

PRIOR INFORMATION NOTICE (PIN)

IO/22/OT/70000756/LLU

Manufacturing Engineering Support for Diagnostic Ports

Abstract.

The purpose of this summary is to provide prior notification of the IO's intention to launch a competitive Open Tender process in the coming weeks. This summary provides some basic information about the ITER Organisation, the technical scope for this tender, and details of the tender process for the this package.

1 Introduction

This Prior Information Notice (PIN) is the first step of an Open Tender Procurement Process leading to the award and execution of a Framework Service Contract.

The purpose of this document is to provide a basic summary of the technical content in terms of the scope of work, and the tendering process.

The Domestic Agencies are invited to publish this information in advance of the forth-coming tender giving companies, institutions or other entities that are capable of providing these services the prior notice of the tender details.

2 Background

The ITER project is an international research and development project jointly funded by its seven Members being, the European Union (represented by EURATOM), Japan, the People's Republic of China, India, the Republic of Korea, the Russian Federation and the USA. ITER is being constructed in Europe at St. Paul–Lez–Durance in southern France, which is also the location of the headquarters (HQ) of the ITER Organization (IO).

For a complete description of the ITER Project, covering both organizational and technical aspects of the Project, visit www.iter.org.

3 Scope of Service

Diagnostics are a critical part of the operation of ITER. They provide the means to observe, control and sustain the plasma performance over long timescales. ITER will operate with a plasma current in the region of 15 MA and toroidal fields of 5 T. The pulse lengths will be in the region of 500 s typically and will extend up to several thousand seconds during more advanced operation. A key objective of this device is $Q=10$ operation. This means that a typical fusion power of 500 MW will be provided for 50 MW input.

Many diagnostics, as well as systems like DMS (Disruption Mitigation System) and GDC (Glow Discharge Cleaning), shall be integrated into ports and their infrastructure, which hold these diagnostics in place. Figure gives an overview of the typical integrated diagnostic port in ITER.

There are 25 diagnostic ports in ITER, and one more port, Equatorial Port #2, are hosting diagnostic systems. Each equatorial and upper diagnostic port consist of the port plug structure with three integrated Diagnostic Shield Modules and Diagnostic First Walls (see Fig. 2), Interspace Support Structure and Port Cell Support Structure. The lower ports do not have port plugs but they use diagnostic racks to host in-vacuum components and diagnostics. Each port hosts one or more tenants (diagnostics, Glow Discharge Cleaning, Disruption Mitigation System) and services (water, gas, electrical). The in-port plug components will be assembled at Port Integrator's sites at DAs or at IO.

Most of the integrated diagnostic port systems are being procured in kind from the Domestic Agencies (DAs) to functional specifications. However, two (2) diagnostic equatorial ports, three (3) diagnostic upper ports, one (1) diagnostic lower port and one (1) equatorial port with DMS are the IO full responsibility from conceptual design to procurement.

