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Control Engineer/Physicist CHD-078

Reports to Line Manager:	CODAC Section Leader, Department for CODAC & IT, Heating & CD, Diagnostics	**Job Code:**	CHD-078
Direct Employment:	Not Required	**Grade:**	P3

Purpose

The CODAC Section develops standards for and is responsible for the integration of Plant Systems instrumentation and control (subsystems) provided by the seven ITER Parties' Domestic Agencies (DA). The number of Plant Systems is estimated to be in the order of 150 and will be developed over a period of ten years. A large part of these Plant Systems will use embedded control in order to fulfil data acquisition and feedback control requirements. The CODAC Section has recently standardized the software environment EPICS as a baseline for the ITER control system.

The candidate will take a leading role in developing the standards for embedded control with emphasis on electronics, input/output, device drivers, control algorithms and integration with CODAC standards.

china
eu
india
japan
korea
russia
usa

Major Duties/Responsibilities

- Develops the standards for an embedded control platform to fulfill ITER data acquisition and feedback control requirements;
- Develops the standards for Plant System embedded control input/output boards;
- Develops device drivers, in the ITER standard software environment, to support the standard input/output boards;
- Supervises contracts to assist in the development of standard embedded control;
- Contributes to the development of feedback control;
- Maintains a strong commitment to the implementation and perpetuation of the ITER Safety Program, values and ethics.

Qualifications and Experience

- ***Education:***
  - Degree at least equivalent to 4 years of study after the High School Diploma, in Engineering, Physics or other relevant field.
- ***Technical experience:***
  - At least 8 years of practical experience in a research or industrial environment with a similar scope of work;
  - At least 8 years of practical experience in developing and using embedded technologies (VME, PCI, cPCI, PCIe, PXI, ATCA or similar);
  - Good knowledge of digital electronics for embedded control and remote input/output;
  - Good knowledge of Linux and real-time operating systems;

  - Some knowledge of control theory (PI, PID, H infinity, transfer functions etc.);
  - Some knowledge of feedback control tools like SimuLink and Matlab.
- ***Project experience:***
  - Experience in executing contracts with external partners or Industry;
  - At least some experience participating in a large international project to develop a control system.
- ***Social Skills***
  - Ability to work effectively in a multi-cultural environment;
  - Ability to work in a team and to promote team work.
- ***Language requirements:***
  - Fluent in English (written and spoken).

Direct Supervisor and Interfaces

- Reports to CODAC Section Leader Acts.

Authority / Approval Levels

This position has authority and approval levels generally defined by the Section Leader for his/her scope of work.

Measures of Effectiveness

- Successfully defines and enforces ITER-wide standards for the embedded control platform;
- Successfully defines and enforces input/output standards for embedded control;
- Successfully establishes the required device drivers to fully integrate embedded control in ITER standards;
- Successfully interfaces between the data acquisition and feedback control actors to establish ITER-wide embedded control standards.