



SimDB/SimDAP joint meeting

Baltimore INTEROP
26-31 October 2008



Objectives of this additional session

- Many thanks to be there !
 - Additional thanks to Matthew who permits the session permutation
 - Special thanks to Christophe to have organized this meeting
- Reinforce the core team for SimDB to properly address cross-WG issues
- SimDB concept digest presentation with highlights on cross-WG aspects
- A few words on the recommendation process
 - *Standing Committee on Standards and Processes* WG meeting yesterday

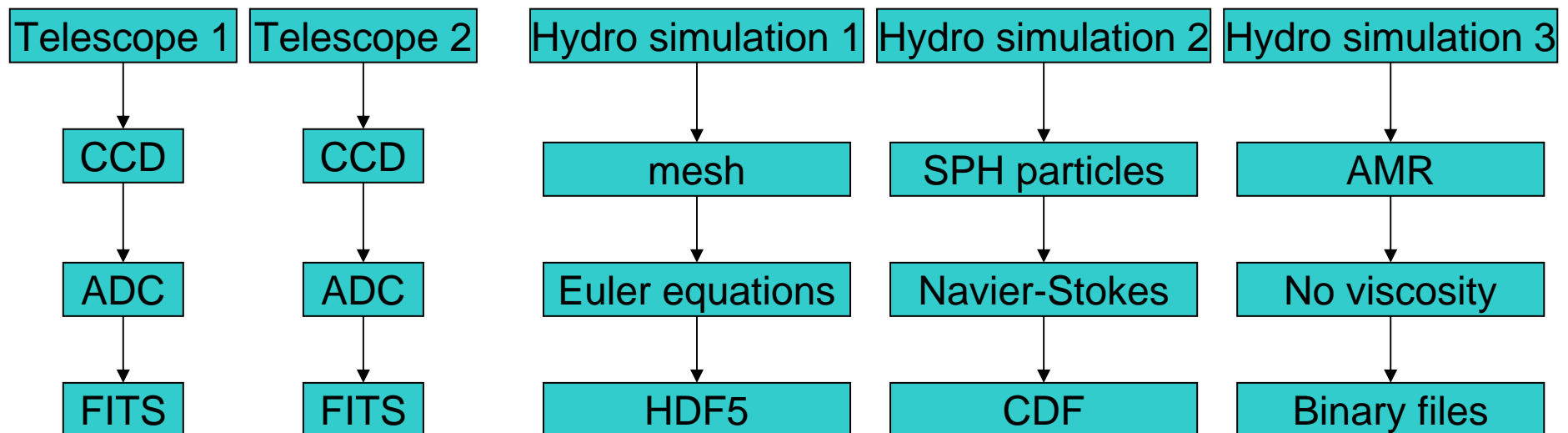


The 3D+Time simulated world...

- 3D Simulation products are called 'snapshots' (series of)
 - Much more complex than observational results with no standard data storage format (no FITS)
 - But less 'permanent' than observations (no long term archiving)
- Timely activity
 - New instrument/survey preparation phase for strategy tradeoff
 - After, for interpretation
- Two dominant production modes
 - Large collaborative consortia using SC produces Tb of data
 - Individuals too.
- Effort to make available data worldwide:
 - GAVO (Millenium etc.), CADAC, iTVO, Horizon,...

Diversity...

- The nature (physical assumptions, algorithms etc.), data format and data volume of theoretical data being so different from one experiment to another, need to find services able to handle them specifically
 - ⇒ services expected to manipulate the data (cf. SimDAP service)
 - ⇒ need to discover some of those services too





Why a dedicated standard to access data and metadata

■ Typical queries for discovery

- Very different from observation

 - No 'named' objects but defined by their properties

- Much more complex queries

- Example

 - investigate whether observed structures in X-ray cluster that seem to indicate turbulence, can truly be that.

 - Query: return all hydro-dynamical simulations of galaxy clusters of mass at least $10^{14} M_{\odot}$, that have a model for viscosity included in the simulation. Moreover, return only those simulations that have associated to them an online visualisation service that can produce projected temperature and pressure maps.

