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Prometeo, the next generation test-bench for the front-end electronics of the ATLAS Tile Calorimeter upgrade phase-II

Prometeo is a portable test-bench for the full certification of the front-end electronics of the ATLAS Tile Calorimeter upgrade phase-II. It is a high throughput electronics system designed to simultaneously read-out all the samples from 12 channels at the LHC bunch crossing frequency. The core of the system is a Xilinx VC707 evaluation board extended with a dual QSFP FMC module to read-out and control the front-end boards. The rest of the functionalities of the system are provided by a HV mezzanine board that to turn on the gain of the photo-multipliers, an LED board that sends light to illuminate the them, and a 12 channel ADC board that samples the analog output of the front-end. The system is connected by ethernet to a GUI client from which QA tests are performed on the electronics such as noise measurements and linearity response to an injected charge.

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