

Telescope Control System of the ASTRI SST-2M prototype for the Cherenkov Telescope Array

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for the CTA ASTRI project

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THMPL04

ASTRI SST-2M Prototype

- End-to-end prototype, installed on Mount Etna (Italy), proposed for the Small Size class of Telescopes of the future Cherenkov Telescope Array (CTA).
- Mechanical commissioning and optical validation stages are successfully done and it is currently undergoing the scientific verification stage.
- A first set of nine ASTRI telescopes is planned to be produced for early implementation on the southern CTA site.

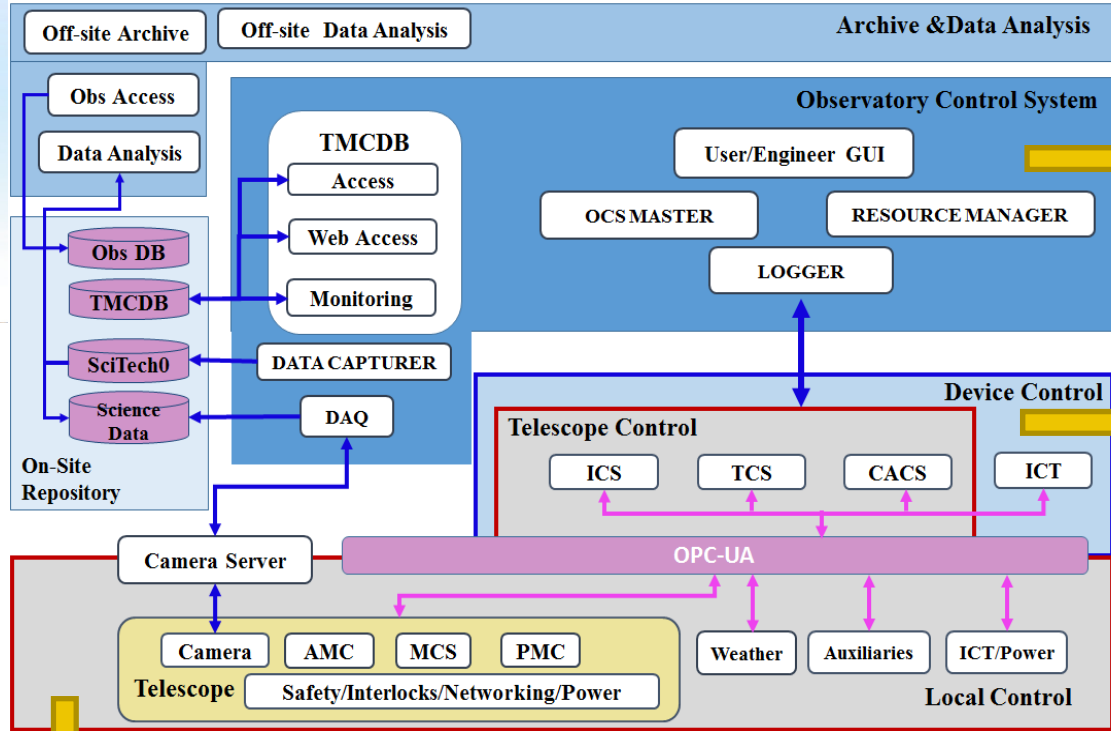


Control System

Provide a stand-alone, intelligent and active machine, able to efficiently perform all the required engineering and operative functionalities, to receive commands, transmit monitoring data and eventually recover errors



ASTRI SST-2M Software General Architecture



User/Engineer Operation

Full access to the telescope capabilities by defining specific interface with the TCS component.

High-Level Control (TCS)

- Monitoring, coordination and execution of the hardware functionalities.
- No direct hardware control.
- No responsibility for time-critical operations.

Low-Level Control

- Telescope Hardware and auxiliaries controllers.
- Auto consistent real-time functions development.



Conclusion

- ASTRI SW Version V.0.2.0 is installed at the telescope site (July 2017) and it is currently being used for the scientific verification stage of the prototype.
- The Telescope Control System is completely independent from the user operation tools (e.g. GUI) and the low-level hardware controllers, responsible for the telescope functionalities, are completely transparent to the GUI.



- The ASTRI SST-2M can be seen as a robotic and stand-alone machine, able to be fully operated by any other high-level controller simply excluding the GUI part and defining a specific interface.
- This separation provides an easy and efficient way for the integration of the prototype in the high-level control software system of the ASTRI telescopes, under array configuration as proposed for CTA.

