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Museum data, where next – consuming linked data

Cultural Heritage and the Semantic Web British Museum, UK, 13th January 2011

Hugh Glaser Seme4 Limited and University of Southampton, UK

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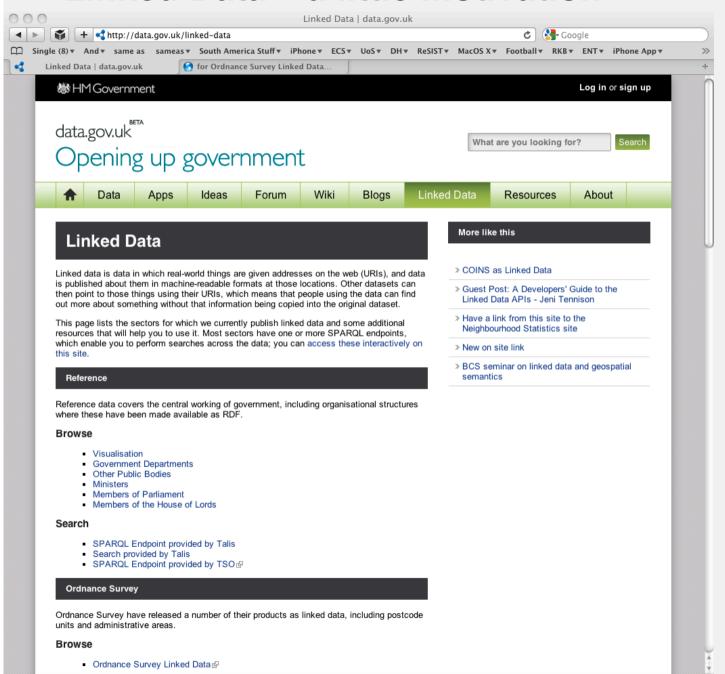


From the Study Day Description

- "The ability of the semantic web to cheaply but effectively integrate data and breakdown data silos provides museums with a long awaited opportunity to present a richer, more informative and interesting picture."
 - » Dominic Oldman

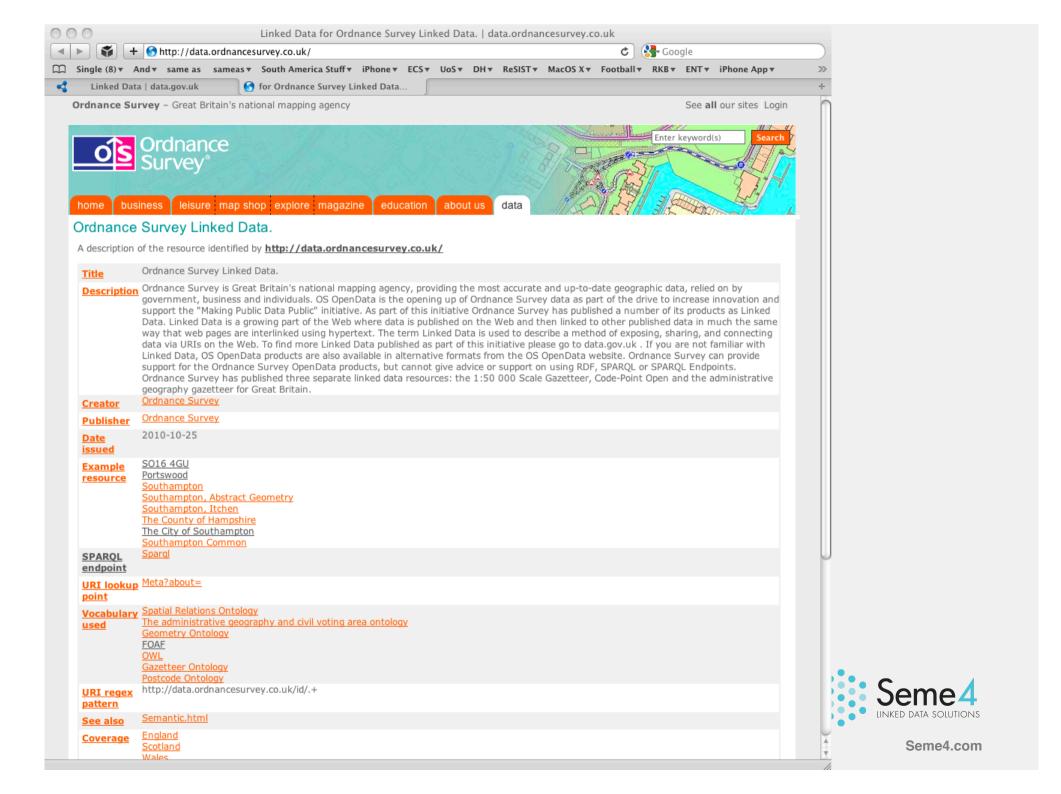


Linked Data – a little motivation





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The **World Cup 2010 website** is a significant step change in the way that content is published. From first using the site, the most striking changes are the horizontal navigation and the larger, format high-quality video. As you navigate through the site it becomes apparent that this is a far deeper and richer use of content than can be achieved through traditional CMS-driven publishing solutions.

The site features 700-plus team, group and player pages, which are powered by a high-performance dynamic semantic publishing framework. This framework facilitates the publication of automated metadata-driven web pages that are light-touch, requiring minimal journalistic management, as they automatically aggregate and render links to relevant stories.



Staff from the BBC's online and technology teams talk about BBC Online, BBC iPlayer, and the BBC's digital and mobile services. The blog is reactively moderated. Posts are normally closed for comment after three months. Your host is Nick Reynolds (NR).

Subscribe to BBC Internet Blog

You can stay up to date with BBC Internet Blog via these feeds.

