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The ATLAS ITk Strip Detector System for the Phase-II LHC Upgrade

ATLAS is preparing for the HL-LHC upgrade, where integrated and instantaneous luminosity will reach unprecedented values. For this, an all-silicon Inner Tracker (ITk) is under development with a pixel detector surrounded by a strip detector. The strip system consists of 4 barrel layers and 6 endcap disks. After completion of FDRs in key areas, such as Sensors, Modules, Front-End electronics and ASICs, prototyping has been completed successfully. Pre-production is about to start. We present an overview of the Strip System, and highlight the final design choices of sensors, module designs and ASICs. We will summarise R&D results achieved during prototyping, including irradiated modules demonstrating the radiation hardness achieved. In addition, we will outline the current status of pre-production on various detector components, with an emphasis on QA and QC procedures. We will also discuss the plans for the pre-production and production phase distributed over many institutes.

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