# Job Title: Metrology & Reverse Eng. Coordinator IO1133

Requisition ID **7220** - 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.

The ITER Organization (IO) is an Equal Opportunity organization committed to diversity and inclusiveness in the workplace.

As the IO attracts and retains people coming from a vast array of different backgrounds and cultures, bias and exclusion cannot be tolerated. The IO believes it is our diverse perspectives and backgrounds that gives unique strength and value to the ITER mission, regardless of race, member nation, gender, religion, status, sexual orientation, or disability - all are welcome and respected at ITER.

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:** 04/02/2024
**Department:** Engineering Services Department
**Job Family:** Engineering
**Job Role:** Coordinating Engineer
**Job Grade:** P4
**Language Requirements:** Fluent in English (written & spoken)
**Contract Duration:** Up to 5 years

## Purpose

As Metrology & Reverse Engineering (MRE) Coordinator within the Engineering Services Department (ESD), you will oversee metrology and reverse engineering competencies and resources with the ITER Programs and Projects objectives and needs, within the framework of a flexible matrix organization.
Additionally, you will ensure that all contributors deliver high quality service in the areas of metrology and reverse engineering, including process definition, compliance with standards and implementation of best industrial standards within safety, quality, cost and human resource management processes.

## Background

The MRE contributors are supporting the ITER Organization (IO) in coordinating and technically supervising geometrical/tolerance requirements defined by the requirements owner during design (Tolerance Breakdown, Requirements allocation at Subsystems and Components level, Impact Assessment), manufacturing (e.g. as-built data and Impact Assessment) and assembly/installation of the ITER facility (definition of Assembly Targets, validation – for Plant and Mechanical areas).

The MRE coordinator contributes to define, organize and implement metrology campaigns aiming at assessing the compliance of the ITER systems, structures, or components with geometrical requirements during design (measurability assessment), manufacturing (metrology for manufacturing), and assembly/installation (metrology for assembly).

## Key Duties, Scope, and Level of Accountability

- Contributes to the global ESD Work-Plan by collecting and anticipating, through effective collaboration, metrology and reverse engineering needs from Programs and Projects (including the associated effort assessment), and advise on appropriate resource management strategies to address those needs;
- Coordinates MRE competencies and adequacy of operators based on the established work-plan and possible unplanned requests aiming at quality, efficiency, cost, and schedule compliance;
- Supports the resource assignment strategy consistently with Program/Project manager needs and technical competencies available; in collaboration with Program & Project Managers to anticipate future ITER Project needs;
- Establishes as needed service contracts aiming at reinforcing the IO capabilities to face Project needs, and controls the compliance of contractors' deliverables with their respective discipline;
- Improves the effectiveness and efficiency of MRE activities through standardization, the usage of standards, and the implementation of best industrial practices, such as, but not limited to:
    - Defining and optimizing metrology inspection practices, processes and procedures;
    - Optimizing reverse engineering processes and/or tools to support the management of geometrical requirements, as-built and as-assembled geometrical data and to perform impact assessment of system/subsystem requirements on project requirements (e.g. definition of alignment strategies and targets during assembly, validations of component positions…);
    - Defining common procedures to be used in the production phases of different items and their possible repairs, at FAT and SAT and during assembly phases, and supporting the different involved suppliers to carry out such procedures correctly;
    - Improving the ITER Project compliance with ISO standards in the field of geometrical requirement definition and assessment, by clarifying the geometrical requirements embedded in geometrical product specifications;
- Assesses, when applicable, the Metrology feasibility prior to starting the next assembly step of the components in order to insure a full reliability of the survey;
- Contributes to the management of all means, including equipment and supplies and the software requirements definition;
- Disseminates MRE culture within IO, DAs and suppliers;
- May be asked to support integration, interface management and contribute to issue-fixing;
- Represents IO in key meetings with suppliers and other key stakeholders (Domestic Agencies – DAs- and major research organizations), and conducts respective technical negotiations;
- Prepares regular reports and ad-hoc reports when needed, participating in progress meetings;
- May be requested to perform other duties in support of the project;
- May be required to work outside the ITER Organization (IO) reference working hours, including nights, week-ends and public holidays.

## Measure of Effectiveness

- Develops and maintains a good level of MRE competencies for the operators according to the Project needs;
- Improves the effectiveness and efficiency of MRE activities through standardization, the usage of standards, and the implementation of best industrial practices;
- Develops, maintains and propagates MRE standards, industrial best practices and processes, with associated KPIs;
- Fixes issues related to design, integration & construction, within its scope, with a high level of autonomy;
- Issues accurate and high quality documentation and reports within the defined schedule.

## Experience & Profile

- ***Professional Experience:***
  - Minimum 10 years' experience in the application of metrology techniques on machined and fabricated components and their precise alignment.
- ***Education:***
  - Master's degree or equivalent in Mechanical 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:***
  - **Metrology:** understanding of the science of measurement applied to industrial processes; comparing of a standard of known accuracy with a unit of test and measuring equipment for the purpose of detecting, correlating, reporting, or eliminating by adjustment any deviation in the accuracy of the unit being compared; application of traceability principles and uncertainty analyses in relating those measurements to intrinsic standards, derived standards, or acceptable measurement systems through an unbroken chain of comparisons;
  - **Reverse engineering:** management of as-built dimensional data, assessment and mitigation of the impact of out-of-tolerance conditions, creation of as-built 3D models for recording and reporting as-built surface geometries, Geometrical Dimensioning and Tolerancing (GD&T);
  - **Project management and execution:** planning, measuring progress, managing risks and costs, and reporting on programs within the constraints of human and financial resources;
  - **Contract management, procurement management, and execution:** defines needs and requirements, performs sourcing activities including preparation of technical specifications, manages internal and external parties to ensure implementation according to contractual requirements of large and complex systems and facilities;
  - **Analysis and requirements definition, including risk identification and management:** anticipate and adapt proposed solutions and tasks to the environment, cascading data driven requirements and solutions, and reporting on outcomes;
  - **Quality assurance and control:** verify compliance of products, processes and systems with all applicable requirements and standards;
  - **Problem solving:** assess problems, identify root causes, propose solutions to reach project objectives within time and cost;
  - Usage of metrology software for dimensional inspection and analysis such as Spatial Analyzer and Polyworks is considered as an advantage;
  - Tolerance modelling and analysis of complex 3D systems using dimensional variation software in combination with CATIA V5 is considered as an advantage.
- ***IO Core 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.
- ***Additional Behavioral Competencies:***

- Drives vision and purpose: paint a compelling picture of the vision and strategy that motivates other to action;
- Optimizes work processes: identify and implement the most effective and efficient processes to get things done, with a focus on continuous improvement.

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

- May be requested to perform other duties in support of the project as defined by your line manager, and when relevant upon the request of the matrix manager;
- Maintains a strong commitment to the implementation and perpetuation of the ITER Safety Program, and ITER Values (Trust; Integrity; Excellence; Team mind set; Diversity and Inclusiveness);
- ITER Core Technical Competencies (Knowledge of these competencies may be acquired through on-board training at basic understanding level for all ITER staff members) :

**1)** Nuclear Safety, Environment, Radioprotection and Pressured Equipment
**2)** Occupational Health, Safety & Security
**3)** Quality Control & Quality Assurance Processes

- Implements the technical control of the Protection Important Activities, as well as their propagation to the entire supply chain;
- 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 or Department 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;
- For staff expected to perform on-call, shift hours, or other work outside ITER Organization reference working hours, including nights, weekends, and public holidays, the possession of a driving license valid in France is required. No commuting vehicle will be provided by the ITER Organization.