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sMDT Module-0 Construction and Test for the Phase-II Upgrade of ATLAS Muon Spectrometer CHUANSHUN WEI, Univ of Michigan - Ann Arbor, ATLAS COLLABORATION — The Large Hadron Collider (LHC) will be upgraded to increase its luminosity by a factor of 7 of its designed luminosity ($10^{34} cm^{-2} s^{-1}$). The ATLAS detector will have a major upgrade to fully explore the physics opportunity provided by the upgraded LHC. In order to improve the Muon Spectrometer trigger efficiency at the HL-LHC, the barrel muon MDT (Monitored Drift Tube) chambers will be replaced by smaller-diameter MDT (sMDT) chambers and additional thin-gap RPC (Resistive Plate Chamber) trigger chambers. These chambers are required to have high precision in individual wire position, robust performance in high radiation environment to achieve high efficiency and excellent tracking resolution. In this talk, I will report the sMDT Module-0 construction and testing results at Univ. of Michigan. The results demonstrate that we can build the new generation muon chamber to satisfy all the stringent requirements.

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