

COM-CCF Uses Cases (list definition)

Atmosphere Calibration

R. de los Reyes on behalf of the 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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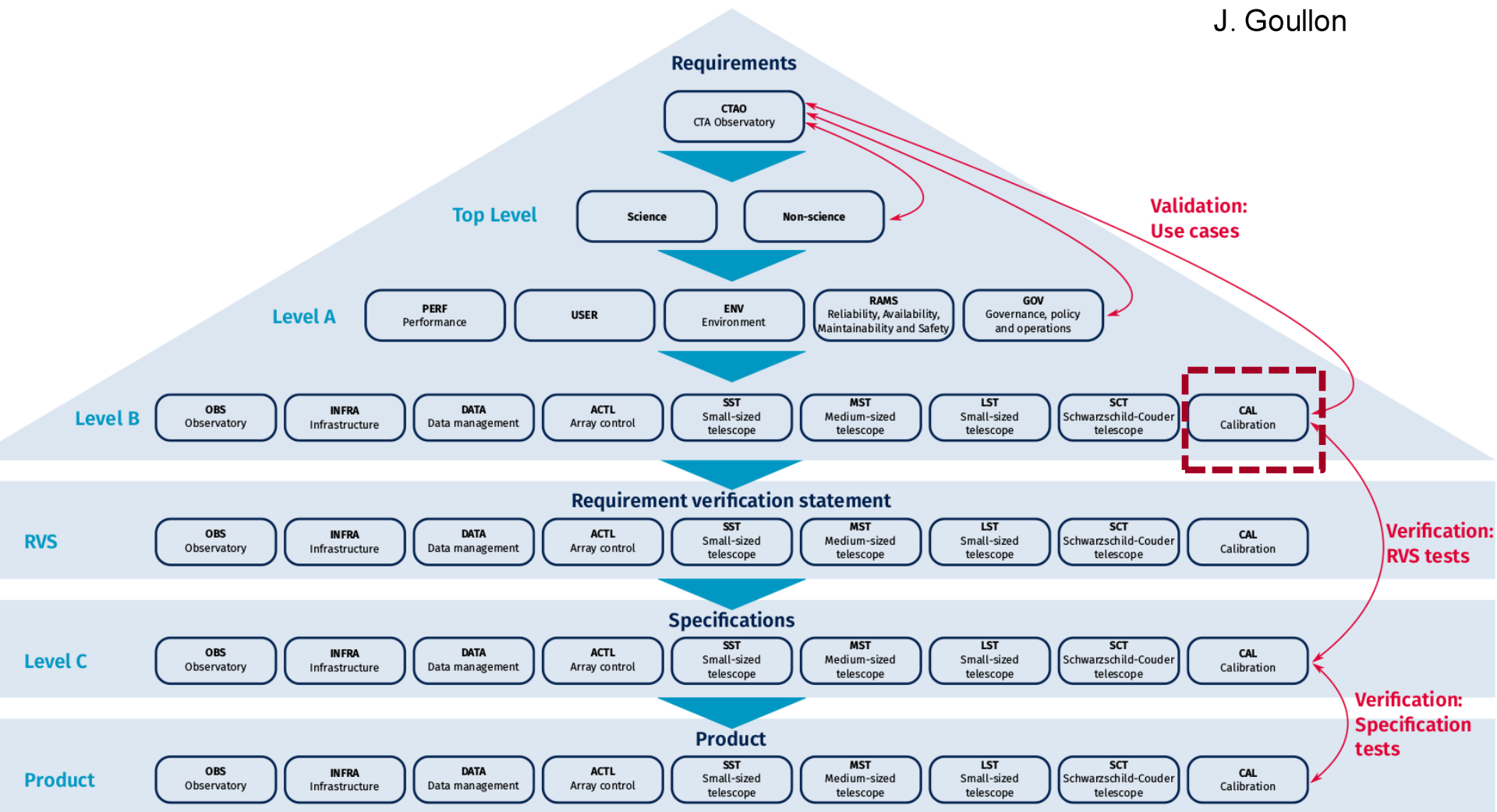


Figure 1.1 – Validation and verification processes within CTA.

Introduction



J. Goullon

Top Level

- Science-related
- Observatory-related

Product level

ACTL

xST

COM

etc.

Sub-product level

Drive control

Camera control

etc.

