

SUP@VAMDC

Support at the Virtual Atomic and Molecular Data Centre

**D1.2**

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**SUP@VAMDC Project Plan Year 1**

Version 2.1

Grant agreement no: 313284

Combination of Coordination and Support Actions





### **Project Information**

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<http://voparis-twiki.obspm.fr/twiki/bin/view/VAMDC/SUP-VAMDC>

### **Consortium:**

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### **Document**

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## List of participants:

Beneficiary Number *	Beneficiary name	Beneficiary short name	Country	Date enter project**	Date exit project**
1 (coordinator)	Observatoire de Paris <sup>1</sup>	OBSPARIS	France	Month 1	Month 24
2	The Chancellor, Masters and Scholars of the University of Cambridge	UCAM	UK	Month 1	Month 24
3	Uppsala Universitet	UU	Sweden	Month 1	Month 24
4	Open University	OU	UK	Month 1	Month 24
5	Universitaet zu Koeln	KOELN	Germany	Month 1	Month 24
6	University College London <sup>3</sup>	UCL	UK	Month 1	Month 24
7	Korea Atomic Energy Research Institute	KAERI	Korea	Month 1	Month 24
8	Institute University of South Africa	UNISA	South Africa	Month 1	Month 24
9	Tata Institute of Fundamental Research	TIFR	India	Month 1	Month 24

In addition to the legal Beneficiaries, SUP@VAMDC has external partners who are supported to attend SUP@VAMDC main events and an associate member with no support. Detailed explanations are given in the implementation section of Description of Work. Below is the list of those partners.

Name	Institute	Status
Dr Yuri Ralchenko	Atomic Spectroscopy Group, NIST, USA	External
Dr Larry Rothman	The Harvard-Smithsonian Center for Astrophysics, Cambridge, USA	External
Dr Brian Drouin	The Propulsion Laboratory, NASA	External
Dr Carlos Gonzales	The Chemical and Biochemical Reference Data Division	External
Prof. Stephen Buckman	Atomic and Molecular Physics Laboratory, Canberra, Australia	External
Prof. Michael Brunger	The Electron Scattering and Modelling Group, Flinders University, Australia	External
Dr Izumi Murakami	National Institute for Fusion Science, Japan	External
Prof. Milton Fujimoto	Universidade Federal of Parana, Brazil	External
Dr Bas Braams	Atomic and Molecular Data Unit, IAEA, Vienna	Associate

Abstract	<p>The objective of D1.2 is to describe SUP@VAMDC Project Plan, with a detailed view of Year 1.</p> <p>It provides work details, name of people in charge of board, workpackages, tasks.</p> <p>It includes the Consortium Agreement as an annexe to the document.</p>
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**Versioning and Contribution history**

Version	Date	Reason for modification	Modified by
V0.1	01/03/2013	First Draft	M.L. Dubernet
		Inputs from the nodes on the different contributions	
V1.0	22 Sept. 2013		M.L. Dubernet
v2.0	21 May 2014	After 1rst Review, re-shape with metrics and KPI (already defined in WP reports by WP learders and their boards) most rationale is in WP reports - circulated to EPT for remarks	M.L. Dubernet
V2.1	22 May 2014	small items	J. Tennyson
v2.1	25 May 2014	Final Check	M.L. Dubernet

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M.L. Dubernet	26 May 2014	Mrs Kalfin	26 May 2014

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## EXECUTIVE SUMMARY



### SUP@VAMDC SUMMARY

Atomic and molecular (A+M) data are critical for a range of applications such as astrophysics, atmospheric physics, fusion, environmental sciences, combustion chemistry, health and clinical science including radiotherapy. They underpin industries ranging from technological plasmas to lighting. The Virtual Atomic and Molecular Data Centre (VAMDC) is a major new European initiative that has built a unified, secure, documented, flexible and interoperable e-science environment-based interface to 24 existing A+M databases.

SUP@VAMDC will coordinate collaborative studies and provide the supporting procedures that will develop a global e-infrastructure for the assembly, curation and access to A+M data. It will adopt and adapt VAMDC protocols to include further A+M databases and networks around the world. It will also design the pathways by which common policies may be developed for an open science version of VAMDC that will extend its availability to new audiences such as schools, students, citizens and industry.

### SUP@VAMDC ACTIONS

- Provide operational, legal and technological support for studies aimed at developing a sustainable open scientific data e-infrastructure in Atomic and Molecular Data.
- Provide support and the medium for inclusion of authentication, authorization and accounting as well as licensing and tools within the VAMDC brand.
- Promote and fashion future interoperability (technical, semantic, reference architecture, etc) across the A+M community through promotion, monitoring and adoption of common standards.
- Implement a programme of dissemination to raise the visibility of the VAMDC e-infrastructure to new audiences such as other disciplines, which could use the VAMDC e-infrastructure in their own scientific endeavours as well as students and citizen-scientists.

- Develop a globally connected and interoperable VAMDC e-infrastructures between the EU and the rest of the world, including Brazil, South Africa, Asia, Australia, USA, through hosting workshops and supporting dialogue between synergistic structures.
- Analyze and evaluate possible business models for supporting an open science model (OPEN VAMDC) while assessing which model(s) can provide financial sustainability for VAMDC itself.

### SUP@VAMDC OUTPUTS

- A worldwide open science e-infrastructure based on an international consortium of atomic and molecular databases providers linked by international agreements and common policies by which A+M data providers present and curate their data.
- A worldwide e-infrastructure impacting A+M Users: Astrochemistry and Planetary Sciences, Atmospheric Science, Fusion Energy Research, Lighting and Plasmas technologies, Radiation Sciences.
- A worldwide e-infrastructure with a wide public outreach impacting industrial and commercial partners, citizen science and education.
- Develop a roadmap to establish an accessible worldwide Open Science e-infrastructure constructed and operated by an international consortium of A+M database and service providers.

