RI031675

EuroVO-DCA

The European Virtual Observatory Data Centre Alliance

COORDINATION ACTION

RESEARCH INFRASTRUCTURE

COMMUNICATION NETWORK DEVELOPMENT

D8 - FINAL REPORT ON WP3 ACTIVITIES

Due date of deliverable: 31/10/2008

Actual submission date: 15/12/2008

Start date of project: 01/09/2006 Duration: 28 month

ESA – ESO Final version

Project co-funded by the European Commission within the Sixth Framework Programme (2002-2006)		
Dissemination Level		
PU	Public	X
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

TABLE OF CONTENT

1. WP OBJECTIVES AND STARTING POINT OF WORK AT THE BEGINNING OF THE PROJECT – SUMMARY OF RESULTS

1.1. WP activities, objectives and highlights

In the context of the EuroVO-DCA project, WP3 objectives have been to organize the activities necessary to distribute knowledge of the VObs framework among European data centres.

To motivate data centres to implement the VObs framework and support this implementation, WP3 activities have been organised among several axes which are reported accordingly hereafter:

- Organization of two major Euro-VO Workshops (one per Cycle) on "How to publish data in the VO".
- On-site support to data centres in their uptake of the VObs.
- Organization of a community workshop "Astronomical Spectroscopy and the VObs", in a domain of interest for several of the partners and for the community at large.

Support material arising from the workshops and the visits have been developed, maintained and published on the EuroVO-DCA web pages so they are widely available. Specific tools for IVOA standards implementation have also been developed and made available to the data centres

Furthermore, WP3-2 "Technical feedback activities" objectives have been to gather technical feedback from the VObs framework implementation by data centres. The specific report on WP3-2 activities is compiled in Deliverable D9.

1.2. List of deliverables

Del. no.	Deliverable name	WP no.	Date due	Actual/ Forecast delivery date	Estimated indicative person-months	Lead contractor
D6	First EuroVO-DCA Workshop	3	August 2007	25th - 29th June 2007	28	ESA
D7	Second EuroVO-DCA Workshop	3	August 2008	23rd -27th June 2008	28	ESO
D8	Final Report on WP3 activities	3	October 2008	15th December 2008	6	ESA-ESO
D9	Implementation feedback report	3	October 2008	15th December 2008	6	LU

1.3. List of milestones

Milestone no.	Milestone name	WP no.	Date due	Actual/Forecast delivery date	Lead contractor
1	PCT meeting	3	April 2007	3rd & 4th May 2007	CNRS
2	First EuroVO-DCA Workshop (D6)	3	August 2007	25th – 29th June 2007	ESA
3	PCT meeting	3	October 2007	4th & 5th October 2007	CNRS
4	Mid-term Board meeting	3	October 2007	4th & 5th October 2007	CNRS
5	PCT meeting	3	April 2008	29th May 2008	CNRS
6	Second EuroVO-DCA Workshop (D7)	3	August 2008	23rd -27th June 2008	ESO
7	PCT meeting (held together with the final Board meeting)	3	October 2008	19th & 20th November 2008	CNRS

2. PROGRESS TOWARDS OBJECTIVES

2.1. First "Euro-VO Workshop on how to publish data in the VO

The "Euro-VO Workshop on how to publish data in the VO" was held at ESAC, on 25th - 29th June 2007. The Workshop is deliverable D6 and the initial date was August 2007.

2.2.1. Workshop preparation

The Programme Organizing Committee (POC) consisted of representatives of each EuroVO-DCA partners including people who could organize individual Workshop sessions and also representation from the EuroVO-DCA Internal Science Team (IST). It was chaired by Pedro OSUNA from ESA. Complete details about the Workshop can be found at: http://esavo.esac.esa.int/EuroVOWorkshopJune2007/.

The Workshop had been publicized through the Euro-VO mailing list, at the "Astronomical Spectroscopy and Virtual Observatory Workshop" in March 2007, at the IVOA interoperability meeting in May 2007 and towards the EuroVO-DCA partners' communities directly. The official announcement was sent on 4th May 2007. About 70 people registered to the Workshop from 11 countries.

The Workshop was organized around various parallel sessions about publishing data using existing tools which had been developed within the Euro-VO and national partner context. In particular, there were sessions about publishing catalogues (through AstroGrid DSA, France-OV SAADA and ESA DMMapper tools), publishing spectra (through ESA DAL Toolkit and ESO MEX tools), publishing images (through ESA DALToolkit, France-OV SAADA and ESO MEX tools) and a specific VOEvent session provided by AstroGrid for publishing in the emerging field of transient event data. All participants could participate in any session. All session material has been published on the EuroVO-DCA web pages. The success of the Workshop can be measured by the high proportion of participants who were able to publish their data through VObs protocols by the end of the sessions even in the emerging field of transient events.

It was also explained that data centres need to use their expertise to organize and characterize their data and metadata in order to publish them through on-line web services. Together with the data centres infrastructure, VObs publishing tools presented at the workshop can help to provide a "VObs layer" on top of the data centre infrastructure so their data holdings can be easily published through the VObs framework.

