

Taverna Introduction

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<http://www.taverna.org.uk/>



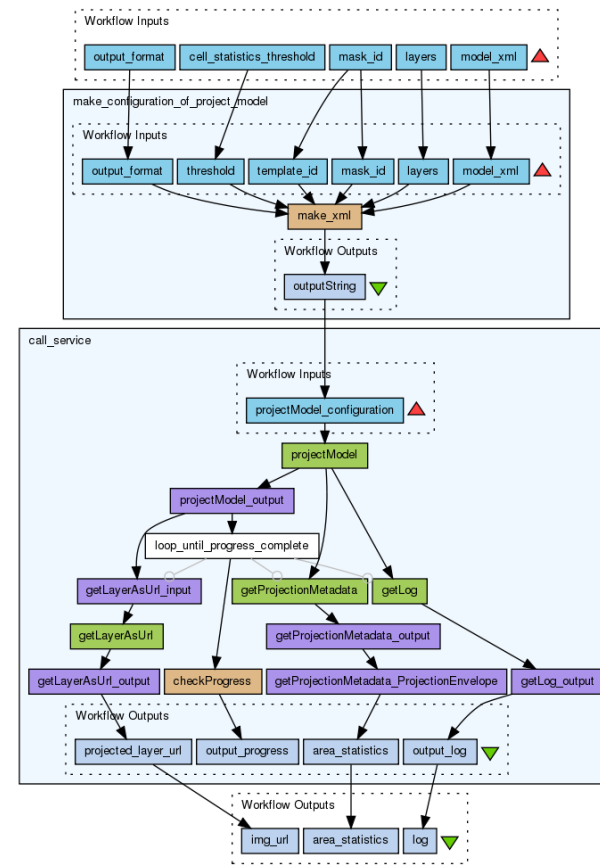
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Workflows

- Sophisticated analysis pipelines
- A set of services to analyse or manage data (either local or remote)
- Data flow through services
- Control of service invocation
- Iteration
- Automation
- Access to intermediate results



<http://www.myexperiment.org/workflows/3966>



Workflows in Taverna

- This tutorial will give you a basic introduction to designing, and reusing workflows in Taverna and some of its main features.
- Workflows in this practical use small data-sets and are designed to run in a few minutes. In the real world, you would be using larger data sets and workflows would typically run for longer



Taverna: Download and installation

- Taverna for biodiversity can be downloaded from <http://www.taverna.org.uk/download/workbench/2-5/biodiversity/>
- Follow the instructions on the website to install Taverna for your operating system.

The following page shows a screenshot of Taverna and the different panels that make up the workbench



Design perspective

- The **Design perspective** is where you create and edit workflows

The screenshot shows the Tavana Workbench 2.4.0 interface in the Design perspective. The top menu bar includes File, Edit, Insert, View, Windows, Components, and Advanced Help. A red arrow points to the 'Design' tab. The interface is divided into three main sections:

- Available Services Panel:** Located on the left, it displays a list of available services under categories like 'Service templates', 'Local services', and 'Interaction'. A box labeled 'Available Services Panel' is overlaid on this section.
- Workflow Explorer:** Located at the bottom left, it shows a hierarchical tree of the current workflow, including 'Workflow input ports', 'Workflow output ports', and 'Services'. A box labeled 'Workflow Explorer' is overlaid on this section.
- Workflow Diagram:** The main workspace on the right shows a visual representation of the workflow. It includes 'Workflow input ports' (sequence, email), 'run_input', 'run', and 'run_output' activities. Below these are various 'get' activities for status, result, and graphical outputs, connected by arrows. A box labeled 'Workflow Diagram' is overlaid on the top part of this section.



