

Data Centre Alliance Status Report

Slides drawn from Mid-term review (Jan 10, 2008) from various partners



Mark ALLEN (DCA Project Scientist)

EuroVO-DCA objectives

Co-ordinate European data centres and create a co-operating community for technology take-up and the provision of resources to the VObs

- Co-ordinate national VObs initiatives and fostering the definition of a European strategy (*WP2*)
- Disseminate knowledge and good practice among European data centres (*WP3*); also foster participation from data centres from other European countries (*WP6*)
- Gather feedback from implementation to convey to VObs developers (partners', EuroVO TC, IVOA – *WP3-2*)
- Prepare inclusion of Theory services in the VObs (*WP4*)
- Co-ordinate the VObs with the development of the computational Grid (*WP5*)

The EuroVO-DCA project

- Sixth Framework Programme, Research Infrastructure, Communication Network Development
- Coordination Action
- Start date: 1 September 2006
- Duration: 28 months (i.e. ends 31 December 2008)
- Reporting cycle: 14 months
- EC contribution: 1.540 M€

Project cycles

Kick-off

2 months, September – October 2006

Cycle 1

One year, November 2006 – October 2007

Cycle 2

One year, November 2007 – October 2008

Final phase

2 months, November – December 2008

- Astronomical Spectroscopy and the VO Workshop 2007

Since last SAC meeting

- Workshop – 'How to publish data in the VO'
+ feedback from participants
- Data Centre Census
- Support to uptake of VO (in & out of Europe)
- Progress towards inclusion of theory in VO
- Activity in wider GRID community
- Planning of workshops
 - Euro-VO Theory & Grid Workshops
 - 2nd major DCA workshop on VO publishing
- Mid-term review at European Commission
 - very positive

Mid-term review

- European Commission Jan 10, 2008
 - External reviewers
- Executive summary



Excellent project (The project has fully achieved its objectives and technical goals for the period and has even exceeded expectations)



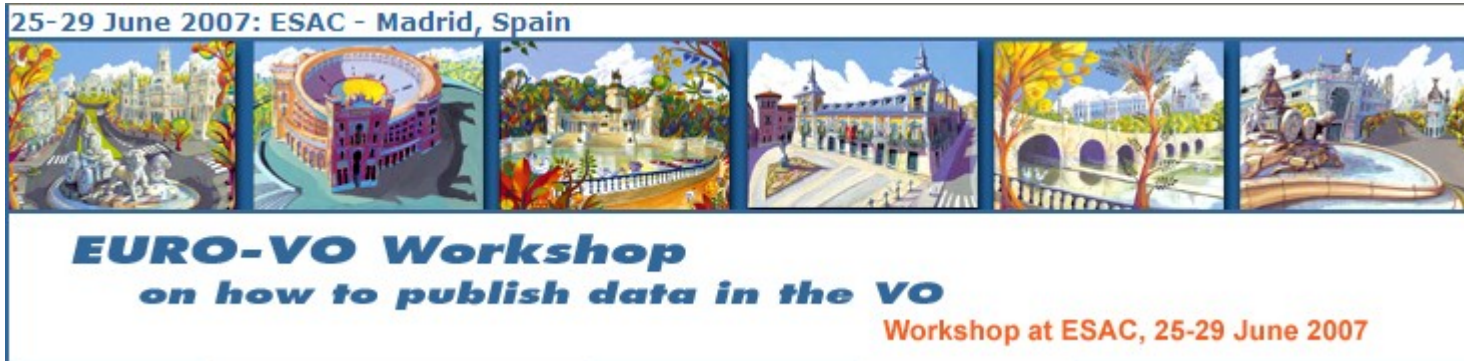
Good project (The project has achieved most of its objectives and technical goals for the period with relatively minor deviations)



Unsatisfactory project (The project has failed to achieve critical objectives and/or is not at all on schedule)

recommendations below...

