



Hypermedia Discourse & Human-Agent Knowledge Cartography

Simon Buckingham Shum

**Knowledge Media Institute & Computing Research Centre
The Open University, Milton Keynes, UK**

**www.kmi.open.ac.uk/people/sbs
sbs@acm.org**



Hypermedia

Discourse



Hypermedia

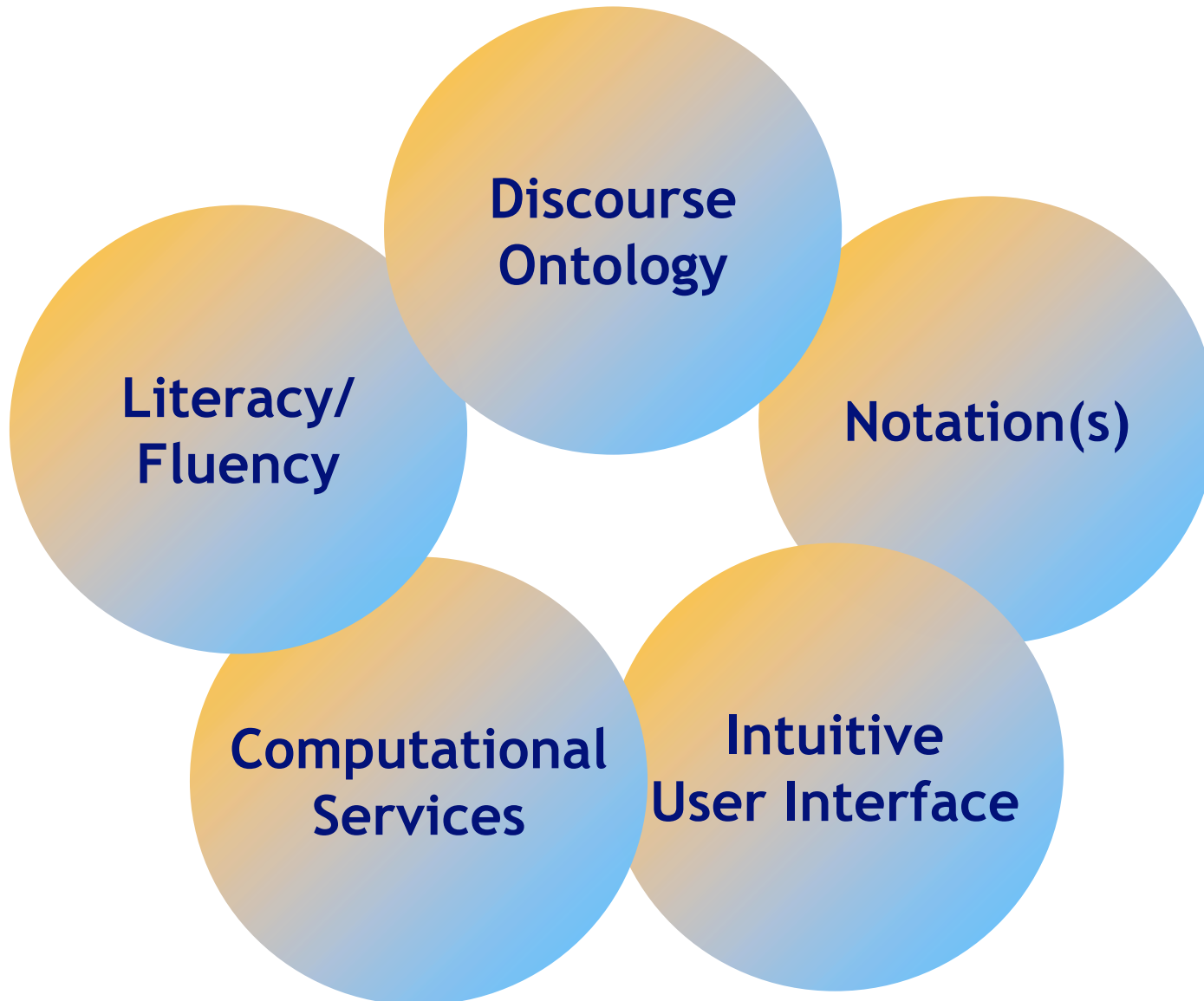
- Modelling *discourse relations*
- Expressing *different perspectives* on a conceptual space
- Supporting the *incremental formalization* of ideas
- Rendering *structural visualizations*
- Connecting *heterogeneous* content

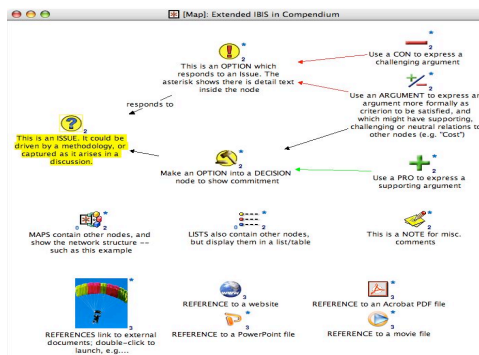


Discourse

- Verbal and written workplace communication
- Discourse communities: “making and taking perspectives”
- Dialogue
- Argumentation
- Claim making
- Analytical narrative
- Meetings

Hypermedia Discourse research

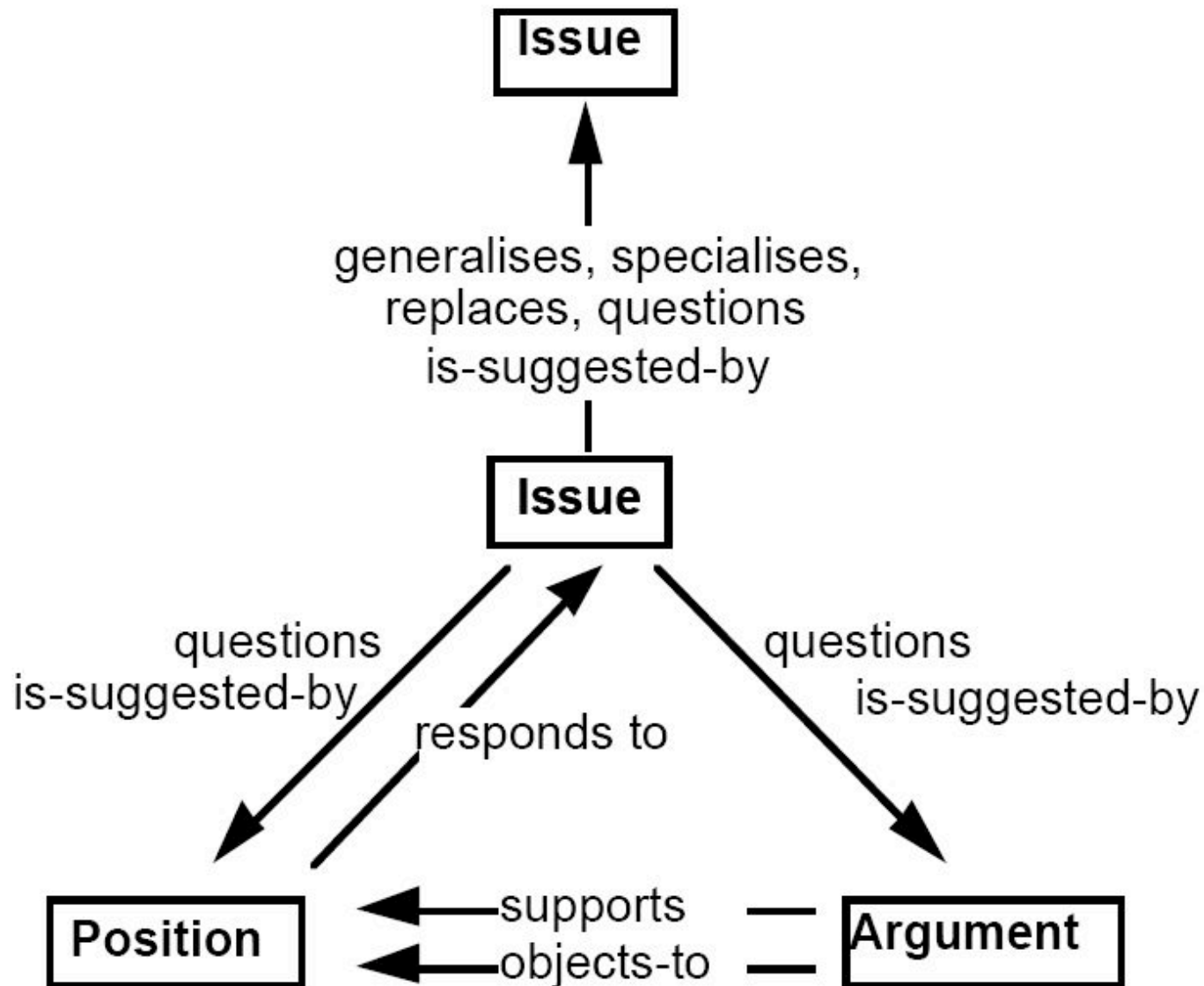




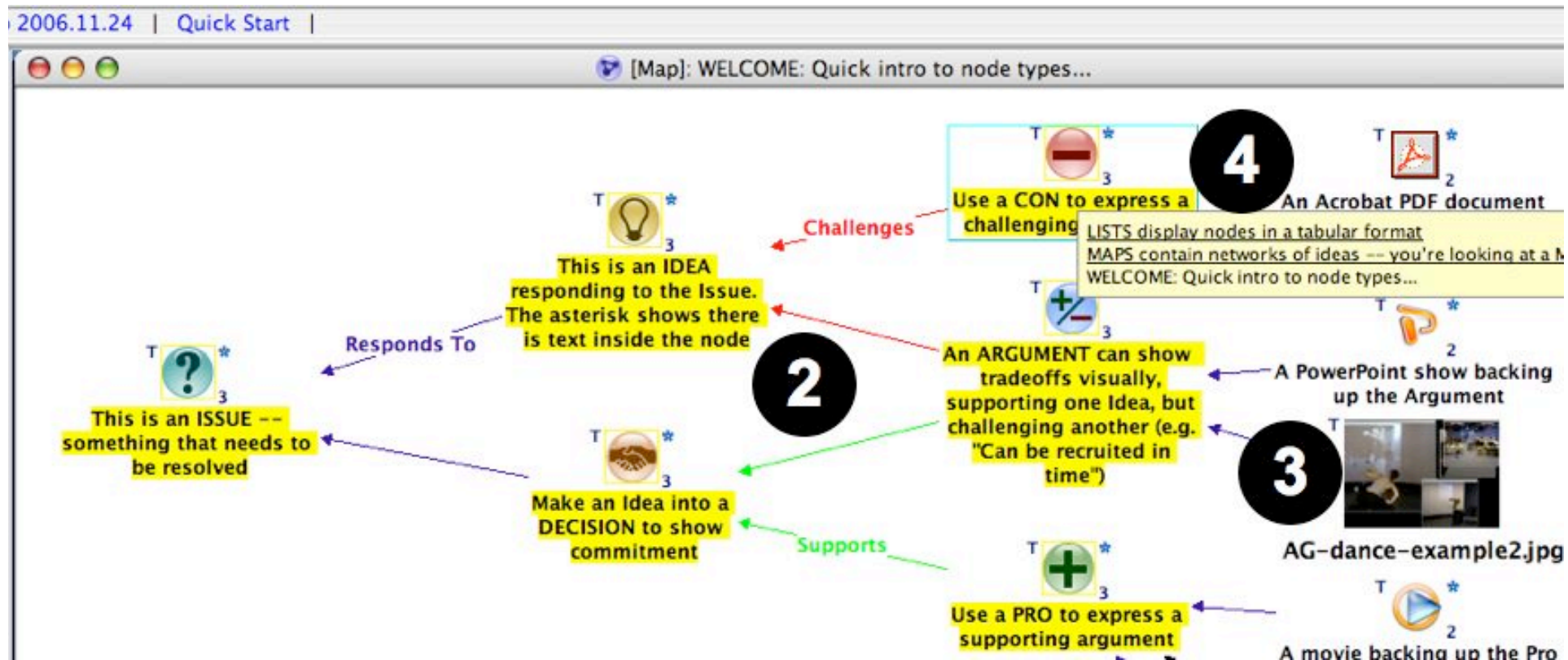
Compendium

- personal or group concept mapping
- real time meeting capture
- participatory modelling
- discourse as semantic hypertext

Discourse grounded in Horst Rittel's IBIS: Issue-Based Information System



Compendium: hypertext discourse mapping/conceptual modelling



Compendium: hypertext discourse mapping/conceptual modelling



Home Window | Maps... | Memetic Final Workshop 2006.11.24 | Quick Start |

Tags View

Make Tag(s) Make Group(s)

- e-Science User Adoption (5)
- Ecosystems (3)
- Example Tag (17)
- Example Tag - Answer/Idea (1)
- Example Tag - Argument/Constraint/Goal
- Example Tag - Con (1)
- Example Tag - Issue/Question (1)
- Example Tag - Pro (1)
- group (11)
- ID (2)
- Infrastructure (39)
- knowledge (1)
- KNOWLEDGE MAPPING
- LabSpace (34)
- location (0)
- Meeting Attendee (0)
- Mimesis (1)

[Map]: WELCOME: Quick intro

1

2

5

Challenges

Supports

Responds To

This is an **ISSUE** -- something that needs to be resolved

This is an **IDEA** responding to the Issue. The asterisk shows there is text inside the node

Make an Idea into a **DECISION** to show commitment



MAPS contain other nodes, and show the network structure -- such as this example



LISTS also contain other nodes, but display them in a list/table



This is a NOTE for misc. comments



REFERENCES link to external documents; double-click to launch, e.g....



