

TMQL –

Topic Map Query Language

A New ISO Standards Initiative

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in Cooperation with TopicMaps.Org

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- “Make Topic Maps Operational”
- “SQL for Topic Maps”
- “Backbone of Global Knowledge Interchange”

Overview

- Motivation
- Usecases
- Modular, Extensible ...
- Requirements
- Architecture
- Development process
- What's next?

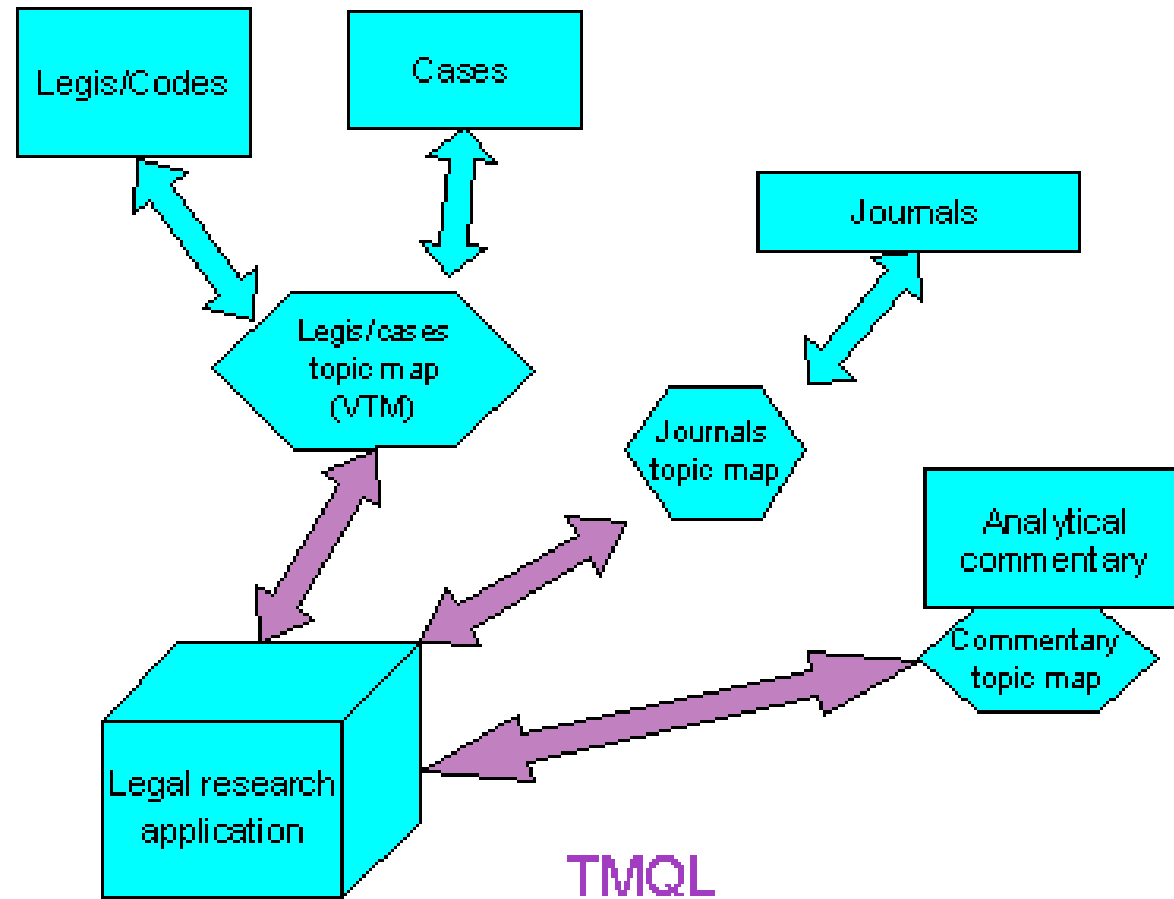
Motivation

- ISO TM & XTM define interchange syntax, conceptual model, and processing model
- Make TMs operational in terms of
 - querying
 - create/update
 - generic API in order to ensure interoperation between TM applications
 - views across several TMs
- SQL and XML query languages are not appropriate

