

# Job Title: Electromagnetic Measurement Coordinating Engineer IO0174

Requisition ID **4521** - Posted - (France, 13067 St Paul Lez Durance Cedex) - **Engineering of Systems - 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:** 17/10/2021

**Domain:** Engineering

**Department:** Engineering Design

**Division:** Port Plugs & Diagnostics

**Section:** In-Vessel Diagnostics

**Job Family:** Engineering

**Job Role:** Coordinating Engineer

**Job Grade:** P4

**Language requirements:** Fluent in English (written & spoken)

**Contract duration:** Up to 5 years

## Purpose

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As Electromagnetic Measurement (EMM) Coordinating Engineer, in the In-Vessel Diagnostics Section (IVD), you will coordinate the activities of the team, including design, and implementation of diagnostic and engineering systems for electromagnetic measurements, machine instrumentation and survey, signal transport and low voltage power supplies.

In addition to providing technical guidance, you will direct the specifications and work in the laboratories and institutes of the ITER Organization (IO) Partners, including any relevant supporting Research & Development (R&D). This includes managing the scope, schedule, safety, quality control and cost of procuring the systems and hardware. You will provide project-engineering expertise and apply project management methodologies to the design, procurement, assembly, commissioning, and operation of these systems.

Finally, you will ensure the coordinated and synchronized integration of the above-mentioned diagnostics for all relevant parts of ITER machine, including ports, vacuum vessel, divertor, galleries and the diagnostics building.

### **Background**

The aim of diagnostics is to provide the measurements to control and understand the plasma so as to achieve the ITER operation goals and gain the knowledge needed for future reactor design. The Port Plug and Diagnostics Division (PPD) provides all the Diagnostics for ITER, along with the engineering infrastructure to support these.

IVD prepares 39 diagnostic projects to support ITER operation. EMM measurements (magnetics, strain stress and temperature monitoring and calorimetry) are used to infer fundamental electromagnetic equilibrium-related parameters in real time for operation and control, to deduce engineering utilisation of core components in operation and to provide fusion power verification and the initial machine geometrical setup to high accuracy. EMM services supply signal transport, amplification and power supply solutions for irradiated environments. The measurements aim to control plasma performance and to gain the knowledge needed for reactor designs.

### **Key Duties, Scope, and Level of Accountability**

- Provides leadership to EMM team members to coordinate activities and ensure efficient use of resources and timely execution of the work;
- Guides and drives implementation of technical solutions;
- Ensures technical control is implemented across all activities.
- Leads the design of the diagnostics interfaces with the main tokamak components;
- Reviews the integration of activities to ensure that the diagnostics achieve specified requirements;
- Specifies and monitors R&D packages;
- Leads the Design Review processes for the relevant diagnostics systems, and other related systems as required;
- Develops technical specifications, manages the procurement of the relevant diagnostics systems through direct contracts, and interacts with the teams working in the Domestic Agencies (DAs) and IO Procurement and Contracts Division as necessary;
- Monitors the procurement of diagnostic systems by using relevant tools, with the support of Corporate Domain (e.g. project planning, work-breakdown, technical schedule);
- Manages and maintains the systems' data and documentation in ITER databases;
- Maintains communication with other organizations within the ITER collaboration and the fusion community;
- Develops plans for the construction, installation, commissioning and operation of the diagnostic systems at ITER;
- Reports variances on all technical, cost and schedule aspects, analyses the impact(s) and proposes recovery plans to be implemented;
- Oversees construction of the relevant diagnostics systems and supervises the work of contractors/technicians;
- Performs and reviews effective opportunities & risk identification and management of related documentation;
- Manages the change control process and communicates changes as necessary;
- 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

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- Demonstrates leadership in coordination of activities and team to ensure objectives are completed within defined schedule;
- Ensures that work packages are completed to agreed quality, deadlines and costs;
- Developed and approved accurate design and interface documentation, schematics plans and databases within defined schedule;
- Developed and approved high quality technical documentation for procurement including risks and opportunities;
- Developed and approved operation and installation plans within the defined schedule and cost;
- Successfully collaborates and communicates well with technical partners in Domestic Agencies and other ITER Organization (IO) Departments / Offices;
- Successfully coordinates and synchronizes the integration of diagnostics, especially in the ports but also all other relevant parts of ITER such as galleries and diagnostic building, within defined schedule;
- Ensures that data and documents are kept in the correct format and to a high standard of accuracy.

### Experience & Profile

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- ***Professional Experience:***
  - Minimum 10 years' experience including coordinating activities of diagnostics projects for the main parts project lifecycle management in the field of scientific or industrial projects within complex international environments.
- ***Education :***
  - Master's degree or equivalent in Physics, Engineering 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 and Demonstrated Experience in:***
  - Electromagnetic problems and design solutions;
  - Decisive involvement in large projects where EM loads are dominant;
  - Knowledge of radiation effects;
  - Interface Management: identifying, resolving and maintaining technical and functional interfaces;
  - Problem solving: assessing problems, identifying root cases, and reaching solutions to achieve project objectives within time and cost;
  - Project Management (planning/measuring progress of project work, managing risks and costs): Identifying issues and delays in projects, development of recovery plans and cost, scope and schedule negotiations with international stakeholders is required;
  - Procurement and contract management: defines requirements, performs sourcing activities, monitors contract delivery, and manages external parties to ensure implementation per contractual requirements;

- Systems Engineering and Design Control: Functional analysis, requirement management, change control, and design defense in technical design reviews are considered an advantage.
  - Presentation writing: write, review, and present technical documents in the domain of expertise, transmitting knowledge and data with precision;
  - More than one project supported by publications in a relevant discipline (electromagnetic measurements, plasma control, structural monitoring, signal transport systems or related projects).
  - **Behavioral Competencies:**
    - Collaborate: Ability to facilitate 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 analyze multiple and diverse sources of information to understand/define problems accurately before moving to proposals;
    - Instill trust: Ability to apply high standards of team mindset, trust, excellence, loyalty and integrity.
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***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 line management and that may jeopardize the achievement of the Project's objectives.