



AstroTaverna and VO workflows

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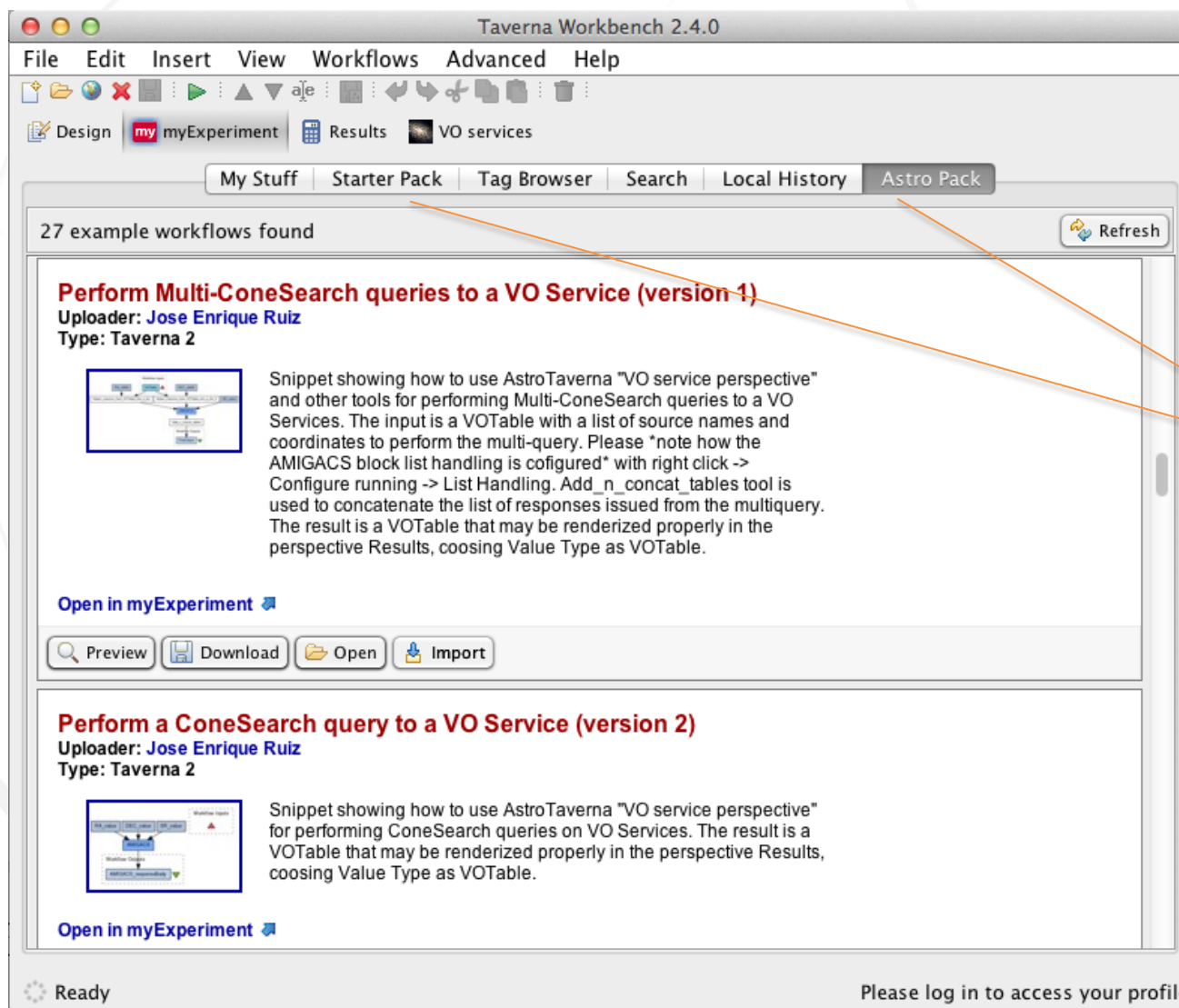
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on behalf of the AMIGA Team

