

Retour d'expérience sur la validation de services VO

**Institut d'Astrophysique Spatiale -
Orsay**

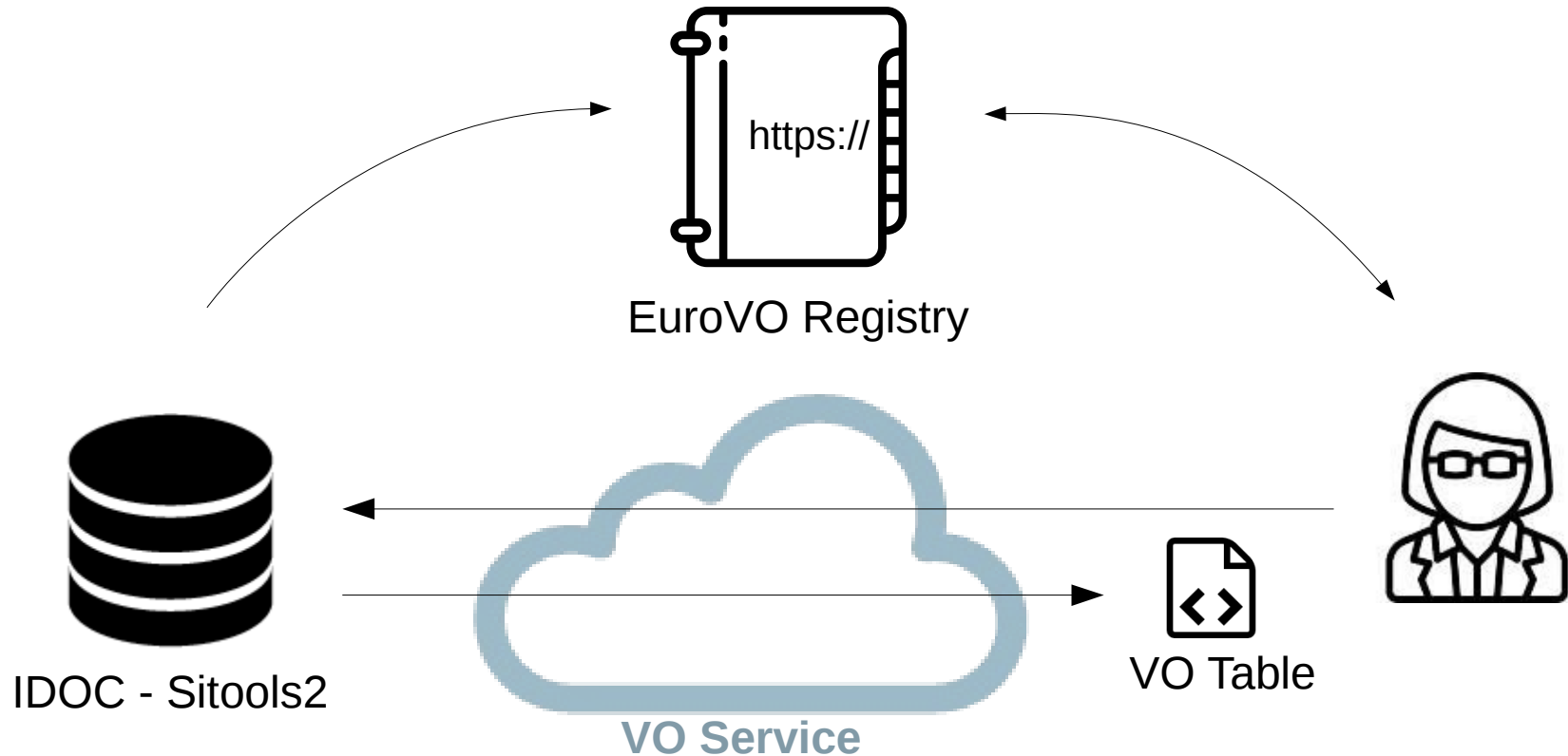
K. Dassas and M. Mebsout



Outlines

- Contexte
 - Sitools2 - VO
- Validateurs
 - VOTable et Services
- Résultats
 - Cone Search et SIA
- Remarques
 - Validation et Spécifications
- Conclusion

Service VO en un mot



Sitools2



- Application Java JEE

- Open source

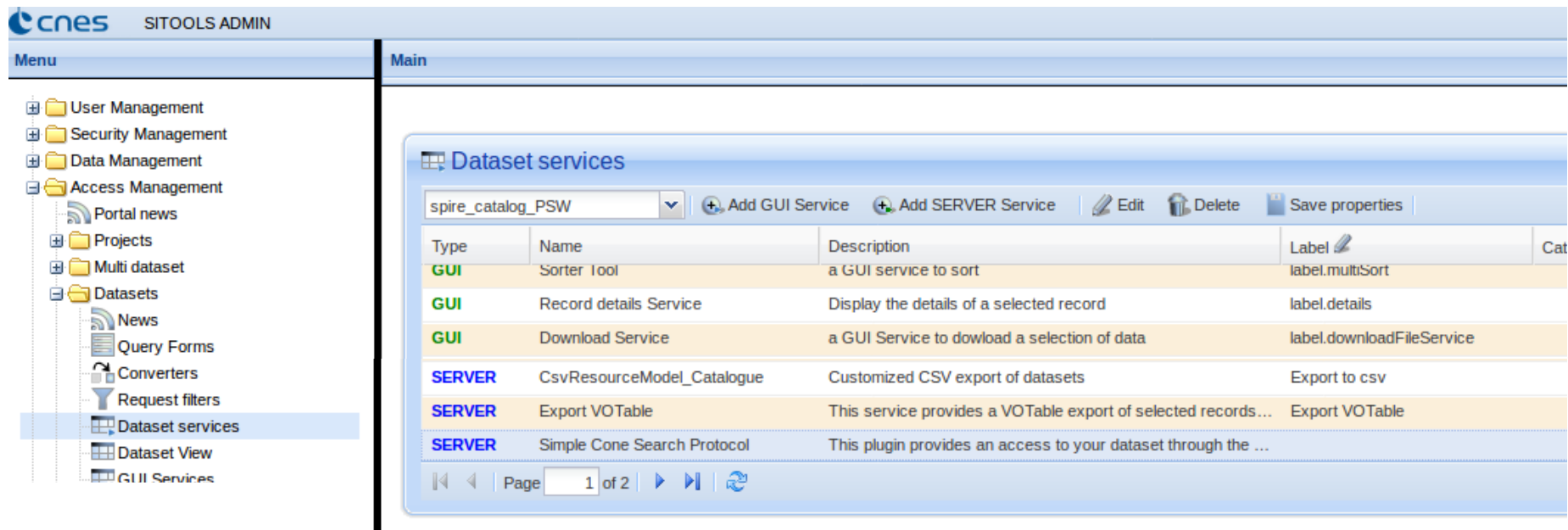
- <https://github.com/SITools2/SITools2-core/projects>



- Plugins

- Astronomy Extension => Services VO

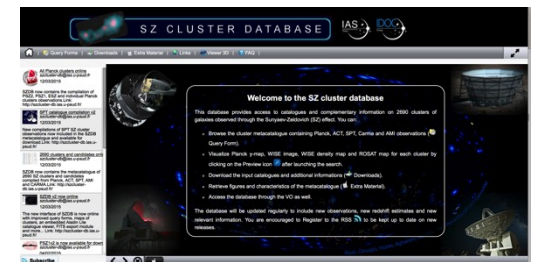
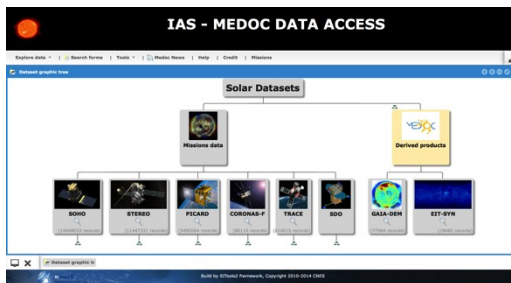
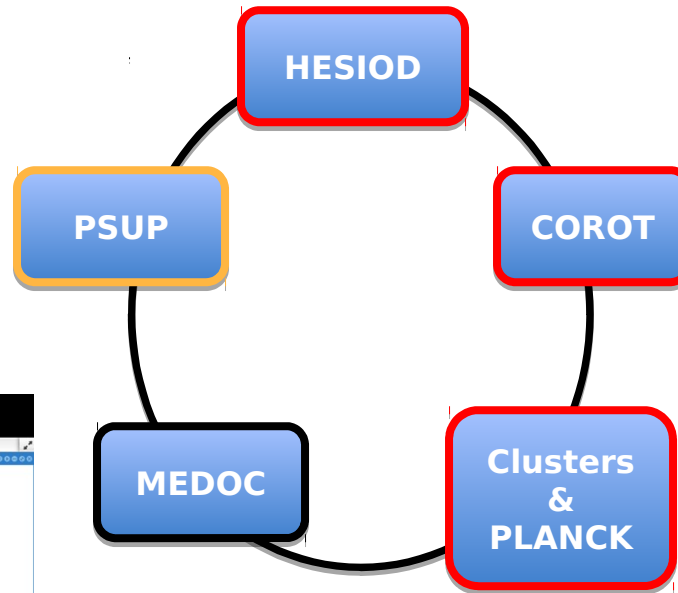
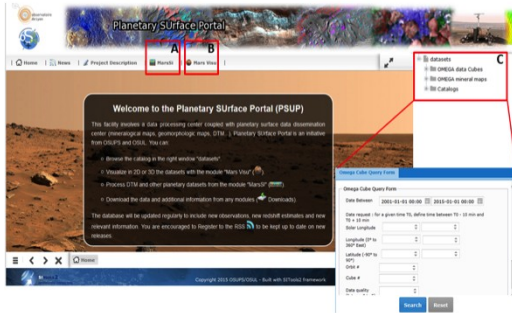
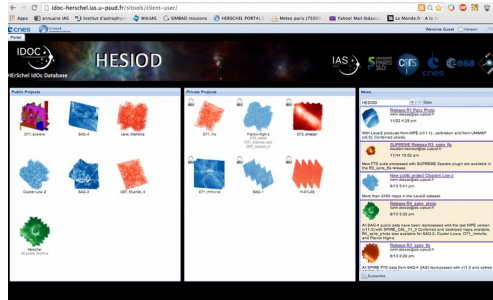
- <https://github.com/SITools2/Astronomy-Extension-Server>






The screenshot shows the 'SITools ADMIN' interface. On the left is a 'Menu' sidebar with categories like User Management, Security Management, Data Management, Access Management, Portal news, Projects, Multi dataset, Datasets, News, Query Forms, Converters, Request filters, Dataset services (highlighted), Dataset View, and GUI Services. The main area is titled 'Main' and displays 'Dataset services' for the 'spire_catalog_PSW' dataset. It includes a table of services with columns for Type, Name, Description, Label, and Category.

