The operator GUI of the Cherenkov Telescope Array

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For the CTA Consortium

CTA: https://portal.cta-observatory.org
GUI prototype: https://www-zeuthen.desy.de/~sadeh/

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the Cherenkov Telescope Array
Designing the operator GUI

• We conduct participatory design workshops with human-computer interaction (HCI) collaborators and various teams from CTA.

• The following questions are used as design guidelines:
  – What should the GUI enable users to do?
  – How should the GUI be designed?

• Current prototype under development:
  – Server: Pyramid, a lightweight python web framework.
  – Data access / buffering: redis, mongodb, ACS.
  – Asynchronous communication between front- and back-end: sockeit.io web-sockets lib.
  – Data visualization: d3.js/dc.js(crossfilter) Javascript libraries using SVG, HTML5 & CSS for real-time interactive data visualization.
Information flow & integrated redis database

- Exposing monitoring data to users of the GUI.
  - Two users (Operators 1 and 2) request data from a combination of sources.
  - The data transmitted to the users are stored in a redis database, which is integrated with the Python Web server.
  - redis is filled by directly accessing lower-level elements of the system. In this example, these are two telescopes (LST-1 and MST-5), and the monitoring database.
Monitoring panel with semantic zoom
Example panels with sync.

Telescope status monitoring

Telescope pointing positions

For bug reports and feature requests, contact Iftach Sadeh.

More movies available at: [https://www-zeuthen.desy.de/~sadeh/](https://www-zeuthen.desy.de/~sadeh/)