### AT A GLANCE

**Project Title :**  
Support at the Virtual Atomic and Molecular Data Centre

**Duration :**  
December 2012-November 2014

**EC Funding :**  
750 000 Euros

**Programme :**  
FP7 INFRASTRUCTURES-2012-1;  
INFRA-2012-3.3

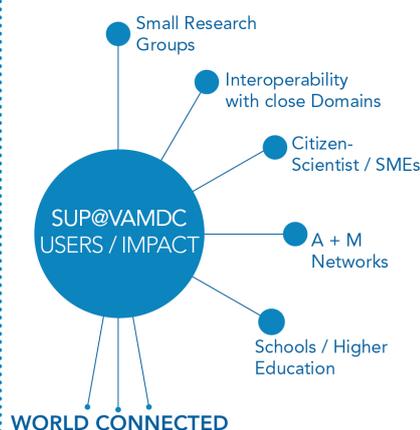
**Project identifier :**  
313284

### Partners :

- Observatoire de Paris, France – Coordinator
- The University of Cambridge, UK
- Uppsala Universitet, Sweden
- Open University, UK
- Universitaet zu Koeln, Germany
- University College London, UK
- Korea Atomic Energy Research Institute, South Korea
- University of South Africa, South Africa
- Tata Institute of Fundamental Research, India

### EXTERNAL AND ASSOCIATED PARTNERS :

- Yuri Ralchenko, Atomic Spectroscopy Group, NIST, USA
- Laurence S. Rothman, The Harvard-Smithsonian Center for Astrophysics, Cambridge, USA
- Brian Drouin, JPL, California Institute of Technology, USA
- Carlos Gonzales, The Chemical and Biochemical Reference Data Division, NIST, USA
- Milton M. Fujimoto, Departamento de Física, Universidade Federal do Paraná, Brazil
- Stephen Buckman, Atomic and Molecular Physics Laboratory, Australian National University, Australia
- Michael Brunger, The Electron Scattering and Modelling Group, Flinders University, Australia
- Izumi Murakami, National Institute for Fusion Science, Japan
- Bas Braams, Atomic and Molecular Data Unit, IAEA, Austria



### Coordinator :

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marie-lise.dubernet@obspm.fr  
Links :  
Project SUP@VAMDC website : sup-vamdc.vamdc.eu  
VAMDC website : www.vamdc.eu or www.vamdc.org  
Access to Databases : http://portal.vamdc.eu

## I. Reference Document

The reference document is the Description of Work that is part of the Grant Agreement signed in August 2012 by the commission. At the date of submission of these plans (that had been forgotten by the coordinator), an amendment is underway in order to change the DoW and budget's share. As the amendment is still not accepted, the present plans are still based on the initial DoW signed in July 2012, and any changes due to the amendment will be given in the subsequent reports.

## II. General Strategy for Year 1

As this revised version of the Plan Year I is written in May 2014 as a request from EU after the 1st SUP@VAMDC review, the plans reflect what has happened since. In addition the strategy and rationale are largely explained in the work package reports (deliverables for year 1) and won't be repeated here.

SUP@VAMDC suffers from the obligation to start on the 1st December 2012 instead that on the 1st of March 2013 as initially proposed by the SUP@VAMDC collaboration. This means that no real plan could be drawn before we got the FINAL review of VAMDC. Indeed this final review of VAMDC obliged us to find funding for a non planed "sustainability/marketing/communication" person. This obliged us to remove grant from EU nodes (6kEuros) and non-EU nodes (2,5kEuros) and therefore to remove activities linked to Education, SMEs, Citizen Project at those nodes. The total amount was 35kEuros from other nodes than OBSPARIS. It was understood that OBSPARIS will carried out the activities as initially planed. Obviously these amendment implied that Education, SMEs, Citizen Project would not be a collective work in Year 1, thus weakening the scopes of the activities as these activities can only be supervised by scientists. OBSPARIS had one scientist available for these activities.

The amendment decided by EU in April 2013 has been approved in November 2013, thus postponing employment up till 2014. All the relevant advert/interviews have been done: this included delays of answer from potential candidates up till a recruitment in April 2014 for 9 months.

**WP2** has been reshaped by the amendment to only 4 tasks. WP2 investigates the ground for collaboration between VAMDC and other A+M networks, as well as with Publishers. Its deals with the political organisation of the Consortium, and for Year 1 will handle the definition of the legal scheme binding the partners. WP2 must deliver a Roadmap that will get assessed by a review panel.

**WP3** is connection to a wider audience through impacting even further traditional user communities, through investigating new communities of data producers, through investigating the possible connection with Education, Industries and Outreach. *Considering that the amendment has removed nearly all partners from WP3-Education-Business-Outreach*, OBSPARIS has concentrated on education, UCL on connection to Industries, and OUtreach has been the poor parent of the WP3. Therefore no collaboration are planed for WP3-Education-Business-Outreach. As a consequence WP3 activities will concentrate :

1. on supporting user communities through tutorials and interaction with users in order to assess their needs, to adapt ourselves or to bring support to users so that their client applications can access our databases, to provide innovative tools.
2. on developing strategies for communication, products and prototypes in order to reach Education, Business, Outreach
3. on providing tutorials and helping small groups to be part of VAMDC e-infrastructure

**WP4** is a strategic work package for extension to external partners for new users and new producers. The work in India is of utmost importance for extending VAMDC to the data that are not currently put on line. The work in South Africa and in Brazil is more an exploration of what is possible and corresponds to the lowest possible level of starting collaboration. For external partners (JPL, HITRAN, NIFS, NIST, IAEA), there are stronger links. The WP4 is a technical work package in the sense that the different partners would implement our standards within their database (JPL, HITRAN, NIFS, NIST, KOREA, IAEA). The implementation of VAMDC in the USA, in India, in South America if possible, in Asia, in Australia is of utter importance because all those groups work together or are in friendly competition; therefore the long term sustainability of VAMDC can only be reinforced through creating or reinforcing international links. All the external partners have similar data as ours and there is just a need for implementation and political agreement. If it happens that some partners have different data then the situation will be handled in Year 2 if time permits.

**WP5** is the technical work package where material and software are developed, where professional released is done, where support to users is provided via help desk and where tutorials are packaged. From the DoW it is true that the structure of WPs between WP3 and WP5 is confusing. Some of the software appears in WP3 because they are developed in close relation with the user communities and it would remove all rationale just to mention them in WP5 since the rationale is in WP3. In these plans for Year 1, we don't try to re-organise the DoW as the work has already been performed and declared accordingly in timesheets.