Type	Name	Description	Label	Cat
GUI	Sorter Tool	a GUI service to sort	label.multiSort	
GUI	Record details Service	Display the details of a selected record	label.details	
GUI	Download Service	a GUI Service to download a selection of data	label.downloadFileService	
SERVER	CsvResourceModel_Catalogue	Customized CSV export of datasets	Export to csv	
SERVER	Export VOTable	This service provides a VOTable export of selected records...	Export VOTable	
SERVER	Simple Cone Search Protocol	This plugin provides an access to your dataset through the ...		

Instances de Sitools en Production



Planck - SZ cluster 1/2 - <http://szcluster-db.ias.u-psud.fr/sitools/>


SZ CLUSTER DATABASE



Home | Query Forms | Downloads | Extra Material | Links | Viewer 3D | FAQ

All Planck clusters online
szcluster-db@ias.u-psud.fr
12/03/2015

SZDB now contains the compilation of PSZ2, PSZ1, ESZ and individual Planck clusters observations. Link: <http://szcluster-db.ias.u-psud.fr/>

SPT catalogue compilation v2
szcluster-db@ias.u-psud.fr
12/03/2015

New compilations of SPT SZ cluster observations now included in the SZDB metacatalogue and available for download. Link: <http://szcluster-db.ias.u-psud.fr/>

2690 clusters and candidates online
szcluster-db@ias.u-psud.fr
12/03/2015

SZDB now contains the metacatalogue of 2690 SZ clusters and candidates compiled from Planck, ACT, SPT, AMI and CARMA. Link: <http://szcluster-db.ias.u-psud.fr/>

SZDB v2 now online
szcluster-db@ias.u-psud.fr
12/03/2015

The new interface of SZDB is now online with improved query forms, maps of clusters, an embedded Aladin Lite catalogue viewer, FITS export module and more... Link: <http://szcluster-db.ias.u-psud.fr/>

PSZ1v2 is now available for download
szcluster-db@ias.u-psud.fr
04/02/2015

Updated Planck 2013 SZ catalogue: 86 new confirmations, 913 redshifts (80% spectroscopic) and a total of 947 confirmed clusters (see arxiv: 1502.00543). Link: <http://szcluster-db.ias.u-psud.fr/>

Planck SZ validation Table updated
szcluster-db@ias.u-psud.fr
03/04/2014

The Planck SZ validation table has been updated and is now available for download. Link: <http://szcluster-db.ias.u-psud.fr/>

Planck sample for M-Y scaling available

Viewer 3D

GAL 43.3074444 -18.0587131

Base image layer

DSS colored

Color map:

native Reverse

Overlay layers

- SZDB (PSZ1 clusters)
- SZDB (PSZ2 clusters)
- SZDB (PLCK clusters)
- SZDB (SPT clusters)
- SZDB (ACT clusters)
- SZDB (other clusters)

Reticle

HEALPix grid

Tools

Export view as PNG

PSZ1 G347.62-21.62

INDEX: 2019

RA: 285.188

DEC: -49.1254


REDSHIFT: 0.049131

REDSHIFT TYPE: spec

REDSHIFT REF: 2009AJ....137.4795C

ALT NAME:

ACO S 808

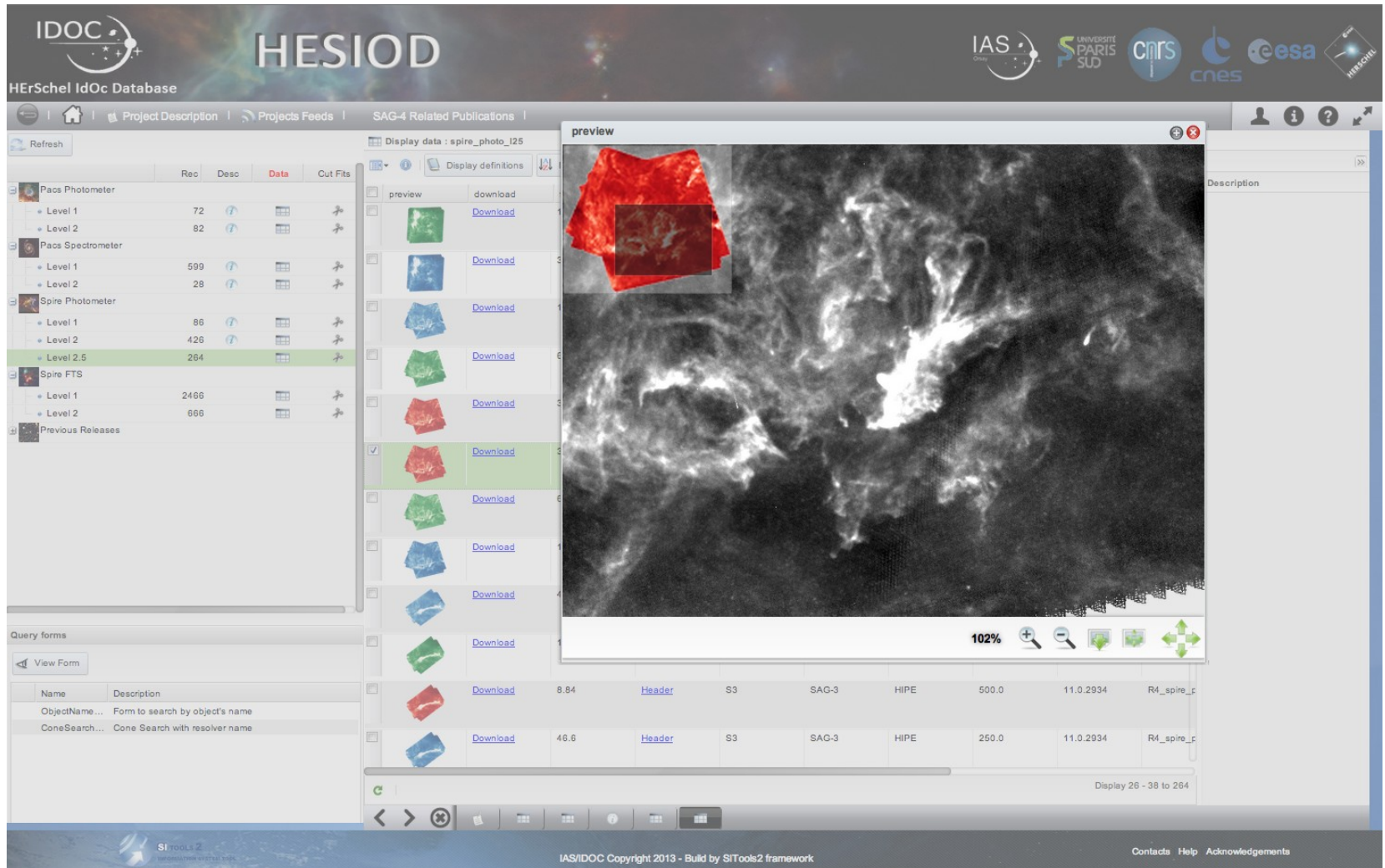


FoV: 77.76°
Contact & Credits



IAS/IDOC Copyright 2015 - Built with SITools2 framework

Herschel - HESIOD <http://idoc-herschel.ias.u-psud.fr/>

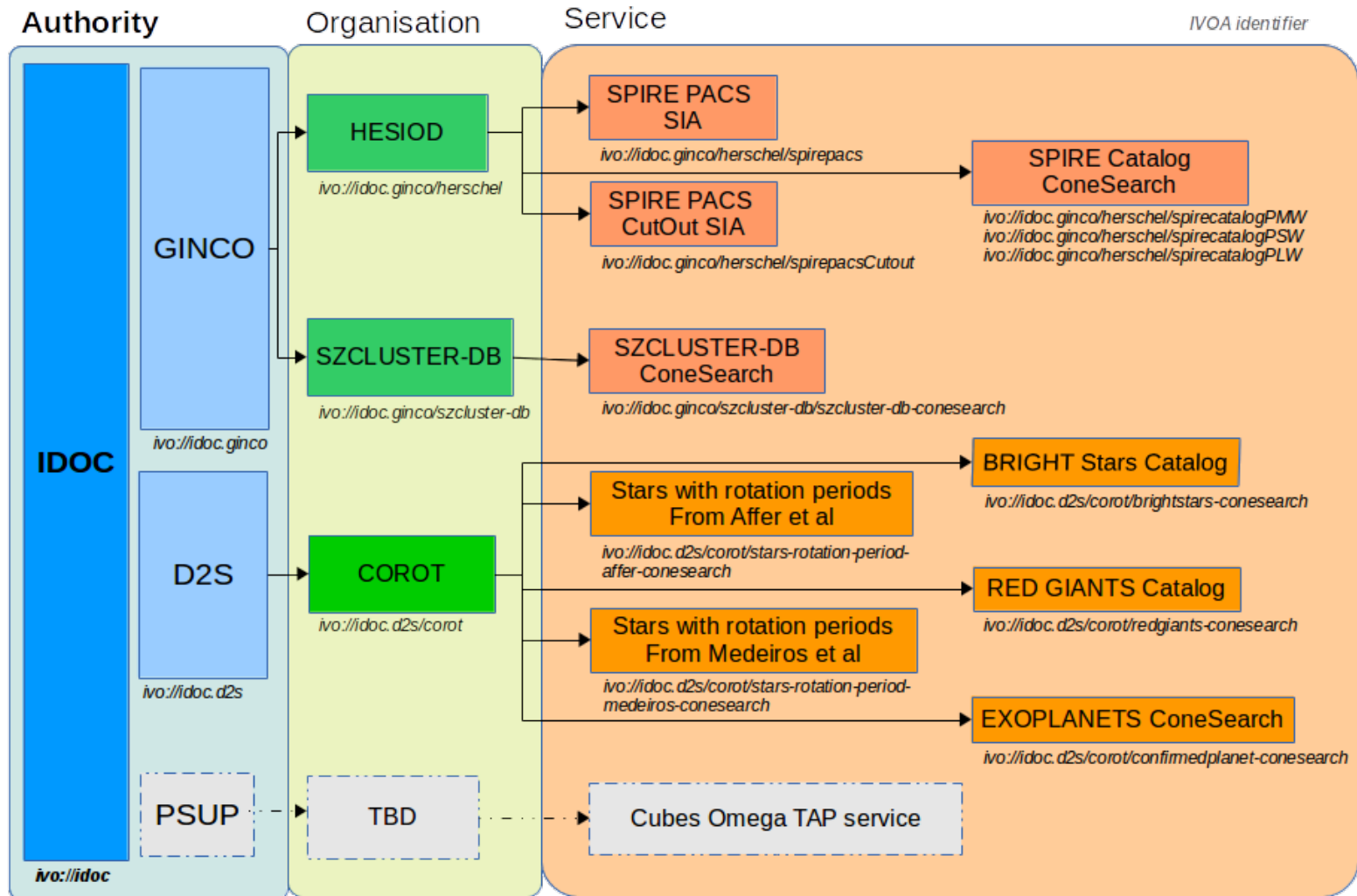


The screenshot displays the HESIOD web interface. On the left, a table lists data levels for various instruments. The 'Spire FTS' Level 2.5 row is highlighted. A 'preview' window shows a red heatmap overlaid on a grayscale image of a galaxy cluster. Below the preview, a table shows data for two rows, with the first row highlighted.

