AxiSymmetry_t Data Structure

The AxiSymmetry_t data structure allows recording the axis of rotation and the angle of rotation around this axis. It is proposed that the AxiSymmetry_t data structure be recorded under a CGNSBase_t node. There may be zero or one AxiSymmetry_t node under a CGNSBase_t node.

SIDS definition of the AxiSymmetry_t data structure:

The AxiSymmetry_t under the CGNSBase_t data structure:

```
CGNSBase_t :=
{
    AxiSymmetry_t AxiSymmetry ;
    ...
}
```

The elements of the AxiSymmetry_t data structure:

```
AxiSymmetry_t :=
{
  List( Descriptor_t Descriptor1 ... DescriptorN ) ; (o)
  DataArray_t<real,1,2> AxiSymmetryReferencePoint; (r)
  DataArray_t<real,1,2> AxiSymmetryAxisVector (r)
  DataArray_t<real,1,1> AxiSymmetryAngle (o)
  DataClass_t DataClass ; (o)
  DimensionalUnits_t DimensionalUnits ; (o)
}
```

Definitions:

- AxiSymmetryReferencePoint: reference (X,Y)-location of an origin for defining the axis of rotation.
- □ AxiSymmetryAxisVector: (X,Y) direction cosines of the axis of rotation, through the AxiSymmetryReferencePoint.
- \Box AxiSymmetryAngle: amount of rotation about axis in this problem. If undefined, the angle is assumed to be 360° or 2π .

Notes:

□ Local DataClass_t and DimensionalUnits_t nodes may be specified under the AxiSymmetry_t node (in case the user does not want to use the default units).

□ All data use the current dimensional units unless different dimensional units are defined under the AxiSymmetry_t node.

ADF file mapping definition of the AxiSymmetry_t data structure:

Name: AxiSymmetry Label: AxiSymmetry_t Data-Type: MT Cardinality: 0,1 Name: AxiSymmetryReferencePoint Name: AxiSymmetryAxisVector Label: DataArray_t Label: DataArray_t Data-Type: R4 Data-Type: R4 **Dimensions: 1 Dimensions: 1 Dimension Values: 2 Dimension Values: 2** Data: AxiSymmetryReferencePoint Data: AxiSymmetryAxisVector Cardinality: 1 Cardinality: 1 Name: AxiSymmetryAngle Name: Descriptor# (or user defined) Label: DataArray_t Label: Descriptor t Data-Type: R4 Data-Type: C1 **Dimensions: 1 Dimensions: 1** Dimension Values: length of string **Dimension Values: 1** Data: Description string Data: AxiSymmetryAngle Cardinality: 1 Cardinality: 0,N Name: DimensionalUnits Name: DataClass Label: DataClass_t Label: DimensionalUnits t Data-Type: C1 Data-Type: C1 **Dimensions: 2 Dimensions: 1 Dimension Values: (32.5) Dimension Values:** length of string **Data:** DimensionalUnits Values Data: DataClass Value Cardinality: 0,1 Cardinality: 0,1