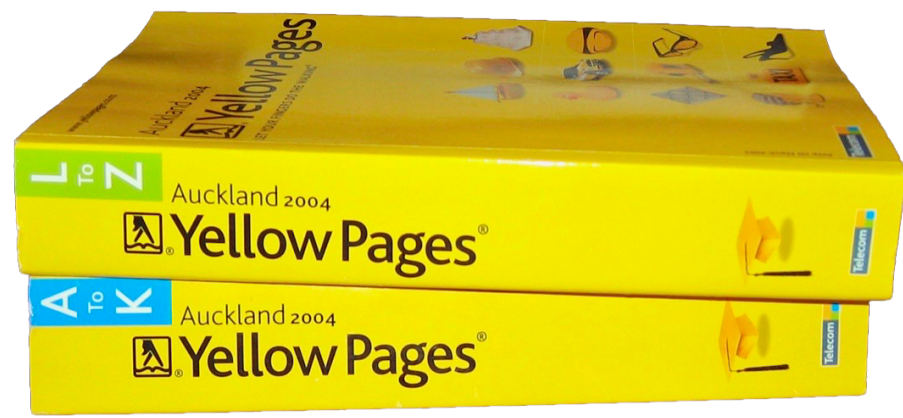




ObsCore & Extensions: Registry

Renaud Savalle¹ and Markus Demleitner²

¹ PADC, Observatoire de Paris, France

² GAVO/Univ. Heidelberg, Germany

Registration of ObsCore Extension tables

1. Recommendation

Use a standard key like:

`ivo://ivoa.net/std/obsradio#table-1.0`

in the element <utype> of the <table> element describing the extension table, in the <schema> “ivoa” of the <tableset> of the <Resource> describing your data collection

NB: This standard key shall be defined in a StandardsRegExt resource

Element *utype*

Type

string: *xs:token*

Meaning

An identifier for a concept in a data model that the data in this table represent.

Occurrence

optional

Comment

The form of the utype string depends on the data model; common forms are sequences of dotted identifiers (e.g., in SSA) or URIs (e.g., in RegTAP).



International
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VODataService: A VOResource Schema
Extension for Describing Collections and
Services

Version 1.3

IVOA Working Draft 2024-01-12

Working Group
Registry

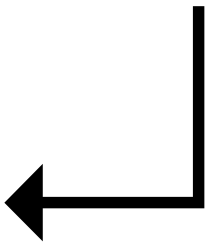
This version
<https://www.ivoa.net/documents/VODataService/20240112>

Latest version
<https://www.ivoa.net/documents/VODataService>

Previous versions
REC-1.2
PR-2021-02-23
PR-2019-07-15
WD-2018-10-26
REC 1.1

Author(s)
Raymond Plante, Markus Demleitner, Aurélien Stébé, Kevin Benson, Patrick Dowler, Matthew Graham, Gretchen Greene, Paul Harrison, Gerard Lemson, Tony Linde, Guy Rixon

Editor(s)
Markus Demleitner, Ray Plante



Registration of ObsCore Extension tables

2. Example 1

Resource `ivo://jive.eu/__system__/obs-radio/obs_radio`

- type: **CatalogResource**
- Published on EVN Data Archive Publishing Registry
- Describe EVN Data Archive obs_radio Table:

ri:Resource "2021-11-11T13:00:00Z" EVN Data Archive obs_radio Table title EVN Data Archive obs_radio Table shortName ivoa.obs_radio identifier ivo://jive.eu/__system__/obs-radio/obs_radio curation Joint Institute for VLBI ERIC content observational-astronomy capability "ivo://ivoa.net/std/TAP#aux" tableset schema ivoa name ivoa title EVN Data Archive obs_radio Table description Radio-specific metadata for suitable data products table ivoa.obs_radio name ivoa.obs_radio description An IVOA-defined metadata table for radio measurements, utype ivo://ivoa.net/std/obsradio#table-1.0 column obs_publisher_did column s_resolution_min column s_resolution_max column s_fov_min column s_fov_max column s_maximum_angular_scale column f_resolution column t_exp_min column t_exp_max column t_exp_mean column uv_distance_min column uv_distance_max column uv_distribution_ecc	1983 ▾ 1984 ▾ 1985 1986 1987 ▾ 1988 1989 ▾ 1990 1991 ▾ 1992 1993 1994 1995 1996 ▾ 1997 1998 1999 2000 2001 2002 2003 2004 2005 ▾ 2006 2007 ▾ 2008 2009 2010 2011 2012 2013	<tableset> <schema> <name>ivoa</name> <title>EVN Data Archive obs_radio Table</title> <description>Radio-specific metadata for suitable data products from EVN Data Archive's obscure table.</description> <table> <name>ivoa.obs_radio</name> <description>An IVOA-defined metadata table for radio measurements, with extra metadata for interferometric measurements ("visibilities") as well as single-dish observations. You will almost always want to join this table to ivoa.obscore (do a natural join).</description> <utype>ivo://ivoa.net/std/obsradio#table-1.0</utype> <column> <name>obs_publisher_did</name> <description>Dataset identifier assigned by the publisher.</description> <ucd>meta.ref.void</ucd> <utype>obscore:curation.publisherdid</utype> <dataType>arraysize="*" xsi:type="vs:VOTableType">char</dataType> <flag>indexed</flag> <flag>primary</flag> </column> <column> <name>s_resolution_min</name> <description>Angular resolution, longest baseline and max frequency dependent</description> <unit>arcsec</unit> <ucd>pos.angResolution;stat.min</ucd> <utype>Char.SpatialAxis.Resolution.Bounds.Limits.LoLim</utype> <dataType>xsi:type="vs:VOTableType">float</dataType> <flag>nullable</flag>
--	--	--