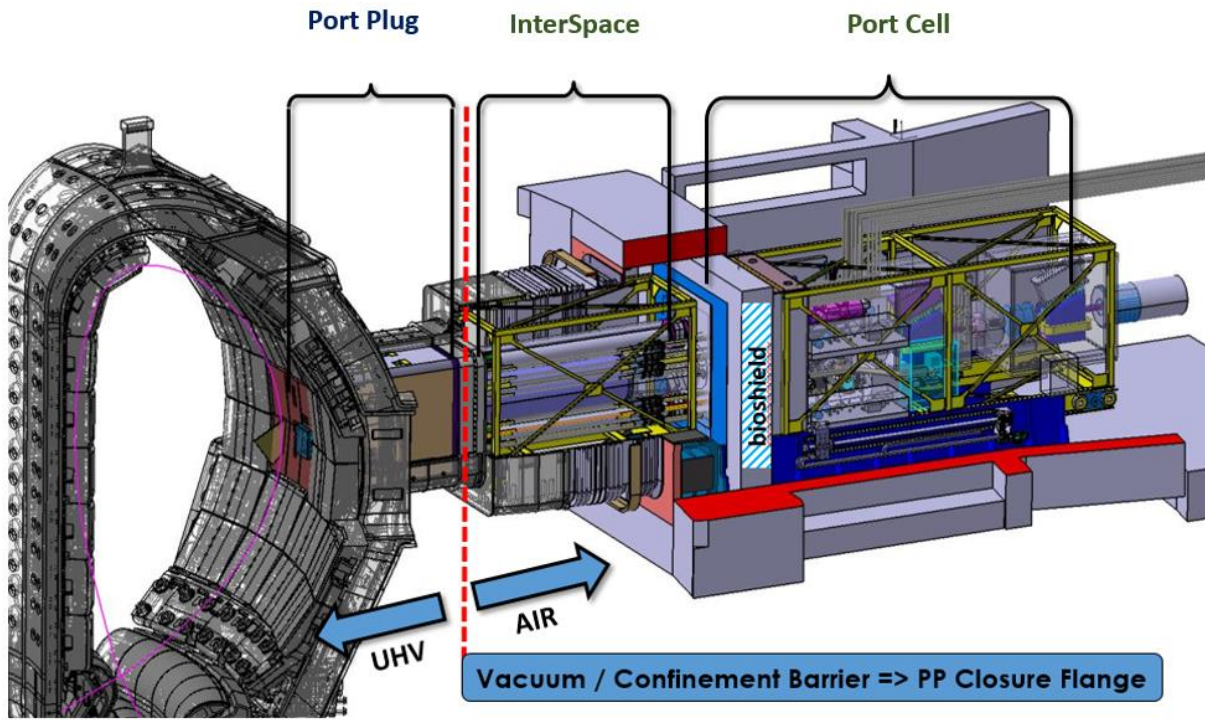


Figure 1: Example of diagnostics inside integrated port (top) and integrated port interspace structure (bottom).

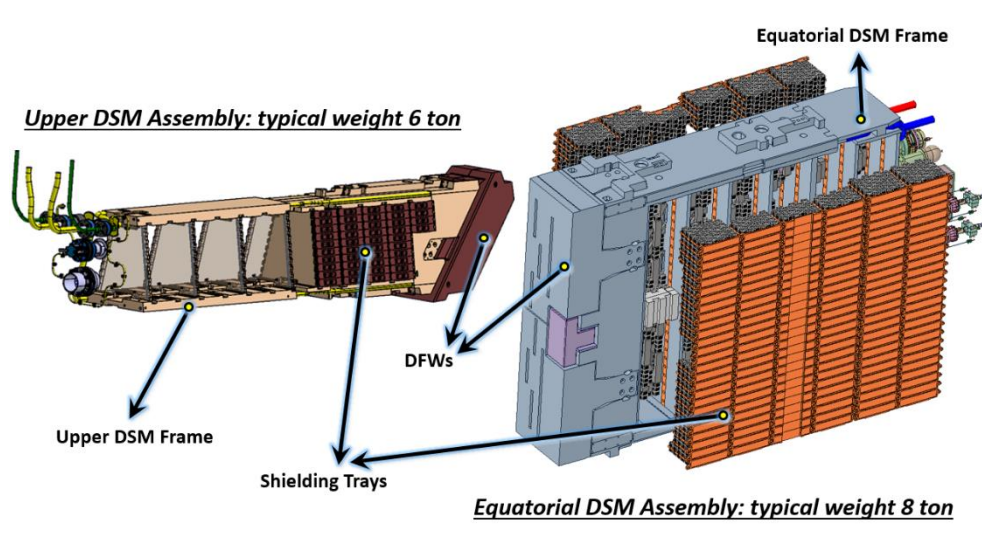


Figure 2: Example of in-vacuum port assembly (DSM/DFW) for the upper (left) and equatorial (right) ports.

The scope of the Manufacturing Engineering Support for Diagnostic Ports requested in this specification requires that the contractor's company provides suitable and experienced expertise to contribute to establish and to reinforce the ITER port integration systems in all manufacturing feasibility demonstrations aspects. The work is to provide manufacturing design support services to progress the technical development of IO diagnostic integrated port-based systems and to minimize the technical risks inherent to the manufacturing of Port Diagnostic components and to develop suitable procedures for those critical operations that may pose a risk (in terms of feasibility, cost and schedule) during the manufacturing stage of the different systems. It includes:

- Development of advanced machining technologies, involving robotics, automation and other technological processes (Electrical Discharge Machining and others as applicable).
- Development of specific welding and derived processes at all levels of automation and involving new processes and last welding developments. This part includes feasibility justification through welding trials, qualification of specific procedures and execution of representative mock-ups.
- Development of non-destructive examination techniques suitable for the different materials and conditions present in port systems and subject to tight execution constraints typical in nuclear and fusion installations.
- Development of critical manufacturing processes and their extrapolation into a real production environment like deep drilling, coatings, cold/hot forming, etc.
- Development of feasibility demonstrations for maintenance and refurbishment processes involving specific manufacturing operations (cutting, welding, NDE, and others as applicable) through representative mock-ups).
- Material characterization and derived processes (metals, ceramics, coatings, etc).
- Testing of port related components, which includes the design and definition of installations, procedures and facilities needed for testing of Port components in the factory and on site.