REFERENCE to a website



REFERENCE to a PowerPoint file



REFERENCE to an Acrobat PDF file

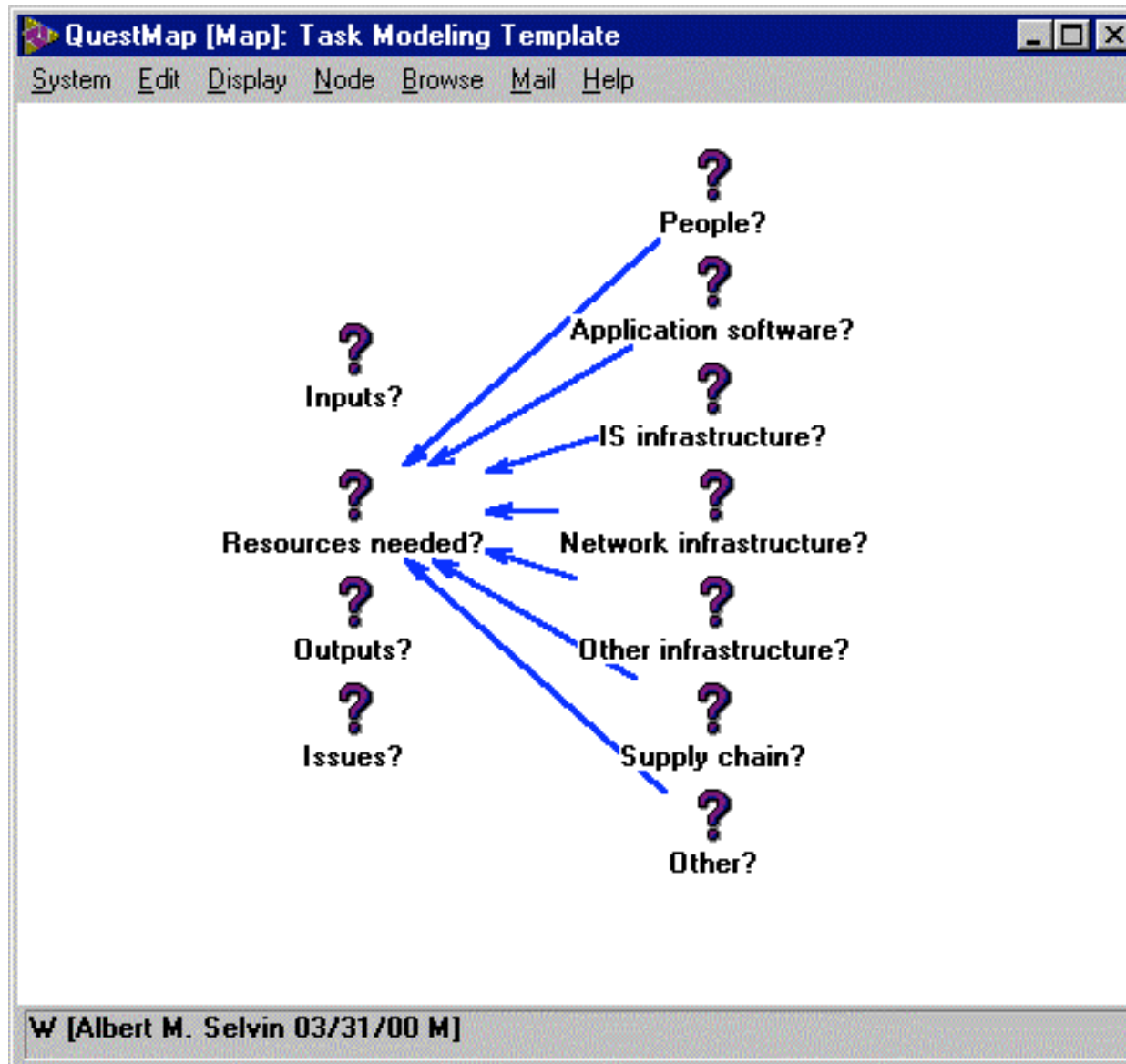


REFERENCE to a movie file

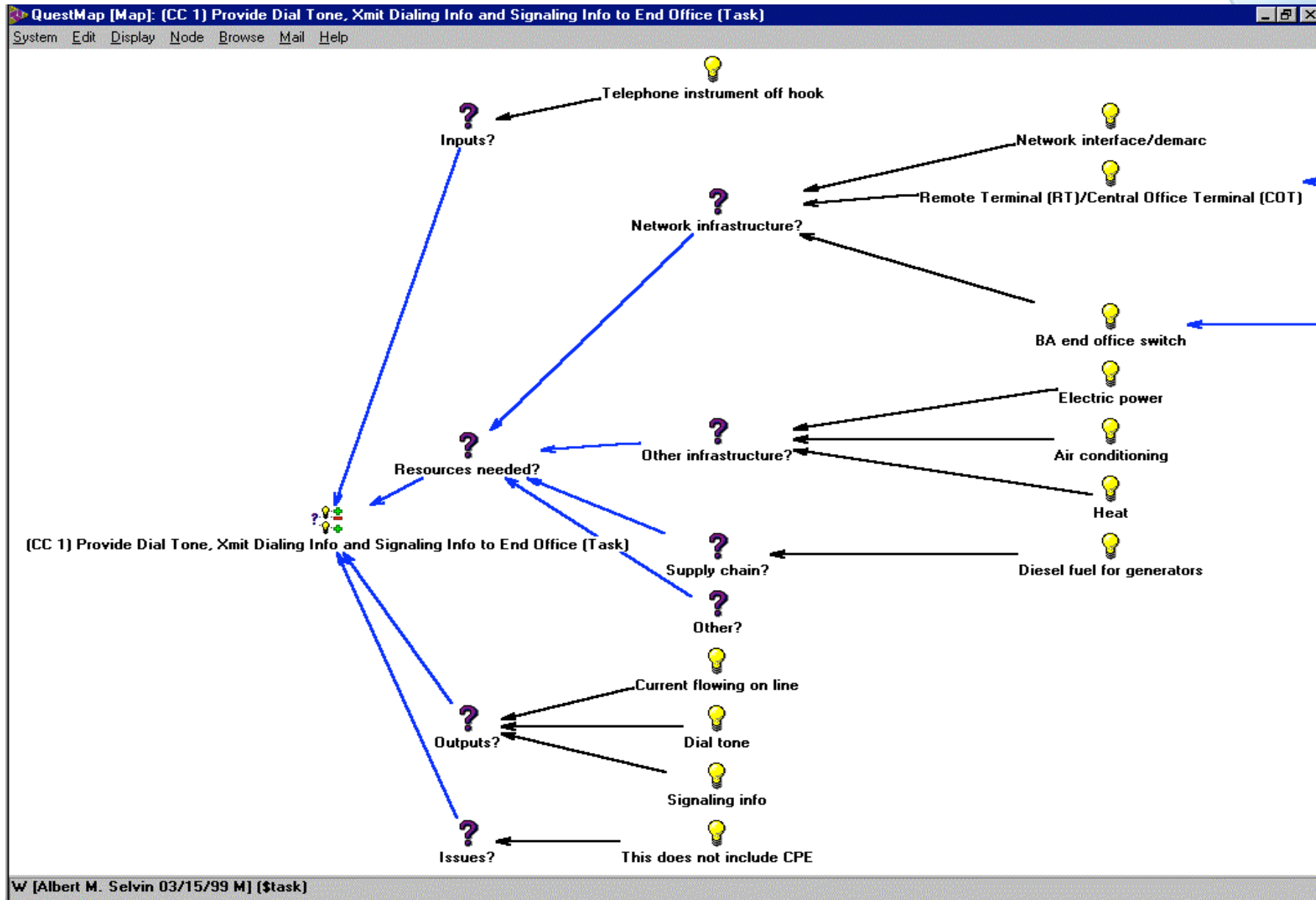


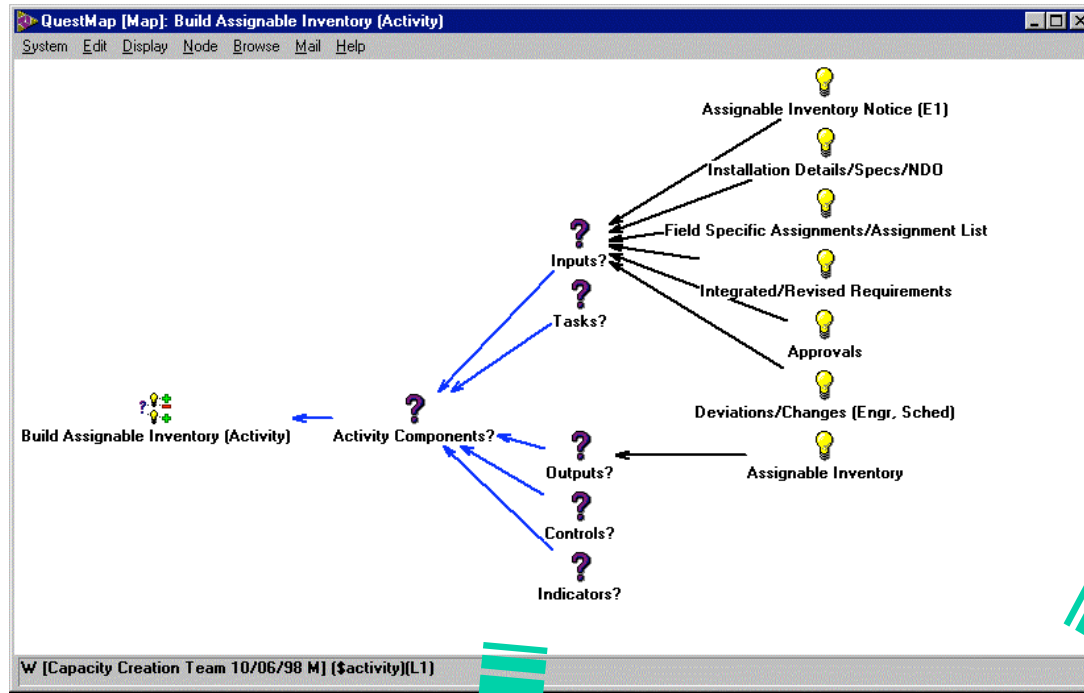
Modelling using Issue-templates

Modelling organisational processes in Compendium using a *Template*

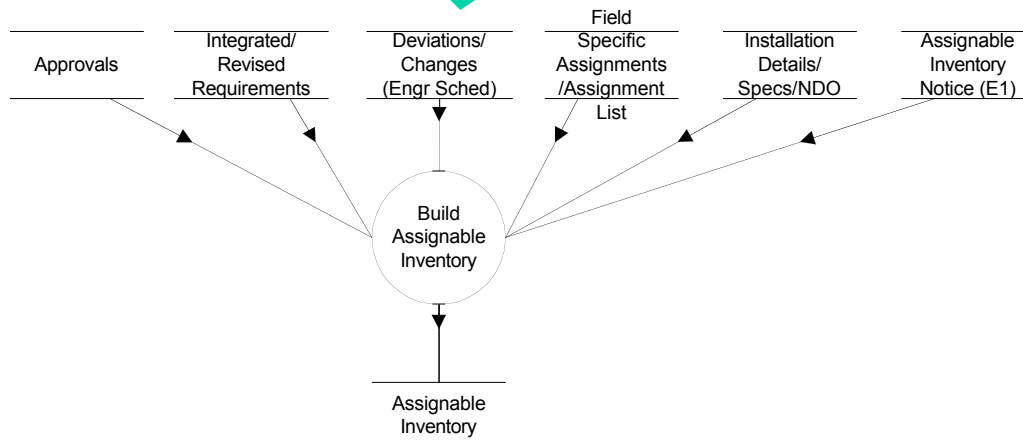


Completing a Compendium template





Generating Custom Documents and Diagrams from Compendium Templates



Microsoft Word - CCPFM0022299.doc

File Edit View Insert Format Tools Table Window Project Compendium Help

© Bell Atlantic

Network Engineering and Planning

Activity	Build Assignable Inventory
Activity Description	(L1)
Activity Components	
Inputs	<i>What is provided</i>
	Assignable Inventory Notice (E1) Need to reconcile whether this gets generated in "John's" process or "Jack's" process.
	Installation Details/Specs Engineering vendor's detail engineered specification used by the installation vendor to install/remove equipment.
	Field Specific Assignments/Assignment List Equipment location and assignment termination data. Based on the configuration requested via the CCR and is specific to the equipment placed in the office. Terminations, shams, cable lengths, unusual conditions, DCS, power (train, heat dissipation, etc.). The assignment terminations and equipment locations determined for the ER. Also includes "in-assignments."
	Integrated Requirements Any requirements added to the CCR that weren't there originally associated with or related to the CCR. Revised Requirements or supplements to Requirements that may require pricing of supplements to Previous Pricing or authorizations
	CM Concurred CCR
	Deviations/Changes (Engr. Sched) Schedule, quality, equipment, building, frame, floor space, power. Deviations identified on the job. Unforeseen conditions at the job site or with the job that were identified after the job was engineered or before/after installation start (e.g., building or job-related conditions, customer initiated requests).
Outputs	<i>What is received</i>
	Assignable Inventory

Last Updated: April 11, 1999 Page 67 Capacity Creation FMO

Page 67 Sec 1 67/107 At 5.4" Ln 16 Col 69 REC TRK EXT OVR WPH



Structure management in Compendium

- **Associative linking**
nodes in a shared context connected by graphical Map links
- **Categorical membership**
nodes in different contexts connected by common attributes via metadata Tags
- **Hypertextual Transclusion**
reuse of the same node in different views
- **Templates**
reuse of the same structure in different views
- **HTML, XML and RDF data exports for interoperability**
- **Java and SQL interfaces to add services**

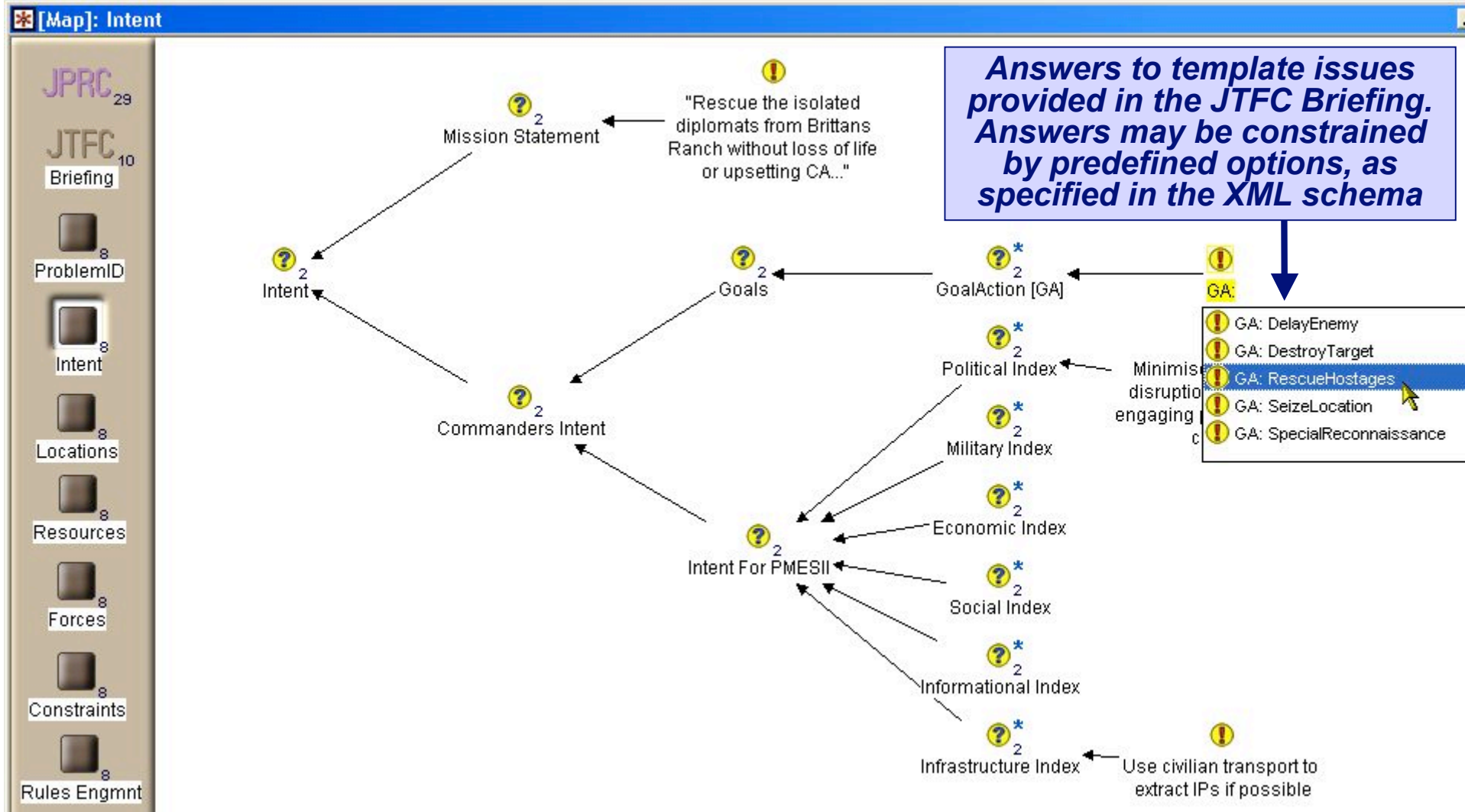


Using Compendium for personnel recovery planning

*Example of Conversational Modelling:
real time dialogue mapping combined with model driven
templates (AI+IA)*

Co-OPR Project (with Austin Tate):
<http://www.aiai.ed.ac.uk/project/co-opr>

Mission Briefing: *Intent* template



Capturing political deliberation/rationale



Compendium - Co-OPR Expt. B 2004.11.16

File Edit Map Format Tools Favorites Workspaces Window Help

[Map]: COA-2.1: Coalition D.I.m.E. (US; UK; AU)

JPRC 16 94
 MAP: COA-3
 COA Comparison

PMESII effects?
 IP capacity?
 RM R. Superiority?

