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# A Task-Oriented Overview of Argumentation Technology

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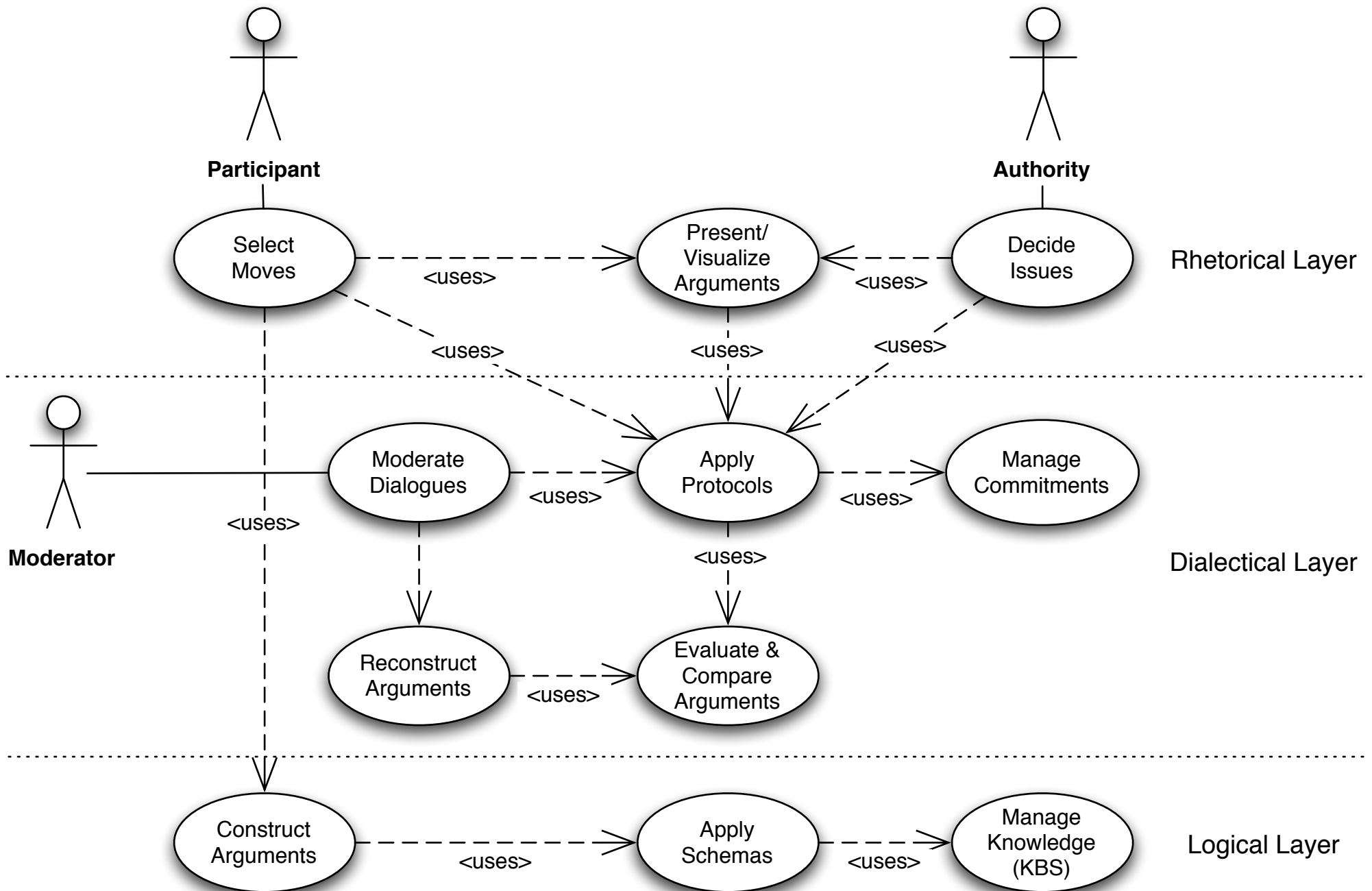
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March, 2007

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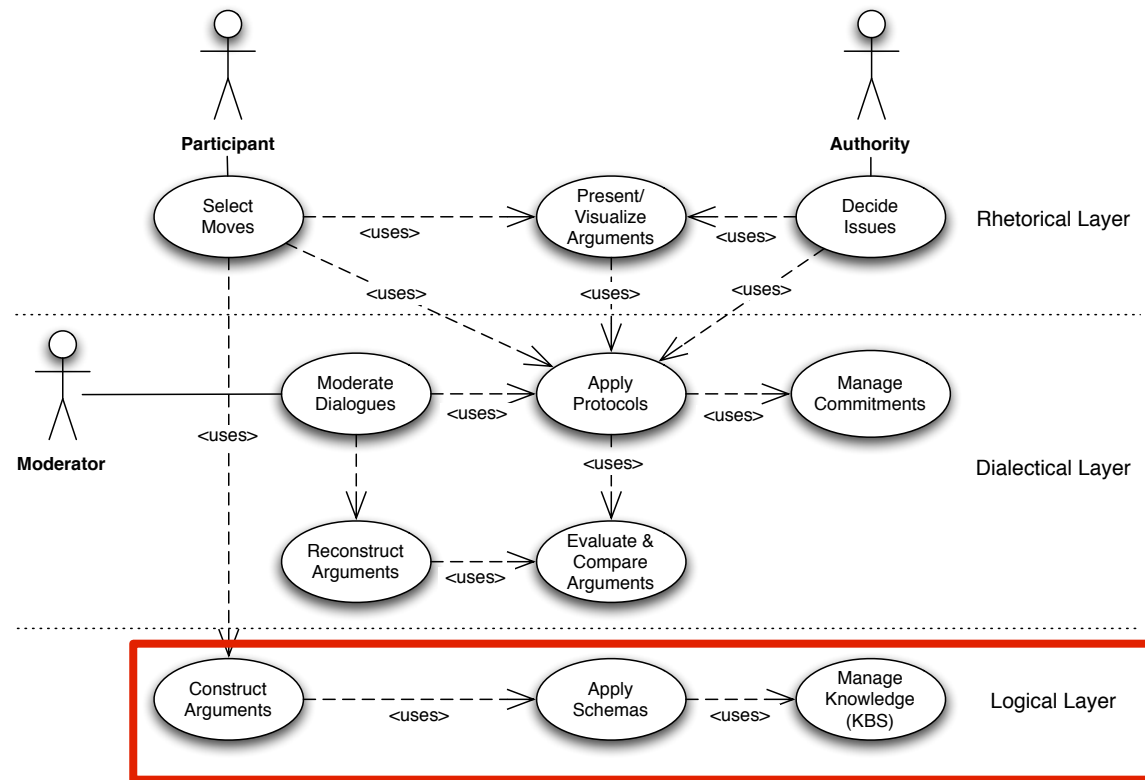
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# Argumentation Tasks ("Use Cases")