These technical specifications will be defined specifically for each Task depending on the actual requirement and will include a technical scope, the organization of the task in IO and a description of the deliverables. The work foreseen shall be executed both on-site and off-site.

4 Procurement Objective & Process

The objective is to award a Framework Service Contract through a competitive bidding process.

The Procurement Procedure selected for this tender is called the **Open Tender** procedure.

The Open Tender procedure is comprised of the following four main steps:

➤ Step 1- Prior Information Notice (PIN)

The Prior Information Notice is the first stage of the Open Tender process. The IO formally invites the Domestic Agencies to publish information about the forth-coming tender in order to alert companies, institutions or other entities about the tender opportunity in advance. A Prior Information Notice is published on the IO web site. **Interested tenderers are kindly requested to return the expression of interest form (Annex I) by e-mail by the date indicated in the procurement time table below.**

➤ Step 2 - Invitation to Tender

After 10 working days of the publication of the PIN, the Instructions to Tenderers (ITT) will be advertised. This stage allow interested bidders who have seen the PIN to obtain the tender documents and to prepare and submit their proposals in accordance with the tender instructions.

➤ Step 3 – Tender Evaluation Process

Tenderers proposals will be evaluated by an impartial, professionally competent technical evaluation committee of the IO. Tenderers must provide details demonstrating their technical compliance to perform the work in line with the technical scope and in accordance with the particular criteria listed in the ITT.

➤ Step 4 – Contract Award

A Framework Service contract will be awarded on the basis of best value for money according to the evaluation criteria and methodology described in the ITT.

5 Procurement Timetable

The tentative timetable is as follows:

Milestone	Date
Publication of the Prior Information Notice (PIN)	Beginning of February 2022
Submission of expression of interest form	Mid of February 2022
ITT advertisement	End of February 2022
Tender Submission	Mid of April 2022
Tender Evaluation & Contract Award	End of May 2022
Contract Signature	Mid of June 2022

6 Quality Assurance Requirements

Prior to commencement of any work under this Contract, a “Quality Plan” shall be produced by the Contractor and submitted to the IO for approval, describing how they will implement the ITER Procurement Quality Requirements.

7 Contract Duration and Execution

The ITER Organization shall award the Service Framework Contract in the first half of 2022. The estimated contract duration is 4 years with the option of one possible extension of 2 years.

8 Experience

The tenderer shall demonstrate their knowledge, experience and capabilities in the implementation of providing expected supports in accordance with the IO technical requirements in English.

9 Candidature

Participation is open to all legal entities participating either individually or in a grouping/consortium. A legal entity is an individual, company, or organization that has legal rights and obligations and is established within an ITER Member State.

Legal entities cannot participate individually or as a consortium partner in more than one application or tender of the same contract. A consortium may be a permanent, legally established grouping, or a grouping which has been constituted informally for a specific tender procedure. All members of a consortium (i.e. the leader and all other members) are jointly and severally liable to the ITER Organization.

In order for a consortium to be acceptable, the individual legal entities included therein shall have nominated a leader with authority to bind each member of the consortium, and this leader shall be authorised to incur liabilities and receive instructions for and on behalf of each member of the consortium.

It is expected that the designated consortium leader will explain the composition of the consortium members in a covering letter at the tendering stage (the Invitation to Tender). Following this, the Candidate’s composition must not be modified without notifying the ITER Organization of any changes. Evidence of any such authorisation shall be submitted to the IO in due course in the form of a power of attorney signed by legally authorised signatories of all the consortium members.

10 Sub-contracting Rules

All sub-contractors who will be taken on by the Contractor shall be declared with the tender submission. Each sub-contractor will be required to complete and sign forms including technical and administrative information which shall be submitted to the IO by the tenderer as part of its tender.

The IO reserves the right to approve (or disapprove) any sub-contractor which was not notified in the tender and request a copy of the sub-contracting agreement between the tenderer and its subcontractor(s). For each Contract, sub-contracting is allowed but it is limited to one level, and

its cumulated volume is limited to 30% of the total Contract value. Two levels of sub-contracting may be considered for very specific activities which will be mentioned by the IO in the ITT.