



RI031675

EuroVO-DCA

The European Virtual Observatory Data Centre Alliance

COORDINATION ACTION

RESEARCH INFRASTRUCTURE

COMMUNICATION NETWORK DEVELOPMENT

D2 - Preliminary Project Plan

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Duration: 28 month

CNRS

Final Draft

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)	

TABLE OF CONTENTS

- 1. Project objectives 3
- 2. Participants..... 4
- 3. Project management 5
- 4. Implementation plan 8
 - 4.1. General description 8
 - 4.2. Management of risk 9
- 5. Work packages summary12
- 6. Graphical presentation of the work packages.....13
- 7. Summary of deliverables15
- 8. Summary of milestones17
- 9. WP1 activities description19
 - 9.1. Project management and monitoring.....19
 - 9.2. Maintenance of the Risk Register and of the Self-evaluation Matrix19
 - 9.3. Reporting26
 - 9.4. External presence28
- 10. WP2 activities description.....29
 - 10.1. WP2 Objectives29
 - 10.2. Milestones and deliverables.....29
 - 10.3. Meetings.....29
 - 10.4. Census of European data centres in the partner countries and in other European countries.....30
 - 10.5. Strategy31
- 11. WP3 activities description.....32
 - 11.1. Major Workshops32
 - 11.2. Minor Workshops32
 - 11.3. On-site Support to data centres.....33
- 12. WP3-2 activities description.....34
- 13. WP4 activities description.....35
 - 13.1. Theoretical astronomy Experts Group35
 - 13.2. Census *theory* data centres (with WP2)35
 - 13.3. Cooperation in IVOA theory interest group activities.....36
 - 13.4. Coordination with Work package 5: Grid activities.....36
- 14. WP5 activities description.....37
 - 14.1. Knowledge acquisition37
 - 14.2. Guidelines and documents39
 - 14.3. Dissemination activity39
 - 14.4. Integration of test applications39
- 15. WP6: Support to data centres from other European countries.....40
 - 15.1. WP6: overall aims.....40
 - 15.2. WP6: milestones.....40
 - 15.3. WP6 in three steps.....40
- 16. Effort distribution42
- 17. Estimated budget breakdown per Work package43

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 eInfrastructure 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).

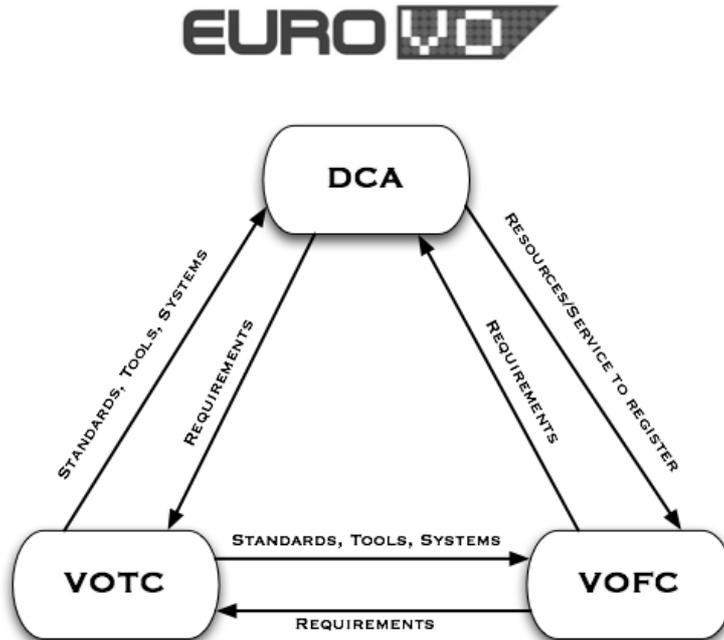
2. PARTICIPANTS

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.



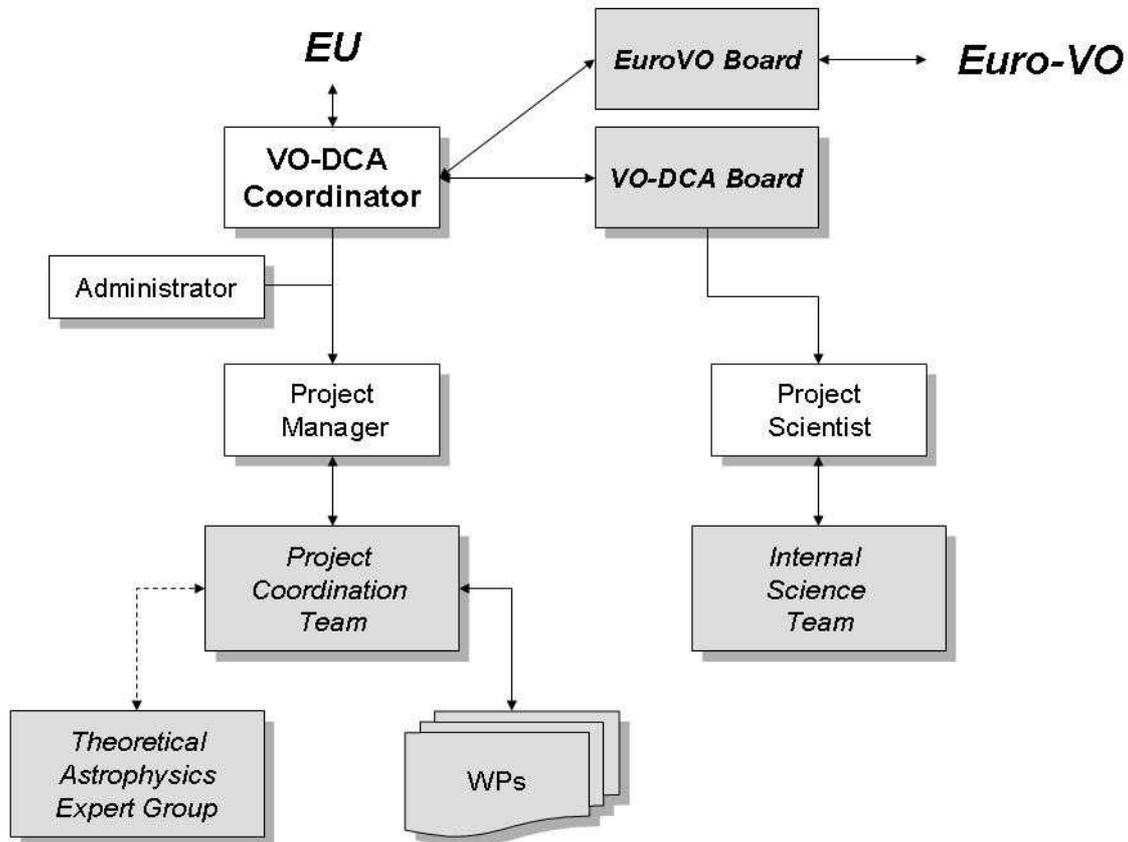
The **EuroVO-DCA Coordinator** is Françoise Genova (CDS, Observatoire Astronomique de Strasbourg). She is responsible for all communication with Commission on contractual matters. The **EuroVO-DCA Project Manager** (DCA PM) is Mathias Depretz. He manages the EuroVO-DCA project activities. The **EuroVO-DCA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

