RI031675

EuroVO-DCA

The European Virtual Observatory Data Centre Alliance

COORDINATION ACTION

RESEARCH INFRASTRUCTURE

COMMUNICATION NETWORK DEVELOPMENT

D3 - Revised Project Plan

Due date of deliverable: 31/10/2007
Actual submission date: 15/12/2007

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

CNRS 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	
RE	Restricted to a group specified by the consortium (including the	
CO	Confidential, only for members of the consortium (including the Commission Services)	

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1. PROJECT OBJECTIVES

The **Top-level objective** of the project is to coordinate European data centres in forming a co-operating community enhancing the European astronomical *e*Infrastructure and, thereby, maximising the scientific utilisation of the rich astronomical on-line resources distributed all over Europe.

The EuroVO-DCA objective is "*Technology take-up and full VObs compliant data and resource provision by astronomical data centres in Europe*". Five goals are identified, each corresponding to one or several Work Package or sub-Work Package and to their deliverables:

1. Co-ordinating national VObs initiatives and fostering the definition of a European strategy (WP2: Definition of European DCA strategy)

2. Disseminating knowledge and good practice about interoperability standards and tools among the European data centres, by hiring support staff, organising meetings and enabling the exchange of personnel (WP3: Support to take-up and implementation of the VObs framework). These actions will also aim at fostering participation of data centres from other European and candidate countries to the VObs endeavour (WP6: Support to data centres from other European countries)

3. Gathering feedback from implementations to convey to the developers of standards, tools and protocols, in particular to the VO-TECH project and to other European VObs technology contributors, and to the IVOA Interoperability working groups (WP3-2: Technical feedback activities)

4. Preparing the inclusion of new types of services in the VObs framework, theoretical and modelling services, by setting up an expert group which will propose new appropriate interoperability standards (WP4: Theory in VObs)

5. Co-ordinating the VObs with the development of generic elements of the computing grid, in particular European middleware projects such as EGEE (WP5: Coordination with computational grid projects)

2. PARTICIPANTS

Partic. Role	Partic. N°	Participant name	Participant short name	Country	Date enter project	Date exit project
CO	1	Centre National de la Recherche Scientifique	CNRS	FRANCE	Month 1	Month 28
CR	2	European Space Agency	ESA	FRANCE	Month 1	Month 28
CR	3	European Southern Observatory	ESO	GERMANY	Month 1	Month 28
CR	4	Istituto Nazionale di Astrofisica	INAF	ITALY	Month 1	Month 28
CR	5	Instituto Nacional de Técnica Aeroespacial	INTA	SPAIN	Month 1	Month 28
CR	6	Max Planck Gesellschaft	MPG	GERMANY	Month 1	Month 28
CR	7	Nederlandse Onderzoekschool voor Astronomie, legally represented by the University of Groningen	NOVA	NETHERLANDS	Month 1	Month 28
CR	8	University of Leicester	LU	UNITED KINGDOM	Month 1	Month 28

3. PROJECT MANAGEMENT

The Euro-VO activities are the Data Centre Alliance (this project), the Technology Centre (VOTC) and the Facility Centre (VOFC).

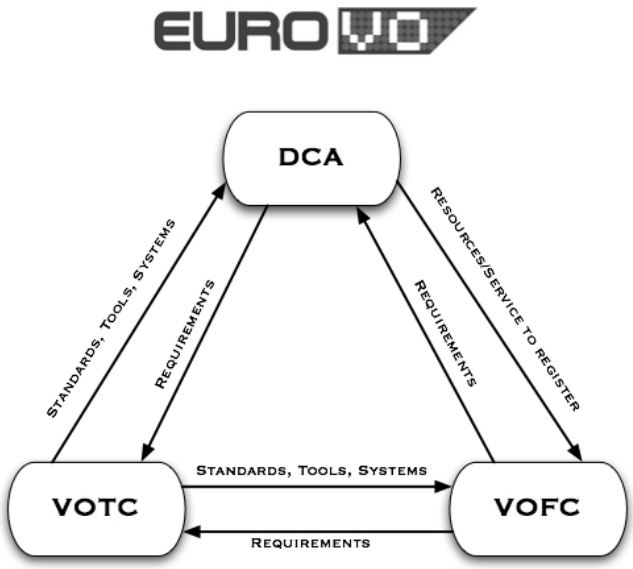


Figure 1: The Euro-VO project.

The **EuroVO-DCA Coordinator** is Françoise Genova (CDS, Observatoire Astronomique de Strasbourg). She is responsible for all communication with Commission on contractual matters. The **EuroVO-DCA Project Manager** (EuroVO-DCA PM) is Mathias Depretz. He manages the EuroVO-DCA project activities. The **EuroVO-DCA Scientist** is Mark Allen (CDS, Observatoire Astronomique de Strasbourg).

The **EuroVO-DCA Board** is chaired by Françoise Genova. Its purpose is project oversight – its setup, financial monitoring, resolution of issues between partners, and overall scientific and technical policies. It brings national data centre issues, programs and requirements to the attention of the project. It coordinates the EuroVO-DCA activities and defines the project work plan, with input from the partners and from the Project Co-ordination Team (PCT) described below. The Board has appointed the EuroVO-DCA PCT, the Internal Science Team (IST) and the Theoretical astronomy Expert Group (TEG). The Project Manager, the Project Scientist and the TEG chair are invited to the Board meetings.

Board members for Cycle 2:

CNRS	Françoise GENOVA (Chair)	INTA	Enrique SOLANO
ESA	Christophe ARVISET*	MPG	Wolfgang VOGES
ESO	Paolo PADOVANI	NOVA	Edwin VALENTIJN
INAF	Fabio PASIAN	LU	Mike WATSON

* Replaces Martin KESSLER

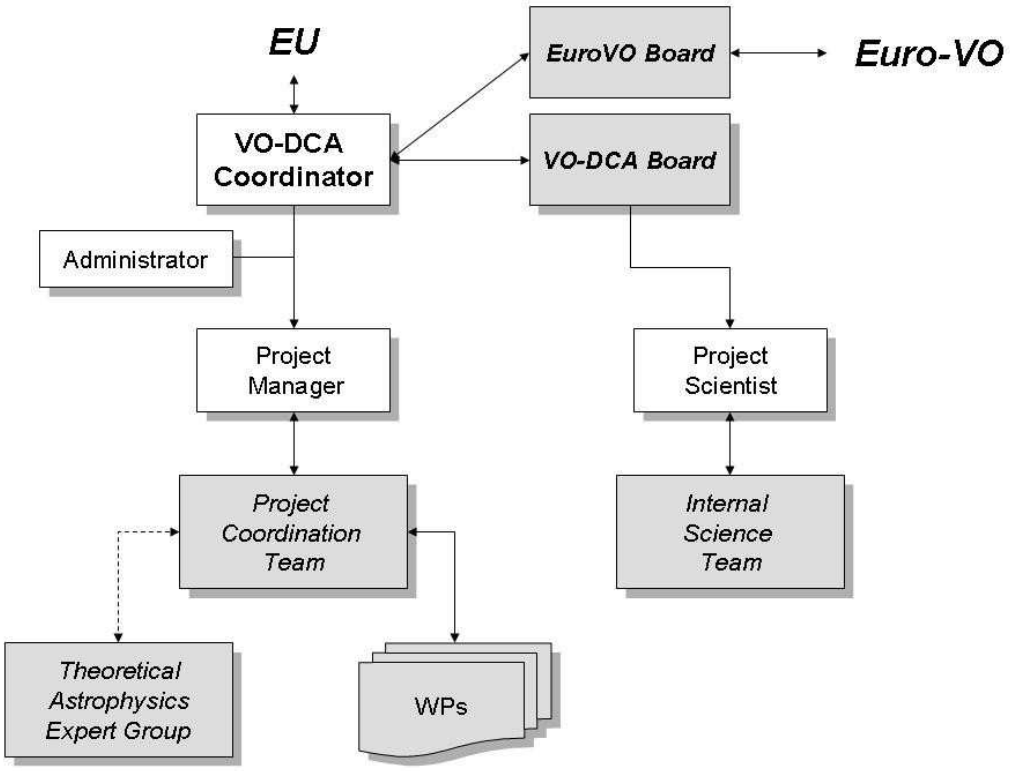


Figure 2: EuroVO-DCA organization chart

The **EuroVO-DCA Project Co-ordination Team** (PCT) is a panel appointed by the EuroVO-DCA Board. It acts as the project technical management body. It is chaired by the EuroVO-DCA Project Manager, who reports on its activities to the Board. The chair of the TEG is a member of the PCT. The PCT is also formed so as to cover all Work Package activities. Technical liaison with the other components of Euro-VO are accomplished through the representatives of the partners in charge of the Euro-VO Facility Centre (ESO and ESA) and of the Euro-VO Technology Centre (LU representing AstroGrid), who are also in charge of different aspects of the *Support to take-up and implementation* coordination activities (WP3). At the end of the first project yearly Cycle, the PCT has proposed the EuroVO-DCA work plan for Cycle 2 (summarized in the present document). During Cycle 2, the PCT will hold 2 meetings (April and October, 2007), receive and discuss reports from the EuroVO-DCA PM and from the partners, assess the project activities and produce a review report.

