

# CDS participation in IVOA

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## IVOA Standards with CDS participation

### Current reference document on IVOA Architecture

#### *IVOA Architecture, Version 1.0*

Author(s): Christophe Arviset, Severin Gaudet and the IVOA Technical Coordination Group (including **S. Derriere**, **F. Genova**, **M. Louys\***)

Editor(s): Christophe Arviset

IVOA Note, 23 November 2010

<http://www.ivoa.net/Documents/Notes/IVOAArchitecture/index.html>

### IVOA Documents and Standards can be found at

<http://www.ivoa.net/Documents/>

## 2003

#### *IVOA Document Standards, Version 1.0*

Author(s): IVOA Executive Committee (incl. **F. Genova**)

Editor(s): R. J. Hanisch, A. E. Linde

*IVOA Recommendation 24 October 2003, obsoleted by Version 1.2*

IVOA Standard, <http://www.ivoa.net/Documents/DocStd/20031024/>

## 2004

#### *VOTable Format Definition, Version 1.1*

Author(s): **François Ochsenbein**, Roy Williams, Clive Davenhall, Daniel Durand, **Pierre Fernique**, David Giarretta, Robert Hanisch, Tom McGlynn, Alex Szalay, Mark B. Taylor, Andreas Wicenec

Editor(s): **François Ochsenbein**

*IVOA Recommendation 11 August 2004, obsoleted by Version 1.2*

IVOA Standard, <http://www.ivoa.net/Documents/VOTable/20040811/>

## 2005

#### *An IVOA Standard for Unified Content Descriptors, Version 1.10*

Author(s): **Sébastien Derriere**, Norman Gray, Robert Mann, Andrea Preite Martinez, Jonathan McDowell, Thomas Mc Glynn, **François Ochsenbein**, Pedro Osuna, Guy Rixon, Roy Williams

Editor(s): **Sébastien Derriere**, Andrea Preite Martinez, Roy Williams

*IVOA Recommendation 19 August 2005*

IVOA Standard, <http://www.ivoa.net/Documents/latest/UCD.html>

***The UCD1+ controlled vocabulary, Version 1.11***

Author(s): Andrea Preite Martinez, **Sébastien Derriere**, Norman Gray, Robert Mann, Jonathan McDowell, Thomas Mc Glynn, **François Ochsenbein**, Pedro Osuna, Guy Rixon, Roy Williams

Editor(s): **S. Derriere**, A. Preite Martinez

*IVOA Recommendation 31 December 2005*

IVOA Standard, <http://www.ivoa.net/Documents/cover/UCDlist-20051231.html>

**2006**

***Maintenance of the list of UCD words, Version 1.20***

Author(s): Nausicaa Delmotte, **Sébastien Derriere**, Norman Gray, Robert Mann, Jonathan McDowell, Thomas Mc Glynn, **François Ochsenbein**, Pedro Osuna, Andrea Preite Martinez, Guy Rixon, Roy Williams

Editor(s): A. Preite Martinez, **S. Derriere**

*IVOA Recommendation 28 May 2006*

IVOA Standard, <http://www.ivoa.net/Documents/latest/UCDlistMaintenance.html>

**2007**

***The UCD1+ controlled vocabulary, Version 1.23***

Author(s): Andrea Preite Martinez, **Sébastien Derriere**, Nausicaa Delmotte, Norman Gray, Robert Mann, Jonathan McDowell, Thomas Mc Glynn, **François Ochsenbein**, Pedro Osuna, Guy Rixon, Roy Williams

Editor(s): A. Preite Martinez, **S. Derriere**

*IVOA Recommendation 02 April 2007*

IVOA Standard, <http://www.ivoa.net/Documents/cover/UCDlist-20070402.html>

**2008**

***Simple Spectral Access Protocol, Version 1.04***

Author(s): D.Tody, M. Dolensky, J. McDowell, **F. Bonnarel**, T.Budavari, I.Busko, A. Micol, P.Osuna, J.Salgado, P.Skoda, R.Thompson, F.Valdes, and the Data Access Layer Working Group.

