

DAL Validator Implementations by VOParis

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Context and Goals

Goal

Services description

examples

Conclusion

❑ Reconstruct a service validator

- Make it simple and easy to maintain
 - Use software library for xml validation
 - Separate programming and service constraint.
 - Put service constraint in separate text file
- Make a code « generic » that can be used for all service (IVOA)

❑ Try other service (PDAP)

How service are describe

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- **Each service are describe in text file**
 - To express service constraint the format choose is JSON.
 - Default query parameter + XML tag Mandatories and recommended.
 - Possible If/then Else to simplify description.

JSON - examples

- Example of cone search

{

Goal

"VOTable version": "1.0",

Services description

"required parameters": {

examples

"RA": "180.0",

Conclusion

"DEC": "60.0",

"SR": "1.0"

},

"optional parameters": {

"VERB": [1,2,3]

},

Description exemple of a validation request

Goal

```
"2.2.1":{
```

Services description

```
"xpath": "/vot:VOTABLE/vot:RESOURCE/vot:TABLE/vot:*[@ucd='ID  
_MAIN']",
```

examples

```
"max":1,
```

```
"error type": "error",
```

Conclusion

```
"documentation": "Exactly one <code
```

```
class=\"element\">FIELD</code> <strong>must</strong> have  
<code class=\"attribute\">ucd=\"ID_MAIN\"</code>, with an array  
character type (fixed or variable length), representing an ID string  
for that record of the table."
```

```
},
```

Validator functionality

□ URL of the service

<http://voparis-validator.obspm.fr/>

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VOTable Validation Service

Load specification:

Simple Image Access 1.0



Validate protocols

Protocols :

Simple Spectral Access 1.04 and 1.03

Simple Cone Search

Simple Image Access

Simple Line Access

Table Access 1.0

VOTable

Planetary Data Access 1.0

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Validate protocols

Goal



VOTable Validation Service

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Load specification:

Simple Image Access 1.0

Required parameters:

POS

SIZE

FORMAT

Additional parameters:

URL of the service to validate:

Output format:

Validator usual answer

http://voparis-srv.obspm.fr/srv/sia-vopsat_posse.php?&POS=180.0%2C60.0&SIZE=1.0%2C1.0&FORMAT=ALL

```

1 <?xml version="1.0" encoding="UTF-8" ?>
2 <VOTABLE version="1.1" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns="http://www.ivoa.net/xml/VOTable/v1.1" xsi:
3 <RESOURCE type="results"><INFO name="QUERY STATUS" value="OK"/>
4 <DESCRIPTION>VOPSAT - POSS1-E</DESCRIPTION>
5 <PARAM name="POS" unit="deg" value="180.0,60.0"/>
6 <PARAM name="SIZE" unit="deg" value="1.0,1.0"/>
7 <PARAM name="INTERSECT" value="OVERLAPS"/>
8 <TABLE nrows="0"><PARAM name="Instrument" ucd="meta.id;instr" datatype="char" value="Photographic Focus / MAMA"/>
9 <PARAM name="Telescope" ucd="meta.id;instr.tel" datatype="char" value="Palomar Schmidt"/>
10 <PARAM name="BandPass" ucd="VOX:BandPass.ID" datatype="char" value="R (103a-F/Red-Plax-24)" />

```

Error: Element **DESCRIPTION**: This element is not expected. Expected is one of (**LINK**, **TABLE**, **RESOURCE**, **##other***).

Line 4: <DESCRIPTION>VOPSAT - POSS1-E</DESCRIPTION>

Warning: Exactly one **FIELD** or **PARAM** *should* have **ucd="INST_ID"**, with **datatype="char"**, and **arraysize="*"**, identifying the instrument or instruments used to make the observation. Either the element is missing, or some of its required attributes are missing or erroneous. No match found.

Error: Exactly one **FIELD** or **PARAM** **must** have **ucd="VOX:Image_Format"**, with **datatype="char"**, and **arraysize="*"**, specifying the MIME-type of the object associated with the image acref, e.g., image/fits, text/html, and so forth. 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:STC_CoordRefFrame"**, with **datatype="char"**, and **arraysize="*"**, representing the coordinate system reference frame, selected from ICRS, FK5, FK4, ECL, GAL, and SGAL. 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:WCS_CoordProjection"**, with **datatype="char"**, and **arraysize="3"**, with the array value being the three-character code (TAN, ARC, SIN, and so forth) specifying the celestial projection, as for FITS WCS. Either the element is missing, or some of its required attributes are missing or erroneous. No match found.

