



EuroVO-AIDA

Euro-VO Astronomical Infrastructure for Data Access

**D2.5**

-

**Revised project plan**

Final Version

Grant agreement no: 212104

Combination of Collaborative Projects & Coordination and Support Actions



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## 1. PROJECT OBJECTIVES

**The objective of the EuroVO-AIDA project** is to lead the transition of the European VObs to operations. EuroVO-AIDA integrates Networking Activities (NA), Service Activities (SA) and Joint Research Activities (JRA) to perform all the aspects of work needed during this transition (items appearing in *italics* correspond to projects milestones as described in Section 8):

- 1 - Construction of a community of science users, and the gathering of their needs. Several Networking Activities act with this aim, the *Science Advisory Committee* for general scientific oversight of the project, *scientific Workshops* for the dissemination of good practice and the gathering of science requirements, also *community dissemination* in conferences and on web pages. Service Activities also contribute to this objective, with two *Announcements of Opportunities for science programs* to trigger advanced science usage of the freely available VObs data services, the production of *on-line tutorials* for community dissemination, *data access tools development* in response to community needs, and all the *preparatory work for the Science Workshops*.
- 2 - Large scale deployment of IVOA protocols and standards by the astronomical data repositories. One *Data Centre Workshop* will be organized for the sharing of good practice on the implementation of the VObs framework and the gathering of feedback from implementation. Service Activities also concur to this objective, with the implementation of a *European Registry of VObs-enabled resources* and of *registry curation tools*, *provision of on-line tutorials* for community dissemination, *adjustments of VObs tools* from data providers' feedback and all the *preparatory work for the Data Centre Workshop*.
- 3 - Maintenance and development of the VObs technical infrastructure. The Joint Research Activities provide the *research work needed for assessing and prototyping the required evolution of the VObs interoperability standards*, taking into account feedback from implementation by data providers and from science usage, and *for evaluating the potential of new technologies*. These tasks have two sets of milestones: the EuroVO-AIDA Technology Forums, gathering the three JRAs for work planning and technology exchange, and the biannual *IVOA Interoperability meetings* where the IVOA standards are discussed.
- 4 - Service activities for *higher education and the general public*.
- 5 - *Possible liaison with other scientific domains or with other communities* which develop generic frameworks and tools will be explored.

## 2. BENEFICIARIES

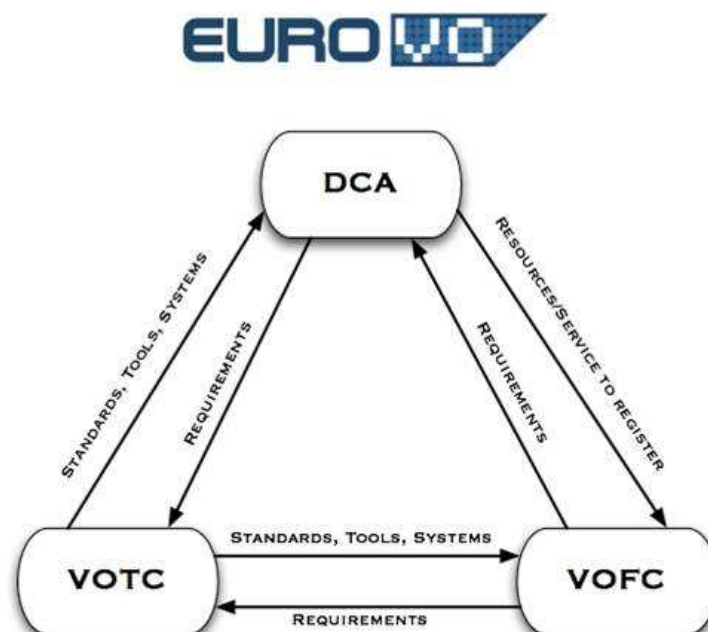
<b>Beneficiary Number</b>	<b>Beneficiary name</b>	<b>Beneficiary short name</b>	<b>Country</b>	<b>Date enter project</b>	<b>Date exit project</b>
1 (Coordinator)	Centre National de la Recherche Scientifique	CNRS	France	Month 1 (Feb. 2008)	Month 30 (July 2010)
2	European Space Agency	ESA	France	Month 1 (Feb. 2008)	Month 30 (July 2010)
3	European Organization for Astronomical Research in the Southern Hemisphere	ESO	Germany	Month 1 (Feb. 2008)	Month 30 (July 2010)
4	Istituto Nazionale di Astrofisica	INAF	Italy	Month 1 (Feb. 2008)	Month 30 (July 2010)
5	Instituto Nacional de Técnica Aeroespacial Esteban Terradas	INTA	Spain	Month 1 (Feb. 2008)	Month 30 (July 2010)
6	Rijksuniversiteit Groningen	RUG	The Netherlands	Month 1 (Feb. 2008)	Month 30 (July 2010)
7	The University of Edinburgh	UEDIN	United Kingdom	Month 1 (Feb. 2008)	Month 30 (July 2010)
8	Ruprecht-Karls-Universität Heidelberg	UHEI	Germany	Month 1 (Feb. 2008)	Month 30 (July 2010)

### 3. PROJECT MANAGEMENT

European VObs activities are focussed through the European Virtual Observatory (Euro-VO) consortium, which has 8 member organizations, comprising European intergovernmental (ESO, ESA) and national research organizations and VObs initiatives. It consists of three interacting elements, addressing the different strands of work described in Section 1:

- **Euro-VO Data Centre Alliance (DCA)**: a network of the European data centres, which populates the system with data, provides the physical storage and computational fabrics, and using VObs technologies, publishes data, metadata and services to the Euro-VO
- **Euro-VO Technology Centre (VOTC)**, a distributed organization, coordinating a set of research and development projects on the advancement of VObs technology, systems and tools
- **Euro-VO Facility Centre (VOFC)**, which provides the Euro-VO with a persistent, centralized registry for resources, standards and certification mechanisms, as well as community support for VObs technology take-up and dissemination and scientific program support using VObs technologies and resources. The VOFC provides a “public face” to the Euro-VO

**Figure 1: The Euro-VO project**



The **EuroVO-AIDA coordinator** is Françoise GENOVA (CDS, Observatoire Astronomique de Strasbourg). She is responsible for all communication with Commission on contractual matters. The **EuroVO-AIDA Project Manager** (EuroVO-AIDA PM, CNRS) is Mathias DEPRETZ. He manages the EuroVO-DCA project activities. The **EuroVO-AIDA Project Scientist** is Paolo PADOVANI. He has been nominated by the Board during its kick-off meeting on March 17<sup>th</sup>, 2008.

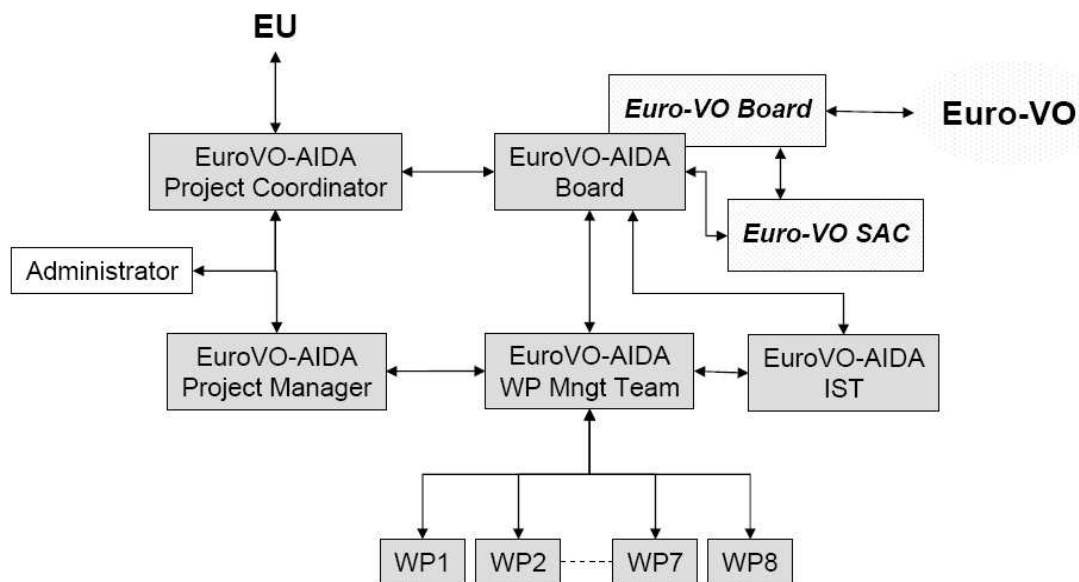
The **EuroVO-AIDA Board** is composed of named investigators from each partner (a similar group of people acting as Euro-VO Board). It is chaired by Françoise GENOVA. Its purpose is project oversight – its setup, financial monitoring, resolution of issues between partners, and overall scientific and technical policies. It brings national projects and agencies issues, programs and requirements to the attention of the project. It coordinates the EuroVO-AIDA activities and defines the project work plan, with input from the partners and from the Work Package Management Team (EuroVO-AIDA WPMT) described below. If new national VObs projects join the Euro-VO for the duration of EuroVO-AIDA, they will be invited to attend the Board meetings. The full Board meets annually to oversee the global status of the project. The Board appoints the EuroVO-AIDA WPMT. The EuroVO-AIDA Project Manager, the Science Advisory Committee Secretary and the IST chair (see below) are invited to the Board meetings.

The EuroVO-AIDA project Science Advisory Committee (SAC) is the **Euro-VO Science Advisory Committee** (Euro-VO SAC), chaired by Timo PRUSTI (ESA). The SAC will be renewed in July 2009. The Euro-VO SAC charter and membership can be found at: <http://www.euro-vo.org/pub/fc/sac.html>.

Board members:

CNRS	Françoise GENOVA (Chair)	INTA	Enrique SOLANO
ESA	Christophe ARVISET	RUG	Edwin VALENTIJN
ESO	Paolo PADOVANI	UEDIN	Andy LAWRENCE
INAF	Riccardo SMAREGLIA	UHEI	Joachim WAMBSGANSS

**Figure 2: EuroVO-AIDA organization chart**



*The EuroVO-AIDA Project Coordinator chairs the EuroVO-AIDA Board  
 The EuroVO-AIDA Project Manager chairs of the EuroVO-AIDA WPMT*



The **EuroVO-AIDA Work Package Management Team** (WPMT) is a panel appointed by the EuroVO-AIDA Board. It acts as the project technical management body. It is chaired by the EuroVO-AIDA Project Manager, who reports on its activities to the EuroVO-AIDA Board. The WPMT is composed of the Work Package leads, and of one representative of the partners which do not lead a Work Package, to ensure optimal circulation of information. The WPMT meets every six months, receives and discusses reports from the EuroVO-AIDA PM, from the Work Packages and from the partners, assesses the project activities and produces a review report. At the end of the first project yearly Cycle, it proposes the EuroVO-AIDA work plan for the following Cycle.

WPMT members:

PM	Mathias DEPRETZ (WP1 and Chair)	INTA	Raúl GUTIERREZ
CNRS	Françoise GENOVA (WP2 & WP8)	RUG	Andrey BELIKOV
ESA	Pedro OSUNA (WP3 & WP7)	UEDIN	Keith NODDLE (WP6)
ESO	Evanthia HATZIMINAOGLOU (WP4)	UHEI	Florian FREISTETTER
INAF	Massimo RAMELLA (WP5)		

The **EuroVO-AIDA Internal Science Team** (IST) is a panel appointed by the EuroVO-AIDA Board, composed of scientists from the partner teams. The 4 Euro-VO Scientists – (Facility Centre / ESA and ESO, Data Centre Alliance, Technology Centre) are invited to attend the IST activities in the case they are not nominated as IST members. The IST role is complementary to the high level scientific oversight by the SAC: it acts at the EuroVO-AIDA project level as support of the Board, WPMT and all Work Packages during the project as required. The IST will hold two meetings (kick-off and conclusions), and teleconference discussions as required, in particular if IST advice is sought from one of the project Work Packages. The IST reports on its activities to the EuroVO-AIDA Board, which nominates its chairperson. The chairperson is invited to attend the Board meetings.

IST members:

CNRS	Mark ALLEN	INTA	Eduardo MARTIN
ESA	Pedro OSUNA	RUG	Gijs VERDOES KLEIJN
ESO	Paolo PADOVANI (Chair)	UEDIN	Nicholas WALTON
INAF	Giuseppe LONGO	UHEI	Markus DEMLEITNER

## 4. IMPLEMENTATION PLAN

### 4.1. General description

The project structure is distributed into types of activities: Networking Activities, Services Activities and Joint Research Activities. Each Work Package is under the responsibility of one partner.

<b>WP1-NA1</b>	Management (CNRS)
<b>WP2-NA2</b>	Strategy, co-operation and dissemination (CNRS), with 5 tasks: <ul style="list-style-type: none"> <li>▪ Strategy definition</li> <li>▪ Workshops</li> <li>▪ Community dissemination</li> <li>▪ International co-operation on the definition of IVOA standards</li> <li>▪ Liaison with other communities</li> </ul>
<b>WP3-SA1</b>	Service Activities in support of deployment of IVOA protocols and standards (ESA)
<b>WP4-SA2</b>	Service Activities in support of provision of VObs-enabled services to the science community (ESO)
<b>WP5-SA3</b>	Service Activities for higher education and outreach (INAF)
<b>WP6-JRA1</b>	Evolution of VObs interoperability standards (UEDIN)
<b>WP7-JRA2</b>	Data Access Protocols and Data Models (ESA)
<b>WP8-JRA3</b>	Assessment of emerging technologies (CNRS)

EuroVO-AIDA activities relevant to Networking Activities are all the tasks dealing with co-operation inside the project and with relevant communities, dissemination of knowledge, including the spreading of good practice, and the collaborative aspects of the development of interoperability standards. **WP1** contains all activities relevant to the **EuroVO-AIDA project management**. The other Networking Activities are grouped into **WP2 - Strategy, co-operation and dissemination**, which co-ordinates the different networking aspects of the project, which are strongly inter-dependant.

EuroVO-AIDA plans to provide several specific services to the different communities relevant to the VObs:

- **WP3 – SA1 - Service activities in support of deployment of IVOA protocols and standards** address the needs of the European VObs data provider community.
- **WP4 – SA2 – Service activities in support of provision of VObs-enabled services to the science community** address the needs of the European astronomical scientific community.
- **WP5 – SA3 – Service activities for education and outreach** address the provision of services to higher education.

The Joint Research Activities (JRAs) of EuroVO-AIDA aim at completing work required for key parts of the Virtual Observatory technical infrastructure, taking into account feedback from implementation and from usage by the science community as gathered by the relevant Networking and Service Activities:

**WP6 - JRA1 - Evolution of VObs interoperability standards:** Interoperability Standards are the core of the VObs. They require international debate, but also considerable technical development, and testing in the context of prototype implementations.

**WP7 - JRA2 - Data Access Protocols and Data Models:** We have separated out these areas from JRA1, as they are of crucial importance for the future of Euro-VO, likely to evolve significantly from the data centre implementation and science usage feedback, and of particular relevance to the Scientific Digital Repositories endeavour.

**WP8 - JRA3 - Assessment of emerging technologies:** The technical infrastructure for the VObs cannot stay still, as it relies on a background of telecommunication networks, the Web, and e-Science and Grid technology. As new technologies emerge, we must assess them, test them with prototype deployments, and plan how to utilise them within Euro-VO.

## 4.2. Project Management

As in Cycle 1, the Project Manager will follow all Work Packages activities in close coordination with the partners in charge. All WPs will report to the WPMT.

The project lasts 30 months and is organized into several phases, a kick-off phase of 3 months (from 1<sup>st</sup> February 2008 to 30<sup>th</sup> April 2008) , two one-year Cycles (Cycle 1 from 1<sup>st</sup> May 2008 to 30<sup>th</sup> April 2009 - Cycle 2 from 1<sup>st</sup> May 2009 to 30<sup>th</sup> April 2010), and a final phase of 3 months:

- The kick-off phase was used to establish the project detailed work program, taking in particular into account all the findings of the EuroVO-DCA and VO-TECH projects, and the partners' input on the different aspects of the EuroVO-AIDA activities. WP1 and WP2 were fully active in this stage, and there was assessment and preparatory work in the WPs 3-5 Service Activities and WPs 6-8 Joint Research Activities to provide elements for the detailed project plan. The first meeting of the Board (17<sup>th</sup> & 18<sup>th</sup> March 2008, Strasbourg) contributed to the project kick-off. At the end of the kick-off phase, WP2 produced the project detailed work program for Cycle 1 (D2.1 - Preliminary Project Plan).
- Assessment of Cycle 1 and definition of Cycle 2 project plan: the project activities during the first half of Cycle 1 were assessed by the WPMT during its first meeting (20<sup>th</sup> & 21<sup>st</sup> November 2008, Villafranca del Castillo, Madrid) and the detailed work program for Cycle 2 was assessed and adjusted at the end of the yearly Cycle, during the mid-term Board-WPMT meeting held in Paris on 29<sup>th</sup> June 2009, which led to the production of the revised Project Plan (D2.5, the present document). WPs 2-8 presented their activities during the 1<sup>st</sup> WPMT meeting and the mid-term Board-WPMT meeting (29<sup>th</sup> June 2009, Paris). They produced respectively mid-term reports, which were assessed by the WPMT. The WPMT prepared a mid-term report and proposed a plan for future activities to the Board; in parallel, the IST produced a report which was submitted to the Board; the Board adopted the detailed work program for Cycle 2 (the present document).
- Management of Cycle 2: the project activities will be assessed by the WPMT at the end of year 2009. WPs 2-8 will present their activities during the next WPMT meeting. They will produce respectively a final report. The reports will be assessed by the WPMT at the end of Cycle 2.
- During the final phase, the WPMT will assess the WP final reports and prepare the final activity report. The WPs and WPMT will also prepare elements for the Euro-VO medium term strategic plan. The Board will adopt the final products of the project:
  - (1) the Medium Term Strategic Plan for Euro-VO
  - (2) the final document describing the organization of the astronomical Virtual Observatory and possible liaison with other communities

Two important elements for the project management are the management of risk, and self-assessment of performance:

- The **management of risk** for the EuroVO-AIDA project is via a risk register. The risk register is established and maintained by the EuroVO-AIDA WPMT throughout the project.
- The **list of performance indicators** is included in Section 9.3.1. It will be maintained by the EuroVO-AIDA WPMT throughout the project.

### 4.3. Management of risk

The Risk Register defined in the Description of Work has been updated by the Board and by the WPMT during the following meetings:

- Board kick-off meeting (Strasbourg on 17<sup>th</sup> March 2008)
- First WPMT meeting (Villafranca del Castillo on 20<sup>th</sup> & 21<sup>st</sup> November 2008)
- Mid-term Board-WPMT meeting (Paris on 29<sup>th</sup> June 2009)

The updates are indicated in red in the tables.

