

# ATLAS DataFlow Infrastructure: recent results from ATLAS cosmic and first-beam data-taking

*Thursday, March 26, 2009 8:00 AM (20 minutes)*

The ATLAS DataFlow infrastructure is responsible for the collection and conveyance of event data from the detector front-end electronics to the mass storage. Several optimized and multi-threaded applications fulfill this purpose operating over a multi-stage Gigabit Ethernet network which is the backbone of the ATLAS Trigger and Data Acquisition System. The system must be able to efficiently transport event-data with high reliability, while providing aggregated bandwidths larger than 5 GByte/s and coping with many thousands network connections. Nevertheless, routing and streaming capabilities and monitoring and data accounting functionalities are also fundamental requirements.

During 2008, a few months of ATLAS cosmic data-taking and the first experience with the LHC beams provided an unprecedented testbed for the evaluation of the performance of the ATLAS DataFlow, in terms of functionality, robustness and stability. Besides, operating the system far from its design specifications helped in exercising its flexibility and contributed in understanding its limitations. Moreover, the integration with the detector and the interfacing with the off-line data processing and management have been able to take advantage of this extended data taking-period as well.

In this paper we report on the usage of the DataFlow infrastructure during the ATLAS data-taking. These results, backed-up by complementary performance tests, validate the architecture of the ATLAS DataFlow and prove that the system is robust, flexible and scalable enough to cope with the final requirements of the ATLAS experiment.

## Presentation type (oral | poster)

oral

**Primary author:** Dr VANDELLI, Wainer (Conseil Europeen Recherche Nucl. (CERN))

**Presenter:** Dr VANDELLI, Wainer (Conseil Europeen Recherche Nucl. (CERN))

**Session Classification:** Poster session

**Track Classification:** Online Computing