

# ALICE Event Visualization Environment

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ALICE Event Visualization Environment (AEVE) is a general framework for visualization of detector geometry and event-related data being developed for the ALICE experiment. Its design is guided by the large raw event size (80 MBytes) and an even larger footprint of a full simulation–reconstruction pass (1.5 TBytes). An extensible pre-processing mechanism needed to reduce the data volume, collect cumulative statistics, provide cross-indexing information and allow attachment of user-data is presented. Data-selection is described with an emphasis on the usage of advanced n-tuple management functionality of the ROOT framework (tree-friends and tree indices). Data-flow and data-management are discussed in view of application steering in a multi-threaded, input-limited environment. Overview of data-visualization and data-interaction layer is made and techniques used to maximize presentation-layer configurability are described. The article closes with a discussion of AEVE as a base for construction of a wide range of end-user applications ranging from expert debugging tools (read-out electronics, simulation and reconstruction code, detector performance monitoring) to general event-display programs.

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