Data Models WG

Session 1

   XML Schema Guidelines

   Converging the Models

   Observation and Characterization

Session 2

   Catalogs

   Spacetime Coordinates

XML Schema Guidelines

How do we go from UML to XML?

- UML to XML automatic tools vs hand-crafting
- Choice groups? Substitution groups?
- Extension vs restriction
- Validation tools
- Splitting into multiple xsd files
- The importance of instance examples

Converging the Models

Advanced DM efforts:

Quantity (Thomas, Berry, Dowler)

Observation (Micol, Giaretta, Louys, Bonnarel)

Characteri(z/s)ation (Bonnarel, Louys)

Space-Time Coords (STC) (Rots)

How much should these models make use of each other?

Converging the Models (2)

I believe there is a natural hierarchy:

STC Coordinate and Frame objects should be built on Quantity and Quantity Frame objects

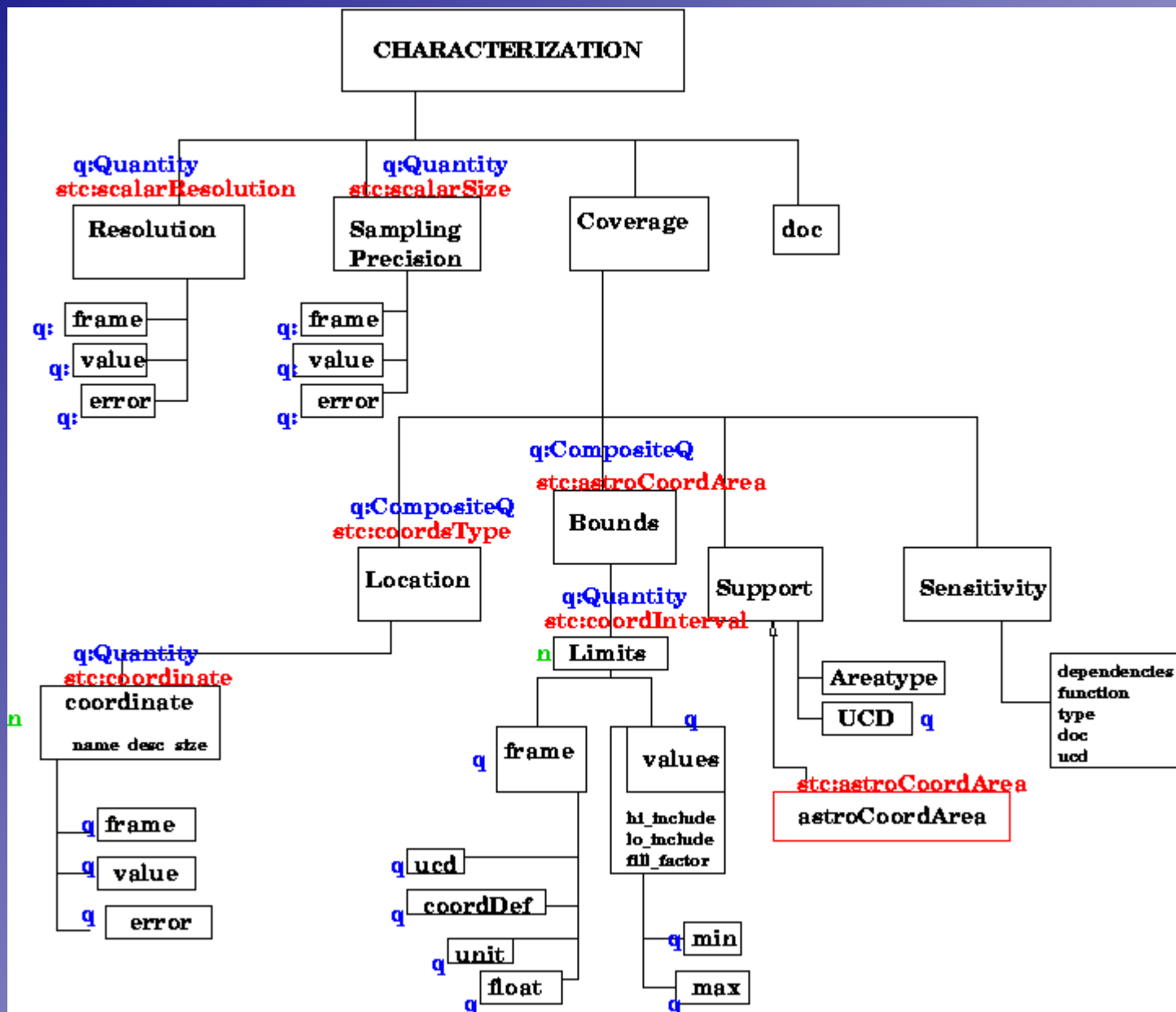STC Areas should be special cases of a more general Interval quantity

Characterization involves simplified use of ideas that are present in STC

Converging the Models (3)

CDS proposal: to reduce buy-in, make Characterization largely independent of STC and Quantity, define simple objects which do the same job.

My proposal: Include in Characterization definition self-contained toy versions of STC and Quantity, as simple as possible to give what is needed.

These would be instance-compatible with full models

Instance Example (char2.xml)

```
<?xml version="1.0" encoding="UTF-8"?>

<characterisation>
 <resolution><frame idref="eq" xsi:type="FrameRef"/><value>5.2</value> </resolution>
 <resolution><frame idref="wl" xsi:type="FrameRef"/><value>0.5</value> </resolution>
 <sampling_precision><frame xsi:type="Frame"><ucd>pos.eq</ucd><unit>pixel</unit></frame><value>0.02</value><float/></sampling_precision>
 <sampling_precision><frame idref="wl" xsi:type="FrameRef"/><value>0.25</value></sampling_precision>
 <coverage>
  <location>
   <coordinate size="2">
        <frame id="eq" xsi:type="Frame"><ucd>pos.eq</ucd><unit>deg</unit><float/></frame>
        <values><value>28.4</value><value>-20.0</value></values>
   </coordinate>
   <coordinate>
         <frame id="wl" xsi:type="Frame"><ucd>em.wl</ucd><unit>Angstrom</unit><float/></frame>
         <value>4500.2</value><error>0.28</error>
   </coordinate>
   <coordSys ref="CS"/>
  </location>
  <bounds>
   <limits size="2"><frame idref="eq" xsi:type="FrameRef"/><values><min>28.342 -20.2</min><max>28.481 -19.8</max>
    </values></limits>
   <limits hi_include="false"><frame idref="wl" xsi:type="FrameRef"/>
         <values><min>4402.1</min><max>7200.8</max></values></limits>
  </bounds>
  <support/>
  <sensitivity/>
 </coverage>
<coordSys id="CS">
 <timeFrame><TT/><GEOCENTER/></timeFrame>
 <spaceFrame><ICRS/><BARYCENTER/><SPHERICAL naxes="2"/></spaceFrame>
 <spectralFrame><HELIOCENTER/></spectralFrame>
</coordSys>
</characterisation>
```

QUANTITY = STC COORDINATE

STC COORDSYS