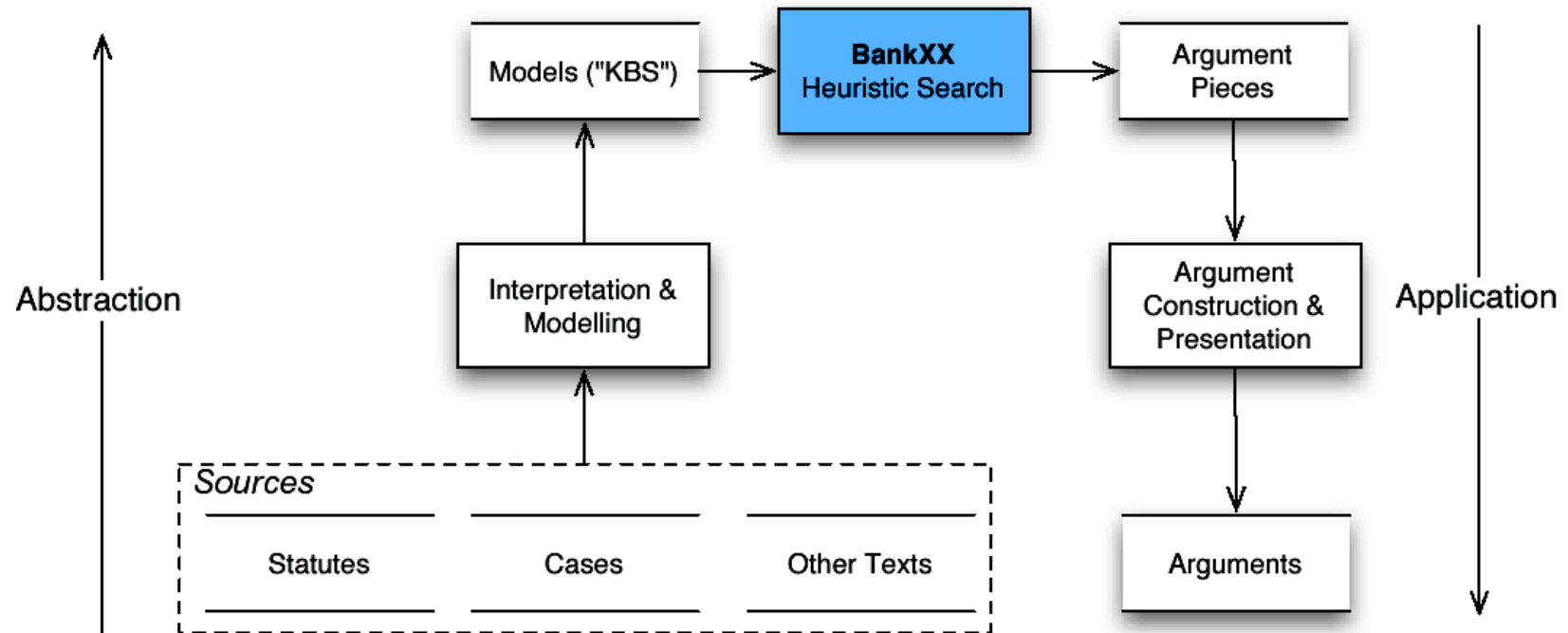


## Example Tools: Argument Construction

- BankXX
- PLAID
- Parmenides

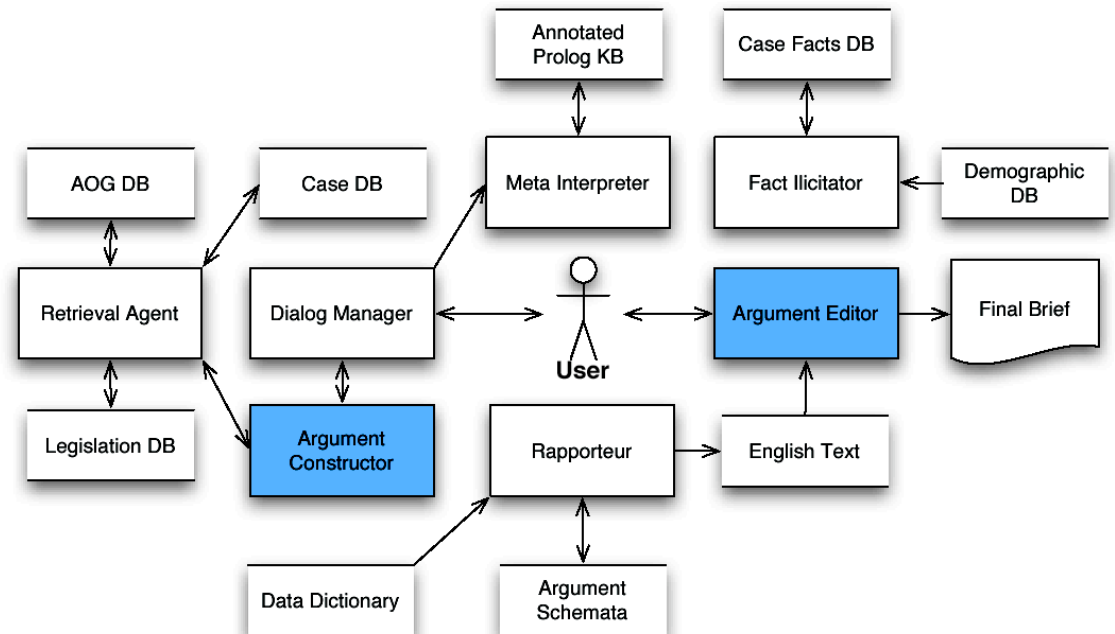


## Bank XX – (Rissland, Skalak & Friedman, 1993/96)



## PLAID (1995)

- Uses a version of Toulmin's argumentation scheme to construct arguments
- Research prototype, implemented in Prolog
- Developed by Trevor Bench-Capon and G. Staniford (1995)



