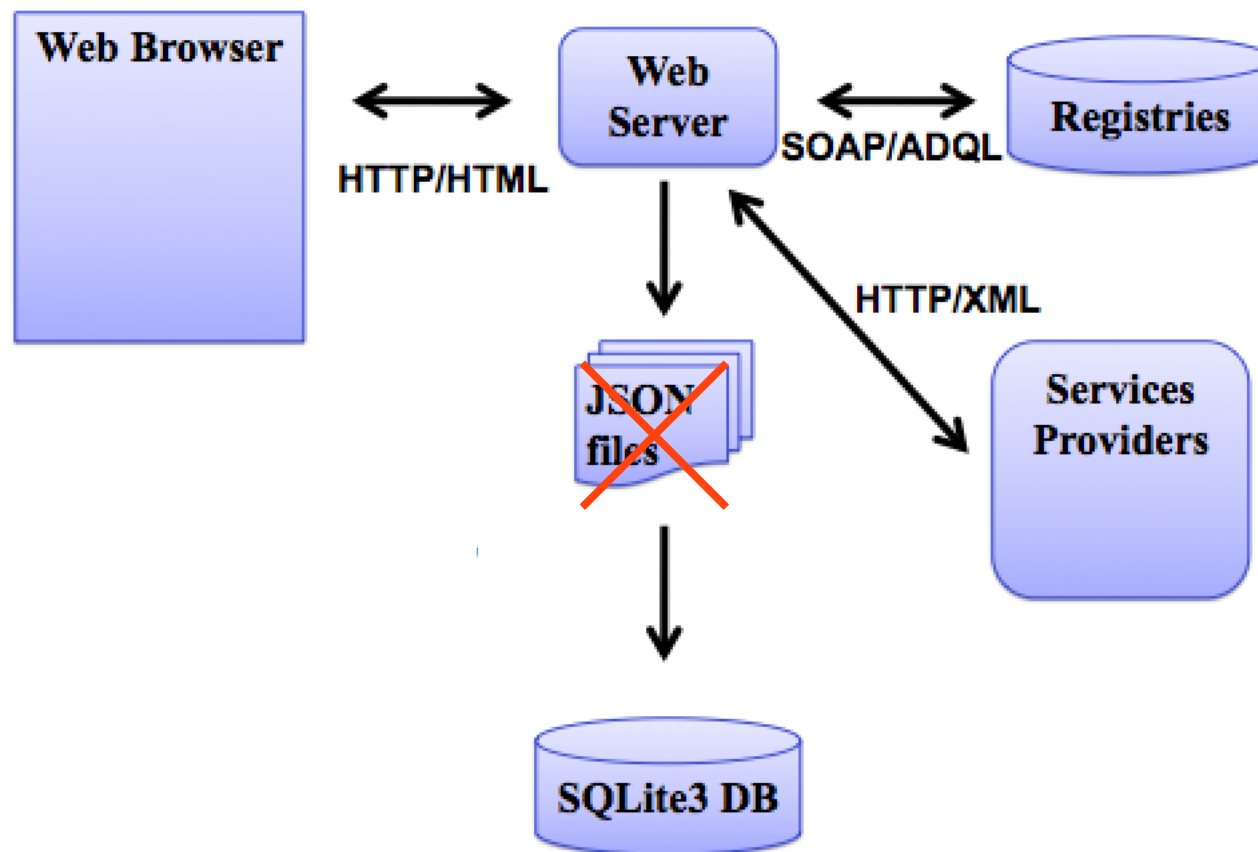


Validation Levels of VO Services

Automatic Validation and Quality Assurance of VO
Services harvested from the Registry

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VOParis Data Centre

Validation Levels Architecture



“Validation and Quality Assurance for IVOA Services”
 (by Savalle, R.; Le Sidaner, P.; Shih, A.; Normand, J.;
 Coquatre Zielgen, G. in ADASS XXI - 2011)

Validation Levels Process



- The list of active services to validate is extracted from a Full Searchable Registry via **SOAP** (for ESAC & Astrogrid registries) or **REST** (for the VOPDC registry)
- The service protocol version is extracted from the registry if present; else a default version is used
- Service arguments are fixed per service, ie not yet extracted from registry (where some curators provide example arguments)
- Service is validated using VOPDC validator (Ops 2)
- Results are consolidated at:
<http://voparis-validation.obspm.fr/>

