Towards a Semantic Web Testbed for Collaborative Policy Development

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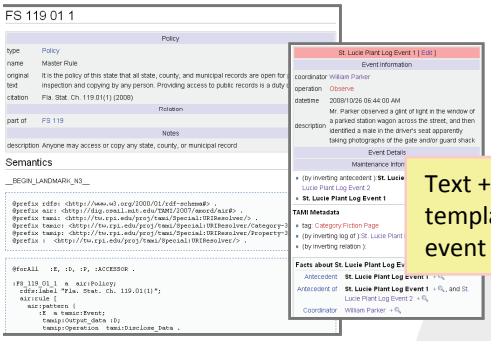
Background

We aim to improve accountability of distributed data usage by creating tools to support collaborative online development of scenarios and policy infrastructure. Within the context of the Transparent Accountable Datamining Initiative (TAMI) , we are developing a semantic wiki-based testbed that interacts with a rule language, its associated reasoner and related justification UI, and multiple browsers; and includes scenario data that embodies real world requirements to our policy infrastructure.

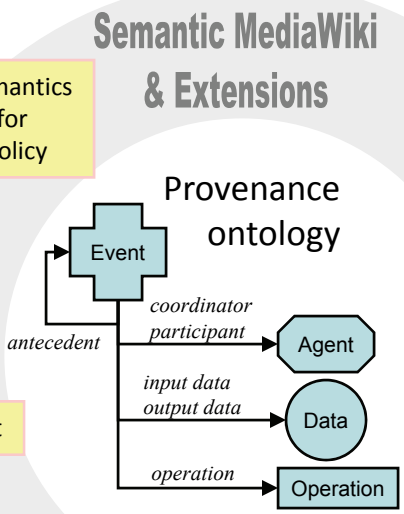
Requirements

Collaborative policy and privacy projects may benefit from a testbed infrastructure that can:

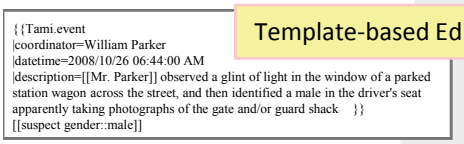
- ❑ support distributed scenario development
- ❑ support balance between text (latent semantics) and semantic annotations (explicit semantics)
- ❑ synchronize the text version and the Semantic Web version of scenario data upon change
- ❑ help users effectively browse, locate and debug scenario data using annotated semantics
- ❑ be adaptive to new privacy and policy scenarios



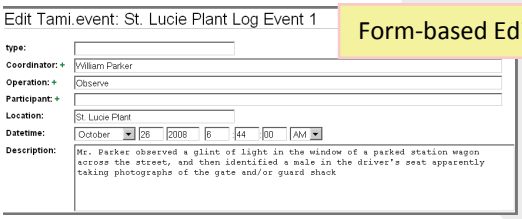
Text + semantics template for event & policy



SMW Browse



Template-based Edit



Form-based Edit

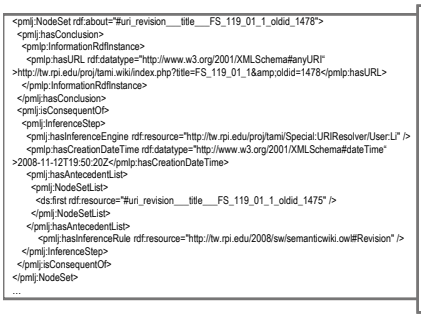
Tabulator-based Browse

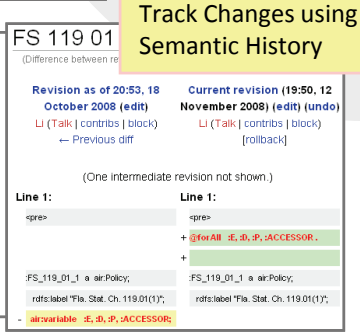
Browse by semantic query results

List of Events

	Datetime	Coordinator	Operation	Participant	Input data	Output data	Antecedent
St. Lucie Plant Log Event 1	26 October 2008 06:44	William Parker	Observe				St. Lucie Plant Log Event 1
St. Lucie Plant Log Event 2	26 October 2008 06:50	William Parker	Compile Data		FPL Security Policy 3-1	IMAGE 293-1 IMAGE 293-2 St. Lucie Plant Incident Report 293	St. Lucie Plant Log Event 1 St. Lucie Plant Log Event 2
St. Lucie Plant Log Event 3	26 October 2008 06:52	William Parker	Disclose Data	Port St. Lucie Police Department			St. Lucie Plant Log Event 2 St. Lucie Plant Log Event 3

Track Changes using Semantic History





Technical Highlights

- ❑ Semantic Wiki-based online collaborative environment
- ❑ Ontology driven semantic templates and forms
- ❑ Semantically-enhanced browsing of scenario data
- ❑ Enhanced options for publishing semantic content
- ❑ Hypothetical testing support via semantic history

Conclusions & Future Work

- ❑Our testbed is suitable for hosting evolving TAMI scenario data
- ❑Future work will add policy editing and management functionality

References
[1] Daniel J. Weitzner, Hal Abelson, Tim Berners-Lee, Chris P. Hanson, Jim Hendler, Lalana Kagal, Deborah L. McGuinness, Gerald J. Sussman, K. Krasnow Waterman. **Transparent Accountable Data Mining: New Strategies for Privacy Protection** Proceedings of AAAI Spring Symposium on The Semantic Web meets eGovernment, 2008
[2] Lalana Kagal, Chris Hanson, Daniel Weitzner, **Integrated Policy Explanations via Dependency Tracking**, IEEE Policy 2008.

demo: http://tw.rpi.edu/proj/tami/

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