

# Job Title: Diagnostic Integration Engineer TED-234

Req ID **834** - Posted **12/10/2019** - (France, 13067 St Paul Lez Duranc) - **Diagnostics Systems Engineering - 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 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.

**Application deadline:** 24/11/2019

**Domain:** Engineering

**Department:** Engineering Design

**Division:** Port Plugs & Diagnostics

**Section:** In-Vessel Diagnostics

**Job Family:** Project Engineering

**Job Role:** Engineer - 2

**Job Grade:** P3

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

**Contract duration:** Up to 5 years

## Purpose

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To lead the design and interface updates of diagnostic sub-systems integrated with the tokamak vacuum vessel and cryostat.

To develop, organize and oversee procurement and the acceptance of distributed diagnostics components and materials.

To organize assembly support and design updates in the as-built configuration for these components.

## Background

*The in-vessel diagnostics section (IVD) looks after 35 diagnostic projects. Many of these involve sensor and hardware groups critical to machine operation and distributed on the surfaces of core machine components such as the main vacuum vessel, cryostat and toroidal field coils. The projects are entering the assembly stage and success needs careful and high quality follow-up of manufacturing, acceptance testing, pre-assembly, on-machine assembly and metrology. Ultimately, this will lead to the update of the as-built databases to support the commissioning of the tokamak for first plasma.*

## Major Duties/Roles & Responsibilities

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- Develops Engineering and Interface designs for distributed diagnostic components;
- Leads related Gateway Reviews and organizes the releases of corresponding Work Packages;
- Organizes deployment and installation, including assembly oversight for distributed systems;
- Coordinates the work of various teams in diagnostic laboratories and work-spaces;
- Prepares technical specifications for procurement and manages the relevant contracts;

- Organizes materials procurement, including standardization and oversees associated manufacturing;
- Organizes the installation of these diagnostic systems in ITER by planning worksite activities, overseeing and refining on-site testing (electrical tests, optical and waveguide alignment, etc.), developing remedial actions, editing engineering work packages and managing field change requests;
- Controls all protection-important activities (PIAs) in this area;
- Maintains updated databases associated with distributed components after metrology campaigns;
- 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.

Note: 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;

## Measure of Effectiveness

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- Completes work packages to agreed deadlines;
- Manages interfaces efficiently and smoothly;
- Demonstrates fast control of manufacturing flow and subsequent corrections;
- Organizes interface management efficiently and prepares well for installation plans;
- Collaborates effectively with technical partners.

## Experience & Profile

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- **Professional Experience:**
  - At least 8 years' experience in the role/job function of Integration or System Engineering and within the field of plasma, high energy, fission or Ultra High Vacuum (UHV) engineering.
- **Education:**
  - Master's degree or equivalent in an Engineering field 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:**
  - Familiarity with most aspects of mechanical and/or electrical engineering design for tokamak diagnostic systems, such as magnetics, instrumentation, optical engineering, vacuum systems, microwave and cabled electrical transmission, water cooling systems and mechanical handling schemes, would be an advantage;
  - Proven experience of engineering and interface designs for diagnostic sub-systems;
  - Experience of preparing technical specifications and engaging in procurement activities;
  - Familiarity with recognized engineering codes and standards, experience in manufacturing or database manipulation;
  - Experience with the technical follow-up of Computer Aided Design (CAD) activity and/or direct participation in CAD activities would be an advantage (i.e. Ability to use analysis codes (ANSYS etc) and CAD tools (CATIA etc)).
- **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/solutions;
- 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.