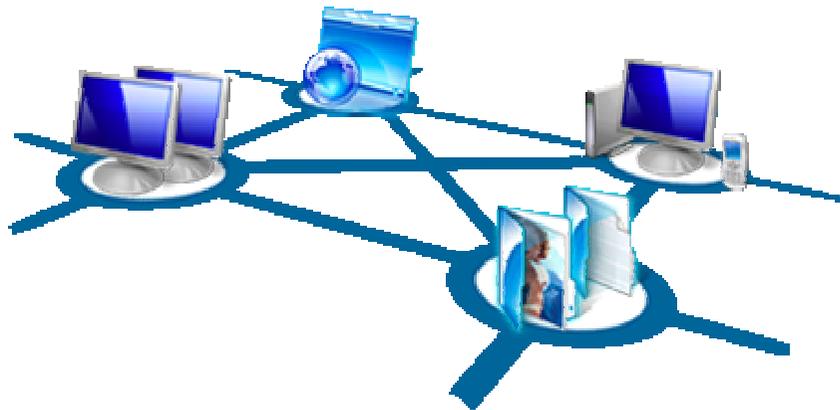


Tools for Dataset Lifecycle Management



Alex D. Wade
Dean Guo
Simon Mercer
Oscar Naim
Mike Zyskowski

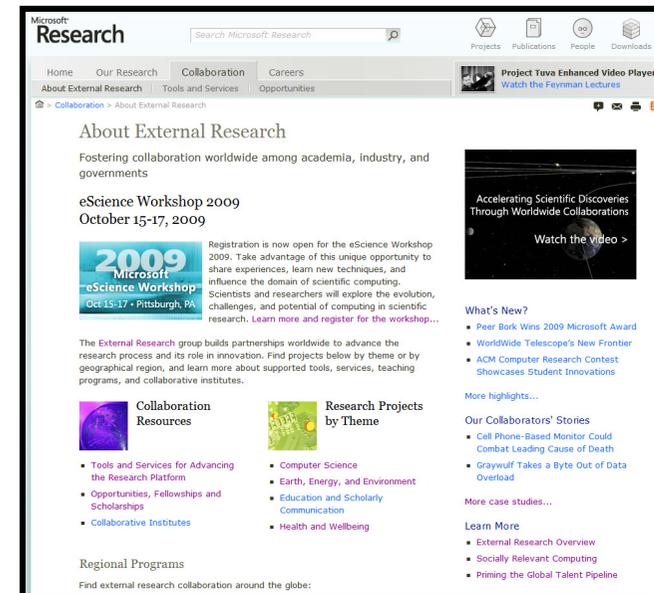
Microsoft®
Research

Microsoft® Research



Microsoft External Research

- Division within Microsoft Research **focused on partnerships** between academia, industry and government to advance research in fields that rely heavily upon advanced computing
- Supporting **groundbreaking research** to help advance human potential and the wellbeing of our planet
- Developing **advanced technologies** and services to support every stage of the research process
- Microsoft External Research is **committed to interoperability** and to providing open access, open tools, and open technology



<http://research.microsoft.com/collaboration/about/>

A stack of books is shown on the left side of the slide, with a blurred background. The books are stacked vertically, and their spines are visible. The colors of the spines vary, including dark blue, light blue, and white. The background is a soft, out-of-focus gradient of light blue and white.

Mission

Tailor Microsoft software to meet the specific needs of the academic research community

Our approach:

Conduct applied projects to enhance academic productivity by evolving Microsoft's scholarly communication offerings



The
F O U R T H
P A R A D I G M

DATA-INTENSIVE SCIENTIFIC DISCOVERY

EDITED BY TONY HEY, STEWART TANSLEY, AND KRISTIN TOLLE

Free PDF Download Or, Amazon Kindle version & paperback print-on-demand

“The impact of Jim Gray’s thinking is continuing to get people to think in a new way about how data and software are redefining what it means to do science.”

— **Bill Gates**, Chairman, Microsoft Corporation

“One of the greatest challenges for 21st-century science is how we respond to this new era of data-intensive science. This is recognized as a new paradigm beyond experimental and theoretical research and computer simulations of natural phenomena—one that requires new tools, techniques, and ways of working.”

— **Douglas Kell**, University of Manchester

“The contributing authors in this volume have done an extraordinary job of helping to refine an understanding of this new paradigm from a variety of disciplinary perspectives.”

— **Gordon Bell**, Microsoft Research

The screenshot shows the Microsoft Research website page for "The Fourth Paradigm: Data-Intensive Scientific Discovery". The page features a navigation bar with "Home", "Our Research", "Collaboration", and "Careers". Below the navigation bar, there is a search bar and a "Project Tuva Enhanced Video Player" section. The main content area is titled "The Fourth Paradigm: Data-Intensive Scientific Discovery" and includes a sub-header "Presenting the first broad look at the rapidly emerging field of data-intensive science". A central image shows a book cover for "The Fourth Paradigm" with the subtitle "DATA-INTENSIVE SCIENTIFIC DISCOVERY". To the right of the image, there is a section titled "The Fourth Paradigm Now Available in Paperback and On Demand" which states that the book is available as a free PDF download, a printed paperback copy, or a Kindle version. Below this, there are links to "Order the paperback from Amazon.com" and "Order the Kindle version from Amazon.com". On the far right, there is a "In the News" section with a link to "A Deluge of Data Shapes a New Era in Computing" and a "Download The Fourth Paradigm" section with links for "Full text, low resolution (6 MB)", "Full text, high resolution (93 MB)", and "By chapter and essay". At the bottom, there is a "Related Resources" section with links to "Microsoft Research collaborative projects" and "eScience Workshop 2009".



<http://research.microsoft.com/fourthparadigm/>

RESEARCHER PRODUCTIVITY

Make complex tasks simple

Research Information Centre – a VRE Framework

Collaborative environment for research groups



TRINITY COLLEGE DUBLIN
COLÁISTE NA TRÍONÓIDE, BAILE ÁTHA CLIATH

THE UNIVERSITY OF DUBLIN

Research Information Centre

Welcome Mike Chance

Home

Projects Overview

Name	Role	Activities	Discussions
Oliver Cromwell		ARC_SEC2.doc added by Jan Holloway	No Discussion Started
Product 2		No Activity Performed	No Discussion Started
Product 3		No Activity Performed	No Discussion Started
Product 4		No Activity Performed	No Discussion Started
Product 5		No Activity Performed	No Discussion Started
Product 6		No Activity Performed	No Discussion Started
Product 7		No Activity Performed	No Discussion Started

Feedback Alerts

Name	Project	Requested By	Received On
ARC_SEC2.doc	Oliver Cromwell	Jan Holloway	12/04/2010 15:34:28
ARC_SEC2.doc	Oliver Cromwell	Jan Holloway	12/04/2010 15:34:28
ARC_CV.doc	Oliver Cromwell	Jan Holloway	12/04/2010 15:34:28
ARC_SEC1.doc	Oliver Cromwell	Jan Holloway	12/04/2010 15:34:28
ARC_CV.doc	Oliver Cromwell	Jan Holloway	12/04/2010 15:34:28
ARC_SEC2.doc	Oliver Cromwell	Jan Holloway	12/04/2010 15:34:28
ARC_CV.doc	Oliver Cromwell	Jan Holloway	12/04/2010 15:34:28
ARC_SEC1.doc	Oliver Cromwell	Jan Holloway	12/04/2010 15:34:28

