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## Muon trigger primitive generation with the Drift Tubes detector at CMS for the HL-LHC

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In view of the upcoming high-luminosity operations of the LHC (HL-LHC), significant upgrades in the CMS trigger system are foreseen to maintain high physics selectivity with finer granularity and more robust readout electronics. The present Drift Tube (DT) on detector electronics will be replaced by new readout boards which will perform the time digitisation of the signals inside radiation-tolerant FPGAs achieving a high integration. The digitized signals will be streamed via high-speed optical links to the backend system, which will generate trigger primitives providing precise reconstruction of the muon's position, direction and collision time. Currently the reconstruction of these primitives makes use of an analytical solution, which has been implemented both as software and firmware and tested in data and simulation, probing an offline reconstruction performance at hardware level. Neural Networks are currently under study towards more performant pattern recognition and non-track object reconstruction profiting from the increased flexibility and computational power of the backend's FPGA system.

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