

## The ATLAS Muon-to-Central Trigger Processor Interface (MUCTPI) Upgrade

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The Muon-to-Central Trigger Processor Interface (MUCTPI) is part of the Level-1 trigger system of the ATLAS experiment at the Large Hadron Collider (LHC) at CERN. We will describe an upgrade of the MUCTPI which will use optical input and provide full precision region-of-interest information on muon candidates to the topological trigger processor of the Level-1 trigger system. The new MUCTPI will be implemented as an ATCA blade receiving 208 optical serial links from the ATLAS muon trigger detectors. Two high-end processing FPGAs will eliminate double counting of identical muon candidates in overlapping regions and send candidate information to the topological trigger. A third FPGA will combine the candidate information, send muon multiplicities to the Central Trigger Processor (CTP) and provide readout data to the ATLAS data acquisition system. A System-on-Chip (SoC) module will provide communication with the ATLAS run control system for control, configuration and monitoring of the new MUCTPI.

### Summary

See attached file

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