Feedback Received
There are no items to show in this view

Powered by Microsoft Office © Sharepoint © Server 2007 ©

Personal site for each researcher and project site for each project

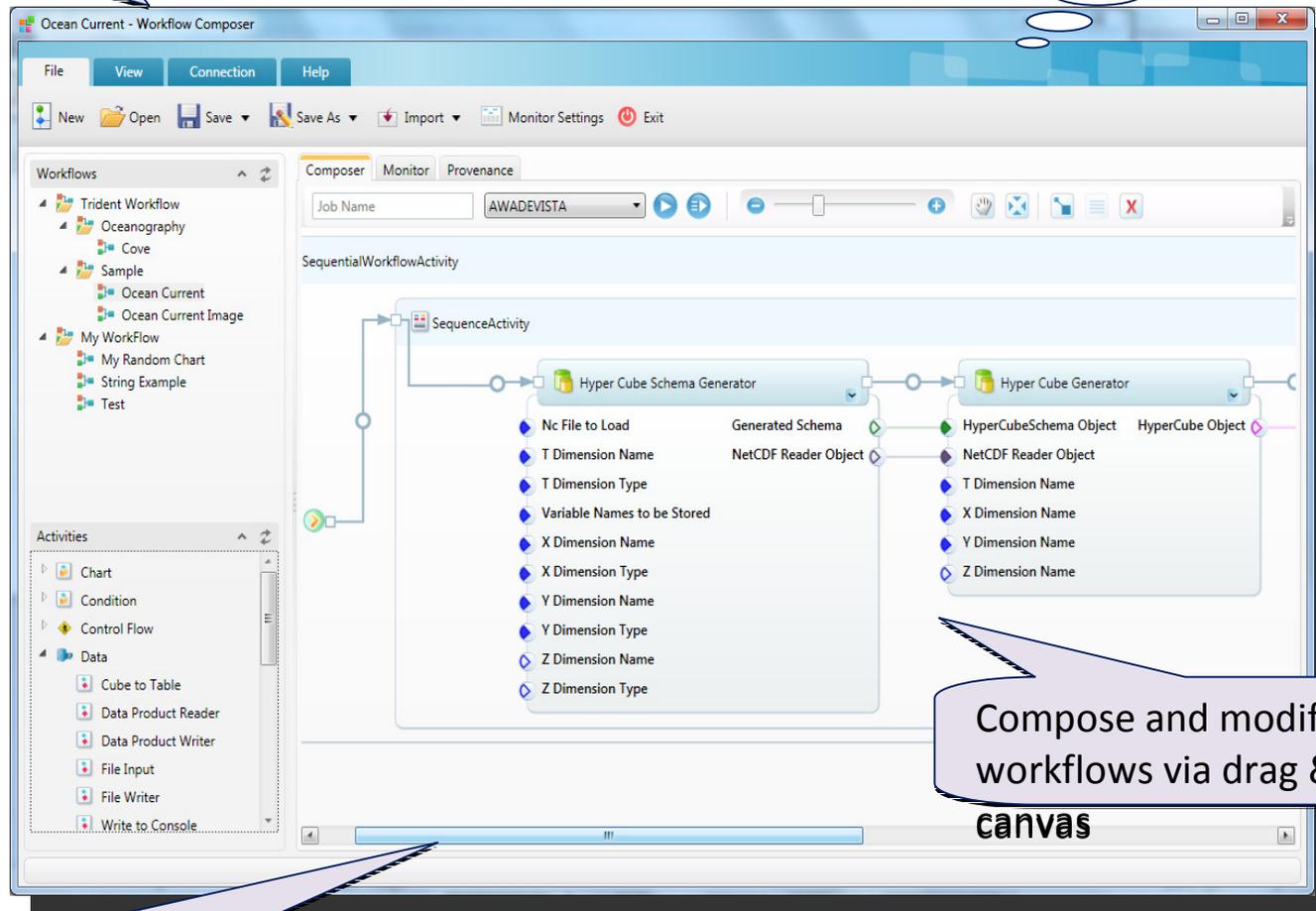
Document management, federated search, social networking, real-time communication, blogs,

wikis

Project Trident – a Scientific Workflow Workbench

Author, Execute and Monitor
Workflows

Share workflows via
my experiment



Compose and modify
workflows via drag & drop
canvas

View data products,
performance metrics, and
provenance data

Version 1.2 (Open Source under Apache 2.0 License):
<http://tridentworkflow.codeplex.com/>

Zentity – a Research Output Repository Platform

A semantic computing platform to store and expose relationships between digital assets

Native support for RSS, OAI-PMH, OAI-ORE, AtomPub and SWORD

The screenshot displays the Zentity administrator interface. At the top, there is a navigation bar with the Zentity logo, a 'Welcome administrator' message, and links for 'Logout' and 'Change Password'. Below this, the interface is divided into several sections:

- Browse:** Offers predefined views for navigating resources, including filters for 'By Year', 'By Category', 'By Resource Type', 'By Author', 'Recently Added Resources', and 'Top Authors'.
- Search:** Provides a search box with a 'Go' button and an example search query: 'E.g. Quantum Universe Author:Tony'.
- Help:** Contains links to 'How-To Guides', 'Developer References', 'Zentity Forums', and 'About Zentity'.
- Manage:** Lists actions for resource management: 'Add/Edit/Delete Resources, Users, Groups from the Zentity repository.', 'Add Resource', 'Edit/Delete Resources', 'Add Tag', 'Edit/Delete Tags', 'Manage Categories', 'Manage Users', and 'Manage Groups'.
- Services:** Lists open standards services: 'AtomPub', 'SWORD', 'Syndication', 'OAI-PMH', and 'OAI-ORE'.
- Tags:** Shows a list of tags such as 'abstract', 'article', 'consider', 'describe', 'introduce', 'method', 'new', and 'paper'.

At the bottom of the interface, there is a 'Zentity Pivot Viewer' showing a grid of data visualizations and a 'Zentity ScholarlyWorks' network graph. The graph features nodes representing research articles and their relationships, with a pop-up window showing details for a specific article: 'Zentity ScholarlyWorks: JournalArticle - A Chart Semantics for the...'. The article details include the title, date added (6/15/2010 11:03:18 PM), and date modified (6/15/2010 11:03:18 PM). The article text describes a graphical semantics for the pi-calculus, noting its suitability for expressing causality and temporal properties compared to conventional relational semantics. It explains that a pi-chart is a finite directed acyclic graph recording a computation in the pi-calculus, where nodes represent processes and edges represent computation steps or message-passing interactions. The graph also includes a 'View in Pivot' and 'View in Zentity' link.

Flexible data model enables many scenarios and can be easily extended over time

v.1 (v.2 Tech Preview available soon!) : <http://research.microsoft.com/zentity/>

Project Trident



Research Information Centre



DATA MANAGEMENT

Integrated Workflow Template for the RIC

Microsoft® Research Information Centre Framework

Biology Workflow Template

Lorem ipsum dolor sit amet, consectetur adipisicing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.

Workflow Manager > **Job Status** > **Workflow Output**

Execute **Terminate**
Workflow

Execution status: - NWA - 6/21/2010 5:16:18 PM - Running

Workflows

- Trident Workflow
 - Oceanography
 - Cove
 - Sample
 - Ocean Current
 - Ocean Current Image
- All users' Workflows
 - localadmin (WORKFLOW-VRE\admini)
 - Kartik (fareast\v-kashah)
 - My WorkFlow
 - NWA

Details **Execution**

Workflow Input Parameters

Input Parameters	Value
SingleSequenceParserActivity.InputFile	C:\DemoData\SwineFluOutbreak_NewYork_DNA.FASTA
SingleSequenceParserActivity.InputFile	C:\DemoData\SwineFluOutbreak_HongKong_DNA.FASTA

Notes

Workflow Application - NWA - Windows Internet Explorer

http://workflow-vre:40071/default.aspx

Microsoft®
 Research Information Centre Framework
 Biology Workflow Template

[Workflow Manager](#)
▼
[Job Status](#)
▶
[Workflow Output](#)

