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CEPC Detector Data Acquisition System

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This report outlines the design plans for the CEPC detector data acquisition system. Firstly, it describes the RADAR data flow framework, which aims to implement a high-performance and flexible data acquisition platform based on experience from previous experiments. Exploration of heterogeneous acceleration methods is underway to optimize future online data processing capabilities. Additionally, the design of online service software will enhance system stability and provide practical monitoring and management tools for DAQ users.

The report will also cover the conceptual design of the Experiment Control System (ECS). As a centralized management platform, ECS plans to integrate subsystems such as DAQ and DCS, and introduce AI technologies for intelligent monitoring and anomaly diagnosis, thereby supporting safe and efficient experiment operations.

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