

# Euro-VO Registry Service Compliance Statistics

*Costas Vrioni, Christophe Arviset, Juan Gonzalez  
ESAC Science Data Centre,*

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Reference: VO Service Compliance Statistics

Status: Issued

ESA UNCLASSIFIED - Releasable to the Public




**Welcome to the new EURO-VO Full Harvestable VO Resource Registry.**



The new Euro-VO Registry offers you the following main functionalities:




**For astronomers and end users:**

Search the VO resources through the Simple Search Panel, the Advanced Search or through the expert ADQL Search Panel (click on the  icon ).




**For data publishers:**

Host your resources with EuroVO, create and update your own VO Resources via a password-protected interface, check their compliance with the associated IVOA standards (click on the  icon; requires an account: click  to join ).



**For VO Applications developers and for other IVOA Registries:**

Harvest the registry, retrieve individual resources, or search the registry through its programmatic [OAI-PMH](#), [RI1](#) and [RegTAP](#) interfaces (click on the  icon to find more information).

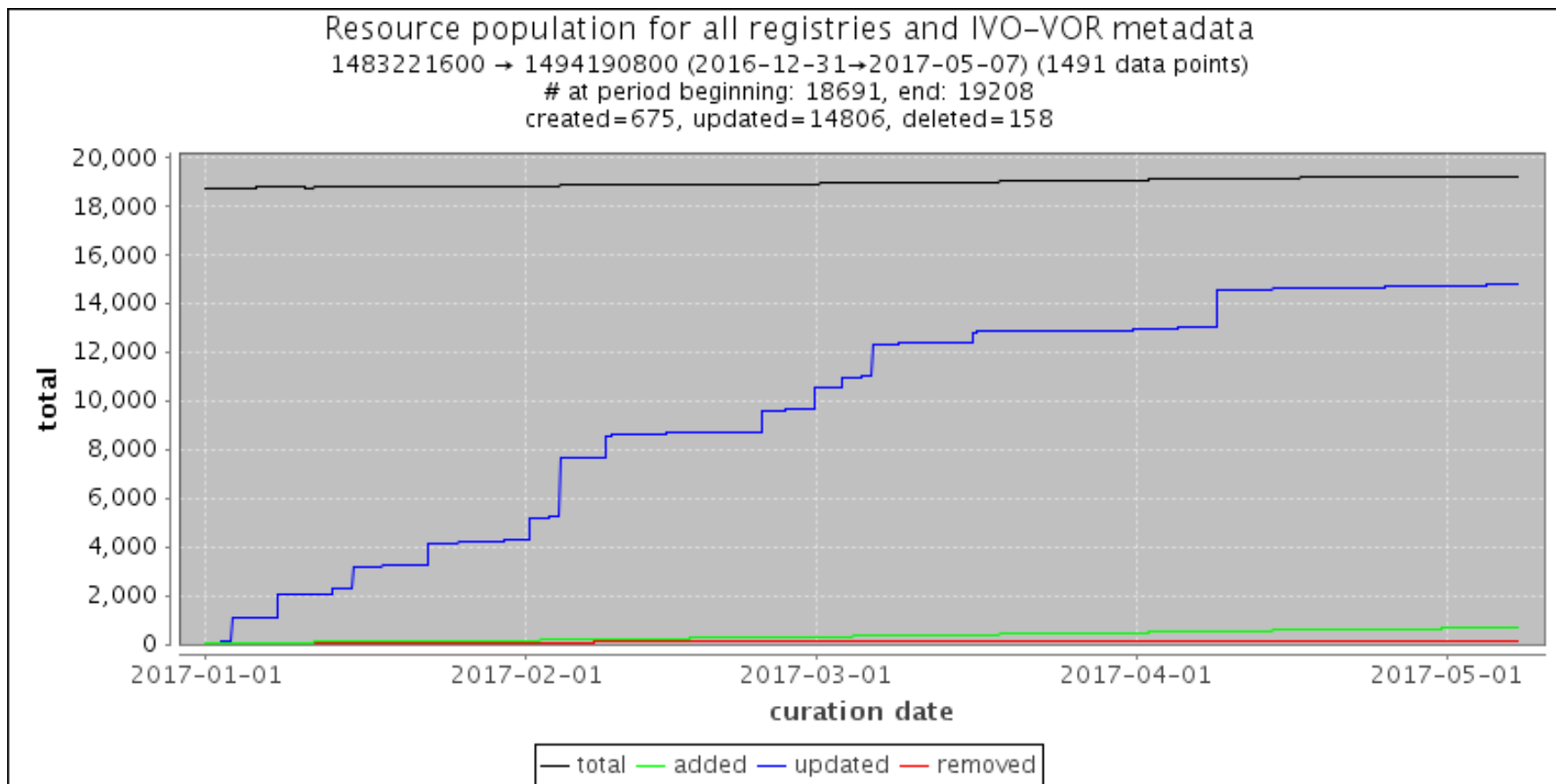


If you have any question regarding the EURO-VO Registry, please send an email to:

[esavo.registry@sciops.esa.int](mailto:esavo.registry@sciops.esa.int).



