

+Call for Expertise: エキスパート募集

IO References: IO/24/CFE/10027927/VML

**“Expert Support for Diagnostics I&C Integration”**

(計測と I&C のエキスパート支援)

IO 締め切り 2024 年 2 月 5 日(月)

概要：

イーター機構（IO）では、上記タスクの支援をいただく作業を ITER 参加極の企業・機関等から募集します。応募を希望される企業・機関等は、所定の期限までに応募書類を直接 ITER 機構の下記担当までご提出下さい。

○ 今回の募集に関する書類は以下の通りです。

- ・ 招待状
- ・ 技術仕様書
- ・ 履歴書（CV）テンプレート
- ・ 見積もり提案書テンプレート
- ・ 誓約書
- ・ 守秘義務に関する誓約書(契約締結時に署名されること)

○ 応募者は、以下の申込用紙を ITER 機構に直接送付願います。

- ・ 履歴書（ITER 機構の招待状と技術仕様書で規定した要求事項と基準を満足していることを示す経験について明記されていること）
- ・ 誓約書（署名入り）
- ・ 見積もり提案書

（※提出書類は pdf ファイル 1 本にまとめて送付願います。）

○ 応募書類の提出先

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## ○はじめに

この事前情報通知 (PIN) は、供給契約の審査および実行につながる公開入札調達プロセスの最初のステップです。この文書の目的は、作業範囲と入札プロセスに関する技術的内容の基本的な概要を提供することです。

## ○背景

ITER プロジェクトは、欧州連合 (EU) (EURATOM を代表とします)、日本、中華人民共和国、インド、韓国、ロシア連邦、米国の 7 カ国が共同出資する国際的な研究開発プロジェクトで、ITER 機構 (IO) の本部 (HQ) があるヨーロッパ、フランス南部のサン・ポール・レ・デュランスで建設されています。

ITER プロジェクトの組織面および技術面の詳細については、[www.iter.org](http://www.iter.org) を参照してください。

## ○作業範囲

「計測と I&C のエキスパート支援」と題した本契約の目的は、技術仕様書に記載されたサービスの提供を調達することです。詳細は技術仕様書 A8D8P9\_v1.2 (本 PIN 文書の附則 I) を参照下さい。

## ○調達プロセスと目的

目的は、競争入札プロセスを通じて供給契約を落札することです。

この入札のために選択された調達手続きは公開入札手続きと呼ばれます。

オープン入札手順は、次の 4 つの主要なステップで構成されています。

### ➤ ステップ 1-事前情報通知 (PIN)

事前情報通知は公開入札プロセスの第一段階です。IO は、関心のある候補企業に対し、10 作業日までに担当調達担当官に以下の情報を提出し、競争プロセスへの関心を示すよう正式に要請します。

-候補会社の名称

-登録国

-連絡先の名前、電子メール、タイトル、電話番号。

### 特に注意:

関心のある候補企業は、IO Ariba の電子調達ツール「IPROC」に登録してください (まだ登録していない場合)。手順については、<https://www.iter.org/fr/proc/overview> を参照してください。

Ariba (IPROC) に登録する際には、お取引先様に最低 1 名の担当者の登録をお願いします。この連絡担当者は、提案依頼書の発行通知を受け取り、必要と思われる場合は入札書類を同僚に転送することができます。

➤ ステップ 2-入札への招待

関心のある候補企業の完全登録後、提案依頼書 (RFP) を「IPROC」に掲載します。この段階では、担当の調達担当者に関心を示し、かつ IPROC に登録している関心のある候補企業は、RFP が公表された旨の通知を受けることができます。その後、RFP に詳述されている入札説明書に従って提案書を作成し、提出します。

このツールに登録されている企業のみが入札に招待され、登録されている企業は、自社の名前でのみ提案を提出できます。

➤ ステップ 3-入札評価プロセス

入札者の提案は、IO の公平な評価委員会によって評価されます。入札者は、技術的範囲に沿って、かつ、RFP に記載された特定の基準に従って作業を実施するために、技術的遵守を証明する詳細を提供しなければなりません。