Validation Levels Results

- Services validated: CS, SIA, SSA (since 2011) and TAP (since 2015, TAP validator uses STILTS taplint by M.Taylor). Datalink validator effort started.
- Validation is performed every day (several hours total time – but for TAP: timeout of 10 mins)
- Results are stored in SQLite3 Dbs:
 - 1 DB=1 type of svc, 1 row = 1 svc (ivoid, url)
- If the validation result is unchanged, the column days_same is incremented
- To browse the results:

<http://voparis-validation.obspm.fr/registry-load2.php>

- To retrieve the SQLite 3 DBs:

<http://voparis-validation.obspm.fr/db/>
Interop Sesto 2015

Validation Levels

Demo: Results

<http://voparis-validation.obspm.fr/registry-load2.php>

IVOA Services Validator: Results

Version 1.17

Questions, comments: vo.paris@obspm.fr

This tool displays the results produced by registry-search2 and their statistics. By default only statistics are returned. To display full results check "Display detailed results" in line Display. Among the available DBs to use, the ones called results-cron-REGISTRY-PROTOCOL.db are produced every night.

Main Form

Select SQLite3 DB file to load:	db/results-cron-VOParis-SIA.db Create new DB
DB Table:	services
DB Where clause:	date='2015-06-13' Use the structure of the services table (on the right) to construct this where clause
DB sort criterium:	date desc, short_name asc
Columns to display:	<input checked="" type="checkbox"/> IVOA id <input checked="" type="checkbox"/> URL <input checked="" type="checkbox"/> Title <input checked="" type="checkbox"/> Short Name <input type="checkbox"/> Contact Name <input checked="" type="checkbox"/> Contact Email <input type="checkbox"/> Spec <input checked="" type="checkbox"/> Spec V <input type="checkbox"/> Insert Date <input type="checkbox"/> Update Date <input checked="" type="checkbox"/> Val Date <input checked="" type="checkbox"/> Days
Display:	<input type="checkbox"/> Display detailed results <input checked="" type="checkbox"/> Display statistics
Select Registry WSDL (for details):	NVO
Select Registry endpoint (for details):	ESA
Debug level:	0
Load and Display	

Structure of the services tables

Column	Title
id	IVOA id
url	URL
title	Title
short_name	Short Name
contact_name	Contact Name
contact_email	Contact Email
spec	Spec
specv	Spec V
date_insert	Insert Date
date_update	Update Date
date	Val Date
days_same	Days

Validation Levels

Demo: Results

Opening SQLite3 DB file db/results-cron-VOParis-SIA.db

Found table services in DB

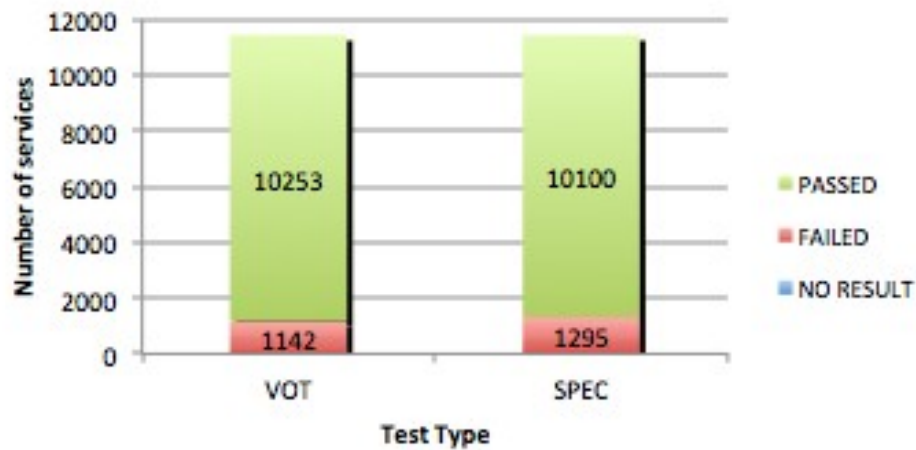
Statistics from SQLite3 DB db/results-cron-VOParis-SIA.db