Editor(s): D.Tody, M. Dolensky

*IVOA Recommendation 01 February 2008*

IVOA Standard, <http://www.ivoa.net/Documents/latest/SSA.html>

***Data Model for Astronomical DataSet Characterisation, Version 1.13***

Author(s): IVOA Data Model Working Group

Editor(s): **Mireille Louys\***, Anita Richards, **François Bonnarel**, Alberto Micol, Igor Chilingarian, Jonathan McDowell

*IVOA Recommendation 25 March 2008*

IVOA Standard, <http://www.ivoa.net/Documents/latest/CharacterisationDM.html>

## 2009

### ***SAMP, Simple Application Messaging Protocol, Version 1.11***

Author(s): Mark Taylor, **Thomas Boch**, Michael Fitzpatrick, Alasdair Allan, Luigi Paioro, John Taylor, Douglas Tody

Editor(s): **Thomas Boch**, Michael Fitzpatrick, Mark Taylor

*IVOA Recommendation 21 April 2009, obsoleted by Version 1.2*

IVOA Standard, <http://www.ivoa.net/Documents/cover/SAMP-20090421.html>

### ***Vocabularies in the Virtual Observatory, Version 1.19***

Author(s): **Sébastien Derriere**, Alasdair J G Gray, Norman Gray, Frederic V Hessman, Tony Linde, Andrea Preite Martinez, Rob Seaman and Brian Thomas

Editor(s): Alasdair J G Gray, Norman Gray, Frederic V Hessman, Andrea Preite Martinez

*IVOA Recommendation 07 October 2009*

IVOA Standard, <http://www.ivoa.net/Documents/latest/Vocabularies.html>

### ***VOTable Format Definition, Version 1.2***

Author(s): **Francois Ochsenbein**, Roy Williams

Editor(s): **Francois Ochsenbein**

*IVOA Recommendation 30 November 2009*

IVOA Standard, <http://www.ivoa.net/Documents/VOTable/20091130/>

## 2010

### ***Document Standards, Version 1.2***

Author(s): R.J. Hanisch, C. Arviset, **F. Genova**, B. Rino

Editor(s): R.J. Hanisch

*IVOA Recommendation 13 April 2010*

IVOA Standard, <http://www.ivoa.net/Documents/DocStd/20100413/>

### ***VOSpace specification, Version 2.0***

Author(s): Matthew Graham, Dave Morris, Guy Rixon, Pat Dowler, **André Schaaff**, Doug Tody

Editor(s): Matthew Graham

*IVOA Working Draft 12 November 2010*

<http://www.ivoa.net/Documents/VOSpace/20101112/index.html>

### ***Web Services Basic Profile, Version 1.0***

Author(s): **André Schaaff**, Matthew Graham

Editor(s): Matthew Graham

*IVOA Recommendation 16 December 2010*

IVOA Standard, <http://www.ivoa.net/Documents/WSBasicProfile/20101206/>

### ***Simple Application Messaging Protocol, Version 1.2***

Author(s): M. Taylor, **T. Boch**, M. Fitzpatrick, A. Allan, L. Paioro, J. Taylor, D. Tody

Editor(s): **T. Boch**, M. Fitzpatrick, M. Taylor

*IVOA Recommendation 16 December 2010*

IVOA Standard, <http://www.ivoa.net/Documents/SAMP/20101216/index.html>

## 2011

### ***Observation Data Model Core Components and its Implementation in the Table Access Protocol, Version 1.0***

Author(s): **Mireille Louys\***, **Francois Bonnarel**, David Schade, Patrick Dowler, Alberto Micol, Daniel Durand, Doug Tody, Laurent Michel, Jesus Salgado, Igor Chilingarian, Bruno Rino, Juan de Dios Santander, Petr Skoda

Editor(s): Doug Tody, Alberto Micol, Daniel Durand, **Mireille Louys\***

IVOA Recommendation 28 October 2011

<http://www.ivoa.net/Documents/ObsCore/20111028/index.html>

### ***Spectrum Data Model, Version 1.1***

Author(s): Jonathan McDowell, Doug Tody, Tamas Budavari, Markus Dolensky, Inga Kamp, Kelly McCusker, Pavlos Protopapas, Arnold Rots, Randy Thompson, Frank Valdes, Petr Skoda, Bruno Rino, **Sebastien Derriere**, Jesus Salgado, Omar Laurino and the IVOA Data Access Layer and Data Model Working Groups

Editor(s): Jonathan McDowell, Doug Tody

IVOA Recommendation 20 November 2011

<http://www.ivoa.net/Documents/SpectrumDM/20111120/index.html>

## 2012

### ***Simple Application Messaging Protocol, Version 1.3***

Author(s): M. Taylor, **T. Boch**, M. Fitzpatrick, A. Allan, J. Fay, L. Paioro, J. Taylor, D. Tody

Editor(s): **T. Boch**, M. Fitzpatrick, M. Taylor

IVOA Recommendation 11 April 2012

<http://www.ivoa.net/Documents/SAMP/20120411/>

### ***Simple Spectral Access Protocol, Version 1.1***

Author(s): Doug Tody, Markus Dolensky, Jonathan McDowell, **Francois Bonnarel**, Tamas Budavari, Ivo Busko, Alberto Micol, Pedro Osuna, Jesus Salgado, Petr Skoda, Randy Thompson, Frank Valdes, and the Data Access Layer working group