Workflow Diagram

The workflow diagram is the visual representation of the workflow, it:

- Shows inputs, outputs, services and data flows
- Allows editing of the workflow by dragging and dropping and connecting services together
- Enables saving of workflow diagrams for publishing and sharing



Workflow Diagram - Service types

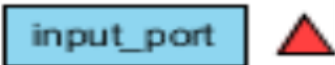
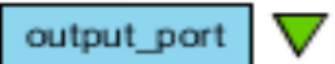

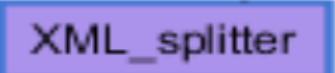


Type	Description
BeanShell	A user editable scripting operation using Beanshell script
Nested workflow	A sub-workflow exposed as a single operation
RShell	A user editable script in R
Spreadsheet import	An operation for loading spreadsheet data in CSV and Excel format
Text constant	A single constant string
XPath	Extraction of data from XML data

Type	Description
Local service	A standard Beanshell
WSDL web service	A processor accessing a standard SOAP service
REST web service	Accessing RESTful web services
Tool	Calling a local or remote tool/script
Interaction	Interaction in a web browser
Component	Re-usable component workflow



Workflow diagram – non services

- Taverna workflow diagrams also have:

Element	Description
	Input port
	Output port
	“Merge” - make a list out of elements (often sub-lists)
	XML Splitter
	Data flow
	Control flow (run after)



Workflow Explorer

- The Workflow Explorer shows the detailed view of your workflow. It shows default values and descriptions for service inputs and outputs and it shows where remote services are located. It also shows configuration details, such as iteration and looping
- Workflow validation details can also be found here. Before a workflow is run, Taverna checks to see if it is connected correctly and if its services are available.



Available Services Panel

Lists services available by default in Taverna

- Local java services
- WSDL Web Service – secure and public
- RESTful Services
- R Processor services (for statistical analyses)
- Beanshell scripts
- Xpath scripts
- Spreadsheet import service

The services panel also allows you to add new services or workflows from the web or from file systems – there are loads more available!



Results perspective

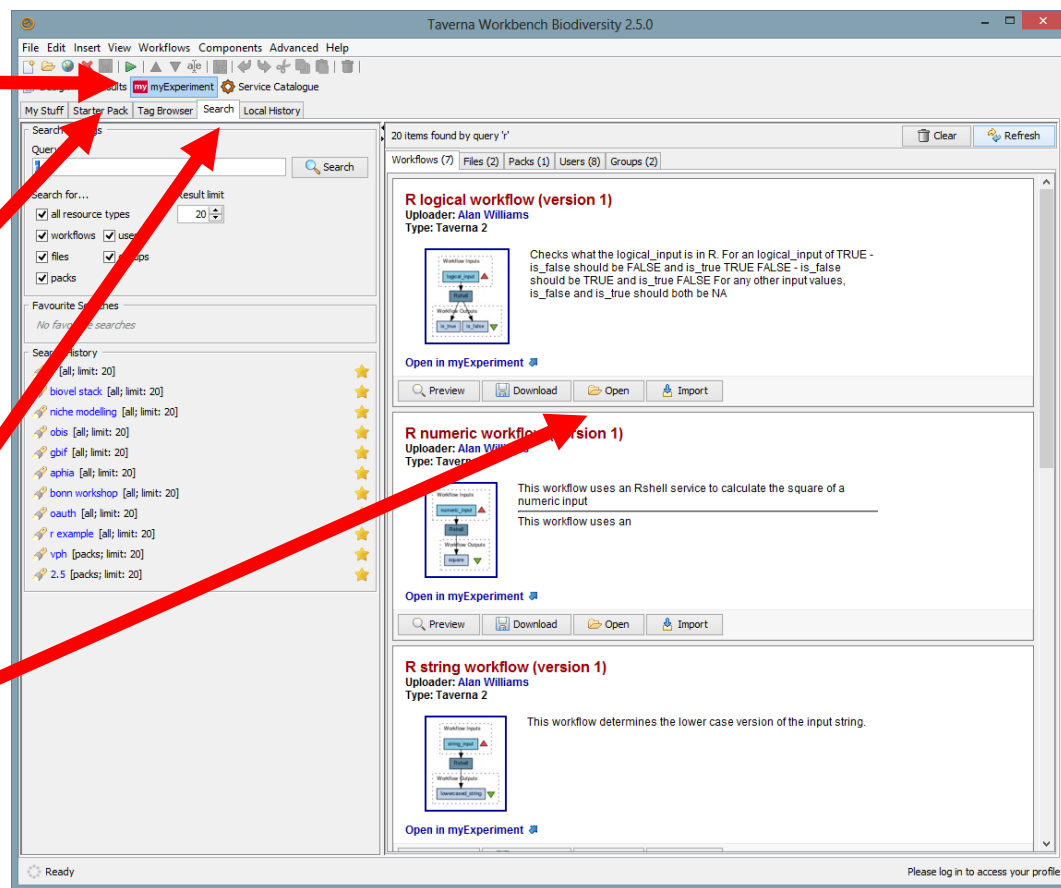
- The **Results perspective** shows
 - your current and previous workflow runs,
 - the data associated with the runs
- You can view the run's input and output values and also the data that flowed between services
- The data can be saved