EURO-VO Workshop on how to publish data in the VO



ESAC, 25-29 June 2007

<http://esavo.esac.esa.int/EuroVOWorkshopJune2007/>

Workshop Programme

- Parallel sessions about publishing data using existing tools within EURO-VO
- Publishing catalogues
 - DSA (AstroGRID), SAADA (OV-France), DMMapper (ESA)
- Publishing spectra
 - DALToolkit (ESA), MEX (ESO)
- Publishing images
 - DALToolkit (ESA), SAADA (OV-France), MEX (ESO)
- VOEvent transient data (AstroGRID)

Workshop results

- High proportion of participants were able to publish their data through VO protocols by the end of the sessions
- Example:
 - Publishing Theoretical Spectra
 - small group publishing a set of models



Simple Spectra Access Protocol for Theoretical Spectra (TheoSSAP)

Archive:

TMAP
Spectra[More information on archive](#)Effective
temperature in K: +/- Surface gravity (log
g) in cm/s²: +/-

Mass fraction 0:

 +/- dex

Mass fraction 1:

 +/- dex

Mass fraction 2:

 +/- dex

Mass fraction 3:

 +/- dex

Mass fraction 4:

 +/- dex

Mass fraction 5:

 +/- dex

Mass fraction 6:

 +/- dex

Mass fraction 7:

 +/- dex

Band:

The wavelength range in format "wavelength₁/wavelength₂" in meters.

Data format:

Format of the individual spectra. (No need to select, if return format is html.)

Return Format:

 votable
 html

The format in which to present the metadata. (If html is selected, no further selection of data format is necessary, since links to all available formats will be created anyways.)

[Help](#)[Reset](#)[Start search](#)

Done

Web form interface to VO
compliant service providing
theoretical spectra

```
- <VOTABLE xsi:schemaLocation="http://www.ivoa.net/xml/VOTable/VOTable-1.1.xsd" version="1.1">
- <RESOURCE>
- <DESCRIPTION>
  Capabilities of SSA service for synthetic spectra (TMAW)
  <DESCRIPTION>
  <INFO value="OK" name="QUERY_STATUS"/>
  <INFO value="1.01" name="SERVICE_PROTOCOL">SSAP</INFO>
- <PARAM unit="dec. deg., ICRS" ucd="" arraysize="" datatype="char" value="" name="INPUT:pos">
  <DESCRIPTION>Not applicable for synthetic spectra.</DESCRIPTION>
  </PARAM>
- <PARAM value="" ucd="" unit="dec. deg." datatype="double" name="INPUT:size">
  <DESCRIPTION>Not applicable for synthetic spectra.</DESCRIPTION>
  </PARAM>
- <PARAM value="0," ucd="" unit="m" arraysize="2" datatype="double" name="INPUT:band">
  <DESCRIPTION>Wavelength range.</DESCRIPTION>
  </PARAM>
- <PARAM value="" unit="UTC" arraysize="2" datatype="double" name="INPUT:time">
  <DESCRIPTION>Not applicable for synthetic spectra.</DESCRIPTION>
  </PARAM>
- <PARAM arraysize="" datatype="char" value="all" name="INPUT:format">
  <DESCRIPTION>Format of data to search for.</DESCRIPTION>
  - <VALUES>
    <OPTION value="all"/>
    <OPTION value="native"/>
    <OPTION value="votable"/>
  </VALUES>
  </PARAM>
- <PARAM value="queryData" arraysize="" datatype="char" name="INPUT:REQUEST">
```

VO standard description of service allows VO registration and interoperability

Workshop feedback: what did you find most useful, and why?

- Overview of concepts, mechanisms, tools, standards and science examples
 - Most knew very little about the VO
- Most successful elements
 - gaining an overview
 - being able to try out a range of different VO publishing tools
 - identify tools matching requirements
 - opportunity to work directly with those already engaged with VO data publishing and development
 - see real working examples
 - identify relevant IVOA working groups and standards
 - catalogue publishing tools were the most popular in terms of number of attendees

Recommendation 3:

- The panel felt that attendance at the first Data Centre workshop was “broad but shallow”, with good national representation, but relatively small numbers of attendees from outside France and Spain. The Consortium should take steps to address this for future events.

