

## Technical Specifications (In-Cash Procurement)

# Engineering and Administrative Management Support for Diagnostics Design Activities

This tender is aimed at providing engineering and administrative management support for Diagnostics activities to the ITER Organization to secure that the relevant First Plasma systems do not fall behind in the schedule.

## Technical Summary

# Engineering and Administrative Management Support for Diagnostics Design Activities Framework Contract

IO/22/CFT/70000815/LLU

## 1. Purpose

This tender is aimed at providing engineering and administrative management support for Diagnostics activities to the ITER Organization to secure that the relevant First Plasma systems do not fall behind in the schedule.

## 2. Background

### 2.1 ITER Diagnostics System

The Diagnostics System provides accurate measurements of plasma behaviour and performance, including those needed for machine protection and basic machine control; those required for advanced plasma control; and those required for evaluation and physics studies. Implicitly this includes also first wall measurement functions.

In total there are about 100 diagnostic related systems grouped in 9 groups which respond to these requirements. The groups are these:

- Visible spectroscopy
- VUV & X-Ray spectroscopy
- Plasma & Fusion Products
- Heat and Imaging diagnostics
- Boundary and First Wall diagnostics
- Lasers and Microwave Systems
- Electromagnetic measurements diagnostics
- Common Systems and EQ and PIF
- Boundary Penetrations and Upper and Lower Ports

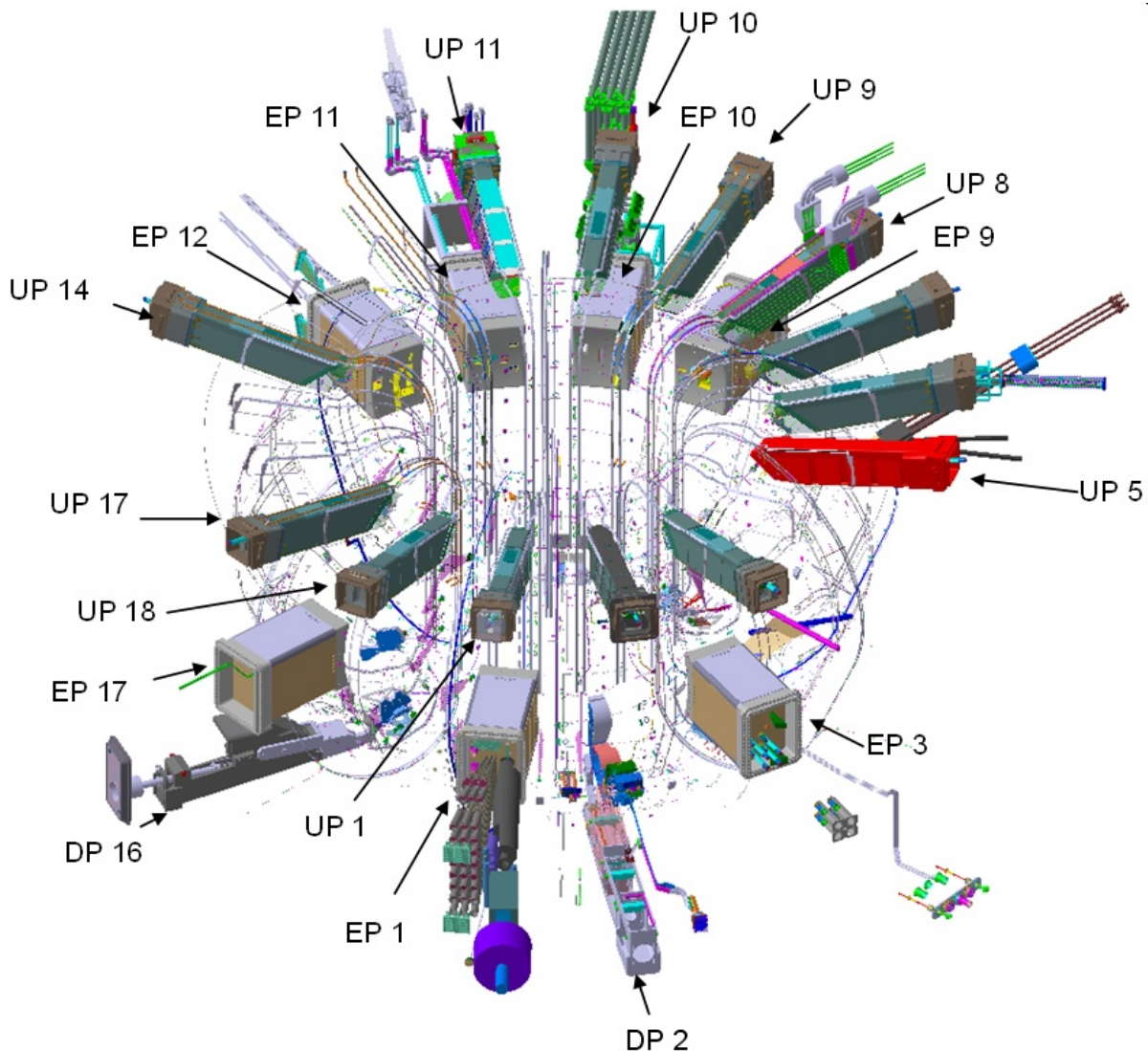
The diagnostics scope includes also port-plugs and other infrastructure which hold these diagnostics in place, in the ports and the divertor. Figure 1 gives an overview of the diagnostic scope inside the tokamak.

