



Generic Dataset Observation datamodel

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G.Greene





Generic dataset concept

- Metadata:
 - Everything common to all datasets: Access, Curation, DatasetID packages.
 - Everything too complex to be in Typed protocol : High level characterization (FoV, variation maps), Provenance, Complex linking.
- Queries =
 - non type specific (= generic) queries
 - Querying by datamodel (Observation, char) using ADQL+utypes .

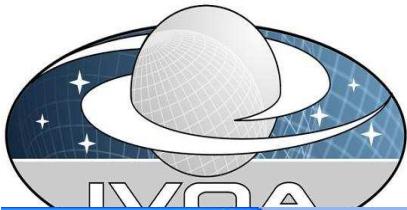




Observation data model

- See more tomorrow (DM session 2)
- UML Diagram and XML schema available
- Hooking basic metadata (DatasetID) to Field Of View (obs:char/coverage.support) or provenance -→ see Tamas slides for connexion with footprint services.
 - DAL Query response version = F O V integrated in the VOTABLE
 - (HLA provides such conversion from the Stc footprint embedded into Observation container to SIA query response extension)
- Provides a frame for complex accesses methods (Access package extensions or DataLinks)





Others File all-VO C.FOV Sextractor

Hubble Legacy Archive Footprint Data

Target: NGC 6946 [Grab coord]
Radius: 14.0'
Instrument: ACS - Advanced Camera for Survey
Level: Best - Best Available

- Inst-Bandpass: ACS-detection
 - resolution: FULL
 - J8MXD85YQ
 - J9F004QFQ
 - J8Z419DWQ
 - resolution: PREVIEW
 - J8MXD85YQ
 - J9F004QFQ
 - J8Z419DWQ
- Inst-Bandpass: ACS-F435W
 - resolution: FULL
 - J8Z419DWQ
 - resolution: PREVIEW
 - J8Z419DWQ

INFO on this server

Reset Clear Help SUBMIT Close

Pixel: unknown full

UType	Value
J8MXD85YQ	
ACS	
20:34:52.50	
+60:10:03.4	
9788	
Ho	
J8MXD85YQ	
http://hla.st...	
Z	
4300,4300pi...	
-0.05" 0.051"	
FK5	
2000	
TAN	
2150,2150pi...	

19.95' x 13.09'

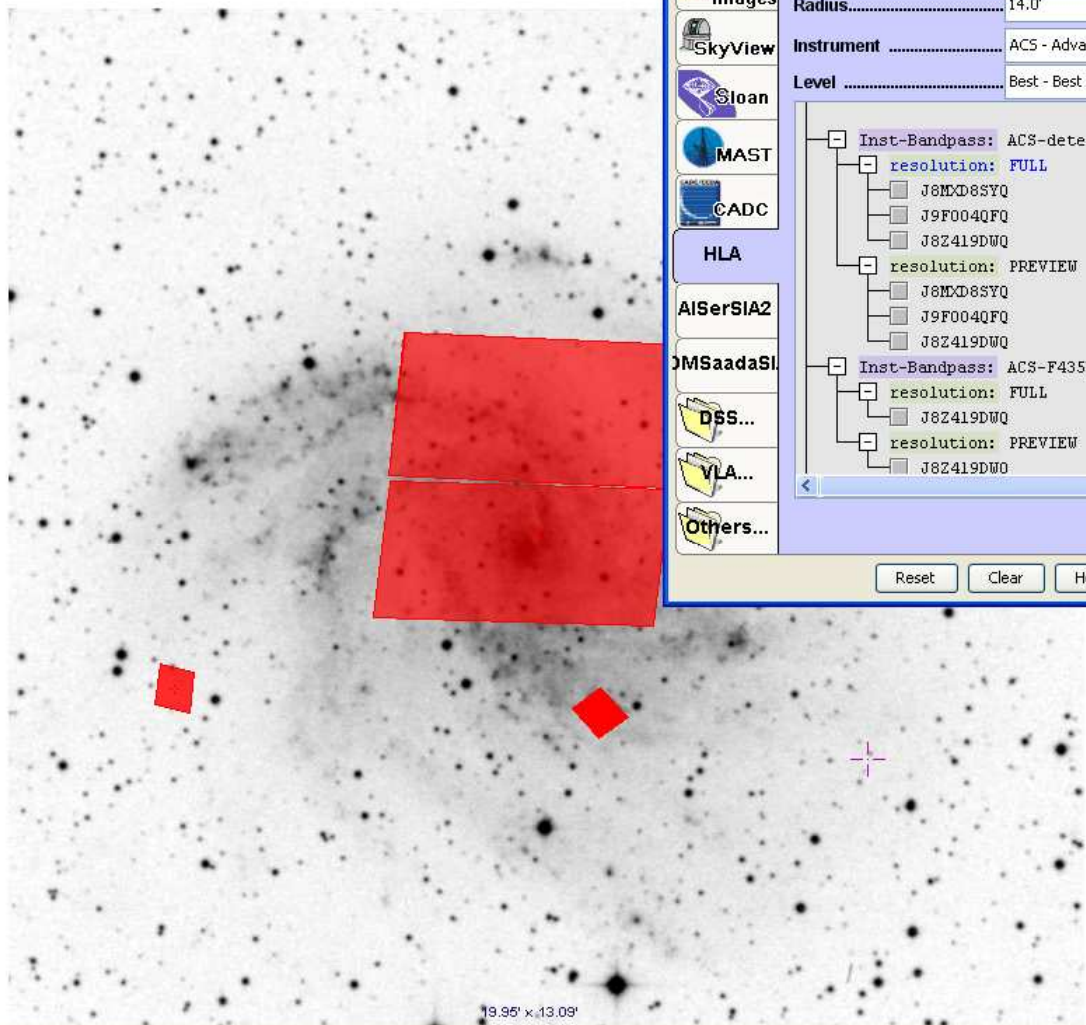
12.93' x 12.91'

