STC 2 Status
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Work since last IVOA Interop

- We reworked the design and the division into separate models

- In parallel with STC application in the Cube Model

- Close interaction between model development and application implementation

- Concentrating on three models

- One model done, the other two close to completion

STC2 Models

- 1. Coordinate systems, frames, and values

- 2. Coordinate measures
  Dependency on (1)
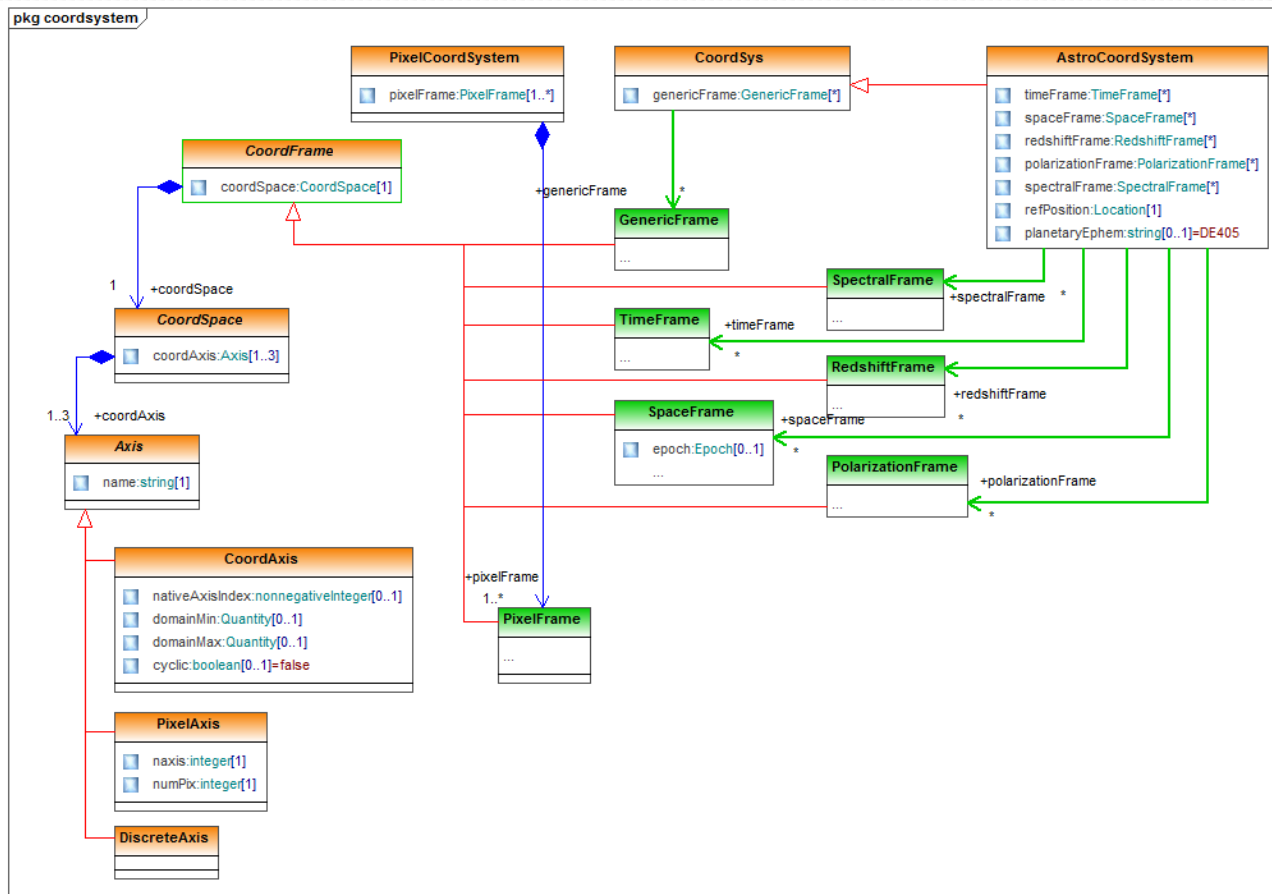
- 3. Transformations
  Dependency on (1)