2.2.2. Participants' profile

Apart from the advisors who organized and delivered the sessions, there were about 45 participants from data centres, large projects or astronomers wishing to learn how to publish their data holdings through VObs protocols. There were also participants from non EuroVO-DCA partners, invited through WP6. The distribution per country of these participants was as described in Figure 1.

Data centres and large projects were targeted to participate, but in practice, a significant number of small and individual data providers also attended. However, we certainly achieved our target audience in terms of technical background since around 45% were programmers, 45% were system administrators and 10% were astronomers.

It is important to notice that some of the partners had lower participation from their country as they had organized similar "national" Workshops recently. In particular a large combined AstroGrid and RADIONET Workshop to enable publication of data to the VObs had been held in Oxford (UK) in December 2006 under a pre-arranged national program.

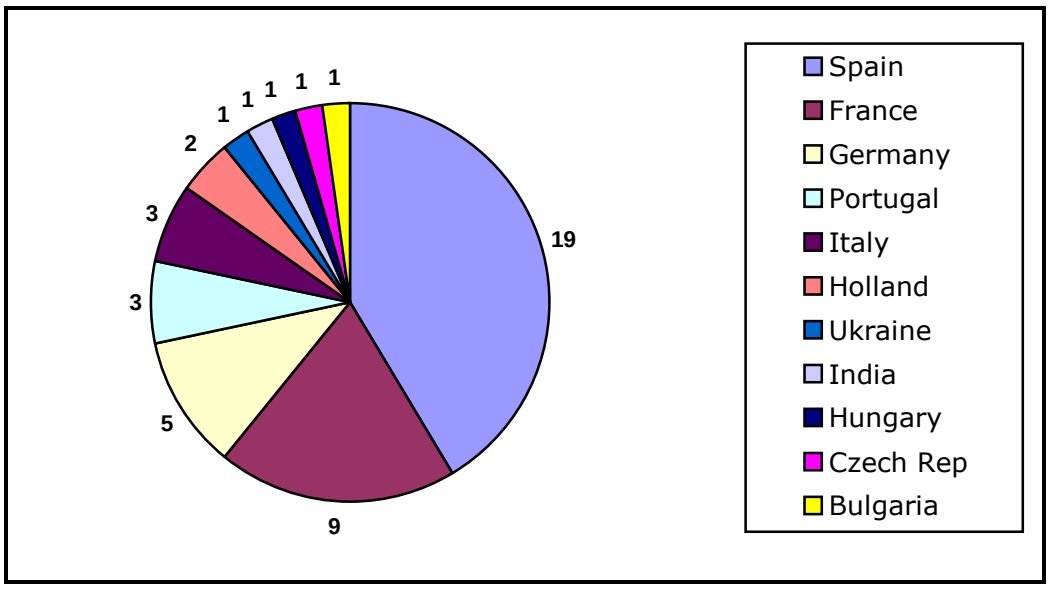

Figure 1 – First "Euro-VO Workshop on how to publish data in the VO" Participants distribution per country

2.2.3. Networking aspects

Networking with existing or potential VO projects:

- Participants from EC countries beyond EuroVO-DCA partners' countries, with which relations have been built in particular through WP6 "Support to data centres from other European countries": Bulgaria, Czech Republic, Hungary and Portugal
- Participants from other countries: from Ukraine and India

2.2.4. Feedback

There was a specific feedback session at the end of the Workshop for advisors and participants to give their feedback on the sessions and on the VObs protocols. Details of such feedback can be found on the Workshop web page at: http://esavo.esac.esa.int/EuroVOWorkshopJune2007/SpeakersMonday.html.

A specific individual questionnaire was also submitted to the participants about the Workshop and the VObs protocols, which has been analysed and reported in the context of WP3-2 and deliverable D9. From the received feedback, the Workshop was considered to be very successful. It also allowed preparing better the next Workshop in Cycle 2, taking into account comments and suggestions from participants.

In terms of achievement at the Workshop, 15% already publish data to the VObs and said the Workshop helped them improve this while 50% stated they were going to start publishing data to the VObs within a year following the Workshop! 20% said they needed to know about VObs data access for some other reason. Impressively, no participants who responded thought they could not use the VObs to publish their data and all learned from the Workshop and noted the excellent support from the advisors. No participant felt the Workshop was inappropriate or not useful to them.

2.2. Second "Euro-VO Workshop on how to publish data in the VO

The "EuroVO-DCA Workshop 2008 on how to publish data in the VO" was held on 23rd - 27th June 2008 at ESO (Garching bei München, Germany).

2.2.1. Workshop preparation

The Programme Organizing Committee (POC) consisted of representatives of each EuroVO-DCA partners including people who could organize individual Workshop sessions and also representation from the EuroVO-DCA Internal Science Team (IST). It was chaired by Bruno RINO from ESO.

A website (http://www.euro-vo.org/dcaworkshop2008/) was created where participants could get logistic information prior to the event, including the schedule (http://www.euro-vo.org/dcaworkshop2008/program.html) which gives an overview of the workshop. Software pre-requisites where made available 10 days in advance, and supporting materials for the hands-on sessions where made available as required during the week.