Services tested (where validator was run and date='2015-06-13'): 205

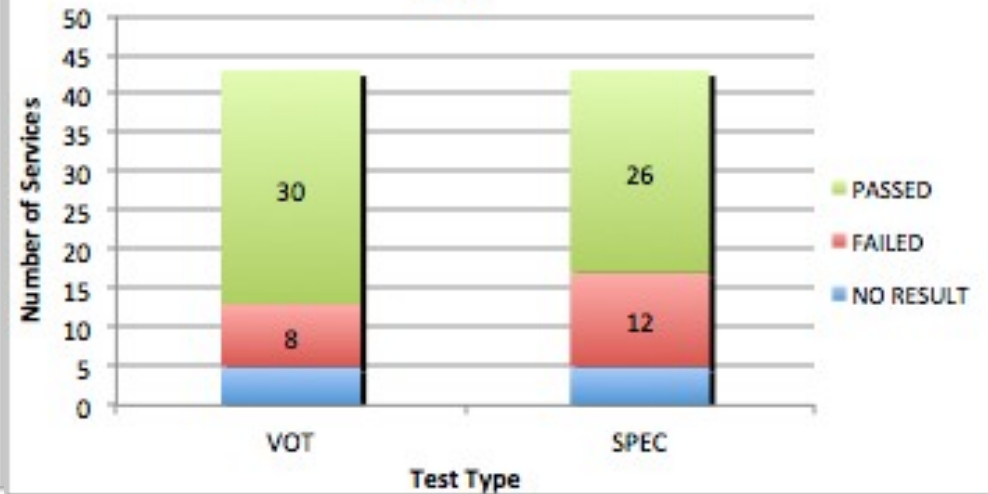
VOT - no results:	24 = 11.7 %	Spec - no results:	24 = 11.7 %
VOT - failed:	111 = 54.1 %	Spec - failed:	114 = 55.6 %
VOT - passed:	70 = 34.1 %	Spec - passed:	67 = 32.7 %

