

Technical Specifications (In-Cash Procurement)

CFE - Support for the building integration

The objective of this engineering contract is to provide the analysis to the integrated diagnostic system designs, with particular emphasis in the areas of diagnostic integration within ports and in the buildings. The diagnostics have to be integrated within tokamak complex. Transmission lines, cables and cubicles will be located in different places across the tokamak complex and have to be designed and integrated to withstand the loads, to ensure confinement and to provide functionality to the ...

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1 Purpose

The objective of this engineering contract is to provide the analysis to the integrated diagnostic system designs, with particular emphasis in the areas of diagnostic integration within ports and in the buildings. The diagnostics have to be integrated within tokamak complex. Transmission lines, cables and cubicles will be located in different places across the tokamak complex and have to be designed and integrated to withstand the loads, to ensure confinement and to provide functionality to the diagnostic systems.

2 Scope

The scope of work for this task order will be the following Diagnostics development activities: **Advance diagnostic designs in their integration into the tokamak complex building.**

The work comprises of integration of distributed ex-vessel diagnostic systems in the buildings and integration of diagnostic systems inside the tokamak complex building.

3 Definitions

For a complete list of ITER abbreviations see: [ITER Abbreviations \(ITER_D_2MU6W5\)](#).

4 References

N/A

5 Estimated Duration

The duration shall be for 12 months from the starting date of the task order. Services are to be provided at 100% of time at the IO-CT work site.

6 Work Description

The work involves technical involvement in the following areas:

- The deliverables as described in the following section shall take of full-time involvement
- Control and integration of the design of equipment (or parts of equipment) performed by external companies and other parts of IO impacting on diagnostics scope especially for the diagnostic systems in gallery of the building 11 and diagnostic building.
- Working on the development of alternatives to conflicting designs.
- Ensuring design compliance with the ITER requirements and with the Diagnostics system requirements.
- Contribution to the preparation of data for CAD exchange to facilitate the provision of data to IO and external agencies.
- The work is to be performed on ITER site. However, the contractor may be asked by the Responsible Officer to perform travel missions of a short duration for the purpose of the execution of the Contract.

7 Responsibilities

7.1 The Contractor's Responsibilities

In order to successfully perform the tasks in this Technical Specification, the Contractor shall:

- Strictly implement the IO procedures, instructions and use templates;
- Provide experienced and trained resources to perform the tasks;
- Contractor's personnel shall possess the qualifications, professional competence and experience to carry out services in accordance with IO rules and procedures;
- Contractor's personnel shall be bound by the rules and regulations governing the IO ethics, safety and security IO rules.

7.2 IO's Responsibilities

The IO shall:

- Nominate the Responsible Officer to manage the Contract;
- Organise a monthly meeting(s) on work performed;
- Provide a desk when required at IO premises.

8 List of deliverables and due dates

	Deliverable	
D1	<p>Integration of the diagnostic at the B1 level.</p> <p>The aim of this deliverable is to create the configuration stable of the diagnostic at the B1 level in the building 11 (Port Cells and Galleries).</p> <p>The deliverable will be a PowerPoint store on IDM. The list of the reviewer and approver need to be put by the contractor this list need to be done in accordance with the ITER_D_2EXFXU - Sign-Off Authority for Project Documents. .</p>	TO + 4 month
D2	<p>Integration of the diagnostic at the L1 level.</p> <p>The aim of this deliverable is to create the configuration stable of the diagnostic at the L1 level in the building 11 (Port Cells and Galleries) and building 74 (B74).</p> <p>The deliverable will be a PowerPoint store on IDM. The list of the reviewer and approver need to be put by the contractor this list need to be done in accordance with the ITER_D_2EXFXU - Sign-Off Authority for Project Documents</p>	TO + 8 months
D3	<p>Integration of the diagnostic at the L2, L3 and L4 levels.</p> <p>The aim of this deliverable is to create the configuration stable of the diagnostic at the L2, L3 and L4 level in the building 11 (Port Cells and Galleries and building 74</p> <p>The deliverable will be a PowerPoint store on IDM. The list of the reviewer and approver need to be put by the contractor this list need to be</p>	TO + 12 months

done in accordance with the ITER_D_2EXFXU - Sign-Off Authority for Project Documents .
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Note that the work on the IO-scope systems includes the design development of these systems, whereas the work on the DA-scope systems is integration design work.

