外部委託業者の募集

References: IO/25/OT/70001318/AJI

"Framework Contract for Common Components and Monitoring Diagnostics Implementation Services"

（汎用部品とモニタリング計測の導入サービスに関する枠組み契約）

IO 締め切り 2025 年 8 月 8(金)

〇はじめに

本事前情報通知（PIN）は、作業契約の入札授与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。

本文書の目的は作業範囲と入札プロセスに関する技術的な内容の基本的な要約を提供することです。

〇背景

ITER は平和利用の核融合発電の科学的および技術的な実現可能性の実証を目的とした、国際共同研究開発プロジェクトです。ITER 機構の 7 つのメンバーは、;欧州連合（EURATOM が代表）、日本、中華人民共和国、インド、大韓民国、ロシア連邦、および米国です。

ITER の敷地はフランス南東部のブーシュデュローヌ地区にあり、ITER 本社（HQ）もあるフランス CEA サン・ポール・レ・デュランス に近いところに位置しています。詳細については、ITER のウェブサイト http://www.iter.org を参照して下さい。

〇作業範囲

本入札プロセスは、ITER機構（IO）ポート向けのB4C（炭化ホウ素）の供給に関するフレームワーク契約の締結を目的としています。ITER機構内では、計測プログラム部門が本契約の実施を担当します。

本契約において、供給業者は、ITER計測ポートの中性子遮蔽に使用される炭化ホウ素（B4C）セラミックブロックの調達要件に対してのみ責任を負います。これらのセラミックブロックは、エクアトリアルポートプラグ（EPP）#2、8、17およびアッパーポートプラグ（UPP）#4、5、6向けのものです。

契約には、ITERサイトへの納入および製品が本技術仕様書で定義された技術要件を満たしていることの保証も含まれます。

〇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、以下の概略日程に示された期日までに担当調達担当官に添付の関心表明フォームで以下の情報を

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。

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
  PIN の発行から 10 作業日経過後、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。

〇概略日程

概略日程は以下の通りです：

マイルストーン	暫定日程
事前指示書（PIN）の発行	2025 年 6 月 23 日
関心表明フォームの提出	2025 年 7 月 3 日
iProc での提案依頼書 (RFP) の発行	2025 年 7 月 7 日の週
明確化のための質問（もしあれば）	2025 年 8 月 8 日（質問締切り） 2025 年 8 月 11 日（回答締切り）
iPROC での入札提出	2025 年 8 月 18 日

入札評価と契約授与	2025 年 9 月または 10 月
枠組み契約調印	2025 年 9 月または 10 月

〇契約期間と実行

予想される契約期間は48か月です。契約の最終調印日前の作業はありません。

〇経験

契約者に求められる要件は以下の通りです：

- **B4C ブロック製造における実績ある専門知識**：炭化ホウ素（B4C）セラミックブロックはホットプレス製法により製造される必要があります。B4C、特に^10B 同位体に関する経験と実績が求められます。
- **高精度な寸法公差の維持能力**：高度な精密加工技術と厳格な品質管理手法により、厳しい製造公差を達成・維持できる能力。
- **測定システムの習熟**：三次元測定機（CMM）などの測定機器やその他の寸法検証手法を用いて、公差の確認ができる技術。
- **超高真空機器向け製造経験**：超高真空機器に求められる厳格な清浄条件下での製造経験。
- **汚染管理の知識**：真空部品の製造において、アウトガスや汚染を最小限に抑えるための手順に精通していること。
- **原子力品質基準への適合能力**：厳格な原子力品質基準を満たす部品の製造に関する技術と経験。

〇候補

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。ITER 加盟国は欧州連合(EURATOM メンバー)、日本、中華人民共和国、インド共和国、大韓民国、ロシア連邦、アメリカ合衆国です。

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、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「**Framework Contract for Supply of B4C for IO ports**」をご参照ください。】
ITER 公式ウェブ　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。

イーター国際核融合エネルギー機構からの外部委託
に関心ある企業及び研究機関の募集について

＜ITER 機構から参加極へのレター＞

以下に、外部委託の概要と要求事項が示されています。参加極には、提案された業務に要求される能力を有し、入札すべきと考える企業及び研究機関の連絡先の情報を ITER 機構へ伝えることが求められています。このため、本研究・業務に関心を持たれる企業及び研究機関におかれましては、応募書類の提出要領にしたがって連絡先情報をご提出下さい。

china eu india japan korea russia usa
Route de Vinon-sur-Verdon - CS 90 046 - 13067 St Paul Lez Durance Cedex - France

PRIOR INDICATIVE NOTICE (PIN)

OPEN TENDER SUMMARY

IO/25/OT/70001318/AJI

for

Framework Contract for Common Components and Monitoring Diagnostics Implementation Services

Abstract

The purpose of this summary is to provide prior notification of the IO 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 award of a Framework Contract for Common Components and Monitoring Diagnostics Implementation Services.

