

Euro-VO Resources Validation Status

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Issue/Revision: 1.0

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:

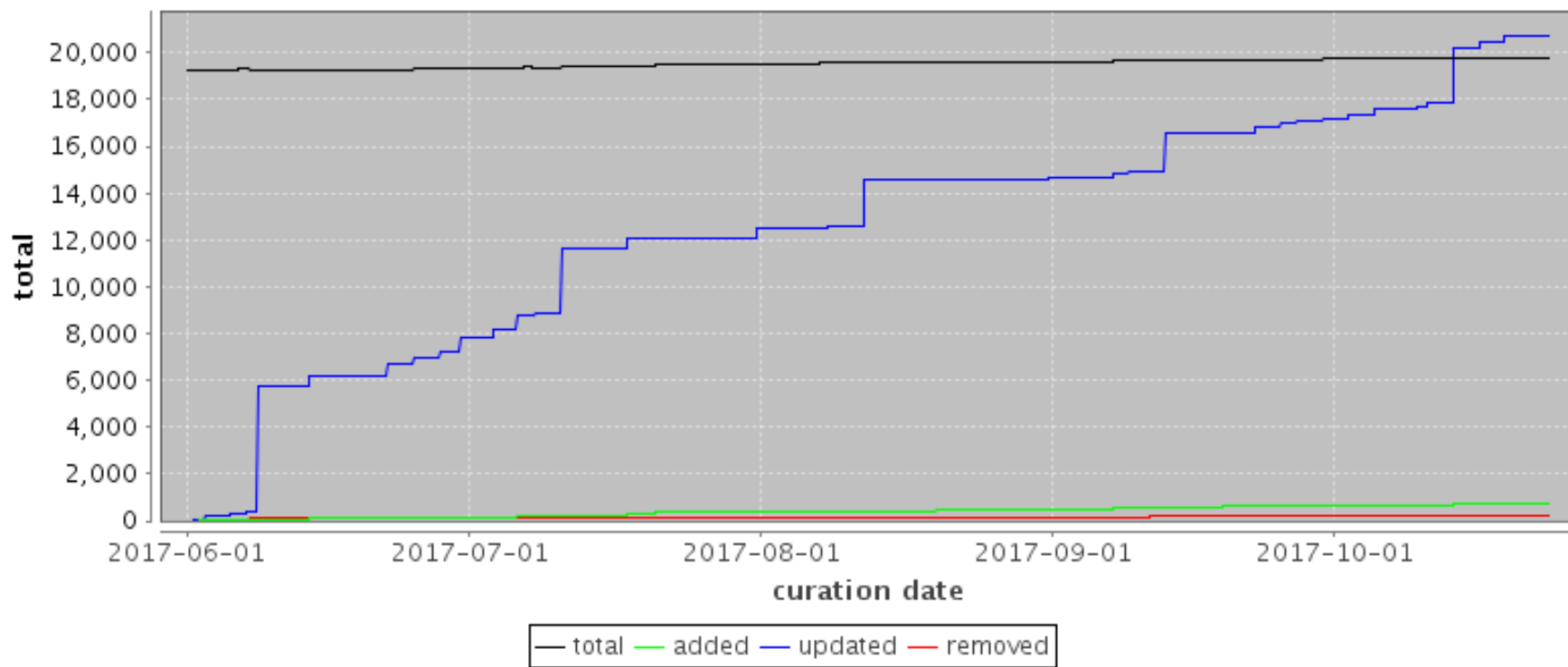
esavo.registry@sciops.esa.int.



VOResources evolution



Resource population for all registries and IVO-VOR metadata
1496264400 → 1508792400 (2017-05-31→2017-10-23) (1382 data points)
at period beginning: 19281, end: 19777
created=722, updated=20757, deleted=226



- **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

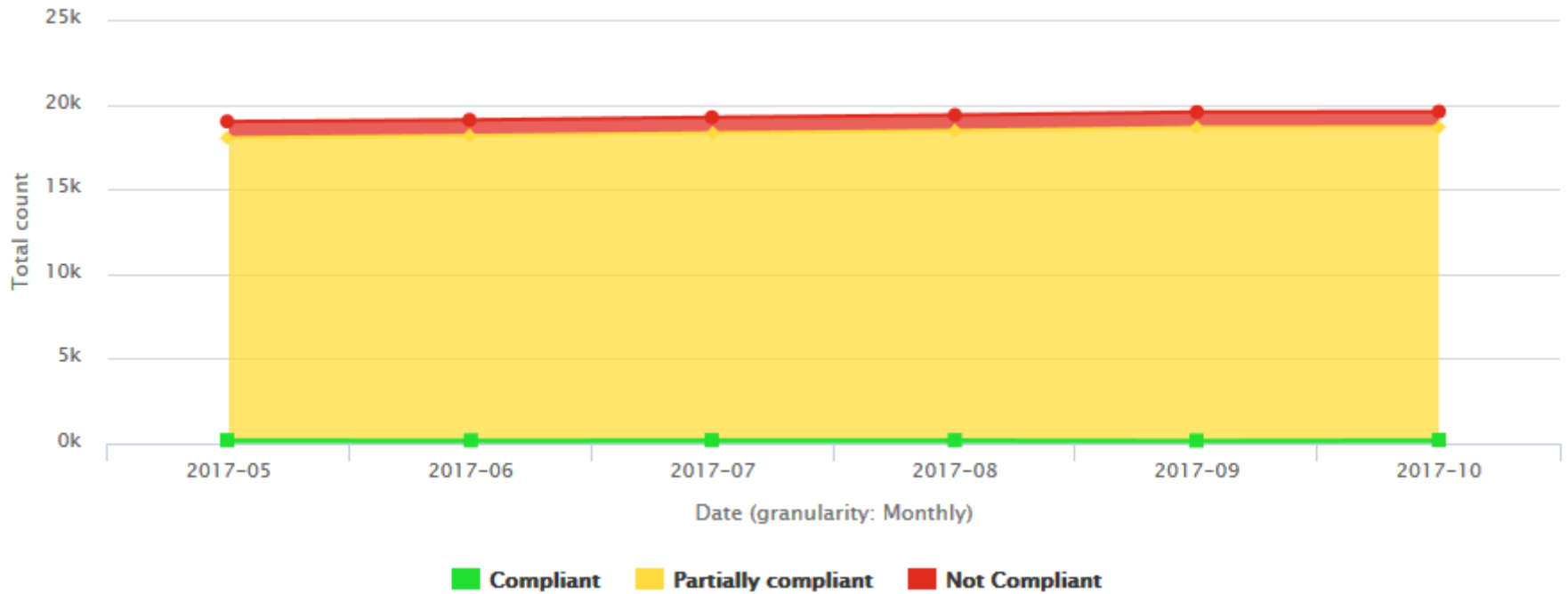
- **not compliant** (all requirements fail)

- D** all reqs fail but some other criterion (of lesser importance) succeeds
- E** no criterion succeeds