1. Safe return of hostages
 Do not destabilize region
 Ensure safe retrieval of hostages
 Maintain good relations with nations
 Reinforce rule of law
 Preserve regional stability
 Be prepared for coalition follow-on
 Do not disturb CA balance of power or govt structure
 No hostage can be harmed

Rescue Mech.
 General issues
 Support
 IP

Need to focus on Cebesoy
 Focus on President Melen
 Contact senior military command structure to exert pressure via State Security Council

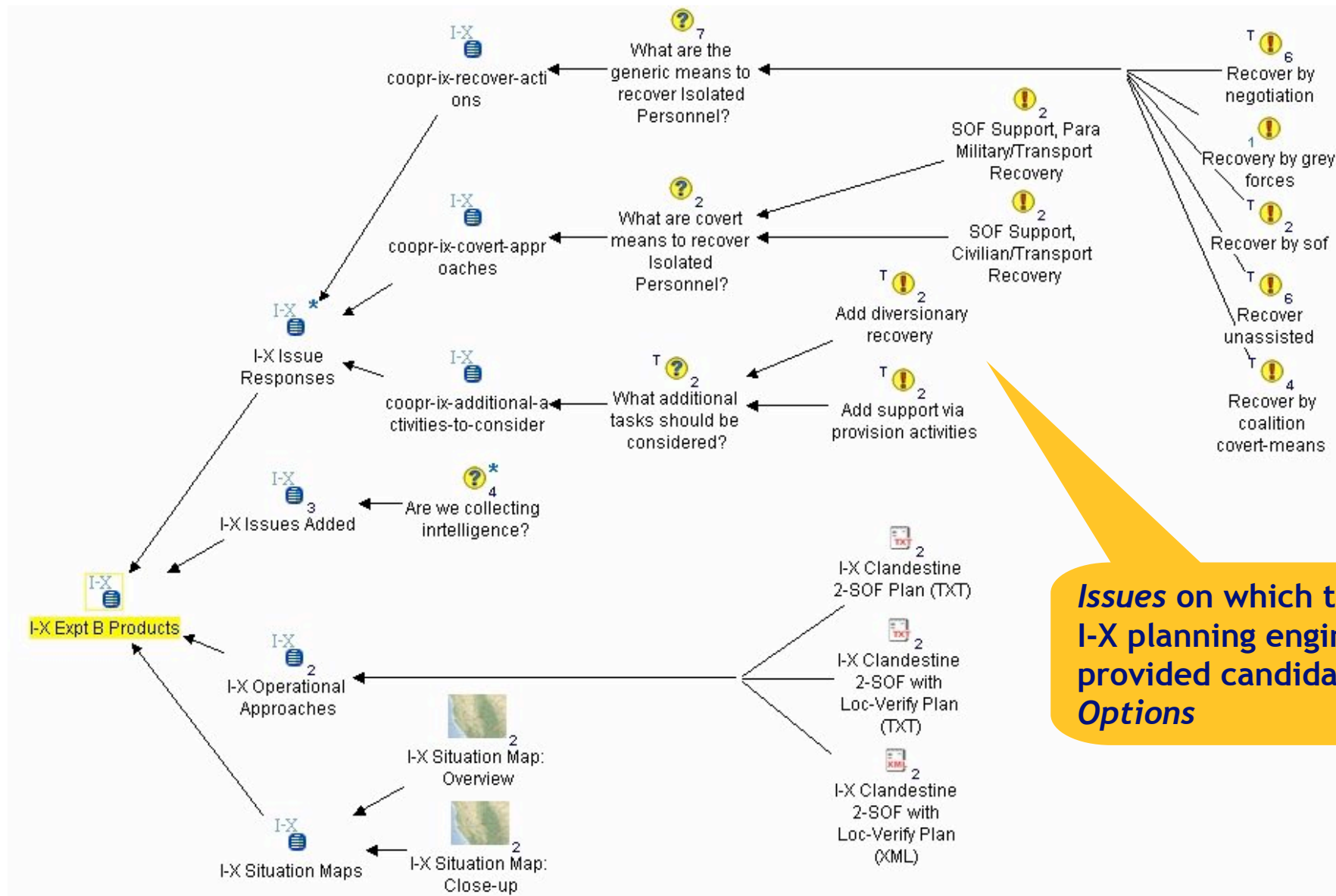
[Map]: Analysis of approaching Cebesoy

Should we approach Cebesoy to bypass the president to defuse the situation?

Cebasoy has contacts with several ambassadors
 CA has rejected all diplomatic approaches and offers of assistance
 Calif govt lacks lift to move troops: Can we offer CA C130s or large trucks?
 Can we offer economic inducements?
 Tell Cebesoy that we know what he's doing
 Admiral: We can contact Cebasoy and offer him help in
 Cebesoy is not a stable person --
 Do we go public about what we know about the conspiracy?
 PolMil: We can't go public outside of notifying President etc.
 Public diplomacy, propaganda would be counter-productive

Dialogue Map capturing the planners' discussion of this option

Planning Engine input to Compendium





Modelling a document corpus: The Iraq Debate

17 75
What is Global Argument.net?

8 75
Navigating these Argument Maps

11 75
One War, Many Theories
Michael Cohen

55 75
Who are against the war?

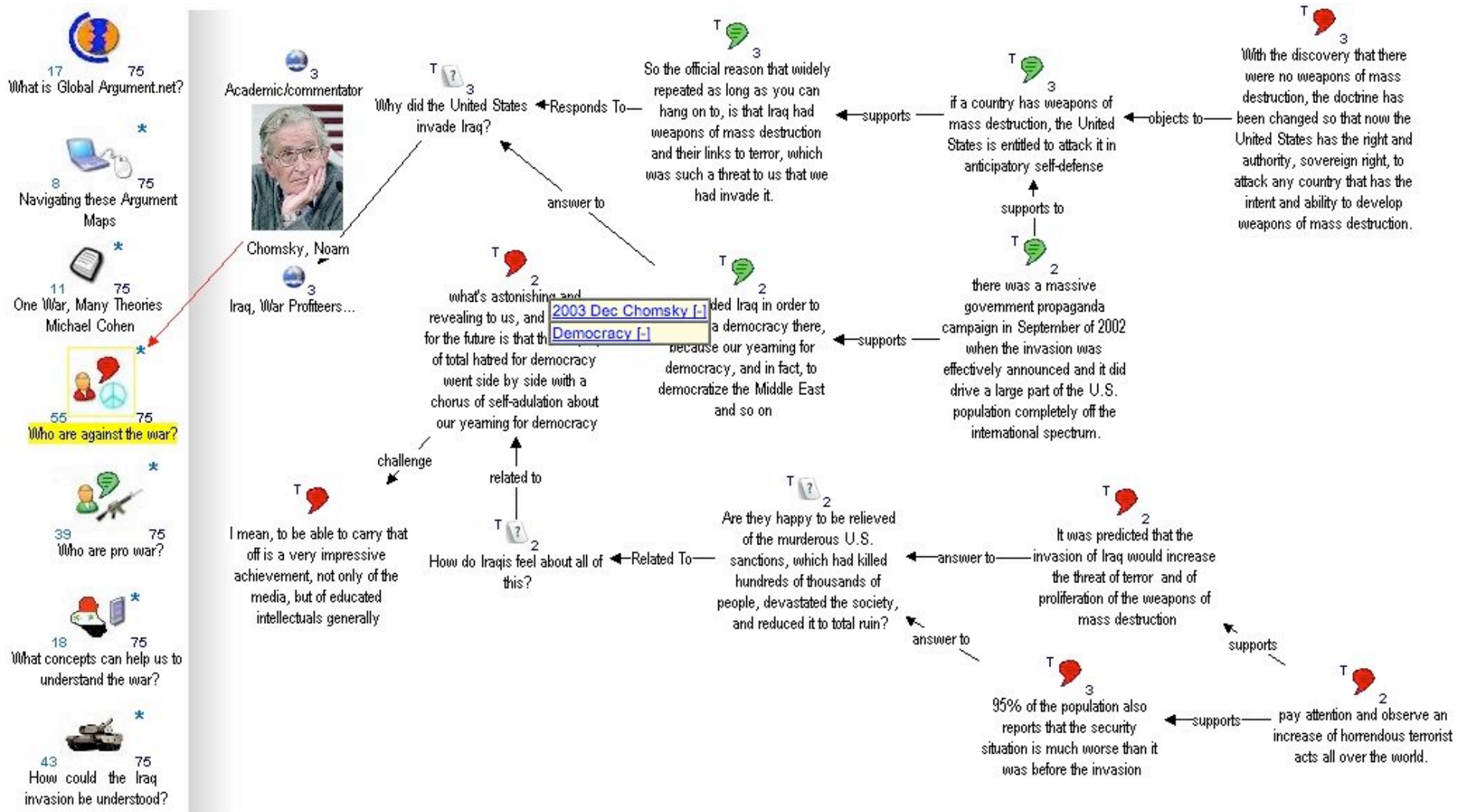
39 75
Who are pro war?

18 75
What concepts can help us to understand the war?

43 75
How could the Iraq invasion be understood?

<p>3 Prof.international affairs 25 2003 Feb Walt [-]</p>	<p>3 Editor/commentator 25 2003 Mar AliTank [-]</p>	<p>3 Politica philosopher 23 2003 Aug Gray [-]</p>	<p>3 Moral philosopher 11 2003 Sep Gaita [-]</p>	<p>3 Prof sociology 13 2003 Nov Mann [-]</p>	<p>3 Academic/commentator 23 2003 Dec Chomsky [-]</p>	<p>3 Historian/journalist 18 2003 Mar Manne [-]</p>	<p>3 Writer/commentator 23 2003 Nov Mann [-]</p>
<p>3 Iraq: The War Debate</p>	<p>3 The price of occupying Iraq</p>	<p>3 'Bush and Blair deceived about its impact on Iraq'</p>	<p>3 The war against Iraq was not a last resort</p>	<p>3 The Incoherent Empire</p>	<p>3 Iraq, War Profiteers...</p>	<p>Who are against the war? What are the war's causes? What ethical principles are at stake? What are the war's effects? See all the Reference Source G2 Power [-]</p>	
<p>3 Int.relations academic/editor 20 2002 Sep Harries [-]</p>	<p>3 Academic/author 30 2003 Feb Mearsheimer [-]</p>	<p>3 Prof political science 35 2003 Feb Waltz K. [-]</p>	<p>3 Int.relat academic/commentator 21 2004 Mar Fukuyama [-]</p>	<p>3 Former Aust foreign minister 19 2004 Jul Evans [-]</p>	<p>3 Political philosopher 30 2001 Elstain [-]</p>	<p>3 Prof.political science 32 2003 Nov Walzer [-]</p>	
<p>3 On Prudence and Restraint in Foreign Policy</p>	<p>3 Keeping Saddam in a Box</p>	<p>3 Deterrence and Rogues</p>	<p>3 Roundup: Historians' Take on the News</p>	<p>3 invasion of Iraq was illegal</p>	<p>3 Just War and Human</p>	<p>3 Arguing about War</p>	
<p>3 Academic/author 19 2002 Pollack [+]</p>	<p>3 Journalist/commentator 28 2003 Feb Kristol [+]</p>	<p>3 Journalist 32 2004 Jan Friedman [+]</p>	<p>3 Philosopher 23 2004 Feb Scruton [+]</p>	<p>3 Journalist/commentator 19 2004 Jun Krauthammer [+]</p>	<p>3 Author/former adviser to US sect state 16 2005 Jan Kagan [+]</p>		
<p>3 The Threatening Storm The Case for Invading Iraq</p>	<p>4 Iraq: The War Debate</p>	<p>3 Liberal Hawks Reconsider the Iraq War</p>	<p>3 Kant and Iraq</p>	<p>http://kmi.open.ac.uk/projects/compendium/iraq</p>			

Annotating a document corpus: Chomsky's article in the Iraq Debate



- 17 75 What is Global Argument.net?
- 8 75 Navigating these Argument Maps
- 11 75 One War, Many Theories Michael Cohen
- 55 75 Who are against the war?
- 39 75 Who are pro war?
- 18 75 What concepts can help us to understand the war?
- 43 75 How could the Iraq invasion be understood?



Large scale NASA e–science field trials: Interoperability with other databases, software agents and collaboration tools

www.kmi.open.ac.uk/projects/coakting/nasa

Clancey, W.J., Sierhuis, M., Alena, R., Berrios, D., Dowding, J., Graham, J.S., Tyree, K.S., Hirsh, R.L., Garry, W.B., Semple, A., Buckingham Shum, S.J., Shadbolt, N. and Rupert, S. (2005). “**Automating CapCom Using Mobile Agents and Robotic Assistants.**” *1st Space Exploration Conference, American Institute of Aeronautics and Astronautics*, 31 Jan–1 Feb, 2005, Orlando, FL. Available from: AIAA Meeting Papers on Disc [CD-ROM]: Reston, VA, and as Advanced Knowledge Technologies ePrint 375: <http://eprints.aktors.org/375>



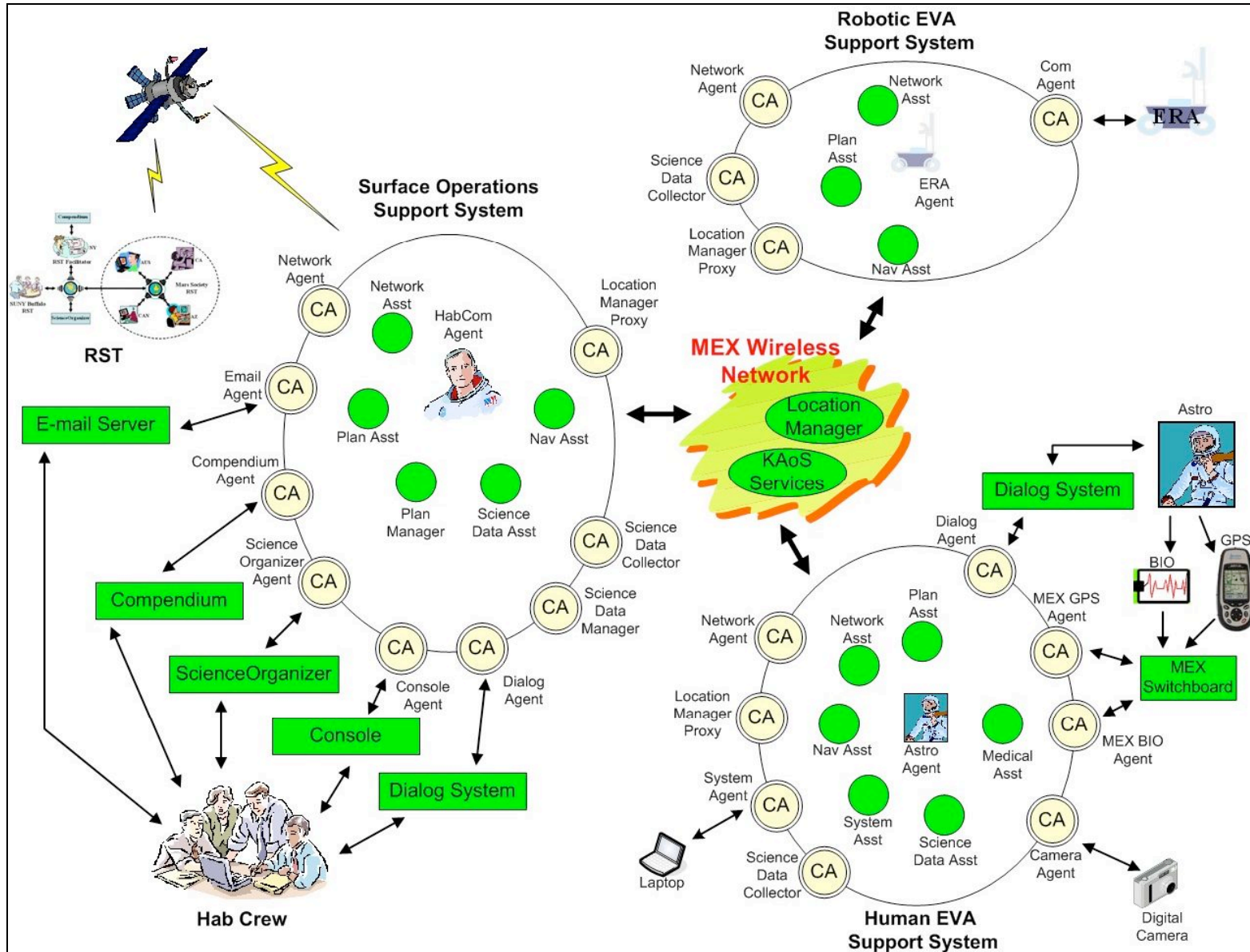
Image Credits--- Mars: NASA/JPL/MSSS; Earth: NASA/JSC; Composite: MSSS

