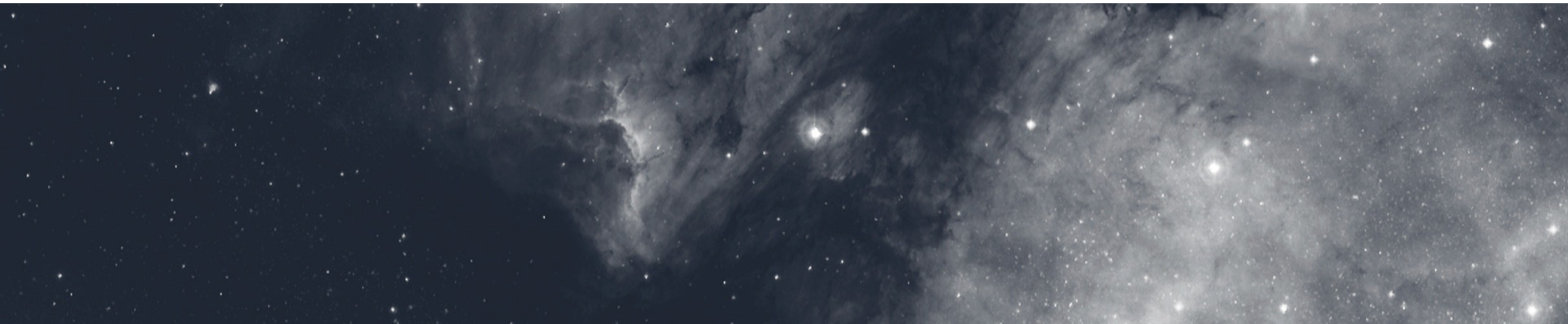


Use VODataService for VizieR records (and its 1.3 evaluation)

G.Landais & S.Derriere



□ VizierR registry content



Contents

- ~26,200 records currently in the Registry
- Granularity chosen: the catalogue (same granularity used for DOI)

Metadata

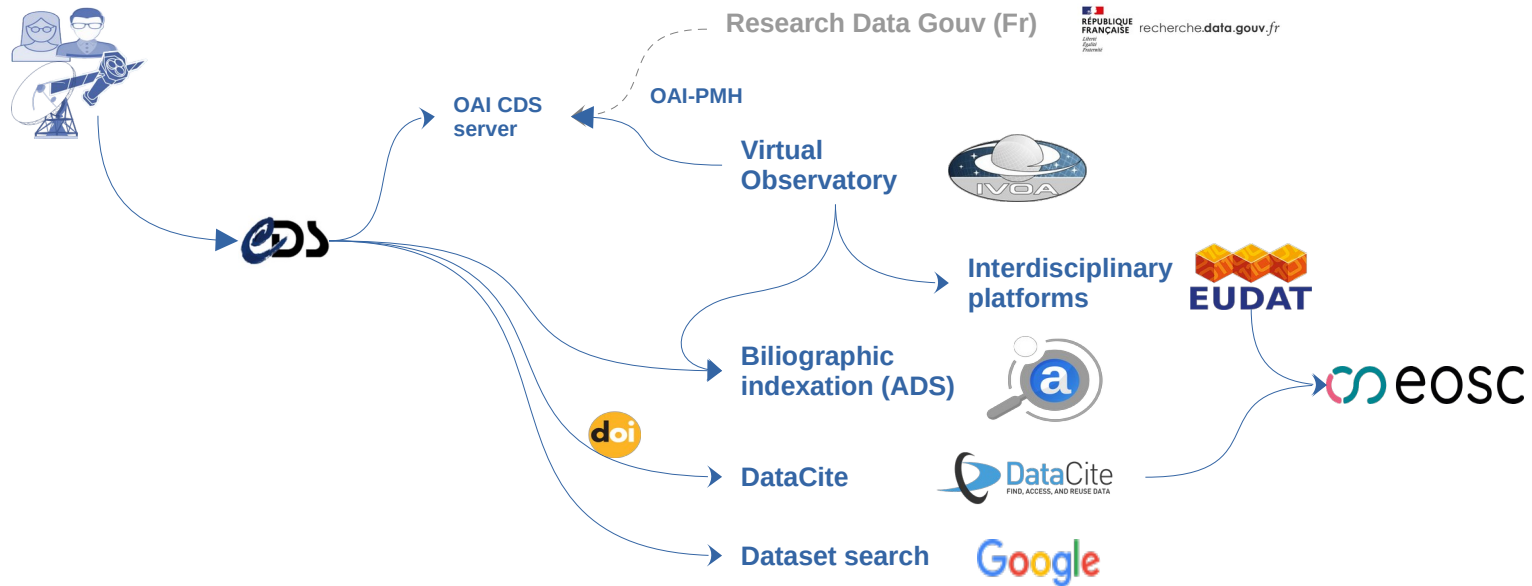
- Basic DublinCore description
- Alternate Identifier (DOI)
- Link to bibliography
- Related Identifier (using DOI, ivoid)
- Tables (≥ 1)
- Capabilities: SCS, TAP, Web
- Coverage (MOC)