Refresh

Job Name	Status	Start Date/ Time	Stop Date/ Time	View Output
TestSK	Completed	4/23/2010 10:57:50 AM	4/23/2010 10:58:15 AM	View
NW Aligner	Completed	4/22/2010 7:57:39 AM	4/22/2010 7:57:54 AM	View
NW Aligner	Completed	4/22/2010 7:33:39 AM	4/22/2010 7:34:02 AM	View
Trident Test	Completed	4/21/2010 10:03:33 PM	4/21/2010 10:03:53 PM	View
sAMPLE DEMO	Completed	4/21/2010 11:42:04 AM	4/21/2010 11:42:29 AM	View
Test April 20	Completed	4/20/2010 9:25:03 AM	4/20/2010 9:25:46 AM	View
Status on Top	Completed	4/19/2010 10:45:02 AM	4/19/2010 10:45:28 AM	View
Cove	Completed	4/19/2010 12:34:07 AM	4/19/2010 12:34:34 AM	View
NW Aligner	Completed	4/16/2010 11:48:06 AM	4/16/2010 11:48:20 AM	View
NW ALigner Test 10	Completed	4/16/2010 10:50:57 AM	4/16/2010 10:51:12 AM	View
NW Aligner Test 4	Completed	4/16/2010 10:35:55 AM	4/16/2010 10:36:10 AM	View
test	Completed	4/16/2010 8:56:28 AM	4/16/2010 8:56:47 AM	View
NW Aligner	Completed	4/16/2010 6:09:41 AM	4/16/2010 6:09:57 AM	View
NW Aligner	Completed	4/16/2010 6:01:48 AM	4/16/2010 6:02:08 AM	View
NW Aligner	Completed	4/16/2010 5:20:13 AM	4/16/2010 5:23:35 AM	View

[Jobs 1 - 15] >>>

© 2010 Microsoft Corporation

Done Local intranet | Protected Mode: Off 100%

Microsoft® Research Information Centre Framework

Biology Workflow Template

Lorem ipsum dolor sit amet, consectetur adipisicing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.

Workflow Manager Job Status Workflow Output

Refresh

Workflow Name	View Output
Contig	View
HongKong	View
NewYork	View

SilverMap Beta Microsoft QUT eResearch 2009

Gene details - Influenza A virus (A/Norway/2674/2009(H1N1)) segment 4

Sequence Influenza A virus (A/Norway/2674/2009(H1N1)) segment 4 se
 Locus tag CY051986.1
 GI 269819800
 EValue 0

Identities 1733
 Positives 1733
 Query from 1
 Query to 1741
 Hit from 4
 Hit to 1744

Query AC AAAAGCAACAAAATGAAGGCAATACTAGTAGTTCTGCTATATACATTGCA
 Hit AC AAAAGCAACAAAATGAAGGCAATACTAGTAGTTCTGCTATATACATTGCA

Zoom: 169%
 Radius: 2.28e-073
 Stretch: 0.50
 Select



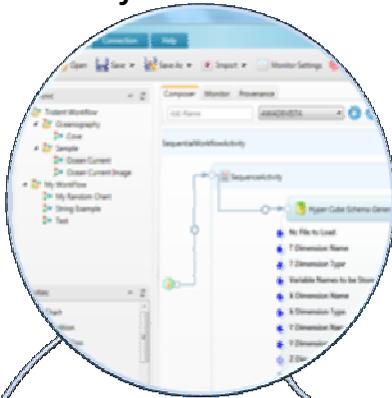
Integrated Workflow Template

for the Research Information Centre

From the RIC, researchers can...

- **View/execute/monitor** scientific workflows within the context of project collaboration site
- **Receive alerts** (email, SMS) when workflows complete
- **Browse workflow execution history** and provenance information
- **Review/store/manage data files** that are written back into SharePoint by Trident