The official announcement was made on 16th April. The workshop was publicised through the Euro-VO mailing list (http://www.euro-vo.org/announcements/), through the IVOA mailing list (http://www.ivoa.net/forum/interop/), to data centres registered in the Census of European data centres (http://cds.u-strasbg.fr/twikiDCA/bin/view/EuroVODCA/DCACensus), and towards Euro-VO partners' data centres community..

The workshop primarily targeted large data centres, large projects and surveys to encourage them to become "publishers" in the VO and acquire the knowledge and experience necessary to do so. Several smaller data centres and individual astronomers who wanted to publish their data holdings to the VO were keen on participating and also attended the workshop.

Following an introductory session for all participants, full-day hands-on sessions were arranged in which participants were introduced to tools that allowed them to publish their own particular catalogues, images and spectral data holdings through the VO according to established VO protocols. Participants were encouraged to bring some samples of their data to the workshop or access datasets remotely in order to work on real examples and ensure that they would be able to build the corresponding VO services after returning to their data centres. Time-series and theoretical data were also covered using emerging VO standards in two half-day sessions. In addition to the main hands-on group sessions, participants could also attend short and focused sessions and obtain one-to-one help dealing with specific topics relevant to publishing their datasets.

2.2.2. Participants' profile

The workshop had a total of 82 participants, of which 51 where not related to the EuroVO-DCA project (in the role of advisor or otherwise). From these, about three quarters came from EuroVO-DCA project partner countries, while the others came from: Armenia, Bulgaria, Chile, China, Lithuania, Mexico, Portugal, Russia, Serbia, Switzerland, and Turkey.

About half of the participants represented a data centre, a quarter represented a survey and the remaining quarter were astronomers wanting to share their data (note: several participants fit in more than one of these categories). Figure 2 and Figure 3 present these repartitions.

