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Software for the CMS Cosmic Challenge

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At the end of 2004 CMS decided to redesign the software framework used for simulation and reconstruction. The new design includes a completely revisited event data model. This new software will be used in the first months of 2006 for the so called Magnet Test Cosmic Challenge (MTCC). The MTCC is a slice test in which a small fraction of all the CMS detection equipment is expected to be operated in the 4T solenoid of the experiment.

Cosmic rays detected in the muon chambers will be used to trigger the readout of all detectors. Prior to data taking, the detectors and their readout electronics must be tuned and synchronized with dedicated software procedures. Local reconstruction must be carried out online and offline in all subdetectors to monitor and measure their performance. Global reconstruction, linking different subdetectors, is also expected to be attempted to study relative timings and positions. CMS Visualization, which allows reconstruction products attached to every detector element to be promptly accessed, is also expected to be used for validation purposes and monitoring.

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