Euro-VO Resources Validation Status

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IVOA interop, Observatoire de Paris, Paris, France, 15/05/2019

http://registry.euro-vo.org/

LogIn | Join

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 Join 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).

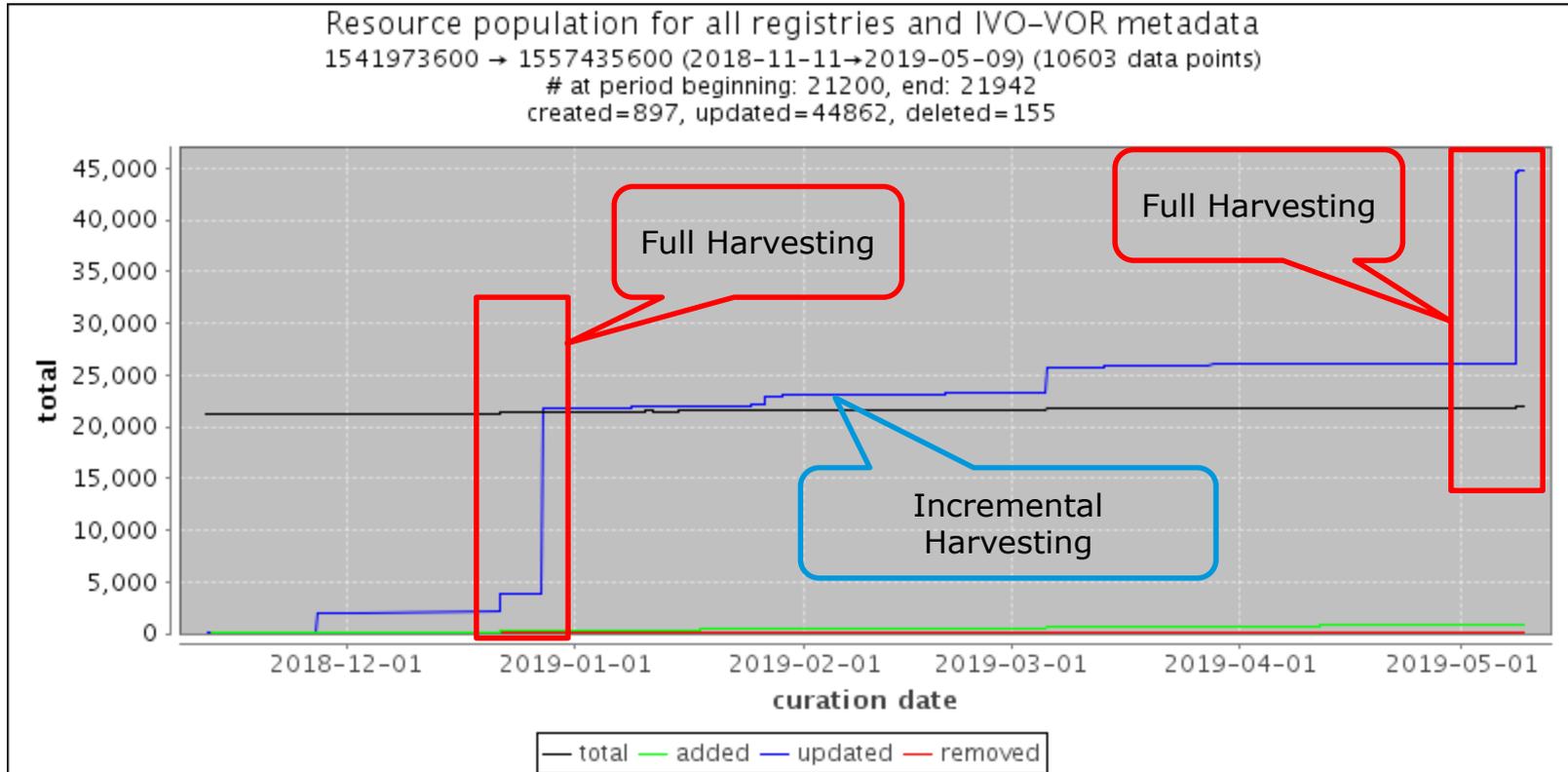If you have any question regarding the EURO-VO Registry, please send an email to:

esavo.registry@sciops.esa.int.

Resource population for all registries and IVO–VOR metadata
1541973600 → 1557435600 (2018-11-11→2019-05-09) (10603 data points)
# at period beginning: 21200, end: 21942
created=897, updated=44862, deleted=155

Many updates the last months...