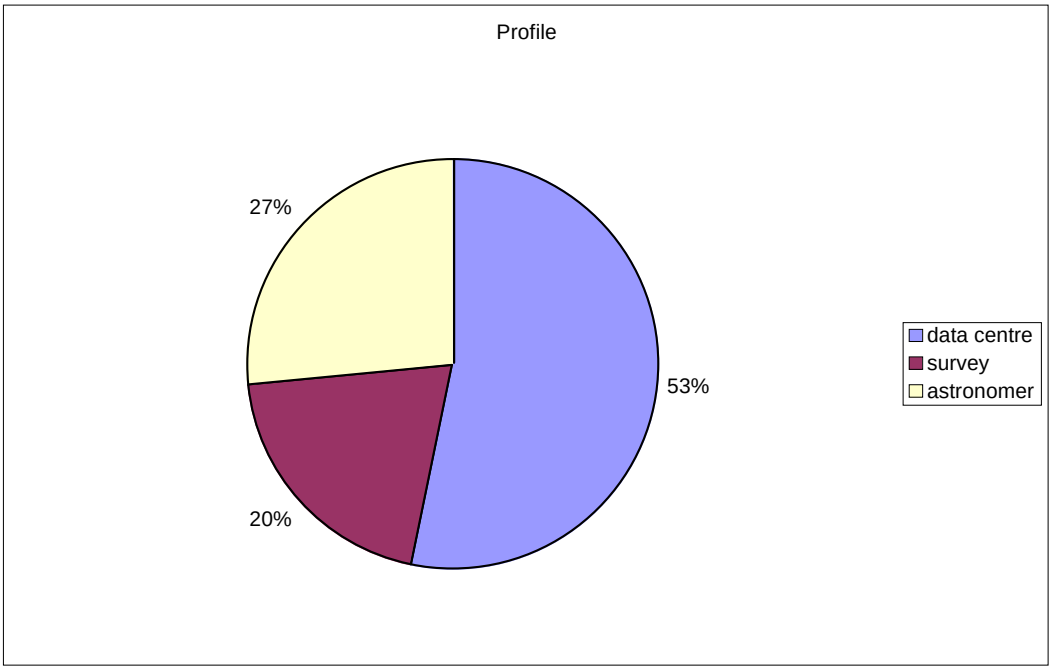

Figure 2: Distribution of participants per profile

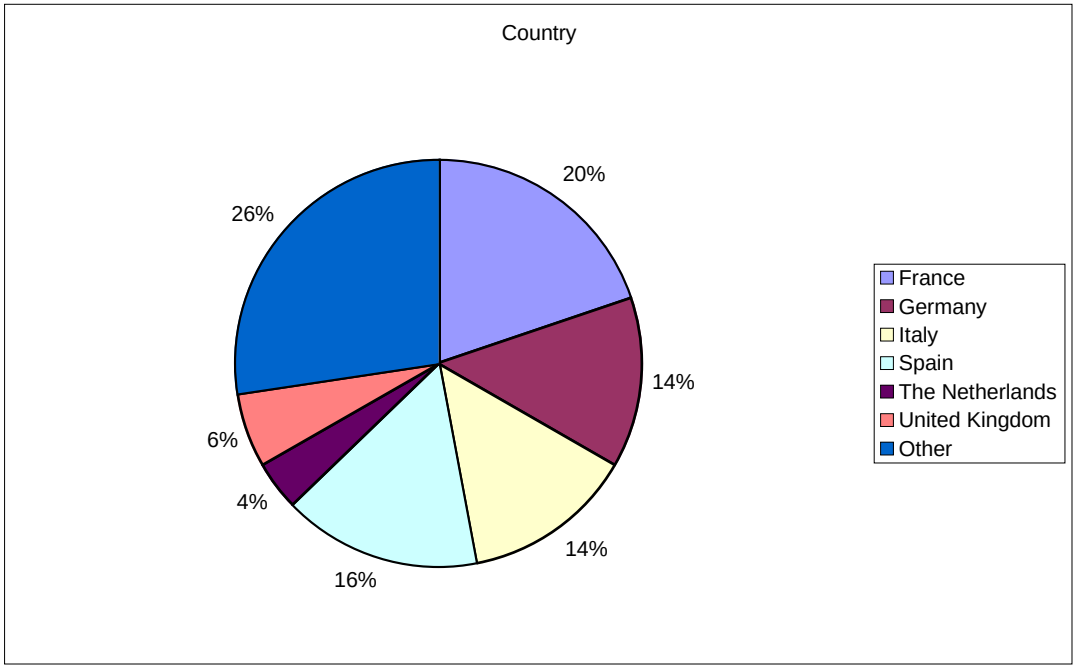

Figure 3: Distribution of participants per country

Major facilities and missions represented covered almost all wavelengths from high-energy facilities such as HESS, XMM and SWIFT, massive surveys e.g. GAIA and international facilities such as ALMA, and radio including VLBI. Science foci covered a wide range, from geodetic and planetary archives to the Planck Cosmic Microwave Background satellite. Large collaborations were also represented e.g. WINGS-Nearby Galaxy Cluster Survey and the Digitized First Byurakan Survey. A number of participants also wanted to publish source lists, on-demand products and/or a variety of coordinated products e.g. images and spectra.

Among non-European participants were one Chilean participant involved in discussions about the possible development of a national VO; one Mexican participant involved in the development of VO services; two Chinese participants involved in the development of LAMOST (the Large Sky Area Multi-Object Fiber Spectroscopic Telescope, a large infrastructure project of the Chinese Academy of Sciences) and China-VO.

2.2.3. Networking aspects

Networking with existing or potential VO projects:

- Participants from EC countries beyond EuroVO-DCA partners' countries, with which relations have been built in particular through WP6 "Support to data centres from other European countries": Bulgaria, Lithuania and Portugal
- Participants from Associated Countries: Serbia, Switzerland, Turkey – it is particularly interesting to have several participants from Turkey, expressing their willingness to build a Turkish VO, since it is the first time a contact is established with Turkey on these matters
- Participants from other countries: from the Armenian, Russian and Chinese Virtual Observatory projects; from Chile and Mexico – efforts are on-going in particular in Chile to build a national VO project

Networking with nearby disciplines, with other EC funded projects:

- Several participants from radio astronomy (ALMA, EVN/JIVE, VLBI for Geodesy & Astrometry), astroparticles (HESS), planetary science (Europlanet)
- Participants from Europlanet (FP6 Coordination Action, FP7 I3), BalticGrid II

2.2.4. Feedback

A feedback survey (similar to that for the 1st major workshop), was conducted online at http://www.insitefulsurveys. com/Survey.asp?SI=968831113304. Feedback was nearly all positive: the sessions were mostly rated between "Very useful" and "Fairly useful". A small number of participants described some sessions as "Interesting but of no immediate use". People valued the interaction with peers and experts as well as the formal sessions; the short and focused "one-on-one" sessions were very well received. Participants especially valued being able to publish their own data, since this gave them more confidence that the workshop would be of on-going use when they went home.

More details can be found in the context of WP3-2 Deliverable D9 (Implementation feedback report).

2.3. "Astronomical Spectroscopy and Virtual Observatory" Workshop

A focused "Astronomical Spectroscopy and Virtual Observatory Workshop" was organised on 21st - 23rd March, 2007 by WP3 at ESAC (http://esavo.esac.esa.int/SpectroscopyAndVOWorkshopMarch2007/). The main goal of the Workshop was to identify current and future needs of astronomical spectroscopy, and discuss how the Virtual Observatory concept and applications can fulfil them. The method pursued to achieve this goal was promoting a forum of discussion and interchange of experiences between astronomers and engineers active in the VObs endeavour, and astronomers with a specific expertise and involvement in astronomical spectroscopic projects – both from the observational and the theoretical side.

Since the early phases of its design and organization, the Workshop was conceived as a highly interactive forum. The Workshop was structured into five sessions: "Spectroscopic surveys", "VObs standards and applications", "Spectroscopic tools and algorithms", "Photometry in the VObs", and "Access to laboratory databases and theoretical data". Each session was introduced by a series of presentations, providing the Workshop participants with an overview to the astronomical and technical context. They concluded with lively round table discussions of future challenges astronomical spectroscopy will have to face in the coming years, as well as possible VObs solutions thereto. Overall, 34 presentations were given (5 of them invited review talks at the start of each session); the time spent in the round table discussions amounted to more than 20% of the total Workshop duration. More then 20 poster papers were also presented during the Workshop.