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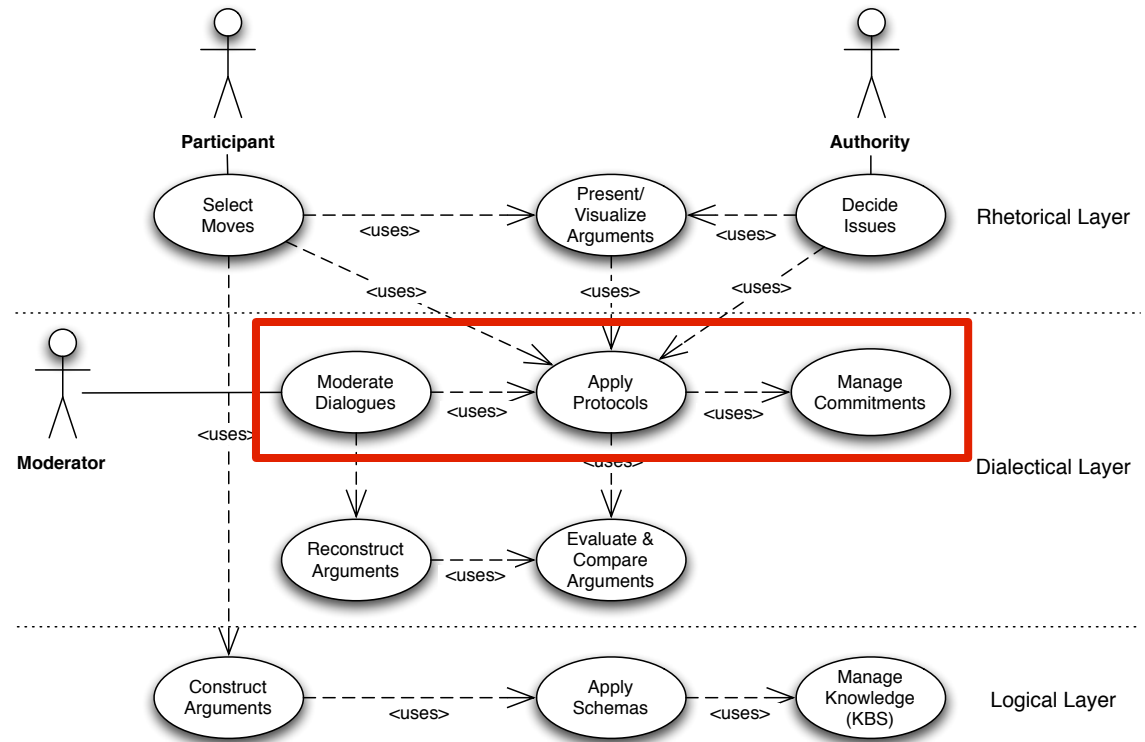
## Parmenides (2006)

- Supports the collaborative construction of arguments, using an argumentation scheme for practical reasoning.
- The argumentation scheme is used to guide the dialogue.
- Supports navigation and browsing of argument graphs, using hyperlinks, but not visually.
- Is a web application, written in PHP. (Presumably with a database backend.)
- Developed by Katie Atkinson, Trevor Bench-Capon and Peter McBurney



## Example Tools: Supporting Dialogues and Collaboration

- Room 5
- Zeno
- ClaiMaker



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## Room 5 (Loui & Norman, 1997)

- Is an online argumentation **game**, supporting the collaborative construction of arguments on the web.
- An argumentation protocol is used to structure the dialogue and guide users as they input arguments.
- Research prototype. The system is intended to be used as a game, not for supporting actual dialogues.



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## Zeno (2001)

- Zeno supports the **collaborative** construction and visualization of argument graphs on the World Wide Web.
- Argumentation Services
  - Uses IBIS to keep track of the status issues, positions, and arguments
  - Providing ways to structure and visualize arguments
  - Some support for protocols and process, such as reminding participants of deadlines
- Zeno is open source, written in Java. There is a commercial version, called Dito, marketed by Ontopica ([www.ontopica.de](http://www.ontopica.de))



Home

User: Thomas F. Gordon

Log out

Online Users: 47

Users here: 1

5 Subscribed sections:

AG-Online-Med... ▶



RID 6181 ▶

## Integration der Ergebnisse

Created by mediator, 2002-05-19 21:19:33 | Modified by urottbeck, 2002-09-09 16:55:55

Hier werden die Ergebnisse der Dritten Runde zu beschlussfähigen Vorschlägen zusammengefasst. Die Summe der z.Zt. konkretisierten Fördervorschläge ist etwas höher als 25 Mio - deshalb, und weil leider noch nicht alle Zahlen genannt wurden, sind jetzt Rückfragen an einzelne nötig, für die ich wegen der knappen Zeit den Austausch per mail wähle. Den jeweiligen Stand erfahren Sie durch die Artikel unten. Ich bitte um Verständnis, dass ich diesen Bereich nur zum Lesen vorgesehen habe - es ist mir derzeit nicht möglich, weitere Vorschläge zu verarbeiten. Die Beiträge von Herrn Fischkopf sind jetzt erst in den Arbeitsgruppen eingegangen (ich hatte vergessen, sie für das Schreiben zu sperren); da zu befürchten ist, dass sie dort niemand mehr liest, habe ich sie hierhin kopiert.

Unser Zeitplan für die Beantragung der Fördergelder:

- 19. - 22.5. aktuelle Runde
- 22. - 26.5. Beschluss des Mediationskreises; Weitergabe der Ergebnisse an den Gemeinderat
- 28.5. Beschluss des Gemeinderats
- 29.5. die als zügig bekannte Sprottenborner Verwaltung schreibt den Antrag und schickt ihn ab

Bitte wählen Sie die [Themensicht](#)Die Abstimmung über die Ergebnisse findet in [Konsensbildung](#) statt.

↑  
Integration der  
Ergebnisse  
Contained Sections:  
None

Structure List Timeline Roles

### Topics

- Information zum Konflikt Seelenheil - Smart [1]   
by mediator

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- Förderanträge (*Werft und Hafen*) [6]   
by mediator | Reads: 2  
← re  Ergebnis der Rücksprachen Hafen und Werft kooperieren

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- Ergebnis der Rücksprachen Hafen und Werft kooperieren [9]   
by mediator  
→ re  Förderanträge

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- Hafen und Werft voran !!! [13]   
by fischkopf

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- Förderanträge (*Umwelt und Naturschutz*) [5]   
by mediator

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- Umwelt ganz vorn [14]   
by fischkopf

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- Förderanträge (*Verkehr*) [4]   
by mediator  
← re  Ergebnis der Rücksprachen Bus-Shuttle und innerörtl. Verkehr

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- Ergebnis der Rücksprachen Bus-Shuttle und innerörtl. Verkehr [7]   
by mediator  
→ re  Förderanträge

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- Förderanträge (*Ortsgestaltung*) [3]   
by mediator  
← re  Ergebnis der Rücksprachen Fachtagung / Vorbereitung weiterer Maßnahmen

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- Ergebnis der Rücksprachen Fachtagung / Vorbereitung weiterer Maßnahmen [8]   
by mediator  
→ re  Förderanträge