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)
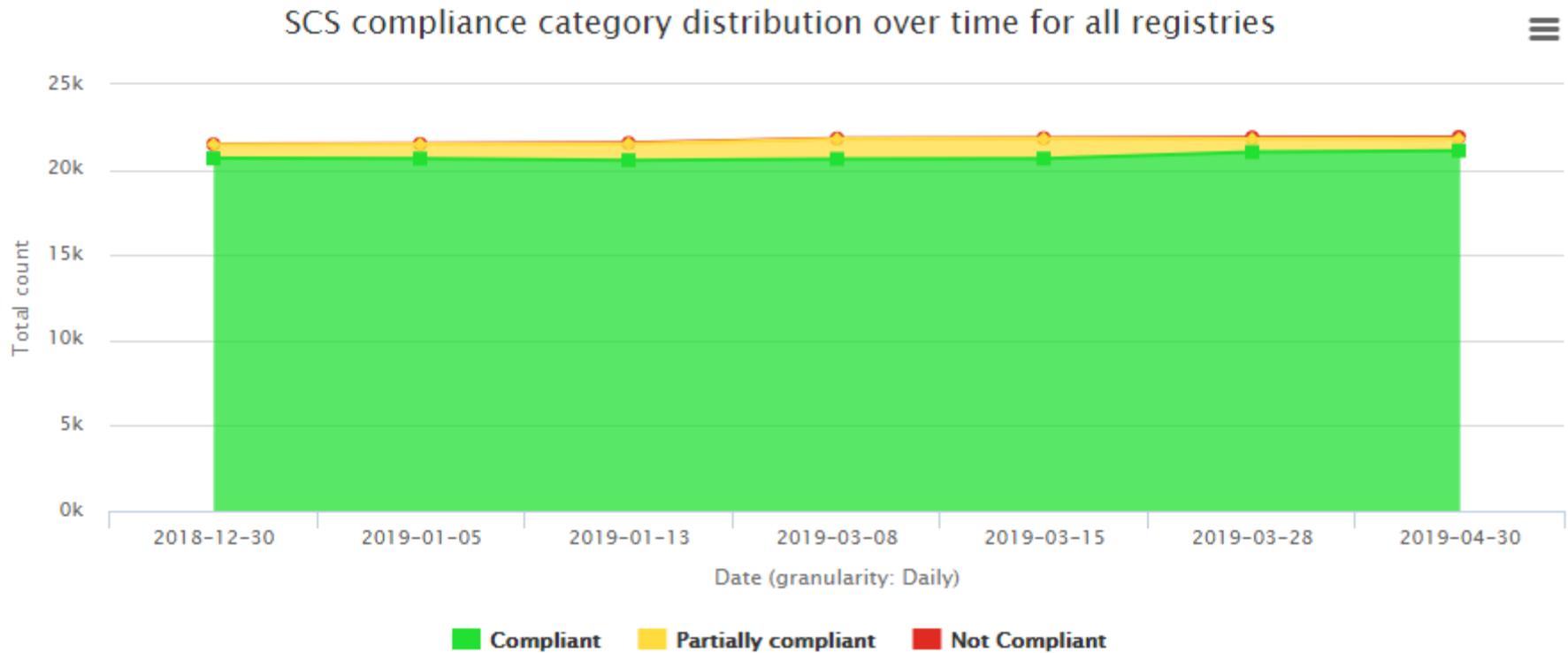
C	at least one (1) req fails, but at least one (1) req equally succeeds
C-	at least two (2) reqs fail, but at least one (1) req equally succeeds
C--	at least three (3) reqs fail, but at least one (1) req equally succeeds

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

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

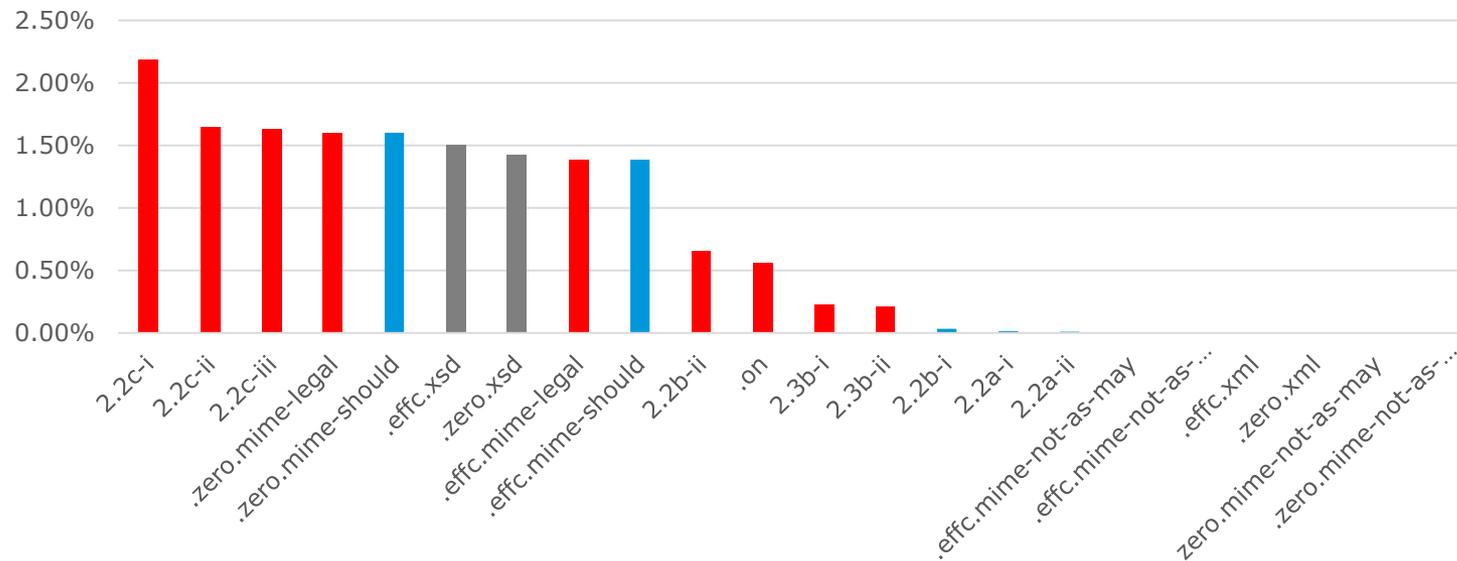| Criterion Type	
name	description
REQUIREMENT	Tests drawn from 'MUST' statements in the respective standard
WARNING	Tests drawn from strongly encouraged 'SHOULD' statements in the respective standard
RECOMMENDATION	Tests drawn from 'SHOULD' statements in the respective standard
EXTRA	Criteria not defined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

