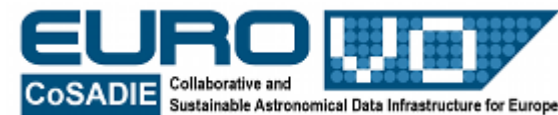


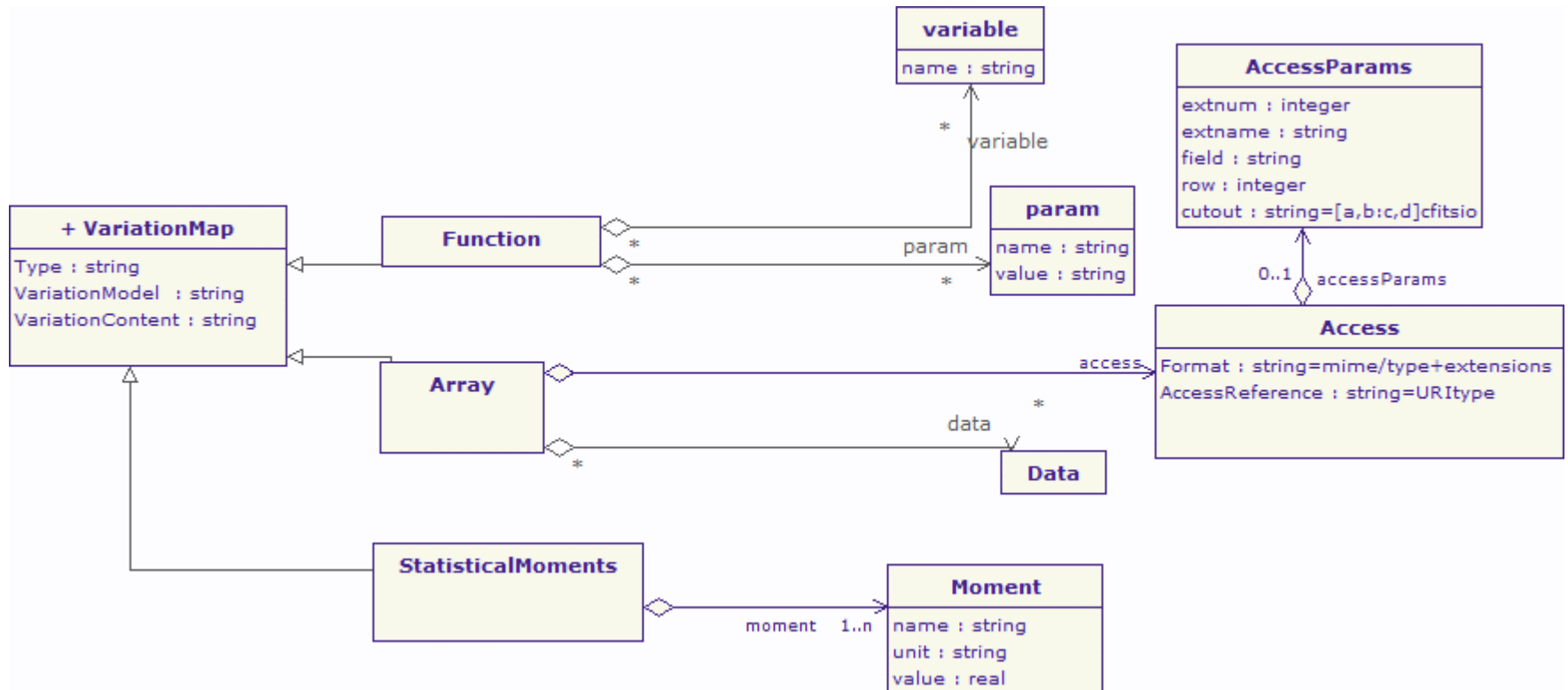


Characterisation2 VO-DML mapping, utypes

F.Bonnarel et al



Level 4 UML diagram (Char 2 partial view)



Char2 level 4: VO-DML description

- ▶ Use cases for « Level 4 » = variability along axes
- ▶ VariationMap objectType is extended by Function, Array, StatisticalMoments objectTypes
 - Function is a (composition= collection) of Param objectType and Variable objectType instances.
 - Array is a composition of Data and Access objectTypes instances.
 - StatisticalMoment is a composition of Moments instances.