1 Introduction

This Prior Indicative Notice (PIN) is the first step of an Open Tender Procurement Process 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.
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 supplies 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 Work

The present tender process aims to set up a Framework Contract for Common Components and Monitoring Diagnostics Implementation Services. Within the ITER Organization, the Diagnostic program will be in charge of implementing this Contract.
The Contractor, who will be selected for this Contract shall provide specialist engineering expertise in order to successfully implement the systems described in technical specification, ensuring that the final design, manufacturing, testing and installation activities are completed on time and to high levels of quality.

4 Procurement Process & Objective

The objective is to award a 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 Indicative Notice (PIN) :
  The Prior Indicative 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. **Interested tenderers are kindly requested to return the expression of interest form (Annex I) by e-mail by the date indicated in the procurement timetable below.**

- Step 2 - Invitation to Tender (ITT) :
  Within 14 days of publishing the Prior Indicative Notice (PIN), the Invitation to Tender (ITT) will be advertised. This stage allows interested bidders who have seen the PIN to obtain the tender documents and prepare and submit their proposals per the tender instructions.

- Step 3 – Tender Evaluation Process :

Tenderers' proposals will be evaluated by an impartial, professionally competent technical evaluation committee of the ITER Organization. Tenderers must provide details demonstrating their technical compliance to perform the work in line with the technical scope and per the criteria listed in the invitation to tender (ITT).

- Step 4 – Contract award :
  A Service contract will be awarded based on best value for money according to the evaluation criteria and methodology described in the Invitation to tender (ITT).

5 Procurement Timetable

The tentative timetable is as follows:

Milestone	Date
Publication of the Prior Indicative Notice (PIN)	24 July 2025
Deadline for Submission of Expression of interest form	08 August 2025
Request for Proposals (RFP)- Invitation to Tender (ITT) advertisement	23 August 2025
Clarification Questions (if any) and Answers deadline	26 September 2025
Answers to Clarifications	30 September 2025
Tender Submission in IPROC	07 October 2025
Tender Evaluation & Contract Award	October 2025
Contract Signature	Early November 2025

6 Quality Assurance Requirements

Prior to the commencement of any work under this Contract, the selected Contractor shall produce a "Quality Plan" and submit it to the IO for approval, describing how they will implement the ITER Procurement Quality Requirements.

7 Contract Duration and Execution

The duration shall be for 72 months. No work shall commence before the date of final signature of the Contract.

8 Experience/Expertise/Knowledge

Preferably, the Contractor is expected to own the following experience/expertise/knowledge:

- Proven experience in the preparation and review of detailed construction and assembly documents for mechanical installation tasks including welding.
- Recognized methodology for coordinating and executing the preparation of Diagnostic In-vessel system installation Engineering Work Packages.
- Proven competency in Catia model and WP creation for Configuration Management Models (CMMs), ideally for components inside the ITER Vacuum Vessel or Cryostat.
- Proven competency in Catia model and WP creation for Detailed Models (DMs), ideally for components inside the ITER Vacuum Vessel or Cryostat.

- Proven experience in the production of 2D drawings, including component and requirement drawings, following the IO CAD rules (and ideally EWP Toolbox rules). Please provide at least 3 examples.
- Extensive experience in engineering design and/or support in a nuclear or fusion experiment or installation.
- Previous experience with supporting the design, qualification, manufacturing and installation follow-up of plasma diagnostics systems.
- Extensive experience in producing engineering documents such as technical specifications, manufacturing specifications, design review chit closure progress etc.
- Experience in configuration and documentation management using Project Lifecycle Management software.
- A good understanding of tokamak galleries, diagnostic buildings and the port plug structures.
- Knowledge of layout, design and integration of boundary imaging systems and related diagnostic components.
- A good knowledge of optical diagnostics' design in fusion environment, electromagnetic actuators and water-cooled components is required for the design of In-Vessel optical components.
- Expertise in fibre optic sensors applied to plasma current monitoring.
- Expertise in fibre Bragg grating sensors for dynamic monitoring under high neutron fluence.
- Experience in the layout of fibre optic systems under complex interfaces and
- Knowledge and proven experience of feedthrough design and manufacturing follow up.
- Experience supporting safety important components contracts for nuclear facilities.
- Demonstration of development of machine learning applications for condition and health monitoring.
- Expertise in tokamak specific algorithms, analysis models and workflows for electromagnetic, thermal and mechanical monitoring.
- Familiarity with the fusion plasma diagnostics integrated modelling and synthetic data production.
- Experience in engineering data analysis for fusion applications.

