

## 外部委託業者の募集

References: IO/24/OT/10028553/GRD

### **"Procurement of: Thermal Insulation for Cryostat Bellows Interface with the Tokamak Building"**

(トカマク建屋でのクライオスタットベローインターフェースの断熱)

IO 締め切り 2025 年 4 月 25 日(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小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

本作業の作業範囲はトカマク建屋でのクライオスタットベローインターフェースの断熱です。詳細については、付属書 II の技術仕様書 B9MQPD を参照してください。

## 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。

- 会社名
- 登録の国名
- 担当者名、email アドレス、肩書および電話番号

### 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

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。

## ○概略日程

提出のタイムラインが 3 カレンダーウィークに短縮されていることに注意下さい。

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 4 月 11 日
関心表明フォームの提出	2025 年 4 月 25 日
iPROC での入札への招待 (ITT) の発行	2025 年 5 月 7 日
明確化のための質問の締め切り	2025 年 6 月 4 日
明確化のための質問への回答締め切り	2025 年 6 月 9 日
入札提出	2025 年 6 月 18 日
契約授与	2025 年 7 月 9 日
契約調印	2025 年 7 月 28 日

## ○契約期間と実行

ITER機構は2025年の7月末ごろ供給契約を授与する予定です。予想される最大契約期間は84か月の予定です。

## ○経験

契約者は、IOの規則、品質と安全性の要求に十分に準拠する要件を満たす製品とサービスを提供できる能力と経験を持っていることを示す必要があります。

## ○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「**Procurement of: Thermal Insulation for Cryostat Bellows Interface with the Tokamak Building**」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

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## **PRIOR INDICATIVE NOTICE (PIN)**

### **OPEN TENDER SUMMARY**

### **IO/24/OT/10028553/GRD**

for

## **Procurement of: Thermal Insulation for Cryostat Bellows Interface with the Tokamak Building**

List of annexes:

- Annex I – Expression of Interest
- Annex II – Technical Summary B9MQPD

### **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 procurement of the Thermal Insulation for Cryostat Bellows Interface with the Tokamak Building.

## 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 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 Work

The scope of this procurement is the design, qualification, manufacturing, and installation of the Thermal Insulation for Cryostat Bellows Interface with the Tokamak Building.

For more details, please refer to Annex II -Technical Summary B9MQPD.

## 4 Procurement Process & Objective

The objective is to award a 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 interested Suppliers to indicate their interest in the competitive process by returning to the Procurement officer in charge the attached “Expression of Interest and PIN Acknowledgement” (Annex I) by the date indicated under the procurement timetable.

### **Special attention:**

Interested tenderers are kindly requested to register in the IO Ariba e-procurement tool called “iPROC”, if they have not already done so. You can find all links to proceed along with instruction going to: <https://www.iter.org/fr/proc/overview>.

When registering in iPROC, suppliers are kindly requested to nominate 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 - Invitation to Tender

After at least 10 calendar days of the publication of the PIN, the Request for Proposals (RFP) will be published on our digital tool “iPROC”. This stage allows interested bidders 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 (iPROC) will be invited to the tender.**

## ➤ 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.

## ➤ Step 4 – Contract Award

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

## Procurement Timetable

The tentative timetable is as follows:

Milestone	Date
Publication of the Prior Indicative Notice (PIN)	15/04/2025
Submission of expression of interest form	25/04/2025
Invitation to Tender (ITT) launched on iPROC	07/05/2025
Clarification Questions Deadline	04/06/2025
Clarification Response Deadline	09/06/2025
Tender Submission	18/06/2025
Contract Award	09/07/2025
Contract Signature	28/07/2025

## 5 Quality Assurance Requirements

The Contractor should have an ISO 9001 accredited quality system or be able to provide and have approved by the IO a quality plan.

## 6 Contract Duration and Execution

The ITER Organization shall award the Contract end of July 2025. The contract duration is estimated to be a maximum of 84 months.

## **7 Experience**

The candidates shall need to demonstrate that they have the capabilities to supply the required goods and services in full compliance with the applicable standards as well as with the ITER quality and safety requirements.

## **8 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, 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.

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. All consortium members shall be registered in IPROC.

## **9 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.

All declared sub-contractors must be established within an ITER Member State in order to participate.