➤ ステップ 4-落札

認定は、公開されている RFP に記載されている、コストに見合った最適な価格または技術的に準拠した最低価格に基づいて行われます。

## ○概略日程

概略日程は以下の通りです：

マイルストーン	暫定日程
IOWeb ページと DA との連絡により 事前指示書 (PIN) の発行	2024 年 1 月 19 日
関心表明フォームの提出	2024 年 2 月 5 日
IPROC での提案リクエスト (REP) の発行	2024 年 2 月 7 日
IPROC で入札提出	2024 年 2 月 21 日
入札評価と契約授与	2024 年 9/10 週
契約調印	2024 年 11 週
契約開始	2024 年 14 週

## ○契約期間

予想される契約期間は、12 か月です。

### ○経験

入札者は、IO の技術的要件に沿った期待される支援を提供するにあたり、その知識と経験と能力があることを英語で示す必要があります。ITER での使用言語は英語です。流暢でプロレベルが必要です（スピーキングとライティング共に）。

### ○候補

参加は、個人またはグループ/コンソーシアムに参加するすべての法人に開放されます。法人とは、法的権利及び義務を有し、ITER加盟国内に設立された個人、企業又は機構をいいます。

法人は、単独で、またはコンソーシアムパートナーとして、同じ契約の複数の申請または入札に参加することはできません。共同事業体は、恒久的な、法的に確立されたグループ又は特定の入札手続のために非公式に構成されたグループとすることができます。

コンソーシアムのすべての構成員(すなわち、リーダーと他のすべてのメンバー)は、ITER 機構に対して連帯して責任を負います。

コンソーシアムとして許可されるために、その点で含まれる法人はコンソーシアムの各メンバーをまとめる権限をもつリーダーをもたなければなりません。このリーダーはコンソーシアムの各目メンバーのために責任を負わなければなりません。

指名されたコンソーシアムのリーダーは、入札段階でのカバーレター(入札への招待)で、コンソーシアムのメンバーの構成を説明する予定です。その後、候補者の構成は、いかなる変更もITER機構に通知することなく変更してはなりません。かかる認可の証拠は、すべてのコンソーシアムメンバーの法的に授権された署名者が署名した委任状の形式で、しかるべき時期にIOに提出しなければなりません。

どのコンソーシアムメンバーもIPROCに登録する必要があります。

【※ 詳しくは添付の英語版技術仕様書「**Expert Support for Diagnostics I&C Integration**」をご参照ください。】

ITER 機構のウェブサイト

<http://www.iter.org/org/team/adm/proc/overview> からもアクセスが可能です。

「核融合エネルギー研究開発部門」の HP : <http://www.fusion.qst.go.jp/ITER/index.html> では ITER 機構からの各募集 (IO 職員募集、IO 外部委託、IO エキスパート募集) を逐次更新しています。ぜひご確認ください。

## **PRIOR INFORMATION NOTICE (PIN)**

**IO/24/CFE/10027927/VML**

### **Expert Support for Diagnostics I&C Integration**

Procurement Officer in charge:

Virginie Michel  
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#### **Abstract.**

The purpose of this PIN is to provide prior notification of the IO's intention to launch a competitive Call for Expertise process in the coming weeks. This PIN provides some basic information about the ITER Organisation (the "IO"), the technical scope for this tender, and details of the tender process.

## 1 Introduction

This Prior Information Notice (PIN) is the first step of a Call for Expertise Procedure leading to the award and execution of a 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.

## 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](http://www.iter.org).

## 3 Scope of Service

The purpose of this Contract titled “Expert Support for Diagnostics I&C Integration” is to procure the provision of services described in the Technical Specifications, ref. **A8D8P9\_v1.2 (ANNEX I in this PIN document)**.

## 4 Procurement Objective & Process

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

The 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 process. The IO formally invites interested candidate companies to indicate their interest in the competitive process, within **10 calendar days**, by returning to the Procurement officer in charge the following information by the date indicated under paragraph 5 below:
  - Name of candidate company
  - Country of registration
  - Point of contact name, email, title, and phone number.