SCS Services Compliance – all registries

SCS compliance category distribution over time for all registries

Most of the services are compliant...
No particular action needed

SCS Services Validation Analysis

Validation criteria failed for SCS Services

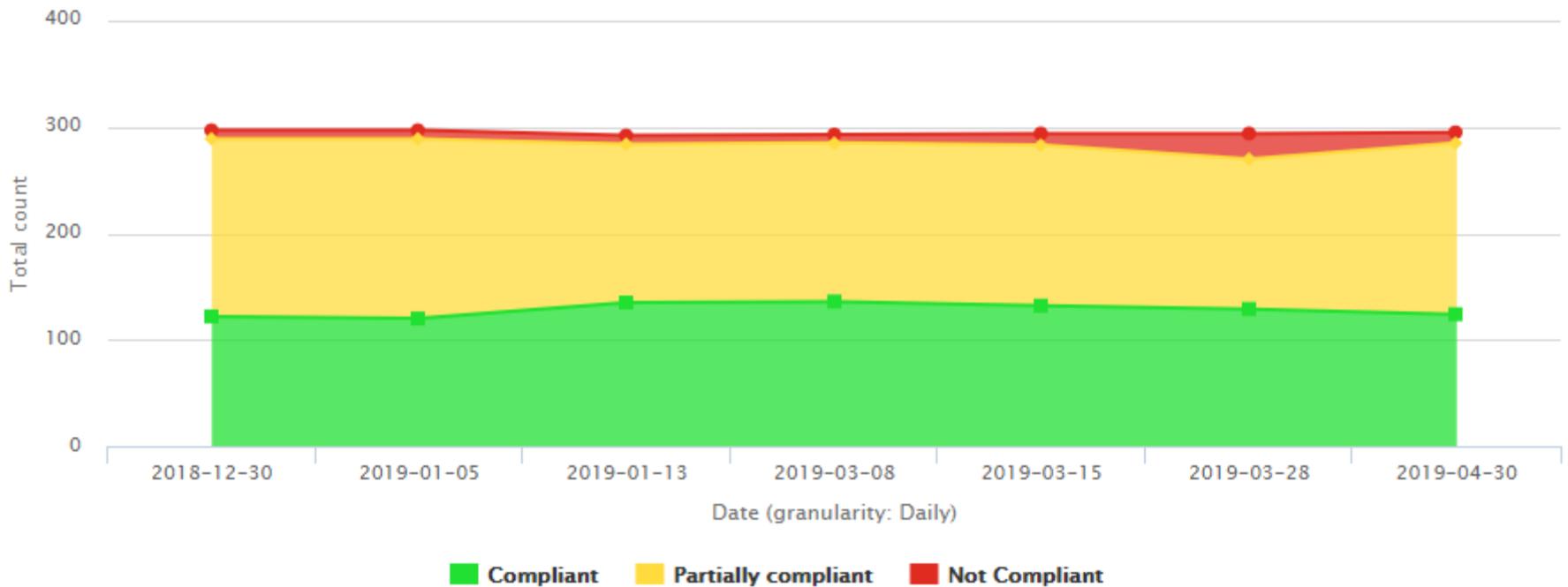|	Criterion Type	
	name	description
🟥	REQUIREMENT	Tests drawn from 'MUST' statements in the respective standard
🟨	WARNING	Tests drawn from strongly encouraged 'SHOULD' statements in the respective standard
🟦	RECOMMENDATION	Tests drawn from 'SHOULD' statements in the respective standard
⬜	EXTRA	Criteria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

SCS Services Validation Analysis

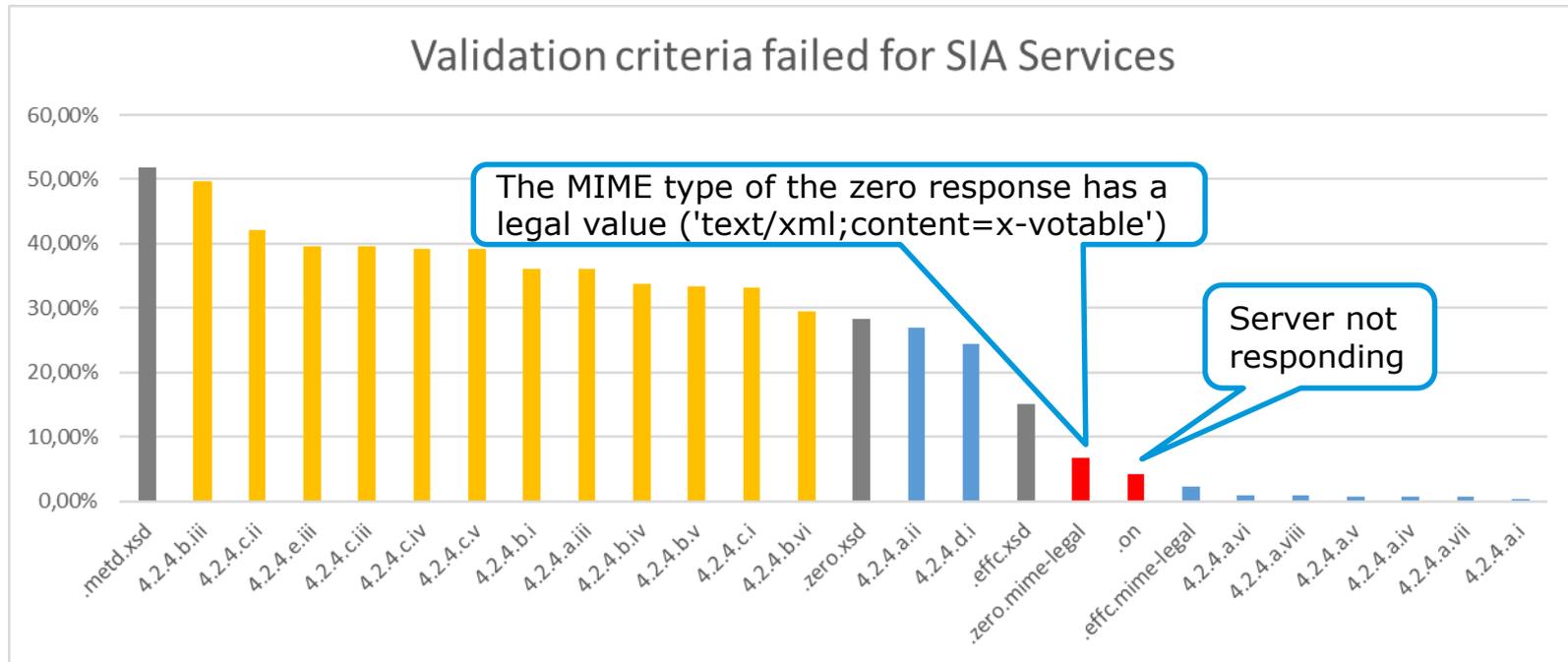| val_code	criterion_type	description
2.2c-i	REQUIREMENT	The VOTable MUST comply with these conditions: [...] Exactly one FIELD must have ucd='ID_MAIN', with an array character type (fixed or variable length)
2.2c-ii	REQUIREMENT	The VOTable MUST comply with these conditions: [...] Exactly one FIELD must have ucd='POS_EQ_RA_MAIN', with type double
2.2c-iii	REQUIREMENT	The VOTable MUST comply with these conditions: [...] Exactly one FIELD must have ucd='POS_EQ_DEC_MAIN', with type double
.effc.xsd	EXTRA	The effective response is XSD-valid XML
.zero.mime-should	RECOMMENDATION	The MIME type of the zero response has the recommended value ('text/xml')
.zero.mime-legal	REQUIREMENT	The MIME type of the zero response has a legal value ('text/xml', 'text/xml;content=x-votable' or 'text/xml;votable'
.effc.mime-should	RECOMMENDATION	The MIME type of the effective response has the recommended value ('text/xml')
.effc.mime-legal	REQUIREMENT	The MIME type of the effectie response has a legal value ('text/xml', 'text/xml;content=x-votable' or 'text/xml;votable'
.zero.xsd	EXTRA	The zero response is XSD-valid XML
2.2b-ii	REQUIREMENT	The effective response has to contain some data
.on	REQUIREMENT	The service is ON
2.2a-ii	REQUIREMENT	The service must respond with an XML document in the VOTable format [for the effective URL]
2.2a-i	REQUIREMENT	The service must respond with an XML document in the VOTable format [for the zero URL]
2.3b-i	REQUIREMENT	no INFO elements with @name='Error' should appear in the zero response
2.3b-ii	REQUIREMENT	no INFO elements with @name='Error' should appear in the effective response
2.2b-i	REQUIREMENT	The zero response contains no data

