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The CMS Outer Tracker Upgrade for the High Luminosity LHC

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The High Luminosity Large Hadron Collider (HL-LHC) at CERN is expected to collide protons at a centre-of-mass energy of 14 TeV and to reach the unprecedented peak instantaneous luminosity of $5-7.5x10^{34}cm^{-2}s^{-1}$ with an average number of pileup events of 140-200. This will allow the ATLAS and CMS experiments to collect integrated luminosities up to 3000-4500 fb^{-1} during the project lifetime. To cope with this extreme scenario the CMS detector will be substantially upgraded before starting the HL-LHC, a plan known as CMS Phase-2 upgrade. CMS Tracker detector will have to be replaced in order to fully exploit the delivered luminosity and cope with the demanding operating conditions. The new detector will provide robust tracking as well as input for the first level trigger. This report is focusing on the replacement of the CMS Outer Tracker system, describing new layout and technological choices together with some highlights of research and development activities.

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