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South African contribution status of the Tile Calorimeter Phase-II upgrade off-detector electronics

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Four important experiments for the High Luminosity Large Hadron Collider (HL-LHC) are currently being upgraded to accommodate an increase in luminosity. These four key experiments include ATLAS (A Toroidal LHC Apparatus), which has been improved to study a broad range of physics. The central hadronic calorimeter is the Tile Calorimeter (TileCal), which is part of the ATLAS detector. The readout electronics system of the ATLAS TileCal must be completely redesigned to accommodate the increased radiation levels and data bandwidth for the HL-LHC. South Africa is contributing 24 % to the Tile Phase-II upgrade off-detector electronics. The contribution involves the firmware and software design; and production of Tile GbE Switch and TileCoM. This paper presents the status of the South African contribution towards the TileCal Phase-II upgrade off-detector electronics.

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