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CMS Monte Carlo production in the WLCG Computing Grid

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Monte Carlo production in CMS has received a major boost in performance and scale since last CHEP conference. The production system has been re-engineered in order to incorporate the experience gained in running the previous system and to integrate production with the new CMS event data model, data management system and data processing framework. The system is interfaced to the two major computing Grids used by CMS, the LHC Computing Grid (LCG) and the Open Science Grid (OSG).

Operational experience and integration aspects of the new CMS Monte Carlo production system is presented together with an analysis of production statistics. The new system automatically handles job resubmission, resource monitoring, job queuing, job distribution according to the available resources, data merging, registration of data into the data bookkeeping, data location, data transfer and placement systems. Compared to the previous production system it considerably improves automation, reliability and performance, eventually leading to a system that can be run and monitored by a small number of production operators. A more efficient use of computing resources and a better handling of the inherent Grid unreliability have resulted in an increase of production scale by about an order of magnitude, capable of running in parallel at the order of ten thousand jobs and yielding more than a million events per day.

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