Planning for next workshop

- June 23-27 ESO, Garching
- Organising committees forming now
- Special efforts will be made to involve also "important" archives and large astronomical facilities, selected through IST, DCA census of data centres, EURO-VO SAC and through the ASTRONET project

On-site support to uptake

- NOVA :
 - OmegaCEN data centre
 - Access from AtroGrid software to Astro-Wise archives
- CNRS EuroVO-DCA :
 - uptake of the theory draft standards in theory services
- On-site support went slower than initially expected
 - More focus was given in workshops
 - Follow-up visits will come more naturally from the attendance to the workshop

EuroVODCA

[Edit](#) [Attach](#) [Printable](#)

[Log In](#) or [Register](#)

[EuroVODCA Web](#) > [WP2Strategy](#) > [DCACensus](#) > DCACensusQuestionnaires

r12 - 28 Jan 2008 - 14:44:04 - MathiasDepretz

EuroVO-DCA project: DCA Census Questionnaires

PLEASE SUBMIT YOUR QUESTIONNAIRES BY JANUARY 25, 2008.

!!! The deadline is extended to February 1, 2008. !!!

The Euro-VO Data Centre Alliance (<http://www.euro-vo.org/pub/dca/overview.html>) project is a Coordination Action funded by the European Commission within the Sixth Framework Program. It aims at helping European astronomical data centres to publish their data and services in the Virtual Observatory, using standards defined by the International Virtual Observatory Alliance (IVOA). EuroVO-DCA operates by coordinating the sharing of expertise, organizing Workshops, and providing assistance, in particular through the national VO projects and by technical visit of experts.

The European community of Data Centres is not well identified at present. In order for the DCA to provide the best possible service to help Data Centres participate in the VO, we are conducting a census of data centres to understand their characteristics and needs.

The information collected in this census will provide a snapshot of the European Data Centre Community, and will guide the preparation of workshops, tutorials and other

- [EuroVODCA Web](#)
- [Create New Topic](#)
- [Index](#)
- [Search](#)
- [Changes](#)
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- [Statistics](#)
- [Preferences](#)
- [Help](#)

- Webs**
- [EuroVODCA](#)
 - [Main](#)
 - [Sandbox](#)
 - [TWiki](#)

- Links**
- [Euro-VO](#)
 - [IVOA](#)
 - [VOTech](#)

5 questionnaires

- (1) Introduction and Identification of Data Centre
- (2) Observational Archives and Data products
- (3) Services / Tools / Software Suites
- (4) Theoretical Archives
- (5) Theory Services

