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Reliable online data-replication in LHCb

In LHCb raw data files are created on a high-performance storage
system using a custom, speed-optimized file-writing software. The
file-writing is orchestrated by a data-base, which represents the
life-cycle of a file and is the entry point for all operations related
to files such as run-start, run-stop, file-migration, file-pinning
and ultimately file-deletion.
File copying to the Tier0 is done using LHCbs standard Grid
framework, DIRAC. The file-mover processes also prepare the
Offline-reprocessing by entering the files into the LHCb Bookkeeping
database. In all these operations a lot of emphasis has been put on
reliability via handshakes, cross-checks and retries.
This paper presents the architecture, implementation details,
performance results from the LHCb Full System test and associated
tools (command line, web-interface).

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