PCT members for Cycle 2:

PM	Mathias DEPRETZ (Chair)	INTA	Raul GUTIERREZ
CNRS	Françoise GENOVA	MPG	Gerard LEMSON
ESA	Pedro OSUNA*	NOVA	Andrey BELIKOV**
ESO	Andreas WICENEC	LU	Anita RICHARDS
INAF	Guiliano TAFFONI		

* Replaces Christophe ARVISET
** Joined the project in March 2007

The **EuroVO-DCA Internal Science Team** (IST) is a panel appointed by the EuroVO-DCA Board, composed of scientists from the partner teams. Its role is to check the global scientific coherence of the EuroVO-DCA activities. The IST is chaired by the EuroVO-DCA Scientist. The IST reports on its activities to the EuroVO-DCA Board. The EuroVO-DCA scientist is the contact point between the EuroVO-DCA IST and the Euro-VO Science Advisory Committee. The IST will continue to act in support of the Board, PCT and all Work Packages. The IST in particular highlights scientific drivers to motivate adoption of EuroVO-DCA take-up within data centres. These will focus on both the short term immediate scientific benefits, as well as identifying larger long term benefits of VObs compatibility of data centres. The EuroVO-DCA scientist organize IST teleconference discussions whenever necessary, in particular if IST advice is required from one of the project Work Packages, and will hold at least one meeting (conclusions).

IST members:

CNRS	Mark ALLEN (Chair)	INTA	Eduardo MARTIN
ESA	Matteo GUAINAZZI	MPG	Niv DRORY
ESO	Piero ROSATI	NOVA	Gijs VERDOES KLEIJN
INAF	Santi CASSISI	LU	Jonathan TEDDS

The EuroVO-DCA Board has formed the **Theoretical astrophysics Expert Group** (TEG), to assess inclusion of theory data and services in the VObs. The TEG is composed of recognized experts from partners' countries, chosen among specialists who have started or intend to start to develop theoretical services for the VObs. The TEG chair, Gerard Lemson, has been appointed by the EuroVO-DCA Board, which has also agreed that ESO would not have a representative. The Working Group works in close relationship with the Euro-VO Technology Centre to get technical input and refine requirement, with the Theory Interest Working Group of the IVOA, to which it provides leading-edge input, and with EuroVO-DCA Work Package 5 for deployment with computational grid usage for massive computing.

TEG members:

CNRS	Hervé WOZNIAK	INTA	Miguel CERVIÑO
ESA	Pedro OSUNA	MPG	Gerard LEMSON (Chair)
ESO	None	NOVA	Joop SCHAIJE
INAF	Santi CASSISI	LU	Nick WALTON

4. IMPLEMENTATION PLAN

4.1. General description

The areas of work identified remain the same, corresponding to the project objectives: one for the general management of the project, and five co-ordinating activities in support to the project strategic objectives. Sub-Work Packages are identified when required for activities which will produce specific deliverables.

Each Work Package (WP) is under the responsibility of one partner, with the exception of WP3 for which responsibility is shared between ESA and ESO. Sub-Work Package WP3-2 is under the responsibility of Leicester University (LU).

The six Work Packages are defined as follows:

Management activities:

- **WP1: Consortium Management** (CNRS)

Coordination activities:

- **WP2: Definition of European DCA strategy** (CNRS). The Board and PCT activities are part of WP2

  The **Internal Science Team activities** led by the EuroVO-DCA Scientist are identified as WP2-2 also under CNRS responsibility

- **WP3: Support to take-up and implementation of the VObs framework** (ESA and ESO)

  This Work Package includes **WP3-2 in charge of Technical feedback activities**, under LU responsibility

- **WP4: Theory in VObs** (MPG), covering all Theoretical astrophysical Expert Group activities

- **WP5: Coordination with computational grid projects** (INAF)

- **WP6: Support to data centres from other European countries** (INTA)

The PM will continue to follow all WP activities in close coordination with the partner(s) in charge. WP 2, 3, 4, 5 and 6, and WP3-2, continue to report to the PCT.

The project expected duration remains 28 months.

The next phases are:

- The one-year **Cycle 2**. The project activities have been assessed and adjusted when required at the end of the first yearly Cycle. The result is the present document. Work Packages 3, 4, 5 and 6 and sub-Work Package WP3-2 will produce final reports one month before the end of Cycle 2. The reports will be assessed by the PCT which will prepare the final activity report. The PCT also will provide input for the medium term strategic plan at the end of Cycle 2

- A **Final Phase** of 2 months, during which the final project reports will be produced by WP2. Only WP1 and WP2 are expected to be active during the Final Phase. The final products of the project will be two documents:

  (1) The Medium Term Strategic Plan for EuroVO-DCA

  (2) A census of European astronomy data centres

Workshops and *visits for technical discussion and cross-sharing of experience* are among the project's most effective and visible tools. Three Workshops organised by EuroVO-DCA are planned for Cycle 2. These are the *Second EuroVO-DCA Workshop*, the *Euro-VO Theory Workshop*, and the *Euro-VO Computational Grid Workshop*. Minor Workshops will also be organised by WPs 2-6 (including WP3-2 for technical Workshops) when useful, on the same basis as the "Astronomical Spectroscopy and Virtual Observatory Workshop" (21st - 23rd March 2007). All the Workshops will be a discussion forum in which all participants bring their expertise: the EuroVO-DCA disseminates knowledge about why and how to use and take-up the VObs framework; data centre staff bring their expertise on their own data holding specifics and their user community needs, and provide feedback on the VObs framework implementation. Participation of both VObs framework developers and data providers allows coordination of the activities of these groups toward the EuroVO-DCA main goals and knowledge flows in both directions. Interested parties from the private sector will be invited to attend the Workshops when relevant. All Workshop materials will be published on the web site, and represent an important resource beyond the Workshops themselves.

Emphasis is also placed on interoperability issues for including theory data in the VObs framework and for making use of the computational grid, which are dealt with by specific Work Packages (WP4 and WP5 respectively). A fraction of the budget is also used to increase collaboration with VObs projects from Eastern Europe (WP6).

EuroVO-DCA participants will also continue to attend IVOA Interoperability meetings where global VObs efforts are coordinated.

4.2. Management of risk

The management of risk for the EuroVO-DCA is via a risk register. The risk register will continue to be maintained by the Euro-VO PCT all along Cycle 2.

All risks identified by the project are itemized in the register and are assessed for their likelihood of occurrence (1 = very unlikely to 4= highly likely) and for their likely impact (1 = minimal impact, 4 = disastrous).

For each item, a summary of what remedial action is possible if the risk does occur is provided. The product of likelihood of occurrence * likely impact provides the risk factor ranging from 1 (no risk) to 16 (extremely high risk). This provides an index of those risks on which attention should be focused, with most attention given to risks with a highest risk factor.

The main risks to delivery of the Coordination Action objectives are tabulated below. Remedial actions are identified that would mitigate the impact of such risks. The Risk Register has been reviewed and updated during the first Board meeting (2&3 October 2006), the first PCT meeting (3&4 May 2007) and the common Board-PCT meeting (4&5 October 2007). Comments on the current status of risks have been included regularly since the first PCT meeting when appropriate.

Table 1: Risk Register (last update: 20/11/2007)

Risk	Consequences	Remedial Actions
Risk 1: IVOA standards evolving after version 1.0 Likelihood of occurrence=3 Impact=2 **Risk Factor = 6**	Even after the recommended version, IVOA standards may still be evolving. Therefore, EuroVO-DCA partners who have already implemented VObs services based on recommended IVOA standards will have to adapt them to the new standards.	▪ EuroVO-DCA partners should make sure that IVOA adopts standards once they have been properly discussed and agreed so they are not bound to drastic changes in the future. ▪ EuroVO-DCA partners should develop their VObs services in a flexible manner, taking into account possible slight evolution of the IVOA standards. Therefore, adapting the existing VObs services to updated IVOA standards should not require too much work.
Risk 2: IVOA standards not available in time Likelihood of occurrence=**→1** Impact=3 **Risk Factor =(9)→3** Initially at 6, after rising to 9, the risk factor is down to 3 (see comment).	IVOA standards are required for the data providers to implement the VObs services on top of their data holdings. If the standards have not reached the recommendation level (version 1.), EuroVO-EuroVO-DCA partners cannot implement the VObs compliant services.	▪ Most of the standards are already at or close to their recommended version 1.0 that should be the baseline for VObs services implementation. The IVOA roadmap defines that most of the remaining ones should reach that state in the course of 2006. Moreover, most of the EuroVO-DCA partners are actively participating in the IVOA working groups and therefore can put pressure on IVOA to make sure that the IVOA standards reach their version 1.0 in due time. ▪ Before reaching the recommended version 1.0, there are previous versions which can be used for developing prototypes of the VObs services. This can be done assuming the risk that the IVOA standards can change and therefore the VObs services may have to evolve. If the VObs services are developed in a flexible manner, the update of the VObs services to the final recommendation may not require too much work. Comment (Board-PCT 04/10/2007): 8 IVOA standards adopted in September 2007. Comment (PCT 04/05/2007): For the time being, the 2007 Workshop is based on the IVOA standards or draft versions at or above release 1.0 and the relevance is thus ensured