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 with legal rights and obligations 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 constituted informally for a specific tender procedure. All consortium members (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 lead will explain the composition of the consortium members in a covering letter at the tendering stage. 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 in IPROC. 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). Rules on sub-contracting are indicated in the RFP itself.

ANNEX I

EXPRESSION OF INTEREST & PIN ACKNOWLEDGEMENT

To be returned by e-mail to: amankumar.joshi@iter.org copy Chloe.Perret@iter.org

TENDER No.	**IO/25/OT/70001318/AJI**
DESIGNATION of SERVICES:	**Framework Contract for Common Components and Monitoring Diagnostics Implementation Services**
OFFICER IN CHARGE:	**Aman Kumar Joshi – Procurement Division ITER Organization**

☐ WE ACKNOWLEDGE HAVING READ THE PIN NOTICE FOR THE ABOVE-MENTIONED TENDER

☐ WE INTEND TO SUBMIT A TENDERs

☐ WE WILL NOT TENDER FOR THE FOLLOWING REASONS:

.....

Company name:.....

COMPANY STAMP

Signature:

Name: .....

Position: .....

Tel: .....

E-mail.....

Date: .....

IDM UID
DUTPML

VERSION CREATED ON / VERSION / STATUS
11 Jun 2025 / 1.2 / Approved

EXTERNAL REFERENCE / VERSION

Technical Specifications (In-Cash Procurement)

Common Components and Monitoring Diagnostics Implementation

Framework contract for 55.A8, 55.AQ, 55.GE, 55.GT and IN-55.PPMI, as well as for Diagnostics documentation and EWPs.

DISCLAIMER : UNCONTROLLED WHEN PRINTED – PLEASE CHECK THE STATUS OF THE DOCUMENT IN IDM

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Table of Contents

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1 Preamble

This Technical Specification is to be read in combination with the General Management Specification for Service and Supply (GM3S) – [Ref 1] that constitutes a full part of the technical requirements.

In case of conflict, the content of the Technical Specification supersedes the content of Ref [1].

2 Purpose

This document specifies the requirements for the framework contract "Common Components and Monitoring Diagnostics Implementation". It defines the scope of the services to be provided, the execution and the deliverables associated. This is a framework contract, where each task order is a free self-standing activity with its own budget.

3 Acronyms & Definitions

3.1 Acronyms

The following acronyms are the main one relevant to this document.

Abbreviation	Description
CCP	Common Components Procurement Project
CRO	Contract Responsible Officer
CRO	Contract Responsible Officer
CWP	Construction Work Package
DA	Domestic Agency
EWP	Engineering Work Package
FOCS	Fiber Optics Current Sensor
GM3S	General Management Specification for Service and Supply
IMAS	Integrated Modelling Analysis Suite
IMD	Imaging and Monitoring Diagnostics Project
IO	ITER Organization
PPMI	Port Plugs Mechanical Instrumentation
PRO	Procurement Responsible Officer
SSD	See System Design
TSM	Tokamak Systems Monitor
WP	Work Package

3.2 Definitions

Contractor: shall mean an economic operator who have signed the Contract in which this document is referenced.

Common Components Procurement (CCP) Project is part of Diagnostics Programme and covers those systems which provide shared functionality.

Imaging and Monitoring Diagnostics (IMD) Project is also part of the Diagnostics Programme, grouping more specialized optics-based diagnostics.

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4 Applicable Documents & Codes and standards

4.1 Applicable Documents

This is the responsibility of the Contractor to identify and request for any documents that would not have been transmitted by IO, including the below list of reference documents.

This Technical Specification takes precedence over the referenced documents. In case of conflicting information, this is the responsibility of the contractor to seek clarification from IO.

