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## **Distributed control and monitoring tools at LU-20 and HILAC complexes**

*Tuesday, 1 October 2019 09:00 (30 minutes)*

The TANGO control system is chosen as the main platform for developing control software at the Nuclotron. The experimental setup of the TANGO system was successfully tested during the runs of the existing accelerator complex. The report describes hardware, server and client software modules for data acquisition and equipment management at LU-20 and HILAC linear accelerators.

Universal web clients were developed for management of equipment groups. The data is transferred is a single stream for each group of equipment. The client layer interacts with TANGO control system via standard http and WebSocket protocols. It allows to significantly expand the choice of programming language for writing the client software. The TANGO device server WebSocketDS was developed for data exchange via WebSocket protocol.

Various JavaScript libraries and frameworks were used for the client layer development, such as Angular, ReactJS, ExtJs and few others. They allow to create cross-platform client web applications for the control systems. JavaScript framework Electron was used for creating standard desktop applications.

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