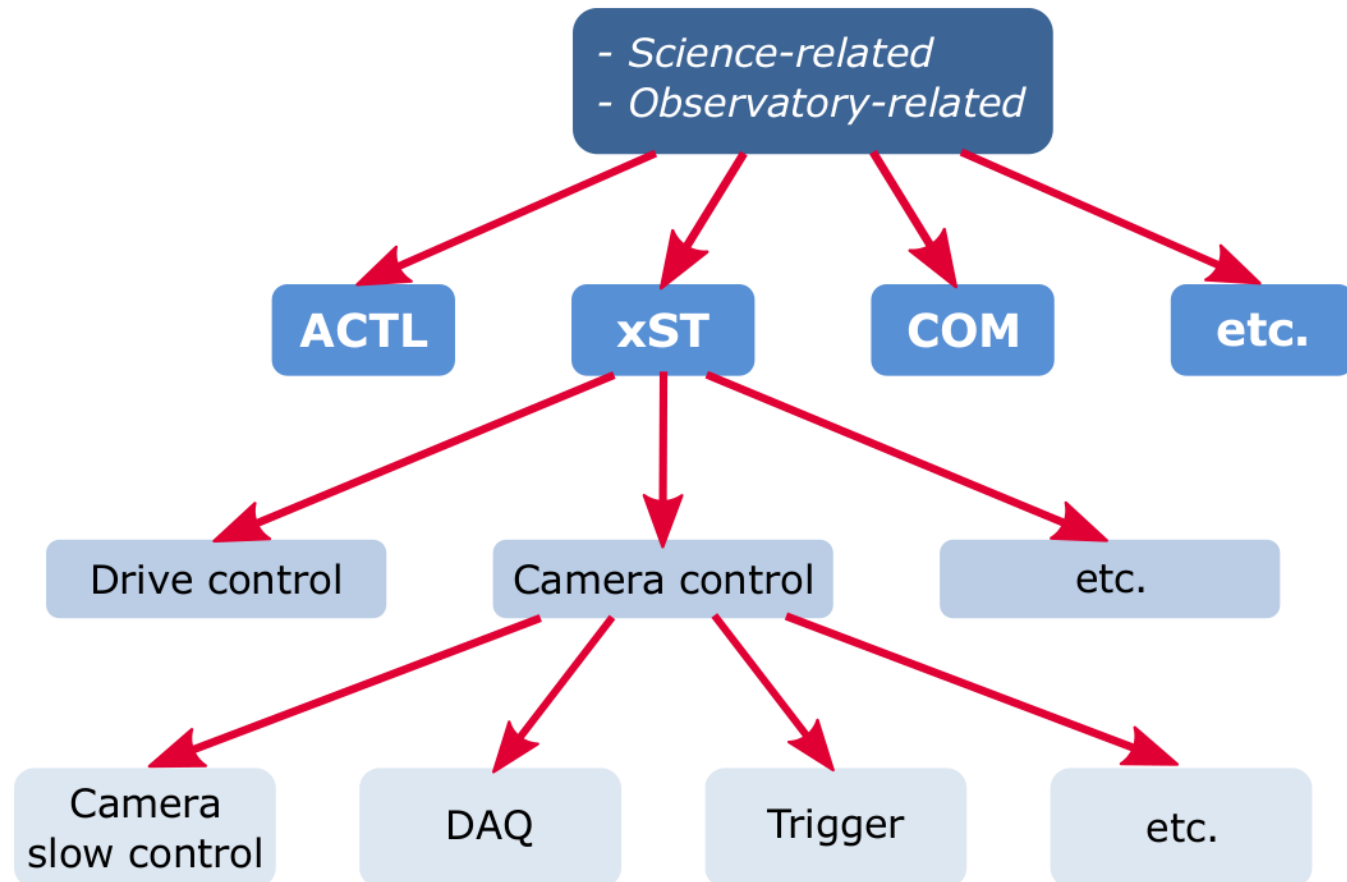
Component level

Camera
slow control

DAQ

Trigger

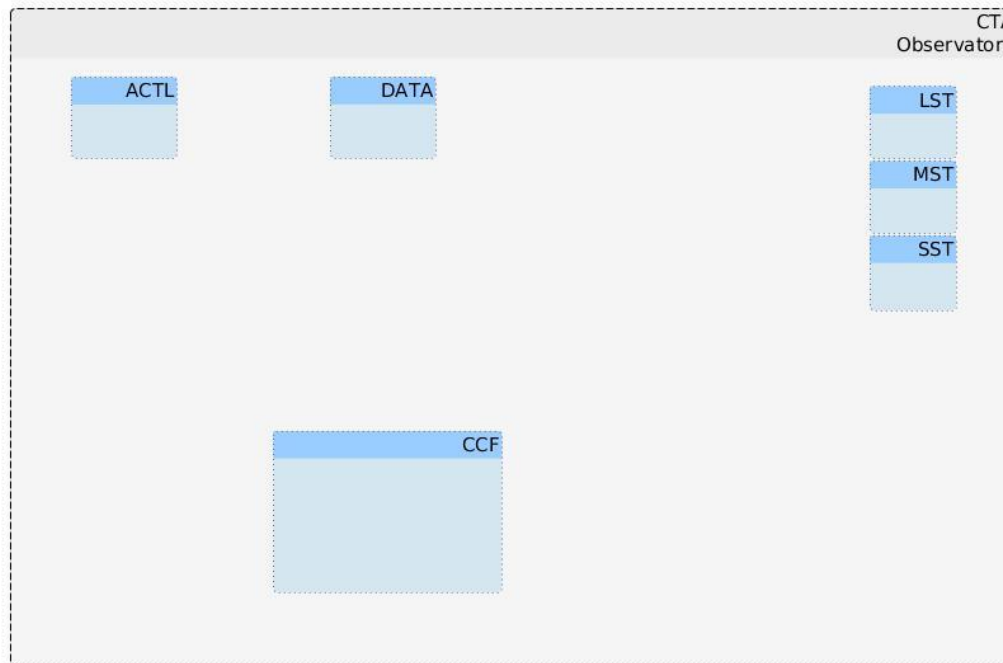
etc.



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)