First look at census results

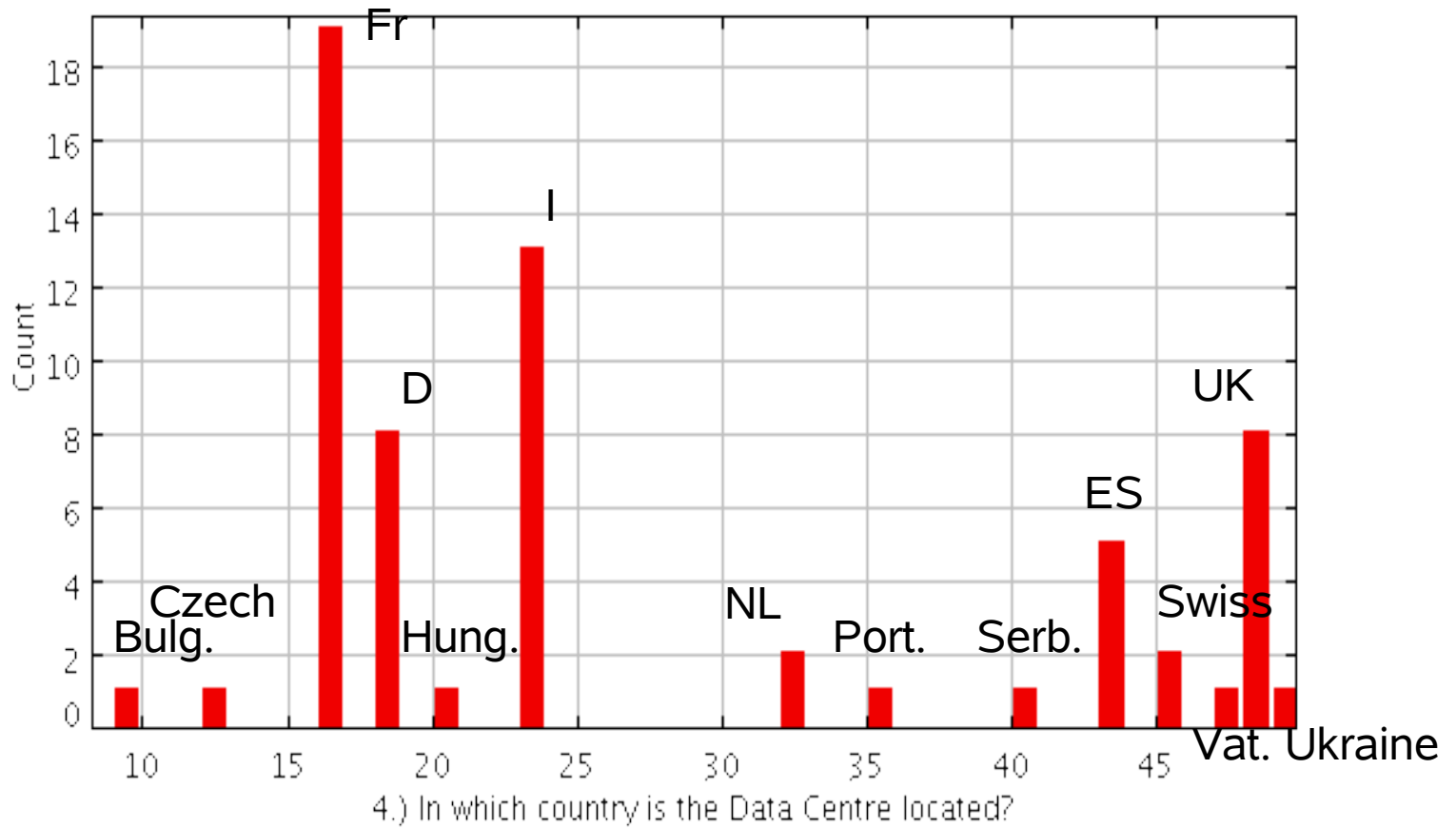




Table Browser for 1: Q1_csv.csv

	1.) Acronym of the Data Centr...	2.) Name of the Data Centre:	6.) Name of the Organization/Institute in charge of the Data Centre:
50	SSADC	Sofia Sky Archive Data Centre	Institute of Astronomy, Bulgarian Academy of Sciences
45	STELOND	Astronomical Institute Ondrejov	Astronomical Institute of the Academy of Sciences
3	EPE	Extrasolar Planets Encyclopedia	LUTH - Observatoire de Paris
5	BASS 2000	BAse de donn�es Solaire/Stellaire Sol	Observatoire Midi-Pyr�nes and Observatoire de Paris
9	MEDOC	Multi Experiment Data and Operation Center	Institut d'Astrophysique Spatiale
10	GRAAL	Groupe de Recherche en Astronomie et Astrophys...	CNRS / INSU / Universit� Montpellier 2
11	BDAP	Base de Donn�es Atmosph�res Plan�taires	Service d'A�ronomie, France
15	HORIZON	HORIZON project Data Centre and Services	CEA, INSU/CNRS, Observatoire de Paris, Universit� de Lyon I, Universit� Paris VI
27	Xcat-DB	SSC XMM-Newton	Survey Science Center of the XMM-Newton satellite at the Observatoire de Strasbourg
31	FUSE/IAP/VO-PARIS	FUSE/IAP/VO-PARIS	Institut d'astrophysique de Paris (IAP)
32	CDPP	Centre de Donn�es de Physique des Plasmas	CESR (Centre d'Etudes Spatiales des Rayonnements)
35	TERAPIX	TERAPIX	Institut d'Astrophysique de Paris
40	VOObsBesancon	Observatoire de Besan�on	Observatoire des Sciences de l'Univers de Besan�on
42	CASSIS	Centre d'Analyse Scientifique de Spectres Infr...	Centre d'Etude Spatiale des Rayonnements (CESR)
46	SYRTE-VOPARIS-DC	SYRTE-VOPARIS Data Center	Observatoire de Paris - SYRTE
47	LUTH/VO-Paris data center	LUTH/VO-Paris data center	LUTH - Observatoire de Paris
55	IMCCE-VOPDC	IMCCE VO Paris Data Centre	IMCCE / CNRS / Observatoire de Paris
58	GEPI-VOPARIS DATA CENTRE	BD/OV GEPI : "Bases de donn�es et Publication ...	GEPI-Observatoire de Paris - VOPARIS
60	VOPARIS_DATA_CENTRE	VO Paris DATA centre	Observatoire de Paris
62	VAMDC	Virtual Atomic and Molecular Data Center	VO PARIS Data Center (Paris Observatory)
63	BAX	BAX	LATT, OMP
12	AIP	Astrophysical Institute Potsdam	Astrophysical Institute Potsdam
17	gavo-dc	GAVO Data Center	Zentrum f�r Astronomie, Universit�t Heidelberg
29	CDMS	Cologne Database for Molecular Spectroscopy	I. Physikalisches Institut, Universit�t zu K�ln
33	eROSITA-DC	eROSITA Data Centre	Max-Planck-Institut fuer extraterrestrische Physik
53	Hamburg	Hamburger Sternwarte	Hamburger Sternwarte
56	SONOBS	Sonneberg Observatory	Sonneberg Observatory / 4pi Systeme GmbH
61	SUMER	SUMER online database	Max-Planck-Institute for Solar System Research
65	ROSAT_MPE	ROSAT Archive at MPE	Max-Planck-Institut f�r extraterrestrische Physik
