract

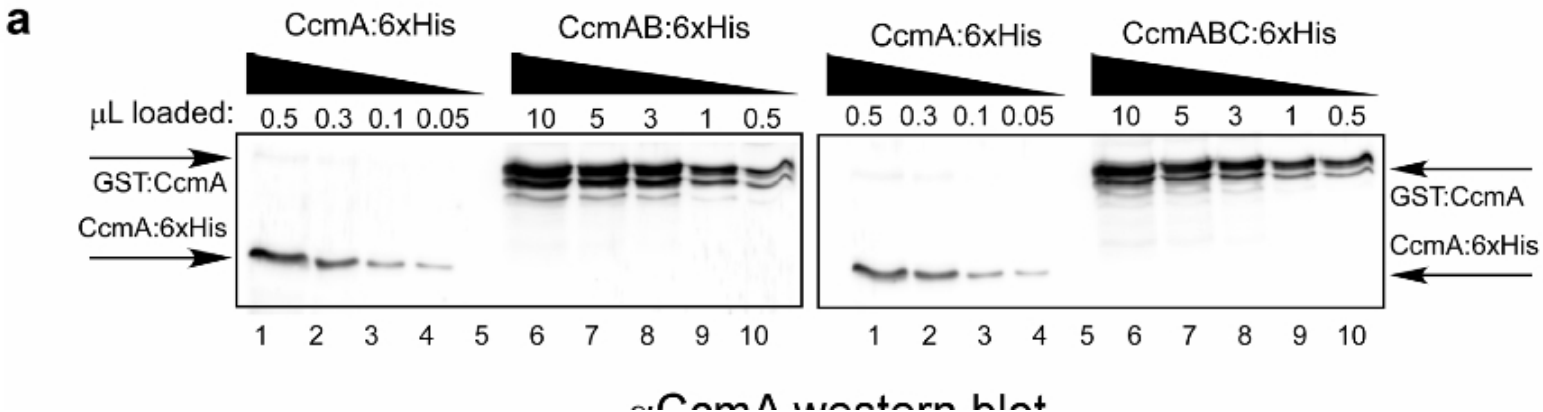
Summary

Done

Supplementary Table 1. Oligonucleotides

Name	Sequence 5'- 3'	Purpose
mutA-left	GACGCGGAATTCTTGAAGCTTCGA GACTGATT	mutCcmA mutagenesis
mutA-right	CAGCTCTCGAAGCTTCAACAACGC CGCCGTCCT	mutCcmA mutagenesis
Ccm-N-term	TTGCAGATCTATGCTTGAAGCCAG AGAGTTAC	pSystem I derivatives
Ccm-C-term	CGGAATTCTTTTTATTTACTCCTCCT GCGGCGAC	pSystem I derivatives
Δ*ccmA*-left	CCGAGAGATCTATGATGTTCTGGC GCATTTTCCG	pRGK350 (Δ*ccmA*)
Δ*ccmB*-left	GGAGAATTCGCCCAGAACATCATA TGGCCCTCGT	pRGK351 (Δ*ccmB*)
Δ*ccmB*-right	GGTATCGAACATATGAGGAAAACA CTGCATCAACT	pRGK351 (Δ*ccmB*)
Δ*ccmC*-left	GCAGTGAATTCCACATATGTTCGAT ACAGAC	pRGK352 (Δ*ccmC*)
Δ*ccmC*-right	AAGAGGCCCGCATATGACCCCTGC ATTTGCTTCC	pRGK352 (Δ*ccmC*)
Δ*ccmD*-left	GGAAGCGAATTCAGGGGTCATATG CGGCCTCTT	pRGK353 (Δ*ccmD*)

Supplementary Figure 1. Quantitative immunoblot to determine ABC complex stoichiometry. Supplementary figure 1b shows plasmids used to express GST:CcmACcmB:6xHis (pRGK360) and GST:CcmACcmBCcmC:6xHis (pRGK359). Protein complexes purified via nickel affinity chromatography from solubilized membranes of RK103 expressing pRGK360 or pRGK359 were separated via 12.5% SDS-PAGE adjacent to a dilution series of pure CcmA:6xHis and immunoblotted with (**a**) αCcmA then re-probed with (**b**) α6xHis. (**c**) Schematic of protein complex stoichiometry in the absence and presence of CcmC, as shown in this experiment.