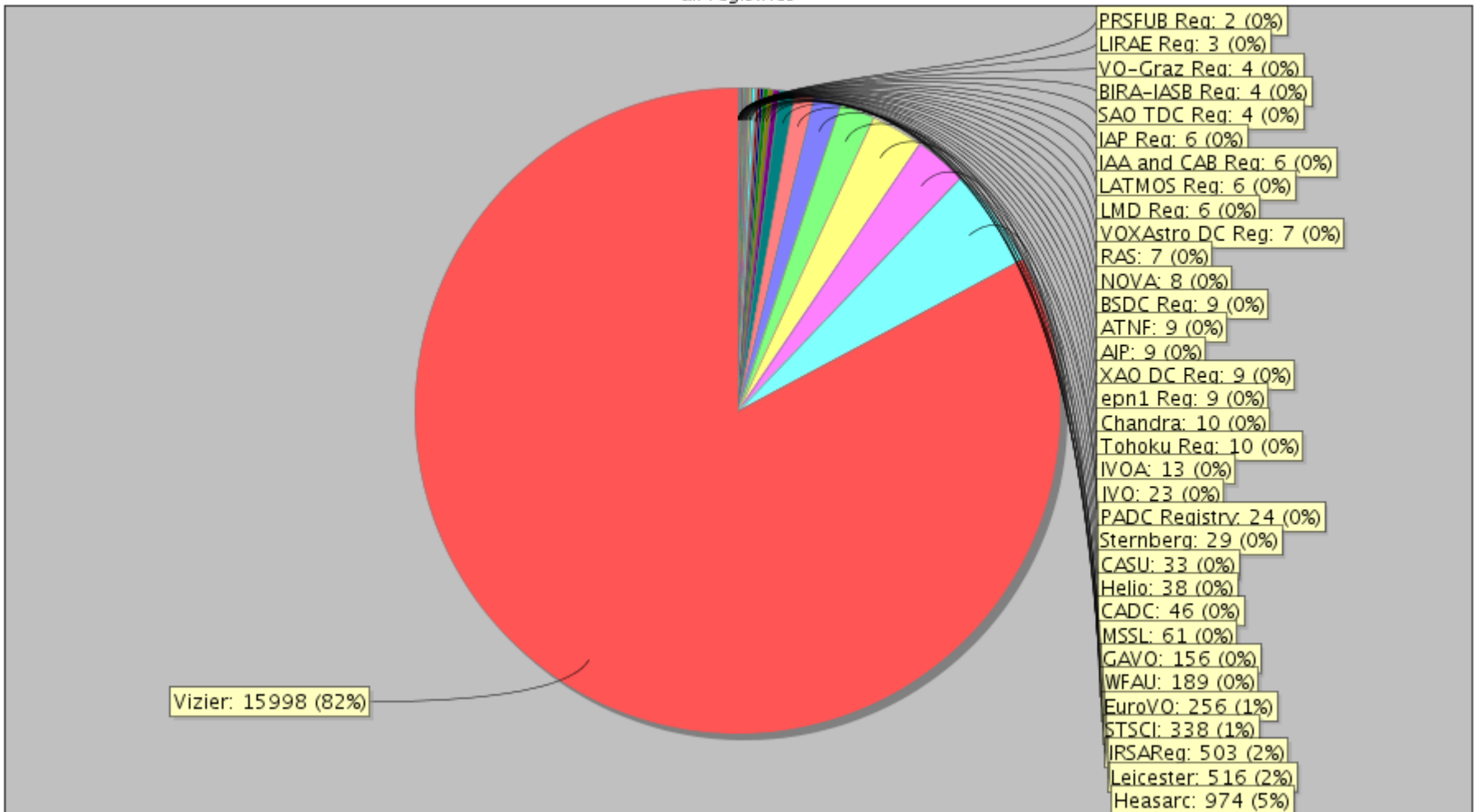
# VOResources evolution



# VOResources per Registry (w/Vizier)



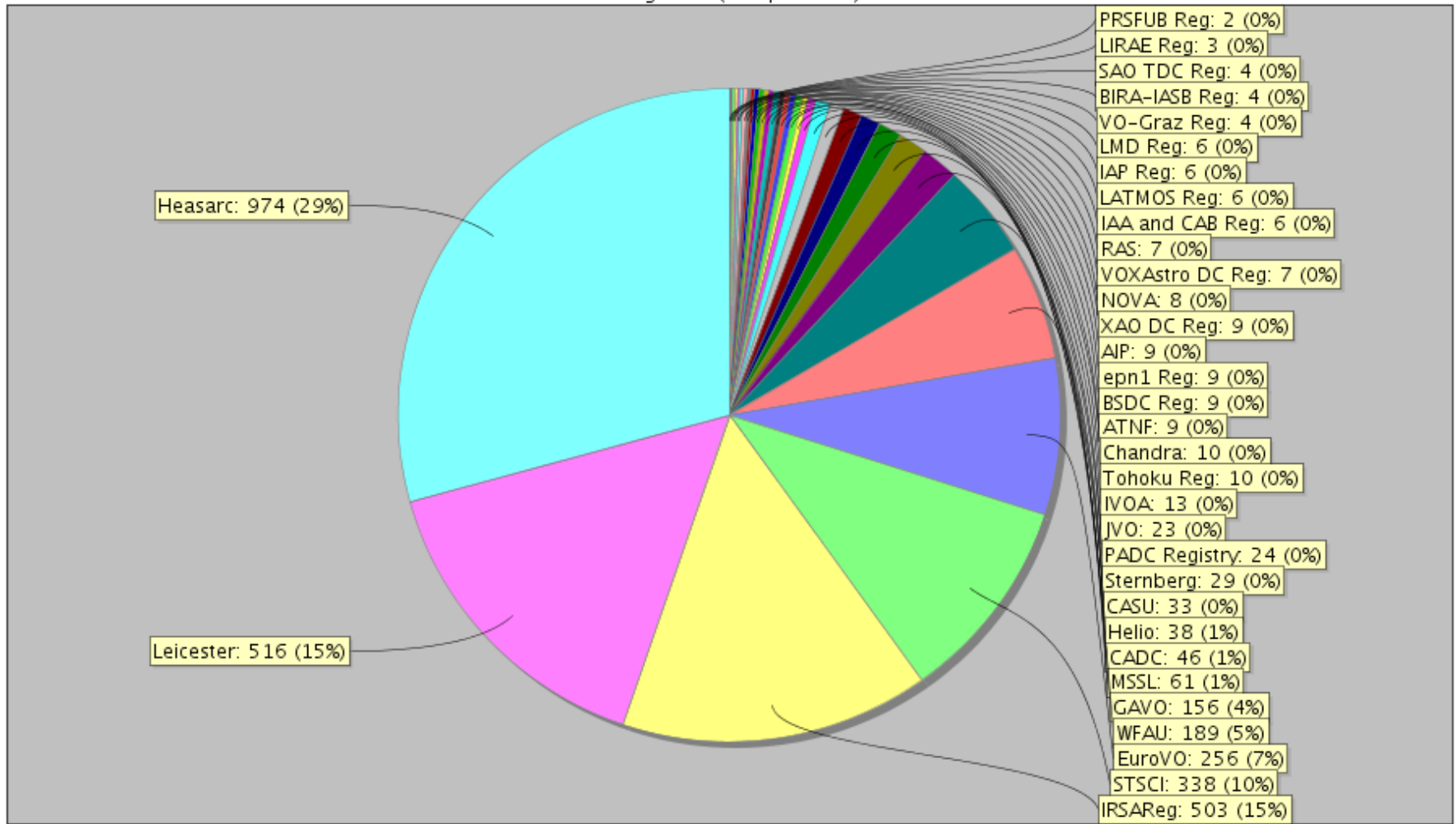
Resource population by registry (IVO-VOR metadata)  
Data as of 2017-05-04 16:16:22 \* 19325 records from 35 registries in total  
all registries



# VOResources per Registry (w/o Vizier)



Resource population by registry (IVO-VOR metadata)  
Data as of 2017-05-04 16:17:46 \* 3327 records from 34 registries in total  
all registries (except: Vizier)



# each service access URL is validated against a vector of pass/fail criteria



```
SELECT criterion_type, description FROM vo_curation.validation_criterion WHERE cap_type='cs:ConeSearch';
```

-----  
REQUIREMENT | The service is ON  
REQUIREMENT | The zero response is well-formed XML  
EXTRA | The zero response is XSD-valid XML  
REQUIREMENT | The MIME type of the zero response has a legal value ('text/xml', 'text/xml;content=x-votable' RECOMMENDATION | The MIME type of the zero response has the recommended value ('text/xml')  
WARNING | The MIME type of the zero response is not the optional value ('text/xml;content=x-votable')  
RECOMMENDATION | The MIME type of the zero response is not the strongly discouraged value ('text/xml;votable')  
REQUIREMENT | The effective response is well-formed XML  
EXTRA | The effective response is XSD-valid XML  
REQUIREMENT | The MIME type of the effective response has a legal value ('text/xml', 'text/xml;content=x-votable' RECOMMENDATION | The MIME type of the effective response has the recommended value ('text/xml')  
WARNING | The MIME type of the effective response is not the optional value ('text/xml;content=x-votable')  
RECOMMENDATION | The MIME type of the effective response is not the strongly discouraged value ('text/xml;votable')  
REQUIREMENT | The service must respond with an XML document in the VOTable format [for the zero URL]  
REQUIREMENT | The service must respond with an XML document in the VOTable format [for the effective URL]  
REQUIREMENT | The zero response contains no data  
REQUIREMENT | The effective response has to contain some data  
REQUIREMENT | The VOTable MUST comply with these conditions: [...] Exactly one FIELD must have ucd='ID\_MAIN', REQUIREMENT | The VOTable MUST comply with these conditions: [...] Exactly one FIELD must have ucd='POS\_EQ\_RA\_MAIN', REQUIREMENT | The VOTable MUST comply with these conditions: [...] Exactly one FIELD must have ucd='POS\_EQ\_DEC\_MAIN', REQUIREMENT | no INFO elements with @name='Error' should appear in the zero response  
REQUIREMENT | no INFO elements with @name='Error' should appear in the effective response  
REQUIREMENT | In the case of error, the service MUST respond with a VOTable that contains a single PARAM (23 rows)

Service Type

▲ Access URL

Validate Now

sia:SimpleImageAccess

http://friendlyvo.herokuapp.com/query/sia?

[Live-Access](#)

Validated on: 13:04:40 19/10/2016

Duration in ms: 2452

Cap Type: sia:SimpleImageAccess

Compliance: C--


[Validations](#) [Traces](#)

Val Code	Val Type	Val Result	Description	valURL	▲ valException	valDetail
4.2.1a	REQUIREMENT	Pass	The VOTable must contain a RESOURCE element, identified with the tag type='results', containing a single TABLE element which contains the results of the query	http://friendlyvo.herokuapp.com/query/si...		
4.2.1b	recommendation	Pass	If multiple resources are present it is recommended that the query results be returned in the first resource element	http://friendlyvo.herokuapp.com/query/si...		
4.2.2a	WARNING	Failed	The RESOURCE element should contain an INFO with name='QUERY_STATUS'	http://friendlyvo.herokuapp.com/query/si...		The expression: '\$0>=1' supplied with the derived values: [0] evaluated to false
4.2.2a-gl	recommendation	Failed	The RESOURCE element should contain [gloss: 'an'->'one'] INFO with name='QUERY_STATUS'	http://friendlyvo.herokuapp.com/query/si...		The expression: '\$0==1' supplied with the derived values: [0] evaluated to false
4.2.2b	recommendation	Failed	Its value attribute should set to 'OK'	http://friendlyvo.herokuapp.com/query/si...		The expression: '\$0=='OK' supplied with the derived values: [] evaluated to false
4.2.4.a.i	REQUIREMENT	Pass	Exactly one field must have ucd='VOX:Image_Title', with datatype='char', and arraysize=''	http://friendlyvo.herokuapp.com/query/si...		
4.2.4.a.ii	WARNING	Failed	Exactly one field should have ucd='INST_ID', with datatype='char', and arraysize=''	http://friendlyvo.herokuapp.com/query/si...		The expression: '\$0==1' supplied with the derived values: [0] evaluated to false
4.2.4.a.iii	WARNING	Failed	Exactly one field should have ucd='VOX:Image_MJDateObs', with datatype='double'	http://friendlyvo.herokuapp.com/query/si...		The expression: '\$0==1' supplied with the derived values: [0] evaluated to false
4.2.4.a.iv	REQUIREMENT	Pass	Exactly one field must have ucd='POS_EQ_RA_MAIN', with datatype='double'	http://friendlyvo.herokuapp.com/query/si...		
4.2.4.a.ix	REQUIREMENT	Pass	Exactly one field must have ucd='VOX:Image_Format', with datatype='char', and arraysize=''	http://friendlyvo.herokuapp.com/query/si...		
4.2.4.a.v	REQUIREMENT	Pass	Exactly one field must have ucd='POS_EQ_DEC_MAIN', with datatype='double'	http://friendlyvo.herokuapp.com/query/si...		
4.2.4.a.vi	REQUIREMENT	Failed	Exactly one field must have ucd='VOX:Image_Naxes', with datatype='int'	http://friendlyvo.herokuapp.com/query/si...		The expression: '\$0==1' supplied with the derived values: [0] evaluated to false
4.2.4.a.vii	REQUIREMENT	Failed	Exactly one field must have ucd='VOX:Image_Naxis', with datatype='int', and arraysize=''	http://friendlyvo.herokuapp.com/query/si...		The expression: '\$0==1' supplied with the derived values: [0] evaluated to false
4.2.4.a.viii	REQUIREMENT	Failed	Exactly one field must have ucd='VOX:Image_Scale', with datatype='double', and arraysize=''	http://friendlyvo.herokuapp.com/query/si...		The expression: '\$0==1' supplied with the derived values: [0] evaluated to false
4.2.4.b.i	WARNING	Failed	Exactly one field should have ucd='VOX:STC_CoordRefFrame', with datatype='char', and arraysize=''	http://friendlyvo.herokuapp.com/query/si...		The expression: '\$0==1' supplied with the derived values: [0] evaluated to false
4.2.4.b.iii	WARNING	Failed	Exactly one field should have ucd='VOX:WCS_CoordProjection', with datatype='char', and arraysize='3'	http://friendlyvo.herokuapp.com/query/si...		The expression: '\$0==1' supplied with the derived values: [0] evaluated to false