21	KODC	Konkoly Observatory Data Center	Konkoly Observatory of the Hungarian Academy of Sciences
1	IA2	Centro Italiano Archivi Astronomici	INAF - Ossrvatorio Astronomico di Trieste
2	LFI-DPC	Planck LFI-DPC	INAF-OATs
4	IA2	Centro Italiano Archivi Astronomici	INAF - Osservatorio Astronomico di Trieste
13	SCAE-VO	SCAE Data Centre	Dipartimento di Fisica, Universita' Sapienza
14	SCAE-VO	SCAE Data Centre	Dipartimento di Fisica, Universita' Sapienza



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14	SCAE Data Centre	Dipartimento di Fisica, Universita' Sapienza
16	Pandora Group	INAF - IASF Milano
18	Tirgo IR Archive	INAF - Osservatorio Astrofisico di Arcetri
20	INAF-OATo	Istituto Nazionale di Astrofisica - Osservatorio Astronomico di Torino
25	INAF-OATo	
30	GOLDMINE	UNIVERSITA' DEGLI STUDI DI MILANO-BICOCCA
34	REM Data Center	INAF-IA SF Bologna
36	ASI Science Data Center	Italian Space Agency (ASI)
64	SOho Long-term ARchive	Istituto Nazionale di Astrofisica - Osservatorio Astronomico di Torino
54	OmegaCEN	Kapteyn Astronomical Institute
57	Joint Institute for VLBI in Europe	Joint Institute for VLBI in Europe
37	GRIDPT-SIM	Laboratory of Systems, Instrumentation and Modeling for Environment and Space Sciences and ...
19	Belgrade Astronomical Database	Astronomical Observatory, Belgrade
26	Planetary Virtual Observatory Laboratory	International Outer Planets Watch and Universidad del Pa�s Vasco
28	AMIGA	Instituto de Astrof�sica de Andaluc�a - CSIC
39	AXIS XMM International Survey	Instituto de F�sica de Cantabria (CSIC-UC)
51	LAEFF Scientific Data Centre	Instituto Nacional de T�cnica Aeroespacial (INTA)
59	VO data centre of the Instituto de Astrof�sica de...	Instituto de Astrof�sica de Canarias
48	INTEGRAL Science Data Centre	ISDC Consortium & Astronomical Observatory of the University of Geneva, Switzerland
49	INTEGRAL Science Data Centre	ISDC Consortium & Astronomical Observatory of the University of Geneva, Switzerland
38	AstroData	Nikolaev Astronomical Observatory
6	UK SDO Data Centre	MSSL
7	Mullard Radio Astronomy Observatory, Cambridge	Astrophysics Group Cavendish Laboratory University of Cambridge
23	CASU Astronomical Data Centre	Cambridge Astronomical Survey Unit
24	CASU Astronomical Data Centre	Cambridge Astronomical Survey Unit University of Cambridge
41	Leicester Database & Archive Service	University of Leicester
43	UK Solar System Data Centre	Science & Technology Facilities Council
44	Edinburgh University Wide Field Astronomy Unit	Institute for Astronomy, University of Edinburgh
52	MERLIN/VLBI National Facility	MERLIN is operated by the University of Manchester Jodrell Bank Centre for Astrophysics as a N...
22	Vatican Observatory	Specola Vaticana
8	test	