BBC Internet Blog Feed (RSS)

BBC Internet Blog Feed (ATOM)

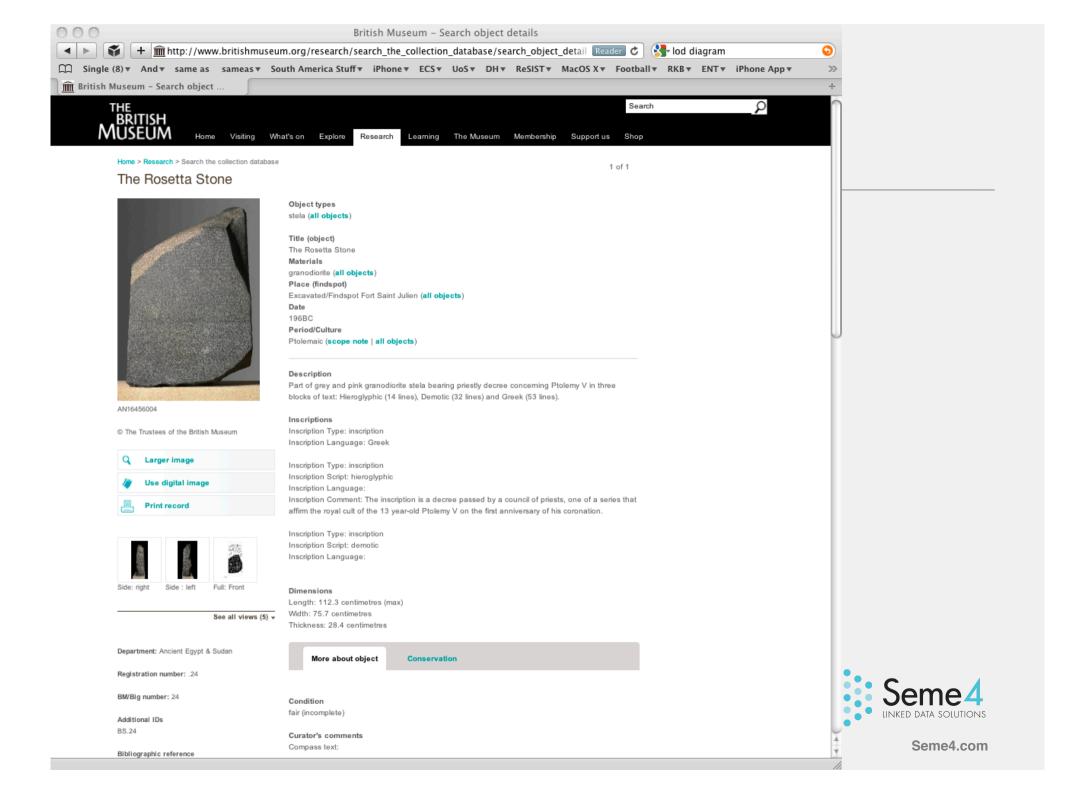
If you aren't sure what RSS is you'll find our beginner's guide to RSS useful.