A screenshot of the VizierR web interface. The top navigation bar includes logos for CDS, PORTAL, SIMBAD, VizierR, ALADIN, XMATCH, and others. The main title is "Variables in the fields of M35 and NGC2158 : J/MNRAS/447/3536". Below the title, there are buttons for "Access to" (VizieR, FTP, ReadMe, TAP, Xmatch, Fits) and "Download notebook". The left sidebar contains metadata: Authors (Nardiello D., Bedin L.R., Nascimbeni V. et al.), Vizier DOI (10.26093/cds/vizier.74473536), Bibcode (2015MNRAS.447.3536N), CDS Keywords (Clusters, open; Stars, variable; Photometry, UBVR), UAT (Open star clusters, Variable stars, Infrared photometry, Optical astronomy, Broad band photometry), and Observation (OC). The main content area has tabs for "Article Origin", "Description", "Acknowledgment", "See also", "ReadMe", "History", "Prov", "FTP", and "VizieR". The "Description" tab is active, showing the title "Variable stars in two open clusters within the Kepler/K2-Campaign-0 field M35 and NGC 2158. (2015)", a link to the original article, keywords, and an abstract. The abstract describes a multiyear survey aimed at collecting high-precision, fast-cadence, and long duration multiband photometric series. A large black oval with a red dot is shown under the "Observation (OC)" section. At the bottom, it says "Inserted into VizierR : 07-Sep-2015" and "Last modification : 14-Aug-2024".

□ Disseminate the datasets



Broadcast datasets to a wide audience and divers networks



Searching resources using API/software

- DataCite or ADS API (eg: to get bibtex)
- Registry: pyvo, regTAP (direct access)
user interface such as topcat, Cassis (Votools) (indirect access)



Search VizieR



“active galactic nuclei” via VizieR, registry and EOSC search

Catalogue collection

Search Catalogue: 315 resources (FTP, VizieR, TAP, ...)

Quick Fields: first author author keyword bibcode year All search terms

active galactic nuclei

Full Search Highlight

315 catalogs found

Results Filter

at a time.