# Compliance category concept





# Compliance mappings



- **Compliant** (no requirement fails)

- A++** no criterion fails

- A+** no requirement, warning or recommendation fails

- A** no requirement or warning fails, but at least one recommendation fails

- B** no requirement fails, but at least one warning fails

- **partially compliant** (some (but not all) requirements fail)

- C** at least one (1) req fails, but at least one (1) req equally succeeds

- C-** at least two (2) reqs fail, but at least one (1) req equally succeeds

- C-** at least three (3) reqs fail, but at least one (1) req equally succeeds

- **not compliant** (all requirements fail)

- D** all reqs fail but some other criterion (of lesser importance) succeeds

- E** no criterion succeeds

# Search on Compliance Category



EURO VO Signed in as: admin [LogOut](#)

Simple Search

Advanced Search

Satisfies from the below criteria: All

Ivoid	<input type="text"/>	All	Short Name	<input type="text"/>	All
Title	<input type="text"/>	All	Subject	<input type="text"/>	All
Description	<input type="text"/>	All	Managed Authority	Any	Select
Resource Types	Any	Select	Capabilities	Any	Select
Simplified Compliance Category	Partially compliant (C,C-,C--)				

Search Clear

ADQL Search

Note for Chrome users: Due to a [well-known issue in Chrome](#), and until it is resolved in a future Chrome release we recommend that you install the XML Tree Chrome extension (available in Chrome Web Store [here](#)).

At any rate, whether you install this extension or not, only affects the ability to view the XML content of resources from within your browser if you are using Chrome (the extension also allows you to search the content of an XML resource by typing XPath expressions in your browser).



# New features for Service Compliance chart



Data Configuration

Registry:  Granularity:

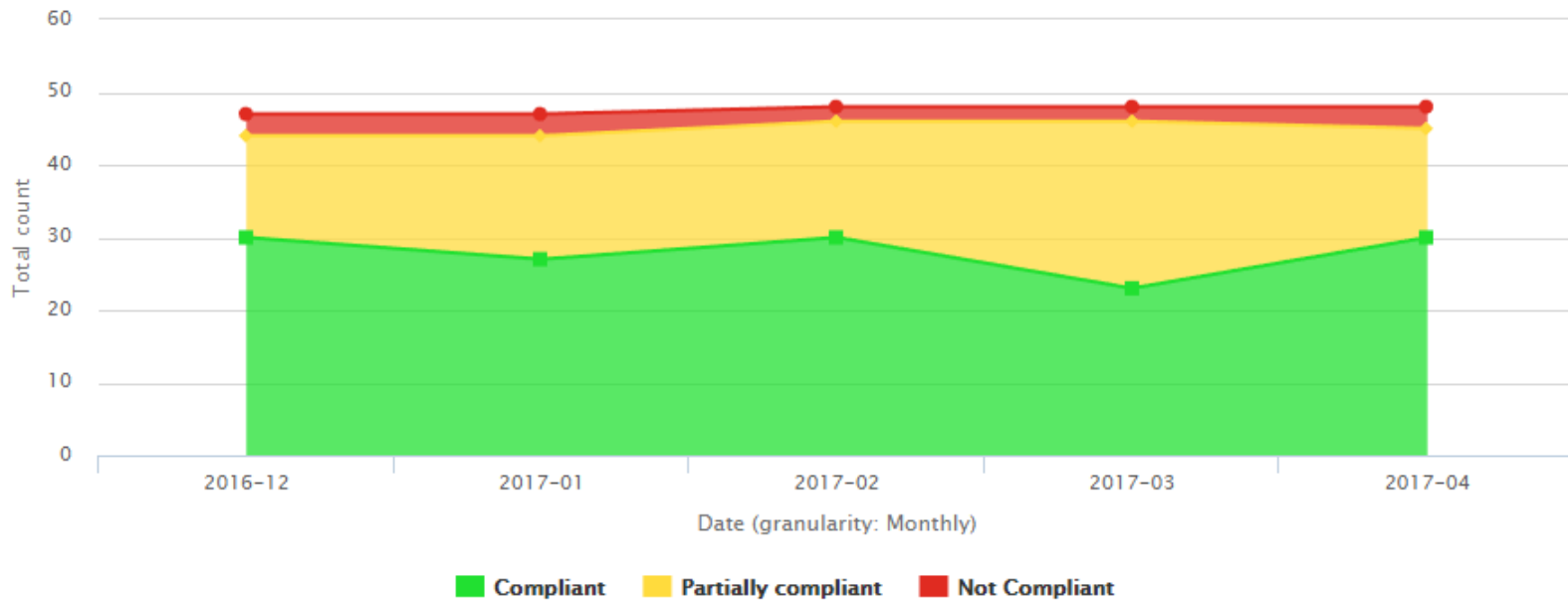
Service Type:  Orientation:

date from:  Chart Type:

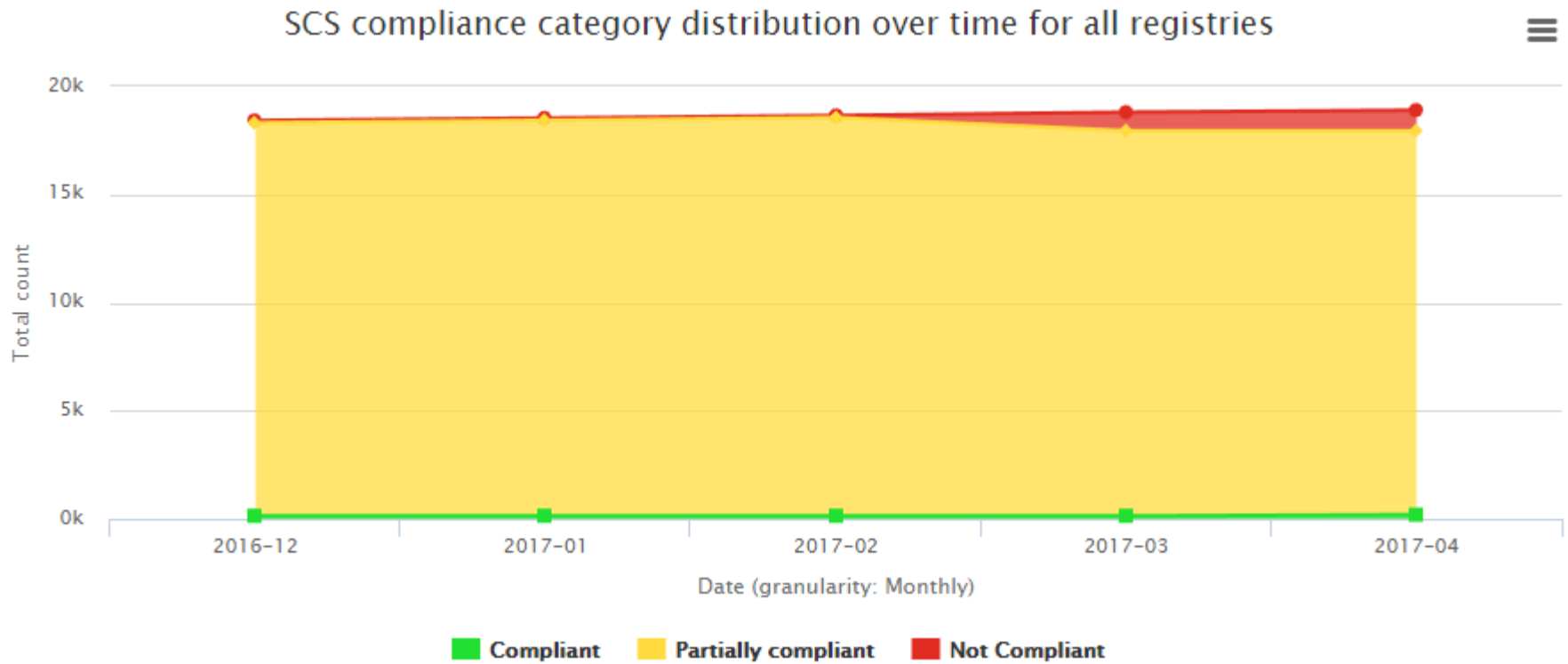
date upto:  Simplified:

[Produce Report](#) [Download report data in CSV](#)

SCS compliance category distribution over time for registry: ivo://esavo/registry



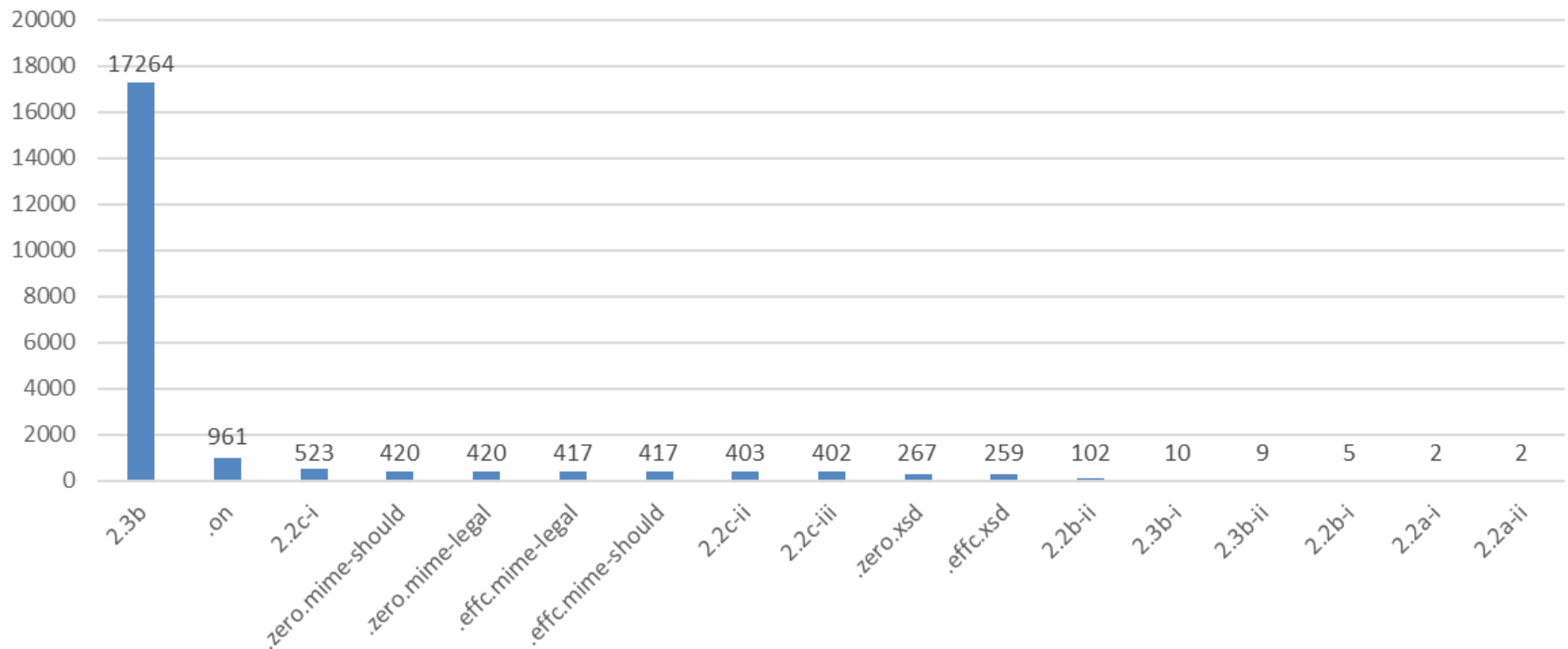
# SCS Services Compliance



# SCS Services Validation Analysis



Validation criteria failed for SCS Services



# SCS Services Validation Analysis



Val. Code: **2.3b**

Appears: **17264 times**

Type: REQUIREMENT

Description:

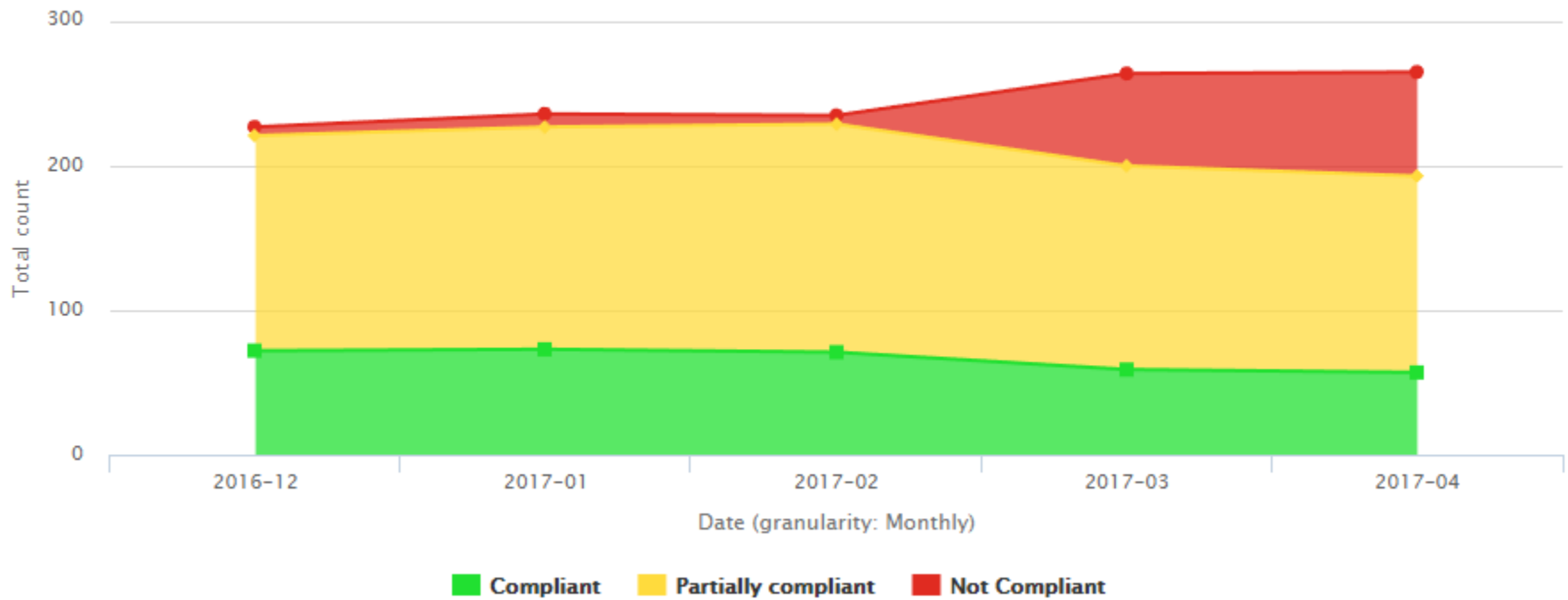
*“In the case of error, the service MUST respond with a VOTable that contains a single PARAM element or a single INFO element with name='Error', where [a] corresponding value attribute [should be present]...”*