9788.F814W.JCM
9788.F814W.J8M
POSSILF-DSS2.1

Zoom 1x

RO VO CENTRE

ISSII.F-DSS2.143



Others

Image servers

- Aladin images
- SkyView
- Sloan
- MAST
- CADC
- HLA
- AISerSIA2
- JMSaadaSl
- DSS...
- VLA...
- Others...

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 - J8Z419DWQ
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 - resolution: FULL
 - J8Z419DWQ
 - resolution: PREVIEW
 - J8Z419DWQ

Catalog servers

VizieR Catalogs

Surveys

Missions

SDSS

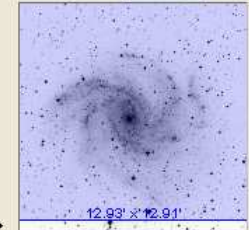
INED

SkyBot

Others..

- 9788.F814W.JCM
- 9788.F814W.J8M
- POSSIIF-DSS2.143

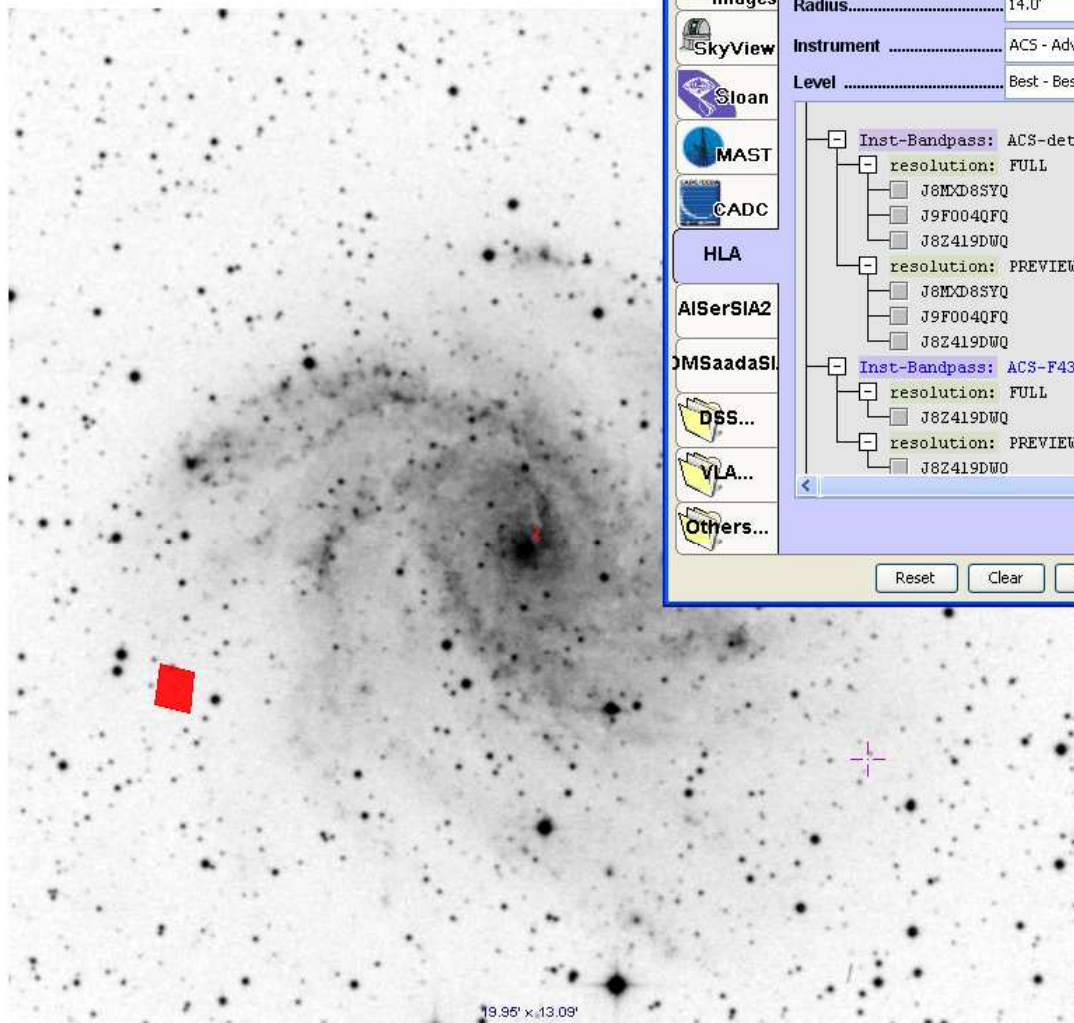
Zoom 1x



multiview match

Search

ISSII.F-DSS2.143



Others

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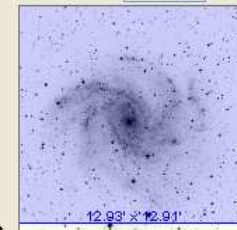
INED

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- 9788.F814W.JCM
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- POSSIIF-DSS2.143

Zoom 1x



Search

Altova XMLSpy - [Obs]

File Edit Project XML DTD/Schema Schema design XSL/XQuery Authentic Convert View Browser WSDL SOAP Tools Window Help

```
<?xml version="1.0" encoding="UTF-8" standalone="yes" ?>
- <Observation xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:stc="http://www.ivoa.net/xml/STC/stc-v1.30.xsd"
  xmlns:cha="http://www.ivoa.net/xml/Characterisation/v1.11.xsd" xmlns:xlink="http://www.w3.org/1999/xlink" xmlns="http://www.ivoa.net/xml/Observation/Observation.xsd"
  xsi:schemaLocation="http://www.ivoa.net/xml/Observation/Observation.xsd Observation2.xsd">
  <!-- Curation as in Spectrum -->
  - <Curation>
    <Publisher>SAO</Publisher>
    <PublisherID>ivo://cfa.harvard.edu</PublisherID>
  - <Contact>
    <Name>Gretchen Greene/Tamas Budavari</Name>
    <Email>jcm@cfa.harvard.edu</Email>
