VO Service Validation (for service operators)

Mark Taylor (University of Bristol)

Operations IG

IVOA Interop

Online

27 May 2021

`$Id: validation.tex,v 1.6 2021/05/27 12:55:11 mbt Exp $`

Context: Service Compliance

There are lots of services operating in the VO

- Mostly focus here on SCS, SIA, SSA, TAP
- But lots of standards are relevant: VOTable, DALI, ObsCore, UWS, UCD, DMs, ...

Not all of them operate perfectly

- Implementation bugs
- Errors in input data
- Out of date with respect to standards
- Incomplete implementations (limited effort)
- Poorly-written/unimplementable standards
- ...

This can cause problems for service consumers

- Poor user experience
- More effort for client software developers

Validation: What and Why

What is validation?

- Run a series of automated tests to assess compliance of services with standards
- All VO standards* should have validation tools
  - ▷ Required by IVOA Document Standards specification
  - ▷ Monitored by the Operations IG (see IvoaValidatorsSummary wiki page)

Why should service operators validate their services?

- Find out what's compliant and what's not
- Enable to improve service compliance
- Provide a good experience for service users
- Central validators do validate registered services
  - ▷ They *may* contact you with issues, but it's a best-efforts service
  - ▷ Better to address issues early (pre-registration), only operators can make the fixes

* where applicable

Validation: How

General validation guidelines:

- It's an iterative process like debugging

  ▷ Fixing one issue may cause others to appear or disappear

- May require interaction with validator providers

  ▷ Failures can be complex, might need explanation not obvious from validator output

- Validation errors are not always in the validated service

  ▷ Sometimes the validators have bugs
  ▷ Sometimes the standards need correction or clarification ($\rightarrow$ document errata or updates)

- Validate often

  ▷ Once valid doesn't mean always valid — new data, software upgrades, standards changes etc can introduce new problems
  ▷ Consider running validation as part of service deployment process

- Don't rely too heavily on validators

  ▷ Validators can't test everything — no error reports doesn't guarantee your service is perfect
  ▷ Some services have multiple validators — you can look at results from several
  ▷ Do your own testing too

- Address reported errors/warnings!

  ▷ ... but sometimes 100% compliance is not feasible
  ▷ Main criterion: provide a good user experience