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: [celine.dimento@iter.org](mailto:celine.dimento@iter.org) copy: [andrew.brown@iter.org](mailto:andrew.brown@iter.org)

TENDER No. **IO/24/OT/10028553/GRD**

DESIGNATION of SERVICES: **Thermal Insulation for Cryostat Bellows Interface with the Tokamak Building**

OFFICER IN CHARGE: **Céline Di Mento – Procurement Division ITER Organization**

- ☐ WE ACKNOWLEDGE HAVING READ THE PIN NOTICE FOR THE ABOVE MENTIONED TENDER
- ☐ WE INTEND TO SUBMIT A TENDER

Are you registered in iPROC (only entities registered in iPROC will be invited to tender):

- ☐ YES
- ☐ NO, but we shall register before the tender launch

.....

Signature:

COMPANY STAMP

Name: .....

Position: .....

Tel: .....

E-mail .....

Date: .....

## Technical Requirements Specification

### Technical Summary - Thermal Insulation for Cryostat Bellows Interface with the Tokamak Building

The ITER Organization (IO) intends to issue a Tender procedure for Thermal Insulation for Cryostat Bellows Interface with the Tokamak Building. This document summarizes the requirements for the design, qualification, manufacturing and on-site installation.

The information and technical details provided in the present document are preliminary and shared with the Candidates to check their interest and capabilities for this contract. Therefore, the technical specifications that will be issued for the upcoming Open Tender will be the only documents to be considered for bidding.

Approval Process			
	Name	Action	Affiliation
Author	Stewart P.	11 Jul 2024:signed	IO/DG/CP/BSM/CEI
Co-Authors	Oulie M.	11 Jul 2024:signed	IO/DG/CP/BSM/CEI
Reviewers	Retaillaud G.	11 Jul 2024:recommended	IO/DG/ADM/PRD/CAL/CCM
Approver	Patisson L.	11 Jul 2024:approved	IO/DG/CP/BSM/CEI
Information Protection Level: Non-Public - Unclassified			
RO: Patisson Laurent			
Read Access	LG: [FLM] FLM-All , LG: [CCS] Safety Group external access, LG: [CCS] CCS-Section Leaders, LG: [CCS] CCS-Doc Control, AD: ITER, AD: IO_Director-General, AD: External Management Advisory Board, AD: IDM_Controller, AD: Auditors, AD: ITER Management Assessor, project administrator, RO		

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# 1 Purpose

The ITER Organization (IO) intends to issue a Tender procedure for Thermal Insulation for Cryostat Bellows Interface with the Tokamak Building. This document summarizes the requirements for the design, qualification, manufacturing and on-site installation.

The information and technical details provided in the present document are preliminary and shared with the Candidates to check their interest and capabilities for this contract. Therefore, the technical specifications that will be issued for the upcoming Open Tender will be the only documents to be considered for bidding.

# 2 Scope of Work

## Background

ITER (“The Way” in Latin) is one of the most ambitious energy projects in the world today. 35 nations are collaborating to build the world’s largest tokamak, a magnetic fusion device that has been designed to prove the feasibility of fusion as a large-scale and carbon-free source of energy based on the same principle that powers our Sun and stars. For more information on the ITER project: <http://www.iter.org>

## The Works

The Cryostat is one of the major components of the ITER machine. The Cryostat is a large, stainless steel structure surrounding the vacuum vessel and superconducting magnets. It is made up of a single wall cylindrical construction and is roughly 30 meters tall and wide. The main functions of the Cryostat are to provide a vacuum environment and to support the Tokamak basic machine main components. The Cryostat is interfacing with the Tokamak Building at the regular and irregular port penetrations through 54 bellows which functions are to ensure the leak tightness between the related environments and to compensate the relative movements between the Cryostat and the Tokamak Building. The layout between the Cryostat Bellows and the Tokamak Building consists of specific embedded plates which are either:

- Rectangular for the 50 rectangular bellows interfaces at the regular ports of the lower (B1), equatorial (L1) and upper (L2) levels
- Circular for the 4 neutral Beam bellows interfaces at the irregular ports of the equatorial (L1) level

The structural capacity of the embedded plates is currently exceeded due to some thermal loading effects (fire and cryogenic accidents) which are applied directly on these structures. In order to resolve this issue, thermal insulation is to be implemented at the Cryostat bellows / Tokamak Building interfaces. A conceptual design of such thermal insulation system is shown on Figure 1, Figure 2 and Figure 3.