The screenshot displays the Taverna Workbench interface. At the top, a menu bar includes File, Edit, Insert, View, Workflows, Components, and Advanced Help. Below the menu is a toolbar with icons for running and managing workflows. The main workspace is divided into two panes. The upper pane shows a workflow graph with nodes: 'xkcdURL', 'getPage', 'getImageLinks', 'comicURLRegex', 'findComicURL', 'getComicStrip', and 'todaysXkcd'. The lower pane, titled 'Workflow results', shows a tree view with 'todaysXkcd' selected. The 'Value type' is set to 'Image', and the 'Value' field displays a comic strip image with the text: "MOVE FAST AND BREAK THINGS." and a list of professions: "JOBS I'VE BEEN FIRED FROM: FEDEX DRIVER, CRANE OPERATOR, SURGEON, AIR TRAFFIC CONTROLLER, PHARMACEUT, MUSEUM CURATOR, WAITER, DOG WALKER". A 'Save value' button is visible in the top right of the results pane.



myExperiment perspective

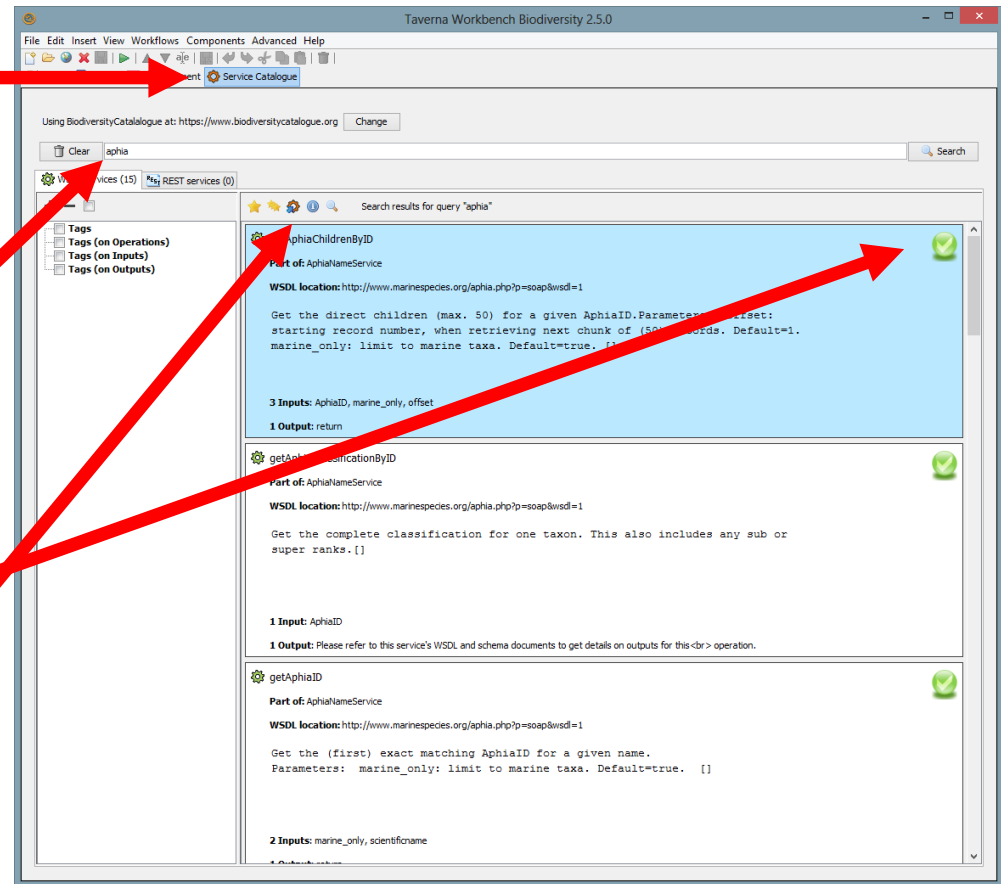
- The **myExperiment perspective** gives you access to some of the capabilities of the myExperiment website
- The **Starter Pack** provides useful examples for you to try
- You can also **Search** for workflows to **Open** and run