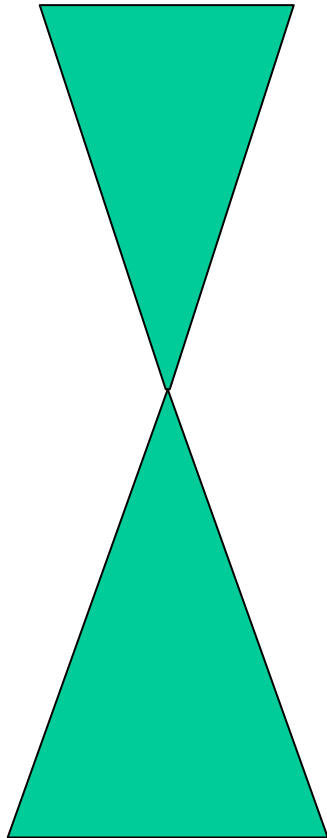
Usecases

- Legal information research
- Job seeker agency

Usecase: Legal Research



Usecase: Legal Research cont'd

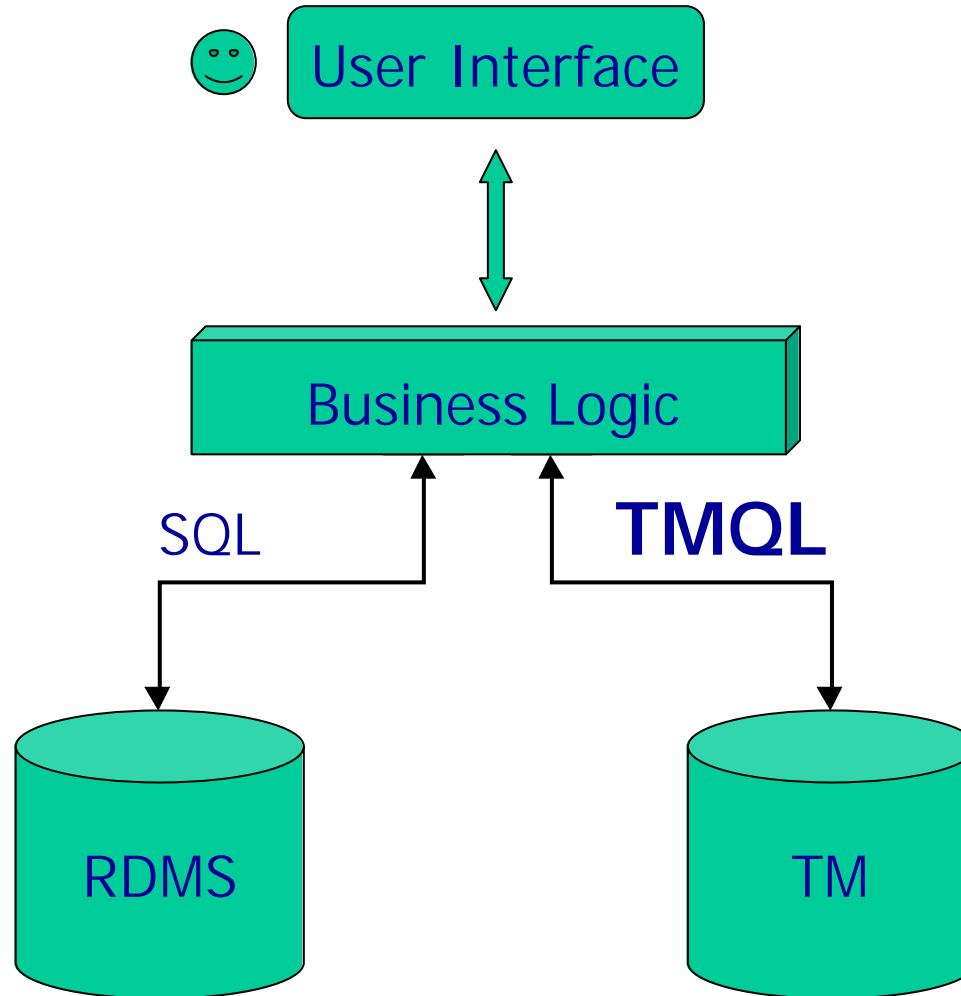


- Query: find topics in commentary which relate to corporate mergers
- Query: using this, find relevant cases; then restrict to those involving holding companies undergoing a hostile takeover, after 1995

