NVO Data Models

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Slide title

- Bullet 1
- Bullet 2
- And so on
  - More details
  - Go here
  - Until you are done

DM Working Group

- Chair – Jonathan McDowell
- US active members: Brian Thomas, Ed Shaya, Tom McGlynn, Ray Plante, Arnold Rots; UCDs: Roy Williams
- UK: David Giaretta, David Berry, Norman Gray
- AVO: Mireille Louys, Alberto Micol, Pierre Didelon; UCDs: Sebastien Derriere
- GAVO: Gerard Lemson

DM Overview

- Requirement: data fusion across wavebands and subdisciplines
- Requirement: complicated queries with well defined meanings on very different archives
- Problem: Same kind of data represented in many different ways (format and structure)
- Approach: Data Modelling. Define standard descriptions – what is a spectrum? - at abstract level first, then map to software.

DM Implementation

- Will implement abstract definition in two ways:
- (1) Serialization for data interchange – how do we structure the files (XML, etc.)? How does a data provider describe what they have to the VO at the data product level?
- (2) Implementation as software classes – what is the subroutine interface for VO applications? What is our common language of concepts (software objects) ? What basic operations does the VO know to perform on data?

DM Process

- IVOA Interop (May, Oct): Established WG, agreed process
- Deliverables per model:
  - White paper (description)
  - UML class diagram (definition)
  - XML schema (serialization)
- Interface with DAL WG for serialization
- Work on email list, then circulate as IVOA Working Draft

DM Activities

- Quantity (Data container) model – working draft in progress
- Observation metadata model – working draft in progress
- Spectral data model – discussions underway
- Interferometry, Transforms, etc.

High level object: Observation

- Coverage: where, when, waveband
- Quantity: what the data is
- Calibrations: sensitivity, etc.
- Curation
- Represents image or spectrum (1 Quantity)
- Represents Event list (table of Quantities)
- Simple source catalog (table of Quantities)

Low level object: Quantity

- Array (e.g. Image) or Scalar (e.g. keyword)
- UCD: What phenomenon
- Data type, dimensions, unit
- Axes and coordinates
- Accuracy: Errors, Quality, Resolution

Example model