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A generic data acquisition software framework, EUDAQ2

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The data acquisition software, EUDAQ1, was originally developed to read out data from beam telescope systems. This was successfully used in many beam tests in which an external position reference was required. The software has recently undergone a significant upgrade, EUDAQ2, ensuring that it is agnostic to the hardware and is a generic, modular system for use by many detectors, including calorimeters. The software can run in different triggering or event building modes and combine the data to produce a common event. EUDAQ2 is also ideal as an overarching software that links to individual detector DAQ systems and so can ease the integration of multiple detectors for data taking. The system has been verified in a beam test involving the analogue hadronic calorimeter, a development within the CALICE collaboration which carries out R&D on linear collider calorimeters, and the beam telescope; these have very different timing and readout structures. The software was also successfully used in a beam test of the ATLAS inner tracker upgrade. The EUDAQ2 software has been developed within the AIDA-2020 EU programme to provide a common framework for linear collider beam tests, but can also be used by other systems or project. The software is now released, freely available and ready for use.

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