The Scientific and Technical Organizing Committee (STOC), a board of 10 astronomers and engineers of widely differentiated background and expertise, co-chaired by Matteo GUAINAZZI (ESA) and Pedro OSUNA (ESA), was in charge of the scientific organization of the Workshop. The STOC fulfilled the task of ensuring the overall coherency and quality of the Workshop scientific program.

The Workshop has been perceived by the astronomical community as a timely and appropriate undertaking. This interest is demonstrated by the large number of participants, which largely exceeded the most optimistic expectations. 116 participants from 15 countries attended the Workshop sessions, and the majority of them were not previously part of the VObs community. The participation of astronomers from countries which do not belong to the European Union (Armenia, Chile, Japan, Mexico, Switzerland, and United States) is also noticeable. The subdivision of the participants by nation is shown in Figure 4.

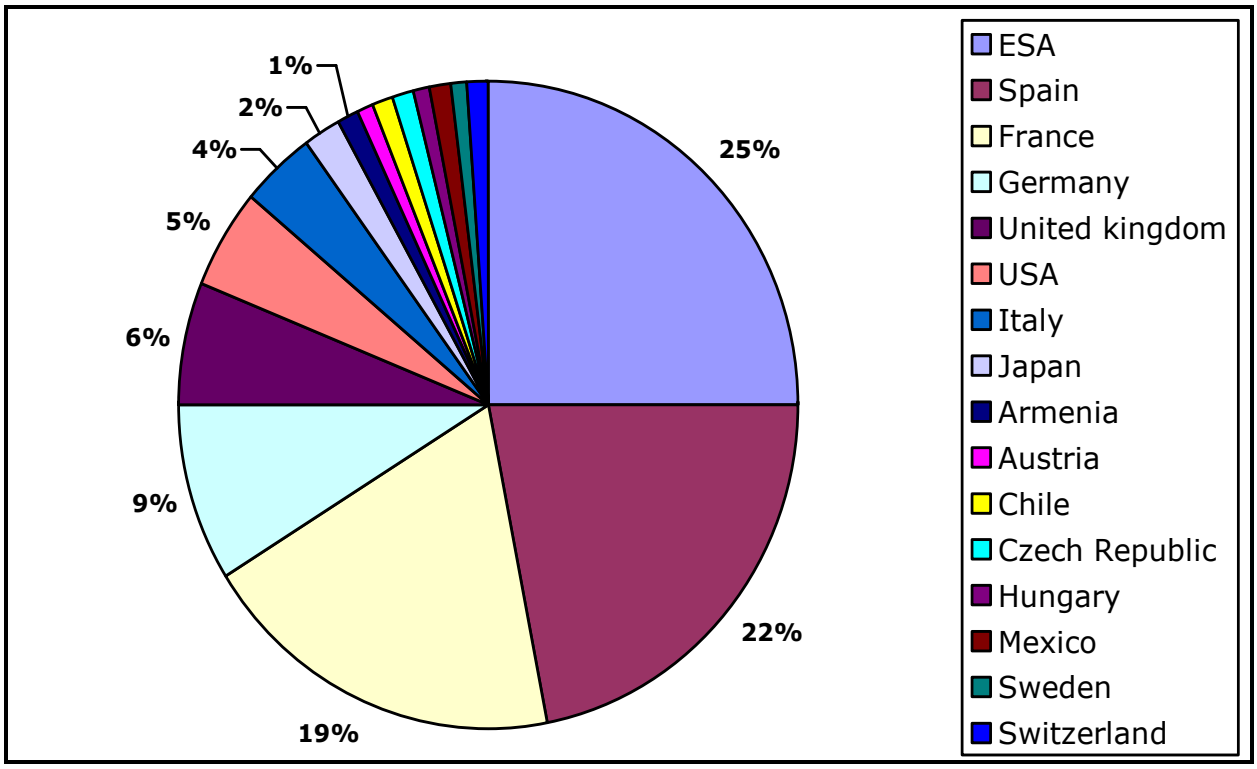

Figure 4 - Distribution of the participants to the "Astronomical Spectroscopy and Virtual Observatory" Workshop (ESAC. 21st – 23rd March 2007). The total number of participants amounted to 116

Four IVOA Working Groups Chairs attended the meeting (Data Access Layer, Data Model, Query Language, Table). This event has been instrumental in providing the VObs projects with community-driven momentum and guidelines, helping the further development of VObs standards, protocols and tools in this field.

Proceedings of the Workshop, including contributions from all the oral and poster papers presented, and a summary of each of the round table discussions, have been compiled, published by ESA and distributed to all participants.