NASA e-science field trials (2004 and 2005)



**Distributed Mars-Earth planning and data analysis tools
for Mars Habitat field trial in Utah desert, supported from US+UK**

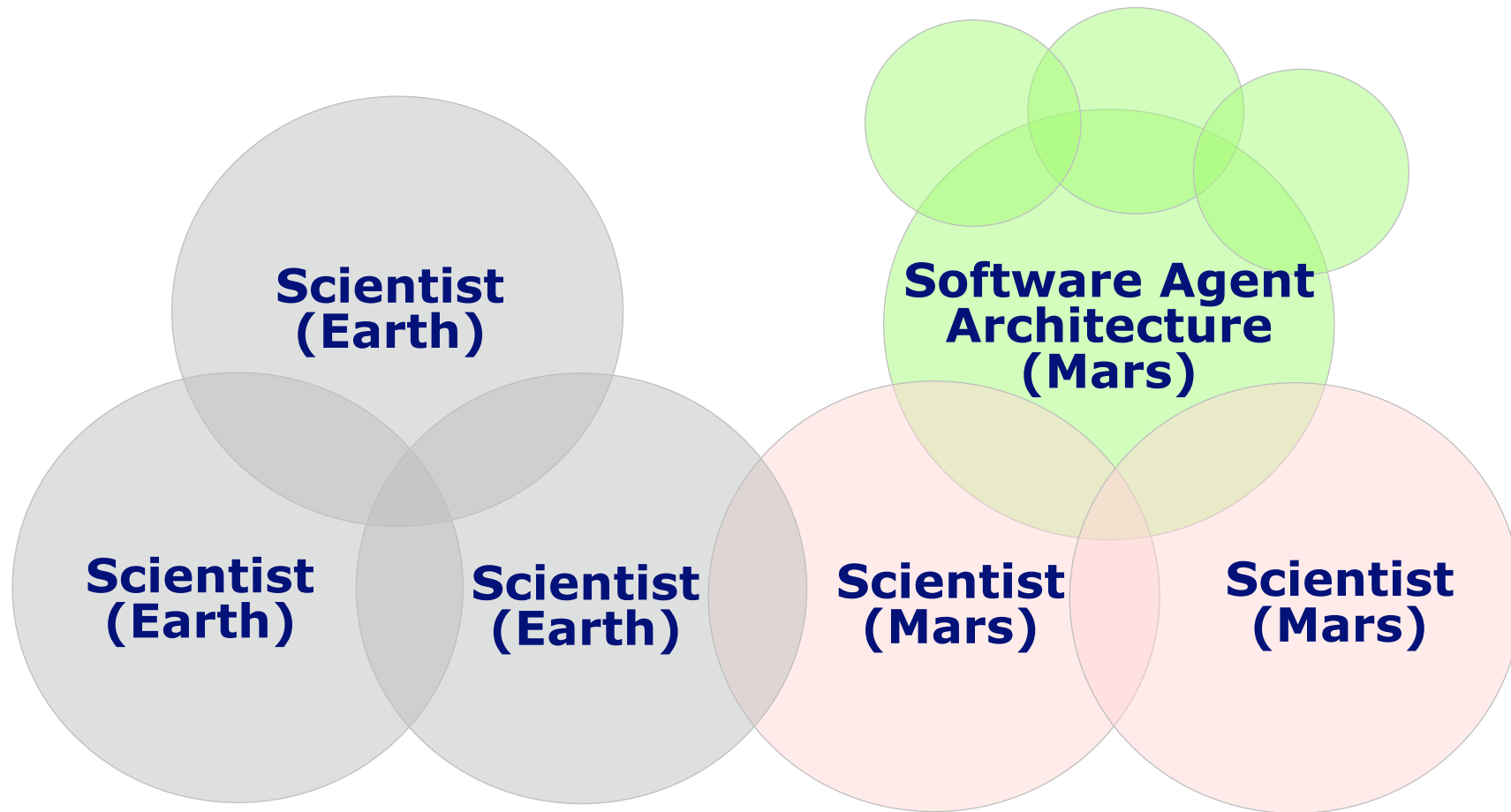
NASA Mobile Agents Architecture



Collaboration Configuration

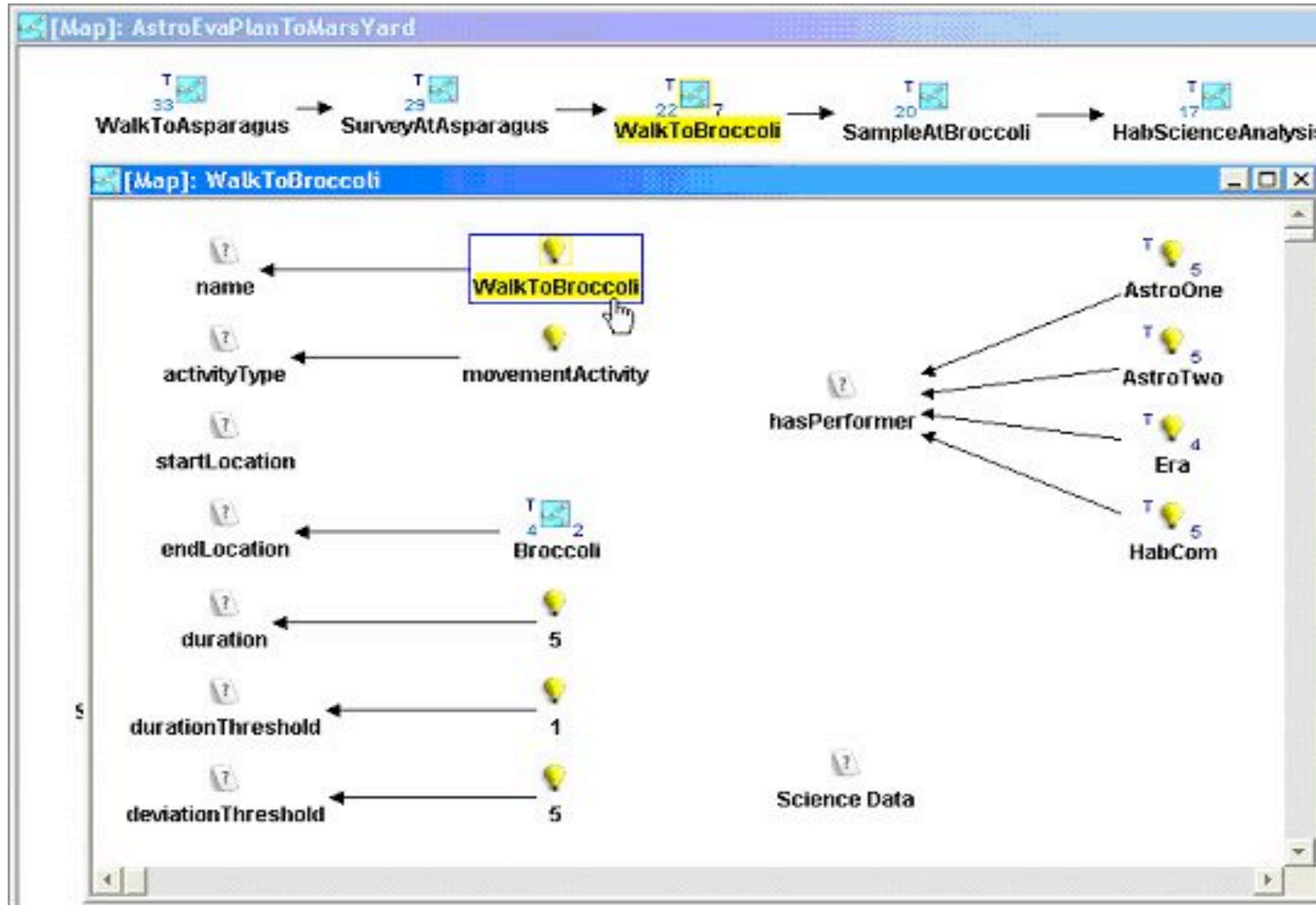


Compendium used as a collaboration medium at all intersections:
humans+agents, reading+writing maps



NASA testbed:

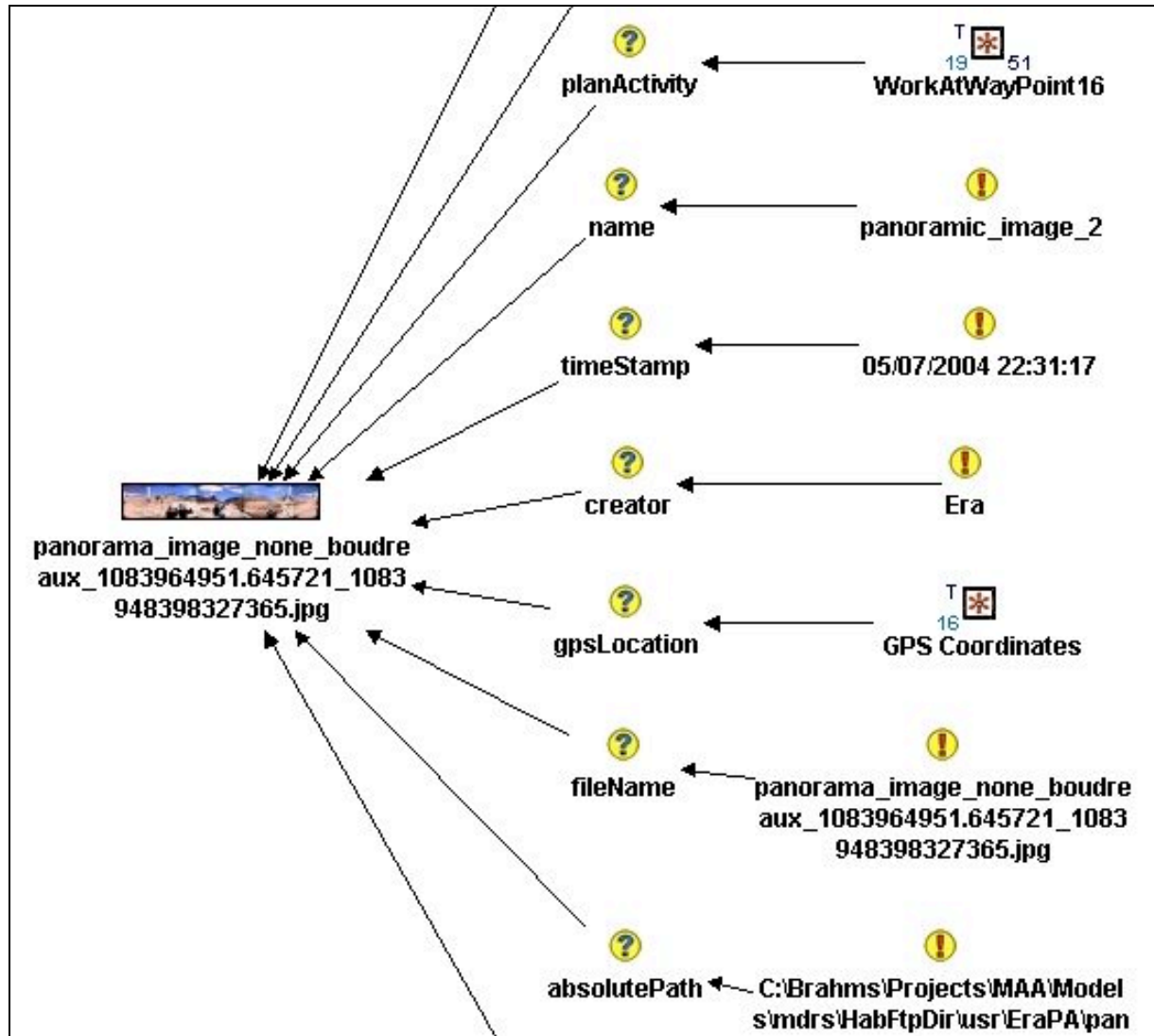
Compendium activity plans for surface exploration, constructed by *scientists on 'Earth'*, interpreted by *software agents on 'Mars'*



The Compendium nodes and relationships in this plan were interpreted by Brahms software agents for monitoring and coordinating astronaut and robot activity during surface explorations.

CoAKTiNG NASA testbed:

Compendium science data map, generated by *software agents*, for interpretation by *Mars+Earth scientists*



Copyright, 2004,
RIACS/NASA Ames, Open
University, Southampton
University
Not to be used without
permission

The Compendium maps were autonomously created and populated with science data by Brahms software agents that use models of the mission plan, work process, data flow and science data relationships to create the maps.

CoAKTinG NASA testbed: Compendium-based photo analysis by *geologists* on 'Mars'



Compendium - NASA MDRS Crew29 FINAL

File Edit Map Format Tools Favorites Workspaces Window Help

75% 1:1

[Map]: Brent's Analysis

(In Brent's map) Please verify that the Rock and Back Hill location names are correct, as Sci Org says they are Red and Rock

LOCATION: Rock Hill

LOCATION: Gap between Rock Hill and Back Hill

LOCATION: Back Hill

Mosaic of Rock Hill w/ Abby and Boudreaux for scale

dsc02591.jpg dsc02590.jpg dsc02589.jpg

voice_note_2004-3-29_22-40-25.wav

Context photo of Sample RK/M1/01 (SEE TAG for more detail)

dsc02587.jpg

Summary of Field Work at Rock Hill

(In Abby's map) Which of these 4 samples came from the rock perspective photo in Brent's map?

