

COM-CCF Uses Cases (list definition)

Array Calibration

R. de los Reyes on behalf of CCF board

Introduction

J. Goullon

- Role of UCs:
 - Use Cases: enable a **communication channel** between stakeholders and all involved parties that build CTA.
 - Use Case: describes the **interaction** between an actor and a system (System Under Discussion) , where the SUD is treated as a black box.
 - All Ucs will be uploaded and assessed in **Jama**, where they can be linked to all related requirements.
- Steps to write them:
 - **List** of UCs with a title/purpose/SUD structured in a coherent way.
 - Writing UCs, starting with the scope and followed by main success scenario and exception paths.
 - UCs are best written by a **small group** of people.
 - Depending on the level, PO would have to accept the UCs.

Introduction



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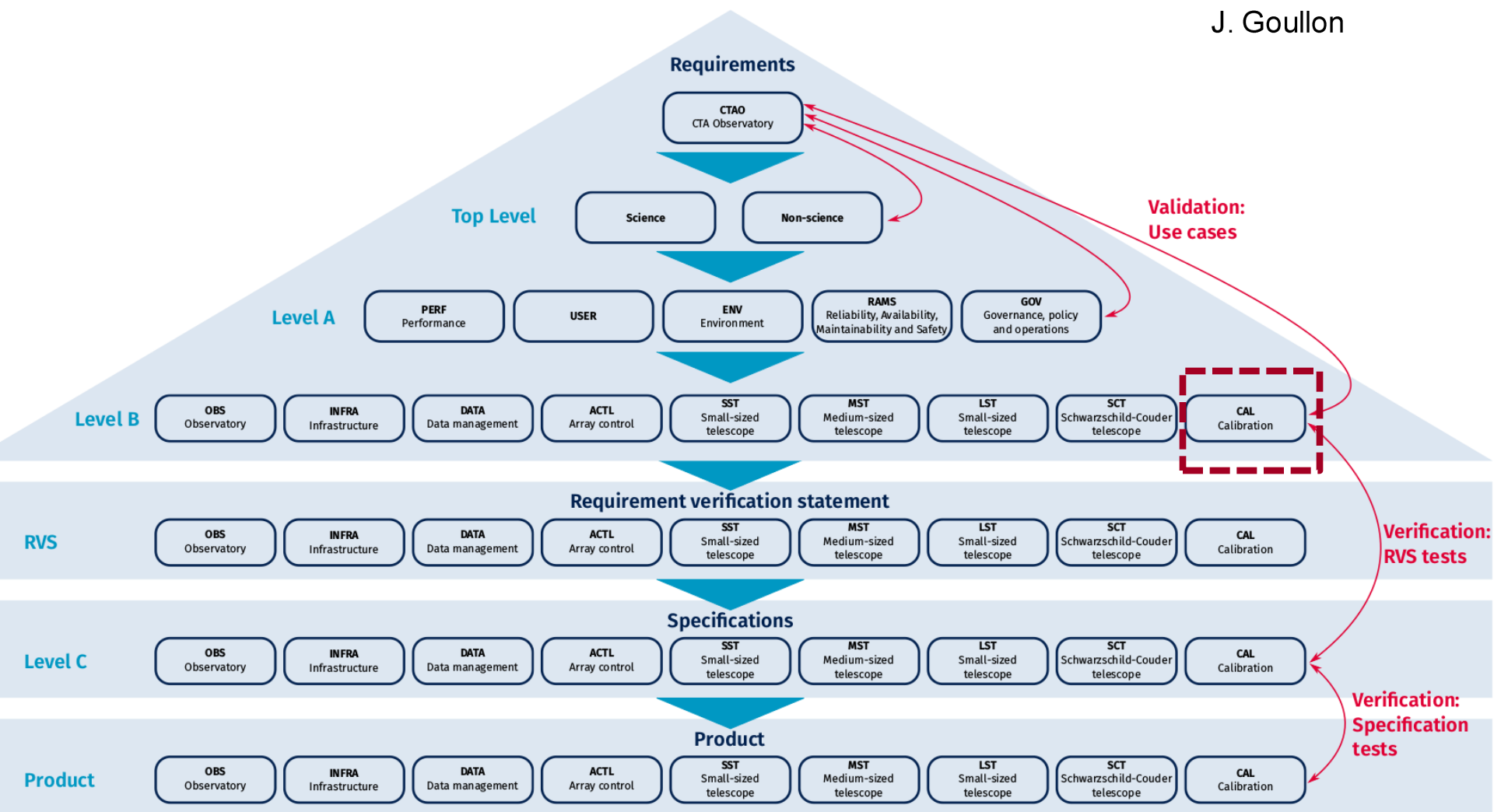


Figure 1.1 – Validation and verification processes within CTA.