Catalog ID	Title	Date	Access
J/A+A/424/519	Naked active galactic nuclei (2004A&A...424.519H, Hawkins M.R.S.)	2004	Go VizieR FTP ReadMe
Jother/Apr64.277	Catalog of X-ray active galactic nuclei (2021Ap...64.277P, Paronyan G.M.)	2021	Go VizieR FTP ReadMe
VII/166	Quasars and Active Galactic Nuclei (6th Ed.) (1993ESOSR...13...1V, Veron-Cetty M.P.)	1993	Go VizieR FTP ReadMe
VII/168	Quasars and Active Galactic Nuclei (7th Ed.) (1996ESOSR...17...1V, Veron-Cetty M.P.)	1996	Go VizieR FTP ReadMe
VII/207	Quasars and Active Galactic Nuclei (8th Ed.) (1998ESOSR...18...1V, Veron-Cetty M.P.)	1998	Go VizieR FTP ReadMe
VII/215	Quasars and Active Galactic Nuclei (9th Ed.) (2000ESOSR...19...1V, Veron-Cetty M.P.)	2000	Go VizieR FTP ReadMe
VII/224	Quasars and Active Galactic Nuclei (10th Ed.) (2001A&A...374...92V, Veron-Cetty M.P.)	2001	Go VizieR FTP ReadMe
VII/235	Quasars and Active Galactic Nuclei (11th Ed.) (2003A&A...412.399V, Veron-Cetty M.P.)	2003	Go VizieR FTP ReadMe
VII/248	Quasars and Active Galactic Nuclei (12th Ed.) (2006A&A...455.733V, Veron-Cetty M.P.)	2006	Go VizieR FTP ReadMe
VII/258	Quasars and Active Galactic Nuclei (13th Ed.) (2010A&A...518A.10V, Veron-Cetty M.P.)	2010	Go VizieR FTP ReadMe
J/A+A/693/A35	Changing-look active galactic nuclei (2025A&A...693A.35J, Jana A.)	2025	Go VizieR FTP ReadMe
J/A+A/674/A195	Unknown active galactic nuclei study (2021A&A...647A.195G, Giuliani L.)	2021	Go VizieR FTP ReadMe
JApJ/658/815	Radio loudness of active galactic nuclei (2007ApJ...658.815S, Sikora M.)	2007	Go VizieR FTP ReadMe
JApJ/660/1072	Unified model of active galactic nuclei (2007ApJ...660.1072W, Wang J.-M.)	2007	Go VizieR FTP ReadMe
JApJ/903/86	Properties of 68 active galactic nuclei (2020ApJ...903...86M, Martinez-Aldama)	2020	Go VizieR FTP ReadMe
JMNRAS/466/2879	Active galactic nuclei from HeII (2017MNRAS...466.2879B, Bar R.E.)	2017	Go VizieR FTP ReadMe
JPASJ/374/239	Radio dichotomy of active galactic nuclei (2022PASJ...74.239X, Xiao H.)	2022	Go VizieR FTP ReadMe
JAJ/151/74	VLA/VLBA obscured radio-loud active galactic nuclei (2016AJ...151...74Y, Yan T.)	2016	Go VizieR FTP ReadMe

Web Interface to the Relational Registry

Any Text Field match active galactic nuclei

Match words somewhat loosely against title, description, subject, and creator.

Run Query

1174 resources

Total matching: 1174

- “Under-massive” black hole candidates WEB TAP SCS SCS
- 0.006<z<=0.8 IR galaxies with AKARI SCS WEB TAP
- 1-500um obs. of nearby luminous IR galaxies TAP SCS WEB
- 1.3mm VLBI detections of M87 TAP WEB
- 1.4 GHz imaging of the Bootes field SCS WEB TAP SCS
- 1.4GHz emission of KISS emission-line galaxies WEB SCS TAP
- 1.4GHz flux densities of Abell 2255 galaxies SCS SCS WEB TAP
- 1.5Jy MOJAVE AGN sample and 3FGL data WEB TAP SCS
- 11.5um image of NGC 835 WEB WEB SCS TAP
- 13+38 XMM-Newton/ROSAT 1.4GHz radio catalog TAP WEB SCS
- 13yr of spectrophotometrically monitored QSOs TAP SCS WEB
- 15GHz and jet properties of MOJAVE blazars SCS TAP WEB
- 15GHz monitoring of AGN jets with VLBA TAP SCS WEB
- 164 GHz-peaked spectrum sources TAP WEB SCS
- 16yrs of AGNs X-ray spectral analyses from 7Ms CDF-S SCS WEB TAP
- 17 Seyfert 1 galaxies light curves WEB SCS TAP
- 19.3yr R-band monitoring of 1ES 2344+514 TAP WEB
- 1Jy northern AGN sample WEB SCS TAP
- 1UVA catalog of time variable UV sources WEB SCS SCS SCS