Instrument	Level	Rec	Desc	Data	Out Fits
Pacs Photometer	Level 1	72			
	Level 2	82			
Pacs Spectrometer	Level 1	599			
	Level 2	28			
Spire Photometer	Level 1	86			
	Level 2	426			
Spire FTS	Level 1	2466			
	Level 2	666			

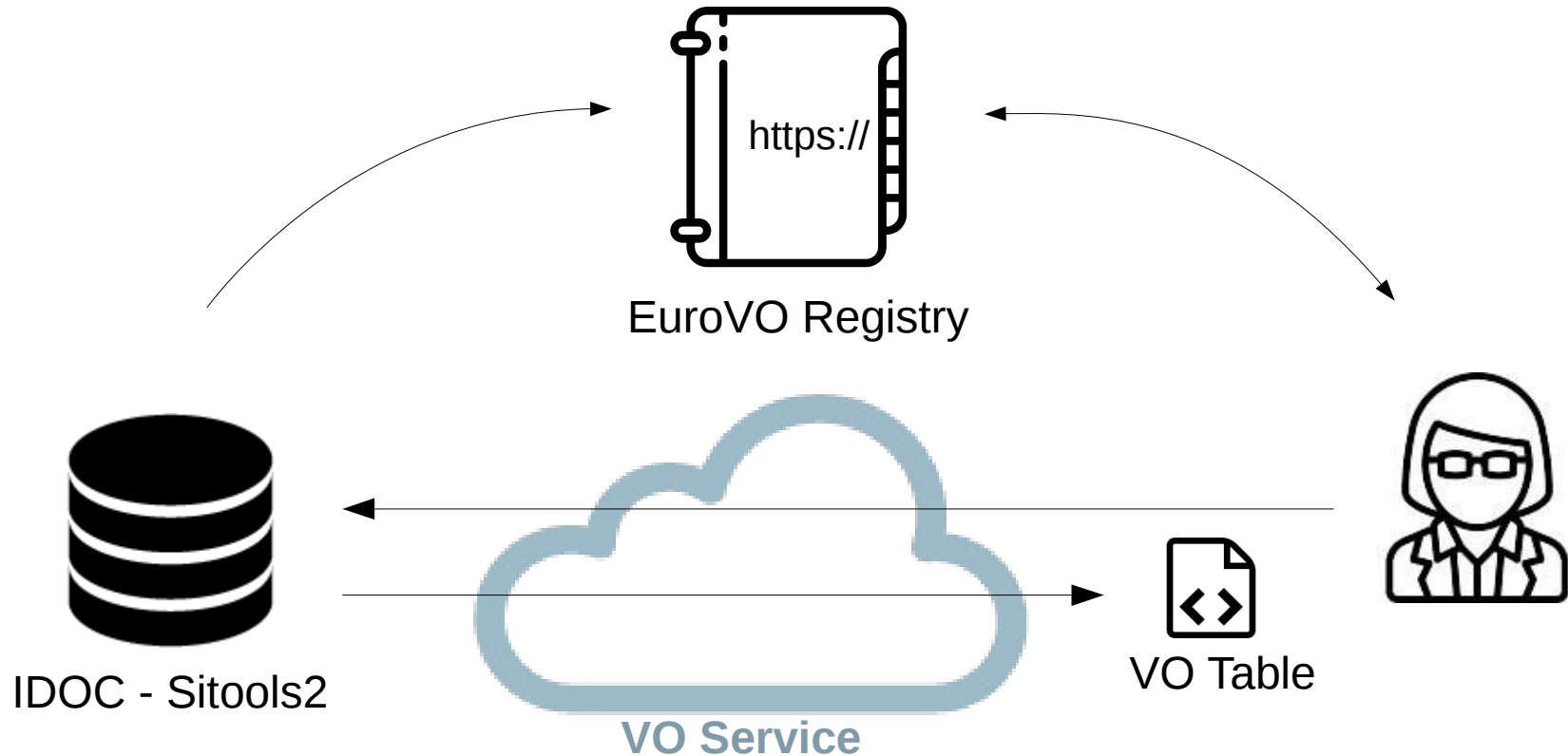
8.84	Header	S3	SAG-3	HIPE	500.0	11.0.2934	R4_spire_p...
46.6	Header	S3	SAG-3	HIPE	250.0	11.0.2934	R4_spire_p...

IDOC VO registered services summary

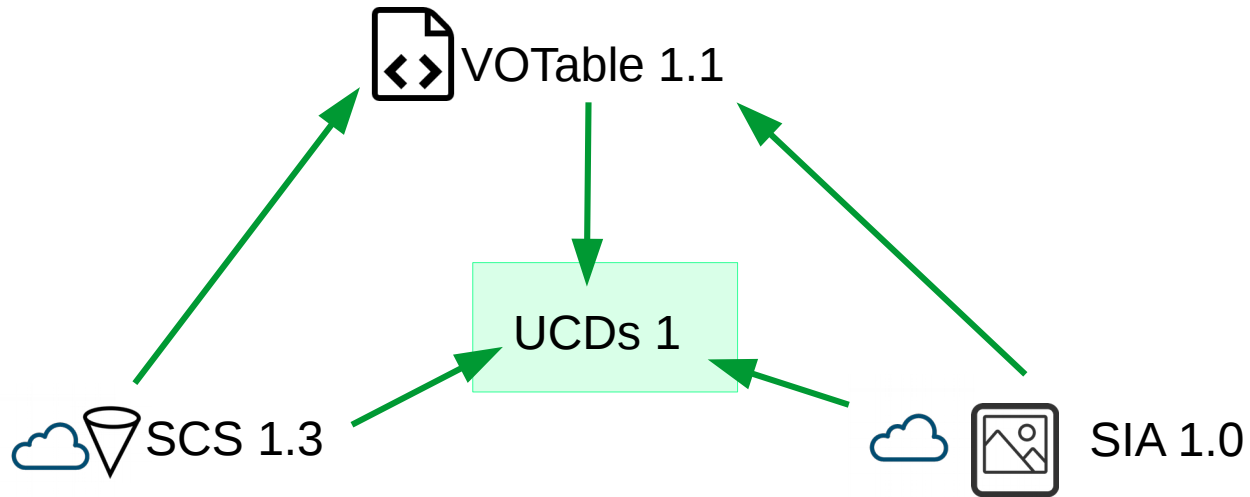


Validateurs

Service VO en un mot



Spécifications suivies par nos services



Extrait de Spécification de Simple Cone Search 1.03

2. Service Interface Requirements

A service implementation that is compliant with this standard must meet the following requirements:

1. the service must respond to a HTTP GET request represented by a URL having two parts:

- A base URL of the form:

http://<server-address>/<path>? [<extra-GET-arg>& [...]]

- The set of query constraints must include the following parameters, which are interpreted by the service with the stated meaning:

- **RA** -- a right-ascension in the ICRS coordinate system for the position of the center of the cone to search, given in decimal degrees
- **DEC** -- a declination in the ICRS coordinate system for the position of the center of the cone to search, given in decimal degrees
- **SR** -- the radius of the cone to search, given in decimal degrees.

Example:

`http://mycone.org/cgi-bin/search?RA=180.567&DEC=-30.45&SR=0.0125`

A query following this syntax represents a request for information on sources located within the specified cone on the sky.

2. The service must respond with an XML document in the VOTable format, that represents a table of astronomical sources whose positions are within the cone -- other sources outside the cone -- the service implementor may decide on the exact search criterion used internally to the service to filter the results.

The base MIME-type of the HTTP response should be `text/xml`. The more specific form `text/xml;content=x-votable` may optionally be used (for compatibility reasons); however, this value is strongly discouraged as it is not compliant with the MIME-type standard [[MIME](#)]. The XML format should be [VOTable v1.0](#) or 1.1 [[VOTable v1.1](#)].

Editor's Note:

The original NVO specification allowed a MIME-type of `text/xml;votable`, thus for backward compatibility this is still allowed.

The VOTable MUST comply with these conditions:



Extrait de Spécification de spécification VOTable 1.1

4 FIELDS and PARAMeters

The atoms of the table structure are represented by **FIELD** and **PARAM** elements.