Color Coding

- Orange boxes are classes
- Yellow boxes are data types
- Red lines are generalizations
- Green lines are associations
- Blue lines are compositions
- Red boxes are elements from a different model that serve as parent elements in the present model
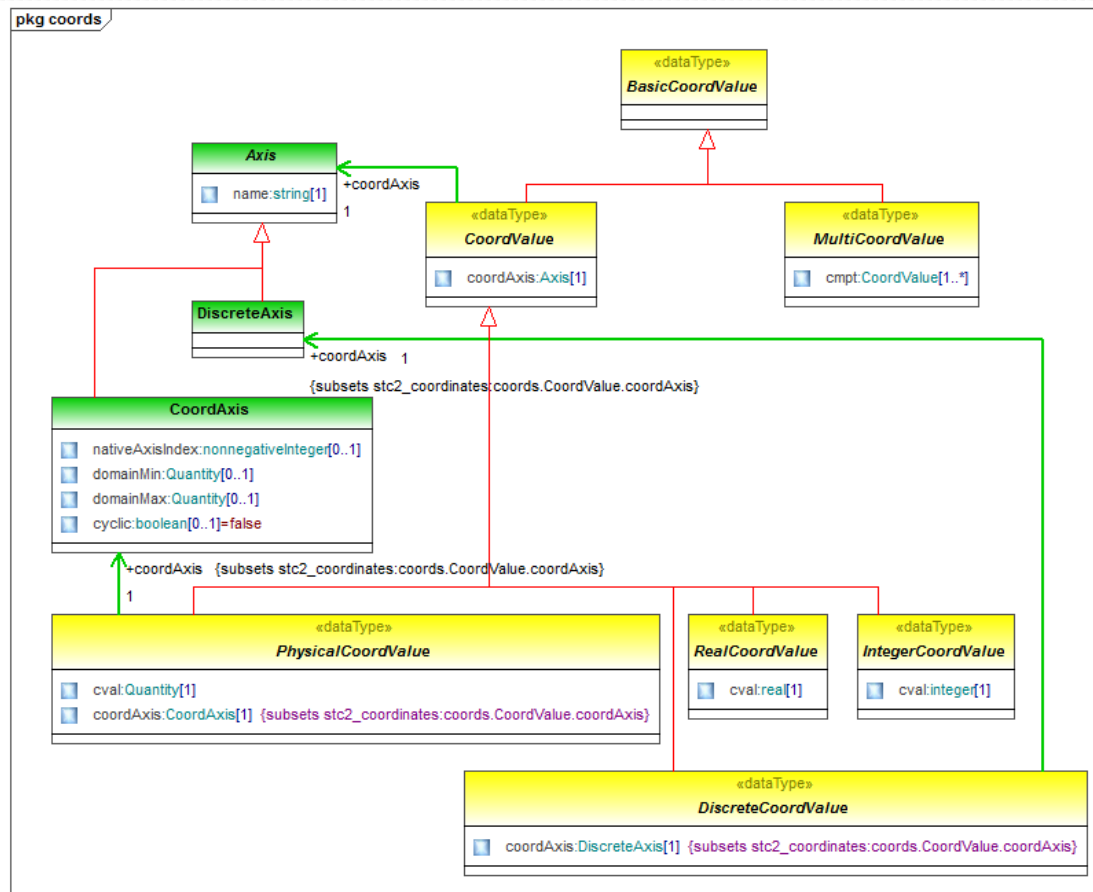- Green boxes are elements from a different model that are associated with elements in the current model

Coordinate Systems, Frames, Values

- A coordinate value is associated with:
- A coordinate axis, one or more of which make up:
- A coordinate space, which has also a flavor and is part of:
- A coordinate frame

  Coordinate value, and associated axis, space, and frame, all belong to a specific coordinate domain
  Related coordinate frames are associated with each other in:

- A coordinate system, which contains item common to all frames such as reference position and solar system ephemeris