Theory in the VO

- Assess the inclusion of theory data and services in the Virtual Observatory
 - DCA - Theory Expert Group
 - Workshops
 - Whitepaper – in prep with community consultation
 - IVOA Standards: SNAP
 - define framework for including *large* simulations in VObs

Horizon GalMer Database Access

http://ozone.obspm.fr/horizon/galmer/

GalMer HORIZON PROJECT

DB Query Query Results Experiment Snapshot Description

Introduction Simulations GalMer DB References Credits

Database solution

This project is powered by the PostgreSQL ORDBMS with the preliminary version of the [XML Type support](#). The major part of the SNAP Data Model serialisation into the relational database schema has been made by **Laurent Bourges**, in a frame of his contract funded by the [EuroVO Data Centre Alliance](#) project.

The GalMer team:

- Igor Chilingarian
- Francoise Combes
- Paola Di Matteo
- Anne-Laure Melchior
- Benoit Semelin

C software libraries

- CFITSIO**: The CFITSIO library is used in the GalMer API for I/O of FITS files.
- gd library**: The GD Graphics library is used in the GalMer API to generate preview maps of the snapshots.

JavaScript libraries

- prototype**: The "Prototype" JavaScript Framework is used in the GalMer web-site as the Ajax technology implementation.
- The JavaScript Tab interface is used for tabbed DB navigation.
- The JavaScript Vectorgraphics and Drag'nDrop & DHTML libraries are heavily used at the Snapshot preview page.

Some functionality of this web-site is thanks to:

The interaction between the GalMer DB WEB-site and VO Applications is implemented using Java/JavaScript/PLASTIC connection as described in [Zolotukhin & Chilingarian \(2007\)](#). Some of the software solutions initially proposed and developed for the [ASPID-SR](#) archive by Igor Chilingarian and Ivan Zolotukhin have been reused in this project.

Special thanks to: Isa Barbarisi (ESA), Thomas Boch (CDS), Francois Bonnarel (CDS), Pierre Fernique (CDS), Gerard Lemson (MPE), Mireille Louys (CDS), Jesus Salgado (ESA), John Taylor (Google), Mark Taylor (Univ. of Bristol), Ivan Zolotukhin (SAI MSU)

Age: 300.0 Myr
PREVIEW

phi	0.0
theta	-37
Xcent	0.0
Ycent	0.0
Zoom	6.9894
Bright.	5.9948

Stars
 Gas
 D. M.

Init

TOOLS

FITS Maps

Gas mass: [dropdown]
Download in Aladin

SPECTRUM

Show region
 Dust
Download in VOSpec

W3C HTML 4.01

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Last modified: 09/Dec/2007



Recommendation 2:

- The panel felt that the intended efforts towards Virtual Observatory encapsulation of astrophysical theoretical modelling were admirable, but recognised the strong technical challenges involved in e.g. creating appropriate data models. The panel suggested that useful contacts may be formed with other groups performing similar research on grid-publication of ensembles of theoretical models, such as the climatology group METAFOR.