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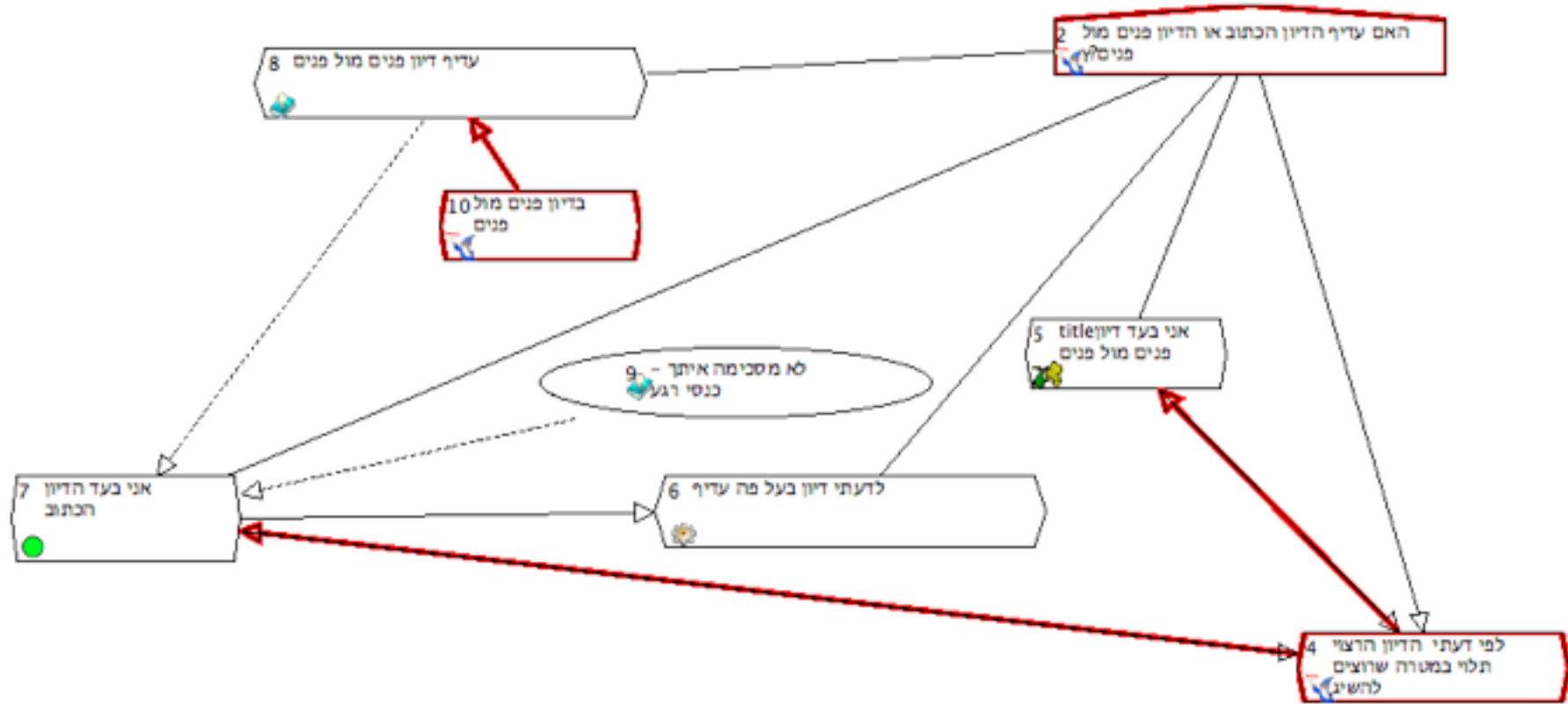
- Weiter so [12]   
by fischkopf

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- Förderanträge (*Kultur*) [2] 

Zoom (%) 80.0 A [Color] [Stroke] [Dash] [Arrow]

Marquee Information Argument Question Explanation Link Support Opposition



Floorcontrol Participants

Request... Take... M...

Common Cards Drafts Layer

2 | Question האם עדיף הדיון הכתוב או הדיון פנים מול פנים?

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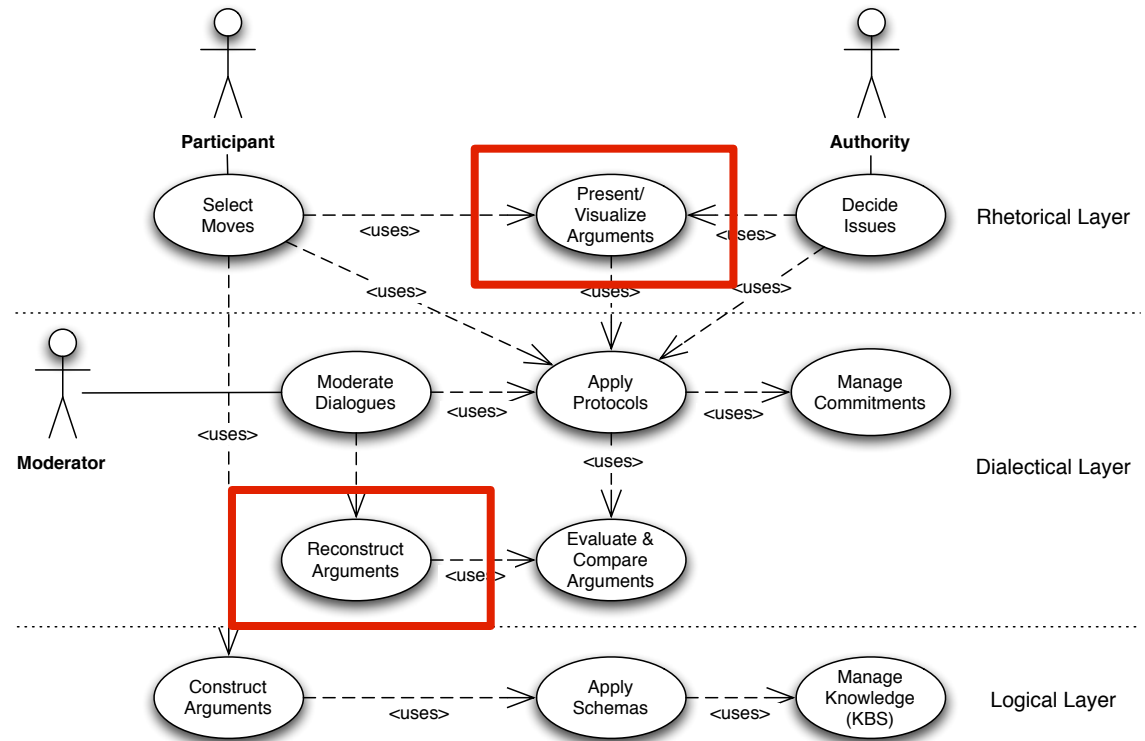
## ClaiMaker (2002)

- Web application for collaboratively creating and browsing argument maps of claims in scholarly documents.
- Developed by Simon Buckingham Shum in the ScholOnto project at the Knowledge Media Institute of the Open University, UK.
- Implemented in PHP.
- Includes a database of bibliographic information