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

Figure 2: Euro-VO 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 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. The PCT meets every six months, receives and discusses reports from the DCA PM and from the partners, assesses the project activities and produces a review report. At the end of the first project yearly cycle, it will propose the EuroVO-DCA work plan for the following cycle. 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).

PCT members:

PM	Mathias DEPRETZ (Chair)	INTA	Raul GUTIERREZ
CNRS	Françoise GENOVA	MPG	Gerard LEMSON
ESA	Christophe ARVISET	NOVA	TBD
ESO	Andreas WICENEC	LU	Anita RICHARDS
INAF	Guiliano TAFFONI		

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 will hold at least two meetings (kick-off and conclusions), and will act in support of the Board, PCT and all Work Packages during the project. The IST will in particular highlight scientific drivers to motivate adoption of 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 IST is chaired by the EuroVO-DCA Scientist. The EuroVO-DCA scientist organizes IST teleconference discussions whenever necessary, in particular if IST advice is required from one of the project Work Packages. The IST reports on its activities to the DCA Board. The EuroVO-DCA scientist is the contact point between the EuroVO-DCA IST and the Euro-VO Science Advisory Committee.

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 will work 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 is expected to provide 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

Several areas of work have been identified, 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 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-INSU 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 follow all WP activities in close coordination with the partner(s) in charge. WP 3, 4, 5 and 6, and WP3-2, will report to the PCT.

The project will last 28 months. It is organised into several phases:

- A Kick-off phase of 2 months, during which only WP1 and WP2 have been active. The first meeting of the Board constituted the project kick-off. At the end of the Kick-off phase, WP2 produces:
 - (1) The project detailed work program for Cycle 1 (this document);
 - (2) A preliminary census of the astronomy data centres in partner countries and of the astronomy data centres in other European countries.

- Two one-year Cycles, Cycle 1 and Cycle 2. The project activities will be assessed and adjusted if required at the end of the first yearly cycle. WP3 will organise one DCA Workshop during each Cycle. Work Packages 3, 4, 5 and 6 and sub-Work Package WP3-2 will produce respectively mid-term and final reports one month before the end of each Cycle. The reports will be assessed by the PCT which will prepare respectively a mid-term and final activity report. The PCT will also propose a plan for future activities to the Board at the end of Cycle 1, and input for the medium term DCA strategic plan at the end of Cycle 2. At the end of Cycle 1, the Board will produce the detailed work program for Cycle 2.
- A Final Phase of 2 months, during which the final project reports will be produced by WP2. Only WP1 and WP2 will be active during the Final Phase. The final products of the project will be two documents:
 - (1) The Medium term strategic plan for Euro-VO DCA;
 - (2) A census of European astronomy data centres.

Emphasis will 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. A small fraction of the budget will also be used to increase collaboration with VObs projects from Eastern Europe.

Workshops and visits for technical discussion and cross-sharing of experience will be among the project's most effective and visible tools. Four workshops organised by EuroVO are planned. These are the *First and Second EuroVO-DCA Workshops*, the *Theory Workshop*, and the *EuroVO Computational Grid Workshop*. Minor workshops will also be organised by WP 2-6 (including WP3-2) when useful. These workshops will be a discussion forum in which all participants bring their expertise: the EuroVO-DCA will disseminate knowledge about why and how to use and take-up the VObs framework; data centre staff will 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 VO framework developers and data providers will coordinate the activities of these groups toward the DCA main goals and knowledge will flow 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.

DCA participants will also attend IVOA Interoperability meetings where global VObs efforts are coordinated.

4.2. Management of risk

The management of risk for the Euro-VO DCA will be via a risk register. The risk register is established and will be maintained by the Euro-VO PCT all along the project.

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 provide 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.

Table 1: Risk Register

Risk	Consequences	Remedial Actions
<p>Risk 1: IVOA standards evolving after version 1.0</p> <p>Likelihood of occurrence=3 Impact=2 Risk Factor = 6</p>	<p>Even after the recommended version, IVOA standards may still be evolving. Therefore, DCA partners who have already implemented VObs services based on recommended IVOA standards will have to adapt them to the new standards.</p>	<ul style="list-style-type: none"> ▪ 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. ▪ 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.
<p>Risk 2: IVOA standards not available in time</p> <p>Likelihood of occurrence=2 Impact=3 Risk Factor = 6</p>	<p>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.), DCA partners cannot implement the VObs compliant services.</p>	<ul style="list-style-type: none"> ▪ 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 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.
<p>Risk 3: IVOA standards not properly implemented</p> <p>Likelihood of occurrence=2 Impact=3 Risk Factor = 6</p>	<p>If the IVOA standards are not precise enough or if the DCA partner does not follow the standards completely, there is a risk that the resulting VObs services can not really interact with each others.</p>	<ul style="list-style-type: none"> ▪ DCA partners, through the IVOA should make sure that IVOA standards are precise enough so they can be implemented without risk of errors. ▪ DCA partners should make sure that VObs services implemented in the frame of the 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.

