Job Title: Scientific Officer IO0928

Req ID **1320** - Posted **18/02/2020** - (France, 13067 St Paul Lez Durance Cedex) - **Science and Technology Expertise** - **New Posting**

The ITER Organization brings together people from all over the world to be part of a thrilling human adventure in southern France—building the ITER Tokamak. We require the best people in every domain.

We offer challenging full-time assignments in a wide range of areas and encourage applications from candidates with all levels of experience, from recent graduates to experienced professionals. Applications from under-represented ITER Members and from female candidates are strongly encouraged as the ITER Organization supports diversity and gender equality in the workplace.

Our working environment is truly multi-cultural, with 29 different nationalities represented among staff. The ITER Organization Code of Conduct gives guidance in matters of professional ethics to all staff and serves as a reference for the public with regards to the standards of conduct that third parties are entitled to expect when dealing with the ITER Organization.

The south of France is blessed with a very privileged living environment and a mild and sunny climate. The ITER Project is based in Saint Paul-lez-Durance, located between the southern Alps and the Mediterranean Sea—an area offering every conceivable sporting, leisure, and cultural opportunity.

To see why ITER is a great place to work, please look at this video

Application deadline: 31/03/2020
Domain: Science & Operation
Department: Science,Controls & Operation
Division: Science
Section: Experiments and Plasma Operation
Job Family: Scientific Coordination
Job Role: Scientist - 1
Job Grade: P2
Language requirements: Fluent in English (written & spoken)
Contract duration: Up to 5 years

Purpose

As Scientific Officer, you will bring your expertise to contribute to and support the development, upgrade and maintenance of the Plasma Control System Simulation Platform (PCSSP);
You will participate in the design, testing and implementation of tools required for the simulation and operation of the Plasma Control System (i.e. synthetic diagnostics, archiving and interfaces to other ITER plasma simulations within the Integrated Modelling & Analysis Suite-IMAS);
You will also contribute to the evaluation of the software implementation for the PCS components to prepare for the commissioning and future operation of ITER.

Background information:
The Plasma Control System (PCS) is the primary tool for the control of the plasmas generated in the ITER device. The PCS controls practically all the required plant systems to execute a pulse, and especially those related to the plasma parameters themselves; from the magnetic configuration to the electron density, thermal stored energy, etc. The accuracy and sophistication of the plasma control to be achieved by the PCS in ITER is a key element for success in achieving ITER's fusion power production goals.

Major Duties/Roles & Responsibilities

- Develops, tests and maintains the PCSSP simulation environment (based on Matlab/Simulink) to support the development of the PCS for operation;
- Produces supporting documentation and manuals for the new capabilities introduced into PCSSP;
- Carries out maintenance of the PCSSP and supports the maintenance of the PCS software during the operation of ITER;
- Contributes to the evaluation of future PCS control functions required for the extension of plasma operation throughout the various phases of the ITER Research Plan;
- Liaises with other plant systems and diagnostics to ensure that the correct input and output signals are provided to/by PCS and that correct and up-to-date models of the systems are included in the PCSSP;
- Liaises with the Controls Division (CD), which is responsible for the actual implementation of the PCS, and provides support for verification and validation tests from PCSSP to the PCS as implemented by Control, Data Access and Communication (CODAC);
- Contributes to the commissioning of the PCS as implemented by CD prior to the start of ITER operation;
- 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 shifts outside ITER Organization reference working hours, including nights, weekends and public holidays.

Measures of Effectiveness

- Establishes effective development and maintenance plans for PCSSP and provides the appropriate documentation to a high standard within the defined schedule;
- Develops high quality PCS software components for testing in PCSSP, performs thorough evaluations and provides quality documentation for the developed components and test records;
- Ensures good communication with the CD throughout the implementation of PCS;
- Communicates well and maintains high professional standards when interfacing with staff from the ITER Organization, ITER Members' R&D institutions and Domestic Agencies.

Experience & Profile

- *Professional Experience:*
  - At least 5 years' expertise in the field of control systems.
- *Education:*
  - Master Degree or equivalent in Electrical Engineering, Control Engineering, Physics or other relevant discipline;
  - The required education degree may be substituted by extensive professional experience involving similar work responsibilities and/or additional training certificates in relevant domains.
- *Language requirements:*
  - Fluent in English (written and spoken).
- *Technical Competencies:*
  - Proven experience in the design of control systems;
  - High level knowledge and proven practical experience of Matlab/Simulink;
  - Good knowledge other programming languages, in particular C++;
  - Knowledge of real-time applications is considered an advantage;
  - Experience in conducting acceptance and commissioning tests of control systems is also an advantage;

- ◦ Experience in Plasma Control in magnetic confinement devices would be beneficial
  - ◦ Proficient skills in use of PCs, including MS Office standard (Word, Excel, PowerPoint, Outlook);
  - ◦ Basic knowledge of database software (e.g. Enterprise Architecture) and SysML is considered an asset.
- *Behavioral Competencies:*
  - ◦ 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 proposals;
  - ◦ Instill trust: Ability to apply high standards of team mindset, trust, excellence, loyalty and integrity.

The following important information shall apply to all jobs at ITER Organization:

- Maintains a strong commitment to the implementation and perpetuation of the ITER Safety Program, ITER Values (Trust; Loyalty; Integrity; Excellence; Team mind set; Diversity and Inclusiveness) and Code of Conduct;
- ITER Core technical competencies of 1) Nuclear Safety, environment, radioprotection and pressured equipment 2) Occupational Health, safety & security 3) Quality assurance processes. Knowledge of these competencies may be acquired through on-board training at basic understanding level for all ITER staff members;
- Implements the technical control of the Protection Important Activities, as well as their propagation to the entire supply chain;
- May be requested to work on beryllium-containing components. In this case, you will be required to follow the established ITER Beryllium Management Program for working safely with beryllium. Training and support will be provided by the ITER Organization;
- May be requested to be part of any of the project/construction teams and to perform other duties in support of the project;
- Informs the IO Director-General, Domain Head, or Department/Office Head of any important and urgent issues that cannot be handled by lline management and that may jeopardize the achievement of the Project's objectives.