Contribution ID: **12**   Type: **not specified**

Serenity-S1 ATCA Processing Card

Wednesday 26 March 2025 09:30 (20 minutes)

The Serenity-S1 ATCA processing card is a key component in the CMS Phase-2 Upgrade, designed for high-speed data acquisition and processing. It features 124 high-speed serial links operating at 25 Gb/s, a powerful VU13P FPGA for data processing, and a versatile clock tree supporting multiple clocking options.

Initial hardware tests confirm the integrity of power supplies and signal integrity through eye diagram analysis. The software stack is built for a System-on-Chip running the Alma 9 Linux operating system. On top of that, the Serenity Management Shell (SMASH) provides essential control functions, including power supply management, clock configuration, FPGA programming, and real-time board monitoring.

Although the Serenity-S1 was developed for large-scale deployment, it is also well-suited as a standalone data acquisition (DAQ) unit for a variety of systems.

Primary author: MEHNER, Torben

Presenter: MEHNER, Torben

Session Classification: FPGA und DAQ

Track Classification: Vortrag