European Commission

European Open Science Cloud - EU Node

Home About Services Resource Hub Support Contributors News & Events User Space

Resource hub

active galactic nuclei

419 resources

All resources Publications Data Software Other Products Services Data Sources Training Interoperability Outcomes Tools

Showing 1 to 20 of 419 resources

No filters applied

Relevance

AGNs in *nuclei* star clusters

VizieR online Data Catalogue associated with article published in Journal Astronomical Journal (AAJ) with title “The coincidence of *nuclei* star clusters and *active galactic nuclei*” (bibcode: 2006ApJ...678.1105S)

Author: Sethi, S. | Aguerri, M. | Lee, D. | Ben-Zion, A.

Publisher: Strasbourg Astronomical Data Center | 821960

Identifier: 10.26000/strasbourg.107001018 (DOI)

Keywords: active galactic nuclei • Galaxy classification systems • Nuclear Sciences • absolute magnitude • galaxy classification systems • absolute magnitude • Observational Astronomy • Astrophysics and Astronomy • High energy astrophysics • High energy...

IR imaging, *nuclei* SEDs, Spitzer spectra of 22 AGNs

VizieR online Data Catalogue associated with article published in Journal Astronomical Journal (AAJ) with title “The *nuclei* infrared emission of low-luminosity *active galactic nuclei*” (bibcode: 2012AJ...144..131M)

Author: Nelson, R.E. | Lopez-Rodriguez, E. | Pacheco, C. | Alonso-Hernandez, A. | Levens, N.A. | Barvainis, J. | Ramos-Alonso, C. | Colla, L. | Efstathi, M. | Aravali, L. | Roche, P.F. | G.N.

Publisher: Strasbourg Astronomical Data Center | 821960

Identifier: 10.26000/strasbourg.104400101 (DOI)

Keywords: Spectroscopy • Interdisciplinary astronomy • galactic and extragalactic astronomy • astronomy • Observational astronomy • X-ray sources • Interdisciplinary Astronomy • Spectral energy distribution • Infrared photometry • Galactic and extragalactic...

SEDs of weak AGNs associated with LINERS

VizieR online Data Catalogue associated with article published in Journal Astronomical Journal (AAJ) with title “Spectral energy distributions of weak *active galactic nuclei* associated with low-ionization *nuclei* emission regions” (bibcode: 2010ApJ...715..187..138S)

Author: Erickson, M. | Hwang, J.A. | Fink, H.M.L.G.

Publisher: Strasbourg Astronomical Data Center | 821960

Identifier: 10.26000/strasbourg.118701018 (DOI)

Keywords: active galactic nuclei • X-ray sources • Nuclear Sciences • X-ray sources • Observational Astronomy • Spectral energy distribution • Spectral energy distribution • Astrophysics and Astronomy • High energy astrophysics • High energy astrophysics • galactic and...

Motivations

- Improve relations existing between tableset and services
(see Registry, interop may 2024)

Issue: one resource in registry possibly contains a collection of datasets and a collection of services but it is **not possible to attach a service to the datasets**.

→ A general issue in VizieR, Esa, Ukidss, etc.
example: ivo://CDS.vizier/i/355

- **DCAT (Data Catalogue vocabulary)** compatibility
<https://www.w3.org/TR/vocab-dcat-3/>

Attempt of mapping Registry OAI-PMH record with DCAT

<https://cds.unistra.fr/registry/?verb=GetRecord&metadataPrefix=dcat&identifier=ivo://cds.vizier/i/355>