Editor(s): Doug Tody

IVOA Recommendation 10 February 2012

<http://www.ivoa.net/Documents/SSA/20120210/index.html>

### ***Simulation Data Model, Version 1.0***

Author(s): Gerard Lemson, Laurent Bourges, Miguel Cervino, Claudio Gheller, Norman Gray, Franck LePetit, **Mireille Louys\***, Benjamin Ooghe, Rick Wagner, Herve Wozniak

Editor(s): Gerard Lemson, Herve Wozniak

IVOA Recommendation 3 May 2012

<http://www.ivoa.net/Documents/SimDM/20120503/index.html>

***Characterisation DM: Complements and new features. Observation quality and variability - complex datasets, Version 1.0***

Author(s): **Francois Bonnarel**, Igor Chilingarian, **Mireille Louys**, Juande Santander Vela, Jesus Salgado

Editor(s): **Francois Bonnarel**

*IVOA Working Draft 29 October 2012*

<http://www.ivoa.net/documents/Characterisation2/20121029/WD-Characterisation2-1.0-20121029.pdf>

## **2013**

***VOTable Format Definition, Version 1.3***

Author(s): **Francois Ochsenbein**, Roy Williams, Clive Davenhall, Markus Demleitner, Daniel Durand, **Pierre Fernique**, David Giaretta, Robert Hanisch, Tom McGlynn, Alex Szalay, Mark Taylor, Andreas Wicenec

Editor(s): **Francois Ochsenbein**, Mark Taylor

*IVOA Recommendation 20 September 2013*

<http://www.ivoa.net/documents/VOTable/20130920/REC-VOTable-1.3-20130920.html>

***VOSpace specification, Version 2.0***

Author(s): Matthew Graham, Dave Morris, Guy Rixon, Pat Dowler, **Andre Schaaff**, Doug Tody

Editor(s): Matthew Graham

*IVOA Recommendation 29 March 2013*

<http://www.ivoa.net/documents/VOSpace/20130329/REC-VOSpace-2.0-20130329.html>

***Photometry Data Model, Version 1.0***

Author(s): Jesus Salgado, Carlos Rodrigo, Pedro Osuna, **Mark Allen**, **Mireille Louys**, Jonathan McDowell, Deborah Baines, Jesus Maiz Apellaniz, Evanthia Hatziminaoglou, **Sebastien Derriere**, Gerard Lemson

Editor(s): Jesus Salgado, Pedro Osuna

*IVOA Recommendation 05 October 2013*

<http://www.ivoa.net/documents/PHOTDM/20131005/index.html>

***DataLink, Version 1.0***

Author(s): Patrick Dowler, **Francois Bonnarel**, **Laurent Michel**, Tom Donaldson, David Languignon

Editor(s): Patrick Dowler

*IVOA Working Draft 22 October 2013*

<http://www.ivoa.net/documents/DataLink/20131022/WD-DataLink-1.0-20131022.pdf>

## 2014

### *MOC - HEALPix Multi-Order Coverage map, Version 1.0*

Author(s): **Thomas Boch**, Tom Donaldson, Daniel Durand, **Pierre Fernique**, Wil O'Mullane, Martin Reinecke, Mark Taylor

Editor(s): **Pierre Fernique**

*IVOA Recommendation 02 June 2014*

<http://www.ivoa.net/documents/MOC/20140602/REC-MOC-1.0-20140602.pdf>

### *DataLink, Version 1.0*

Author(s): Patrick Dowler, **François Bonnarel**, **Laurent Michel**, Tom Donaldson, David Languignon, Markus Demleitner

Editor(s): Patrick Dowler

*IVOA Working Draft 28 February 2014*

<http://www.ivoa.net/documents/DataLink/20140228/WD-DataLink-1.0-20140228.pdf>

### *DataLink, Version 1.0*

Author(s): Patrick Dowler, **Francois Bonnarel**, **Laurent Michel**, Markus Demleitner

Editor(s): Patrick Dowler

*IVOA Working Draft 05 May 2014*

<http://www.ivoa.net/documents/DataLink/20140505/WD-DataLink-1.0-20140505.pdf>

### *DataLink, Version 1.0*

Author(s): Patrick Dowler, **Francois Bonnarel**, **Laurent Michel**, Markus Demleitner

Editor(s): Patrick Dowler

*IVOA Proposed Recommendation 30 May 2014*

<http://www.ivoa.net/documents/DataLink/20140530/PR-DataLink-1.0-20140530.pdf>

### *Units in the VO, Version 1.0*

Author(s): Markus Demleitner, **Sebastien Derriere**, Norman Gray, **Mireille Louys**, **Francois Ochsenein**

Editor(s): **Sebastien Derriere**, Norman Gray

*IVOA Recommendation 23 May 2014*

<http://www.ivoa.net/documents/VOUnits/20140523/VOUnits-REC-1.0-20140523.pdf>

## 2015

### *Dataset Metadata Model, Version 1.0*

Author(s): **Francois Bonnarel**, Omar Laurino, Gerard Lemson, **Mireille Louys\***, Arnold Rots, Doug Tody, and the IVOA Data Model Working Group.