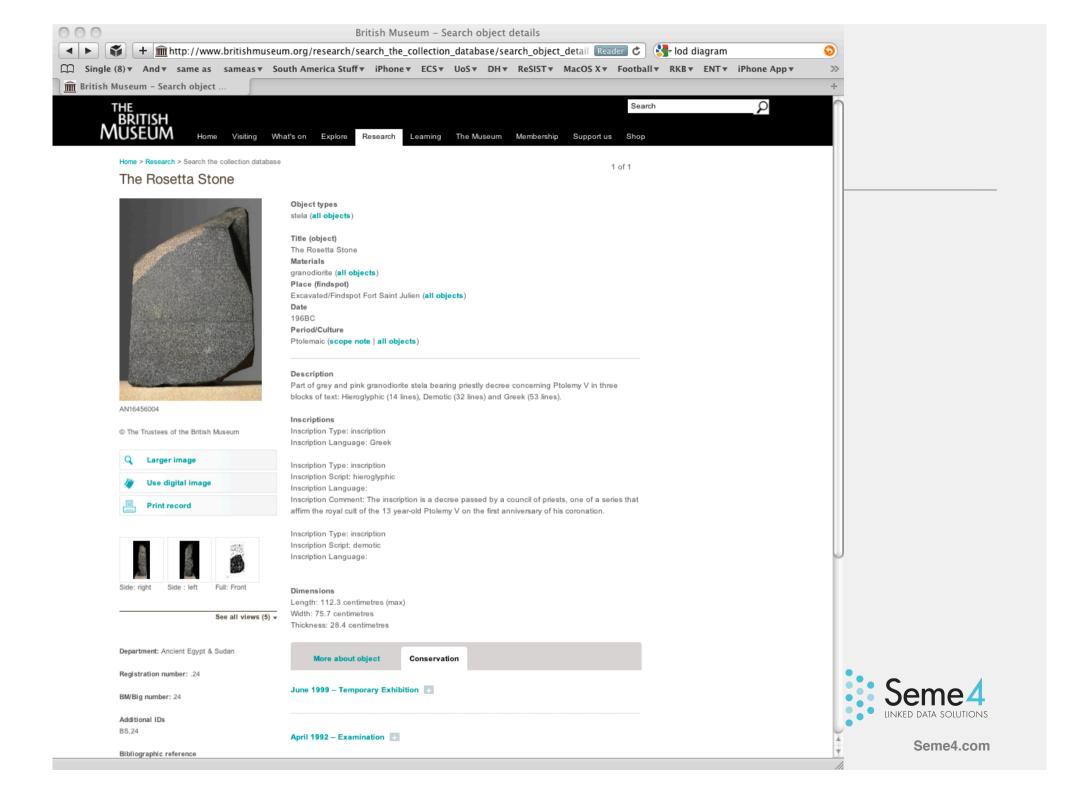
BBC on Blogs

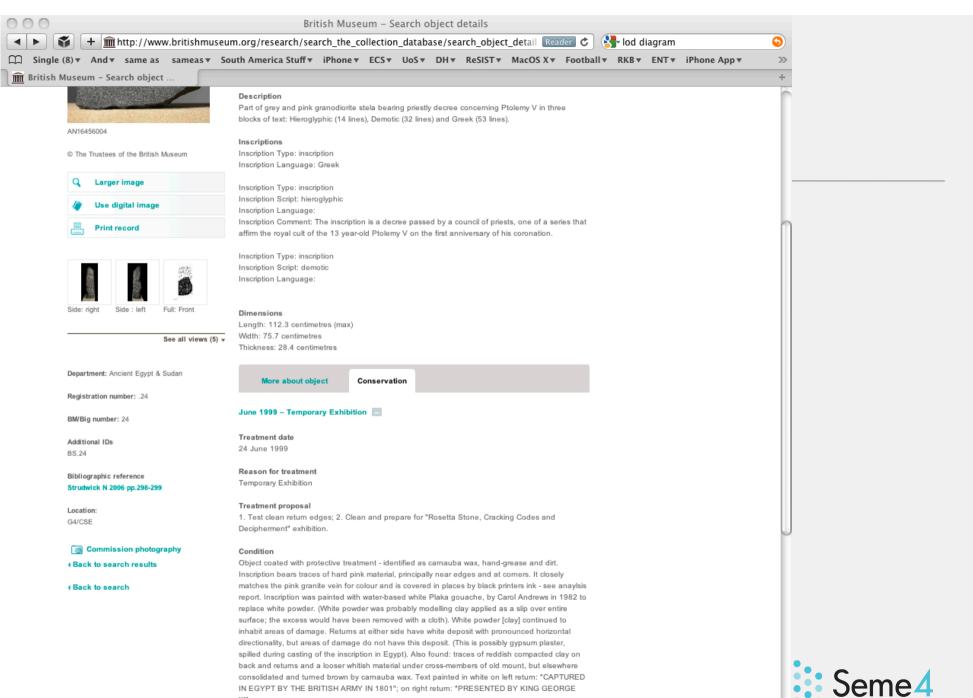
 BBC iPlayer Gets More S4C VOD, Will Also Link Out

15

- From paidContent (NR)
- Whatever happened to surround sound for streaming Radio?







Treatment details

Samples were taken of: pink material and printers ink in inscription; surface coating from various

locations; white deposit on returns; reddish compacted clay on back and returns; loose whitish



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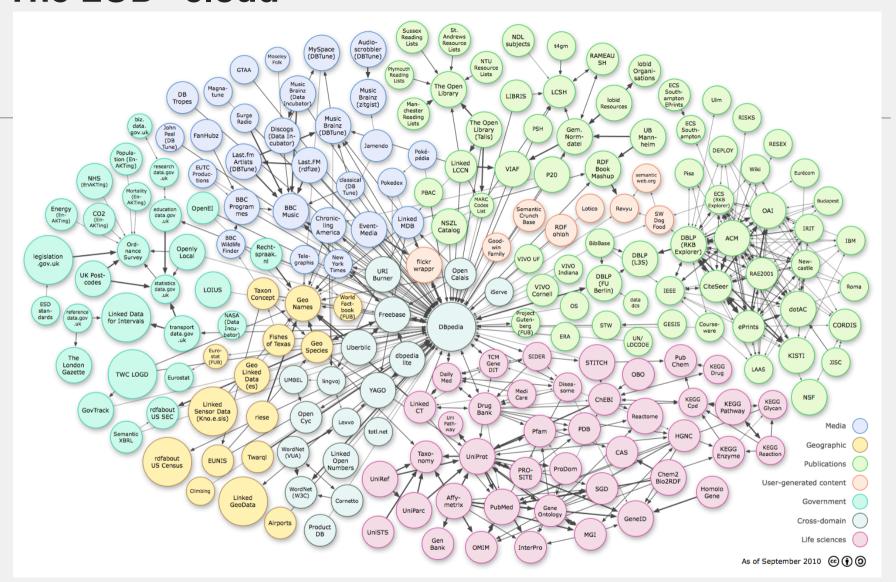
British Museum

That was a year ago

- Science data
- Conservation data
- Linked to the Catalogue
- Live on the web site
- Now
 - Catalogue
- ResearchSpace
 - More institutions
 - Research environment



The LOD "cloud"





