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JOB DETAIL

My space	Ref. IO1096 - 6/27/2010	
RSS See jobs	Embedded Control	s Engineering Resp. Officer CHD-25
My job alert	Main iob	Control system
	Departments	CHD/Department for CODAC and IT, Heating and CD, Diagnostics
	Divisions	CHD / CODAC and IT Division
	Sections	CHD / CIT / CODAC Section
	Job Family	Project engineering
	Application Deadline	8/1/2010
	Grade	P3
	Direct employment	Not required
	Supervised by:	Division Head
	Purpose	The CODAC Section is developing standards for and is responsible for integration of Plant Systems instrumentation and control (subsystems) provided by the seven ITER parties called Domestic Agencies. The number of Plant Systems is estimated to be in the order of 160 and be developed over a period of ten years. A large part of these Plant Systems will use embedded control in order to fulfill fast data acquisition and feedback control and machine protection, a complex Plasma Control System has to be implemented as part of the CODAC core. These systems will run plasma pulses, read sensors coming from Diagnostics and feed corrections to actuators in Plant Systems and monitor the whole ITER devices. 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 controls with an emphasis on fast controls software/hardware, signal input/output (I/O), control algorithms and integration with CODAC standards.
	Main duties / Responsibilities	 Develops standards for an embedded control platform to fulfill ITER requirements on signal I/O for embedded fast controllers; Develops a baseline for the central controller to achieve plasma control requirements; Develops standards for Plant System embedded control I/O; Interfaces with diagnostics and feedback control actors in Plant Systems to establish ITER-wide embedded control standards; Produces design documents and prototypes for ITER's needs for fast controls; Implements algorithms and softwares for fast feedback and fast interlock event generation and handling; Supervises contracts to assist in the development of standard embedded controllers; Maintains a strong commitment to the implementation and perpetuation of the ITER Safety Program, values and ethics.
	Measures of effectiveness	 Successfully performs System Engineering work needed to fulfill embedded fast controllers for the ITER device; Successfully defines and enforces ITER-wide standards for embedded control functions; Successfully defines and enforces input/output standards for embedded control; Successfully establishes the required software environment to fully integrate the Plasma Control System in ITER standards; Successfully interfaces with diagnostics and feedback control actors in Plant Systems to establish ITER-wide embedded control standards.
	Level of study	PhD or equivalent degree
	Diploma	Engineering, Physics or other relevant disciplines
	Level of experience	At least 5 years

Technical experience	 6 -15 years of practical experience in a research or industrial environment with a similar scope of work; Ability to commission and operate complex systems in large scale scientific facilities; Good knowledge of feedback control tools like SimuLink and Matlab; Basic knowledge of control theory (PI, PID, H infinity, transfer functions, etc.); At least 5 years of practical experience in developing and using embedded technologies (VME, PCI, cPCI, PCIe, PXI, ATCA or similar tools); Good knowledge of digital electronics for fast embedded control and remote input/output is an asset; Experience in specification, design and implementation of feedback systems and their integration into control systems; Experience in solving complex interface problems between diagnostics, machine actuators, control systems and computing.
Social skills	Ability to work effectively in a multi-cultural environment Ability to work in a team and to promote team spirit
General skills	MS Office professional (Access, Project, Publisher, Visio) MS Office standard (Word, Excel, PowerPoint, Outlook) Sharepoint
Specific skills Languages	 Experience in executing contracts with external partners or industrial companies; Experience with project management methodology & tools; Experience working in a large international project would be an advantage; Good knowledge of the ITER Project. English (Fluent)

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