

A First Look at the ALMA Science Archive

Sandra Etoka



The ALMA Archive

The **purpose of the ALMA archive** is to provide services for:

- persistent archiving and retrieval for observational data

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- observation descriptors (including scripts)

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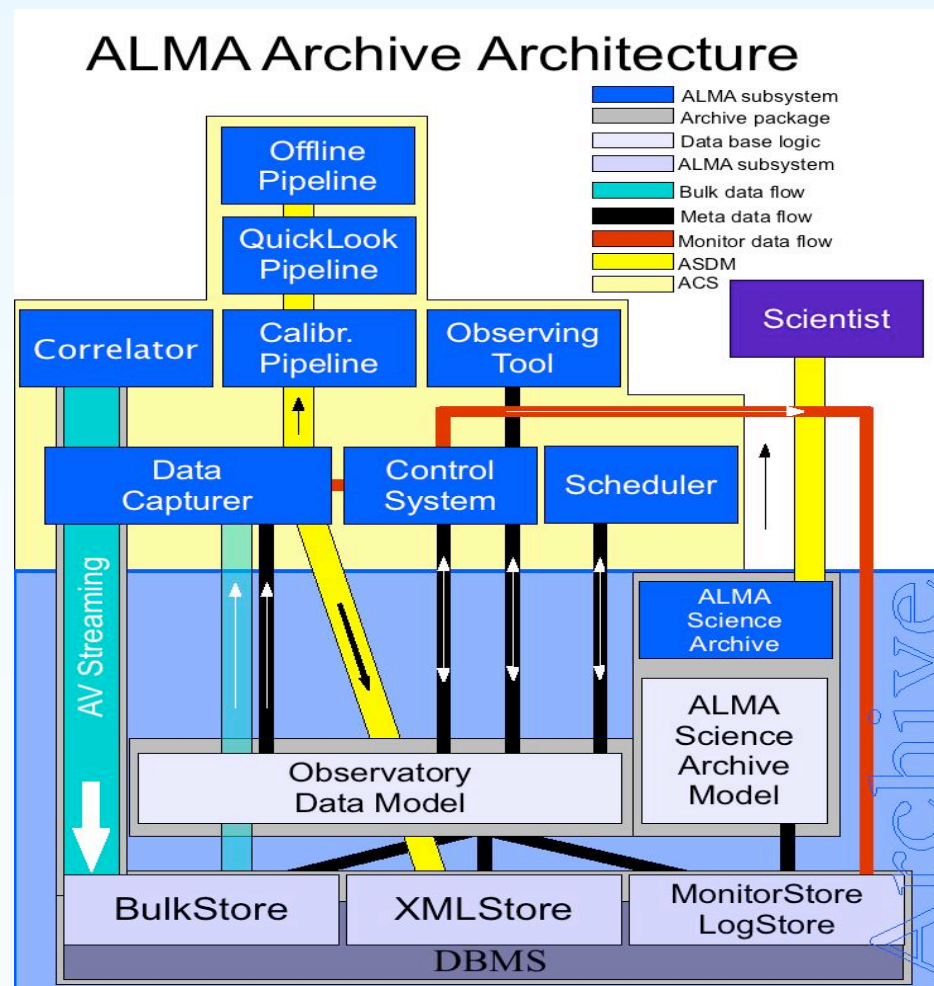
- persistent archiving and retrieval for observational data
- observation descriptors (including scripts)
- datacubes produced by the pipeline

The ALMA Archive

The **purpose of the ALMA archive** is to provide services for:

- persistent archiving and retrieval for observational data
- observation descriptors (including scripts)
- datacubes produced by the pipeline
- technical and environmental data