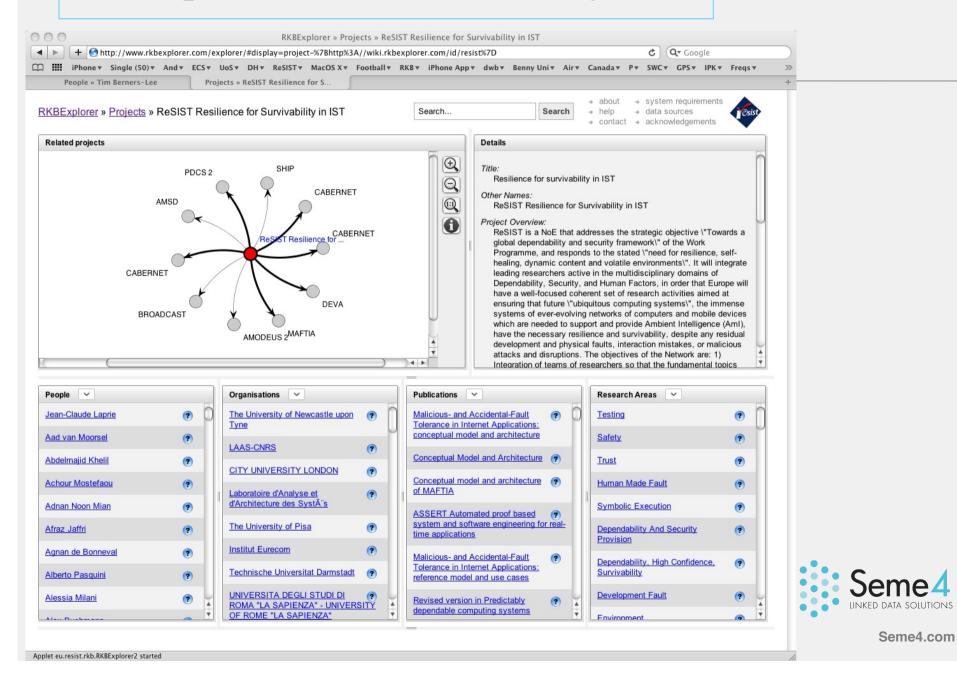
10

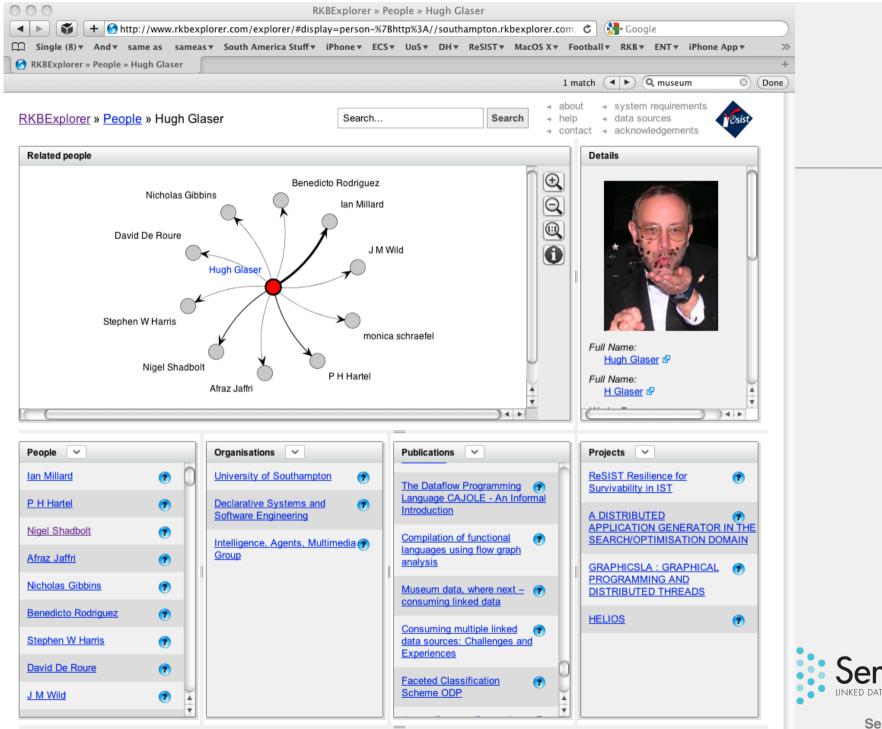
Our Example: RKB and RKBExplorer

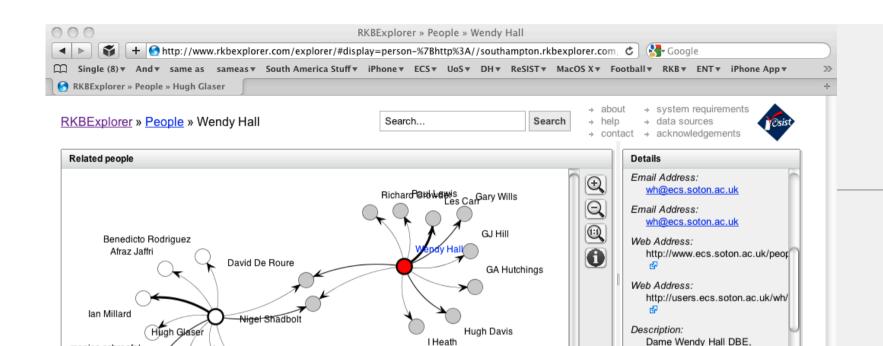
- RKB (ReSIST Knowledge Base) and RKBExplorer
- Knowledge-enabled infrastructure for cooperation in research into resilient systems
- Reasonably mature system

