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Debbie: an innovative approach for the CMS Pixel Tracker web-based configuration DB

The configuration of the CMS Pixel detector consists in a complex set of data that uniquely define its startup condition. Since several of these conditions are used to both calibrate the detector over time and to properly initialize it for a physics run, all these data have been collected in a suitably designed database for historical archival and retrieval. In this talk we present a description of the underlying database schema with a particular emphasis on the architecture and implementation of the web-based interface that allows for very sophisticated browsing/editing operations of detector data using a graphical representation of its topology. This interface employs state-of-art technology such as Ajax transactions, svg-based vector graphics and an extensive use of the Extjs JavaScript library. The GUI represents a novel approach to web-based interfaces, since it features a very complex set of widgets, dynamically generated on the fly upon user-demand, thus mimicking the behavior of a stand-alone program specifically designed to this extent, but avoiding portability and interactive-login issues of the latter solution.

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