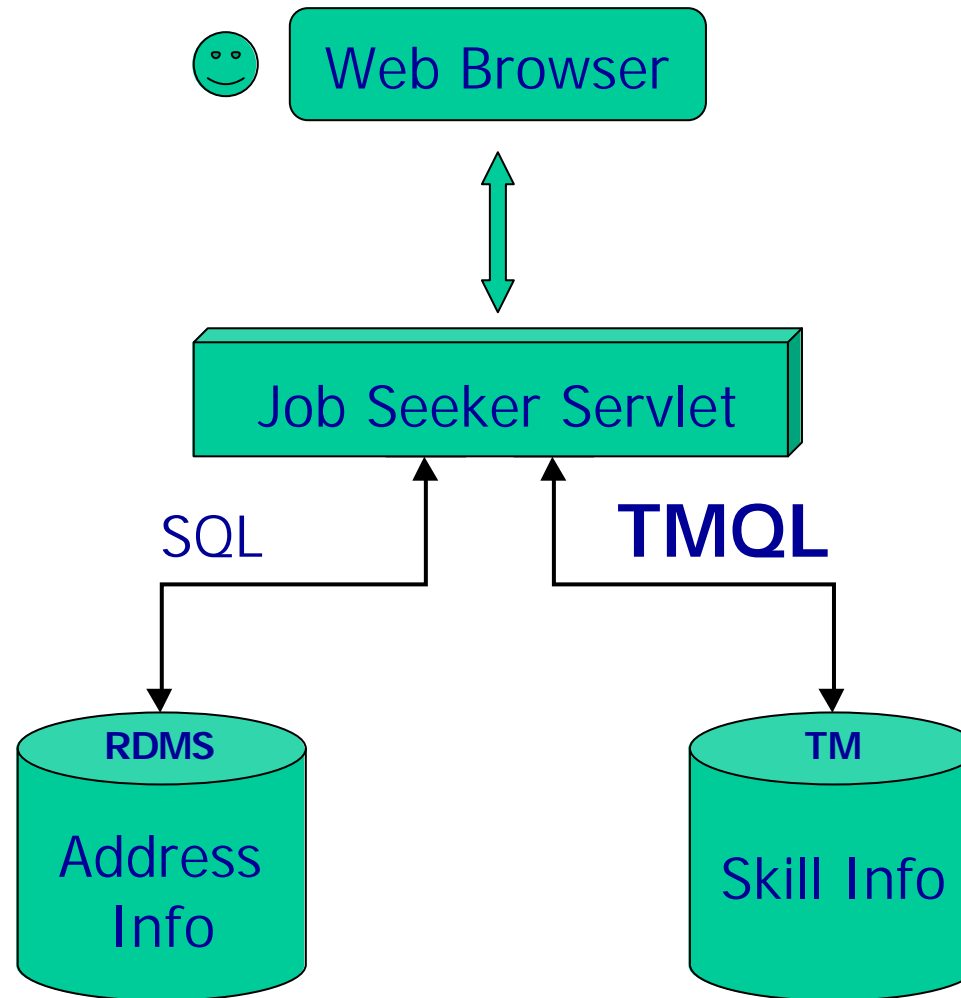
Usecase: Legal Research cont'd

- Query: selecting one of these cases, find all legislation cited in opinions given
- Query: find all cases which went to appeal, which involved any of these points of law
- Query: for one of these cases, find all occurrences (reports and discussions) in a range of sources, eg law reports, journals, analytical works online (a query using several topic maps)

Usecase: Job Seeker Agency



Usecase: Job Seeker Agency cont'd



Usecase: Job Seeker Agency cont'd

- Query TM:
Find job seeker with certain skills
- Update TM:
Add new job seeker – its name and skills

Demo ...

- TMQL Query (early draft syntax, SQL-like):

```
SELECT topic x WHERE  
x instance_of topic named "Job seeker"  
AND  
assoctemp y named "Person is skilled in"  
AND  
x in (assoc template_is y) has topic named "Java  
programming"  
AND  
x in (assoc template_is y) has topic named "German -  
fluent"
```

- Topic map “**mechanics**” and “**drivers**”
 - **Drivers** protected from breaking the topic map
 - ◆ Retrieve, add, modify, delete information held in the topic map
 - **Mechanics** can create “broken” states, can mend “broken” topic map
 - ◆ Read, add, modify, delete any topic map component
- These are levels or parts of TMQL

- Further levels/parts for higher-level representations ("**traffic control**")
 - Application profiles
 - Supporting KR encoding eg inference rules
 - Constraints ensuring computability for queries based on topic map template/schema structures
 - Not part of TMQL "core"
 - ◆ Later development
 - ◆ Who will build them?