URL: <http://www.ivoa.net/documents/latest/ConeSearch.html>

# SIA Services Compliance



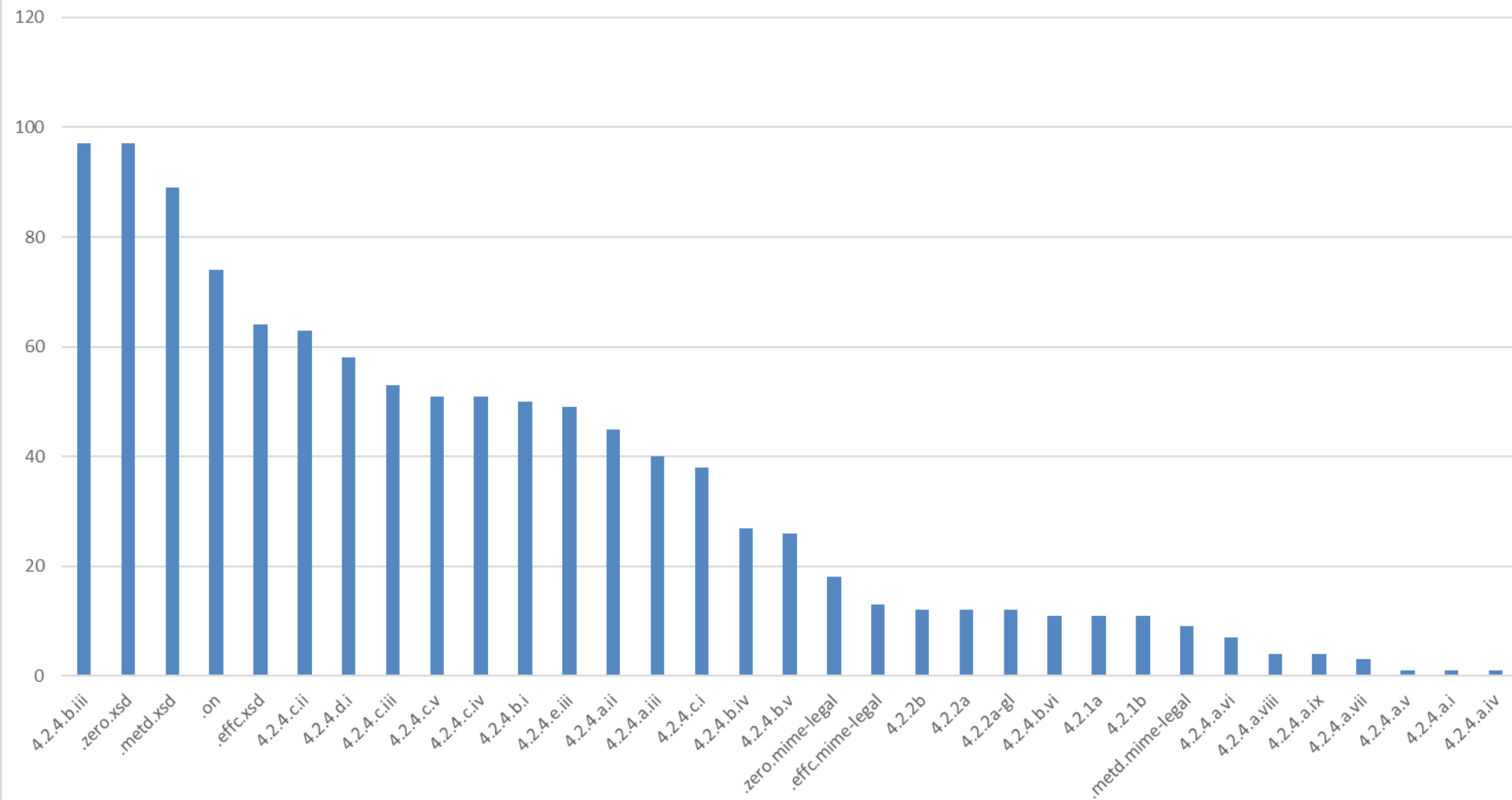
## SIA compliance category distribution over time for all registries



# SIA Services Validation Analysis



Validation criteria failed for SIA Services





# SIA Services Validation Analysis



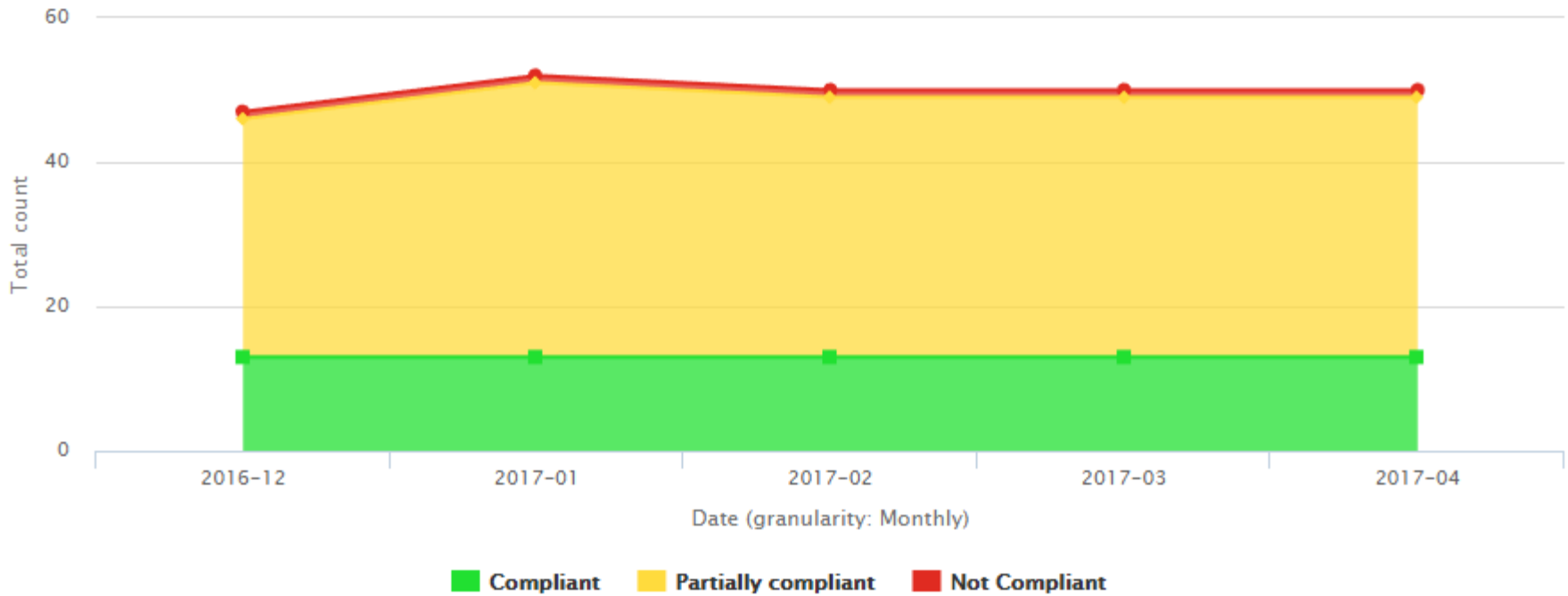
val_code	services	failure	criterion_type	description
4.2.4.b.iii		97	WARNING	Exactly one field should have ucd='VOX:WCS_CoordProjection', with datatype='char', and arraysize='3'
.zero.xsd		97	EXTRA	The zero response is XSD-valid XML
.metd.xsd		89	EXTRA	The metadata response is XSD-valid XML
.on		74	REQUIREMENT	The service is ON
.effc.xsd		64	EXTRA	The effective response is XSD-valid XML
4.2.4.c.ii		63	WARNING	Exactly one field should have ucd='VOX:BandPass_Unit', with datatype='char', and arraysize='*'
4.2.4.d.i		58	WARNING	Exactly one field should have ucd='VOX:Image_PixFlags', with datatype='char', and arraysize='*'
4.2.4.c.iii		53	WARNING	Exactly one field should have ucd='VOX:BandPass_RefValue', with datatype='double'
4.2.4.c.v		51	WARNING	Exactly one field should have ucd='VOX:BandPass_LoLimit', with datatype='double'
4.2.4.c.iv		51	WARNING	Exactly one field should have ucd='VOX:BandPass_HiLimit', with datatype='double'

URL: <http://www.ivoa.net/documents/latest/SIA.html>

# SSA Services Compliance



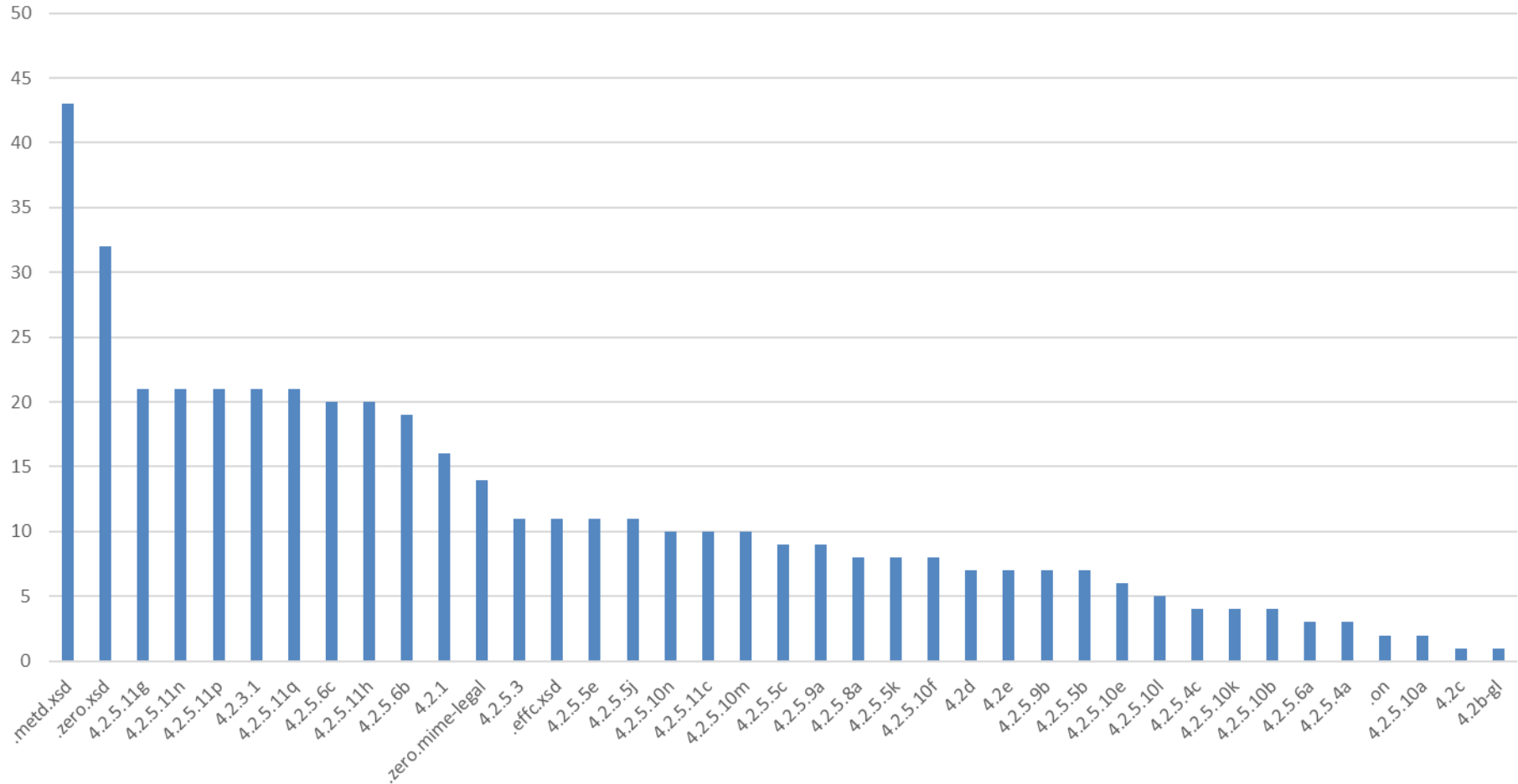
### SSA compliance category distribution over time for all registries



