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The upgraded LHCb RICH detector: status and perspectives

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The LHCb experiment is designed to perform high-precision measurements of CP violation and search for New Physics using the enormous flux of beauty and charmed hadrons produced at the Large Hadron Collider (LHC). The two RICH detectors installed in LHCb have performed successfully during the 2010-2012 data taking period. The data from these detectors were essential to most of the physics results published by LHCb. In order to extend its potential for discovery and study of new phenomena it is planned to upgrade the LHCb experiment in 2018 with a 40MHz readout and a much more flexible software-based triggering system. This would increase the readout rate and occupancies for the RICH detectors. The RICH detector will require new photon detectors and modifications of the optics of the upstream RICH detector. Tests of the complete opto-electronic chain have been performed during testbeam sessions in autumn 2014. The status and perspectives of the RICH upgrade project will be presented.

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