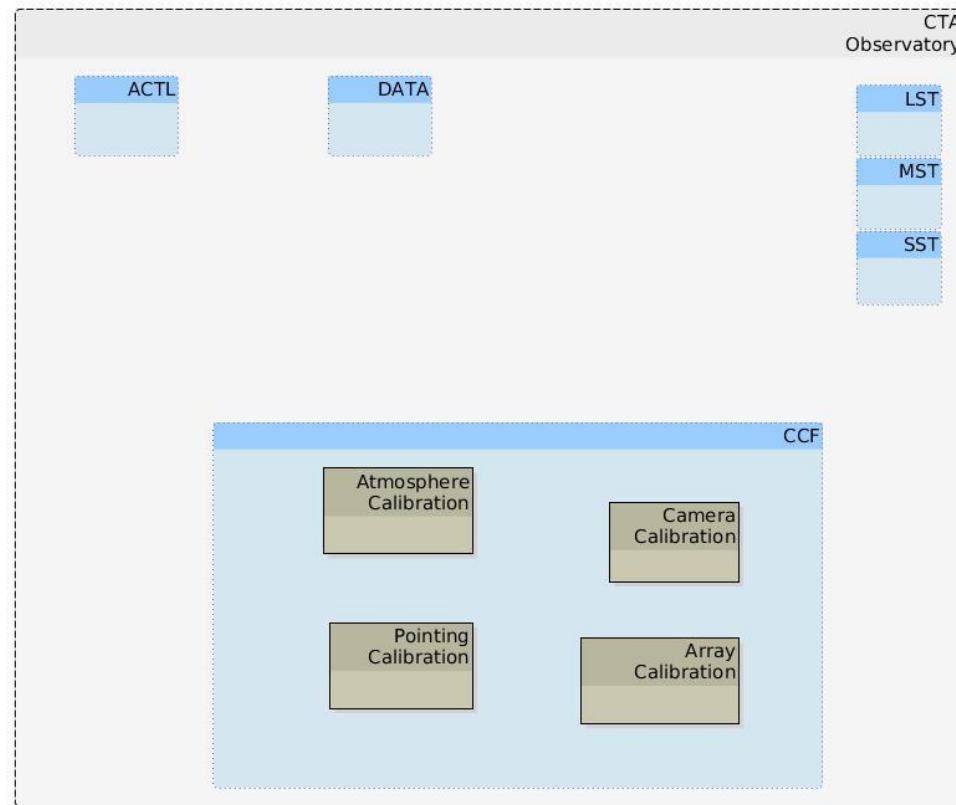


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- Not clear how many (ACTL and LST Telescope has described at least 3)
 - High Level: UC-COM-CCF-0000X -> CCF as a black box
 - UC-COM-CCF-00001: Calibration of CTA data
 - UC-COM-CCF-00002: Monitoring of site environment conditions
 - UC-COM-CCF-00003: 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:
 - 3Y000 -> **Atmosphere Calibration (X=3)**
 - UC-COM-CCF-3100: Atmosphere modeling (site climatology) (*GDAS/WRF, Sun/Moon photometer, ARCADE LIDAR, Radiosondes, Weather monitoring for LSTs, archival data from MAGIC LIDAR, archival data from optical telescopes at the ORM, satellite data*)
