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Preparing the LHCb data acquisition for LHC Run3

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The LHCb experiment will face an unprecedented amount of data in LHC Run3 starting in 2021. We expect more than 30 Tbit/s of data from the detector into the event-builder. After an intense R&D phase we have now decided on the details of the architecture and on the technology. In terms of amount of data to handle this will be the biggest scientific data acquisition system built to date. While the technology to build even bigger systems is clearly available, building a compact system at this size with a limited budget poses some interesting challenges. In our system we have tried to minimize the number of custom-made components to maximally profit from technological development in industry, but our use-case for these components remains quite special. In this paper we review the design, the reasons which brought us to it, the measurements which guided our decisions and we will discuss the main technology drivers.

Mini oral

Yes

IEEE Member

Yes

Are you a student?

No

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