外部委託業者の募集

References: IO/24/OT/70001199/AJI

“Framework Contract for manufacturing of generic diagnostics components (rails, skids, pads, dogleg plates)"

（汎用計測部品（レール、スキッド、パッド、ドッグレッグプレート）の製造に関する枠組み契約）

IO 締め切り 2024 年 12 月 19 日(木)

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。

国内機関は、次回の入札に先立って、これらのサービス/工事を提供することができる企業、機関またはその他の団体が入札の詳細を事前に通知する前に、この情報を公表するよう求められます。

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、汎用計測部品（レール、スキッド、パッド、ドッグレッグプレート）の製造に関するフレーム契約の締結を目的としています。ITER機構内では、計測プログラムがこの契約の実施を担当します。供給者は、汎用計測部品の製造準備、原材料の調達、製造、工場内での検査/試験、そしてITER水平（EQ）および上部（UP）計測ポート向けの部品の納品を担当し、ITERサイトへの納入と製品が本技術仕様書で定義された技術要件を満たすことを保証する責任があります。

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、関心のある企業、機関又はその他の団体に事前に入札機会について通知するために、国内機関に対し、今後の入札に関する情

報を公表するよう正式に要請します。**関心のある入札者は、下記の調達スケジュールに示された日付までに、電子メールで関心表明書（付属書 I）を返送してください。**

- ステップ 2-入札への招待（ITT）
  事前指示通知（PIN）の公表から 14 日以内に、入札への招待（ITT）が公告されます。この段階では、PIN を見た関心のある入札者が入札書類を入手し、入札説明書に従って提案書を作成して提出することができます。

- 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、入札への招待（ITT)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、公開されている入札への招待（ITT)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	2024 年 12 月 5 日
関心表明フォームの提出	2024 年 12 月 19 日
提案リクエスト（RFP）と入札への招待（ITT）の発行	2025 年 1 月 14 日
明確化のための質問（もしあれば）	2025 年 2 月 14 日
明確化のための質問回答	2025 年 2 月 19 日
iProc で入札提出	2025 年 2 月 26 日
入札評価と契約授与	2025 年 4 月 15 日
契約調印	2025 年 4 月 30 日

〇契約期間と実行

予想される契約期間は36か月の予定です。契約の最終調印前の作業はありません。

〇経験

契約者は以下を提供することが求められます：

- 核融合または核分裂炉プロジェクト、またはその他の高規制の科学・産業プロジェクト向けの機械部品およびサブアセンブリの製造経験。
- 各種原材料（SS 316L(N)、SS 660、CuAl 青銅、インコネルなど）の大量供給経験、技術仕様に従った不純物含有量（低コバルト、ニオブ、タンタル）の管理、およびさまざまなタイ

プ（圧延、鍛造など）の供給経験。
- セラミック（アルミナ）部品の製造経験。
- 表面コーティングおよび研磨の経験。
- 製造、安全、品質、文書化、CAD、真空、試験、物流など、一般的な ITER の要件に関する管理および遵守経験。
- 契約者のスタッフは、IO の規則および手順に従ってサービスを実施するための資格、専門的な能力、および経験を有する必要があります。

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。

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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 manufacturing of generic diagnostics components (rails, skids, pads, dogleg plates)」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/24/OT/70001199/AJI

for

Framework Contract for manufacturing of generic diagnostics components (rails, skids, pads, dogleg plates)

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 a Framework Contract for manufacturing of generic diagnostics components (rails, skids, pads, dogleg plates).

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 Supply 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 the manufacturing of generic diagnostics components (rails, skids, pads, dogleg plates). Within the ITER Organization, The Diagnostic program will be in charge of implementing this Contract.
The Supplier is responsible for the manufacturing preparation, raw materials procurement, manufacturing, in-works controls/testing, and deliveries of the generic diagnostics components for the ITER Equatorial (EQ) and Upper (UP) Diagnostics Ports, its delivery to the ITER Site and for ensuring that the product meets the technical requirements defined in this Technical Specification.

4 Procurement Process & Objective

The objective is to award a Supply 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 Supply 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)	05 December 24
Deadline for Submission of Expression of Interest Form	19 December 24
Request for Proposals (RFP)- Invitation to Tender (ITT) advertisement	14 January 2025
Clarification Questions (if any) and Answers deadline	14 Feb 2025
Answers to Clarifications	19 Feb 2025
Tender Submission in IPROC	26 Feb 2025
Tender Evaluation & Contract Award	15-Apr-25
Contract Signature	30-Apr-25

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 36 months. No work shall commence before the date of final signature of the Contract.