Editor(s): Mark Cresitello-Dittmar

*IVOA Working Draft 02 March 2015*

<http://www.ivoa.net/documents/DatasetDM/20150302/WD-DatasetDM-1.0-20150320.pdf>

***N-Dimensional Cube Model, Version 1.0***

Author(s): Doug Tody, **Francois Bonnarel**, Omar Laurino, **Mireille Louys\***, Arnold Rots, Jose Enrique Ruiz, Jesus Selgado, and the IVOA Data Model Working Group.

Editor(s): Mark Cresitello-Dittmar

*IVOA Working Draft 20 March 2015*

<http://www.ivoa.net/documents/NDimCubeDM/20150320/WD-CubeDM-1.0-20150320.pdf>

***DataLink, Version 1.0***

Author(s): Patrick Dowler, **François Bonnarel**, **Laurent Michel**, Markus Demleitner

Editor(s): Patrick Dowler

*IVOA Recommendation 17 June 2015*

<http://www.ivoa.net/documents/DataLink/20150617/REC-DataLink-1.0-20150617.pdf>

***Server-side Operations for Data Access, Version 1.0***

Author(s): **François Bonnarel**, Markus Demleitner, Patrick Dowler, Douglas Tody

Editor(s): **François Bonnarel**

*IVOA Working Draft 21 December 2015*

<http://www.ivoa.net/documents/SODA/20151221/index.html>

***Simple Image Access, Version 2.0***

Author(s): Patrick Dowler, Doug Tody, **François Bonnarel**

Editor(s): Patrick Dowler, **François Bonnarel**

*IVOA Recommendation 23 December 2015*

<http://www.ivoa.net/documents/SIA/20151223/>

**2016**

***Dataset Metadata Model, Version 1.0***

Author(s): **Francois Bonnarel**, Omar Laurino, Gerard Lemson, **Mireille Louys**, Arnold Rots, Doug Tody, and the IVOA Data Model Working Group.

Editor(s): Mark Cresitello-Dittmar

*IVOA Working Draft 17 March 2016*

<http://www.ivoa.net/documents/DatasetDM/20160317/index.html>

***Simulation Data Access Layer, Version 1.0***

Author(s): David Languignon, Franck Le Petit, Carlos Rodrigo, Gerard Lemson, Marco Molinaro, **Hervé Wozniak**

Editor(s): David Languignon, Franck Le Petit

*IVOA Working Draft 03 May 2016*

<http://www.ivoa.net/documents/SimDAL/20160503/index.html>

***HiPS - Hierarchical Progressive Survey, Version 1.0***



Author(s): **Pierre Fernique, Mark Allen, Thomas Boch**, Tom Donaldson, Daniel Durand, Ken Ebisawa, **Laurent Michel**, Jesus Salgado, Felix Stoehr  
Editor(s): **Pierre Fernique**  
*IVOA Working Draft 23 June 2016*  
<http://www.ivoa.net/documents/HIPS/20160623/index.html>

***Provenance Data Model, Version 1.0***

Author(s): Kristin Riebe, Mathieu Servillat, **Francois Bonnarel, Mireille Louys**, Florian Rothmaier, Michele Sanguillon, IVOA Data Model Working Group  
Editor(s): Kristin Riebe, Mathieu Servillat  
*IVOA Working Draft 21 November 2016*  
<http://www.ivoa.net/documents/ProvenanceDM/20161121/index.html>

**2017**

***Simulation Data Access Layer, Version 1.0***

Author(s): David Languignon, Franck Le Petit, Carlos Rodrigo, Gerard Lemson, Marco Molinaro, **Hervé Wozniak**  
Editor(s): David Languignon, Franck Le Petit  
*IVOA Recommendation 20 March 2017*  
<http://www.ivoa.net/documents/SimDAL/20170320/index.html>

***VOSpace, Version 2.1***

Author(s): **Matthew Graham, Dave Morris, Guy Rixon, Pat Dowler, André Schaaff, Doug Tody, Brian Major**  
Editor(s): **Matthew Graham, Brian Major, Dave Morris**  
*IVOA Proposed Recommendation 05 April 2017*  
<http://www.ivoa.net/documents/VOSpace/20170405/index.html>