The ALMA Archive Architecture



S. Etoke: A First look at the ASA

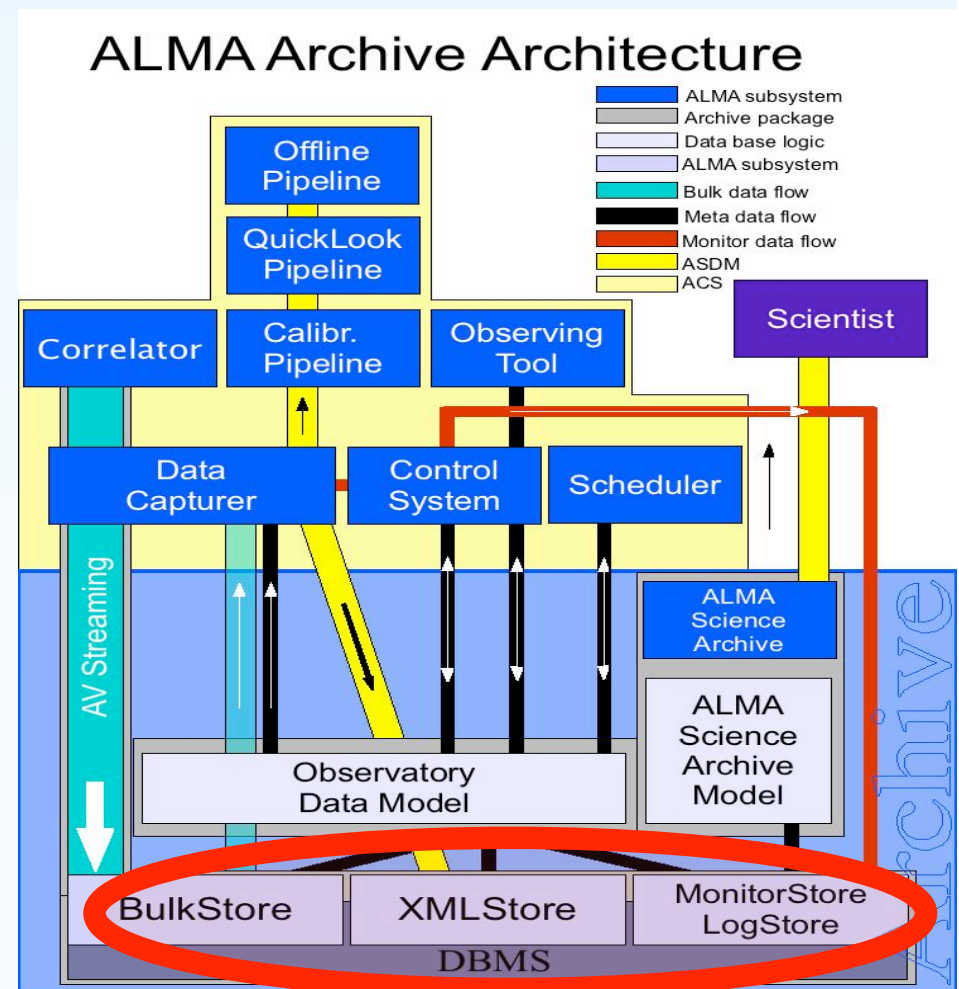
The ALMA Archive Architecture

Stores

BulkStore: data coming from the Correlator

XMLStore: metadata describing observations

Monitor Store: Event and loggings (*describing the status of the instrument*) & environmental data