Coordination with Computational Grid Projects

- How can Data Centres benefit of GRID computing?
- How can Astronomers benefit of Grid computing through Data Centres?

Grids

- Authentication & Authorization
- Data Management
- Job Management
- Information system

VObs

- Single-sign-on
- VOspace
- Workflows
- Information System (Registries)



Data Centre Alliance Workshops

Garching (Munich), Germany

April 7-11, 2008

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[Motivations](#)

[Venue](#)

[General Information](#)

[Important Dates](#)

[Registration](#)

[Committees](#)

[Participants](#)

[Contacts](#)

Theory in the Virtual Observatory

April 7-9, 2008

The Virtual Observatory is an international astronomical community-based initiative. It aims to allow global electronic access to the available astronomical data archives of space and ground-based observatories, as well as simulation databases. It also aims to enable data analysis techniques through a coordinating entity that will provide common standards, wide-network bandwidth, and state-of-the-art analysis tools.

VO efforts have mainly concentrated on observational data archives and services, but recently results from theoretical research, especially simulation have started attracting more attention.

The main goal of this workshop is to outline needs and challenges that computational and theoretical astrophysics will be facing in the coming years, and to identify how the unique capabilities intrinsic to the Virtual Observatory concept can meet them.

Grid and the Virtual Observatory

April 9-11, 2008

The Virtual Observatory is rapidly evolving as a fundamental tool for the astronomical community. It may be seen as a Grid of federated astronomical databases. To process the huge amount of data residing in the Virtual Observatory it is necessary to provide an adequate amount of resources. The combination of the VObS and of the Grid technology is the right answer to this issue offering at the same time a complete and integrated working environment to the Astronomical and Astrophysical community.

The main goal of the workshop is to contribute to the integration of the Virtual Observatory and Grid e-science infrastructures and to the development of new Grid-aware astronomical applications. This workshop aims at contributing to the adoption of Grid and Virtual Observatory technologies by the Astronomical Data Centers.

The two workshops are organized back-to-back. It is possible to participate only in one of them, however there are important links between the workshops and we strongly suggest to attend the two.

(ist)

- Garching, 7-11 April 2008
- Theory Workshop
 - Intro to VO; 3D simulations, Micro-simulations, theory-observational interoperability, Theory-Grid-VO, Discussion
- Grid Workshop
 - '... bridge between the VObs and the standard Grid infrastructures'*
 - Applications and Data Centre Experience, Infrastructure and interoperability, Tools, Discussion

Support to data centres from other European Countries

- Very successful cooperation with Data Centres from Portugal, Bulgaria, Hungary and the Czech Republic.
 - **VObs Info-Workshop: Sofia, 2008, Jan 24-25**
 - Attendance: 40 participants + 9 DCA people.
 - **Other Events: VOIndia workshop, Lithuania VO School**

EuroVO DCA Science Aspects

- Big picture – scientific utilisation of VO, relevance of DCA activities to science community – IST, VO promotion at meetings
- Identification of important data centres
 - via census and consultation with Euro-VO SAC
 - feed into Workshop participation and visits - OK
- Science examples at workshops
 - participants bring their own
 - was to draw on RI projects as examples...
- Feedback on science usage of DCA assisted resources - greater effort needed... how?

Recommendation 1:

- The project should look at establishing useful metrics of scientific impact, such as the increase in numbers and scope of registered European VO services over the time span of the project. Greater attention should also be paid to the publication impact of the project.

Outlook

- Much effort into prep of (3) Workshops
- Analysis of census
- End of project deliverables

- DCA activities in AIDA – next week

End

Recommendation 2:

- The panel felt that the intended efforts towards Virtual Observatory encapsulation of astrophysical theoretical modelling were admirable, but recognised the strong technical challenges involved in e.g. creating appropriate data models. The panel suggested that useful contacts may be formed with other groups performing similar research on grid-publication of ensembles of theoretical models, such as the climatology group METAFOR.

Recommendation 4:

- The panel recommended the development of the EuroVO website into a central repository for agreed solutions, tools and procedures to publish data. Clearer support should be given online on how to create a service from a given tool or program (e.g., a list of HOWTO documents).