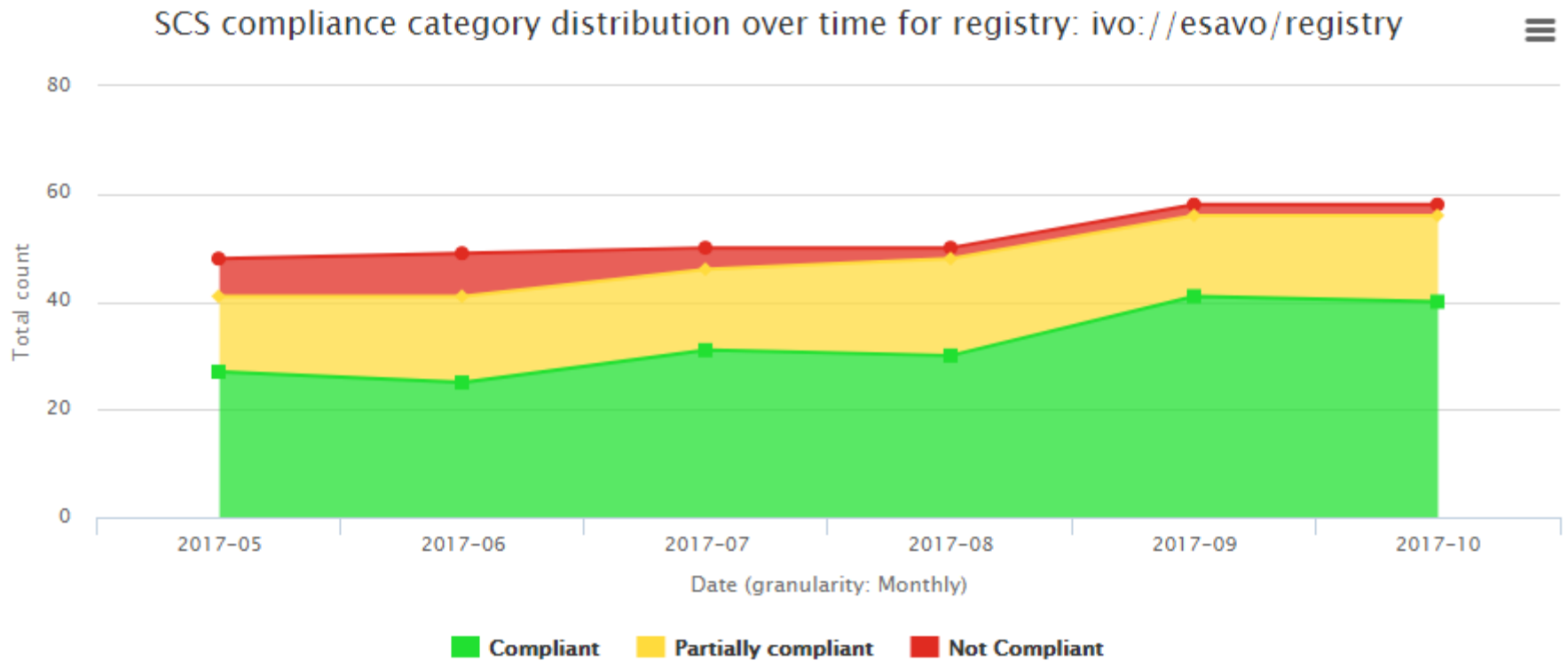
SCS Services Compliance – all registries



SCS compliance category distribution over time for all registries



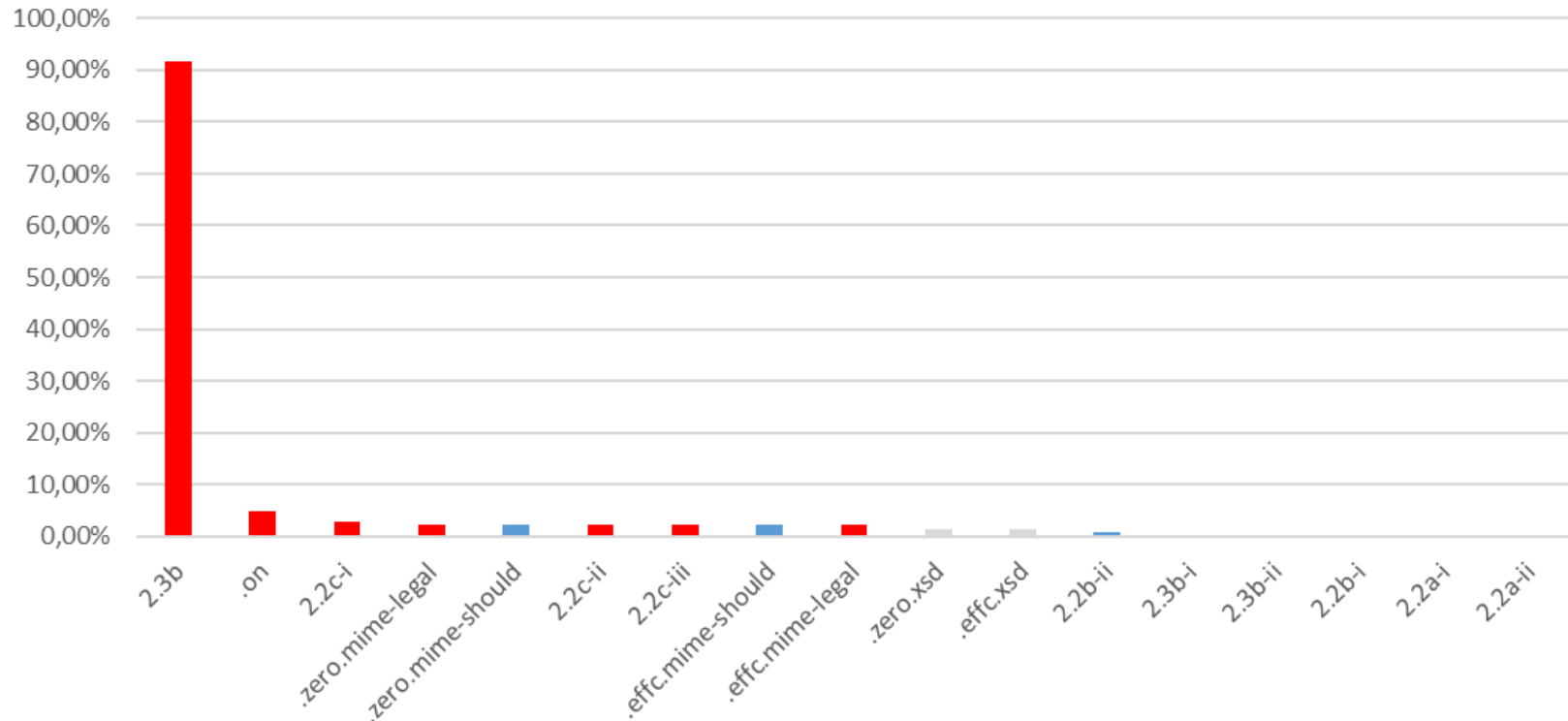
SCS Services Compliance - Euro-VO Registry esa