Project Trident



Research Information
Centre



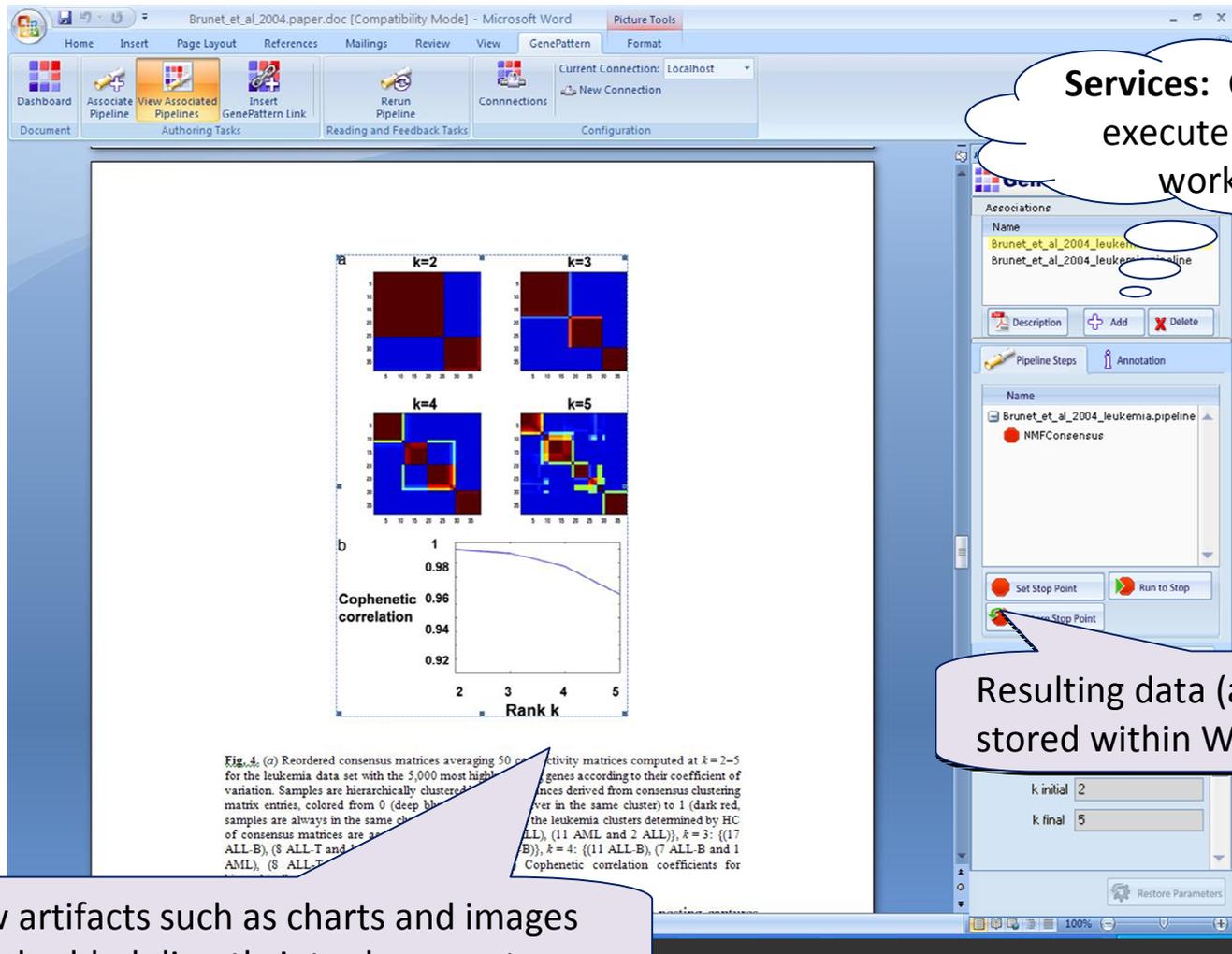
Word 2010



AUTHORING

Include Data and Data artifacts
in compound documents

Project Trident: Workflow Add-in for Word



Services: Control and execute scientific workflows

Resulting data (and provenance) stored within Word document

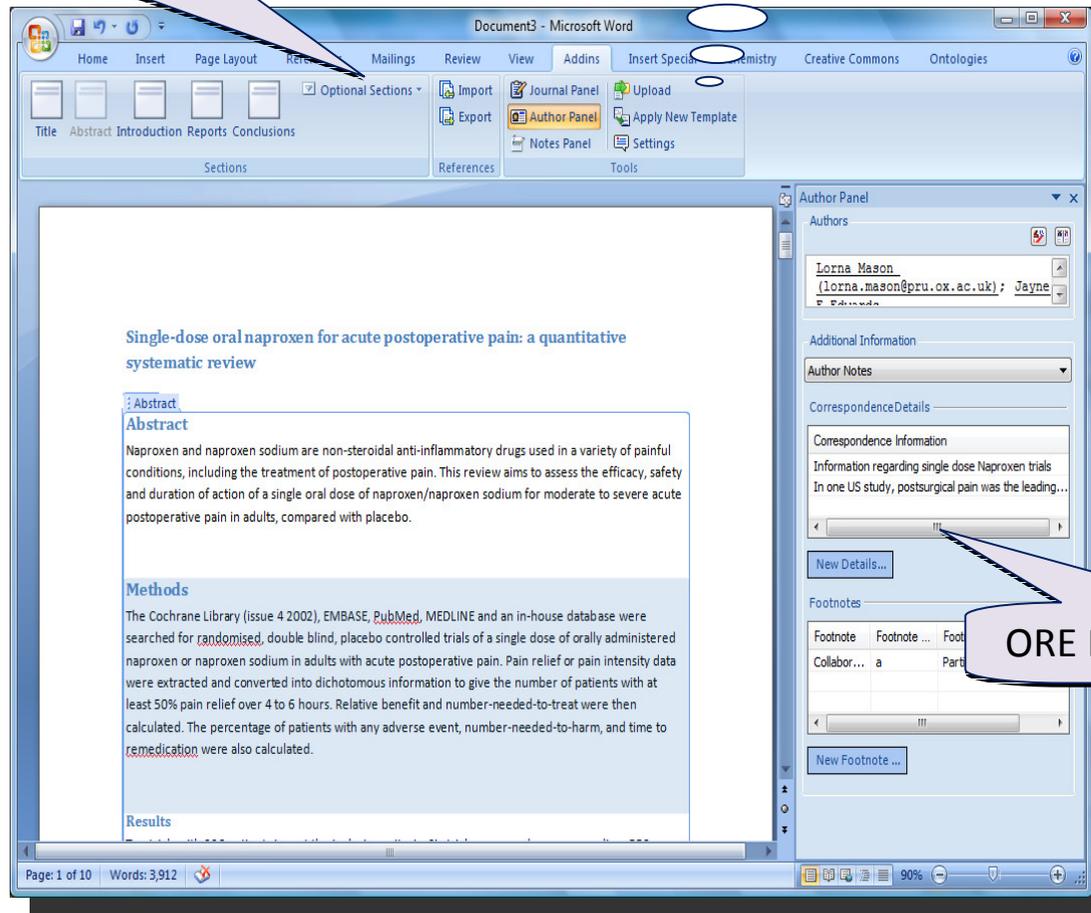
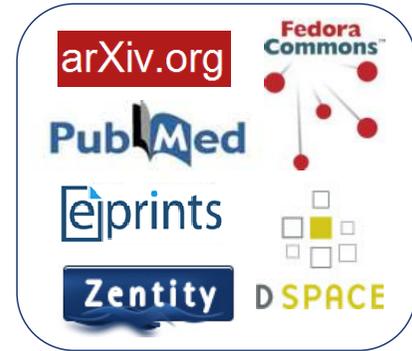
Workflow artifacts such as charts and images can be embedded directly into document

Version 1.2 (Open Source under Apache 2.0 License):
<http://tridentworkflow.codeplex.com/>

Article Authoring Add-in for Word

Read, convert, and author NLM XML documents

Repository deposit via SWORD



ORE Resource Map creation

Project Trident



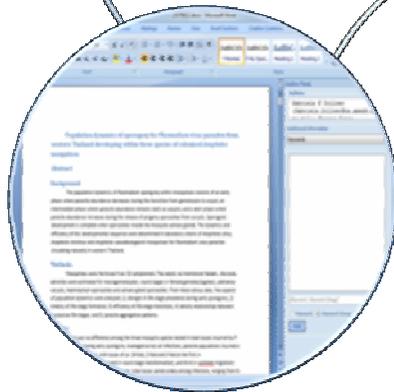
Zenty



Research Information
Centre



Word 2010



DATA DEPOSIT
SWORD client for SharePoint

SWORD client for SharePoint

TRINITY COLLEGE DUBLIN THE UNIVERSITY OF DUBLIN
COLAISTE NA TRIONOIDE, BAILE ATHA CLIATH

Research Information Centre

Help | Contact Us | Feedback Library Search

Welcome Mike Chance

Home


Mike Chance
Researching Oliver Cromwell
Interests
History, Technology
[Edit Profile](#)

Projects Overview

Name	Role	Activities	Discussions
Oliver Cromwell		ARC_SEC2.doc added by Jan Holloway	No Discussion Started
Product 2		No Activity Performed	No Discussion Started
Product 3		No Activity Performed	No Discussion Started
Product 4		No Activity Performed	
Product 5		No Activity Performed	
Product 6		No Activity Performed	
Product 7		No Activity Performed	

Feedback Alerts

Name	Project	Requested By	Received On	Feedback
ARC_SEC2.doc	Oliver Cromwell	Jan Holloway	12/04/2010 15:34:28	Provide Feedback
ARC_SEC2.doc	Oliver Cromwell	Jan Holloway	12/04/2010 15:34:28	Provide Feedback
ARC_CV.doc	Oliver Cromwell	Jan Holloway	12/04/2010 15:34:28	Provide Feedback
ARC_SEC1.doc	Oliver Cromwell	Jan Holloway	12/04/2010 15:34:28	Provide Feedback
ARC_CV.doc	Oliver Cromwell	Jan Holloway	12/04/2010 15:34:28	Provide Feedback
ARC_SEC2.doc	Oliver Cromwell	Jan Holloway	12/04/2010 15:34:28	Provide Feedback
ARC_CV.doc	Oliver Cromwell	Jan Holloway	12/04/2010 15:34:28	Provide Feedback
ARC_SEC1.doc	Oliver Cromwell	Jan Holloway	12/04/2010 15:34:28	Provide Feedback

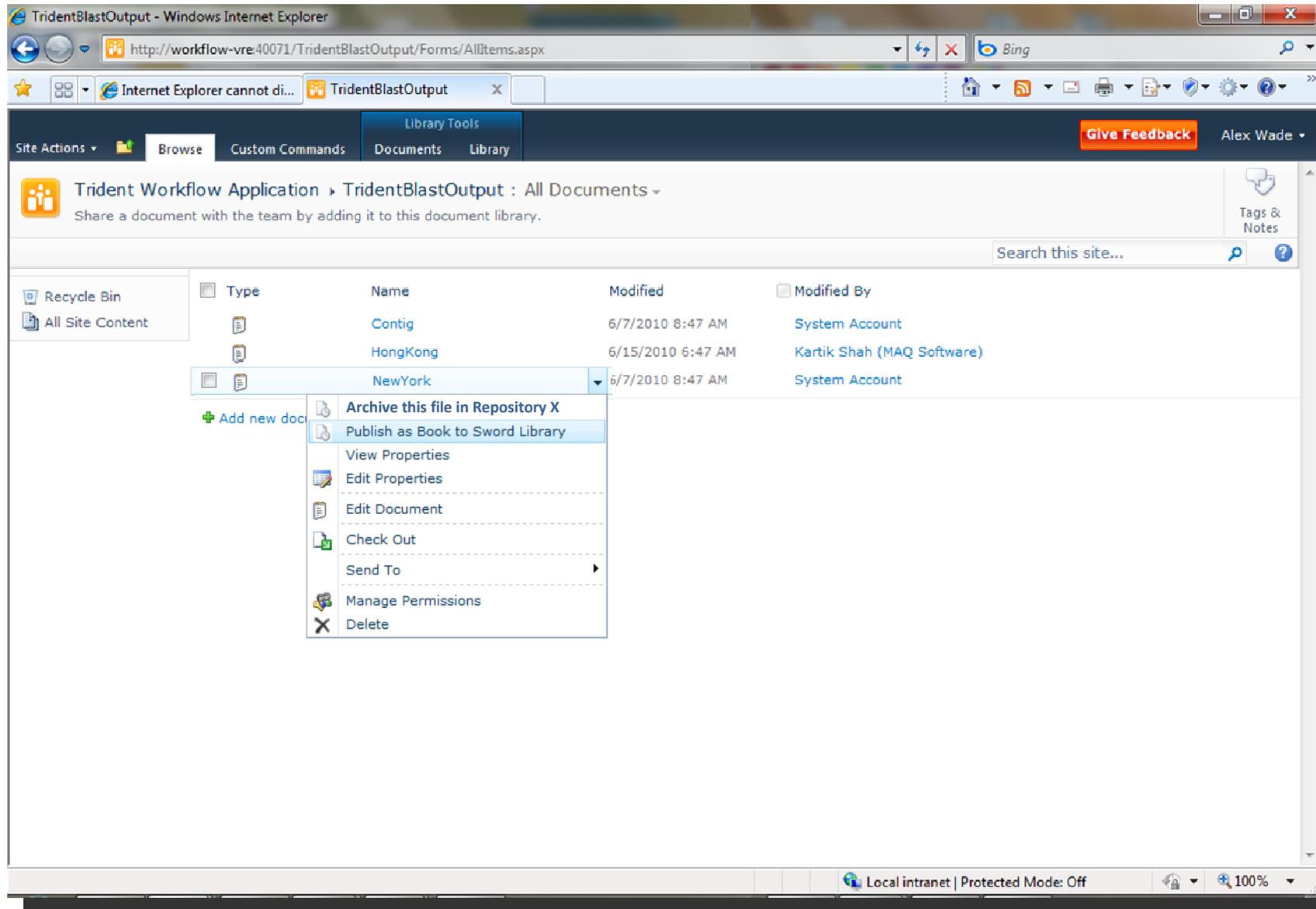
Feedback Received
There are no items to show in this view