Upon notification of any revision of the applicable document transmitted officially to the contractor, the contractor shall advise within 4 weeks of any impact on the execution of the contract. Without any response after this period, no impact will be considered.

Ref	Title	IDM Doc ID	Version
1	General Management Specification for Service and Supply (GM3S)	82MXQK	1.4

4.2 Applicable Codes and Standards

This is the responsibility of the contractor to procure the relevant Codes and Standards applicable to that scope of work.

5 Scope of Work

The implementation of several Common Components and Monitoring Projects requires very specific skills along with similar processes. In particular, it has been identified that the following projects have related implementation needs, timelines, and technologies:

- 55.PPMI Port Plugs Mechanical Instrumentation covers the supply and installation of in-port plug optics fibre-based sensors for dynamic monitoring of the port plug structures.
- 55.A8 and 55.AQ Fiber Optics Current Sensor (FOCS) is a diagnostic for the accurate plasma current monitoring based on the use of spun optic fibres.
- 55.GE Boundary Imaging System is a diagnostic collecting light from the divertor region to detect transient events such as ELM bursts or L-H transitions.
- 55.GT Tokamak Systems Monitor (TSM) is a diagnostic designed to provide a comprehensive overview of the Tokamak's state by using optic-fibre and resistive instrumentation signals, mixed with other monitoring diagnostics data. It compares the current state with reference design values, detects anomalies, and manages the health and lifetime of the Tokamak.
- Diagnostic documentation and Engineering Work Packages (EWP) related to Common Components and Monitoring projects.

This framework contract focusses on implementing the engineering, technologies and processes required and shared by these systems for completing their final design phase and initiating their manufacturing and construction assembly phases, including as well early aspects related to the preparation of their future commissioning.

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5.1 Work description

This framework contract will provide specialist engineering expertise in order to successfully implement the systems described previously, ensuring the final design, manufacturing, testing and installation activities are completed on time and to high levels of quality.

It is expected that task orders within this framework will also include testing activities, manufacturing of prototype and test items, and delivery of short series of items. if unpractical to be executed through separate contracts. There will be no PIAs nor work on PIC within the Task Orders.

Preparation for installation of many in-vessel diagnostic sub-systems is ongoing, in parallel to manufacturing of the tens of thousands of components which comprise the sub-systems. Engineering and CAD services are required to prepare installation documents, detailed technical specifications, and requirement and component drawings forming part of the Engineering Work Packages (EWPs) for their associated installation.

In more detail for the different areas (note that these are indicative activities and not intended to cover all but most of the activities to be performed):

Port Plugs Mechanical Instrumentation (55.PPMI)

- Integration of supplier models in our ITER system databases.
- Evaluation of performance of optic fibre sensors and components.
- Assessment of installation procedures, including prototypes preparation.
- Surveillance of manufacturing, including factory visits, review of tests and cross-checking of modifications.
- Preparation, execution and documentation of site acceptance tests (SAT).
- Participation and presentation of work, when needed, on relevant gate reviews.
- Preparation of installation specifications, procedures and drawings.
- Subsequent follow-up and oversight of installation of the components within this scope.
- Creation of as-installed documentation.
- Maintenance of design documentation and manufacturing database.

Fiber Optics Current Sensor, FOCS (55.A8) and PCM (55.AQ)

- Preparation of technical input documents for 55.A8 and 55.AQ gate design reviews.
- Subsequent follow-up of design review actions.
- Development of FOCS feedthrough and optomechanical connection mechanical design, including oversight of CAD resources.
- Evaluation of performance of spun fibre sensors and other optical components.
- Participation to the development of the optical system and setup for the PCM.
- Preparation of qualification plans for 55.AQ.
- Technical checking and independent verification of calculations produced by Third Parties.
- Participation and presentation of work, when needed, on relevant gate reviews.
- Subsequent follow-up of tender(s), including responding to tenderer’s questions.
- Monitoring of manufacturing, including factory visits, review of tests and cross-checking of modifications.
- Preparation, execution and documentation of site acceptance tests (SAT).
- Preparation of installation specifications, procedures and drawings.
- Subsequent follow-up and oversight of installation of the components within this scope.