#### Risk management of the networking activities

RISK	CONSEQUENCES	REMEDIAL ACTIONS
<p><b>Risk NA-R1: Different requirements and needs between European and other international partners about IVOA standards</b></p> <p>Likelihood of occurrence=3→2</p> <p>Impact=3</p> <p><b>Risk Factor = 9→6</b></p>	<p>Through AIDA coordination, European partners will bring to IVOA interoperability meetings European requirements and needs for defining IVOA protocols and standards. If they differ from the ones of other IVOA international partners, the AIDA output may be limited.</p>	<p>AIDA partners represent the several of the driving forces within IVOA (together in particular with the USA, Canada and Japan), therefore AIDA partners' requirements and needs are very likely taken into account for the definition of the IVOA protocols and standards.</p> <p>Furthermore, through the AIDA project, European partners will now appear as a coordinated "force" which will give even more weight to the European partners' needs and requirements.</p> <p><b>Comment 1 (WPMT1- 21/11/2008):</b> The likelihood is increased from 2 to 3 after the Baltimore IVOA interoperability meeting, but is still manageable. The second remedial action is actively put in place for the next IVOA interoperability meeting.</p> <p><b>Comment 2 (Board-WPMT - 29/06/2009):</b> The likelihood was lowered from 3 to 2 before and during the Strasbourg IVOA interoperability meeting.</p>

RISK	CONSEQUENCES	REMEDIAL ACTIONS
<p><b>Risk NA-R2:</b> <b>Transition between other projects and EuroVO-AIDA</b></p> <p>Likelihood of occurrence=2→1</p> <p>Impact=3→1</p> <p><b>Risk Factor = 6→1</b></p>	<p>The AIDA project will highly benefit from the outputs of previous FP6 complementary projects like VO-TECH and EuroVO-DCA.</p> <p>The effectiveness of the AIDA project therefore depends somewhat on the success outputs of these previous projects and on the proper organisation of the transition between the projects.</p>	<p>AIDA partners are also quite involved in these previous FP6 complementary projects and therefore are fully aware of the importance of their success as inputs to the AIDA project.</p> <p>Furthermore, the transition and knowledge transfer between these projects and AIDA can be organized relatively smoothly by the partners, including some manpower resources transfer, depending of the starting date of the AIDA project.</p> <p><b>Comment 1 (BOARD1–17/03/2008):</b> The likelihood is lowered from 2 to 1, as this was the aim of the 1<sup>st</sup> Board meeting and since transition between the two projects will be taken into account in the Project Plan.</p> <p><b>Comment 2 (WPMT1–21/11/2008):</b> As foreseen, the 2 Technology Forums with VO-TECH ensured transition between the projects.</p> <p><b>Comment 3 (Board-WPMT -29/06/2009):</b> The impact is lowered from 3 to 1 as transition was ensured.</p>
<p><b>Risk NA-R3:</b> <b>The VObs is not yet well known in the Scientific Community</b></p> <p>Likelihood of occurrence=2→3</p> <p>Impact=3</p> <p><b>Risk Factor= 6→9</b></p>	<p>Although WP2-3 Community Outreach will make sure that the VObs is well advertised to the Scientific community, some scientists are still not yet convinced of its utility or have a confuse idea of how the VObs could be useful for their science.</p>	<p>AIDA partners should prepare clear on-line science cases examples demonstrating how the VObs can be used for daily astronomy science.</p> <p>Furthermore, list of refereed papers should be given on the project web site, as this will be the best “proof” that the VObs is in use.</p> <p><b>Comment 1 (Board-WPMT -29/06/2009):</b> The likelihood is increased from 2 to 3. In the transition to operations, the IVOA has set up a committee to assess VO take-up. Prioritization of standards is planned to facilitate implementation by Data Centres and to increase the impact for users. This may lead to put priorities in WP6 and WP7.</p>

RISK	CONSEQUENCES	REMEDIAL ACTIONS
<p><b>Risk NA-R4:</b> <b>Lack of convergence between the scope of the workshops and the real needs of the communities</b></p> <p>Likelihood of occurrence=1 Impact=3 <b>Risk Factor = 3</b></p>	<p>If the scope of the technical and scientific workshops is too vague or too general, not in line with the real needs of the VObs technical and scientific communities, there will be few attendances to these workshops and their impact will be limited.</p>	<p>AIDA partners are involved in VObs projects since the early days. They are data providers who want to publish their data holdings into the VObs, and they also have scientists who are doing science with the VO.</p> <p>Furthermore, through advice from the Euro-VO SAC and the AIDA IST and WPMT, it shall be easy to identify the needs and requirements for such workshops so there is little risk that the scope of these workshops is not adequate.</p> <p><b>Comment 1 (Board-WPMT - 29/06/2009):</b> As VO "Hands-on" Workshop has been extremely successful to gather feedback on the community needs, the second community feedback Workshop will be refocused to include "Hands-on".</p>

### Risk management of the Service Activities

RISK	CONSEQUENCES	REMEDIAL ACTIONS
<p><b>Risk SA-R1:</b> <b>Not enough manpower to perform the Service Activities</b></p> <p>Likelihood of occurrence=3 Impact=3 <b>Risk Factor = 9</b></p>	<p>Some of the tasks within these Services Activities could require more manpower than what is currently planned.</p> <p>For example, VObs scientists may define VObs Science cases that would require developing a tool that does not exist and there is no real manpower with AIDA to cover such new development.</p> <p>In that case, the output of these AIDA services activities could be limited by the funded and contributed manpower.</p>	<p>Services Activities will then have to be prioritized taking into account inputs from the AIDA Board and the IST to make sure resources are directed first to what is more important.</p> <p>Partners could seek through their own funding to increase their contributed manpower to be able to cope with the extra manpower required.</p> <p><b>Comment 1 (WPMT1- 21/11/2008):</b> Deliverable D3.1 "Euro-VO Registry of resources" is shifted and the work plan is reorganised.</p> <p><b>Comment 2 (Board-WPMT - 29/06/2009):</b> D3.1 was delivered on 13/01/2009. D3.2 "Registry curation tools" is shifted to November 2009.</p>

RISK	CONSEQUENCES	REMEDIAL ACTIONS
<p><b>Risk SA-R2:</b>  <b>Quality of the VObs resources in the Euro-VO central registry</b></p> <p>Likelihood of occurrence=3            Impact=3  <b>Risk Factor = 9</b></p>	<p>For the time being, the VObs resources put in all IVOA registries are not "checked" so their quality is unsure. If these VObs resources do not work, the VObs applications accessing them will not work well either.</p>	<p>By having a central Euro-VO Registry of VObs resources, it becomes easier to check the validity of these VObs resources. By building a Curation tool for these VObs resources, the quality of the Euro-VO Registry will be improved.</p> <p>Therefore, the central Euro-Registry shall ensure VObs application developer can access these valid and working VObs resources.</p> <p><b>Comment 1 (Board-WPMT - 29/06/2009):</b> D3.2 "Registry curation tools" is shifted to November 2009. International agreement thought on strategy definition for curation tools.</p>
<p><b>Risk SA-R3:</b>  <b>Lack of interest of the Scientific Community for the VObs</b></p> <p>Likelihood of occurrence=1→2            Impact=4  <b>Risk Factor = 4→8</b></p>	<p>If the Scientific Community does not buy in the VObs and does not use its application, the EuroVO-AIDA project will become quite useless.</p>	<p>Through the Euro-VO SAC and the EuroVO-AIDA IST, the EuroVO-AIDA project will make sure to stay close to the Scientific Community and deliver framework and tools to meet this community's needs.</p> <p>By increasing the outreach and dissemination of the EuroVO-AIDA activities, we can ensure that the VObs is advertised to the Scientific Community and therefore brings added-value and new tools to benefit the Science in Europe.</p> <p><b>Comment 1 (BOARD1- 17/03/2008):</b> The prototype 2007 Euro-VO Research Initiative was not successful. Mitigation actions have been discussed during the meeting.</p>



**Risk management of the Joint Research Activities**

<b>RISK</b>	<b>CONSEQUENCES</b>	<b>REMEDIAL ACTIONS</b>
<p><b>Risk JRA-R1: Not enough manpower to perform the Joint Research Activities</b></p> <p>Likelihood of occurrence=3 Impact=3 <b>Risk Factor = 9</b></p>	<p>By their nature, most of the tasks within these JRAs could require more manpower, or more tasks could be performed if more manpower would be available.</p> <p>In that case, the output of these EuroVO-AIDA joint research activities could be limited by the funded and contributed manpower.</p>	<p>Joint Research Activities will then have to be prioritized taking into inputs from the EuroVO-AIDA Board and the IST to make sure resources are directed first to what is more important.</p> <p>Partners could seek through their own funding to increase their contributed manpower to be able to cope with the extra manpower required.</p> <p>Partners could also seek through further FP7 calls the way to increase the manpower for these joint research activities specially to coordinate closer with other communities.</p>
<p><b>Risk JRA-R2: Different needs and requirements amongst AIDA partners wrt IVOA protocols and standards</b></p> <p>Likelihood of occurrence=2 Impact=2 <b>Risk Factor = 4</b></p>	<p>EuroVO-AIDA partners may have different needs, requirements and priorities in defining IVOA protocols and standards. That may lead to difficulties in coordinating the JRA activities amongst the partners and to bring consolidated inputs to the IVOA working groups.</p>	<p>First, it is important to notice that the diversity brought by the partners is also to be seen as an important asset of the project. Partners bring different views, requirements and priorities which makes the European added value when they are brought together and coordinated.</p> <p>Through regular meetings (Technology Forums), this diversity and this synergy will be discussed in order to coordinate it at European level before presenting it to other international IVOA partners.</p> <p>If needed, with advice from the Euro-VO SAC which gives external scientific oversight and from the AIDA IST which provides a closer regular scientific interaction, through decision by the EuroVO-AIDA Board, priorities could be set to use JRA resources optimally.</p>



## 5. WORK PACKAGES SUMMARY

### Networking Activities

WP No	WP title	Type of activity	Lead participant No	Lead participant short name	Person-months	Start month	End month
WP1	NA1 - Management	Management	1	CNRS	9 (+23)	1 (Feb. 2008)	30 (July 2010)
WP2	NA2 - Strategy, co-operation and dissemination	Coordination	1	CNRS	93	1 (Feb. 2008)	30 (July 2010)
	TOTAL				102		

### Service Activities

WP No	WP title	Type of activity	Lead participant No	Lead participant short name	Person-months	Start month	End month
WP3	SA 1 - Service activities in support of deployment of IVOA protocols and standards	Service	2	ESA	20	4 (May 2008)	27 (April 2010)
WP4	SA2 - Service activities in support of provision of VObs-enabled services to the science community	Service	3	ESO	43	4 (May 2008)	27 (April 2010)
WP5	SA3 - Service activities for higher education and outreach	Service	4	INAF	27	4 (May 2008)	27 (April 2010)
	TOTAL				90		

### Joint Research Activities

<b>WP No</b>	<b>WP title</b>	<b>Type of activity</b>	<b>Lead participant No</b>	<b>Lead participant short name</b>	<b>Person-months</b>	<b>Start month</b>	<b>End month</b>
WP6	JRA1 - Evolution of VObs interoperability standards	Joint Research Activity	7	UEDIN	47	4 (May 2008)	27 (April 2010)
WP7	JRA2 - Data Access protocols and Data Models	Joint Research Activity	2	ESA	29	4 (May 2008)	27 (April 2010)
WP8	JRA3 - Assessment of emerging technologies	Joint Research Activity	1	CNRS	37	4 (May 2008)	27 (April 2010)
	<b>TOTAL</b>				<b>113</b>		

## 6. GRAPHICAL PRESENTATION OF THE WORK PACKAGES

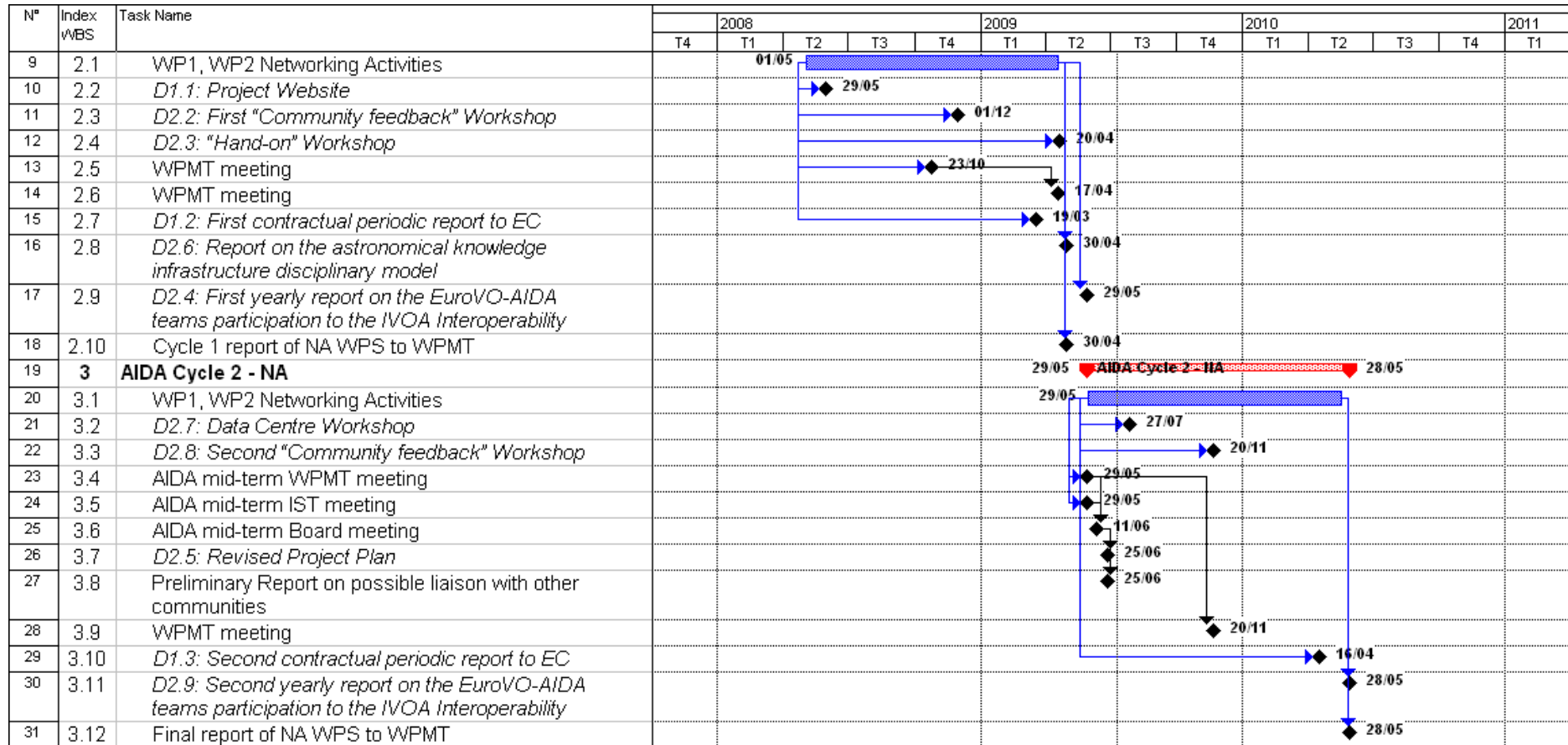
### 6.1. EuroVO-AIDA Kick-off phase

N°	Index wBS	Task Name	2008				2009				2010			
			T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	
1	<b>1</b>	<b>AIDA Kick-off Phase</b>			01/02									
2	1.1	WP1, WP2 activities			01/02									
3	1.2	AIDA Board meeting : Project Kick-off					17/03							
4	1.3	AIDA IST Kick-off meeting						14/04						
5	1.4	WPMT Kick-off meeting						14/04						
6	1.5	Technical Forum #1 jointly with VOTECH						18/03						
7	1.6	<i>D2.1: Preliminary Project Plan</i>												

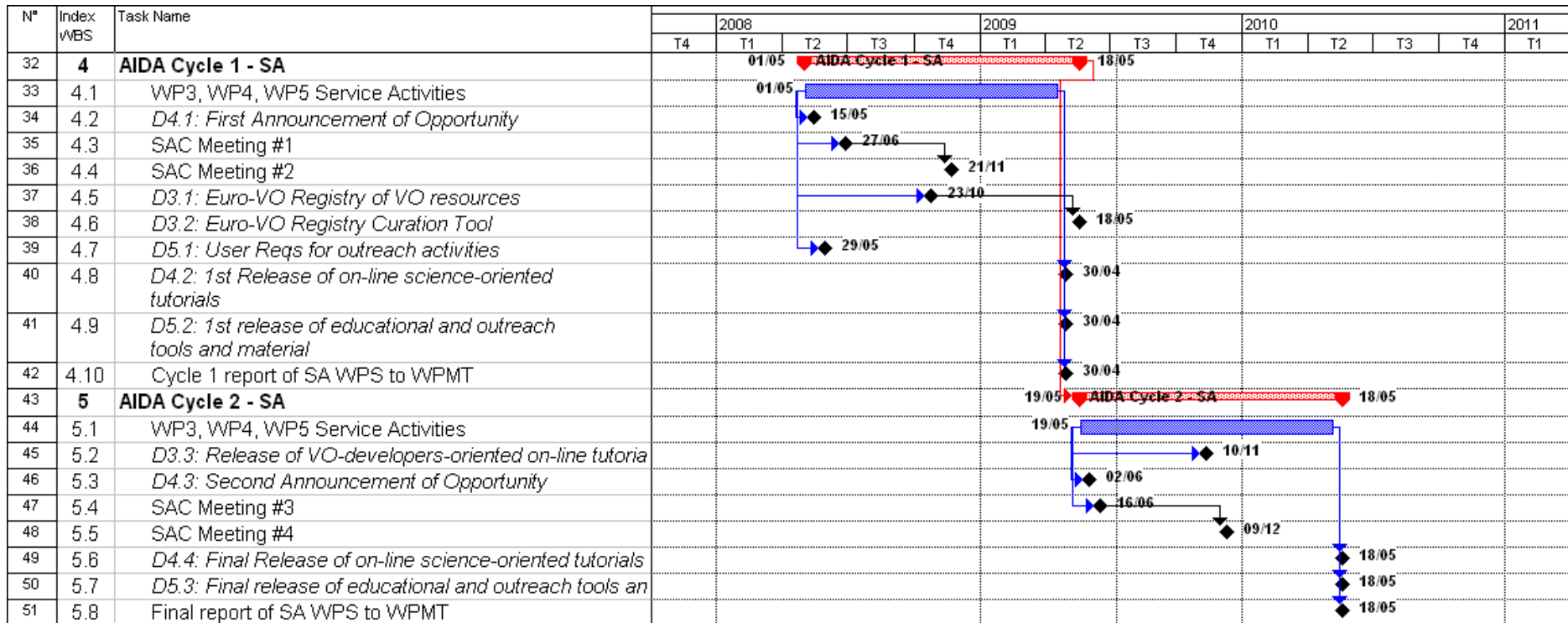
### 6.2. EuroVO-AIDA Final Phase

N°	Index wBS	Task Name	2009				2010				2011			
			T1	T2	T3	T4	T1	T2	T3	T4	T1			
72	<b>8</b>	<b>AIDA Final Phase</b>								31/05				
73	8.1	WP1, WP2 activities								31/05				
74	8.2	AIDA WPMT Final meeting									28/06			
75	8.3	AIDA IST Final meeting									28/06			
76	8.4	AIDA Final Board meeting										27/07		
77	8.5	<i>D1.4: Final contractual report to EU</i>											25/08	
78	8.6	<i>D1.5: Final plan for the use of dissemination of foregrou.</i>											25/08	
79	8.7	<i>D2.10: Medium term strategic plan for Euro-VO</i>											25/08	
80	8.8	<i>D2.11: Report on possible liaison of the astronomical VOswith other communities</i>											25/08	