### 2.2 Procurement of the ITER Diagnostics System

Out of the around 110 subsystems, about 70% of subsystems will be supplied by the DAs as in-kind contributions, and about 30% of subsystems will be realized by the IO through in-cash procurements.

Exceptions for which IO has to do detailed design work are the magnetic sensors, and in vessel cable looms which will be procured through built to print contracts.

For several other diagnostics IO has even the full responsibility from conceptual design to procurement. These are thermocouples, erosion monitor, dust and tritium inventory monitors, first wall samples and plasma boundary flow monitor, in vessel electron cyclotron heating protection probes.



**Figure 1: Overview of diagnostics inside the tokamak (EP means Equatorial Port, UP Upper Port, DP Divertor Port) – note regarding scale: one EP has a cross section of 2m \* 2.5 m approximately**

### 3. Scope of work

The selected Contractor of this Contract will be requested to provide the engineering support and administrative management support to the IO diagnostic division so that the IO may not

limited to but such as the followings, in the areas of the ITER diagnostic system development:

- Organisation of monthly meetings with stakeholders, Setting up of agendas, Following up of actions, Control of completeness of documentation
- Interfacing, for the IO, with partners at DAs and suppliers across the world to ensure the coherent development of diagnostic systems and/or related contract execution,
- Preparation of technical reports on diagnostic integration activities in to the ITER infrastructure, and related administrative management,
- Report on identified risks for diagnostic systems,
- Review and comment on the evaluation of technical reports and follow up on the advancement of various diagnostic reports,
- Review and comment on the accuracy of diagnostic reports,
- Review and comment on the interface specifications and assist the negotiation with opposite side for specified diagnostic and integrated diagnostic systems,
- Report on the structural integrity analysis / load definitions of diagnostic systems and their interfaces,
- Report on the design compliance with ITER requirements and with requirements for diagnostic systems,
- Advice and assist installation, commissioning, operation, scientific exploitation and documentation of Plasma diagnostic systems,
- Follow-up, under the supervision of IO, and reporting on prototyping, manufacturing, acceptance testing of Plasma diagnostic systems.

The details of the services to be provided by the future contractor will be defined in the task order technical specification document.

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.

#### 4. Indicative Schedule

The tentative timetable is as follows and the IO reserves the right to combine Pre-qualification (PQ) and Call for Tender together (CFT) as shown in Case 2 below.

##### Case 1: Standard Process

Launch of PQ:	End pf April 2022
Submission of PQ applications	End of May 2022
Launch of CFT:	Mid of July 2022
Contract Award	November 2022
Contract Signature	End of 2022

##### Case 2: PQ/CFT Combined Process

Launch of PQ/CFT combined:	End of April 2022
Submission of PQ/CFT offer:	Mid of June 2022
Contract Award:	September 2022
Contract Signature:	October 2022

#### 5. Experience

The Candidate and its personnel shall have adequate experience for the work as detailed below.

Experience in Tokamaks and/or Nuclear Safety is advantageous.

The required experiences for this Contract shall be in English preferable in the international environment:

- 1) Administrative and Management Support Services
  - Organisation of meetings and coordination with DAs and Contractors
  - Project management in terms of documentation, schedule, quality, risk and cost management
  - Contract management assistance in terms of cost, schedule, quality, risk and documentation management
- 2) Technical Engineering Support Services
  - Checklist follow up on evaluation of reports or requirement compliances
  - Structural integrity analysis / load definitions of diagnostic systems and their interfaces,
  - Technical Report preparation and review
  - Management and development of Interface specifications
  - Supervision and report on prototyping or manufacturing contracts

## **6. Duration of services**

The Contract will be carried out over an initial firm period of four (4) years and an optional period of two (2) years. The Contract is scheduled to come into force in Q3 2022.

## **7. Candidature**

Participation is open to all legal persons participating either individually or in a grouping (consortium) which is established in an ITER Member State. A legal person cannot participate individually or as a consortium partner in more than one application or tender. 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.

The consortium groupings shall be presented at the pre-qualification stage. The tenderer's composition cannot be modified without the approval of the ITER Organization after the pre-qualification.

Legal entities belonging to the same legal grouping are allowed to participate separately if they are able to demonstrate independent technical and financial capacities. Candidates (individual or consortium) must comply with the selection criteria. The IO reserves the right to disregard duplicated reference projects and may exclude such legal entities from the pre-qualification procedure.

## **8. Reference**

Further information on the ITER Organization procurement can be found at:

<http://www.iter.org/org/team/adm/proc>