### **III. Work package Plans**

#### **A. WP1 – MGT: Project Management**

The Project management will follow exactly what is written in the DoW - Annexe I - and will be followed.

<http://voparis-twiki.obspm.fr/twiki/bin/view/VAMDC/MGT:T1> will contain all official documents.

The management of each WP is written at the start of the WPs plans.

The schedule for reporting in Year 1 is on <http://voparis-twiki.obspm.fr/twiki/bin/view/VAMDC/MGT:T2>

Year 1 node matrices should be made available for Year 1 in March 2013. Those node matrices allow to focus the work of each partner and estimate the associate cost.

Node Reports and Work Package Reports must be uploaded end of October 2013.

November 2013: Review of all documents by EPT via mail. End of November 2013 edition of all deliverables to EU.

## **B. WP2 - Policies and Strategy**

WP2 is split into 4 Tasks:

- Task 1 : Coordination (lead: OBSPARIS)
- Task 2: Developing Partnership with other networks (lead: OU)
- Task 3: Developing a global A+M e-infrastructure (Lead: OBSPARIS)
- Task 4: Annual Meeting (Lead: OU)

### **a. Task 1: Coordination (lead: OBSPARIS)**

Task 1 of WP2 deals with the coordination of the work, with the organisation of the Review Committee and with the edition of the VAMDC Roadmap.

#### **Coordination of WP2**

Metrics ("measurable quantity")

- [M.C.1] Connection between all partners
- [M.C.2] Information on progress of WP2 activities for all partners

Key Performance Indicators ("goal value of quantities listed under Metrics")

- [KPI.C.1] WP2 Board formed and Tools for communication established
- [KPI.C.2] All partners incl. WP2 leader updated on a regular basis, at least every two months

#### **Roadmap**

The roadmap document will handle the following timelines :

- 3 years (specific objectives)
- 5 years (broader objectives)
- 10 years (foreseen objectives)

and should handle all issues related to organisation and sustainability of VAMDC

Metrics

- [Roadmap] Decide about sections associated to name of people in charge at Annual Meeting in September 2014

KPI

- [KPI.Roadmap] Having all sections defined and all people assigned

Action: Organise a session at Annual Meeting to discuss VAMDC Roadmap's organisation.

#### **Review Committee -**

The review committee should access the roadmap written by SUP@VAMDC at the end of the project. It should cover all aspects of the roadmap sections.

Metrics

- [RC.1] Number and Origin of people involved

- [RC.2] Activity of the Review Committee

#### Key Performance Indicators

- [KPI.RC.1] The right choice is done with respect to impact
- [KPI.RC.2] Review Committee complete with respect to the expected domains
- [KPI.RC.2] Edition of recommendations

Action: Organise Review Committee

### **b. Task 2: Developing Partnership with other networks (lead: OU)**

#### **SubTask 2.1: Connection to scientific networks**

The initial roadmap for Year 1 includes the connection to other networks that handle atomic and molecular data. The initial target partners were APAN (Asia-Pacific Atomic Data Network), DCN (Data Centre Network), ADAS (Atomic Data and Analysis Structure), IUPAC (International Union of Pure and Applied Chemistry). Those bodies or networks are related to scientific evaluation of data, which is a crucial issue for the e-infrastructure VAMDC. The VAMDC project (funded by EU) did not aim at performing any scientific evaluation of data, therefore the e-infrastructure VAMDC does not include this feature. Nevertheless in various meetings with users and producers of data it was mentioned several times the importance of scientific evaluation of data. Therefore we thought that it was important to define the rules of collaboration with such networks that have been established for years.

The initial choice of networks was based on the basis of collaboration of SUP@VAMDC partners because it is easier to target communities where we already have a scientific influence:

- APAN has an activity of evaluation of data for electron-molecule collisions
- DCN includes a number of atomic data centers that are dedicated to fusion
- ADAS has an activity of producing atomic data for fusion, they have a private system of databases making money, and an open access.
- ADAS that could be part of VAMDC
- IUPAC has an activity of evaluation of data for chemistry.

One objective is that the VAMDC e-infrastructure be accepted and promoted at a larger level. Another objective is to define the procedures that will allow to include the activities of these networks within VAMDC.

#### Metrics

[M.SN.1] Ability to define rules of collaboration

[M.SN.2] Ability to convince those networks to adopt VAMDC Standards

[M.SN.3] Ability to convince those networks to implement new nodes in VAMDC

#### Key Performance Indicators

[K.SN.1] At least one rule of collaboration is found

[K.SN.2] Number of networks that decide to adopt VAMDC standards among the 4 cited above

[K.SN.3] At least 1 node per network decides to implement their databases in VAMDC

List of Actions that have been planned in Year 1 in order to achieve this goal

- 1) Meetings with APAN, DCN, ADAS networks
- 2) Contacting IUPAC in order to raise their interest in collaborating with us

### **SubTask 2.2: Connection to Publishers**

Another key group of stakeholders **are the academic publishers** since they are the major disseminators and repositories of A+M data. WP2 has engaged with a set of publishers (representing both purely commercial ventures (Springer) and learned Societies (IOPP and RSC) in order to provide exemplars of how e-infrastructures can establish working relationships with publishers including methodologies for ensuring that authors are recognized (cited) when their work is downloaded from the databases. The latter is also important in demonstrating the importance of data to the funders of academic A+M research.

Our goal is to organise the collaboration with publishers. The current strategy is inherited from the conclusion of the "VAMDC Project" that ended at the start of this project.