Service Catalogue perspective

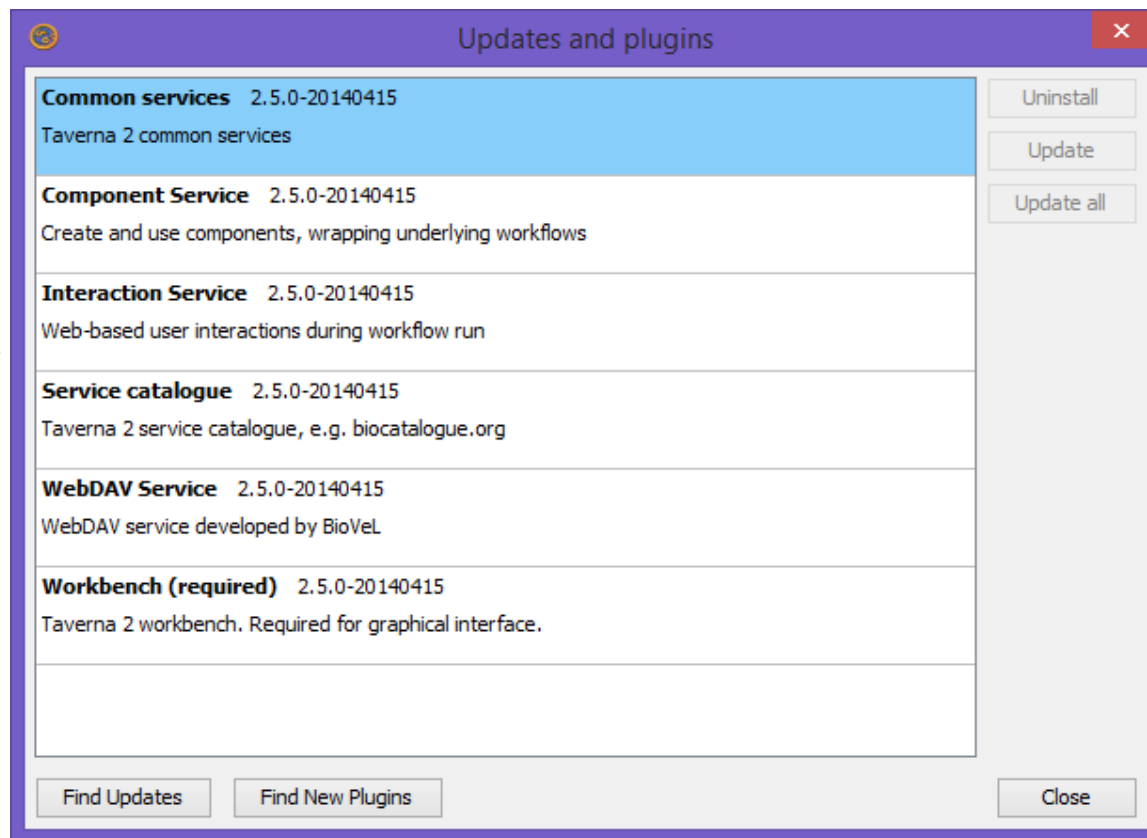
- The **Service Catalogue perspective** gives you access to some of the capabilities of the biodiversityCatalogue website
- You can search for services
- Check their status
- Add them to the workflow or the service panel – available by right-clicking the service