  </Contact>
  </Curation>
  <!-- Data ID section -->
  - <DataID>
    <Title>Arp 220 Image</Title>
    <Creator>STScI/JHU</Creator>
    <DatasetID>ivo://stsci.edu/mast#10314</DatasetID>
    <Date>2003-12-31T14:00:02Z</Date>
    <Version>1</Version>
    <Instrument>BCS</Instrument>
    <Logo>http://stsci.edu/nvo/sdsslogo.jpg</Logo>
  </DataID>
  <!-- Access to the actual data -->
  - <Access>
    <acref>http://sdss.jhu.edu/images/sdss/10314.fits</acref>
    <format>application/fits</format>
  </Access>
  <!-- Characterisation -->
  - <cha:characterisationAxis>
    <cha:axisName>Sky</cha:axisName>
    <cha:ucd>pos.eq</cha:ucd>
    <cha:unit>deg</cha:unit>
    <cha:coordsystem id="TT-ICRS-TOPO" xlink:type="simple" xlink:href="ivo://STClib/CoordSys#TT-ICRS-TOPO" />
    <cha:independentAxis>true</cha:independentAxis>
    <cha:calibrationStatus>CALIBRATED</cha:calibrationStatus>
  - <cha:numBins2>
    <cha:I1>500</cha:I1>
    <cha:I2>500</cha:I2>
  </cha:numBins2>
    <cha:undersamplingStatus>false</cha:undersamplingStatus>
    <cha:regularsamplingStatus>true</cha:regularsamplingStatus>
  - <cha:coverage>
  - <cha:location>
    <cha:coord coord_system_id="TT-ICRS-TOPO">
      - <stc:Position2D>
        <stc:Name1>RA</stc:Name1>
        <stc:Name2>Dec</stc:Name2>
        - <stc:Value2>
          <stc:C1>132.4210</stc:C1>
          <stc:C2>12.1232</stc:C2>
        </stc:Value2>
        </stc:Position2D>
      </cha:coord>
    </cha:location>
  - <cha:bounds>
    <cha:unit>arcsec</cha:unit>
    <cha:Extent>20</cha:Extent>
    - <cha:limits coord_system_id="TT-ICRS-TOPO">
      <cha:Coord2VecInterval />
    </cha:limits>
  </cha:coverage>
  </cha:location>
  </cha:bounds>
  </cha:characterisationAxis>
  </Observation>
```