***Observation Data Model Core Components and its Implementation in the Table Access Protocol, Version 1.1***

Author(s): **Mireille Louys, Doug Tody, Patrick Dowler, Daniel Durand, Laurent Michel, Francois Bonnarel**, Alberto Micol and the IVOA DataModel working group  
Editor(s): **Mireille Louys, Doug Tody, Patrick Dowler, Daniel Durand**  
*IVOA Recommendation 09 May 2017*  
<http://www.ivoa.net/documents/ObsCore/20170509/index.html>

***Server-side Operations for Data Access, Version 1.0***

Author(s): **François Bonnarel**, Markus Demleitner, Patrick Dowler, Douglas Tody, James Dempsey  
Editor(s): **François Bonnarel, Patrick Dowler**  
*IVOA Recommendation 17 May 2017*  
<http://www.ivoa.net/documents/SODA/20170604/index.html>

***Document Standards, Version 2.0***

Author(s): **F. Genova**, C. Arviset, M. Demleitner, B. Glendenning, M. Molinaro, R.J. Hanisch, B. Rino

Editor(s): **F. Genova**

*IVOA Recommendation 17 May 2017*

<http://www.ivoa.net/documents/DocStd/20170517/>

***HiPS - Hierarchical Progressive Survey, Version 1.0***

Author(s): **Pierre Fernique, Mark Allen, Thomas Boch**, Tom Donaldson, Daniel Durand, Ken Ebisawa, **Laurent Michel**, Jesus Salgado, Felix Stoehr

Editor(s): **Pierre Fernique**

*IVOA Recommendation 19 May 2017*

<http://www.ivoa.net/documents/HiPS/20170519/index.html>

***SSO - Single-Sign-On Profile: Authentication Mechanisms, Version 2.0***

Author(s): Giuliano Taffoni, **André Schaaff**, Guy Rixon, Brian Major

Editor(s): Giuliano Taffoni

*IVOA Recommendation 24 May 2017*

<http://www.ivoa.net/documents/SSO/20170524/index.html>

***VO-DML - A Consistent Modeling Language for IVOA Data Models, Version 1.0***

Author(s): Gerard Lemson, Omar Laurino, Laurent Bourges, Mark Cresitello-Dittmar, Mark Markus Demleitner, Tom Donaldson, Patrick Dowler, Matthew Graham, Norman Gray, **Laurent Michel**, Jesus Salgado

Editor(s): Gerard Lemson, Omar Laurino

*IVOA Proposed Recommendation 11 July 2017*

<http://www.ivoa.net/documents/VODML/20170711/index.html>

***Provenance Data Model, Version 1.0***

Author(s): Kristin Riebe, Mathieu Servillat, **François Bonnarel, Mireille Louys**, Markus Nullmeier, Florian Rothmaier, Michèle Sanguillon, IVOA Data Model Working Group

Editor(s): Kristin Riebe, Mathieu Servillat

*IVOA Working Draft 21 September 2017*

<http://www.ivoa.net/documents/ProvenanceDM/index.html>

***Dataset Metadata Mode, Version 1.0***

Author(s): Mark Cresitello-Dittmar, **Francois Bonnarel**, Omar Laurino, Gerard Lemson, **Mireille Louys**, Arnold Rots, Doug Tody, and the IVOA Data Model Working Group.

Editor(s): Mark Cresitello-Dittmar

*IVOA Working Draft 28 September 2017*

<http://www.ivoa.net/documents/DatasetDM/20170928/index.html>

***Maintenance of the list of UCD words, Version 2.0***

Author(s): **Françoise Genova**, **Mireille Louys**, Andrea Preite Martinez, **Sebastien Derriere**, Marco Molinaro, Nausicaa Delmotte, Norman Gray, Robert Mann, Jonathan McDowell, Thomas Mc Glynn, **François Ochsenein**, Pedro Osuna, Guy Rixon, Roy Williams

Editor(s): **Françoise Genova**

*IVOA Working Draft 18 October 2017*

<http://www.ivoa.net/documents/UCDlistMaintenance/20171018/>

**2018**

***N-Dimensional Cube Model, Version 1.0***

Author(s): Mark Cresitello-Dittmar, Doug Tody, **Francois Bonnarel**, Omar Laurino, Gerard Lemson, Markus Demleitner, and the IVOA Data Model Working Group

Editor(s): Mark Cresitello-Dittmar

*IVOA Working Draft 16 May 2018*

<http://www.ivoa.net/documents/CubeDM/20180516/index.html>

***VO-DML: a consistent modeling language for IVOA data models, Version 1.0***

Author(s): Gerard Lemson, Omar Laurino, Laurent Bourges, Mark Cresitello-Dittmar, Markus Demleitner, Tom Donaldson, Patrick Dowler, Matthew Graham, Norman Gray,

