



# IVOA Interoperability Meeting Cape Town, 8 - 13 May, 2016



State of the TCG

Cape Town  
2016-05-08

*Matthew Graham and Pat Dowler  
For the TCG*



# Working and Interest Groups

- ▶ The role of Working Groups is to build consensus and broker agreement on technical work
- ▶ The role of Interest Groups is to act as points of contact between the community and the Working Groups and vice versa

	Chair	Vice-Chair
TCG	<a href="#">Matthew Graham</a>	<a href="#">Pat Dowler</a>
<b>Working Groups</b>		
<a href="#">Applications</a>	<a href="#">Pierre Fernique</a>	<a href="#">Tom Donaldson</a>
<a href="#">Data Access Layer</a>	<a href="#">François Bonnarel</a>	<a href="#">Marco Molinaro</a>
<a href="#">Data Model</a>	<a href="#">Mark Cresitello-Dittmar</a>	<a href="#">Laurent Michel</a>
<a href="#">Grid and Web Services</a>	<a href="#">Brian Major</a>	<a href="#">Giuliano Taffoni</a>
<a href="#">Registry</a>	<a href="#">Markus Demleitner</a>	<a href="#">Theresa Dower</a>
<a href="#">Semantics</a>	<a href="#">Mireille Louys</a>	<a href="#">Alberto Accomazzi</a>
<b>Interest Groups</b>		
<a href="#">Data Curation &amp; Preservation</a>	<a href="#">Françoise Genova</a>	n/a
<a href="#">Education</a>	<a href="#">Massimo Ramella</a>	<a href="#">Sudhanshu Barway</a>
<a href="#">Knowledge Discovery in Databases</a>	<a href="#">Kai Lars Polsterer</a>	n/a
<a href="#">Operations</a>	<a href="#">Tom McGlynn</a>	<a href="#">Mark Taylor</a>
<a href="#">Theory</a>	<a href="#">Franck Le Petit</a>	<a href="#">Carlos Rodrigo</a>
<a href="#">Time Domain</a>	<a href="#">John Swinbank</a>	<a href="#">Mike Fitzpatrick</a>
<b>IVOA Committees</b>		
<a href="#">Exec</a>	<a href="#">Christophe Ariset</a>	<a href="#">Enrique Solano</a>
<a href="#">Standard and Processes</a>	<a href="#">Francoise Genova</a>	n/a
<a href="#">Science Priorities</a>	<a href="#">Mark Allen</a>	n/a



# Technical Coordination Group

- ▶ Assures technical coordination amongst WGs/IGs
- ▶ Liaison with IVOA Exec
- ▶ Specific role in Recommendation Process
- ▶ WG/IG chairs and vice-chairs:
  - ▶ 3-year terms
  - ▶ 1 year extension possible

	Chair	Vice-Chair
TCG	<a href="#">Matthew Graham</a>	<a href="#">Pat Dowler</a>
<b>Working Groups</b>		
<a href="#">Applications</a>	<a href="#">Pierre Fernique</a>	<a href="#">Tom Donaldson</a>
<a href="#">Data Access Layer</a>	<a href="#">François Bonnarel</a>	<a href="#">Marco Molinaro</a>
<a href="#">Data Model</a>	<a href="#">Mark Cresitello-Dittmar</a>	<a href="#">Laurent Michel</a>
<a href="#">Grid and Web Services</a>	<a href="#">Brian Major</a>	<a href="#">Giuliano Taffoni</a>
<a href="#">Registry</a>	<a href="#">Markus Demleitner</a>	<a href="#">Theresa Dower</a>
<a href="#">Semantics</a>	<a href="#">Mireille Louys</a>	<a href="#">Alberto Accomazzi</a>
<b>Interest Groups</b>		
<a href="#">Data Curation &amp; Preservation</a>	<a href="#">Françoise Genova</a>	n/a
<a href="#">Education</a>	<a href="#">Massimo Ramella</a>	<a href="#">Sudhanshu Barway</a>
<a href="#">Knowledge Discovery in Databases</a>	<a href="#">Kai Lars Polsterer</a>	n/a
<a href="#">Operations</a>	<a href="#">Tom McGlynn</a>	<a href="#">Mark Taylor</a>
<a href="#">Theory</a>	<a href="#">Franck Le Petit</a>	<a href="#">Carlos Rodrigo</a>
<a href="#">Time Domain</a>	<a href="#">John Swinbank</a>	<a href="#">Mike Fitzpatrick</a>
<b>IVOA Committees</b>		
<a href="#">Exec</a>	<a href="#">Christophe Ariset</a>	<a href="#">Enrique Solano</a>
<a href="#">Standard and Processes</a>	<a href="#">Francoise Genova</a>	n/a
<a href="#">Science Priorities</a>	<a href="#">Mark Allen</a>	n/a