SCS Services Validation Analysis



Validation criteria failed for SCS Services



	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

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>

Existing Simple Cone Search version 1.03 Proposed Erratum 1:

http://wiki.ivoa.net/twiki/bin/view/IVOA/SCS-1_03-Err-1

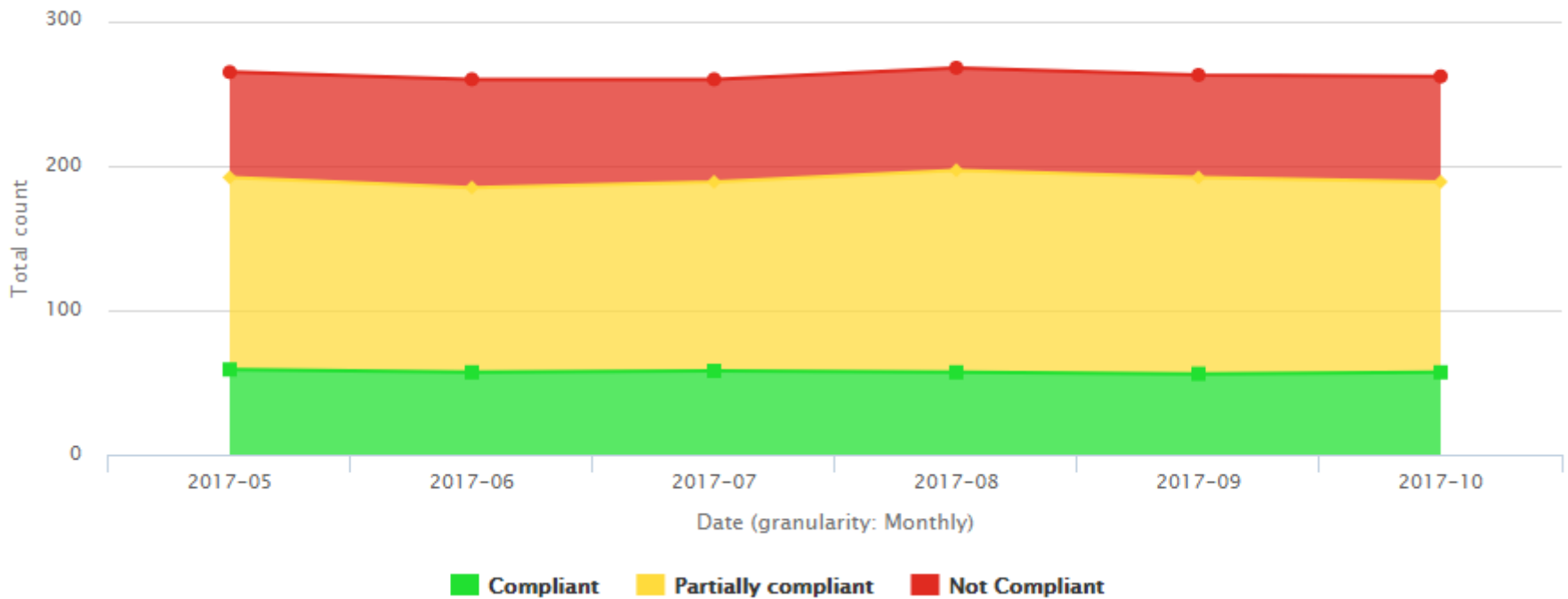
Once erratum endorsed, most of SCS services will become compliant!

.on: increase the connection timeout on validator?