4.1 FIELD attributes

The valid attributes of a **FIELD** or **PARAM** are:

- the **name** and/or **ID**. The **ID** attribute is required if the field has to be referenced (see [the generic ID rule](#)). It may help to include the ordinal number of the column in the table in the value of the **ID** attribute as e.g. **ID="col13"** when a single table is involved: the connection to the corresponding column would become more obvious, especially in the FITS data serialization which uses the ordinal column number in the keywords containing the metadata related to that column.
- the **datatype**, which expresses the nature of the data that is described as one of the permitted primitives (see [the table above](#) and their exact meaning in [section 6](#)). This attribute determines how data are read and stored internally; it is *required*.
- the **arraysize** attribute exists when the corresponding table cell contains more than one of the specified datatype, as explained in [section 2.2](#). Note that strings are not a primitive type, and have to be described as an array of characters.
- the **width** and **precision** attributes define the numerical accuracy associated with the data (see [below](#)).
- the **unit** attribute specifies the units in which the values of the corresponding column are expressed (see [below](#)).
- the **ucd** attribute supplies a standardized classification of the physical quantity expressed in the column (see [below](#)).
- the **utype** attribute, introduced in VOTable 1.1, is meant to express the role of the column in the context of an external data model (see [below](#)).
- the **ref** attribute is used to quote another element of the document in the definition of a **FIELD** or **PARAM**. It is used

Valdateur de Service et de VOTable

 Service VO 





 VOTable 





Validation Service - EuroVO - <http://registry.euro-vo.org>

Signed in as: idoc.ginco [LogO](#)



Validation Result ✕

Service Type: sia:SimpleImageAccess

Validated on: 16:38:04 10/02/2018

Cap Type: sia:SimpleImageAccess

Validations

Val Code	Val Type	Val Status	Description	Access URL
4.2.1a	REQUIREMENT		Single TABLE element which contains the results of the query	SIZE=180.000
4.2.1b	recommendation	Pass	If multiple resources are present it is recommended that the query results be returned in the first resource element	http://idoc-herschel.ias.u-psud.fr/ds/sia/spirepacsphotol25/services/sia/cutOut?POS=0.0,0.0&SIZE=180.000
4.2.2a	WARNING	Pass	The RESOURCE element should contain an INFO with	http://idoc-herschel.ias.u-psud.fr/ds/sia/spirepacsphotol25/services/sia/cutOut?POS=0.0,0.0&SIZE=180.000

Standalone Validation

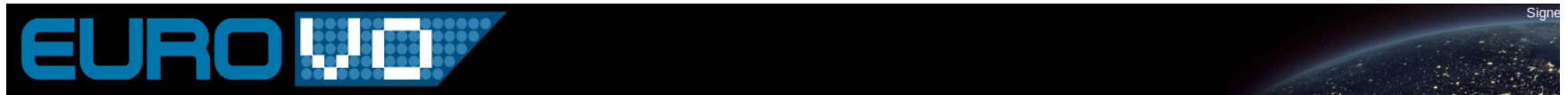
This dialog is used for validating standalone services, i.e. services not (yet) declared as a capability/interface inside a Resource record and hence, not yet part of the VO.

For services declared inside resource records, validation is integrated in the search results or edit resources screens so you don't have to use this dialog (though you obviously can if you so wish).

Service Type*

Access URL*

Validation Service - EuroVO - <http://registry.euro-vo.org>



Validation Result0
Validation Result1
Validation Result2

Service Type
▲ Access URL
Validate Now

cs:ConeSearch http://idoc-corot.ias.u-psud.fr/057e71c5-b503-4f1b-a735-7fb918aa462b/plugin/conesearch? Live-Access

Validated on: 16:48:13 27/02/2018
Standard Version: 1.0
Duration in ms: 954

Cap Type: cs:ConeSearch
Compliance: C-
i

Validations

Val Code	Val Type	Val Result	Description	valURL	▲ valException	valDetail
2.2a-i	REQUIREMENT	Pass	The service must respond with an XML document in the VOTable format [for the zero URL]	http://idoc-corot.ias.u-psud.fr/057e71c5...		
2.2a-ii	REQUIREMENT	Pass	The service must respond with an XML document in the VOTable format [for the effective URL]	http://idoc-corot.ias.u-psud.fr/057e71c5...		
2.2b-i	REQUIREMENT	Pass	The zero response contains no data	http://idoc-corot.ias.u-psud.fr/057e71c5...		
2.2b-ii	REQUIREMENT	Pass	The effective response has to contain some data	http://idoc-corot.ias.u-psud.fr/057e71c5...		
2.2c-i	REQUIREMENT	Pass	The VOTable MUST comply with these conditions: [...] Exactly one FIELD must have ucd='ID_MAIN', with an array character type (fixed or variable length)	http://idoc-corot.ias.u-psud.fr/057e71c5...		
2.2c-ii	REQUIREMENT	Failed	The VOTable MUST comply with these conditions: [...] Exactly one FIELD must have ucd='POS_EQ_RA_MAIN', with type double	http://idoc-corot.ias.u-psud.fr/057e71c5...		The expression: '\$0==1' supplied with the evaluated to false
2.2c-iii	REQUIREMENT	Failed	The VOTable MUST comply with these conditions: [...] Exactly one FIELD must have ucd='POS_EQ_DEC_MAIN', with type double	http://idoc-corot.ias.u-psud.fr/057e71c5...		The expression: '\$0==1' supplied with the evaluated to false
2.3b-i	REQUIREMENT	Pass	no INFO elements with @name='Error' should appear in the zero response	http://idoc-corot.ias.u-psud.fr/057e71c5...		



Compliance Categories

Compliant

- A++ no criterion fails
- A+ no requirement, warning or recommendation fails
- A no requirement or warning fails, but at least one recommendation fails
- B no requirement fails, but at least one warning fails

Partially Compliant

- C at least one (1) requirement fails, but at least one (1) requirement equally succeeds
- C- at least two (2) requirements fails, but at least one (1) requirement equally succeeds
- C-- at least three (3) requirements fails, but at least one (1) requirement equally succeeds

Not Compliant

- D all requirements fail but some other criterion (of lesser importance) succeeds
- E no criterion succeeds

Validation Service - VOParis <http://voparis-validator.obspm.fr>



VOTable Validation Service

Load specification:

Simple Cone Search 1.03

Load

Required parameters:

RA 180.0

DEC 60.0

SR 1.0

Additional parameters:

URL of the service to validate:

<http://voparis-validator.obspm.fr/xml/111.xml?>

Run batch tests

Output format:

XHTML

Validate

Validation Service - VOParis <http://voparis-validator.obspm.fr>



VOTable Validation Service

<http://idoc-herschel.ias.u-psud.fr/ds/sia/spirepacsphotol25/services/sia/cutOut?&POS=180.0%2C60.0&SIZE=1.0%2C1.0&FORMAT=ALL>

```

15 <-DESCRIPTION>
16     Array (matrix) value specifying the WCS CD matrix
17 </DESCRIPTION>
18 </FIELD>
19 <FIELD name="CoordRefFrame" ucd="VOX:STC_CoordRefFrame" datatype="char" arraysize="*">
20 <-DESCRIPTION>
21     Coordinate system reference frame, selected from "ICRS", "FK5", "FK4", "ECL", "GAL", and "SGAL"
22 </DESCRIPTION>
23 </FIELD>
24 <FIELD name="Crpix" ucd="VOX:WCS_CoordRefPixel" datatype="double" arraysize="*">
25 <-DESCRIPTION>
  
```

SUCCESS: valid VOTable 1.2!

SUCCESS: valid Simple Image Access 1.0!

Warning: Exactly one **FIELD** or **PARAM** *should* have `ucd="VOX:Image_MJDateObs"`, with `datatype="double"`, representing the mean modified Julian date of the observation. Either the element is missing, or some of its required attributes are missing or erroneous. No match found.

Warning: Exactly one **FIELD** or **PARAM** *should* have `ucd="VOX:BandPass_Unit"`, with `datatype="char"`, and `arraysize="*"`, identifying the units used to represent spectral values, selected from meters, hertz, and kev. No other units are permitted here; the client application may of course present a wider range of units in the user interface. Either the element is missing, or some of its required attributes are missing or erroneous. No match found.

Warning: Exactly one **FIELD** or **PARAM** *should* have `ucd="VOX:BandPass_RefValue"`, with `datatype="double"`, specifying the characteristic (reference) frequency, wavelength, or energy for the bandpass model. Either the element is missing, or some of its required attributes are missing or erroneous. No match found.

Warning: Exactly one **FIELD** or **PARAM** *should* have `ucd="VOX:BandPass_HiLimit"`, with `datatype="double"`, specifying the upper limit of the bandpass. Either the element is missing, or some of its required attributes are missing or erroneous. No match found.

Warning: Exactly one **FIELD** or **PARAM** *should* have `ucd="VOX:BandPass_LoLimit"`, with `datatype="double"`, specifying the lower limit of the bandpass. Either the element is missing, or some of its required attributes are missing or erroneous. No match found.

Warning: Exactly one **FIELD** or **PARAM** *should* have `ucd="VOX:Image_PixFlags"`, with `datatype="char"`, and `arraysize="*"`, specifying the type of processing done by the image service to produce an output image pixel. Either the element is missing, or some of its required attributes are missing or erroneous. No match found.

Questions, comments: vo.paris@obspm.fr

Validation VOTable - Astropy



In [4]: `import astropy.io.votable`

```
astropy.io.votable.validate(source="arraysize_doubleStr_coosys.xml", xmllint=True)
```

Validation report for arraysize_doubleStr_coosys.xml

3: W22: The DEFINITIONS element is deprecated in VOTable 1.1.

```
Ignoring
<DEFINITIONS>
^
```

4: W27: COOSYS deprecated in VOTable 1.2

```
<COOSYS ID="J2000" equinox="J2000." epoch="J2000." system="eq_FK5"/>
^
```

13: W06: Invalid UCD 'POS_EQ_RA_MAIN': Unknown word 'POS_EQ_RA_MAIN'

```
<FIELD name="RAJ2000" ucd="POS_EQ_RA_MAIN" ref="J2000" data...
^
```

18: W06: Invalid UCD 'POS_EQ_DEC_MAIN': Unknown word

```
'POS_EQ_DEC MAIN'
<FIELD name="DECJ2000" ucd="POS_EQ_DEC_MAIN" ref="J2000" da...
^
```

53: W06: Invalid UCD 'ID_MAIN': Unknown word 'ID_MAIN'

```
<FIELD name="ID" ucd="ID_MAIN" datatype="char" arraysize="*">
^
```

Validation VOTable - Stilts



```
~$ java -jar stilts.jar votlint
validate=true
version=1.2
out=out.txt
votable=VO_table.xml
```

out.txt

```
1 INFO (l.4, c.71): COOSYS is deprecated at VOTable 1.2
2 ERROR (l.65, c.43): Bad double string 'SPT-CL'
3 ERROR (l.65, c.43): Bad double string 'J0000-4356'
4 ERROR (l.76, c.44): Bad double string 'PSZ2'
5 ERROR (l.76, c.44): Bad double string 'G025.07-78.64'
6 ERROR (l.87, c.43): Bad double string 'SPT-CL'
```

Résultats

IVOA Services Requirements - CS Error



Service	EuroVO	VOParis	Astropy	Stilts
9 Simple Cone Search Hesiod – spire-catalog x3 SZCluster-DB _sz-cluster-db-cs COROT _exoplanets, brightstars, redgiants, rotation-period x2	C- → A++	‘Valid VOTable 1.2’ ‘Valid ConeSearch 1.03 ‘	Bad Double String Éléments dépréciés pour VOTable 1.2 Invalid UCDS	Bad Double String Éléments dépréciés pour VOTable 1.2
2 SIA Hesiod _spirepacs x2	C → B	‘Valid VOTable 1.2’ ‘Valid SIA 1.0’ + Warning missing 6 ucds		