# Technical Coordination Group

► New leadership

	Chair	Vice-Chair
TCG	Matthew Graham	Pat Dowler
<b>Working Groups</b>		
Applications	Pierre Fernique	Tom Donaldson
Data Access Layer	François Bonnarel	Marco Molinaro
Data Model	Mark Cresitello-Dittmar	Laurent Michel
Grid and Web Services	Brian Major	Giuliano Taffoni
Registry	Markus Demleitner	Theresa Dower
Semantics	Mireille Louys	Alberto Accomazzi
<b>Interest Groups</b>		
Data Curation & Preservation	Françoise Genova	n/a
Education	Massimo Ramella	Sudhanshu Barway
Knowledge Discovery in Databases	Kai Lars Polsterer	n/a
Operations	Tom McGlynn	Mark Taylor
Theory	Franck Le Petit	Carlos Rodrigo
Time Domain	John Swinbank	Mike Fitzpatrick
<b>IVOA Committees</b>		
Exec	Christophe Ariset	Enrique Solano
Standard and Processes	Francoise Genova	n/a
Science Priorities	Mark Allen	n/a



# Technical Coordination Group

► Terms ending this InterOp

	Chair	Vice-Chair
TCG	Matthew Graham	Pat Dowler
<b>Working Groups</b>		
Applications	Pierre Fernique	Tom Donaldson
Data Access Layer	François Bonnarel	Marco Molinaro
Data Model	Mark Cresitello-Dittmar	Laurent Michel
Grid and Web Services	Brian Major	Giuliano Taffoni
Registry	Markus Demleitner	Theresa Dower
Semantics	Mireille Louys	Alberto Accomazzi
<b>Interest Groups</b>		
Data Curation & Preservation	Françoise Genova	n/a
Education	Massimo Ramella	Sudhanshu Barway
Knowledge Discovery in Databases	Kai Lars Polsterer	n/a
Operations	Tom McGlynn	Mark Taylor
Theory	Franck Le Petit	Carlos Rodrigo
Time Domain	John Swinbank	Mike Fitzpatrick
<b>IVOA Committees</b>		
Exec	Christophe Ariset	Enrique Solano
Standard and Processes	Francoise Genova	n/a
Science Priorities	Mark Allen	n/a