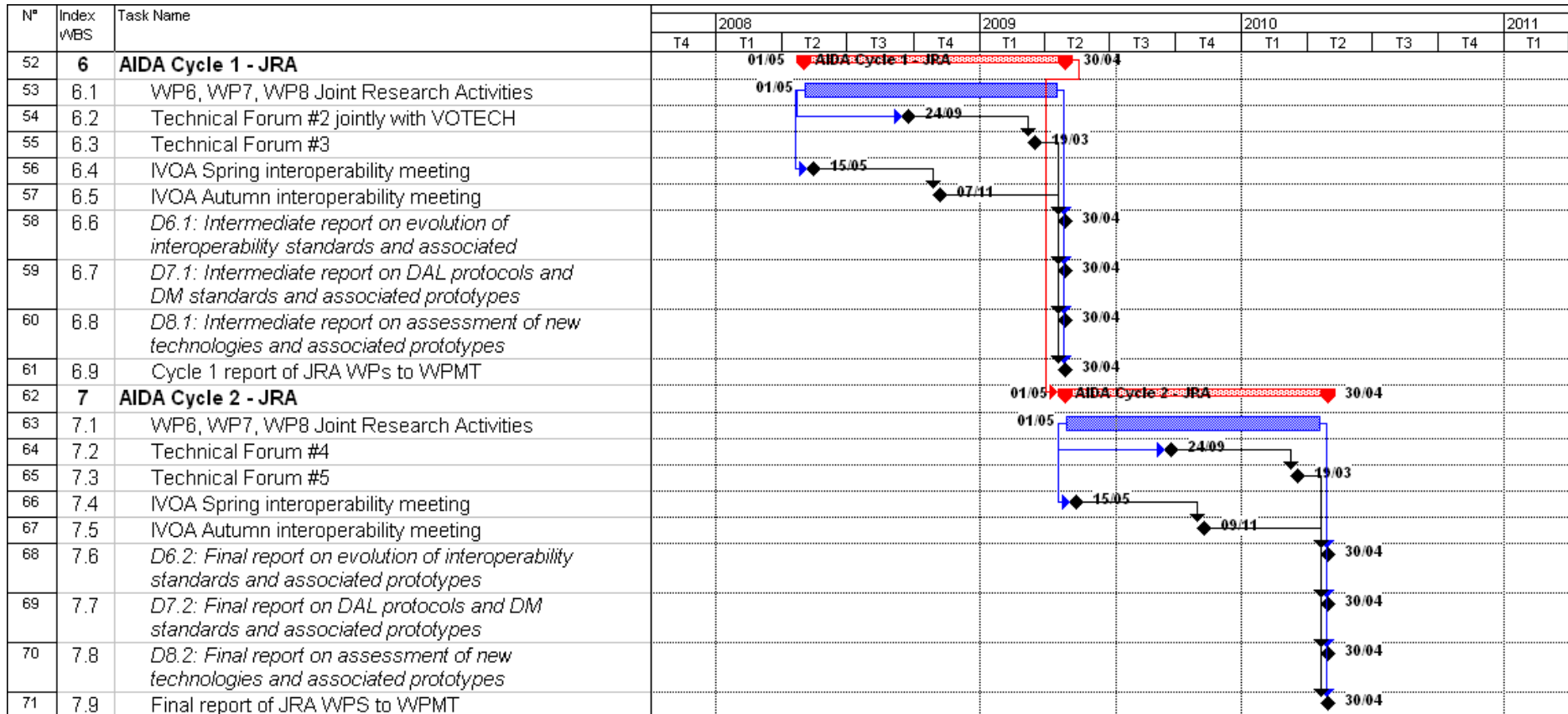
**6.3. EuroVO-AIDA Networking Activities: Cycle 1 & Cycle 2**



**6.4. EuroVO-AIDA Service Activities: Cycle 1 & Cycle 2**



**6.5. EuroVO-AIDA Joint Research Activities: Cycle 1 & Cycle 2**



## 7. SUMMARY OF DELIVERABLES

The EuroVO-AIDA Board and the EuroVO-AIDA WPMT have updated the timing of deliverables during the Board kick-off meeting on 17<sup>th</sup> March, 2008 and during the 1<sup>st</sup> WPMT meeting on 20<sup>th</sup>-21<sup>st</sup> November, 2008.

The Updates are indicated in red in the table. Actual submission date is indicated in blue in the table.

Del. no.	Deliverable name	WP no.	Lead beneficiary	Estimated indicative person-months	Nature	Dissemination level	Delivery date
D2.1	Preliminary project plan	2 (task 2-1)	CNRS	4	R <sup>1</sup>	PU <sup>2</sup>	Month 3 (April 2008) 13/06/2008
D1.1	Project Web site	1	CNRS	1	O <sup>3</sup>	PU/CO <sup>4</sup>	Month 4 (May 2008) 11/07/2008
D5.1	User requirement for the outreach activity	5	INAF	3	R	PU	Month 4 (May 2008) 07/07/2008
D4.1	First Announcement of Opportunity	4	ESO	10	O	PU	Month 5 (June 2008) 04/08/2008
D2.2	First "Community feedback" Workshop	2 (task 2-2)	ESA	10	O	PU	Month 9 (Oct. 2008) Postponed to month 11 (Dec. 2008) 12/01/2009
D3.1	Euro-VO Registry of resources	3	ESA	3	O	PU	Month 9 (Oct.2008) 13/01/2009

<sup>1</sup> Report

<sup>2</sup> Public

<sup>3</sup> Other

<sup>4</sup> Confidential, only for members of the consortium (including the Commission Services)

Del. no.	Deliverable name	WP no.	Lead beneficiary	Estimated indicative person-months	Nature	Dissemination level	Delivery date
D3.2	Registry curation tools	3	ESA	4	O	PU	Month 12 (Jan. 2009) Postponed to November 2009
D1.2	First contractual periodic report	1	CNRS	2	R	PP <sup>5</sup>	Month 13 (Feb. 2009) 15/04/2009
D2.3	"Hand-on" Workshop	2 (task 2-2)	ESO	12	O	PU	Month 13 (Feb. 2009) Postponed to Month 15 (April 2009) 20/04/2009
D2.4	First yearly report on the EuroVO-AIDA teams participation to the IVOA Interoperability meetings	2 (task 2-4)	UEDIN	9	O	PU	Month 15 (April 2009) Updated to Month 16 (May 2009: after the Interoperability meeting) and then to month 17 (June 2009) 14/09/2009
D4.2	First release of on-line science-oriented tutorials	4	ESO	11	O	PU	Month 15 (April 2009) 12/05/2009
D5.2	First release of educational and outreach tools and material	5	INAF	10	O	PU	Month 15 (April 2009) 03/05/2009
D6.1	Intermediate report on Evolution of interoperability standards and associated prototypes	6	UEDIN	22	R+O	PU	Month 15 (April 2009) Postponed to July 2009 <sup>6</sup> 04/09/2009

<sup>5</sup> Restricted to other programme participants (including the Commission Services)

<sup>6</sup> The deliverable D6.1 was postponed to take into account the IVOA interoperability meeting on 24<sup>th</sup>-29<sup>th</sup> May 2009 and the Mid-Term Board meeting on 29<sup>th</sup> June 2009



Del. no.	Deliverable name	WP no.	Lead beneficiary	Estimated indicative person-months	Nature	Dissemination level	Delivery date
D7.1	Intermediate report on Data Access Protocols and Data Models and associated prototypes	7	ESA	13	R+O	PU	Month 15 (April 2009) Postponed to July 2009 <sup>7</sup> 04/09/2009
D8.1	Intermediate report on Assessment of new technologies and associated prototypes	8	CNRS	20	R+O	PU	Month 15 (April 2009) Postponed to July 2009 <sup>8</sup> 04/09/2009
D2.5	Revised project plan	2 (task 2-1)	CNRS	4	R	PU	Month 16 (May 2009) Postponed to July 2009 <sup>9</sup> The present report
D2.6	Report on the astronomical knowledge infrastructure disciplinary model	2 (task 2-1 and 2-5)	CNRS	8	R	PU	Month 16 (May 2009) Postponed by a few months <sup>10</sup>
D2.7	Data Centre Workshop	2 (task 2-2)	ESA	15	O	PU	Month 17 (June 2009) 31/08/2009
D4.3	Second Announcement of Opportunity	4	ESO	10	O	PU	Month 17 (June 2009) 25/06/2009

<sup>7</sup> The deliverable D7.1 was postponed to take into account the IVOA interoperability meeting on 24<sup>th</sup>-29<sup>th</sup> May 2009 and the Mid-Term Board meeting on 29<sup>th</sup> June 2009

<sup>8</sup> The deliverable D8.1 was postponed to take into account the IVOA interoperability meeting on 24<sup>th</sup>-29<sup>th</sup> May 2009 and the Mid-Term Board meeting on 29<sup>th</sup> June 2009

<sup>9</sup> The revised Project Plan was postponed, as the Mid-term Board WPMT meeting was slightly delayed to take into account the "Information Event on the seventh Call for proposals under the e-Infrastructures Activity of the 'Capacities' Specific Programme, FP7" on 18<sup>th</sup> June 2009.

<sup>10</sup> The report is postponed by a few months to gather additional information on the evolution of IVOA in the transition phase to operations

Del. no.	Deliverable name	WP no.	Lead beneficiary	Estimated indicative person-months	Nature	Dissemination level	Delivery date
D3.3	Release of VO-developers-oriented on-line tutorials	3	ESA	6	O	PU	Month 18 (July 2009) <a href="#">12/08/2009</a>
D2.8	Second "Community feedback" Workshop	2 (task 2-2)	ESA	10	O	PU	Month 21 (Oct. 2009) <b>Postponed to Month 24 (Jan. 2010)</b>
D1.3	Second contractual periodic report	1	CNRS	2	R	PP	Month 25 (Feb. 2010)
D2.9	Second yearly report on the EuroVO-AIDA teams participation to the IVOA Interoperability meetings	2 (task 2-4)	UEDIN	9	O	PU	Month 27 (April 2010) <b>Updated to Month 28 (after the Interoperability meeting)</b>
D4.4	Final release of on-line science oriented tutorials	4	ESO	12	O	PU	Month 27 (April 2010)
D5.3	Final release of educational and outreach tools and material	5	INAF	14	O	PU	Month 27 (April 2010)
D6.2	Final report on Evolution of VObs interoperability standards and associated prototypes	6	UEDIN	25	R+O	PU	Month 27 (April 2010)
D7.2	Final report on Data Access Protocols and Data Models and associated prototypes	7	ESA	16	R+O	PU	Month 27 (April 2010)
D8.2	Final report on Assessment of emerging technologies and associated prototypes	8	CNRS	17	R+O	PU	Month 27 (April 2010)

<b>Del. no.</b>	<b>Deliverable name</b>	<b>WP no.</b>	<b>Lead beneficiary</b>	<b>Estimated indicative person-months</b>	<b>Nature</b>	<b>Dissemination level</b>	<b>Delivery date</b>
D1.4	Final contractual report	1	CNRS	3	R	PP	Month 30 (July 2010)
D1.5	Final plan for the use and dissemination of foreground	1	CNRS	1	R	PU	Month 30 (July 2010)
D2.10	Medium term strategic plan for Euro-VO	2 (task 2-1)	CNRS	8	R	PU	Month 30 (July 2010)
D2.11	Report on possible liaison of the astronomical VObs with other communities	2 (task 2-5)	CNRS	4	R	PU	Month 30 (July 2010)
<b>TOTAL</b>				<b>305</b>			

## 8. SUMMARY OF MILESTONES

The EuroVO-AIDA Board has updated the timing of milestones during its kick-off meeting on 17<sup>th</sup> March, 2008 and during the Mid-term Board-WPMT meeting on 29<sup>th</sup> June, 2009. Updates are indicated in red in the table.

Milestone no.	Milestone name	WPs No's	Lead beneficiary	Delivery date from Annex I	Comments
M1	Project kick-off	all	CNRS	Month 1 (February 2008)	Agenda and Minutes of the Board kick-off meeting (17 <sup>th</sup> March 2008): <a href="http://cds.u-strasbg.fr/twikiAIDA/bin/view/EuroVOAIDA/Board1">http://cds.u-strasbg.fr/twikiAIDA/bin/view/EuroVOAIDA/Board1</a>
M2	First Technical Forum (jointly organized with VO-TECH)	WP2, WP6, WP7, WP8	CNRS	Month 2 (March 2008)	Meeting (17 <sup>th</sup> -20 <sup>th</sup> March 2008) Web site, agenda and presented viewgraphs: <a href="http://wiki.eurovotech.org/twiki/bin/view/VOTech/StageSevenPlanningMeetings">http://wiki.eurovotech.org/twiki/bin/view/VOTech/StageSevenPlanningMeetings</a>
M3	Preliminary Project plan approval	all	CNRS	Month 3 (April 2008)	Preliminary project plan (13/06/2008)
M4	IVOA Interoperability meeting	WP2, WP6, WP7, WP8	UEDIN	Month 4 (May 2008)	Meeting organized in Trieste (19 <sup>th</sup> -23 <sup>rd</sup> May 2008) by INAF. Meeting Web site: <a href="http://www.ivoa.net/cgi-bin/twiki/bin/view/IVOA/InterOpMay2008#Meeting_Web_site">http://www.ivoa.net/cgi-bin/twiki/bin/view/IVOA/InterOpMay2008#Meeting_Web_site</a>

Milestone no.	Milestone name	WPs No's	Lead beneficiary	Delivery date from Annex I	Comments
M5	First SAC meeting	WP2, WP4	ESO	Month 5 (June 2008) <b>Anticipated (March 2008)</b>	<ul style="list-style-type: none"> <li>- Agenda and minutes of the SAC meeting (11<sup>th</sup>-12<sup>th</sup> March 2008): <a href="http://www.euro-vo.org/cgi-bin/twiki/bin/view/Fc/SacMeeting04">http://www.euro-vo.org/cgi-bin/twiki/bin/view/Fc/SacMeeting04</a></li> <li>- Evaluation of the proposals received to the first Announcement of Opportunity - The evaluation of proposals was made by e-mail</li> </ul>
M6	Second Technical Forum (jointly with VO-TECH)	WP2, WP6, WP7, WP8	UEDIN	Month 8 (September 2008)	Meeting (29 <sup>th</sup> September - 2 <sup>nd</sup> October 2008) Web site, agenda and presented viewgraphs: <a href="http://wiki.eurovotech.org/twiki/bin/view/VOTech/StageEightPlanningMeetings">http://wiki.eurovotech.org/twiki/bin/view/VOTech/StageEightPlanningMeetings</a>
M7	First "Community feedback" Workshop	WP2, WP4	ESA	Month 9 (October 2008) <b>Postponed (December 2008)</b>	<ul style="list-style-type: none"> <li>- Meeting (1<sup>st</sup>-3<sup>rd</sup> December 2008) Web site, agenda and presented viewgraphs: <a href="http://esavo01.esac.esa.int/MultiwavelengthVOWorkshopDec2008/">http://esavo01.esac.esa.int/MultiwavelengthVOWorkshopDec2008/</a></li> <li>- Report on feedback: 12/01/2009 (D2.2)</li> </ul>
M8	IVOA Interoperability Meeting	WP2, WP6, WP7, WP8	UEDIN	Month 10 (November 2008)	Meeting organized by US-VO in Baltimore on 27 <sup>th</sup> -31 <sup>st</sup> October 2008. Meeting Web site: <a href="http://www.ivoa.net/cgi-bin/twiki/bin/view/IVOA/InterOpOct2008">http://www.ivoa.net/cgi-bin/twiki/bin/view/IVOA/InterOpOct2008</a> Report on EuroVO-AIDA partners' participation to the Interoperability meeting.
M9	Second SAC meeting	WP2, WP4	ESO	Month 10 (November 2008)	Agenda and minutes of the SAC meeting (11 <sup>th</sup> -12 <sup>th</sup> December 2008): <a href="http://www.euro-vo.org/cgi-bin/twiki/bin/view/Fc/SacMeeting05">http://www.euro-vo.org/cgi-bin/twiki/bin/view/Fc/SacMeeting05</a>

Milestone no.	Milestone name	WPs No's	Lead beneficiary	Delivery date from Annex I	Comments
M10	"Hands-on" Workshop	WP2, WP4	ESO	Month 13 (February 2009) <b>Postponed (April 2009)</b>	<ul style="list-style-type: none"> <li>- Meeting (30<sup>th</sup> March - 2<sup>nd</sup> April 2009) Web site: <a href="http://www.euro-vo.org/aidahandson2009/">http://www.euro-vo.org/aidahandson2009/</a>)</li> <li>- Report on feedback: 20/04/2009 (D2.3)</li> </ul>
M11	Third Technical Forum	WP2, WP6, WP7, WP8	<b>CNRS</b>	Month 14 (March 2009)	Meeting (16 <sup>th</sup> -18 <sup>th</sup> March 2009 ) Web site, agenda and presented viewgraphs: <a href="http://cds.u-strasbg.fr/twikiAIDA/bin/view/EuroVOAIDA/ThirdTechnologyForum">http://cds.u-strasbg.fr/twikiAIDA/bin/view/EuroVOAIDA/ThirdTechnologyForum</a>
M12	IVOA Interoperability Meeting	WP2, WP6, WP7, WP8	UEDIN	Month 16 (May 2009)	Meeting organized by CDS in Strasbourg on 24 <sup>th</sup> -29 <sup>th</sup> May 2009. Meeting Web site: <a href="http://www.ivoa.net/cgi-bin/twiki/bin/view/IVOA/InterOpMay2009">http://www.ivoa.net/cgi-bin/twiki/bin/view/IVOA/InterOpMay2009</a> Report on EuroVO-AIDA partners' participation to the Interoperability meeting
M13	Mid-term Board meeting	all	CNRS	Month 16 (May 2009)	<ul style="list-style-type: none"> <li>- Agenda and Minutes of the Board mid-term meeting (29<sup>th</sup> June 2009): <a href="http://cds.u-strasbg.fr/twikiAIDA/bin/view/EuroVOAIDA/Board2">http://cds.u-strasbg.fr/twikiAIDA/bin/view/EuroVOAIDA/Board2</a></li> <li>- Revised project plan (the present document)</li> <li>- Description of the disciplinary model of knowledge infrastructure</li> </ul> <p>The meeting was slightly delayed to take into account the "Information Event on the seventh Call for proposals under the e-Infrastructures Activity of the 'Capacities' Specific Programme, FP7" on 18<sup>th</sup> June 2009.</p>

