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# The online data taking system of the Cherenkov Telescope Array Observatory

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The Cherenkov Telescope Array Observatory (CTAO is the next-generation ground-based observatory for gamma-ray astronomy. CTAO will be constructed on two sites, one array in the Northern and the other in the Southern hemisphere, containing more than 60 telescopes of three different sizes, for covering different energy domains. The Array Control and Data Acquisition (ACADA) system is the central software governing on-site Cherenkov Telescope Array Observatory (CTAO) operations. ACADA controls, supervises, and acquires the data generated by the telescopes and the auxiliary instruments. It will drive the efficient planning and execution of observations while handling the several Gb/s camera data generated by each CTAO telescope. The ACADA software is based on the Alma Common Software (ACS) framework, and written in C++, Java, Python, and JavaScript. The first release of the ACADA software, ACADA Release 1, was finalized in July 2023, and successfully tested with the first CTAO Large-sized Telescope in October 2023, and a program for the integration of ACADA and the CTAO telescopes will be carried out during the next couple of years. This contribution describes the design of the ACADA software.

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