OBSERVATION: Rock Hill looks to have two layers not three as observed in Panoramas

Did not get to sample the reddish hills off to the north (left side in photos)

voice_note_2004-3-29_22-22-35.wav

Context photo #2, similar to above

dsc02586.jpg

This photo is v good - links Outcrop to the Rock perspective, and we are excited to incorporate it into the methodology :-)

Not a good photo - sampling area is cut off

Close up photo of sample RK/M1/01

dsc02585.jpg

NOTE ON SAMPLE BAG Naming:

dsc02593.jpg

dsc02592.jpg

dsc02589.jpg

dsc02597.jpg

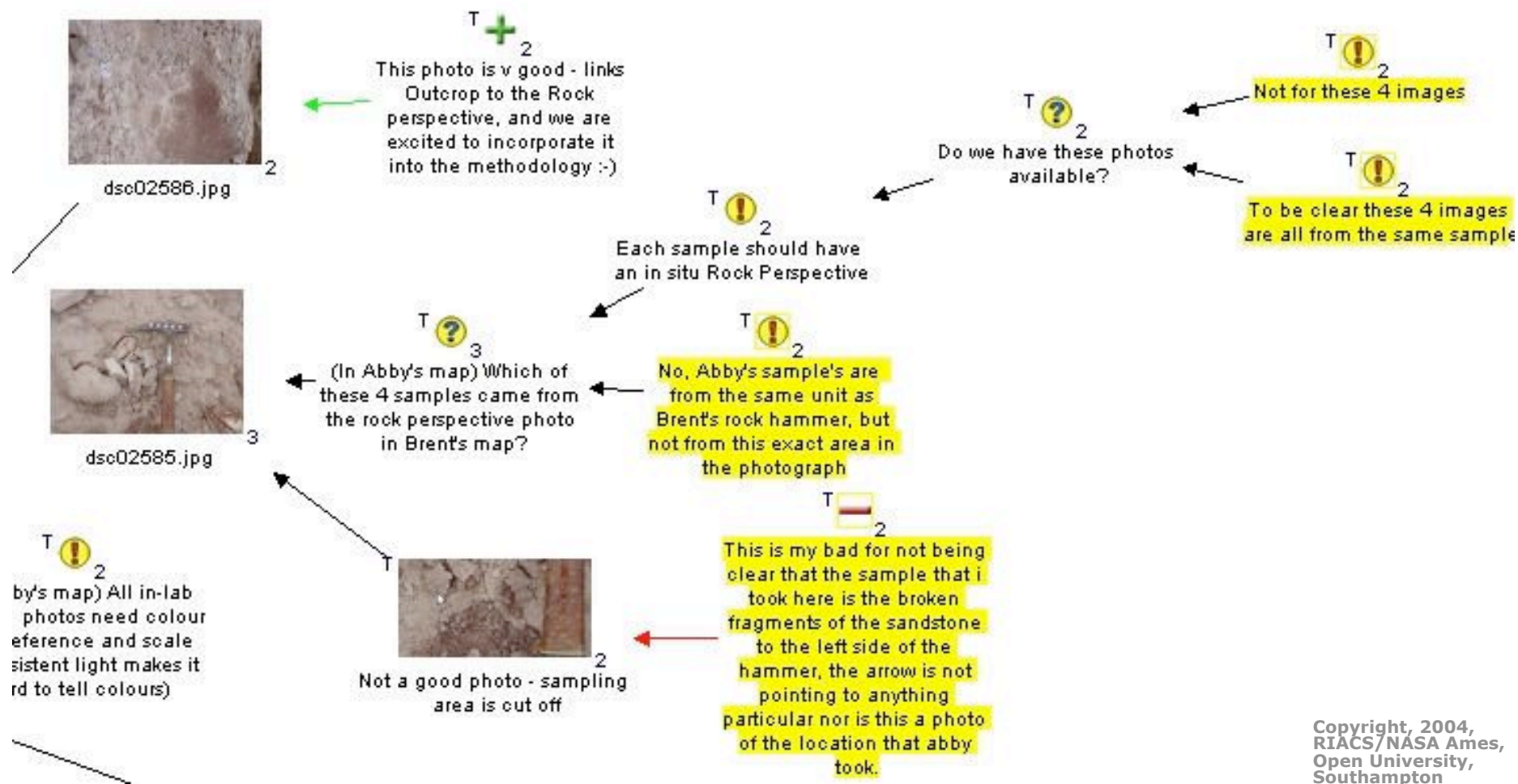
dsc02598.jpg

This is my bad for not being clear that the sample that i took here is the broken fragments of the sandstone to

Copyright, 2004,
RIACS/NASA Ames,
Open University,
Southampton
University
Not to be used
without permission

NASA testbed:

Compendium scientific feedback map *from Earth scientists to Mars colleagues*



Copyright, 2004, RIACS/NASA Ames, Open University, Southampton University
Not to be used without permission



Collaborative sensemaking in e-Science:

Meeting Replay tool for *Earth scientists*, synchronising video of *Mars crew's* discussion as they annotate their mission plans

[Map]: Lith Canyon EVA Segment 1 Crew Planning Meeting 05/03/04

lithseg1wproute.jpg

WayPoint0
WayPoint1
WayPoint2
WayPoint3
WayPoint4

Where should Boudreaux take Panoramas?

Where should Boudreaux take Pictures?

Start Boudreaux Watch me when descending into the canyon starting at Fossil Hill

You can have Boudreaux take a picture of AstroOne at any time after that

Make sure that Boudreaux is in line of sight from AstroOne. Thus move it to

Title: Lith Canyon EVA Segment 1 Planning Meeting - 3rd May 2004
Date: Tue May 4 00:37:00 2004
Participants: [Maarten](#), [Brent](#), [Abigail](#), [John](#)

Current Speaker: Maarten
Nodes: Make sure that Boudreaux is in line of sight from AstroOne. Thus move it to WP 2 and 3 at appropriate times

Video **Playing** 00h 20m 09s **Pause**

Group Sync Offline Online

Mode Master Slave

Receiving Yes No

Agnès
Compendium
Abigail
Brent
John
Maarten

NASA MR Clip: 00:50

Copyright, 2004, RIACS/NASA Ames, Open University, Southampton University
Not to be used without permission

Memetic Meeting Replay

The CoAKTinG project's results are now mainstreamed in the Access Grid by the JISC Memetic VRE project



1

2

File Edit View Format Tools Favorites Workspaces W

Files\External_Image_113 4641355814.jpg

Files\External_Image_113 4640815923.jpg

memecc-mock-up-v4.ppt

◀ back Title: Memetic Meeting 2005-12-15 (I

Date: 15 Dec 2005, 09:37


Participants: Michelle Bachler, Simon Buckin
Mancini, Danius Michaelides, A

Agenda	
Compendium	
Michelle Bachler	
Simon Buckingham Shum	
Ben Jubey	
Clara Mancini	
Danius Michaelides	
Andrew Rowley	
Roger Slack	


Memetic Meeting Replay

The CoAKTinG project's results are now mainstreamed in the Access Grid by the JISC Memetic VRE project





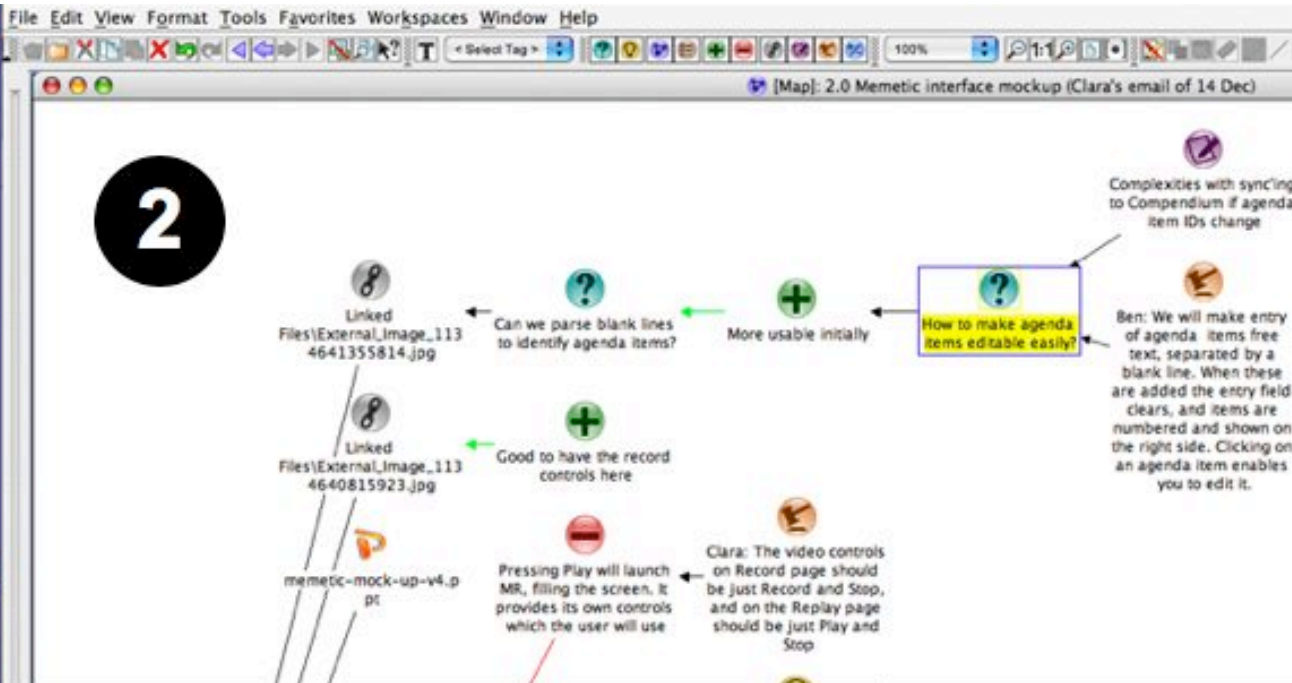
181.35



File Edit View Format Tools Favorites Workspaces Window Help

[Map]: 2.0 Memetic interface mockup (Clara's email of 14 Dec)

2



◀ [back](#) Title: [Memetic Meeting 2005-12-15 \(Imported\)](#)

Date: 15 Dec 2005, 09:37

Participants: Michelle Bachler, Simon Buckingham Shum, Ben Juby, Clara Mancini, Danius Michaelides, Andrew Rowley, Roger Slack ([sites](#))

Speaker: Ben Juby
Agendum: 2.0 Memetic interface n
Events: Selecting node
Nodes: ? How to make agend

Agenda	<div style="background-color: red; width: 100%; height: 10px;"></div>
Compendium	<div style="background-color: green; width: 100%; height: 10px;"></div>
Michelle Bachler	<div style="background-color: blue; width: 100%; height: 10px;"></div>
Simon Buckingham Shum	<div style="background-color: red; width: 100%; height: 10px;"></div>
Ben Juby	<div style="background-color: green; width: 100%; height: 10px;"></div>
Clara Mancini	<div style="background-color: blue; width: 100%; height: 10px;"></div>
Danius Michaelides	<div style="background-color: red; width: 100%; height: 10px;"></div>
Andrew Rowley	<div style="background-color: green; width: 100%; height: 10px;"></div>
Roger Slack	<div style="background-color: blue; width: 100%; height: 10px;"></div>

3

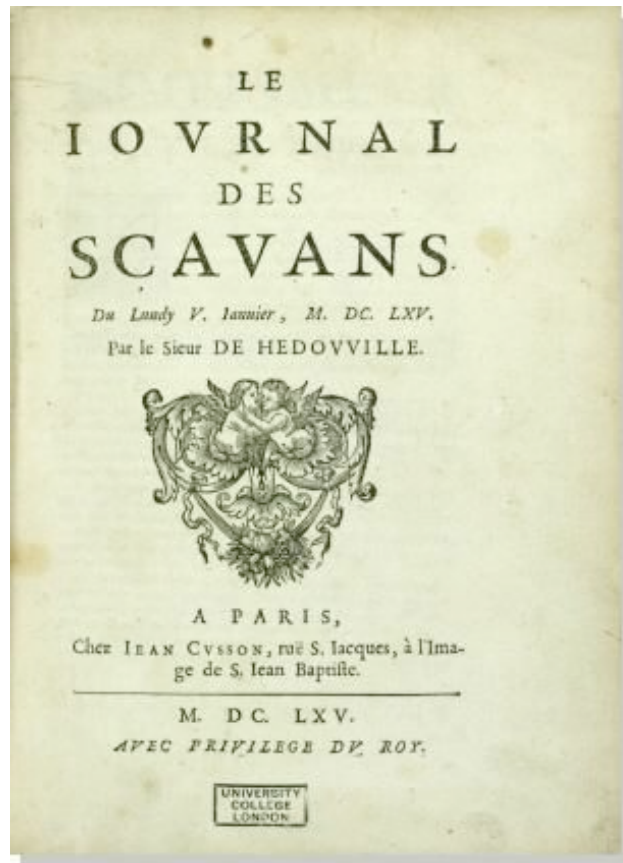
In Gutenberg's shadow (or standing on his shoulders)



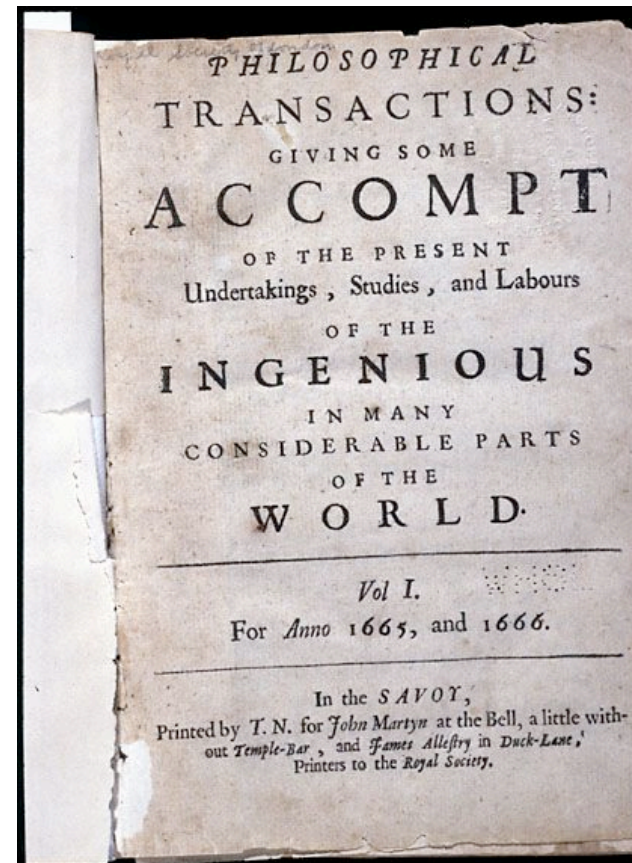
[Information Technology] + [Social Networks]

= Knowledge Medium

Newspapers + Invisible Colleges = Scholarly Journals



Le Journal des Sçavans
January 1665

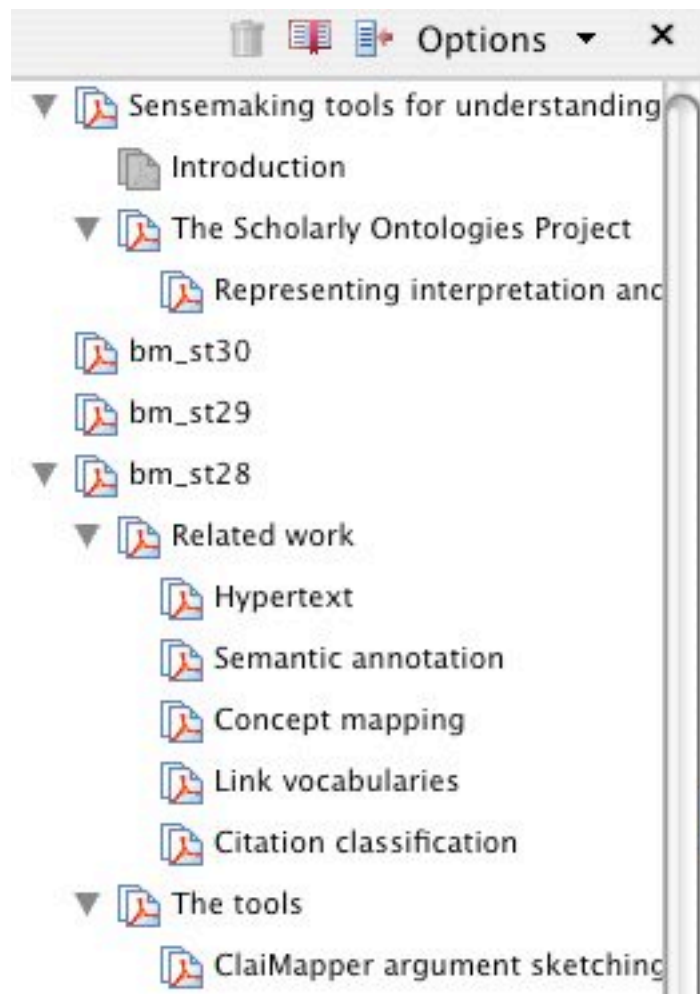


***Philosophical Transactions of
the Royal Society of London***
March 1665



Jumping forward 343 years...

2008... Ideas and arguments (=knowledge claims) are now digital... ...digital paper!

