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Readout electronics for the CMS pixel detector upgrade

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Commissioning and start-up of the LHC at CERN advances very well. It is expected that the accelerator reaches its design luminosity in the run period starting after 2014 and will go well below that before 2018. In order to exploit the full physics potential even in this very high track density environment, the CMS pixel detector will be replaced by a low mass pixel detector with an additional barrel layer and an additional end disk on each side. However, the detector services cannot be replaced. As a consequence a higher number of modules needs to be powered through the existing cables and a much higher data volume has to be read out through the same number of optical fibers. For this reason new, faster readout electronics and a new powering scheme have to be developed.

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