Ivo id

Curation, datasetID, Access

Text Grid Schema/WSDL Authentic Browser

Obs

Ln 1, Col 1 CAP NUM SCP

démarrer 3 Microsoft Offi... 3 Explorateur ... Mail :: Inbox (55)... alinda.u-strasbg... VOTableSTC-200... ssa-v097.pdf Microsoft PowerP... Altova XMLSpy - ... FR 11:27

Altova XMLSpy - [Obs]

File Edit Project XML DTD/Schema Schema design XSL/XQuery Authentic Convert View Browser WSDL SOAP Tools Window Help

```
<cha:regularsamplingStatus>true</cha:regularsamplingStatus>
- <cha:coverage>
- <cha:location>
  - <cha:coord coord_system_id="TT-ICRS-TOPO">
    - <stc:Position2D>
      <stc:Name1>RA</stc:Name1>
      <stc:Name2>Dec</stc:Name2>
    - <stc:Value2>
      <stc:C1>132.4210</stc:C1>
      <stc:C2>12.1232</stc:C2>
    </stc:Value2>
    </stc:Position2D>
  </cha:coord>
</cha:location>
- <cha:bounds>
  <cha:unit>arcsec</cha:unit>
  <cha:Extent>20</cha:Extent>
- <cha:limits coord_system_id="TT-ICRS-TOPO">
  <cha:Coord2VecInterval />
</cha:limits>
</cha:bounds>
<!-- The spatial support is actually the footprint -->
- <cha:support>
  - <cha:coordsystem id="RegionCoordSys">
    - <stc:SpaceFrame>
      - <stc:Cart2DRefFrame projection="TAN" ref_frame_id="TT-ICRS-TOPO">
        - <stc:Transform2 unit="deg">
          <stc:C1>1.0</stc:C1>
          <stc:C2>1.0</stc:C2>
          <stc:PosAngle xsi:nil="true" />
        </stc:Transform2>
      </stc:Cart2DRefFrame>
    - <stc:CoordRefPos>
      - <stc:Position2D>
        - <stc:Value2>
          <stc:C1>132.4210</stc:C1>
          <stc:C2>12.1232</stc:C2>
        </stc:Value2>
      </stc:Position2D>
    </stc:CoordRefPos>
    <stc:SPHERICAL coord_naxes="2" />
  </stc:SpaceFrame>
</cha:coordsystem>
- <cha:Area coord_system_id="RegionCoordSys">
  - <stc:Polygon coord_system_id="RegionCoordSys" unit="deg">
    - <stc:Vertex>
      - <stc:Position>
        <stc:C1>0.2</stc:C1>
        <stc:C2>-0.1</stc:C2>
      </stc:Position>
    </stc:Vertex>
    - <stc:Vertex>
      - <stc:Position>
        <stc:C1>-0.2</stc:C1>
        <stc:C2>-0.1</stc:C2>
      </stc:Position>
    </stc:Vertex>
    - <stc:Vertex>
      - <stc:Position>
        <stc:C1>-0.2</stc:C1>
        <stc:C2>0.1</stc:C2>
      </stc:Position>
    </stc:Vertex>
  </stc:Polygon>
</cha:Area>
</stc:Area>
</stc:Area>
```

Spatial support = field of view in Stc-x

Text Grid Schema/WSDL Authentic **Browser**

Obs

Ln 1, Col 1 CAP NUM SCRL

démarrer 3 Microsoft Offi... 3 Explorateur ... Mail :: Inbox (55)... alinda.u-strasbg... VOTable5TC-200... ssa-v097.pdf Microsoft PowerP... Altova XMLSpy - ... FR 11:30

