

# Job Title: Integrated Systems Engineer IO0497

Req ID **1723** - Posted **07/05/2020** - (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:** 18/06/2020

**Domain:** Engineering

**Department:** Central Integration Office

**Division:** Physical & Functional Integration

**Section:** System Integration

**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 an Integrated Systems Engineer, you will be responsible for configuring and controlling the integrated systems (in particular the ITER Heating Systems), including their technical performances, and also managing interfaces with the other systems and transverse requirements (such as fire protection and confinement). Your focus will include accountability for the control of system maturity and for the relevant integration deliverables. Additionally, this role plans and implements the integrated verification and validation of project requirements and operational scenarios.

## **Background**

The System Integration Section is a multidisciplinary team focusing on functional integration of the ITER Machine, including Tokamak Machine and Plant Systems.

Key tasks of the System Integration Section are:

- Participation in ITER gate reviews to ensure the compliance of design solutions with project requirements and functional interfaces;
- Management of the functional interfaces along the ITER lifecycle;
- Functional analysis for the propagation and verification of project level requirements;
- Contribution to Configuration Management and in particular to change control, with the role of keeping the functional configuration and interfaces under control.

## **Major Duties/Roles & Responsibilities**

- Implements Systems Engineering and manages requirements, functional interfaces with the other systems and transversal functions for the ITER Heating Systems (such as Electron/Ion Cyclotron Heating and Current Drive System, and Neutral Beam Heating Systems);
- Manages baseline documents, including systems requirements documents, interface documents, engineering diagrams, e.g. process flow diagrams and piping and instrumentation diagrams throughout

the whole lifecycle of the system's integration;

- Prepares and controls the functional interfaces of the systems;
- Participates in gate reviews and design integration reviews in order to verify the implementation of the integrated requirements, environmental constraints and subsequently advises on corrective actions when necessary;
- Controls the compliance and integration of engineering diagrams with respect to project requirements, taking care of both functional interfaces as well as transverse requirements related to design basis and investment protection policy;
- Takes part in the qualification of equipment as part of the requirements verification;
- Supports the commissioning preparation for requirements validation;
- Participates in configuration management tasks including the technical assessment of change control, deviation requests and non-conformities;
- 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.

## Measure of Effectiveness

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- Produces and maintains documents accurately and to a high standard regarding the ITER System's functional integration;
- Implements Systems Engineering processes and associated reporting as per the required quality, cost and schedule ;
- Prepares the commissioning phase of the integrated systems in line with the overall project schedule;
- Ensures smooth collaboration with all internal and external stakeholders when implementing Systems Engineering.

## Experience & Profile

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- *Professional Experience:*
  - At least 8 years' experience in implementing systems engineering approaches on complex engineering projects, preferably within an international environment.
- *Education:*
  - Master's degree or equivalent in physics, mechanical engineering, nuclear engineering or other relevant engineering field;
  - 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:*
  - Implementing Systems Engineering and managing requirements and functional interfaces;
  - Engineering and both the construction and commissioning of systems typically found on complex engineering projects;
  - Document management, including handling systems requirements documents (compliance matrix), interface documents, engineering diagrams etc.;
  - Heating and current drive systems and radiofrequency systems is advantageous;
  - Interlock design or implementation for systems protection is advantageous;
  - Contributing to and assessing design reviews;
  - Quality Assurance and Quality control standards, dealing with change requests, deviation requests and non-conformities;
  - Process of qualification for equipment is desirable;
  - The application of international standards for system engineering and design of complex components is considered as an advantage;
  - Using DOORS and PLM tools is considered as 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 proposals;
- 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, 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.