COM-CCF Uses Cases (list definition)

Array Calibration

R. de los Reyes on behalf of CCF board
Introduction

- 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

Figure 1.1 – Validation and verification processes within CTA.
Introduction (e.g. WP levels of Ucs)

- Science-related
- Observatory-related

**Top Level**

**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)

- 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)

- 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)

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

J. Gouillon. Jama workshop (05.03.2016)
Next steps on UCs

- Current general document:
  - [https://docs.google.com/document/d/17UQMUNBF1Y5jz5f1Xn3J-MYoGBxngoloBL_fmBGMwco/edit](https://docs.google.com/document/d/17UQMUNBF1Y5jz5f1Xn3J-MYoGBxngoloBL_fmBGMwco/edit)
- Array Calibration Ucs document:
  - [https://docs.google.com/document/d/1kT-0YqYZpJQLjKZtHLOyZwxnJ68gPDrlsTDF7eUoTPw/edit](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).