Updates and Plugin Installation

- Taverna updates are issued on the regular basis
- There is also a number of plugins which are developed for Taverna
- To get the updates and plugins select “Advanced -> Updates and plugins”

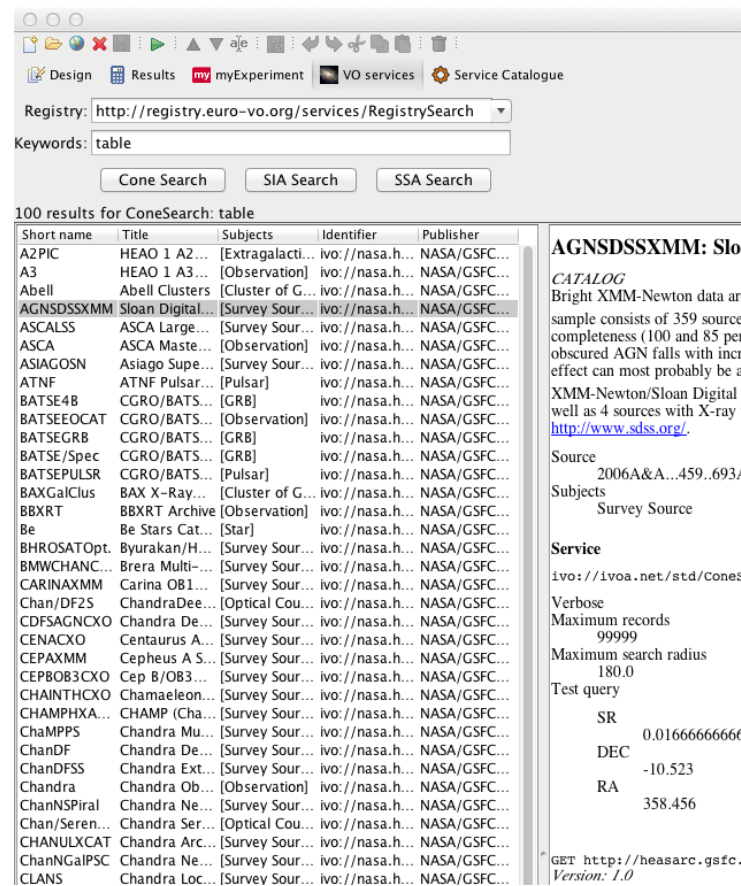




Taverna Workflow Management

Open extensibility

- Plug-in framework
 - Command line tool
 - Data Services: VOTables for AstroTaverna
 - Optimisations: E.g. Holl. model parameter sweeps
 - Infrastructures: Grid, HPC, Web Services
 - Domains: CDK, BioMart, VOTable
 - Commodities: Excel Spreadsheets, Open Refine, R
- Plug into other frameworks & platforms
 - Portals: Scratchpads
 - Interactive platforms: iPython Notebook
 - Wfms: KNIME Node, Galaxy tool, Kepler Actor
- Third party applications
 - Taverna Online
 - XworX
 - OGC chainer