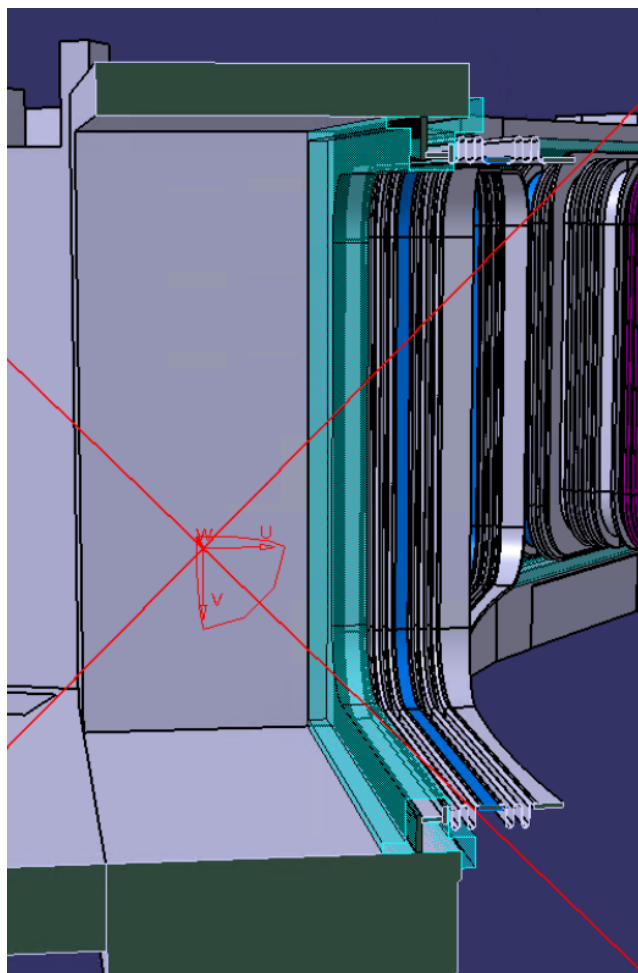


Figure 1 - Typical layout for the Thermal Insulation System at the regular ports Conceptual Design (dimensions subjected to change)

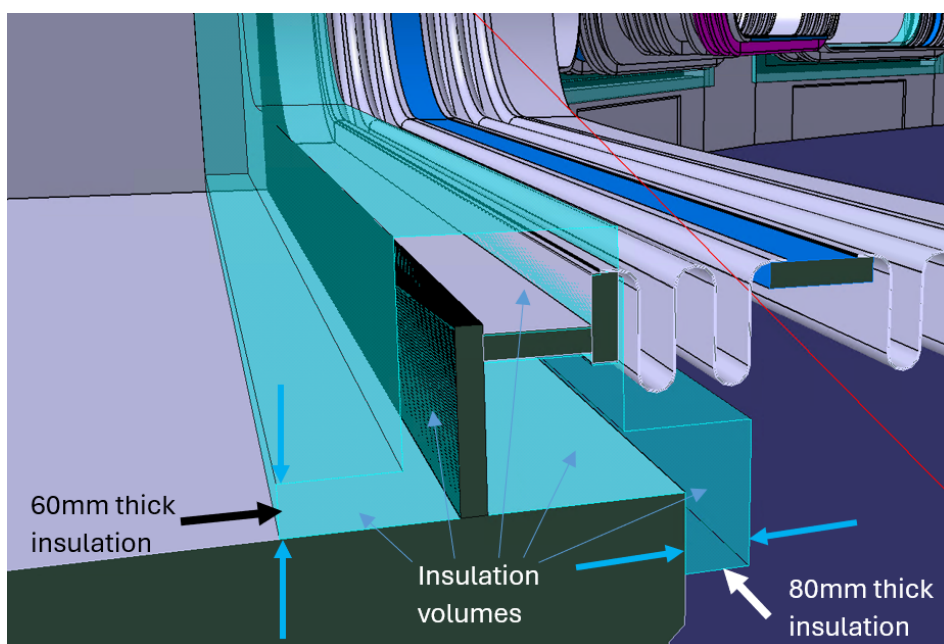


Figure 2 – Zoomed View: Typical layout for the Thermal Insulation System at the regular ports Conceptual Design (dimensions subjected to change)