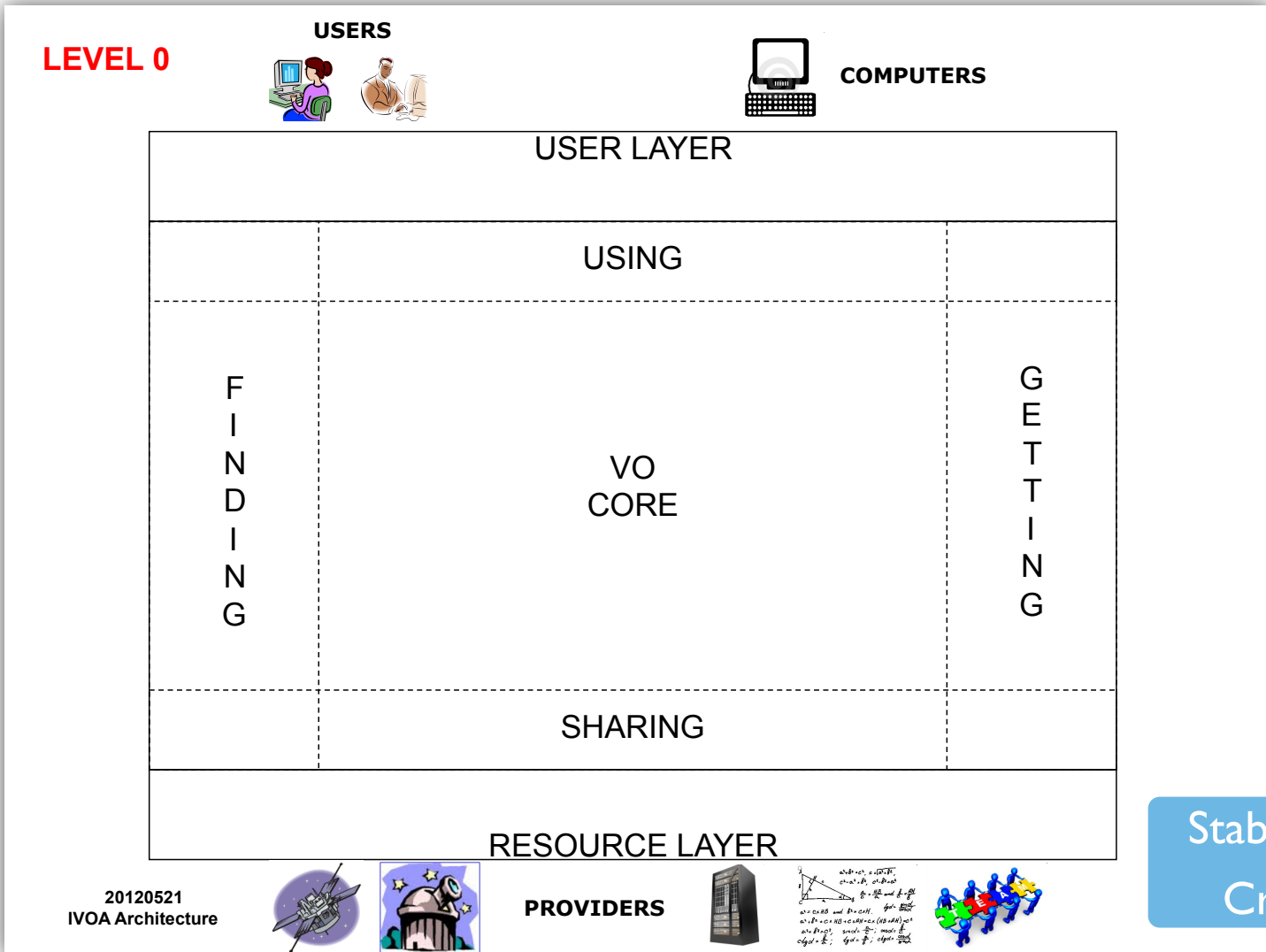


# IVOA Architecture

- ▶ IVOA Architecture Note released on Nov 2010
  - ▶ <http://www.ivoa.net/Documents/Notes/IVOAArchitecture/20101123/index.html>
- ▶ General description of IVOA Architecture
  - ▶ Level 0, 1, and 2 from general to VO specific
  - ▶ Present all IVOA standards in one slide (Level 2)
- ▶ Level 0 and 1 stable since creation
- ▶ Level 2 updated with new IVOA standards
- ▶ Individual standards diagram updated



