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Jaroslaw Szewinski - Multipurpose MTCA.4 data processing board based on FPGA device with builtin data converters

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Xilinx, world leading FPGA vendor, has released RFSoC FPGA device family, which may have 8x RF-class 12-bit 4 GSPS ADCs and 8x 14-bit 6.5 GSPS DACs, together with the multi-core ARM processors and FPGA programmable logic available in one integrated circuit. Due to the high sampling frequency which is multiplied by number of channels, amount of data that has to be transferred to and from this device may be large. RFSoC technology fits very well to the MTCA.4 standard, due to high bandwidth backplane, which may carry data to and from data converters, as well as flexible Zone 3 interface which is suitable for analog I/O.
This contribution will present the MTCA.4 RFSoC based device, equipped in 8xADC and 8xDAC variant of the FPGA device. The general board concept will be presented, as well as implementation details and possible project variants.

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