



VAMDC

Virtual Atomic and Molecular Data Centre

D6.1

–

Interoperability Plan

Version 0.2

Grant agreement no: 239108

Combination of Collaborative Projects & Coordination and Support Actions



Project Information

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Consortium:

Beneficiary Number *	Beneficiary name	Beneficiary short name	Country	Date enter project**	Date exit project**
1(coordinator)	Centre National de la Recherche Scientifique	CNRS	France	Month 1	Month 42
2	The Chancellor, Masters and Scholars of the University of Cambridge	CMSUC	UK	Month 1	Month 42
3	University College London	UCL	UK	Month 1	Month 42
4	Open University	OU	UK	Month 1	Month 42
5	Universitaet Wien	UNIVIE	Austria	Month 1	Month 42
6	Uppsala Universitet	UU	Sweden	Month 1	Month 42
7	Universitaet zu Koeln	KOLN	Germany	Month 1	Month 42
8	Istituto Nazionale di Astrofisica	INAF	Italy	Month 1	Month 42
9	Queen's University Belfast	QUB	UK	Month 1	Month 42
10	Astronomska opservatorija	AOB	Serbia	Month 1	Month 42
11	Institute for Spectroscopy RAS	ISРАН	Russian Federation	Month 1	Month 42
12	Russian Federal Nuclear Centre All-Russian Institute of Technical Physics	RFNC-VNIITF	Russian Federation	Month 1	Month 42
13	Institute of Atmospheric Optics	IAO	Russian Federation	Month 1	Month 42
14	Corporacion Parque Tecnologico de Merida	IVIC	Venezuela	Month 1	Month 42
15	Institute of Astronomy of the Russian Academy of Sciences	INASAN	Russian Federation	Month 1	Month 42

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Abstract	The objective of D6.1 is to describe VAMDC Interoperability Plan on PM3. This plan corresponds to Activities in WP6: JRA1 “Interoperability”. This plan is included in the VAMDC Project Plan.
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Versioning and Contribution history

Version	Date	Reason for modification	Modified by
V0.1	21/10/2009	WP6 Draft – no name	M.L. Dubernet
V0.2	07/01/2010	WP6 – Cycle 1 completed	M.L. Dubernet

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M.L. Dubernet	04/03/2010	Mrs Asero	04/03/2010

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WP6 ACTIVITIES DESCRIPTION

Work package number	6		Start date or starting event:				3			
Work package title	JRA1: Interoperability									
Activity Type	RTD									
Participant id	1	6	7	8	9	10	12	14		
Person-months per beneficiary: (Total = EU + Node Contributions)	36	18	10	5	12	6	3	6		

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1. WP6 Objectives

Define all standards necessary to build an interoperable infrastructure

WP6 Leader is KOLN with co-leader CNRS

2. WP6 Milestones and Deliverables

Milestones

M6.1	Technical Meetings	WP6	UU	Months 5,10, 16, 22, 28, 34, 40, 42	Minutes. Presentations on internal Website
M6.2	Evaluation of standards releases	WP6	UU	Months 10, 22, 34	

Deliverables

D6.1 Interoperability Plan (PM 3)

D6.2 Interoperability Report to be included in report to the EU – Year 1 (PM 10)

D6.3 Interoperability Report to be included in report to the EU – Year 2 (PM 22)

D6.4 Interoperability Report to be included in report to the EU – Year 3 (PM 34)

D6.5 Final Report of Interoperability to be included in final report to the commission (PM41)

Annual Interoperability Plan revisions included in Revised Annual VAMDC Project Plans – Year 1,2,3

3. WP6 Tasks Description

WP6 Leader (co)	S. Schlemmer (KOLN)/ M.L. Dubernet (CNRS: LPMAA/LUTH)
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Task Number	Leader	Other Partners
1	M.L. Dubernet/J. Bureau(CNRS:LPMAA/LUTH)	All partners
2	T. Millar (QUB)	All partners
3	N. Piskunov (UU)	CNRS:LPMAA/LUTH
4	M. Doronin (CNRS:LPMAA)	UU
5	S. Schlemmer (KOLN)	All partners

Description of work (possibly broken down into tasks)

Task 1: Data Models and XML Schema (lead by CNRS(1), all JRA1 partners)

The current data models and XML schema are a description of atomic and molecular line lists for use in an astrophysical context and a description of atomic and molecular elementary processes. The documents have been designed by a small number of people, those documents are still in draft mode, do not cover all application fields and have not been discussed extensively among users and producers. These preliminary versions will be completed and extended in order to cover a wider range of species, a wider range of processes and will include the effect of the environment. For now we identify the following extensions:

- inclusion of solid, surface spectroscopy for interstellar medium and planetology
- inclusion of larger molecules such as PAH
- description of atomic and molecular line shapes arising from different sources

In connection to the user & producer board of NA2, more extensions will be considered if necessary. Through the Standards and Processes Committee all standards will be connected to International efforts of standardisation.