# IVOA Architecture Level 0





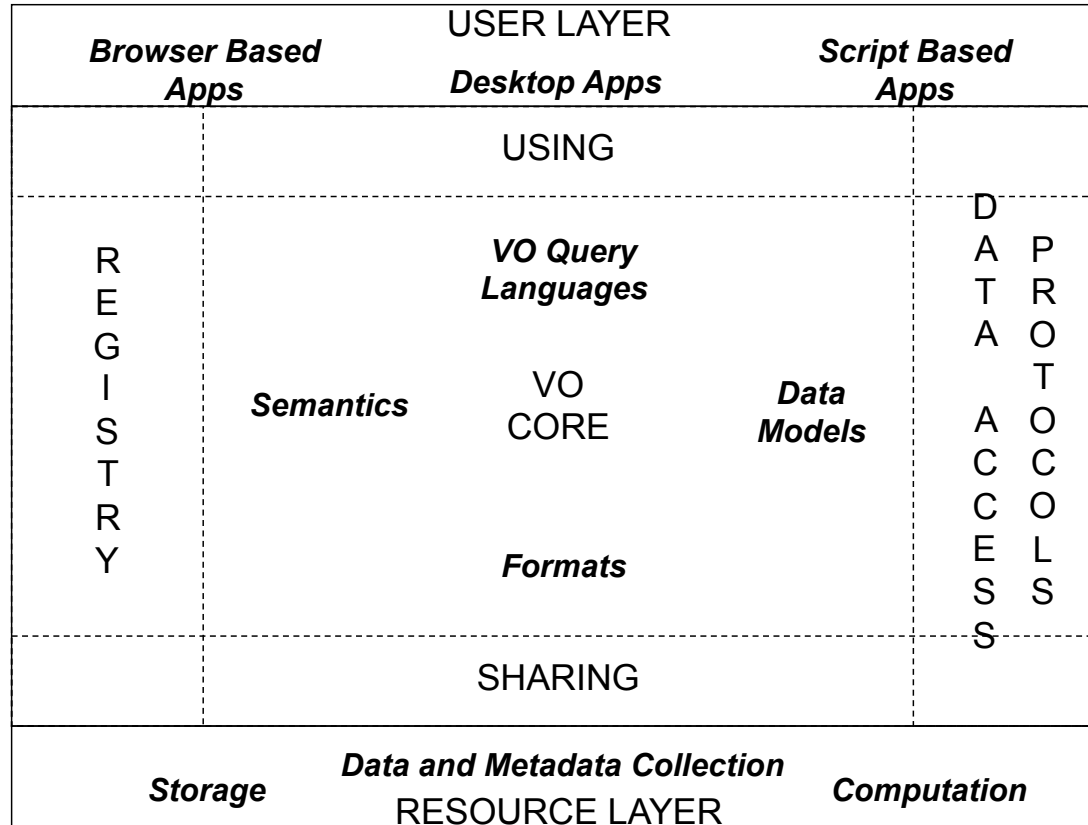
# IVOA Architecture Level 1

**LEVEL 1**

**USERS**



**COMPUTERS**

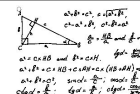


D  
A  
T  
A  
A  
C  
C  
E  
S  
S

20120521  
IVOA Architecture



**PROVIDERS**



Stable Since  
Creation





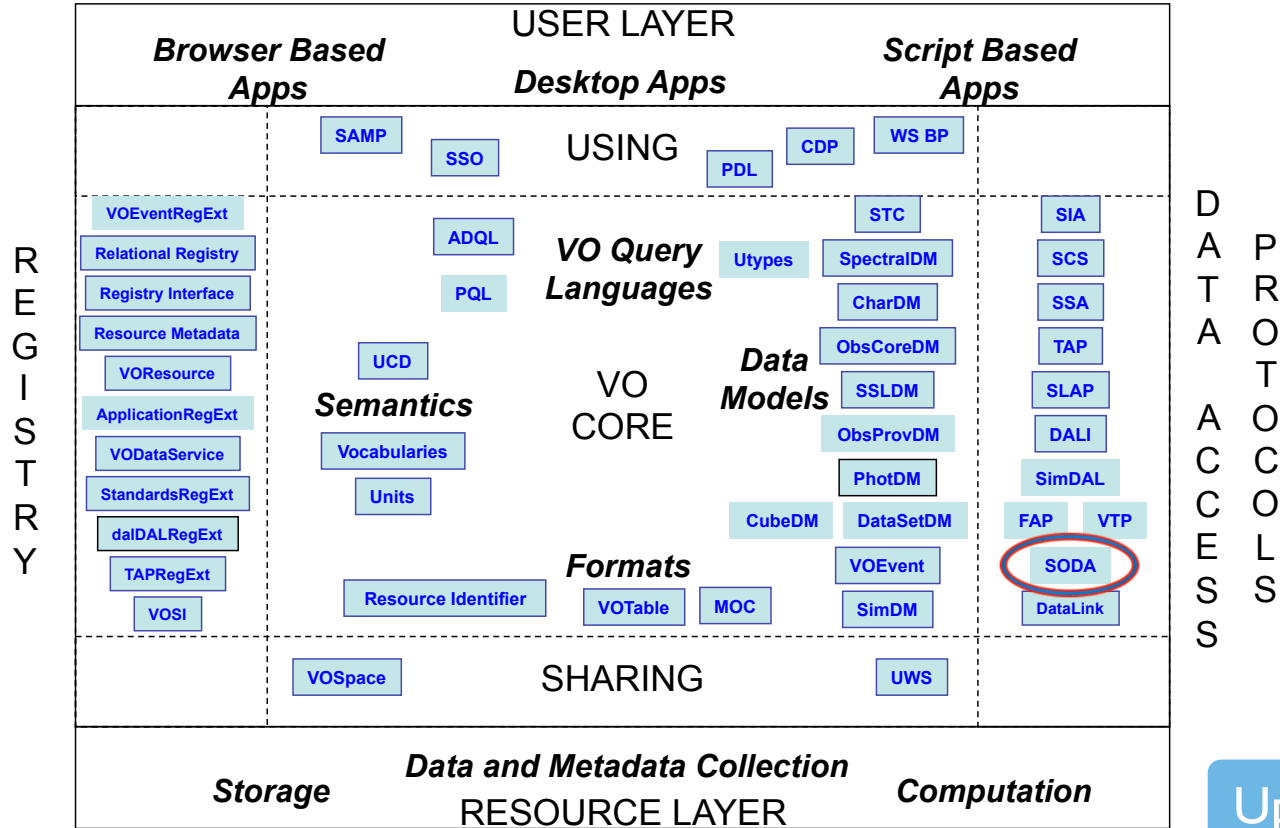
# IVOA Architecture Level 2

**LEVEL 2**  
All standards



COMPUTERS

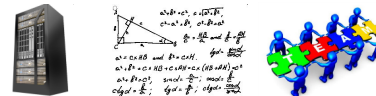
REC  
InProgress



20160508  
IVOA Architecture



PROVIDERS



Updated with  
new standards



# Standards approved at last InterOp

- ▶ Data Access Layer WG
  - ▶ SIA 2.0







# IVOA Standards – I

Date	WG/IG	Recommendation	Version	Replaces
Oct 2003	Standards & Processes	IVOA Document Standards	1.0	
Date	WG/IG	Recommendation	Version	Replaces
Aug 2004	VOTable	VOTable	1.10	
Date	WG/IG	Recommendation	Version	Replaces
Aug 2005	Semantics	Unified Content Descriptors	1.10	
Dec 2005	Semantics	UCD1+ Controlled Vocabulary	1.11	
Date	WG/IG	Recommendation	Version	Replaces
May 2006	Semantics	Maintenance of UCD Words	1.20	
Nov 2006	VOEvent	VOEvent	1.11	
Date	WG/IG	Recommendation	Version	Replaces
Mar 2007	Registry	IVOA Identifiers	1.12	
Apr 2007	Semantics	UCD1+ Controlled Vocabulary	1.23	1.11
Oct 2007	DM	STC	1.33	
Oct 2007	DM	SpectralDM	1.01	
Nov 2007	DM	CharDM	1.12	
Dec 2007	DAL	SSAP	1.03	

More details can be found on the IVOA Document pages at:  
<http://www.ivoa.net/Documents/>



# IVOA Standards – 2

Date	WG/IG	Recommendation	Version	Replaces
Jan 2008	GWS	SSO	1.03	
Jan 2008	GWS	VOSpace	1.02	
Feb 2008	Registry	VOResource	1.03	
Feb 2008	DAL	SCS	1.03	
Feb 2008	DAL	SSAP	1.04	1.03
Mar 2008	DM	CharDM	1.13	1.12
Oct 2008	VOQL	ADQL	2.0	
Date	WG/IG	Recommendation	Version	Replaces
Apr 2009	Apps	SAMP	1.11	
Oct 2009	Semantics	Vocabularies	1.19	
Oct 2009	GWS	VOSpace	1.15	1.02
Nov 2009	Registry	Registry Interface	1.0	
Nov 2009	DAL	SIAP	1.0	
Nov 2009	VOTABLE	VOTable	1.2	1.1