Risk 3: **IVOA standards not properly implemented** Likelihood of occurrence=2 Impact=3 **Risk Factor = 6**	If the IVOA standards are not precise enough or if the EuroVO-DCA partner does not follow the standards completely, there is a risk that the resulting VObs services cannot really interact with each others.	▪ EuroVO-DCA partners, through the IVOA should make sure that IVOA standards are precise enough so they can be implemented without risk of errors. ▪ EuroVO-DCA partners should make sure that VObs services implemented in the frame of the EuroVO-DCA project are 100% compliant. As part of the yearly project report, the list of 100% compliant VObs services could be given to encourage data providers to develop 100% compliant VObs services. Comment (Board-PCT 04/10/2007): June 2007 and June 2008 Workshops on "How to publish data in the VO". Previous Comment 1 (PCT 04/05/2007): This risk is low (TWiki, meetings, Workshop) and will be assessed at the next PCT meeting. Previous comment 2 (PCT 04/05/2007): Recommendation to IVOA and the VObs projects to develop a registry curation tool.

Risk 4: **VObs services not used by the scientists** Likelihood of occurrence=1 Impact=3 **Risk Factor = 3**	If the VObs services developed by the EuroVO-DCA partners are not scientifically oriented, they will not be used by the scientific community, and the value of the EuroVO-DCA project would be very poor.	▪ The EuroVO-DCA Scientist and IST will check the global scientific coherence of the EuroVO-DCA activities. ▪ In coordination with the Euro-VO Facility Centre, scientific use cases for the EuroVO-DCA partners will be obtained to implement VObs services which correspond to scientists needs and permit an increase in the science conducted through VObs tools and application. Comment (PCT 04/05/2007): A mixed Workshop between VObs and scientists was organised where participants showed great interest and motivation (Spectroscopy Workshop).

Risk 5: Insufficient collaboration between EuroVO-DCA partners Likelihood of occurrence=1 Impact=3 **Risk Factor = 3**	As presented in the proposal, EuroVO-DCA partners need to have strong collaboration between them to ensure consistency and convergence of VObs work within the EuroVO-DCA. If missing, the risk of duplicate or divergent work being performed becomes higher.	▪ EuroVO-DCA partners will ensure that necessary time and budget is available for collaboration meetings, teleconferences, Workshop, etc… including appropriate reporting and visibility of such activities. ▪ EuroVO-DCA to provide collaborative web site containing all the information discussed through these collaborations. Comment 1 (PCT 04/05/2007): TWiki site made available in October 2006 and regularly updated since then. Comments 2 (PCT 04/05/2007): Active partners' participation to the EuroVO-DCA meetings and Workshops.

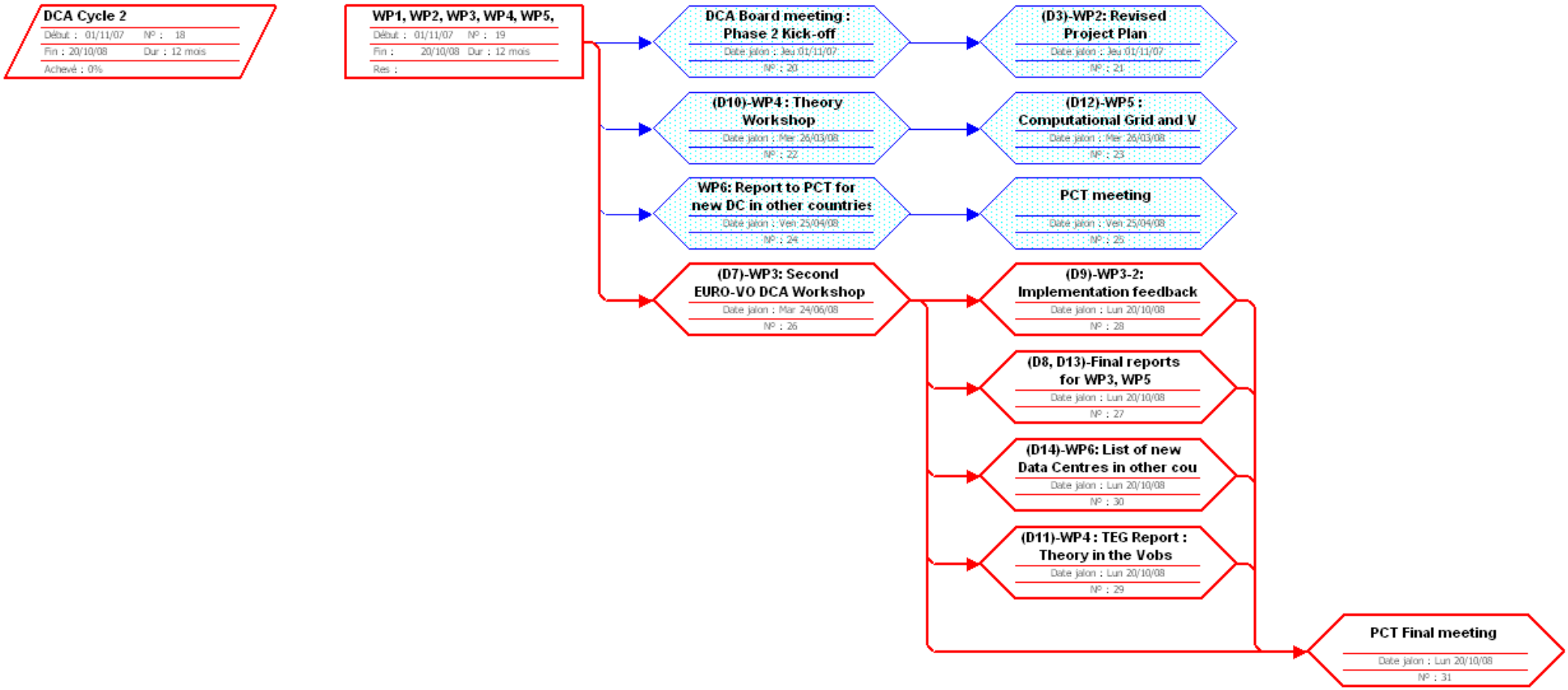
5. WORK PACKAGES SUMMARY

Work package N°	Work package title	Lead contractor N°	Person-months	Start month	End month	Deliverable N°
WP1	Management	1 (CNRS)	10	1	28	D1* D15* D16
WP2	Definition of European DCA Strategy	1 (CNRS)	16	1	28	D2* D3* D4 D5
WP3	Support to take-up and implementation of the VObs framework	2 (ESA) 3 (ESO)	68	3	26	D6* D7 D8 D9
WP4	Theory in VObs	6 (MPG)	33	3	26	D10 D11
WP5	Coordination with computational grid projects	4 (INAF)	26	3	26	D12 D13
WP6	Support to data centres from other European countries	5 (INTA)	17	3	26	D14
	TOTAL		170			

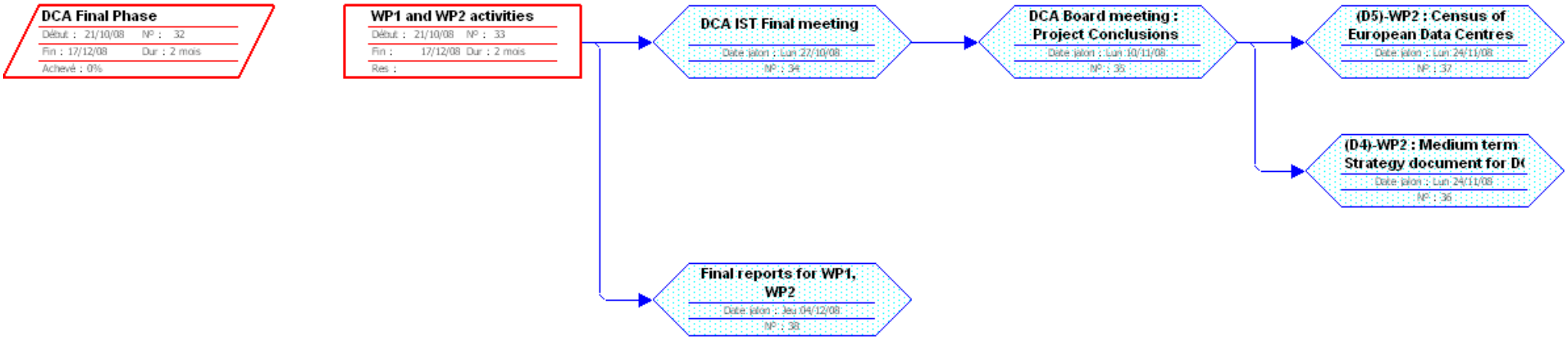
* D1 (Project Website), D2 (Preliminary Project Plan), D6 (First EuroVO-DCA Workshop and D15 (First Periodic Report) were scheduled during Cycle 1 of the project. D3 (Revised Project Plan) is the present document.