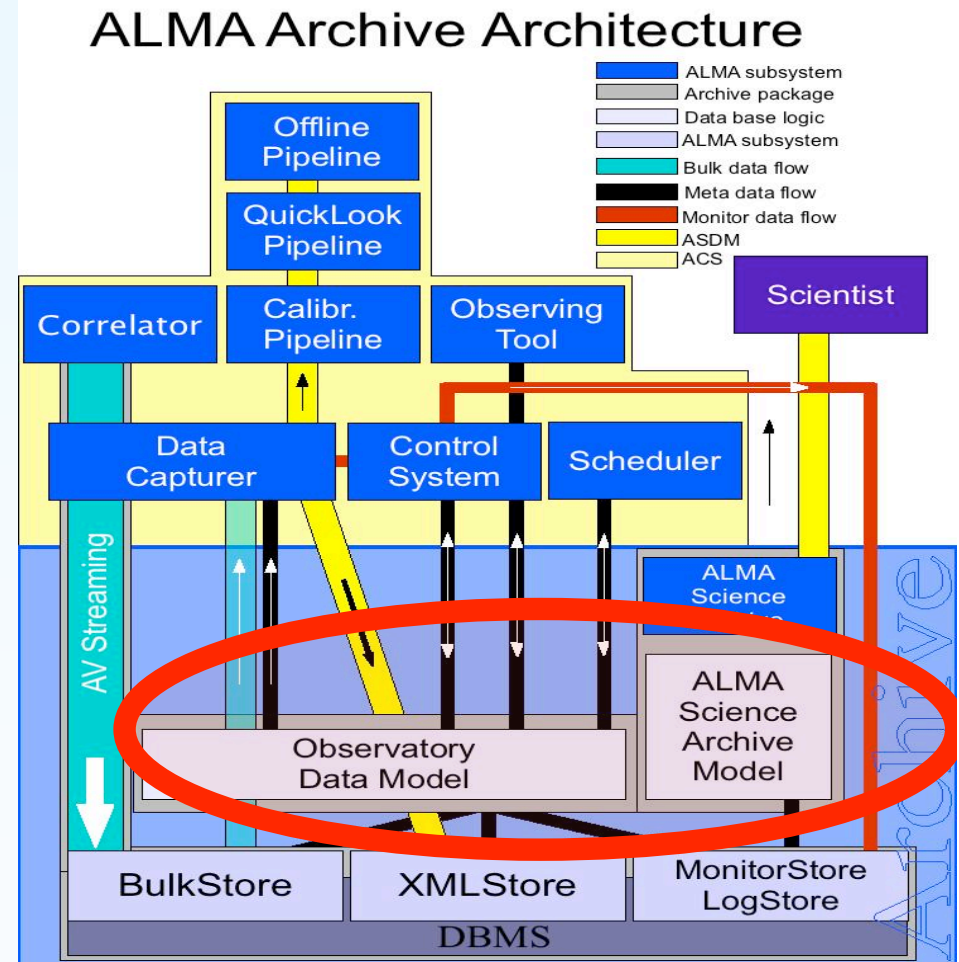


The ALMA Archive Architecture

Data Models

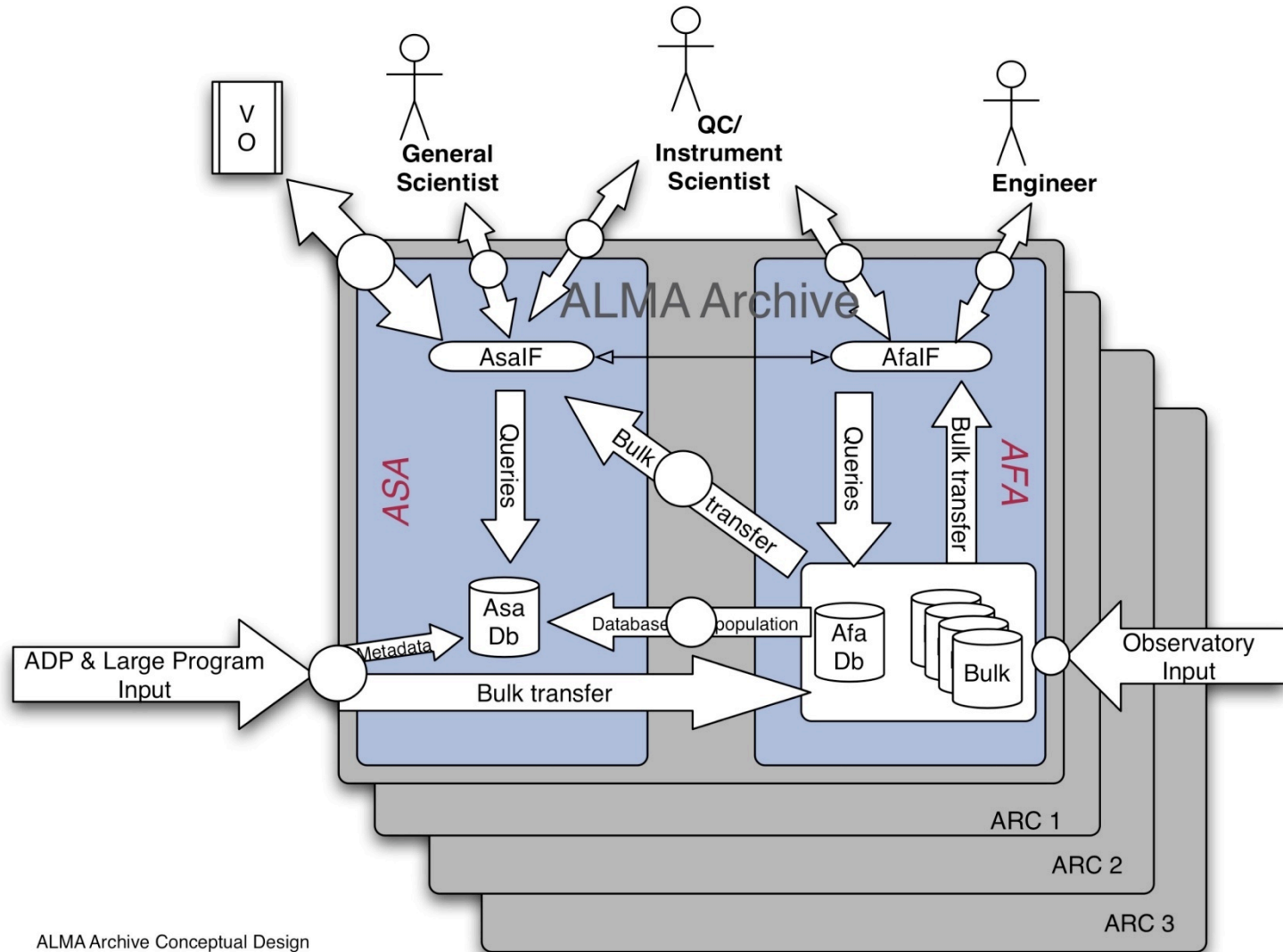
APDM:
ALMA Project Data Model –
for the execution of projects

ASDM:
ALMA Science Data Model –
*for scientific interpretation of
the observations*



ALMA Archive Conceptual Design

- All ALMA data is accessible through the Archive

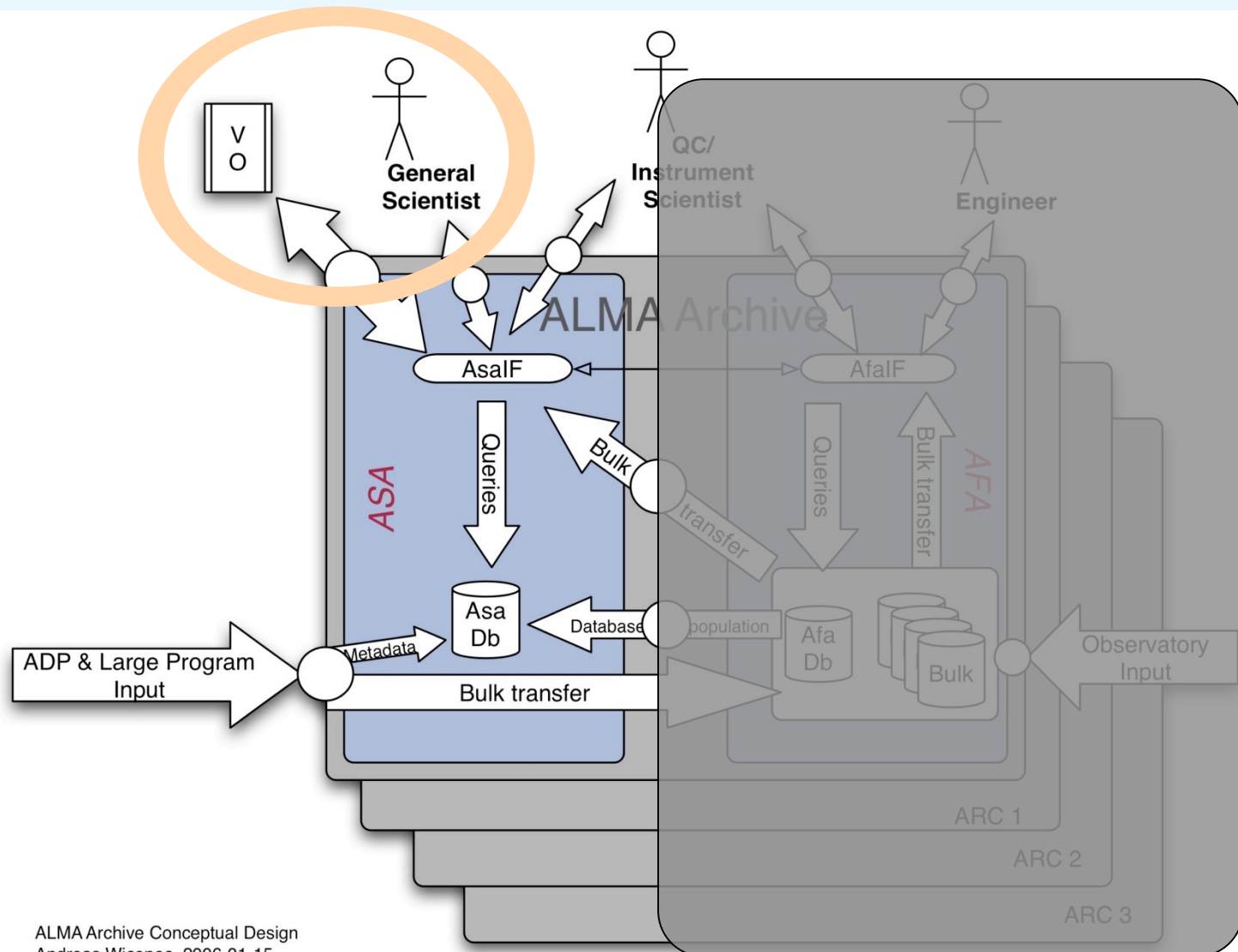


ALMA Archive Conceptual Design
Andreas Wicenec, 2006-01-15

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ALMA Archive Conceptual Design