Task 2: Dictionaries (lead by QUB(9), all JRA1 partners)

In order to uniquely identify resources we will need to define and build dictionaries both general and specific to applications. At present we identify the following dictionaries:

- single identification of databases and services
- list of conventions (link to IUAPAC and other convention bodies)
- list of names of species (in relation with other fields such as chemistry)
- list of processes and coding of processes
- list of quantum numbers

Other lists will be identified during the course of the project in relation with activities in WP2 (NA2)

Task 3: Access Protocols and Query/Retrieval Languages (lead by UU(6), all JRA1 partners)

We will define protocols retrieving different types of resources: numerical data, libraries, documentation, references. Those protocols will cover asynchronous queries and the retrieval of huge sets of data. In a second step we will design a general query language allowing to access and retrieve any atomic and molecular data.

Task 4: Registries (lead by CNRS(1) with partner 6)

Registries provide a mechanism with which applications can discover and select resources-- e.g. data and services--that are relevant for a particular scientific problem. We will start from the registries defined in the IVOA and see how to adapt and/or extend the documents to our own purpose. In particular we wish to implement ways of finding resources at various levels of granularity.

Task 5: Other Documents (lead by KOLN(7), all JRA1 partners)

Other basic definitions/standardisations might be necessary in order to find/identify resources and documents produced by the IVOA will be assessed in order to keep/adapt to our own needs.

4. WP6 Tasks Description for Period 1

Full task activities are detailed at the VAMDC wiki on the WP6/JRA1 pages – see <http://voparis-twiki.obspm.fr/twiki/bin/view/VAMDC/WP6>

Task 1: Data Models and XML schema Documents

- 1.1 – Investigation of XSAMS – Leader CNRS/LPMAA with all participants -
 - Presentation of XSAMS at Kick-Off (M4)
 - Investigation of Molecular Parts by Partners (M4-M9)
 - Produce document where modifications to XSAMS is proposed by M9 –
- 1.2 – Schema for Solid Spectroscopy - Leader CNRS/LPG with internal and external partners (EuroPlanet RI FP7 project)
 - Organisation of Solid Spectroscopy Workshop to discuss Schema (M7)
 - Draft documents M9; M11
- 1.3 – Schema for PAH – Leader INAF + CNRS/CESR
 - Draft documents M9; M11
- 1.4 – Schema for Line Shapes related to pressure broadening – Leader UCL with participants CNRS/GSMA, ICB, IAO, CFA
 - Draft documents M9; M11
- 1.5 – Schema for Atomic Line Shapes – Leader AOB + CNRS/LERMA
 - Draft documents M11

Task 2: Dictionaries Documents

Drafts of lists will be provided in M9 and updated in M11

- 2.1 List of Species Names: make decision about standardized names
- 2.2 List of Processes: complete the list of processes given in XSAMS
- 2.3 List of Conventions
- 2.4 List of Quantum Numbers: complete the list of processes given in XSAMS

Task 3: Access Protocols and Query/Retrieval Language Documents

- 3.1 – Understand existing protocols – Leader CNRS/LPMAA with UU
 - Draft Documents M9, M11
- 3.2 – List of Requirements Application Fields in connection with User/Producer requirements of WP2 – Leader UU with CNRS/LPMAA
 - Draft Documents M11
- 3.3 – Make Proposition – Leader UU with CNRS/LPMAA
 - Draft Documents M11

Task 4: Registries Documents

- 4.1 – Understand existing protocols – Leader CNRS/LPMAA with UU
 - Draft Documents M9, M11
- 4.2 – List of Requirements Application Fields in connection with User/Producer requirements of WP2 – Leader UU with CNRS/LPMAA
 - Draft Documents M11
- 4.3 – Make Proposition – Leader CNRS/LPMAA with UU
 - Draft Documents M11

The documents will be available within the consortium during the whole project on the private part of our web-site. We plan a public release of draft/final versions on our public web-site at Months 12