SIA Services Compliance – all registries

SIA compliance category distribution over time for all registries

SIA Services Validation Analysis

Validation criteria failed for SIA Services

The MIME type of the zero response has a legal value ('text/xml;content=x-votable')

Server not responding

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

SIA Services Validation Analysis

VAL_CODE	CRITERION_TYPE	DESCRIPTION
.METD.XSD	EXTRA	The metadata response is XSD-valid XML
4.2.4.B.III	WARNING	Exactly one field should have ucd='VOX:WCS_CoordProjection', with datatype='char', and arraysiz
4.2.4.C.II	WARNING	Exactly one field should have ucd='VOX:BandPass_Unit', with datatype='char', and arraysize='*'
4.2.4.C.III	WARNING	Exactly one field should have ucd='VOX:BandPass_RefValue', with datatype='double'
4.2.4.E.III	WARNING	Exactly one field should have ucd='VOX:Image_FileSize', with datatype='int'
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', withdatatype='char', and arraysize=
.ZERO.XSD	EXTRA	The zero response is XSD-valid XML
4.2.4.A.III	WARNING	Exactly one field should have ucd='VOX:Image_MJDateObs', with datatype='double'
4.2.4.C.I	WARNING	Exactly one field should have ucd='VOX:BandPass_ID', with datatype='char', and arraysize='*'
4.2.4.D.I	WARNING	Exactly one field should have ucd='VOX:Image_PixFlags', with datatype='char', and arraysize='*'
4.2.4.A.II	WARNING	Exactly one field should have ucd='INST_ID', with datatype='char', and arraysize='*'
.EFFC.XSD	EXTRA	The effective response is XSD-valid XML
4.2.4.B.IV	WARNING	Exactly one field should have ucd='VOX:WCS_CoordRefPixel', with datatype='double', andarraysiz
4.2.4.B.V	WARNING	Exactly one field should have ucd='VOX:WCS_CoordRefValue', with datatype='double', and arrays
4.2.4.B.VI	WARNING	Exactly one field should have ucd='VOX:WCS_CDMatrix', with datatype='double', and arraysize='*
.ZERO.MIME-LEGAL	REQUIREMENT	The MIME type of the zero response has a legal value ('text/xml;content=x-votable')

…

There are also ~15% of the services that could not been tested
due to wrong structure in VOTable returned. (next slides)

Issues 1/2: Wrong structure in VOTABLE

```
<DATA>                                              ✅
  <TABLEDATA>
    <TR>
      <TD>00</TD>
      <TD>00</TD>
      <TD> 0.00000000    0.00000000</TD>
      <TD> 0.0000000    0.0000000</TD>
      <TD>AIRGLOW</TD>

      <TD>22000</TD>
      <TD>2479.000</TD>
```

```
<TABLEDATA>                                         ❌
  <DATA>
    <TR>
      <TD>00</TD>
      <TD>00</TD>
      <TD> 0.00000000    0.00000000</TD>
      <TD> 0.0000000    0.0000000</TD>
      <TD>AIRGLOW</TD>

      <TD>22000</TD>
      <TD>2479.000</TD>
```

Action required for Euro-VO Portal validator:

- Change validator to mark these cases as non compliant
  - VOTable being returned is not compliant

Issues 2/2: SIAv1 vs SIAv2 both versions are used

Version incompatibility on input parameters (The SIZE is removed on SIAv2):

The SIZE parameter:

a. For some is reported as error (SIAv2)
   https://casda.csiro.au/casda_vo_tools/sia2/query?POS=0.0,0.0&SIZE=10.000

b. For some is optional?
   http://archive.stsci.edu/siap/search.php?id=borg&POS=0.0,0.0

c. For some is mandatory (SIAv1)
   http://archives.esac.esa.int/hsa/aio/jsp/siap.jsp?POS=0.0,0.0&SIZE=0.200