INTEROP meeting, May 2014

- » Workflow management system
- » Target user:
 - › astro-informatician
- » astrotaverna-users@iaa.es
- » Within Astrotaverna:
 - › Basic VOTable management
 - › Aladin integration
 - › Service discovery
 - › SAMP connectivity
 - › Set of examples for training

- ▼ Astro tools
 - Add column - Add column to VOTable
 - Add common fields - Add common fields to a VOTable
 - Aladin macro
 - Aladin script
 - Cat two VOTables - Concatenate two VOTables
 - Cat VOTable list - Concatenate a list of VOTables
 - Coord. transformation - Coordinates reference system transformation
 - Coord. units conversion - Add coordinate units conversion
 - Crossmatch - Crossmatch two VOTables
 - Format conversion - VOTable format conversion
 - Join VOTables - Join two VOTables
 - List from column - Extract column from a VOTable as a list
 - Name resolver - Resolve object name into coordinates
 - Select columns - Select columns from a VOTable
 - Select rows - Select rows from a VOTable
- ▼ Services
 - Access CS VOService
 - Access SIA VOService
 - Access SSA VOService
 - Access TAP VOService
 - PDL service - Import PDL service (Beta)
 - PDL validation - Validate inputs with pdl-description
 - Template filler - Fill template file from VOTable
 - Template validation - Validate template file against VOTable



Taverna Workbench 2.4.0


File Edit Insert View Workflows Advanced Help

Design myExperiment Results VO services

My Stuff Starter Pack Tag Browser Search Local History Astro Pack

27 example workflows found Refresh

Perform Multi-ConeSearch queries to a VO Service (version 1)
Uploader: [Jose Enrique Ruiz](#)
Type: Taverna 2




Snippet showing how to use AstroTaverna "VO service perspective" and other tools for performing Multi-ConeSearch queries to a VO Services. The input is a VOTable with a list of source names and coordinates to perform the multi-query. Please "note how the AMIGACS block list handling is configured" with right click -> Configure running -> List Handling. Add_n_concat_tables tool is used to concatenate the list of responses issued from the multiquery. The result is a VOTable that may be rendered properly in the perspective Results, choosing Value Type as VOTable.

[Open in myExperiment](#)

Preview Download Open Import

Perform a ConeSearch query to a VO Service (version 2)
Uploader: [Jose Enrique Ruiz](#)
Type: Taverna 2



Snippet showing how to use AstroTaverna "VO service perspective" for performing ConeSearch queries on VO Services. The result is a VOTable that may be rendered properly in the perspective Results, choosing Value Type as VOTable.

[Open in myExperiment](#)

Ready Please log in to access your profile

Starter pack

Taverna Workbench 2.4.0

File Edit Insert View Workflows Advanced Help

Registry:

Keywords:

Cone Search SIA Search SSA Search TAP Search

47 results for TableAccess:

Short name	Title	Subjects	Identifier	Publisher
2XMM	XMM-Newto...	[x-ray xray...	ivo://wfau.r...	WFAU, Instit...
UKIDSS DR4	UKIDSS DR4...	[Infrared, su...	ivo://wfau.r...	WFAU, Instit...
UKIDSS DR5	UKIDSS DR5...	[Infrared, su...	ivo://wfau.r...	WFAU, Instit...
UKIDSS DR6	UKIDSS DR6...	[Infrared, su...	ivo://wfau.r...	WFAU, Instit...
SDSS DR8	SDSS DR8 - ...	[Stars, Surve...	ivo://wfau.r...	WFAU, Instit...
UKIDSS DR7	UKIDSS DR7...	[Infrared, su...	ivo://wfau.r...	WFAU, Instit...
AstroDAbis	AstroDAbis...	[AstroDAbis,...	ivo://wfau.r...	WFAU, Instit...
HEASARC X...	[high energy...	ivo://nasa.h...	NASA/HEAS...	
VHS DR1	VHS DR1 - ...	[Stars, Surve...	ivo://wfau.r...	WFAU, Instit...

