

ITER CONTROL SYSTEM DEVELOPMENT ENVIRONMENT

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Abstract

ITER is a large tokamak fusion facility whose construction is organized in such a way that the plant systems it consists of will be delivered in-kind by the seven participating countries. Integration of the plant systems is thus expected to be particularly challenging. To make integration of instrumentation and controls of plant systems as smooth as possible, the ITER Control, Data Access and Communication (CODAC) team prepared a Plant Control Design Handbook, which specifies in detail the interfaces between the plant systems and the central system. To facilitate compliance with the handbook, a development environment has been prepared for plant system controls developers, which standardizes the operating system, control system infrastructure, development tools and development processes. In this paper, we describe the ITER CODAC development environment: what open-source software was selected, how it is packaged for ITER CODAC, what infrastructure for development is in place, what challenges were encountered and what the roadmap is for the foreseeable future.

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