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The ASTRI-Horn Telescope Control System

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The ASTRI-Horn Cherenkov telescope, installed at Serra La Nave on the Mount Etna (Italy), has been developed by INAF in the context of the "Astrofisica con Specchi a Tecnologia Replicante Italiana"(ASTRI) Project. It is the INAF proposed prototype for the Small Size class of Telescopes of the future Cherenkov Telescope Array (CTA) and for the INAF Mini Array which will be installed at the Observatory of Teide in Tenerife (Spain).

ASTRI-Horn uses a dual-mirror configuration and a Cherenkov camera having a detector composed of an array of monolithic silicon photomultiplier sensors (SiPM) coupled with a specifically designed front-end and back-end electronics. Therefore ASTRI-Horn represents a successful innovative solution for the detection of atmospheric Cherenkov light as was demonstrated by the detection of the Crab Nebula during the Science Verification phases.

The ASTRI-Horn is an end-to-end system. Great efforts were dedicated to the development of the Telescope Control System (TCS) whose task is to allow the operation and maintenance of the telescope controlling and coordinating all the functionality of the telescope subsystems.

Each Telescope subsystem (e.g. Mount, Optical Assembly, Cherenkov Camera, etc) has its own Local Control system which interacts with the hardware devices. At this lower level there are more stringent requirements regarding performance, reliability and safety, since this is where the real telescope handling logic resides as well as the telescope safety system.

The purpose of this contribution is to give a general overview of the ASTRI-Horn TCS presenting its architecture and the solutions adopted. Particular emphasis will be given to describe the camera control system including its graphical user interface designed to support both the laboratory and on site camera operation activities.

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