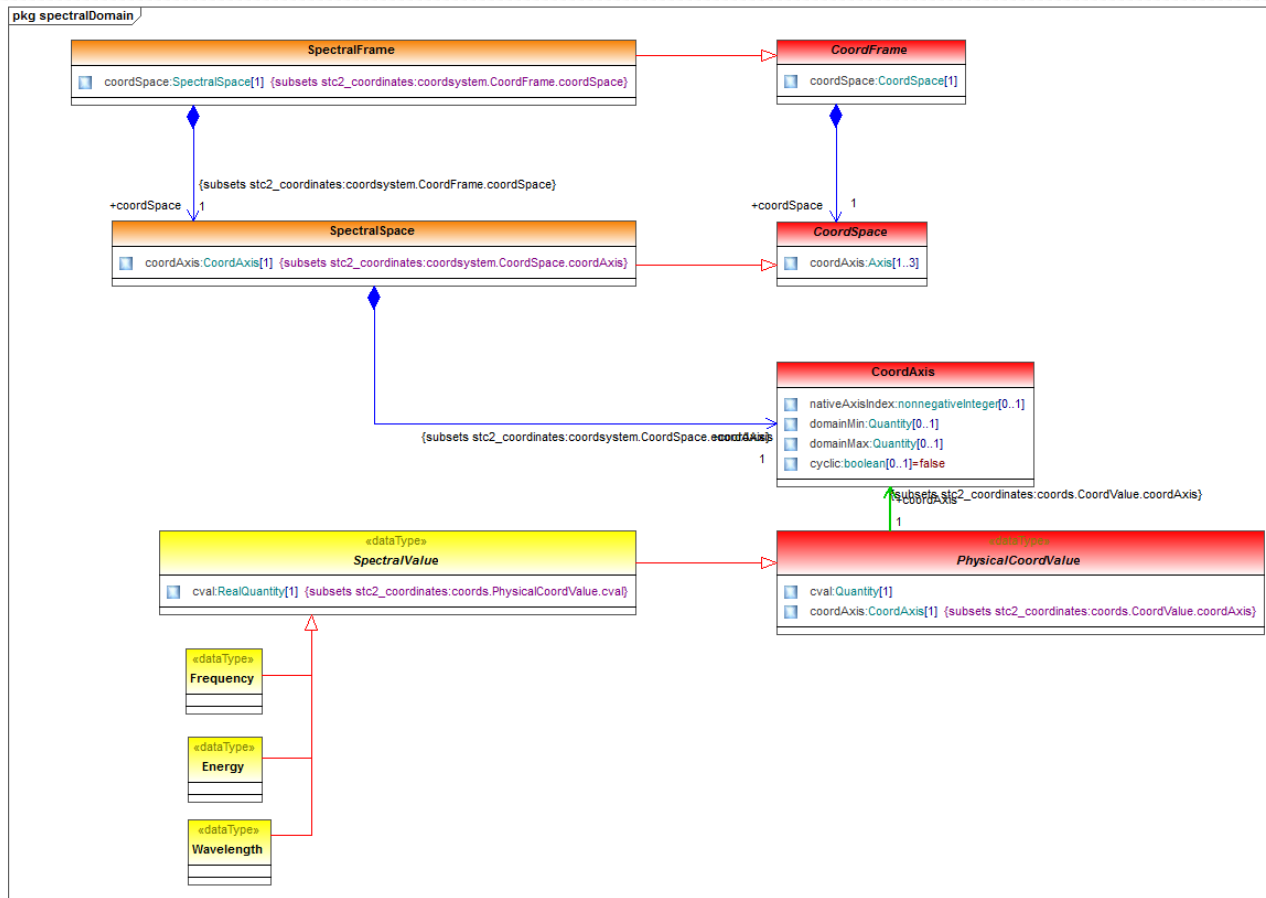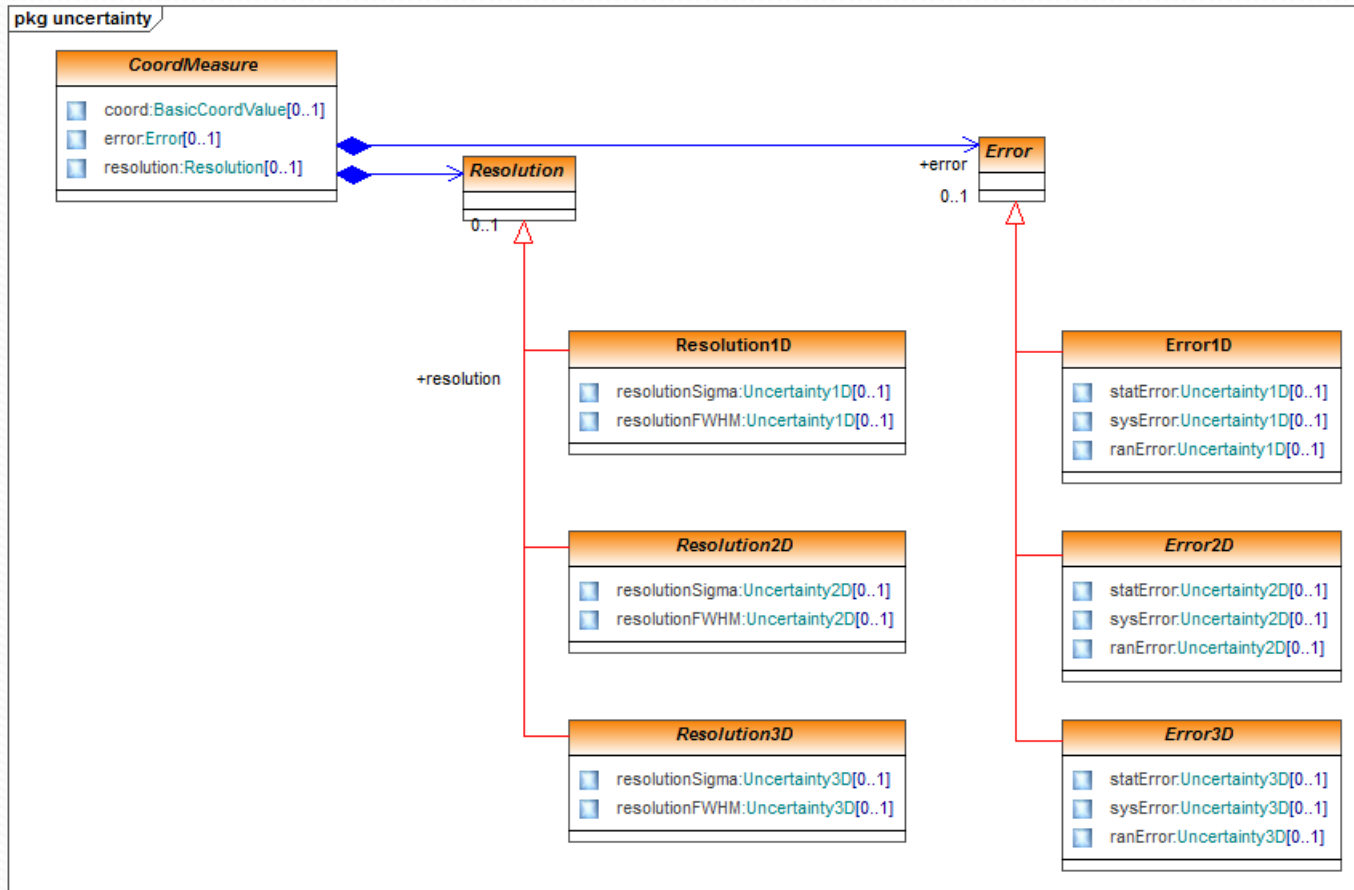# Coordinate Systems, Frames, Axes