- All ALMA data is accessible through the Archive **BUT**

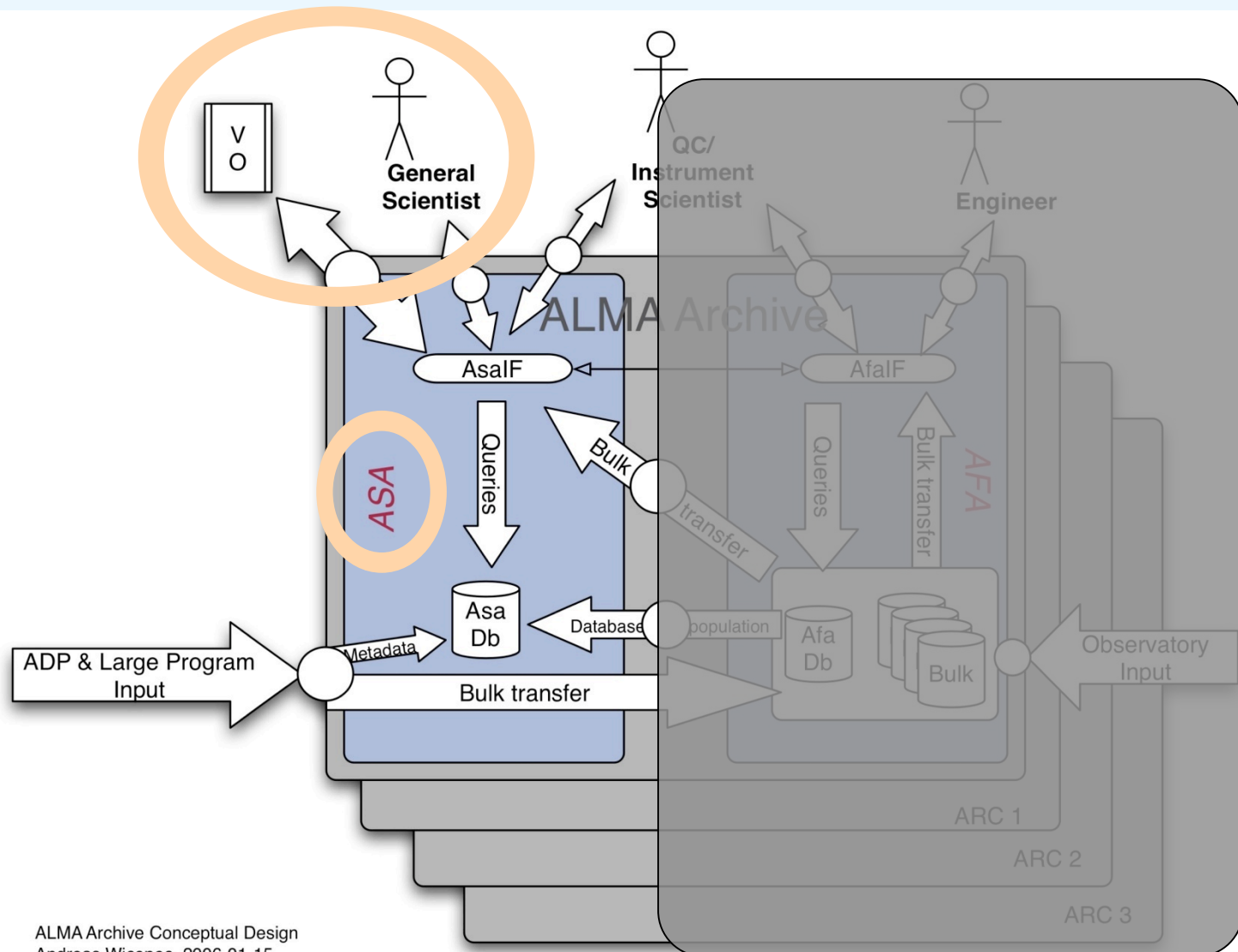


ALMA Archive Conceptual Design
Andreas Wicenc, 2006-01-15

S. Etoke: A First look at the ASA

ALMA Archive Conceptual Design

- All ALMA data is accessible through the Archive
- BUT
- The **ASA** provide an optimal access to the **data** in a **scientific** way

