TDIG / Apps Session

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Chairs & Vice-chairs
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Introduction to the session

- Time Series related topics
  - Data Model status
  - Description of time metadata in VOTable
  - Implementation and usage
  - Connecting space coverage to time coverage
- VOEvents related topics
  - Registry: how to discover VOEvents services and streams?

Time Series Data Model

- What to expect from a Time Series Data model?
- What are the dependancies and why?
- What is the status of those dependancies?
- Are there shortcuts?

What (I think) a Time Series DM could eventually do

- **The IDEA in mind**: An **ideal time viewer** should be able to connect:
- sources,
- images,
- spectra,
- measurements,
- …
- and a model describing the data and the relations could help doing so

What (I think) a Time Series DM could eventually do

- **The IDEA in mind**:
- Display measurements as a function of time
- In complex datasets identify what's varying with time and what is not
- Simultaneously visualise the catalogue positions in the sky
- Navigate through any image available through VO + users
- Show the photometric information around any source of interest
  - As a function of time (light-curve viewer)
  - As a function of wavelength (photometric-viewer)

Time Series Data Model
Dependancies and status

- **CubeDM**
  - describes the sparse nature of a time cube (e.g. data points, light-curves, spectra, images, …
- **CharacterizationDM**
  - describes the parameter space of observed data to facilitate discovery (e.g. bounds in wavelength, sky location, …)
- **PhotDM**
  - photometric system
- **MeasureDM**
  - Defining the nature of any measurement
- **CoordinatesDM**
  - describing coordinate system

See Victoria 2018 presentation if you want to know more details on the model

Time Series Data Model
Dependancies and status

Working Draft
- **CubeDM**
  - describes the sparse nature of a time cube (e.g. data points, light-curves, spectra, images, …

Recommendation
- **CharacterizationDM**
  - describes the parameter space of observed data to facilitate discovery (e.g. bounds in wavelength, sky location, …)

Recommendation
- **PhotDM**
  - photometric system

Working Draft
- **MeasureDM**
  - Defining the nature of any measurement

Working Draft
- **CoordinatesDM**
  - describing coordinate system

Time Series Data Model
Dependancies and status

- **But… my data are light curves!**
  - Do I have to use all these data models as they currently are?
- **Are there shortcuts?**
  - **Yes!** You don’t need to import all the elements of a model to create a new one
  - The TimeSeriesDM will only use some of the elements you might be interested in:
    - Photometry
    - Positions
    - Time
  - Describe only the elements of interest — this reduces a lot! And this is how data models need to be understood

Time Series Data Model
Dependancies and status

- **But I want it now!**
  - Patience…
  - Participate in the revision of the documents ! Or you risk the result wont meet your expectations…
  - and meanwhile take a close look at:
    - **TIMESYS**
      - Metadata on VOTable1.4 to describe TIMESYS
      - Services implementations of VOTable 1.4 (VizieR beta, DacHS)
      - Clients: VOTable 1.4 (Aladin proto, STILT, STILTS, TOPCAT)
      - Validator: votlint
    - **STMOC**
      - Coverage of space and time of catalogues and image collections
      - Note:

- **OK, what next?**
  - Stay tuned !