### **Special attention:**

**Interested candidate companies are kindly requested to register in the IO Ariba e-procurement tool called “IPROC”, if not so done yet. The process on how to do is described at the following link: <https://www.iter.org/fr/proc/overview>.**

**When registering in Ariba (IPROC), suppliers are kindly requested to register at least one contact person. This contact person will be receiving the notification of publication of the Request for Proposal and will then be able to forward the tender documents to colleagues if deemed necessary.**

➤ Step 2 - Request for Proposals

After the full registration of interested candidate companies, the Request for Proposals (RFP) will be published in “IPROC”. This stage allows interested candidate companies who have indicated their interest to the Procurement Officer in charge AND who have registered in IPROC to receive the notification that the RFP is published. They will then prepare and submit their proposals in accordance with the tender instructions detailed in the RFP.

**Only companies registered in this tool will be invited to the tender and registered company can only submit a proposal in their name.**

➤ Step 3 – Tender Evaluation Process

Tenderers proposals will be evaluated by an impartial 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 RFP (given in section 5).

➤ Step 4 – Contract Award

The award will be done on the basis of best value for money or lowest price technically compliant offer as described in the published RFP.

## 5 Procurement Timetable

The tentative timetable is as follows:

Milestone	Date
Publication of the Prior Indicative Notice (PIN) on IO Webpage and communications with DAs	19 January 24
Deadline for Submission of expression of interest form	5 February 24
Request for Proposals (RFP) publishing on IPROC	7 February 24
Tender Submission in IPROC	21 February 24
Tender Evaluation & Contract Award	Week 09/10
Contract Signature	Week 11
Contract Commencement	Week 14

## 6 Contract Duration and Execution

The estimated contract duration shall be 12 months.

## 7 Experience

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

The working language of ITER is English, and a fluent professional level is required (spoken and written).

## **8 Candidature**

Participation is open to all legal entities participating either individually or in a grouping/consortium. A legal entity is a 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 its offer. 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.

Any consortium member shall be registered in IPROC.

## **9 Sub-contracting Rules**

No subcontracting is allowed for this package.



**Technical Specifications (In-Cash Procurement)**

**2024-01 - Expert Support for Diagnostics I&C Integration**

Expert Support for Diagnostics I&C Integration

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# 1 PURPOSE

This document provides the technical specification for the work to be performed for diagnostics plant I&C production and reference system aiming at the integration of these systems with central CODAC. Each of the 55+ ITER Diagnostic Systems are operated from the main control room through an instrumentation and control system (I&C) with one plant I&C for each diagnostics. The diagnostics plant I&C systems are developed by the IO-CT team and the domestic agencies according to their responsibilities for the supply of the various diagnostics. The integration of these plant I&C with central CODAC is essential for the success of ITER operation. The work described in this technical specification is focused on the integration aspects and covers the integration relevant topics for each life-cycle phase from design, manufacturing, testing, integration, operation, and maintenance.

# 2 SCOPE

In support of the Controls and Diagnostics Division objectives provide the following services and resulting deliverables related to diagnostics plant I&C production and reference systems located at the Corbières Lab and the CODAC technical rooms :

1. Perform receiving inspection and inventory management (CLM)
  - a. Receive I&C components and document reception
  - b. Perform receiving inspection and power-up tests as required
  - c. Document HW items received in inventory management system (CLM)
  - d. Verify system documentation in IDM and source code in SVN
2. Manufacturing, assembly and installation, and cabling
  - a. Support the manufacturing of diagnostics plant I&C
    - i. Hardware components including Integration kits, fast controllers, slow controller, COTS controllers, signal conditioning and local control networks
    - ii. Software components including all plant I&C software, device support, and functionality extending to central CODAC.
  - b. Support the assembly and installation of diagnostics plant I&C
    - i. Cubicle rails and accessories
    - ii. Chassis in Cubicles
    - iii. Boards in Chassis
    - iv. Electrical power in cubicles
  - c. Cabling support
    - i. Install pre-manufactures cables and cabling looms
    - ii. Perform connectivity test
    - iii. Prepare and apply cable labels
    - iv. Terminate cables as required
3. Execute Test Plans, reproduce previous test report results and report issues
  - a. Perform tests and document results in the Test Report (STR)
  - b. Report Issues observed during testing and issue JIRA tickets
  - c. Co-ordinate with suppliers for the MRR preparation of the plant systems
    - i. Review MRR documentation (SMS, MIP, SIP, STP, wiring diagrams, CLM list)