Action required for Euro-VO Portal validator:
1. Initially validate only SIAP 1.0 services
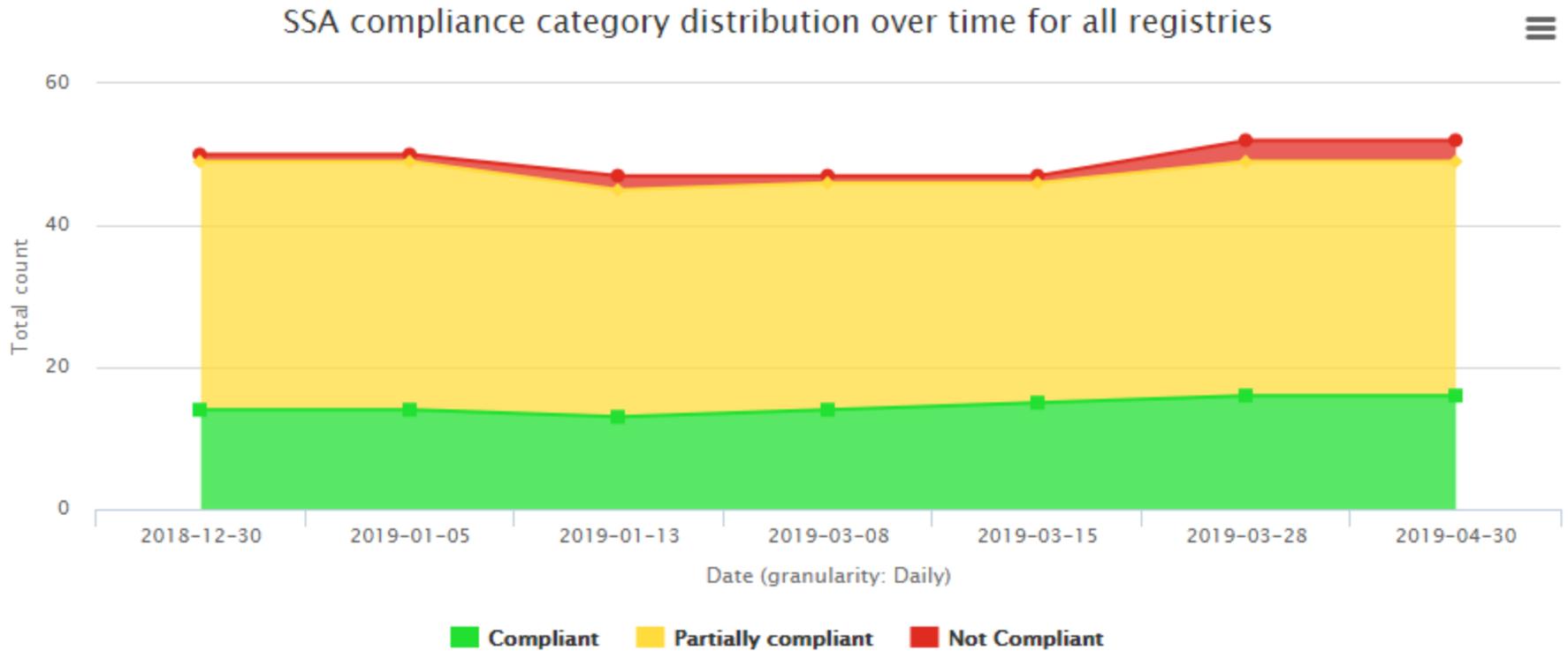2. Then update validator so it covers both SIAP 1 and SIAP 2

SIA Services Validation Analysis

Potential actions to be taken:

1. **Improve the standard:** erratum for all the 4.2.4.* warnings ?

2. **Improve the Euro-VO Registry validator:**

   a. Improve the search algorithm for validation test data, adapt test query params based on limits defined by the service itself.

3. **Improve the services:**

   a) Wrong structure in VOTABLE

   b) Some services are XSD invalid (most common problem the missing xsi:type="vs:ParamHTTP")

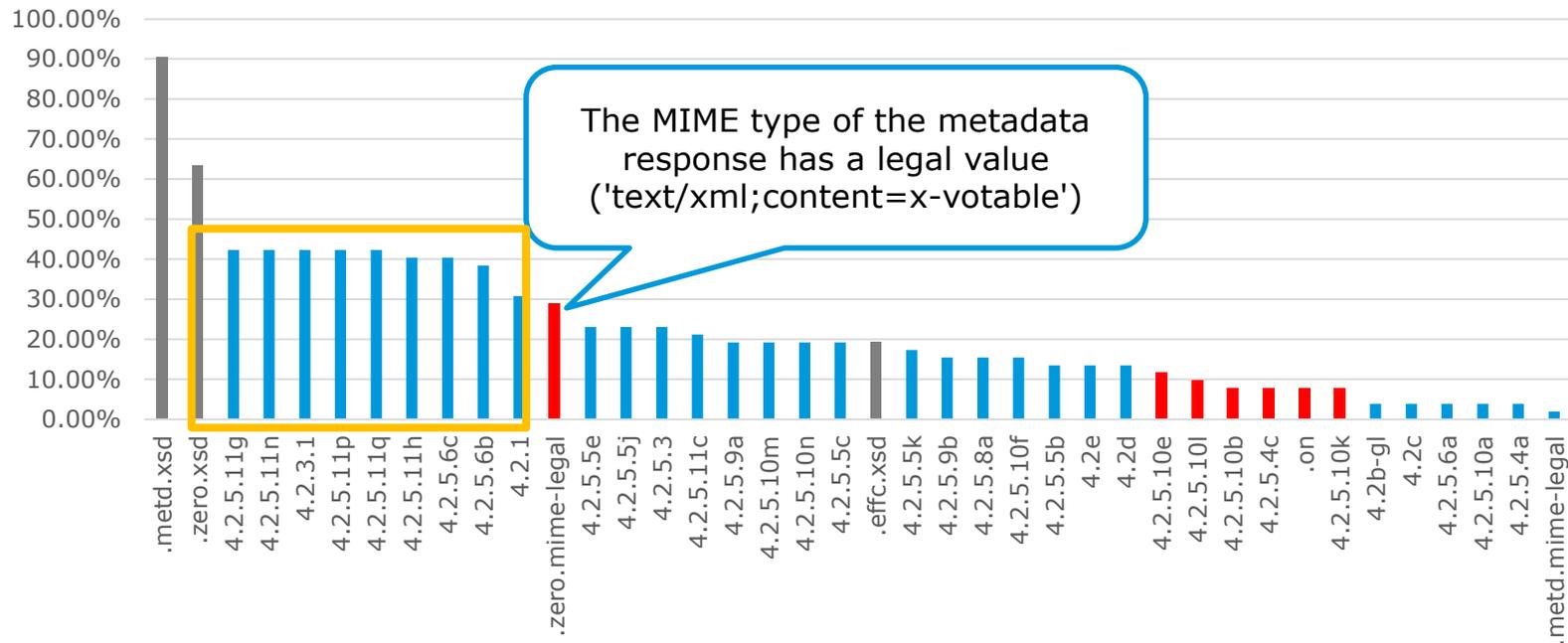   c) Contact with the low Compliance Category services and report findings.