Milestone no.	Milestone name	WPs No's	Lead beneficiary	Delivery date from Annex I	Comments
M14	Third SAC meeting	WP2, WP4	ESO	Month 16 (May 2009)	<ul style="list-style-type: none"> <li>- Agenda and minutes of the SAC meeting</li> <li>- Evaluation of the proposals received to the second Announcement of Opportunity</li> </ul> <p>The SAC being renewed, the third SAC meeting was not organised and the evaluation of the proposals received to the second Announcement of Opportunity was done by e-mail discussions.</p>
M15	DCA Workshop	WP2, WP3, WP6, WP7, WP8	ESA	Month 17 (June 2009)	<ul style="list-style-type: none"> <li>- Meeting (22<sup>nd</sup>-26<sup>th</sup> June 2009) Web site, agenda and presented viewgraphs : <a href="http://www.sciops.esa.int/index.php?project=CONFERENCE&amp;page=AIDA_VOVS2009">http://www.sciops.esa.int/index.php?project=CONFERENCE&amp;page=AIDA_VOVS2009</a></li> <li>- Report on feedback: 31<sup>st</sup> August 2009 (D2.7)</li> </ul>
M16	Fourth Technical Forum	WP2, WP6, WP7, WP8	INAF	Month 20 (September 2009)	<p>Meeting (22<sup>nd</sup>-24<sup>th</sup> September 2009) Web site: agenda and presented viewgraphs: <a href="http://cds.u-strasbg.fr/twikiAIDA/bin/view/EuroVOAIDA/FourthTechnologyForum">http://cds.u-strasbg.fr/twikiAIDA/bin/view/EuroVOAIDA/FourthTechnologyForum</a></p>
M17	Second "Community feedback" Workshop	WP2, WP4	ESA	Month 21 (October 2009)  Postponed (January 2010)	<ul style="list-style-type: none"> <li>- Meeting Web site: agenda and presented viewgraphs</li> <li>- Report on feedback</li> </ul> <p>It was decided during the mid-term Board-WPMT meeting to maximize the feedback gathered from the meeting by including "Hands-on" aspects and to postpone this "Hands-on Community feedback Workshop" to January 2010 (in Strasbourg)</p>
M18	IVOA Interoperability Meeting	WP2, WP6, WP7, WP8	UEDIN	Month 22 (November 2009)	<p>Report on EuroVO-AIDA partners' participation to the Interoperability meeting</p>

Milestone no.	Milestone name	WPs No's	Lead beneficiary	Delivery date from Annex I	Comments
M19	Fourth SAC meeting	WP2, WP4	ESO	Month 22 (November 2009) <b>Anticipated (Sept. / October 2009)</b>	Agenda and minutes of the meeting The SAC being renewed, the fourth SAC meeting will be anticipated to September / October 2009.
M20	Final Technical Forum	WP2, WP6, WP7, WP8	<b>UHEI</b>	Month 26 (March 2010)	Meeting Web site: agenda and presented viewgraphs
M21	IVOA Interoperability Meeting	WP2, WP6, WP7, WP8	UEDIN	Month 28 (May 2010)	Report on EuroVO-AIDA partners' participation to the Interoperability meeting
M22	Final Board meeting	all	CNRS	Month 29 (June 2010)	- Agenda and minutes of the final Board meeting - Euro-VO Medium Term Strategic Plan



## **9. WP1 - NA1 - MANAGEMENT**

### **9.1. Work Package Objectives**

This Work Package is led by CNRS. Its objectives are to oversee the project on behalf of all the partners, to co-ordinate financial and administrative matters and to deliver the project external presence.

### **9.2. Work Package Deliverables**

D1.1 (Month 4 - May 2008): Project Web site - delivered on 11/07/2008

D1.2 (Month 13 - February 2009): First contractual periodic report to EC - delivered on 15/04/2009

D1.3 (Month 25 - February 2010): Second contractual periodic report to EC

D1.4 (Month 30 - July 2010): Final contractual report to EC

D1.5 (Month 30 - July 2010): Final Plan for the use and dissemination of foreground

### **9.3. Work Package activities**

#### **9.3.1. Project Management and monitoring**

This task includes overall legal, contractual, financial and administrative management activities:

- Establishment and maintenance of the Consortium Agreement (CA)
- Production of the contractual reports
- Obtaining audit certificates by each of the partners
- Compilation of the meetings organized and the reports produced by the project

In order to assure the project management, various actions will continue during Cycle 2:

- Update of the project directory
- Maintenance of Board, WPMT, and IST mailing lists
- Dissemination of reporting templates and guidelines
- Update of the list of EuroVO-AIDA presentations to conferences/meetings of other EC-funded projects

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

The Risk Register (see section 4.3) has been reviewed and approved by the Board during the Board kick-off meeting and the mid-term Board-WPMT meeting. It will be maintained by the WPMT until the end of the project. The Project Manager will continue to assure the maintenance of the list of Performance/research indicators (see below) for each WP. The list of Performance/research indicators has been reviewed and approved by the Board and by the WPMT during the Board kick-off meeting, the first WPMT meeting and the mid-term Board-WPMT meeting.

### List of Performance/research indicators

The List of Performance/research indicators, defined in the Description of work, has been updated by the Board during the mid-term Board-WPMT meeting, which took place in Paris on 29<sup>th</sup> June 2009.

WP	EVENT	PERFORMANCE INDICATOR	SCHEDULE
<b>WP1-NA1</b>  <b>Management</b>	Define EuroVO-AIDA logo, document templates, high-level documents for external audience		The Project logo (17/03/2008) and templates for current documents (29/09/2008) are available on: <a href="http://cds.u-strasbg.fr/twikiAIDA/bin/view/EuroVOAIDA/WP1Management">http://cds.u-strasbg.fr/twikiAIDA/bin/view/EuroVOAIDA/WP1Management</a>  A brochure "AIDA Master sheet" has been produced for the EC
	Functioning EuroVO-AIDA Web site ( <b>Deliverable D1.1</b> )	Including: <ul style="list-style-type: none"> <li>▪ details of each partner</li> <li>▪ details of each WP and deliverables</li> <li>▪ links with other relevant projects</li> </ul>	Project Web site available in final version since 11/07/2008 at: <a href="http://www.euro-vo.org/pub/general/intro.html">http://www.euro-vo.org/pub/general/intro.html</a>  Project TWiki available at: <a href="http://cds.u-strasbg.fr/twikiAIDA/bin/view/EuroVOAIDA/WebHome">http://cds.u-strasbg.fr/twikiAIDA/bin/view/EuroVOAIDA/WebHome</a>
	Production of the first, second and final contractual reports ( <b>Deliverables D1.2, D1.3, D1.4</b> )		Month 13 (Feb. 2009) - delivered on 15/04/2009 Month 25 (Feb. 2010) Month 30 (July 2010)
	List of EuroVO-AIDA presentations to meetings organised by EC and to meetings organised by other EC funded projects		For each reporting period  Included in the 1 <sup>st</sup> periodic report (D1.2)

WP	EVENT	PERFORMANCE INDICATOR	SCHEDULE
<b>WP2-NA2</b>  <b>Strategy, co-operation and dissemination</b>	Board, WPMT, IST meetings		<ul style="list-style-type: none"> <li>▪ <u>Board kick-off meeting (17/03/2008)</u> - <a href="http://cds.u-strasbg.fr/twikiAIDA/bin/view/EuroVOAIDA/Board1">http://cds.u-strasbg.fr/twikiAIDA/bin/view/EuroVOAIDA/Board1</a></li> <li>▪ <u>1<sup>st</sup> WPMT meeting (20-21/11/2008)</u> - <a href="http://cds.u-strasbg.fr/twikiAIDA/bin/view/EuroVOAIDA/WPMT1">http://cds.u-strasbg.fr/twikiAIDA/bin/view/EuroVOAIDA/WPMT1</a></li> <li>▪ <u>1<sup>st</sup> IST Teleconference (15/07/2008)</u> - <a href="http://cds.u-strasbg.fr/twikiAIDA/bin/view/EuroVOAIDA/AIDAIST">http://cds.u-strasbg.fr/twikiAIDA/bin/view/EuroVOAIDA/AIDAIST</a></li> <li>▪ <u>Mid-term Board-WPMT meeting (29/06/2009)</u> - <a href="http://cds.u-strasbg.fr/twikiAIDA/bin/view/EuroVOAIDA/Board2">http://cds.u-strasbg.fr/twikiAIDA/bin/view/EuroVOAIDA/Board2</a></li> </ul>
	Update of risk register		Initial Risk Register produced at the <u>Board kick-off meeting (17/03/2008)</u> Updated at: <ul style="list-style-type: none"> <li>▪ <u>1<sup>st</sup> WPMT meeting (20-21/11/2008)</u></li> <li>▪ <u>Mid-term Board-WPMT meeting (29/06/2009)</u></li> </ul>
	Production of the Preliminary and Revised Work Plan <b>(Deliverables D2.1, D2.5)</b>	Including: <ul style="list-style-type: none"> <li>▪ List of documents to be produced during the project</li> <li>▪ Updated list of criteria and performance/research indicators</li> </ul>	<ul style="list-style-type: none"> <li>▪ Preliminary project Plan (D2.1) sent to EC on 13/06/2008</li> <li>▪ Month 16 (May 2009) - The present report</li> </ul>
	Production of the report on astronomical knowledge infrastructure disciplinary model <b>(Deliverable D2.6)</b>		Month 16 (May 2009): postponed by a few months to gather additional information on the evolution of IVOA in the transition phase to operations
	Maintenance of the Euro-VO census of European Data Centres		One update during Cycle 2

WP	EVENT	PERFORMANCE INDICATOR	SCHEDULE
<p><b>WP2-NA2</b></p> <p><b>Strategy, co-operation and dissemination (continued)</b></p>	<p>Production of the Medium Term Strategic Plan for Euro-VO <b>(Deliverable D2.10)</b></p>		<p>Month 30 (July 2010)</p>
	<p>Organisation of the Scientific Workshops <b>(Deliverables D2.2, D2.3, D2.8)</b></p>	<ul style="list-style-type: none"> <li>▪ Workshop Web site</li> <li>▪ Overall level of participation</li> <li>▪ Number of countries represented</li> <li>▪ Feedback from participants</li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>D2.2</b> - Month 9 (Oct. 2008) - First "Scientific Workshop" postponed to Month 10 (1-3/12/2008): ESO (<a href="http://esavo.esa.int/MultiwavelengthVOWorkshopDec2008/">http://esavo.esa.int/MultiwavelengthVOWorkshopDec2008/</a>)</li> <li>▪ <b>D2.3</b> - Month 13 (Feb. 2009) - "Hands-on Workshop" postponed to Month 15 (30/03-02/04 2009): ESO (<a href="http://www.euro-vo.org/aidahandson2009/">http://www.euro-vo.org/aidahandson2009/</a>)</li> <li>▪ <b>D2.8</b> - Month 21 (Oct. 2009) - Second "Community Feedback" Scientific Workshop postponed to Month 24 (Jan. 2010): CNRS</li> </ul> <p>The analysis of the results of the First Community feedback Workshop and of the Hands-on Workshop has shown that Hands-on is the best way to gather feedback from the community, and the Board decided that this Workshop will be organised as "Hands-on Community Feedback workshop".</p>
	<p>Organisation of the Data Centre Workshop <b>(Deliverable D2.7)</b></p>	<ul style="list-style-type: none"> <li>▪ Workshop Web site</li> <li>▪ Overall level of participation</li> <li>▪ Number of countries represented</li> <li>▪ Feedback from participants</li> </ul>	<p><b>D2.7</b> - Month 17 (June 2009) - "Euro-VO AIDA Workshop on how to publish data in the VO" (22-26/06/2009): ESA (<a href="http://www.sciops.esa.int/index.php?project=CO_NFERENCE&amp;page=AIDA_VOWS2009">http://www.sciops.esa.int/index.php?project=CO_NFERENCE&amp;page=AIDA_VOWS2009</a>)</p>

WP	EVENT	PERFORMANCE INDICATOR	SCHEDULE
<p><b>WP2-NA2</b></p> <p><b>Strategy, co-operation and dissemination (continued)</b></p>	<p>Organisation of the Technology Forums</p>	<ul style="list-style-type: none"> <li>▪ Meeting Web site</li> <li>▪ Level of European participation</li> <li>▪ Multiple prototypes presented</li> <li>▪ Acceptance of input by IVOA</li> </ul>	<p>Month 2 (17-20/03/2008) – CNRS: <a href="http://wiki.eurovotech.org/twiki/bin/view/VOTech/StageSevenPlanningMeetings">http://wiki.eurovotech.org/twiki/bin/view/VOTech/StageSevenPlanningMeetings</a></p> <p>Month 8 (29/09-2/10 2008) – UEDIN: <a href="http://wiki.eurovotech.org/twiki/bin/view/VOTech/StageEightPlanningMeetings">http://wiki.eurovotech.org/twiki/bin/view/VOTech/StageEightPlanningMeetings</a></p> <p>Month 14 (16-18/03/2009) - CNRS: <a href="http://cds.u-strasbg.fr/twikiAIDA/bin/view/EuroVOAIDA/ThirdTechnologyForum">http://cds.u-strasbg.fr/twikiAIDA/bin/view/EuroVOAIDA/ThirdTechnologyForum</a></p> <p>Month 20 (22-24/09/2009) – INAF: <a href="http://cds.u-strasbg.fr/twikiAIDA/bin/view/EuroVOAIDA/FourthTechnologyForum">http://cds.u-strasbg.fr/twikiAIDA/bin/view/EuroVOAIDA/FourthTechnologyForum</a></p> <p>Month 26 (March 2010): UHEI</p>
	<p>(*) Report on EuroVO-AIDA teams participation to the IVOA Interoperability meetings</p> <p><b>(Deliverables D2.4, D2.9)</b></p>	<ul style="list-style-type: none"> <li>▪ Number of participants</li> <li>▪ Representation of EuroVO-AIDA JRAs teams</li> <li>▪ Standards discussed with EuroVO-AIDA teams participation</li> </ul>	<ul style="list-style-type: none"> <li>▪ Initially Month 15 (April 2009), updated to month 17 (June 2009) - delivered on 14/09/2009</li> <li>▪ Initially Month 27 (April 2010), updated to month 29 (June 2010)</li> </ul> <p>The reason for postponing the deliverables is to take into account the IVOA interoperability meetings which will be held in May 2009 and May 2010.</p>
	<p>Participation to conferences for community dissemination</p>		<p>For each reporting period</p> <p>Included in the 1<sup>st</sup> periodic report (D1.2)</p>

WP	EVENT	PERFORMANCE INDICATOR	SCHEDULE
	(**) Provision of on-line tutorials from WP3 and WP4 on the Web site <b>(Deliverables D4.2, D4.4, D3.3)</b>	<ul style="list-style-type: none"> <li>▪ Number of tutorials</li> </ul>	Science tutorials (incremental releases): <ul style="list-style-type: none"> <li>▪ Month 15 (April 2009) - <b>D4.2</b> released on 12/05/2009</li> <li>▪ Month 27 (April 2010) - <b>D4.4</b></li> </ul> VO-developers-oriented tutorials: <b>D3.3</b> - Month 18 (July 2009), released on 12/08/2009
	List of contacts/meetings with other communities		For each reporting period, regularly updated at: <a href="http://cds.u-strasbg.fr/twikiAIDA/bin/view/EuroVOAIDA/AIDASchedule">http://cds.u-strasbg.fr/twikiAIDA/bin/view/EuroVOAIDA/AIDASchedule</a> and <a href="http://cds.u-strasbg.fr/twikiAIDA/bin/view/EuroVOAIDA/PresenceMeetingsEC">http://cds.u-strasbg.fr/twikiAIDA/bin/view/EuroVOAIDA/PresenceMeetingsEC</a>
	Production of the Report on possible liaison with other communities <b>(Deliverables D2.11)</b>		Month 30 (July 2010)

WP	EVENT	PERFORMANCE INDICATOR	SCHEDULE
<p><b>WP3-SA1</b></p> <p><b>Service Activities in support of deployment of IVOA protocols and standards</b></p>	<ul style="list-style-type: none"> <li>▪ Release of the Euro-VO Registry of resources</li> <li>▪ Release of Registry Curation tools</li> </ul> <p><b>(Deliverables D3.1, D3.2)</b></p>	<ul style="list-style-type: none"> <li>▪ Registry compliant with IVOA standard</li> <li>▪ Harvesting and harvestable registry</li> <li>▪ Availability of the registry curation tool (update 1<sup>st</sup> WPMT meeting: cross WP action on this topic)</li> </ul>	<p>Month 9 (Oct. 2008)</p> <p>Month 12 (Jan. 2009)</p> <p>These 2 deliverables have been delayed and a mitigation plan presented at the first project review (24/04/2009):</p> <ul style="list-style-type: none"> <li>▪ <b>D3.1:</b> mid-January 2008 - released on 13/01/2009</li> <li>▪ <b>D3.2:</b> may-June 2009 - postponed to November 2009 to take into account international discussions on curation tools</li> </ul>
	<p>Production of elements for WP2:</p> <ul style="list-style-type: none"> <li>▪ On-line tutorials for developers</li> <li>▪ Preparatory Work for the Data Centre Workshop</li> </ul>		<p>See above (**)</p>
	<p>List of visits to data centre providers</p>		<p>For each reporting period</p> <p>Included in the 1<sup>st</sup> periodic report (D1.2)</p>
	<p>List of adaptation of VO tools to serve the data centre community</p>		<p>For each reporting period</p> <p>Included in the 1<sup>st</sup> periodic report (D1.2)</p>

