

# The Online Observation Quality System for the ASTRI Mini Array.

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The ASTRI Mini-Array is an international collaboration led by the Italian National Institute for Astrophysics (INAF), aiming to construct and operate an array of nine Imaging Atmospheric Cherenkov Telescopes to study gamma-ray sources at very high energy (TeV) and perform Stellar intensity interferometry observations.

This contribution describes the design and the technologies used by the ASTRI team to implement the Online Observation Quality System (OOQS).

The main objective of the OOQS is to perform data quality analyses in real-time during Cherenkov and Intensity Interferometry observations to provide feedback to both the Array Control System and the Operator. The OOQS perform the analysis of a set of key data quality parameters and can generate alarms to other sub-systems for a fast reaction to solve critical conditions in real-time. The results from the data quality analyses are saved into the Quality Archive for further investigations. The main challenge addressed by the OOQS design is the high data rate (up to 3Gbit/s) produced by each telescope and acquired by the Array Data Acquisition System that sends it to the OOQS.

In the current OOQS design, developed on the basis of the definition of specific use cases and requirements, the Redis NoSQL database manages the data throughput generated by the telescopes, and the Slurm workload scheduler executes in parallel the high number of data quality analyses. The Operator can visualise the OOQS results (e.g. camera plots, histograms, tables and more) through a Graphical User Interface as soon as they are produced.

## Keywords

online data quality, gamma-ray, Cherenkov telescope, data quality, real-time analysis

## Collaboration

other (fill field below)

## other Collaboration

ASTRI Mini Array

## Subcategory

Experimental Methods & Instrumentation

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