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# Production and installation of first GEM station in CMS

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The High Luminosity phase of the LHC (HL-LHC) will result in an increase of beam
energy, a higher collision rate, and a harsher radiation environment. A challenge for CMS is to maintain an efficient and reliable trigger for muons with eta > 1.6. Gas Electron Multiplier (GEM) technology can operate well at high particle fluxes and will be employed in the upgrade of the endcap muon system. The installation of the first station, known as GE1/1, began in July 2019. This station is about 5 meters from the interaction point and covers the region 1.6 < eta < 2. The first 72 chambers have been installed together with their services (gas, cooling, low voltage and high voltage) and the installation of the second set of 72 chambers is planned for spring 2020. A description is presented of the detector design, the Quality Assurance and certification path, the status
of commissioning, and preliminary results.

## Funding information

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