**Laurent Michel**, Jesus Salgado

Editor(s): Gerard Lemson, Omar Laurino

*IVOA Working Draft 19 May 2018*

<http://www.ivoa.net/documents/VODML/20180519/index.html>

***The UCD1+ controlled vocabulary Version 1.3, Version 1.3***

Author(s): Andrea Preite Martinez, **Mireille Louys**, Baptiste Cecconi, **Sebastien Derriere**, **François Ochsenein**, and the IVOA Semantic Working group

Editor(s): Andrea Preite Martinez, **Mireille Louys**

*IVOA Recommendation 27 May 2018*

<http://www.ivoa.net/documents/UCD1+/20180527/index.html>

***VOSpace, Version 2.1***

Author(s): Matthew Graham, Dave Morris, Guy Rixon, Pat Dowler, **André Schaaff**, Doug Tody, Brian Major

Editor(s): Matthew Graham, Brian Major

*IVOA Recommendation 21 June 2018*

<http://www.ivoa.net/documents/VOSpace/20180620/index.html>

***VO-DML: a consistent modeling language for IVOA data models, Version 1.0***

Author(s): Gerard Lemson, Omar Laurino, Laurent Bourges, Mark Cresitello-Dittmar, Markus Demleitner, Tom Donaldson, Patrick Dowler, Matthew Graham, Norman Gray, **Laurent Michel**, Jesus Salgado

Editor(s): Gerard Lemson, Omar Laurino

*IVOA Recommendation 10 September 2018*

<http://www.ivoa.net/documents/VODML/20180910/index.html>

**2019**

***Provenance Data Model, Version 1.0***

Author(s): Mathieu Servillat, Kristin Riebe, Catherine Boisson, **François Bonnarel**, Anastasia Galkin, **Mireille Louys**, Markus Nullmeier, Nicolas Renault-Tinacci, Michèle Sanguillon, Ole Streicher

Editor(s): Mathieu Servillat

*IVOA Proposed Recommendation 19 July 2019*

<http://www.ivoa.net/documents/ProvenanceDM/20190719/index.html>

***MOC - HEALPix Multi-Order Coverage map, Version 1.1***

Author(s): **Pierre Fernique**, **Thomas Boch**, Tom Donaldson, Daniel Durand, Wil O'Mullane, Martin Reinecke, Mark Taylor

Editor(s): **Pierre Fernique**

*IVOA Recommendation 07 October 2019*

<http://www.ivoa.net/documents/MOC/20191007/REC-MOC-1.1-20191007.pdf>

***VOTable Format Definition, Version 1.4***

Author(s): **Francois Ochsenbein**, Roy Williams, Clive Davenhall, Markus Demleitner, Tom Donaldson, Daniel Durand, **Pierre Fernique**, David Giaretta, Robert Hanisch, Tom McGlynn, Alex Szalay, Mark Taylor, Andreas Wicenec

Editor(s): **Francois Ochsenbein**, Mark Taylor, Tom Donaldson

*IVOA Recommendation 21 October 2019*

<http://www.ivoa.net/documents/VOTable/20191021/REC-VOTable-1.4-20191021.html>

**2020**

***Provenance Data Model, Version 1.0***

Author(s): Mathieu Servillat, Kristin Riebe, Catherine Boisson, **François Bonnarel**, Anastasia Galkin, **Mireille Louys**, Markus Nullmeier, Nicolas Renault-Tinacci, Michèle Sanguillon, Ole Streicher

Editor(s): Mathieu Servillat

*IVOA Recommendation 11 April 2020*

<http://www.ivoa.net/documents/ProvenanceDM/20200411/index.html>

## CDS participation in IVOA, 2019-2020

2019-2020

*A list of acronyms is given at the end of this section to facilitate reading.*

### ***Role in IVOA structure (September 2020)***

- F. Genova, Executive Board Member representing France
- A. Schaaff, Chair of the *Data Curation & Preservation* Interest Group
- M.G. Allen, editor of the bi-annual IVOA Newsletter
- L. Michel, Chair of the *Data Model* Working Group
- A. Nebot, Chair of the *Time Domain* Interest Group since May 2017
- F. Bonnarel, Vice Chair of the *Radio* Interest Group
- H. Heinl, Vice Chair of the *Education* Interest Group

### ***CDS Presentations at the IVOA Interoperability meetings***

Interoperability Paris, May 12-17, 2019

<https://wiki.ivoa.net/twiki/bin/view/IVOA/InterOpMay2019MeetingPage>

- **Opening Plenary: Monday May 13, 2019**
  - **Charge to the Working Groups:**
    - [WG DM](#) (L. Michel, M. Cresitello-Dittmar)
    - [WG Semantics](#) (M. Louys, M. Demleitner)
    - [IG DCP](#) (A. Schaaff, T.Jenness)
    - [IG Time Domain](#) (A. Nebot, D. Morris)
- **Closing Plenary: Friday May 17, 2019**
  - **Charge to the Working Groups:**