- d. Review of the MRR documentation review checklists prepared by RAWES (SyDS, SMS checklist, MIP checklist, SIP checklist)Support in FAT testing of diagnostics plant I&C
- 4. Operation, Maintenance, Issue tracking
  - a. Operate plant I&C systems and document any issues observed
  - b. Document availability and reliability of plant I&C systems
  - c. Review latest issue/bug list and maintenance report
  - d. Coordinate bug fixes and witness acceptance testing
  - e. Report remaining issues/bugs
- 5. Coordination of Lab Activities related to central CODAC installation, operation and maintenance
  - a. Coordinate installation of central CODAC infrastructure at the Corbières Lab
  - b. Coordinate testing and maintenance of central CODAC systems
  - c. Provide operation support for central CODAC infrastructure
  - d. Support in configuration and maintenance of the production systems and system prototypes developed and delivered at Corbieres labSupport in testing the interfaces of plant I&C with central CODAC system
- 6. I&C Quality Inspection (Design, Implementation, Documentation)
  - a. Perform regular quality inspections of the plant I&C systems
  - b. Verify that design documentation matches the implementation
  - c. Verify the quality of documentation in IDM and other repositories
  - d. Perform failure assessment (FMEA) and propose strategy for process control by coordinating with plant I&C manufacturers
  - e. Document any change, deviation or non-conformity in the plant I&C
  - f. Review quality control plans developed by diagnostic plant I&C manufacturers
- 7. CODAC Integration of production and reference systems. I&C Methodology application and improvement
  - a. Participate in CODAC integration activities
  - b. Document lessons learned and provide input for additional CODAC requirements
  - c. Apply and improve diagnostics I&C methodology for all life-cycle phases including requirements, design, manufacturing, acceptance testing, integration with central CODAC, operation and maintenance.

### 3 DEFINITIONS

<b>API</b>	Application Programming Interface
<b>CODAC</b>	Control, Data Access and Communications
<b>DAN</b>	Data Archiving Network
<b>DAQ</b>	Data Acquisition
<b>DNFM</b>	Divertor Neutron Flux Monitor
<b>EPICS</b>	Experimental Physics and Industrial Control System
<b>MTCA</b>	MicroTCA Computing Architecture
<b>NDS</b>	Nominal Device Support
<b>NDUC</b>	Neutron Diagnostic Use Case
<b>OMM</b>	I&C Operation and Maintenance Manual

<b>PDM</b>	Pulse Discrimination Module
<b>SRS</b>	System Requirements Specification
<b>SDS</b>	System Design Specification
<b>SMS</b>	System Manufacturing Specification
<b>STR</b>	System Test Report
<b>STP</b>	System Test Plan
<b>TCN</b>	Time Critical Network

## 4 REFERENCES

- [RD1] Diagnostic plant I&C system engineering methodology ([JQLRRK](#))
  - [RD2] Enterprise Architect User Manual ([Q77FFP](#))
  - [RD3] SEQA-45 - Software Engineering and Quality Assurance for CODAC ([2NRS2K](#))
  - [RD4] Requirements Management Guideline for Diagnostics Plant I&C ([UNL5VW](#))
  - [RD5] Diagnostics plant I&C Implementation process ([MPF9QZ](#))
  - [RD6] Diagnostics I&C SharePoint ([Link](#))
  - [RD7] CODAC Application documentation ([6FAM25](#))
  - [RD8] General Management Specification for Service and Supply (GM3S) ([82MXQK](#))
- In case of conflict on requirements, the subject specification will prevail.

## 5 ESTIMATED DURATION

The contract duration is 12 month and work will be performed on ITER site.