Introduction (e.g. WP levels of Ucs)



J. Goullon

Top Level

- Science-related
- Observatory-related

Product level

ACTL

xST

COM

etc.

Sub-product level

Drive control

Camera control

etc.

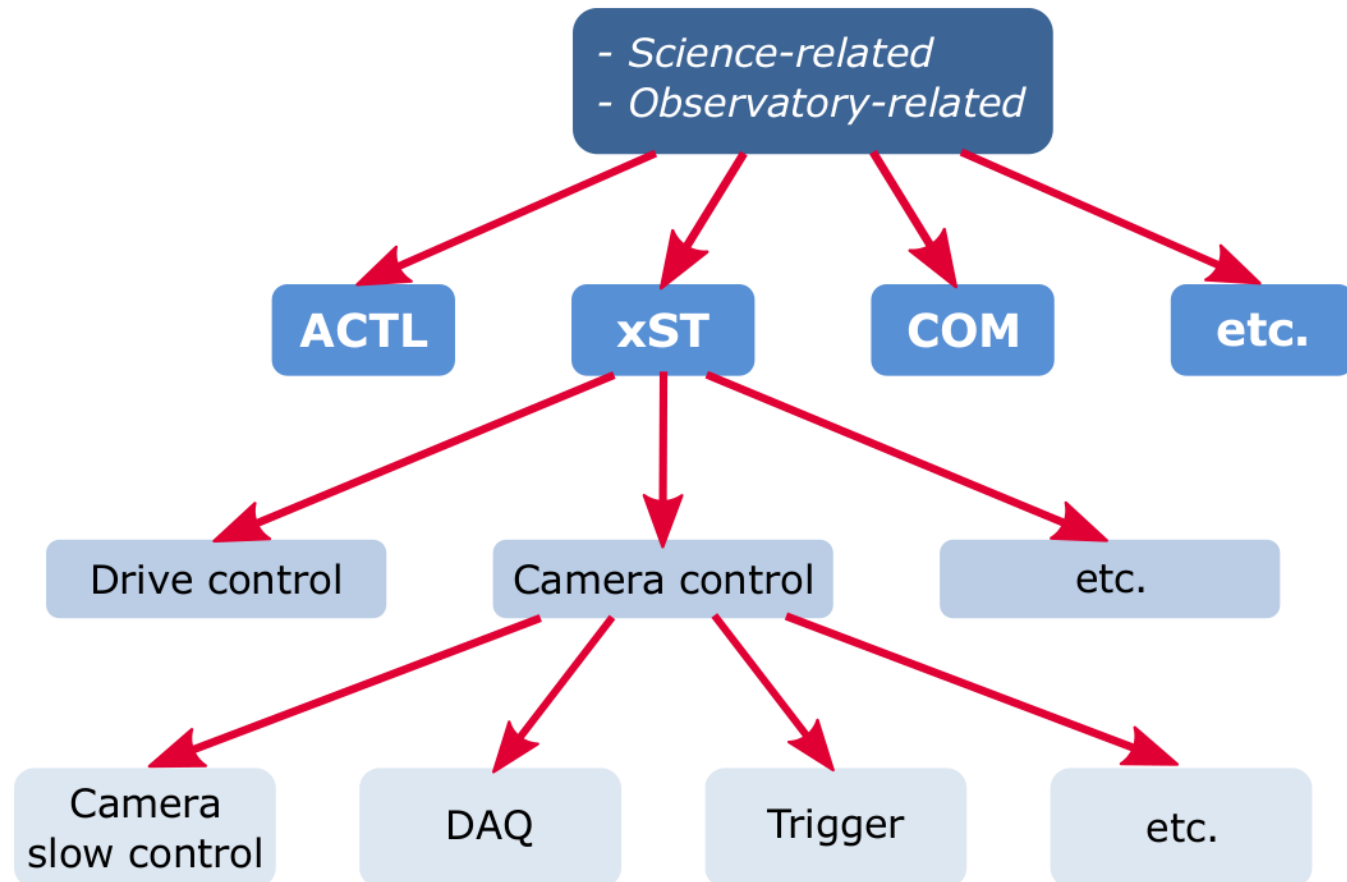
Component level

Camera
slow control

DAQ

Trigger

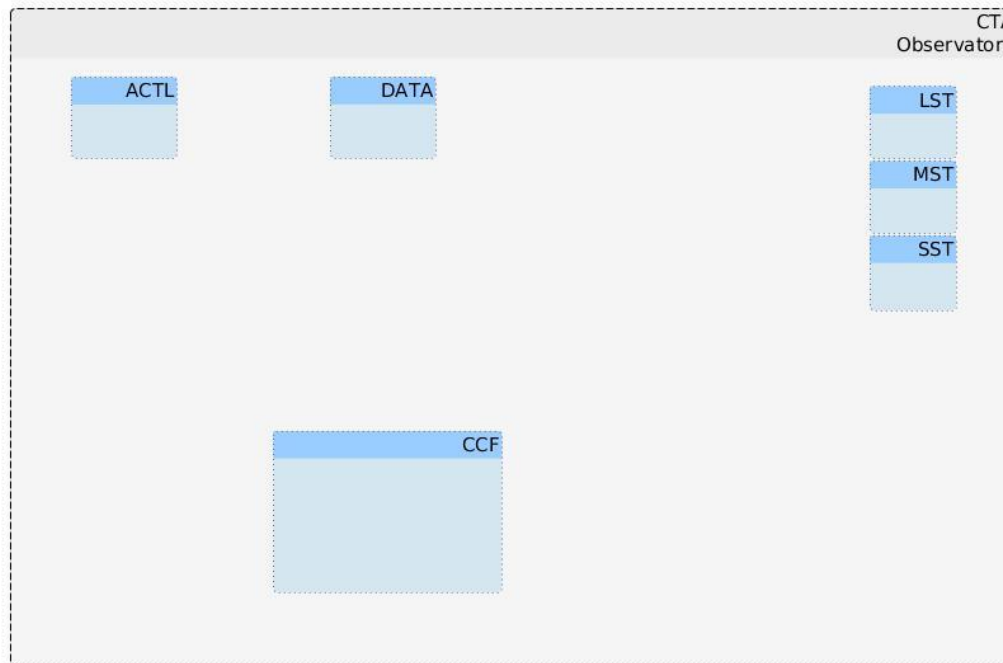
etc.



Organization (levels of UCs)



- Not clear how many (ACTL and LST Telescope has described at least 3)
- High Level: UC-COM-CCF-0000X