Proposal: Update VOResource

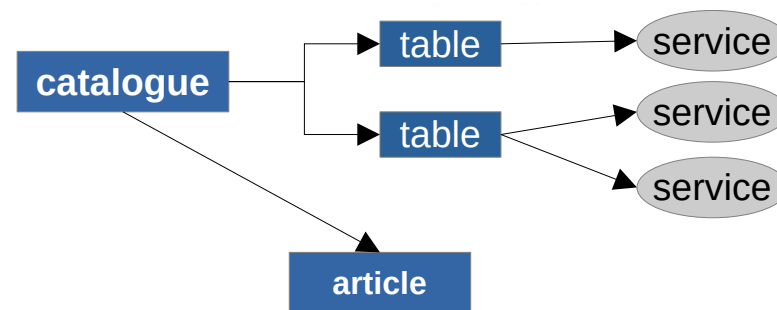
```
<capability xsi:type="cs:ConeSearch"
  standardID="ivo://ivoa.net/std/ConeSearch">
  <services>
    <reftable name='table1' />
    <reftable name='table2' />
  </services>
</capability>
...
<tableset>
  <schema>
    <table>
      <name>table1</name>
    </table>
  </schema>
  ...
</tableset>
```

□ Requirements



Requirements

- Keeping the DOI granularity and stay consistent with Eudat/Eosc + Research DataGouv
- Linking table with service
- Providing the “curation” information



METAdata scope

- Metadata assigned to the **Catalogue level**
 - Abstract, authors, title, DOI, ...
 - Relations
- Metadata assigned to the **table level**
 - Table description, ucd..
 - Coverage (MOC)
 - Capabilities (SCS)

□ VODataService 1.2 novelties