#### Metrics

- [M.CP.1] Define the entry points for collaboration
- [M.CP.2] Contacts with the Editors or/and Publishers
- [M.CP.3] Answers from Editors or/and Publishers
- [M.CP.4] Define the framework for collaboration

#### Key Performance Indicators

- [KPI.CP.1] The number, the feasibility and the impact of the entry points
- [KPI.CP.2] The number of Contacts and the corresponding impact
- [KPI.CP.3] The number of Answers and the corresponding impact
- [KPI.CP.4] Ability to write feasible roadmap with the Publishers/Editors

#### Actions:

- 1) To Contact Editors/Publishers (in relation to [CP.2 and CP.3])
- 2) Brainstorming between Editors/Publishers about entry points (in relation to [CP.1])
- 3) Initializing prototypes of collaboration (in relation to [CP.1] and [CP.4])

### **c. Task 3: Developing a global A+M e-infrastructure (lead: OBSPARIS)**

The strategy for Year 1 is to explore different models of collaboration at the international level, to engage with national stakeholders and to define from a practical point of view sustainability, i.e. licences and AAA issues. It has been decided to remove AAA strategy from the work plan for Year 1 and Year 2 as issues related to MoU are more important to solve.

#### Consortium Agreement

VAMDC ended with no agreement on Legal Entity. At final VAMDC Board Meeting, all nodes leaders expect the UK nodes and CNRS nodes' leaders, were in disagreement with legal entity. Nevertheless EU insisted that it should be done and therefore goals of Year 1 have been oriented towards the legal entity issue.

## Metrics

- [M.CA.1] Propose Models for Consortium Agreement with legal entity
- [M.CA.2] Get Feedbacks from Groups Partners of VAMDC
- [M.CA.3] Get Feedbacks from stakeholders

## Key Performance Indicators

- [KPI.CA.1] Ability to propose different models following feedbacks from partners and stakeholders
- [KPI.CA.2] Agreements on models
- [KPI.CA.3] Support from stakeholders on different models

Actions: Write the models, present them to partners, get feedbacks, present models to stakeholders.

## Licences Agreements

The Licences had not been discussed with legal people prior to the SUP@VAMDC project, just discussed among developers. Therefore the objective of Year 1 was to contact legal departments in order to get knowledgeable about licences, write different models, discuss them among the SUP@VAMDC people and take a final decision.

## Metrics

- [M.LA.1] Propose Models for Licences
- [M.LA.2] Get Approval from SUP@VAMDC group
- [M.CA.3] Get Feedbacks from stakeholders

## Key Performance Indicators

- [KPI.LA.1] Final Agreement on Licences with document written

Actions: Have meeting with legal departments, Write the models, discuss them with partners at meeting.

### **d. Task 4: Annual Meeting at OU**

The annual meeting is planned at OU for Year 1 (exchange with UCAM that will handle Annual meeting in year 2)

## Metrics

- [M.AM.1] Organize program for presentation of nodes and work packages, boards meetings
- [M.AM.2] Organize expert meeting
- [M.AM.3] Have all communication items

## Key Performance Indicators

- [KPI.AM.1a] There is good coverage of all activities
- [KPI.AM.1b] The meetings of the boards lead to strategic decisions for Year 2
- [KPI.AM.2] At least 2 experts are invited and useful information/contact are gathered
- [KPI.AM.3] Program and Talks on the WEB

Actions: Contact between OU and OBSPARIS, contact with experts by OU, local organisation for renting rooms/coffee breaks, maintenance of WEB for the event.

## C. WP3 - Connection to a wider audience

WP3 is split into 5 Tasks:

- Task 1 : Coordination (lead: OBSPARIS)
- Task 2: Support to user communities and to other molecular domains (Lead: OBSPARIS)
- Task 3: Support to Education (Lead: OBSPARIS)
- Task 4: Connection to Business and Outreach (Lead: UCL)
- Task 5: Support to small producers (Lead: UU)

### a. Task 1: Coordination (lead: OBSPARIS)

Metrics ("measurable quantity")

[M.C.1] Connection between all partners

[M.C.2] Information on progress of WP3 activities for all partners

Key Performance Indicators ("goal value of quantities listed under Metrics")

[KPI.C.1] WP3 Board formed and Tools for communication established

[KPI.C.2] All partners incl. WP3 leader updated on a regular basis, at least every two months

### b. Task 2: Support to user communities and to other molecular domains (Lead: OBSPARIS)

This task is divided into 2 sub-tasks

#### **Sub-Task 2.1 aims at impacting a large range of “research users”**

The user communities have been targeted in accordance with the type of databases that are currently accessible in VAMDC ([http://portal.vamdc.org/vamdc\\_portal/nodes.seam](http://portal.vamdc.org/vamdc_portal/nodes.seam)).

Metrics ("measurable quantity")

[M.UC.1] Select the users community

[M.UC.2] Define Strategies to impact those communities

[M.UC.3] Implement Strategies to impact those communities

[M.UC.4] Marketing Actions

Key Performance Indicators ("goal value of quantities listed under Metrics")

[KPI.UC.1] List of User Communities (5 + General Astrophysics) - Large Impact

[KPI.UC.2] Adaptation of Strategies to the selected communities (done) - 100%

[KPI.UC.3] Number of implemented Strategies (4) - Impact - 100%

[KPI.UC.4] Tutorials for users (see the list in appendix) - Impact 70%

Actions: meetings, develop software, tutorials

**Sub-Task 2.2 aims at exploring the possible connection and complementary approaches with close domains such as chemistry and biology.**

The strategy is to connect to the well-know NIST department of Chemistry and Biology, and to pursue our activity with a biology related domain: the RADAM community that deals with radiation damage.

Metrics ("measurable quantity")

- [M.CB.1] Make contact with those communities
- [M.CB.2] Take examples in chemistry and biology and assess compatibility
- [M.CB.3] Assess impact on VAMDC infrastructure
- [M.CB.4] "Connected resources" accessible from VAMDC

Key Performance Indicators ("goal value of quantities listed under Metrics")

- [KPI.CB.1] Success in contacting people
- [KPI.CB.2] 2 new resources are examined
- [KPI.CB.3] Impact assessed on schema, query language, dictionaries, registries, tools, software
- [KPI.CB.4] 2 new resources accessible by end of Year 2 (considering the manpower dedicated to WP3)

Actions: meetings, provide support/tutorials

### **c. Task 3 - Support to Education (Led by OBSPARIS)**

The roadmap On Education for Year 1 does not included work at other nodes than OBSPARIS because of the amendment. The amendment indicated that all meetings related to Education/SMEs/Citizen science would be removed from the activities of nodes where grant was removed. This grant was transferred to OBSPARIS in order to support EU request to employ a person for "sustainability/marketing/legal issues".