Coordinate Values

Sample Domain: Spectral

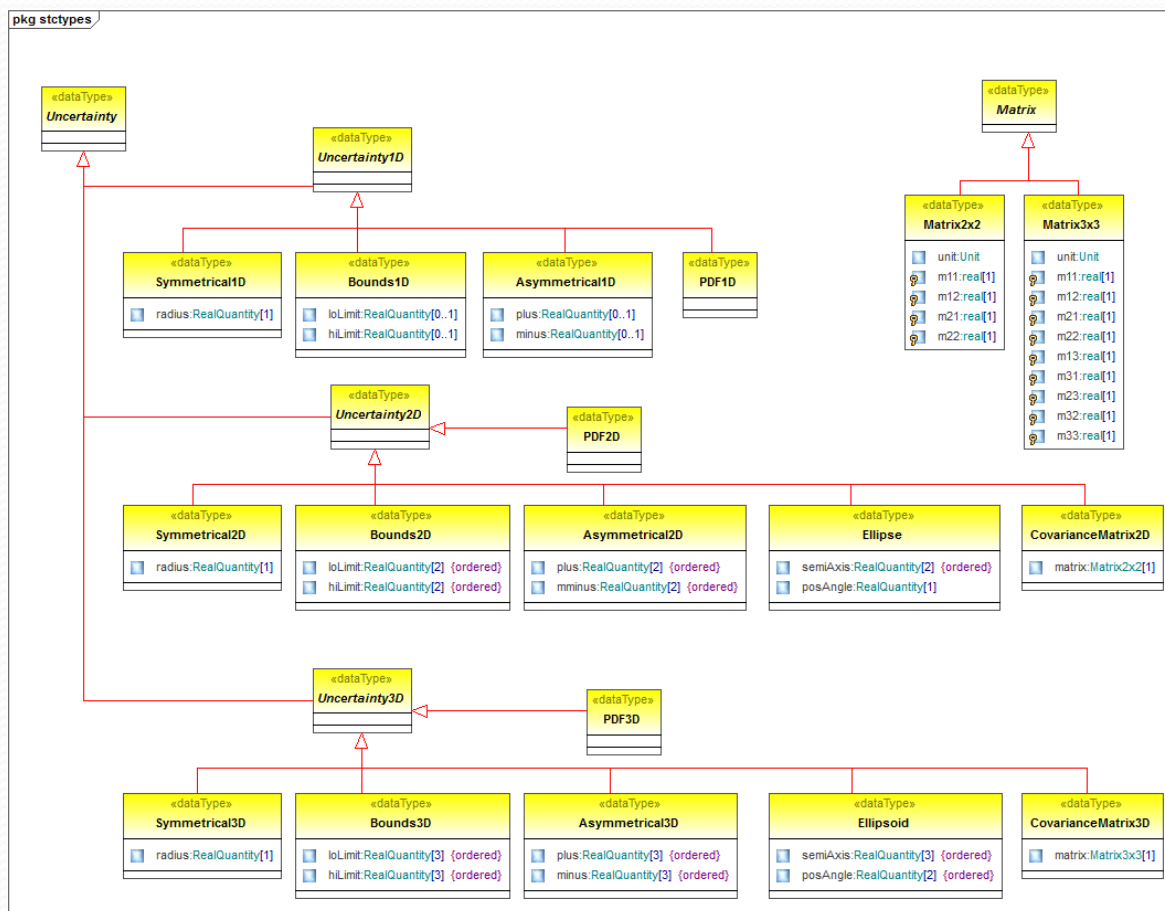IVOA Interop Shanghai May 2017: STC 2 Status

Coordinate Measures

- In real life coordinate values are seldom the impersonal exact numbers, but need to be qualified

- To provide proper meaning, add:
  - Errors/uncertainties of various ilk
  - Resolution