- [WG DM](#) (L. Michel, M. Cresitello-Dittmar)
  - [WG Semantics](#) (M. Louys, M. Demleitner)
  - [IG DCP](#) (A. Schaaff, T. Jenness)
  - [IG Time Domain](#) (A. Nebot, D. Morris)
- State of the IVOA
  - [State of the IVOA](#) (M. Allen)
  - [Closing Remarks](#) (M. Allen)
- Plenary session
  - [Observatoires Virtuels France](#) (F. Genova)
- SSIG session
  - [VESPA: EPNCORE and other topics](#) (S. Erard, P. Fernique...)
- Apps sessions
  - Joint Topic Based-sessions
    - Joint session TDIG / Apps
      - [TDIG / Apps](#) (A. Nebot, D. Morris, T. Donaldson, R. D'Abrusco)
      - [Space-Time-MOC - Where and when in a few milliseconds](#) (P. Fernique, D. Durand, A. Nebot, T. Boch, F-X.-Pineau...)
    - Joint session DAL / Apps / GWS / Reg
      - DAL 1 "Standards: revision & updates"
        - [SIAP & SODA Next](#) (F. Bonnarel)
      - DAL 2 "DAL Feedback & ADQL"
        - [Evolutions of TAP-Lib & Co](#) (G. Mantelet)
    - Catalogs / Source Properties DM
      - [Transformations](#) (F. Bonnarel)
      - [ProvTAP](#) (F. Bonnarel)
      - [VizieR](#) (G. Landais, E. Perret, M. Brouty, T. Pouvreau, P. Vannier, P. Ocvirk)

- [Crossmatch](#) (F-X. Pineau)
    - [Aladin](#) (P. Fernique)
    - [wrap-up](#) (F. Bonnarel)
  - [HiPS](#)
    - [Exploring catalogue with CatTiler](#) (T. Boch and the CDS Team)
    - [Recent and Future developments in MOCpy](#) (M. Baumann, T. Boch)
  - Tools and Discovery
    - [a search engine for the VO standards](#) (L. Michel)
- Education IG & Media Group session
  - [Usage of HiPS in outreach softwares](#) (S. Derriere, T. Boch, P. Fernique, A. Schaaff...)
- DCP IG session
  - [Quick introduction](#) (A. Schaaff, T. Jenness)
    - Certification
      - [Trustworthy Data Repositories: CoreTrustSeal Certification](#) (F. Genova)
    - DOIs
      - [DOI Note Status](#) (A. Schaaff, T. Jenness)
      - [Splinter session DOI](#) (A. Schaaff, T. Jenness, G. Landais...)
- Semantics session
  - [The Unified Astronomy Thesaurus 3.0](#) (S. Derriere)
  - [Observatory instruments](#) (E. Perret, G. Landais, T. Mayer, M. Louys)

**Interoperability Groningen, October 11-13, 2019**

<https://wiki.ivoa.net/twiki/bin/view/IVOA/InterOpOct2019>

- Opening Plenary: October 11, 2019
  - Charge to the Working Groups:

- [WG DM](#) (L. Michel, J. Salgado)
  - [IG DCP](#) (A. Schaaff, T. Jenness)
  - [IG Time Domain](#) (A. Nebot, D. Morris)
- **Closing Plenary: October 13, 2019**
  - **Charge to the Working Group:**
    - [WG DM](#) (L. Michel, J. Salgado)
    - [IG DCP](#) (A. Schaaff, T. Jenness)
    - [IG Time Domain](#) (A. Nebot)
- **State of the IVOA**
  - [State of the IVOA](#) (M. Allen)
  - [Closing Remarks](#) (M. Allen)
- **Radioastronomy in the VO**
  - [Introduction to previous VO work on Radioastronomy](#) (F. Bonnarel)
- **Data Model**
  - **Source DM**
    - [Introduction](#) (L. Michel)
    - [Mapping Vizier meta-data on a source DM](#) (G. Landais, F. Bonnarel, M. Louys, A. Nebot, L. Michel)
    - [Data annotations](#) (F. Bonnarel, L. Michel, A. Nebot, M. Louys, G. Landais)
    - [CAB-MSD note presentation](#) (L. Michel, F. Bonnarel...)
  - **DM-WG session**
    - **Introduction** (L. Michel)
    - [Provenance Status](#) (M. Louys, F. Bonnarel...)
- **DAL**
  - **Apps & DAL joint session**