Optics InfoBase

http://www.opticsinfobase.org/abstract.cfm?URI=oe-8-7-417

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Non-sequential double ionization of helium and related wave-function dynamics obtained from a five-dimensional grid calculation.

Harm Muller

Optics Express, Vol. 8, Issue 7, pp. 417-424

Keywords (OCIS):
(020.0020) Atomic and molecular physics : Atomic and molecular physics
(270.6620) Quantum optics : Strong-field processes

Abstract
Numerical integration of the time-dependent Schroedinger equation for two three-dimensional electrons reveals the behavior of helium in the presence of strong 390 nm and 800 nm light. Non-sequential double ionization is seen to take place predominantly at times when the electric-field component of the light reaches its peak value. Double ionization starts only in the second cycle of a flat-top pulse, and reaches a stable value only after many cycles, showing that recollision, sometimes through very long trajectories, must be involved.

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History
Original Manuscript: February 5, 2001
Published: March 26, 2001

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The Tree of Life

Blog of Jonathan A. Eisen, evolutionary biologist. Topics are related mostly to my work. I am interested in phylogenomics and the origin of novelty in microorganisms (new functions, processes, forms)(see my LAB WEB SITE). My posts also include some comments on the issue of "Open Access" publishing. Currently, I am a Professor at the U. C. Davis Genome Center.

TUESDAY, OCTOBER 2, 2007

PLoS One Commentary Expansion and Metagenomics of Warm Waters

People interested in metagenomics and/or marine microbiology should check out a recent paper in PLoS One on Metagenomics of the Deep Mediterranean, a Warm Bathypelagic Habitat.

In this paper, the authors use metagenomic sequencing to study microbes from 3000m depth int he Mediterranean. The most interesting thing about this paper is that the water at this depth is much warmer than water from similar depths that have been previously studied by metagenomics. The authors do some comparative metagenomic analysis and conclude that temperature of the water is more important than depth in determining the suite of organisms and genes that are present in the water. This is a preliminary result but does being to show the potential power of comparative metagenomic analyses.

The other thing people might want to check out is the Commentary on this article. I have been trying to get people in my lab to layer their comments and annotations onto this article as a test of the new PLoS One