# SSA Services Validation Analysis



Validation criteria failed for SSA Services



# SSA Services Validation Analysis



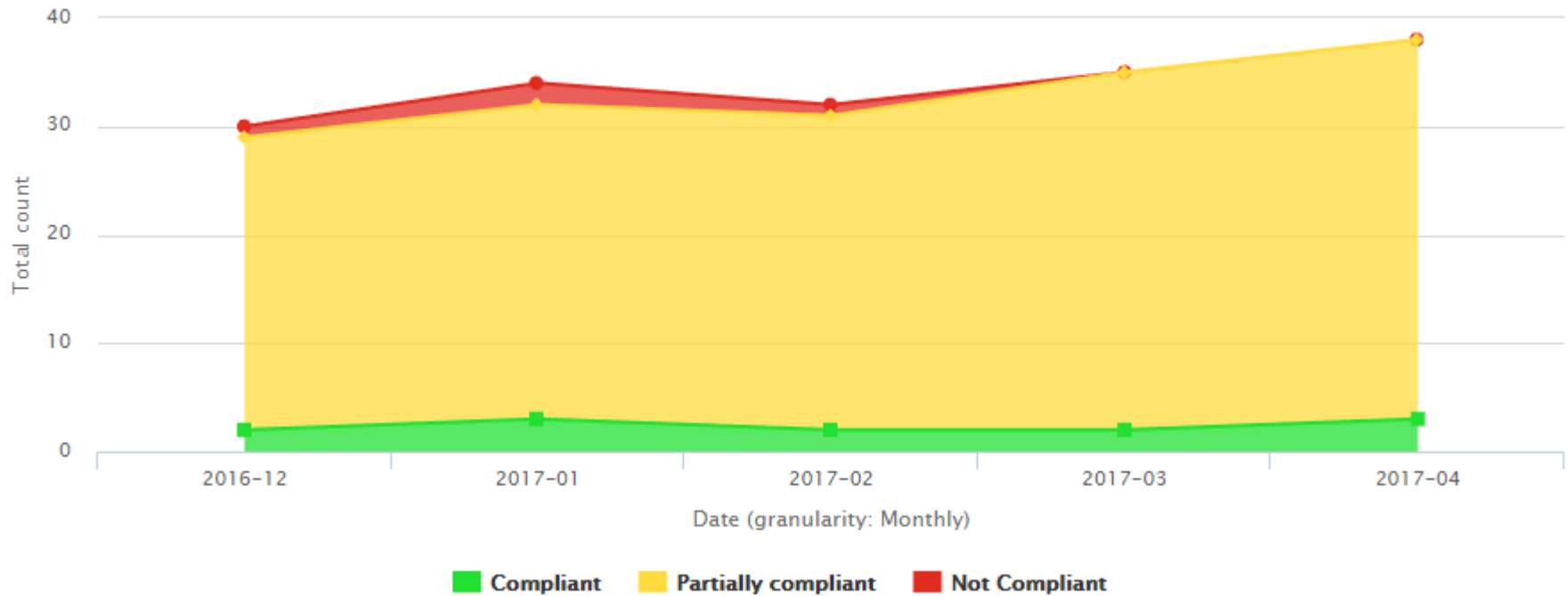
val_code	services facade	criterion_type	description
.metd.xsd	43	EXTRA	The metadata response is XSD-valid XML
.zero.xsd	32	EXTRA	The zero response is XSD-valid XML
4.2.5.11g	21	RECOMMENDATION	Char.SpectralAxis.Calibration   Type of coord calibration   REC
4.2.5.11n	21	RECOMMENDATION	Char.SpatialAxis.Accuracy.StatError   Astrometric statistical error   REC
4.2.5.11p	21	RECOMMENDATION	Char.SpatialAxis.Calibration   Type of coord calibration   REC
4.2.3.1	21	RECOMMENDATION	Query.Score   Degree of match to query params   REC
4.2.5.11q	21	RECOMMENDATION	Char.SpatialAxis.Resolution   Spatial resolution of data   REC
4.2.5.6c	20	RECOMMENDATION	Curation.PublisherDID   Publisher's ID for the dataset   REC