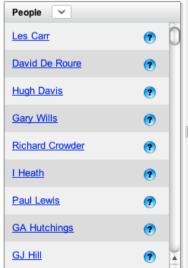


RKBExplorer – the ReSIST Project





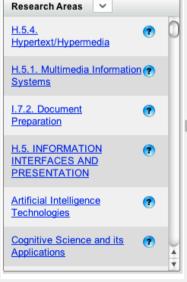




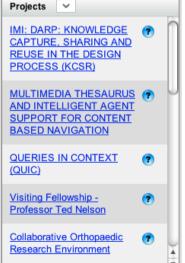
Stephen W Harris

J M Wild

monica schraefel







FREng, FBCS, FIET, FCGI, FRS (born 25 October 1952) is

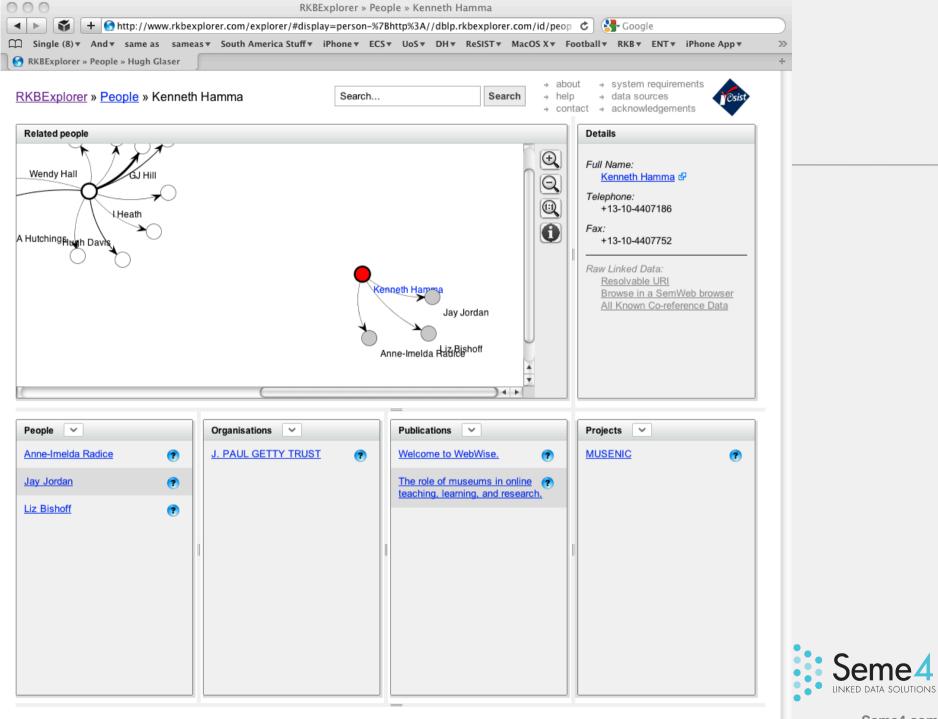
Science at the University of

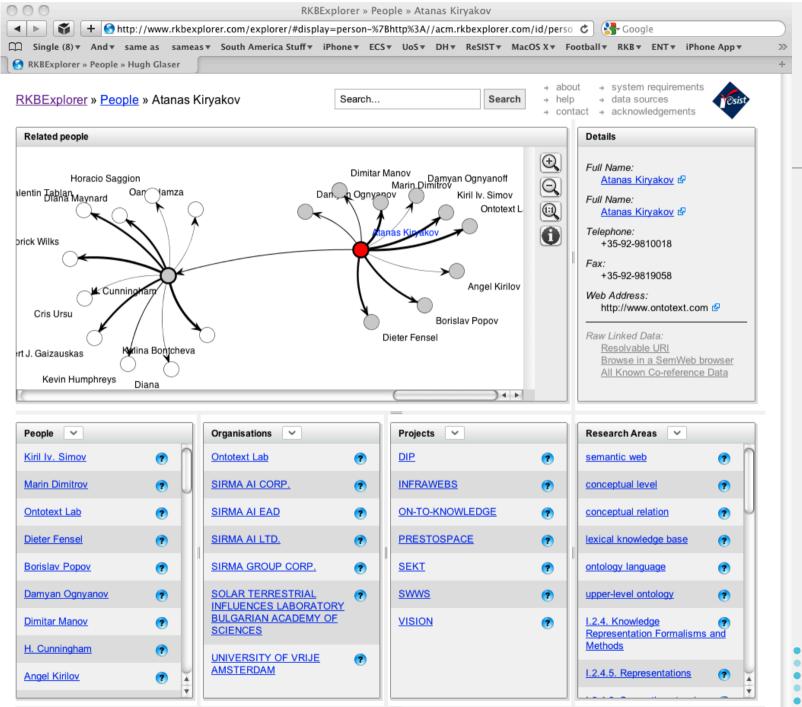
) 4 b

Professor of Computer

Southampton.











Atanas Kiryakov is connected to H. Cunningham

Semantic Web Enabled, Open Source Language Technology
 Towards LarKC: A Platform for Web-Scale Reasoning.

They are linked by 4 relations.

They have co-authored 2 papers:

They are both members of 2 projects:

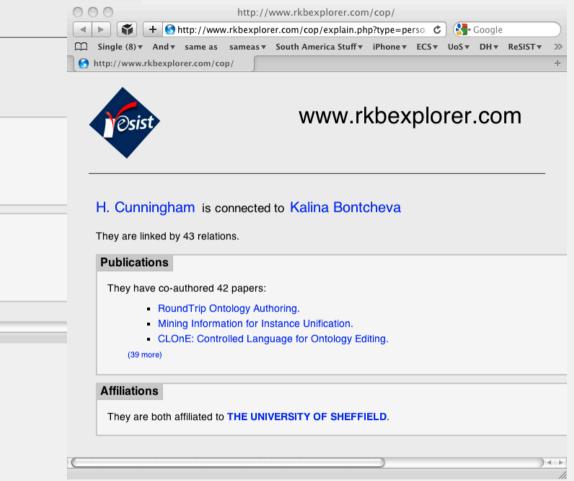
PRESTOSPACE

SEKT

Publications

Projects

But Why?







The Web of Data has many equivalent URIs.

This service helps you to find co-references between different data sets.

Enter a known URI, or use Sindice to search first.

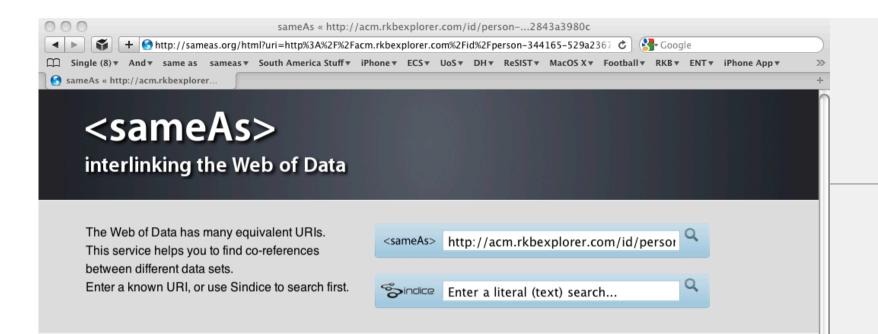
<sameas></sameas>	Enter a Linked Data URI	Q
Sindice	Enter a literal (text) search	Q

Why not try searching for the string "<u>Southampton</u>", (which we will look up for you on <u>Sindice</u> first) or finding other equivalent identifiers for <u>http://transport.data.gov.uk/id/local-authority/1755</u>?