## 6 WORK DESCRIPTION

Overall IO Technical Responsible Officer for this contract: **Stefan Simrock**.

The sub-tasks of this task order together with the deliverables are described in chapters 6.1 – 6.7. Each subtask consists of

- Subtask title.
- Short introduction
- Actual task description
- Inputs provided by IO and
- Deliverables including Milestones

The deliverables must be compliant with the PCDH and the work will be executed according to the diagnostics plant I&C system engineering methodology and the manuals and guidelines provided by CODAC and the CCI section [RD1] ... [RD7]. All the tasks will have besides the deliverables in addition a focus on the main outcomes and quality aspects.

Delivery milestones are monthly activity reports A#01 ... A#12, and quarterly summary reports with references to all additional documents and other references (such as test reports or JIRA

tickets) produced in that period - Q#01, Q#02, Q#03, Q#04. The activity reports and quarterly summary report will cover each subtask in a separate section.

The reports will be delivered every month. The deliverables Dx.x will evolve over the duration of the contract depending on changing diagnostics needs and available inputs (for example: a test plan can be only executed when the hardware and software are installed and the test plan becomes available – this depends on several other contractors and actors and therefore availability dates cannot be guaranteed). Activity reports describe the variable progress on each deliverable each month with reference to related documentation.

## **6.1 Sub-Task-1: Perform receiving inspection and inventory management (CLM)**

The scope of this subtask is described in section 2 (Scope) under point 1.

### **Liaison and Resource Tracking Officer**

IO-RO: Stefan Simrock

### **Task Description**

All plant I&C deliverables and I&C components shipped to IO must be inspected and documented.

1. Perform receiving inspection
  - a. Receive I&C components and document reception
  - b. Perform receiving inspection and power-up tests as required
2. Inventory management (CLM)
  - a. Document HW items received in inventory management system (CLM)
  - b. Verify system documentation in IDM and source code in SVN

### **Inputs to be provided by IO:**

1. List of plant I&C under development
2. Purchase requests for I&C components
3. Inventory documentation system (CLM)
4. Deliver inspection checklist
5. CLM documentation

### **Deliverables from the Contractor**

<b>Deliverable</b>	<b>Description</b>	<b>Milestones</b>
D1.1 Receiving Inspection Reports	Receiving inspection report for each plant I&C or component delivery	ALL

D1.2 Inventory documentation in CLM	Test plan including test procedures of all delivered software components	ALL
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## 6.2 Sub-Task-2: Manufacturing, assembly and installation, and cabling

The scope of this subtask is described in section 2 (Scope) under point 2.

### **Liaison and Resource Tracking Officer**

IO-RO: Stefan Simrock

### **Task Description**

The quality of manufacturing, assembly and installation, and cabling are an essential pre-requisite for plant I&C integration.

1. Support the manufacturing of diagnostics plant I&C
  - a. Hardware components including Integration kits, fast controllers, slow controller, COTS controllers, signal conditioning and local control networks
  - b. Software components including all plant I&C software, device support, and functionality extending to central CODAC.
2. Support the assembly and installation of diagnostics plant I&C
  - a. Cubicle rails and accessories
  - b. Chassis in Cubicles
  - c. Boards in Chassis
  - d. Electrical power in cubicles
3. Cabling support
  - a. Install pre-manufactures cables and cabling looms
  - b. Perform connectivity test
  - c. Prepare and apply cable labels
  - d. Terminate cables as required

### **Inputs to be provided by IO:**

1. Schedule for Manufacturing, assembly and installation activities
2. Manufacturing and assembly specifications
3. Installation instructions
4. Cabling plans
5. Cubicles, components and parts as required

### **Deliverables from the Contractor**

Deliverable	Description	Milestone
D2.1 Manufacturing reports	Activity report on manufacturing and assembly	ALL
D2.2 Installation and cabling reports	Activity report for installation and cabling	ALL

### 6.3 Sub-Task-3: Execute Test Plans, reproduce previous test report results and report issues

The scope of this subtask is described in section 2 (Scope) under point 3.

