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Pixel detector for CMS upgrade

The LHC machine upgrade program will increase the luminosity delivered to the large experiments up to 7.5x1034 cm-2s-1 in 2026, with the goal of an integrated luminosity of 3000 fb-1 b by the end of 2037. In order to fully exploit these operating conditions and luminosity, CMS plans to build a completely new pixel detector. The Phase II pixel detector relies on highly radiation tolerant sensors and a new ASIC based on 65 nm CMOS technology. A high bandwidth readout system and a novel serial powering scheme of the pixel modules will be used to accommodate the highly demanding system needs. These prospective design choices as well as new layout geometries with acceptance extended from $|\eta|<2.4$ το $|\eta|<4$, will be presented along with some highlights of the R & D activities.

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