SDSS DR8: SDSS DR8 - Sloan Digital Sky Survey Data Release 8

SURVEY

This is an AstroGrid Dataset Access installation of the Sloan Digital Sky Survey (SDSS) DR8 hosted by the Wide Field Astronomy Unit (WFAU), University of Edinburgh. WFAU would like to thank John

Add to workflow

Service description

Service

TAP QUERY:

Table Metadata

Service: (2 tables)

Table: Contains the parameters provided for each source in the GLIMPSE Highly Reliable Catalog (intermedia

Name	Data Type	Indexed	Unit	Description	UCD	Utype
srcName	char	<input type="checkbox"/>		GLIMPSE Highly Reliable Catalogue source name		
seqNo	int	<input type="checkbox"/>		sequential object number in the HRC	meta.id	
cx	double	<input type="checkbox"/>		unit vector of spherical co-ordinates	pos.distance;pos.cartesian.x	

Foreign Keys:

Target Table	Links	Description	Utype

Service Capabilities

Query Language: Max Rows: Uploads:

ADQL Text

Synchronous

Examples Clear Parse Errors

List of services

TAP details

TO BE RELEASED

- » Taverna 2.5
 - › [Taverna Workbench Core](#)
 - › [Taverna Workbench Astronomy](#)
 - › [Taverna Workbench Bioinformatics](#)
 - › [Taverna Workbench Biodiversity](#)
 - › [Taverna Workbench Digital Preservation](#)
 - › Taverna Workbench Enterprise

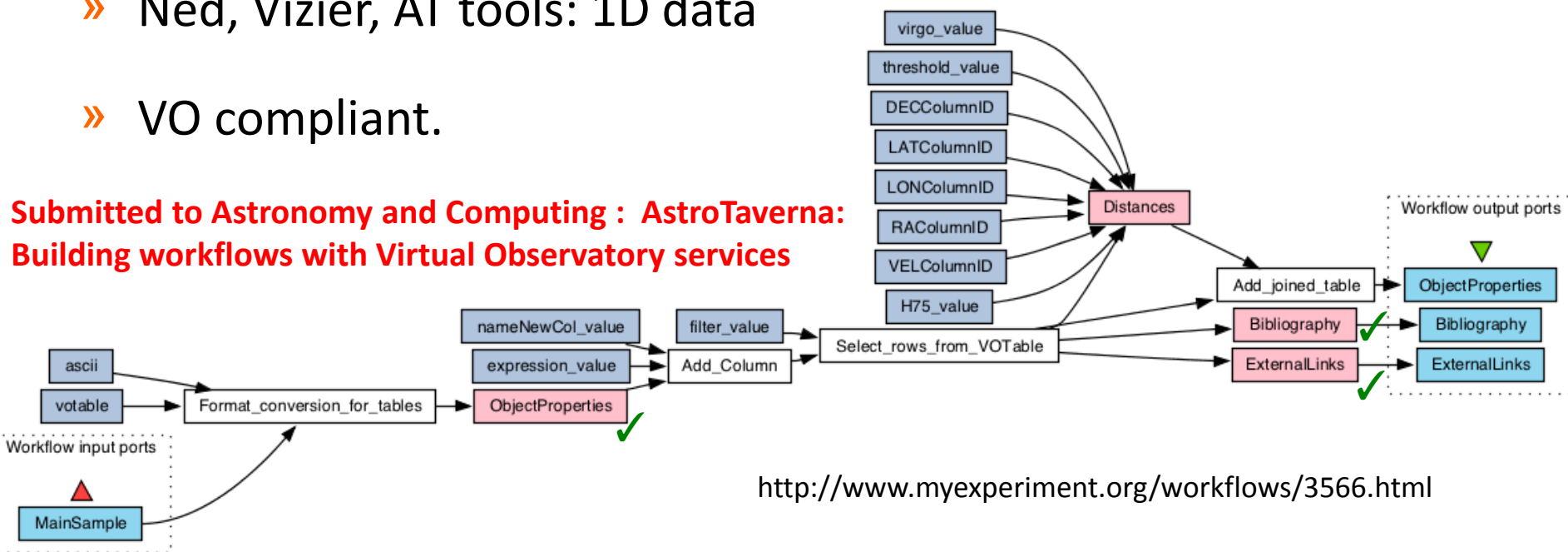
- » Taverna 2.5 Astronomy Edition includes:
 - › VAMDC (Virtual Atomic and Molecular Data Centre) plugin.
 - › Helio plugin.
 - › AstroTaverna plugin.