Powered by Microsoft Office © Sharepoint © Server 2007 ©

object

send to





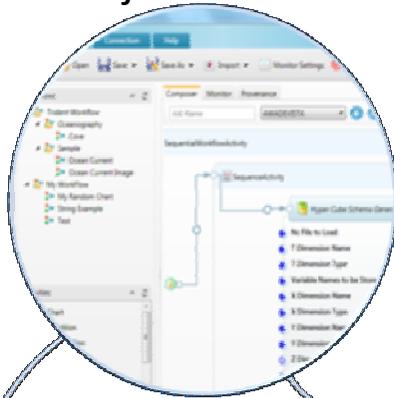
SWORD client for SharePoint



From SharePoint (and the RIC), researchers can...

- **Select any file in SharePoint:**
 - Document
 - Presentation
 - Image
 - Data files
- **and publish it to any repository** (via SWORD)
 - SWORD endpoints are managed as a custom list, so new locations are easily added

Project Trident



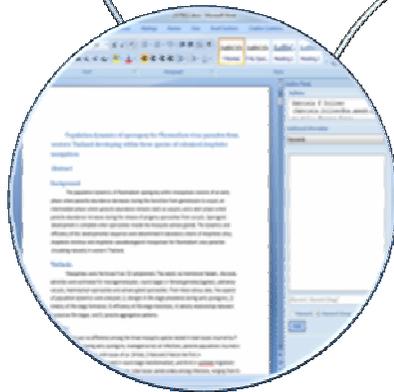
Zenty



Research Information Centre



Word 2010



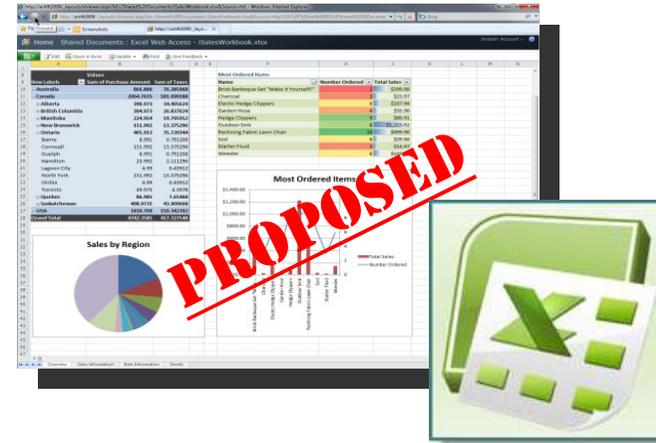
Excel 2010

DATE	LAT	LON	DEPTH	MAG
3/3/2010 22:54	3.70	127.11	63.5	
3/3/2010 22:17	3.61	127.18	60	
3/3/2010 21:17	3.68	127.25	35.3	
3/3/2010 21:24	-38.46	-73.7		
3/3/2010 19:58	-33.46	-71.82		
3/3/2010 19:58	-33.4783	-71.8882		
3/3/2010 17:44	-36.4975	-73.1		

DATA CURATION

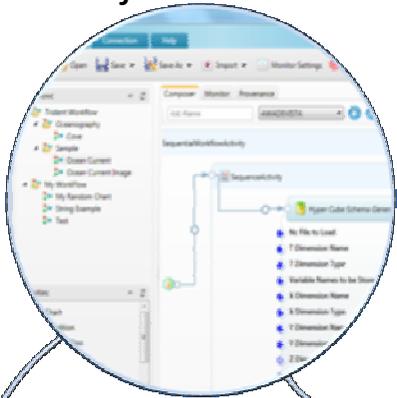
through Excel 2010

Data Curation Add-in for Microsoft Excel



- **Microsoft Research, in partnership with [California Digital Library's Curation Center](#)**
 - Collaboration with **Tricia Cruse & John Kunze**
 - Part of the [DataONE](#) (an NSF DataNet Project)
- **Proposed functionality *under consideration*:**
 - **Versioning** - revision history and original raw data can be protected and recovered
 - **Time stamps** - easily determine when the data were created and last updated
 - **"Workbook builder"** - select from globally shared standardized layouts for capturing data
 - **Export metadata in a standard formats** (e.g., a DataCite citation or an EML document that describes the dataset(s) in a workbook) so that researchers can readily share their data,
 - **Globally shared vocabulary of terms for data descriptions** (e.g., column names), and as needed to add new terms to the globally shared vocabulary, to enable wide collaboration between researchers
 - **Import term descriptions from the shared vocabulary** and annotate them to refine local definitions
 - **Deposit data and metadata into a data archive** to preserve and publish research data

Project Trident



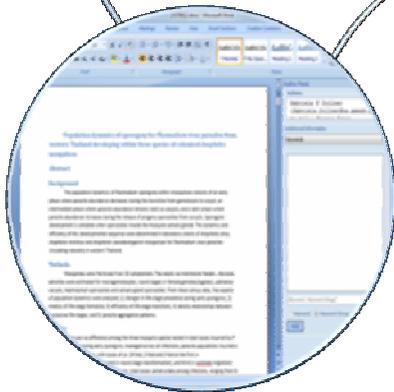
Zentity



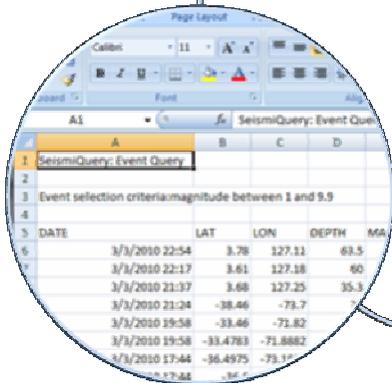
Research Information Centre



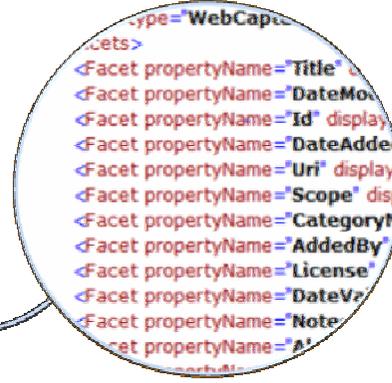
Word 2010



Excel 2010



OData



DATA SHARING

OData Protocol

Open Data Protocol

A RESTful Interface for Data

Just HTTP

- Items as resources, HTTP methods (GET, PUT, ...) to act
- Leverage proxies, authentication, ETags, ...