attribute						collection				
attribute (3 rows)	vodml-id	name	description	datatype	multiplicity					
	1 variationMap.Type	Type	Specifies VariationMap nature Function , Array, Moments	datatype	multiplicity					
	2 VariationMap.VariationModel	VariationModel	DataModel followed by the Map serialisation if any	datatype	multiplicity					
3 VariationMap.VariationContent	VariationContent	Semantic description	datatype	multiplicity						
attribute	vodml-id	Function.expression				collection (2 rows)	vodml-id	name	description	datatype
	name	expression					1 Function.Param	Param	Description of the Param	datatype
	description	C-like expression					2 Function.Variable	Variable	Description of the Variable	datatype
	datatype	vodml-type	ivo:string							
	multiplicity	minOccurs	1							
		maxOccurs	1							
attribute (2 rows)	vodml-id	name	description	datatype	multiplicity					
	1 Param.name	name	Name of the parameter	datatype	multiplicity					
2 Param.value	Value	Value of the parameter	datatype	multiplicity						
attribute	vodml-id	Variable.name								
	name	name	Name of the variable							
	description									
	datatype	vodml-type	ivo:string							
	multiplicity	minOccurs	1							
		maxOccurs	1							

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<?xml version="1.0" encoding="UTF-8"												
char2	objectType (4 rows)	@abstract	vodml-id	name	description	extends	attribute					
	1	true	variationMap	VariationMap	describes property on axis variability		attribute (3 rows)			vodml-id	name	
							1	variationMap.Type	Type			
							2	VariationMap.VariationModel	VariationModel			
						3	VariationMap.VariationContent	VariationContent				
	2		Function	Function	functional description of the variationMap	extends	vodml-type	char2:variationMap	attribute			
									vodml-id	Function.expression		
									description	C-like		
									datatype	vodml-type		
									minOccurs			
									maxOccurs			
	3		ParamType	ParamType	describes Param in expression		attribute (2 rows)			vodml-id	name	
							1	Param.name	name			
							2	Param.value	Value			
	4		VariableType	VariableType	describes Param in expression		attribute				vodml-id	Variable.name
									name	name		
									description	Name variable		
									datatype	vodml-type		
									minOccurs			
									maxOccurs			

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```
</attribute>
<attribute>
<vodml-id>VariationMap.VariationModel</vodml-id>
<name>VariationModel</name>
<description>
DataModel followed by the Map serialisation if any
</description>
<datatype>
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</datatype>
<multiplicity>
<minOccurs>0</minOccurs>
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</multiplicity>
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<name>VariationContent</name>
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Semantic description
</description>
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</datatype>
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<maxOccurs>1</maxOccurs>
</multiplicity>
</attribute>
</objectType>
<objectType>
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<name>Function</name>
<description>
functional description of the variationMap
</description>
<extends>
1
<vodml-type>char2:variationMap</vodml-type>
</extends>
<attribute>
```

Char2 level 4: Datatypes

- ▶ Do I need Quantities ? Ucd always available ?
- ▶ « Types » with C-like formats, Cfitsio-like formats, regexp ?
 - Is that ivoa datatypes ?
 - Or should it be ?

VO-DML and utypes

- ▶ Let's take Array VariationMap
- ▶ Vo-dml-type is Array
- ▶ Vo-dml-role is Sensitivity.Array
- ▶ Utype needs a starting point in the path:
SpatialAxis.coverage.Sensitivity.Array
- ▶ Utypes : VO-DML description
+ a starting objectType in the model

VO-DML model	Starting Point	path	utype
Char2	SpatialAxis	SpatialAxis.coverage.Sensitivity.Array	= path or older utype

Ivoa datatypes and VOTABLE mappings

- ▶ Quantity seem to be mappable to VOTABLE PARAM (or FIELD)
 - except it uses ivoa datatypes ???
- ▶ Problem is mainly in string with structure
 - (examply gratia dateTime or my examples of cfitsio formats and c-like formats)
- ▶ Where do we map ivoa datatypes in VOTABLE ?
 - New datatype attribute values ? No !
 - Using xtype ? Does that enter in conflict with previous usage
 - Just don't map it and refer to vo-dml-type attribute of the FIELDref ? Is that consistent ?