Currently serving 39 221 073 URIs in 13 112 833 bundles!

about · contact · get the widget





Equivalent URIs for http://acm.rkbexplorer.com/id/person-344165-529a2367796b9822d610a72843a3980c -

http://data.semanticweb.org/person/atanas-kiryakov

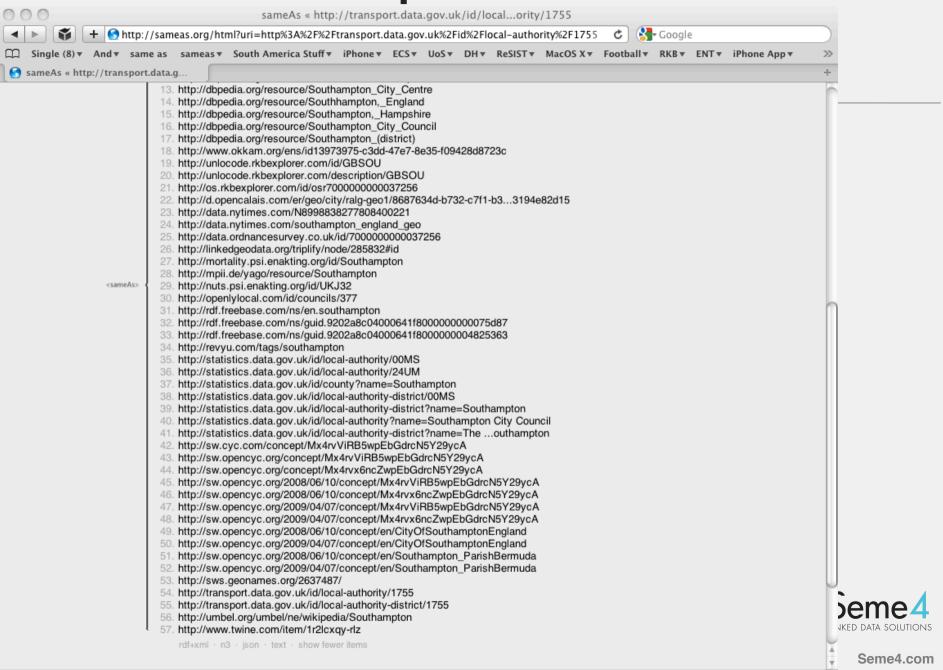
<sameAs>

- http://acm.rkbexplorer.com/id/person-344165-529a2367796b9822d610a72843a3980c
- 3. http://acm.rkbexplorer.com/id/person-344165-be4c940af0b483a2d1675df9fa0bab6f
- 4. http://acm.rkbexplorer.com/id/person-344165-c23ba3f792faeca763400f197b89adb1
- http://acm.rkbexplorer.com/id/person-344165-e0b9eea0f283efab1c5ae86ad61bf111
- http://acm.rkbexplorer.com/id/person-344165-fa8e9aed948670c2accad97a4320122d
- 7. http://dblp.rkbexplorer.com/id/people-2ceb8136f69a235014d3d46c881a1...86ce3c9dc7
- 8. http://dblp.rkbexplorer.com/id/people-c9d93beb4ba98fa7318516e5fb5f9...f7185e51d3
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- http://dblp.rkbexplorer.com/id/people-c9d93beb4ba98fa7318516e5fb5f9...601d0b0236
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- http://dblp.rkbexplorer.com/id/people-c9d93beb4ba98fa7318516e5fb5f9...3a2580ac89
- http://dblp.rkbexplorer.com/id/people-c9d93beb4ba98fa7318516e5fb5f9...b8848ff4e0
- 17. http://dblp.rkbexplorer.com/id/people-c9d93beb4ba98fa7318516e5fb5f9...6922936d8c
- 18. http://dblp.rkbexplorer.com/id/people-c9d93beb4ba98fa7318516e5fb5f9...c42f7e7ace
- 19. http://citeseer.rkbexplorer.com/id/resource-CSP162937-13aaf289f2945...80cea8e74c
- 20. http://citeseer.rkbexplorer.com/id/resource-CSP162937-2897e9670649a...00d1d4c62c
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- http://citeseer.rkbexplorer.com/id/resource-CSP162937-7896446de27c6...8f39db880b
- http://citeseer.rkbexplorer.com/id/resource-CSP162937-8ac5adb3359f3...213751b546



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What is Southampton?



Co-Reference

- Repositories have people, publications, etc. from other institutions who also have records there and elsewhere
- And vice versa
- Co-Reference is a Big Problem
 - Everything is a URI (not title, name, number...)
 - Identifying multiple URIs for one resource
 - Rejecting incorrectly conflated resources
 - Publishing
 - Using
- Coldstart
 - A serious problem
 - Nothing is linked to anything
 - Not even (reliably) within most repositories



Co-Reference Service (CRS)

CRS Subsystem

- Find co-references
- Store them
- Publish them
 - Essentially:
 - URI_i -> { URI₁, ..., URI_i, ..., URI_n }
- Recommend a "Canon"
- Published by the Data Publisher
 - And possibly others
- Middleware aggregates co-references from recognised CRSes



CRS continued

CRS Policies are defined by context

- Often one per Triplestore
- Can be many per Triplestore for different purposes
- May not be associated with a particular Triplestore