Remarques

6 - Remarques

1 - IVOA Services Requirements – SCS Error

Non homogène entre services

2 - Arraysize attribute

<FIELD arraysize=""> mal interprété

3 - VOX:WCS_CoordProjection

non détecté /EuroVO

4 - Chaîne de caractère dans une colonne double

non détecté par les Validateurs de Service

5 - Invalid ucd POS-EQ-RA-MAIN

Spécifications Services incompatibles avec la Spécifications des UCDS 1.1

6 - Option xmlint=True inutilisable chez Astropy

Ticket ouvert dans Gitlab

6.1 - Remarques

1 - IVOA Services Requirements – SCS Error

Non homogène entre service

C- → A

2 - Arraysize attribute

<FIELD arraysize=""> mal interprété

3 - VOX:WCS_CoordProjection

non détecté /EuroVO

4 - Chaîne de caractère dans une colonne double

non détecté par les Validateurs de Service

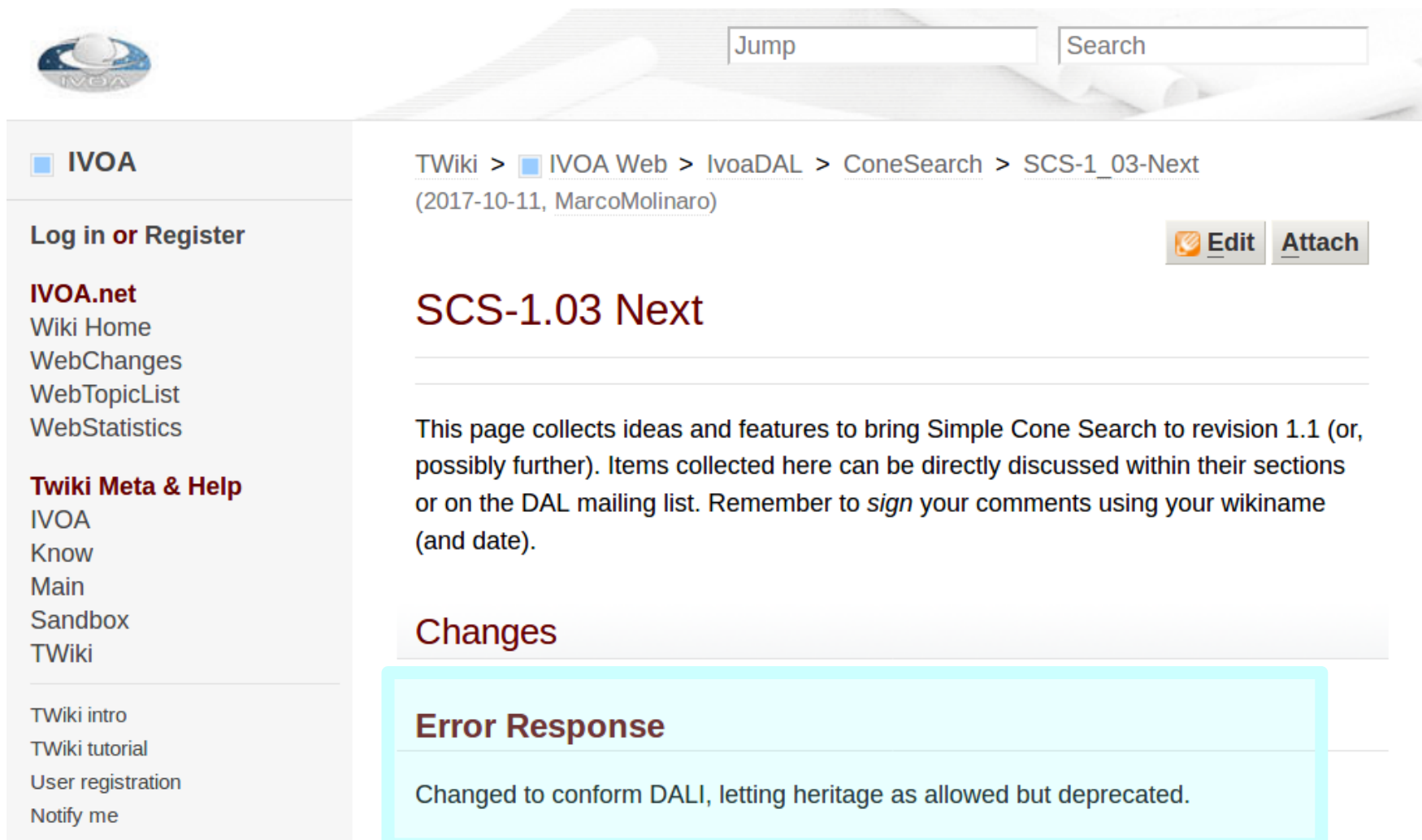
5 - Invalid ucd POS-EQ-RA-MAIN

Spécifications Services incompatibles avec la Spécifications des UCDS 1.1

6 - Option xmlint=True inutilisable chez Astropy

Ticket ouvert dans Gitlab

6.1 - IVOA Services Requirements - CS Error



The screenshot shows a TWiki page interface. At the top, there are search boxes labeled 'Jump' and 'Search'. Below them is a breadcrumb trail: [TWiki](#) > [IVOA Web](#) > [IvoaDAL](#) > [ConeSearch](#) > [SCS-1_03-Next](#) (2017-10-11, [MarcoMolinaro](#)). There are 'Edit' and 'Attach' buttons. The main heading is 'SCS-1.03 Next'. The text below reads: 'This page collects ideas and features to bring Simple Cone Search to revision 1.1 (or, possibly further). Items collected here can be directly discussed within their sections or on the DAL mailing list. Remember to *sign* your comments using your wikiname (and date).' Below this is a 'Changes' section with a highlighted box containing the text: 'Error Response' and 'Changed to conform DALI, letting heritage as allowed but deprecated.'

[Jump](#) [Search](#)

[IVOA](#)

Log in or Register

IVOA.net
[Wiki Home](#)
[WebChanges](#)
[WebTopicList](#)
[WebStatistics](#)

Twiki Meta & Help
[IVOA](#)
[Know](#)
[Main](#)
[Sandbox](#)
[TWiki](#)

[TWiki intro](#)
[TWiki tutorial](#)
[User registration](#)
[Notify me](#)

[TWiki](#) > [IVOA Web](#) > [IvoaDAL](#) > [ConeSearch](#) > [SCS-1_03-Next](#)
(2017-10-11, [MarcoMolinaro](#))

[Edit](#) [Attach](#)

SCS-1.03 Next

This page collects ideas and features to bring Simple Cone Search to revision 1.1 (or, possibly further). Items collected here can be directly discussed within their sections or on the DAL mailing list. Remember to *sign* your comments using your wikiname (and date).

Changes

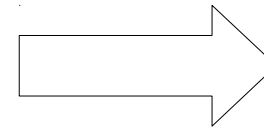
Error Response

Changed to conform DALI, letting heritage as allowed but deprecated.

6.2 - Remarques

- 1 - IVOA Services Requirements – SCS Error
Non homogène entre service
C- → A++
- 2 - **Arraysiz attribute**
<FIELD arraysize=""> mal interprété
C- → A++
- 3 - VOX:WCS_CoordProjection
non détecté /EuroVO
- 4 - Chaîne de caractère dans une colonne double
non détecté par les Validateurs de Service
- 5 - Invalid ucd POS-EQ-RA-MAIN
Spécifications Services incompatibles avec la Spécifications
des UCDS 1.1
- 6 - Option xmlint=True inutilisable chez Astropy
Ticket ouvert dans Gitlab

6.2 - Arraysize attribute



Pas d'erreur
remontée pour
chacun
des autres validateur



VOTable v1.3 and 1.2

The arraysize attribute exists when the corresponding table cell contains more than one of the specified datatype.

6.3 - Remarques

- | | |
|---|-----------------------|
| <p>1 - IVOA Services Requirements – SCS Error
Non homogène entre service</p> | <p>C- → A++</p> |
| <p>2 - Arraysize attribute
<FIELD arraysize=""> mal interprété</p> | <p>C- → A++</p> |
| <p>3 - VOX:WCS_CoordProjection
non détecté /EuroVO</p> | <p>B → A++</p> |
| <p>4 - Chaîne de caractère dans une colonne double
non détecté par les Validateurs de Service</p> | |
| <p>5 - Invalid ucd POS-EQ-RA-MAIN
Spécifications Services incompatibles avec la Spécifications
des UCDS 1.1</p> | |
| <p>6 - Option xmlint=True inutilisable chez Astropy
Ticket ouvert dans Gitlab</p> | |

6.3 - VOX:WCS_CoordProjection

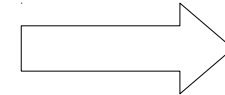


Service	EuroVO	VOParis	Astropy	Stilts
9 Simple Cone Search Hesiod – spire-catalog x3 SZCluster-DB _sz-cluster-db-cs COROT _exoplanets, brightstars, redgiants, rotation-period x2	C- → A++	‘Valid VOTable 1.2’ ‘Valid ConeSearch 1.03 ‘	Éléments dépréciés pour VOTable 1.2 Invalid UCDS	Éléments dépréciés pour VOTable 1.2
2 SIA Hesiod _spirepacs x2	C → B missing 7 ucd «should »	‘Valid VOTable 1.2’ ‘Valid SIA 1.0’ + Warning missing 6 ucd «should »		

6.4 - Remarques

- | | |
|---|-----------------|
| <p>1 - IVOA Services Requirements – SCS Error
Non homogène entre service</p> | <p>C- → A++</p> |
| <p>2 - Arraysize attribute
<FIELD arraysize=""> mal interprété</p> | <p>C- → A++</p> |
| <p>3 - VOX:WCS_CoordProjection
non détecté /EuroVO</p> | <p>B → A++</p> |
| <p>4 - Chaîne de caractère dans une colonne double
non détecté par les Validateurs de Service</p> | |
| <p>5 - Invalid ucd POS-EQ-RA-MAIN
Spécifications Services incompatibles avec
la Spécifications des UCDS 1.1</p> | |
| <p>6 - Option xmlint=True inutilisable chez Astropy
Ticket ouvert dans Gitlab</p> | |

