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The recording system of the URAN array

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In MEPhI, the URAN array for registration of the neutron component of extensive air showers (EAS) is being created. The setup has a cluster structure and includes 6 clusters of 12 detectors each, located on the roofs of the buildings. En-detectors capable of simultaneous registration of two main EAS components are used: electromagnetic (e) and neutron (n). The recording system of the setup consists of twelve boards of amplitude analysis (two boards per cluster), which are synchronized in time with the accuracy of 10 ns. Each board has six dual-12-bit channel ADC with 200 MHz sampling frequency. To register the delayed EAS neutrons the ability to change the sampling frequency in six cards from 200 MHz to 1 MHz is used. Recording time at 1 MHz sampling frequency is 20000 ms. The recording system is integrated by the Central DAQ Post and data transmission from the boards is performed via fiber optic lines.

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