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Boundary Imaging System (55.GE)

- BIS electromechanical in-vessel shutter mechanical design and engineering calculations.
- Subsequent follow-up of design review engineering actions.
- Engineering support to the manufacturing of BIS First Mirrors and preparation of qualification plan.
- Elaboration of prototypes requirements and test plans.
- Integration of as-installed data of interfacing PBSes in BIS SCC designs to meet alignment requirements.
- Preparation of installation specifications, procedures and sequence compatible with ITER construction activities. Follow-up and update of installation strategy as required by the Project.
- Surveillance of manufacturing, including factory visits, review of tests and cross-checking of modifications.
- Preparation, execution and documentation of site acceptance tests (SAT).
- Creation of as-installed documentation.
- Maintenance of design documentation and manufacturing database.

Tokamak Systems Monitor, TSM (55.GT)

- Review of the functionality, performance and documentation of prototypes produced by Third Parties.
- Technical checking and independent verification of algorithms and analysis workflows produced by Third Parties.
- Development of the TSM Anomaly Detection module.
- Implementation of system specific anomaly detection algorithms.
- Participation on the TSM Data Analysis application development, testing and deployment.
- Contribution to finalization of the TSM lifetime algorithms design and implementation.
- Integration of ML and AI-based enhancements to the TSM functionalities.
- Implementation of these previously mentioned algorithms and workflows within the Integrated Modelling Analysis Suite (IMAS).
- Monitoring of manufacturing/implementation, including factory visits, review of tests and management of modifications.

Diagnostic Engineering Work Packages (EWPs)

CAD tasks for EWPs

- Creation of interfacing points (interface skeletons)
- Update of CMMs and update or creation or integration of DMs
- Creation of new 3D Work Packages and segregation/splitting of existing models into those new Work Packages
- Create 2D Drawings with Bill of Materials following ITER standards:
    - Component drawing (CMP): Drawing showing the key dimensions, material, mass and classification of the components within the work scope.
    - Requirement drawing (REQ): Detailed drawing showing the positional and installation requirements for the components within the work scope.
- Extract of Construction BOMs from the prepared models.

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- Preparation of laser marking skeletons in order to position the diagnostic components.
- Provide efficient deployment, oversight and follow-up of multiple CAD resources, reviewing generated outputs for CAD quality and consistency with generated documents

Documentation tasks and EWPs

- Creation of the following documents:
    - Scope of Work table (SoW): Lists the high level installation activities to be performed step by step.
    - Document Applicability Matrix (DAM): Lists all of the documents and drawings which are applicable.
    - Component Bill of Material (C-BOM): Lists all of the components which are to be installed.
    - Tool Bill of Material (T-BOM): Lists any special tools which are to be used within the EWP.
    - Technical Specifications: Detailed documents presenting technical requirements for the assembly activities listed in the SoW.
    - Technical Master Document (TMD): Overall umbrella document linking the SoW, DAM, Technical Specifications.
- Review of the documents listed above, comparing with the Requirement drawings.
- Surveillance of Protection Important Activities (PIA) evidence, including review and verification of compliance.
- Automation of databases and systems, including optimization of processes.

5.2 Indicative Work packages

The following activities are foreseen as indicative work packages. The indicative work packages are not task orders by themselves and only define some span of work expected within the current Framework Contract. The work is to be performed predominantly off-site, with occasional visits.

Three different categories of activities are foreseen:

- Category 1 – for activities which can be spread in time, i.e. those with workloads less than 0.5 person per day.
- Category 2 – for activities which will be the main occupancy for a person during some period, i.e. workloads between 0.5 to 1.0 person per day.
- Category 3 – for those activities involving for sure more than one person, i.e. those with workloads higher than 1.0 person per day.

The work packages (WPs) will use the previous classification along with an estimate of total hours. The contractor will then add the proposed details of the delivery and the price for this work package. Some indicative WPs are listed in the following table.

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Indicative work package	Category & duration	Hours
Detailed design and calculations for 55.GE EM shutter: - 3D CAD model - Engineering calculations supporting the design choice - 2D manufacturing drawings (for prototype) - Production of technical documents	Cat 2, 5 months	580 260 100 140 80
55.A8 Optical and optomechanical engineer: - 3D CAD concept models update - 3D clash check and solving - 2D diagrams checking - Technical documents editing for design reviews	Cat 1, 8 months	900 270 80 230 320
Technical and safety assessment of the detailed installation procedure of 55.PPMI components inside upper port plugs: - Procurement of plywood prototype - Procurement of required testing equipment - Technical feasibility study - Safety assessment of the assembly procedures - Documentation	Cat 1, 9 months	300 80 40 40 60 80
Implementation of 55.GT tokamak dynamic simulation workflows within the Integrated Modelling Analysis Suite (IMAS): - Pre-testing of workflows - Implementation of parameters in the configuration file - Evaluation of the load transfer scripts - Definition of synthetic sensors as IDS variables - Integration and testing - Documentation	Cat 1, 6 months	450 80 120 40 80 80 50