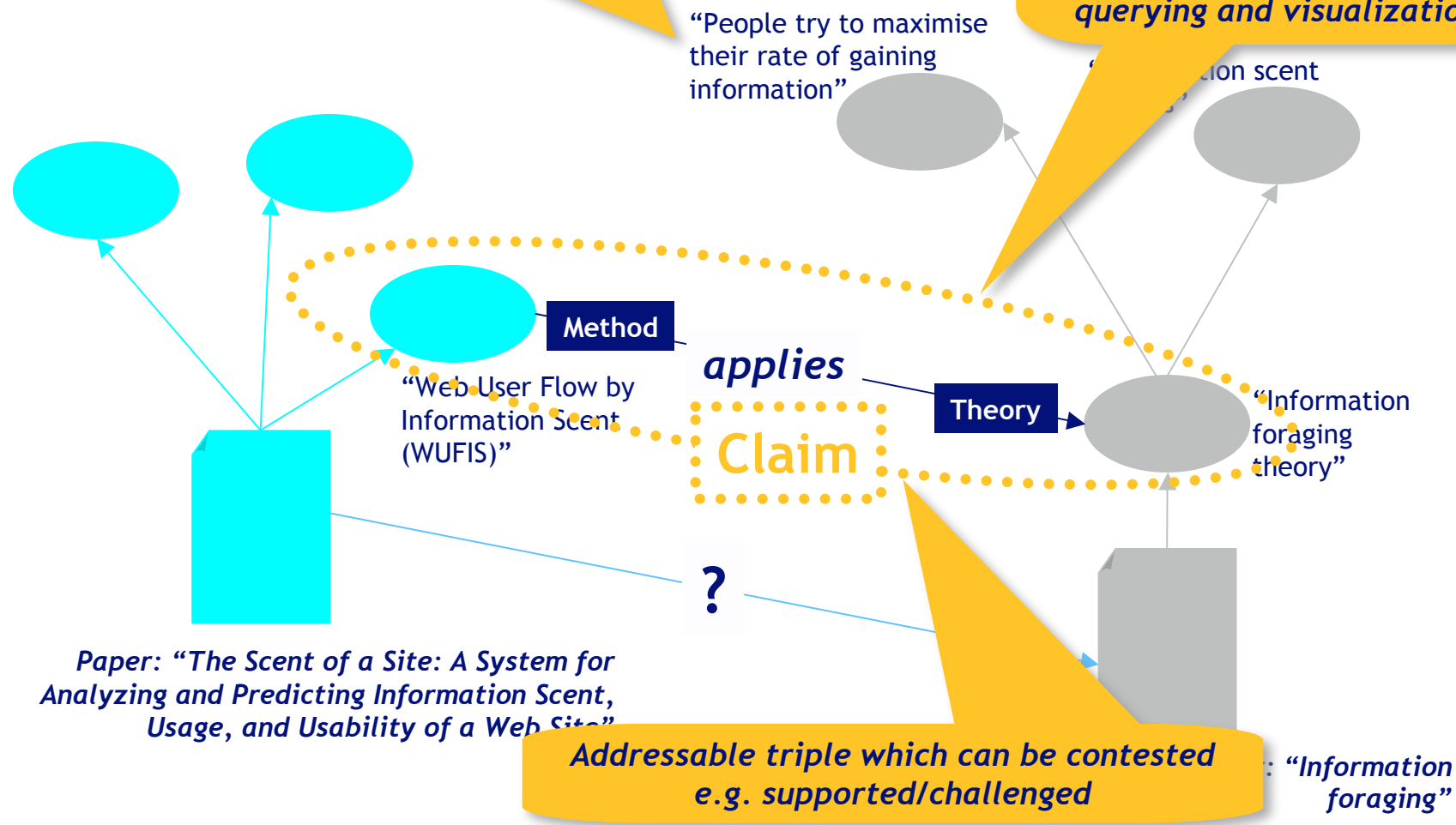


Beyond document citations...



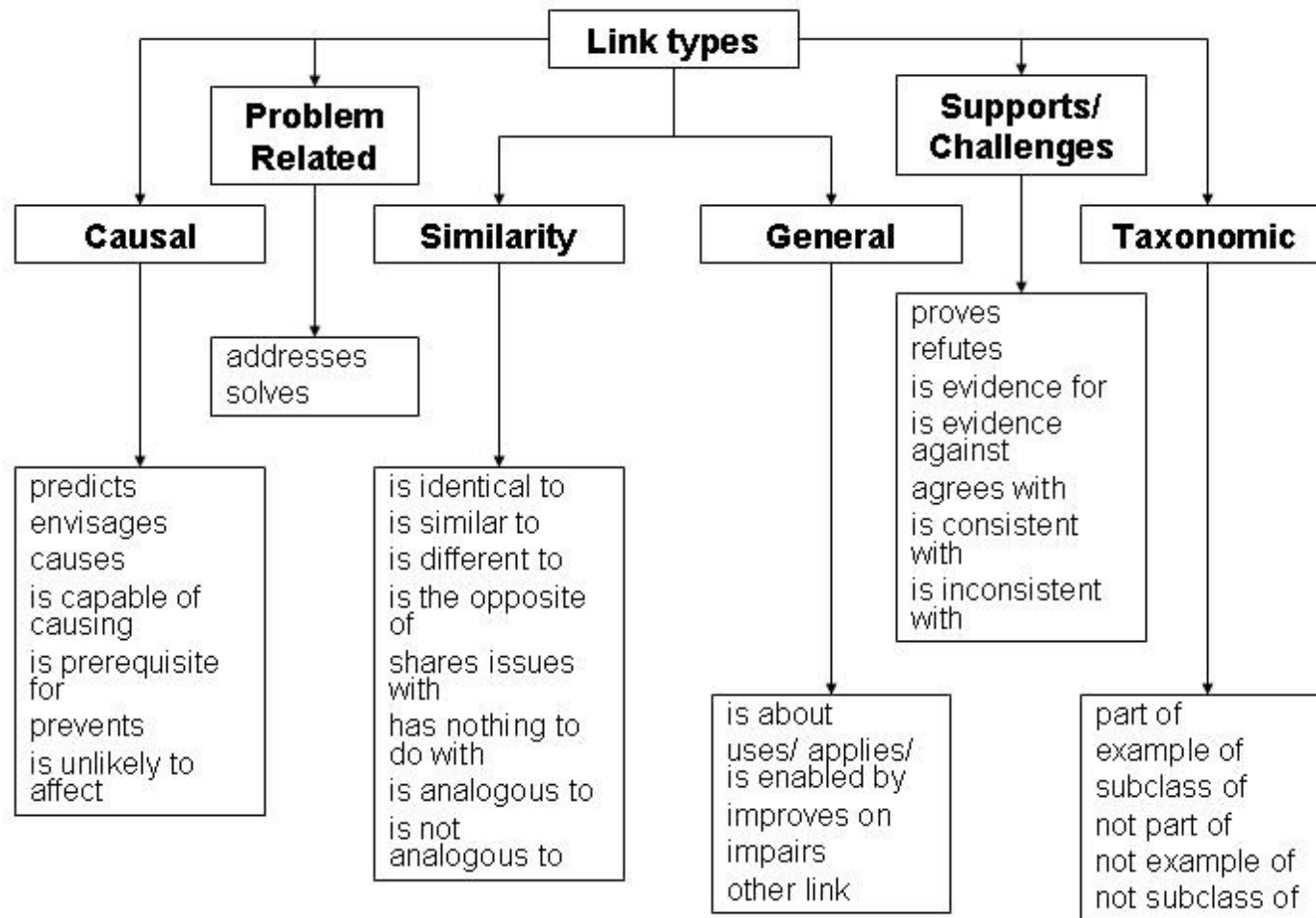
These annotations are freeform summaries of an idea, as one would find in researchers' journals, fieldnotes, lit. review notes or blog entries

Making formal connections between ideas creates a semantic citation network → novel literature navigation, querying and visualization

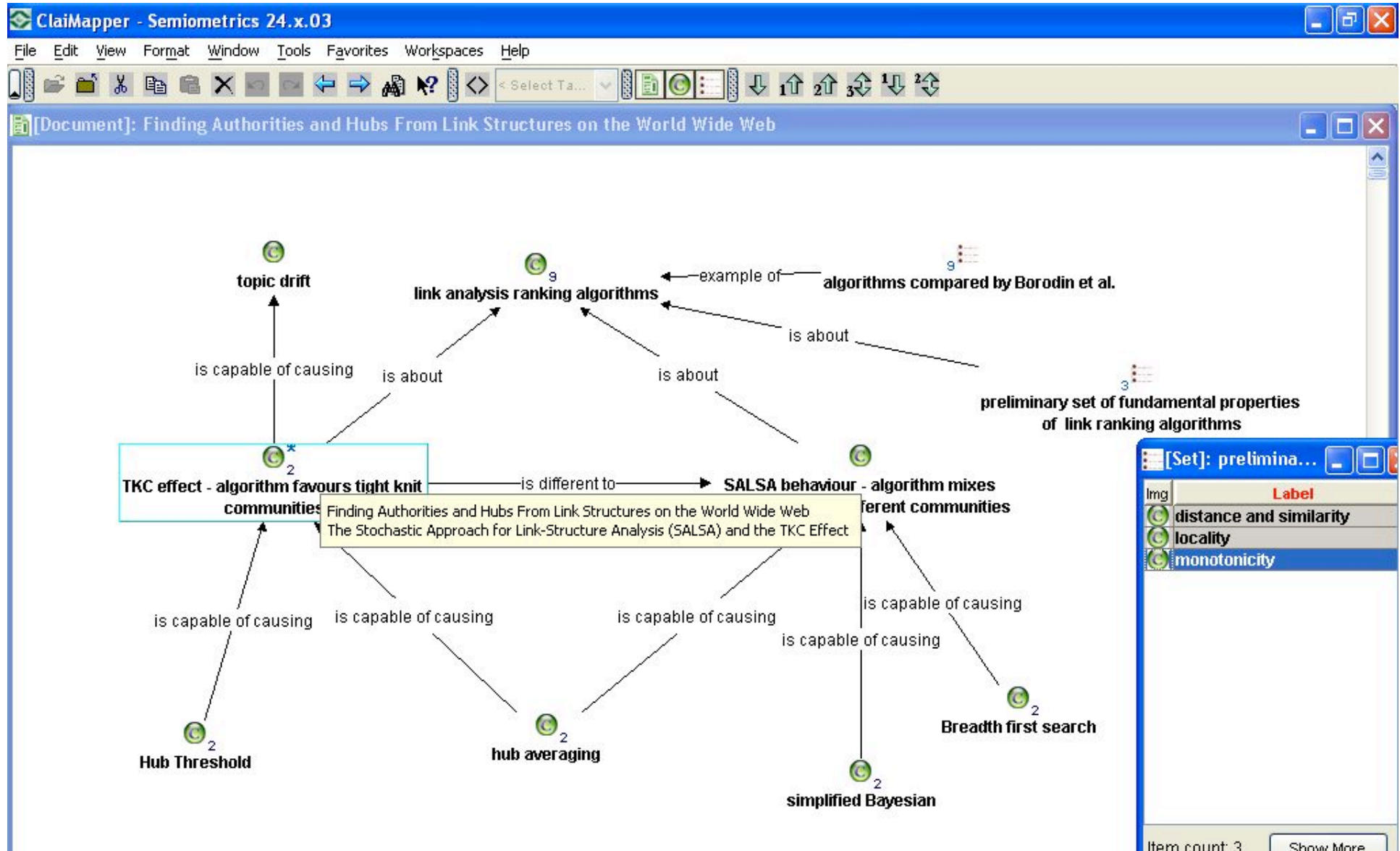


Combining formal relations with the expressive freedom of ‘folksonomies’

Relational classes and dialects (KMi Scholarly Ontologies project)



If we model concepts in a literature as concept maps... (KMi's ClaiMapper, built on Compendium)



“Semantic del.icio.us”: KMi’s ClaimSpotter assigning *and* linking freeform tags



ClaimSpotter 0.4.5 | Annotate

http://127.0.0.1/claimspotter/0.4.5/index.php?user=1&document=1#section-H-1

Login History Add a document Standard Alternate .dot Export Help About

More Ideas Concepts: All Relations: Argument Zones: Importances: >5 Term(s): trust find clear Reset

Document

TABLE OF CONTENTS:

- Abstract
- Introduction
- Information Analysis in TRELLIS
- Source
- Attribution and Description
- Deriving an Assessment about a Source
- Helping Users Select Sources
- Related Work
- Conclusions
- References

source based on the annotations of many individuals. Our work builds on the Semantic Web and presents a tool that helps users create annotations that are in a mix of formal and human language, and exploits the formal representations to derive measures of trust in the content of Web resources and their original source.

INTRODUCTION

The Semantic Web can be described as a substrate to support advanced functions for collaboration (human-human, computer-human, computer-computer), sharing of Web resources, and reasoning about their content [3]. The markup languages that are being proposed for the Semantic Web will be the basis to develop reasoners, proof checking and derivation tools, and many other functions such as Web services.

The Semantic Web will also be the basis for the Web of Trust, which will provide mechanisms to handle authentication, permission, and validation of attribution in a Web where, by design, anyone can contribute content, links, and services.

A lot of current emphasis on the Web of Trust is in accessing resources, specifically authentication and permission issues. Digital signatures and public keys support authentication. Proofs are another important technology in the Web of Trust, since permission schemes are often described with rules and statements (e.g., anyone working for company C should be allowed to access D) and will need to rely on proofs that can reason about the rules and conclude whether access should be granted. An important issue with respect to both authentication and permission is checking that a document can be attributed to the source specified. For example, if Joe Doe writes an article and publishes it claiming Henry Kissinger as the author, it should be possible to check the truth about the document’s authorship.

Show: Notes: Concepts: Claims:

concepts

My | Add | Remove all

Type	Label	Copy in...
remove n/a	Trellis	[X...] [X...]
remove n/a	ix of formal and human language	[X...] [X...]
remove n/a	Representing trust	[X...] [X...]
remove n/a	Semantic Web	[X...] [X...]
remove n/a	measures of trust in the content	[X...] [X...]
remove n/a	Trusting different information sou	[X...] [X...]

claims

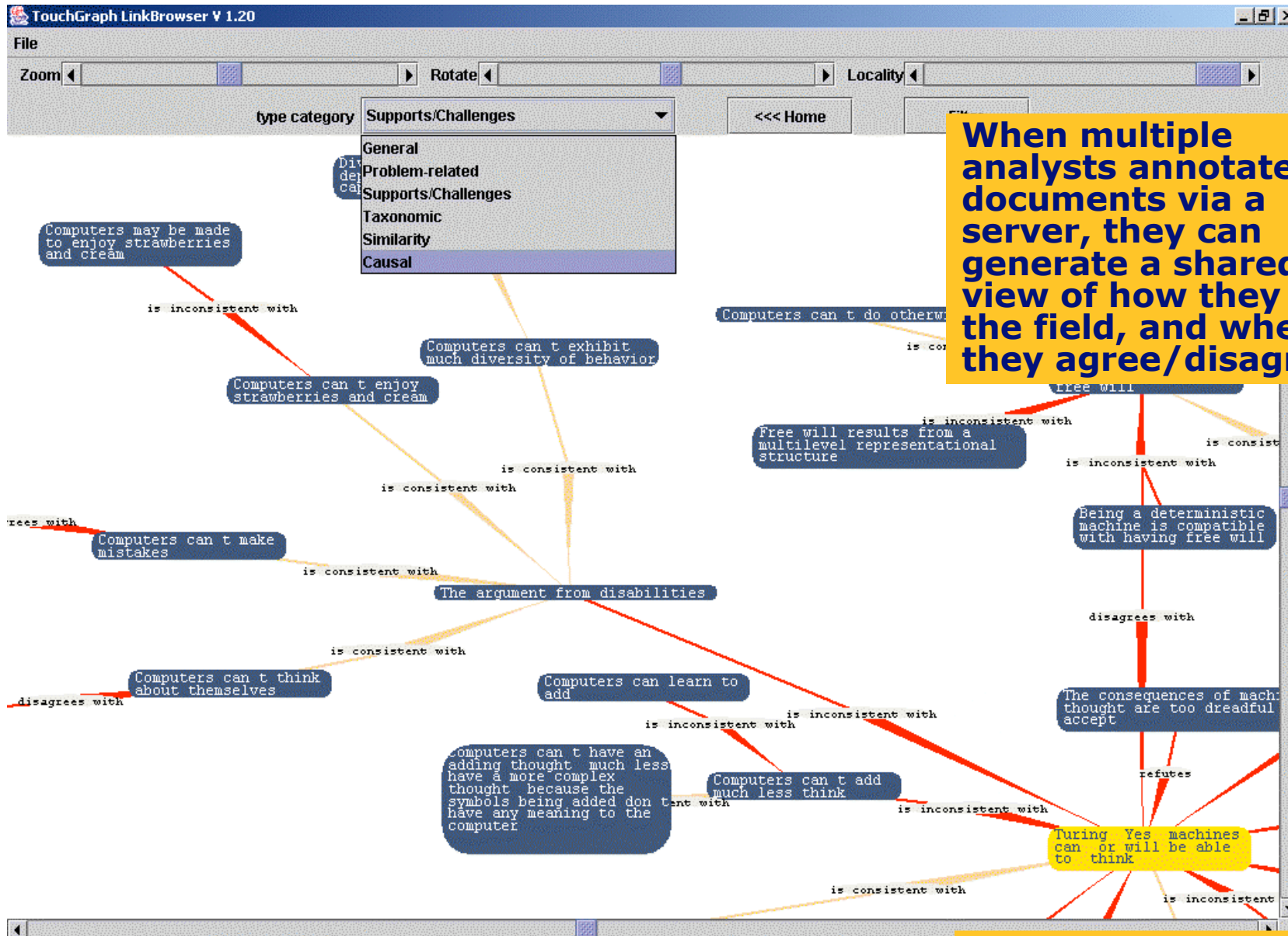
My | Add | Remove all

Source	Relation	Destination
Trellis	is about	Trusting different information
n/a		n/a
Concept		Concept
some evidence	is evidence against	[claimNumber29
n/a		n/a
Concept		Link

