

# Model Status: coords, meas, trans

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May 5, 2020

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# Coordinates

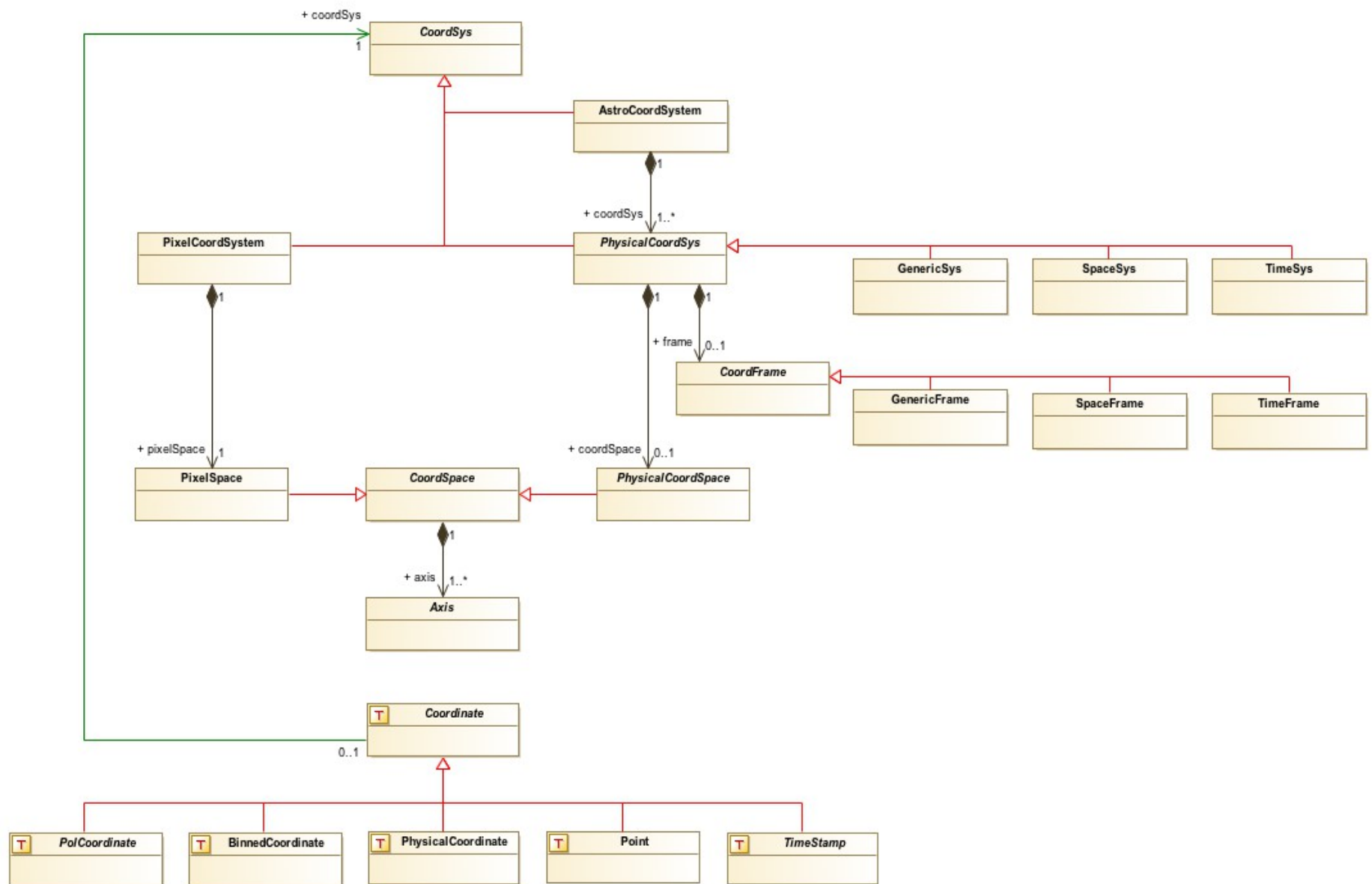
## Roadmap – Factor in RFC comments

- Restore element combining CoordFrame + CoordSpace to support Transform requirements (CoordSys)
- Trickle-down effect of this on overall design