SIA Services Compliance – all registries

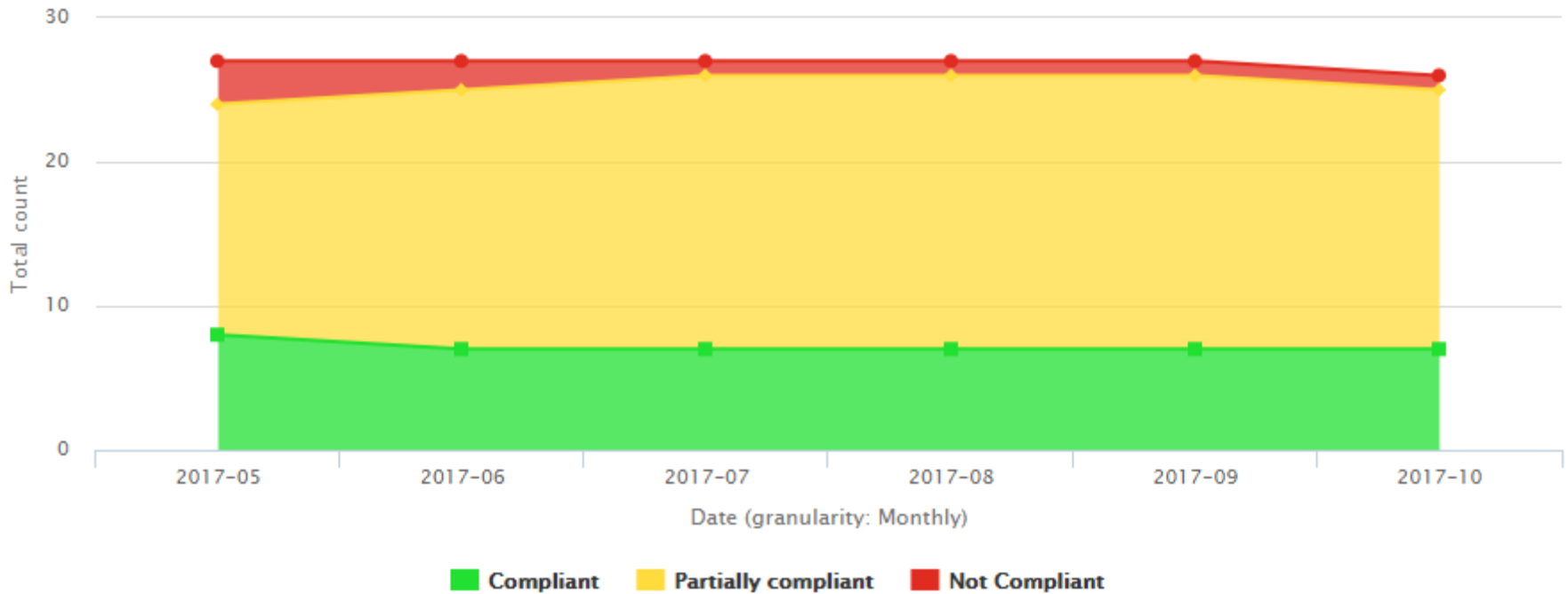


SIA compliance category distribution over time for all registries



SIAP Services Compliance – Euro-VO Registry

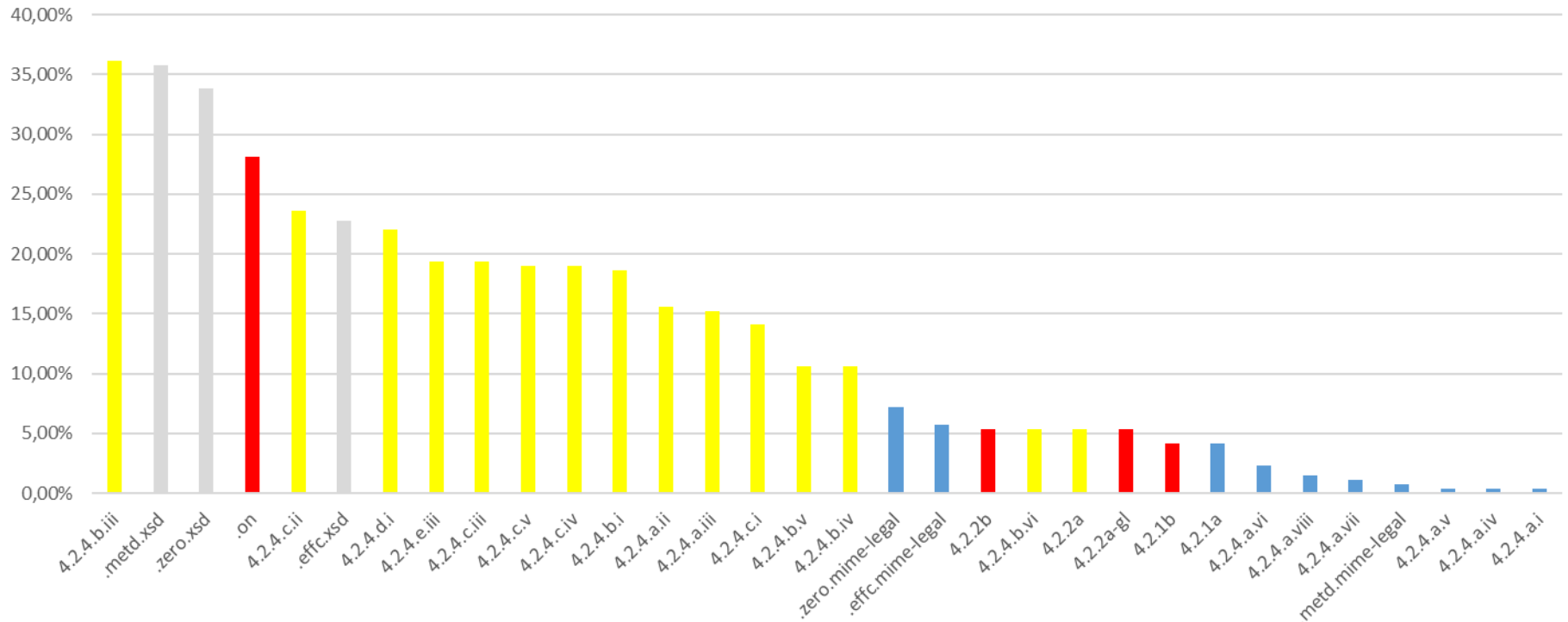
SIA compliance category distribution over time for registry: ivo://esavo/registry 



SIA Services Validation Analysis



Validation criteria failed for SIA Services



	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



SIA Services Validation Analysis



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

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

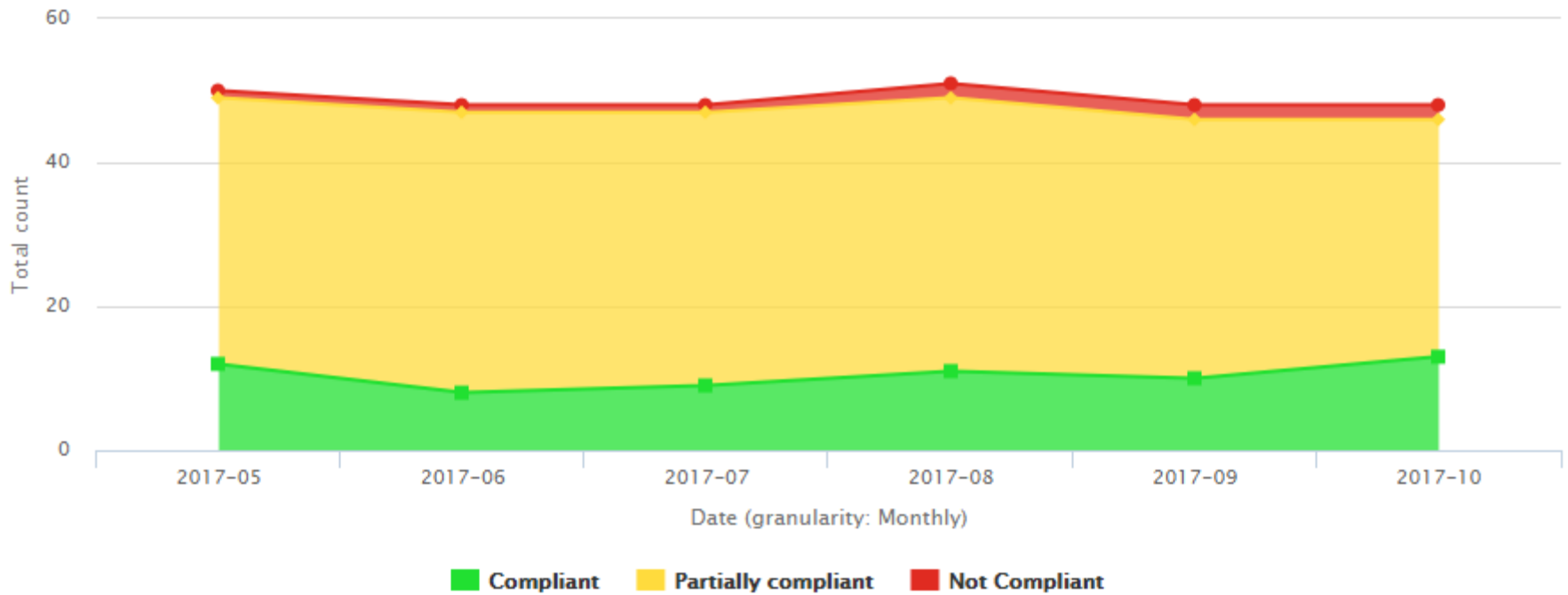
Most Important:

- **.on**: 90% of them are related to the SSL certificate update on NASA/GSFC HEASARC -> ESA has to update the Java RT in order to update the list of certificates. For the others try to increase the connection timeout on validator?
- **4.2.4.b.ii**: suggest an erratum?

