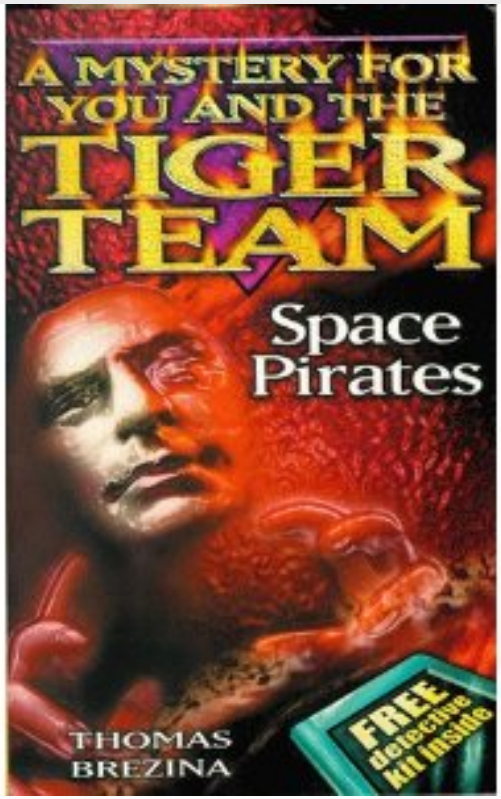
VIRTUAL ASTRONOMICAL OBSERVATORY

Utypes Tiger Team Status

Omar Laurino
SAO/VAO

A good mistery



WHAT ARE UTYPES FOR?!

Tiger Team mandate

- Collect Use Cases
- Study current usage of Utypes
  - Are they used in a meaningful way?
  - Assess impact of changes to existing standards
- Develop a standard

Tiger Team mandate

- Collect Use Cases **-> This talk**
- Study current usage of Utypes
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Tiger Team mandate

- Collect Use Cases
- Study current usage of Utypes **-> Matthew's talk**
  - Are they used in a meaningful way?
  - Assess impact of changes to existing standards
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Tiger Team mandate

- Collect Use Cases
- Study current usage of Utypes
  - Are they used in a meaningful way?
  - Assess impact of changes to existing standards
- Develop a standard **-> Gerard's talk (presented by Markus) will present a possible solution.**

General Status

- Team officially appointed by Exec in July
- Had five telecons so far
- Producing two documents:
  - Current Usages
  - Actual Standard (preceded by list of Use Cases)
    - Collection and Prioritization of Use Cases and Requirements
    - Evaluating possible solutions (currently SimDM's approach) against Use Cases and Requirements

Use Cases

- We tried to process and refine Use Cases collected in Urbana-Champaign, after discussion and prioritization.
- Use cases are necessarily abstract, since we are designing a framework which is supposed to enable a number of possible concrete use cases.
- We try to take into account some representative concrete use cases, but we cannot limit ourselves to those.

Use Cases

- (De)Serialization of Data Models
  - Utypes are part of the serialization strategy of Data Models: thus, they need to be put in the more general context of a consistent Data Modeling process.
  - Lossy (VOTable, FITS, etc.) and Lossless (XML) formats? the vast majority of simple access protocols implementations doesn't implement XML. Can you apply this concept to the TAP services?
  - Are DMs graphs or trees? If they are graphs (like STC, PhotDM, SimDM) then utypes cannot be unique identifiers of DM elements (two different utypes may point to the same element).

Use Cases

- Trivial round-tripping (a simple format conversion of a compliant file should save compliancy)
  - This is currently impossible (e.g. try converting a spectrum from FITS to VOTable using topcat, stilts or any other model-agnostic tool)

- Two main opinions:
  1. Each DM defines a different format that only model-aware clients can understand.
  2. We should make model-unaware manipulation possible

- Concrete cases:
  - SED
  - Users work with TOPCAT!

Use Cases

- Possible use cases enabled in the long run
  - **VO-Importer**: Given a non-compliant file and a list of DM descriptions, the user is guided through the process of rendering it compliant by mapping columns to DM fields.
  - **VO-Publisher**: Given a DB and a list of DM descriptions, a data provider is guided through the process of creating compliant DAL services by mapping tables and columns to DM fields.
  - **Object-oriented queries**:
    - SELECT PhotometryPoint p FROM ivo://provider/service WHERE p.target.name like '3C273' and p.spectralaxis.value BETWEEN 10 AND 15

- Data Models descriptions:
  - Reuse of DMs, extensibility, description and documentation of DMs, self-generated schemata, etc…

More information

Utypes Tiger Team wiki page

Goals for this week

- Report back on the work done:
  - This session
- Open discussion:
  - Tue @14.00

Thank you!