High level UCs must describes CCF as a black box

Organization (levels of UCs)

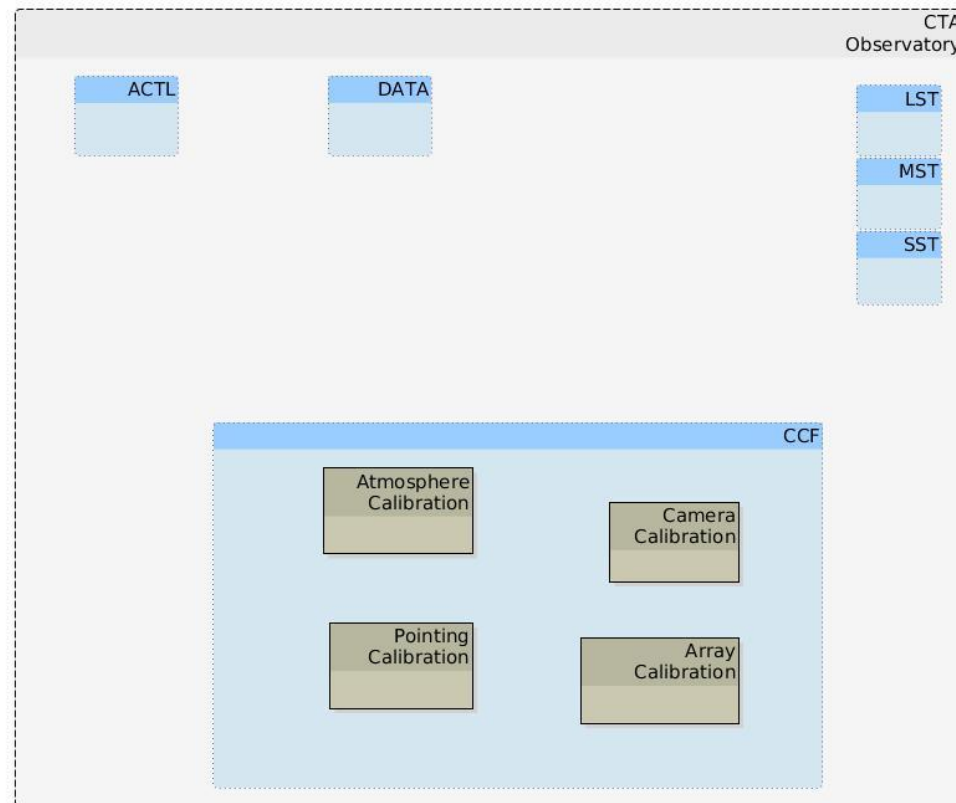


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- Not clear how many (ACTL and LST Telescope has described at least 3)
 - High Level: UC-COM-CCF-0000X -> CCF as a black box
 - UC-COM-CCF-00001: Calibration of CTA data
 - UC-COM-CCF-00002: Monitoring of site environment conditions
 - UC-COM-CCF-00003: Optimize the quality of observations and CTA duty cycle
 - ...?