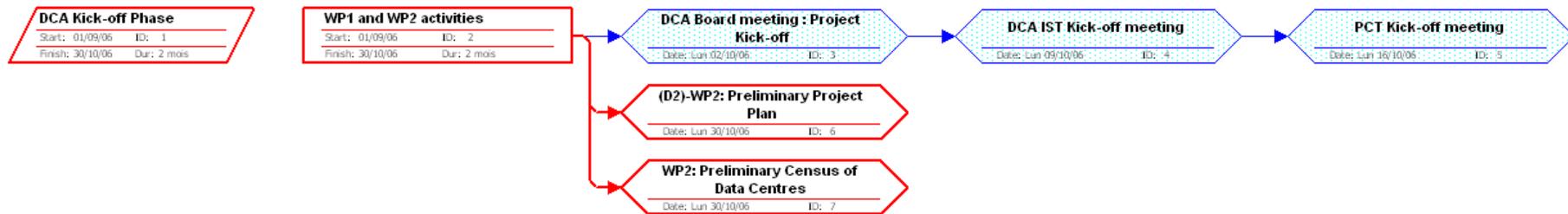
<p>Risk 4: VO services not used by the scientists</p> <p>Likelihood of occurrence=1 Impact=3 Risk Factor = 3</p>	<p>If the VObs services developed by the DCA partners are not scientifically oriented, they will not be used by the scientific community, and the value of the DCA project would be very poor.</p>	<ul style="list-style-type: none"> ▪ The DCA Scientist and IST will check the global scientific coherence of the DCA activities. ▪ In coordination with the Euro-VO Facility Centre, scientific use cases for the 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.
<p>Risk 5: Insufficient collaboration between DCA partners</p> <p>Likelihood of occurrence=1 Impact=3 Risk Factor = 3</p>	<p>As presented in the proposal, DCA partners need to have strong collaboration between them to ensure consistency and convergence of VObs work within the DCA. If missing, the risk of duplicate or divergent work being performed becomes higher.</p>	<ul style="list-style-type: none"> ▪ 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. ▪ DCA to provide collaborative web site containing all the information discussed through these collaborations.

5. WORK PACKAGES SUMMARY

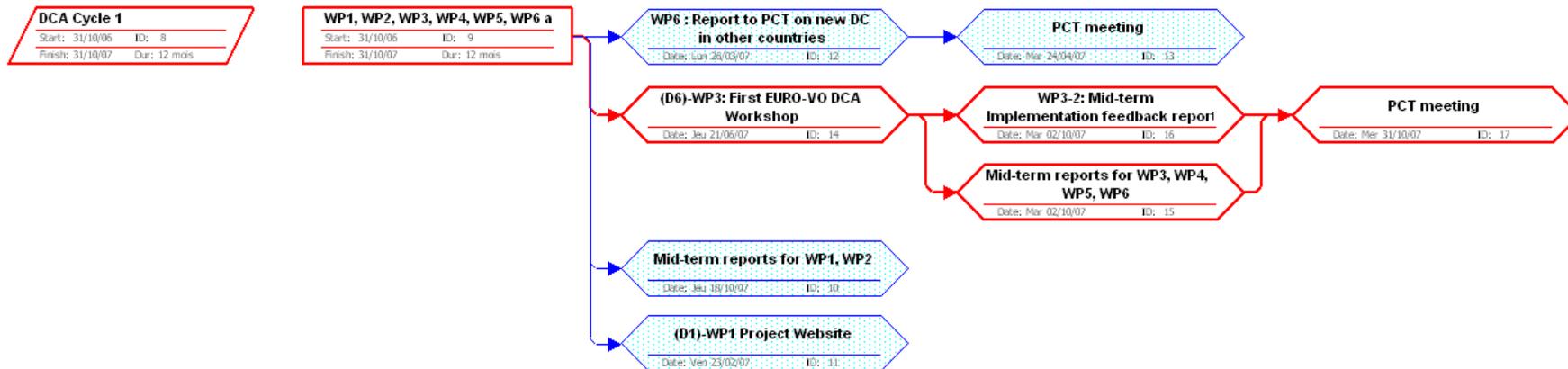
Work package N°	Work package title	Lead contractor N°	Person-months	Start month	End month	Deliverable N°
WP1	Management	1 (CNRS)	10	1	28	D1 D15 D16
WP2	Definition of European DCA Strategy	1 (CNRS)	16	1	28	D2 D3 D4 D5
WP3	Support to take-up and implementation of the VObs framework	2 (ESA) 3 (ESO)	68	3	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			