6. GRAPHICAL PRESENTATION OF THE WORK PACKAGES

Activities during Cycle 2



Activities during the Final Phase



7. SUMMARY OF DELIVERABLES

Del. N°	Deliverable name	WP N°	Lead participant	Estimated person-months	Nature	Delivery date	Dissemination level
D1	Project Web site	WP1	CNRS	2	Web site	19th March 2007	PU/CO
D2	Preliminary Project Plan	WP2	CNRS	2	Report	11th December 2006	PU
D3	Revised Project Plan	WP2	CNRS	2	Report	15th December 2007 (this document)	PU
D4	Medium term strategic plan for EuroVO-DCA	WP2	CNRS	8	Report	Month 27	PU
D5	Census of European data centres	WP2	CNRS	6	Report	Month 27	PU
D6	First EuroVO-DCA Workshop	WP3	ESA	28	Workshop	10th October 2007	PU
D7	Second EuroVO-DCA Workshop[1]	WP3	ESO	28	Workshop	Month 22	PU
D8	Final report on WP3 activities	WP3	ESA - ESO	6	Report	Month 26	PU
D9	Implementation feedback report	WP3	LU	6	Report	Month 26	PU
D10	Euro-VO Theory Workshop	WP4	MPG	21	Workshop	Month 20[2]	PU
D11	TEG report: Framework for the inclusion of theory data and services in the VObs	WP4	MPG	12	Report	Month 26	PU

[1] The Workshop is anticipated from month 24 to month 22 (see Section 12 "WP3 activities description" for more details).

[2] The Workshop is postponed from month 17 to month 20 (see Section 13 "WP4 activities description" for more details).

D12	Euro-VO Computational Grids Workshop	WP5	INAF	17	Workshop	Month 20[3]	PU
D13	Final report on WP5 activities	WP5	INAF	9	Report	Month 26	PU
D14	Report on the inclusion of data centres from beyond the partners' countries in the VObs	WP6	INTA	17	Report	Month 26	PU
D15	First periodic report	WP1	CNRS	3	Report	Month 14	PP
D16	Final contractual report	WP1	CNRS	3	Report	Month 28	PP
			TOTAL	170			

[3] The Workshop is postponed from month 17 to month 20 (see Section 14 "WP5 activities description" for more details).

8. SUMMARY OF MILESTONES FOR CYCLE 2

Month 15 (Nov.2007)	Beginning of Cycle 2 (All Work Packages)
Month 20 (April 2008)	Euro-VO Theory Workshop (deliverable D10, under WP4 responsibility) - The Workshop (and thus the milestone) is postponed from January 2008 to April 2008 (see Section 13 "WP4 activities description" for more details)
Month 20 (April 2008)	Euro-VO Computational Grid Workshop (deliverable D12, under WP5 responsibility) - The Workshop (and thus the milestone) is postponed from January 2008 to April 2008 (see Section 14 "WP5 activities description" for more details)
Month 20 (April 2008)	PCT meeting (All Work Packages) ➢ Assessment of activity of the first six months of Cycle 2, updated program for the next six months
Month 22 (June 2008)	Second EuroVO-DCA Workshop (deliverable D7, under WP3 responsibility), anticipated from August 2008 to June 2008
Month 26 (Oct. 2008)	PCT meeting (All Work Packages) ➢ Assessment of WP3 activities from deliverables D8 and D9 in preparation of the final Board meeting ➢ Assessment of WP4 activities and of deliverable D11 in preparation of the final Board meeting ➢ Assessment of WP5 activities and of deliverable D13 in preparation of the final Board meeting ➢ Assessment of WP6 activities from deliverable D14 in preparation of the final Board meeting
Month 28 (Dec. 2008)	Final Board meeting (All Work Packages) ➢ Final assessment of the project work (also for WP 3-6), Medium term strategic plan for EuroVO-DCA (deliverable D4), and Census of European data centres (deliverable D5)
Month 28 (Dec. 2008)	Final report to EU (deliverable D16, under WP1 responsibility)

9. WP1 ACTIVITIES DESCRIPTION

This Work Package is led by CNRS/INSU. It is responsible for overall legal, contractual, financial and administrative management activities.

It is also in charge of the production of the contractual reports and the compilation of the meetings organised and the reports produced by the project.

Finally, it assures the project external presence through the establishment and maintenance of the project external Web site and the participation to *e*Infrastructure meetings organised by the European Commission and by other projects, and to OGF (Open Grid Forum) meetings.

9.1. WP1 objectives

- to oversee the project on behalf of all the partners
- To co-ordinate financial and administrative matters
- To deliver an external presence

9.2. Milestones and deliverables for Cycle 2

December 2008: Final report to EU (deliverable D16)

9.3. Project management and monitoring

In order to assure the project management, various additional actions will continue to be undertaken by WP1:

- Update of the project directory if required
- Update of the list of EuroVO-DCA presentations to conferences/meetings of other EC-funded projects to improve synergy between projects

In other respects, each WP will monitor the different aspects of its activities. This monitoring is part of the WP reports, and will be assessed by the PCT and the Board.

9.4. Maintenance of the Risk Register and of the Self-evaluation Matrix

The Risk Register (see Table 1 in Section 4.2) will continue to be maintained by the Euro-VO DCA PCT throughout Cycle 2 of the project.

The Project Manager will continue to assure the maintenance of the Self-evaluation Matrix for each Work Package.

The current Self-evaluation Matrix is shown below (Table 2).

Table 2: Self-evaluation Matrix

(Last update: 20/11/07 – minor updates for the periodic reports: 03/12/07)

Work Package	Evaluation item	Content/Evaluation issues	Schedule	Delivery data
WP1 Management	**Deliverable D1** – Functioning EuroVO-DCA web site http://www.euro-vo.org/pub/dca/overview.html	Including: ▪ Details of each Partner ▪ Details of each WP and deliverables ▪ Links to other relevant projects (EC-funded projects, other VObs projects)	Month 6 (Feb. 2007)	Available in preliminary form since 11/10/2006 and in final form since 19/03/2007
	Recruitment of the EuroVO-DCA PM		Kick-off phase (Sept. 2006)	M. DEPRETZ (CNRS, 01/09/2006)
	PCT and IST meetings		As Planned	PCT kick-off : no formal meeting (PM decision) 1st PCT meeting : 3&4/05/2007 IST kick-off : teleconference on 16/11/2006 1st IST meeting : 23/03/2007 Common Board-PCT meeting : 4&5/10/2007

	Update of risk register		Each PCT meeting	1st Board meeting : 03/10/2006 1st PCT meeting : 3&4/05/2007 Common Board-PCT meeting : 4&5/10/2007
	Production of first and second project reports		Month 3 (Nov. 2006) Month 9 (May 2007)	12/01/2007 19/06/2007
	List of EuroVO-DCA presentations to conferences/meetings of other EC-funded projects to improve synergy between projects		For each reporting period	In the Periodic Activity Report
	Deliverable D15 – First periodic report		Month 14 (Oct. 2007)	In preparation for delivery mid-December 2007
	Deliverable D16 – Final contractual report		Month 28 (Dec. 2008)	

WP2 Definition of European DCA strategy	Define EuroVO-DCA logos, document templates , high-level documents for external audience		End of Kick-off phase (Oct.06)	10/10/2006
	Preliminary census of data centres in the partner countries		End of Kick-off phase (Oct 06)	02/11/2006
	Deliverable D2 – Preliminary Project Plan	▪ List of documents to be produced during the project and their draft Table of Contents ▪ Finalized list of Evaluation Metrics	End of Kick-off phase (Oct. 2006)	11/12/2006
	Draft strategic document for medium-term development of the EuroVO-DCA		End of Cycle 1 (Oct. 2007)	Draft summary discussed at the Board-PCT meeting (4&5/10/2007)
	Mid-project evaluation and update of the Evaluation Metrics		End of Cycle 1 (Oct. 2007)	Updated at the 1st PCT meeting (3&4/05/2007) Updated at the Board-PCT meeting (4&5/10/2007)
	Deliverable D3 – Revised Project Plan		End of Cycle 1 (Oct. 2007)	This document
	Deliverable D4 – Medium Term Strategic Plan for EuroVO-DCA		Final Phase (Dec. 2008)	
	Deliverable D5 – Census of European data centres		Final Phase (Dec. 2008)	
	Final evaluation of the Evaluation Metrics		Final Phase (Dec. 2008)	