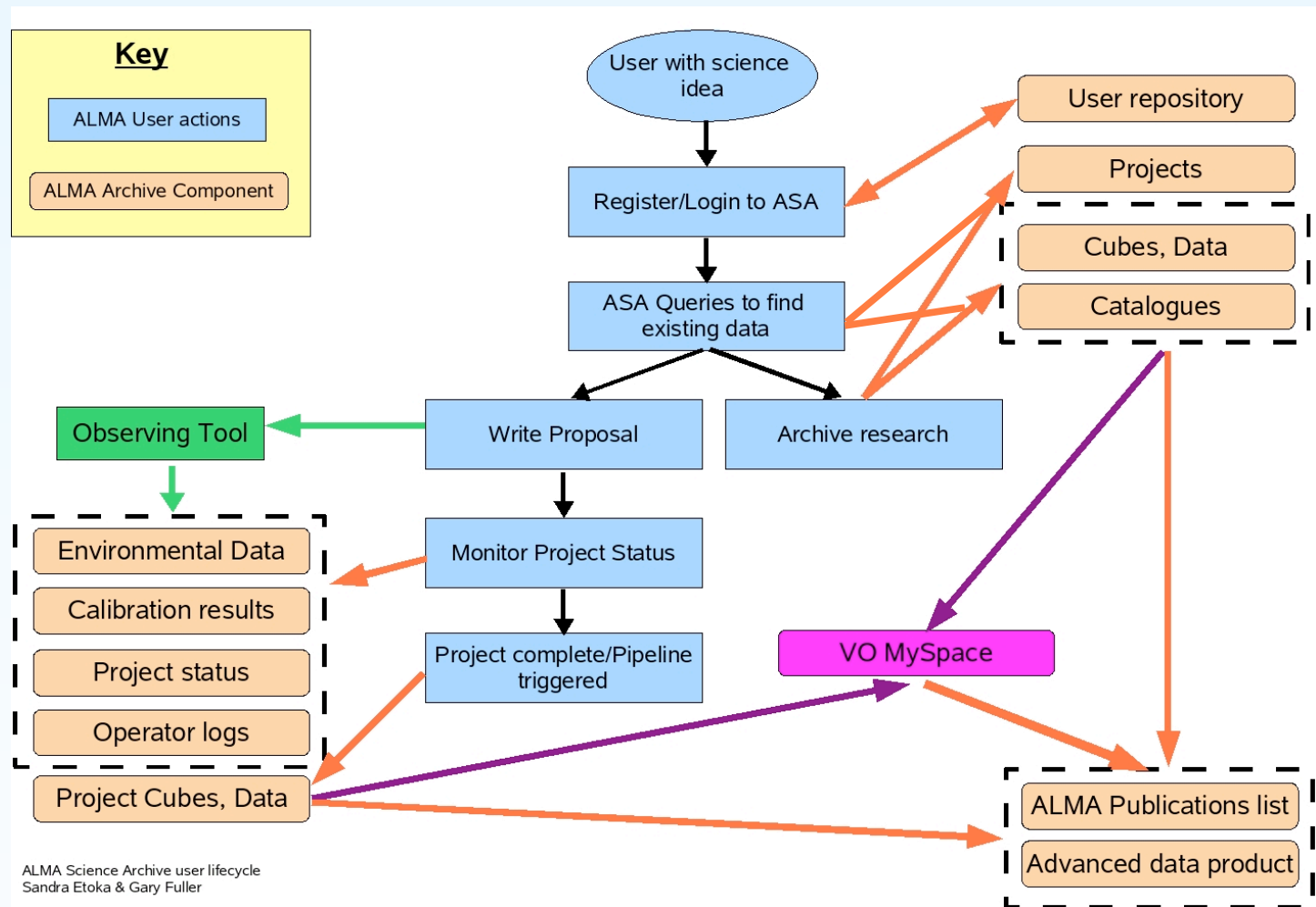


ALMA Archive Conceptual Design
Andreas Wicenc, 2006-01-15

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ALMA User Lifecycle

- User interactions with the ALMA Archive at various stages during the evolution of a research project



ASA Portal

- Screenshot of the development version of the ASA Portal. The figure shows the portal entrance page before authentication

The screenshot shows a web browser window with the URL <http://almadev1.hq.eso.org:9080/ALMA>. The page features the ALMA Science Archive logo and a navigation menu with links for Home, Members, News, Events, and ASA Portal Release. A login form is visible on the left side, including fields for Login Name and Password, a log in button, and links for 'Forgot your password?' and 'New user?'. The main content area is titled 'Overview' and provides information about the ALMA Science Archive (ASA) and the ALMA Compact Array (ACA). It lists various data types available, such as observation project descriptions, technical data, scheduling information, ambient conditions, science and calibration data, quick-look data, and reduced image stacks. A 'Data Availability' section explains that data is publicly and freely available after a proprietary period of one year. The footer contains information about the ALMA observatory and its partners, along with a copyright notice for 2006-2007.

ALMA — Portal

ALMA — Portal

ALMA — ALMA Science Archive

ALMA SCIENCE ARCHIVE

Log In Join

You are here: Home

Home

Members

News

Events

ASA Portal Release

Log In

Login Name

Password

log in

Forgot your password?

New user?

Site Map Accessibility Contact search

Overview

The ALMA Science Archive (ASA) provides access to all data obtained by the ALMA observatory, both from the main array and the ALMA Compact Array (ACA). This includes data and data descriptions (meta-data) collected throughout the execution of ALMA observing projects like

- Observation project descriptions including abstracts.
- Technical data about the array, receiver and correlator configuration.
- Scheduling information and project status.
- Ambient conditions.
- Science and calibration data from the correlators (raw visibilities).
- Quick-look data.
- Reduced image stacks.

Depending on availability added value products are also made available or linked to the observational data. Access is provided through web query forms and through interfaces following the standards as defined by the International Virtual Observatory Alliance (IVOA).

Data Availability

In general all data is publicly and freely available after a proprietary period of one year. All calibration data is available immediately after final ingestion into the ASA. Basic access and browsing is possible without registration, the more advanced features of the ASA and data retrieval requires prior registrations and authentication.

News

ASA Portal Release

2007-01-15

More news...

<< January 2007 >>

Su	Mo	Tu	We	Th	Fr	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

ALMA is an international astronomical facility jointly developed and operated by an international collaboration of partners in Europe, Japan and North America in cooperation with the Republic of Chile.

The data is Copyright © 2006-2007 by the ALMA observatory.

Done

ASA User Interface

- ASA interface capability. Forms to query for:

➔ APDM (*i.e., project status & general structure*)

➔ ASDM (*i.e., metadata concerning the observations*)