Altova XMLSpy - [Obs]

File Edit Project XML DTD/Schema Schema design XSL/XQuery Authentic Convert View Browser WSDL SOAP Tools Window Help

XML

Observation

- xmns:xsi http://www.w3.org/2001/XMLSchema-instance
- xmns:stc http://www.ivoa.net/xml/STC/stc-v1.30.xsd
- xmns:cha http://www.ivoa.net/xml/Characterisation/Characterisation-v1.11.xsd
- xmns:xlink http://www.w3.org/1999/xlink
- xmns http://www.ivoa.net/xml/Observation/Observation.xsd
- xsi:schemaLoca... http://www.ivoa.net/xml/Observation/Observation.xsd Observation2.xsd
- Comment Curation as in Spectrum
- Curation
 - Publisher SAO
 - PublisherID ivo://cfa.harvard.edu
 - Contact
- Comment Data ID section
- DataID
 - Title Arp 220 Image
 - Creator STScI/JHU
 - DatasetID ivo://stsci.edu/mast#10314
 - Date 2003-12-31T14:00:02Z
 - Version 1
 - Instrument BCS
 - Logo http://stsci.edu/hvo/sdsslogo.jpg
- Comment Access to the actual data
- Access
 - acref http://sdss.jhu.edu/images/sdss/10314.fits
 - format application/fits
- Comment Characterisation
- char
 - cha:characterisationAxis (4)

	cha:axisName	cha:ucd	cha:unit	cha:coordsystem	cha:independe...	cha:accuracy	cha:cal
1	Sky	pos.eq	deg	cha:coordsystem <ul style="list-style-type: none"> id TT-ICRS-TOPO xlink:type simple xlink:href ivo://STCLib/CoordSys#TT-ICRS-TOPO 	true		CALIBRATE
2	Time	time	d	cha:coordsystem <ul style="list-style-type: none"> idref TT-ICRS-TOPO 			CALIBRATE
3	spectral	em.wl	m	cha:coordsystem <ul style="list-style-type: none"> idref TT-ICRS-TOPO 			CALIBRATE
4	"Flux density"	"phot.flux.density;em.wavelength"	"erg cm**(-2) s**(-1) Angstrom**(-1)"	cha:coordsystem <ul style="list-style-type: none"> idref TT-ICRS-TOPO 		cha:accuracy	CALIBRATE
 - Comment <prov>
 - Comment
 - Comment
 - Comment <prov>

Observation container contains
Curation dataID and Access with char

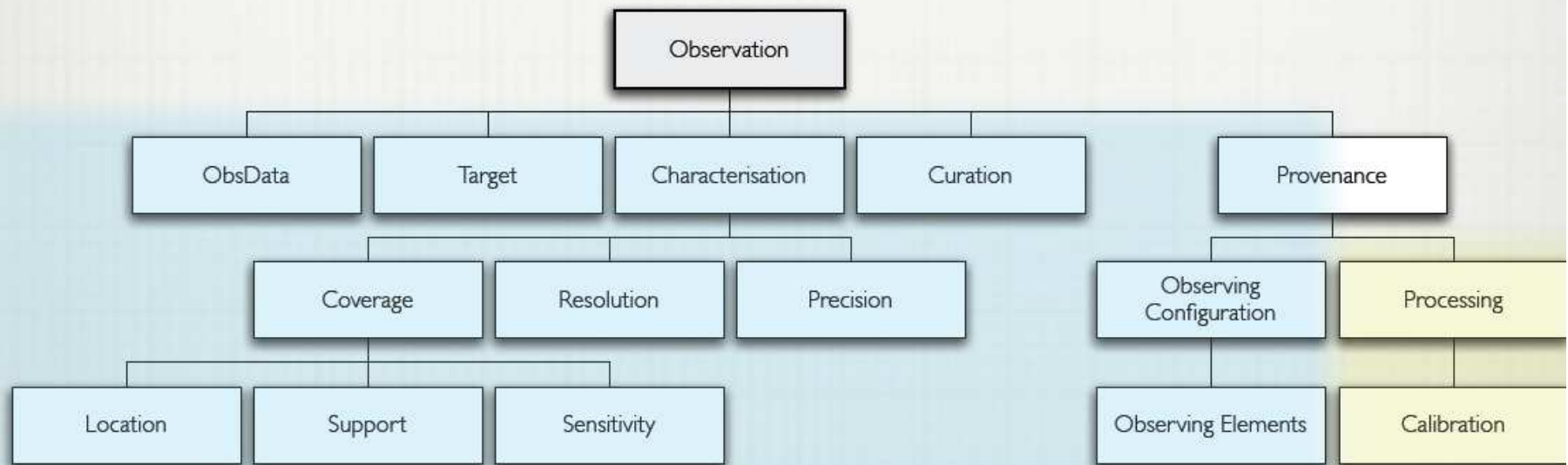
Text Grid Schema/WSDL Authentic Browser

Obs

Ln 1, Col 1 CAP NUM SCRL

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OBSERVATION DM 2003-2006



Altova XMLSpy - [provenance *]