WP3 Support to take-up and implementation of the VObs framework	Procurement of WP3 related personnel			Mar SIERRA (ESO, 01/03/2007)
	List of approved VObs standards		End of Kick-off Phase (Oct. 2006)	http://www.ivoa.net/Documents/ Continuously updated
	Deliverable D6 – First EuroVO-DCA Workshop	Evaluation issues: ▪ Overall level of participation ▪ Number of participants from non-partners European countries (see WP 6) ▪ Participation from all the EuroVO-DCA partners ▪ Presentation/discussion of all IVOA approved standards	Initial date : Month 12 (August 2007) Actual date : Month 10 (June 2007)	The Workshop took place at ESAC, on 25&29/O6/2007, with approval of the Board for the new date Deliverable D6 was sent to the Project Officer on: 11/10/2007
	Mid-project report on take-up and implementation of the VObs framework	Including: ▪ List of approved IVOA standards ▪ List of support given to partner data centres	End of Cycle 1 (Oct. 2007)	In the Periodic Activity Report
	Mid-project report on technical feedback (WP3-2)	Including the participation of EuroVO-DCA partners to IVOA Interoperability meetings	End of Cycle 1 (Oct. 2007)	In the Periodic Activity Report

	Deliverable D7 – Second EuroVO-DCA Workshop	Evaluation issues: ▪ Overall level of participation ▪ Number of participants from non-partners European countries (see WP6) ▪ Participation from all EuroVO-DCA partners ▪ Presentation/discussion of all IVOA approved standards	Initial date : Month 24 (August 2008) Actual date : Month 22 (June 2008)	The Workshop will take place at ESO, in June 2008, with approval of the Board for the new date
	Deliverable D8 – Final report on WP3 activities		End of Cycle 2 (Oct. 2008)	
	Deliverable D9 – Implementation Feedback Report	Including the participation of EuroVO-DCA partners to IVOA Interoperability Meetings	End of Cycle 2 (Oct. 2008)	
	Cross-knowledge visits between EuroVO-DCA partners	▪ Plan for visits and items to be tackled ▪ Update of the list of EuroVO-DCA partners cross visits and items tackled in the EuroVO-DCA internal web site ▪ Reports for all these visits on the EuroVO-DCA internal web site	Each PCT meeting	Done at the 1st PCT meeting : 3&4/05/2007 Done at the common Board-PCT meeting: 4&5/10/2007) Low activity level in WP3: See WP6

WP4 Theory in VObs	Procurement of WP4 related personnel			Laurent BOURGES (CNRS, 16/07/2007)
	Draft document 'Framework for inclusion of Theory data and services in the VObs'		End of Cycle 1 (Oct. 2007)	Delayed to take into account the results of the census questionnaire Outline discussed at the TEG telecon (11/04/2007)
	Deliverable D10 – Euro-VO Theory Workshop	Evaluation issues: ▪ Number of participants ▪ Participation from all the WP 4-involved partners ▪ Presentation/discussion of all Theory related IVOA approved standards if any	Initial date : Month 17 (January 2008) Actual date : Month 20 (April 2008)	The Workshop is delayed to April 2008 in order to organise it with WP5 Workshop and to take into account the results of the data centres Census questionnaire.
	Deliverable D11 – TEG report: 'Framework for inclusion of Theory data and services in the VObs'		Month 26 (October 2008)	
	Participation of EuroVO-DCA partners to all Interoperability meetings with Theory related discussion		For each reporting period	In the Periodic Activity Report

WP5 Coordination with computational GRID projects	Procurement of WP5 related personnel			Valeria MANA (INAF, from 01/01/2007 to 31/03/2007) Massimo SPONZA (INAF, 01/09/2007)
	Mid-project report on WP5 activities	Including: ▪ Definition of the list of partners to connect their Grids ▪ Establishment of GRID standards to use to connect EuroVO-DCA partners Grids	End of Cycle 1 (October 2007)	In the Periodic Activity Report
	Deliverable D12 – Euro-VO Grid Workshop	Evaluation issues: ▪ Number of participants ▪ Participation from all the EuroVO-DCA WP 5 involved partners ▪ Presentation/discussion of all GRID related IVOA approved standards ▪ Applications running on various partners Grids	<u>Initial date :</u> Month 17 (January 2008) <u>Actual date :</u> Month 20 (April 2008)	The Workshop is delayed to April 2008 in order to organise it with WP4 Workshop and to take into account EGEE III schedule
	Deliverable D13 – Final report on WP5 activity		End of Cycle 2 (Oct. 2008)	
	Number of presentations of EuroVO-DCA GRID activities at other GRID related conferences / projects (EC funded in particular)		For each reporting period	In the Periodic Activity Report

WP6 Support to data centres from other European countries	Procurement of WP6 related personnel			Jose Manuel ALACID (INTA, 04/06/2007)
	Deliverable D14 – Report on the inclusion of data centres from beyond the partners' countries in the VObs	▪ Build an initial target list of countries to give support to in the EuroVO-DCA context o Contact point o List of astronomical assets relevant to the EuroVO-DCA and their added value for the EuroVO-DCA and the VObs in general o Priority for contacting them ▪ Update the list	Month 2 (October 2006) Every 6 months	First list on: 02/11/2006 List continuously updated on the project TWiki: http://cds.u-strasbg.fr/twikiDCA/bin/view/EuroVODCA/WP6Newcountries Update done at the 1st PCT meeting : 3&4/05/2007 Update done at the 2nd PCT meeting : 4&5/10/2007
	Visit to these data centres for VObs take-up support	▪ Plan for visits and items to be tackled ▪ Update list of visits and items tackled in the EuroVO-DCA internal web site. ▪ Reports for all these visits on the EuroVO-DCA internal web site	Every 12 months Every 6 months	Update Done at the 1st PCT meeting : 3&4/05/2007 Update done at the common Board-PCT meeting : 4&5/10/2007

9.5. Reporting

The list of deliverables to be transmitted to the EC is available in Section 6 of this document. The Project Manager will continue to be in contact with the PCT and Board members to prepare the project deliverables, especially for D16 (Final contractual report). The final contractual report will finalize the implementation of the EuroVO-DCA project. It will assess the work undertaken during the whole duration of the project.

Here is a list of documents and reports to be produced during Cycle 2 of the project and their draft Table of Contents:

Final contractual report (D16 - WP1)

- Expanded version of the Publishable Executive Summary
- Summary description of project objectives, contractors involved, work performed and end results, elaborating on the degree to which the objectives were reached
- Brief description of the methodologies and approaches employed
- Presentation of state-of-the-art achievements of the project
- Description of the impact of the project on the research sector
- Publishable results of the Final plan for using and disseminating the knowledge
- Final management report
- Final report on the distribution of the Community's contribution

Census of data centres (D5 - WP2 and WP6)

See Section 10.4.

Medium term strategic plan for EuroVO-DCA (D4 - WP2)

The medium term strategy for the Euro-VO Data Centre Alliance will be defined progressively during the whole duration of the project, taking in particular into account FP7 priorities. The Medium term strategic plan for EuroVO-DCA will take into account the coordination between EuroVO-DCA and the FP7 EuroVO-AIDA project which will overlap during 11 months.

Final report on WP3 activities (D8 - WP3)

This report will consist in a description of the WP3 activities.

Implementation feedback report (D9 - WP3)

This report will include a description of WP3-2 activities.

TEG report (D11 - WP4)

This report will present the framework for the inclusion of theory data and services in the VObs.

Final report on WP5 activities (D13 - WP5)

This report will consist in a description of the WP5 activities.

Report on the inclusion of data centres from beyond the partners' countries in the VObs (D14 - WP6)

This report will consist in a description of WP6 activities.

9.6. External presence

The Project Manager assures the project external presence through the maintenance of the EuroVO-DCA website (http://www.euro-vo.org/pub/dca/), the maintenance of the project TWiki (http://cds.u-strasbg.fr/twikiDCA/bin/view/EuroVODCA/WebHome), and through participation to meetings and events, as done during Cycle 1.

Planned participation to events (known in November 2007):

- 4th e-Infrastructure Concertation meeting, Sophia Antipolis, 5th & 6th December 2007
- IVOA events (next IVOA meetings are planned in Trieste in May 2007 – organized by INAF – and in Baltimore in September or October 2008)

The EuroVO-DCA schedule is available on:
http://cds.u-strasbg.fr/twikiDCA/bin/view/EuroVODCA/DCASchedule

The PM will also provide a "communication package" (brochure, poster, elements for talks) for communication about the EuroVO-DCA project.

10. WP2 ACTIVITIES DESCRIPTION

This Work Package, led by CNRS/INSU, aims at defining the project program and a medium term strategic plan for the EuroVO-DCA. It oversees the scientific aspects and the development of the project, and ensures its visibility in IVOA. This task provides technical and scientific leadership and planning, developing the overall project plan and assessing the project activities. The different aspects of the work are under responsibility of the Board, of the Project Coordination Team and of the Internal Science Team.