Charter:

- Highlight scientific drivers to motivate DCA take-up
- Provide real science examples for use in the DCA workshops and tutorials, and to test and use the services.
- Identify science linkage across the DCA work packages
- Pursue the strategies and priorities defined by the Euro-VO Science Advisory Committee.

- **Highlight scientific drivers to motivate DCA take-up**
 - IST Contributions to DCA Workshops:
 - 'How to Publish Data in the VO' Workshop
 - *Science with the VO (Allen), Enabling VO Science (Tedds)*
 - 'Astronomical Spectroscopy and the VO' Workshop
 - 3 IST members on STOC
 - IST (and EuroVO SAC) members led round table discussions, and gave presentations

- **Provide real science examples for use in the DCA workshops and tutorials, and to test and use the services.**
 - Examples linked to individual 'helper' tools for publishing to VO
 - Workshops organised in favor of participants bringing own data
 - Presence of scientists at workshops to illustrate immediate benefits of VO enabled resources

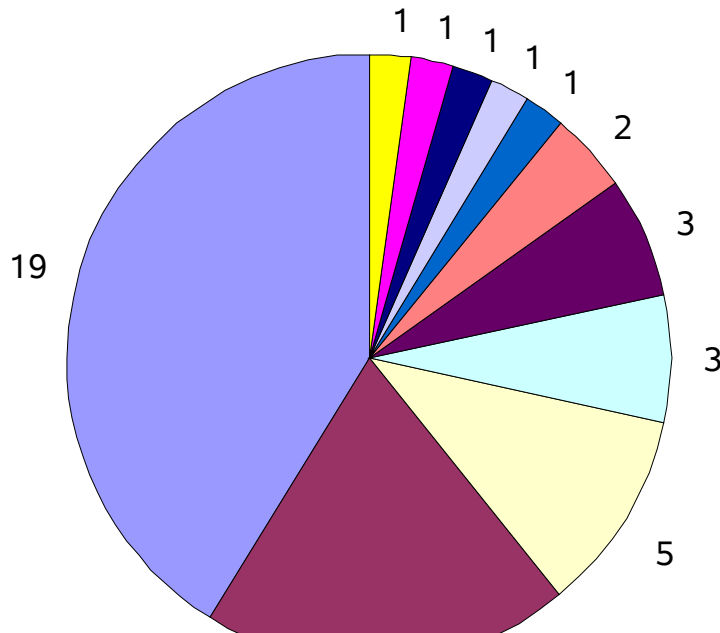
Tracking Science Usage

- Follow up on science use and results
 - real examples, often innovative use
 - important for feedback, and identifying success stories
- Workshop participants
 - 15% already publish
 - 50% indicated intent to publish to VO within 1 year – important to follow up on these cases

Workshop Participants Distribution

- Note that some partners had organized “similar” national workshops (eg UK)

EURO-VO DCA June Workshop Participants distribution per



Some EC “outsiders” (link with WP6)

- No real “large” projects
- Several “small” projects, astronomers with their own data

Mark ALLEN (DCA Project Scientist)

Feedback: assess workshop achievement

Overall

- **3/19** already publish data to the VO
 - said workshop helped them improve this
- **9/19** are going to start publishing data to the VO this year!
- **4/19** need to know about VO data access for some other reason

Did the workshop help?

- **0/19** participants thought that they could not use the VO for their data
- **0/19** already use the VO but didn't learn much from the workshop
- workshop helped them understand the work required to ingest, publish data
- participants saw publishing to VO as an important goal for their archive
- support from the advisors was very good throughout

Workshop Organization

- Geared towards data centres and large projects to acquire the knowledge and experience necessary to allow them to become "publishers" in the VO.
 - Small data providers not excluded
- Announced via
 - DCA Board and PCT (forwarded to National data centres)
 - EURO-VO mailing list
 - IVOA mailing lists
 - At previous EURO-VO workshop in March 2007
- Workshop pages
 - <http://esavo.esac.esa.int/EuroVOWorkshopJune2007/>