6. GRAPHICAL PRESENTATION OF THE WORK PACKAGES

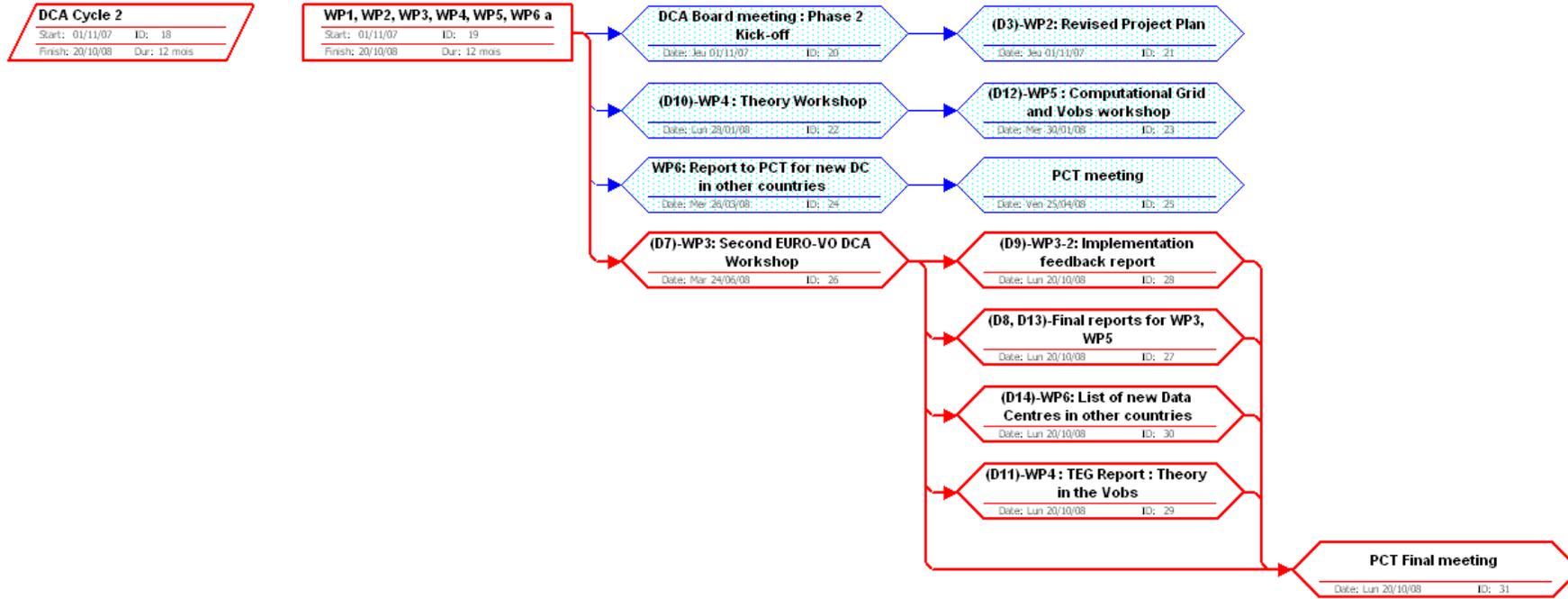
Activities during the Kick-off Phase



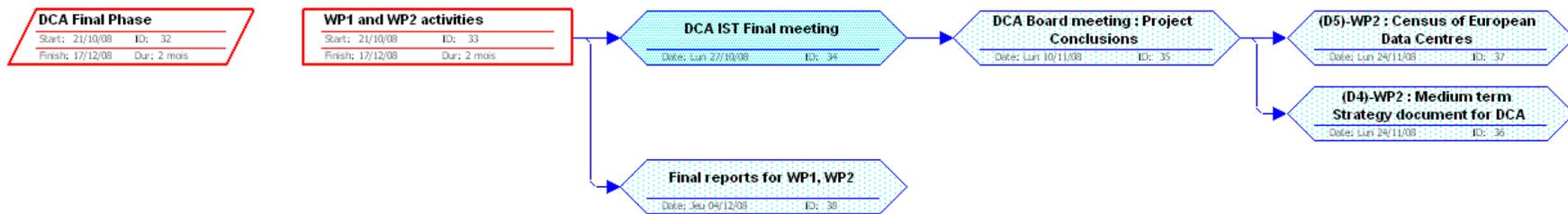
Activities during Cycle 1



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	Month 6	PU/CO
D2	Preliminary Project Plan	WP2	CNRS	2	Report	Month 2	PU
D3	Revised Project Plan	WP2	CNRS	2	Report	Month 14	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	Month 10	PU
D7	Second EuroVO- DCA Workshop	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 17	PU
D11	TEG report: Framework for the inclusion of theory data and services in the VObs	WP4	MPG	12	Report	Month 26	PU

D12	Euro-VO Computational Grids Workshop	WP5	INAF	17	Workshop	Month 17	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			

8. SUMMARY OF MILESTONES

- Month 1 Project kick-off (WP1 and WP2)
- Month 2 Board meeting: project kick-off (All Work Packages): 2 & 3 October, 2006
- Initial planning for coordination of data centres and partners to define a common European DCA strategy, definition of the preliminary project plan (deliverable D2) – also for WP 3-6.
- Month 3 Beginning of cycle 1 (All Work Packages)
- Month 3 First report to EU (under WP1 responsibility)
- Month 6 Second Board meeting (All Work Packages): 1 & 2 February, 2007
- Month 7 Functioning project web site (Deliverable D1, under WP1 responsibility)
- A major milestone providing one main tool for dissemination of knowledge about EuroVO-DCA and international visibility of the project.
- Month 8 PCT meeting (All Work Packages)
- Assessment of the first six months activity, updated program for the next six months.
- Month 9 Second report to EU (under WP1 responsibility)
- Month 10 First EuroVO-DCA Workshop (deliverable D6, under WP3 responsibility)
- Month 14 PCT meeting (All Work Packages)
- Assessment of Cycle 1 activity, draft Cycle 2 program in preparation of the Board meeting.
- Month 14 Mid-term Board meeting (All Work Packages)
- Assessment of Cycle 1 activities and revised project plan for Cycle 2 (deliverable D3) – also for WP3-6.
- Month 14 First periodic report to EU (deliverable D15, under WP1 responsibility)
- Month 15 Beginning of cycle 2 (All Work Packages)

- Month 17 EuroVO Computational Grid Workshop (deliverable D12, under WP5 responsibility)
- Month 17 EuroVO Theory Workshop (deliverable D10, under WP4 responsibility)
- Month 20 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 Second EuroVO-DCA Workshop (deliverable D7, under WP3 responsibility)
- Month 26 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 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 Final report to EU (deliverable D16, under WP1 responsibility)

9. WP1 ACTIVITIES DESCRIPTION

This work package (WP) is led by CNRS/INSU. Its objectives are to oversee the project on behalf of all the partners, to co-ordinate financial and administrative matters and to deliver an external presence. 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 eInfrastructure meetings organised by the European Commission and by other projects, and to GGF (Global Grid Forum) meetings.

9.1. Project management and monitoring

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

- Creation and update of the project directory;
- Creation of Board, PCT, IST and TEG mailing lists;
- Dissemination of reporting templates and guidelines;
- Update of the list of 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.

