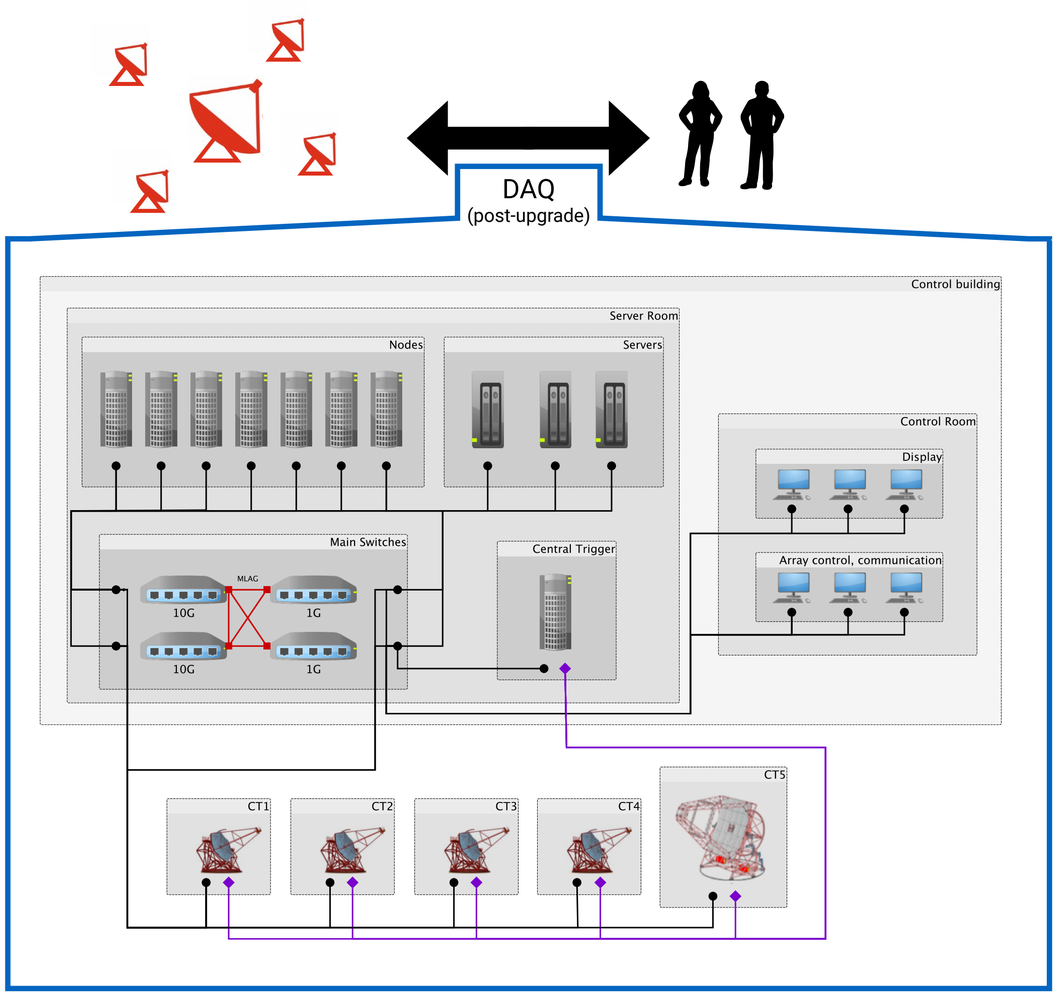
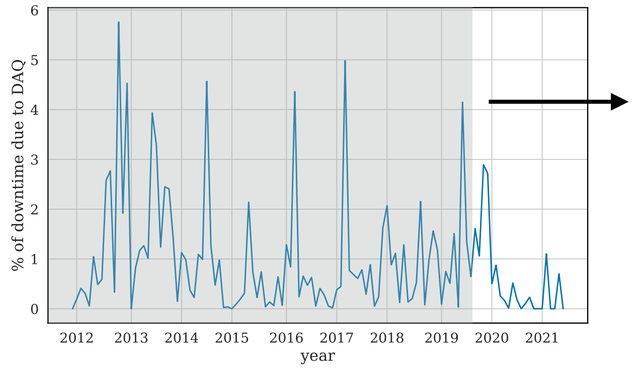
The upgraded Data Acquisition System of the H.E.S.S. telescope array

Reasons Aging, outdated components were no longer supported by vendors
Goals Homogeneous design, built-in redundancy, minimal long-term maintenance, reproducible setup



The Data Acquisition System (DAQ) oversees the array operations:
telescope movement, data taking and conversion, data storage, etc.
It comprises both the hardware and the software.

The old cluster was put in place in 2012 [1].
As time went on, the needs of the collaboration evolved.
In mid-2019, the DAQ team undertook a **full hardware replacement**,
to ensure stable operations for the next >7 years.
The new system …
… is more robust, with a greater level of redundancy
… has more storage space available, to accommodate new data-taking modes
… is more homogeneous, with hot spares ready to be swapped in
… is easily maintained and monitored from remote.



After the upgrade, the average downtime due to DAQ-related issues has **decreased by 75%**.

[1] Arnim Balzer et al., "The H.E.S.S. central data acquisition system," Astroparticle Physics, Vol. 54, p. 67-80 (2013).

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