Not optimum serialization in the current (VizieR) implementation

VODataService 1.2 introduces new resource types:

- **DataResource**: resource without tabular structure
- **DataService**: DataResource + access to service
- **CatalogueResource**: DataService + tableset (one or more tables)
- **CatalogueService**: only 1 table (the original type in VODataService 1.1)

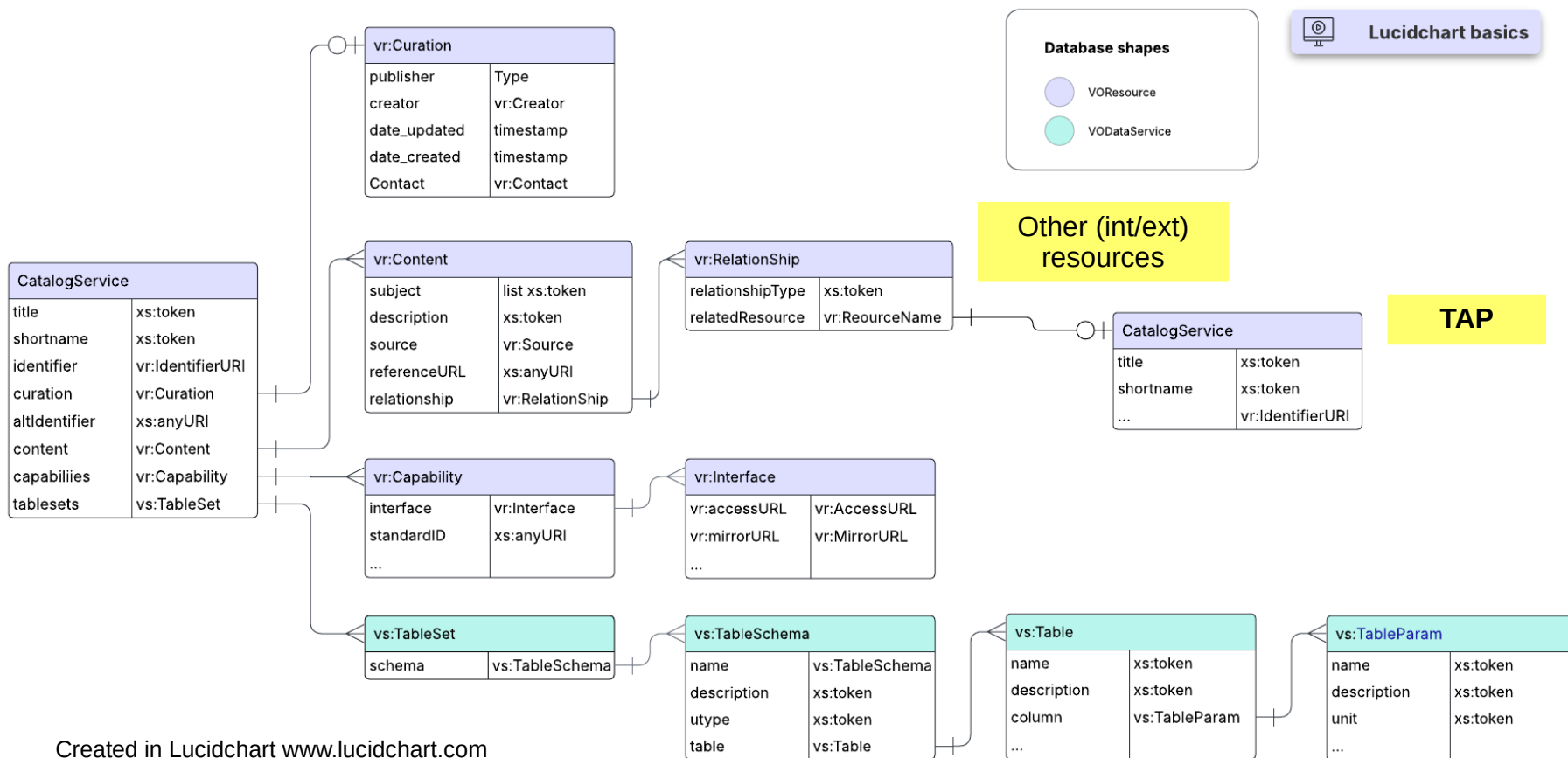
```
<metadata>
  <ri:Resource xmlns:vr="http://www.ivoa.net/xml/VOResource/v1.0" xmlns:vs="http://www.ivoa.net/xml/VODataService/v1.1"
    xmlns:cs="http://www.ivoa.net/xml/ConeSearch/v1.0" xmlns:xlink="http://www.w3.org/1999/xlink"
    xmlns:vg="http://www.ivoa.net/xml/VORegistry/v1.0" xmlns:tr="http://www.ivoa.net/xml/TAPRegExt/v1.0" xmlns=""
    xsi:type="vs:CatalogService" xsi:schemaLocation="http://www.ivoa.net/xml/RegistryInterface/v1.0
```