#### **Liaison and Resource Tracking Officer**

IO-RO: Stefan Simrock

#### **Task Description**

Execute Test Plans, reproduce previous test report results and report issues. Test plans provided with the delivery of a plant I&C or I&C components must be repeated and verified on IO site to ensure that they can be executed and reproduced in the IO environment in which they are installed. Issues have to be documented and must be followed-up until they are resolved.

1. Perform tests and document results in the Test Report (STR)
2. Report Issues observed during testing and issue JIRA tickets
3. Co-ordinate with suppliers for the MRR preparation of the plant systems
  - a. Review MRR documentation (SMS, MIP, SIP, STP, wiring diagrams, CLM list)
  - b. Review of the MRR documentation review checklists prepared by RAWES (SyDS, SMS checklist, MIP checklist, SIP checklist)
4. Support in FAT testing of diagnostics plant I&C

#### **Inputs to be provided by IO:**

1. Test Plans delivered by I&C suppliers
2. Test Report delivered by I&C suppliers

#### **Deliverables from the Contractor**

Deliverable	Description	Milestone
D3.1 Testing Activity report	Activity report on test performed	ALL
D3.2 Test Reports	Test reports with documentation of issues found	ALL



## 6.4 Sub-Task-4: Operation, Maintenance, Issue tracking

The scope of this subtask is described in section 2 (Scope) under point 4.

### Liaison and Resource Tracking Officer

IO-RO: Stefan Simrock

### Task Description

Operation, Maintenance, Issue tracking. Accepted plant I&C systems must be maintained which include their regular operation, detection of potential problem, and documentation and follow-up on issues. Regular operation allows to collect information about availability and reliability of the plant I&C systems

1. Operate plant I&C systems and document any issues observed
2. Document availability and reliability of plant I&C systems
3. Review latest issue/bug list and maintenance report
4. Coordinate bug fixes and witness acceptance testing
5. Report remaining issues/bugs

### Inputs to be provided by IO:

1. Operation Manual
2. Maintenance Manual

### Deliverables from the Contractor

Deliverable	Description	Milestone
D4.1 Operation report	Report of operation activities including observations on operability and reliability	ALL
D4.2 Maintenance Report	Report of maintenance activities	ALL
D4.3 Issue tracking	Issue reporting and tracking in JIRA	ALL

## 6.5 Sub-Task-5: Coordination of Lab Activities related to central CODAC installation, operation and maintenance

The scope of this subtask is described in section 2 (Scope) under point 5.

### Liaison and Resource Tracking Officer

IO-RO: Stefan Simrock

### Task Description

Coordination of Lab Activities related to central CODAC installation, operation and maintenance

1. Coordinate installation of central CODAC infrastructure at the Corbières Lab
2. Coordinate testing and maintenance of central CODAC systems
3. Provide operation support for central CODAC infrastructure
4. Support in configuration and maintenance of the production systems and system prototypes developed and delivered at Corbieres lab
5. Support in testing the interfaces of plant I&C with central CODAC

### Inputs to be provided by IO:

1. Schedule of Corbières Lab activities
2. Architecture of the Corbières Lab infrastructure
3. Description of the Central CODAC installations at the Corbières Lab
4. Test Plan for Central CODAC infrastructure

### Deliverables from the Contractor

Deliverable	Description	Milestone
D5.1 Coordination Report	Report of the central CODAC coordination activities.	ALL
D5.2 Test and Maintenance reports	Test reports and maintenance reports for Central CODAC infrastructure	ALL
D5.3 Operation and Maintenance report	Report on operation and maintenance activities of the Central CODAC infrastructure.	ALL

## 6.6 Sub-Task-6: I&C Quality Inspection (Design, Implementation, Documentation)

The scope of this subtask is described in section 2 (Scope) under point 6.