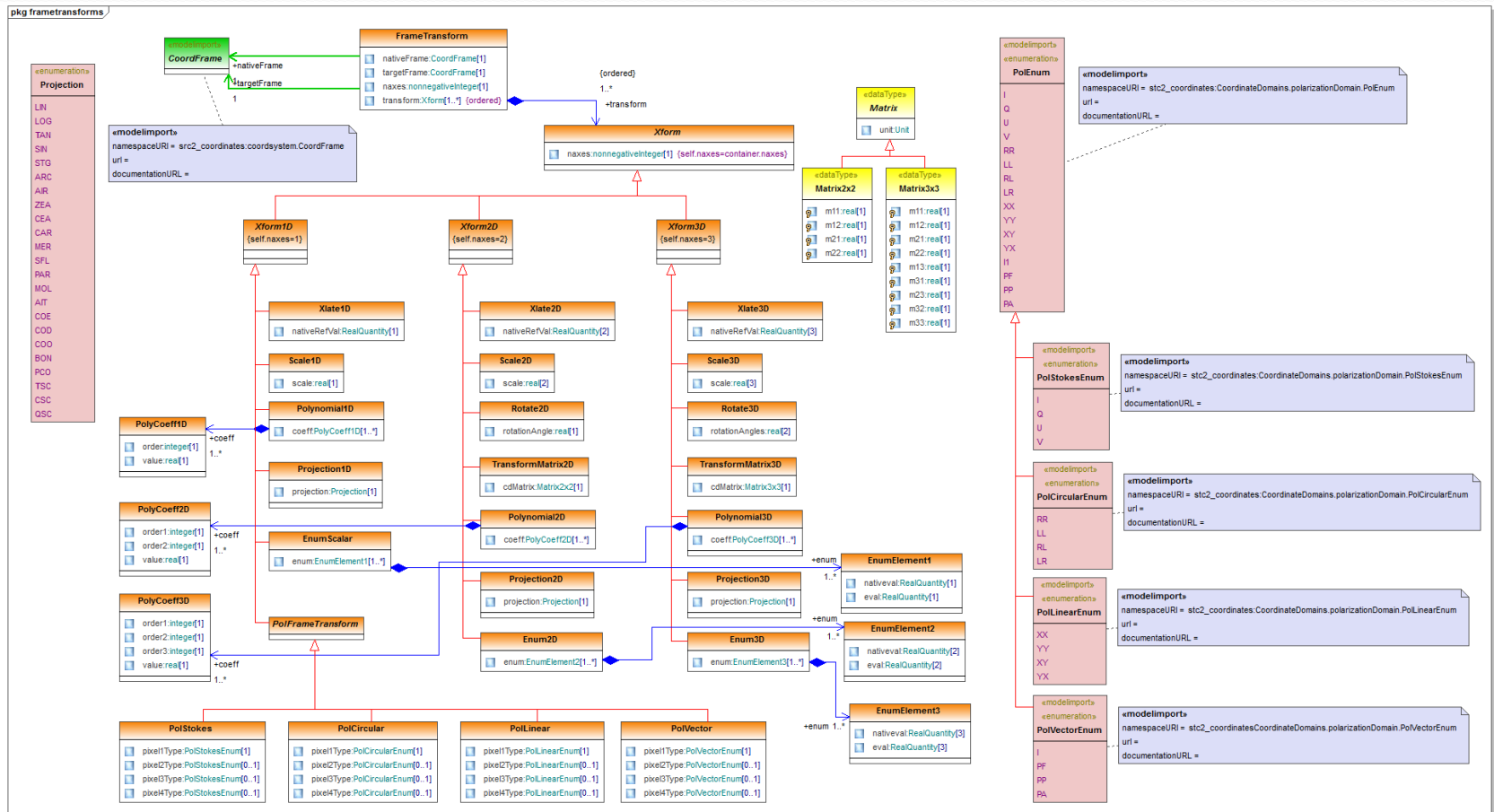# Coordinate Measure

Uncertainty Data Type

Transforms

- Are assembled from sequences of atomic transforms:
  - Translation
  - Scaling
  - Rotation
  - Projection
  - Polynomial
  - Enumeration
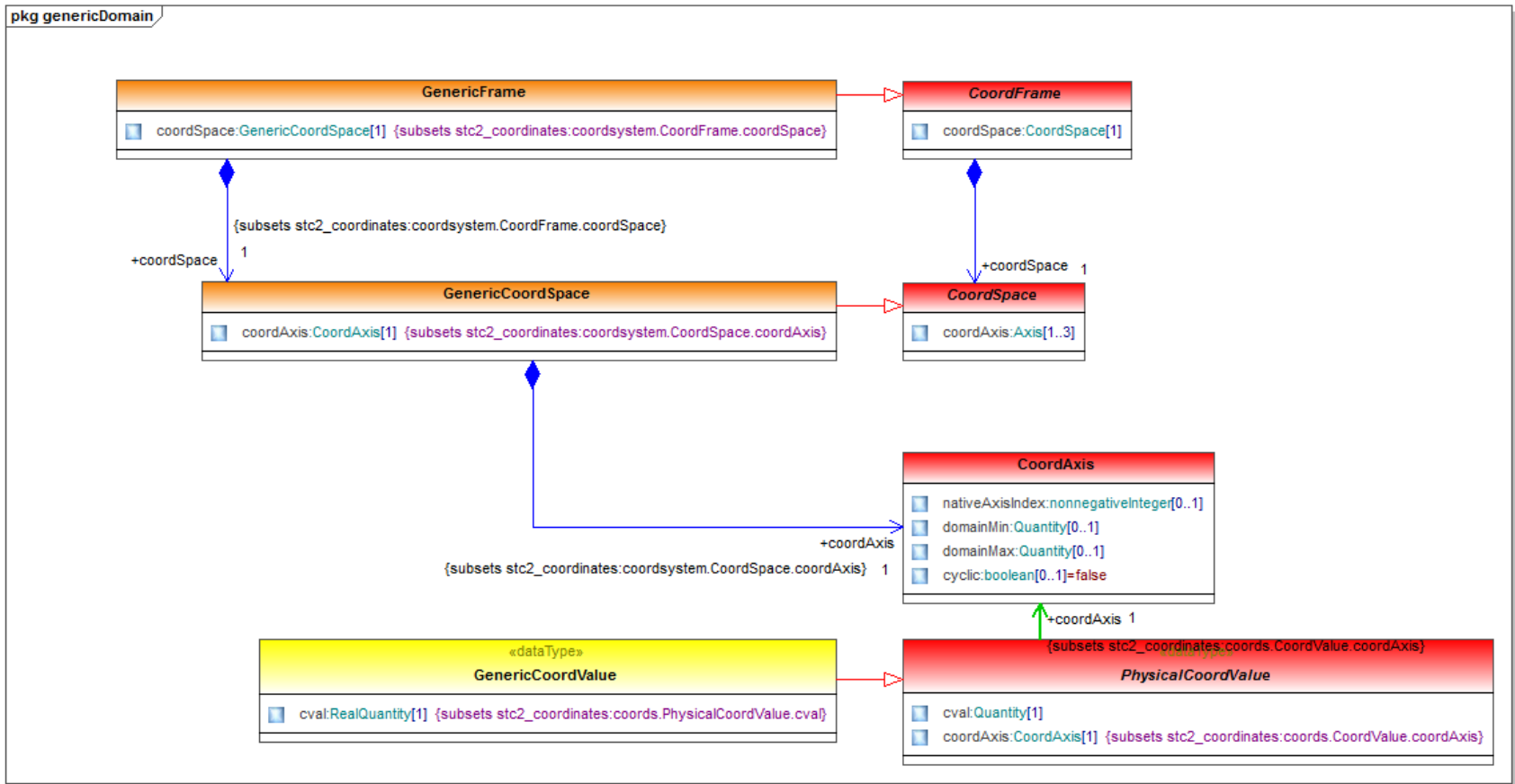- They operate between a native and a target coordinate frame