Key elements of the project strategy are:

- Realizing a census of European data centres in the partner countries and in other European countries, taking into account the diversity in size and objectives
- Increasing awareness about the VObs among these data centres
- Supporting them in their way towards implementation
- Gathering feedback about implementation
- Preparing a medium term strategic plan for the Euro-VO Data Centre Alliance

10.1. WP2 objectives

In order to undertake the European Data Centre Alliance Strategy, WP2 lead, with the assistance of the Board, the Project Coordination Team and the Internal Science Team:

- Defines the project program: revised Project Plan (D3 – the present document)
- Oversees the project development and monitor the progress of WP2-WP6
- Oversees the scientific aspects of the project (WP2-2)
- Defines a medium term strategic plan for the EuroVO-DCA
- Ensures visibility of EuroVO-DCA in IVOA

10.2. Milestones and deliverables for Cycle 2

- November 2008: Medium term strategic plan for EuroVO-DCA (D4)
- November 2008: Census of European data centres (D5)
- December 2008: Final Board meeting for the assessment of the project work

10.3. Meetings

The Project Manager will continue to organise Board and PCT meetings and to assure the global coherence of the project. The next Board meeting is planned for December 2008 (final Board meeting) for the assessment of the project. A Medium term strategic plan for EuroVO-DCA (deliverable D4) and a Census of European data centres (D5) will be produced. Two PCT meetings are also planned:

- Month 20 (April 2008): assessment of activity of the first six months of Cycle 2, updated program for the next six months
- Month 26 (October 2008): assessment of WP3, WP4, WP5 and WP6 activities during the project in preparation of the final Board meeting

10.4. Census of European data centres in the partner countries and in other European countries

The definition of a data centre in the Virtual Observatory context has been available since 5th October 2006 on the project TWiki for reference: http://cds.u-strasbg.fr/twikiDCA/bin/view/EuroVODCA/DataCentresinVO.

The Board discussed the results of the Preliminary census of data centres in partners' countries during its 2007 meetings. The census management was identified as one of the PM's responsibilities (with the PCT), with input from the Board and IST. As a result of input from Board, PCT, IST and TEG, the census is organised into 5 questionnaires:

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

The census will be advertised in partners' and other European countries before the end of 2007. The on-line census is available on the EuroVO-DCA project TWiki, at http://cds.u-strasbg.fr/twikiDCA/bin/view/EuroVODCA/DCACensus. Data centres will be invited to fill on-line forms or to send Word documents. The answers will be collated, organized, discussed and used.

The Preliminary census of data centres in other European countries elaborated by WP6 will continue to be updated on a regular basis. It is available on the WP6 TWiki page: http://cds.u-strasbg.fr/twikiDCA/bin/view/EuroVODCA/WP6Newcountries.

The Final Census of European data centres (D5) will be produced at the end of the project.

10.5. WP2-2 activities

The IST plans to have a teleconference meeting in early 2008 and a face-to-face meeting prior to the major EuroVO-DCA Workshop to be held in June.

A list of target archives based on input from the Euro-VO Science Advisory Committee and from the partners will be established in collaboration with the Board and PCT. The Census will allow identifying contact persons in these archives.

Concerning the assistance to EuroVO-DCA Workshops, IST members will assist in the preparation of the EuroVO-DCA Theory Workshop, and the EuroVO-DCA Grid Workshop, in particular to highlight the scientific benefits of using VObs systems.

Following the Workshops, data centre visits, and use of the on-line materials, the IST seeks to identify scientific usage of VObs systems that have been enabled by VObs up-take. This is coordinated with WP3 efforts for collecting feedback.

10.6. Strategy

The medium-term strategy for the Euro-VO Data Centre Alliance aims at creating and maintaining a community of VObs data providers. It has already begun to be assessed during Cycle 1: it was one of the drivers for the additional Board meeting, and the

project has been very actively participating in events organised in preparation for FP7 to understand the European plans and priorities for the following years, and in several events ensuring networking with other EC-funded programs. The "Euro-VO Astronomical Infrastructure for Data Access" (EuroVO-AIDA) project (FP7, Scientific Digital Repositories programme) is an important element of this medium term strategy. This project aims at undertaking the Euro-VO transition to operations covering all aspects of Euro-VO, the Data Centre Alliance (DCA), Facility Centre (VOFC) and Technology Centre (VOTC), following the VO-TECH and EuroVO-DCA projects.

EuroVO-DCA activities will be coordinated with EuroVO-AIDA activities to ensure optimal transition and re-use of results and lessons learnt. An additional EuroVO-DCA Board meeting may be organized for this purpose in February 2008, jointly with the EuroVO-AIDA kick-off meeting.

Another aspect of the medium term strategy of Euro-VO is to be properly included in the global European astronomy landscape. The Astronet ERA-NET is consolidating a global European strategy for Astronomy. The "Science Vision for European astronomy" document was released in September 2007. The press release mentions the VObs and data archiving. The medium term Infrastructure Roadmap is being discussed, and Virtual Observatory is tackled by Panel D "Theory, computing facilities, and networks, Virtual Observatory", co-chaired by Paolo PADOVANI. A very detailed questionnaire was sent to the European astronomy communities and a majority of projects is ready to be VObs compliant. The first draft of the Infrastructure Roadmap is foreseen for spring 2008. A symposium will be held in Liverpool on 16th – 18th June 2008 to gather input and feedback. Active participation to all activities linked to the preparation of this Roadmap will continue.

The medium term strategic plan also has to address concertation with other disciplines, e.g. with planetary sciences and in particular the Europlanet Coordination Action and with heliophysics. The adequate level (organisations, European, IVOA) for the interactions between communities has to be defined.

10.7. Visibility in IVOA

The project close interaction with IVOA (International Virtual Observatory Alliance) will continue. It follows several tracks:

- Take-up of IVOA standards by European data centres, as a result of WP3 and WP6 actions, and feedback from implementation
- Input from WP4 to the IVOA Theory Interest Group and to other relevant IVOA Working Groups for the assessment and definition of theory standards
- Activities of WP5 on coordination with Grid, with input to the relevant IVOA Working Groups, to the IVOA Theory Interest Group and to the IVOA Astro-RG Interest Group (which is being reorganized by IVOA)

The Theory and Grid Workshops which will be organized in April 2008 are in particular expected to provide input to IVOA from relevant communities.

11. WP3 ACTIVITIES DESCRIPTION

This Work Package, led by ESA and ESO, aims at motivating data centres to implement the VObs framework, at supporting this implementation, at gathering feedback from implementation and new requirements from individual data centres specific needs, and at transmitting of this feedback to VO-TECH and other technological projects and to IVOA to insure global interoperability.

This includes:

- Two Euro-VO Data Centre Workshops during the project duration
- Visits of experienced VObs developers to national meetings or sites selected by partners

11.1. WP3 objectives

- WP3 organizes the activities necessary to distribute knowledge of the VObs framework among European data centres
- WP3-2 gathers feedback from the VObs framework implementation by data centres

11.2. Milestones and deliverables for Cycle 2

- April 2008: PCT meeting
- June 2008: Second EuroVO-DCA Workshop (deliverable D7)
- October 2008: Final PCT meeting

11.3. Major Workshops

23rd – 27th June 2008: Second EURO-VO Workshop (ESO Garching, Germany).

The Workshop will be built on the experience drawn from the first "Euro-VO Workshop on how to publish data in the VO" held at ESAC, Madrid, on 25th – 29th June, 2007 (http://esavo.esac.esa.int/EuroVOWorkshopJune2007/). The scope and possible improvements for the Workshop were discussed during the Board-PCT meeting in October 2007 and will continue to be discussed in the coming months.

The main conclusions of the first Workshop were:

- Spanish and French participants (2 communities used to organise such Workshops) were the most represented, enhancing the importance of the action of the national partners
- The participation came more from small projects than from large projects
- Single astronomers can also be interested to publish their data in the VO
- The Workshop was a very good forum for discussions, as expected

The comparison between the Workshop participants, the census of data centres and the list of target archives established by the IST in collaboration with the Board and the PCT will be useful to improve the participation of large projects to the next Workshop. The

partners will propose participants and gather requirements from their national communities.

11.4. Minor Workshops

As the additional "Astronomical Spectroscopy and Virtual Observatory" Workshop has been a success, the IST would be eager to organize another similar Workshop but this may not be possible because of the other commitments during Cycle 2.

A specific Workshop, restricted to key data centres, might be organized. The idea would be to advertise more the already VObs compliant archives, to produce incentive to become VObs compliant. But it is likely that this aim will rather be included in the 2008 major Workshop. As explained earlier, contact persons will be identified at the Target archives to ensure the proper level of participation.

The possible organization of a focused WP3-2 technical Workshop is presented in Section 11.6.

11.5. On-site Support to data centres

The on-site support to data centres is going more slowly in WP3, since a priority has been put on the Workshop for which there is a high demand. More visits may be organised as follow-up of the Workshops if required. A webpage about WP3 technical visits, which will be regularly updated by all the partners, has been created on the project TWiki: http://cds.u-strasbg.fr/twikiDCA/bin/view/EuroVODCA/WP3Visits.

From these visits, support material will be developed, maintained and published on the EuroVO-DCA web pages so that they are widely available.

These actions are very successful in WP6 (see Section 14.5) and they may be better suited for initiating contacts with new communities.

11.6. WP3-2 activities

WP3-2 is in charge of the Technical Feedback from implementation of the VObs framework.

During Cycle 2, WP3-2 leads will continue to assimilate feedback from data centres in the context of VObs deployment of datasets and from target key implementers such as developers using VObs infrastructure elements, e.g. VO tool builders, as well as from general users at VObs Workshops and demonstrations. The targets for output of this feedback include infrastructure developers, IVOA standards developers and other relevant software engineering staff within the Euro VO-TECH project, other European VObs technology groups and IVOA interoperability working groups.

