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EUDAQ and EUTelescope: Software Frameworks for Test Beam Data Acquisition and Analysis

A high resolution ($\sigma \sim 2\mu m$) beam telescope based on monolithic active pixel sensors was developed within the EUDET collaboration. It has become the primary beam tool for many groups including several CERN based experiments, largely due to its precise resolution, reliable operation and DAQ integration capabilities. For the telescope to deliver this excellent performance, two software packages play a central role: EUDAQ, a multi-platform data acquisition system that allows easy integration of the device-under-test, and EUTelescope, a group of processors running in ILCSoft's Marlin framework that allows the spatial reconstruction of particle tracks and the final data analysis.

Although both software packages have been used successfully in test beams for many years, they are under constant development: integrating new device types and use-cases, extending usability and flexibility, and supporting new features such as the high-rate capabilities of the next-generation pixel beam telescope developed within the new European detector infrastructure project AIDA.

In this contribution, we present the features of the current releases of both EUDAQ and EUTelescope, show-case the application of the frameworks within other projects, and discuss the plans for development toward an easy to use software stack with the capability for high particle and data rates.

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