Registration of ObsCore Extension tables

2. Example 2

Resource `ivo://jive.eu/tap`

- type: **CatalogService**
- Published on EVN Data Archive Publishing Registry
- Describe EVN Data Archive TAP Service:

```
▼ ● ri:Resource "2009-12-01T10:00:00Z" EVN Data Archive TAP service
  ● title EVN Data Archive TAP service
  ● shortName EVN TAP
  ● identifier ivo://jive.eu/tap
  > ● curation Joint Institute for VLBI ERIC
  > ● content virtual-observatories
  > ● capability "ivo://ivoa.net/std/TAP"
  > ● capability "ivo://ivoa.net/std/VOSI#availability"
  > ● capability "ivo://ivoa.net/std/VOSI#capabilities"
  > ● capability "ivo://ivoa.net/std/VOSI#tables"
  > ● coverage Radio
  ▼ ● tableset
    > ● schema evn
    ▼ ● schema ivoa
      ● name ivoa
      ● description Definition and support code for the ObsCore data
      ▼ ● table ivoa.obs_radio
        ● name ivoa.obs_radio
        ● description An IVOA-defined metadata table for radio mea
        ● utype ivo://ivoa.net/std/obsradio#table-1.0
        > ● column obs_publisher_id
        > ● column resolution_min
```

```
<schema>
  <name>ivoa</name>
  <description>Definition and support code for the ObsCore data model and
    table.</description>
  <table>
    <name>ivoa.obs_radio</name>
    <description>An IVOA-defined metadata table for radio measurements, with extra
      metadata for interferometric measurements ("visibilities") as well as single-dish
      observations. You will almost always want to join this table to ivoa.obscore (do a
      natural join).</description>
    <utype>ivo://ivoa.net/std/obsradio#table-1.0</utype>
    <column>
      <name>obs_publisher_id</name>
      <description>Dataset identifier assigned by the publisher.</description>
      <ucd>meta.ref.void</ucd>
      <utype>obscore:curation.publisherid</utype>
      <dataType arraysize="*" xsi:type="vs:VOTableType">char</dataType>
      <flag>indexed</flag>
      <flag>primary</flag>
    </column>
    <column>
```

Discovery of ObsCore Extension tables with RegTAP

1. ADQL code for discovery of radio ObsCore Extensions tables in the registry:

```
SELECT DISTINCT
  table_name,
  access_url,
  res_type,
  ivo_id
FROM
  rr.res_table
NATURAL JOIN rr.capability
NATURAL JOIN rr.interface
NATURAL JOIN rr.resource
WHERE
  table_ctype LIKE 'ivo://ivoa.net/std/obsradio#table-1.1%'
  AND standard_id LIKE 'ivo://ivoa.net/std/tap%'
  AND intf_role = 'std'
  AND (res_type = 'vs:catalogresource' OR res_type = 'vs:catalogservice')
```

res_table(+) 1 X

SELECT DISTINCT table_name, access_url, res_type | Enter a SQL expression to filter results (use Ctrl+Space)

	A-Z table_name	A-Z access_url	A-Z res_type	A-Z ivo_id
1	ivoa.obs_radio	http://dc.g-vo.org/tap	vs:catalogresource	ivo://org.gavo.dc/__system__/obs-radio/obs_radio
2	ivoa.obs_radio	http://dc.g-vo.org/tap	vs:catalogservice	ivo://org.gavo.dc/tap
3	ivoa.obs_radio	http://evn-vo.jive.eu/tap	vs:catalogresource	ivo://jive.eu/__system__/obs-radio/obs_radio
4	ivoa.obs_radio	http://evn-vo.jive.eu/tap	vs:catalogservice	ivo://jive.eu/tap

Discovery of ObsCore Extension tables using pyvo.registry

1. Python code for discovery of radio ObsCore Extensions tables

```
2 import pyvo
3
4 class HasRadio(pyvo.registry.SubqueriedConstraint): 1 usage
5     def get_search_condition(self, service):
6         return ("ivoid IN (SELECT DISTINCT ivoid"
7                 " FROM rr.res_table"
8                 " NATURAL JOIN rr.resource"
9                 " WHERE table_ctype LIKE 'ivo://ivoa.net/std/obsradio#table-1.%'"
10                " AND res_type='vs:catalogresource')")
11
12 res_with_radio_tables=pyvo.registry.search(HasRadio())
13 print(res_with_radio_tables)
```

Discovery of ObsCore Extension tables using pyvo.registry

2. Python code for querying resources found

```
15 from astropy.table import vstack
16
17 results = []
18 for res in res_with_radio_tables:
19     svc = res.get_service("tap")
20     print(f'Querying {svc.baseurl}')
21     svc_results = svc.run_async(
22         "SELECT TOP 10 t_min, s_resolution_min, access_url"
23         " FROM ivoa.obs_radio NATURAL JOIN ivoa.obscore").to_table()
24     print(svc_results)
25     results.append(svc_results)
26 union = vstack(results)
27 print(union)
```