2.4. On-site support to data centres

WP3 created a TWiki page to provide the list of WP3 visits of experienced VObs persons to data centres, national meetings or sites selected by partners (http://cds.u-strasbg.fr/twikiDCA/bin/view/EuroVODCA/WP3Visits). If data centres needed on-site support to publish their data into the VObs, they could contact Christophe ARVISET (ESA) or Paolo PADOVANI (ESO), indicating the name of the data centre, the type of data that they wanted to publish (e.g. spectra, images, catalogues) and the amount and the format of the data that they wanted to publish.

This service has been advertised through the partners and specifically as well during the two EuroVO-DCA workshops for data centres. Several visits have been organized in the context of WP3 and also in collaboration with WP6. Nonetheless, visits of experts to data centres through the projects have not really been up to our expectations. More emphasis has been put on the organization of the EURO-VO Workshops, which target a wide community and apparently data centres preferred this type of workshops than specific on-site visits at their premises. In the second workshop, there have also been some one-to-one sessions with data centres participants which have allowed this direct communication.

List of WP3 experts' visits supported by the project

EuroVO-DCA, Work Package 3: Visits of experienced VObs persons to Data Centres, national meetings or sites selected by partners

Date	Partner	Data Centre Visited	Description of the visit
23 Nov 2006	ESO	INAF	Visit of P. Padovani to the ``VObs.it -- Osservatorio Virtuale Italiano'' Workshop in Monteporzio, Italy
04-05 Dec 2006	CNRS	AstroGrid	Visit of M. Allen to the 'Scientific Research using AstroGrid' and 'Radio data publishing and pipelines' Workshops in Oxford
11 Dec 2006	CNRS	NOVA	Visit of Sébastien Derriere to the Virtual Observations courses in Groningen to present and discuss the CDS services
8 Jan 2007	CNRS	NOVA	Visit of Mark Allen to the Virtual Observation courses in Groningen to present and discuss VO tools and services and science usage
02-04 May 2007	AstroGrid (LU)	CDS	Visit of Mark Taylor to CDS to discuss TOPCAT and many other topics
18-19 Jun 2007	MPG	CNRS	Visit of G. Lemson to the French VO Theory WG meeting in Lyon (also WP4)
27-28 Sep 2007	LU	AstroGrid @ Cambridge UK	Jonathan Tedds attended IVOA Interoperability meeting to feed back information from data publishers at DCA workshops to IVOA technical standards process (WP3-2)
08-11 Oct 2007	ESA	AstroGrid @ Edinburgh	Pedro Osuna, Isa Barbarisi and Aurelien Stebe attended VOTECH DSRP to discuss IVOA standards
9-10 Oct 2007	LU	AstroGrid @ Edinburgh	Jonathan Tedds attended DSRP to discuss data publishing & IVOA standards (WP3-2)
15-17 Oct 2007	ESA	Moletaj Observatory, Institute of Theoretical Physics and Astronomy of Vilnius University, Lituania	Jesus Salgado and Aurelien Stebe presented IVOA protocols and ESAVO Data Publishing tools at the Lituanian Astronomy Workshop (WP6)
18-19 Oct 2007	CNRS	idem	Sébastien Derriere and Françoise Genova presented the IVOA standards, Euro-VO and the CDS services in the VO at the same Workshop (WP6)
19 Oct 2007	INAF	idem	Riccardo Smareglia presented the prototype integration of theory data in the VO, interoperability with computational grids and VO-compliant visualisation and data mining tools at the same Workshop (WP6)
20-22 Feb 2008	ESA	AstroGrid (UKIDSS) @ Edinburgh	Pedro Osuna and Aurelien Stebe visited AstroGrid in Edinburgh to help publishing UKIDSS images and spectra using ESAVO Data Publishing tools
14-18 Apr 2008	ESO	ESA @ Madrid	Bruno Rino visited Aurelien Stebe (ESA) in Madrid to integrate ESO Data Ingestion and Mapping tool (MEX) and ESAVO Data Publishing tool (DALToolKit)
6-8 Oct 2008	ESA, ESO	Kiev, Ukraine	Christophe Arviset (ESA) and Paolo Padovani (ESO) presented EURO-VO, ESAVO and ESO activities at the CODATA conference.
Nov 2008 (TBC)	ESA	ASDC, Frascati, Italy	Support to the ASI Science Data Center (to be organized)

(Available at: http://cds.u-strasbg.fr/twikiDCA/bin/view/EuroVODCA/WP3Visits**):**

2.5. Support for uptake

In the context of the two EuroVO-DCA Workshops of June 2007 and June 2008, various Euro-VO tools (AstroGrid DSA, ESO MEX, France-VO SAADA and ESA DALToolkit and DMMapper) have been introduced and explained to offer the data centres and other participants an easier and faster way to publish their data holdings into the VObs. These tools were bundled together in a DVD which was distributed to the Workshop participants and made available also through the Workshop web pages.

In addition a test registry was provided (by AstroGrid) and maintained both during and after each workshop in order to allow live testing of data publishing before going public.

Furthermore, all partners' projects supported their national data centres in their uptake of VObs framework. Some specific examples are mentioned here, although the list is not exhaustive.

