Technical Assessment for the VLT/ELT/ALMA Dataflow

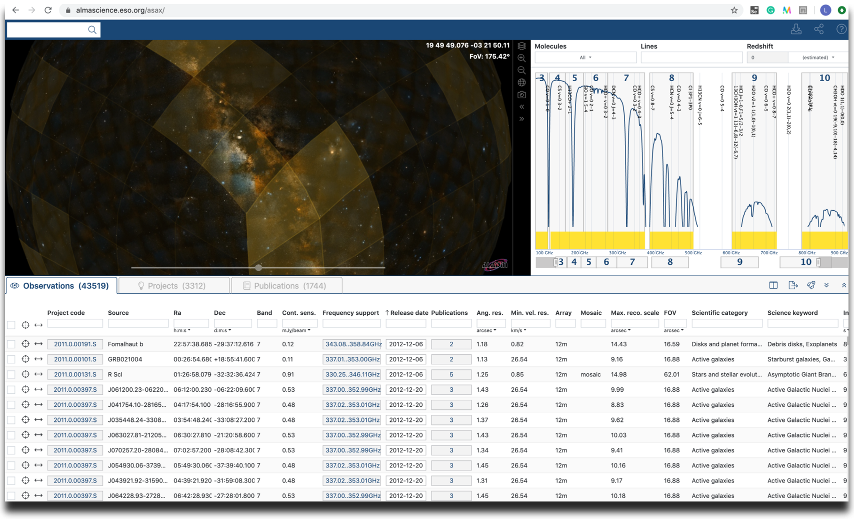
Software Testing Service Contract

PR 100207

The expected effort for this technical assessment is about 2 man-days. The answers to the technical assessment should be provided in a document of about five pages, and source code should be made available.

ALMA Technical Assessment

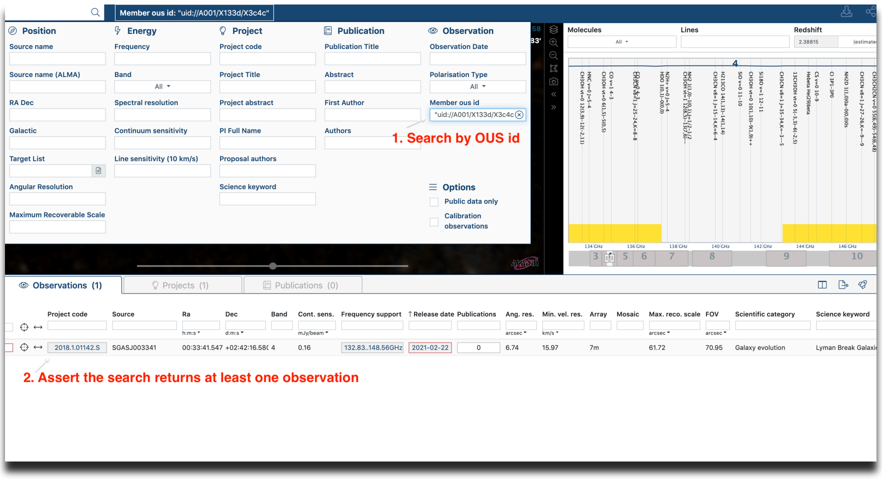
The ALMA Archive Query interface (ASAX), hosted at https://almascience.eso.org/asax, is a public web application for searching and downloading observation data.