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

The Risk Register (see section 4.2) has been reviewed and approved by the Board during the first board meeting. It will be maintained by the Euro-VO PCT throughout the project.

The Project Manager will assure the maintenance of the Self-evaluation Matrix (Table 2) for each Work Package. The self-evaluation matrix has been reviewed and approved by the Board during the first board meeting.

Table 2: Self-evaluation Matrix

Work Package	Evaluation item	Content/Evaluation issues	Schedule
WP1 Management	Deliverable D1 – Functioning EuroVO-DCA web site http://dca.euro-vo.org	Including: <ul style="list-style-type: none"> ▪ Details of each Partner ▪ Details of each WP and deliverables ▪ Links to other relevant Projects (EC-funded projects, other VObs projects) 	Month 6
	Recruitment of the DCA PM		Kick-off phase
	PCT and IST meetings		As planned
	Update of risk register		Each PCT meeting
	Production of first and second project reports		Month 3, Month 9
	List of DCA presentations to conferences/meetings of other EC-funded projects to improve synergy between projects		For each reporting period
	Deliverable D15 – First periodic report		Month 14
	Deliverable D16 – Final contractual report		Month 28

WP2 Definition of European DCA strategy	Define DCA logos, document templates , high-level documents for external audience		End of Kick-off phase
	Preliminary census of data centres in the partner countries		End of Kick-off phase
	Deliverable D2 – Preliminary Project Plan	Including: <ul style="list-style-type: none"> ▪ 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
	Draft strategic document for medium-term development of the EuroVO-DCA		End of Cycle 1
	Mid-project evaluation and update of the Evaluation Metrics		End of Cycle 1
	Deliverable D3 – Revised Project Plan		End of Cycle 1
	Deliverable D4 – Medium Term Strategic Plan for EuroVO-DCA		Final Phase
	Deliverable D5 – Census of European Data Centres		Final Phase
	Final evaluation of the Evaluation Metrics		Final Phase

WP3 Support to take-up and implementation of the VObs framework	Procurement of WP3 related personnel		
	List of approved VObs standards		End of Kick-off Phase
	Deliverable D6 – First EuroVO-DCA Workshop	Evaluation issues: <ul style="list-style-type: none"> ▪ Overall level of participation ▪ Number of participants from non-partners European countries (see WP 6) ▪ Participation from all the DCA partners ▪ Presentation/discussion of all IVOA approved standards 	Month 12
	Mid-project report on take-up and implementation of the VObs framework	Including: <ul style="list-style-type: none"> ▪ List of approved IVOA standards ▪ List of support given to partner data centres 	End of Cycle 1
	Mid-project report on technical feedback	Including the participation of DCA partners to IVOA Interoperability Meetings	End of Cycle 1
	Deliverable D7 – Second EuroVO-DCA Workshop	Evaluation issues: <ul style="list-style-type: none"> ▪ Overall level of participation ▪ Number of participants from non-partners European countries (see WP 6) ▪ Participation from all the DCA partners ▪ Presentation/discussion of all IVOA approved standards 	Month 24

	Deliverable D8 – Final report on WP3 activities		End of Cycle 2
	Deliverable D9 – Implementation Feedback Report	Including the participation of DCA partners to IVOA Interoperability Meetings	End of Cycle 2
	Cross-knowledge visits between DCA partners	<ul style="list-style-type: none"> ▪ Plan for visits and items to be tackled ▪ Update of the list of DCA partners cross visits and items tackled in the DCA internal web site ▪ Reports for all these visits on the DCA internal web site 	Each PCT meeting
WP4 Theory in VObs	Procurement of WP4 related personnel		
	Draft document ' <i>Framework for inclusion of Theory data and services in the VObs</i> '		End of Cycle 1
	Deliverable D10 – Euro-VO Theory Workshop	Evaluation issues: <ul style="list-style-type: none"> ▪ Number of participants ▪ Participation from all the WP 4-involved partners ▪ Presentation/discussion of all Theory related IVOA approved standards if any 	Month 17
	Deliverable D11 – TEG report: ' <i>Framework for inclusion of Theory data and services in the VObs</i> '		Month 26
	Participation of DCA partners to all Interoperability meetings with Theory related discussion		For each reporting period

<p>WP5</p> <p>Coordination with computational GRID projects</p>	Procurement of WP5 related personnel		
	Mid-project report on WP5 activities	<p>Including:</p> <ul style="list-style-type: none"> ▪ Definition of the list of partners to connect their GRIDs ▪ Establishment of GRID standards to use to connect DCA partners GRIDs 	End of Cycle 1
	Deliverable D12 – Euro-VO Grid Workshop	<p>Evaluation issues:</p> <ul style="list-style-type: none"> ▪ Number of participants ▪ Participation from all the DCA WP 5 involved partners ▪ Presentation/discussion of all GRID related IVOA approved standards ▪ Applications running on various partners GRIDs 	Month 17
	Deliverable D13 – Final report on WP5 activity		End of Cycle 2
	Number of presentations of DCA GRID activities at other GRID related conferences / projects (EC funded in particular)		For each reporting period

<p>WP6</p> <p>Support to data centres from other European countries</p>	Procurement of WP6 related personnel		
	<p>Deliverable D14 – Report on the inclusion of data centres from beyond the partners’ countries in the VObs</p>	<ul style="list-style-type: none"> ▪ Build an initial target list of countries to give support to in the DCA context <ul style="list-style-type: none"> ○ Contact point ○ List of astronomical assets relevant to the DCA and their added value for the DCA and the VObs in general ○ Priority for contacting them ▪ Update the list 	<p>Month 2</p> <p>Every 6 months</p>
	<p>Visit to these data centres for VObs take-up support</p>	<ul style="list-style-type: none"> ▪ Plan for visits and items to be tackled ▪ Update list of visits and items tackled in the DCA internal web site. ▪ Reports for all these visits on the DCA internal web site 	<p>Every 12 months</p> <p>Every 6 months</p>

9.3. Reporting

The list of deliverables to be transmitted to the EC is available in section 6 of this document. The Project Manager will be in contact with the PCT members and the Board to prepare the Project deliverables for the Commission, especially for D15 and D16.