8 Experience

The Contractor is expected to provide in the following:

- Experience in manufacturing mechanical components and sub-assemblies for nuclear fusion or fission reactors projects, or other highly regulated scientific/industrial projects,
- Demonstrated experience in supplying large quantities of various raw materials (SS 316L(N), SS 660, CuAl bronze, Inconel…) with controlled impurities content (low cobalt, niobium and tantalium) of various types (rolled, forged…), as per technical specifications.
- Experience in manufacturing ceramic (alumina) parts.
- Experience in surface coatings with polish.
- Experience in managing and following the general ITER requirements relative to manufacturing, safety, quality, documentation, CAD, vacuum, testings, logistics…

- Contractor's personnel shall possess the qualifications, professional competence and experience to carry out services in accordance with IO rules and procedures.

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/24/OT/70001199/AJI**
DESIGNATION of SERVICES:	**Framework Contract for manufacturing of generic diagnostics components (rails, skids, pads, dogleg plates)**
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
B7EA37

VERSION CREATED ON / VERSION / STATUS
07 Nov 2024 / 1.1 / Approved

EXTERNAL REFERENCE / VERSION

Technical Specifications (In-Cash Procurement)

General Technical Specification for the manufacturing of generic diagnostics components (rails, skids, pads, dogleg plates)

Technical Specification for the manufacturing of generic diagnostics components (rails, skids, pads, dogleg plates)

Table of Contents

1 Preamble

This Technical Specification is to be read along with the General Management Specification for Service and Supply (GM3S) [1] that constitutes a full part of the requirements. In case of conflict, the content of the Technical Specification supersedes the contents of [1].

2 Purpose

This specification establishes the scope and requirements for the manufacturing preparation, raw materials procurement, the manufacturing, in-works controls/testing, and deliveries of the generic diagnostics components for the ITER Equatorial (EQ) and Upper (UP) Diagnostics Ports.

These generic diagnostics components are:

- **The Port Plugs skids assemblies,**
- **The Port Plugs lateral pads assemblies,**
- **The in-VV rails assemblies,**
- **The in-VV dogleg plates assemblies.**

These components are described in the section 7.1 of this Technical Specification.

For information:

- The components installed in the EQ ports (rails, skids, lateral pads, dogleg plates) are part of the ITER system PBS 55.Q0.S0. The components installed in the UP ports (rails, skids, lateral pads) are part of the ITER system PBS 55.U0.S0.
- All these components have been implemented in the ITER project through the PCR-439.

This contract is to be executed under a Framework Contract.

3 Acronyms & Definitions

3.1 Acronyms

The following acronyms are the main ones relevant to this document*.

Abbreviation	Description
A&M	Alignment & Metrology
ADP	Acceptance Data Package
ATPP	Authorization-To-Proceed Point
BoM	Bill of Materials
BTP	Built-To-Print
C&S	Codes and Standards
CAD	Computer Assisted Design
COTS	Commercial Off The Shelf
CRN	Contractor’s Release Note
DLC	Diamond-Like Carbon
DR	Deviation Request
DT	Destructive Testing
ECH	Electron Cyclotron Heating
EoMR	End-Of-Manufacturing Report
EQ	Equatorial
FAT	Factory Acceptance Tests

FWC	Framework Contract
GM3S	General Management Specification for Service and Supply
HP	Hold Point
ICH	Ion Cyclotron Heating
IO	ITER Organization
MDB	Manufacturing Database
MIP	Manufacturing and Inspection Plan
MRR	Manufacturing Readiness Review
N/A	Not Applicable
NCR	Non-Conformance Report
NDT	Non Destructive Testing
NP	Notification Point
PBS	Project Breakdown Structure
PCR	Project Change Request
PE/NPE	Pressure Equipment / Nuclear Pressure Equipment
PIA	Protection Important Activity
PP	Port Plug
PPS	Product Procurement Specification / Port Plug Structure
PRO	Procurement Responsible Officer
QC	Quality Class
R	Review of document point
S	Surveillance point
SS	Stainless Steel
SIC	Safety Important Component
TBM	Test Blanket Module
TS	Technical Specification
UHV	Ultra High Vacuum
UP	Upper
UT	Ultrasonic Testing
VQC	Vacuum Quality Class
VV	Vacuum Vessel
W	Witness point
WP	Work Package

Table 1: Acronyms.