Obviously this is likely to weaken the actions in Task 3 since OBSPARIS will be left alone to carry out scientifically the work in Education and UCL for connection to Industries.

Metrics ("measurable quantity")

- [M.SE.1] Select and Contact Education communities
- [M.SE.2] Define Strategies to impact those communities
- [M.SE.3] Assess impact on VAMDC of those strategies
- [M.SE.4] Implement Strategies to impact those communities
- [M.SE.5] Communication

Key Performance Indicators ("goal value of quantities listed under Metrics")

- [KPI.SE.1a] List of Education Communities
- [KPI.SE.1b] Working Groups and meetings (at least according to milestones)
- [KPI.SE.2] Adaptation of Strategies to the selected communities
- [KPI.SE.3] Lowest possible impact on infrastructure is desirable
- [KPI.SE.4] Number of implemented Strategies - 1 at least in Year 1 - 1 in Year 2
- [KPI.SE.5] 1 communication action

Actions: meetings with teachers, software support, communication

#### **d. Task 4 - Connection to Business and Outreach (Lead: UCL)**

##### **Sub-Task 4.1 - Support to Citizen Scientist Projects**

The strategy for Year 1 is to explore the possibilities considering the amount of time that could be put in the project for this sub-task. Again Year 1 has seen most of the Citizen/SMEs meetings cancelled because of the amendment requested by EU. And the other orientation is to meet people already involved in Citizen Science Projects.

Actions: meetings for collaboration

##### **Sub-Task 4.2 - Data Requirements for SMEs and Industry**

The strategy was to learn about the different industries including SMEs that use atomic and molecular data since our network (apart from UCL) has very little knowledge in this area.

Metrics:

[M.1]: Data compiled on the products and data needs of businesses and research institutes

[M.2]: Web interface to this data established online and advertised to consortium members and other interested parties.

Key Performance Indicators:

[K.1]: Profiles acquired on 100 companies

[K.2]: Functioning, password-protected web interface to access company profiles established and available to all consortium members.

Actions: Collect information, make a website

##### **Sub-Task 4.3 - General SME and Industry Activities**

The strategy is to reach more widely at Industrial partners through different aspects of the VAMDC e-infrastructure that might interest them (can be other aspects than actually using the data).

Metrics:

[M.4]: Attendance of organised meetings

Key Performance Indicators:

[K.4]: Attendance of 20 at Industry engagement event

Actions: meetings and presentations

#### **e. Task 5 Support to small producers research groups**

The strategy is to continue the inclusion of producers already known in VAMDC into the e-infrastructure. There will be no attempt to advertise widely the inclusion of new producers since the rules of collaboration are not defined yet. Such marketing actions will come once the VAMDC Consortium has its Technical MoU and status right into place.

Goal: Give support to data providers wanting to join the VAMDC infrastructure

Metrics:

[DP.1] non used

[DP.2] Organization of data producer meetings

[DP.3] Support implementation of VAMDC Standards for new data providers

Key performance indicators:

[KPI.DP.1] non used

[KPI.DP.2] Data producer meetings held.

[KPI.DP.3] Informed decision on whether a new VAMDC node is suitable for each data provider. Technical support given.

Actions: tutorials, meetings, support

#### **D. WP4 - Extension towards other e-infrastructure and EU schemes**

WP4 is split into 3 Tasks:

- a) Task 1: Coordination (lead: UU)
- b) Task 2: Extension to Regional Partners
- c) Task 3: Support towards external partners

##### **a. Task 1: Coordination (lead: UU)**

Task 1 of WP4 deals with the coordination of WP4 activities.

Metrics ("measurable quantity")

[M.C.1] Connection between all partners (legal, regional, external)

[M.C.2] Initiation of VAMDC promotion

[M.C.3] Information on progress of WP4 activities for all partners

Key Performance Indicators ("goal value of quantities listed under Metrics")

[KPI.C.1] WP4 Board formed

[KPI.C.2] Introduction to VAMDC provided to all partners

[KPI.C.3] All partners updated on a regular basis, at least every two months

##### **b. Task 2: Extension to Regional Partners**

The goal of Task 2 is to promote VAMDC in regions (Korea, South Africa, India) and to engage with regional partners. Although we have identified interest in these countries outside Europe, the success requires other components available at the national level: human resources, technical infrastructure, user and/or producer communities that are fully aware of the VAMDC issues. Therefore the objective of Task 2 is to investigate those issues in Year 1. No work had ever been done with those countries/continent within VAMDC.

Metrics applicable to each sub-task:

[M.R.1] Visibility of VAMDC in region ("promotion")

[M.R.2] Integration, development, and exploitation of VAMDC technology in region

[M.R.3] Adaptation of VAMDC standards and technology in region

Key Performance Indicators

[KPI.R.1a] One regional meeting held per year with VAMDC demonstration or tutorial

[KPI.R.1b] Information on VAMDC presented on regional website

[KPI.R.2] VAMDC standards implemented for at least one database per region

[KPI.R.3] Recommendations for adaptation of VAMDC standards and/or technology submitted to VAMDC consortium by regional A+M community

Actions: meetings, tutorial, website to advertise VAMDC

### c. Task 3: SUP@VAMDC Support towards external partners

The goal of Task 3 is to ensure interoperability between VAMDC and other existing A+M schemes/networks, that is, to promote and monitor the adoption and adaptation of common standards. The external partners were already chosen in the Annexe I-DoW. Some partners were new such as the APAN network, the Brazilian partner, other partners in the USA were already known through nothing concrete had been done during VAMDC previous project: NIST atomic database, JPL database; the HITRAN database (USA) had been implemented at a prototype level during the VAMDC project at UCL and continuation of collaboration/support was needed in order to transfer technology to the USA. The ultimate objective is to have nodes registered from the USA and from other institutes in other countries. This ultimate objective will depend upon the availability of their local resources since no funding for manpower goes to these external partners.