More details can be found on the IVOA Document pages at:  
<http://www.ivoa.net/Documents/>



# IVOA Standards – 3

Date	WG/IG	Recommendation	Version	Replaces
Feb 2010	GWS	CDP	1.0	
Mar 2010	DAL	TAP	1.0	
Apr 2010	Standards & Process	IVOA Document Standards	1.2	1.0
Oct 2010	GWS	UWS	1.0	
Dec 2010	Registry	VODataService 1.1	1.1	
Dec 2010	DM	SSLDM	1.0	
Dec 2010	DAL	SLAP	1.0	
Dec 2010	GWS	WS BP	1.0	
Dec 2010	Apps	SAMP	1.2	1.11
Date	WG/IG	Recommendation	Version	Replaces
May 2011	GWS	VOSI	1.0	
Jul 2011	VOEvent	VOEvent	2.0	1.11
Oct 2011	DM	ObsCoreDM	1.0	
Nov 2011	DM	SpectrumDM	1.1	1.01

More details can be found on the IVOA Document pages at:  
<http://www.ivoa.net/Documents/>



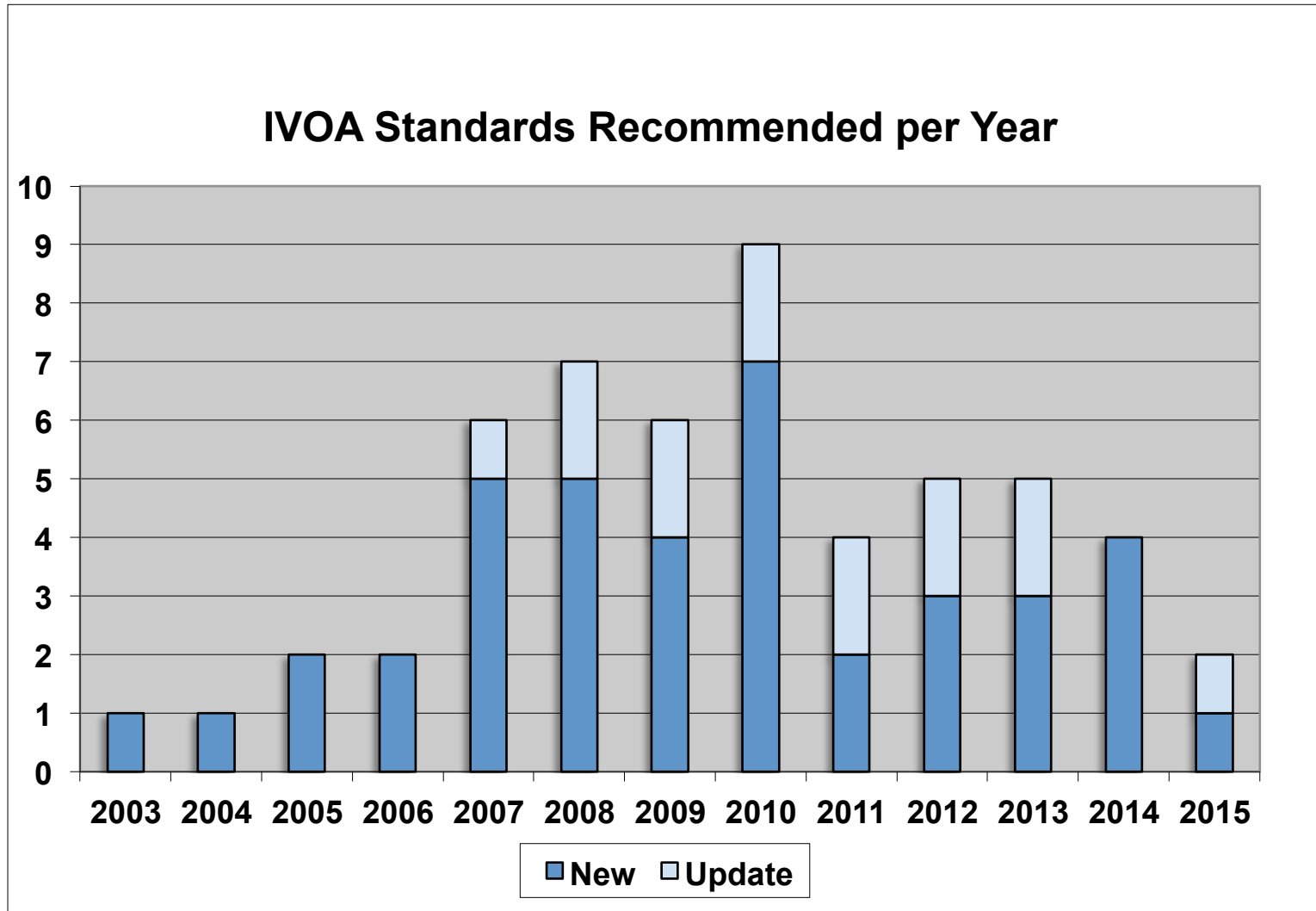
# IVOA Standards – 4

Date	WG/IG	Recommendation	Version	Replaces	Year	Status
Feb 2012	DAL	SSAP	1.1	1.04	2012	Update
Apr 2012	Apps	SAMP	1.3	1.2	2012	Update
May 2012	Registry	StandardRegExt	1.0		2012	New
May 2012	Theory / DM	SimDM	1.0		2012	New
Aug 2012	DAL	TAPRegExt	1.0		2012	New
Date	WG/IG	Recommendation	Version	Replaces	Year	Status
Mar 2013	GWS	VOSpace	2.0	1.15	2013	Update
Sep 2013	Apps	VOTable	1.3	1.2	2013	Update
