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The Upgrade of the Level-1 Muon Trigger at the CMS experiment for the High-Luminosity LHC era

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We present an innovative upgrade to the CMS Level-1 Muon trigger for the High Luminosity LHC (HL-LHC) era. The upgrade includes a new, modular, ATCA, time-multiplexed, platform that hosts large FPGAs and can run a variety of muon reconstruction algorithms, including Machine Learning based ones. The system also takes advantage of the availability of tracks at the Level-1 from the CMS track trigger upgrade project. We will describe the full system, the algorithms that are expected to run in it and their performance in the challenging conditions of the HL-LHC

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