Uniform URL convention

- Every piece of information is addressable
- Predictable and flexible URL syntax

Multiple representations

- Use regular HTTP content-type negotiation
- JSON and Atom (full AtomPub support)



Open Data Protocol URL Conventions

● Addressing lists and items

List of lists	.../_vti_bin/listdata.svc/
List	listdata.svc/Employees
Item	listdata.svc/Employees(123)
Single column	listdata.svc/Employees(123)/Fullname
Lookup traversal	listdata.svc/Employees(123)/Project
Raw value access	listdata.svc/Employees(123)/Project/Title/\$value

● Presentation options

Sorting	listdata.svc/Employees?\$orderby=Fullname
Filtering	listdata.svc/Employees?\$filter=JobTitle eq 'SDE'
Projection	listdata.svc/Employees?\$select=Fullname,JobTitle
Paging	listdata.svc/Employees?\$top=10&\$skip=30
Inline expansion	listdata.svc/Employees?\$expand=Project



Open Data Protocol

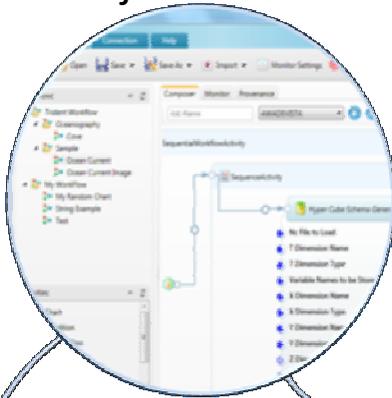
OData Producers

- SharePoint 2010
- IBM Websphere
- Windows Azure Table Storage & SQL Azure
- Zentity 2.0
- Services:
 - Facebook Insights
 - Netflix
 - Open Government Data Initiative
 - Open Science Data Initiative
 - DBPedia

OData Consumers

- Web Browsers
- Excel 2010
- LinQPad
- Client libraries for
 - Javascript
 - PHP
 - Java
 - Windows 7 Phone
 - iPhone (Objective C)
 - .NET

Project Trident



Zenty

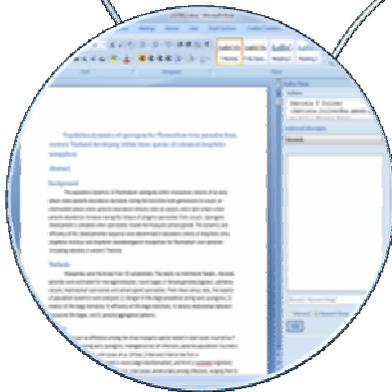


Research Information Centre

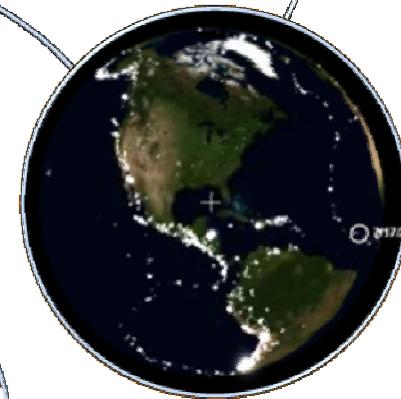


VISUALIZING DATA

Word 2010



WWT | Earth



Excel 2010

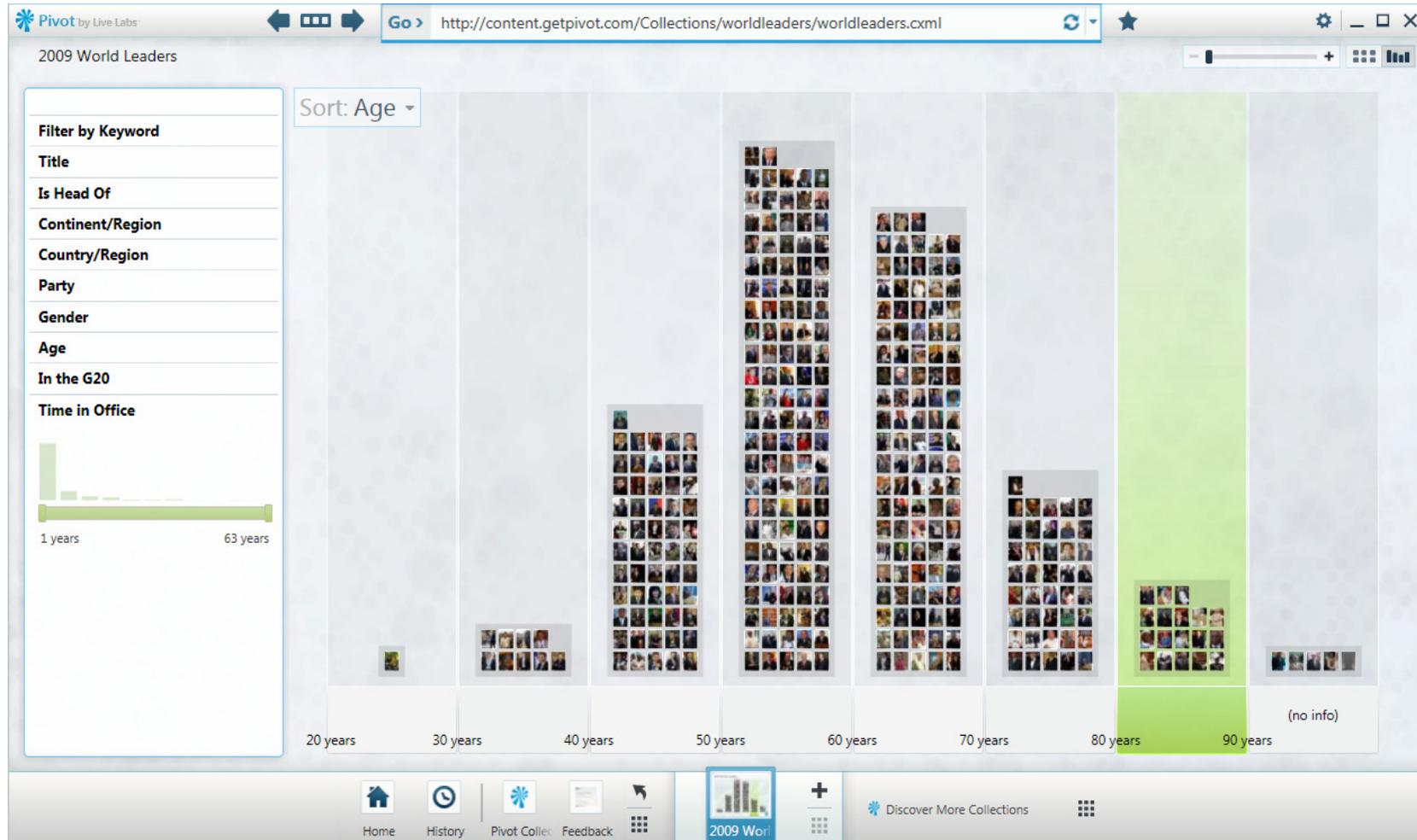
DATE	LAT	LON	DEPTH	MA
3/3/2010 22:54	3.78	127.11	63.5	
3/3/2010 22:17	3.61	127.18	60	
3/3/2010 21:57	3.68	127.25	35.3	
3/3/2010 21:24	-38.46	-73.7		
3/3/2010 19:58	-33.46	-71.82		
3/3/2010 19:58	-33.4783	-71.8882		
3/3/2010 17:44	-36.4975	-73.1		

