

- UC-COM-CCF-2100: Absolute calibration of telescopes optical throughput using a reference light source
 - Responsible:
 - Scope:
 - Affected systems: Illuminator (1)
 - Trigger: Need of an absolute end-to-end calibration, SCI-0170, A-PERF-0410, A-PERF-0260, A-PERF-0380, A-PERF-0390
 - Frequency: Longer than per month
 - UC-COM-CCF-2111x: UCs for the Operation of Illuminator.
 Note: Here there should be a list of UCs that describe how to operate the device (e.g. start up and shutdown device)
 IMPORTANT: specially requested to be filled by ACTL
 - UC-COM-CCF-2112x: UCs for the Production of Calibration Events
 Note: Here there should be a list of UCs that describe how to produce the calibration events (equivalent to “Perform observation” for telescopes)
 - UC-COM-CCF-2113x: UCS for the Production of Illuminator Calibration Products.
 Note: Here there should be a list of UCs that describes how to produce the calibration products that afterwards will be used to the CTA calibration (to understand the effected systems read CCF/ACTL/DATA explanation in the first page)
 - UC-COM-CCF-2114x: UC for the Integration of Illuminator Calibration Products List of UCs that described how the device/method results will be implemented into the CTA calibration (to understand the effected systems read CCF/ACTL/DATA explanation in the first page)

- UC-COM-CCF-22000: Inter- and cross-calibration of telescopes with a light source attached on a UAV

- Responsible:
- Scope:
- Affected systems: Octocopter (1)
- Trigger: Need of an absolute end-to-end calibration, SCI-0170, A-PERF-0410, A-PERF-0260, A-PERF-0380, A-PERF-0390
- Frequency: Longer than per month(?)
 - UC-COM-CCF-2211x: Operation of Octocopter. UCs for the Operation of Illuminator.
 Note: Here there should be a list of UCs that describe how to operate the device (e.g. start up and shutdown device)
 IMPORTANT: specially requested to be filled by ACTL
 - UC-COM-CCF-2212x: Production of Calibration Events.
 Note: Here there should be a list of UCs that describe how to produce the calibration events (equivalent to “Perform observation” for telescopes)
 - UC-COM-CCF-2213x: Production of Octocopter Calibration Products.
 Note: Here there should be a list of UCs that describes how to produce the calibration products that afterwards will be used to the CTA calibration (to understand the effected systems read CCF/ACTL/DATA explanation in the first page)
 - UC-COM-CCF-2214x: Integration of Octocopter Calibration Products. List of UCs that described how the device/method results will be implemented into the CTA calibration (to understand the effected systems read CCF/ACTL/DATA explanation in the first page)
- UC-COM-CCF-23000: End-to-end absolute calibration of CTA array
 - Responsible:
 - Scope:
 - Affected systems: CTA-N vs CTA-S (1), Space detectors (2), Archival data (3), CR-electrons (4)

- Trigger: Need of an absolute end-to-end calibration, SCI-0170, A-PERF-0410, A-PERF-0260, A-PERF-0380, A-PERF-0390
- Frequency: Longer than per night
 - UC-COM-CCF-2302x: Production of Calibration Events.
RR: these should be already in CTA DB, so there is NO NEED of these UCs.
 - UC-COM-CCF-2303x: Production of Calibration Products.
Note: Here there should be a list of UCs that describes how to produce the calibration products that afterwards will be used to the CTA calibration (to understand the effected systems read CCF/ACTL/DATA explanation in the first page) (RR: Affected system: DATA)
RR: The calibration products would be (?):
 - calibration factor of the overall energy scale and flux (for all four)
 - UC-COM-CCF-2304x: Integration of Calibration Products. List of UCs that described how the device/method results will be implemented into the CTA calibration (to understand the effected systems read CCF/ACTL/DATA explanation in the first page) (RR: Affected system: DATA)
- UC-COM-CCF-24000: Array Calibration using CTA data
 - Responsible:
 - Scope:
 - Affected systems: muons (241xx), air showers (242xx), CTC (243xx)
 - Trigger: Normal data reduction chain -> Data taken
 - Frequency: Lower than Min./sec. Time-scales
 - UC-COM-CCF-24111: Production of stereo trigger muon Calibration Events during scientific data-taking
 - Responsible:

- Scope: Stereo trigger muon events collected during regular scientific data-taking: this is the case in which ACTL does not influence/command the acquisition because SWAT has to recognize the candidate muon events and directly send them to the central DAQ.
 - Affected systems: OBS-SWAT
 - Trigger: Observation data taking.
 - Frequency: Min./sec.
- UC-COM-CCF-24112: Production of stereo trigger muon Calibration Events from dedicated run.
 - Responsible:
 - Scope: Muon calibration events acquired during dedicated runs: (if any), with-or-without specific trigger configurations. This mainly refers to LSTs and in this case ACTL plays its role because the specific runs have to be included in the night observation plan
 - Affected systems: Telescope (LST and, perhaps, MST), ACTL, OBS-SWAT
 - Trigger:
 - Frequency: Longer than per night
- UC-COM-CCF-24113: Production of mono trigger muon Calibration Events from dedicated run.
 - Responsible:
 - Scope: Mono trigger muon events acquired by dedicated runs: with-or-without specific trigger configurations, telescope by telescope (this case includes also the LST dedicated mono trigger runs to be performed from time to time to monitor the stereo bias).
 - Affected systems: Telescope (specific triggers) and ACTL (the specific runs have to be included in the night observation plan).