- » <http://www.taverna.org.uk/download/workbench/2-5/>

Retrieve object properties from NED and VO Archives, and calculate distance for a list of galaxies.

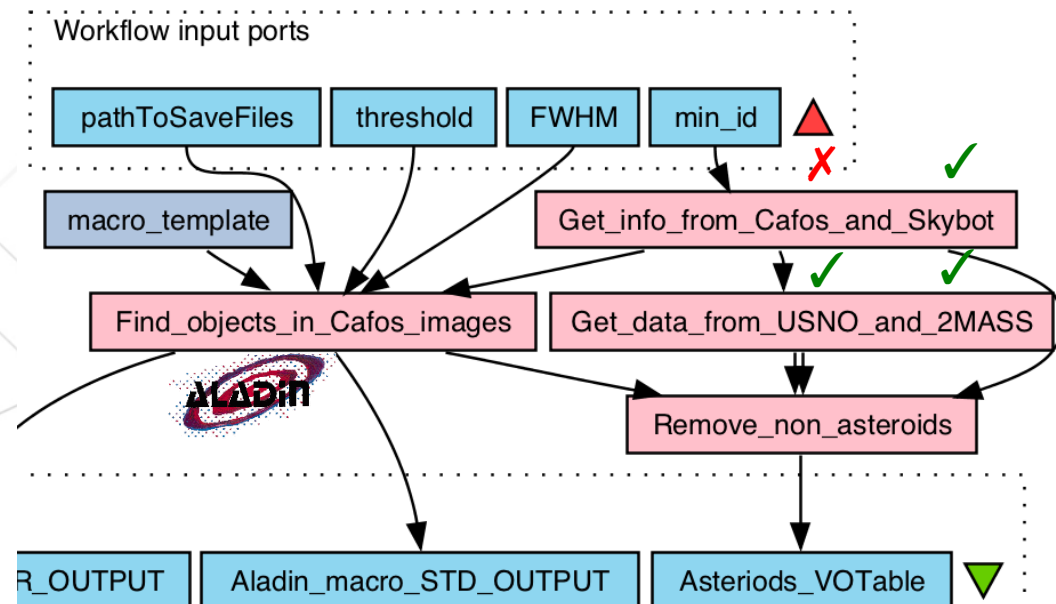
- » The goal is to build a sample of objects and their properties with up-to-date physical information in order to use it as the basis for a potential observational proposal.
- » Ned, Vizier, AT tools: 1D data
- » VO compliant.

Submitted to Astronomy and Computing : AstroTaverna:
Building workflows with Virtual Observatory services