**For a complete list of ITER abbreviations see: ITER Abbreviations (ITER_D_2MU6W5).*

3.2 Definitions

Contractor: shall mean an economic operator who have signed the Contract in which this document is referenced. In this document as well as in the Appendix and Annexures referred here, the names Contractor and Supplier are used interchangeably.

Client: the ITER Organization.

Components, or generic diagnostics components: the components, parts or subassemblies to be manufactured in the frame of this contract.

4 Structure of the Technical Specification

This Technical Specification (TS) constitutes the main document in which the Scope of the basic supply of generic diagnostics components is described. It contains the top level requirements that

are applicable to the Scope of Work. For traceability purposes and to ease the use of this Technical Specification; applicable requirements specified in this document are identified using the following nomenclature [B1_00_RQ_XXX] where XXX means the number of the requirement.

The requirements of the General Management Specification for Service and Supply (GM3SS) [1] shall be met with for the execution of this contract. This document is a generic one giving the top level requirements. For traceability purposes and to ease the use of this Technical Specification; applicable requirements specified in this Section are identified using the following nomenclature [GM3S_a.b.c_RQ_XXX] where a.b.c is the relevant section in the GM3S and XXX means the serial number of the requirement. In case if the requirements are to be added to an existing section, the section name is indicated as a.b.c and in case a new section has to be added, a.b.c a new number is given.

This main document of the Technical Specification has associated several documents which are respectively referred to as Appendices, Applicable IO Documents and Reference IO Documents.

The Appendices are named using the following convention: Appendix B1_YY where YY is a number which identifies the number of the appendix. They develop the different subsections in which the technical requirements of the main TS document are defined and specified in the form of top level requirements.

The Appendices are mandatory documents. The Appendices serve the purpose to explain the different specific stages and aspects of the manufacturing process and so they are developing and defining in a much more detailed way the specific requirements that shall be applicable during aforementioned manufacturing stages.

On each Mandatory Appendix, and for traceability and ease to use purposes as well, the specific requirements are also defined and numbered following this nomenclature: [B1_YY_RQ_XXX] where YY identifies the number of the Mandatory Appendix and XXX means the number of the requirement.

Appendix B1_01 includes a master table where all applicable requirements (as defined in the present document) and detailed requirements (as defined in the Appendices) are listed.

Applicable Documents are documents that contains applicable requirement for the execution of the contract, are listed under Section Applicable Documents 5.1.

The list of applicable Appendices is given in Section 5.2.

Applicable codes and standards are listed in Section 5.3.

Reference Documents are documents that are not mandatory but serve as a guideline, are listed under Section 6.

5 Applicable Documents & Codes and standards

5.1 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 list of following 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.

No	Title	IDM ID	Rev
1	General Management Specification for Service and Supply (GM3S) and its list of applicable documents	82MXQK	1.4
2	ITER Requirements Regarding Contractors Release Note	22F52F	5.0
3	Procedure for the Usage of the ITER CAD Manual	2F6FTX	1.1
4	Procedure for the CAD Management plan	2DWU2M	2.2
5	Codes and Standards for ITER Mechanical Components	25EW4K	4.0
6	ITER Vacuum Handbook	2EZ9UM	2.5
7	ITER Dimensional Metrology Handbook	46FN9B	2.1
8	ITER Numbering System for Components and Parts	28QDBS	5.0
9	ITER Procurement Quality Requirements	22MFG4	5.1
10	ITER Quality Assurance Program	22K4QX	8.5
11	Procurement Requirements for Producing a Quality Plan	22MFMW	4.0
12	Procedure for management of Deviation Request	2LZJHB	8.1
13	IO QA Deviation Request Template	2LRNQP	4.0
14	Procedure for implementation of a Manufacturing and Inspection Plan	22MDZD	3.7
15	Manufacturing and Inspection Plan Template	VGDUSJ	2.3
16	ITER Planning & Scheduling Manual	2DWMCW	4.3
17	Required Scheduling Standards	7A4588	3.2
18	Component Classification BOM 55.Q0.S0 and 55.U0.S0	6XRMZ9	Latest version

Table 2: Applicable Documents.