WP	EVENT	PERFORMANCE INDICATOR	SCHEDULE
<b>WP4-SA2</b>  <b>Service Activities in support of provision of VObs-enabled services to the science community</b>	Announcement of Opportunities ( <b>Deliverables D4.1, D4.3</b> )	<ul style="list-style-type: none"> <li>▪ Number and topics of proposals</li> <li>▪ Feedback on standards and tools</li> </ul>	<ul style="list-style-type: none"> <li>▪ Month 5 (June 2008): 1<sup>st</sup> AO launched on 16/04/2008 – D4.1 sent to EC on 12/08/2008.</li> <li>▪ Month 17 (June 2009): 2<sup>nd</sup> AO launched on 20/05/2009 – D4.3 sent to EC on 25/06/2009.</li> </ul>
	Production of elements for WP2 <ul style="list-style-type: none"> <li>▪ On-line science tutorials</li> <li>▪ Preparatory work for the scientific workshops</li> </ul>		See above (**)
	List of adaptation of VO tools to serve the science community		For each reporting period Included in the 1 <sup>st</sup> periodic report (D1.2)

WP	EVENT	PERFORMANCE INDICATOR	SCHEDULE
<b>WP5-SA3</b>  <b>Service Activities for higher education and outreach</b>	Production of User requirements for the outreach activity ( <b>Deliverable D5.1</b> )		<b>D5.1</b> delivered on 07/07/2008
	Releases of educational and outreach tools and material ( <b>Deliverables D5.2, D5.3</b> )		<ul style="list-style-type: none"> <li>▪ Month 15 (April 2009): delivered on 03/05/2009</li> <li>▪ Month 27 (April 2010)</li> </ul>



WP	EVENT	PERFORMANCE INDICATOR	SCHEDULE
<p><b>WP6-JRA1</b></p> <p><b>Evolution of VObs interoperability standards</b></p>	<p>Detailed Work Programme for Cycle 1 (Included in <b>Deliverable D2.1</b>)</p>	<ul style="list-style-type: none"> <li>▪ Agreement on requirements</li> <li>▪ The Work programme takes into account the current results from VO-TECH and the current status of IVOA standards</li> </ul>	<p>See in the Preliminary Project Plan (D2.1) sent to EC on 13/06/2008</p>
	<p>Detailed Work Programme for Cycle 2 (included in <b>Deliverable D2.5</b>)</p>	<ul style="list-style-type: none"> <li>▪ Agreement on updated requirements</li> <li>▪ The Work programme takes into account the final results from VO-TECH and the current status of IVOA standards</li> </ul>	<p>End of Cycle 1 (April 2009) - The present report, which takes into account discussions at the IVOA interoperability meeting (24-29/05/2009) and at the mid-term EuroVO-AIDA Board-WPMT meeting (29/06/2009)</p>
	<p>Production of activity reports and associated prototypes (<b>Deliverables D6.1, D6.2</b>)</p>		<ul style="list-style-type: none"> <li>▪ Month 15 (April 2009) : postponed to June 2009 (after the IVOA interoperability meeting and the Mid-term Board meeting) - delivered on 04/09/2009</li> <li>▪ Month 27 (April 2010) : postponed to June 2010 (after the IVOA interoperability meeting)</li> </ul>
	<p>Impact on IVOA (<b>Deliverables D2.4, D2.9</b>)</p>		<ul style="list-style-type: none"> <li>▪ Month 15 (April 2009) : postponed to June 2009 (after the IVOA interoperability meeting) - delivered on 14/09/2009</li> <li>▪ Month 27 (April 2010) : postponed to June 2010 (after the IVOA interoperability meeting)</li> </ul> <p>See above (*)</p>

WP	EVENT	PERFORMANCE INDICATOR	SCHEDULE
<p><b>WP7-JRA2</b></p> <p><b>Data Access Protocols and Data Models</b></p>	<p>Detailed Work Programme for Cycle 1 (Included in <b>Deliverable D2.1</b>)</p>	<ul style="list-style-type: none"> <li>▪ Agreement on requirements</li> <li>▪ The Work programme takes into account the results from VO-TECH and the current status of IVOA standards</li> </ul>	<p>See in the Preliminary Project Plan (D2.1) sent to EC on 13/06/2008</p>
	<p>Detailed Work Programme for Cycle 2 (included in <b>Deliverable D2.5</b>)</p>	<ul style="list-style-type: none"> <li>▪ Agreement on updated requirements</li> <li>▪ The Work programme takes into account the final results from VO-TECH and the current status of IVOA standards</li> </ul>	<p>End of Cycle 1 (April 2009) - The present report, which takes into account discussions at the IVOA interoperability meeting (24-29/05/2009) and at the mid-term EuroVO-AIDA Board-WPMT meeting (29/06/2009)</p>
	<p>Production of activity reports and associated prototypes (<b>Deliverables D7.1, D7.2</b>)</p>		<ul style="list-style-type: none"> <li>▪ Month 15 (April 2009) : postponed to June 2009 (after the IVOA interoperability meeting and the Mid-term Board meeting) - delivered on 04/09/2009</li> <li>▪ Month 27 (April 2010) : postponed to June 2010 (after the IVOA interoperability meeting)</li> </ul>
	<p>Impact on IVOA standards (<b>Deliverables D2.4, D2.9</b>)</p>		<ul style="list-style-type: none"> <li>▪ Month 15 (April 2009) : postponed to June 2009 (after the IVOA interoperability meeting) - delivered on 14/09/2009</li> <li>▪ Month 27 (April 2010) : postponed to June 2010 (after the IVOA interoperability meeting)</li> </ul> <p>See above (*)</p>

WP	EVENT	PERFORMANCE INDICATOR	SCHEDULE
<b>WP8-JRA3</b>  <b>Assessment of emerging technologies</b>	Detailed Work Programme for Cycle 1 (Included in <b>Deliverable D2.1</b> )	The Work programme takes into account the results from VO-TECH and the current status of IVOA standards	See in the Preliminary Project Plan (D2.1) sent to EC on 13/06/2008
	Detailed Work Programme for Cycle 2 (included in <b>Deliverable D2.5</b> )	The Work programme takes into account the final results from VO-TECH and the current status of IVOA standards	End of Cycle 1 (April 2009) - The present report, which takes into account discussions at the IVOA interoperability meeting (24-29/05/2009) and at the mid-term EuroVO-AIDA Board-WPMT meeting (29/06/2009)
	Production of activity reports and associated prototypes ( <b>Deliverables D8.1, D8.2</b> )		<ul style="list-style-type: none"> <li>▪ Month 15 (April 2009) : postponed to July 2009 (after the IVOA interoperability meeting and the Mid-term Board meeting) - delivered on 04/09/2009</li> <li>▪ Month 27 (April 2010) : postponed to June 2010 (after the IVOA interoperability meeting)</li> </ul>
	Impact on IVOA ( <b>Deliverables D2.4, D2.9</b> )		<ul style="list-style-type: none"> <li>▪ Month 15 (April 2009) : postponed to June 2009 (after the IVOA interoperability meeting) - delivered on 14/09/2009</li> <li>▪ Month 27 (April 2010) : postponed to June 2010 (after the IVOA interoperability meeting)</li> </ul> See above (*)

### 9.3.2. Project Reporting

The Project Reporting to the European Commission (EC) consists in the delivery of all Project Deliverables. CNRS, as the Project Coordinator, helps partners for the writing of these deliverables and transmits them to the EC. The Project Manager has provided the Reporting guidelines and Deliverables templates on the TWiki: <http://cds.u-strasbg.fr/twikiAIDA/bin/view/EuroVOAIDA/WP1Management>.

The list of deliverables to be transmitted to the EC is available in Section 7 of this document. The Project Manager, as during Cycle 1, will be in contact with the Board and the WPMT to prepare the Project deliverables for the Commission for Cycle 2, especially for the Second contractual Reports and the Final contractual Report.

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

#### D1.4 – CNRS - Final contractual report (Month 30: July 2010)

This report will describe the project activities, and include all information required by EC in final reports, in particular:

- A final publishable summary report
- A plan for use and dissemination of foreground
- A report on societal implications

#### D1.5 – CNRS - Final plan for the use and dissemination of foreground

This compulsory deliverable will include all information required by EC.

#### D2.6 – CNRS - Report on the astronomical knowledge infrastructure disciplinary model (Month 16: May 2009)

This report will deliver a description of the astronomical VObs community and disciplinary model, prepared in close connection with WPs 2-5. It has been postponed by a few months to take into account the on-going evolution of IVOA towards operational phase.

#### D2.10 – CNRS - Medium term strategic plan for Euro-VO (Month 30: July 2010)

The report will include an assessment of the possible liaison with other scientific disciplines and with the projects which develop generic concepts and tools from D2.11 below.

#### D2.11 – CNRS - Report on possible liaison of the astronomical VObs with other communities (Month 30: July 2010)

The report will summarize the project findings in terms of possible liaison with other scientific communities and developers of digital library framework.

#### D6.2 – UEDIN - Final report on Evolution of VObs interoperability standards and associated prototypes (Month 27: April 2010)

The report will summarize the achievements to that point, analyse the state of the international scene, and make recommendation for continued work and requirements on future technical projects.

### D7.2 – ESA - Final report on Data Access Protocols and Data Models and associated prototypes (Month 27: April 2010)

The report will summarize the achievements to that point, analyse the state of the international scene, and make recommendation for continued work and requirements on future technical projects.

### D8.2 – CNRS - Final report on Assessment of emerging technologies and associated prototypes (Month 27: April 2010)

The report will summarize the achievements to that point, analyse the state of the international scene, and make recommendation for continued work and possible uptake.

### **9.3.3. Project external presence (CNRS)**

As during Cycle 1, the Project Manager will assure the project external presence during Cycle 2 through the maintenance of the EuroVO-DCA website and the maintenance of the project TWiki (<http://cds.u-strasbg.fr/twikiAIDA/bin/view/EuroVOAIDA/WebHome>).

The EuroVO-AIDA logo is already available and was used for the design of the Project Website, which was due for May 2008. The project TWiki has been made available before the Board kick-off meeting and will continue to be updated by the partners during Cycle 2. The "static" web pages describing the project are installed on the Euro-VO Web pages, with a link to the project TWiki to provide an up-to-date view of the project activities.

As during Cycle 1, partners are also asked to keep up to date the list of presentations to meetings organized by the EC and by other EC funded projects in which they will participate, by filling the "Schedule" page and the relevant WP1 page on the TWiki, and to keep the PM informed of all meetings in which they will participate on EuroVO-AIDA funds during Cycle 2.

## **10. WP2 - NA2 - STRATEGY, CO-OPERATION AND DISSEMINATION**

### **10.1. Work Package Objectives**

This Work Package is led by CNRS. Its objective is to ensure the entire project Networking Activities through:

#### 1 - WP2-1: Strategy definition

- Defines the project program
- Oversees the project development and monitors the progress
- Oversees the scientific aspects of the project
- Ensures external liaisons:
  - Liaisons with the policy-making level (Europe, national agencies and policy makers in the partner countries)
  - Explores the extension of the astronomical VObs community to other European countries
  - Manages the liaison with other international VObs projects
- Defines a medium term strategic plan for Euro-VO

#### 2 - WP2-2: Workshops

- Dissemination of knowledge, gathering of feedback, and sharing of best practices among the European scientific and data provider communities
- Technology Forums

#### 3 - WP2-3: Community dissemination

#### 4 - WP2-4: International co-operation on the definition of IVOA standards

#### 5 - WP2-5: Liaison with other communities

- Explores the possible future collaboration with other scientific disciplines and other communities (e.g. the Digital Library community)
- Provides input for the medium term strategic plan

### **10.2. Work Package Deliverables**

#### 1 - WP2-1: Strategy definition (CNRS)

- D2.1 (Month 3 - April 2008, CNRS, with the participation of all partners): Preliminary project plan - delivered on 13/06/2008
- D2.5 (Month 16 - May 2009, CNRS, with the participation of all partners): Revised project plan - The present deliverable

- D2.6 (Month 16 - May 2009, CNRS, with the participation of all partners): Report on the astronomical knowledge infrastructure disciplinary model - delayed by a few months to take into account the on-going evolution of IVOA towards operational phase
- D2.10 (Month 30 - July 2009, CNRS, with the participation of all partners): Medium term strategic plan for Euro-VO

## 2 - WP2-2: Workshops

- D2.2 (Month 9 - October 2008 - ESO with participation of all partners): First Community feedback Workshop: Postponed to Month 11 (December 2008) - Multiwavelength astronomy and the Virtual Observatory, 1<sup>st</sup>-3<sup>rd</sup> December 2008 - delivered on 12/01/2009
- D2.3 (Month 13 - February 2009 - ESO with participation of all the partners): Hands-on Workshop: Postponed to Month 15 (April 2009), 30<sup>th</sup> March-2<sup>nd</sup> April 2009 - delivered on 20/04/2009
- D2.7 (Month 17 - June 2009 - ESA, with participation of all partners): Data Centre Workshop on How to publish data in the VO, 22<sup>nd</sup>-26<sup>th</sup> June 2009 - delivered on 31/08/2009
- D2.8 (Month 21 - October 2009 - CNRS, with participation of all the partners): Second Community feedback Workshop: Postponed to Month 24 (January 2010). The analysis of the results of the First Community feedback Workshop and of the Hands-on Workshop has shown that Hands-on is the best way to gather feedback from the community, and the Board decided that this Workshop would be organised as a "Hands-on community feedback workshop".

## 3 - WP2-3: Community dissemination (ESO + all)

- D3.3 (Month 18 - July 2009, ESA and other WP3 participants): VObs developers-oriented on-line tutorials - delivered on 12/08/2009
- D4.2 (Month 15 - April 2009, ESO with other WP4 participants): First release of on-line science-oriented tutorials - delivered on 12/05/2009
- D4.4 (Month 27 - April 2010, ESO with other WP4 participants): Final release of on-line science-oriented tutorials

## 4 - WP2-4: International cooperation on the definition of IVOA standards (JRA leads and all JRA participants)

- D2.4 (Month 15 - April 2009, UEDIN): First yearly report on the EuroVO-AIDA teams participation to the IVOA Interoperability meetings: Updated to Month 16 (May 2009) and then to month 17 (June 2009) to take fully into account May 2009 Interoperability meeting - delivered on 14/09/2009
- D2.9 (Month 27 - April 2010, UEDIN): Second yearly report on the EuroVO-AIDA teams participation to the IVOA Interoperability meetings: Updated to Month 28 (May 2010) after the May 2010 Interoperability meeting

## 5 - WP2-5: Liaison with other communities (CNRS + all)

- D2.11 (Month 30 - July 2010, CNRS, with participation of all partners): Report on possible liaison with other communities

### 10.3. Work Package activities

WP2 objectives are to ensure the entire project Networking Activities. This is done through a strong interaction with the other WPs.

#### 10.3.1. Strategy Definition (WP2-1)

This task provides technical and scientific leadership and planning, ensuring the co-ordination of the EuroVO-AIDA activities, developing the overall project plan and assessing the project activities.

The different aspects of the work that will be undertaken during Cycle 2 are:

- Definition of the project program (revised Project Plan, the present document)
- Overseeing of project development and progress monitoring: the PM will continue to follow WPs activities in close connection with the WP leads. The risk register and the "performance indicators" list will be maintained by the WPMT. This will contribute to the adaptation of the project global activities to the project results and to the evolution of the context.
- Overseeing of scientific aspects
- Ensuring of external liaisons: at the Policy making level, with other communities and with other VO projects

As in Cycle 1, the work is under the responsibility of the Board, of the WPMT (Work Package Management Team) and of the IST (Internal Science Team), and high level scientific guidance is provided by the Euro-VO SAC (Science Advisory Committee).

As foreseen, the **IST** is involved in the organisation of all Workshops and in the external presence of the project. The IST will actively participate to the organisation and scientific coverage of the next "Hands-on community feedback Workshop".

The **SAC** being renewed, the next SAC meeting will be held in September or October 2009.

CNRS will continue to organize a discussion of the medium term Euro-VO strategic plan taking into account EU calls.

This task also includes the maintenance of the **Euro-VO DCA census of European data centres** produced by EuroVO-DCA, which will be used and maintained by EuroVO-AIDA during Cycle 2. The Census will be advertised again in partners' and other European countries, in order to complete it.

The board, during its mid-term meeting, discussed the 1<sup>st</sup> review (24<sup>th</sup> April 2009) recommendations to be implemented:

- 1 - The management should closely monitor resource allocation for all partners, in particular INTA and UEDIN: The Project coordinator will propose to the Board members a repartition of the second allocation of funds to partners, based on the percentage to be received from the initial budget, with a modulation taking into account actual spending of each partner during the first year (e-mail discussion).
- 2 - Collaboration between EuroVO-AIDA public outreach (WP5) and the International Year of Astronomy is recommended: the International Year of Astronomy is already well advanced, and the main effort will be to give sustainability to WP5 activities beyond EuroVO-AIDA completion.



3 - Publication of user feedback, and the way the feedback is influencing tool development, should be used to measure success of community engagement: each VO tool developer will be asked, following the next "Hands-on Community feedback Workshop", to provide a report on this topic.

4 - The consortium is encouraged to develop the concertation efforts beyond the field of astronomy, providing evidence of concrete impact: contacts established with organisations such as EGEE and Europlanet will be detailed in the next periodic report.

### 10.3.2. Workshops (WP2-2)

The three Science Workshops (ESO), the Data Centre Workshop (ESA) and the bi-yearly Technology Forums (UEDIN) are essential elements for the dissemination of knowledge, the gathering of feedback and the sharing of best practices among astronomers and data providers.

The DCA Workshop was organized on 22<sup>nd</sup>-26<sup>th</sup> June 2009. Information on the programme and on the participation is available on the following web site: [http://www.sciops.esa.int/index.php?project=CONFERENCE&page=AIDA\\_VOVS2009](http://www.sciops.esa.int/index.php?project=CONFERENCE&page=AIDA_VOVS2009)

The fourth **Technology Forum** will be organized by INAF in Trieste on 22<sup>nd</sup>-24<sup>th</sup> September 2009 and the fifth Technology Forum by UHEI in Heidelberg on March 2010.

It was decided during the mid-term Board-WPMT meeting to postpone the **Community feedback Workshop** to January 2010. The Workshop will be probably organised in Strasbourg and will be a "Hands-on Community feedback Workshop", as the "Hands-on" Workshop organised on 30<sup>th</sup> March - 2<sup>nd</sup> April 2009 was very successful in gathering feedback from the Community. The presence of tools developers and scientists will allow a close interaction during the Workshop and the live usage of the tools by astronomers maximizes detailed feedback gathering through the tutors on relevance of functionalities, ergonomics, etc. This is in line with the Review recommendations.

### 10.3.3. Community Dissemination (WP2-3)

The Project TWiki (<http://cds.u-strasbg.fr/twikiAIDA/bin/view/EuroVOAIDA/WebHome>) and the Euro-VO Web site (<http://www.euro-vo.org/pub/aida/overview.html>) will continue to be major tools for the dissemination towards the community during Cycle 2.

Tutorials from SA1 (Service activities in support of the deployment of IVOA protocols and standards), to be delivered as D3.3 - Release of VO-developers-oriented on-line tutorials (ESA) will be published on Euro-VO Web pages (<http://www.euro-vo.org/pub/>) in July 2009, and will be properly identified as EuroVO-AIDA products.