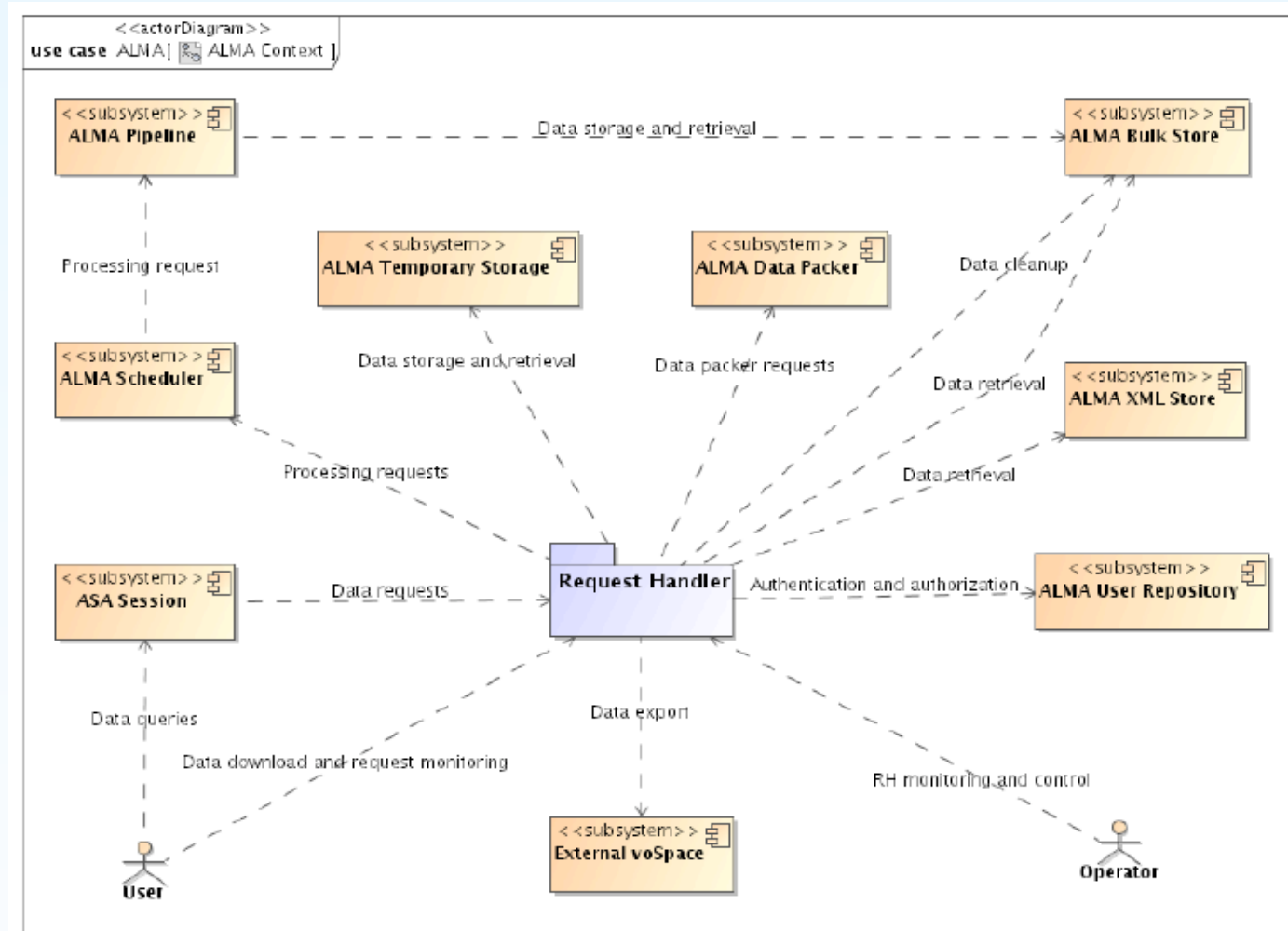
➔ Catalogues & Databases (*i.e., spectral line cat., calibrator cat., SiteCharacteristic DB, Calibration DB ...*)

The screenshot shows the ALMA Science Archive ASA User Interface. The header includes the ALMA Science Archive logo, navigation links (admin, My Folder, Preferences, Undo, Log out), and utility links (Site Map, Accessibility, Contact, Site Setup). A search bar is also present. The main content area displays the 'AntennaTable' with a table of antenna data.

antennaId	name	type	xPosition	yPosition	zPosition	time	xOffset	yOffset	zOffset	dishDia
0	A1	GROUND-BASED	-30.976690292358398	-0.934326171875	-72.976531982421875	67392155467266176	0	0	0	12
1	A2	GROUND-BASED	-33.734508514404297	16.194339752197266	-79.473548889160156	67392155467266176	0	0	0	12
2	A3	GROUND-BASED	-28.833110809326172	35.720211029052734	-67.926559448242188	67392155467266176	0	0	0	12
3	A4	GROUND-BASED	-25.991439819335938	50.501708984375	-61.231998443603516	67392155467266176	0	0	0	12
4	A5	GROUND-BASED	-23.270149230957031	65.13916015625	-54.821048736572266	67392155467266176	0	0	0	12
5	A6	GROUND-BASED	-16.796760559082031	73.787841796875	-39.570701599121094	67392155467266176	0	0	0	12
6	A7	GROUND-BASED	-12.808650016784668	86.51708984375	-30.175300598144531	67392155467266176	0	0	0	12
7	A8	GROUND-BASED	-6.591486930847168	82.563232421875	-15.528579711914062	67392155467266176	0	0	0	12
8	A9	GROUND-BASED	2.5600709915161133	89.2236328125	6.0311498641967773	67392155467266176	0	0	0	12
9	A10	GROUND-BASED	8.3796358108520508	85.756843566894531	19.741189956665039	67392155467266176	0	0	0	12
10	A11	GROUND-BASED	13.657750129699707	78.092041015625	32.175640106201172	67392155467266176	0	0	0	12
11	A12	GROUND-BASED	20.037269592285156	69.79345703125	47.204860687255859	67392155467266176	0	0	0	12
12	A13	GROUND-BASED	23.629970550537109	56.588619232177734	55.668750762939453	67392155467266176	0	0	0	12
13	A14	GROUND-BASED	27.951580047607422	45.339599609375	65.849807739257812	67392155467266176	0	0	0	12
14	A15	GROUND-BASED	30.152589797973633	29.033939361572266	71.035057067871094	67392155467266176	0	0	0	12
15	A16	GROUND-BASED	30.4564208984375	13.010250091552734	71.750839233398438	67392155467266176	0	0	0	12
16	A17	GROUND-BASED	30.347570419311523	-8.45703125	71.494422912597656	67392155467266176	0	0	0	12
17	A18	GROUND-BASED	30.290529251098633	-29.936040878295898	71.360031127929688	67392155467266176	0	0	0	12
18	A19	GROUND-BASED	26.121549606323242	-42.875	61.538539886474609	67392155467266176	0	0	0	12
19	A20	GROUND-BASED	23.600210189819336	-57.684329986572266	55.598628997802734	67392155467266176	0	0	0	12
20	A21	GROUND-BASED	20.005500793457031	-71.057373046875	47.130031585693359	67392155467266176	0	0	0	12
21	A22	GROUND-BASED	14.443880081176758	-78.38916015625	34.027671813964844	67392155467266176	0	0	0	12
22	A23	GROUND-BASED	9.1725435256958008	-86.16455078125	21.609170913696289	67392155467266176	0	0	0	12
23	A24	GROUND-BASED	4.0612750053405762	-95.7783203125	9.5677671432495117	67392155467266176	0	0	0	12
24	A25	GROUND-BASED	-2.0521008968353271	-86.55078125	-4.8344478607177734	67392155467266176	0	0	0	12
25	A26	GROUND-BASED	-10.263369560241699	-86.092529296875	-24.178979873657227	67392155467266176	0	0	0	12
26	A27	GROUND-BASED	-18.175960540771484	-73.686767578125	-42.819881439208984	67392155467266176	0	0	0	12