Prior to the second EuroVO-DCA Workshop, specific work has been done between ESO and ESA to integrate better their tools (ESA DALToolkit and MEX) to offer a complete solution to the data centres for extracting the metadata from their data holding and then for publishing their data in the VObs framework.

CNRS EuroVO-DCA staff is supporting the uptake of the theory draft standards in theory services, in close connection with the CNRS WP4 activities for the preparation of the "Framework for the inclusion of Theory in the VObs" document (see below).

NOVA activities concentrated on developing a VObs access to the data stored in Astro-Wise information system (http://www.astro-wise.org). VObs layer developed by OmegaCEN for Astro-Wise includes dynamic local publishing registry, VObs services (Cone Search and SIA), implementation of Plastic communication protocol for Astro-Wise and a library for the access to the VObs resources from Astro-Wise. All components are an integral part of Astro-Wise and allow publishing data in VObs from Astro-Wise system.

The collaboration between members of the EuroVO-DCA, OmegaCEN/NOVA and AstroGrid/LU allowed testing an access from AstroGrid software to Astro-Wise archives.

2.6. Meetings in the frame of WP3

In the frame of WP3, here some of the meetings or events in which EuroVO-DCA members participated:

- AstroGrid Science Workshop and RadioNet / AstroGrid workshop for radio data providers, Oxford, United Kingdom, 4th – 8th December 2006 (M. ALLEN).
  http://wiki.astrogrid.org/bin/view/Astrogrid/AgRadionetWorkshopDec06
  Note: This Workshop was in support to the providers of radioastronomical data.
- First lecture course on "Virtual Observations", University of Groningen, Netherlands, 11th, 15th, 22nd December 2006, and 9th January 2007 (M. ALLEN, S. DERRIERE, N. WALTON)
  http://www.astro.rug.nl/~valentyn/VO.html
  Note: These lectures came in support to part of The Netherlands community and were also used as a test of content for other similar events.

- Astronomical Spectroscopy and VO workshop, Villafranca 21st – 23rd March 2007 EuroVO-DCA IST first face-to-face meeting, Villafranca 23rd March 2007
  http://esavo.esac.esa.int/SpectroscopyAndVOWorkshopMarch2007/
  Note: This very successful Workshop was organized by WP3 as a meeting point between the scientific community and the VObs community. Large Spanish and French participation thanks to the triggering work of the French VObs in this domain. The Project Scientist organized an IST meeting at this occasion to optimize usage of travel funds.
- First Euro-VO "Workshop on how to publish data in the VO", Madrid 25th – 29th June 2007
  http://esavo.esac.esa.int/EuroVOWorkshopJune2007/
  Note: Major EuroVO-DCA delivery. Participants were a mixture of VObs developers and data centre staff interested in publishing data and services in the VObs. For instance for France: VObs experts were CDS engineers and scientists and data centre staff came from several French laboratories: Marseille-Provence Observatory, Grenoble Observatory, and Paris Observatory.
- Joint European and National Astronomical Meeting (JENAM) 2007, Yerevan, Armenia, 20th – 25th August, 2007, which was attended by many EuroVO scientists and included also a VO session
  http://www.aras.am/JENAM-2007/EASsymp08.htm
- Second Euro-VO "Workshop on how to publish data in the VO", Garching bei München, 23rd – 27th June 2008
  http://www.euro-vo.org/dcaworkshop2008/
  Note: Major EuroVO-DCA delivery. Participants were a mixture of VObs developers and data centre staff interested in publishing data and services in the VObs. Major facilities and missions represented covered almost all wavelengths from high-energy facilities such as HESS, XMM and SWIFT, massive surveys e.g. GAIA and international facilities such as ALMA, and radio including VLBI.
- 21st CODATA meeting, Kiev, Ukraine, 6th – 8th October 2008 (C. ARVISET, P. PADOVANI)
  http://www.codata.org/08conf/
  Note: An international Workshop on scientific information which covered a variety of disciplines, including biology, climate research, physics, geo-physics, social sciences, and astronomy.
- WP3 staff attended both EuroVO-AIDA Technology Forums, organized with VO-TECH on 17th – 19th March 2008 in Strasbourg and 29th September – 2nd October 2008 in Cambridge:
  http://wiki.eurovotech.org/twiki/bin/view/VOTech/StageSevenPlanningMeetings
  and
  http://wiki.eurovotech.org/twiki/bin/view/VOTech/StageEightPlanningMeetings
- Second lecture course on "Virtual Observations", University of Groningen, Netherlands , 22nd, 23rd, 29th September 2008, 2nd, 6th, 7th, 20th, 27th, 28th October 2008 and 4th November 2008 (E. VALENTIJN, G. VERDOES KLEIJN, R. PELETIER, A. BELIKOV, G. LEMSON)
  http://www.astro.rug.nl/~valentyn/VO2008Schedule.htm
  Note: These lectures came in support to part of The Netherlands community and were also used as a test of content for other similar events.

