Status of ITER control systems [[1]](#footnote-1)\*)

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CODAC (Control, Data Acquisition and Communication) is the ITER control system. It is divided into two control levels: central supervisor and lower local level control systems. Central supervisor is ITER Organization responsibility and local control systems is responsibility of national domestic agencies.

Supervisor includes the central core of CODAC, a nuclear safety system, a blocking and protection system, a plasma control system and a central computing core which provides a real time control. Lower level control systems provide control of working of 130 technological and diagnostic subsystems of the ITER. CODAC uses EPICS SCADA (Supervisory Control and Data Acquisition) based on computer networks with a bandwidth of 10–40 Gbps and built on client-server architecture.

The report provides an overview of the state of affairs for February 2020 on the top-level control systems as well as on the technological and diagnostic subsystems for which the Russian Federation domestic agency is responsible (DIVERTOR NEUTRON FLUX MONITORS, DIVERTOR THOMSON SCATTERING, NEUTRAL PARTICLE ANALYZER, CXRS BASED ON DNB (EDGE), VERTICAL NEUTRON CAMERA, HIGH FIELD SIDE REFLECTOMETRY, PORT PLUG TEST FACILITY, EC RF GYROTRONS, REMOTE PARTICIPFTION CENTER)

At the conference, the state of affairs on these systems will be reported in detail in reports by the authors directly responsible for these areas. Also considered are the problems that were solved with the control systems developed in 2020. In particular, problems related to the integration of technological and diagnostic systems into the central control system at the stage of acceptance tests on manufacturers sites and at ITER site during the lunch of plant and works at first plasma stage, problems of electromagnetic and radiation compatibility. Also considered the remote access mode problems for integration and control of diagnostics within Remote participation center of Russian Federation domestic agency.

The report is of interest to physicists and engineers working in the field of controlled thermonuclear fusion

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1. \*) [abstracts of this report in Russian](http://www.fpl.gpi.ru/Zvenigorod/XLVIII/E/ru/HD-Semenov.docx) [↑](#footnote-ref-1)