PROGRESS AND STATUS OF ITER CONTROL SYSTEMS [[1]](#footnote-1)\*)

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Control system of ITER - CODAC (Control, Data Acquisition and Communication) consists of two control levels – central: supervisory control system (in scope and responsibility of ITER organization) and local: plan systems instrumentation and control (I&C), which are under responsibility of Domestic Agencies. Supervisory system contains central core of control system (CODAC Core System), Central Safety System, Central Interlock System, Plasma Control System and High-Performance Computing for real-time operation of ITER. Plant breakdown of ITER is represented by more than 130 Plant systems: technological and diagnostics. CODAC is based on SCADA (**S**upervisory **Co**ntrol and **D**ata **A**cquisition) EPICS, which uses client-server approach and computer networks 10-40 Gb/s.

The overview of progress and status (up to March 2023) of ITER Central Control Systems and Plant system I&Cs of technological and diagnostic systems in scope of Russian Federation responsibility *(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 Participation Center)* is presented.

Challenges in 2022-2023 related to data acquisition and control systems: integration of different technological and diagnostic systems to Central on into complex of ITER, partly performed on Factory Acceptance Testing at manufacturer site, planned activities for Site Acceptance Testing and ITER Cadarache, issues of commissioning and integrated commissioning and further operation including electromagnetic compatibility and radiation hardness assurance. Independent task is the testing of remote participation (integration monitoring, limited control and data access) which is performed using Russian Remote Participation Center located in Project Center ITER. More information for specific topics is described in details in dedicated topics by the responsible.

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

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