Validation Levels Statistics

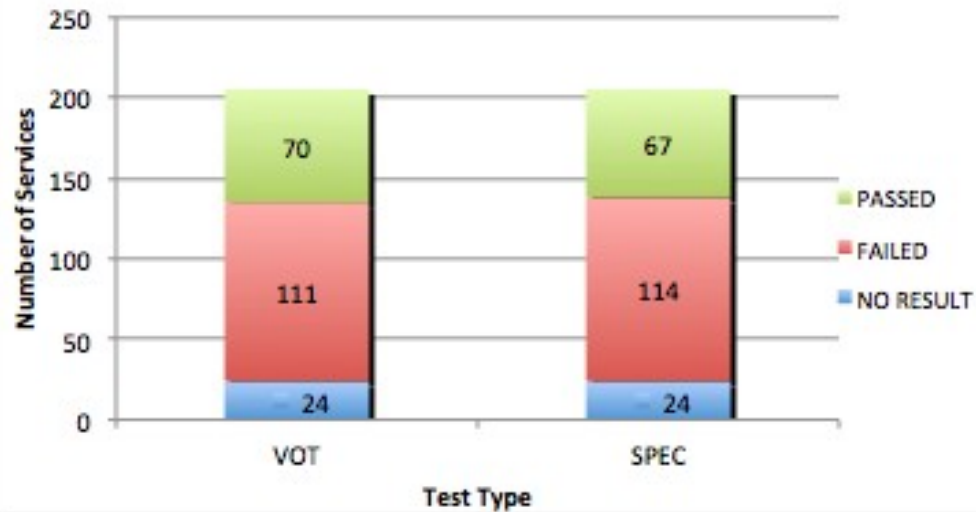
ConeSearch



SSA

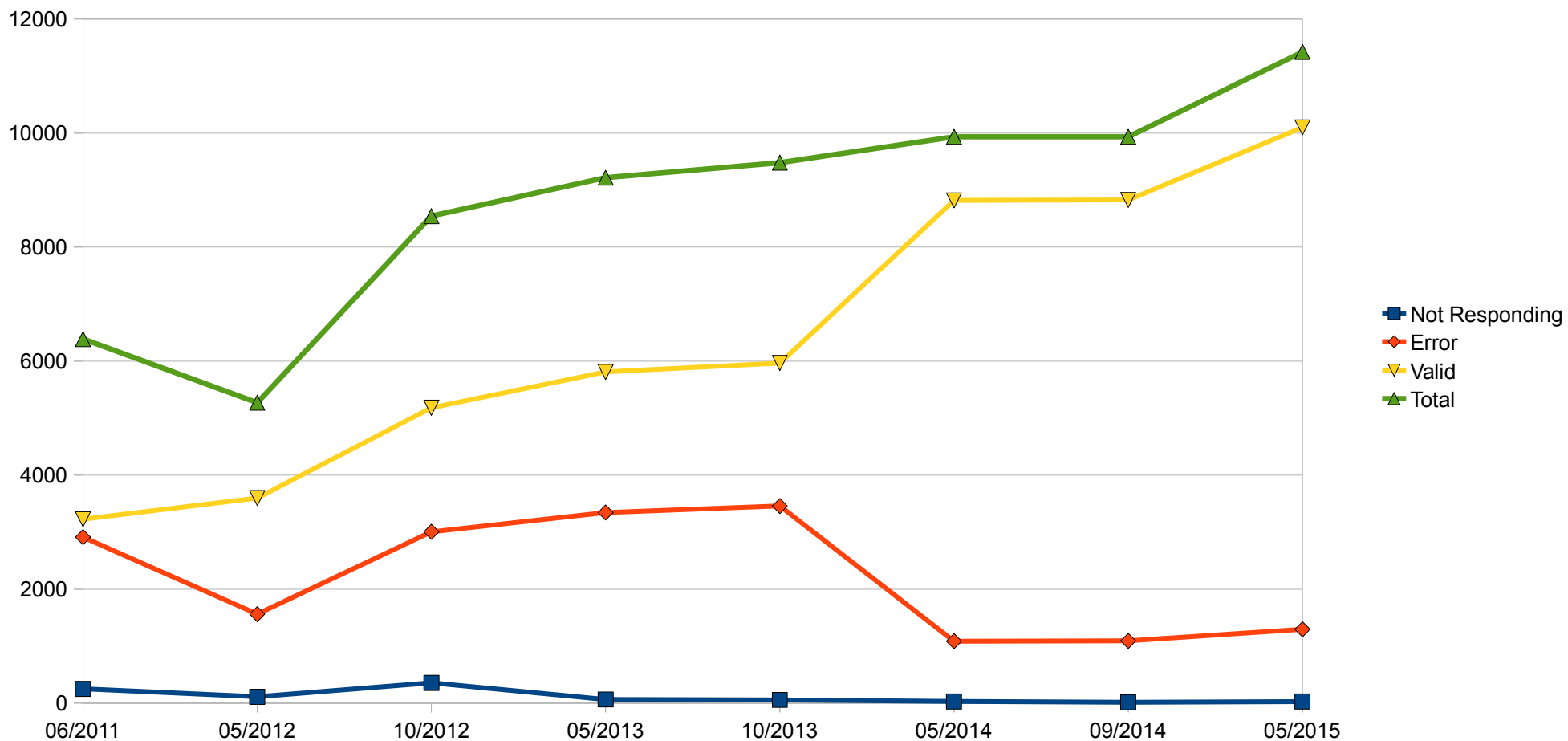


SIA



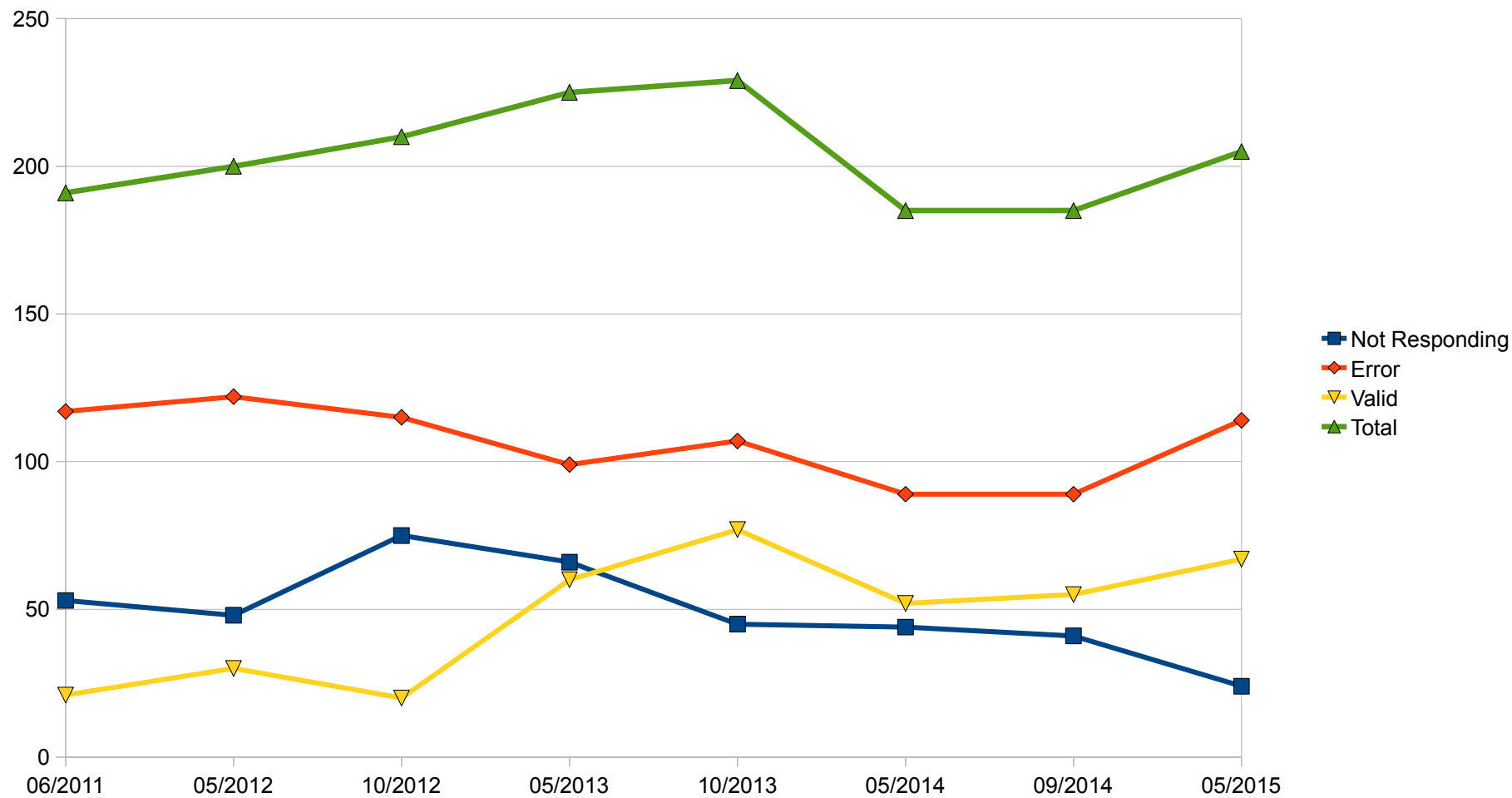
Validation Levels History

Stats for Cone Search



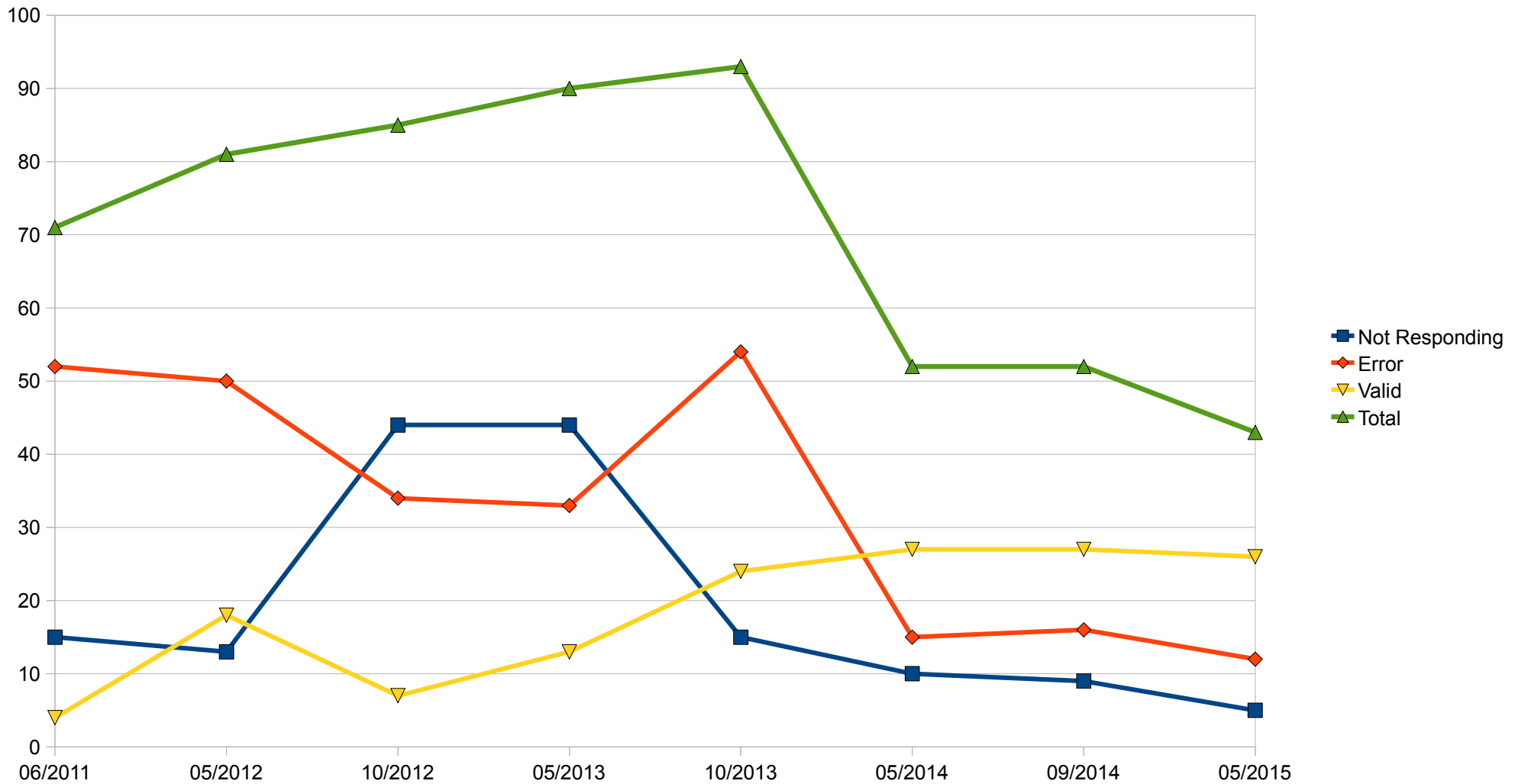
Validation Levels History

Stats for SIA



Validation Levels History

STATS for SSA



Validation Levels

Demo: Detailed Results

<http://voparis-validation.obspm.fr/registry-load2.php>

#	VOParis FSR	IVOA id	URL	Title	Contact Email	Spec V	Val Date	Days	Validator Info	Validator Results
1	details	ivo://nasa.heasarc/skyview/1420mhz	http://skyview.gsfc.nasa.gov/cgi-bin/vo/sia.pl?survey=1420mhz&	Bonn 1420 MHz Survey	skyview@skyview.gsfc.nasa.gov	1.0	2015-06-13	124	Access URL Validate Validate (batch)	VOTable Image Access 0 fatalities 13 warnings 13 errors
2	details	ivo://nasa.heasarc/skyview/2mass	http://skyview.gsfc.nasa.gov/cgi-bin/vo/sia.pl?survey=2mass&	Two Micron All Sky Survey (-Band)	skyview@skyview.gsfc.nasa.gov	1.0	2015-06-13	35	Access URL Validate Validate (batch)	VOTable Image Access 0 fatalities 13 warnings 13 errors
3	details	ivo://irsa.ipac/2MASS-ASKYAT	http://irsa.ipac.caltech.edu/cgi-bin/2MASS/IM/nph-im_sia?type=at&ds=asky&	2MASS All-sky Atlas Image Service	irsasupport@ipac.caltech.edu	1.0	2015-06-13	493	Access URL Validate Validate (batch)	VOTable Image Access 1 fatalities 1 warnings 1 errors