Transforms

Current Status

- Coordinates
  - Model finalized
  - First draft of WD is on volute
- Measures
  - Model finished, VO-DML syntax to be checked; expected 1 July
  - First draft expected at the same time
- Transforms
  - Model finalized, a few issues to be resolved; expected 1 July
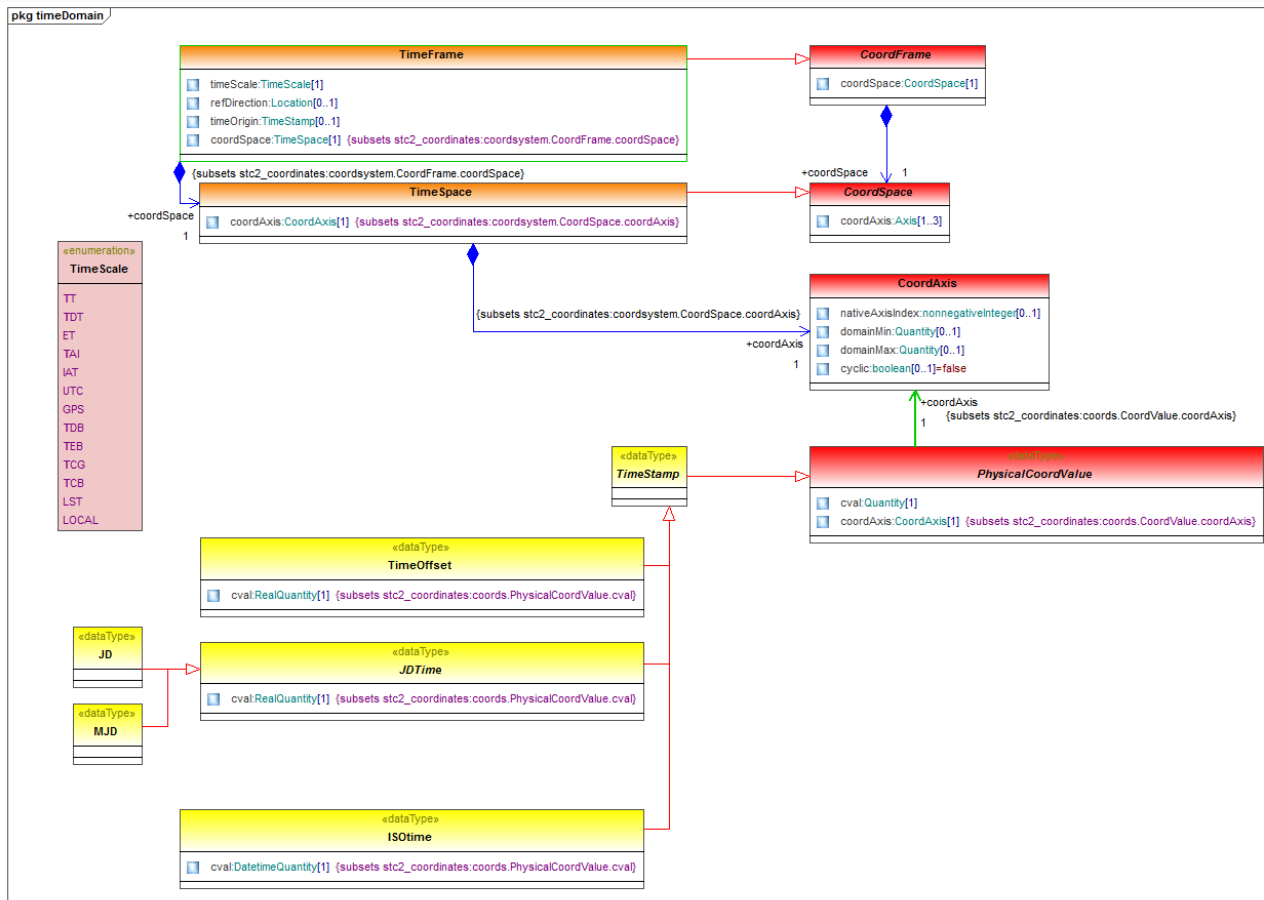 - First draft on volute
- Used in Cube Model
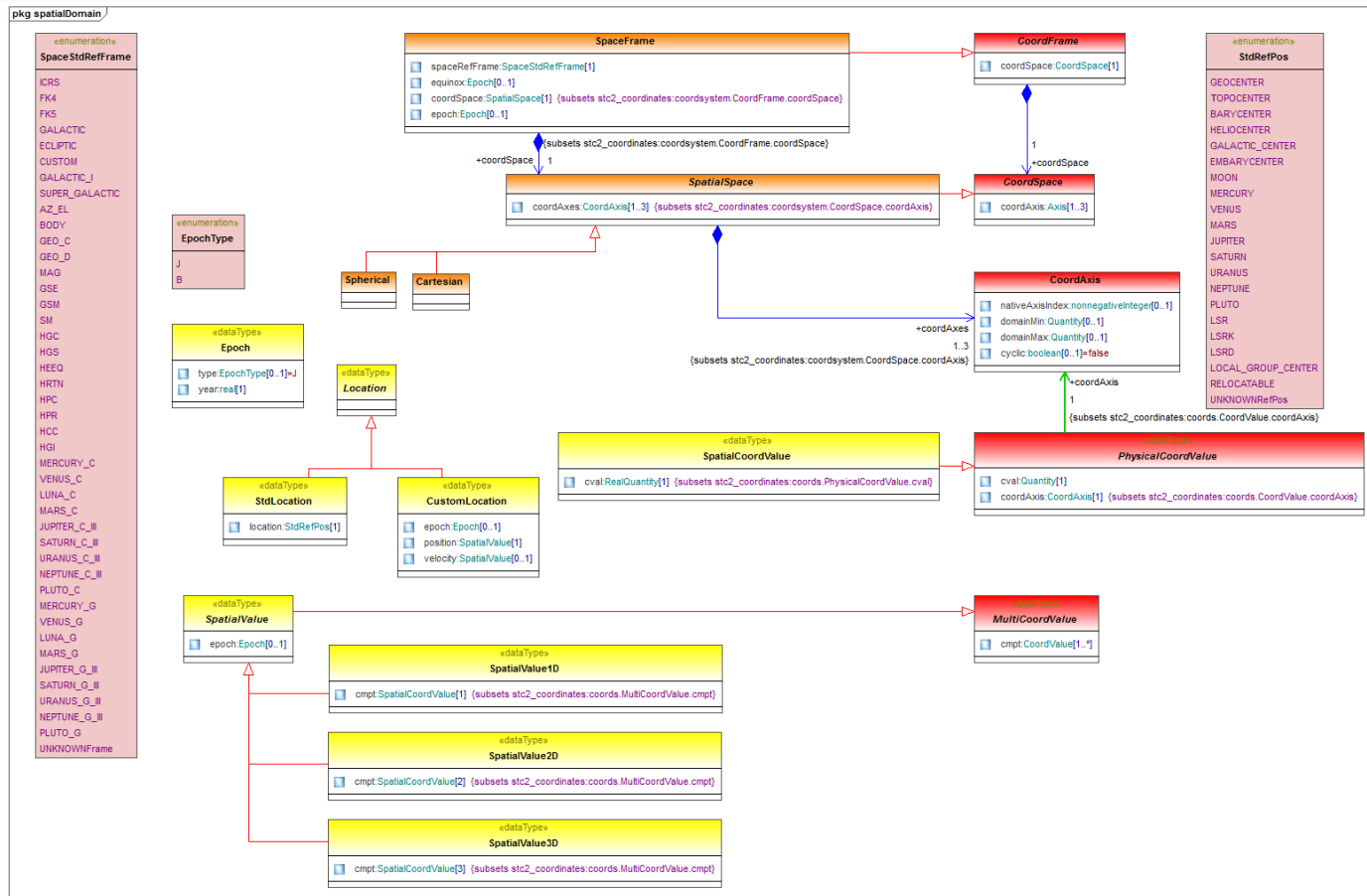
Backup Slides