SWAT is included too in the sense that it must allow the passage of the acquired data to the central DAQ, even if no-stereo.

- Trigger:
- Frequency: Longer than per night
- UC-COM-CCF-24114: Production of mono trigger muon Calibration Events during scientific-data taken.
 - Responsible:
 - Scope: Mono flagging muon events: (at level of the telescope camera server) acquired during the regular scientific data-taking without any dedicated run or specific trigger configuration.
 - Affected systems: Telescopes, OBS-SWAT (it must allow the passage of the acquired data to the central DAQ)
 - Trigger:
 - Frequency: Min./sec.
- UC-COM-CCF-24121: Production of telescope optical throughput Calibration Product
 - Responsible:
 - Scope:
 - Affected systems: DATA (calculation within the CTA Pipeline).
 - Trigger:
 - Frequency:
- UC-COM-CCF-24122: Production of alternative flat-fielding of camera pixels Calibration Product
 - Responsible:
 - Scope:
 - Affected systems: DATA (calculation within the CTA Pipeline).
 - Trigger:
 - Frequency:

- UC-COM-CCF-24123: Production of individual mirror facets reflectivities Calibration monitoring Product
 - Responsible:
 - Scope:
 - Affected systems: DATA (calculation within the CTA Pipeline).
 - Trigger:
 - Frequency:
- UC-COM-CCF-24124: Production of telescope PSF Calibration monitoring Product
 - Responsible:
 - Scope:
 - Affected systems: DATA (calculation within the CTA Pipeline).
 - Trigger:
 - Frequency:
- UC-COM-CCF-24021: Production of inter- and cross-calibration of telescopes optical throughput Calibration Product
 - Responsible:
 - Scope: Production of inter- and cross-calibration optical throughput of CTA array telescope participating in the scientific observation using *air showers* and *CTC*.
 - Affected systems: DATA (calculation within the CTA Pipeline).
 - Trigger: Scientific data taking
 - Frequency: Longer than per run (?)
- UC-COM-CCF-24221: Production of inter-calibration of the relative time of the telescopes Calibration Product
 - Responsible:
 - Scope: Production of inter-calibration time-stamps correction between telescopes using *air showers* .
 - Affected systems: DATA (calculation within the CTA Pipeline).

- Trigger: Scientific data taking
- Frequency: Longer than per run (?)

■ UC-COM-CCF-24031: Integration of optical throughput Calibration

Product

- Responsible:
- Scope: Correction of the optical throughput per telescope.
- Affected systems: DATA (correction of telescope calibration within the CTA Calibration Pipeline), ACTL (actions on-site?)
- Trigger:
- Frequency:

■ UC-COM-CCF-24132: Integration of alternative flat-fielding of camera

pixels Calibration Product

- Responsible:
- Scope: Correction of the optical throughput per telescope.
- Affected systems: DATA (correction of telescope calibration within the CTA Calibration Pipeline), ACTL (actions on-site?)
- Trigger:
- Frequency:

■ UC-COM-CCF-24133: Integration of individual mirror facets reflectivities

Calibration Product

- Responsible:
- Scope: Correction of the optical throughput per telescope.
- Affected systems: ACTL (actions on-site), DATA (correction of telescope settings within the CTA MC Pipeline?)
- Trigger:
- Frequency:

■ UC-COM-CCF-24134: Integration of PSF monitoring Calibration Product

- Responsible:
- Scope: Correction of the optical throughput per telescope.

- Affected systems: ACTL (actions on-site), DATA (correction of telescope settings within the CTA MC Pipeline?)
 - Trigger:
 - Frequency:
- UC-COM-CCF-24231: Integration of inter-calibration of the relative time of the telescopes Calibration Product
 - Responsible:
 - Scope: Correction of the optical throughput per telescope.
 - Affected systems: ACTL (actions on-site), DATA (correction of telescope calibration within the CTA Calibration Pipeline)
 - Trigger:
 - Frequency:
- UC-COM-CCF-24331: Integration of CTC Calibration Product cross-calibrating it with other atmosphere monitoring devices
 - Responsible:
 - Scope:
 - Affected systems: DATA
 - Trigger:
 - Frequency: Several min.