WP3-2 gathered technical feedback on the "EURO-VO Workshop on how to publish data in the VO" from a feedback questionnaire. Nearly half of the participants filled the questionnaire, which is an excellent response rate. The overall feedback was very positive, and the feedback will be used to define the content of the second Euro-VO Workshop.

More technical feedback is to be expected now that all the basic IVOA standards are in Recommendation form. The organisation of a “mini Workshop” to go deeper on technical aspects, with a few participants of the June 2007 Workshop who indicated an interest, is

being discussed. The open question is whether to provide customized technical help in the frame of a specific focussed Workshop in addition to organize technical visits and the June 2008 major Workshop.

This focused technical Workshop could be geared towards a selected subset of participants from the June 2007 Workshop: we have identified those participants who can benefit from further assistance in order to finish a complete implementation to publish their datasets in the VObs. This would provide more tightly focussed interaction between data providers and the relevant experts in order to develop detailed strategies for the publication of specific archives and collections. This would allow a more in-depth study of the application of IVOA standards, including additional discussion of possible enhancements to the usability of current standards. This could also involve the development of practical science use cases, in partnership with members of the Internal Science Team. Lessons and developments from such a workshop would be used as exemplars for subsequent major workshop. A list of potential participants will be provided and the Board will decide whether or not to organize such a Workshop.

12. WP4 ACTIVITIES DESCRIPTION

This Work Package is led by MPG.

The European astronomy *theoretical* community has an extremely active and leading role in the world. The results of large scale numerical computer simulations are reaching sizes directly comparable to or even exceeding the large observational archives. But the tools and results of theoretical astronomy are in general not easily accessible outside of small groups of experts. Some code, partially documented, is available on demand or on line, some simulation results are obtainable, but there is no common framework allowing publication and usage of codes and results.

At present the main focus of VObs activities is the harmonization of heterogeneous, distributed, archives of *observational* data, compilation databases and electronic journals. Achieving a similar level of standardization in the field of theory would be a major step forward, allowing scientists to reuse the tools for new simulations, to compare the results of different models, and to compare simulation and modelling results to observational data available in the VObs.

12.1. WP4 objectives

This Work Package aims at assessing the inclusion of theory data and services in the Virtual Observatory. The ultimate goal is a report describing a framework for how theory data and services can be included in the VObs. To this end WP4 organises its activities according to the following topics:

1. The Theoretical astronomy Expert Group (TEG)
2. Census of *theory* data centres (with WP2)
3. Cooperation in IVOA theory interest group activities
4. Coordination with Work package 5: Grid activities

12.2. Milestones and deliverables for Cycle 2

- April 2008: Euro-VO Theory Workshop (deliverable D10)
- April 2008: PCT meeting
- October 2008: Final PCT meeting

12.3. The Theoretical astronomy Expert Group

The *Theoretical astronomy Expert Group* (TEG) is in charge of organising WP4 activities, including the Theory Workshop. One member comes from each of the participants in the EuroVO-DCA. The expert group aims at defining requirements on standards in this domain and at pre-standardization activities, based on the experience of national groups already working in the direction of integrating theoretical data and models in the VObs. The activities of the expert group are performed in the context of the IVOA Theory Interest Group, to which it contributes actively.

WP4 and the TEG will produce a white paper presenting a framework for inclusion of theory into the virtual observatory. The outline is available on project TWiki, at: http://cds.u-strasbg.fr/twikiDCA/bin/view/EuroVODCA/TEGTeleconApril112007. The draft of the document has been delayed to January 2008.

12.4. Census of theory data centres (with WP2)

As a sub-task in the census of European data centres (see Section 10.4), the TEG pays special attention to data centres publishing theory data and services. An important special task is to make an inventory of the different data formats that are used in the theory community, and a characterisation of the types of simulations. The census questionnaires include Theory data centres:

- Theoretical Archives (questionnaire #4)
- Theory Services (questionnaire #5)

The TEG will actively engage such centres and urge them to contribute to the VObs by helping development, implementation and use of theory standards. In particular we will urge them to register their services in IVOA compliant registries and to provide requirements to the standards process.

12.5. Cooperation with IVOA Theory Interest Group activities

The IVOA is the body responsible for the development of VObs standards. For theory this task is assigned to the IVOA Theory Interest Group, which is currently chaired by the MPE. An important aspect of the work of WP4 will continue to be to participate in these activities. The TEG will participate in setting requirements, defining the standards, in implementing prototypes and disseminating these results to the member constituencies.

An additional focused Workshop will be organised to discuss the Simple Numerical Access Protocol (SNAP), as proposed during the IVOA Theory Interest Group meeting in the September 2007 Cambridge IVOA Interoperability meeting.

12.6. Coordination with Work package 5: Grid activities

It is believed that for theory services especially, Grid support will become important. This will have to be addressed in the final report and this work will be done in coordination with WP5. In practice this includes participation in each other focused Workshops and a co-ordination of the main Workshops of WP4 and WP5.

12.7. Theory Workshop

WP4 (with WP5: see Section 13.5) proposed, during the Board-PCT meeting in October 2007, to postpone their Workshops, initially scheduled for January 2008, to April 2008. The reasons for WP4 are that the results of the Census questionnaire are needed to invite people and to define the programme, and also the timing of development of the IVOA standards. The Workshop will take place in Garching on 8th – 11th April 2008. WP4 will organise a TEG Teleconference beforehand to discuss the Workshop.

13. WP5 ACTIVITIES DESCRIPTION

This Work Package is led by INAF. WP5 has identified 5 areas of work:

- Gathering information on the different mechanisms for users to access the individual computational Grid infrastructures (middleware, authentication procedures, user interfaces, etc) through contacts with various computational Grid projects
- Performing preparatory studies on how to interface VObs computing tasks with the different computational Grids, through contacts with user communities (in coordination with WP4 and the TEG) and technical groups (e.g. VO-TECH)
- Fostering access by data centres to their own national Grids, through the organisation of a dedicated Workshop
- Dissemination of the acquired knowledge at the WP3-organised Euro-VO Data Centre Workshops
- Verifying that requirements from the VObs community are taken into the appropriate consideration by the individual computational Grid projects, through contacts with computational Grid projects and the Open Grid Forum (OGF)

13.1. WP5 objectives

WP5 aims at achieving coordination between the VObs and the computational grid communities. WP5 activity is organized into four different topics:

1. Knowledge acquisition
2. Coordination with other Work packages and other European projects
3. Definition and drafting of guideline and handbook on the use of grid computing for data centres
4. Dissemination activity

13.2. Milestones and deliverables for Cycle 2

- April 2008: Euro-VO Computational Grid Workshop (deliverable D12)
- April 2008: PCT meeting
- October 2008: Final PCT meeting

13.3. Knowledge acquisition

13.3.1. Census of Grid initiatives and middleware analysis.

There are a number of different grid initiatives in Europe. Some of them are focused on development of a grid middleware, some on use of pre-existing grid infrastructures to run scientific/industrial applications. As a grid infrastructure is strongly dependent on the middleware used, it is crucial to make a taxonomy that characterizes and classifies various approaches used to build Grid infrastructure and applications. The taxonomy not only highlights the design and engineering similarities and differences of state-of-the-art in Grid middleware, but also identifies the areas that need further research. Therefore, it is mainly a survey of all the European Grid projects, both at the National and European

scale; some "local" Grids at the campus or metropolitan level should also be taken into account.

The aim of this survey is:

- To identify the grid projects and the middleware used
- To identify the projects that actually provide a production grid environment
- To verify the middleware tools and identify those useful for EuroVO-DCA data centres
- To check their interaction with main European grid initiatives (EGEE, DEISA etc.)
- To check the compliance with the standards proposed by OGF

WP5 has produced a Census of the main national and local GRID initiatives, available on: http://cds.u-strasbg.fr/twikiDCA/bin/view/EuroVODCA/WP5Grid. This census will be regularly updated if required.

To ease data centre access to Grid infrastructures, WP5 will continue to gather all available information on Grid standards, which are rapidly evolving and are not always accepted by the different grid initiatives. For this reason WP5 follows the evolution of the standards through the Open Grid Forum (also known as GGF) and emphasizes the use of those standards by the different grid initiatives. Moreover, WP5 will continue to point out any tool/service that is widely used / adopted and that is emerging as a de-facto standard:

- Authentication and Authorization
- Grid data management
- Grid job management and workflow tools
- Information system

13.3.2. Coordination with other Work packages and other European projects

The coordination with EGEE is on track with the creation of the DCA Virtual Organization, the coordination with NA4/NA3 and participation to EGEE User Forum 2007. Contacts have been developed during the OGF meeting in Manchester (7th – 11th May 2007) to participate in EGEE JRA1.

The next important step will be the launch of EGEE III at the beginning of year 2008 in which the astronomy community is fully supported (this is one of the reasons to postpone the WP5 Workshop to April 2008). WP5 will inform EuroVO-DCA partners of the results of the first meeting.