Validator usual answer

VOTable Validation Service

http://voparis-srv.obspm.fr/srv/pdapv1.php?&RETURN_TYPE=VOTABLE&RESOURCE_CLASS=DATA_SET

```
1 <?xml version="1.0" encoding="UTF-8" ?>
2 <VOTABLE version="1.1" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns="http://www.ivoa.net/xml/VOTable/v
3 <RESOURCE type="results"><DESCRIPTION>Planetary data from Paris Observatory</DESCRIPTION>
4 <INFO name="QUERY STATUS" value="OK"/>
5 <TABLE nrows="6"><FIELD ID="DATA SET.DATA ACCESS REFERENCE" name="DATA SET.DATA ACCESS REFERENCE" ucd="DATA_ACCESS_REF
6 <FIELD ID="DATA SET.ID" name="DATA SET.ID" utype="pds:DATA SET.DATA SET ID" datatype="char" arraysize="*/>
7 <FIELD ID="DATA SET.NAME" name="DATA SET.NAME" utype="pds:DATA SET.DATA SET NAME" datatype="char" arraysize="*/>
8 <FIELD ID="DATA SET.TARGET NAME" name="DATA SET.TARGET NAME" ucd="TARGET NAME" utype="pds:DATA SET.TARGET NAME" dataty
9 <FIELD ID="DATA SET.TARGET TYPE" name="DATA SET.TARGET TYPE" ucd="TARGET TYPE" utype="pds:DATA SET.TARGET TYPE" dataty
10 <FIELD ID="DATA SET.MISSION NAME" name="DATA SET.MISSION NAME" ucd="MISSION NAME" utype="pds:DATA SET.MISSION NAME" d
```

SUCCESS: valid VOTable 1.1!

SUCCESS: valid Planetary Data Access 1.0!

Validator evolution in progress

Validate classic service + metadata + error at once

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Load specification:

Simple Image Access 1.0

Required parameters:

POS

SIZE

FORMAT

Additional parameters:

URL of the service to validate:

Run batch tests

Output format:

Validator evolution in progress

Validate classic service + metadata + error at once

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VOTable Validation Service

Test: FORMAT=ALL

Fatal: Error while retrieving data. Is the remote service URL correct?

Test: FORMAT=METADATA

Fatal: Error while retrieving data. Is the remote service URL correct?

Test: error

Fatal: Error while retrieving data. Is the remote service URL correct?

Validator evolution in progress

JSON Files

http://voparis-validator.obspm.fr/json/json_specs.xhtml

Goal

JSON Files for VOTable Specifications

A JSON file has 1 to 4 fixed entries at its root:

- **VOTable version:** minimum VOTable version number required by the specification. Defaults to "1.0". This entry is optional.
- **required parameters:** list of parameters that are required by the specification, as an associative array (`{...}`) with parameter name/value pairs (`"name": "value"`). The value can be a list, to denote a limited set of possible values (`"name": ["a", "b", "c"]`). This entry is **mandatory**.
- **optional parameters:** same as above, except those parameters are deemed optional by the specification. This entry is optional.
- **test cases:** list (`{...}`) of test cases as associative arrays (`{...}`), containing parameter/value pairs. This entry is optional.

Any other entry is either a *test* or a *branch test*. Their names can be anything, as long as they are unique within the entry's level inside the JSON tree.

Test

A test is an associative array (`{...}`) with a minimum of 3 mandatory entries:

- **xpath:** an XPath 1.0 expression, used to match elements, attributes, or a combination of the two. All elements must be prefixed with `vot:`. If the XPath query doesn't match any element or attribute, an error is raised, defined below.
- **error type:** a string, one of `warning` or `error`.
- **documentation:** a message describing the error.

There are 2 other (optional) entries:

- **min:** an integer, the minimum number of matches for the XPath query, below which an error is raised. Defaults to 1 if absent, or 0 if `max` is set to 0.
- **max:** an integer, the maximum number of matches for the XPath query, above which an error is raised. Defaults to 2147483647 if absent.

A special case is with `max` set to 0: the test is then reversed, i.e. an error is raised only if the XPath query **does** have matches, instead of none.

Branch test

Validator examples

SIA : SRCJ

Goal

<http://voparis-validator.obspm.fr/validator.php?POS=180.0%2C60.0&S>

Services description

SSA : H1G

<http://voparis-validator.obspm.fr/validator.php?REQUEST=queryData&>

examples

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Validator evolution in progress

JSON Files <http://voparis-validator.obspm.fr/json/>



VOTable Specifications

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Planetary Data Access 1.0.json

[Documentation](#)

examples



Conclusion

Load button will test the json syntax

```
Array  
(  
  [VOTable version] => 1.1  
  [required parameters] => Array  
    (  
      [DATA_SET_ID] =>  
      [PRODUCT_ID] =>  
      [TARGET_TYPE] =>  
      [TARGET_NAME] =>  
      [INSTRUMENT_TYPE] =>  
      [INSTRUMENT_NAME] =>  
      [START_TIME] =>
```

Conclusions

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Conclusion

❑ This tool was a real request

- It took some time to define architecture
(keep it simple and stupid)

- We decide at first to make it for one/two protocol
- When the development start it was « quick »
- Seem useful for us

❑ We didn't had time to even correct our services