6.4 - Chaîne de caractère dans une colonne double



Pas d'erreur



STILTS

out.txt

```
1 INFO (l.4, c.71): COOSYS is deprecated at VOTable 1.2
2 ERROR (l.65, c.43): Bad double string 'SPT-CL'
3 ERROR (l.65, c.43): Bad double string 'J0000-4356'
4 ERROR (l.76, c.44): Bad double string 'PSZ2'
5 ERROR (l.76, c.44): Bad double string 'G025.07-78.64'
6 ERROR (l.87, c.43): Bad double string 'SPT-CL'
```



```
53: W06: Invalid UCD 'ID_MAIN': Unknown word 'ID_MAIN'
      <FIELD name="ID" ucd="ID_MAIN" datatype="char" arraysize="*">
      ^
```

```
65: W30: Invalid literal for float 'SPT-CL'. Treating as empty.
      <TD>SPT-CL J0000-4356</TD>
      ^
```

6.5 - Remarques

- 1 - IVOA Services Requirements – SCS Error
Non homogène entre service
C- → A++
- 2 - Arraysize attribute
<FIELD arraysize=""> mal interprété
C- → A++
- 3 - VOX:WCS_CoordProjection
non détecté /EuroVO
B → A++
- 4 - Chaîne de caractère dans une colonne double
non détecté par les Validateurs de Service
- 5 - Invalid ucd POS-EQ-RA-MAIN**
Spécifications Services incompatibles avec la
Spécifications des UCDs 1.1
- 6 - Option xmlint=True inutilisable chez Astropy
Ticket ouvert dans Gitlab

6.5 - Invalid ucd POS-EQ-RA-MAIN



IVOA Recommendation

Simple Cone Search Version 1.03

- Exactly one FIELD must have ucd="ID_MAIN", with an array character type (fixed or variable length), representing the table. This identifier may not be repeated in the table, and it could be used to retrieve that same record a
- Exactly one FIELD must have ucd="POS_EQ_RA_MAIN", with type double, representing the right-ascension of system.
- Exactly one FIELD must have ucd="POS_EQ_DEC_MAIN", with type double, representing the declination of the system.

In [4]: `import astropy.io.votable`

```
astropy.io.votable.validate(source="array.xml", xmlint=True)
```



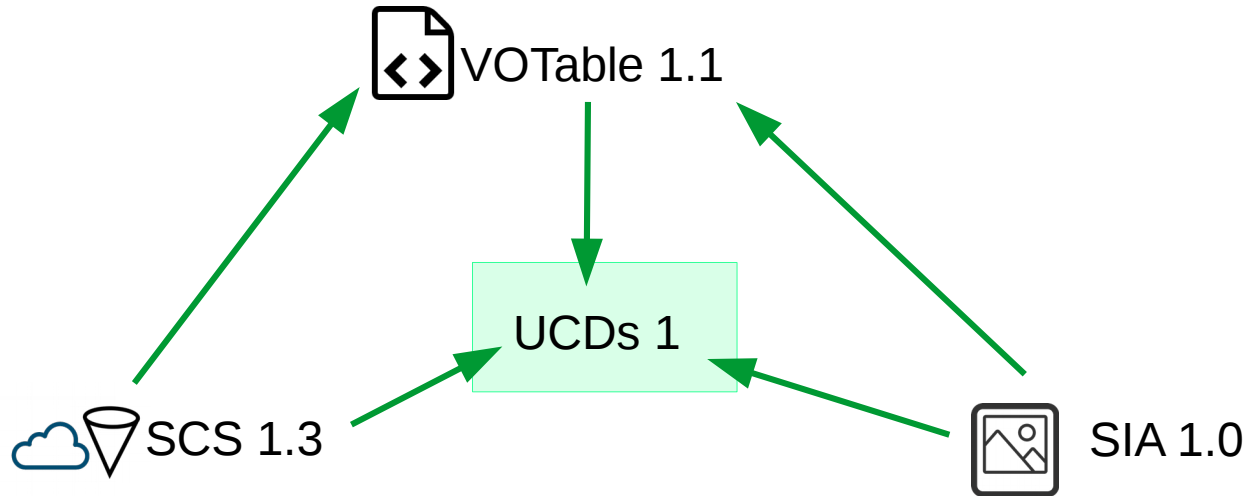
```
13: W06: Invalid UCD 'POS EQ RA MAIN' for 'POS_EQ_RA_MAIN'
    <FIELD name="POS_EQ_RA_MAIN" ucd="POS_EQ_RA_MAIN" ref="J2000" data...
    ^

18: W06: T... 'POS_EQ_DEC_MAIN': Unknown word
    'POS_EQ_DEC_MAIN' ucd="POS_EQ_DEC_MAIN" ref="J2000" da...

53: W... id UCD 'ID_MAIN': Unknown word 'ID_MAIN'
    <FIELD name="ID" ucd="ID_MAIN" datatype="char" arraysize="*">
```

Pour VOTable 1.2
(pas d'erreur en spécifiant 1.1)

Spécifications de nos services



6.6 - Remarques

- 1 - IVOA Services Requirements – SCS Error
Non homogène entre service
C- → A++
- 2 - Arraysize attribute
<FIELD arraysize=""> mal interprété
C- → A++
- 3 - VOX:WCS_CoordProjection
non détecté /EuroVO
B → A++
- 4 - Chaîne de caractère dans une colonne double
non détecté par les Validateurs de Service
- 5 - Invalid ucd POS-EQ-RA-MAIN
Spécifications Services incompatibles avec la Spécifications
des UCDS 1.1
- 6 - Option xmlint=True inutilisable chez Astropy**
Résolu dans la version 3.0.2

Conclusion

- Attention à la cohérence des versions de spécifications utilisées pour les services
- Validateurs à croiser pour améliorer la qualité des services
- Ne pas hésiter à contacter les acteurs des spécifications / validateurs. Réponses rapides et intérêt apprécié.

Questions ?



6.2 - Arraysize attribute



Signed in as: idoc.ginco | Log

Validation Result0 X
Validation Result1 X
Validation Result2 X

Service Type ▲ Access URL

cs:ConeSearch http://idoc-corot.ias.u-psud.fr/057e71c5-b503-4f1b-a735-7fb918aa462b/plugin/conesearch?

Validate Now

[Live-Access](#)

Validated on:

Standard Version:

Duration in ms:

Cap Type:

Compliance: i

Validations

Val Code	Val Type	Val Result	Description	valURL	▲ valException	valDetail
2.2a-i	REQUIREMENT	Pass	The service must respond with an XML document in the VOTable format [for the zero URL]	http://idoc-corot.ias.u-psud.fr/057e71c5...		
2.2a-ii	REQUIREMENT	Pass	The service must respond with an XML document in the VOTable format [for the effective URL]	http://idoc-corot.ias.u-psud.fr/057e71c5...		
2.2b-i	REQUIREMENT	Pass	The zero response contains no data	http://idoc-corot.ias.u-psud.fr/057e71c5...		
2.2b-ii	REQUIREMENT	Pass	The effective response has to contain some data	http://idoc-corot.ias.u-psud.fr/057e71c5...		
2.2c-i	REQUIREMENT	Pass	The VOTable MUST comply with these conditions: [...] Exactly one FIELD must have ucd='ID_MAIN', with an array character type (fixed or variable length)	http://idoc-corot.ias.u-psud.fr/057e71c5...		
2.2c-ii	REQUIREMENT	Failed	The VOTable MUST comply with these conditions: [...] Exactly one FIELD must have ucd='POS_EQ_RA_MAIN', with type double	http://idoc-corot.ias.u-psud.fr/057e71c5...		The expression: '\$0==1' supplied with the derived values: [0] evaluated to false
2.2c-iii	REQUIREMENT	Failed	The VOTable MUST comply with these conditions: [...] Exactly one FIELD must have ucd='POS_EQ_DEC_MAIN', with type double	http://idoc-corot.ias.u-psud.fr/057e71c5...		The expression: '\$0==1' supplied with the derived values: [0] evaluated to false
2.3b-i	REQUIREMENT	Pass	no INFO elements with @name='Error' should appear in the zero response	http://idoc-corot.ias.u-psud.fr/057e71c5...		

6.3 - VOX:WCS_CoordProjection



Signed in as: idoc.ginco [Log](#)

-
-
-
-
-
-
-
-
-

Validation Result0 X

Service Type	Access URL	Validate Now
sia:SimpleImageAccess	http://idoc-herschel.ias.u-psud.fr/ds/sia/spirepacsphotol25/services/sia?	<input type="button" value="Live-Access"/>
Validated on:	Standard Version:	Duration in ms:
06:56:12 16/02/2018	1.0	1727
Cap Type:	Compliance:	
sia:SimpleImageAccess	B	

Validations

Val Code	Val Type	Val Result	Description	valURL	valException	valDetail
4.2.4.a.ii	WARNING	Pass	Exactly one field should have ucd='INST_ID', with datatype='char', and arraysize='*'	http://idoc-herschel.ias.u-psud.fr/ds/sia/spirepacsphotol25		
4.2.4.a.iii	WARNING	Failed	Exactly one field should have ucd='VOX:Image_MJDateObs', with datatype='double'	http://idoc-herschel.ias.u-psud.fr/ds/sia/spirepacsphotol25		The expression: '\$0==1' supplied with the derived values: [0] evaluated to false
4.2.4.b.iii	WARNING	Failed	Exactly one field should have ucd='VOX:WCS_CoordProjection', with datatype='char', and arraysize='3'	http://idoc-herschel.ias.u-psud.fr/ds/sia/spirepacsphotol25		The expression: '\$0==1' supplied with the derived values: [0] evaluated to false
4.2.4.c.ii	WARNING	Failed	Exactly one field should have ucd='VOX:BandPass_Unit', with datatype='char', and arraysize='*'	http://idoc-herschel.ias.u-psud.fr/ds/sia/spirepacsphotol25		The expression: '\$0==1' supplied with the derived values: [0] evaluated to false
4.2.4.c.iii	WARNING	Failed	Exactly one field should have ucd='VOX:BandPass_RefValue', with datatype='double'	http://idoc-herschel.ias.u-psud.fr/ds/sia/spirepacsphotol25		The expression: '\$0==1' supplied with the derived values: [0] evaluated to false
4.2.4.c.iv	WARNING	Failed	Exactly one field should have ucd='VOX:BandPass_HiLimit', with datatype='double'	http://idoc-herschel.ias.u-psud.fr/ds/sia/spirepacsphotol25		The expression: '\$0==1' supplied with the derived values: [0] evaluated to false