URL: <http://www.ivoa.net/documents/SSA>

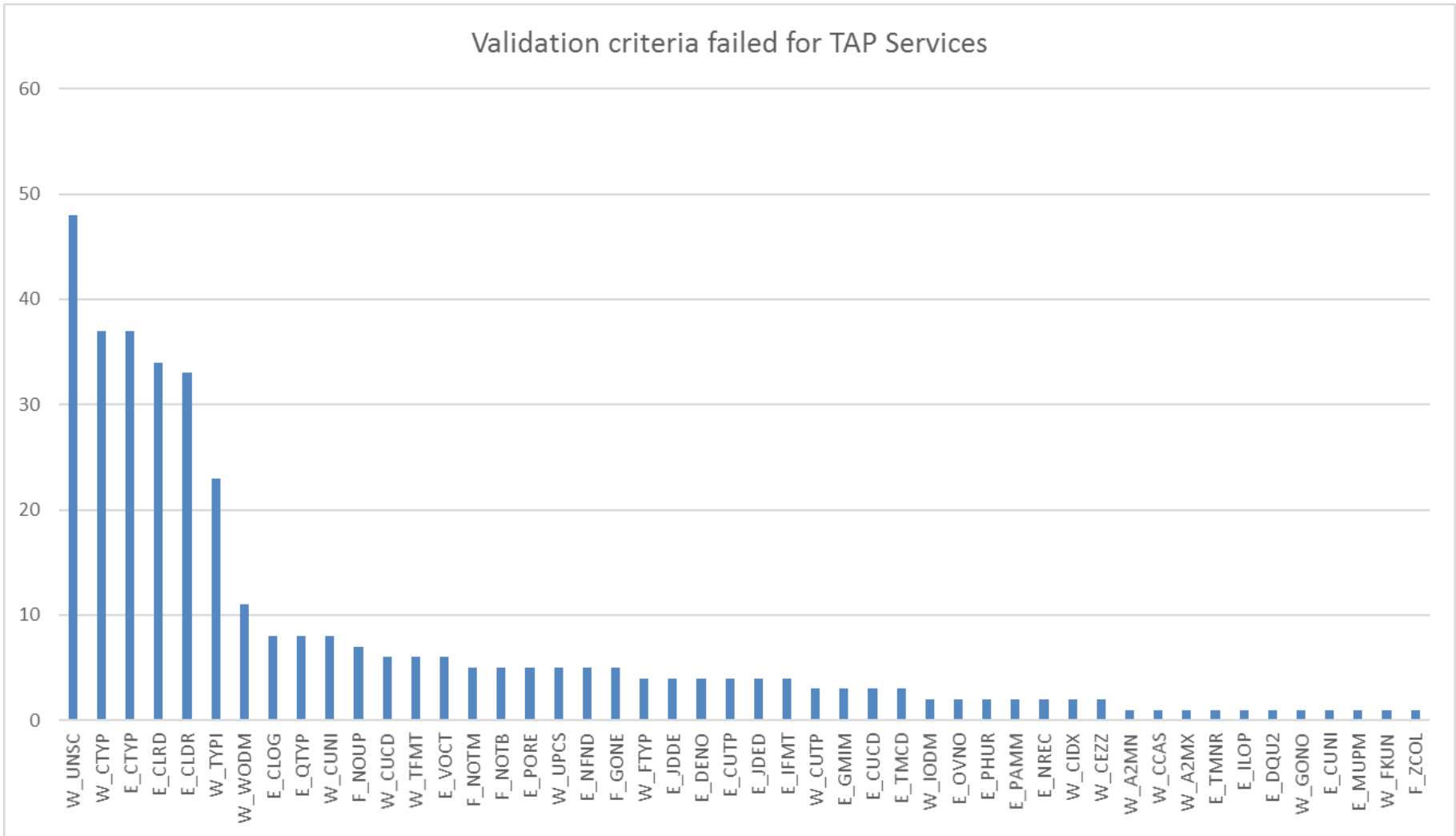
# TAP Services Compliance



TAP compliance category distribution over time for all registries



# TAP Services Validation Analysis



# TAP Services Validation Analysis



val_code	services fail	criterion_type	description
W_UNSC	48	WARNING	Foreign schema used in validation
W_CTYP	37	WARNING	Datatype mismatch
E_CTYP	37	REQUIREMENT	Declared/result type mismatch
E_CLRD	34	REQUIREMENT	Unexpected columns in result
E_CLDR	33	REQUIREMENT	Declared columns absent in result
W_TYPI	23	WARNING	ObsCore datatype mismatch
W_WODM	11	WARNING	Incorrect ObsCore ID
E_CLOG	8	REQUIREMENT	Non-boolean value
E_QTYP	8	REQUIREMENT	Query/result column type mismatch
W_CUNI	8	WARNING	Unit mismatch
F_NOUP	7	EXTRA	No upload methods listed
W_CUCD	6	WARNING	UCD mismatch
W_TFMT	6	WARNING	Non-ISO-8601 result
E_VOCT	6	REQUIREMENT	Bad Content-Type for VOTable
F_NOTM	5	EXTRA	Earlier metadata stages not completed
F_NOTB	5	EXTRA	No obscure table
E_PORE	5	REQUIREMENT	POST error

URL: <http://www.ivoa.net/documents/TAP/>



# Next Step!



- 1. The problem:** Some requirements are non compliant in almost all VO services supposed to implement them.
- 2. The Reasons** (for non compliancy):
  1. Requirement not clear and therefore wrongly implemented (too strictly in the validator and too loosely in the service)?
  2. “Wrong” requirement, conscientiously/in purpose not implemented?
  3. Service validator is wrong (bugs, implements different version of the standard)?
- 3. Possible solutions:**
  1. Try again to contact to service providers in order to update their services.
  2. Test again the validators.
  3. Change the importance of the criterion from REQUIREMENT to RECOMMENDATION (from MUST to SHOULD in standard)? Or delete it?
  4. Suggestions?....



# Backup slides



# Backup slides (Euro-VO Registry VO Resources stats only)

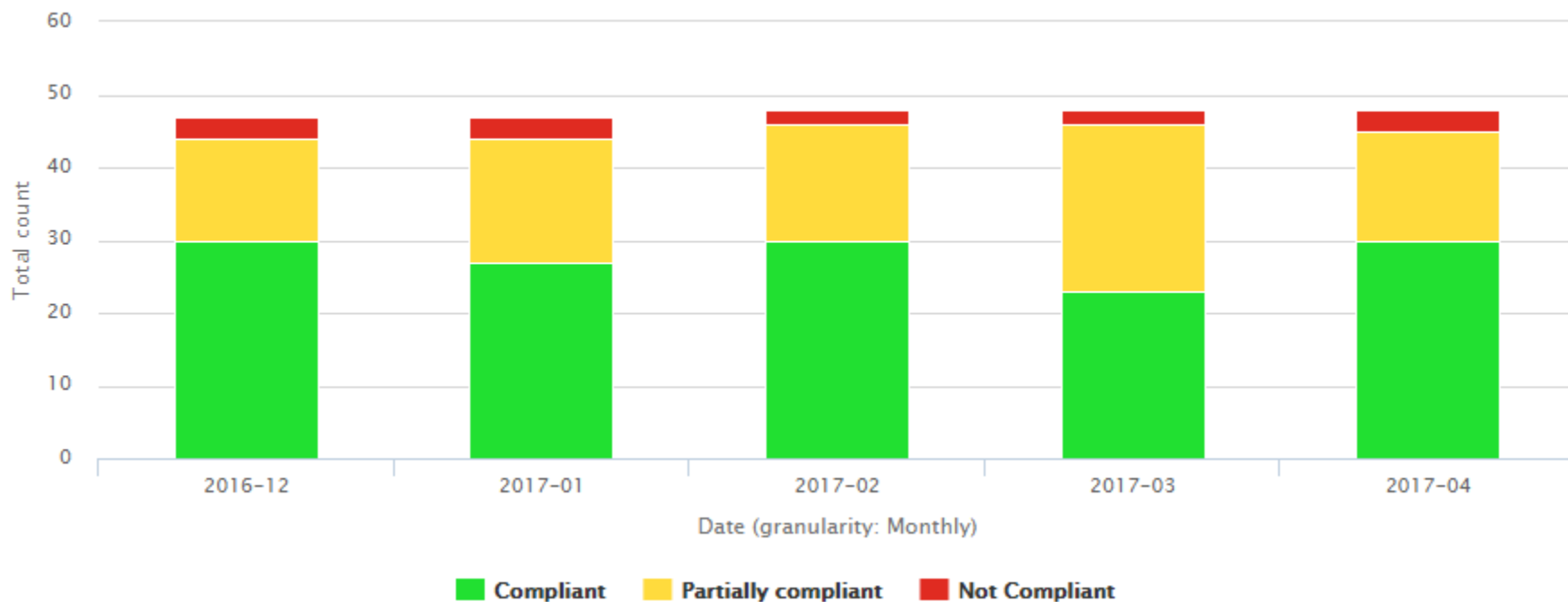


1. Start from our registry ?

# Euro-VO Registry Cone Search



SCS compliance category distribution over time for registry: ivo://esavo/registry



