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Quality Assurance of the QEM foils for the upgrade of the readout chambers of the ALICE TPC.

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The ALICE (A Large Ion Collider Experiment) experiment at the Large Hadron Collider (LHC) at CERN is dedicated to heavy ion physics to explore the structure of strongly interacting matter.

The Time Projection Chamber (TPC) of ALICE is a tracking detector located in the central region of the experiment. It offers excellent tracking of charged particles and identification of those via dE/dx . After the second long shutdown (LS2) the LHC will run at substantially higher luminosities. To cope with the higher data acquisition rate of approximately a factor of 100, the ALICE experiment will upgrade the Multi-Wire Proportional Chamber -based readout chambers (ROC) of the TPC. The new ROC design is based on Gas Electron Multiplier (GEM) technology.

The production of the ALICE TPC ROCs is distributed over several institutes in two continents. This, combined with strict requirements on the performance of the ROCs, necessitates thorough Quality Assurance (QA) measures. The QA protocol, developed by the ALICE collaboration, will be presented in detail.

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