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## How do I obtain a file of calibrated visibilities ("measurement set") for ALMA data?

Sarah Wood - 2024-03-20 - Archive & Data Retrieval

Calibrated measurement sets are now directly provided by the ARCs. More information on the process is given below:

The EU ARC: Calibrated measurement sets can be requested through the [Helpdesk](#). Information about the European ARC CalMS service can be found on the [Science Portal](#).

The EA ARC: The PI automatically gets an email with a download link for the calibrated measurement sets. Other users can contact the [Helpdesk](#) to request a calibrated measurement set (if it's not under proprietary time). A detailed explanation is given here: [https://www2.nao.ac.jp/~eaarc/DATARED/support\\_data\\_reduction\\_en.html](https://www2.nao.ac.jp/~eaarc/DATARED/support_data_reduction_en.html)

The NA ARC: The PI automatically get a download link posted on their project ticket once the data is delivered and have a window of 30 days to download the calibrated measurement set. After this window a request can be placed through a [Helpdesk](#) ticket. The [Helpdesk](#) is also the contact point for users requesting calibrated measurements not under proprietary time anymore. More information is given [here in a KB article about the NA added values products](#). NRAO also recommends the new [Science Ready Data Products Initiative](#).

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Manual generation of calibrated measurement sets is done in the following way:

ALMA raw data (asdm), data products (images or cubes), and auxiliary data (scripts, logs and quality assessment figures) are stored in the archive for each data delivery. This data includes the calibration and flagging tables.

The FITS products delivered to the PIs are not complete. They mostly serve the purpose to show that the requested parameters are reached and do not always cover the full bandwidth, all spectral windows, or all fields. For many scientific use-cases, (re)imaging of the products will be required. Users will need the calibrated visibilities if they wish to re-calibrate or re-image the data.

Calibrated visibilities can be easily recreated by downloading the products and the raw data tar files and then running the scriptForPI.py using the correct CASA version. This procedure

is also specified in the ALMA QA2 Data Products document for each cycle, located here:  
<http://almascience.org/processing/qa2-data-products>

Download all tar files for a given delivery from the ALMA Science Archive and untar them.  
Then change into the "script" directory with the python scripts:

```
cd */*/*/script
```

Start the correct version of casa. See the KB article [What CASA version was used for QA2?](#) if you are not sure which version was used. If your data were processed by the ALMA Data Reduction Pipeline, include the "--pipeline" flag when opening CASA.

In CASA, type:

```
>execfile('scriptForPI.py')
```

This will apply the flagging and calibration tables to the raw data and thus result in a MS ready for imaging. In some cases (manual data-reduction or data before Cycle 5) a specific version of CASA is required.

If the MOUS contains one in the scripts directory, the MS can then be processed with the commands in the "scriptForImaging.py" script. The "scriptForImaging.py" script may partially be interactive (for masking) and should be executed by copying and pasting the commands from the script to the casa prompt, rather than by the "execfile" command. If there is no scriptForImaging.py, users can use the [CASA Guides](#) for guidance.

If your data was calibrated using the ALMA Science Pipeline, please see the [CASA Guide for Imaging Pipeline Reprocessing](#) or the document "ALMA Science Pipeline Documentation" available from the [Documents page of ALMA Science Portal](#) for more information.

Tags

calibration

restore

restoredata

restoring

scriptforpi