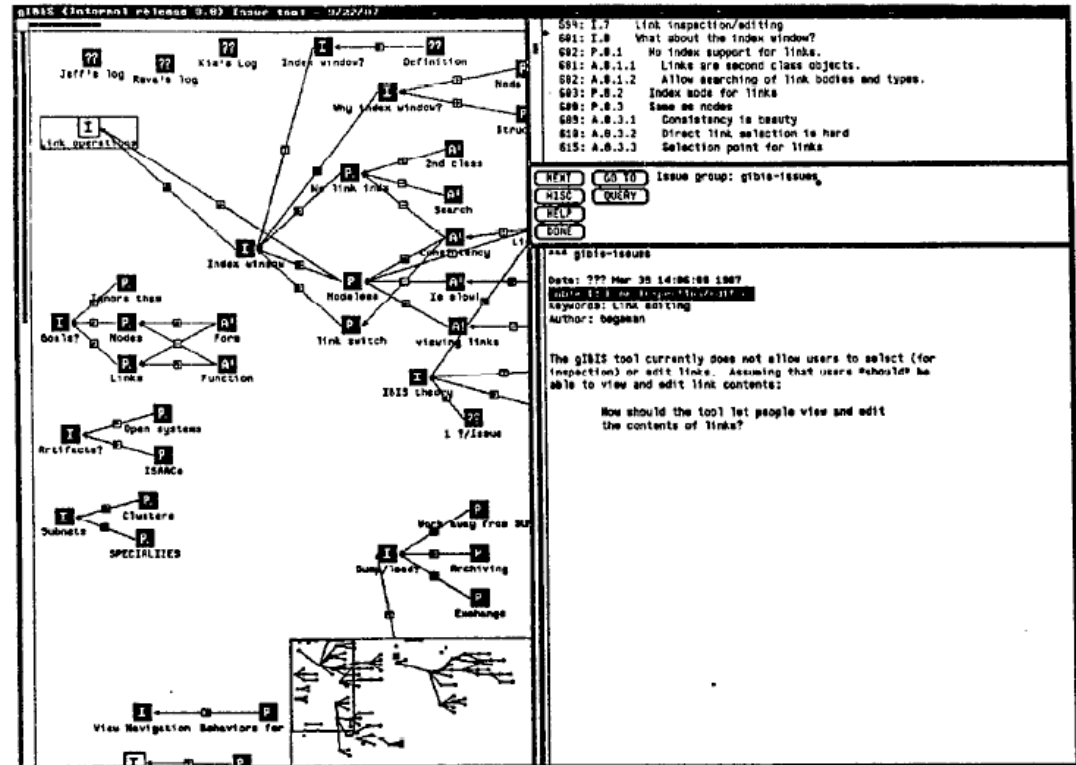
## Example Tools: Argument Reconstruction & Visualization

- gBIS
- Compendium
- Araucaria
- Rational
- ArguNet



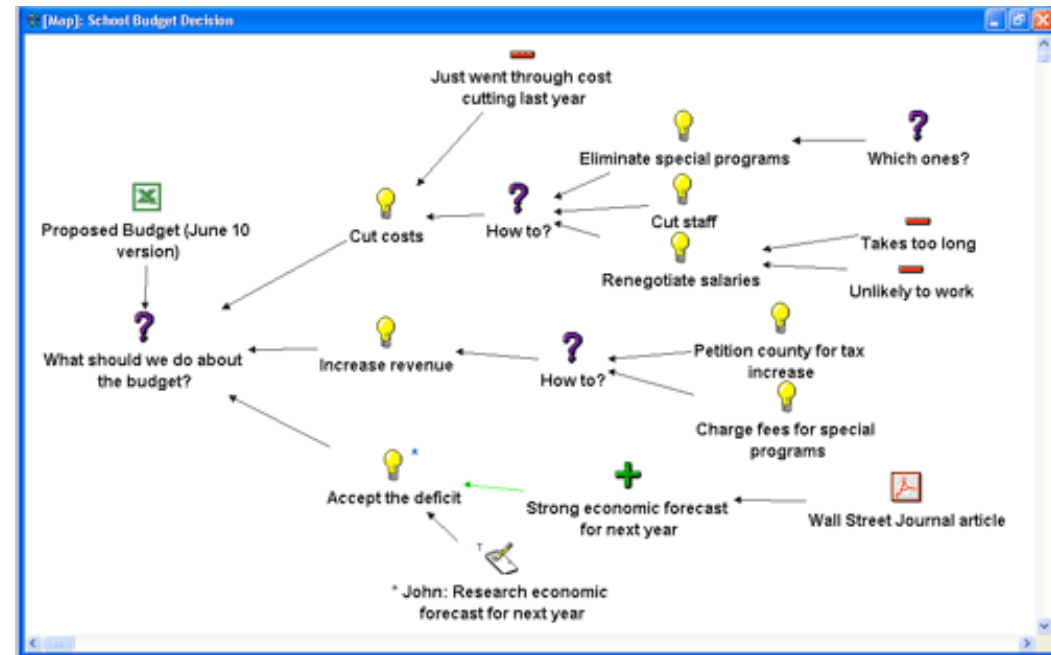
## gIBIS (Conklin & Begeman, 1988)

- One of the first software applications for diagramming arguments.
- Based on Rittel's IBIS model.
- Research prototype.
- Products based on gIBIS include
  - QuestMap
  - Compendium



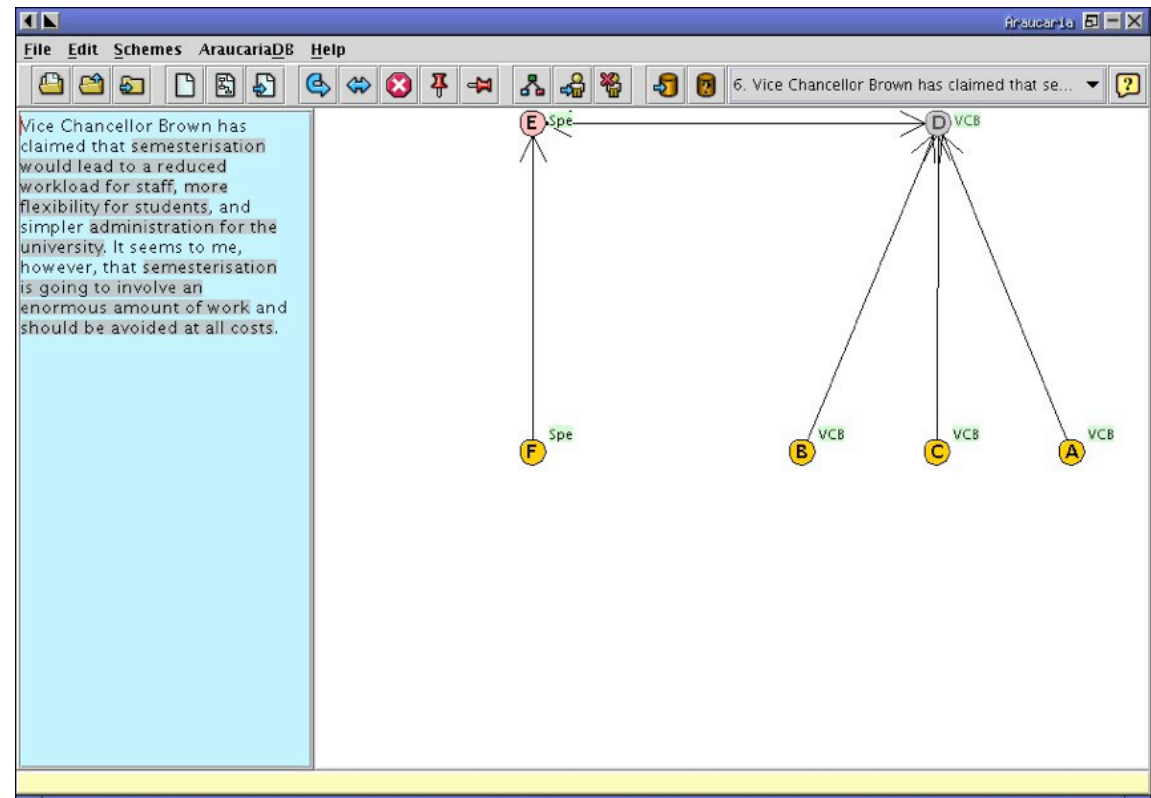
## Compendium (mid 1990s)