#### Metrics

- [M.E.1] Visibility of VAMDC in regions covered by A+M networks ("promotion")
- [M.E.2] Adoption of VAMDC standards by networks and linked databases
- [M.E.3] Adaptation of VAMDC standards by networks

#### Key Performance Indicators

- [KPI.E.1] VAMDC and interoperability discussed during at least one meeting organized by the relevant community addressed in each sub-task, and information on VAMDC presented on a website for at least one community addressed in one of the sub-tasks
- [KPI.E.2] VAMDC standards implemented for at least one database linked to one network or community addressed in one of the sub-tasks (keeping in mind that external partners to not receive EU funding)
- [KPI.E.3] Recommendations for adaptation of VAMDC standards and/or technology submitted to VAMDC consortium by at least one A+M network or community addressed in each sub-task

Actions: Meetings, presentation, tutorials

### E. WP5 - Operational Support for dissemination of Data

WP5 is split into 5 Tasks:

- Task 1: Coordination (lead: UCAM)
- Task 2: Direct support to users (lead: OBSPARIS)
- Task 3: Tutorials for users (lead: UU)
- Task 4: Maintenance and enhancement of the infrastructure

#### a. Task 1: Coordination (lead: UCAM)

Metrics ("measurable quantity")

- [M.C.1] Connection between all partners
- [M.C.2] Information on progress of WP5 activities for all partners

Key Performance Indicators ("goal value of quantities listed under Metrics")

[KPI.C.1] WP5 Board formed and Tools for communication established  
[KPI.C.2] All partners incl. WP5 leader updated on a regular basis, at least every two months

**b. Task 2: direct support to users (lead: OBSPARIS)**

The direct support to users goes through the help desk, the monitoring of the e-infrastructure via NAGIOS, the availability of information on the website

Metrics:

- [M.S.1] Number of help requests requests logged in RT that have been resolved.
- [M.S.2] Time needed to notify service operators of service outage.
- [M.S.3] Completeness of user-guides w.r.t. supported software-products
- [M.S.4] Fraction of Dictionary terms with suitable explanations
- [M.S.5] Guided Tour
- [M.S.5] Availability of forum pages

Performance indicators:

- [KPI.S.1] All help requests addressed within 1 week and 80% resolved within 1 month. (“resolved” can mean “scheduled for later development”)
- [KPI.S.2] Any outage of a registered service notified to the operator within 6 hours.
- [KPI.S.3] All supported software products have a user guide.
- [KPI.S.4] All commonly-used Dictionary terms have explanations on the dictionary site.
- [KPI.S.5] Design of Guided Tour
- [KP.S.5] Completeness of work to be computed

Actions: Answer queries from users, monitor infrastructure, write/re-organise user guides in new general website (need upgrade of joomla)

**c. Task 3: tutorials for users (lead: UU)**

A set of tutorial material is planned to be available. The tutorial materials may be viewed at <http://tutorial.vamdc.eu/> .

Metrics:

- [M.T.1] Coverage of end-user facilities with self-paced tutorials
- [M.T.2] Coverage of data-provider facilities with self-paced tutorials
- [M.T.3] Coverage of data-provider facilities with workshop materials

Performance indicators:

- [KP.T.1] Self-paced exercises exist for every end-user features
- [KP.T.2] Screencast videos exist for every data-provider features
- [KP.T.3.1] Slides available for introductory talk of workshop.
- [KP.T.3.2] Files available for worked-example data-nodes.
- [KP.T.3.3] Virtual-machine images available, containing environment for node building

Actions: Write all Tutorials, Package them

#### **d. Task 4: maintenance and enhancement of the infrastructure**

The maintenance and enhancement of the infrastructure are directly linked to the feedbacks and needs expressed in the WP3 and WP5 work-packages, through key applications for users (see WP3-Task 2 explanations), through better visualisation of data, through inclusion of new data nodes, through improvement of the species database that ensure part of the interoperability, through dedicated software for education as concrete prototype items must be available for education in order to assess the potentiality of VAMDC.

##### Metrics

- [M.M.1] System availability rate
- [M.M.2] Number of new nodes registered and working
- [M.M.3] New Specview versions with better access to VAMDC
- [M.M.4] New functionalities in Spectcol
- [M.M.5] Linking IVOA standards with VAMDC for Workflows
- [M.M.6] Revised web-portal development process status
- [M.M.7] More Flexible and User Friendly Display of Data
- [M.M.8] Improvement of Species Database Functionalities
- [M.M.9] Library support for user-programmers
- [M.M.10] Assessment of work to be done in Yr2

##### Performance indicators:

- [KPI.M.1.1] At least 95% availability of core system (portal, registry)
- [KPI.M.1.2] At least 80% availability of data nodes, averaged over all active nodes
- [KPI.M.2] At least one node new node (considering the uncertainties)
- [KPI.M.3.1] One Specview improvements submitted to STScI for release
- [KPI.M.3.2] One New version of Specview available for download from STScI.
- [KPI.M.4] One New version of SpectCol available for download from VAMDC site
- [KPI.M.5] One application developed and supported via tutorial
- [KPI.M.6.1] Inclusion of at least one upgrade to portal.vamdc.eu
- [KPI.M.6.2] Design a beginner web portal
- [KPI.M.7.1] Java library released for building queries
- [KPI.M.7.2] Web-site support for registry queries
- [KPI.M.8] Have software able to query species from node and check completeness of species database
- [KPI.M.9] Design libraries that have a general impact, and that are used
- [KPI.M.10] Availability of clear Roadmap

Actions: Develop the relevant upgrades, do professional release with documentation.



## IV. Management structure

The management structure of SUP@VAMDC is shown in Fig 1 of section B2 of Part B, page 12 of DoW - Annexe I.