Maintenance

- Provenance
- Rollback

Can be used to infer owl:sameAs

Eg OAI CRS has

- 7531045 different URIs
- in
- 2544955 bundles



Open System

RKBExplorer is only one interface

And not a required part

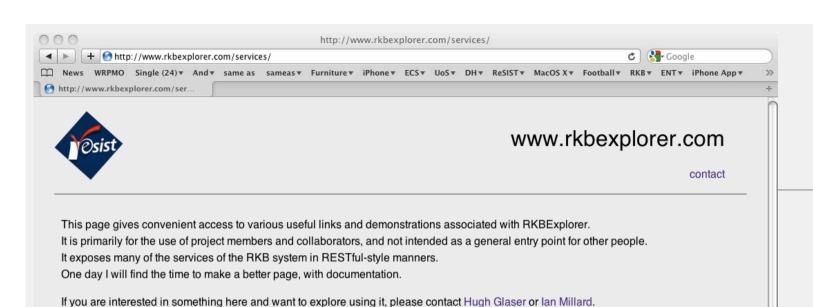
Services:

- Details for a paper (the right hand pane in RKBExplorer):
 - http://www.rkbexplorer.com/detail/?uri=http://southampton.rkbexplorer.com/id/eprints-12614
- Network of people for a publication (lower pane):
 - http://www.rkbexplorer.com/network/?uri=http:// southampton.rkbexplorer.com/id/eprints-12614&type=publication-person
- _

Services

- http://www.rkbexplorer.com/services/
- Other Interfaces (using the services)
 - Personal Web pages
 - iPhone
 - iGoogle Gadget





RKB Explorer application

ReSIST project, Jean-Claude Laprie, ALRL Paper

iGoogle Gadgets of the RKB Panels

[Main Page]

Complete Co-Reference Information

[Main Page],

or try: Nigel Shadbolt, Hugh Glaser, Brian Randell, Jean-Claude Laprie, Seungwoo Lee

Ontology Mapping

[Main Page],

or try: KISTI -> AKT (RDF, html);

Networks (Communities of Practice)