Nov 2013	Reg	SimpleDALRegExt	1.0		2013	New
Sep 2013	DM	PhotDM	1.0		2013	New
Nov 2013	DAL	DALI	1.0		2013	New
Date	WG/IG	Recommendation	Version	Replaces	Year	Status
May 2014	Semantics	VOUnits	1.0		2014	New
May 2014	GWS	PDL	1.0		2014	New
May 2014	Apps	MOC	1.0		2014	New
Nov 2014	Registry	RegTAP	1.0		2014	New
Date	WG/IG	Recommendation	Version	Replaces	Year	Status
Jun 2015	DAL	Datalink	1.0		2015	New
Dec 2015	DAL	SIAP	2.0	1.0	2015	Update

More details can be found on the IVOA Document pages at:  
<http://www.ivoa.net/Documents/>



# IVOA Standards per year







# Exec Endorsed Priorities

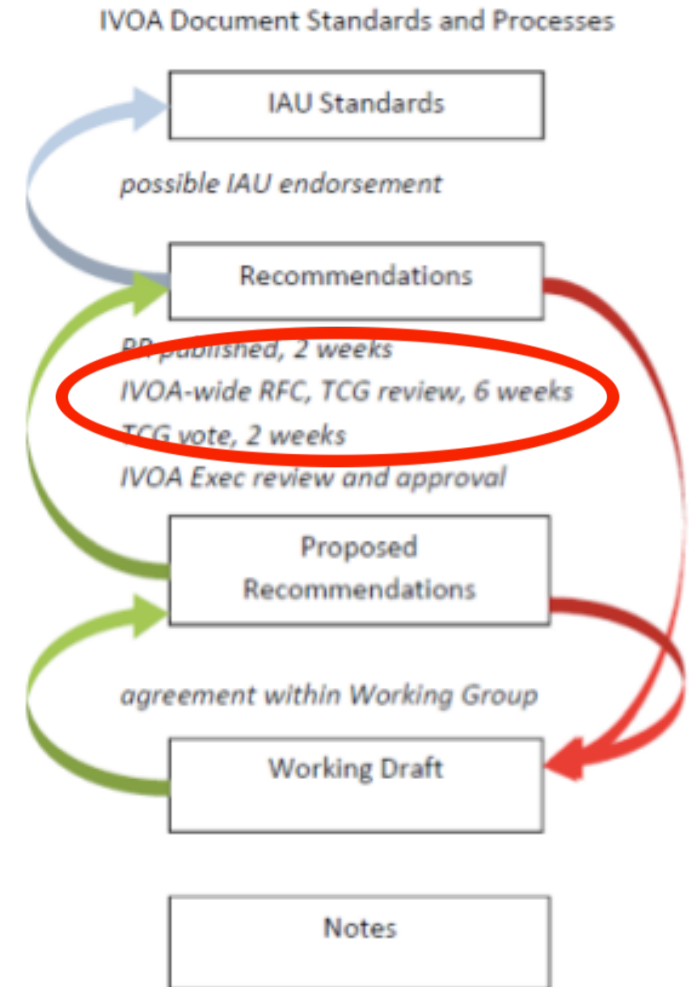
- ▶ **Multi-dimensional data:**
  - ▶ **SIA v2.0:**
    - ▶ ObsCore 1.0: Recommendation
    - ▶ Datalink 1.0: Recommendation
    - ▶ SIA 2.0: Recommendation
    - ▶ SODA (AccessData) 1.0: In PR
  - ▶ **SIA v2.1:**
    - ▶ Obscore 1.1: In RFC
    - ▶ ImageDM 1.0: Refactored into DatasetDM and CubeDM, both in WD.
    - ▶ SIAv2.1: to follow ImageDM and/or ObsCore



# Review Process - I

- ▶ Working Drafts
  - ▶ WG/IG agreement
  - ▶ Leading to a Proposed Recommendation (PR)