□ Current implementation



Current VizieR records in registry: use CatalogService ONLY

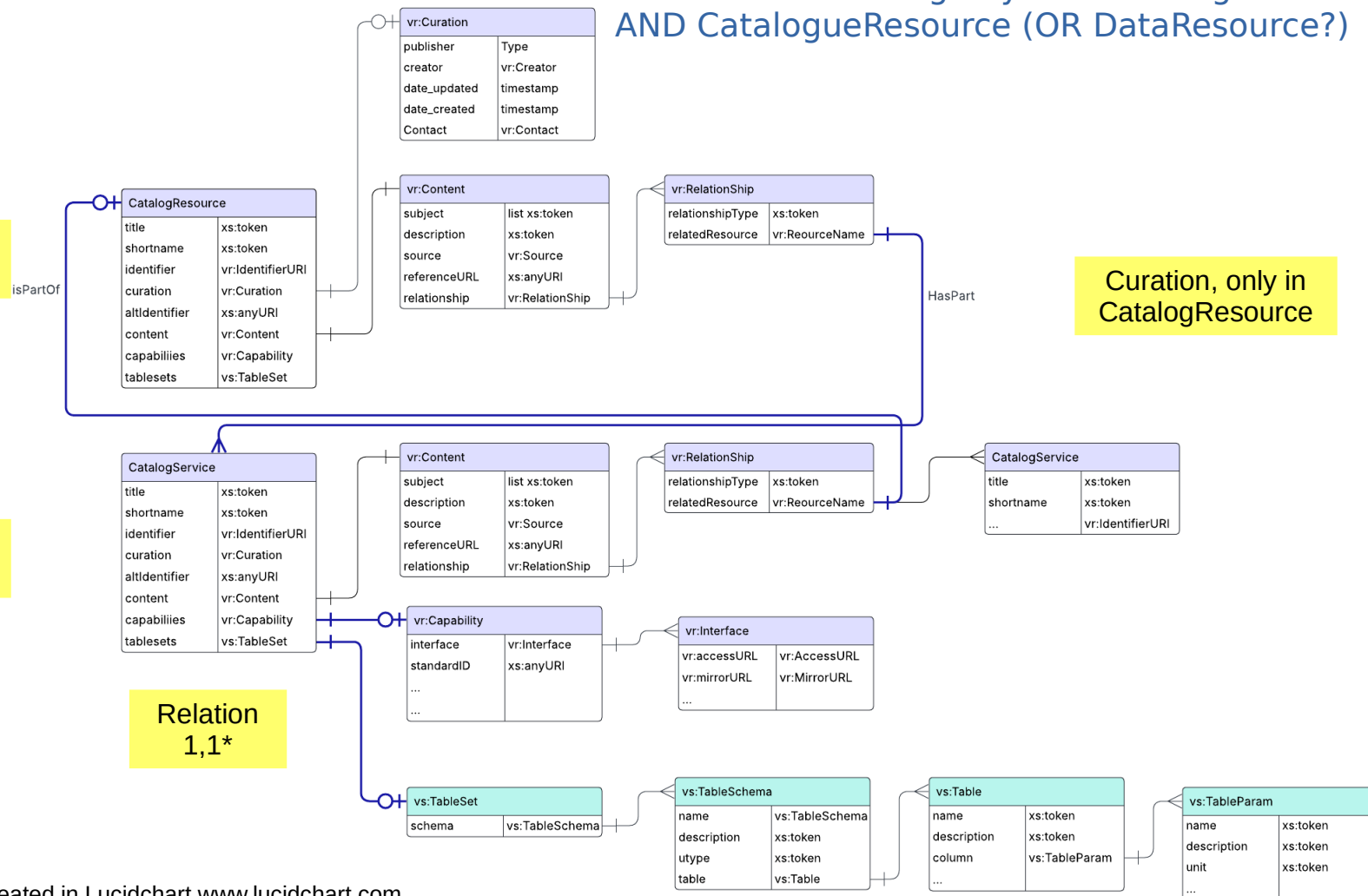
https://cds.unistra.fr/registry/?verb=GetRecord&metadataPrefix=ivo_vor&identifier=ivo://cds.vizieR/J/AJ/161/36



Created in Lucidchart www.lucidchart.com

□ Possible implementation

VizieR records in registry: use CatalogueService AND CatalogResource (OR DataResource?)



Created in Lucidchart www.lucidchart.com

□ Particularities



Non duplicated metadata

Provenance metadata (vr:Curation) is in the Catalogue level ONLY
xsitype=CatalogResource (or DataResource?)

Reasons why avoiding duplication:

- Avoid misinterpretation of metadata granularity (in particular: DOI, title, relations)
- Avoid ambiguities for metadata merging operations at different levels (and possibly from different networks, eg: EOSC uses Eudat+DataCite)
- Metadata maintenance

Linked Data

- Catalogues links tables (CatalogService) using “*HasPart*” relation
- Tables links the CatalogResource using “*isPartOf*” relation
- Tables links services using “*isServedBy*” relation

□ Pro & cons



	Conservative CatalogueService	CatalogueResource + CatalogueService
VizieR granularity	compatible	compatible
Table - service relations	Non optimum	Full
DCAT compatibility	almost	Full
Extern harvesting	Yes	Almost (+ need Filter?)
Client search	Yes	Breaking Change and more complex

Breaking change issues

- Search by Author → found CatalogResource
The client needs to follow “HasPart” relations
- Search by Service/coverage → found CatalogService
The client need to search Curation with “isPartOf” relations !

□ Conclusion



A possible “clean” implementation
Possible breaking changes in data harvesting !

Lot of work (for DataCenter and clients/API)

Other implementations possible if we keep in mind the
granularity issue.

Thank for your attention !