## Status

- Model updates completed
- Documentation updated
- Example suite updated





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# Measurement

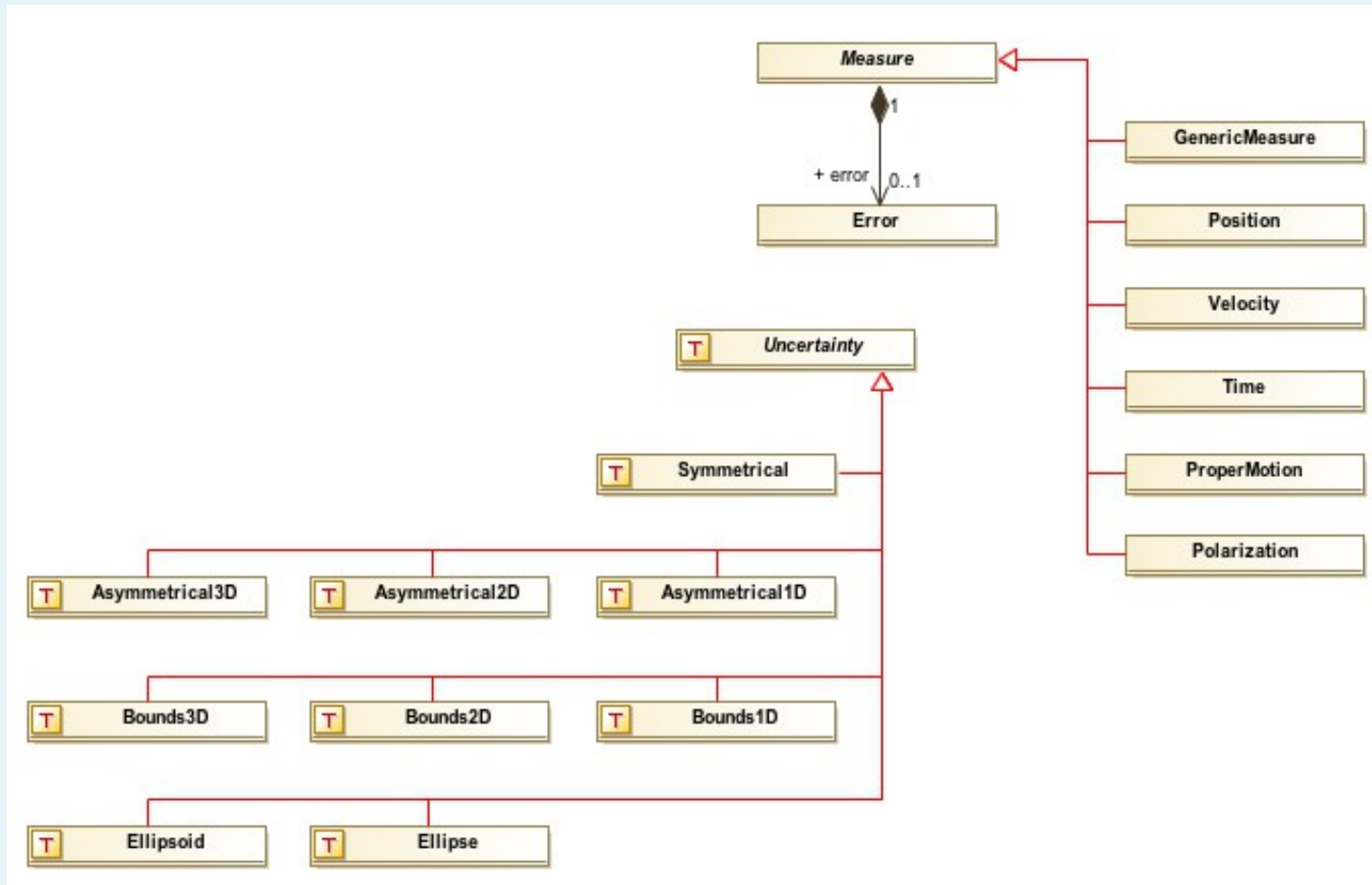
## Roadmap – Factor in RFC comments

- Adjust for Coords model changes
- Remove Frame specific position types
- Drop 'random' error
- Reduce Uncertainty types; clarifying text

## Status

- Model updates completed
- Documentation updated
- Example suite update in progress





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# Meas/Coords Wrap-up

- Minimal content achieved?
  - Starting to get cyclical suggestions, to add elements rejected from earlier versions..
- Would like to freeze structural content..
  - Allow descriptive enhancements
  - Further object modifications based new requirements from usage projects.



# Usage Projects

- CubeDM: N-dimensional cube datasets
  - Initial driver for the STC model revamp
- TDIG: TimeSeries project
  - Utilizing CubeDM, PhotDM, Meas, Coords
  - Exploring annotation mechanism
  - <https://wiki.ivoa.net/twiki/bin/view/IVOA/InterOpMay2020TDIG#LightCurves>
- CABMSD: Source Catalogs - [Friday, May 8 @ 6:00 UTC](#)
  - Utilizing Meas, PhotDM
- Science based 'utility' applications – **NEEDED!!!**
  - PyVO: `extract_skycoord_from_votable()`
  - Informs annotation discussion

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# Transform

- Requested update
  - add elements to relate Mappings to the associated Coordinate Systems
- Working group list item
  - vo-dml validity of element composing it's parent, or sibling.
- Modification of forward/inverse handling
  - Dedicated Mapping type for explicit spec. of both
- Status
  - These are under review by the author list to assess compatibility with target implementations.