### Liaison and Resource Tracking Officer

IO-RO: Stefan Simrock

### Task Description

I&C Quality Inspection (Design, Implementation, Documentation)

1. Perform regular quality inspections of the plant I&C systems (Compliance with PCDH).
2. Verify that design documentation matches the implementation
3. Verify the quality of documentation in IDM and other repositories
4. Perform failure assessment (FMEA) and propose strategy for process control by coordinating with plant I&C manufacturers
5. Document any change, deviation or non-conformity in the plant I&C
6. Review quality control plans developed by diagnostic plant I&C manufacturers

### Inputs to be provided by IO:

1. Plant I&C Documentation (SRS, SDS, SMS, STP, STR, OMM as applicable)
2. Data Visualization and Analysis Tools

### Deliverables from the Contractor

Deliverable	Description	Milestone
D6.1 Quality inspection plan	Procedures for quality inspection including evaluation criteria for quality	ALL
D6.2 Inspection Reports	Quality Inspection Reports	ALL

## 6.7 Sub-Task-7: CODAC Integration of production and reference systems, I&C Methodology

The scope of this subtask is described in section 2 (Scope) under point 7.

### **Liaison and Resource Tracking Officer**

IO-RO: Stefan Simrock

### **Task Description**

CODAC Integration of production and reference systems, I&C Methodology

1. Participate in CODAC integration activities
2. Document lessons learned and provide input for additional CODAC requirements
3. Apply and improve diagnostics I&C methodology for all life-cycle phases including requirements, design, manufacturing, acceptance testing, integration wit central CODAC, operation and maintenance.

### **Inputs to be provided by IO:**

1. Integration tools and applications (documentation)
2. Integration procedures
3. Support from I&C integration team (from CODAC and Diagnostics)

### **Deliverables from the Contractor**

<b>Deliverable</b>	<b>Description</b>	<b>Milestone</b>
D7.1 Integration activity plan	Resource loaded work plan of integration activities	ALL
D7.2 Integration activity report	Reports of integration activities	ALL
D7.3 Lessons learned	Lessons learned report. Proposal for improvement of integration procedures.	ALL
D7.4 CODAC requirements	Requirements for CODAC tools and applications updated.	ALL

## 7 RESPONSIBILITIES

The contractor will provide specialist resources on a long-term permanent basis for the duration and at the location as required under this scope of work. The contractor undertakes that:

- The personnel will possess the qualifications, professional competence and experience to carry out such services in accordance with best practice within the industry
- The personnel will be bound by the rules and regulations governing ITER safety and security
- The required safety clearance deliverables will be provided and maintained accurate during period of execution of the services.

### 7.1 Specific Skills

Execution of the service requires personnel with appropriate accreditation for Low Voltage (LV) electrical operation according to NFC 18 510. High Voltage (HV) electrical work is not required.

### 7.2 Milestones

The table below shows the allocation of the deliverables of this task order with the 7 main milestones.

Milestone	Deliverable	Est Due date
A#01	D1.x	T0+1 month
A#02	D2.x	T0+1 month
A#03	D3.x	T0+2 month
Q#01	D4.x	T0+2 month
	D5.x	T0+3 month
	D6.x	T0+3 month
	D7.x	T0+3 month
A#04	D1.x	T0+4 month
A#05	D2.x	T0+4 month
A#06	D3.x	T0+5 month
Q#02	D4.x	T0+5 month
	D5.x	T0+6 month
	D6.x	T0+6 month
	D7.x	T0+6 month
A#07	D1.x	T0+7 month
A#08	D2.x	T0+7 month
A#09	D3.x	T0+8 month
	D4.x	T0+8 month
	D5.x	T0+9 month
	D6.x	T0+9 month
	D7.x	T0+9 month

Q#03		
A#10	D1.x	T0+10 month
A#11	D2.x	T0+11 month
A#12	D3.x	T0+11 month
Q#04	D4.x	T0+12 month
	D5.x	T0+12 month
	D6.x	T0+12 month
	D7.x	

T0 is the date of kick off meeting that should take place within one month after the signature of the contract.

## 8 ACCEPTANCE CRITERIA

The following criteria shall be the basis of the acceptance of the successful accomplishment of the Work.

### 8.1 Delivery date criteria

On-time delivery of deliverables according to the milestone dates defined in Section 7.

