

Cmd3Fwk Software Development Framework

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CMD-3 is the general purpose cryogenic magnetic detector for VEPP-2000 electron-positron collider, which is being commissioned at Budker Institute of Nuclear Physics (BINP, Novosibirsk, Russia). The main aspects of physical program of the experiment are study of known and search for new vector mesons, study of the $p\bar{p}$ and $n\bar{n}$ production cross sections in the vicinity of the threshold and search for exotic hadrons in the region of center-of-mass energy below 2 GeV. The dedicated CMD-3 Software Development Framework (Cmd3Fwk) was implemented in order to be the basic software integration solution and the persistency manager for the detector reconstruction, MC simulation and the third level trigger subsystem. Software design standards for the project are object oriented programming techniques, C++ as a main language, GRID environment compatibility and Linux as a main platform. Recently, the core components of the Cmd3Fwk was moved to the separate detector independent software package (MetaFramework) with the aim to enable its usage outside the scope of the CMD-3 project. The key features of the MetaFramework are modularity, dynamic data processing chain generation according to the XML modules configuration and on-demand data request mechanisms. It also provides command line and graphical user interfaces for building XML configurations and running the data processing jobs. The MetaFramework is a powerful tool which can be used for development of the specialized adaptive data processing tools for various applications, for instance, for building small and medium scale HEP experiment specific data processing frameworks. The contribution gives the overview of the design features for both the Cmd3Fwk and the MetaFramework projects.

Summary

CMD-3 is the general purpose cryogenic magnetic detector for VEPP-2000 electron-positron collider, which is being commissioned at Budker Institute of Nuclear Physics (BINP, Novosibirsk, Russia). The essential upgrade of CMD-2 detector (designed for VEPP-2M collider at BINP) farm and distributed data storage management software is required to satisfy new detector needs and scheduled to perform in near future.

The contribution gives the overview of both the Cmd3Fwk (CMD-3 detector specific) and the MetaFramework (detector independent) software projects designed and implemented within the scope of CMD-3 experiment.

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