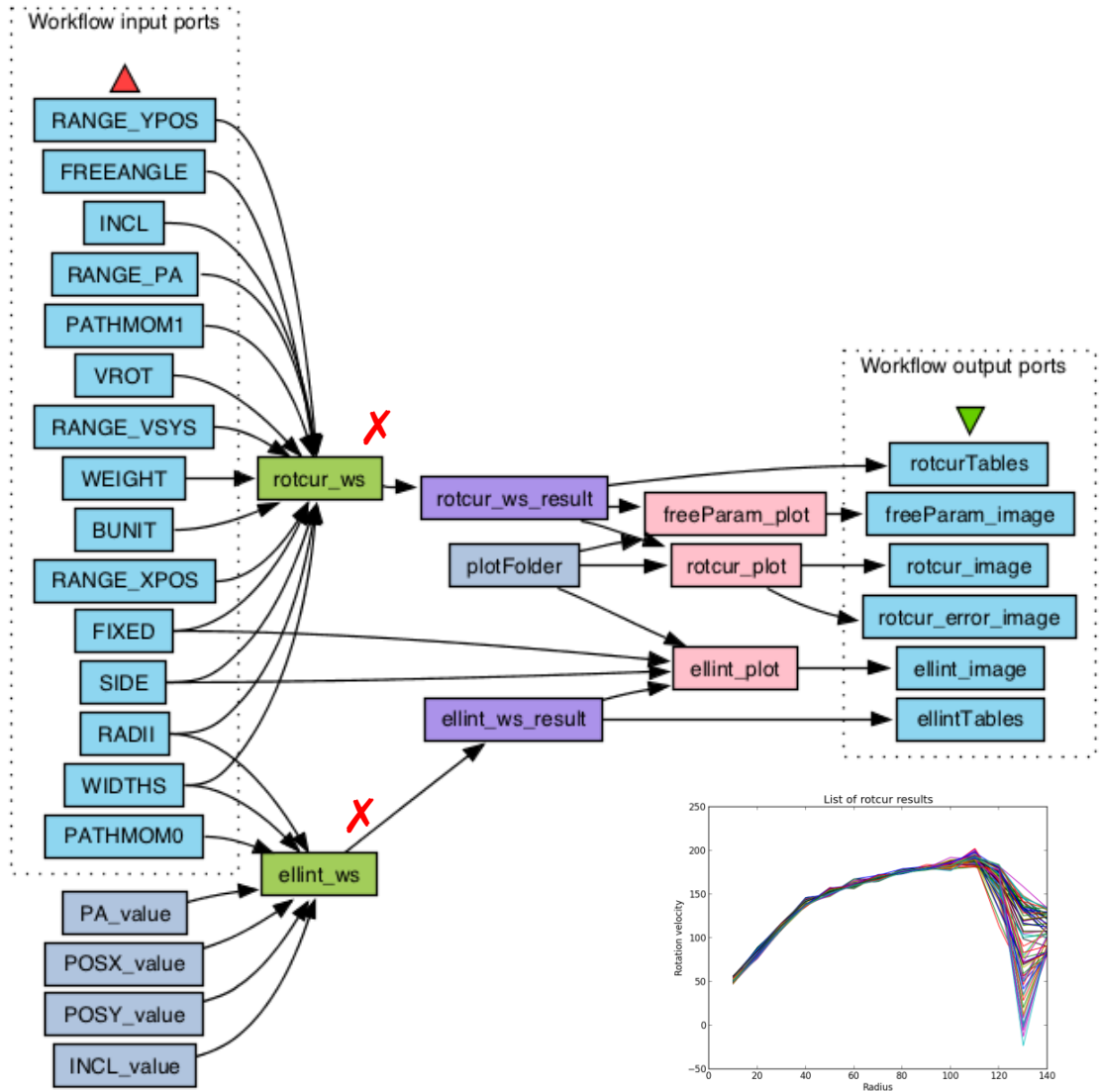
- » It analyzes images from CAFOS instrument in Calar Alto Observatory. It uses SkyBot catalog in order to identify objects in the Solar System. It includes a double check to avoid objects that are not asteroids (comparing with USNO and 2MASS catalogs).

- » Cafos, Skybot, USNO, 2MASS, Aladin, AT tools.



Based on (Velasco, A. 2012)

- » Exploration of parameters.
- » Web services running in computing infrastructures.



<http://www.myexperiment.org/workflows/4061.html>

- » Alpha version of a Python package that allows the running of Taverna Workflows within an iPython Notebook.
 - › `pip install tavernaPlayerClient`
- » Capabilities:
 - › Listing of workflows available on a Taverna Portal
 - › Selection of a workflow and the running of the workflow within the Notebook.
 - › Communication between python environment and Taverna workflow

Work partially carried out at the pro-iBiosphere Data Enrichment Hackathon

- » A demonstration video is at <http://youtu.be/QVQwSOX5S08>
- » An example notebook is available at <http://tinyurl.com/neoflwy>
- » A more complex example showing the chaining of workflows is at <http://tinyurl.com/ncw9ces>



```
In [1]: from tavernaPlayerClient import *

In [2]: c = Client('http://dev.at.biovel.eu', 'player', 'player')

In [3]: workflows = c.workflows

In [4]: for w in workflows:
        print str(w.identifier) + ' = ' + w.title

1 = Various output types
2 = Ecological niche modelling workflow v20
```

<http://www.researchobject.org>

Enabling **reproducible**, transparent research.

