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Zynq FPGA processing signal system for SOLARIS storage ring diagnostics.

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After the successful testing of the BBQ system for passive tune measurements using direct diode detectors at the SOLARIS storage ring, the next step - and a significant challenge - was the proper acquisition and processing of the analog signal. To address this, a 24-bit ADC system integrated with a Zynq FPGA was developed to ensure high-quality signal acquisition and reliable data processing.
In addition, based on the developed hardware platform, a dedicated BPM signal spectrum analyzer is currently being designed, with the ultimate goal of replacing the device presently in use.
The presentation will summarize the progress achieved to date, planned improvements, technical challenges encountered, and the expected final performance parameters of the system.

Authors: SZCZEPANIAK, Mateusz (NSRC SOLARIS); Mr ZUREK, Michal (NSRC SOLARIS)

Presenters: SZCZEPANIAK, Mateusz (NSRC SOLARIS); Mr ZUREK, Michal (NSRC SOLARIS)

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