

## Module Prototyping for the Phase II Upgrade of the CMS Outer Tracker

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To cope with the challenges of the HL-LHC the tracker of the CMS detector will be replaced by an enhanced version within the Phase-II Upgrade until 2026. The future outer tracker consists of  $\sim 13000$  double-sided silicon sensor modules of two types (2S-Modules: strip/strip sensor, PS-Modules: pixel/strip sensor) with different granularities depending on their distance to the interaction point. With readout chips connected to both sensors these so called p\_T-modules distinguish charged particles according to their bent trajectory in the magnetic field by a coincidence logic. The information of high-p\_T particle tracks contributes to the Level 1 trigger. The large number of modules and their complex structure puts strict requirements on various aspects of the assembly and test procedures during the production phase beginning in 2021. The various assembly and test concepts for this large scale production in respect to the 2S-Module including existing prototypes are presented.

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