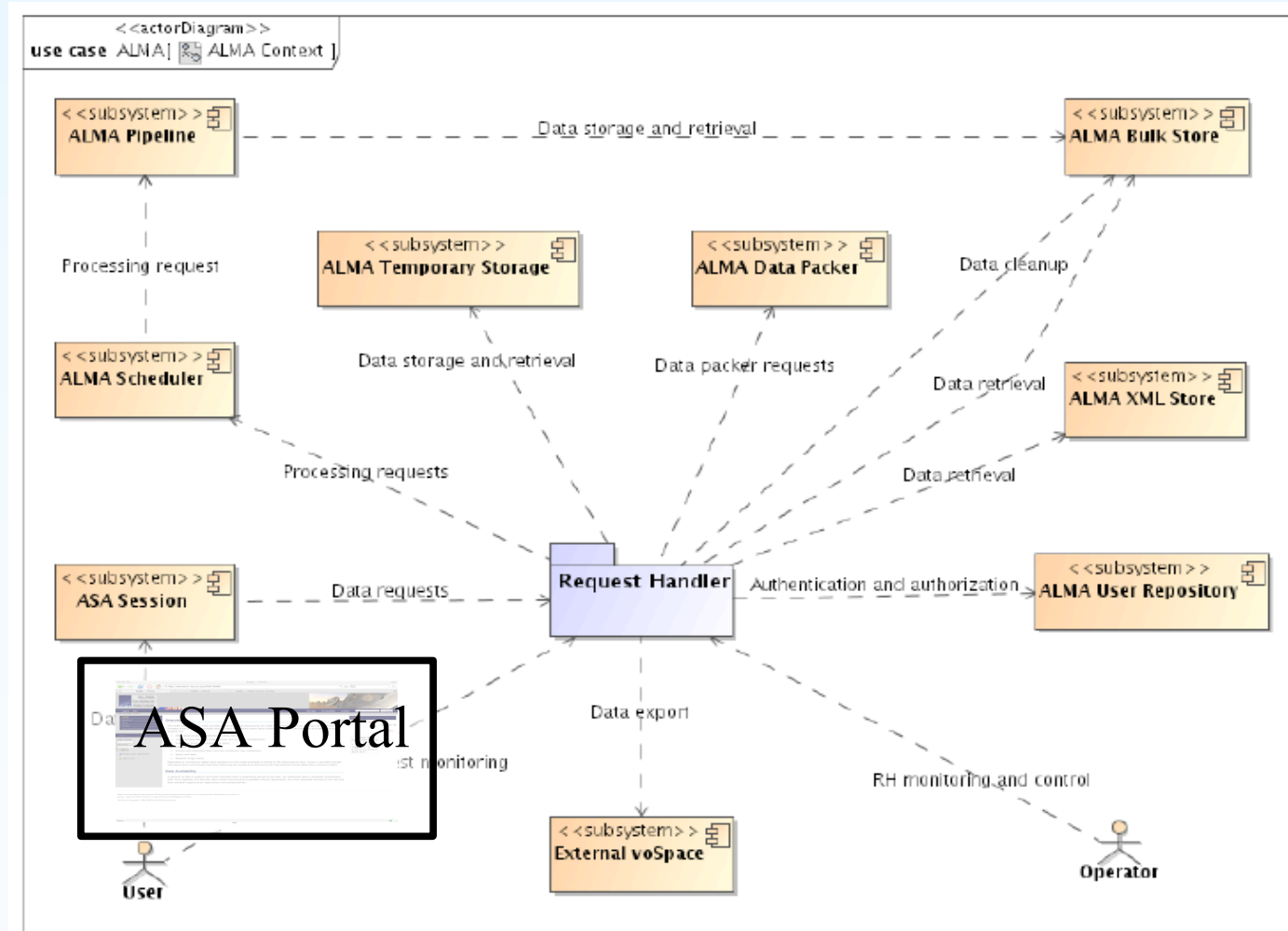
Request Handler

- This diagram shows the interactions of the Request Handler in the context of the ALMA operational system