 - UC-COM-CCF-32000: Atmospheric monitoring for online dynamic short-term scheduling (*ASC, Ceilometer*)
 - UC-COM-CCF-33000: Correction and selection of MC and Data and MC using Atmospheric Parameters (*LIDARs, FRAM, CTC, Spectrometer*)
 - UC-COM-CCF-34000: Common CTA weather monitoring (*Classic weather station, Anemometers, Dust counters, Weather forecast, Satellite data*)
 - UC-COM-CCF-3500: Monitoring of CTA-S earthquakes (*Accelerometers*)
 - UC-COM-CCF-36000: Monitoring of CTA-N weather (*Rain sensors, Electric field mills, National Rain Radars*)

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

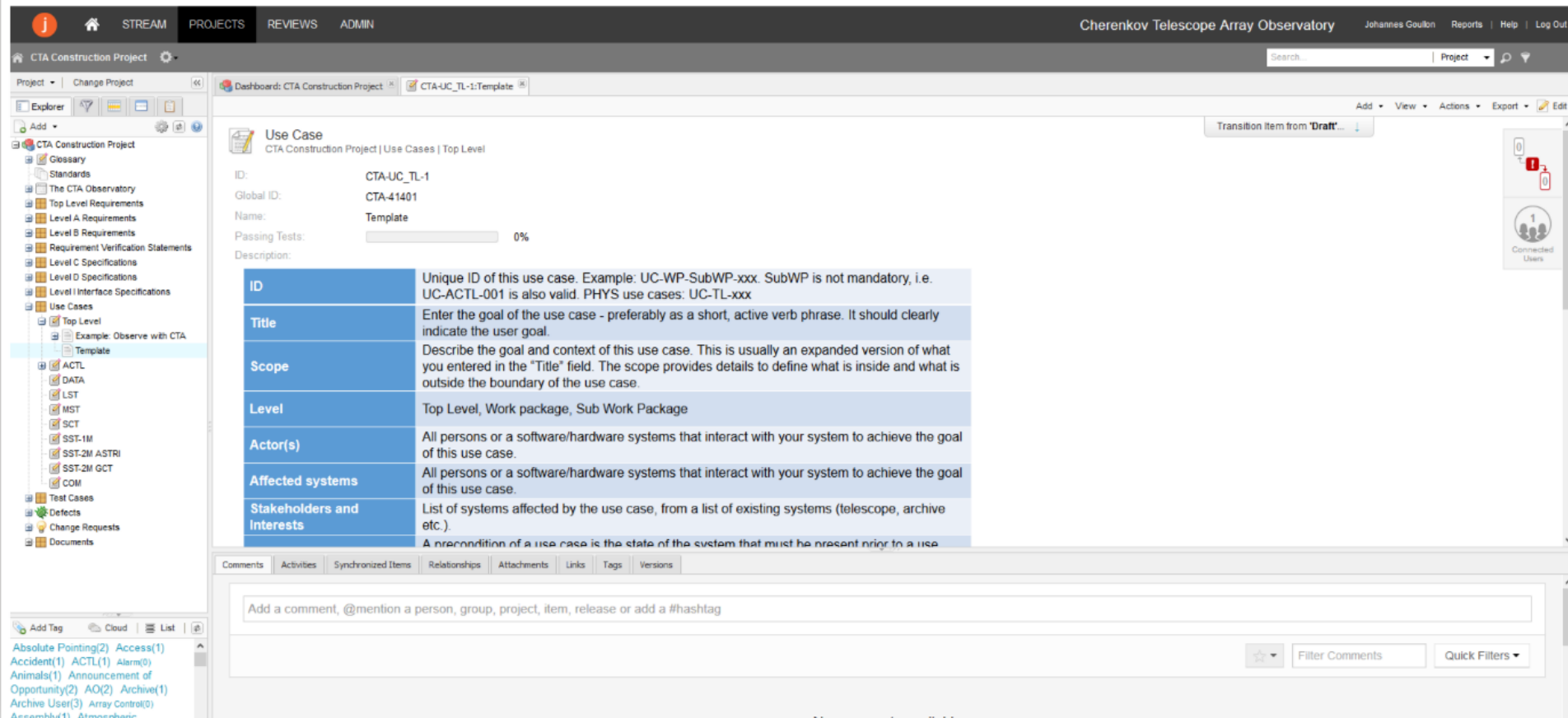
Organization (levels of UCs) (e.g. Weather monitoring)