Participation in conferences will complete the Community Dissemination during Cycle 2, as in Cycle 1.

### 10.3.4. International co-operation on the definition of IVOA standards (WP2-4)

As during Cycle 1, the international cooperation on IVOA standards will be assured through participation in the bi-yearly IVOA Interoperability meetings and IVOA Working Group discussions.

During Cycle 1, IVOA Interoperability meetings were held as follows:

- The spring 2008 meeting was organized in Trieste, Italy, by INAF, on 19<sup>th</sup>-23<sup>rd</sup> May ([http://www.ivoa.net/cgi-bin/twiki/bin/view/IVOA/InterOpMay2008#Meeting\\_Web\\_site](http://www.ivoa.net/cgi-bin/twiki/bin/view/IVOA/InterOpMay2008#Meeting_Web_site))
- The fall meeting 2008 was organized in Baltimore, USA, by the US Virtual Observatory project, on 27<sup>th</sup>-31<sup>st</sup> October (<http://www.ivoa.net/cgi-bin/twiki/bin/view/IVOA/InterOpOct2008>)

For Cycle 2, IVOA Interoperability meetings are scheduled as follows:

- The spring 2009 meeting was organized in Strasbourg, France, by the CDS, on 24<sup>th</sup>-29<sup>th</sup> May (<http://www.ivoa.net/cgi-bin/twiki/bin/view/IVOA/InterOpMay2009>)
- The fall 2009 meeting will be organized in Garching bei München, Germany, by ESO, on 9<sup>th</sup>-13<sup>th</sup> November (<http://www.ivoa.net/cgi-bin/twiki/bin/view/IVOA/InterOpNov2009>)
- The spring 2010 meeting will be held in May 2010, likely at UHEI

### **10.3.5. Liaison with other communities (WP2-5)**

The idea is to develop future collaborations with other disciplines and other communities developing generic frameworks and tools and to provide input for the Euro-VO medium strategic plan.

A number of other scientific communities were identified during Cycle 1:

- Planets, Heliospheric physics, METAFOR, Earth Observation (L. Fusco's projects)
- Digital libraries (DRIVER II et al)
- genomic databases/bioinformatics, artificial intelligence
- computing and data storage grid

The assessment of possible collaboration with these scientific communities will continue during Cycle 2.

Several new EC projects have been identified as important targets:

- Europlanet
- HELIO
- VAMDC

This task also includes active participation in EC-organized concertation activities. This began before the start of the project (4<sup>th</sup> e-Infrastructure Concertation meeting, Sophia Antipolis, France, 5<sup>th</sup>-6<sup>th</sup> December 2007) and was pursued during Cycle 1, with participation to the 5<sup>th</sup> e-Infrastructure Concertation meeting " e-Infrastructures as standardization drivers" (Barcelona, Spain, 6<sup>th</sup> June 2008) and to the 6<sup>th</sup> e-Infrastructure Concertation Meeting "Looking to the future: sustainable e-Infrastructures" EC & BELIEF-II project (Lyon, France, 24<sup>th</sup> November 2008). Active participation in EC-organized concertation activities will continue during Cycle 2 of the project.

## **11. WP3 - SA1 - SERVICE ACTIVITIES IN SUPPORT OF DEPLOYMENT OF IVOA PROTOCOLS AND STANDARDS**

### **11.1. Work Package Objectives**

This Work Package is led by ESA. Its objective is to support the deployment of IVOA protocols and standards in Europe with the goal of increasing the amount of astronomical resources being accessible through the Virtual Observatory.

### **11.2. Work Package Deliverables**

D3.1 (Month 6 - July 2008, ESA): Euro-VO Registry of VObs resources available - delivered on 13/01/2009 (full registry available mid-march 2009)

D3.2 (Month 12 - January 2009, ESA): Availability of Curation tools for the Euro-VO Registry - Postponed to November 2009 (the mitigation plan was presented to the 1<sup>st</sup> Review of the project)

D3.3 (Month 18 - July 2009, ESA and other WP3 participants): VObs developers-oriented on-line tutorials - delivered on 12/08/2009

### **11.3. Work Package activities**

The objective of WP3 is to support the deployment of IVOA protocols and standards in Europe, including provision of a Euro-VO registry of VO resources. This Work Package and WP2-2 ensure continuation of EuroVO-DCA activities in support to data providers.

Partners will continue to work in close collaboration on the different aspects of WP3 and the EuroVO-DCA actions in support to data centres from other European countries will be continued.

This Work Package includes four strands of work:

- Provision to the European Community of a Euro-VO Registry of VObs resources
- Registry Curation tools
- Service activities in support of the European Data Centres for the implementation of the IVOA standards and protocols for them to publish their data holdings to the VObs
- Adaptation of the VObs tools to the evolution of existing IVOA standards and to the new standards that will be produced, and to take into account data providers' feedback

#### **11.3.1. Provision to the European Community of a Euro-VO Registry of VObs resources**

The ESA-VO full Registry was converted into the Euro-VO Registry.

The activities led to the delivery of Deliverable D3.1 on 13<sup>th</sup> January 2009 with the availability of the central Euro-VO Registry (full registry available mid-march 2009). Use Cases and support were also provided about the registering of VO Resources and for searching VO Resources.

During Cycle 2, the work will continue with the operations, maintenance and potential upgrade of the Euro-VO Registry of VObs resources according to the possible evolving specifications of the IVOA Registry of VObs resources.

In parallel to these “operational” activities, WP3 will continue to participate to the IVOA Registry WG discussions, mailing forum, teleconferences, documents writing, and meetings as a natural link to WP6 activities. Feedback and inputs will be given through the experience of operating a central Registry for Euro-VO and supporting data centres in the task of registering their resources.

### 11.3.2. Registry Curation tools

The Euro-VO Registry, acting as a central Registry in Europe, has the responsibility to ensure the quality/curation of the VO resources it contains. Although this is not an easy task and it is agreed that neither the IVOA nor the Euro-VO should act as a “censure” body, it is important that the Euro-VO plays an active role in ensuring the quality of the VObs resources so they can be used efficiently and securely.

Moreover, the quality stored in the Euro-VO Registry will be propagated to other registries harvesting the Euro-VO Registry, increasing the importance of ensuring its quality.

The work on curation utilities started during Cycle 1 and presented many challenges, so the work plan was updated, postponing (with the approval of the 1<sup>st</sup> review) the availability of curation tools for VO Resources from January 2009 to November 2009. The activities that will be undertaken during Cycle 2 can be summarized as follows:

- Review work going on in that area of curation utilities at European and IVOA level
- Review the list of VO resources which can be “curated” when inserted into the registry and define plan of actions
- Development of curation tools of VO Resources
- Implementation of these tools into the Euro-VO Registry

A possible schedule matrix follows, defining the steps for the delivery of D3.2:

TASK	DATE	COMMENTS
Inputs gathering	EuroVO-AIDA Technology Forum 16 <sup>th</sup> -19 <sup>th</sup> March 2009	Gather possible inputs in relation to Curation tools from the European community
Discussion and crosscheck with IVOA	IVOA Interoperability meeting 25 <sup>th</sup> -29 <sup>th</sup> May 2009	Fill the IVOA community in with inputs. Discuss applicability of needs within the IVOA community and gather requirements
Basic design of tool capabilities	June 2009	Make a top level design of possible curation tool with the possibilities available at the time
Tool presentation	IVOA Interoperability meeting 9 <sup>th</sup> -13 <sup>th</sup> November 2009	Show the tool implementation at the interoperability meeting

These activities will lead to Deliverable 3.2 in November 2009 with the availability of initial curation tools for VO Resources selected in the study phase. These curation tools will be plugged into the Euro-VO Registry to start ensuring the quality of the VO Resources there.

A dedicated "Registry Curation Tools" session was organised during the May 2009 IVOA interoperability meeting in Strasbourg, leading to the review of the existing facilities and tools and to an agreement on proceeding towards Registry Curation Tools and IVOA Standard Validators. This will be reflected in IVOA Technical Assessment and Roadmap for 2009 - 2010.

Later on, activities will encompass the operations, maintenance and upgrade of these curation tools, as well as potentially developing new ones when needs arise. These activities are also to be part of the WP6 and WP7 activities, in link with the IVOA Registry Working Groups discussions and activities.

### **11.3.3. Service activities in support of the European Data Centres for the implementation of the IVOA standards and protocols for them to publish their data holdings to the VObs**

As follow up activities of what was done in the Euro-VO DCA (Data Centre Alliance) project, it is important to keep providing help and support to the European Data Centre for them to publish their data holdings into the VObs, making sure they are then registered into the Euro-VO Registry so they can be accessed by the whole scientific community.

As during Cycle 1, by helping providing more data through the VObs framework, WP3 activities will continue during Cycle 2 to ensure the increased usage of the European science data holdings, the increased usefulness of the VO applications making use of these VObs Resources and therefore the VObs dissemination in general.

During Cycle 1, the activities in that context included in particular the preparatory work for the EuroVO-AIDA Data Centre Alliance Workshop on how to publish their data holdings through IVOA protocols and standards (WP2-2), which was held in June 2009.

These activities will continue during Cycle 2. When this Revised Project Plan was discussed by the mid-term Board meeting, the EuroVO-AIDA Data Centre Alliance Workshop on how to publish their data holdings through IVOA protocols and standards already took place on 22<sup>nd</sup>-26<sup>th</sup> June 2009. Useful information on the Workshop programme and participants is available on the following webpage:

[http://www.sciops.esa.int/index.php?project=CONFERENCE&page=AIDA\\_VOVS2009](http://www.sciops.esa.int/index.php?project=CONFERENCE&page=AIDA_VOVS2009).

The Workshop was the occasion to develop links with new partners, in particular, the Byurakan Astrophysical Observatory (Armenia), the Nordic Optical telescope, the South African Large Telescope.

This event closed the series of Workshops organised since the beginning of the EuroVO-DCA project on "How to publish data in the VO". The connexion with the European Data Centres will be assured also during Cycle 2 with:

- The development of technical on-line tutorials oriented towards developers of data centre on how to publish data into the VObs, which will be distributed in the frame of WP2-3,
- Visits to data centre providers, as required, to provide them on-site support to publish their data holdings into the VObs,

- Gathering feedback from the Data Centres on publishing their data holdings into the VObs, to be used to improved the publishing tools and the IVOA standards and protocols, in close cooperation with WP7. In this aim, ESA, ESO and CNRS partners will in particular gather feedback from the Hands-on community feedback Workshop participants, in the view of designing useful metrics at the end of year 2009.

#### **11.3.4. Adaptation of the VObs tools to the evolution of existing IVOA standards and to the new standards that will be produced, and to take into account data providers' feedback**

Several tools (SAADA, DALToolkit, DSA ...) have already been developed in Europe to help Data Providers to publish their data holdings into the VObs, according to existing IVOA standards and protocols. These tools have initially been used in the context of previous data providers' Workshop, but need to be continuously kept up to date with the definition and evolution of IVOA standards and protocols. Furthermore, using the feedback received from the data centres which used them, these tools can be improved and made easier to use with the relevant level of documentation and help.

In particular, and as in Cycle 1, activities will continue on adapting these publishing tools to the upcoming IVOA standards and protocols, in particular the TAP (Table Access Protocol) to publish catalogues.

These activities lead to Deliverable 3.3 in July 2009 where all these tools are published on the Euro-VO web pages.

All these activities have a natural and strong link with WP6 and WP7 in particular, as the evolution of the IVOA standards and protocols have impact on the development of the data publishing tools, and as the feedback from the data centres using these tools and publishing their data through the VObs framework will bring inputs to the evolution of the IVOA standards.

## **12. WP4 – SA2 – SERVICE ACTIVITIES IN SUPPORT OF PROVISION OF VOBS-ENABLED SERVICES TO THE SCIENCE COMMUNITY**

### **12.1. Work Package Objectives**

This Work Package is led by ESO. Its objective is to serve the science community in its uptake of the VObs-enabled data infrastructure:

- 1 - Trigger advanced usage of VObs capabilities
- 2 - Obtain a set of well documented science cases
- 3 - Gather feedback about the science community needs
- 4 - Adapt VObs tools to these needs

### **12.2. Work Package Deliverables**

D4.1 (Month 5 - June 2008, ESO): First AO- delivered on 04/08/2008

D4.2 (Month 15 - April 2009, ESO with other WP4 participants): First release of on-line science-oriented tutorials - delivered on 12/05/2009

D4.3 (Month 17 - June 2009, ESO): Second AO - delivered on 25/06/2009

D4.4 (Month 27 - April 2010, ESO with other WP4 participants): Final release of on-line science-oriented tutorials

### **12.3. Work Package activities**

WP4 activities can be summarized as follows:

- In complement to the free usage of the services through communications network, Announcements of Opportunities for advanced usage of astronomical digital archives through VObs tools, and scientific support to the selected projects; feedback gathering on the tools from the proposals submitted to the AOs
- Development of on-line science-oriented tutorials based on science cases for the usage of VObs-enabled astronomical archives and VObs data access tool, disseminated in the frame of WP2-3
- Preparatory work for the Scientific Workshops to help astronomers utilise at best European digital archives (WP2-2)
- Adaptation of VObs tools to fulfil the science community needs

This Work Package also manages the **Euro-VO Science Advisory Committee** (Euro-VO SAC). Since its last meeting (11<sup>th</sup>-12<sup>th</sup> December 2008), the SAC is being renewed. The renewal process has started during Spring 2009, to be completed before the end of the Summer. Then, the third SAC meeting was not organised and the fourth SAC meeting will be anticipated to September / October 2009. The evaluation of the proposals received to the Second Announcement of Opportunity will be done by e-mail discussions.

The Second **Announcement of Opportunities** of the EuroVO-AIDA project for advanced usage of astronomical digital archives through VObs tools, and scientific support to the selected projects was foreseen in June 2009. The aim is to give support to scientists and projects interested in utilising VO tools. The call was released on 20 May 2009 on the Euro-VO web pages (<http://www.euro-vo.org>), with a deadline of 15<sup>th</sup> July 2009.



The announcement was also circulated by e-mail to the Euro-VO mailing list, which by now includes more than 480 addresses of professional astronomers.

It was also advertised on the European Astronomical Society (EAS) newsletter as well as in the newsletters and mailing lists of various national Astronomical Societies and Virtual Observatory projects.

Following the same process as for the First Announcement of Opportunities, after the deadline (15<sup>th</sup> July 2009) the Euro-VO partners will assess the technical feasibility of the submitted projects and the EURO-VO Science Advisory Committee (SAC) will evaluate the scientific content of the projects. Based on this evaluation, the Principal Investigators of the top ranked projects will be invited to ESO in order to give a more detailed presentation of their plan and explain what they need from the VO. The official starting date of the projects will be just after this meeting.

The Second "**Community feedback**" Workshop will be organized by CNRS in the frame of WP2-2 in January 2010. As the "Hands-on meeting" at ESO has been the most effective mean of reaching out to the astronomical community in WP4, as participants were extremely enthusiastic, and as a lot of tutorials have been collected already, it was decided that this "**Community feedback**" Workshop will be organised as "Hands-on Community Feedback" Workshop.

During Cycle 2, WP4 leads plan to participate to the following events, plus other relevant events if opportunities appear later:

- First School on Multiwavelength Astronomy, 29<sup>th</sup> June - 10<sup>th</sup> July, 2009, Paris (<http://www.black-hole.eu/index.php/schools-workshops-and-conferences/1st-school-on-multiwavelength-astronomy>)
- ESO "VO-day", 15<sup>th</sup> September, 2009
- IX Hellenic Astronomical Conference, 20<sup>th</sup>-24<sup>th</sup> September, 2009, Athens, (<http://www.helas.gr/conf/2009/index.php>), where Evanthia Hatziminaoglou will give an invited talk on "Science with the Virtual Observatory" in the Session "Astronomical Infrastructures"
- Summer School NOVICOSMO 2009 "Highlights in Astrophysics", 20<sup>th</sup>-30<sup>th</sup> September, 2009, Rabac, Croatia (<http://www.novicosmo.org/>)
- SVO Hands-on Workshop, September 2009, Granada, Spain



## **13. WP5 – SA3 – SERVICE ACTIVITIES FOR EDUCATION AND OUTREACH**

### **13.1. Work Package Objectives**

This Work Package is led by INAF. Its objective is to provide and share expertise and material between partners useful for:

- 1 - Higher educational level (university, doc and post doc students)
- 2 - Teacher of the 14-18 years old students (non specialists in astronomy)
- 3 - General public, amateur astronomers, and press

### **13.2. Work Package Deliverables**

D5.1 (Month 4 - May 2008, INAF with other WP5 participants): Identification of User requirement for the outreach activities - [delivered on 07/07/2008](#)

D5.2 (Month 15 - April 2009, INAF with other WP5 participants): First release of Educational and Outreach tools and material - [delivered on 03/05/2009](#)

D5.3 (Month 27 - April 2010, INAF with other WP5 participants): Final release of Educational and Outreach tools and material

### **13.3. Work Package activities**

The activities developed in WP5 are new among European VO activities. We want to provide tools for accessing VO data, in particular, for higher education students, for middle school teachers, and for amateur astronomers.

The idea is to "adapt" tools already in use among professional astronomers with the following two general requirements: on the one hand to maintain the sense of wonder and the excitement of accessing the top-level information that humans have been able to gather by observing the sky, on the other to ease the steep learning curve that the original tools for professional astronomers would require. These general requirements have become a more specific set of requirements that are applied to our selected professional tools and that we offer to other existing tools that have been developed for a variety of goals and that access, or will access, European VO data.

We point out that, in preparing our plan for WP5-SA3, we have taken into account the draft of the ASTRONET Infrastructure Roadmap (May 2008; <http://www.strw.leidenuniv.nl/astronetroadmap/>), in particular chapter 7 "Education, recruitment & training, public outreach".

The Work Plan for WP5 was initially defined as follows:

#### **Phase A**

- Requirements and choice of outreach interfaces
- Production and/or modification of existing software
- Translation of outreach interfaces
- Basic documentation with some examples

## Phase B

- Identification of testers and design of appealing projects for them
- Test Interface
- Gather, translate and organize feed-back for interface revisions

## Phase C

- Produce documents (user guide, primer, examples, basic script library...)
- Produce basic outreach content for interface and dedicated web-site
- Distribute and promote the use of our outreach products

At the time of writing this revised project plan, Phases A and B are completed and Phase C is in progress.

We remind that the identified main professional tools that are adopted and offered to our public are Aladin (CDS), Stellarium (ESO) and Stellarium/VirGO (ESO).

Concerning the remaining basic requirements identified in our D5.1, the selection of astronomical objects by class and the simplified search options will be implemented during Cycle 2, whereas the high level commands in script language has been abandoned after negative feedback from our users.