- Supports real-time argument visualization (“dialogue mapping”) in meeting rooms.
- Based on Rittel’s IBIS model of issues and arguments
- Successor of the QuestMap system
- Open Source software used by several consulting companies, such as the Cognexus Institute, directed by Jeff Conklin, the developer of gIBIS and QuestMap



## Araucaria (2001)

- Supports argument reconstruction and visualization
- Diagram types: Beardsley/Freeman, Toulmin and Wigmore
- Supports argumentation schemes.
- Stores arguments in XML using the Argument Markup Language (AML) DTD.
- Developed by G. W. A. Rowe, C. A. Reed and J. Katzav.
- Open Source, Implemented in Java

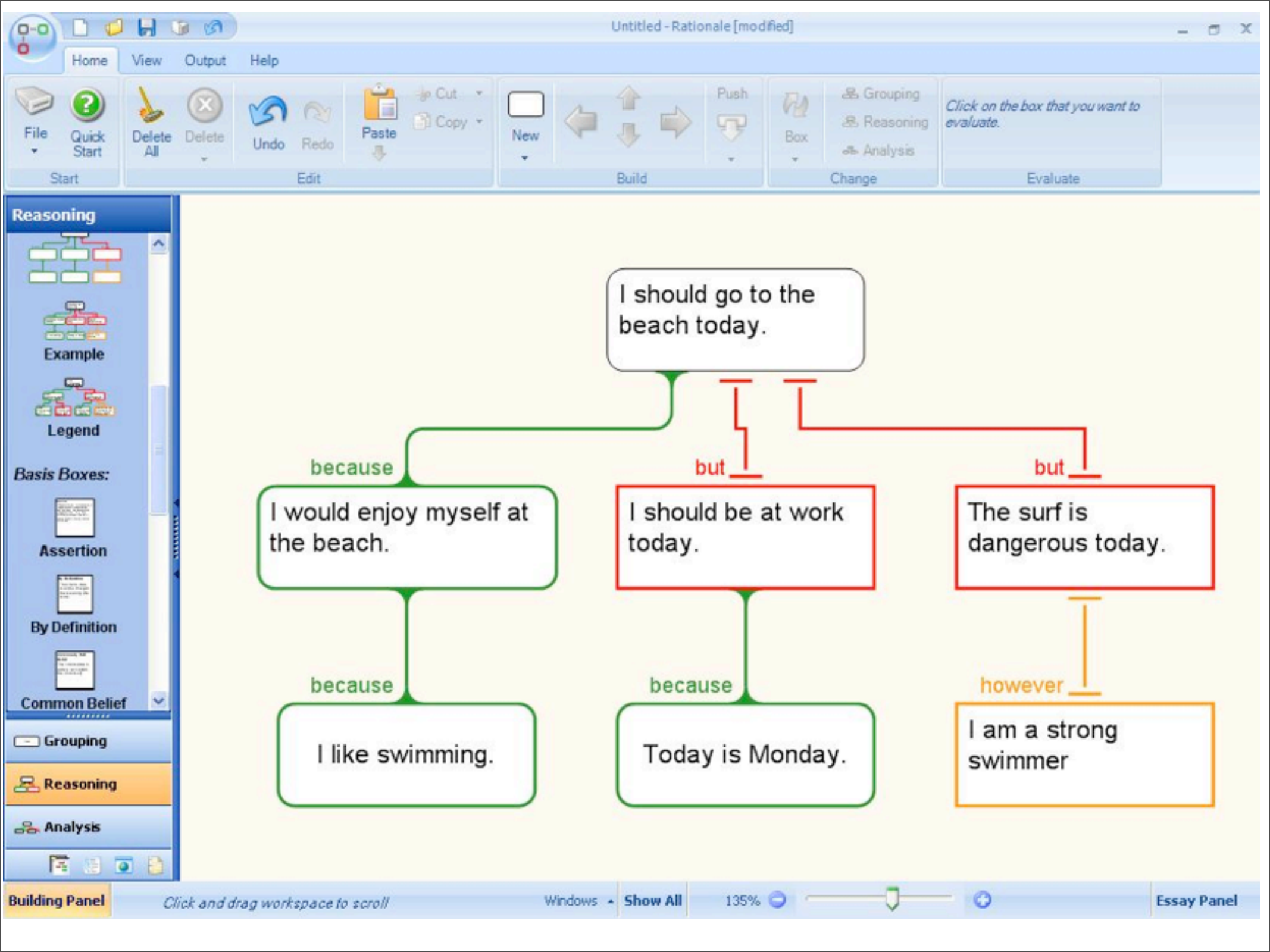


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## Rational (circa 2003)

- Commercial “Argument Mapping” product, by Austhink.
- Supports argument visualization (Beardsley/Freeman style)
- Argument evaluation is done manually, but with some system support.
- Designed by Tim van Gelder as successor to his “Reasonable!” system.
- Platform: A .Net application (Windows only).





File Quick Start Delete All Delete Undo Redo Paste Cut Copy New Build Change Evaluate

Click on the box that you want to evaluate.