The coordination with the VO-TECH Design Study, which is also a source of input for WP5 work, started. WP5 will continue to develop its partnership, especially with VO-TECH Design Study 3 (*New Infrastructure*) and work on standards.

WP5 continues to cooperate with the IVOA Working Groups, in particular with the Grid and Web Services group (on Single Sign On standards) and with the Theory Interest Group (on Grid and Theoretical calculations), and with the Astro-RG Interest Group (which is being reorganized by IVOA).

Due to its particular nature, WP5 will continue to take care of interacting with other Work Packages of EuroVO-DCA during Cycle 2. In particular, WP5 has a formal interaction with

WP4. WP5 will also provide input on BaSTI (Bag of Stellar Tracks and Isochrones) for WP4, as the GRID usage for theory has to be developed in the WP4 white paper.

WP5 will continue to work with Astro-WISE and AstroGrid. The coordination with regional Grid initiatives (in Spain and in Germany) has started.

13.4. Guidelines and documents

One of the main aspects of WP5 work is to suggest how data centres can interoperate with local/European grid initiatives. For this reason, WP5 will provide manuals and documents for the data centres that describe access procedures in Grid facilities and the way to use them for their computational or storage requirements.

Furthermore, WP5 will discuss and propose some procedures to interact with the Grids interoperating with standard procedures, such as, how to set up similar authentication and authorization procedures or make interoperable data access.

From now on, here is the list of possible documents useful for data centres on which WP5 is working:

- Census of the Grid initiatives (released)
- Census for Astronomers (on going)
- Document on Authentication and Authorization (released)
- Document on Data management systems for the Grid (on going)
- Document on Job management systems for the Grid (on going)
- Use cases (to be done)
- Data reduction oriented use cases description (to be done)
- Theoretical use cases description (to be done)
- Guidelines for the use of the Grids (to be done)

13.5. Dissemination activity

To make the data centres aware of the different possible interactions with the Grid infrastructures, documents and a handbook will be provided. Moreover, we will take care to set up an efficient dissemination activity. This activity will be based both on the organization of a Grid Workshop for Astronomical data centres, in collaboration with the Grid projects, and on identifying any grid school/documents organized/produced by the Grid projects.

As Grid information is not well organized or easy to access, we will provide an easily available information repository for the data centres and for the Astronomers to recover any information they need. The repository will collect links to the documents and any relevant contact person useful to the data centres (ex. VOrg managers, support teams etc.).

The dissemination activity involves also the grid community that must be aware of the requirements of the Astronomical data centres in order to make the grid environment more suitable to the data centres needs. We will verify that the requirements identified by the data centres will be taken into account by the different Grid projects.

The "Euro-VO Computational Grid Workshop", initially scheduled for January 2008, will take place in Garching on 8th – 11th April 2008, with the WP4 theory Workshop (as already mentioned in 12.7). The reason for postponing the WP5 Workshop is better coordination with EGEE3 which will hopefully be launched at the beginning of year 2008 (see above). The participants will be people interested in using or knowing about the Grid. Each partner will advertise the Workshop to its national community to identify the potential participants.

In addition, an ESAC-GRID Workshop, which took place on 29th & 30th November 2007 in Villafranca (Spain), has been open to participants from EuroVO-DCA partners.

13.6. Integration of test applications

To allow gathering of information and the preparation of guidelines and documents to be practical and experience-based, we expect that at least some of the partners participating in WP5 perform the integration of test applications on the Grid. In particular, data centres can port applications (data processing, cross-matching, simulations) on the local/national Grid infrastructure they can access, and/or on EGEE.

This activity should develop in collaboration with WP3 and/or WP4, and will be carried out in parallel with the other WP5 phases, in particular covering the final part of the survey phase, all of the middleware analysis phase, and most of the phase dealing with the preparation of documentation and guidelines.

14. WP6: SUPPORT TO DATA CENTRES FROM OTHER EUROPEAN COUNTRIES

This Work Package is led by INTA. Its first objective is the identification of data centres likely to be interested in publishing their data in the VObs in European countries beyond the partners' countries. It also aims at supporting their take-up and implementation of the VO.

WP6 develops the contacts with European data centre managers, to identify their specific needs and to support their participation in Euro-VO Workshops and VObs framework implementation, in particular by technical visits.

14.1. WP6 objectives

- Increase awareness about the VObs framework in the whole European data centre community
- Inclusion of European data centres from other countries in the VObs framework

The main activities of WP6 during Cycle 2 will be:

- Development of already identified partnerships (Helsinki) and identification of possible new data centres (Lithuania)
- Organisation of EuroVO-DCA Info-days in interested European countries
- Support to participation to EuroVO-DCA Workshops

14.2. Milestones and deliverables for Cycle 2

- April 2008: PCT meeting
- October 2008: Final PCT meeting
- October 2008: Report on the inclusion of data centres from beyond the partners' countries in the VObs (deliverable D14)

14.3. Step 1: Advertise

The Census questionnaires will be advertised as widely as possible.

WP6 will continue its presence (through posters, talks, special sessions…) of the EuroVO-DCA/WP6 in meetings with a high participation of people from potential candidate centres if any.

EuroVO-DCA Info-days will be organised in 2008 in Bulgaria (Sofia, 24th – 25th January 2008) and possibly in Portugal.

14.4. Step 2: Identify

The preliminary census of the astronomy data centres in other European countries, updated on a regular basis by WP6, has been available since November 2006 at: http://cds.u-strasbg.fr/twikiDCA/bin/view/EuroVODCA/WP6Newcountries.

WP6 will continue its identification activities with new potential data centres. The aim is to lead to identification of data centres interested in joining the VObs initiative in Europe.

These data centres are asked to provide information. This information consists in a contact point and a letter of interest to the WP6 leader indicating their objectives, specific needs and added value to the EuroVO-DCA projects and the VObs in general. They will be invited to fill the Census questionnaires.

Concerning Portugal, a VObs coordinator has been identified and several laboratories are interested in the VObs activities.

14.5. Step 3: Support

Using the list of interested data centres and the associated priority "targets", and the list of available IVOA standards, WP6 will continue to make visits to data centres where support on VObs framework implementation can be given from the EuroVO-DCA partners.

From these visits, support material will be developed and maintained, so that it can also be published on the EuroVO-DCA web pages to be widely available. For the moment, some presentations issued from these visits are available on WP6 TWiki page, at this address: http://cds.u-strasbg.fr/twikiDCA/bin/view/EuroVODCA/WP6Newcountries.

At present, interested data centres are:

- The University of Lisbon (Portugal)
- The Konkoly Observatory (Hungary)
- The Bulgarian Academy of Sciences
- The Ondrejov Observatory (Czech Republic)

The Vatican Observatory will be invited to attend the EuroVO-DCA Workshops (Vatican is neither part of nor associated to EC).

WP6 presentation during the Board-PCT meeting, available on the TWiki (http://cds.u-strasbg.fr/twikiDCA/bin/view/EuroVODCA/PCT1), describes in more details the contact established with these data centres. The detailed information is also available in the Periodic activity Report.

The Info-days will also be used to disseminate knowledge on standards and tools, and to gather requirements.

15. EFFORT DISTRIBUTION

The table below summarises the predicted distribution of EU-funded staff effort across WP areas and partners. The main entries are expected EU-funded staff effort. The numbers in brackets are the expected partner-contributed effort for strategy definition.

	CNRS-INSU	ESA	ESO	INAF	INTA	MPG	NOVA	LU	TOTAL Activities
Coordination activities									
WP2:DCA Strategy	16 (+6)	(+3)	(+3)	(+3)	(+3)	(+3)	(+3)	(+3)	**16**
WP3:Support to take-up and implementation of VObs framework	9	12	16	3	2		12	14	**62**
WP4:Theory in VObs	6	2		3	8	12		2	**39**
WP5:Coordination with computational grid		2		12		6	6		**26**
WP6:Support to data centres from other European countries	3	2	2		8			2	**17**
Total coordination activities	34	18	18	18	18	18	18	18	**160**
Consortium management activities									
WP1: Management	10 (+3)	(+1)	(+1)	(+1)	(+1)	(+1)	(+1)	(+1)	**10**
Total consortium Management activities	10								**10**

TOTAL per Participant	**44**	**18**	**18**	**18**	**18**	**18**	**18**	**18**	**170**

16. ESTIMATED BUDGET BREAKDOWN PER WORK PACKAGE

The table below breaks down the predicted expenditure by Work package. The amounts are expressed in euros.

Management activities	
WP1:Management	**106 817,00**
Total management activities	**106 817,00**
Co-ordination activities	
WP2: DCA strategy	**219 160,00**
WP3: Support to take-off and implementation of VObs framework	**593 773,00**
WP4: Theory in VObs	**268 389,00**
WP5: Coordination with computational grid	**213 873,00**
WP6: Support to data centres from other European countries	**138 842,00**
Total coordination activities	**1 434 038,00**
TOTAL ACTIVITIES	**1 540 855,00**