The main elements of the structure are:

### Executive Team (ET):

It comprises the following members:

- Y.A. Ba, Project Manager Assistant
- M.L. Dubernet, SUP@VAMDC Coordinator
- N. Walton, EPT Coordinator
- N. Mason, WP2 Coordinator

### Project Board (PB)

PB Webpages are at <http://voparis-twiki.obspm.fr/twiki/bin/view/VAMDC/SVPB>

These pages includes links to all Board Meetings including Agenda and Minutes

Name	Institute	Status
M.L. Dubernet & C. Zeppen	Observatoire de Paris (OBSPARIS)	Partner 1
N. Walton	The Chancellor, Masters and Scholars of the University of Cambridge (UCAM)	Partner 2
N. Piskunov (represented at time by U. Heiter)	Uppsala Universitet (UU)	Partner 3
N. Mason	Open University (OU)	Partner 4
S. Schlemmer (represented at times by C. Endres)	Universitaet zu Koeln (KOELN)	Partner 5
J. Tennyson	University College London (UCL)	Partner 6
Y. Rhee	Korea Atomic Energy Research Institute (KAERI)	Partner 7
D. Smits	Institute University of South Africa (UNISA)	Partner 8
E. Krishnankumar	Tata Institute of Fundamental Research (TIFR)	Partner 9
Dr Yuri Ralchenko	Atomic Spectroscopy Group, NIST, USA	External
Dr Larry Rothman	The Harvard-Smithsonian Center for Astrophysics, Cambridge, USA	External
Dr Brian Drouin	The Propulsion Laboratory, NASA	External
Dr Carlos Gonzales	The Chemical and Biochemical Reference Data Division	External
Prof. Stephen Buckman	Atomic and Molecular Physics Laboratory, Canberra, Australia	External
Prof. Michael Brunger	The Electron Scattering and Modelling Group, Flinders University, Australia	External

Dr Izumi Murakami	National Institute for Fusion Science, Japan	External
Prof. Milton Fujimoto	Universidade Federal of Parana, Brazil	External
Dr Bas Braams	Atomic and Molecular Data Unit, IAEA, Vienna	Associate

### Executive Project Team (EPT)

EPT Webpages are at <http://voparis-twiki.obspm.fr/twiki/bin/view/VAMDC/SVEPT>

These pages include all EPT teleconferences with their agenda and minutes

Role	Name	Partners
EPT coordinator	N. Walton	UCAM
WP1 Leader	M.L. Dubernet	OBSPARIS
WP2 Leader	N. Mason	OU
WP3 Leader	Y.A. Ba	OBSPARIS
WP4 Leader	U. Heiter	UU
WP5 Leader	G. Rixon	UCAM

### Work Package Boards (WPB)

**WP2 : All Board Members, D. Egret (OBSPARIS), C. Zeippen (OBSPARIS), F. Portier-Fozzani, C.M. Zwölf**

**WP3: Y.A. Ba, C. Hill, G. Rixon, M.L.Dubernet, T. Marquardt, C. Endres, N. Moreau, F. Portier-Fozzani**

**WP4 : U. Heiter, B. Braams, D.J. Drouin, C. Gonzales, C. Hill, E. Krishnankumar, C. Endres, F. Delahaye, Yoon Jung-Sik, L. Rothman, M. Bruenger, M. Fujimoto, N. Mason, N. Moreau, D. Smits, S. Buckman, T. Marquart, Y. Rhee, Y. Ralchenko, F. Portier-Fozzani**

**WP5: G. Rixon, C. Endres, J. Tennyson, N. Moreau, P. Le Sidaner, T. Marquart, Y.A. Ba, F. Portier-Fozzani**

## V. List of Key People at Partners Institutes for Year 1 (Beneficiaries are described in detail in DoW, section B2.2 in Part B, page 15) -

Name	Institute	Status
M.L. Dubernet, Y.A. Ba (all WP), C.M. Zwoelf (WP2), C. Zeippen (WP2), D. Egret (WP2), F. Delahaye (WP3-4), N. Moreau (WP3-4-5), Z. Meliani (WP3-5), A.L. Melchior (WP3)	Observatoire de Paris (OBSPARIS)	Partner 1
N. Walton, G. Rixon	The Chancellor, Masters and Scholars of the University of Cambridge (UCAM)	Partner 2
N. Piskunov, E. Stempels, U. Heiter (WP4), T. Marquart	Uppsala Universitet (UU)	Partner 3

N. Mason	Open University (OU)	Partner 4
C. Endres, S. Schlemmer	Universitaet zu Koeln (KOELN)	Partner 5
J. Tennyson	University College London (UCL)	Partner 6
Y. Rhee	Korea Atomic Energy Research Institute (KAERI)	Partner 7
D. Smits	Institute University of South Africa (UNISA)	Partner 8
E. Krishnakumar	Tata Institute of Fundamental Research (TIFR)	Partner 9
M. Fujimoto	Universidade de Parana	External Partner with Strong EU Support

## VI. Project Timeline

The project time plan has been arranged conforming to the following schedule:

1. The project is planned for 24 months starting on 1st of December 2012. The length of the project is 24.
2. A 2 month ‘kick-off’ or set up period is envisaged during which both the scientific programme, tutorials, conferences programmes, and target groups will be further defined, milestones reviewed and approved and, crucially relevant important staff appointed and briefed (e.g the Project manager).
3. The main project time plan is arranged in 2 periods. The project’s progress will be reviewed at at the Annual Meetings of SUP@VAMDC (Sept. 2013 and Sept. 2014)
4. Annual Reports are sent to EU at the end of each period:
  - Period 1 = Month 13
  - Period 2 = Month 24

## VII. Overall strategy and general description

The overall strategy for the work plan relies on 5 work packages.

The work plan is organized according to the following ideas: political and, strategy, coordination decisions on a “concept” can only be handled once some experience is gained from operational activities where the concept is learned, discussed and experienced. WP2 is work package for the political, strategy, coordination decisions on a “concept”, and WP3, WP4 are the work packages where the “concept” is learned, discussed and experienced. WP1 and WP5 are the work packages that accompany the work carried out in WP2, WP3, WP4.