SSAP Services Compliance – all registries

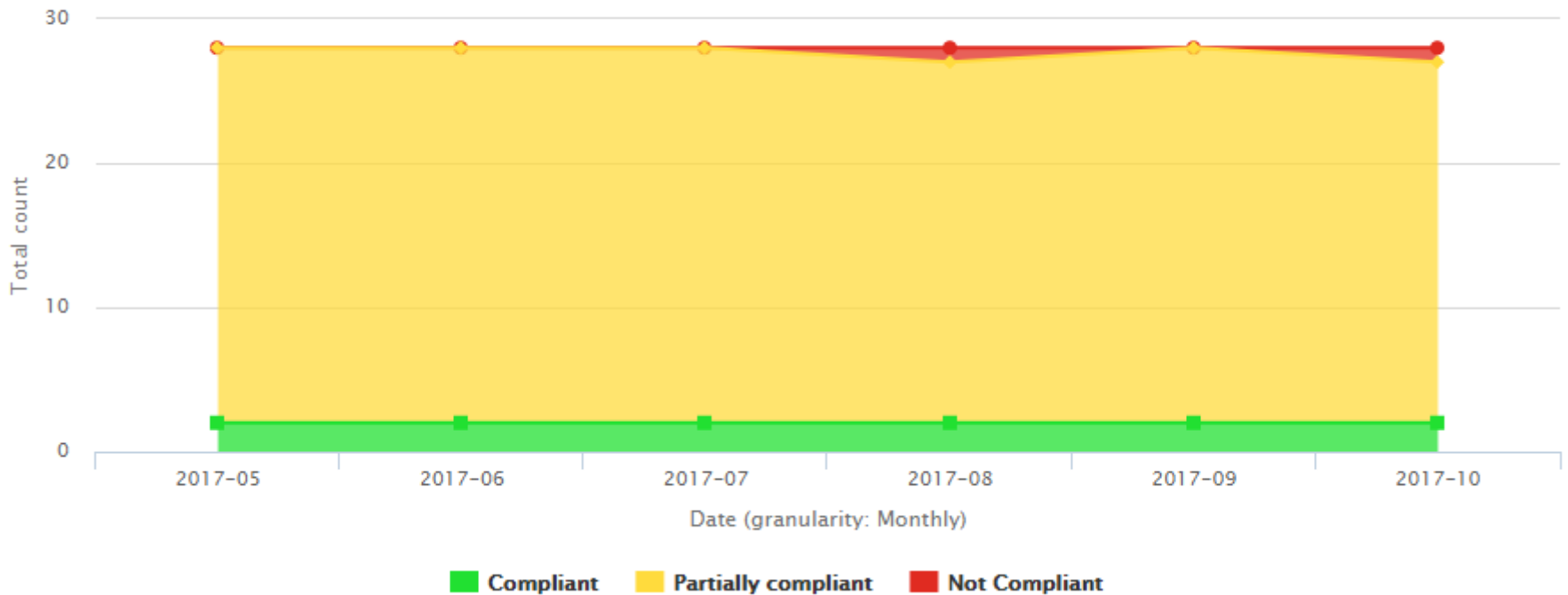


SSA compliance category distribution over time for all registries



SSAP Services Compliance – Euro-VO Registry

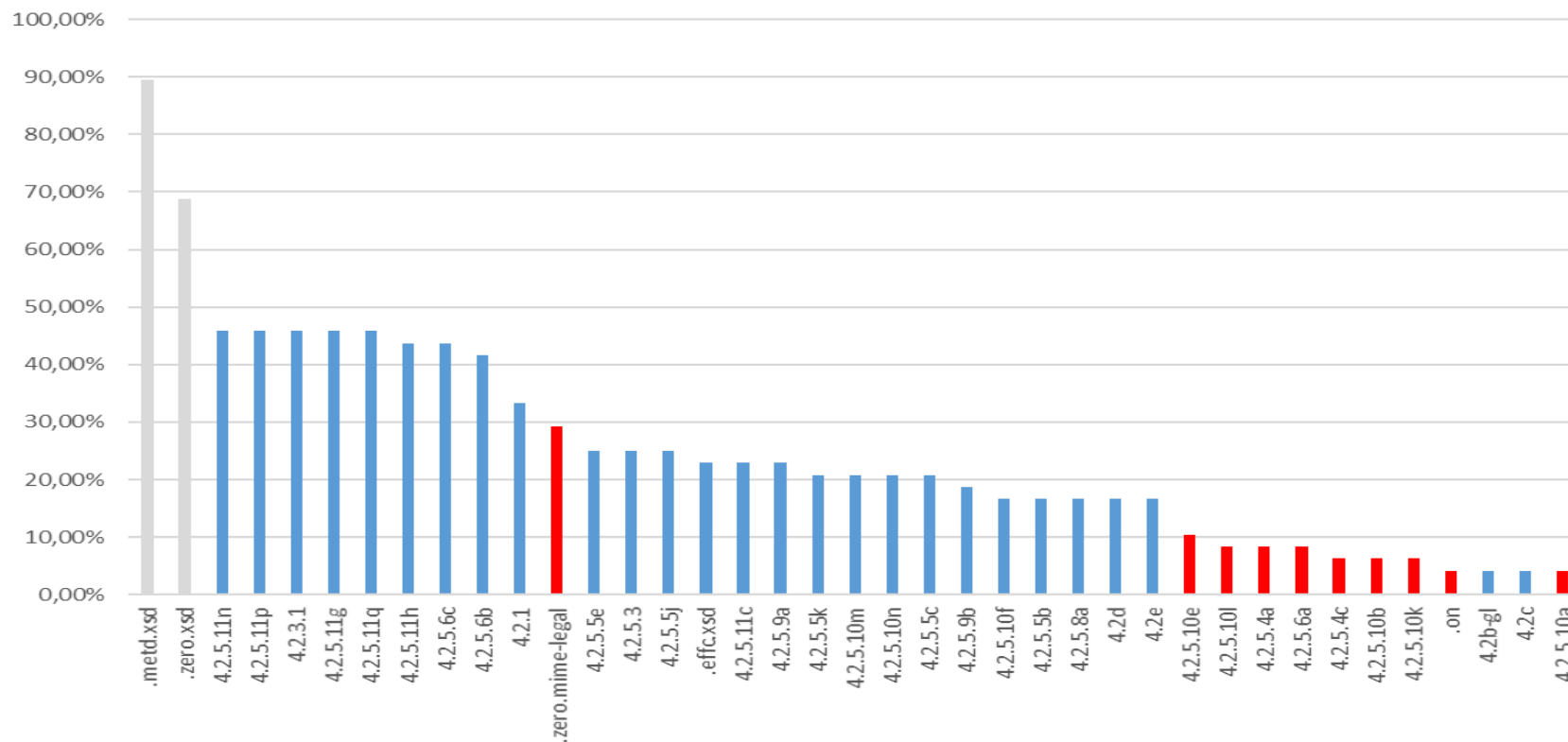
SSA compliance category distribution over time for registry: ivo://esavo/registry 