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Indicative work package	Category & duration	Hours
Diagnostic Engineering Work Packages (EWPs) for one In-Vessel Construction Work Package (CWP): - Update of 3D models - Production of 2D drawings - Production of documentation package	Cat 3, 1 month	160 40 40 80

6 IO Documents

No input is expected from IO

7 List of deliverables and due dates

The implementation details of deliverables and priorities will be agreed between the Contact Persons under each separate Task Order. No element of work or activity shall begin without the prior written notification by the ITER Organization in the form of a "Task Order" signed by both Parties.

The deliverables will depend on the type of a task, but they shall be well defined before the start of the Task order in question and shall be based on the expertise requested in Section 5.1of these Technical Specifications. The examples of the deliverables include, but are not limited to, the following items:

1. Reports or minutes of the kick-off meeting including list of all input information and requirements.
2. Progress reports containing:
    a. Summaries of meetings and decisions,
    b. Drafts of material to be used in final reports,
    c. Issues that have arisen in the course of the work, along with suggested approaches to addressing these issues.
3. Deliverables of Task orders in the form of:
    a. Report,
    b. Technical note,
    c. Calculation Note,
    d. Any other relevant engineering documents.
4. Reports or minutes of the meeting for completion of the task order containing:
    a. Deliverables acceptance statement,
    b. Report on outstanding issues identified during Task Order execution, forward action plan,
    c. Summary of the Task Order outcome.
5. Delivery on ITER site (or other agreed location) of prototypes and components manufactured under this contract.

8 Quality Assurance requirements

The Quality class under this contract is QC1, [Ref 1] GM3S section 8 applies in line with the defined Quality Class.

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9 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 Supplier 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 Contractor and Subcontractor following the requirements of the Order 7th February 2012 (ITER_D_7M2YKF).

NOTE: There are no Protection Important Activities (PIAs) within the scope of this work but there is monitoring/oversight of Third Parties working on PIC and/or performing PIAs related to the 55.PPMI Optical Feedthroughs. This monitoring/oversight is not itself a PIA.

10 Special Management requirements

Requirement for [Ref 1] GM3S section 6 applies in full.

10.1 Work Monitoring

The work on individual task orders shall be started by dedicated kick-off meetings and managed by means of Progress Meetings. It is expected that Progress Meetings will be held as frequently as required, generally bi-weekly, written progress reports are required monthly.

The main purpose of the Progress Meetings is to allow the ITER Organization/Diagnostics Division and the Contractor Technical Responsible Officers to:

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

In addition to the Progress Meetings, if necessary, the ITER Organization and/or the Contractor may request additional meetings to address specific issues to be resolved.

It is expected that on occasion the Contractor will be required to make a presentation to Topical Technical Meetings either by videoconference or in person. If a presentation in person at an off-site meeting is required, the ITER Organization will reimburse travelling expenses.

For all Progress Meetings, a document (the Progress Meeting Report) describing tasks done, results obtained, blocking points and action items shall be written by the Contractor. Each report will be stored in the ITER IDM in order to ensure traceability of the work performed.

10.2 CAD design requirements

This contract requires for CAD activities, [Ref 1] GM3S section 6.2.2.2 applies.

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10.3 Specific requirements and conditions

Successful performance is mandatory.

It shall be noted that Contractor's personnel visiting the ITER site shall be bound by the rules and regulations governing safety and security.

The Contractor shall have and maintain the necessary equipment and licenses to run the software tools required to carry out the tasks and produce the deliverables in accordance with the tools adopted by the IO. This concerns in the first instance the CAD tools – if the contractor is providing CAD. The detailed requirements for CAD tools are indicated in section 14. The Contractor shall ensure that experts are adequately supported and equipped. The official language of the ITER project is English. Therefore, all input and output documentation relevant to this Contract shall be in English. The Contractor shall ensure that all the professionals in charge of the Contract have an adequate knowledge of English, to allow easy communication and adequate drafting of technical documentation. This requirement also applies to the Contractor's staff working at the ITER site or participating in meetings with the ITER Organization.

Documentation developed shall be retained by the Contractor 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, it should fulfil IO document on calculation code for safety analysis.