NVO Data Models

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CfA
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