4	details	ivo://nasa.heasarc/skyview/408mhz	http://skyview.gsfc.nasa.gov/cgi-bin/vo/sia.pl?survey=408mhz&	HI All-Sky Continuum Survey	skyview@skyview.gsfc.nasa.gov	1.0	2015-06-13	124	Access URL Validate Validate (batch)	VOTable Image Access 0 fatalities 13 warnings 13 errors
5	details	ivo://irsa.ipac/Herschel/Images/ACMC	http://irsa.ipac.caltech.edu/cgi-bin/Atlas/nph-atlas?mission=ACMC&hdr_location=%5CACMCDataPath%5C&SIAP_ACTIVE=1&collection_desc=ACMC&	Auriga-California Molecular Cloud	irsasupport@ipac.caltech.edu	1.0	2015-06-13	18	Access URL Validate Validate (batch)	VOTable Image Access 1 fatalities 13 warnings 0 errors
6	details	ivo://irsa.ipac/Spitzer/Images/Abell1763	http://irsa.ipac.caltech.edu/cgi-bin/Atlas/nph-atlas?mission=Abell1763&hdr_location=%5CAbell1763DataPath%5C&SIAP_ACTIVE=1&collection_desc=Abell1763&	Spitzer Observations of Abell 1763	irsasupport@ipac.caltech.edu	1.0	2015-06-13	210	Access URL Validate Validate (batch)	VOTable Image Access 1 fatalities 13 warnings 0 errors
7	details	ivo://CDS.Aladin/SIA	http://aladin.u-strasbg.fr/cgi-bin/nph-HTTP?cgi?FORMAT=image/fits&mode=siap_atlas&out=qualifier&	The ALADIN image server	question@simbad.u-strasbg.fr	1.0	2015-06-13	406	Access URL Validate Validate (batch)	VOTable Image Access 1 fatalities 0 warnings 0 errors