Use cases are a very distinctive output of WP5 activities since their validity is independent from software development. A preliminary collection was presented in D5.2 (First release of educational and outreach tools and material). More use cases will be completed for D5.3 (Final release of educational and outreach tools and material), scheduled for April 2009.

Our work on the selection of astronomical objects by class will continue in Cycle 2. The main category trees Stars, Galactic Nebulae, and Galaxies have just been prepared. The possibility to select objects based on their belonging to these categories will be included in our software tools before the beginning of next school year 2009-2010.

Other activities which will be undertaken during Cycle 2 are:

- Development of the initial contacts with HOU and ESO
- Creation of a dedicated website for distribution of outreach material, including a quick presentation of use cases in English (they are already available in Italian)
- Production of more use cases (e.g. "Explore Messier Catalog", "The colour of Stars", "Distance of the Crab Nebula")
- Translation effort in general, and in particular of use cases
- Extension of tests in schools in other countries (Germany and France)
- Participation to professional conferences where to present our preliminary results and a description of WP5 activities to the widest possible audience. If possible, promotion of our WP5 will not be limited to the astronomical community.
- Course of lectures (start – February 2010), organised by RUG

Finally, a number of important news:

- The EuroVO-AIDA WP5 will be officially part of the course in Astronomy of the Trieste University for the school year 2009-2010, which will lead to tests and feedback for higher education at the university level.

- The EuroVO-AIDA WP5 obtained the STELLA certificate and is now advertised in the STELLA site. STELLA is funded with support from the European Commission within the Lifelong Learning Programme and it is an important program "to disseminate innovative projects, methodologies, emerging ideas in science education in an integrated and interactive way".
- EuroVO-AIDA WP5 has been invited to schools in Bulgaria, via the Astronomy Department of the Sofia University. The extension to this country of our experience even before the completion of the project promises to lead to significant improvements of our final release.

More information on the WP5 activities are detailed on following TWiki page: <http://cds.u-strasbg.fr/twikiAIDA/bin/view/EuroVOAIDA/WP5Outreach> and pages therein.

## **14. WP6 - JRA1 - EVOLUTION OF VOBS INTEROPERABILITY STANDARDS**

### **14.1. Work Package Objectives**

This Work Package is led by UEDIN. Its objectives are:

- 1 - To decide what technical standards and protocols are required for Euro-VO
- 2 - To bring forward these requirements to the IVOA, in the frame of WP2-4 activities
- 3 - To develop drafts of these standards
- 4 - To develop prototype software implementing the draft standards
- 5 - To make all possible effort to conclude international agreement on the necessary standards
- 6 - To ensure that deployments within Euro-VO are compatible with IVOA standards.

### **14.2. Work Package Deliverables**

D6.1 (Month 15 - April 2009, UEDIN and other WP6 participants): WP6-JRA1 intermediate report and associated prototypes - postponed to take into account the IVOA interoperability meeting on 24-29 May 2009 - delivered on 04/09/2009

D6.2 (Month 27 - April 2010, UEDIN and other WP6 participants): WP6-JRA1 intermediate report and associated prototypes

### **14.3. Work Package activities**

JRA1 is led by UEDIN, with large contributions by CNRS, ESA, and INAF, and some contributions by other partners (in that respect a specific point on INTA Cycle 2 activities is given below). The three EuroVO-AIDA Joint Research Activities (WPs 6, 7, 8) are strongly interlinked. The evolution of the VO standards is very important for the development of the Virtual Observatory and will continue to require an international agreement for which European organizations can provide a strong input through EuroVO-AIDA.

WP6 activities can be summarized as follows:

- Formulation of requirements and the technical plan. This takes input from other parts of Euro-VO, and formulates a plan which is used by all other parts, especially WP7-JRA2 and WP8-JRA3
- Participation in IVOA Working Groups. This includes co-ordinating our plan with the IVOA roadmap; producing draft standards; attending IVOA meetings and telecoms; and reporting of IVOA progress to Euro-VO. Networking with IVOA is part of WP2-4
- Development of software prototypes. Draft standards will be tested by developing and deploying software prototypes which implement those standards (e.g. tools, dataset access). We will also develop recommendations for Euro-VO partners on construction of actual working infrastructure components which are compliant with VO standards

As during Cycle 1, feedback from Service and Networking activities will be important input for WP6. For instance, it is expected that the Service activities linked to registry in WP3 will allow intense tests and produce requirements for evolution of the Registry standards.

The key milestones are the Technical Forums (included in WP2-2) and the IVOA interoperability meetings. In order to prepare IVOA meetings at best, EuroVO-AIDA partners will discuss during the Technology Forum during Cycle 2 (September 2009 and March 2010) to define a European view on targets and priorities.

The Final report on Evolution of VObs interoperability standards and associated prototypes to be produced will contribute to set the status of interoperability standards.

Partners will take part to the discussions in the different groups of the IVOA (Applications, G&WS, Registry, etc.). EuroVO-AIDA partners' priorities include PLASTIC/SAMP, Theory standards (as follow up in particular of the evaluation done in the frame of the EuroVO-DCA project), Single Sign On, in addition to standards linked to Data Access Layer, Data Models and VO Query, which are tackled by WP7.

Planned travels to IVOA interoperability meetings within WP2-4 during Cycle 2:

- November 2009: IVOA Interoperability meeting (Garching bei München)
- May 2010: IVOA Interoperability meeting (Victoria, Canada)

Planned participation in Technical Forums within WP2-2 during Cycle 2:

- Technical Forum #4: 22<sup>nd</sup>-24<sup>th</sup> September 2009, Trieste (INAF)
- Technical Forum #5: March 2010 (UHEI)

During Cycle-2 INTA will continue its efforts to improve the S3 access protocol as well as to implement new S3-based services (e.g. asteroseismic models). In parallel to this INTA will continue the contacts with the SimDB/SimDAP community on our common goal of defining a unique VO access protocol for theoretical data.

Planned activities in the domains of the different IVOA Working Groups and Interest Groups are listed below. The actual work programme may evolve if required, depending on the international context.

It is to be noted that the output from this Work Package does not necessarily have to be an IVOA Standard, as the life cycle of IVOA Standards is controlled by the IVOA body. This Working Group collaborates in the creation of those standards by gathering inputs from the partners, and transmitting them to the IVOA where those inputs are discussed and eventually become part of an eventual standard.

### **Applications**

SAMP Standard: define new mTypes.

Add/complete SAMP capability: Virgo, VODesktop, and VOSpec.

On-going: JSAMP support.

### **G&WS**

Security questions: Minimum Requirements? Trusted authorisation engines? Security Plans: Merge/assimilate existing systems, Bridge between disparate systems, Prototype ideas and edge cases.

VOSI: TAP + Reg and Root URL for all VOSI end points?

VOSpace: Complete v1.1 implementations, Prototype v2.0 (REST).

REST: Best practises.

### **Registry**

Finalise VODataService schema (dependent upon TAP / VOSI etc).

Finalise S\*AP schema extensions.

Prototype Curation Tool.

Prototype Registry search proposals.

### **Semantics**

Continue development of the CDS annotation service.

Investigate SKUA, an infrastructure to create and share annotations.

Continue to improve the ontology of astronomical object types.

Port the existing code to the Manchester OWL API.

Design and implement an automated instantiation process for the ontology of astronomical object types.

Design and implement a web service use-case exploiting the knowledge structured in the ontology.

### **Theory**

SimDAP: VisIVO implementation and convergence with the microsimulation requirements.

SimDB: Extensions for microsimulation and Spectra extensions.

Simulation semantics.

### **Data curation and preservation**

No explicit plans for the moment. Contacts are maintained with the NSF-selected DataNet project at Johns Hopkins University, in which the US VObs project is playing an important role.

### **VOTable**

Largely a completed activity as the final changes in support of DAL/TAP are now complete. VOTable v1.2 document is posted on the IVOA website, available at the following address: <http://ivoa.net/Documents/cover/VOTable-20090613.html>. Plans are to bring the document to REC.

Upgrade SAVOT to VOTable v1.2 compliance.

### **VOEvent / OGF Astro-RG**

Low volume activities. Plan to maintain general watching brief.

## **15. WP7- JRA2 - DATA ACCESS PROTOCOLS AND DATA MODELS**

### **15.1. Work Package Objectives**

This Work Package is led by ESA. Its objectives are:

- 1 - Taking into account requirements from the scientific users and the data centres, participate in the IVOA Working Groups for the definition of the IVOA standards and protocols for data access, data description (taking into account in particular data provenance and data quality), and query language, beyond the present initial versions ("simple" protocols)
- 2 - Input will be given to the Data Access Layer, Data Models and VO Query Language IVOA Working Groups, in the frame of WP2-4 activities

### **15.2. Work Package Deliverables**

D7.1 (Month 15 - April 2009, ESA and other WP7 participants): WP7-JRA2 intermediate report and associated prototypes - postponed to take into account the IVOA interoperability meeting on 24<sup>th</sup>-29<sup>th</sup> May 2009 - delivered on 04/09/2009

D7.2 (Month 27 - April 2010, ESA and other WP7 participants): WP7-JRA2 final report and associated prototypes

### **15.3. Work Package activities**

The idea is to perform R&D studies for Data Access, Data Model and VObs Query Language protocols and standards. WP7 is lead by ESA with contributions from the other WP7 participants, in particular of CNRS for the data modelling aspects, and of CNRS, INAF, INTA and UHEI for theory standards.

In particular that includes:

- Studying the DAL, DM, VOQL standards. Assessing possible technologies to implement these standards
- Participation to the IVOA Working Groups discussions, mail forum, teleconferences
- Participation to writing the standards specifications document of these DAL, DM, VOQL
- Participation to the IVOA Technical forum and meetings to present the findings and implementations of these DAL, DM, VOQL standards
- Writing prototype implementation of these DAL, DM, VOQL standards onto real data holdings from European Data Centres
- If applicable, publish these implementations into the Euro-VO Registry of VObs resources
- Coordinate with EuroVO-AIDA Service Activities for these (prototype) implementations of these DAL, DM, VOQL standards to be consumed by VObs tools (in liaison with WP3 and WP4)

EuroVO-AIDA participation in the IVOA interoperability meetings to present EuroVO-AIDA findings, prototypes and reference implementations of these DAL, DM and VOQL standards is taken into account in the Networking task WP2-4. The co-operation between partners amongst the JRAs is a networking activity undertaken in WP2-2 service activities.

Planned travels to IVOA interoperability meetings within WP2-4 during Cycle 2:

- November 2009: IVOA Interoperability meeting (Garching bei München)
- May 2010: IVOA Interoperability meeting (Victoria, Canada)

Planned participation in Technical Forums within WP2-2 during Cycle 2:

- Technical Forum #4: 22<sup>nd</sup>-24<sup>th</sup> September 2009, Trieste (INAF)
- Technical Forum #5: March 2010 (UHEI)

Technology Forums organized within WP2-2 are important milestones to bring Euro-VO view as one. Indeed, these events enable to pursue discussions amongst the European partners on all these DAL, DM, and VOQL aspects with the goal to be able bring the Euro-VO view as one consolidated view to the IVOA discussions. Nonetheless, it is to be noted that although this is the goal, the project recognizes the diversity of the various partners (which makes its strength as well!), which might represent different user communities and therefore having different requirements and ideas. These technology Forums are the opportunity to expose and understand these various views so that gives us a chance to try to unite them at European level before discussing them at a more worldwide level.

WP7 also has a natural link with WP3 service activities in support to Data Centres for the implementation of these prototypes at the European level and for gathering feedback from implementation. As explained earlier on in the WP3 section, lots of interaction is taking place between these two WPs in Cycle 2.

Work on the DAL, DM and VOQL standards and potential resulting services are inputs to the definition and the implementation of the curation utilities of the Euro-VO Registry of VObs resources, as well as inputs to the data publishing tools developed at European level. Feedback from the data centres when implementing the DAL, DM and VOQL standards to publish their data holdings into the VObs framework are used for the evolution of these IVOA standards.

It is to be noted, like for the other JRAs, that the output from this Work Package does not necessarily have to be an IVOA Standard, as the life cycle of IVOA Standards is controlled by the IVOA body. This Working Group collaborates in the creation of those standards by gathering inputs from the partners, and transmitting them to the IVOA where those inputs are discussed and eventually become part of an eventual standard.

The working plan for Cycle 2 is basically the same than in Cycle 1. Clear priorities for Cycle 2 will be the TAP, DAL and DM.

It is expected that the combination of a proper Observation Data Model being accessed through the TAP protocol will increase the ease of access to many astronomical resources. Therefore, Observation DM work will be boosted from the IVOA and thus from this group as well.

Here is the list of identified Tasks and their leader, with their plans for Cycle 2:

- WP7\_T1\_AsynchDAL - UEDIN
  - Integration of asynchronous queries into the new generation DAL protocols (e.g. TAP, SIAP v2)



- WP7\_T2\_SEDLibrary - ESO
  - At ESO, a first effort is based on the "natural" native FITS format most of the ground based observatories are using world-wide
  - A library is being developed to convert the ground based typical spectral format (1D image) into the SpectrumDM suggested FITS format
  - A CGI script to test the library is already available, and will be soon made available through the ESO SSA operational service
  - Later on, based on this concrete experience, the library will be made available to other data centres
  
- WP7\_T3\_FootprintDAI - CNRS
  - Integration of Footprint services in the current and future SIAP and SSAP protocols including development of server/client prototype as a proof of concept
  
- WP7\_T4\_GenericsDS - CNRS
  - Discussions on query parameters, access to cubes, with cutouts and transformations (including resampling) output parameters with their utypes, etc..., inclusion of DAL associations and extensions
  - The Generic dataset access protocol will include a common profile to encapsulate the existing IVOA simple access protocols and provide advanced capabilities such as ADQL queries, descriptions of metadata according to the full Observation DM, and access modes to heterogeneous complex data
  - A version of the SIA2 preliminary draft interface is under preparation for end of June 2009. A version of SIA2 working draft is planned to be circulated for 3<sup>rd</sup> August 2009. Then, the generic Dataset protocol will be designed following the vision developed in "DAL architecture document" ([http://www.ivoa.net/internal/IVOA/SiaInterface/DAL2\\_Architecture.pdf](http://www.ivoa.net/internal/IVOA/SiaInterface/DAL2_Architecture.pdf)) and formalized in a new document
  
- WP7\_T5\_AssocSAP - ESA
  - Absence of clear use cases identified in IVOA
  - Thus the aim is to define use cases to give as an input:
    - *Complex data*: multi-images, Echelle...
    - *Complex metadata*: Photometry, Provenance, characterisation level 3 (FOVS) and 4 (variability maps)
    - *Echelle spectra*: it could be described either by association of multiple 1-D spectra or use a multi-segment spectral representation - is this enough?
  - Transmission curves/response matrixes linked in the SSAP response to SED
  - Images and sub-images (in SIAP, one image per observation + images for different energy bands or instrument - example: XMM images)
  - Multi-position query
  - Confidence Maps (McMahon)

- WP7\_T6\_ PhotometryDM- ESA
  - Meeting held between SVO and ESA-VO members
  - Preliminary Photometry UML Data model produced. Task distribution working list created and model distributed to it.
  - Science use cases distributed to the list
  - Plan of activities developed and distributed:
    - Distribution of preliminary Photometry UML for discussion (done)
    - Distribution of science use cases (done)
    - Agreement on DM
    - Creation of Profile Filter Service and interaction with VO applications (ongoing)
    - Creation of Photometry data services and interaction with VO applications
  - Model presented during the AIDA 3<sup>rd</sup> Technical Forum (March 2009) - Discussions were held during the meeting and changes were implemented in the model
  
- WP7\_T7\_RadioCubes - UEDIN
  - Produced a Note on polarization, also for presentation at the IVOA Interoperability meeting in Strasbourg, France, on 24<sup>th</sup>-29<sup>th</sup> May 2009 (<http://www.ivoa.net/internal/IVOA/NotesOnPolarization/Note-Polarization-0.1-20090522.pdf>)
  - Summarizing briefly the requirements of data providers such as ALMA, e-MERLIN, HI single dish mosaics
  - Investigating compatible formats in other wavebands, e.g. some ESO optical or IR data (SINFONI) may be in the form of suitable cubes
  - Drawing up priorities for data retrieval standards - commenting on related aspects of SIAPv2
  
- WP7\_T8\_ADQLLibrary - ESA
  - Facilitate update of ADQL by data centres by developing Java libraries
  - ADQL XML, ADQL2SQL, SQL2ADQL
  - Note that ADQL v2.0 became IVOA recommendation in October 2008
  
- WP7\_T9\_SourceCat - ESA
  - Activity on this Data Model is on hold within the IVOA. However, it is felt that the Source Catalogue Data Model will be crucial within implementations of TAP accessing Sources; therefore, higher activity is expected after first release of the TAP standard
  - In any case, a revised version of the model has been created and distributed for discussion. The revised model is attached to the D7.1 deliverable

- WP7\_T10\_ObsProvDM - CNRS
  - "Provenance" of an observation or a dataset in IVOA vocabulary and standards may be different than in other contexts
  - It is part of a more general description of the dataset metadata which is called the "Observation data model"
  - It is not dealing with the curator or data provider which are described elsewhere in the standard
  - It is dealing with the description of the history of the data
  - An observational dataset is the result of an instrumental and software process
  - We need to give simple enumeration of these steps with links to additional non standardized documentation and metadata
  - "Provenance" has three main classes:
    - "Processing" (calibration, mosaicking...)
    - "Observation Configuration" made of "Observation elements" (telescope, camera)
    - "Ambient conditions" (like temperature)
  - Priority use cases:
    - Describing Filter transmission curve
    - Access to Progenitors of the Mosaic dataset...
  - Specific discussions at IVOA level on this topic since the IVOA Interoperability meeting in Strasbourg in May 2009: the priorities and allocated resources may be raised
  
- WP7\_T11\_Units - UEDIN
  - VO Units draft written and proposed to IVOA
  - Discussions ongoing (<http://www.ivoa.net/forum/dm/att-1495/WD-VOUnits-20090519.pdf>)

## 16. WP8 - JRA3 - ASSESSMENT OF EMERGING TECHNOLOGIES

### 16.1. Work Package Objectives

This WP is led by CNRS. Its objective is to assess the potential usage of emerging technologies of interest to the VObs in technical areas where partners are involved.