6.3 - VOX:WCS_CoordProjection

```

1 <?xml version="1.0" encoding="UTF-8"?>
2 <VOTABLE version="1.2" xmlns="http://www.ivoa.net/xml/VOTable/v1.2">
3
4   <RESOURCE type="results">
5
6     <INFO name="QUERY_STATUS" value="OK"/>
7     <PARAM datatype="char" name="Instrument" value="Herschel"/>
8     <PARAM datatype="char" name="Image service" value="Image Cutout Service"/>
9     <PARAM datatype="char" name="Waveband Coverage" value="infrared"/>
10    <PARAM datatype="int" name="Max records" value="-1"/>
11    <PARAM datatype="char" name="Max query size" value="64800"/>
12    <PARAM datatype="int" name="VERB" value="1"/>
13    <TABLE nrows="408">
14      <FIELD name="CdMatrix" ucd="VOX:WCS_CdMatrix" datatype="double" arraysize="*">
15        <DESCRIPTION>
16          Array (matrix) value specifying the WCS CD matrix
17        </DESCRIPTION>
18      </FIELD>
19      <FIELD name="CoordRefFrame" ucd="VOX:STC_CoordRefFrame" datatype="char" arraysize="*">
20        <DESCRIPTION>
21          Coordinate system reference frame, selected from "ICRS", "FK5", "FK4", "ECL", "GAL", and "SGAL"
22        </DESCRIPTION>
23      </FIELD>
24      <FIELD name="Projection" ucd="VOX:WCS_CoordProjection" datatype="char" arraysize="3">
25        <DESCRIPTION>
26          Array value being the three-character code ("TAN", "ARC", "SIN", and so forth) specifying the celest
27        </DESCRIPTION>
28      </FIELD>
29      <FIELD name="Crpix" ucd="VOX:WCS_CoordRefPixel" datatype="double" arraysize="*">
30        <DESCRIPTION>
31          Array value specifying the image pixel coordinates of the WCS reference pixel
32        </DESCRIPTION>
33      </FIELD>

```

6.3 - VOX:WCS_CoordProjection



VOTable Validation Service

<http://idoc-herschel.ias.u-psud.fr/ds/sia/spirepacsphotol25/services/sia?&POS=180.0%2C60.0&SIZE=1.0%2C1.0&FORMAT=ALL>

```

1 <?xml version="1.0" ?>
2 <VOTABLE version="1.2" xmlns="http://www.ivoa.net/xml/VOTable/v1.2">
3
4   <RESOURCE type="results">
5
6     <INFO name="QUERY_STATUS" value="OK" />
7     <PARAM datatype="char" name="Instrument" value="Herschel"/>
8     <PARAM datatype="char" name="Image service" value="Pointed Image Archive"/>
9     <PARAM datatype="char" name="Waveband Coverage" value="infrared"/>
10    <PARAM datatype="int" name="Max records" value="1"/>
11    <PARAM datatype="char" name="Max query size" value="64800"/>

```

SUCCESS: valid VOTable 1.2!

SUCCESS: valid Simple Image Access 1.0!

Warning: Exactly one **FIELD** or **PARAM** *should* have `ucd="VOX:Image_MJDateObs"`, with `datatype="double"`, representing the mean modified Julian date of the observation. Either the element is missing, or some of its required attributes are missing or erroneous. No match found.

Warning: Exactly one **FIELD** or **PARAM** *should* have `ucd="VOX:BandPass_Unit"`, with `datatype="char"`, and `arraysize="**"`, identifying the units used to represent spectral values, selected from meters, hertz, and keV. No other units are permitted here; the client application may of course present a wider range of units in the user interface. Either the element is missing, or some of its required attributes are missing or erroneous. No match found.

Warning: Exactly one **FIELD** or **PARAM** *should* have `ucd="VOX:BandPass_RefValue"`, with `datatype="double"`, specifying the characteristic (reference) frequency, wavelength, or energy for the bandpass model. Either the element is missing, or some of its required attributes are missing or erroneous. No match found.

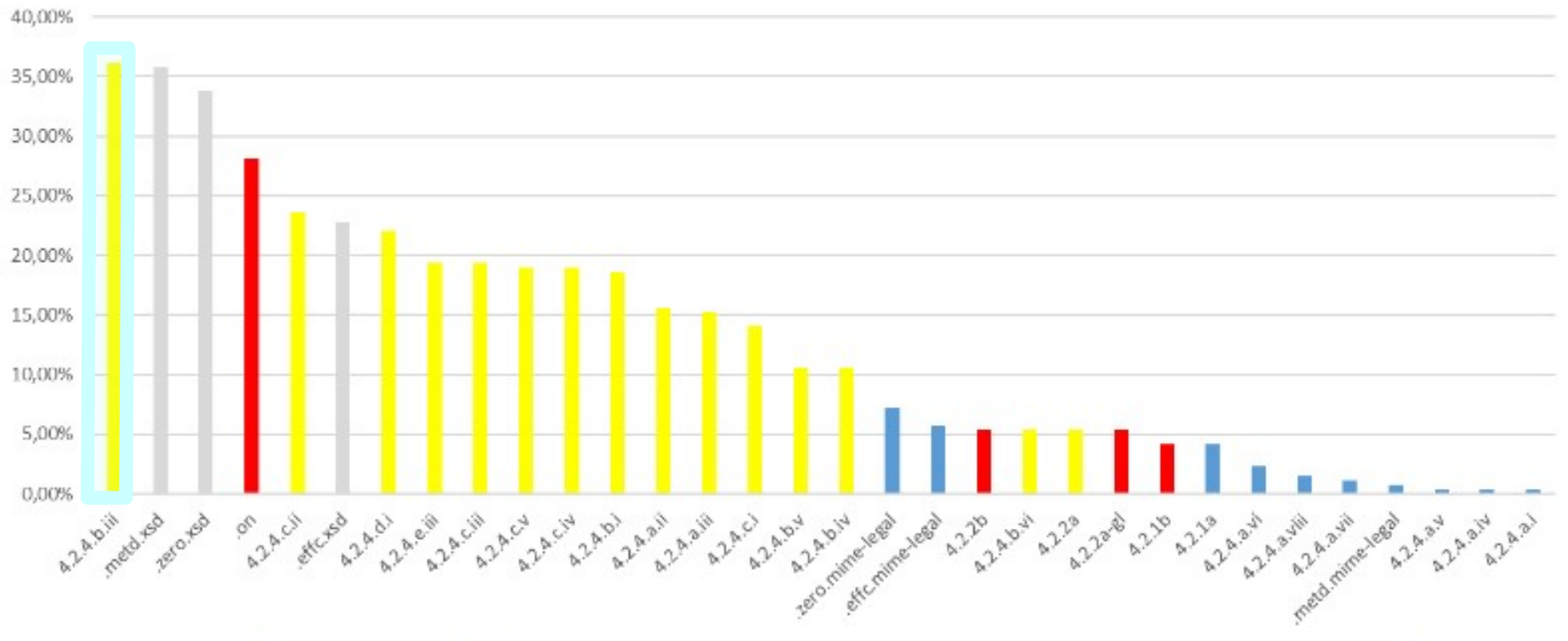
Warning: Exactly one **FIELD** or **PARAM** *should* have `ucd="VOX:BandPass_HiLimit"`, with `datatype="double"`, specifying the upper limit of the bandpass. Either the element is missing, or some of its required attributes are missing or erroneous. No match found.

Warning: Exactly one **FIELD** or **PARAM** *should* have `ucd="VOX:BandPass_LoLimit"`, with `datatype="double"`, specifying the lower limit of the bandpass. Either the element is missing, or some of its required attributes are missing or erroneous. No match found.

Warning: Exactly one **FIELD** or **PARAM** *should* have `ucd="VOX:Image_PixFlags"`, with `datatype="char"`, and `arraysize="**"`, specifying the type of processing done by the image service to produce an output image pixel. Either the element is missing, or some of its required attributes are missing or erroneous. No match found.

SIA Services Validation Analysis

Validation criteria failed for SIA Services



	name	description
■	REQUIREMENT	Tests drawn from 'MUST' statements in the respective standard
■	WARNING	Tests drawn from strongly encouraged 'SHOULD' statements in the respective standard
■	RECOMMENDATION	Tests drawn from 'SHOULD' statements in the respective standard
■	EXTRA	Criteria not defined in the IVOA 'Service Validation' wiki

SIA Services Validation Analysis



url_code	criticism_type	description
4.2.4.b.iii	WARNING	Exactly one field should have ucd='VOX:WCS_CoordProjection', with datatype='char', and arraysize='3'
.meta.xml	EXTRA	The metadata response is XSD-valid XML
.zero.xml	EXTRA	The zero response is XSD-valid XML
.on	REQUIREMENT	The service is ON
4.2.4.c.ii	WARNING	Exactly one field should have ucd='VOX:BandPass_Unit', with datatype='char', and arraysize='*'
.effc.xml	EXTRA	The effective response is XSD-valid XML
4.2.4.d.i	WARNING	Exactly one field should have ucd='VOX:Image_PixFlags', with datatype='char', and arraysize='*'
4.2.4.e.iii	WARNING	Exactly one field should have ucd='VOX:Image_FileSize', with datatype='int'
4.2.4.c.iii	WARNING	Exactly one field should have ucd='VOX:BandPass_RefValue', with datatype='double'
4.2.4.c.v	WARNING	Exactly one field should have ucd='VOX:BandPass_LoLimit', with datatype='double'
4.2.4.c.iv	WARNING	Exactly one field should have ucd='VOX:BandPass_HiLimit', with datatype='double'
4.2.4.b.i	WARNING	Exactly one field should have ucd='VOX:STC_CoordRefFrame', with datatype='char', and arraysize='*'

URL: <http://www.ivoa.net/documents/latest/SIA.html>

Most Important:

- **.on**: 90% of them are related to the SSL certificate update on NASA/GSFC HEASARC -> ESA has to update the Java RT in order to update the list of certificates. For the others try to increase the connection timeout on validator?
- **4.2.4.b.ii**: suggest an erratum?



6.4 - Chaîne de caractère dans une colonne double



VOTable Validation Service

<http://idoc-corot.ias.u-psud.fr/057e71c5-b503-4f1b-a735-7fb918aa462b/plugin/conesearch?&RA=180.0&DEC=60.0&SR=180>

```

26      <DESCRIPTION>
27          URL to be used to access or retrieve the image
28      </DESCRIPTION>
29  </FIELD>
30  <FIELD name="RA" ucd="POS_EQ_RA_MAIN" datatype="double" unit="degree">
31      <DESCRIPTION>
32          Right ascension
33      </DESCRIPTION>
34  </FIELD>
35  <DATA>
36  <TABLEDATA>
37      <TR>
38          <TD>7528</TD>
39          <TD></TD>
40          <TD>AN2_STR_0000007528_20070411T150752_20070508T213552.fits</TD>
41          <TD>HD_174966</TD>
42      </TR>
43  <TR>

```

SUCCESS: valid VOTable 1.2!

