

CALL FOR EXPERTISE

**Integrated Logistics Processes and Systems
Integration Management Support
Technical Specifications**

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1 Abstract

The ITER Organization intends to place a contract for the systems and services to support the Assembly, Commissioning, Start-Up and Operations of the ITER project. The Assembly and Operations Division is in need of expert technical and management support for the oversight of the implementation of this contract in order to support the effective and timely performance of its work.

2 Background and Objectives

ITER will be the world's largest experimental facility to demonstrate the scientific and technical feasibility of fusion power. As the world's largest and considered to be one of the most complex scientific endeavours ever undertaken, the ITER Organization Assembly and Operations Division is responsible for the Assembly, Commissioning, Start-Up and Operations of the one of a kind ITER nuclear plant facility. This facility is comprised of on the order of a million assembled components and tens of millions of individual parts that make up the complex Tokamak Machine, Superconducting Magnets, and associated Plant Support components, systems and structures, many of which have safety classifications.

The ITER project is currently in its detail design and early fabrication and construction phases of work. The site work has been completed and the critical path delivery of the first key buildings is underway. The Assembly and Operations Division, accountable for the Machine Assembly, Plant Assembly and Operations of ITER are now involved in the detailed planning of processes, systems and requirements to support the effective and timely performance of these future phases of the project.

The ITER Integrated Logistics Support (ILS) function is in need of a service and technology partner to provide proven knowledgeable people, processes, and technologies that will successfully support the effective and timely performance of its work. It is intended to use proven processes, modelled within mature Commercial-Off-the-Shelf (COTS) software, and the associated services to define, implement, and operate the processes and systems required by the Assembly, Commissioning, Start-Up, and Operations phases of work.

The integrated processes and systems functional requirements are to manage the Materials, Assembly, Testing, Technical Documentation and Data, and asset Operations phases of the ITER facility. The work will be delivered in a staged approach to support the ITER lifecycle and baseline schedule. It is preferred that little, if any customisation of COTS software is performed to meet the requirements of the ITER Organization.

Expert technical and management support is sought for the oversight of the implementation of this contract in order to support the effective and timely performance of its work.

3 Scope of Work

The Assembly & Operations Division responsibilities are defined as:

- ensure on-site assembly of machine & other plant systems is both possible and timely
- study and implement appropriate remote handling facilities for installation and maintenance

- ensure that standard assembly, maintenance and Remote Handling tools are used whenever possible
- planning, coordination and execution of Operation and Maintenance
- RAMI programme and standardization to ensure adequate machine availability
- Ensure that the maintainability of all machine and plant systems is taken into account in the design
- preparation and support of individual testing (equipment, calibration, handover and acceptance) & integrated commissioning
- define Control room, I&C interfaces, operational readiness documentation
- central logistics for transport, reception, handling and storage of components
- facilities management
- central spares management
- site supervision & coordination, control of access, permit to work management, during all the phases of the project
- training and qualification of contractors

The ITER Project will acquire, receive, test, install and integrate thousands of components which will make up its many plant systems and the Tokamak itself.

Once operational, these systems must be maintained, repaired and upgraded in an efficient and timely manner in order to ensure that ITER achieves its research aims.

The overall and unified standard process for supporting these two phases is that of **Integrated Logistics Support (ILS)**. This internationally recognised system, originally developed by the military to ensure the necessary support for highly advanced hardware, is accepted within NASA, the aerospace and other industries which face similar challenges to ITER.

The goals of ILS are:

- Achieve lowest cost of ownership
- Improve reliability, availability and maintainability
- Identify and develop support drivers and resources

The near term of the Assembly & Operations division is focused on the preparations necessary for the Assembly Phase of ITER. Within the Integrated Logistics Support (ILS) functions of ITER an effort is underway that requires support for the management of the procurement, development and integration of business processes and systems of ITER.

Systems to manage the following ILS processes to be considered are:

- Test Facilities and Testing management
- Installation and Maintenance management
- Spares Inventory Management
- Technical Documentation

- Facilities Management
- Packaging, Handling, Storage, and Transportation
- Materials Management

A critical support to ILS is also the establishment of an Engineering Database (EDB) to store reference data on systems and components.

4 Estimated Duration

The contract is estimated at 12 months initially with possibility of extension.

5 Work Description

ITER is requesting one (1) expert to support the Assembly and Installation engineering activities commencing mid of July 2011.

This task will be performed under the direct supervision of the Head of Division of Assembly and Operations Division. The primary tasks currently foreseen for 2011 are to support the AOP division head in:

1. the on-going in-house development of an Engineering Database (EDB);
2. support to EDB project management;
3. development of processes and systems to support Integrated Logistics for assembly and installation;
4. management, direction, and oversight of the delivery of framework contracts to procure, develop and implement the above processes and systems.

Each work task will be individually specified in consultation with the contractor, and a deliverable date agreed.

It is envisaged that at least 75% of this task will be based at the ITER site, with up to 25% able to be executed at home office.

As mentioned above, each specific item of work to be performed will be discussed with the contractor before its commencement, and a deliverable date will be agreed.

6 Acceptance Criteria (including rules and criteria)

Each item of work to be completed according to agreed deliverables shall be reviewed and accepted by the contract Responsible Officer or a nominated representative.

The expert will provide support to ITER in work related to the open call for tender "IO/10/4197/PQN - Procurement of Systems and Services to support the Assembly, Commissioning, Start-Up and Operations phases of ITER". Therefore there is a conflict of interest between that tender and this call for expertise. Therefore no bidder, subcontractor or other interested party in that call for tender is eligible under this call.

7 Specific requirements and conditions

The minimum requirements are:

- 10+ years of EPC experiences in large complex capital intensive projects. With focus on Engineering, Construction, and Operations processes in highly regulated environments.
- 5+ years of Operations experience
- 10+ years of Nuclear project experience would be an advantage
- 5+ years of Management Consulting, specifically in Business Process Optimization
- 10+ years of Information Systems integration experience in the delivery and operations of systems across the Plant lifecycle. EDM, PLM, EAM experience is desirable.
- 5+ years of experience with engineering data standards and interoperability. Experience with ISO 15926 and ISO 10303 are required.
- 5+ years of experience in the acquisition and documentation of engineered data in the as-built environment.
- Integrated Safety Management Systems operations experiences
- 5+ years of project management experience

Key abilities:

- Ability to work within an international environment
- Ability to work independently within a rapid paced environment
- Ability to confidently present to large and small groups of executives, managers, and engineers.
- Ability to gain consensus amongst disparate groups within a matrixed management environment.

8 Work Monitoring / Meeting Schedule

9 Payment schedule / Cost and delivery time breakdown

Payments shall be effected on a monthly basis, covering days actually worked, relevant reimbursable travel expenses and per diems as applicable.