8	details	ivo://irsa.ipac/WISE/Images/AllWISE/L3a	http://irsa.ipac.caltech.edu/ibe/sia/wise/allwise/p3am_odd?	AllWISE Atlas (L3a) Coadd Images	sgroom@ipac.caltech.edu	1.0	2015-06-13	18	Access URL Validate Validate (batch)	VOTable Image Access 0 fatalities 3 warnings 0 errors
9	details	ivo://nasa.heasarc/skyview/batsig	http://skyview.gsfc.nasa.gov/cgi-bin/vo/sia.pl?survey=batsig&	Swift BAT All-Sky Survey: keV	skyview@skyview.gsfc.nasa.gov	1.0	2015-06-13	124	Access URL Validate Validate (batch)	VOTable Image Access 0 fatalities 13 warnings 13 errors
10	details	ivo://irsa.ipac/BLAST	http://irsa.ipac.caltech.edu/cgi-bin/Atlas/nph-atlas?mission=BLAST&hdr_location=%5CBLASTDataPath%5C&SIAP_ACTIVE=1&collection_desc=BLAST&	Balloon-borne Large Aperture Submillimeter Telescope	irsasupport@ipac.caltech.edu	1.0	2015-06-13	18	Access URL Validate Validate (batch)	VOTable Image Access 1 fatalities 13 warnings 0 errors
11	details	ivo://irsa.ipac/BOLOCAM_GPS/Images	http://irsa.ipac.caltech.edu/cgi-bin/Atlas/nph-atlas?mission=BOLOCAM_GPS&hdr_location=%5CBOLOCAM_GPSDataPath%5C&SIAP_ACTIVE=1&collection_desc=BOLOCAM_GPS&	Bolocam Galactic Plane Survey	irsasupport@ipac.caltech.edu	1.0	2015-06-13	18	Access URL Validate Validate (batch)	VOTable Image Access 1 fatalities 13 warnings 0 errors