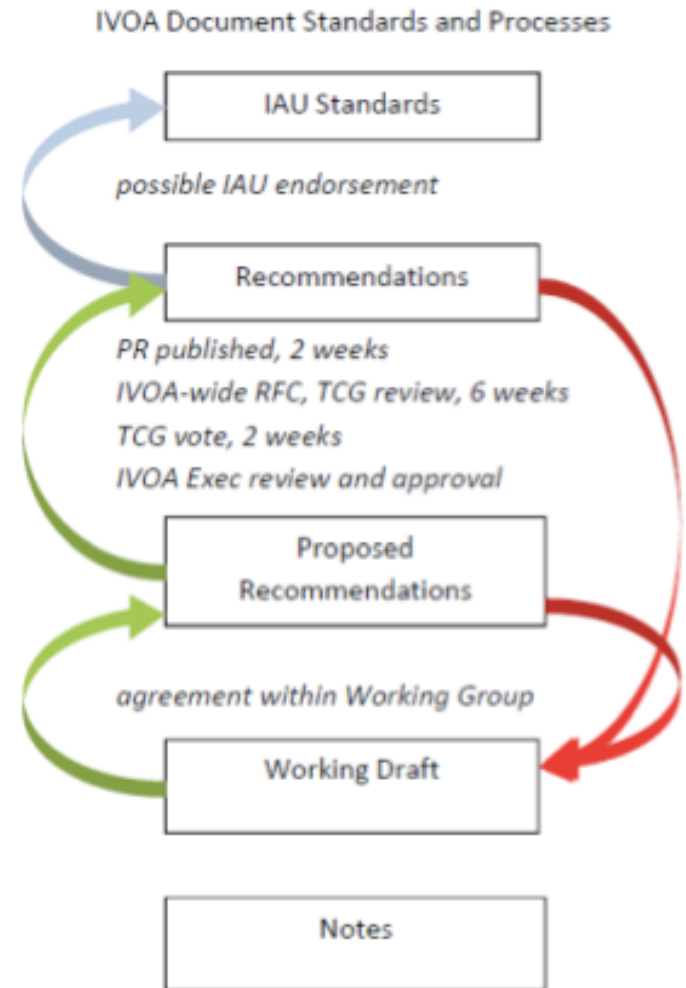
	Chair	Vice-Chair
TCG	Matthew Graham	Pat Dowler
<b>Working Groups</b>		
Applications	Pierre Fernique	Tom Donaldson
Data Access Layer	François Bonnarel	Marco Molinaro
Data Model	Mark Cresitello-Dittmar	Laurent Michel
Grid and Web Services	Brian Major	Giuliano Taffoni
Registry	Markus Demleitner	Theresa Dower
Semantics	Mireille Louys	Alberto Accomazzi
<b>Interest Groups</b>		
Data Curation & Preservation	Françoise Genova	n/a
Education	Massimo Ramella	Sudhanshu Barway
Knowledge Discovery in Databases	Kai Lars Polsterer	n/a
Operations	Tom McGlynn	Mark Taylor
Theory	Franck Le Petit	Carlos Rodrigo
Time Domain	John Swinbank	Mike Fitzpatrick





# Review Process - 2

- ▶ **Proposed Recommendation**
  - ▶ **Request for Comment (RFC)**
    - ▶ IVOA-wide invitation to review
    - ▶ Review early!!!
    - ▶ TCG members should review
  - ▶ **TCG vote**
    - ▶ Integration verification
  - ▶ **Exec review and approval**
- ▶ **WG chairs**
  - ▶ Manage the process
  - ▶ Discretion on accepting late comments





