

**QC Scientist Guidelines**  
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*This document summarizes the high-level tasks of the Quality Control Scientist. It is periodically revised.*

Printed in red are new tasks, printed in grey are tasks which have become obsolete with respect to the previous version.

Detailed procedures and reports are posted on the internal QC Operations Web page ([www.eso.org/~qc/groupIndex.html](http://www.eso.org/~qc/groupIndex.html)). All QC Scientists are expected to be familiar with this documentation.

**Research:** QC Scientists are allowed up to 20% of their time for research. However, this is an operational position – ESO science operations have higher priority than personal research. Annual performance appraisal will be based on functional work only.

### Instrument-specific Responsibilities

For each assigned instrument, the QC Scientists have the following responsibilities:

#### General

- ❑ Be familiar with all assigned instruments, their calibration plan, calibrations, and their purpose
- ❑ Configure and maintain the operations-critical tool calChecker (and its components CAL4CAL and tellTracker, if applicable); analyze issues as quickly as possible, **in-line with the policies agreed with PSO**. Customers are:
  - PSO
- ❑ For all supported instrument modes, create and certify master calibration data, for following customers:
  - external user community (through the Archive calSelector service)
  - PSO (on-line pipeline system), quality feedback
  - **QC group (for IDP projects)**
- ❑ Collect, analyze, and report instrument QC1 parameters. Develop new QC1 parameters as appropriate, after discussion within IOT and in particular with the Instrument Scientist. Maintain high-level QC1 parameter description and process documents. Maintain QC1 database tables in collaboration with DBCM. Customers of QC1 parameters are:
  - Archive (QC1 database)
  - PSO (internal/external Web pages)
  - external user community (external Web pages)
- ❑ Collect scores for all processed ABs. Configure the scoring system for each instrument as complete as possible, and maintain it to keep it up-to-date and make it significant. Customers of scores are:
  - PSO (HC monitor)
- ❑ Configure and maintain the web pages and the process for the Health Check Monitor
- ❑ Create associations for science data, insert them into the Archive. Customers are:
  - External users of calSelector
- ❑ Create associations for science data, **store them on the QC web server**. Customers are:
  - **QC group (IDP projects)**
- ❑ Deliver and maintain calSelector association rules. Customers are:
  - External users of calSelector
- ❑ Configure and maintain the calibration maps for all supported flavours of OCA rules
- ❑ **New: if applicable, process the science data for the assigned IDP project; process the stream data as soon as all required master calibrations are available, normally on a monthly basis, and ingest them; monitor the quality of the IDPs by doing spot checks on the QC reports, checking red scores etc.; monitor ingestion issues; if existing, monitor the IDP quality check pages on the WISQ monitor; maintain the Release description; if required, interact with ASG group about issues.** Customers are:
  - external user community (phase 3 interface)
- ❑ Create and maintain QC information web pages (“tutorial”, data types, pipeline recipes, calibration map), following a common structure. Customers are:
  - ESO operations & technical teams (PSO, USD etc.)
  - external user community
- ❑ Maintain the Reference Frames web pages, as approved by Group Head
- ❑ **If applicable, monitor the pre-imaging part of their instruments.** Customers are:
  - **PIs of pre-imaging runs**
- ❑ Participate in Instrument Operations Team (IOT)

- Keep track of instrument operations status, upgrades and pipeline status
- Provide expertise about data, feed back QC issues
- ❑ Visit regularly Paranal Observatory (as directed by Group Head)
  - Interact with Instrument Scientist, Day and Nighttime Astronomers
  - Achieve and update overview of instrument operations
- ❑ Follow-up and interact with pipeline development, maintenance, & commissioning efforts
- ❑ Interact with SDP group about improving pipelines towards science-grade data products
  
- ❑ Provide input for quarterly reports (see outline on QC Ops Web pages)
- ❑ Fulfill general group tasks and responsibilities as directed by Group Head

### QC Shiftleader

- ❑ Act as QC shiftleader as per weekly plan
- ❑ Check that the primary QC services are up and running, for all instruments.
- ❑ Analyze technical issues (database, data transfer, connectivity, muc performance);
  - if possible, fix them (use the qc\_shift account)
  - if not, inform the appropriate groups at DMO
- ❑ The responsibilities cover normal working days and hours only.

### Tools, Process

As appropriate for your instrument, and as directed by the QC Group Head:

- ❑ Understand how to process calibration data from all pipeline supported instrument modes
- ❑ Understand and operate DFOS infrastructure
  - Support the DFOS common process
    - use only DFOS tools for the common workflows
    - do not modify DFOS tools
  - Understand existing procedures/tools and documentation
  - Set up the configuration files properly
  - Develop new procedures/tools as directed by DFOS responsible and approved by Group Head
- ❑ Understand how to operate DFS infrastructure (esorex, CONDOR etc.)
- ❑ Understand how to operate DFS pipelines
  - Understand applicable DRS at general level
  - Understand recipes, products, algorithms
- ❑ Develop, operate and maintain tools for QC reports, certification and trending
  - use dfos tool *qcDocu* to provide documentation about algorithms, report design etc.

### General Documentation

- ❑ Read and familiarize with the DFO handbook
- ❑ Read and maintain external documentation: <http://www.eso.org/qc/>
  - ...and all pages underneath this link related to your instruments
- ❑ Read and contribute to QC Operations Web pages: <http://www.eso.org/~qc/groupIndex.html>
  - ...and all pages underneath this link

### Support On-Site VLT Science Operations

- ❑ Visit Paranal Observatory at least once per year for 4-8 days.
  - *Frequency and length of visits is instrument status dependent and must be co-ordinated with Group Head*
- ❑ On-site responsibilities
  - Participate in daytime on-site QC process (daytime calibrations)
  - Discuss and interact with on-site staff about QC tools, collect feedback, provide explanations and tutorials
  - Discuss instrument specific Calibration Plan, pipelines, and QC process with Paranal instrument responsible

### Current Instrument Assignments

Listed on [QC Operations Web pages](#)

### Appendix: Policy for data usage in scientific projects/collaborations

- ❑ The QC scientists are in a privileged position because of their direct and total access to all ESO science data. This privileged access can only be granted for operational tasks.

- ❑ If you want to conduct scientific research on archival data, no matter if as part of a collaboration, or as your own research project, you must respect ESO access policy. This means you can only work with data which have already been released to the PI, either through a data package, or through the User Portal, or through a VM data package provided on the mountain.
- ❑ This policy applies to ESO data which are still under access protection. It does not apply to public data.