Reasoning

Example

Legend

Basis Boxes:

Assertion

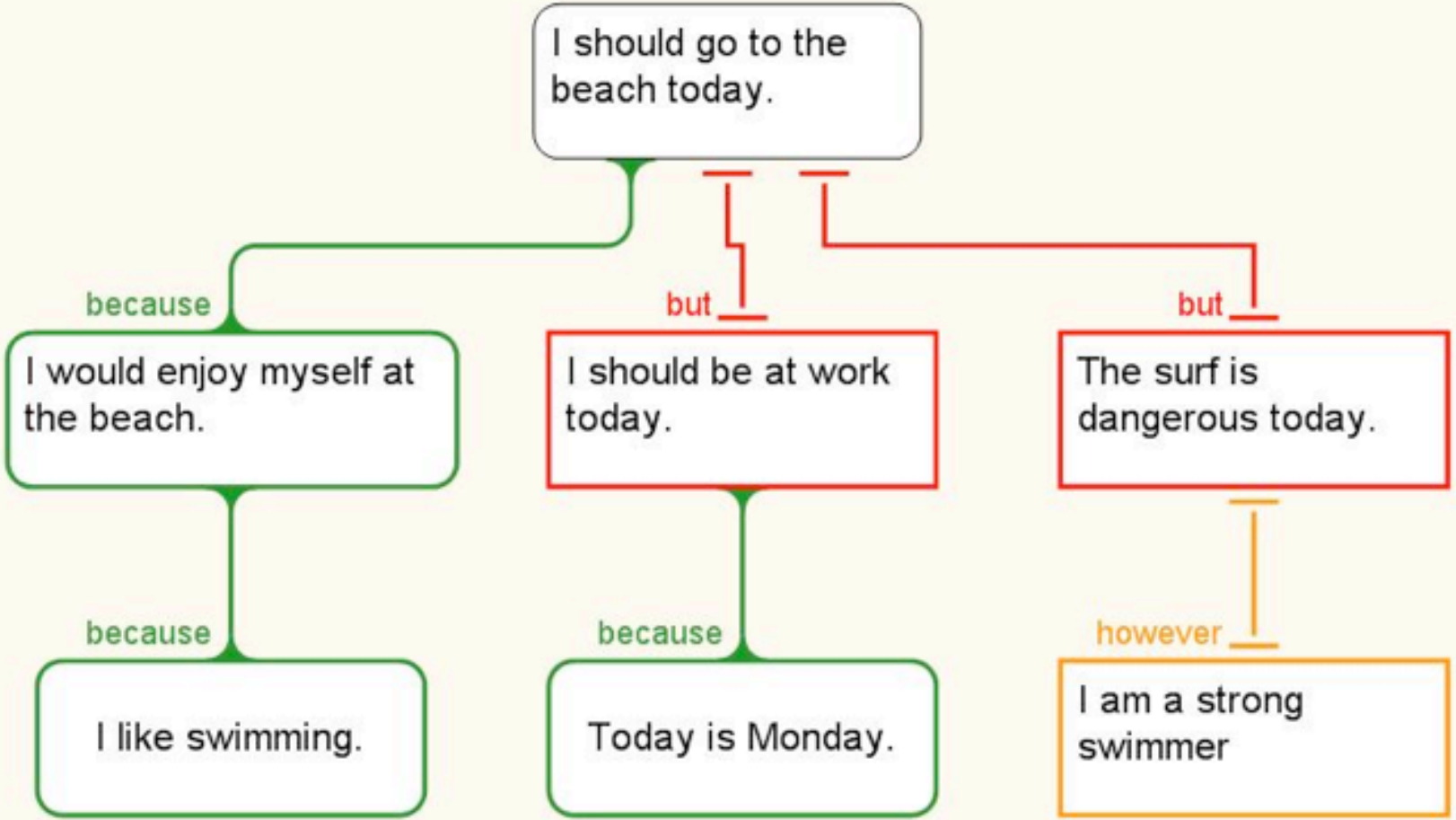
By Definition

Common Belief

Grouping

Reasoning

Analysis



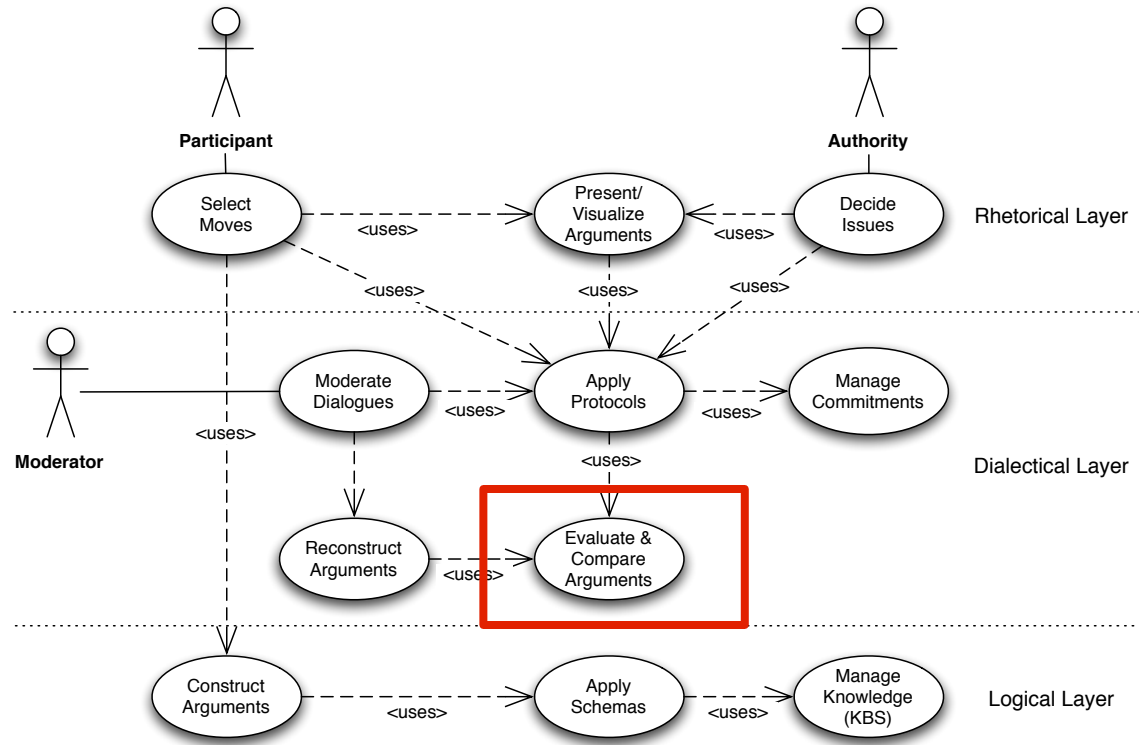
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## ArguNet (2006)

- A new Open Source argument visualization system developed in a project at the FU Berlin.
- Project Manager: Gregor Betz.
- Not much information yet available.
- See <http://www.argunet.org>