SSA Services Compliance – all registries

SSA compliance category distribution over time for all registries

Validation criteria failed for SSA Services

The MIME type of the metadata response has a legal value ('text/xml;content=x-votable')

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

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
4.2.5.11G	RECOMMENDATION	Char.SpectralAxis.Calibration | Type of coord calibration | REC
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
4.2.5.11Q	RECOMMENDATION	Char.SpatialAxis.Resolution | Spatial resolution of data | REC
4.2.5.6C	RECOMMENDATION	Curation.PublisherDID | Publisher's ID for the dataset | REC
4.2.5.11H	RECOMMENDATION	Char.SpectralAxis.Resolution | Spectral resolution FWHM | 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')
4.2.5.5J	RECOMMENDATION	DataID.DataSource | Original source of data | REC
.EFFC.XSD	EXTRA	The effective response is XSD-valid XML
4.2.5.3	RECOMMENDATION	Access.Size | Estimated (not actual) dataset size | REC
4.2.5.5E	RECOMMENDATION	DataID.CreatorDID | Creator assigned dataset identifier | REC
4.2.5.10N	RECOMMENDATION	Char.SpectralAxis.Coverage.Bounds.Stop | Stop in spectral coordinate | REC
4.2.5.11C	RECOMMENDATION	Char.FluxAxis.Calibration | Type of flux calibration | REC
4.2.5.10M	RECOMMENDATION	Char.SpectralAxis.Coverage.Bounds.Start | Start in spectral coordinate | REC
4.2.5.9A	RECOMMENDATION	Char.FluxAxis.Ucd | ucd for flux | REC
4.2.5.5C	RECOMMENDATION	DataID.Collection | IVOA Identifier of collection (string) | REC
4.2.5.10F	RECOMMENDATION	Char.TimeAxis.Coverage.Bounds.Extent | Total elapsed exposure time | REC

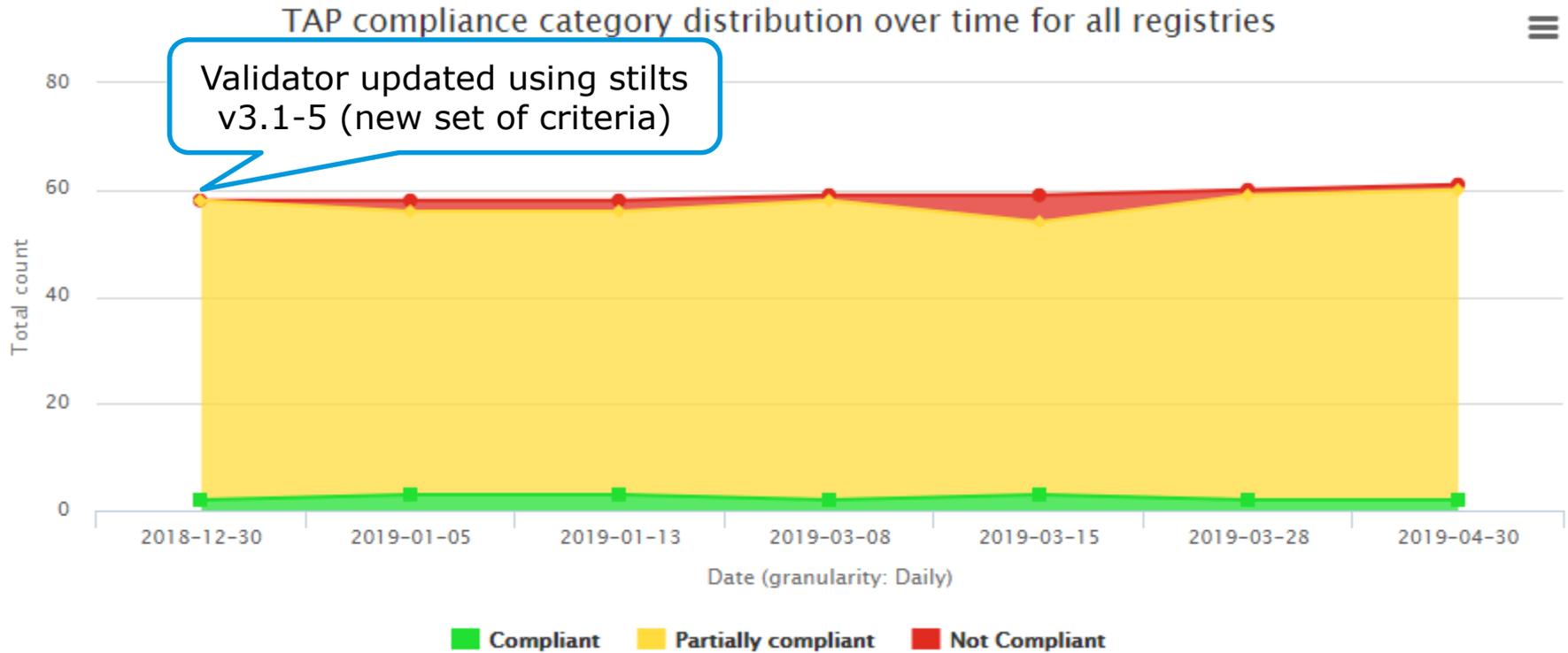## URL: http://www.ivoa.net/documents/SSA

SSA Services Validation Analysis

Potential actions to be taken:

1. **Update the Standard (errata?):** Are the many REC (4.2.5.x) failures really important for the SSA services? They seem to fail for 40% of the services. Suggest an erratum?

2. **Improve the validator:**

   a. Improve the search algorithm for validation test data, adapt test query params based on limits defined by the service itself.

