# Job Title: Magnetics Engineer IO0947

Req ID **1360** - Posted **27/02/2020** - (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:** 12/04/2020
**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

As ITER's Magnetics Engineer, you will be in charge of the overall implementation of the Magnetic Diagnostics System for ITER. You will drive the magnetics algorithm and operational code development and coordinate all magnetics activities related to the integration, construction, commissioning, calibration and operation to ensure that the Magnetic Diagnostics System interoperates with plasma control and fulfils its measurement functions.

*Background*

*The in-vessel diagnostics section (IVD) looks after 35 diagnostic projects. Many of these involve sensor 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, with related interpretation software. The projects are entering the assembly stage and success needs careful and high quality follow-up of coding and manufacture, including proper handling of as-built data. Preparations for operation are ramping up and many of the projects, including most of the magnetics, must be functional from its start.*

## Major Duties/Roles & Responsibilities

- Leads the implementation of the magnetic diagnostics and the magnetic diagnostics activities;
- Plans and oversees the on-site activities for the magnetics electronics and related software;
- Controls all Gateway Review processes impacting magnetics at system level;
- Oversees the design, procurement, manufacturing and commissioning of Magnetics Electronics and Software performed by EU-DA;
- Ensures specification compliance and compatibility of the system and its algorithms with related sensor procurements both within the magnetics and with interfaces such as the Plasma Control System (PCS);
- Prepares for the operation of the whole magnetic diagnostic system, including integrated calibration procedures for the magnetics;
- Prepares the Instrumentation & Control (I&C) integration activities which are associated with on-site acceptance;

- Defines, plans, organizes, oversees and participates in the Site Acceptance Tests and assembly activities;
- Plans maintenance and enhancement activities for ITER's operation;
- Oversees the creation and maintenance all 3D, 2D and lifecycle databases for the magnetics;
- Prepares technical specifications in support of procurement 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.

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.

## Measures of Effectiveness

- Completes Work packages to agreed deadlines;
- Develops and approves interface documentation, schematics plans and databases to a high standard ;
- Develops and approves technical documentation for procurement on expected quality and schedule;
- Develops and gets approved installation, testing and commissioning plans within the defined schedule and cost;
- Successfully collaborates with technical partners in DAs and other units at IO;
- Works efficiently at all times with other Diagnostics team members.

## Qualifications and Experience

- *Professional Experience:*
  - At least 8 years' experience in magnetic measurement system design, commissioning, or use in control, operation and/or measurement interpretation;
  - Demonstrated project management experience with relevant software in any discipline.
- *Education:*
  - Master's degree, or equivalent in Electrical Engineering, Physics, Control 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:*
  - Demonstrated experience in plasma measurement, with instrumentation and control in a commissioning context;
  - Coordinates the work of others to avoid duplication of effort and intervenes appropriately to remove obstacles;
  - Builds on past experience and identify lessons learned in order to develop / implement improvement and optimization actions;
  - Offers broad knowledge and analytic capability in magnetic diagnostics and has used magnetic reconstruction tools;
  - Familiarity with electrical and electronic tests;
  - Experience in a nuclear-relevant field would be advantageous;
  - Identifies issues and delays in a project and takes corrective actions or proposes recovery plans and ensures their implementation for laboratory-scale projects and prototypes;
  - Reports and defends design progress and requirements-compliance across multiple systems;
  - Ability to generate specifications for modelling and simulation;
  - MS Office standard (Word, Excel, PowerPoint, Outlook);
  - Reconstruction code (EFIT or similar), Matlab and Database experience an advantage.
- *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 analyze multiple and diverse sources of information to define problems accurately before moving to solutions;
- Instill trust: Ability to model 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, **r**adioprotection 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.