**not compliant** (all requirements fail)

**Title:** Laurino et al 2011 Catalogue of WGE photometric redshifts for SDSS galaxies

**Type:** vs:CatalogService

**Short name:**

**Identifier:** ivo://ia2.inaf.it/hosted/laurino2011/galphotoz

**Status:** active

**Title:** San Pedro Martir Open Cluster Survey

**Type:** vs:CatalogService

**Short name:** SPMOCS

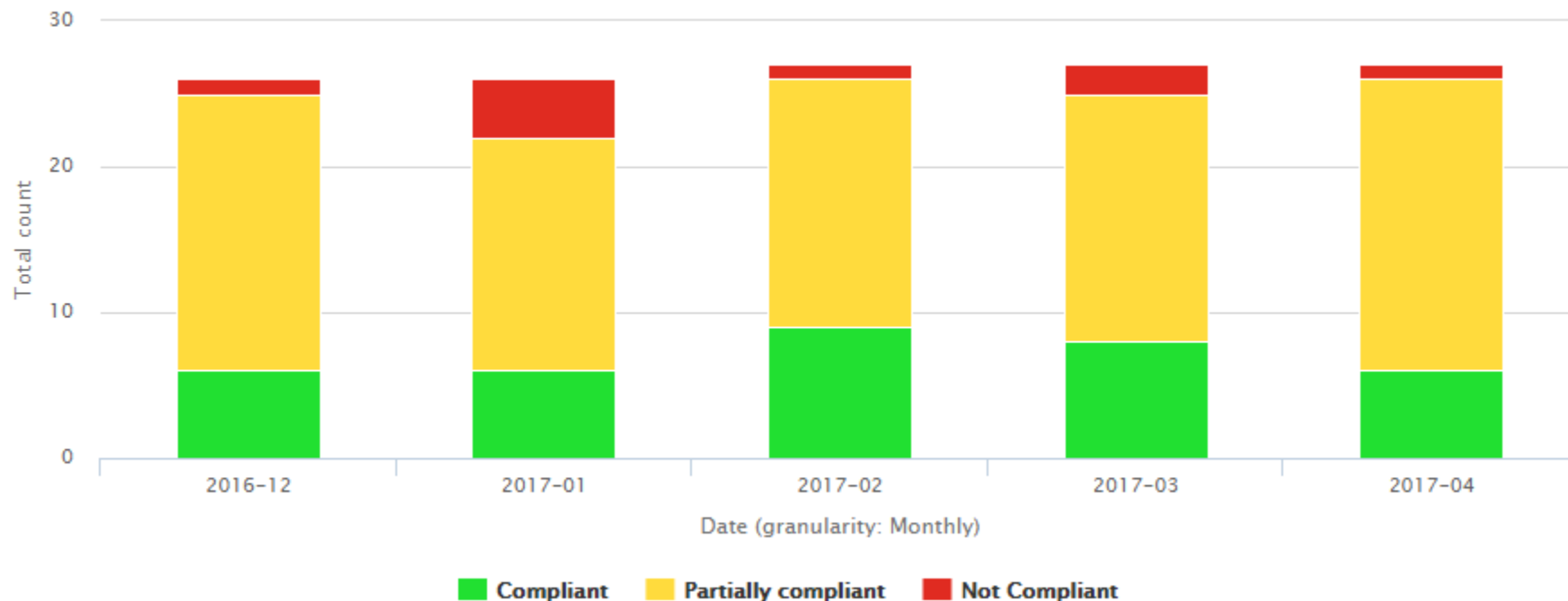
**Identifier:** ivo://vo.sim/Clusters

**Status:** active

# Euro-VO Registry Simple Image Access



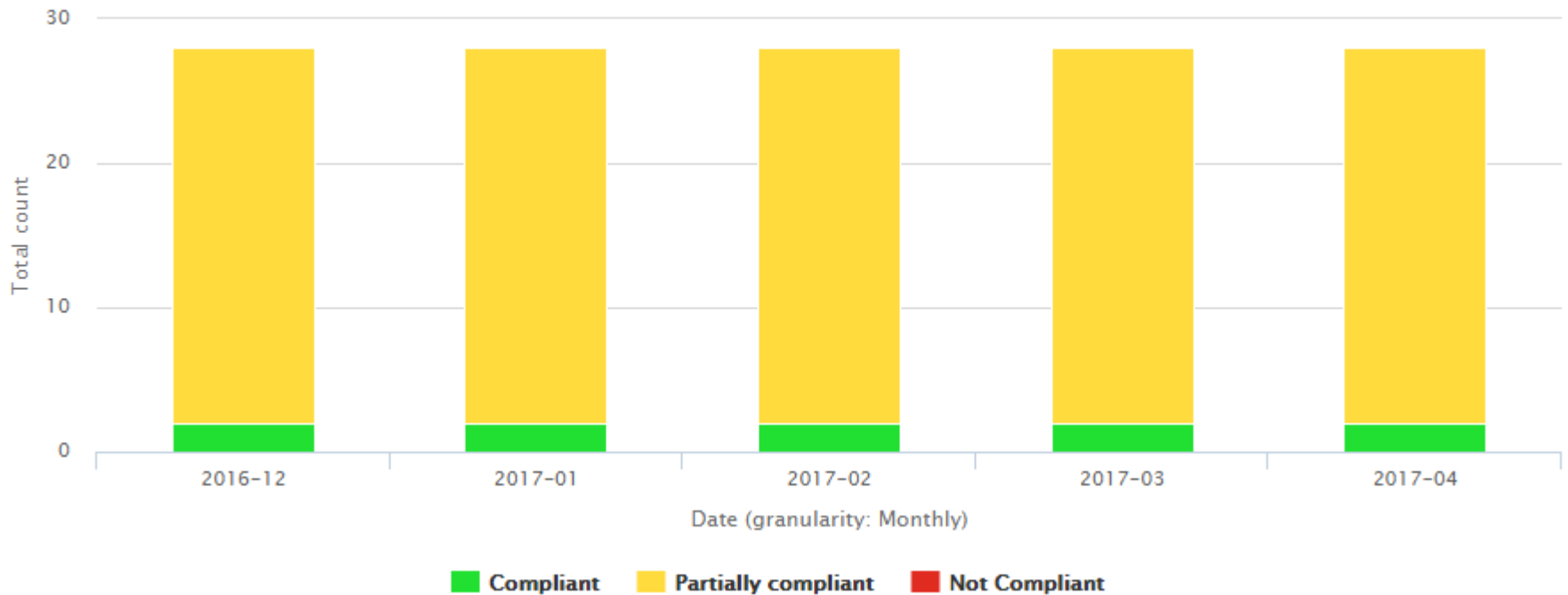
SIA compliance category distribution over time for registry: ivo://esavo/registry



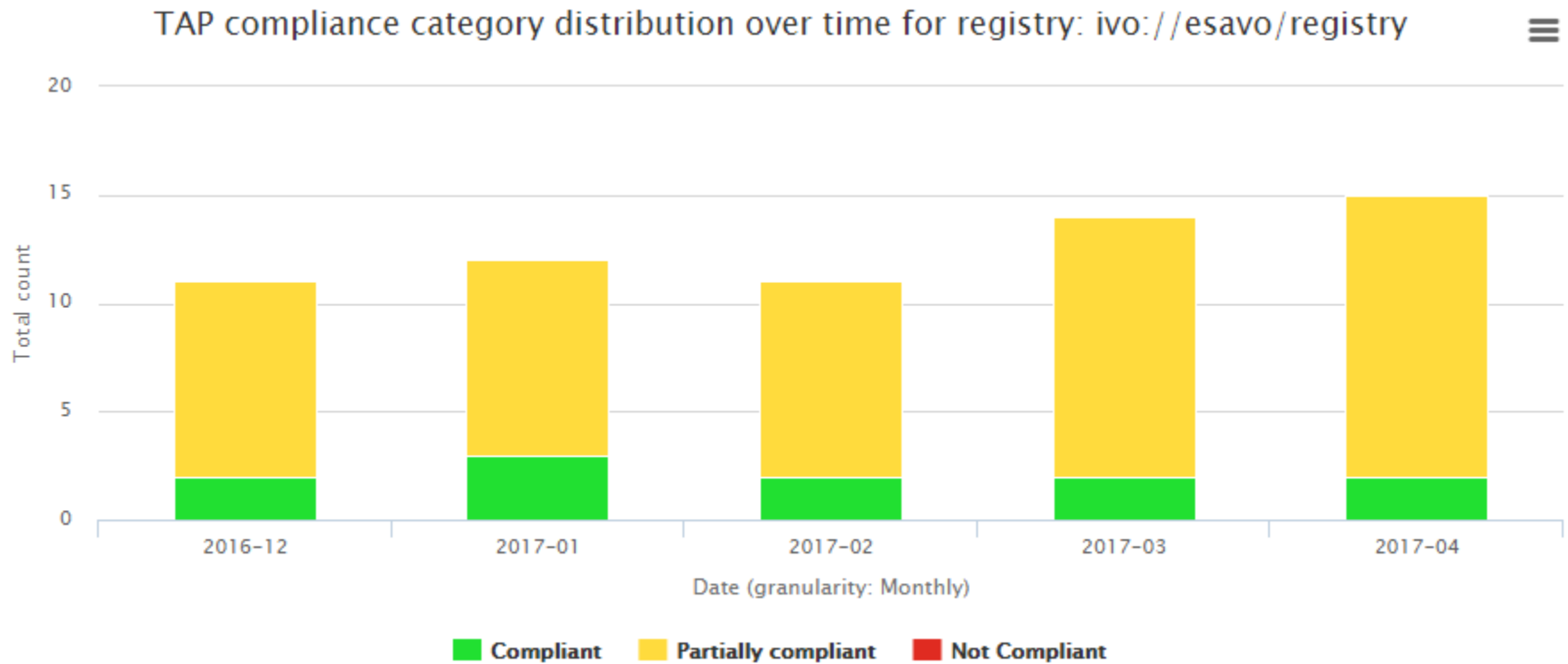
# Euro-VO Registry Simple Spectral Access



SSA compliance category distribution over time for registry: ivo://esavo/registry



# Euro-VO Registry Table Access Protocol



# Compliance Category



Compliance Category			
compliance	numeric_equiv	reportorder	description
A++	8	1	no criterion fails
A+	7	2	no requirement, warning or recommendation fails
A	6	3	no requirement or warning fails, but at least one recommendation fails
B	5	4	no requirement fails, but at least one warning fails
C	4	5	at least one (1) requirement fails, but at least one (1) requirement equally succeeds
C-	3	6	at least two (2) requirements fails, but at least one (1) requirement equally succeeds
C--	2	7	at least three (3) requirements fails, but at least one (1) requirement equally succeeds
D	1	8	all requirements fail but some other criterion (of lesser importance) succeeds
E	0	9	no criterion succeeds



# Criterion Type



Criterion Type	
name	description
REQUIREMENT	Tests drawn from 'MUST' statements in the respective standard
WARNING	Tests drawn from strongly encouraged 'SHOULD' statements in the respective standard
RECOMMENDATION	Tests drawn from 'SHOULD' statements in the respective standard
EXTRA	Criteria not defined in the IVOA 'Service Validation' wiki

# Capability Type



Capability Type		
name	description	documenturl
cs:ConeSearch	Simple Cone Search	<a href="http://www.ivoa.net/documents/latest/ConeSearch.html">http://www.ivoa.net/documents/latest/ConeSearch.html</a>
sia:SimpleImageAccess	Simple Image Access Specification	<a href="http://www.ivoa.net/documents/latest/SIA.html">http://www.ivoa.net/documents/latest/SIA.html</a>
ssa:SimpleSpectralAccess	Simple Spectral Access Protocol	<a href="http://www.ivoa.net/documents/SSA/">http://www.ivoa.net/documents/SSA/</a>
slap:SimpleLineAccess	Simple Line Access Protocol	<a href="http://www.ivoa.net/documents/SLAP/">http://www.ivoa.net/documents/SLAP/</a>
tr:TableAccess	Table Access Protocol	<a href="http://www.ivoa.net/documents/TAP/">http://www.ivoa.net/documents/TAP/</a>