- WP1 handles the management of the SUP@VAMDC project from the financial, administrative and scientific coordination point of views.
- WP2 concentrates on developing policies, defining strategies and ensuring sustainability with issues related to (Open Science for) Atomic and Molecular Data and establishing a coordination structure in A+M data access, provision and evaluation. WP2 uses the results from the technical discussions/organisation supported by tutorials that are organized in WP3 and WP4. This work package handles Objectives O1 and O4.
- WP3 supports the connection to a wider audience, i.e. other domains that are connected to stakeholders, education, citizen-scientists, SMEs, small research groups. This work package will organise working groups, tutorials, and websites for each community. This work package handles Objectives O3 and O5.
- WP4 supports the technical cooperation with other A+M schemes and the implementation of e-infrastructure in other regions, in particular in developing regions. The WP4 work package is a support Work Package that will organize tutorials for our “Regional Partners” and external partners. This corresponds to handling Objective O2 and O6 taking advantage of work done in WP3 and WP5.
- WP5 provides the operational support for the dissemination of data and knowledge.

## VIII. Deliverables for Year 1

Deliverables for Year 1 are confirmed as described in the DoW signed in July 2012. There are included here for convenience.

Deliverable number	Deliverable name	WP number	Lead beneficiary	Estimated indicative person-months	Nature	Desseminati on level	Delivery date
D1.1	SUP@VAMDC Website	WP1	OBSPARIS	1.00	Other	PU	2
D1.2	SUP@VAMDC Project Plan – Year 1	WP1	OBSPARIS	1.00	Report	PU	2
D1.3	SUP@VAMDC Budget and Review Report – Year 1	WP1	OBSPARIS	6.5	Report	PU	13
D1.4	Annual SUP@VAMDC Project Plan – Year 2	WP1	OBSPARIS	1.00	Report	PU	13
D1.5	Final Budget and Review Report of SUP@VAMDC	WP1	OBSPARIS	7.00	Report	PU	24
D2.1	Global A+M Infrastructure and Open Science – Year 1	WP2	OU	9.00	Report	PU	12



### IX. Milestones for Year 1 (as described in DoW signed in November 2013)

Milestone number	Milestone name	WP number	Lead beneficiary	Delivery date from Annex I <sup>1</sup>	Comments
MS1	Kick-off meeting	WP1	OBSPARIS	Month 2	Full program and available on Website with all talks from
MS2	PB meeting 1	WP1	OBSPARIS	Month 2	Minutes on Website
MS3	EPT meeting 1	WP1	UCAM	Month2	Minutes on Website
MS4	WP2 Board Meeting 1	WP2	OU	Month 2	Minutes on Website – Additional Board Teleconference will be done every 15 days – The Board is the place where Policies/Strategy is discussed among Partners and external/associated partners.
MS5	WP3 Board Meeting 1	WP3	OBSPARIS	Month2	Minutes on Website – Located at kick-off – OBSPARIS – then every 15 <sup>th</sup> days via teleconf
MS6	User Meeting 1	WP3	OBSPARIS	Month 2	Minutes on Website – Located at OBSPARIS – kick-off
MS7	Education Workshop 1	WP3	OBSPARIS	Month 2	At kick-off – OBSPARIS; Minutes on Website
MS8	Citizen/SMEs Meeting 1	WP3	OBSPARIS	Month 2	At kick-off – OBSPARIS; Minutes on Website
MS9	Producer Meeting 1	WP3	OBSPARIS	Month 2	At kick-off – OBSPARIS; Minutes on Website
MS10	WP4 Board Meeting 1	WP4	UU 3	Month 2	At kick-off – OBSPARIS; Minutes on Website – every 15 <sup>th</sup> days via teleconf
MS11	Tutorial 1	WP4	OBSPARIS	Month 2	At kick-off - OBSPARIS; Material available
MS12	WP5 Board Meeting 1	WP5	OBSPARIS	Month 2	At kick-off - OBSPARIS – Minutes on Websites – Additional Board Teleconference will be done every 15 days
MS13	User Meeting 2	WP3	KOELN	Month 7	Minutes on Website – Located at KOELN

<sup>1</sup> Month in which the milestone will be achieved. Month 1 marking the start date of the project, and all delivery dates being relative to this start date.

MS14	Producer Meeting	WP3	UU	7	At UU – Minutes on Websites
MS15	Working Meetings in non-ERA 1.1, 1.2, 1.3	WP4	UNISA	7	Organized at UNISA, UFPR, TIFR; Minutes on Website; Tutorials+Producer+User Meetings
MS16	Annual Meeting 1	WP2	UCAM	Month 11	Located at CMSUC – Program, Talks, Minutes on Website
MS17	PB Meeting 2	WP1	OBSPARIS	Month 11	Minutes on Website
MS18	EPT Meeting 2	WP1	UCAM	Month 11	Minutes on Website
MS19	WP2 Board Meeting 2	WP2	OU	Month 11	Minutes on Website – Additional Board Teleconference will be done every 15 <sup>th</sup> days – The Board is the place where Policies/Strategy is discussed among Partners and external/associated partners
MS20	Expert Group Meeting 1	WP2	OU	Month 11	Occuring during Annual Meeting 1 at CMSUC
MS21	WP3 Board Meeting 2	WP3	OBSPARIS	Month 11	Minutes on Website Located at Annual Meeting 1 – CMSUC – then every 15 <sup>th</sup> days via teleconf
MS22	User Meeting 3	WP3	UCAM	Month 11	Minutes on Website – Located at CMSUC – Annual Meeting 1
MS23	Producer Meeting	WP3	UCAM	Month 11	At Annual Meeting 1; CMSUC - Minutes on Website
MS24	WP4 Board Meeting 2	WP4	UU	Month 11	At Annual Meeting 1; CMSUC - Minutes on Website; every 15 <sup>th</sup> days via teleconf
MS25	Tutorial 2	WP4	UCAM	Month 11	At Annual Meeting 1; CMSUC – Material Available
MS26	WP5 Board Meeting 2	WP5	UCAM	Month 11	At Annual Meeting 1; CMSUC - Minutes on Website – Additional Board Teleconference will be done every 15 days
MS27	Education Workshop 4	WP3	OBSPARIS	Month 13	At OBSPARIS; Minutes on Website
MS28	Citizens/SMEs Meeting 4	WP3	OBSPARIS	Month 13	At OBSPARIS; Minutes on Website
MS29	Working Meetings in non-ERA 2.1, 2.2, 2.3	WP4	0	Month 12	Organized at UNISA, UFPR, TIFR; Minutes on Website; Tutorials+Producer+User Meetings