SSA Services Validation Analysis



Validation criteria failed for SSA Services



	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



SSA Services Validation Analysis



val_code	criterion_type	description
.metd.xsd	EXTRA	The metadata response is XSD-valid XML
.zero.xsd	EXTRA	The zero response is XSD-valid XML
4.2.5.11n	RECOMMENDATION	Char.SpatialAxis.Accuracy.StatError Astrometric statistical error REC
4.2.5.11p	RECOMMENDATION	Char.SpatialAxis.Calibration Type of coord calibration REC
4.2.3.1	RECOMMENDATION	Query.Score Degree of match to query params REC
4.2.5.11g	RECOMMENDATION	Char.SpectralAxis.Calibration Type of coord calibration REC
4.2.5.11q	RECOMMENDATION	Char.SpatialAxis.Resolution Spatial resolution of data REC
4.2.5.11h	RECOMMENDATION	Char.SpectralAxis.Resolution Spectral resolution FWHM REC
4.2.5.6c	RECOMMENDATION	Curation.PublisherDID Publisher's ID for the dataset REC
4.2.5.6b	RECOMMENDATION	Curation.Reference URL or Bibcode for documentation REC
4.2.1	RECOMMENDATION	UTYPEs of standard fields are required for identification of interface elements and must be given
.zero.mime-legal	REQUIREMENT	The MIME type of the zero response has a legal value ('text/xml;content=x-votable')

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

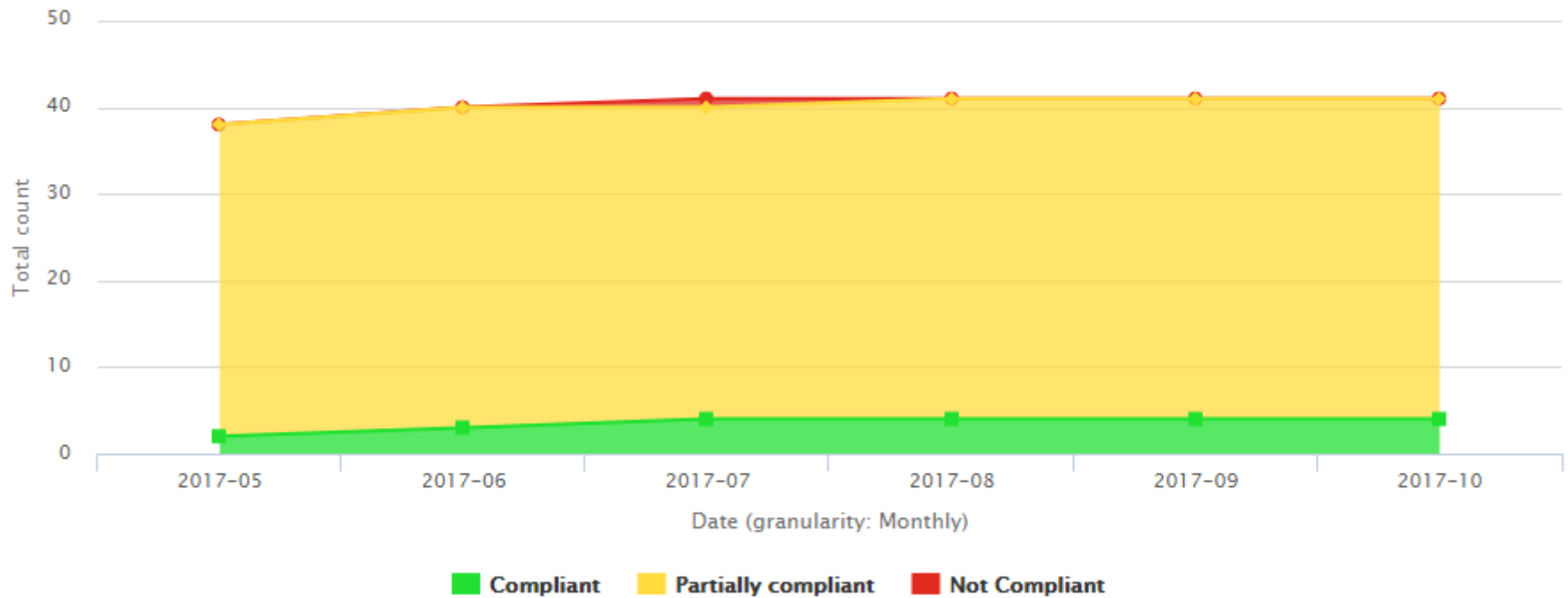
- Most Important: **.zero.mime-legal:** suggest an erratum?
- Are the many REC failures really important for the SSA services?
 - They seem to fail for 40% of the services



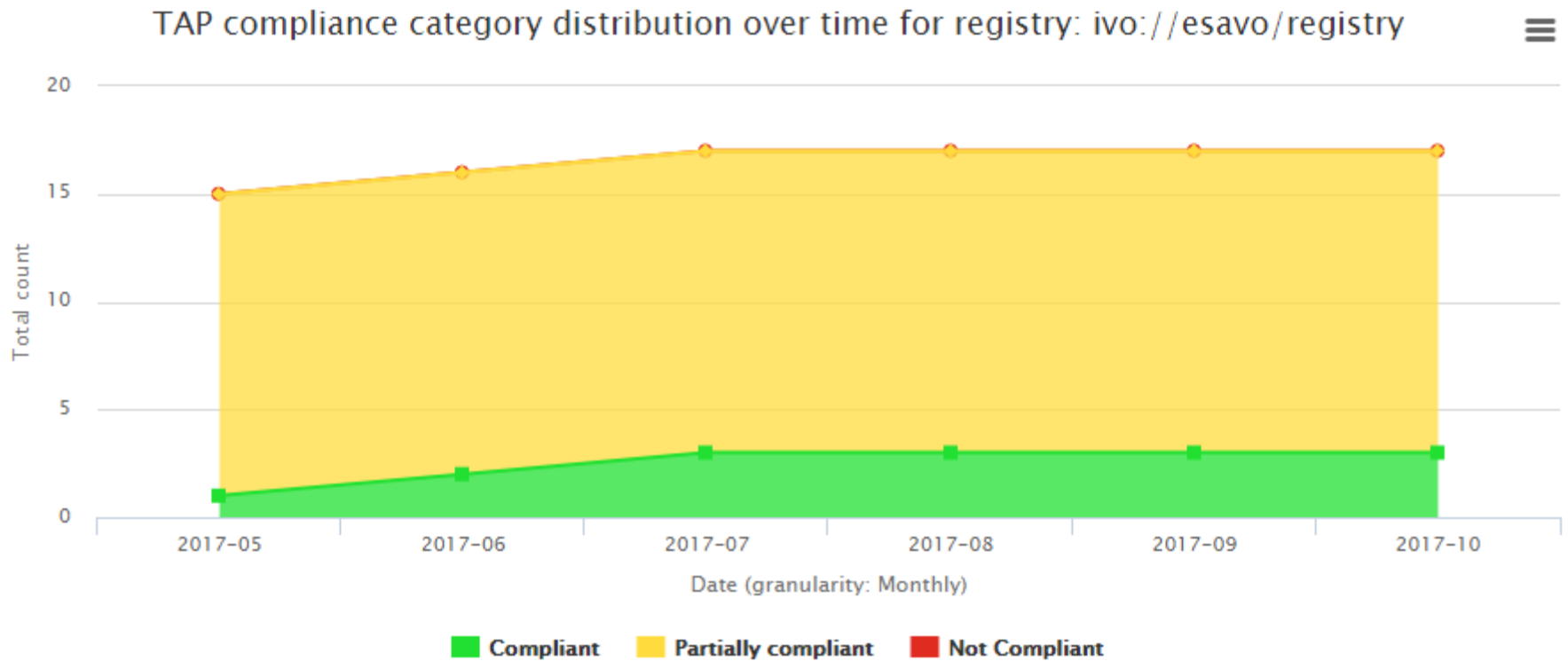
TAP Services Compliance – all registries



