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A Portable ReadOut Module for Tilecal ElectRONics (PROMETEO) test-bench for the certification of the Tile Calorimeter of the ATLAS detector

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**Abstract content
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The instantaneous luminosity of the Large Hadron Collider (LHC) is envisaged to be increased by up to 5-7 times after its upgrade in the year 2022. The High Luminosity LHC, also referred to as the upgrade Phase-II, will bring with it a mandatory complete re-design of the read-out electronics in the Tile Calorimeter (TileCal) of the A Toroidal LHC Apparatus (ATLAS) detector. Here, the new read-out architecture is expected to have the front-end electronics transmit fully digitized information of the detector to the back-end electronics system. Fully digitized signals will allow more sophisticated reconstruction algorithms which will contribute to the required improved triggers at high pile-up. In Phase II, the current Mobile Drawer Integrity ChecKing (MobiDICK) test-bench will be replaced by the next generation test-bench for the TileCal superdrawers, the new PROMETEO (A Portable ReadOut Module for Tilecal ElectRONics). Prometeo is a portable, high-throughput electronic system for full certification of the front-end electronics of the ATLAS TileCal. It is designed to interface to the fast links and perform a series of tests on the data to assess the certification of the electronics. The PROMETEO's prototype is being assembled by the University of the Witwatersrand and installed at CERN for further developing, tuning and tests. A presentation will be made on the overall design of the new PROMETEO, and how it fits into the TileCal electronics upgrade.

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