

THE ROLE OF A CENTRAL DATABASE FOR CONFIGURATION MANAGEMENT

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Abstract

The successful operation of an accelerator facility depends on the availability and integration of numerous categories of data and information throughout its lifecycle. These include:

- 1) optical design and layout information and naming conventions during the conceptual design and R&D stages;
- 2) engineering and manufacturing data and technical documents and drawings during the development and construction phase;
- 3) operations-related data such as beamline, electronics component and cabling lists, run-time configuration details, device setpoints, process information such as feedback parameters and alarm settings, archived component and beam-related history data, system messages and maintenance and problem tracking information during the operational life of the accelerator. To effectively combine above information into an integrated database one needs to start with a vision of an enterprise-wide data repository. In this paper we'll discuss the role of databases for configuration management and machine operation by drawing examples from existing facilities such as Spring-8, BESSY, CERN and SLAC as well as presenting our plans for a comprehensive enterprise-wide database for the Next Linear Collider (NLC). The presentation will also touch upon areas such as design tools, global data modeling, aspects of user interface, as well as database integration within large distributed-object software architecture.