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CMD-3 Project Offline Software Development

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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 ppbar a nnbar 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 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.
In this talk I will present the general design overview and status of implementation of CMD-3 offline software for reconstruction, visualization, data farm management and user interfaces. Software design standards for this project are object oriented programming techniques, C++ as a main language, Geant4 as an only simulation tool, Geant4 and GDML based detector geometry description, WIRED and HepRep based visualization, CLHEP library based primary generators and Linux as a main platform. The dedicated software development framework (Cmd3Fwk) was implemented in order to be the basic software integration solution and persistency manager. We also look forward to achieve high level of integration with ROOT framework and Geant4 toolkit.

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