Organization (levels of UCs)



- Not clear how many (ACTL and LST Telescope has described at least 3)
- Second level: UC-COM-CCF-XY000



High level UCs must describes CCF sub-WP as a black box

Organization (levels of UCs)



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- Not clear how many (ACTL and LST Telescope has described at least 3)
 - Second level: UC-COM-CCF-XY000 -> CCF sub-WP (X) as a black box. Functionalities (Y) of the different sub-WP:
 - 1Y000 -> Camera Calibration (X=1)
 - 2Y000 -> Array Calibration (X=2)
 - 3Y000 -> Atmosphere Calibration (X=3)
 - 4Y000 -> Pointing Calibration (X=4)

Organization (levels of UCs)



- Not clear how many (ACTL and LST Telescope has described at least 3)
- Second level: UC-COM-CCF-XY000 -> CCF sub-WP (X) as a black box. Functionalities (Y) of the different sub-WP:
 - 2Y000 -> **Array Calibration** (X=2)
 - UC-COM-CCF-2100: Absolute calibration of telescopes optical throughput using a reference light source (*Illuminator*)
 - UC-COM-CCF-22000: Inter- and cross-calibration of telescopes with a light source attached on a UAV (*Octocopter*)
 - UC-COM-CCF-23000: End-to-end absolute calibration of CTA array (*CTA-NvsCTA-S, Space detectors, Archival data, CR-electrons*)
 - UC-COM-CCF-24000: Array Calibration using CTA data (*muons, air showers, CTC*)

Organization (levels of UCs)



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- Not clear how many (ACTL and LST Telescope has described at least 3)
 - Third level: UC-COM-CCF-XYZMN -> CCF sub-WP device/method (Z) as a black box. Functionalities (M) of the different device/method.
 - XYZ1N -> Operation (e.g. N control, etc. UCs)
 - XYZ2N -> Production of Calibration Events (e.g. N ways of producing the calibration events)
 - XYZ3N -> Production of Calibration Products (e.g. N different Products)
 - XYZ4N -> Integration of Calibration Products

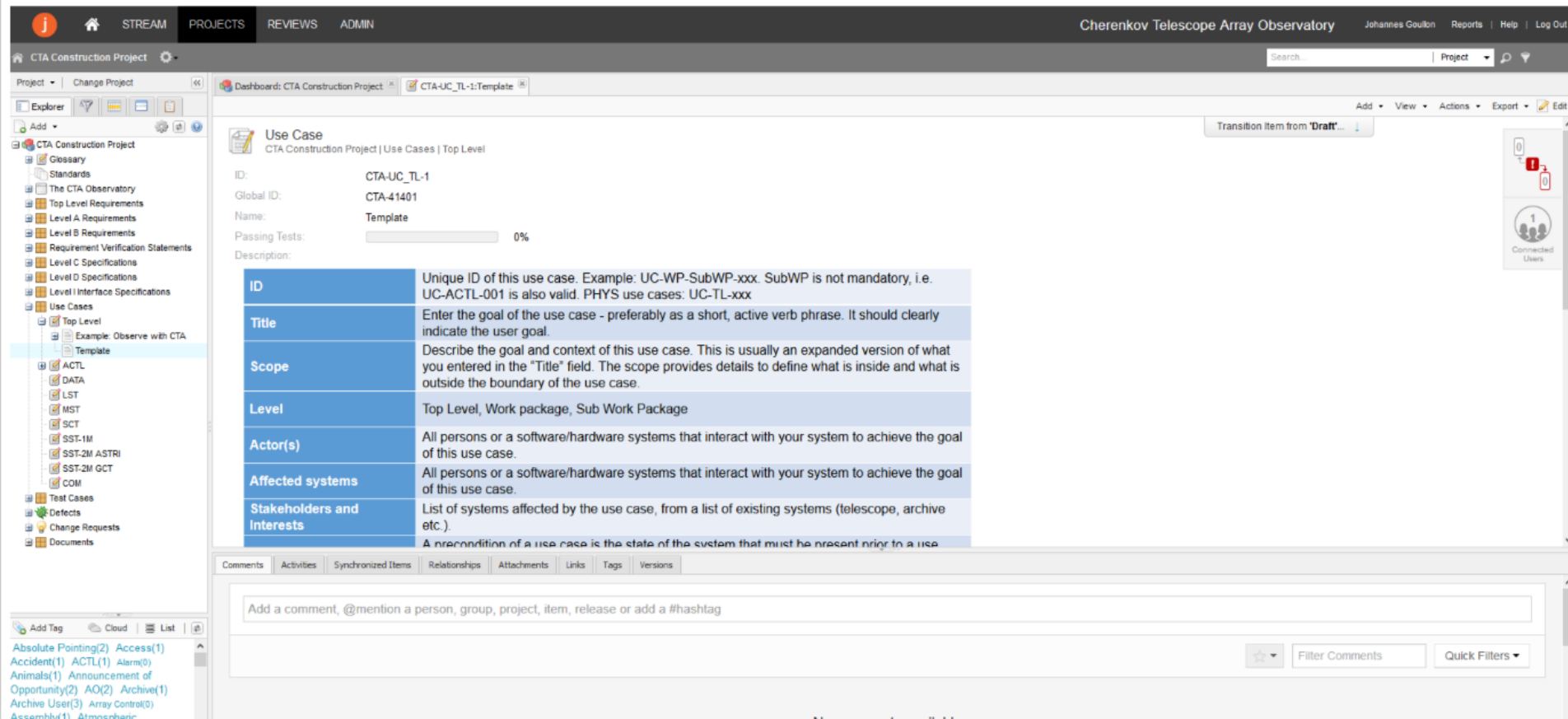
Organization (levels of UCs) (e.g. Illuminator)