Registry: <http://registry.euro-vo.org/services/RegistrySearch>

Keywords: table

Buttons: Cone Search, SIA Search, SSA Search

100 results for ConeSearch: table

Short name	Title	Subjects	Identifier	Publisher
A2PIC	HEAO 1 A2...	[Extragalacti...	ivo://nasa.h...	NASA/GSFC...
A3	HEAO 1 A3...	[Observation]	ivo://nasa.h...	NASA/GSFC...
Abell	Abell Clusters	[Cluster of G...	ivo://nasa.h...	NASA/GSFC...
AGNSDSSXMM	Sloan Digital...	[Survey Sour...	ivo://nasa.h...	NASA/GSFC...
ASCALSS	ASCA Large...	[Survey Sour...	ivo://nasa.h...	NASA/GSFC...
ASCA	ASCA Maste...	[Observation]	ivo://nasa.h...	NASA/GSFC...
ASIAGOSN	Asiago Supe...	[Survey Sour...	ivo://nasa.h...	NASA/GSFC...
ATNF	ATNF Pulsar...	[Pulsar]	ivo://nasa.h...	NASA/GSFC...
BATSE4B	CGRO/BATS...	[GRB]	ivo://nasa.h...	NASA/GSFC...
BATSEOCAT	CGRO/BATS...	[Observation]	ivo://nasa.h...	NASA/GSFC...
BATSEGRB	CGRO/BATS...	[GRB]	ivo://nasa.h...	NASA/GSFC...
BATSE/Spec	CGRO/BATS...	[GRB]	ivo://nasa.h...	NASA/GSFC...
BATSEPULSR	CGRO/BATS...	[Pulsar]	ivo://nasa.h...	NASA/GSFC...
BAXGalClus	BAX X-Ray...	[Cluster of G...	ivo://nasa.h...	NASA/GSFC...
BBXRT	BBXRT Archive	[Observation]	ivo://nasa.h...	NASA/GSFC...
Be	Be Stars Cat...	[Star]	ivo://nasa.h...	NASA/GSFC...
BHROSATOpt	Byurakan/H...	[Survey Sour...	ivo://nasa.h...	NASA/GSFC...
BMWCHANC...	Brera Multi...	[Survey Sour...	ivo://nasa.h...	NASA/GSFC...
CARINAXMM	Carina OB1...	[Survey Sour...	ivo://nasa.h...	NASA/GSFC...
Chan/DF25	ChandraDee...	[Optical Cou...	ivo://nasa.h...	NASA/GSFC...
CDFSAGNCXO	Chandra De...	[Survey Sour...	ivo://nasa.h...	NASA/GSFC...
CENACXO	Centaurus A...	[Survey Sour...	ivo://nasa.h...	NASA/GSFC...
CEPAXMM	Cepheus A S...	[Survey Sour...	ivo://nasa.h...	NASA/GSFC...
CEPBOB3CXO	Cep B/OB3...	[Survey Sour...	ivo://nasa.h...	NASA/GSFC...
CHAINHCXO	Chamaeleon...	[Survey Sour...	ivo://nasa.h...	NASA/GSFC...
CHAMPHXA...	CHAMP (Cha...	[Survey Sour...	ivo://nasa.h...	NASA/GSFC...
ChMPPS	Chandra Mu...	[Survey Sour...	ivo://nasa.h...	NASA/GSFC...
ChanDF	Chandra De...	[Survey Sour...	ivo://nasa.h...	NASA/GSFC...
ChanDFSS	Chandra Ext...	[Survey Sour...	ivo://nasa.h...	NASA/GSFC...
Chandra	Chandra Ob...	[Observation]	ivo://nasa.h...	NASA/GSFC...
ChanNSpiral	Chandra Ne...	[Survey Sour...	ivo://nasa.h...	NASA/GSFC...
Chan/Seren...	Chandra Ser...	[Optical Cou...	ivo://nasa.h...	NASA/GSFC...
CHANULXCAT	Chandra Arc...	[Survey Sour...	ivo://nasa.h...	NASA/GSFC...
ChanNGalPSC	Chandra Ne...	[Survey Sour...	ivo://nasa.h...	NASA/GSFC...
CLANS	Chandra Loc...	[Survey Sour...	ivo://nasa.h...	NASA/GSFC...

AGNSDSSXMM: Sloan Digital...

CATALOG
Bright XMM-Newton data an sample consists of 359 source completeness (100 and 85 per obscured AGN falls with incr effect can most probably be a XMM-Newton/Sloan Digital well as 4 sources with X-ray <http://www.sdss.org/>

Source
2006A&A...459..693/

Subjects
Survey Source

Service
<ivo://ivoa.net/std/cones>
Verbose
Maximum records
99999
Maximum search radius
180.0
Test query
SR
0.01666666666
DEC
-10.523
RA
358.456

GET <http://heasarc.gsfc...>
Version: 1.0