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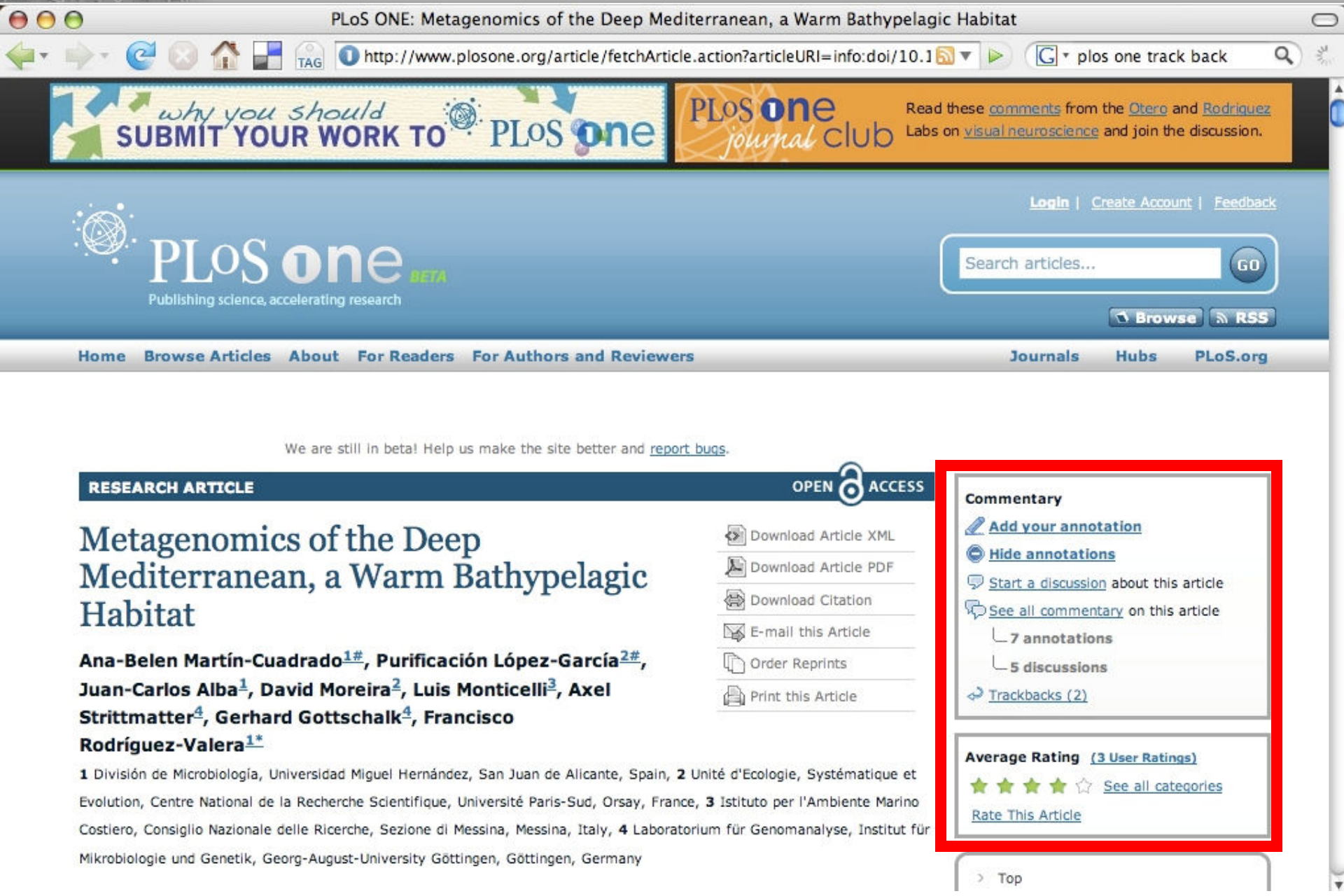

PLoS ONE: Metagenomics of the Deep Mediterranean, a Warm Bathypelagic Habitat
http://www.plosone.org/article/fetchArticle.action?articleURI=info:doi/10.1
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RESEARCH ARTICLE
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Metagenomics of the Deep Mediterranean, a Warm Bathypelagic Habitat
Ana-Belen Martín-Cuadrado[1#], Purificación López-García[2#], Juan-Carlos Alba[1], David Moreira[2], Luis Monticelli[3], Axel Strittmatter[4], Gerhard Gottschalk[4], Francisco Rodríguez-Valera[1*]
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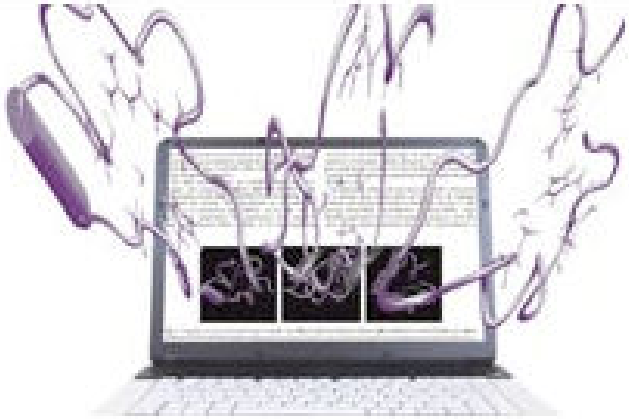

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11 May 2009
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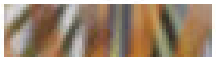

RSC and ChemSpider launch InChI Resolver

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Chemical Communications RSC Publishing

Journals › Chemical Communications › Contents List › DOI: 10.1039/b821952d

Chem. Commun., 2009, 3366-3368 | DOI: 10.1039/b821952d | Communication

3*S*-Fluoroproline as a probe to monitor proline isomerizati protein folding by ^{19}F-NMR†

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First published on the web 19th May 2009

Variable-temperature inversion transfer NMR is used to determine the kinetic and thermodyn *cis–trans* isomerization of *N*-Ac-(3*R*) and (3*S*)-fluoroproline-OMe.