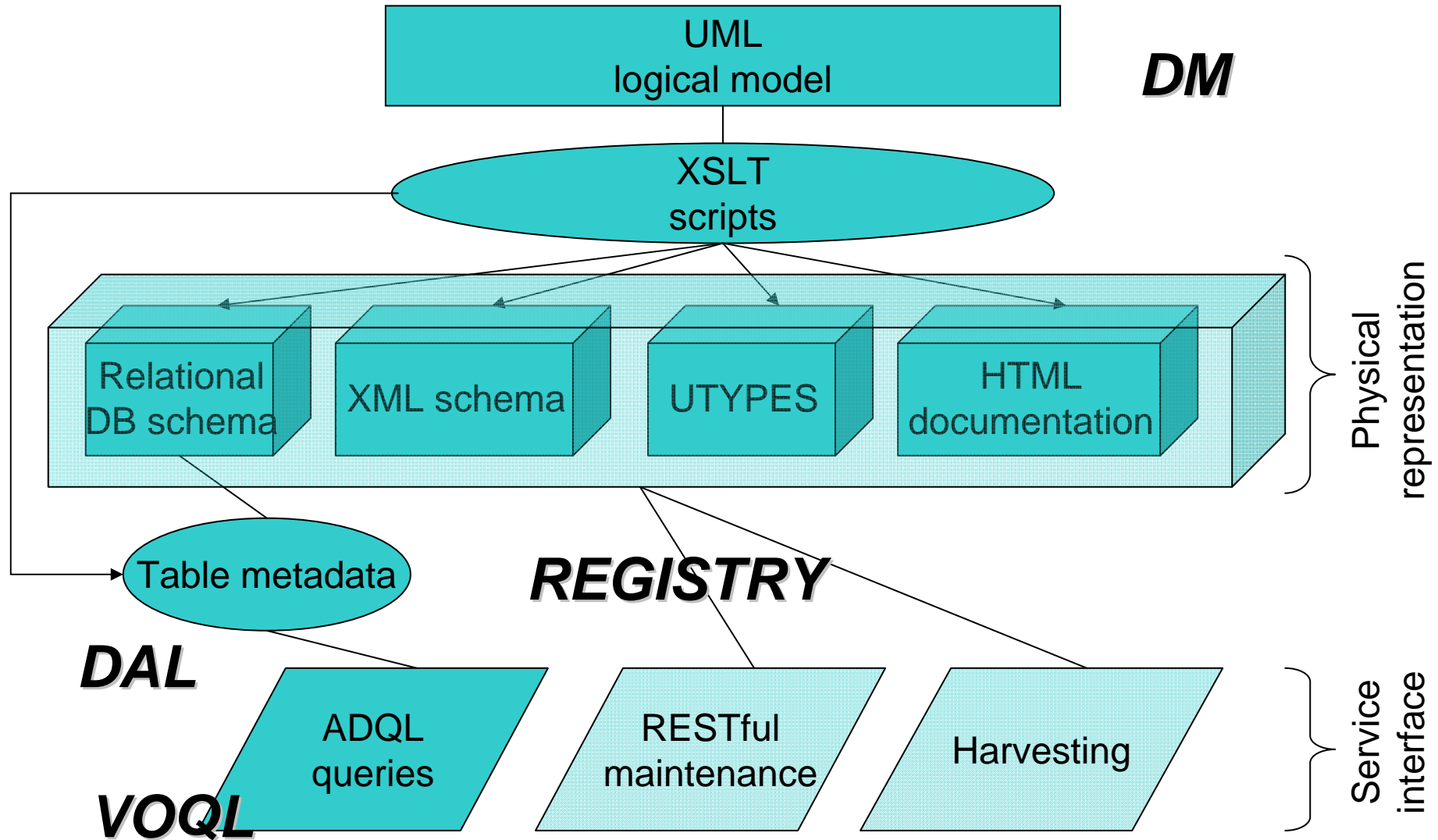
■ Dedicated services



What is SimDB

- SimDB = query part of the former SNAP
 - A Data Model describing simulations
 - + a service specific for querying a database populated with objects based on the data model
- Permits description of
 - The **protocol**: a piece of software (Enzo, Gadge, halo finders, etc.)
 - The **experiment**: the process of running a piece of software with a set of input parameters (i.e., Simulation or the 'Run')
 - **Snapshot**: results of the simulation at some point in time. Could be in files or a database.
 - The minimum information on the resources (services) that handle the data
 - ...
- More fine grained than a Registry and fine tuned for typical queries

SimDB content





SimDB additional features that deserves attention

- Only a few instance of SimDB implementation
- Use of semantics in the DM **Semantics**
- <https://volute.googlecode.com/svn/trunk/projects/theory/snapdm>
 - SVN
 - Collaborative platform



What does TIG need ?

- inputs from affected WGs on the current state and further development of SimDB
 - Early inputs, well before the RFC
 - Ensure similarity with/ and reuse of/ other VO works
 - Need to have representative of all affected WG
- Ask some people from other WG to be involved in writing/editing SimDB proposal:
 - DM: Mireille ; Semantics: Norman
- Who is currently involved in writing the Notes?
 - SimDB: G. Lemson, L. Bourges, R. Wagner, P. Manzato
 - + M. Louys, N. Gray
 - + ?????????? **Suggestions**
 - SimDAP: C. Gheller, R. Wagner, G. Lemson



Recommendation process: pro/cons

Solution	Advantages	Disadvantages
Under the auspice of 1 WG (DM or Registry for instance)	Fit in IVOA rules	How to handle the multi-WG nature? Comments from other WG at TCG review (very too late)
Turn TIG into TWG	Fit in IVOA rules Permit future evolution of std and/or development of new ones	Interaction w/ WG only during the RFC (too late) Observation-Theory interoperability
Divide SimDB into SimDB/DM + SimDB/Services	Fit in IVOA rules	Do not solve interaction issues: semantics (for DM), DAL, Registry etc... (for Services)
Create a specific focused group with promotion privileges	Could be the group that developed SimDB	Need a special EXEC agreement
Under the auspices of 2 or 3 WG (at least DM, Registry and maybe Semantics) 1 WG formally responsible for promotion	Fit in IVOA rules WG discussion in parallel to save time Avoid split of SimDB in several pieces	