File Edit Project XML DTD/Schema Schema design XSL/XQuery Authentic Convert View Browser WSDL SOAP Tools Window Help

XML

prov

observingConfig

Observatory

name	CFHT
observatoryLoc...	stc description

ObservingElements

Telescope

name	CFH
diameter	

Focus

name	MegaPrime
type	Prime

Grating

Filter

name	IM756
band	R
transmissionCurve	

Detector

name	MEGACAM
type	CCDArray

processing

processingStage (2)

type	algorithm	AssociatedData																											
1 mosaic	<table border="1"><tr><td>algorithm</td><td><table border="1"><tr><td>type</td><td>coaddition</td></tr><tr><td>projectMetadata</td><td><table border="1"><tr><td>format</td><td>text/xml</td></tr><tr><td>acref</td><td>http://project.org/metad ata/provenance/coaddit ion.xml</td></tr><tr><td>documentation</td><td>http://project.org/documentation/provenance/co addition.html</td></tr></table></td></tr></table></td><td><table border="1"><tr><td>AssociatedData</td><td><table border="1"><tr><td>Access (4)</td></tr></table></td></tr></table></td></tr><tr><td>2 confidenceMap</td><td><table border="1"><tr><td>algorithm</td><td><table border="1"><tr><td>type</td><td>weight map</td></tr><tr><td>documentation</td><td>http://project.org/documentation/provenance/co nfidence.html</td></tr></table></td></tr></table></td><td><table border="1"><tr><td>AssociatedData</td><td><table border="1"><tr><td>Access</td></tr></table></td></tr></table></td></tr></table>	algorithm	<table border="1"><tr><td>type</td><td>coaddition</td></tr><tr><td>projectMetadata</td><td><table border="1"><tr><td>format</td><td>text/xml</td></tr><tr><td>acref</td><td>http://project.org/metad ata/provenance/coaddit ion.xml</td></tr><tr><td>documentation</td><td>http://project.org/documentation/provenance/co addition.html</td></tr></table></td></tr></table>	type	coaddition	projectMetadata	<table border="1"><tr><td>format</td><td>text/xml</td></tr><tr><td>acref</td><td>http://project.org/metad ata/provenance/coaddit ion.xml</td></tr><tr><td>documentation</td><td>http://project.org/documentation/provenance/co addition.html</td></tr></table>	format	text/xml	acref	http://project.org/metad ata/provenance/coaddit ion.xml	documentation	http://project.org/documentation/provenance/co addition.html	<table border="1"><tr><td>AssociatedData</td><td><table border="1"><tr><td>Access (4)</td></tr></table></td></tr></table>	AssociatedData	<table border="1"><tr><td>Access (4)</td></tr></table>	Access (4)	2 confidenceMap	<table border="1"><tr><td>algorithm</td><td><table border="1"><tr><td>type</td><td>weight map</td></tr><tr><td>documentation</td><td>http://project.org/documentation/provenance/co nfidence.html</td></tr></table></td></tr></table>	algorithm	<table border="1"><tr><td>type</td><td>weight map</td></tr><tr><td>documentation</td><td>http://project.org/documentation/provenance/co nfidence.html</td></tr></table>	type	weight map	documentation	http://project.org/documentation/provenance/co nfidence.html	<table border="1"><tr><td>AssociatedData</td><td><table border="1"><tr><td>Access</td></tr></table></td></tr></table>	AssociatedData	<table border="1"><tr><td>Access</td></tr></table>	Access
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Observational provenance

Processing provenance

Text Grid Schema/WSDL Authentic Browser

provenance

Ln 91, Col 8 CAP NUM SCRL

démarrer 3 Microsoft Offi... 3 Explorateur W... Mail :: Inbox (55) ... alinda.u-strasbg.f... VOTableSTC-200... ssa-v097.pdf Microsoft PowerP... Altova XMLSpy - [... FR 11:53