Contribution ID: **44**   Type: **not specified**

Trigger Unit for High Rate Beam Tests

Friday 27 January 2017 09:00 (15 minutes)

Telescopes for high rate beam tests require a dedicated trigger logic unit. This presentation will give an overview of how the ETH diamond group went from merging independent data streams by comparing time stamps to a fully integrated FPGA-based trigger logic unit for their telescope. The units core is an Artix-7 evaluation board, which is connected to a level converter board through the standardized FMC connector. The level converter board allows for differential as well as threshold adjustable single-ended inputs, the numerous outputs feature TTL and NIM signals.

The FPGA's firmware includes the logic block and a MicroBlaze soft core processor. The MicroBlaze hosts a HTTP server through which settings can be uploaded to the unit and the acquired data can be read out. The unit was fully incorporated into the EUDAQ software which allows the adjustment of almost all run parameters through a run configuration file. At the end of the presentation an outlook for a second potentially open-source version of a more sophisticated version will be given.

Primary author: Mr DORFER, Christian (ETH Zurich)

Presenter: Mr DORFER, Christian (ETH Zurich)

Session Classification: Tools and Methods for Test Beams