Submit Reset

Sereno, B., Buckingham Shum, S. and Motta, E. (2007). Formalization, User Strategy and Interaction Design: Users’ Behaviour with Discourse Tagging Semantics. Workshop on Social and Collaborative Construction of Structured Knowledge, 16th Int. World Wide Web Conference (WWW 2007), Banff, 8-12 May 2007. http://www2007.org/workshops/paper_30.pdf

Visualising claims and arguments



When multiple analysts annotate web documents via a server, they can generate a shared view of how they see the field, and where they agree/disagree

“Semantic Google Scholar” KMi’s ClaimFinder



find **discover** **advanced** **claiMaker**

machine learning

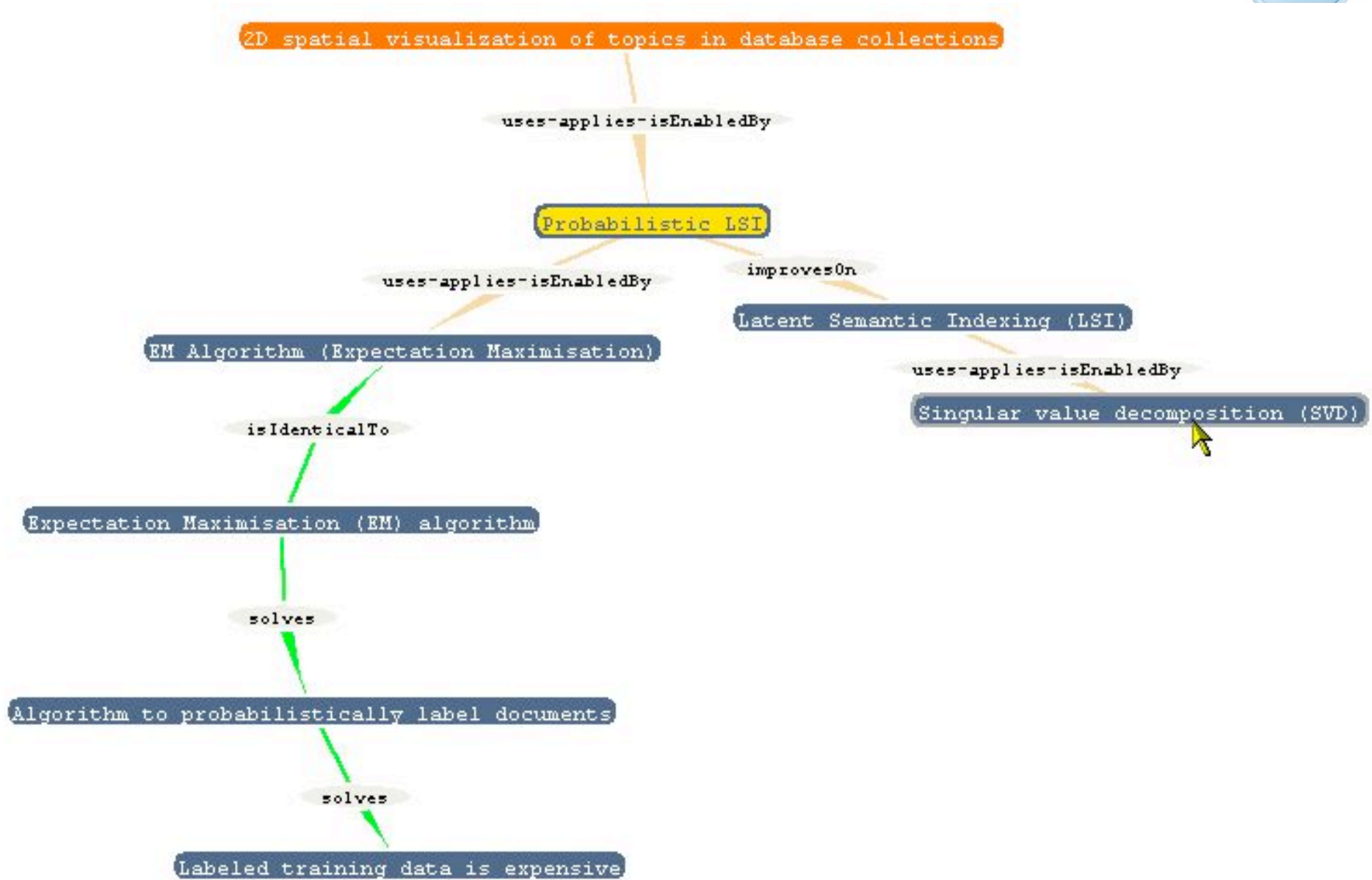
Perspective In contrast agree

Neural network text categorizer

machine learning

[About](#) - [ClaiMaker](#) - [Problems](#) - [Help](#)

Lineage tree (the roots of a concept)





**Adding Web 2.0 functionality to an
open platform for mapping concepts
and arguments**

Cohere: <http://cohereweb.net>

<demo>

Cohere: creating a new Idea for Google's "Knol", linked to a website



Idea Connection Import

Knol

Create by: Simon Buckingham Shum on: 14 December 2007, 16:22

Websites for current idea

Encouraging people to contribute

INSOMNIA
Risk factors, diagnosis and treatment

Article rating: 24th view 100% vote
Year rating: 22,000,000 100% vote

Introduction
Insomnia is a common sleep disorder that can often be treated, sometimes with simple measures such as techniques. This article explains the causes of the problem, lists several alternative treatments, and suggests steps for treatment.

Idea List Idea Cloud Website

Search Ideas Knol

Sort: **Date** **A-Z** Usage Show By: Sel

Knol (websites: 1, connections: 5)

In what sense is a knol different from a well
In a contentious domain ("Causes of global navigate competing views and arguments?)

`<iframe src="http://cohere.open.ac.uk/snippetConnectionFocu`

Cancel OK

Cohere: embedding an Idea in a blog



Google blog proposes the “knol” concept

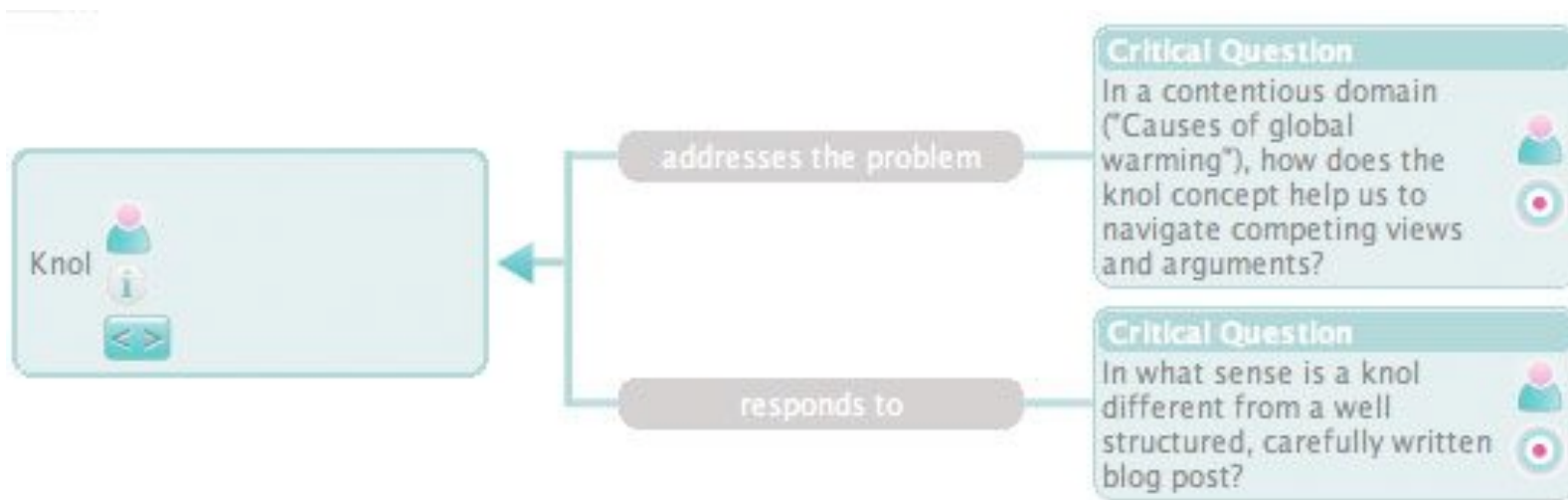
posted by sbs in December 14th, 2007 | Edit
in contested-knowledge, sensemaking

In yesterday's [Google blog post](#), VP Engineering Udi Manber proposes the knol, which we have duly registered in Cohere as an Idea:

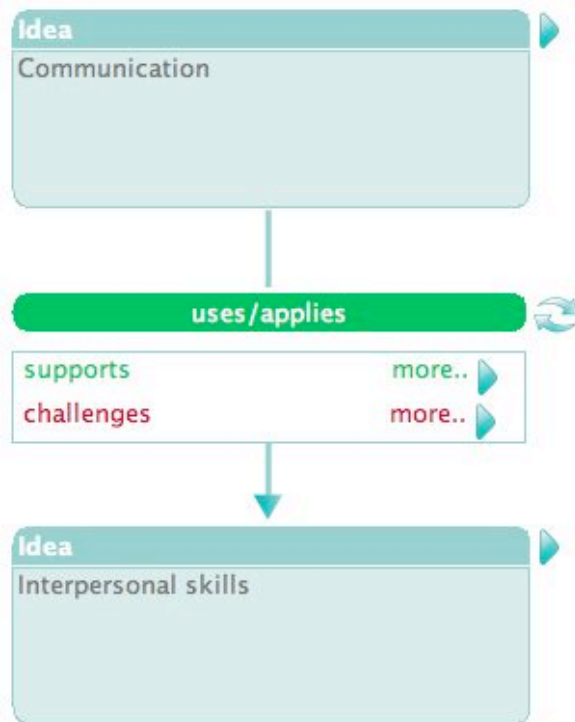



"A knol on a particular topic is meant to be the first thing someone who searches for this topic for the first time will want to read. The goal is for knols to cover all topics, from scientific concepts, to medical information, from geographical and historical, to entertainment, from product information, to how-to-fix-it."

Cohere: raising issues about Google's "Knol" Idea



Cohere: from tag clouds to idea webs



Sort: **Date** A-Z Usage Show By: Selected Websites  

Learning how to learn Open Educational Resources (OERs)

Observation **Key Skills** Collaboration skills Reading Skills **Study**

Skills Problem Solving Information technology Information

literacy **Communication** Information on the web Finding

information **Analytical skills** Modelling Skills **Interpersonal**

skills Knowledge technologies Knowledge Mapping **Writing skills**

Thinking skills

Cohere: all incoming and outgoing links from a focal Idea



An OpenLearn Tool from the OSC Project
Logged in as Ale Okada

Contact
Edit My Profile
About
Logout

» Idea List Idea Cloud Website List **Connection List** Connection Net

Search Connected Ideas Exact

Sort: ▲ **A-Z** Link Type Filter: Positive Negative Show: Full Connection List

Idea
Analytical skills is an example of

Idea
Collaboration skills is an example of

Idea
Communication is an example of

Idea
Knowledge Mapping supports

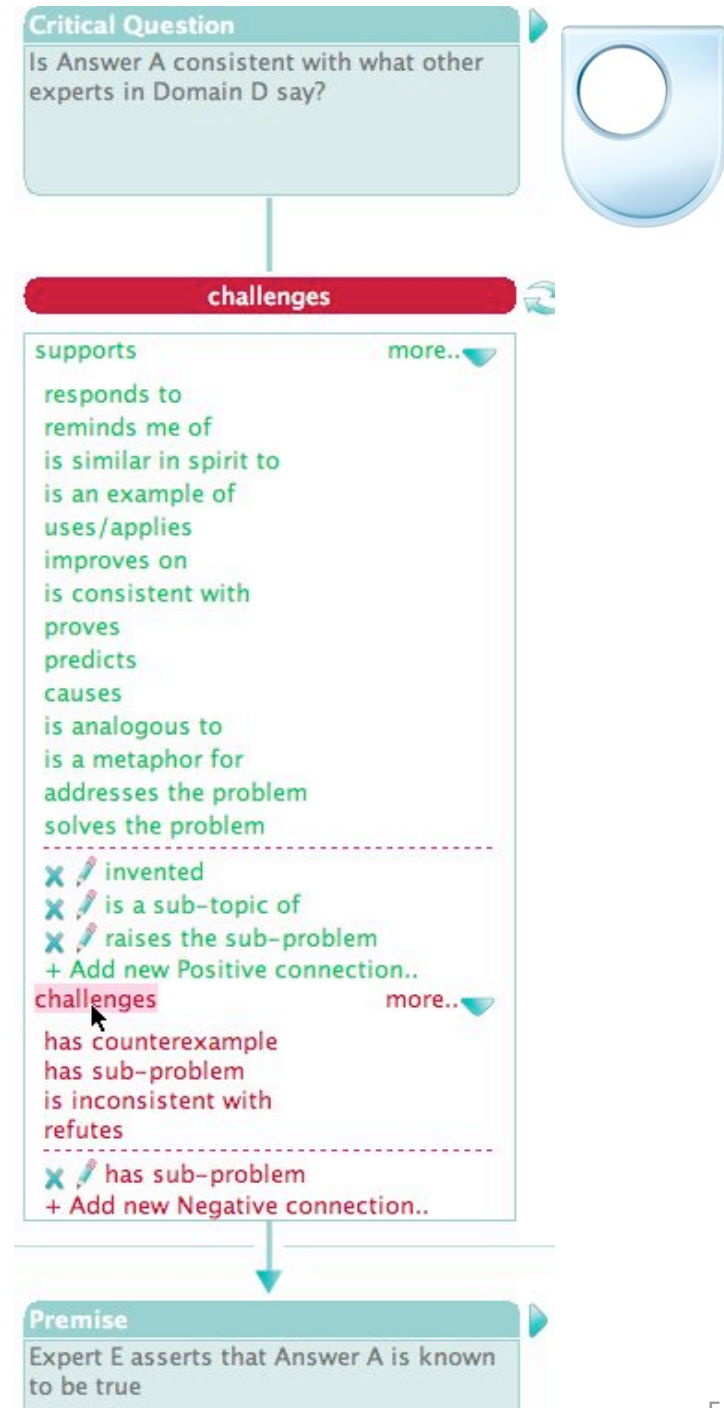
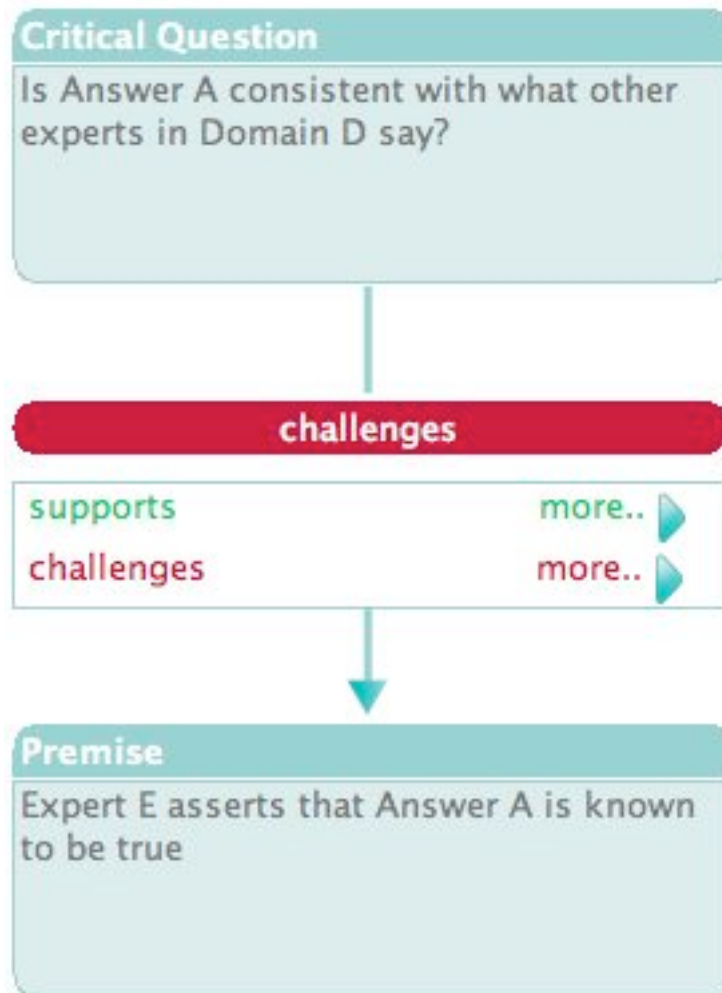
Idea
Study Skills is an example of