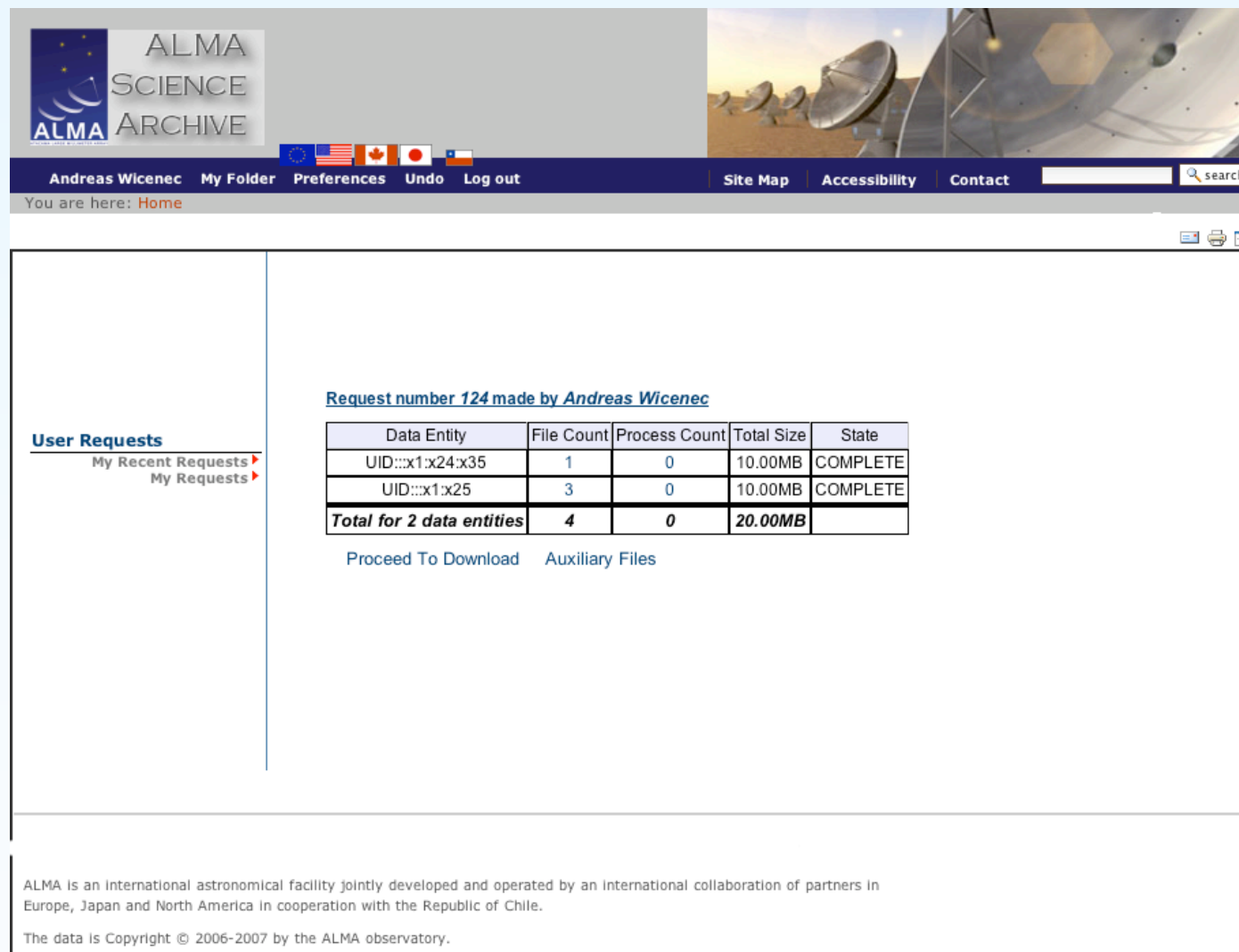
Request Handler

- This diagram shows the interactions of the Request Handler in the context of the ALMA operational system



Request Handler

- This screenshot shows the results of a query handled by the Request Handler in the ASA User interface environment. This is after authentication and visible in 'My Folder'



The screenshot displays the ALMA Science Archive Request Handler interface. The header includes the ALMA logo and the text "ALMA SCIENCE ARCHIVE". Below the header, there is a navigation bar with the user's name "Andreas Wicenec", a "My Folder" link, and flags for the European Union, USA, Canada, and Japan. There are also links for "Preferences", "Undo", and "Log out". On the right side of the navigation bar, there are links for "Site Map", "Accessibility", and "Contact", along with a search box. Below the navigation bar, the text "You are here: Home" is displayed. The main content area shows a table of request results for user "Andreas Wicenec". The table has columns for "Data Entity", "File Count", "Process Count", "Total Size", and "State". The table contains two rows of data and a summary row. Below the table, there are links for "Proceed To Download" and "Auxiliary Files".

User Requests

My Recent Requests ▶
My Requests ▶

Request number 124 made by Andreas Wicenec

Data Entity	File Count	Process Count	Total Size	State
UID::x1:x24:x35	1	0	10.00MB	COMPLETE
UID::x1:x25	3	0	10.00MB	COMPLETE
Total for 2 data entities	4	0	20.00MB	

[Proceed To Download](#) [Auxiliary Files](#)

ALMA is an international astronomical facility jointly developed and operated by an international collaboration of partners in Europe, Japan and North America in cooperation with the Republic of Chile.
The data is Copyright © 2006-2007 by the ALMA observatory.

Timeline

The screenshot shows the ALMA Science Archive website. The browser address bar displays `http://almadev1.hq.eso.org:9080/ALMA`. The page header includes the ALMA Science Archive logo, navigation links for 'Log in' and 'Join', and a search bar. The main content area is titled 'Overview' and describes the ALMA Science Archive (ASA) as a data repository for the ALMA observatory. A list of data types is provided, including observation project descriptions, technical data, and calibration data. A calendar for January 2007 is visible on the right side of the page. A timeline overlay is positioned over the main content, listing three key events: 'Request Handler mock-up just completed', 'Forms for ASA queries under development now', and 'ASA User test towards the end of the year'. The footer of the page contains information about the ALMA observatory and its international collaboration.

Request Handler mock-up just completed

Forms for ASA queries under development now

ASA User test towards the end of the year

ALMA Archive

Sandra Etoka

Gary Fuller (Subsystem Scientific)

Stewart Williams

@ The University of Manchester



Jens Knudstrup

Beate Marx

Holger Meuss

Andreas Wicenec (Subsystem Lead)

@ ESO Garching

Norman Hill

@ CADAC