1. Techtra did the MCV technology transfer from CERN into the Polish industry.
2. Techtra is the only European commercial producer of Gas Electron Multiplier (GEM) foils.
3. Techtra is the only commercial producer of GEM detectors.
1. Techtra has developed universal DAQ systems for GEM detectors.
2. The system can be scaled-up for bigger detectors.
3. Techtra is the only European commercial producer of GEM detectors.

Since 2017, Techtra has provided several GEM detectors.

- 10 x 10 cm GEM detector with 256 ch V1.1 electronic readout
- 20 x 20 cm GEM detector with 4 x 256 ch V2.0 electronic readout
- V2.0 electronic readout board
- X-ray tests stand
- Visualization software with sample radiograph
- Data Acquisition software with on-line charts
1. Techtra prototype and produce dedicated electronic systems.
2. Techtra started the development of ceramic components for GEM detectors – XY strip readouts, hex pads readouts, and GEM foils.

Techtra has conducted several R&D projects in last years.
Modular GEM Detectors (MGEM) Subtitle: GEM detector for CubeSat technology. Design, construction and tests.

Summary

Innovative GEM detectors are under development in Wroclaw, Poland within a framework of MGEM Project supported by the Polish National Centre for Research and Development. Each detector module will be compatible with CubeSat technology and thus can be implemented even in small satellites. The detector will be a component suitable for ballooning, rocket and space mission instrumentations. Detector will be commercially available. Some elements of the detector can be customized. It is expected that the detector will be finally assembled in the end of 2022. For more information on the detector components, their construction and test procedures see the parallel poster.

R&D activities

The test radiographs measured on the LTCC readouts: The prototype LTCC readout is placed on the testing board, covered by GEM and drift foils. The DAQ system dedicated to the MGEM project.

Block diagram of MGEM detector.