JOB DETAIL

Ref. IO2150 - 8/7/2019

Control Systems Integration Engineer SCOD-101&053

Main job	Control system
Department	SCOD / Science & Operations Department
Division	SCOD / Control Division
Section	SCOD / CD / Central Control Integration Section
Job Family	Engineer - 2
Application Deadline (MM/DD/YYYY)	09/10/2019
Grade	P3
Direct employment	Not required
Purpose	SAP Id: 50000649 & 50005580

Two openings

To propose a plan, organize and execute the integration and commissioning for the defined scope of ITER Plant Systems into the central control system composed of conventional control (CODAC), Central Interlock System and Central Safety Systems.
To monitor a subset of ITER Plant Systems delivered by ITER Members for the defined scope of responsibilities of Instrumentation and Control (I&C).
To propose, develop and carry-out solutions in order to allow, ease, improve, support and maintain the Programmable Logic Controllers (PLC) for the ITER Plant Systems in order to ensure their proper integration with the central control system.
To contribute to the management of supply and support contracts related to above activities.

Background information:

The Control Division is responsible for integrating ~170 plant systems, provided by the ITER members, in the central control system. I&C standards have been established and software frameworks developed. These are based on Siemens S7 series of PLC, Peripheral Component Interconnect Express (PCIe) based fast controllers, Ethernet TCP/IP communication and open source software (Linux, Experimental Physics and Industrial Control System – EPICS, Control System Studio, etc.). Integration started in 2018 and will continue up to first plasma in 2025 and beyond.

Main duties / Responsibilities
Interacts with Plant Systems I&C Responsible Officer(s) and suppliers by supporting their design and acceptance, ensuring compliance to standards developed by the Control Division;
Reviews and maintains up-to-date physical and functional interfaces between Plant System I&C and central control systems;
Leads the development of I&C integration plans and procedures for defined Plant Systems I&C, executes them and generates the associated test reports;
Ensures the I&C integration procedures are correctly executed, errors are diagnosed, solutions are proposed and implemented accordingly in addition to test reports being generated;
Participates in the commissioning and operation of Plant Systems and implements required changes to I&C;
Leads the development of test facilities which allow development and testing off line;
Keeps the Plant Control Design Handbook documentation up to date, especially the PLC Software Engineering Handbook and Catalogue;
Implements and documents PLC code as per I&C needs;
Implements and documents Human Machine Interface (HMI) code as per I&C needs;
Participates in the management of contracts to supply standard equipment as well as contracts to support integration activities;
May be requested to be part of any of the project/construction teams and to perform other duties in support of the project;
May be required to work outside ITER Organization reference working hours, including nights, weekends and public holidays.

Measures of effectiveness
Integrates Plant Systems I&C in central control system within the defined scope, quality and schedule;
Proposes and implements solutions for problems

encountered in a timely manner in order to achieve the integration, commissioning and operation for the defined ITER plant systems;

Makes reliable diagnostics, developments, tests, analyses in compliance with existing procedures to effectively support the commissioning, operation and maintenance of integrated ITER Plant Systems;

Keeps documentation related to plant system I&C interfaces up to date.

Level of study Master or equivalent degree

Diploma Electronic, Computer Science or Electro-mechanics

Level of experience At least 8 years

Technical experience/knowledge At least 8 years' experience in designing, installing and commissioning of scientific control systems or large scale industrial plant I&C systems;
Master's degree or equivalent in Electronic, Computer Science, Electro-mechanics or other relevant discipline;

Managing integration and commissioning of heterogeneous I&C systems, including identifying and resolving issues;
Using Siemens Step 7 and TIA portal environments;
Development with Siemens S7-300, S7-400 and S7-1500 PLCs and TCP/IP communications;
Using EPICS and/or industrial SCADA systems;
Using Linux, virtualization environment and real-time operating systems is considered as an advantage;
Working on Human Machine Interface (HMI) development is considered advantageous;
Instrumentation (sensors, actuators) is considered advantageous;
Acceptance testing and commissioning of I&C industrial systems considered as a strong advantage;
Using the following Microsoft Office Tools: Outlook, Word, Excel, Visio, SharePoint.

General skills Collaborate: Ability to dialogue with a wide variety of contributors and stakeholders;
Communicate Effectively: Ability to adjust communication content and style to deliver messages to work effectively in a multi-cultural environment;
Drive results: Ability to persist in the face of challenges to meet deadlines with high standards;
Manage Complexity: Ability to gather multiple and diverse sources of information to understand problems accurately before moving to solutions;
Instill trust: Ability to apply high standards of team mindset, trust, excellence, loyalty and integrity.

Others The required education degree may be substituted by extensive professional experience involving similar work responsibilities and/or additional training certificates in relevant domains.

Languages English (Fluent)

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