3. **Improve the services:**

   a) Wrong structure in VOTABLE

   b) Some services are XSD invalid (most common problem the missing xsi:type="vs:ParamHTTP")

   c) Contact with the low Compliance Category services and report findings.
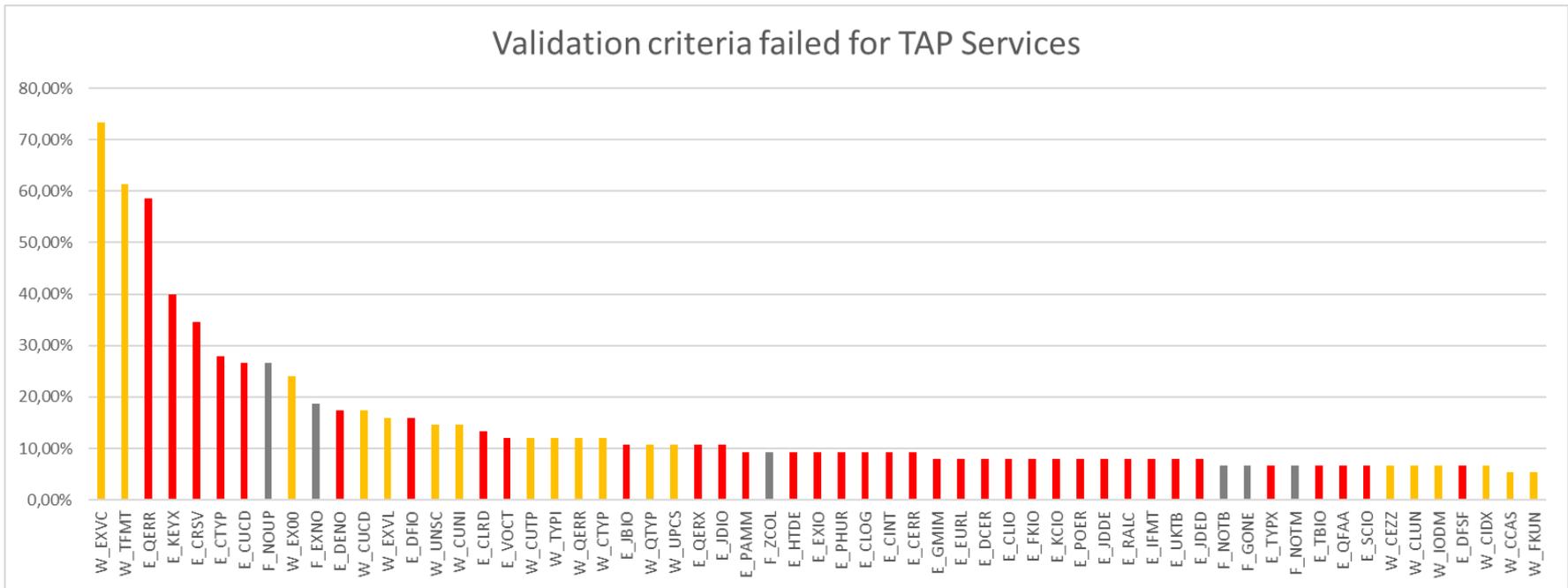
TAP compliance category distribution over time for all registries

Validator updated using stilts v3.1-5 (new set of criteria)

Compliant   Partially compliant   Not Compliant

TAP Services Validation Analysis

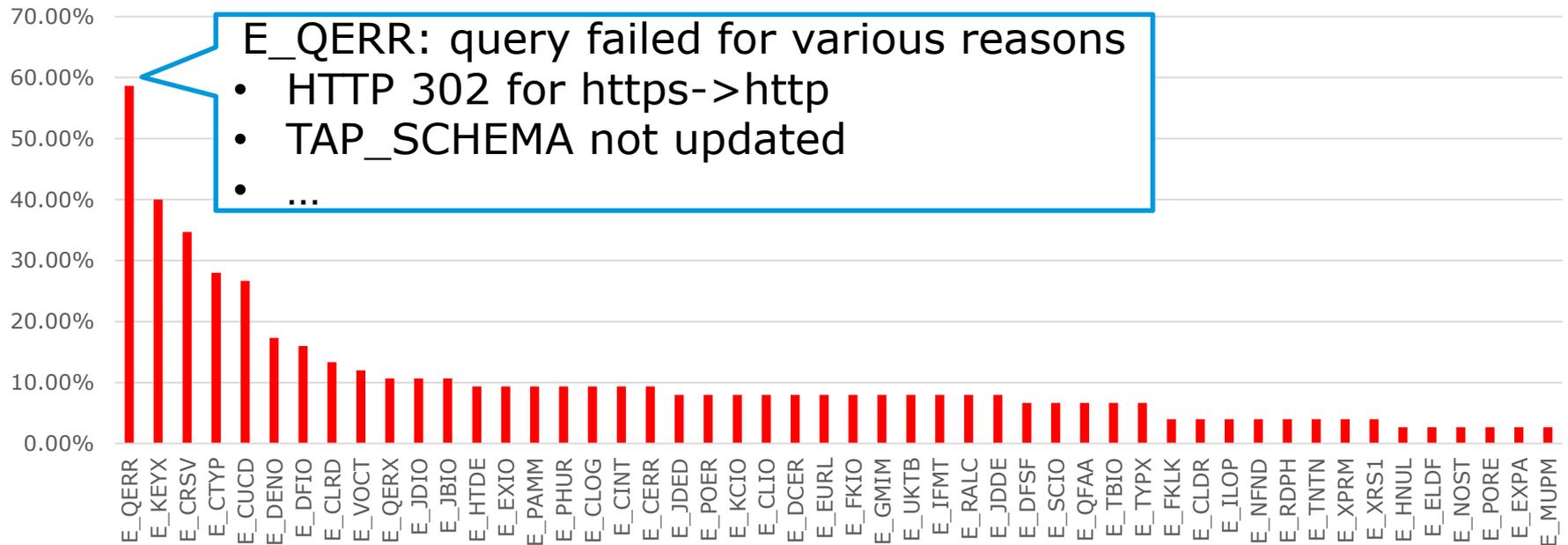Validation criteria failed for TAP Services