OData

```

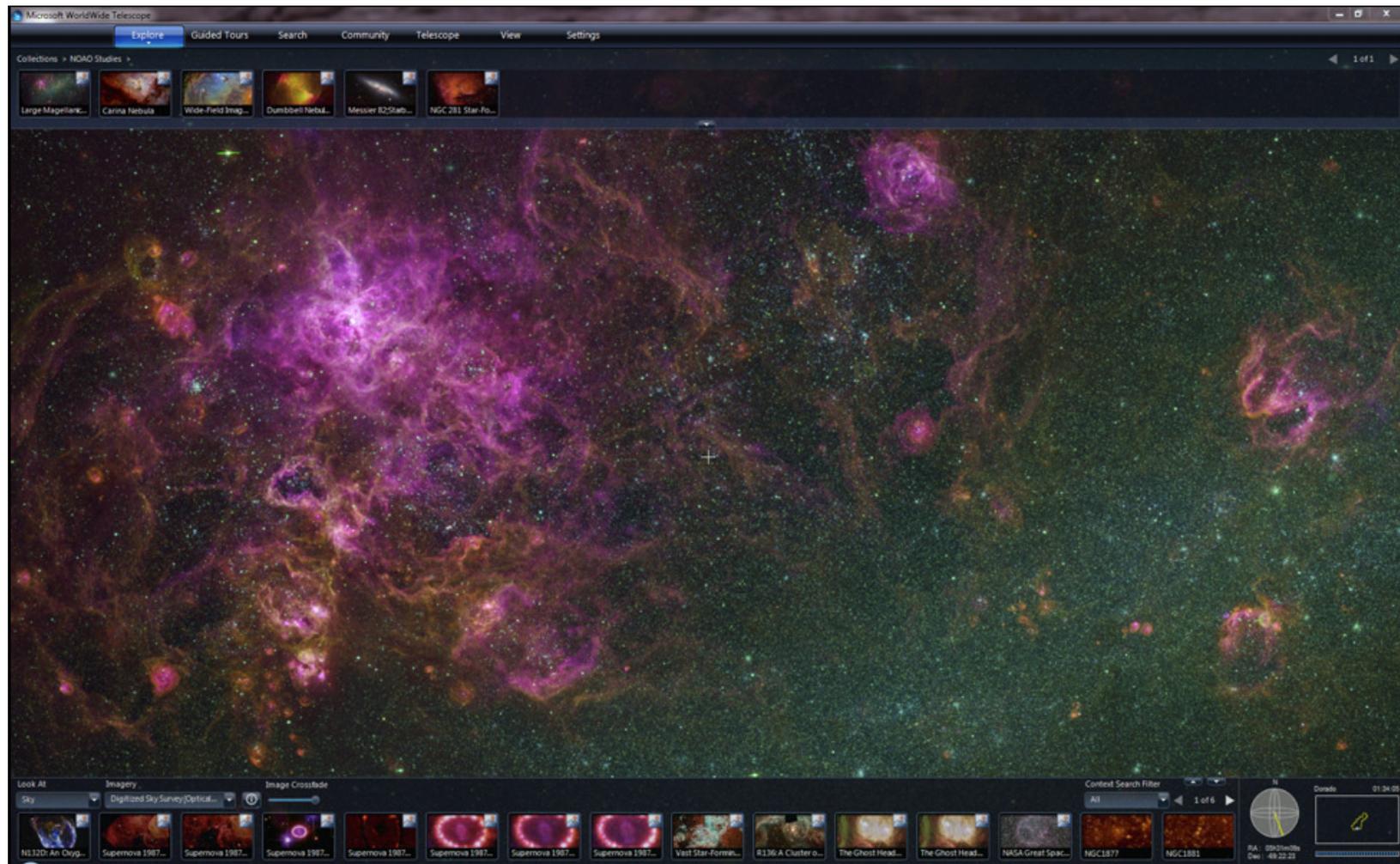
type="WebCaption"
Facets>
<Facet propertyName="Title" display="Title" />
<Facet propertyName="DateModified" display="Date Modified" />
<Facet propertyName="Id" display="Id" />
<Facet propertyName="DateAdded" display="Date Added" />
<Facet propertyName="Uri" display="Uri" />
<Facet propertyName="Scope" display="Scope" />
<Facet propertyName="CategoryName" display="Category Name" />
<Facet propertyName="AddedBy" display="Added By" />
<Facet propertyName="License" display="License" />
<Facet propertyName="DateViewed" display="Date Viewed" />
<Facet propertyName="Note" display="Note" />
<Facet propertyName="Author" display="Author" />

```



<http://www.getpivot.com>

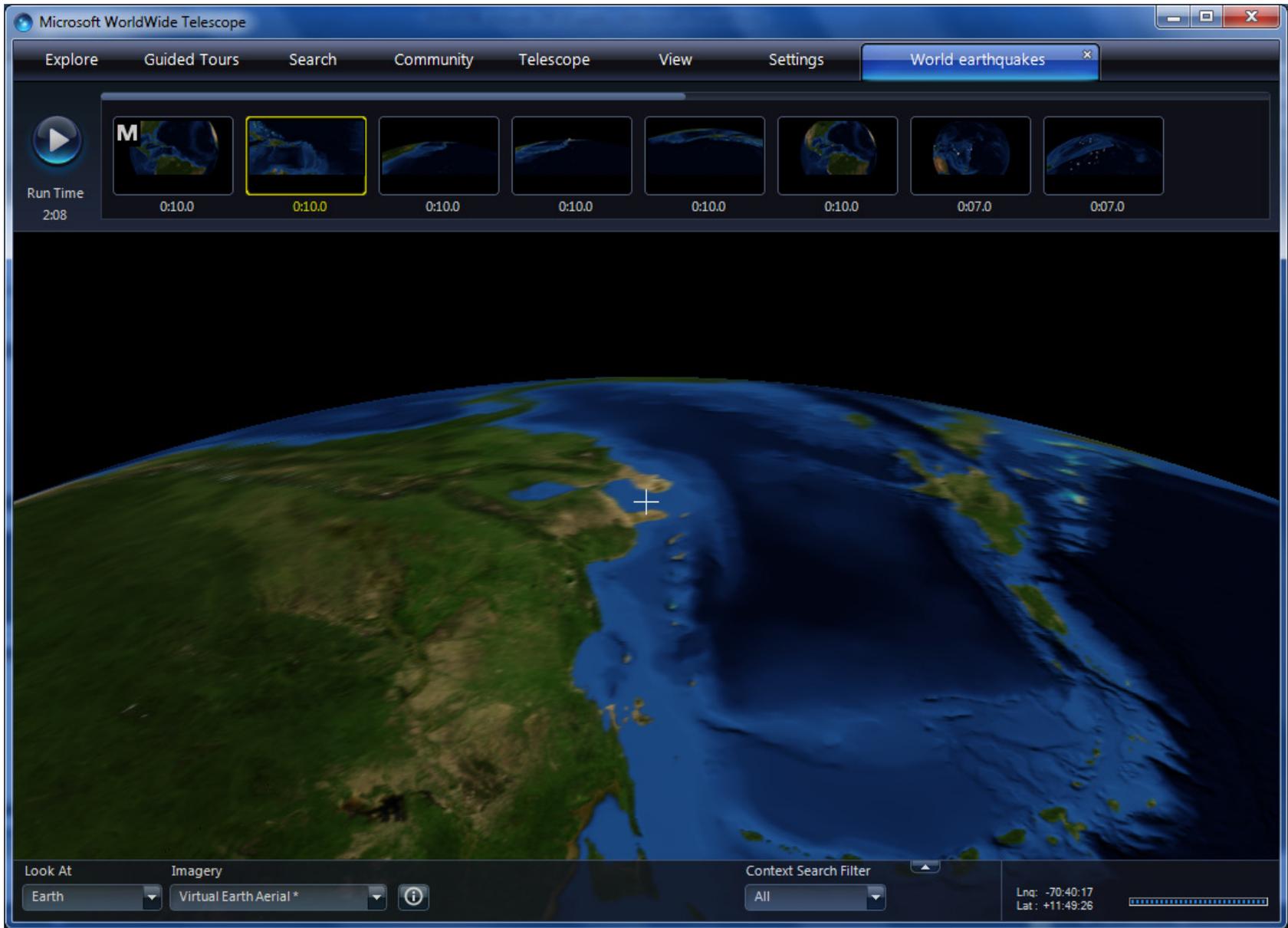
Worldwide Telescope



<http://www.worldwidetelescope.org/>



TIME magazine
"50 Best sites on the Internet 2009"