# Transform Project

Exercise to pass WCS instances between AST and gWCS

- Have a set of example mapping threads from very simple to moderately complex, which exercise the various elements
- Serialization base is YAML (ASDF) format

Status

- Assessing impact of model changes; having regular telecons to cover questions and topics of concern
- Discussing options for annotating to the model.

Highlights uncertainty regarding HOW to use datamodels in this context.



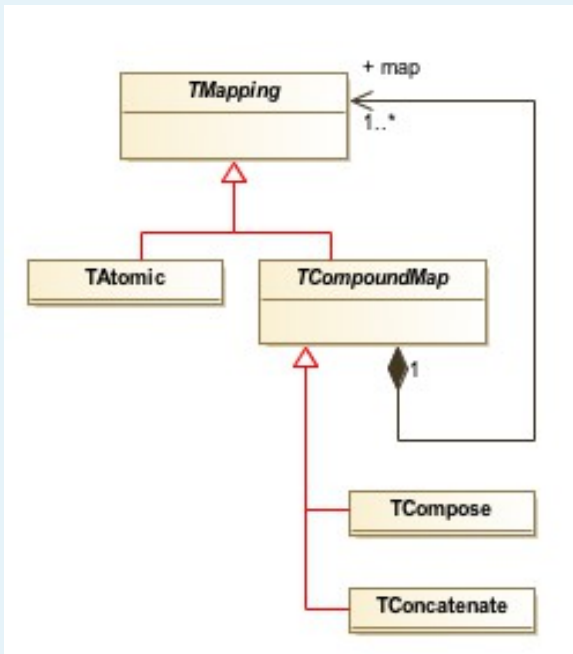
# Topic Transition

- How to use DM in serialization context?
  - Follow-up from Laurent's presentation earlier.



# Model Interpretation

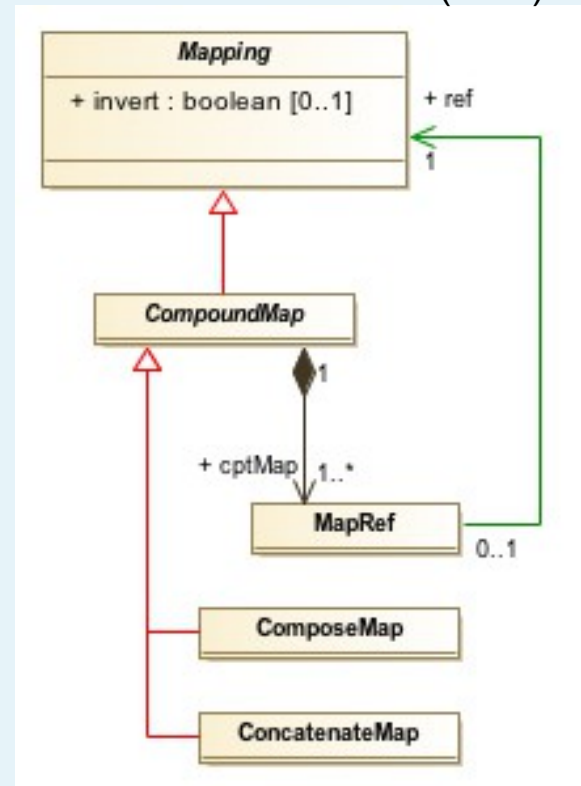
Transform: 2019-04-12



vo-dml  
compliance



Transform: 2020-04-01 (draft)



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# Model Interpretation

VO-DML compliant representation is correct, and has cases where that structure is necessary.

But, data products will typically look like the 2019 version.

Creates Questions:

- Do serializations need to adjust to look like model? (NO)
- Do annotations need to include all elements? This is hard to do unless the local model == IVOA model
- Can annotations 'short cut'? Putting work on clients to bridge layers.. creates validation issue.
- What constitutes a 'valid' implementation?



# Utility Projects

Application projects to exercise thread snippets pulled from science priorities:

- Seems to be good agreement that this would be very useful to get buy-in from the community, and to inform the annotation discussion by trying various schemes.
- BUT, who is going to do this? Volunteers are not lining up.
- Examples
  - PyVO: VOTable → SkyCoord
  - 'epoch' slider: Find/apply Position + ProperMotion
  - Passing WCS instances



# Thoughts

- How explicit do models and annotation need to be?
  - Does every Position need a unique type?  
Or can vo-dml ID + UCD suffice?  
( tag=meas:Position ucd=pos.eq )
- Annotation within the scope of a 'native' serialization only works if local model == ivoa model. So, can we make firm statement that annotation is an external addition?
  - TimeSeries project experience?