The first periodic report will represent a major milestone in the implementation of the EuroVO-DCA project. It will assess the work undertaken during the first cycle of the project. The final contractual report will assess the work undertaken during the 28 months of the project.

Two supplementary reports to EU are planned, on month 3 (November 2006) and 9 (May 2007), to assess the beginning of the project.

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

The First periodic report (D15 - WP1)

One part of this report is of a Periodic activity report, containing:

- A publishable executive summary;
- A description of the project objectives and major achievements during the reporting period;
- A description of the Work packages progress for the period;
- A description of the Consortium management;
- An Annex, the Plan for using and disseminating the knowledge.

The second part is a Periodic management report, containing:

- A justification of major cost items and resources;
- Financial statement per activity for the contractual reporting period (Form C);
- A summary financial report.

The last part of this report is the periodic report on the distribution of the Community's contribution. It shows the distribution of funds made by the coordinator to contractors during the reporting period.

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.

First and second report to EU (WP1)

- A description of the Work packages activities;
- A description of the Consortium management;
- A description of the Project management;
- An updated version of the Self-evaluation Matrix.

Revised Project Plan (D3 - WP2)

- A description of the project objectives;
- A description of the Project management;
- A summary of Work Packages, deliverables and milestones;
- A description of the Work packages activities;
- A presentation of the effort distribution;
- An estimated budget breakdown per Work Package.

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 EuroVO Data Centre Alliance will be defined progressively during the whole duration of the project, taking in particular into account FP7 priorities.

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)

See section 14.

9.4. External presence

The Project Manager will assure the project external presence through the maintenance of the EuroVO-DCA website (<http://www.euro-vo.org/pub/dca/>) and the maintenance of the project Wiki (<http://cds.u-strasbg.fr/twikiDCA/bin/view/EuroVODCA/WebHome>).

Planned participation to events:

- IST conferences (the 2006 IST conference is planned in Helsinki in November 2006);
- IVOA events (next IVOA event is planned in China in May 2007);
- eInfrastructure meetings organised by the European Commission and by other projects (BELIEF, OPTICON, EGEE, ASTRONET, GÉANT and the European National Research and Education Networks);
- annual European Science Week.

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
- Support them in their way towards implementation
- Gather feedback about implementation
- Prepare a medium term strategic plan for the EuroVO Data Centre Alliance

10.1. WP2 Objectives

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

- Define the project program: Preliminary and revised Project Plan (D2 and D3)
- Oversee the project development and monitor the progress of WP2-WP6
- Oversee the scientific aspects of the project (WP2-2)
- Define a medium term strategic plan for the EuroVO-DCA
- Ensure visibility of EuroVO-DCA in IVOA

10.2. Milestones and deliverables

- End October 2006 (end of kick-off phase): Preliminary project plan (D2) and Preliminary census of European data centres
- October 2007: Assessment of Cycle 1 activities and Revised project plan (D3)
- 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 organise Board and PCT meetings, to assure the global coherence of the project.

A kick-off Board meeting was held on October 2 & 3, 2006 in Strasbourg. An additional meeting will be organised on 1 and/or 2 February, 2007, in Garching, to discuss the results of the preliminary Census of European data centres in the partner countries and FP7 strategy.

The other planned Board meetings are:

- October 2007: mid-term Board meeting for the assessment of Cycle 1 activities. A revised project plan for Cycle 2 (D3) will be produced;
- 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.

Four PCT meetings are also planned:

- Month 8 (April 2007): assessment of the first six months activity, updated program for the next six months;
- Month 14 (October 2007): assessment of Cycle 1 activity, draft Cycle 2 program in preparation of the mid-term Board meeting;
- 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

Board members have decided to elaborate a **definition of a data centre** in the VO context, which will help partners to realize the Census and serve as a guideline for the EuroVO-DCA project:

Data centres are an essential component of the Virtual Observatory, publishing data, metadata and services, and providing the physical storage and computational fabrics. The VO development is a strong incentive to share data and knowledge, and many teams are willing to provide data and services in their domains of expertise. 'Classical' data centres, such as ground-and space-based observatory archives, and generalist data centres, are key providers of added-value services and tools. More and more teams are willing to join with value-added services and tools in specific domains, and VO 'data centres' work in very different contexts - national or international Agencies, scientific laboratories - , and are highly diverse in size and objectives, from small and specific to large and general.

Common keywords are the willingness to **provide a service to the community**, provision of **added-value** built on expertise, some kind of **sustainability**, and concern for **quality**. Lessons learnt from the long term history of astronomical data centres show that when beginning these activities, critical parameters are in particular **having a critical mass** adapted to the goals, and **ensuring medium-term sustainability**, which requires at least a strong support from the local authorities. An important factor to win community support, which is indispensable to secure funding, is to find a **national and/or international niche**.

Many types of contribution are possible: data archives, with a particular emphasis put on 'science ready' data; added-value data bases and services; tools, software suites and algorithms, for instance for data visualisation, data analysis and data mining; thematic services to help solving a well-defined science question; full data analysis or research environments. New types of services are emerging, with in particular theoretical services, providing modelling results, or matching models with observations.

EuroVO-DCA will help European data centres to integrate their data and services in the VO framework, and to improve efficiency by sharing expertise and reusing experience. It will gather feedback from implementation and new technology requirements from the data centres, and will transmit them to the Euro-VO Technology Centre and the IVOA.

As discussed during the [first Board meeting](#), the census will be organized as follows:

- per partner;
- per category (data archives/'science ready data, Added-value databases and services, Tools, Software suites, Theory, Thematic services);
- it will differentiate data centres in operation and in project.

For each data centre, the following information will be provided if possible:

- Name;
- Location(s);
- Laboratory/authority in charge;
- Contact person;
- Scientific contact;
- Web page;
- Services provided.

