Contribution ID: **24** Type: **not specified**

Status of Instrumentation and Control Systems Delivered by Russian Federation to ITER Project

ITER (International Thermonuclear Experimental Reactor) is one of the most complex international mega project (Cadarasche, France). It integrates more than 180 technical Sub Systems (Vacuum, Cooling, Power Suppliers, Cryogenics, Plasma Diagnostics, etc), procured from different Participant Teams through their 7 Domestic Agencies (China, EU, India, Japan, Korea, RF, US).
COntrol, Data Acquisition and Communication system (CODAC) coordinates the real time operation of all ITER Technical Subsystems. It also comprises the Central Interlock System, Central Safety System and Plasma Control System (PCS).
PCS uses algorithms based on High Performance Computing which control plasma current ramp up, heating, burning, burning termination, current ramp down, MHD stability, disruption forecasting and mitigation, etc. It takes input data from scenario together with real-time data from more than 40 plasma diagnostics complexes and machine instrumentation and produces outputs for subsystems (actuators).
Russian Federation delivers 8 diagnostic complexes such as Neutral Particle Analyzer, Divertor Thomson Scattering, High Field Side Reflectometer, Divertor Neutron Flux Monitor, H-alpha Spectroscopy, Vertical Neutron Camera, CXRS and Vertical Gamma Spectroscopy.
In the report presented I&C Systems of diagnostics developed by Russian Federation for the ITER Project.
Report will be interesting for physicists and engineers working in Nuclear and Fusion Science.

Primary author: Dr SEMENOV, Igor (Project Center ITER)

Co-authors: Dr KHILCHENKO, Alexander (Budker Institute, Novosibirsk); Mrs KUVSHINOVA, Nina (Project Center ITER)

Presenters: Dr KHILCHENKO, Alexander (Budker Institute, Novosibirsk); Dr SEMENOV, Igor (Project Center ITER)