3. MINOR DEVIATION FROM THE PROJECT WORKPROGRAMME AND CORRECTIVE ACTIONS

3.1. First Euro-VO Workshop on "how to publish data in the VO"

Initially scheduled on August 2007, the 1st Euro-VO Workshop on "how to publish data in the VO" (deliverable D6) was held on 25th – 29th June 2007 at ESA (Villafranca del Castillo, Spain) to avoid the summer holiday period.

3.2. Second Euro-VO Workshop on" how to publish data in the VO"

As the distribution of participation per partner at the first Workshop was a bit uneven, for the 2nd EuroVO-DCA Workshop (deliverable D7) we made sure to send special and focussed invitations to the data centres listed in the census from WP2 to reach the major European data centres and large projects.

Initially scheduled on August 2008, the second Euro-VO Workshop on "how to publish data in the VO" was held on 23rd – 27th June 2008 at ESO (Garching bei München, Germany) to avoid the summer holiday period.

3.3. "Astronomical Spectroscopy and Virtual Observatory Workshop

Note that this Workshop was originally not part of the EuroVO-DCA proposal but the idea was submitted to the Board at the Board kick-off meeting, which had given its approval. It success demonstrated the high demand from the community and has set the ground for future similar workshops on other topics, in particular in the EuroVO-AIDA project Work Programme.

The organisation of the Workshop was approved by the mid-term Review Committee.

3.4. On-site support to data centres

As explained earlier on, focus has been given more in the organization of the two major EuroVO-DCA workshops geared towards the data centres. Possibility of on-site visits to the data centres has been advertised through the partners, the WP3 web pages and during the workshops, but very little requests have been made by the data centres, so the number of on-site visits has been rather limited.

This activity has been very successful in the frame of WP6, with data centres from other European countries, for which there were no pre-existing national VO communities.

3.5. Possible additional mini Workshop

The possibility of organizing an additional mini workshop had been mentioned in the Revised Project Plan (Deliverable D3), which explained that a decision was to be taken in January 2008. The Board finally decided that it would be more efficient to concentrate the efforts in Cycle 2 towards the organization of the planned major June workshop. Therefore, this mini workshop finally did not take place.

ACRONYM LIST

AIDA	Astronomical Infrastructure for Data Access
ALMA	Atacama Large Millimetre Array
ASDC	ASI Science Data Center
ASI	Agenzia Spaziale Italiana
AstroGrid	UK VO project
Astro-Wise	Astronomical Wide-field Imaging System for Europe
CDS	Centre de Données astronomiques de Strasbourg
CNRS	Centre National de la Recherche Scientifique
CODATA	The Committee on Data for Science and Technology
D#	Deliverable number
DAL	Data Access Layer
DCA	Data Centre Alliance
DM	Data Model
DS	Design Study
DSA	Data Set Access
DSRP	Design Study Review Planning
EC	European Commission
ESA	European Space Agency
ESAC	European Space Astronomy Centre, Villafranca del Castillo
ESAVO	ESA Virtual Observatory
ESO	European Southern Observatory
EU	European Union
Euro-VO	European Virtual Observatory
EuroVO-AIDA	European Virtual Observatory - Astronomical Infrastructure for Data Access (EC funded, FP7 Call "Scientific Digital Repositories")
EuroVO-DCA	Euro-VO Data Centre Alliance (EC Funded, eInfrastructure Communication Network Development)
EVN	European VLBI Network
FP#	Framework Programme number
GAIA	ESA mission, Global Space Astronomy for the 21st century
HESS	High Energy Stereoscopic System
I3	Integrated Infrastructure Initiative
INAF	Instituto Nazionale di Astrofisica
IST	Internal Science Team
IVOA	International Virtual Observatory Alliance

JENAM	Joint European and National Astronomy Meeting (meeting of the European Astronomical Society)
JIVE	Joint Institute for Very Long Baseline Interferometry in Europe
LAMOST	Large Sky Area Multi-Object Fibre Spectroscopic Telescope
LU	Leicester University
MEX	Metadata EXtraction
MPG	Max Plank Gesellschaft
NOVA	Nederlandse Onderzoekschool Voor Astronomie
OmegaCEN	OmegaCEN Astronomical Data centre supporting WIDE-FIELD astronomical imaging.
OV	Observatoire Virtuel
PCT	Project Coordination Team
POC	Programme Organizing Committee
QL	Query Language
RADIONET	Advanced Radio Astronomy in Europe, I3 initiative
SAADA	Automatic Archival System for Astronomical Data
SIA	Simple Image Access
STOC	Scientific and Technical Organizing Committee
SWIFT	NASA Gamma-Ray Burst Satellite Mission
TBC	To Be Confirmed
TOPCAT	Tool for Operations of Catalogues And Tables
UK	United Kingdom
UKIDSS	UKIRT Infrared Deep Sky Survey
UKIRT	United Kingdom Infra-Red Telescope
USA	United States of America
VLBI	Very Long Baseline Interferometry
VObs or VO	Virtual Observatory
VO-TECH	The European Virtual Observatory - VO Technology Centre (EC-funded project, Infrastructure Design Study, 2005-2008)
WG	Working Group
WINGS	Nearby Galaxy Cluster Survey
WP	Work Package
XMM	X-ray Multi-Mirror Mission