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Application and further improvement of the RD51 general Scalable Readout System with the VMM chip

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Within the last years, RD51 collaboration's general readout system, the Scalable Readout System (SRS), has been updated by integrating a recent front-end ASIC: The VMM, originally designed for the ATLAS New Small Wheel. Applying the SRS design strategy, a new front-end board and adapter card, as well as FPGA firmware and software was developed, while keeping general SRS hardware. With completion of the first production, the development phase was terminated. The users list contains a rich spectrum of future projects employing mainly gaseous detectors.

The presentation throws a glance on past developments. Our contributions as one of the RD51 teams are highlighted, e.g. readout rate improvements in firmware, noise evaluation and automated quality testing. An overview of applications of the system, focussing on our own, the upgrade of GEM detectors for the future COMPASS++/AMBER experiment and technology transfer from particle physics to neutron science, is given.

TIPP2020 abstract resubmission?

Yes, this would have been presented at TIPP2020.

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