Understanding how proteins change in structure from an unfolded to a folded state is complic cases, by the *cis* to *trans* isomerization of prolyl peptide bonds.[1] While dependent upon the r

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Compound set 'N-Ac-(3R) and (3S)-fluoroproline-OMe'

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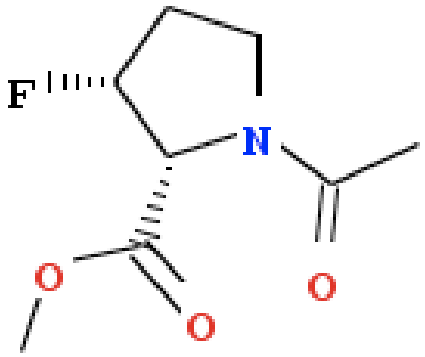

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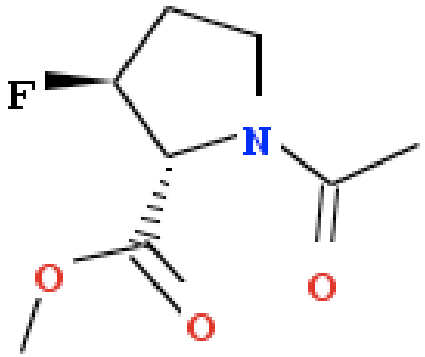

Supplementary Material (ESI) for Integrative Biology
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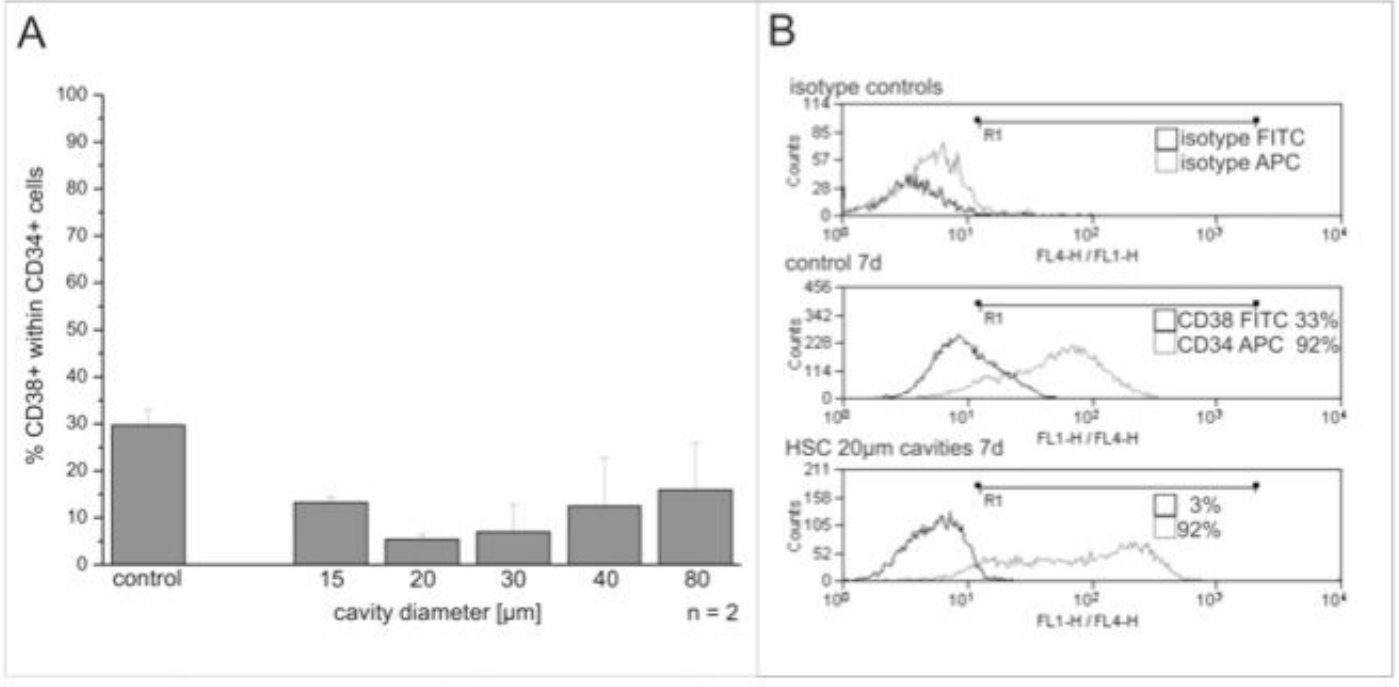
Supplementary Material