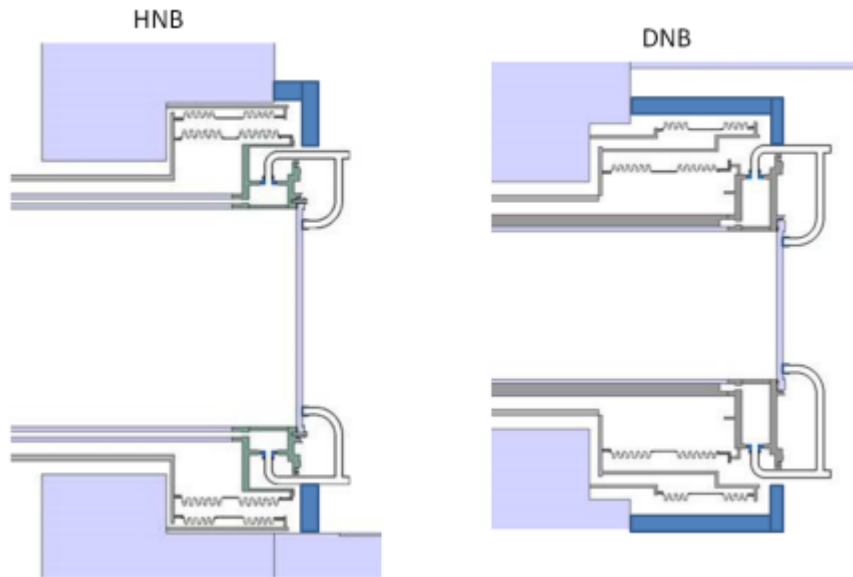


Figure 3 - Typical layout for the Thermal Insulation System at the irregular ports Conceptual Design (dimensions subjected to change)

## 2.1 Work to be performed

### 2.1.1 Design Development

The design of the thermal insulation system is currently functional. All integration and interface details have been defined. The final detailed design shall be developed by the Contractor in order to comply with all the functional, mechanical and interface requirements. A specific design solution shall be developed for each Cryostat bellows / Tokamak Building interface configuration at the regular and irregular ports. In particular, the stringent space constraints in which the systems are to be implemented are to be closely respected. The design shall be fully justified against all possible loading conditions including (but not limited to):

- fire (typically up to 350°C),
- cryogenic temperatures (typically down to -50°C),
- seismic loading (Frequency Response Spectrum data to be used) and inertial loading (typically up to 15g),
- relative movements (typically up to 30 mm),
- pressure (typically max 60 kPa differential pressure).

A design by analysis methodology shall be implemented. Thermal and structural Finite Element Analysis assessments shall be developed.

### 2.1.2 Qualification

The thermal insulation systems shall be qualified, certified and tested by the Contractor in order to validate their compliance and performance against the following requirements:

- Fire
- Overpressure and depression
- Seismic loading
- Bellows relative movements

- Cryogenic environment
- Radiative environment
- Aging
- Permeability to tritium
- Material with non-activable, non-magnetic without any halogen capacities
- Capacity of being removable for in-service inspection
- Decontamination capacity

Fire qualifications (reaction to fire and fire behaviour) shall be performed under the French regulation (Order 22-03-2004 related to the fire resistance of products, construction elements and works & Order of 21 November 2002 relating to the reaction to fire of construction and development products) and certified by a French agreed laboratory (Order of February 5, 1959, approving laboratories for testing the fire behaviour of materials).

Phase 1 (design) and 2 (qualification) shall be concluded by a Final Design Review which aims at demonstrating that all design requirements (regulatory if any, safety and functional & technical) have been met.

### *2.1.3 Manufacturing*

The manufacturing design and all the corresponding manufacturing documentation (manufacturing drawings, material supplier documentation, weld data packages, manufacturing procedures, Non-Destructive Examination procedures, Manufacturing Inspection Plans ...) shall be prepared. It shall be reviewed before the start of fabrication through a Manufacturing Readiness Review.

The fabrication of all thermal insulation systems for the 54 Cryostat bellows / Tokamak Building interfaces shall be performed. The fabrication shall be controlled, and adequate quality assurance system and subsequent quality control activities shall be implemented. This manufacture activity will be subject to IO or IO representative inspection/oversight. A Factory Acceptance Test (FAT) shall be conducted in order to conclude that the manufacturing activities have been satisfactory completed.

### *2.1.4 Integration and on-site installation*

The integration and the installation of the 54 thermal insulation systems shall be performed on the ITER site. Before the actual installation activities can start, detailed installation procedure documentation shall be submitted to IO for review and approval process. The installation scheme shall properly consider all on-site constraints such as the restricted space/access to the interfaces to be insulated and the co-activity & coordination with the other assembly works to be performed in the surrounding areas. All applicable environment, safety and health provisions for work on the ITER Site shall also be closely observed.

### 3 Estimation of the expected durations

No.	Milestones	Date
T0	Kick Off Meeting	End 2024
T1	Design and Qualification	T0 + 12 months
T2	Installation at B1 Level	T1 + 18 to 24 months
T3	Installation at L1 Level	T2 + 18 to 24 months
T4	Installation at L2 Level	T3 + 18 to 24 months
<b>Total estimated duration</b>		<b>T0 + 66 months to 84 months</b>