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ONLINE CALIBRATION SYSTEM USE CASES

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CALIB TAKER

Select calibration configuration

DAQ shifter selects a sub-detector, a configuration of readout crates, and a mode of calibration and requests download to COMICS through COOR. Also started are calibration sub-processes such as Calibration Data Processors on Level 3 nodes, Calibration Manager and Calibration Database Interfaces on the online host, if they are not already running.

Receive status report on configuration request

Calib Taker receives a status report on a configuration request from COOR.

Send connection request to Calibration Manager

Calib Taker sends a connection request to Calibration Manager.

Receive status reports from Calibration Manager

Calib Taker receives status reports from Calibration Manager, e.g. whether Calibration Data Processor is ready to accept data, whether data have been received from Level 3 nodes, whether a Calibration Database Interface has completed comparisons, whether a database transaction has been successfully completed, etc.

Start calibration run

When a calibration configuration request is processed without problems (Calib Taker receives status reports from COOR and Calibration Manager that say individual elements of the system are ready to accept calibration data), DAQ shifter starts a calibration run by requesting COOR to start a run.

Acknowledge start run

Calib Taker acknowledges a start of run by receiving a message from COOR.

Stop calibration run

DAQ shifter can stop (abort) a calibration run by requesting COOR to stop a run.

Acknowledge end run

Calib Taker acknowledges an end of run by receiving a message from COOR.

Receive summary report from Calibration Manager

Calib Taker receives a summary report from Calibration Database Interface through Calibration Manager and displays (updates) it on the screen.

Send action command to Calibration Database Interface

DAQ shifter makes a decision on whether to commit the new results to the database or not and sends a command to Calibration Database Interface through Calibration Manager.

Stop calibration sub-processes

Calib Taker can stop (abort) calibration sub-processes.

Save summary of calibration task

Calib Taker saves a summary of the calibration task to a file (or sends it to a logger).

CALIBRATION MANAGER

Start Calibration Manager

Calibration Manager is started by Calib Taker. This is a server process and waits for connection requests from sub-processes.

Accept connection request from Calib Taker

Calibration Manager accepts connection requests from Calib Taker.

Request connection to COOR

Calibration Manager sends connection request to COOR. COOR sends start run and end run messages to Calibration Manager.

Accept connection request from Calibration Data Processor

Calibration Manager accepts connection requests from Calibration Data Processors.

Accept connection request from Calibration Database Interface

Calibration Manager accepts connection requests from Calibration Database Interfaces.

Receive status reports from Calibration Data Processor

Calibration Manager receives a status report from Calibration Data Processor, e.g. whether it has received data from a crate, whether it has finished processing data, etc.

Receive data from Calibration Data Processor

Calibration Manager receives data from Calibration Data Processors.

Send data to Calibration Database Interface

Calibration Manager sends data to Calibration Database Interface for validation, if it is ready to accept data.

Receive status reports from Calibration Database Interface

Calibration Manager receives status reports from Calibration Database Interface, e.g. whether it has read a reference set from the database and is ready to accept data, etc.

Send status reports to Calib Taker

Calibration Manager sends status reports to Calib Taker.

Receive action command for database transaction from Calib Taker

Calibration Manager receives action commands for database transaction from Calib Taker.

Forward action command for database transaction to Calibration Database Interface

Calibration Manager forwards action commands for database transaction to Calibration Database Interface.

CALIBRATION DATABASE INTERFACE

Start Calibration Database Interface

Calibration Database Interface is started by Calib Taker. This is a client process to Calibration Manager.

Send connection request to Calibration Manager

Calibration Database Interface sends a connection request to Calibration Manager.

Send status report to Calibration Manager

Calibration Database Interface sends status reports to Calibration Manager, e.g. reading the reference data set, not ready for data, ready for data, validation in progress, etc.

Receive data from Calibration Manager

Calibration Database Interface receives data from Calibration Manager.

Send summary report to Calibration Manager

Calibration Database Interface sends a summary report on the validation to Calibration Manager.

Receive action command from Calibration Manager

Calibration Database Interface receives action command for database transaction from Calibration Manager.

CALIBRATION DATA PROCESSOR

Start Calibration Data Processor

Calibration Data Processor is started by Calib Taker. This is a client process to Calibration Manager.

Send connection request to Calibration Manager

Calibration Data Processor sends a connection request to Calibration Manager.

Send status report to Calibration Manager

Calibration Data Processor sends status reports to Calibration Manager, e.g. ready for data, processing in progress, etc.

Send data to Calibration Manager

Calibration Data Processor sends data that contains the results of the calibration data processing, e.g. pedestals and gains, to Calibration Manager.