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# FELIX: the new detector readout system for the ATLAS experiment

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After the Phase-I upgrade and onward, the Front-End Link eXchange (FELIX) system will be the interface between the data handling system and the detector front-end electronics and trigger electronics at the ATLAS experiment. FELIX will function as a router between custom serial links and a commodity switch network which will use standard technologies to communicate with data collecting and processing components. The FELIX system is being developed by using commercial-off-the-shelf server PC technology in combination with a FPGA-based PCIe Gen3 I/O card interfacing to GigaBit Transceiver links and with Timing, Trigger and Control connectivity provided by an FMC-based mezzanine card. Dedicated firmware for the Xilinx FPGA (Virtex 7 and Kintex UltraScale) installed on the I/O card alongside an interrupt-driven Linux kernel driver and user-space software will provide the required functionality. On the network side, the FELIX unit connects to both Ethernet-based network and Infiniband. The system architecture of FELIX will be described and the results of the development program currently in progress will be presented.

## Summary

See attached file

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