[Find the Network of a URI],

or try: Hugh Glaser, The Semantic Web Revisited, Tim Berners-Lee

Detail Information

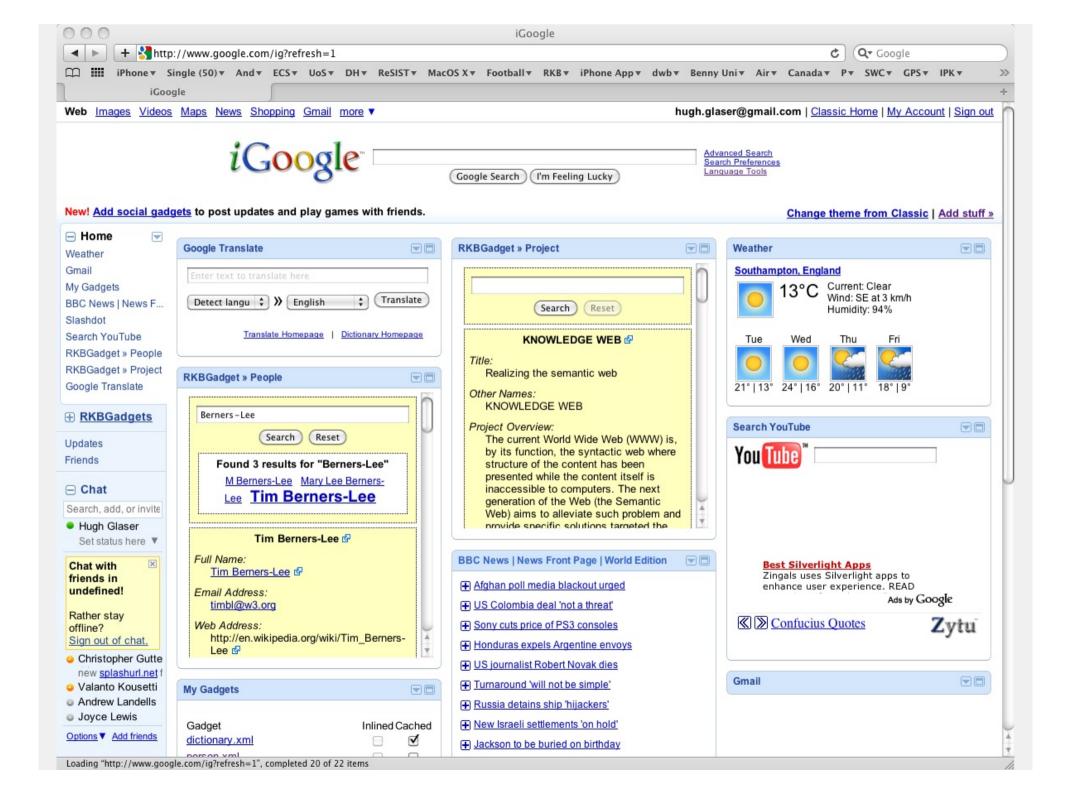
[Find Information about a URI],

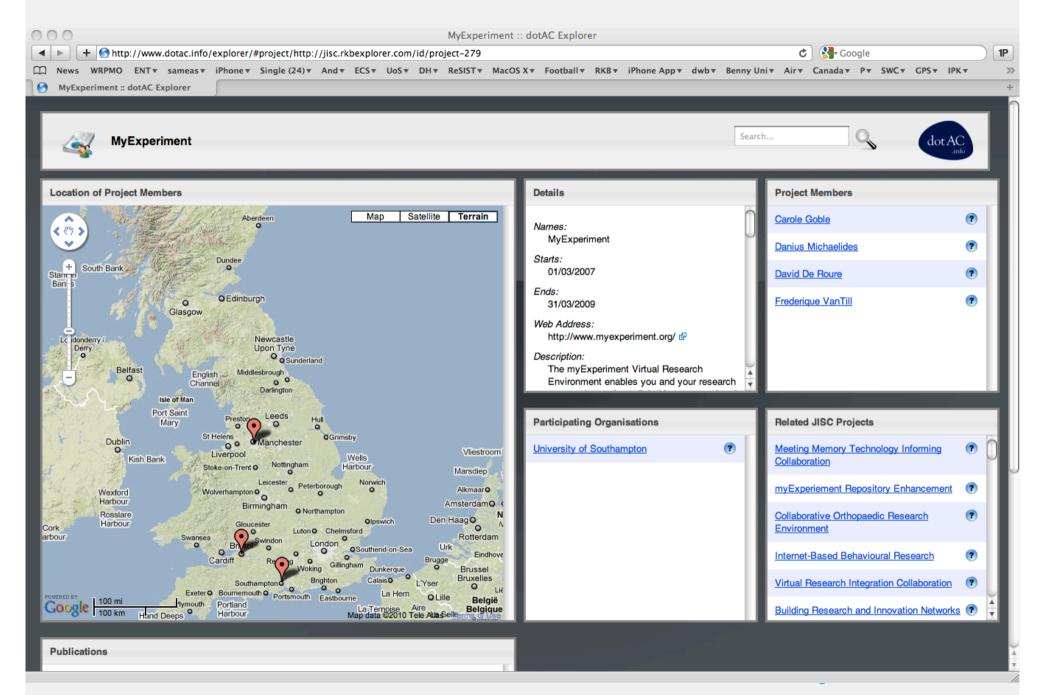
or try: Hugh Glaser, The Semantic Web Revisited, Tim Berners-Lee

Why? - Why are two Things Related?

[Main Page],

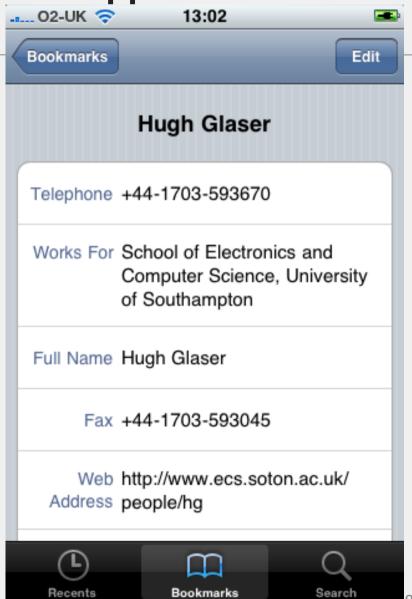


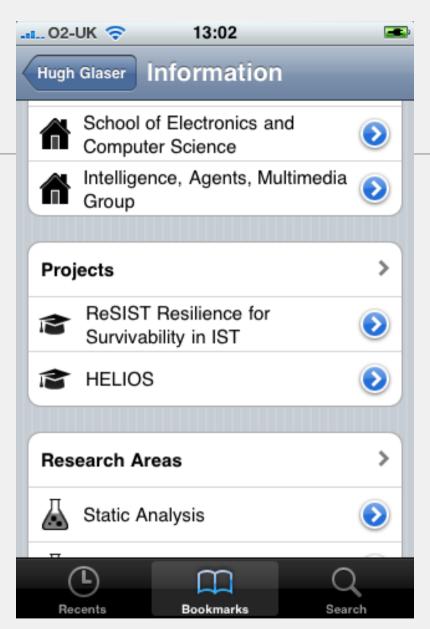




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iPhone App







© 2010 Seme4

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Semantic Web is not "All or Nothing"



Search Enter keywords here 99



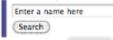
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University of Southampton > ECS > People > Hugh Glaser

Hugh Glaser

- Contact Research and
- Projects Publications
- Homepage

Search People







Hugh Glaser

School of Electronics and Computer University of Southampton Southampton S017 1BJ United Kingdom

Position: Visiting academic staff in Intelligence, Agents, Multimedia Group Fax: +44 (0)23 8059 3045

Email: hg@ecs.soton.ac.uk

URI: http://id.ecs.soton.ac.uk/person/21 [browse]

Interests: genetic algorithms, ontology maintenance, semantic grid, semantic squirrels, semantic web, semantic wiki, service composition, ubiquitous computing, web 2.0

The group secretary for the Intelligence, Hugh works with: Agents, Multimedia Group is Jane

Additional Contact Details

I may be here

Duties

ECS - Staff Training Budget ECS - Travel Budget Staff Teaching allocation (with Mark Zwolinski)



Hugh Glaser

 Dr Ian Millard 	(explain)
 Afraz O Jaffri 	(explain)
 Professor Nigel R 	(explain)
Shadbolt	

 Dr Nicholas Gibbins (explain) Bene Rodriguez-Castro (explain) Professor David C De (explain)

Roure dr monica mc schraefel (explain) Dr Harlth Alani

This list of people is sourced from RKBExplorer, the result of an ECS project. Click on the "explain" link to the right of each person to find out how they are connected. Note: the explain link requires heavy processing and may take some time to load.

Tel: +44 (0)23 8059 6000 | Contact ECS | Intranet | © University of Southampton



From the Study Day Description

- "The ability of the semantic web to cheaply but effectively integrate data and breakdown data silos provides museums with a long awaited opportunity to present a richer, more informative and interesting picture."
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Concluding Remarks

- RKB: Nobody had to put their personal data in they come and find it there
- The initial British Museum project has delivered value, at comparatively low cost
- A new project is almost complete the catalogue is in Linked Data form
- Linked Data works pretty well especially for integration
- Added value
 - More sophisticated services
 - In an Open System you don't have to do everything yourself
 - Concentrate on core business
- Don't stop at the catalogue there is a lot of other interesting stuff
- Worry about your co-reference



- A Whirlwind tour of a part of it that has hopefully given you a flavour
- Imagine people having an RKB-like worldwide view of Cultural Heritage
 - With your institution as part



You are never alone

- Ian Millard
- ReSIST Project
- AKT Project
- EnAKTing Project
- 10 years of collaborators

http://eprints.ecs.soton.ac.uk/id/eprint/21894

