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Status of the AWAKE run 2c photoinjector LLRF at CERN

Wednesday 6 December 2023 14:00 (15 minutes)

As part of the proposed AWAKE run 2c upgrade, an additional electron injector will be installed to produce a 160 MeV electron beam. The injector consists of an S-band photoinjector, an X-band buncher and a pair of high-gradient X-band accelerator structures. RF pulse compressors are required to reach the design energy, adding complexity to the LLRF control system. A MicroTCA based LLRF system using the Struck SIS8300-KU digitizer AMCs and DWC8VM1 RTMs has been used to develop a prototype LLRF system at Uppsala University using the DESY Board support package. The LLRF system, which was initially developed at Uppsala University, has been relocated to CERN. The goal is to integrate it into the CERN control infrastructure based on the FESA (Front-End Software Architecture) platform. The talk will present an overview of the project and current progress.

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