TMQL Requirements

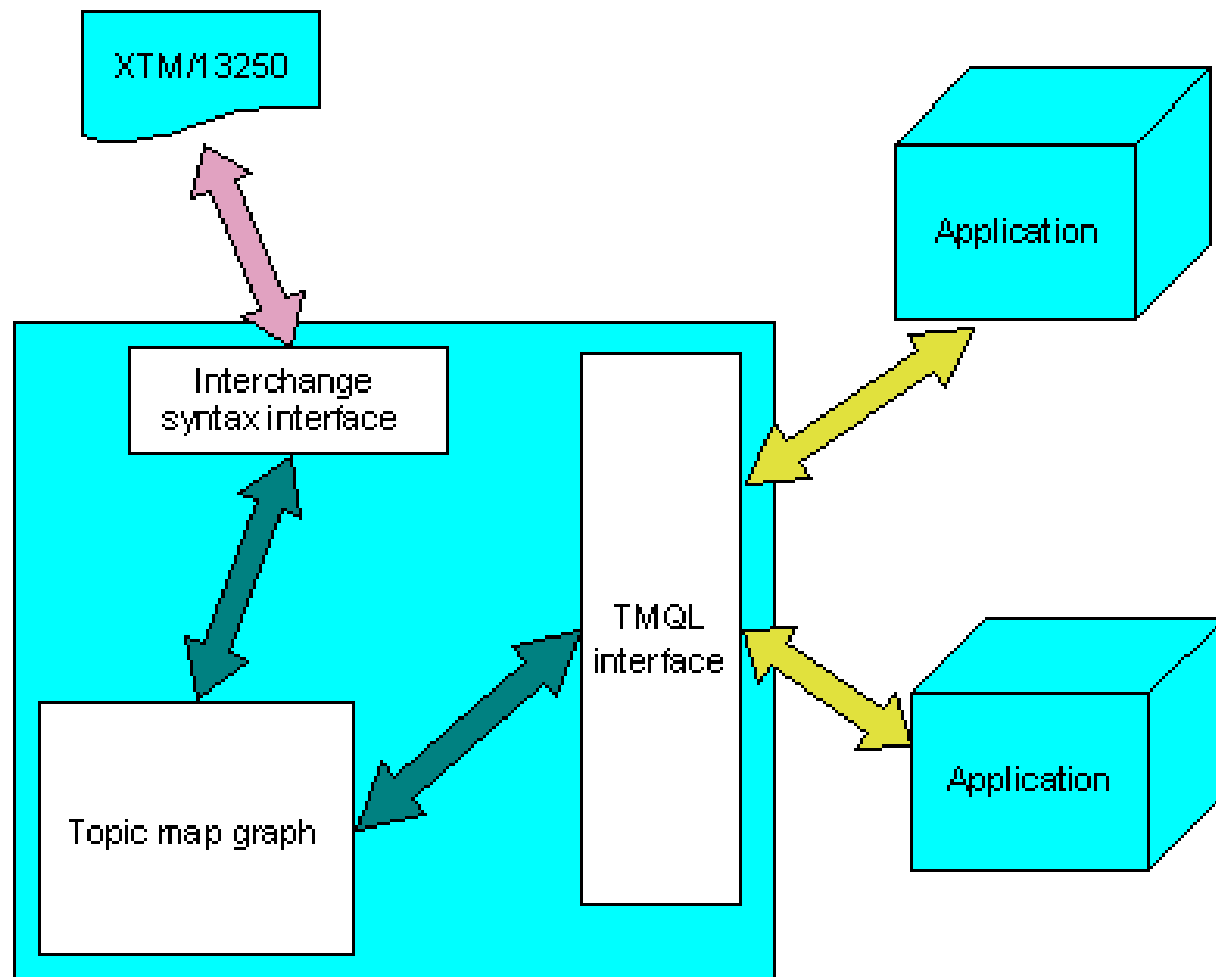
- Requirements document now in draft 0.7
- Operations on the information content of a topic map
 - Information integrity constraints
 - Adding information
 - Removing information
 - Retrieving information

- Operations on the detailed structure of a topic map
 - Transaction requirements
 - Reference data model
 - Model integrity properties
- Conformance
 - Expressed as operations on the reference data model
 - Other approaches to be evaluated
 - ◆ eg using result as output in a canonical form, for easy validation in a test suite

TMQL Non-Requirements (Out of Scope for TMQL)

- Human-computer interface
- Any specific infrastructure or implementation requirements
- Integrity or meaningfulness of information held in the topic map
- Establishment of a topic map graph from a topic map in an interchange syntax

Architecture and TMQL System Context



Development Process

- Start: Dec 2000
- Reqs analysis (work in progress)
- Liaison between SC34 and TopicMaps.Org (2001/03/03)
- Reference data model
- Definition of operations for mechanics and drivers
- Framework for application profiles
- First draft by end of 2001 (our strong hope)

Open TMQL Mailing List:

<http://groups.yahoo.com/group/tmql-wg>

We are waiting for your input!

Join us today (Tuesday) at
7:00 pm at GCA desk
for a TMOQL ad hoc nocturne