TAP compliance category distribution over time for all registries



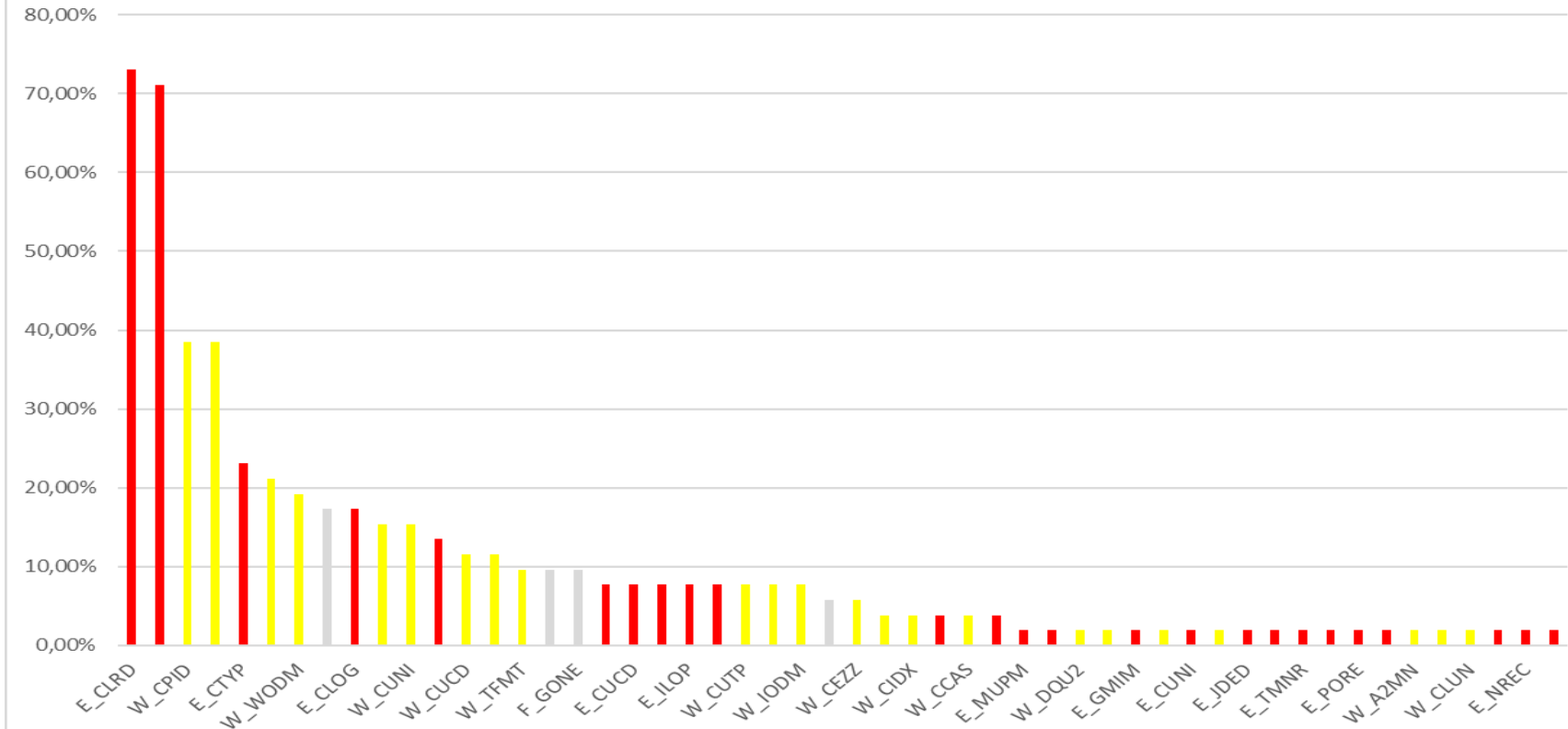
TAP Services Compliance – Euro-VO Registry esa



TAP Services Validation Analysis



Validation criteria failed for TAP Services



	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



TAP Services Validation Analysis



val_code	criterion_type	description
E_CLRD	REQUIREMENT	Unexpected columns in result
E_CLDR	REQUIREMENT	Declared columns absent in result
W_CPID	WARNING	Non-IdentifierURI dataModel
W_TYPI	WARNING	ObsCore datatype mismatch
E_CTYP	REQUIREMENT	Declared/result type mismatch
W_CTYP	WARNING	Datatype mismatch
W_WODM	WARNING	Incorrect ObsCore ID
F_NOUP	EXTRA	No upload methods listed
E_CLOG	REQUIREMENT	Non-boolean value

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

- **E-CLRD** and **E_CLDR** REQs failing for ~**70%** of the TAP services:
 - what to do?
- Need to check if that will improve from TAP 1.0 to TAP 1.1

Overall Conclusions



1. Good progress on IVOA Registry ecosystems
 - a. Need to continue with fixing the anomalies

2. Solution to improve the SCS Services compliance
 - a. Erratum on SCS 1.03
 - b. Update SCS services validators accordingly