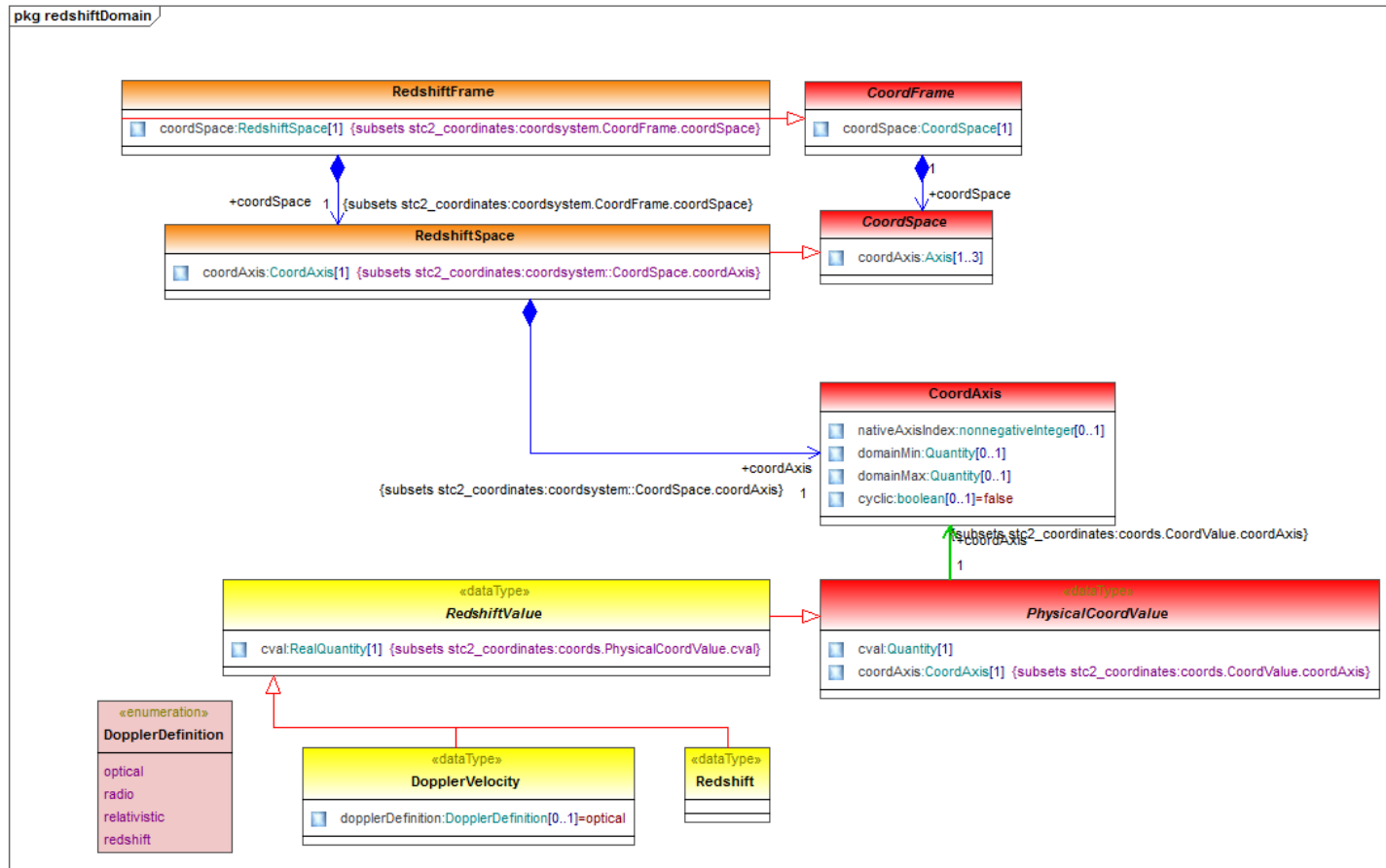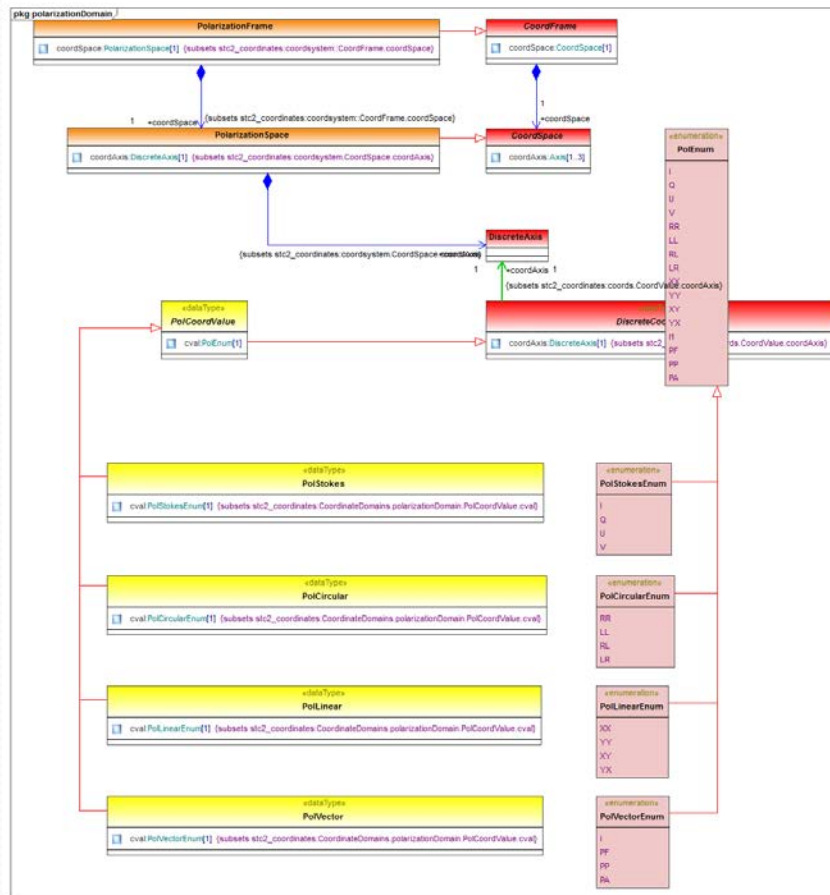- Remaining domains

Generic Domain

Temporal Domain

Spatial Domain

Redshift Domain

Polarization Domain

Pixel Domain