### 8.2 Report and Document Review criteria

Reports and design documentation as deliverables shall be stored in the ITER Organization's document management system, IDM by the Contractor for acceptance. A named ITER Organization's Contract Technical Responsible Officer is the Approver of the delivered documents. The Approver can name one or more Reviewers(s) in the area of the report's expertise. The Reviewer(s) can ask modifications to the report in which case the Contractor must submit a new version. The acceptance of the document by the Approver is an acceptance criterion.

### 8.3 Software delivery criteria

Software source code shall be delivered in the ITER Organizations software repository (SVN) by the Contractor for acceptance. A named ITER Organization's Contract Technical Responsible Officer is the Approver of the delivered software source code. The acceptance is based on successful execution of test plans and approved test reports and includes a source code inspection and analysis.

## 9 SPECIFIC REQUIREMENTS AND CONDITIONS

The recommendations that are described in the CODAC Software Engineering and Quality Assurance document [RD3] shall apply to the deliverables.

## 10 WORK MONITORING / MEETING SCHEDULE

The work will be managed by means of weekly planning and progress meeting and/or formal and informal exchange of documents which provide detailed information. Planning meetings will be organized by the ITER Organization to plan the upcoming activities, review the progress of the work and discuss and resolve the technical problems.

The main purpose of the weekly meetings is to allow the ITER Organization and the contractor to:

1. Allow early detection and correction of issues that may cause delays;
2. Review the completed and planned activities and assess the progress made;
3. Permit fast and consensual resolution of unexpected problems;
4. Clarify doubts and prevent misinterpretations of the specifications.

On every monthly milestone, the contractor shall submit to ITER Organization an activity report and on a quarterly basis a summary report with references to additional documentation produced during that period.

On request and by agreement, additional special subject meetings will be organized.

## 11 QUALITY ASSURANCE (QA) REQUIREMENT

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

The general requirements are detailed in [ITER\\_D\\_22MFG4 - ITER Procurement Quality Requirements](#)

Prior to commencement of the contract, a Quality Plan (QP) must be submitted for IO approval in accordance with Procurement [ITER\\_D\\_22MFMW - Requirements for Producing a Quality Plan](#). The QP should describe the organization for the contract; 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.

Manufacturing and Inspection Plan (or Inspection Plan) should be implemented to monitor quality control and acceptance test. The contractor are subject to [Requirements for Producing an Inspection Plan \(ITER\\_D\\_22MDZD\)](#).

All requirements of this Technical Specification and subsequent changes proposed by the Contractor during the execution of the Contract are subject to the Deviation Request process described in [ITER\\_D\\_2LZJHB - Procedure for the management of Deviation Request](#). When a non-conformance is identified, the contractor are subject to the Non-conformance Report process describe in [ITER\\_D\\_22F53X - Procedure for Management of Nonconformities](#).

Documentation developed as the result of the contract should be retained by the performer for a minimum of 5 years and then may be discarded at the direction of the IO.

## 12 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 External Contractors (Suppliers and Subcontractors, and their 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.

The scope of this technical specification is not PIC/PIA.



## Expression of Interest

To be returned by e-mail to: [Virginie.michel@iter.org](mailto:Virginie.michel@iter.org) copy [Lijun.liu@@iter.org](mailto:Lijun.liu@@iter.org) before  
5 February 2024, 17.00 CET

ITER Organization / ITER Headquarters  
Procurement & Contracts Division  
Route de Vinon-sur-Verdon  
CS 90 046  
13067 St. Paul Lez Durance Cedex  
France

TENDER No. **IO/24/CFE/10027927/VML**

TENDER Title: **Expert Support for Diagnostics I&C Integration**

Officer in charge: **Virginie Michel - Procurement & Contracts Division ITER**

☐ We acknowledge receipt of all tender documents for the above mentioned tender.  
(In event of missing documents, contact the ITER Officer in charge)

☐ We intend to submit a tender

### **Contact Person for this solicitation Process:**

Name: ..... Tel: .....

Position: ..... E-mail address: .....

Signatory Name: .....

Company Stamp

Title: .....

Signature: .....

Date: .....