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

TAP Services Validation Analysis

REQUIREMENTS failed for TAP Services

E_QERR: query failed for various reasons
- HTTP 302 for https->http
- TAP_SCHEMA not updated
- …

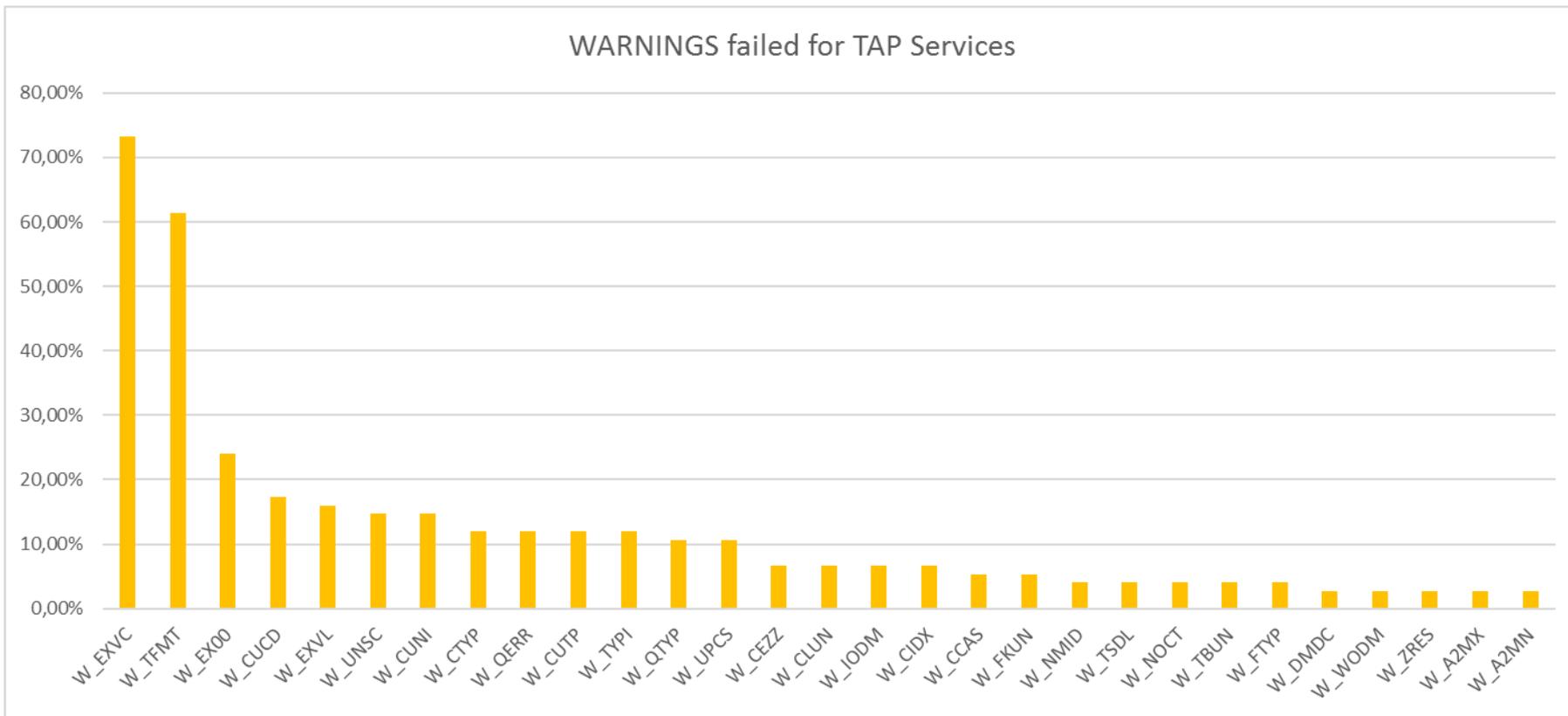| Criterion Type	
name	description
REQUIREMENT	Tests drawn from 'MUST' statements in the respective standard
WARNING	Tests drawn from strongly encouraged 'SHOULD' statements in the respective standard
RECOMMENDATION	Tests drawn from 'SHOULD' statements in the respective standard
EXTRA	Criteria not defined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

TAP Services Validation Analysis

VAL CODE	Description
E_QERR	Query failed
E_KEYX	Unknown standard language feature key
E_CRSV	Column name ADQL reserved word
E_CTYP	Declared/result type mismatch
E_CUCD	UCD mismatch
E_DENO	Non-404 response for deleted job
E_DFIO	Duff query failed
E_CLRD	Unexpected columns in result
E_VOCT	Bad Content-Type for VOTable
E_QERX	Query result parse error
E_JDIO	Error reading job document
E_JBIO	Job read error
E_HTDE	HTTP DELETE failure
E_EXIO	Error reading examples document
E_PAMM	Bad job parameter value

TAP Services Validation Analysis

WARNINGS 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	Description
W_EX00	No examples in examples document
W_CUCD	UCD mismatch
W_EXVL	Example query does not validate
W_UNSC	Foreign schema used in validation
W_CUNI	Unit mismatch
W_CTYP	Datatype possible mismatch
W_QERR	Query failed
W_CUTP	UType mismatch
W_TYPI	ObsCore datatype mismatch
W_QTYP	Query/result column type possible mismatch
W_UPCS	Custom upload method
W_CEZZ	Compression
W_CLUN	Columns content
W_IODM	Incorrect ObsCore ID
W_CIDX	Index flag mismatch

TAP Services Validation Analysis

Potential actions to be taken:

1. **Update the Standard:** need to check if all warnings always failing are covered in TAP 1.1 PR

2. **Improve the validator:** N/A

3. **Improve the services:**
   a. Need to do more fine grained analysis of many errors returned
   b. Try to find if more systematic error pattern
   c. Contact TAP service providers for them to improve their service

Conclusions

1. Still some work to be done to improve the Euro-VO Registry Validators

2. Need to discuss with DAL WG to determine if some of the DAL standards should be corrected with some Errata

3. Need to start contacting publishers of VOResources for them to improve their service compliancy

    a. Time consuming

    b. Will also be made easier with the new Euro-VO Registry Portal (ee Registry II session on Thursday 14:00)