Status of the ITER Control System

A. Wallander

ITER Organization

The ITER Control System is responsible for the functional integration of the ITER plant and enables integrated and automated operation. It is segregated in three tiers; conventional control, machine protection and safety (nuclear and occupational), and two horizontal layers; the central control system and the plant systems instrumentation and control (I&C). The central layer is provided by the central team, while the plant systems I&C are provided in-kind by the seven ITER members. Since there are more than 200 of the latter, integration is considered the main challenge for the control system. The main actions to address this challenge are publication of standards and guidelines, the so called Plant Control Design Handbook (PCDH), and provision of standard software and hardware, so called CODAC Core System and I&C Integration Kit.

The ITER project is in construction phase with the first buildings taking shape at the ITER site in southern France. The installation of the site wide control system network infrastructure will commence in the middle of 2017 followed by the integration of the first plant systems such as buildings, electrical and cryogenic plant. In parallel the final design and manufacturing of other plant systems are in progress as well as the final design and implementation of the central operation applications such as supervision and automation, pulse scheduling, plasma control, data handling and remote handling. The control building with the main control room will be available in 2018 and the integration activities will intensify over the following years.

In this talk the current status of the ITER Control System is reported with emphasize on addressing the integration challenge.