- UC-COM-CCF-34000: Common CTA weather monitoring
 - Affected systems: Classic weather station (1), Anemometers (2), Dust counters (3), Weather forecast (4), Satellite data (5)
 - Trigger: Safety of humans, equipment and data
 - Frequency: continuous
 - UC-COM-CCF-3411x: Operation of classic Weather station
Note: Here there should be a list of UCs that describe how to operate the device (e.g. start up and shutdown device)
 - UC-COM-CCF-3412x: Production of classic Weather station Monitoring Events
Note: Here there should be a list of UCs that describe how to produce the monitoring events (equivalent to “Perform observation” for telescopes)
 - UC-COM-CCF-3421x: Operation of Anemometers
Note: Here there should be a list of UCs that describe how to operate the device (e.g. start up and shutdown device)
 - UC-COM-CCF-3422x: Production of Anemometers Monitoring Events
Note: Here there should be a list of UCs that describe how to produce the monitoring events (equivalent to “Perform observation” for telescopes)
 - UC-COM-CCF-3431x: Operation of Dust counters
Note: Here there should be a list of UCs that describe how to operate the device (e.g. start up and shutdown device)
 - UC-COM-CCF-3432x: Production of Dust counters Monitoring Events
Note: Here there should be a list of UCs that describe how to produce the monitoring events (equivalent to “Perform observation” for telescopes)
 - UC-COM-CCF-3442x: Production of Weather forecast Monitoring Events
Note: Here there should be a list of UCs that describe how to produce the

Introduction

Use cases template



The screenshot displays the 'CTA Construction Project' web application. The top navigation bar includes 'STREAM', 'PROJECTS', 'REVIEWS', and 'ADMIN'. The main header shows 'Cherenkov Telescope Array Observatory' and user information 'Johannes Goullon'. The left sidebar contains a tree view of the project structure, with 'Use Cases' selected. The main content area shows the 'Use Case' template for 'CTA-UC_TL-1'. The template includes fields for ID, Global ID, Name, Passing Tests, and Description. Below these is a table with instructions for each field. The bottom section has tabs for 'Comments', 'Activities', 'Synchronized Items', 'Relationships', 'Attachments', 'Links', 'Tags', and 'Versions'. A comment input field is visible, along with 'Filter Comments' and 'Quick Filters' buttons.

Use Case
CTA Construction Project | Use Cases | Top Level

ID: CTA-UC_TL-1
Global ID: CTA-41401
Name: Template
Passing Tests: 0%
Description:

ID	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.).

A precondition of a use case is the state of the system that must be present prior to a use

Comments | Activities | Synchronized Items | Relationships | Attachments | Links | Tags | Versions

Add a comment, @mention a person, group, project, item, release or add a #hashtag

Filter Comments | Quick Filters

Next steps on UCs

- Current general document:
 - https://docs.google.com/document/d/17UQMUNBF1Y5jz5f1Xn3J-MY0GBxngoloBL_fmBGMwco/edit
- Atmosphere Calibration UCs document:
 - https://docs.google.com/document/d/1rMg26GChZaBZ8Ast_U9a_aG-Gt00rwHhYL-zVMKpdbE/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 responsible people (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.
- 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. weather monitoring, LIDAR,...?)
- Fill the UCs template for the representative UCs and those requested through Jama to be filled by other WP (e.g. ACTL).