12	details	ivo://archive.stsci.edu/borg	http://archive.stsci.edu/stap/search.php?id=borg&	Brightest of Reionizing Galaxies (BoRG)	archive@stsci.edu	1.0	2015-06-13	256	Access URL Validate Validate (batch)	VOTable Image Access 0 fatalities 0 warnings 0 errors
13	details	ivo://irsa.ipac/Spitzer/Images/C2D	http://irsa.ipac.caltech.edu/cgi-bin/Atlas/nph-atlas?mission=C2D&hdr_location=%5CC2DDataPath%5C&SIAP_ACTIVE=1&collection_desc=C2D&	From Molecular Cores to Planet-Forming Disks	irsasupport@ipac.caltech.edu	1.0	2015-06-13	210	Access URL Validate Validate (batch)	VOTable Image Access 1 fatalities 13 warnings 0 errors
14	details	ivo://cadc.nrc.ca/stap/cadc	http://www.cadc-coda.hia-ihc.nrc-cnrc.gc.ca/sia/query?	CADC Image Search	john.ouellette@nrc-cnrc.gc.ca	1.0	2015-06-13	6	Access URL Validate Validate (batch)	VOTable Image Access 0 fatalities 7 warnings 1 errors
15	details	ivo://cadc.nrc.ca/sia1	http://www.cadc-coda.hia-ihc.nrc-cnrc.gc.ca/sia/query	CADC Image Search (SIA)	john.ouellette@nrc-cnrc.gc.ca	1.0	2015-06-13	476	Access URL Validate Validate (batch)	VOTable Image Access 1 fatalities 0 warnings 0 errors
16	details	ivo://mast.stsci.edu/candels	http://archive.stsci.edu/stap/search.php?id=candels&	Cosmic Assembly Near-IR Deep Extragalactic Legacy Survey (CANDELS)	archive@stsci.edu	1.0	2015-06-13	256	Access URL Validate Validate (batch)	VOTable Image Access 0 fatalities 0 warnings 0 errors