5.2 Applicable Appendices

The list below comprises all appendices of the present general Technical Specification that are applicable for the execution of the contract.

Appendix	Title	IDM ID
B1_01	Appendix B1_01: Manufacturing requirements.	97DHNQ
B1_02	Appendix B1_02: CAD & design activities management.	97DHQP
B1_03	Appendix B1_03: Material Procurement and Traceability. And its technical sub-appendices listed below:	97DLZJ
	Appendix B1_03-A1: 316L(N)-IG_Rolled plates.	8U3V4F
	Appendix B1_03-A2: 316L(N)-IG forged Material.	8U3GE9
	Appendix B1_03-A3: X6CrNiTiMoVB25-15-2 Bars for Bolting (Stainless Steel 660).	8U4B57
	Appendix B1_03-A4: CuAl10Ni5Fe4 (number CW307G) rolled or forged bars and semi-finished products.	8U44MR
	Appendix B1_03-A5: Stainless Steel Bolting A4-80 ISO3506.	8U79GY
	Appendix B1_03-A6: Alloy 718.	978VSE
	Appendix B1_03-A7: Alumina or Zirconia.	97DEFU
	Appendix B1_03-A8: CuCrZr-IG alloy (CW106C).	97DGDD
	Appendix B1_03-A9: X6CrNiTiMoVB25-15-2 forged or rolled Bars (Stainless Steel 660).	96SCEX
	Appendix B1_03-A10: CuAl10Ni5Fe4 (condition-CW307G) forgings_H170.	9EWP89
B1_04	Appendix B1_04: Coating requirements.	97DN2C
B1_05	Appendix B1_05: Machining.	97DV5N
B1_06	Appendix B1_06: Examination.	97RRQC
B1_07	Appendix B1_07: Cleanliness, vacuum, surface finish.	97XBDC
B1_08	Appendix B1_08: Manufacturing drawings.	96SCJV
B1_09	Appendix B1_09: Dimensional Control.	97XHYM
B1_10	Appendix B1_10: Final Acceptance Testing.	97Y6AS
B1_11	Appendix B1_11: Engineering analysis.	97Y9GF

B1_12	Appendix B1_12: Packing, Handling, Shipping.	97XX4T
B1_13	Appendix B1_13: Manufacturing Documentation.	97YBFH

Table 3: List of applicable appendices.

5.3 Codes and Standards

- In general sense manufacturing methods and procedures shall follow the reference code RCC-MR 2007 for class 2 box structures in consistency with the document Codes and Standards for ITER Mechanical Components [5].
- It should be noted that there are no European or International Standards with respect to proper fabrication of ultra-high vacuum (UHV) components and so in lieu of an industrial Standard all component's fabrication shall simultaneously comply with the ITER Vacuum Handbook [6].
- For all dimensional characterization activities, the ITER Dimensional Metrology Handbook [7] shall be applied as well.
- EN, ISO and ASTM Standards referenced in any of above mentioned Codes and Standards shall also be considered as complementary applicable documents with regards to manufacturing requirements.
- EN, ISO and ASTM Standards mentioned in this TS shall be considered in their latest version at the time of the sign of the contract.
- In case of change of edition year or issuing standard which supersede above mentioned, the use of new Standards is allowed only in case of demonstration of equivalency with prior written Client's approval.
- The use of EN but non NF Standards is also allowed demonstrating equivalence with the corresponding NF version of the Standard.
- Other equivalent national or international Standards and Codes proposed by the Contractor may be acceptable with prior written Client's approval, provided conformity assessment to all criteria is satisfied.
- As a general rule, in case of discrepancy between requirements in RCC-MR 2007 (or referenced Standards) and IO-specific Codes, the later ones shall prevail.
- Nevertheless, reference Codes and Standards are established in a more detailed way (including applicable exemptions or prevalence rules) for every set of requirements included in mandatory Appendix of this Technical Specification.
- An Inspection entity selected by the Client may be used to ensure manufacturing compliance with the RCC-MR 2007 and additional requirements stated in this Technical Specification.

6 Reference Documents

The following documents constitute reference documents under the scope of this Technical Specification to provide a better understanding of the technical requirements defined. They do not constitute specification requirements.

No	Title	IDM ID
[R1]	Design description document 55.Q0.S0 and 55.U0.S0	6XSJJP

Table 4: Reference Documents.

