

## **Scalability of the TMTT CMS L1 Track Trigger System**

The High Luminosity LHC is expected to be completed by 2026 and the CMS collaboration is preparing a major upgrade of its detector, referred to as Phase-2 Upgrade. Among others, a new tracking system will be developed, where the upgraded tracker electronics will reconstruct trajectories of charged particles within a latency of a few microseconds, so that they can be used by the Level-1 trigger. For this purpose, an FPGA-based track finder has been implemented, utilizing a fully time-multiplexed architecture. A hardware demonstrator based on the MP7 MicroTCA processing card has been assembled, representing a realistic slice of the track finder in order to help gauge the performance and requirements for a full system. This poster will describe the system architecture, analyze possible scenarios for scaling up to a complete track finder for 2026 and estimate the effort and schedule required by the project.