

CMS Grid Computing in the Spanish Tier-1 and Tier-2 Sites

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CMS has chosen to adopt a distributed model for all computing in order to cope with the requirements on computing and storage resources needed for the processing and analysis of the huge amount of data the experiment will be providing from LHC startup.

The architecture is based on a tier-organised structure of computing resources, based on a Tier-0 centre at CERN, a small number of Tier-1 centres for mass data processing, and a relatively large number of Tier-2 centres where physics analysis will be performed. The distributed resources are connected using high-speed networks and are operated by means of Grid toolkits and services.

We present in this paper, using the Spanish Tier-1 (PIC) and Tier-2 (federated CIEMAT-IFCA) centres as examples, the organization of the computing resources together with the CMS Grid Services, built on top of generic Grid Services, required to operate the resources and carry out the CMS workflows.

We also present the current Grid-related computing activities performed at the CMS computing sites, like high-throughput and reliable data distribution, distributed Monte Carlo production and distributed data analysis, where the spanish Sites have traditionally played a leading role in development, integration and testing.

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