Key Skills supports

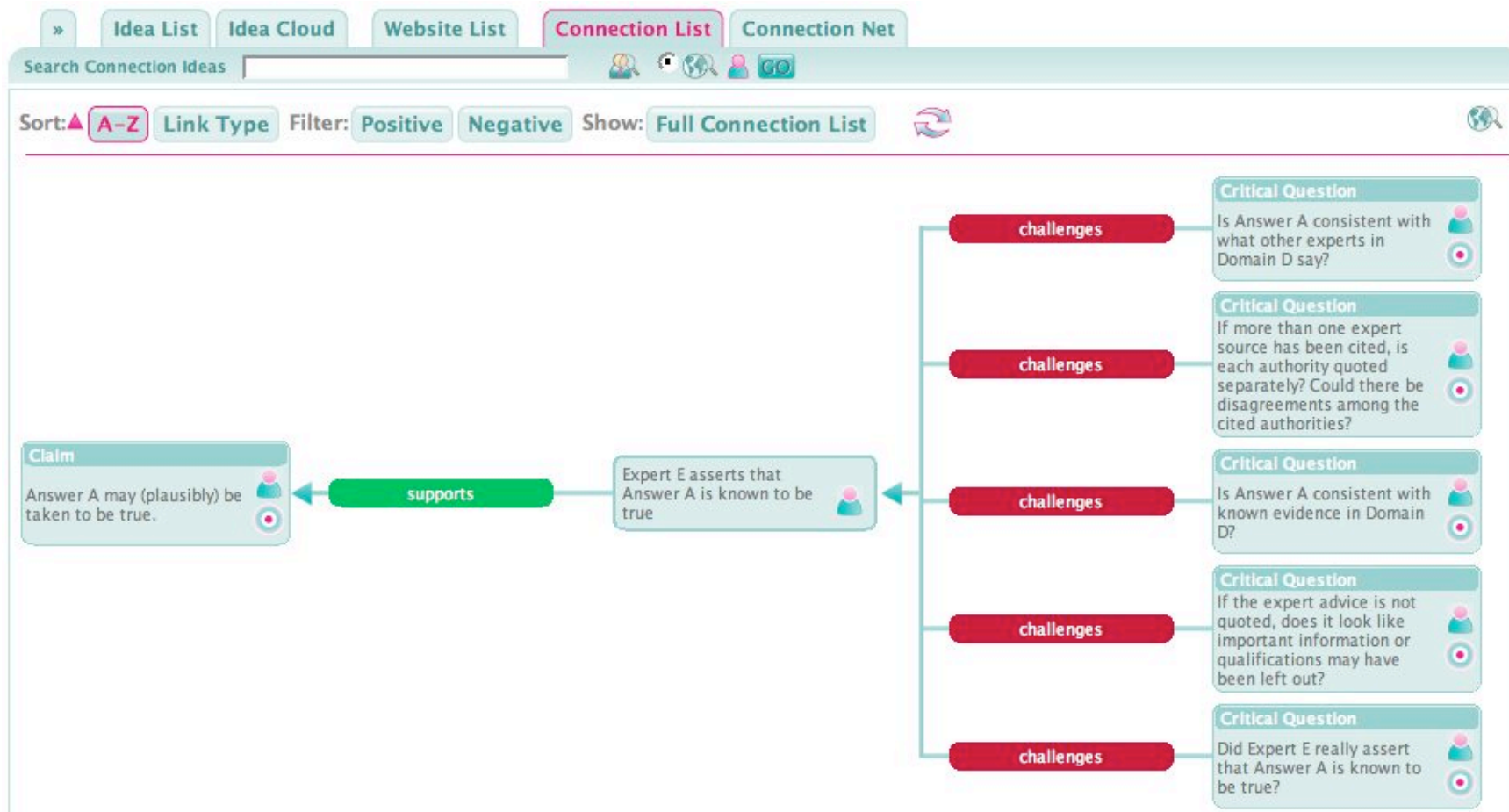
Idea
Learning how to learn

own learning and performance;
communication; information
technology; information literacy;
application of number; problem
solving; working with others.

Cohere: extensible connection language doesn't lock users into one ontology



Cohere: Argument from Expert Opinion with Critical Questions



Cohere: semantically filtering a focal Idea by “contrasting” connections



Turn Off Applet Link Type searches: Select an idea first

Connection Search... Focal Idea: Expert E asserts that Answer A is known to be true

Gravity

Turn Off Applet Link Type searches: Select an idea first

Connection Search... Similarity Contrast Consistency Proof Problems Lineage Causality Analogy

Focal Idea: Expert E asserts that Answer A is known to be true

Search on: challenges, has counterexample, is inconsistent with, refutes

```
graph TD; A[Expert E asserts that Answer A is known to be true] -- challenges --> B[If the expert advice is not quoted, does it look like important information or qualifications may have been left out?]; A -- challenges --> C[Is Answer A consistent with known evidence in Domain D?]; A -- challenges --> D[Is Answer A consistent with what other experts in Domain D say?]; A -- challenges --> E[Did Expert E really assert that Answer A is known to be true?]; A -- challenges --> F[If more than one expert source has been cited, is each authority quoted separately? Could there be disagreements among the cited authorities?];
```


Cohere: a mashup visualization merging different connections around a common Idea



Cohere: homepage integrates People, Ideas and Connections



Welcome
Screencast

About Contact
Logged in as Simon Buckingham Shum
View My Workspace

An Oper
Edit My Profile

Firefox Optimised (2.0.0.8+)

Search for this phrase in connected Ideas

People

Ideas

Connections

Most: Recent Prolific Relevant

All: Recent Popular Connected

All: Recent Connections

My: Recent Popular Connected

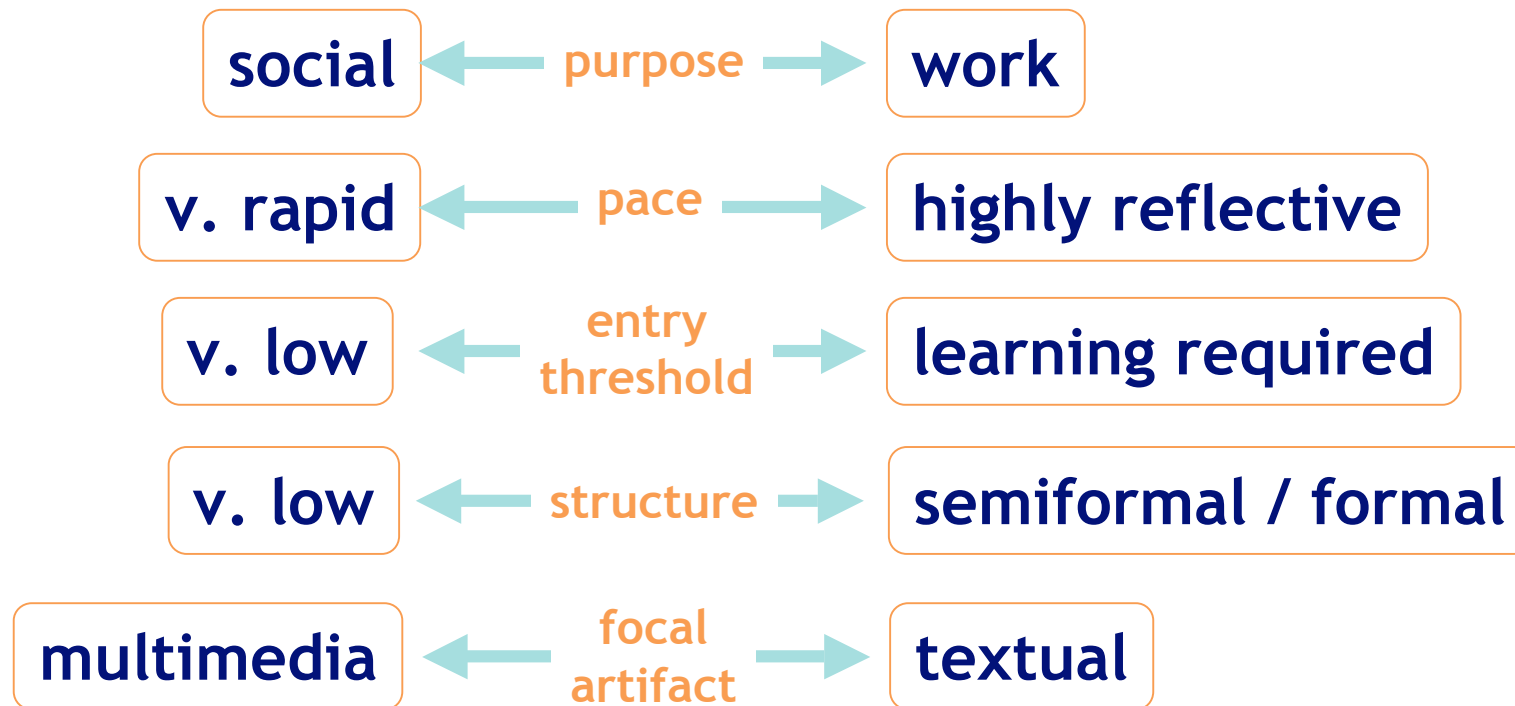
My: Recent Connections Relevant Connections

Social Software vs Argumentation?



Social Software

Argumentation Tools





Acknowledgements

Compendium Project:

Al Selvin (Verizon/Open U.)
Maarten Sierhuis (NASA)
Jeff Conklin (CogNexus Inst.)
Michelle Bachler (Open U.)

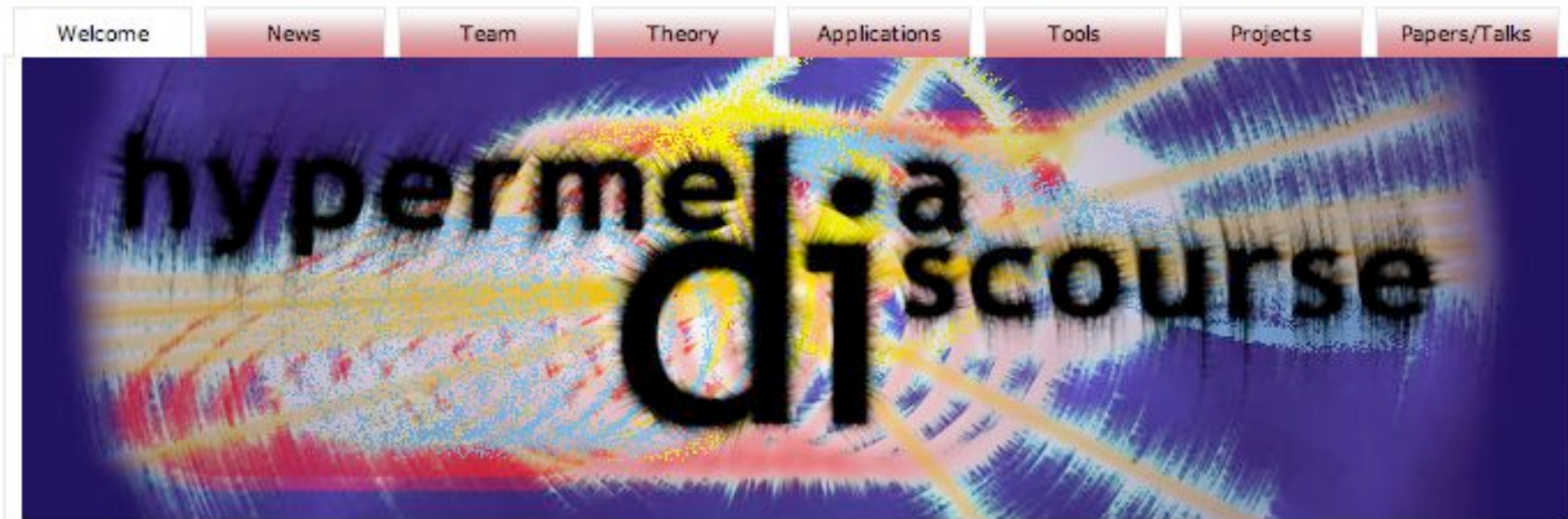
Scholarly Ontologies Project:

Victoria Uren
Gangmin Li
Clara Mancini
Neil Benn
Bertrand Sereno
John Domingue
Enrico Motta

Funding gratefully
acknowledged:



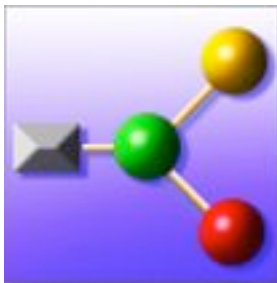
THE WILLIAM AND FLORA HEWLETT FOUNDATION



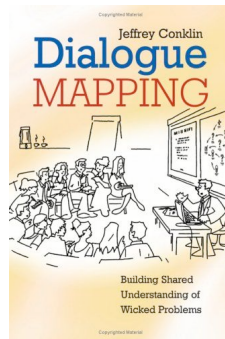
Hypermedia Discourse project:

community / theory / software / screencasts / case studies / user studies

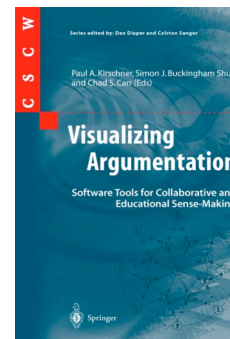
www.kmi.open.ac.uk/projects/hyperdiscourse



Compendium Institute
www.CompendiumInstitute.org



Dialogue Mapping
www.cognexus.org



Visualizing Argumentation
www.VisualizingArgumentation.info



Knowledge Cartography