- 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)

Introduction

Use cases template



The screenshot displays the CTA Construction Project web application interface. The top navigation bar includes links for STREAM, PROJECTS, REVIEWS, and ADMIN. The main header identifies the project as "Cherenkov Telescope Array Observatory" and lists the user as "Johannes Goullon".

The left sidebar shows a project tree with categories like Glossary, Standards, and Use Cases. The "Use Cases" section is expanded, showing a list of use cases including "Example: Observe with CTA" and "Template".

The main content area displays the "Use Case" template for "CTA-UC_TL-1". The template includes fields for ID, Global ID, Name, Passing Tests, and Description. The "Description" field is expanded, showing a table of use case details.

ID	Description
CTA-UC_TL-1	Unique ID of this use case. Example: UC-WP-SubWP-xxx. SubWP is not mandatory, i.e. UC-ACTL-001 is also valid. PHYS use cases: UC-TL-xxx
Title	Enter the goal of the use case - preferably as a short, active verb phrase. It should clearly indicate the user goal.
Scope	Describe the goal and context of this use case. This is usually an expanded version of what you entered in the "Title" field. The scope provides details to define what is inside and what is outside the boundary of the use case.
Level	Top Level, Work package, Sub Work Package
Actor(s)	All persons or a software/hardware systems that interact with your system to achieve the goal of this use case.
Affected systems	All persons or a software/hardware systems that interact with your system to achieve the goal of this use case.
Stakeholders and Interests	List of systems affected by the use case, from a list of existing systems (telescope, archive etc.).

Below the table, there is a section for "Comments" and "Activities". The "Comments" section includes a text input field for adding comments, a "Filter Comments" button, and a "Quick Filters" dropdown menu.

Next steps on UCs

- Current general document:
 - https://docs.google.com/document/d/17UQMUNBF1Y5jz5f1Xn3J-MY0GBxngoloBL_fmBGMwco/edit
- Array Calibration Ucs document:
 - <https://docs.google.com/document/d/1kT-0YqYZpJQLjKZtHLOyZwxnJ68gPDrLsTDF7eUoTPw/edit>
- This meeting:
 - Fix the list of UCs at the sub-WP level (UC-COM-CCF-XYZ00)
 - Agree on UCs category division (M, etc.)
 - Define a person responsible of the UCs.
 - First two levels: R. de los Reyes, M. Gaug + CCF board + volunteers
 - Last two levels: equipment/method experts (help from R. de los Reyes, M. Gaug + CCF board)
- Create different *googledoc* documents to share among responsible people (small group of people) for discussion -> define split level.
- Next months:
 - Include the list of UCs in Jama (assigned to the “person responsible”).
 - Implement the lower UCs level (N)
- Select few representative UCs (e.g. Illuminator, Octocopter, muons)
- Fill the UCs template for the representative UCs and those requested through Jama to be filled by other WP (e.g. ACTL).