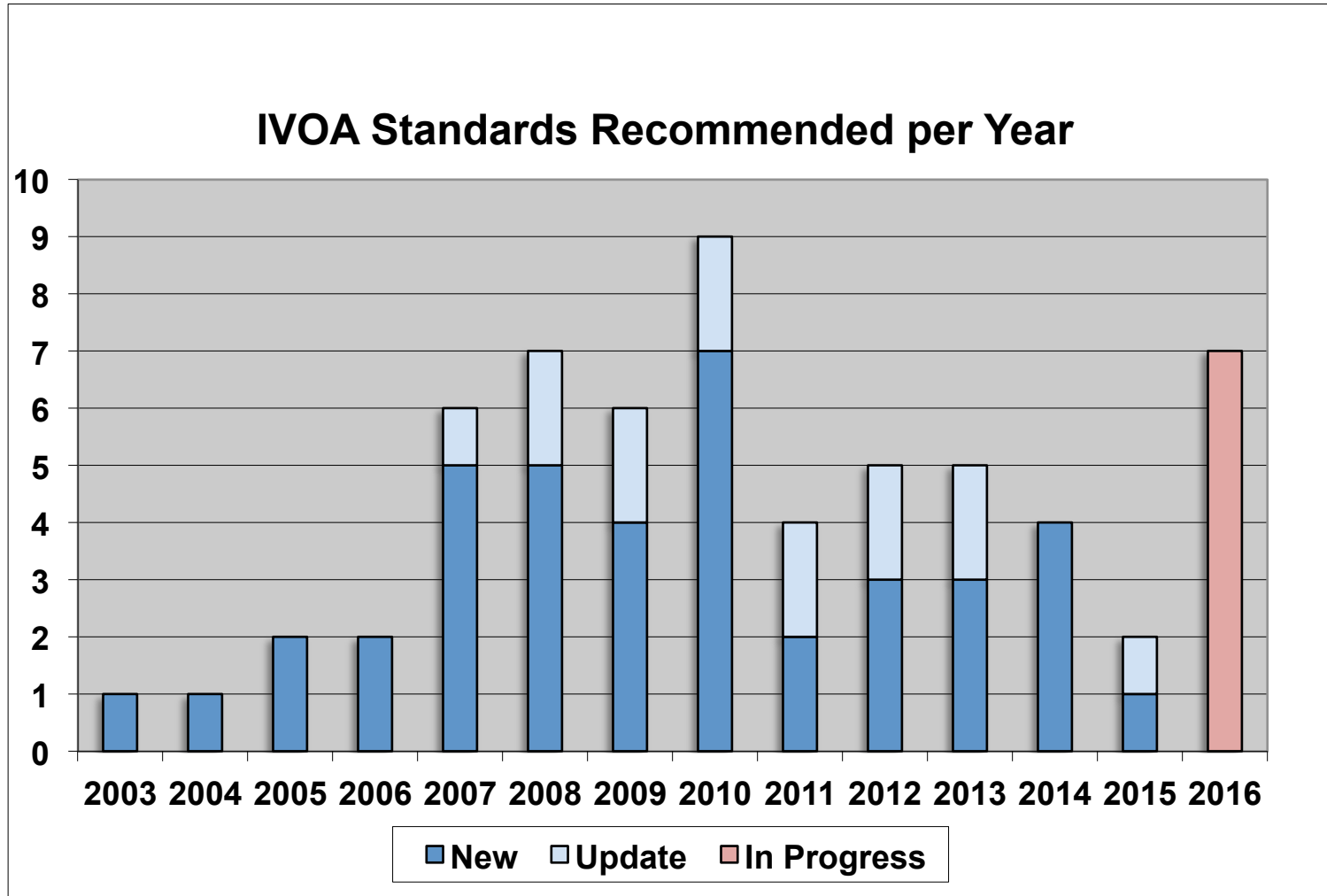
# PR's in the Rec Process

- ▶ In Exec review
  - ▶ Registry Identifiers 2.0
- ▶ Awaiting TCG vote
  - ▶ Universal Worker Service (UWS) 1.1
  - ▶ Single Sign-On (SSO) 2.0
- ▶ In RFC/TCG review
  - ▶ VOSI 1.1
  - ▶ ObsCore 1.1
- ▶ In PR
  - ▶ VOEvent Transport Protocol (VTP) 2.0
  - ▶ SODA 1.0





# IVOA Standards per year





# Publishing Data in the VO

- ▶ All InterOp participants are invited to provide input
- ▶ TCG to maintain and review

TWiki > IVOA Web > PublishingInTheVONew (2013-05-12, MarkTaylor) Edit Attach

## Publishing Data into the VO

- ▶ [Publishing Data into the VO](#)
  - ▶ [0. Introduction](#)
  - ▶ [1. Questions & Answers about what type of data to be published into the VO](#)
  - ▶ [2. Registry for VO Data Service Discovery](#)
  - ▶ [3. Toolkits to publish data into the VO](#)
  - ▶ [4. Developer's corner : other useful software tools and libraries for VO development](#)

### 0. Introduction

The purpose of this page is to provide practical information about how to publish you data holdings into the VO. The content of this page is user contributed by members of the IVOA community and its content will evolve as IVOA standards and implementations evolve.

Depending of your needs and your technical experience, there are several ways to publish you data into the VO:

- if you have very little technical expertise, you might want to contact your national VO projects who might already have the infrastructure to host your data and make it available to the VO. See the [list of national VO projects](#) and the [selection of open data centers](#) offering publication as a service.

<http://wiki.ivoa.net/twiki/bin/view/IVOA/PublishingInTheVONew>



# IVOA Roadmap

- ▶ Roadmap page to be updated by WG/IG chairs after each InterOp.
- ▶ One page per IVOA “semester” – A and B
- ▶ Links to the Roadmap on website footer

TWiki > IVOA Web > IvoaTCG > 2015BRoadmap (2015-10-27, MatthewGraham) Edit Attach

## IVOA Roadmap for 2015B

This outlines the roadmap for development activities by the various IVOA working and interest groups in 2015/16 between the Sydney and Cape Town Interops.

- ↓ [IVOA Roadmap for 2015B](#)
- ↓ [Applications](#)
- ↓ [Data Access Layer](#)
- ↓ [Data Model](#)
- ↓ [Grid and Web Services](#)
- ↓ [Registry](#)
- ↓ [Semantics](#)
- ↓ [Data Curation & Preservation](#)
- ↓ [Education](#)
- ↓ [Knowledge Discovery in Databases](#)
- ↓ [Operations](#)
- ↓ [Theory](#)
- ↓ [Time Domain](#)
- ↓ [Standard and Processes](#)
- ↓ [Science Priorities](#)

<http://www.ivoa.net>



# This InterOp

- ▶ We wish all a productive week!  
Ons wens al 'n produktiewe week!



## IVOA Interoperability Meeting Cape Town, 8 - 13 May, 2016