9 Acceptance Criteria

The deliverables will be posted in the Contractor's dedicated folder in IDM, and the acceptance by the IO will be recorded by their approval by the designated IO TRO. These criteria shall be the basis of acceptance by IO following the successful completion of the services. These will be in the form of reports as indicated in section 8, Table of deliverables

10 Specific requirements and conditions

- Engineering Degree in appropriate Engineering discipline is necessary
- Minimum of 5 years' experience in Construction /Facilities Engineering
- Experience in Systems integration in the buildings is necessary
- Experience in Nuclear Fission/Fusion is very important
- Experience in functional diagrams is an advantage
- Experience of working with CAD and CAD Designers
- Ability to balance quality/risk/cost when providing design information.
- Ability to work in multidisciplinary, international team environment.
- Knowledge of Quality Assurance systems and their practical application
- Must be fluent in English language, both written and oral.

11 Work Monitoring / Meeting Schedule

The work progress shall be reported in Port-Plug and Diagnostics Division meetings on a Monthly basis.

12 Delivery time breakdown

See section 8.

13 Quality Assurance (QA) requirements

The organisation conducting these activities should have an ITER approved QA Program or an ISO 9001 accredited quality system.

The general requirements are detailed in [ITER Procurement Quality Requirements \(ITER_D_22MFG4\)](#).

Prior to commencement of the task, a Quality Plan must be submitted for IO approval giving evidence of the above and describing the organisation for this task; the skill of workers involved in the study; any anticipated sub-contractors; and giving details of who will be the independent checker of the activities (see [Procurement Requirements for Producing a Quality Plan \(ITER_D_22MFMW\)](#)).

Documentation developed as the result of this task shall be retained by the performer of the task or the DA organization for a minimum of 5 years and then may be discarded at the

direction of the IO. The use of computer software to perform a safety basis task activity such as analysis and/or modelling, etc. shall be reviewed and approved by the IO prior to its use, in accordance with Software qualification policy (ITER_D_KTU8HH).

14 CAD Design Requirements (if applicable)

For the contracts where CAD design tasks are involved, the following shall apply:

The Supplier shall provide a Design Plan to be approved by the IO. Such plan shall identify all design activities and design deliverables to be provided by the Contractor as part of the contract.

The Supplier shall ensure that all designs, CAD data and drawings delivered to IO comply with the Procedure for the Usage of the ITER CAD Manual ([2F6FTX](#)), and with the Procedure for the Management of CAD Work & CAD Data (Models and Drawings [2DWU2M](#)).

The reference scheme is for the Supplier to work in a fully synchronous manner on the ITER CAD platform (see detailed information about synchronous collaboration in the ITER [GNJX6A](#) - Specification for CAD data production in ITER Contracts.). This implies the usage of the CAD software versions as indicated in CAD Manual 07 - CAD Fact Sheet ([249WUL](#)) and the connection to one of the ITER project CAD data-bases. Any deviation against this requirement shall be defined in a Design Collaboration Implementation Form (DCIF) prepared and approved by DO and included in the call-for-tender package. Any cost or labour resulting from a deviation or non-conformance of the Supplier with regards to the CAD collaboration requirement shall be incurred by the Supplier.

15 Safety requirements

ITER is a Nuclear Facility identified in France by the number-INB-174 (“Installation Nucléaire de Base”).

For Protection Important Components and in particular Safety Important Class components (SIC), the French Nuclear Regulation must be observed, in application of the Article 14 of the ITER Agreement.

In such case the Suppliers and Subcontractors must be informed that:

- The Order 7th February 2012 applies to all the components important for the protection (PIC) and the activities important for the protection (PIA).
- The compliance with the INB-order must be demonstrated in the chain of external contractors.
- In application of article II.2.5.4 of the Order 7th February 2012, contracted activities for supervision purposes are also subject to a supervision done by the Nuclear Operator.

For the Protection Important Components, structures and systems of the nuclear facility, and Protection Important Activities the contractor shall ensure that a specific management system is implemented for his own activities and for the activities done by any Supplier and Subcontractor following the requirements of the Order 7th February 2012 ([PRELIMINARY ANALYSIS OF THE IMPACT OF THE INB ORDER - 7TH FEBRUARY 2012 \(AW6JSB v1.0\)](#)).

Compliance with [Defined requirements for PBS 55 - Diagnostics \(NPEVB6 v2.0\)](#) or its flowed down requirements in [SRD-55 \(Diagnostics\) from DOORS \(28B39L v5.2\)](#) is mandatory.