The Preliminary Census, due at the end of the project Kick-off Phase, will be produced from the viewgraphs presented by the partners at the Board, and will be sent to the partners for comments. Each partner will produce a list with detailed information and a list of priorities by the end of November 2006. The list will be consolidated by the end of 2006, discussed at the February 2007 Board meeting and maintained during the project. The Final Census of European data centres will be produced at the end of the project.

10.5. Strategy

The medium term strategy for the EuroVO Data Centre Alliance aims at creating and maintaining a community of VO data providers. It will be defined progressively during the whole duration of the project, taking into account FP7 priorities in particular.

The project representatives will participate in EC organised events dedicated to FP7 take-up, such as:

- Information Session on Research Infrastructures under FP7, in Brussels (Belgium), on October 27th, 2006.
- 3rd Concertation meeting on e-Infrastructure (FP6-funded test-beds) in Helsinki (Finland), on November 20th, 2006.
- IST Conference 2006 in Helsinki (Finland), on November 21st-23rd, 2006.
- BELIEF Conference in New Delhi (India), on December 14th-15th, 2006.

11. WP3 ACTIVITIES DESCRIPTION

11.1. Major Workshops

WP3-D6 – end June 2007: First EURO-VO workshop @ ESAC, Madrid, Spain.

The Workshop shall be geared towards the data centres, in particular those not directly involved in the VO. We expect around 100+ participants. It should be built on the experience drawn from the EURO-VO workshop organized at Garching (Germany) in June 2005 (<http://www.euro-vo.org/workshop2005/>). In particular, it may be more adequate to have longer but more specialized tutorials, instead of having all people attending all tutorials. The idea would be to ask participants to come with some of their data and to help them to build the corresponding VO services using IVOA standards.

List of more detailed tasks and schedule:

December 2006	Get list of data centres to invite to the Workshop Send workshop 1 st announcement and invitation
January 2007	Get priority list of IVOA standards to give tutorials on during the workshop
February 2007	Setup workshop programme and organization Setup workshop LOC Send invitations (with financial support) for selected participants in collaboration with all partners and WP6 Determine how to organize feedback on standard implementation in collaboration with WP3-2
March 2007	Determine tutorials leadership between DCA partners
April 2007	Workshop registration deadline
25-29 June 2007	First EURO-VO workshop @ ESAC, Madrid, Spain
July 2007	Formalize feedback from Workshop as input to WP3-2

11.2. Minor Workshops

A lot of interest has been expressed in the context of Spectroscopy and the VO, so the idea has emerged to organize a dedicated workshop (around 30 people) on that subject with the two main objectives:

- Get requirements from the Spectroscopy Scientists about what they would like to see in the VO context
- Show the Spectroscopy Scientists what can already be done with VO tools
- This workshop will take place at ESAC in February 2007.

List of more detailed tasks and schedule:

November 2006	Setup workshop programme and organization Setup workshop LOC Get list of data centres to invite to the Workshop Send invitations (with financial support) for selected participants in collaboration with all partners and WP6
January 2007	Workshop registration deadline
February 2007	VO and Spectroscopy Workshop @ ESAC
March 2007	Formalize feedback from Workshop as input to WP3-2

11.3. On-site Support to data centres

From the list of European data centres and the associated priority "targets" and the list of IVOA standards available, we should prepare a list of visits to these data centres where support on VO framework implementation can be provided from the DCA partners.

From these visits, support material will be developed and maintained, so it can also be published on the DCA web pages so they are widely available. If time permits, possible tools for IVOA standards implementation could also be developed and delivered to the data centres.

List of more detailed tasks and schedule:

November 2006	Prepare a Wiki page with all the list of visits, including follow-up activities
December 2006	Get list of data centres and associated "priority" targets Get priority list of IVOA standards to give support on
January 2007	Prepare list of visits to the data centres, including dates, IVOA standard to give support on, contact point, DCA partners involved, ...
February 2007	Make the list of available tools and/or best practices for publishing data into the VO
July 2007	After the June 2007 workshop, publish on-line all the tutorials material given during the workshop
After each visit	Update list of visits to the data centre, including dates, IVOA standard to give support on, contact point, DCA partners involved, ...

12. WP3-2 ACTIVITIES DESCRIPTION

WP3-2 is in charge of the Technical Feedback to support take-up and implementation of the VObs framework (WP3).

WP3-2 leads will assimilate feedback from data centres in the context of VO deployment of datasets and target key implementers such as developers using VO infrastructure elements, e.g. VO tool builders, as well as general users at VO 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 VOTech project, other European VO technology groups and IVOA interoperability working groups.

We will meet the key requirements of a formal and properly supported feedback and reporting mechanism by trialling the use of web-based reporting alongside outreach activities. The possibility to organize a technical workshop, to be hosted at Leicester, half way between 2 main DCA workshops and incorporating additional feedback from the theory (WP4) and computational grid (WP5) workshops in month 17 will be proposed to the project members at the next Board meeting. We will build on the knowledge and experience gained among European VO partners including the UK national VO project AstroGrid in running extensive scientific and technical workshops since 2001.

13. WP4 ACTIVITIES DESCRIPTION

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 modeling results to observational data available in the VObs.

This work package, lead by Gerard Lemson (MPG/MPE) 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 we plan to organise our work according to the following topics:

1. Formation of the Theoretical astronomy Experts 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.

13.1. Theoretical astronomy Experts Group

The *Theoretical astronomy Expert Group* (TEG) will be formed and will be in charge of organising WP4 activities, including a Theory workshop by mid-project. One member will come from each of the participants in the Euro-VO DCA, except ESO. The expert group will aim 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 will be performed in the context of the IVOA Theory Interest Group, to which it will contribute actively.

An initial teleconference of the TEG is planned for the beginning of November 2006, where initial concrete plans will be made concerning the work in this group. Potentially a kick-off workshop may be organised before the end of 2006.

13.2. Census *theory* data centres (with WP2)

As a sub-task in the census of European data centres (see 10.4), we will pay 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.

