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## A Comparative Analysis of Event Processing Frameworks used in HEP

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Today there are many different experimental event processing frameworks in use by running or about to be running experiments. This talk will compare and contrast the different components of these frameworks and highlight the different solutions chosen by different groups. In the past there have been attempts at shared framework projects for example the collaborations on the BaBar framework (between BaBar, CDF, and CLEO), on the Gaudi framework (between LHCb and ATLAS), on AliROOT/FairROOT (between Alice and GSI/Fair), and in some ways on art (Fermilab based experiments) and CMS' framework. However, for reasons that will be discussed, these collaborations did not result in common frameworks shared among the intended experiments. Though importantly, two of the resulting projects have succeeded in providing frameworks that are shared among many customer experiments: Fermilab's art framework and GSI/Fair's FairROOT. Interestingly, several projects are considering remerging their frameworks after many years apart. I'll report on an investigation and analysis of these realities. With the advent of the need for multi-threaded frameworks and the scarce available manpower, it is important to collaborate in the future; however it is also important to understand why previous attempts at multi-experiment frameworks either worked or didn't work.

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