Kurth, I. et al. 'Hematopoietic Stem and Progenitor Cells in Adhesive Microcavities'



Suppl. Fig. 1 CD38 surface expression within CD34 positive cells. (A) After 7 days the percentage of CD38 positive HSCs is reduced on microstructured substrates compared to

Current state

Frequently

- articles
- hyperlinked references
- supplementary data

Extremely rare

- blogs
- multimedia
- ranking
- commentaries
- etc.

Problems

- links with social networking
  - like blogs
- relations with other materials
  - like multimedia materials
- semantic context
  - like XML

- growing number of digital scholarly objects on the internet
  - like multimedia materials, data sets, and blogs

Cause

most publications and related objects processed as individual objects

no relation between
the related objects is given

Consequence

difficult to find out whether
related objects are available

Solution

integration of all scientific information, with links between the objects

publishers and repositories have the building blocks and the tools, but in general do not use them to create an enhanced publication

$\Rightarrow$ Enhanced publication !

Enhanced publication

- control over the published materials
- integration of scientific information
- semantic relations
- related objects
  - easy to find, easy to access, easy to use
- etc. etc.

Makes scholarly publishing much more efficient

Three forms of EPs

- Envelopes, compound objects or packaging formats
  - *give a complete description and have ideally no external dependencies*
    - METS, MPEG-21/DIDL, LOM/IMS99, ODF packages, etc.
- Overlays, maps, feeds
  - *group references to resources, identify them and describe the content, structure and relations of all parts*.
    - RDF, ORE101, POWDER, SWAP, TopicMaps102, Atom, etc.
- Embedding, or extending existing resources.
  - *no new resources are introduced on the network, but existing resources are enriched by adding semantic annotations.*
    - RDFa, Microformats, XMP (Adobe, 2005).

Focus on number 2

- Envelopes, compound objects or packaging formats
  - *give a complete description and have ideally no external dependencies*
    - METS, MPEG-21/DIDL, LOM/IMS99, ODF packages, etc.
- Overlays, maps, feeds
  - group references to resources, identify them and describe the content, structure and relations of all parts.
    - RDF, ORE101, POWDER, SWAP, TopicMaps102, Atom, etc.
- Embedding, or extending existing resources.
  - *no new resources are introduced on the network, but existing resources are enriched by adding semantic annotations.*
    - RDFa, Microformats, XMP (Adobe, 2005).

Driver Demonstrator

- Content tab
  - metadata
  - textual component
  - associated metadata
  - lists additional resources, again with metadata
  - resources modeled as Aggregations, incl. splash page
- Relations tab
  - to understand the relationships among resources (of a (nested) Aggregation)

- http://driver2.dans.knaw.nl/demonstrator/html

Basic requirements of enhanced publications

- All components have a unique global persistent identifier
- Link must be resolved
- All components have a time stamp
- The file type should be common enough (for future use)
- It should be legal to publish the objects (not only copyright concerned).

Discussion

- 14 Questions
- Groups of 4 persons
  - selected on alphabetical order
- Each person selects a question he/she wants to discuss (5 minutes)
- Discussion (45 minutes)
- Feedback (45 minutes)