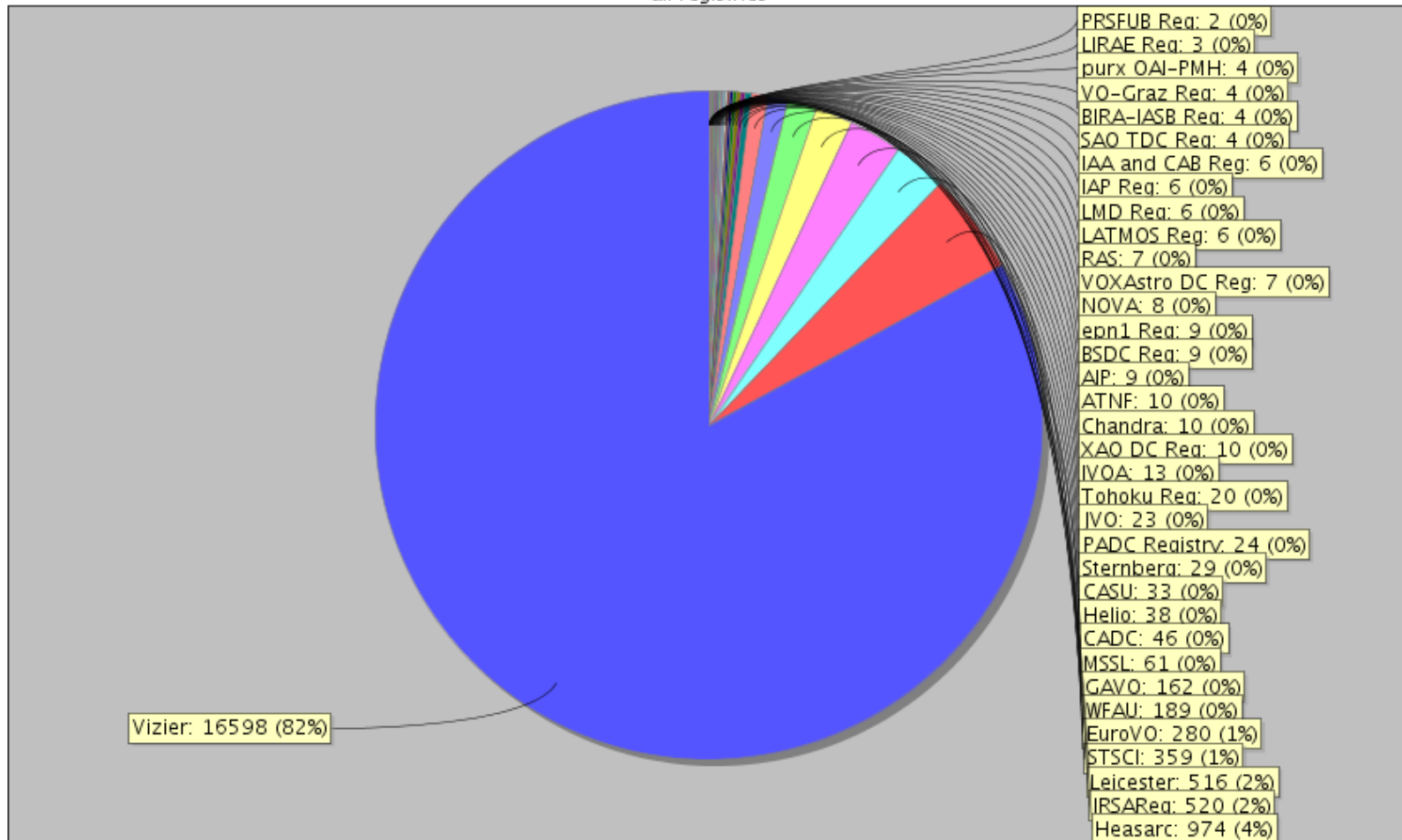
3. Need now to address the rest of services compliance
 - a. SIAP, SSAP, TAP
 - b. Coordination required with DAL WG

BACKUP SLIDES

VOResources per Registry (w/Vizier)



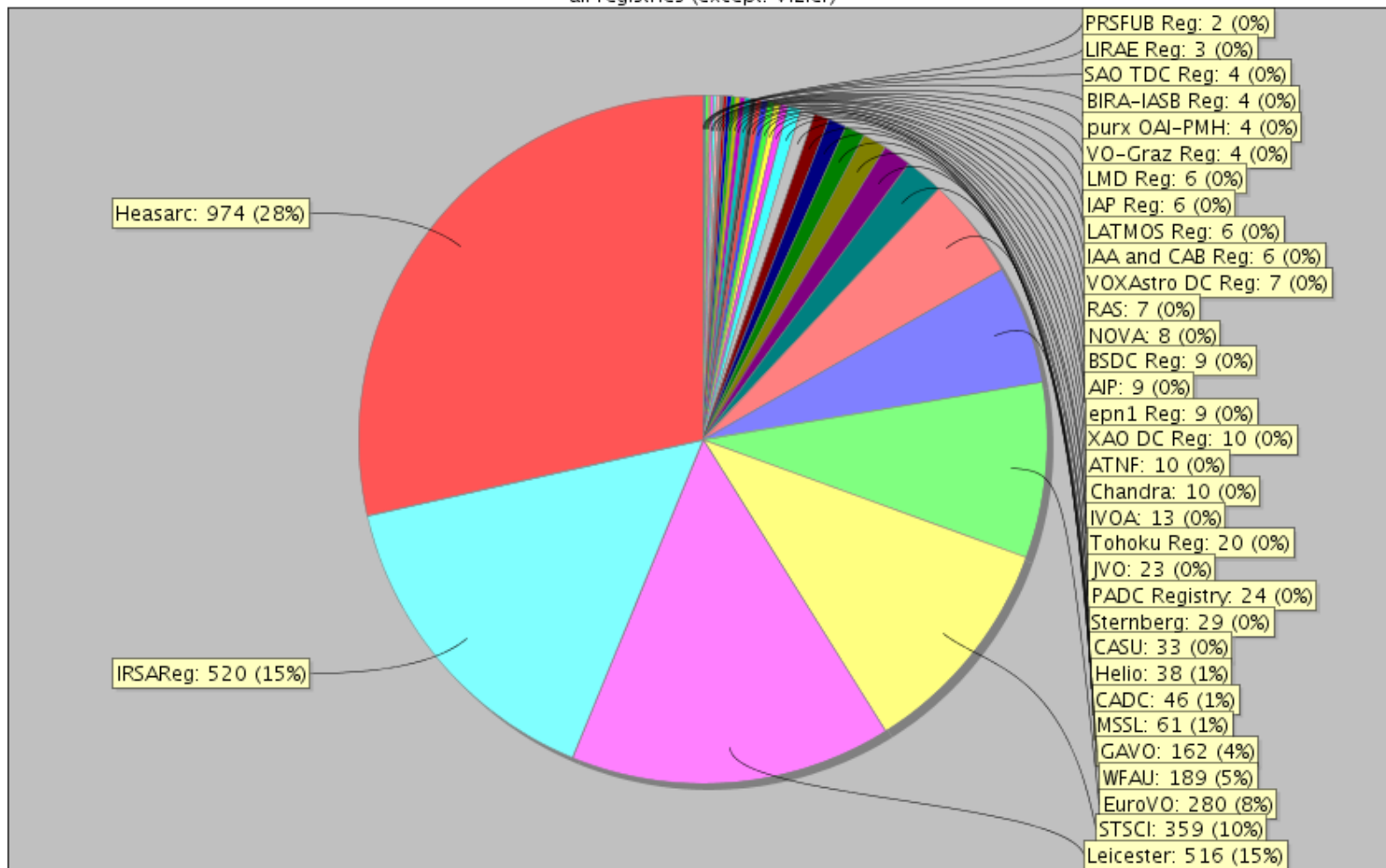
Resource population by registry (IVO-VOR metadata)
Data as of 2017-10-24 19:15:28 * 20009 records from 36 registries in total
all registries



VOResources per Registry (w/o Vizier)



Resource population by registry (IVO-VOR metadata)
Data as of 2017-10-24 19:17:55 * 3411 records from 35 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 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	http://www.ivoa.net/documents/latest/ConeSearch.html
sia:SimpleImageAccess	Simple Image Access Specificatio	http://www.ivoa.net/documents/latest/SIA.html
ssa:SimpleSpectralAccess	Simple Spectral Access Protocol	http://www.ivoa.net/documents/SSA/
slap:SimpleLineAccess	Simple Line Access Protocol	http://www.ivoa.net/documents/SLAP/
tr:TableAccess	Table Access Protocol	http://www.ivoa.net/documents/TAP/

Possible reasons of validation failures



- 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?....