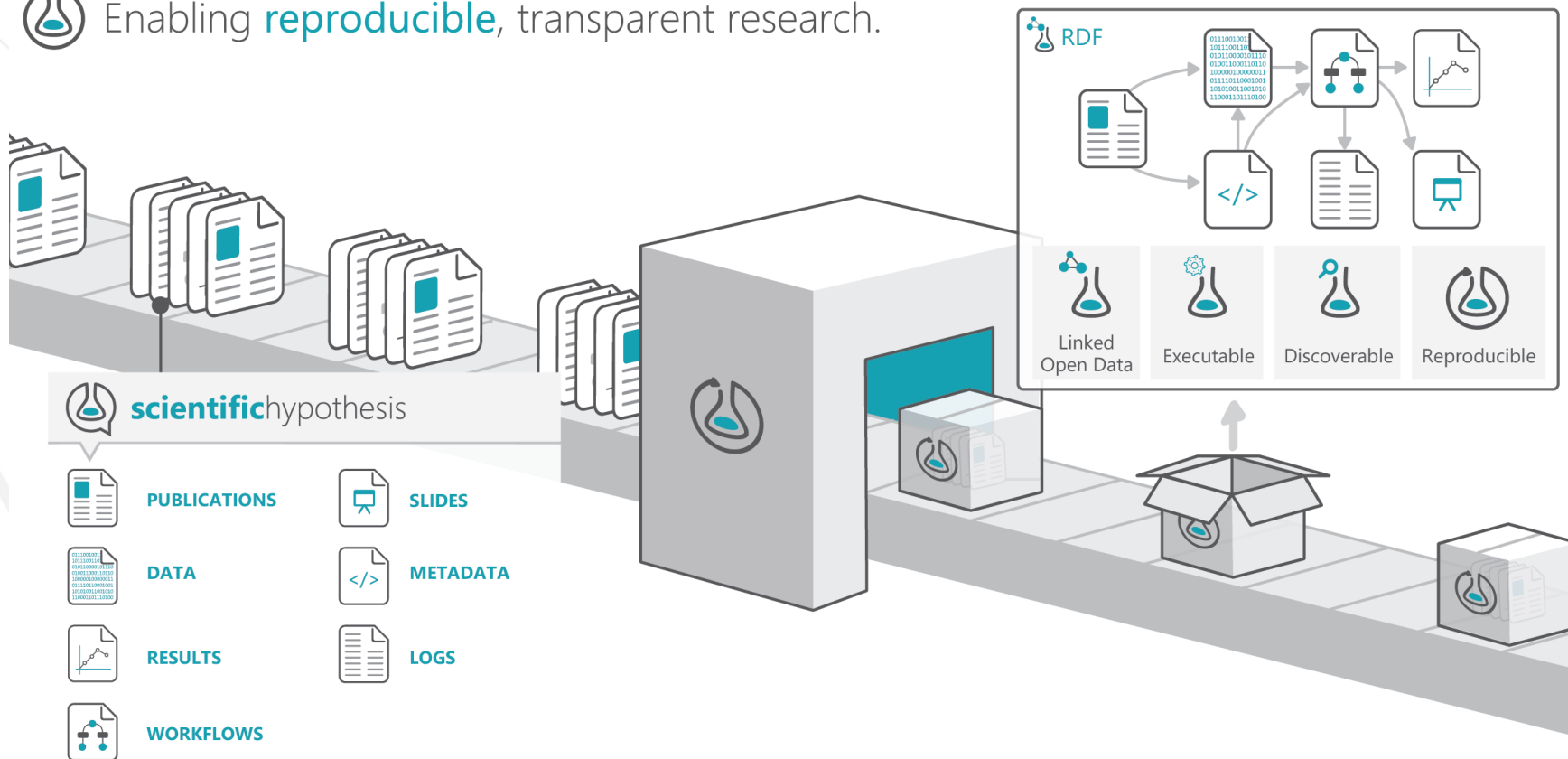


Image from www.researchobject.org

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