Recent Quakes (version 1).xlsx [Autosaved] - Microsoft Excel

File Home Insert Page Layout Formulas Data Review View Creative Commons

Clipboard Font Alignment Number Styles Cells Editing

data Date

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	SeismiQuery: Event Query														
2															
3	Event selection criteria:magnitude between 1 and 9.9														
4															
5	Date	LAT	LON	DEPTH	MAG	TYPE	CATALOG	EVENT_CC	MAG_COM	CODE	REGION	REGION_TEXT			
6	3/3/2010 22:54	3.78	127.11	63.5	4.7	M	FINGER	NEIC	NEIC	263	23	TALAUD IS	INDONESIA		
7	3/3/2010 22:17	3.61	127.18	60	4.6	M	FINGER	NEIC	NEIC	263	23	TALAUD IS	INDONESIA		
8	3/3/2010 21:37	3.68	127.25	35.3	4.8	M	FINGER	NEIC	NEIC	263	23	TALAUD IS	INDONESIA		
9	3/3/2010 21:24	-38.46	-73.7	35	5.1	M	FINGER	NEIC	NEIC	135	8	NEAR COAST OF CENTRAL CHILE			
10	3/3/2010 19:58	-33.46	-71.82	28.7	5.3	M	FINGER	NEIC	NEIC	135	8	NEAR COAST OF CENTRAL CHILE			
11	3/3/2010 19:58	-33.4783	-71.8882	20.4	5.6	MB	NEICALRT	NEIC	NEIC	135	8	NEAR COAST OF CENTRAL CHILE			
12	3/3/2010 17:44	-36.4975	-73.1839	35	5.9	MW	NEICALRT	NEIC	NEIC	135	8	NEAR COAST OF CENTRAL CHILE			
13	3/3/2010 17:44	-36.5	-73.18	35	5.9	M	FINGER	NEIC	NEIC	135	8	NEAR COAST OF CENTRAL CHILE			
14	3/3/2010 17:44	-36.45	-73.07	19	6	M	FINGER	NEIC	NEIC	135	8	NEAR COAST OF CENTRAL CHILE			
15	3/3/2010 15:25	-34.58	-72.25	35	4.9	M	FINGER	NEIC	NEIC	135	8	NEAR COAST OF CENTRAL CHILE			
16	3/3/2010 15:25	-34.65	-72.43	33.5	4.9	M	FINGER	NEIC	NEIC	135	8	NEAR COAST OF CENTRAL CHILE			
17	3/3/2010 14:21	-37.07	-72.83	35	4.8	M	FINGER	NEIC	NEIC	136	8	CENTRAL CHILE			
18	3/3/2010 12:50	-34.8	-72.25	35	4.9	M	FINGER	NEIC	NEIC	135	8	NEAR COAST OF CENTRAL CHILE			
19	3/3/2010 11:13	3.16	127.08	64.5	5	M	FINGER	NEIC	NEIC	263	23	TALAUD IS	INDONESIA		
20	3/3/2010 8:49	-17.18	-177.57	355.6	4.6	M	FINGER	NEIC	NEIC	181	13	FIJI ISLANDS REGION			
21	3/3/2010 7:51	6.82	-73.06	157.3	4.7	M	FINGER	NEIC	NEIC	99	7	NORTHERN COLOMBIA			
22	3/3/2010 7:09	-35.97	-72.61	35.1	4.9	M	FINGER	NEIC	NEIC	135	8	NEAR COAST OF CENTRAL CHILE			
23	3/3/2010 6:16	-33.62	-71.96	35	5.1	M	FINGER	NEIC	NEIC	135	8	NEAR COAST OF CENTRAL CHILE			
24	3/3/2010 5:49	-32.6	-71.71	35	4.7	M	FINGER	NEIC	NEIC	135	8	NEAR COAST OF CENTRAL CHILE			
25	3/3/2010 4:35	-37.53	-73.77	30.2	5.1	M	FINGER	NEIC	NEIC	135	8	NEAR COAST OF CENTRAL CHILE			
26	3/3/2010 4:35	35.55	-97.28	5	2.5	M	FINGER	NEIC	NEIC	499	34	OKLAHOMA			

Sheet1 Sheet2 Sheet3

Ready Recovered Average: 5754.336423 Count: 377828 Sum: 1383509352 100%

Microsoft WorldWide Telescope

Explore Guided Tours Search Community Telescope View Settings World earthquakes

Run Time 2:08

0:10.0 0:10.0 0:10.0 0:10.0 0:10.0 0:10.0 0:07.0 0:07.0

Layers

- Equatorial
- Ecliptic
- Galactic
- Sun
- Mercury
- Venus
- Earth
- Mars
- Jupiter
- Saturn
- Uranus
- Neptune
- Pluto
- Moon

Add
Paste

Name	Value

Time Scrubber

Time Series Auto Loop

Delete Add Paste

Look At Imagery Context Search Filter

Earth Virtual Earth Aerial * All

Lng: -70:40:17
Lat: +11:49:26



Tools for Repositories – Workshop

Join us on Friday! 2pm – 6:30pm

Interested in new visualization interfaces, powerful semantic tools, and interoperability with Microsoft technologies to enhance your repository?

Program

14:00 – 14:15	Welcome & Overview Lee Dirks – Director, Education & Scholarly Communication, Microsoft Research
14:15 – 15:45	Zentity –A Research Output Repository Platform Featuring Pivot, OData, PowerShell, Excel/Power Pivot Oscar Naim – Sr. Research Program Manager, Microsoft Research
15:45 – 16:00	Programming with Zentity - SDK Oscar Naim
16:00 – 16:30	Break
16:30 – 17:00	Services for Repositories - RIC Alex Wade – Director, Scholarly Communication, Microsoft Research
17:00 – 18:15	Tools for Authors Alex Wade & Joe Townsend, Cambridge University
18:15 – 18:30	Wrap-up & Futures Discussion Lee Dirks

Questions?

Alex D. Wade

Director—Scholarly Communication

Microsoft External Research

awade@microsoft.com

<http://research.microsoft.com/people/awade>

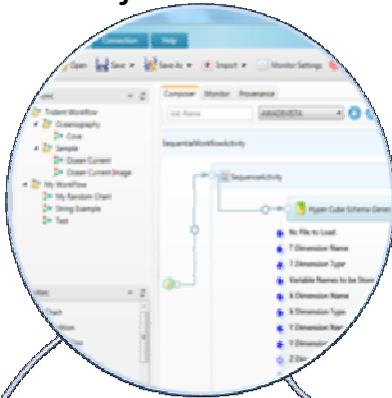
URL – <http://www.microsoft.com/scholarlycomm/>

Facebook: [Scholarly Communication at Microsoft](#)

Microsoft®

Your potential. Our passion.™

Project Trident



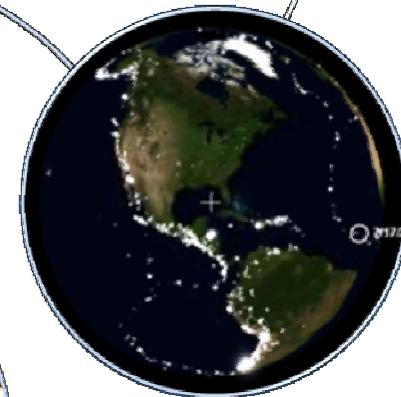
Zenty



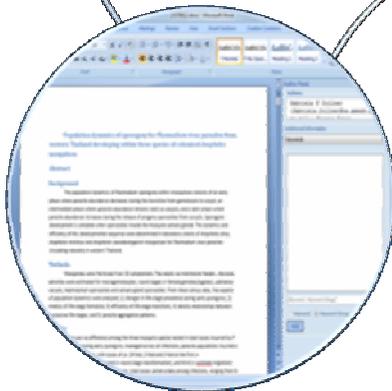
Research Information Centre



WWT | Earth



Word 2010



Excel 2010

DATE	LAT	LON	DEPTH	MA
3/3/2010 22:54	3.78	127.11	63.5	
3/3/2010 22:17	3.61	127.18	60	
3/3/2010 21:57	3.68	127.25	35.3	
3/3/2010 21:24	-38.46	-73.7		
3/3/2010 19:58	-33.46	-71.82		
3/3/2010 19:58	-33.4783	-71.8882		
3/3/2010 17:44	-36.4975	-73.1		

OData

```

type="WebCaption
Facets>
<Facet propertyName="Title" display="Title" />
<Facet propertyName="DateModified" display="Date Modified" />
<Facet propertyName="Id" display="Id" />
<Facet propertyName="DateAdded" display="Date Added" />
<Facet propertyName="Uri" display="Uri" />
<Facet propertyName="Scope" display="Scope" />
<Facet propertyName="CategoryName" display="Category Name" />
<Facet propertyName="AddedBy" display="Added By" />
<Facet propertyName="License" display="License" />
<Facet propertyName="DateVoted" display="Date Voted" />
<Facet propertyName="Note" display="Note" />
<Facet propertyName="Author" display="Author" />

```