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The artdaq Data Acquisition Software Toolkit

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The artdaq data acquisition software toolkit has been developed within the Fermilab Scientific Computing Division to meet the needs of current and future experiments. At its core, the toolkit provides data transfer, event building, and event analysis functionality, the latter using the art event analysis framework.

In the last year, functionality has been added to the toolkit in the areas of state behavior, process control, data quality monitoring, and system monitoring with the goal of providing a complete DAQ software toolkit for future experiments. In addition, the toolkit has been used in the construction of the DAQ system of the DarkSide-50 dark matter experiment and the prototype DAQ for the Mu2e rare decay experiment.

We will present the design and features of the toolkit, the advantages of using the toolkit to construct the DAQ software for an experiment, representative performance results, and future plans.

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