Validation Levels

Exploring a SQLite3 DB

<http://voparis-validation.obspm.fr/db/>

Database Table Index View Trigger Tools Help

Directory

results-cron-VOParis-...

Master Table (1)
Tables (1)
services

Views (0)
Indexes (0)
Triggers (0)

rowid	id	url
33	ivo://...	http://...
23	ivo://...	http://...
46	ivo://...	http://...
7	ivo://...	http://...
49	ivo://...	http://...
22	ivo://...	http://...
1	ivo://...	http://...
2	ivo://...	http://...

TABLE services

2. url (text)

3. title (text)

4. short_name (text)

5. date_insert (text)

6. date_update (text)

7. vor_status (text)

8. vor_created (text)

9. vor_updated (text)

10. contact_name (text)

11. contact_email (text)

12. date (text)

13. xsi_type (text)

14. spec (text)

15. specv (text)

16. params (text)

17. val_mode (text)

18. result_vot (text)

19. result_spec (text)

20. nb_warn (int)

21. nb_err (int)

22. nb_fatal (int)

23. days_same (int)

Settings

Add Duplicate Edit Delete

te	xsi_t...	spec	specv	params	val_...	resul...	
15...	vs:Pa...	Simpl...	1.02	REQU...	normal		
15...	vs:Par...	Simpl...	0.5	REQU...	normal	yes	no
15...	vs:Par...	Simpl...	1.04	REQU...	normal	yes	ye
15...	vs:Par...	Simpl...	1.02	REQU...	normal	no	no
15...	vs:Par...	Simpl...	1.04	REQU...	normal	yes	ye
15...	vs:Par...	Simpl...	1.04	REQU...	normal	yes	ye
15...	vs:Par...	Simpl...	1.04	REQU...	normal	yes	ye

SQLite 3.8.6 Gecko 35.0 0.8.3.1-signed Exclusive Nu

Cancel OK

ET: 2 ms

Validation Levels ...into the Registry

- Definition from <http://www.ivoa.net/documents/REC/ResMetadata/RM-20070302.html>

0	The resource has a description that is stored in a registry.
1	the resource description conforms syntactically to this standard and to the encoding scheme used.
2	the resource description refers to an existing resource that has been demonstrated to be functionally compliant.
3	the resource description has been inspected by a human and judged to comply semantically to this standard
4	the resource description meets additional quality criteria set by the human inspector and is therefore considered an excellent description of the resource.

- Implementation using simple TBD heuristic from validator results: Example:
 - -1 = unknown, 0, 1 OR 2 inferred from consistent results for at least 200 days

<http://voparis-validation.obspm.fr/validationlevels.php?dbFile=results-cron-VOParis-SSA.db>

<http://voparis-validation.obspm.fr/validationlevels.php?dbFile=results-cron-VOParis-SSA.db&format>

Validation Levels

Actions done



- Every 6 month we contact curators of non responding services to encourage fixing them (semi manually).
- We keep an history of problems found and emails sent.
- For 3 years all non responding service due to: technical problems, wrong registry info are fixed. We are facing issues with test services or non maintained dead services => We have started an action via Exec to change their registry status from active to inactive.

Validation Levels

Lessons Learnt



- “Registry is FUN” (Markus) - because its unique in several ways
- Services validation is useful
 - For providers to test their implementation against the stds
 - For registry maintainers, the IVOA to ensure registry quality
 - Data quality should help good research and TRUST from astros
- Registry cleaning is NOT FUN but improves quality...
- Feedback loop between validators and providers can be painful but is an essential, virtuous circle => open validator cf talk in Ops 2