We 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.

13.3. Cooperation in 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 be to participate in these activities. We will participate in setting requirements, defining the standards, in implementing prototypes and disseminating these results to the member constituencies.

13.4. 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 will include participation in each other workshops and a co-ordination of the main mid-term workshops of WP4 and WP5 in month 17.

14. WP5 ACTIVITIES DESCRIPTION

This Work Package is lead by INAF. As defined in the VO-DCA proposal "WP5 aims at achieving coordination between the VObs and the (Grid Computing) computational grid communities". We plan to divide the activity of WP5 of VO-DCA 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.

14.1. Knowledge acquisition

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 of Grid infrastructure and application. 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 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.

Grid Middleware

Grid computing is essentially distributed computing over wide-area networks that involves large scale resource sharing, selection and aggregation. The grid middleware is the software that underlines the fundamental Grid services: information services, resource discovery and monitoring, job submission and management, brokering and data management. We can identify four main services that compose any grid middleware:

- Authentication and Authorization service;
- Data management service;
- Job management service;
- Information system.

To ease data centres access to Grid infrastructures it is important to gather all available information on the different mechanisms to interact with those services.

Core projects

Particular attention will be given to the EGEE project both for its relevance in the European Community, and for the number of computational/storage resources and institutions involved.

Grid standards are rapidly evolving and not always accepted by the different grid initiatives. For this reason we will follow the evolution of the standards through the Open Grid Forum (also known as GGF) and we will emphasize the use of those standards by the different grid initiatives. Moreover, we will point out any tool/service that is widely used/adopted and that is emerging as a de-facto standard.

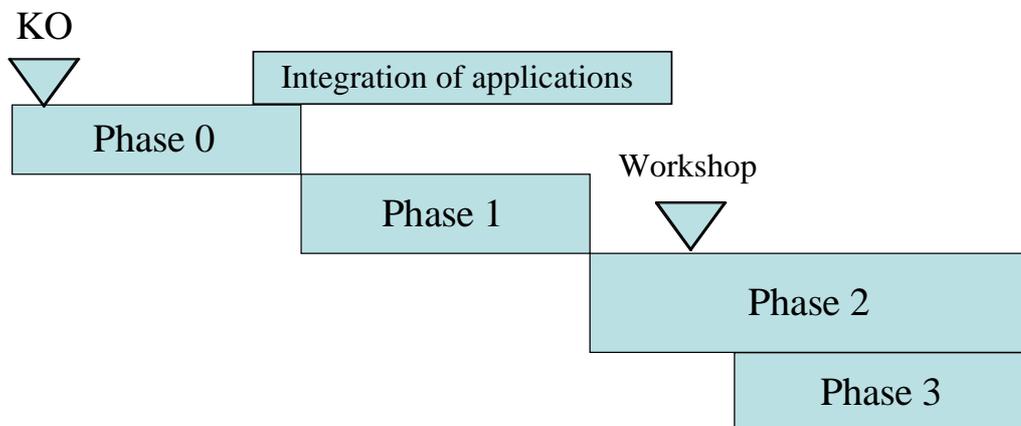
Coordination

Due to the particular nature of this WP, we will take care of interacting with other Work Packages of EuroVO-DCA. In particular, the WP4 represents our natural counterpart. We are planning to organize a kick-off meeting in November together with WP4 and we are planning to have a formal interaction every three months in the form of a small meeting or teleconference.

The VO-TECH project will also be a source of input for our work, and we expect to have a strong interaction, especially with VO-TECH DS3 (infrastructure).

We are planning to cooperate with the IVOA Working Groups, in particular with the Grid and Web services group and with the Theory Interest Group.

To verify the status of our work and to get/give input to other Work Packages/projects we are planning to organize a mid-term meeting in collaboration with WP4.



Preliminary working plan:

- Phase 0 represents the survey;
- Phase 1 is the middleware analysis;
- Phase 2 is the preparation of how-to and suggestions;
- Phase 3 is the dissemination.

The deadlines of this working plan will be set at the kick-off meeting.

14.2. Guidelines and documents

One of the main aspects of our work is to suggest how data centres can interoperate with local/European grid initiatives. For this reason, we 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, we 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.

14.3. 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 School/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 the 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.

14.4. 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.

15. 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 VO in European countries beyond the partners' countries. It will also aim 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 to EuroVO Workshops and VO framework implementation, in particular by technical visits.

15.1. WP6: overall aims

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

15.2. WP6: milestones

For Cycle 1:

- Initial list of data centres (Month 2: end October, 2006);
- Report to the PCT on new data centres in other European countries (Month 7: March 26, 2007);
- Mid-term report (Month 14 / 02-10-2007).

For Cycle 2:

- Report to the PCT on new data centres in other European countries (Month 19: March 26, 2008);
- Deliverable 14 (D14): Report on the inclusion of data centres from beyond the partners' countries in the VObs (Month 26: October 20, 2008).

15.3. WP6 in three steps

Step 1: Advertise

Presence (through posters, talks, special sessions...) of the DCA/WP6 in meetings with a high participation of people from potential candidate centres (IAU GA, JENAM, National Astronomical Societies, ADASS...).

Step 2: Identify

The aim is to lead to identification of data centres interested in joining the VO initiative in Europe.

On one hand, information will be delivered by data centres. 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 DCA projects and the VObs in general.

On the other hand, WP6 will produce a study and approval of the proposals. WP6 will also give priorities (if needed) and a letter of agreement stating the terms (activities to support, duration, etc.) of the collaboration.

Support

From the list of other European data centres and the associated priority "targets" and the list of IVOA standards available, we should prepare a list of visits to make to these data centres where support on VO framework implementation can be given from the DCA partners.

From these visits, support material will be developed and maintained, so it can also be published on the DCA web pages so they are widely available. If time permits, possible tools for IVOA standards implementation could also be developed and delivered to the data centres.

16. 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.

	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	68
WP4:Theory in VObs	6	2		3	8	12		2	33
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

17. 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