Project code	Source	Ra	Dec	Band	Cont. sens.	Frequency support	↑ Release date	Publications	Ang. res.	Min. vel. res.	Array	Mosaic	Max. reco. scale	FOV	Scientific category	Science keyword	In
		h:m:s	d:m:s		mJy/beam				arcsec	km/s			arcsec	arcsec			s
2011.0.00191.S	Fomalhaut b	22:57:38.685	-29:37:12.616	7	0.12	343.08..358.84GHz	2012-12-06	2	1.18	0.82	12m		14.43	16.59	Disks and planet forma...	Debris disks, Exoplanets	8
2011.0.00101.S	GRB021004	00:26:54.68(	+18:55:41.60(	7	0.11	337.01..353.00GHz	2012-12-06	2	1.13	26.54	12m		9.16	16.88	Active galaxies	Starburst galaxies, Ga...	3
2011.0.00131.S	R Scl	01:26:58.079	-32:32:36.424	7	0.91	330.25..346.11GHz	2012-12-06	5	1.25	0.85	12m	mosaic	14.98	62.01	Stars and stellar evolut...	Asymptotic Giant Bran...	6
2011.0.00397.S	J061200.23-06220...	06:12:00.230	-06:22:09.60(	7	0.53	337.00..352.99GHz	2012-12-20	3	1.43	26.54	12m		9.99	16.88	Active galaxies	Active Galactic Nuclei ...	9
2011.0.00397.S	J041754.10-28165...	04:17:54.100	-28:16:55.900	7	0.48	337.02..353.01GHz	2012-12-20	3	1.26	26.54	12m		8.83	16.88	Active galaxies	Active Galactic Nuclei ...	9
2011.0.00397.S	J035448.24-3308...	03:54:48.24(	-33:08:27.200	7	0.48	337.02..353.01GHz	2012-12-20	3	1.37	26.54	12m		9.62	16.88	Active galaxies	Active Galactic Nuclei ...	9
2011.0.00397.S	J063027.81-21205...	06:30:27.810	-21:20:58.600	7	0.53	337.00..352.99GHz	2012-12-20	3	1.43	26.54	12m		10.03	16.88	Active galaxies	Active Galactic Nuclei ...	9
2011.0.00397.S	J070257.20-28084...	07:02:57.200	-28:08:42.30(	7	0.53	337.00..352.99GHz	2012-12-20	3	1.34	26.54	12m		9.41	16.88	Active galaxies	Active Galactic Nuclei ...	9
2011.0.00397.S	J054930.06-3739...	05:49:30.06(	-37:39:40.100	7	0.48	337.02..353.01GHz	2012-12-20	3	1.45	26.54	12m		10.16	16.88	Active galaxies	Active Galactic Nuclei ...	9
2011.0.00397.S	J043921.92-31590...	04:39:21.920	-31:59:08.300	7	0.48	337.02..353.01GHz	2012-12-20	3	1.31	26.54	12m		9.17	16.88	Active galaxies	Active Galactic Nuclei ...	9
2011.0.00397.S	J064228.93-2728...	06:42:28.93(	-27:28:01.800	7	0.53	337.00..352.99GHz	2012-12-20	3	1.45	26.54	12m		10.18	16.88	Active galaxies	Active Galactic Nuclei ...	9

Test Scenario:

We want to automate the web browser interaction to (1.) search for an existing Observation Unit Set (OUS) and (2.) verify that it returns at least 1 observing target for this observation.



Member ous id: "uid://A001/X133d/X3c4c"

Band: All

Polarisation Type: All

Member ous id: "uid://A001/X133d/X3c4c

□ Public data only

□ Calibration observations

1. Search by OUS id

Project code	Source	Ra	Dec	Band	Cont. sens.	Frequency support	↑ Release date	Publications	Ang. res.	Min. vel. res.	Array	Mosaic	Max. reco. scale	FOV	Scientific category	Science keyword
		h:m:s	d:m:s		mJy/beam				arcsec	km/s			arcsec	arcsec		
2018.1.01142.S	SGASJ003341	00:33:41.547	+02:42:16.58(	4	0.16	132.83..148.56GHz	2021-02-22	0	6.74	15.97	7m		61.72	70.95	Galaxy evolution	Lyman Break Galaxi

2. Assert the search returns at least one observation

Tasks:

- Implement a working prototype for automating the specified scenario using Selenium WebDriver and a testing framework/programming language of your choice.
- Make your test code available and provide instructions how to execute it
- Parameterize the execution to expect *browser*, *platform* and *OUS_id* provided at runtime.
- Document the prototype including design patterns, execution instructions and sample test report for the given scenario.
- Explain the motivation for the selected stack (testing framework and language).

VLT/ELT Technical Assessment

Phase 2 API

The phase 2 REST API is used to create so-called observing blocks (OBs) and is documented at https://www.eso.org/copdemo/apidoc/index.html

It is the back-end service to the phase 2 user interface at https://www.eso.org/p2demo

Task

In a programming language of your choice, implement automatic tests for the Phase 2 API `"DELETE /obsBlocks/{obId}/findingCharts/{n}"` as follows ...

- Login with `username/password`: `"52052" / "tutorial"`, e.g.
  `curl -d username=52052 -d password=tutorial https://www.eso.org/copdemo/api/login`
    - This returns a Json object with an `access_token` that is needed for all further API calls. Subsequent API calls need an `"Authorization: Bearer <access_token>"` header.
- To create an observing block (OB) issue a POST request to `/containers/`**`1448455`**`/items` with a JSON object as body

  `{"itemType": "OB", "name": "test for delete finding chart"}`

  (or `"itemType": "CB"`). You can use a more descriptive `name`. The returned JSON object contains the `"obId"` needed for the finding chart APIs.
- Use the API documentation to attach finding charts to the OB
- **Derive and implement relevant test cases for the "DELETE finding chart" API**

Deliverables

- Make your test code available and provide instructions how to execute it
- Explain the motivation for the selected stack (testing framework and language)
- Note that you should be able to see your OB and its finding charts in the p2 web user interface by navigating to https://www.eso.org/p2demo/home/run/6092525, expanding the observing run "Run 60.A-9252(F)", clicking on your OB, and opening the "Finding Charts" tab