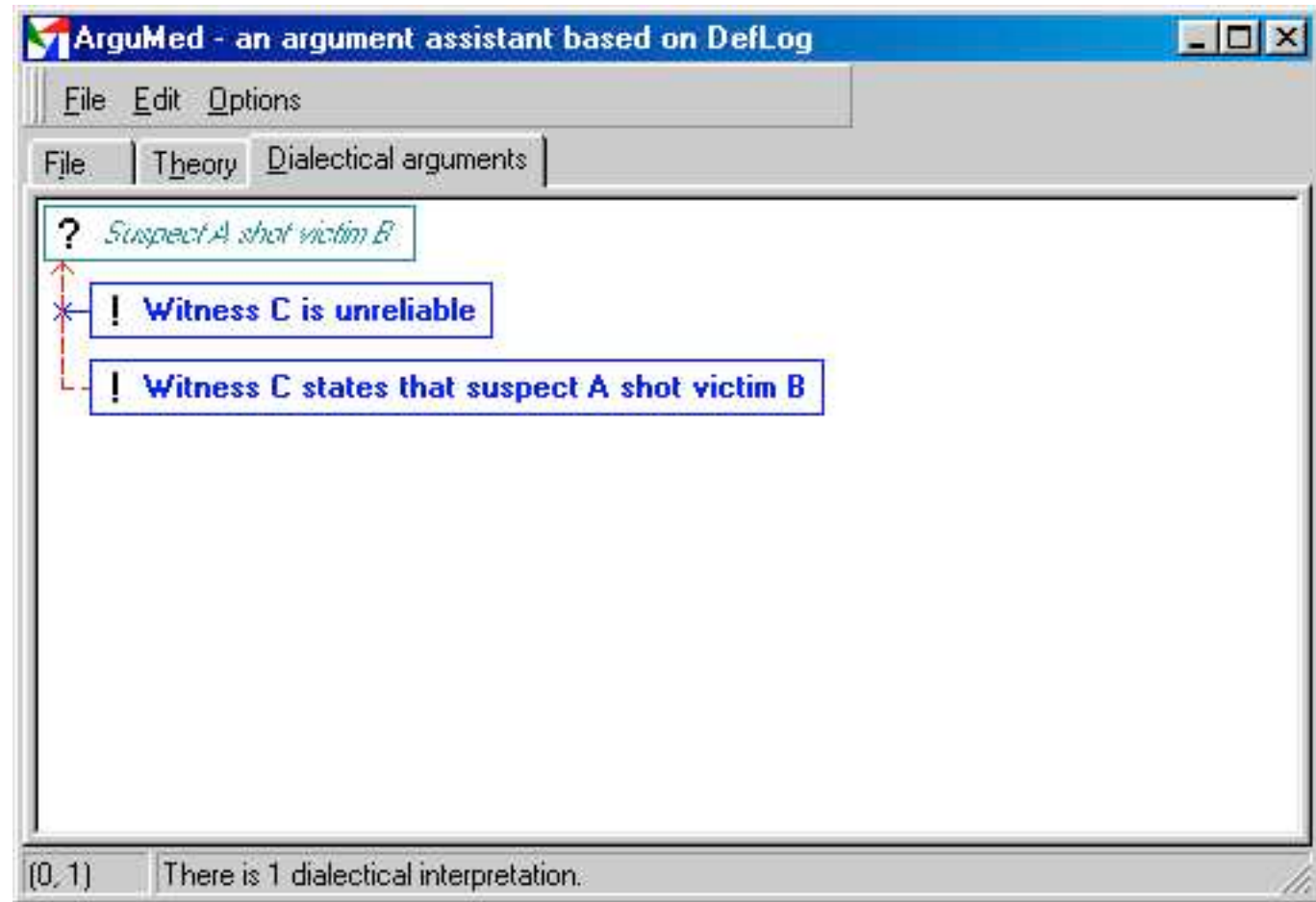


# Example Tools: Argument Evaluation



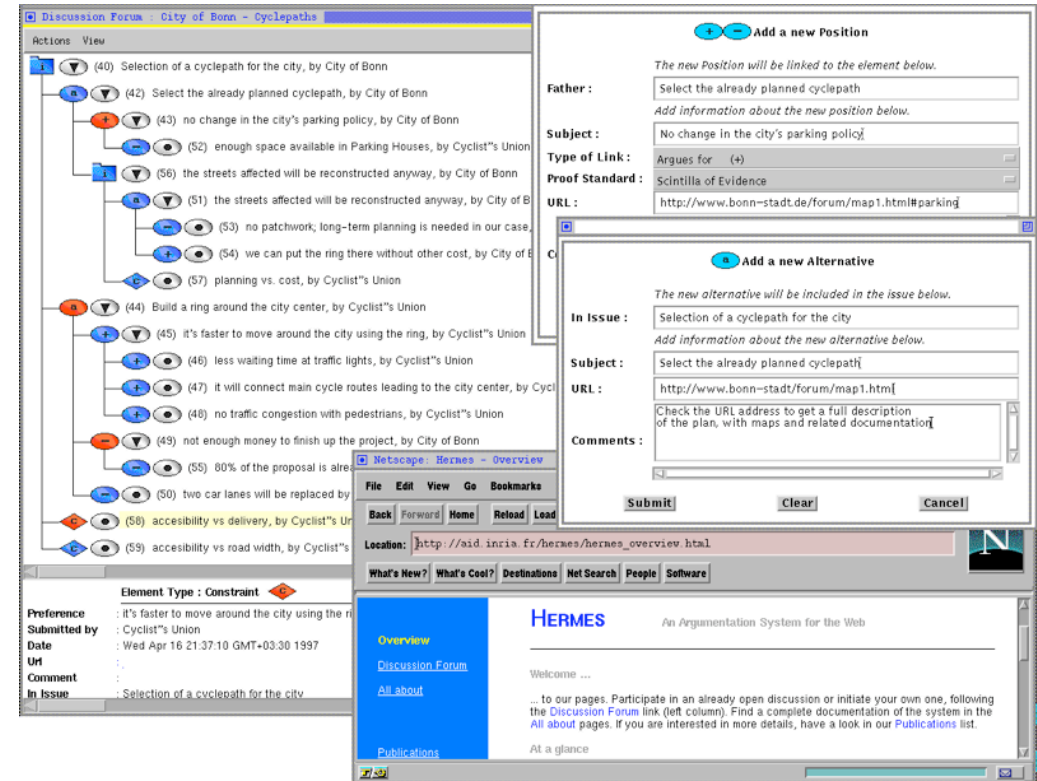
## ArguMed 3 (2001)

- Supports argument visualization and evaluation
- Semantics: DefLog
- Latest version: ArguMed 3 (2001).
- Research prototype, developed by Bart Verheij.
- Implemented in Delphi (Windows only)



## Hermes (2001)

- Supports argument visualization and evaluation
- Based on the Zeno Argumentation Framework (Gordon & Karacapilidis, 1997)
- Supports arguments about preferences, using proof standards
- Written in Java; runs as an applet on the web.
- Designed and implemented by Nikos Karacapilidis and Dimitris Papadias



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## Conclusions

- Argumentation reconstruction and visualization have received the most attention.
  - Conversely, support for other argumentation tasks, is still quite weak and not out of the research and prototype stage.
  - No system exists yet, not even research prototypes, which support all argumentation tasks in an integrated way.
-