SUCCESS: valid Simple Cone Search 1.03!

6.5 - Invalid ucd POS-EQ-RA-MAIN



IVOA Recommendation

Simple Cone Search Version 1.03

- Exactly one FIELD must have ucd="ID_MAIN", with an array character type (fixed or variable length), represent the table. This identifier may not be repeated in the table, and it could be used to retrieve that same record a
- Exactly one FIELD must have ucd="POS_EQ_RA_MAIN", with type double, representing the right-ascension of system.
- Exactly one FIELD must have ucd="POS_EQ_DEC_MAIN", with type double, representing the declination of the system.

In [4]: `import astropy.io.votable`

```
astropy.io.votable.validate(source="arraysize_doubleStr_coosys.xml", xmllint=True)
```

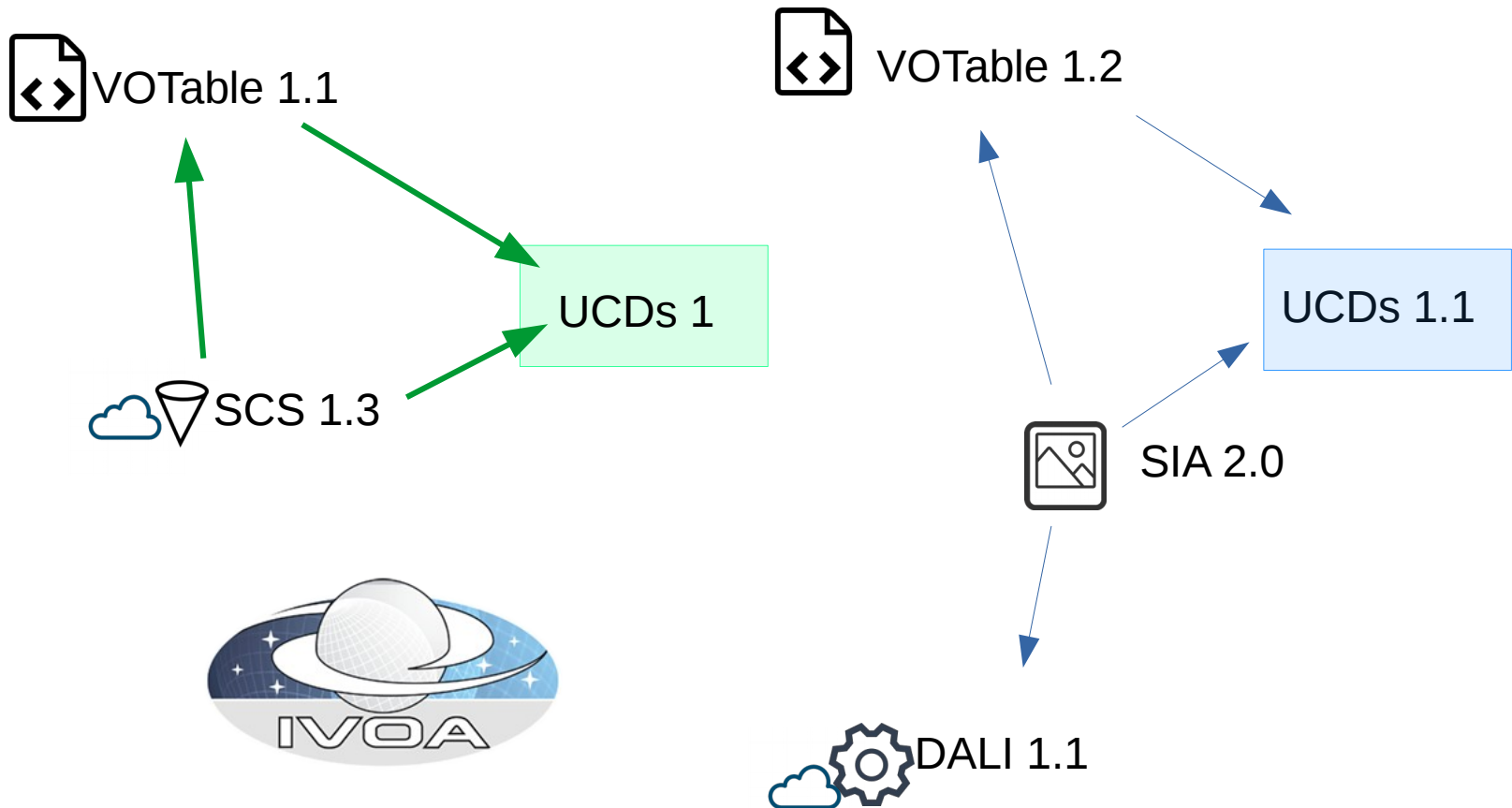


```
13: W06: Invalid UCD 'POS_EQ_RA_MAIN': Unknown word 'POS_EQ_RA_MAIN'
      <FIELD name="RAJ2000" ucd="POS_EQ_RA_MAIN" ref="J2000" data...
      ^

18: W06: Invalid UCD 'POS_EQ_DEC_MAIN': Unknown word
      'POS_EQ_DEC_MAIN'
      <FIELD name="DECJ2000" ucd="POS_EQ_DEC_MAIN" ref="J2000" da...
      ^

53: W06: Invalid UCD 'ID_MAIN': Unknown word 'ID_MAIN'
      <FIELD name="ID" ucd="ID_MAIN" datatype="char" arraysize="*">
      ^
```

Spécifications les plus récentes



6.5 - Invalid ucd POS-EQ-RA-MAIN



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SCS-1.03 Next

UCD update

SCS-1.03 requires UCD 1.0 annotations. Is there a way to make UCD1+ cope with back compatibility? Seems there's not this chance for minor revision. We can probably live with 3 UCD-1.0 elements.

6.6 - xmlint=True cause une Erreur avec Astropy

```
In [13]: import astropy.io.votable
         astropy.io.votable.validate(source="arraysize_doubleStr_coosys.xml", xmlint=True)

Validation report for arraysize_doubleStr_coosys.xml
-----
TypeError                                 Traceback (most recent call last)
<ipython-input-13-f8335bfec417> in <module>()
      1 import astropy.io.votable
      2
----> 3 astropy.io.votable.validate(source="arraysize_doubleStr_coosys.xml", xmlint=True)

~/anaconda3/envs/Astropy/lib/python3.6/site-packages/astropy/io/votable/table.py in validate(source, output, xmlint, filename)
      305         version = votable.version
      306         success, stdout, stderr = validate.validate_schema(
--> 307             filename, version)
      308
      309         if success != 0:

~/anaconda3/envs/Astropy/lib/python3.6/site-packages/astropy/utils/xml/validate.py in validate_schema(filename, schema_file)
      40         schema_part = '--dtdvalid ' + schema_file
      41     else:
----> 42         raise TypeError("schema_file must be a path to an XML Schema or DTD")
      43
      44     p = subprocess.Popen(

TypeError: schema_file must be a path to an XML Schema or DTD
```


6.6 - xmlint=True cause une Erreur avec Astropy

The screenshot shows the GitHub interface for the `astropy/astropy` repository. The file `CHANGES.rst` is selected, showing a commit by `pllim` titled "Fix change log" from 6 days ago. The file content includes the following sections:

```

3.0.2 (unreleased)

Bug Fixes

astropy.io.votable

  • Fix validate with xmlint=True. [#7255, #7283]
    
```

6.6 - xmlint=True cause un Erreur avec Astropy

```
In [13]: import astropy.io.votable
         astropy.io.votable.validate(source="arraysize_doubleStr_coosys.xml", xmlint=True)

Validation report for arraysize_doubleStr_coosys.xml
-----
TypeError                                 Traceback (most recent call last)
<ipython-input-13-f8335bfec417> in <module>()
      1 import astropy.io.votable
      2
----> 3 astropy.io.votable.validate(source="arraysize_doubleStr_coosys.xml", xmlint=True)

~/anaconda3/envs/Astropy/lib/python3.6/site-packages/astropy/io/votable/table.py in validate(source, output, xmlint, filename)
      305         version = votable.version
      306         success, stdout, stderr = validate.validate_schema(
--> 307             filename, version)
      308
      309         if success != 0:

~/anaconda3/envs/Astropy/lib/python3.6/site-packages/astropy/utils/xml/validate.py in validate_schema(filename, schema_file)
      40         schema_part = '--dtdvalid ' + schema_file
      41     else:
----> 42         raise TypeError("schema_file must be a path to an XML Schema or DTD")
      43
      44     p = subprocess.Popen(

TypeError: schema_file must be a path to an XML Schema or DTD
```

6.2 - Arraysize attribute

```

1 <?xml version="1.0" encoding="UTF-8"?>
2 <VOTABLE version="1.2" xmlns="http://www.ivoa.net/xml/VOTable/v1.2">
3 <DEFINITIONS>
4   <COOSYS ID="J2000" equinox="J2000." epoch="J2000." system="eq_FK5"/>
5 </DEFINITIONS>
6   <RESOURCE type="results">
7
8     <INFO name="QUERY_STATUS" value="OK"/>
9     <PARAM datatype="double" name="METADATA_MAX_SR" value="180"/>
10    <PARAM datatype="int" name="METADATA_MAX_RECORDS" value="-1"/>
11    <PARAM datatype="boolean" name="METADATA_VERBOSITY" value="True"/>
12    <TABLE>
13    <FIELD name="ID" ucd="ID_MAIN" datatype="char" arraysize="*">
14      <DESCRIPTION>
15        Name of the cluster
16      </DESCRIPTION>
17    </FIELD>
18    <FIELD name="RAJ2000" ucd="POS_EQ_RA_MAIN" ref="J2000" datatype="double" unit="deg" arraysize="">
19      <DESCRIPTION>
20        Right ascension
21      </DESCRIPTION>
22    </FIELD>
23    <FIELD name="DECJ2000" ucd="POS_EQ_DEC_MAIN" ref="J2000" datatype="double" unit="deg" arraysize="">
24      <DESCRIPTION>
25        Declination
26      </DESCRIPTION>
27    </FIELD>
28    <FIELD name="REDSHIFT_REF" datatype="char" arraysize="*">
29      <DESCRIPTION>
30        Bibliographic reference for the redshift
31      </DESCRIPTION>
32    </FIELD>
33    <FIELD name="REDSHIFT" datatype="double" arraysize="*">

```

