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LHCb is one of four high energy physics experiments currently in operation at the Large Hadron Collider at CERN, Switzerland. The contribution will contain the experiences of the computing team during three different phases of LHC, i.e. Run 1 (2011,2012), the current preparation for Run 2 (2015-17), a brief outlook on plans for data taking and its implications for Run 3 of LHC foreseen to start in 2019 and a brief introduction into LHCbDIRAC, i.e. the experiments tool to interface to distributed computing resources for its data processing and data management operations.

During Run 1 several changes in the online filter farms had impacts on the computing operations and the computing model such as the replication of physics data, the data processing workflows and the organisation of processing campaigns where the strict MONARC model originally foreseen for LHC distributed computing was changed. Furthermore several changes and simplifications in the tools for distributed computing were taken e.g. for the software distribution, the replica catalog service or the deployment of conditions data. The reasons, implementations and implications for all these changes will be discussed.

For Run 2 again a change the running conditions of the LHC will change which will also have an impact on the distributed computing as the output rate of the high level trigger approximately will double. This increased load on computing and also changes in the high level trigger farm, which will allow final calibration of data and which have direct impact on the computing model will be discussed. Again more simplifications in the usage of tools is foreseen for Run 2, such as the consolidation of data access protocols, the usage of a new replica catalog and several adoptions in the core the distributed computing framework of LHCb to serve the additional load. In Run 3 the trigger output rate is again foreseen to increase by factors. One of the changes in HLT, to be tested during Run 2, and which allow direct output of physics data without offline reconstruction will be discussed.
Since Run 1 LHCb also strives for the inclusion of cloud and virtualised infrastructures for its distributed computing needs, including the running on IaaS infrastructures such as Openstack or on hypervisor only systems using VAC, a self organising cloud infrastructure. Also the usage of BOINC for volunteer computing is currently in preparation and already actively tested. All these infrastructures, in addition to the classical grid computing, can be served by a single service and pilot system. The details of these different approaches will be discussed.

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