The intelligent, FPGA-based event builder and DAQ for the COMPASS experiment iFDAQ

Poster #159

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on behalf of COMPASS DAQ group

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iFDAQ

- Novel

Entire DAQ built on FPGA technology including event builder

- First physics run in 2015, full commissioning in 2016
- No congestion, 30 Gbps sustained throughput
- Cost efficient solution => 8x8 event builder in single FPGA
- intelligent
  - Self synchronized;
  - Self diagnostics;
  - Failure handling and automatic recovery;
  - Redundancy and self reconfiguration - new development;

=> Continues data taking with 100% uptime

Other users: Belle II Pixel Detector, NA64

Scalability : 512x512 (256 FPGs) => 10 Tbps throughput