### 16.2. Work Package Deliverables

D8.1 (Month 15 - April 2009, CNRS and other WP8 participants): WP8-JRA3 intermediate report and associated prototypes - postponed to take into account the IVOA interoperability meeting on 24<sup>th</sup>-29<sup>th</sup> May 2009 - delivered on 04/09/2009

D8.2 (Month 27 - April 2010, CNRS and other WP8 participants): WP8-JRA3 final report and associated prototypes

### 16.3. Work Package activities

The activities undertaken in this WP are the study, prototyping and evaluation of the usage of:

- Web 2.0 for data centres (CNRS): assessment of technology and of the human cost associated to quality management (moderation, user-account management, etc)
- Semantics and ontologies (INAF and CDS), with applications to the astronomical semantic web and to the definition and usage of an astronomical vocabulary. INAF is working with the CDS on the definition of a vocabulary, on the mapping and on the development of a prototype on Ontology. The results are discussed at the international level in particular in the IVOA Semantics Working Group (WP2-4)
- Data Mining (UEDIN), with work on both the assessment and implementation of new algorithms, technologies, and packages, and on the technical infrastructure needed in Euro-VO to deliver data mining services to end users

Part of the "Web 2.0" activity is new in Euro-VO. Thanks to VO-TECH FP6 Design Study (DS 2005-2008, extended to June 2009), "Semantics and Ontologies" and "Data mining", as well as the Service Mash-up activity at CDS, were already under development and the transition with EuroVO-AIDA was undertaken during Cycle 1. As foreseen, the detailed EuroVO-AIDA work programme has taken into account VO-TECH findings: "Agile strategy to maximize impact". Web 2.0 assessment has been fully active during Cycle 1. The two other assessments will be mostly active during Cycle 2.

The Participation to the IVOA Working Groups during Cycle 2 will include participating to the discussions, meetings and telecoms and reporting results and recommendations as IVOA Technical Notes.

Planned travels to IVOA interoperability meetings within WP2-4 during Cycle 2:

- November 2009: IVOA Interoperability meeting (Garching bei München)
- May 2010: IVOA Interoperability meeting

Planned participation in Technical Forums within WP2-2 during Cycle 2:

- Technical Forum #4: 22<sup>nd</sup>-24<sup>th</sup> September 2009, Trieste (INAF)
- Technical Forum #5: March 2010 (UHEI)

### 16.3.1. Web 2.0

Activities at CDS covered several aspects:

- Assessment of the implementation of the possibility for users to post annotations in the data centre services
- Service "mash-up"
- Assessment of Flex technology

One aim is to implement the possibility for users to post **annotations on the on-line CDS services**, to assess technology and human cost associated with quality management (moderation, user account management, etc). These services are widely used by the international astronomical community (presently more than 200,000 queries/day), which will allow a representative experimentation.

The requirements are as follows:

- No a priori moderation will be applied – the available manpower is likely not sufficient to check all the comments before posting them;
- User identification (through userID/password/email) will be implemented. This identification will be valid for the whole CDS services including the portal (see below);
- Annotations will be progressively implemented for different service contents:
  - For information about astronomical objects and bibliographic references (SIMBAD)
  - For catalogue and table descriptions, and maybe individual catalogue entries in VizieR
- Several types of annotations will be implemented, user comments and the possibility for users to require an action from the CDS (e.g. error correction, update of the database, etc).

The prototype implementation of annotation of objects of the SIMBAD database initiated during Cycle 1 will be completed in Cycle 2. It will be fully tested by CDS staff and released for public usage during Fall 2009. This will be a real-size prototype, and usage and content will be carefully assessed during Cycle 2. The tests will allow us to evaluate the main hypotheses, that users will be interested, and that there is no need for a priori moderation. The possibility to replace the current CDS hot-line by allowing different types of input (public, CDS only, action required from CDS) will be also assessed.

For the **Service Mash-up**, the aim is to assess the development of a single portal for heterogeneous data provided by the different CDS different services. The first prototyping activities were performed in the frame of the VO-TECH Design study and on CDS funds. The portal, mash-up of the three main CDS services, allows one to query simultaneously SIMBAD, Aladin and VizieR, and provides a summary of available data and links to access them. Thanks to the portal, the navigation between the services has been facilitated, the user being able to re-use the output from one service as the input to another. The development has been an opportunity to assess the usage of AJAX

(Asynchronous JavaScript And XML) and GWT (Google Web Toolkit), and the first implementation of user storage space at CDS (see D8.1). Public release of the portal is planned later in 2009, and feedback on usage will be sought to identify the required adjustments and improvements.

The **assessment of Flex technology** is undertaken with the SimPlay (SIMBAD disPlay) development, as described in D8.1. SimPlay is a simple interactive viewer for Simbad objects running in the user web browser, and aimed at replacing the existing static clickable map. SimPlay will be made publicly available in the SIMBAD service and from the CDS portal platform during Fall 2009. WP5 *Support to higher education and outreach* partners have also shown interest in using SimPlay as an Outreach tool, and SimPlay will benefit from the customization of object classes planned by WP5.

In this domain, **UHEI** has planned the following activities for Cycle 2:

- New tools for the presentation of data: mash up of VO data (e.g. light-pollution) with geographical information, AJAX based datacube visualization
- Including a blog/RSS-feed in the German VO to keep the users up to date of changes, new data, new tools and other news

### 16.3.2. Semantics and Ontologies

One action under this strand of work is the development of an ontology of astronomical object types and their relations. This relatively "simple" case has been identified by INAF and CDS to explore the feasibility and interest of building and using ontologies. This action is interfaced with work performed in the Design Study 5 (*Intelligent resource discovery*) of the VO-TECH FP6 Design Study. As explained earlier, VO-TECH has been extended to the first half of 2009, and proper EuroVO-AIDA results will mostly appear in Cycle 2.

The team will continue to improve the ontology, both by refining its elements and structure and by adding information such as keywords.

The feedback from the prototypes showed that the main limitation of the approach is performance since working on concepts only forces a reclassification of the whole ontology each time there is a modification. To solve this issue, now that the ontology is mature enough, a strategy for an automated instantiation process of actual astronomical data sources into instances of concepts of the ontology of astronomical object types has been set up and is being implemented. To ease the implementation of the instantiation process, improve overall performance and guarantee better support in the future, a change of API has been decided. Existing code using the Protégé-OWL API is being ported to OWL API. Unlike the Protégé-OWL API which is fundamentally an RDF API with OWL capabilities and will not be supported much longer, the newer OWL API is completely dedicated to OWL, which explains why it is becoming the new reference API for OWL manipulation. The performance gain and scalability will be evaluated during Cycle 2.

A web-service use case will be implemented (validation of SIMBAD content), exploiting the knowledge structured in the ontology to suggest refinements and/or additional information from a given input related to object type or to any other information covered by the ontology. This includes providing translation of keywords between different services set of keywords. The goal is to improve the quality of the input before relaying it to the service/application which will use it.

Full documentation will be produced during Cycle 2.

On the other hand, UK partners have developed a prototype RDF version of the IVOA Resource Registry, to explore the usability and expressibility of the RDF result. This prototype will be used by the UK JISC-funded SKUA project.

### **16.3.3. Data Mining**

UEDIN leads the data mining activity within WP8. This is designed to build upon earlier work undertaken under the aegis of the FP6-funded VO-TECH Design Study. In particular, one of the aims of the EuroVO-AIDA data mining activity is to develop some of the ideas from VO-TECH into prototype systems for a Europe-wide VOs. As explained above, the VO-TECH project has received an extension, and has closed in June 2009. This has delayed the conclusions of its data exploration design study, which are intended to form the basis of the development of VO-TECH ideas within EuroVO-AIDA.

This has necessitated a reprofiling of the effort on data mining within WP8, so that the bulk of the work will now take place within Cycle 2. Initial work that has been undertaken includes preliminary discussions with the FP7-funded ADMIRE (Advanced Data Mining and Integration Research for Europe) project, which is developing distributed computing tools and techniques for running data mining analyses on a Europe-wide scale. A preliminary analysis of lessons learnt from VO-TECH highlights the importance of having a ready means of supporting server-side data analysis services, capable of processing large data volumes, and the necessary software components are only now becoming available within the VO.

AstroGrid's AstroRuntime provides a simple way to call VO services, and, in its "headless" version, can provide multiple users with session-based access to services running on a particular server. We will prototype server-side data exploration based on calls made via this method to STILTS and (Astro)Weka. STILTS has the advantage of offering on the server side most of the same tasks that users are familiar with employing on the client side with TOPCAT; and Weka/AstroWeka extends the basic data manipulation and display functionality of STILTS with core data mining routines.


In parallel with this prototyping activity, we shall also undertake more abstract design work, concerned with assessing the best way to offer data exploration services in the VO in a manner which is consistent with more generic service-oriented architectures provided by the e-Science and Grid Computing communities. The first task will be to assess the applicability of the ADMIRE architecture to the VO, focussing on how well it would mesh with the existing VO.

## 17. EFFORT DISTRIBUTION

Activity Type	CNRS	ESA	ESO	INAF	INTA	RUG	UEDIN	UHEI	TOTAL ACTIVITIES
Joint Research (RTD) activities									
WP6	9	6	9	2	2	2	16	4	47
WP7	0	12	9	0	2	4	3	2	29
WP8	12	3	0	7	2	4	6	3	37
Total 'JRAs'	21	21	12	9	6	10	25	9	113
Networking (Coordination) activities									
WP2	25	6	12	12	9	11	12	6	93
Total 'NAs'	25	6	12	12	9	11	12	6	93
Consortium Management activities									
WP1	9 (+9 contr.)	(+2 contr.)	(+2 contr.)	(+2 contr.)	(+2 contr.)	(+2 contr.)	(+2 contr.)	(+2contr.)	9 (+2contr.)
Total 'Management'	9	0	0	0	0	0	0	0	9
Service activities									
WP3	0	9	3	2	3	0	0	3	20
WP4	3	6	3	0	9	4	3	3	43
WP5	9	0	6	12	2	3	0	1	27
Total 'SAs'	12	15	18	14	14	7	3	7	90
<b>TOTAL</b>	<b>67</b>	<b>42</b>	<b>42</b>	<b>35</b>	<b>29</b>	<b>28</b>	<b>40</b>	<b>22</b>	<b>305</b>



**18. ESTIMATED BUDGET BREAKDOWN PER WORK PACKAGE**

<b>Grant agreement Preparation Forms</b>		
	EUROPEAN COMMISSION  7th Framework Programme on Research, Technological Development and Demonstration	<b>Combination of Collaborative                  Project and Coordination and                  Support Action</b>
		<b>A3.2:</b> What it costs

<i>Proposal number (1)</i>	212104	<i>Proposal acronym (2)</i>	EuroVO-AIDA
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**ONE FORM PER PROJECT**

Participant number in this project	Organisation short name	Estimated eligible costs (whole duration of the project)					TOTAL A+B+C+D+E	Total receipts	Requested EC contribution
		RTD (A)	Coordination (B)	Support (C)	Management (D)	Other (E)			
1	CNRS	190.400,00	330.315,20	0,00	100.008,00	113.664,00	734.387,20	0,00	577.370,29
2	ESA	244.475,00	158.877,00	0,00	889,00	178.485,80	582.726,80	0,00	360.445,28
3	ESO	90.000,00	231.576,00	0,00	840,00	138.648,00	461.064,00	0,00	413.476,60
4	INAF	75.600,00	165.440,00	0,00	1.120,00	122.464,00	364.624,00	0,00	290.922,00
5	INTA	55.000,00	116.000,00	0,00	1.000,00	131.373,33	303.373,33	0,00	242.433,33
6	RUG	89.333,33	151.866,67	0,00	1.120,00	62.533,33	304.853,33	0,00	232.214,17
7	UEDIN	251.250,00	170.180,00	0,00	1.000,00	33.190,00	455.620,00	0,00	343.897,50
8	UHEI	110.550,00	107.200,00	0,00	1.000,00	85.983,33	304.733,33	0,00	239.240,83
TOTAL		1.106.608,33	1.431.454,87	0,00	106.977,00	866.341,79	3.511.381,99	0,00	2.700.000,00

## ANNEX: ACRONYMS USED

<b>ADMIRE</b>	Advanced Data Mining and Integration Research for Europe
<b>ADQL</b>	Astronomical Data Query Language
<b>AIDA</b>	Astronomical Infrastructure for Data Access
<b>AJAX</b>	Asynchronous JavaScript And XML
<b>ALMA</b>	Atacama Large Millimetre Array
<b>AO</b>	Announcement of Opportunities
<b>API</b>	Application Programming Interface
<b>AstroGrid</b>	UK VO project
<b>ASTRONET</b>	ASTRONomy NETwork ("Towards a strategic plan for European Astronomy" EC-funded project ERA-NET)
<b>Astro-RG</b>	Astronomical Grid Community Research Group (within OGF and IVOA)
<b>BELIEF</b>	Bringing Europe's eElectronic Infrastructures to Expanding Frontiers (EC-funded project)
<b>CA</b>	Consortium Agreement
<b>CDS</b>	Centre de Données astronomiques de Strasbourg
<b>CGI</b>	Common Gateway Interface
<b>CNRS</b>	Centre National de la Recherche Scientifique
<b>CO</b>	Confidential, only for members of the consortium (including the Commission Services)
<b>D#</b>	Deliverable number
<b>DAL</b>	Data Access Layer
<b>DCA</b>	Data Centre Alliance
<b>DM</b>	Data Model
<b>DRIVER</b>	Digital Repository Infrastructure Vision for European Research
<b>DS</b>	Design Study
<b>DSA</b>	Data Set Access
<b>EAS</b>	European Astronomical Society
<b>EC</b>	European Commission
<b>EGEE</b>	Enabling Grids for E-science in Europe (EC-funded project)
<b>ESA</b>	European Space Agency
<b>ESA-VO</b>	ESA Virtual Observatory
<b>ESO</b>	European Southern Observatory
<b>EU</b>	European Union
<b>Euro-VO</b>	European Virtual Observatory
<b>Europlanet</b>	A European Research Infrastructure for Planetary Science

<b>EuroVO-AIDA</b>	European Virtual Observatory - Astronomical Infrastructure for Data Access
<b>EuroVO-DCA</b>	Euro-VO Data Centre Alliance (EC Funded, FP6 eInfrastructure Communication Network Development, 2006-2008)
<b>FITS</b>	Flexible Image Transport System (the most used standard in Astronomy)
<b>FOV(s)</b>	Field Of View (s)
<b>FP#</b>	Framework Program number
<b>G&amp;WS</b>	Grid & Web Services
<b>GWT</b>	Google Web Toolkit
<b>HELIO</b>	FP7 project
<b>HI</b>	Hydrogen
<b>HOU</b>	Hands-On Universe
<b>INAF</b>	Instituto Nazionale di Astrofisica
<b>INTA</b>	Instituto Nacional de Técnica Aeroespacial
<b>IR</b>	InfraRed
<b>IST</b>	Internal Science Team
<b>IVOA</b>	International Virtual Observatory Alliance
<b>JISC</b>	Joint Information Systems Committee
<b>JRA</b>	Joint Research Activity
<b>JRA#</b>	Joint Research Activity number
<b>JSAMP</b>	Java toolkit for use with the Simple Applications Messaging Protocol
<b>M#</b>	Milestone number
<b>MERLIN</b>	Multi-Element Radio Linked Interferometer Network
<b>METAFOR</b>	Common METAdata FOR Climate Modeling Digital Repositories
<b>NA</b>	Networking activity
<b>NA#</b>	Networking activity number
<b>NOVICOSMO</b>	"NOVICOSMO 2009, Highlights in Astrophysics" (20 <sup>th</sup> - 30 <sup>th</sup> September 2009), an International Summer School with the aim to cover the major topics in modern astronomy and astrophysics
<b>NSF</b>	National Science Foundation (USA)
<b>O</b>	Other
<b>OGF</b>	Open Grid Forum
<b>OWL</b>	Web Ontology Language
<b>PLASTIC</b>	PLatform for Astronomical Tool InterConnection
<b>PM</b>	Project Manager
<b>PP</b>	Restricted to other programme participants (including the Commission Services)
<b>PU</b>	Public
<b>R&amp;D</b>	Research & Development

<b>R</b>	Report
<b>RDF</b>	Resource Description Framework
<b>REC</b>	Recommendation
<b>REST</b>	Representational State Transfer
<b>RSS</b>	Really Simple Syndication
<b>RUG</b>	Rijksuniversiteit Groningen
<b>S3</b>	Simple Self-Described Service
<b>S*AP</b>	Service * Access Protocol
<b>SA</b>	Service Activity
<b>SA#</b>	Service Activity number
<b>SAADA</b>	Automatic Archival System for Astronomical Data
<b>SAC</b>	Science Advisory Committee
<b>SAMP</b>	Simple Application Messaging Protocol
<b>SAVOT</b>	Simple Access to VOTable
<b>SED</b>	Spectral Energy Distributions
<b>SIA</b>	Simple Image Access
<b>SIAP</b>	Simple Image Access Protocol
<b>SIMBAD</b>	Set of Identification, Measurement and Bibliography for Astronomical Data
<b>SimDAP</b>	Simulations Data Access Protocol
<b>SimDB</b>	Simulation Data Base
<b>SimPlay</b>	SIMBAD disPlay
<b>SINFONI</b>	Spectrograph for INtegral Field Observations in the Near Infrared
<b>SKUA</b>	Semantics Knowledge Underpinning Astronomy
<b>SQL</b>	Structured query language
<b>SSA</b>	Simple Spectra Access
<b>SSAP</b>	Simple Spectra Access Protocol
<b>STELLA</b>	Science Teaching in a Lifelong Learning Approach
<b>STILTS</b>	Starlink Tables Infrastructure Library Toolset
<b>SVO</b>	Spanish Virtual Observatory
<b>T#</b>	Task number
<b>TAP</b>	Table Access Protocol
<b>UEDIN</b>	University of Edinburgh
<b>UHEI</b>	University of HEIdelberg
<b>UK</b>	United Kingdom
<b>UML</b>	Unified Modeling Language
<b>URL</b>	Uniform Resource Locator
<b>US-VO</b>	United States - Virtual Observatory
<b>USA</b>	United States of America

<b>VAMDC</b>	Virtual Atomic and Molecular Data Centre
<b>VirGO</b>	Visual Archive Browser for the ESO Science Archive
<b>VisIVO</b>	Visualization Interface to the VO
<b>VizieR</b>	Database of astronomical catalogues and published tables
<b>VObs or VO</b>	Virtual Observatory
<b>VODesktop</b>	launching point for doing science using VO tools
<b>VOEvent</b>	Virtual Observatory Event (Standardized library to report astronomical events)
<b>VOFC</b>	Euro-VO Facility Centre
<b>VOQL</b>	Virtual Observatory Query Language
<b>VOSI</b>	Virtual Observatory Support Interface
<b>VOSpace</b>	VObs-compliant user storage area
<b>VOSpec</b>	A Tool to handle spectra in the VO context
<b>VOTable</b>	Virtual Observatory Table format standard
<b>VOTC</b>	Euro-VO Technology Centre
<b>VO-TECH</b>	Virtual Observatory Technology (EC-funded project, FP6, Infrastructure Design Study, 2005-2008)
<b>WG</b>	Working Group
<b>WP</b>	Work Package
<b>WP#</b>	Work Package number
<b>WPMT</b>	Work Package Management Team
<b>XML</b>	Extensible Markup Language
<b>XMM</b>	X-ray Multi-Mirror Mission