- [ProvTAP & ProvHiPS](#) (F. Bonnarel, M. Louys, D. Durand, A. Egner)
  - DAL main session
    - [Retrieving complex data in TAP services](#) (A. Oberto, H. Liao, G. Mantelet, L. Michel)
    - [feedback report on the implementation of ADQL-2.1](#) (G. Mantelet)
    - [Simple Cone Search extension to Time Search](#) (A. Nebot)
    - [DataLink next status](#) (F. Bonnarel)
- DCP
  - [Introduction](#) (A. Schaaff, T. Jenness)
  - [Machine-readable licence attached to data](#) (A. Schaaff, F. Genova)
- Applications
  - [HiPS: 2 years after the IVOA standard](#) (P. Fernique)
  - [hips2fits, CDS effort to create a service generating FITS cutouts from HiPS files](#) (T. Boch, P. Fernique, F. Bonnarel, Chaitra, C. Bot, FX. Pineau, M. Baumann, L. Michel)
  - [Recent STMOC developments at CDS: support in MOCPv, STMOC for VizieR tables](#) (M. Baumann, T. Boch, FX. Pineau, P. Fernique, A. Nebot)
  - [ST-MOC Discussion](#) (P. Fernique, A. Nebot)
- Operations
  - [VizieR ObsCore-FITS validator](#) (G. Landais, L. Michel)
- Semantics
  - [Vocabularies in ProvDM](#) (M. Louys & Provenance WG)

Interoperability Virtual Meeting, May 4-8,2020

<https://wiki.ivoa.net/twiki/bin/view/IVOA/InterOpMay2020>

Exposés des équipes françaises et de leurs collaborateurs à la réunion Interoperability virtuelle ([4 au 8 mai 2020](#))

- **Opening Plenary: May 4, 2020**
  - **Charge to the Working Groups:**
    - [WG DM](#) (L. Michel, J. Salgado)
    - [IG DCP](#) (A. Schaaff, T. Jenness...)
    - [IG Radio Astronomy](#) (M. Lacy, F. Bonnarel)
    - [IG Time Domain](#) (A. Nebot, D. Morris)
- **RDA FAIR Data Maturity Model WG**
  - [FAIR Data Maturity Model](#) (F. Genova, F. Bonnarel, M. Allen, M. Molinaro)
- **DM**
  - **DM Status report**
    - [Data Models in the VO](#) (L. Michel, J. Salgado)
    - [Discussion](#) (L. Michel, J. Salgado)
  - **Implementations of the Provenance DM**
    - [Introduction](#) (M. Servillat, C. Boisson, F. Bonnarel, M. Louys...)
    - [SVOM](#) (L. Michel, M. Louys)
    - [ProvHiPS](#) (F. Bonnarel, M. Louys, L. Michel...)
  - **Source model progress report**
    - [Introduction](#) (L. Michel, F. Bonnarel, G. Landais, M. Louys)
- **IG Radioastronomy**
  - [Motivation and summary of work done](#) (M. Lacy, F. Bonnarel)
  - [ESCAPE radio astronomy developments](#) (F. Bonnarel)
- **IG Time Domain**
  - [Introduction](#) (A. Nebot, F. Bonnarel, M. Louys, L. Michel...)
- **DAL**
  - [work on resolving current issues](#) (F. Bonnarel, L. Michel)

- [ADQL status & discussion](#) (G. Mantelet)
  - [ConeSearch status & discussion](#) (A. Nebot, M. Molinaro)
  - [Feedback on SIA2/SODA including PyVO developments](#) (F. Bonnarel)
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### ***List of acronyms***

Aladin	Sky atlas and data discovery tool
ARCHES	Astronomical Resource Cross-matching for High Energy Studies
CDS	Centre de Données astronomiques de Strasbourg
Char	Characterisation Data Model
CHARTAP	implementation of Characterisation DM with TAP service
CTA	Cherenkov Telescope Array
DAL	Data Access Layer
DCP	Data Curation & Preservation
DM	Data Model
G&WS	Grid & Web Services
HEALPix	Hierarchical Equal Area isoLatitude Pixelization of a sphere
HIPS	Hierarchical Progressive Survey
IG	Interest Group
IVOA	International Virtual Observatory Alliance
MOC	Multi-Order Coverage
ObsTAP	Observation Data Model Core Component using the Table Access Protocol (TAP)

ObsCoreDM	Observation Core Data Model
RDA	Research Data Alliance
SAMP	Simple Application Messaging Protocol
SIA	Simple Image Access
SIAP	Simple Image Access Protocol
SimDAL	Simulations Data Access Layer
SVO	Spanish Virtual Observatory
TAP	Table Access Protocol
UCD	Unified Content Descriptor
VObs or VO	Virtual Observatory
WCS	World Coordinate Systems
WG	Working Group
WS	Web Service