7 Scope of work

7.1 Description of the systems

Diagnostics are a critical part of the operation of ITER. They provide the means to observe, control and sustain the plasma performance over long timescales. Most of the diagnostics are located in the Equatorial (EQ) and Upper (UP) ports of the tokamak (Figure 1) and using the same generic and modular Port Plug design to insert the systems in the vacuum. There are also non-diagnostics systems using the same generic Port Plug design (ICH in 2 EQ ports, TBM in 2 EQ ports, ECH in 1 EQ port and 4 UP ports).

In total, there are 14 EQ ports and 18 UP ports in which Port Plugs have to be inserted.

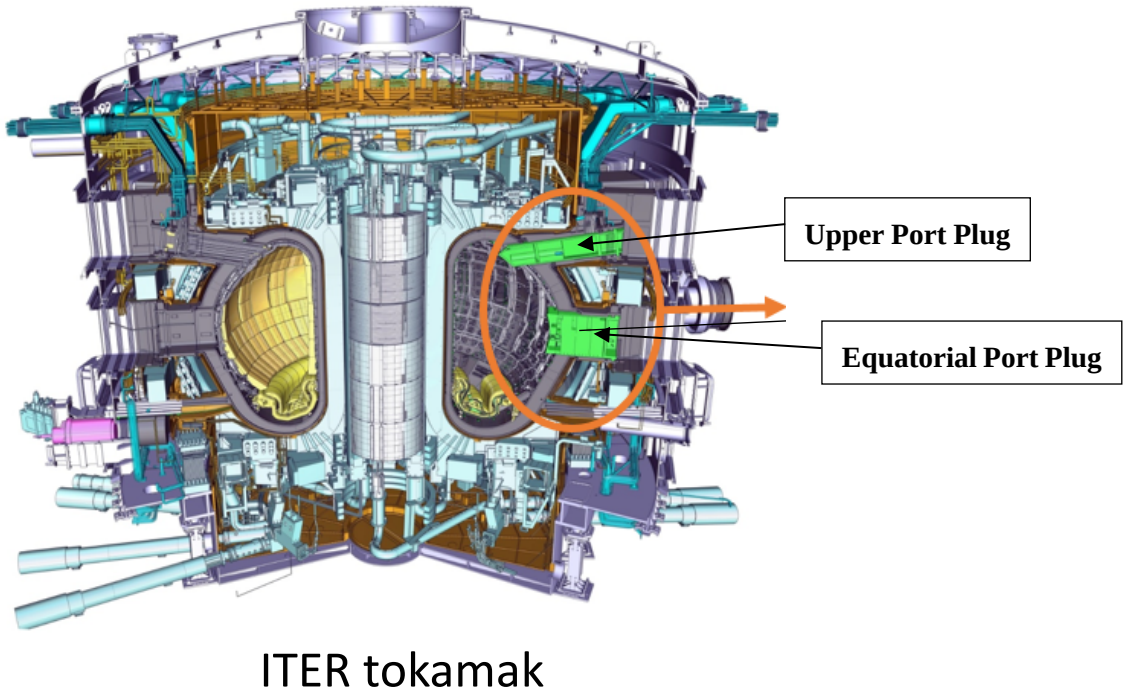

Figure 1. Section view of the tokamak with EQ and UP Port Plugs (highlighted in green).

Port Plugs are massive structures (48 tons for EPP, 25 tons for UPP) which are inserted in/removed from the Ports thanks to Remote Handling machines. Port Plugs are supported and guided in the EQ and UP Ports thanks to specific features: **in-VV rails**, **skids**, and **lateral pads**, which are described in next sections.

In order to limit the neutron streaming through the clearance between the Port Plug and the Port, some **Dogleg Plates** are implemented aiming at forming a shielding labyrinth.

The scope of work is the procurement of materials, the manufacturing and delivery to IO site of the above-mentioned components:

- **In-VV rails assembly**: see short description in section 7.1.1,
- **Port Plug skids assembly**: see short description in section 7.1.2,
- **Port Plug lateral pads assembly**: see description in section 7.1.3,
- **In-VV dogleg plates assembly**: see description in section 7.1.4.

A detailed description of the components can be found in reference [R1].

Nota**: to ensure an accurate positioning and alignment of the Port Plug, some components will be finally customized (mainly for the thickness) prior to their installation by IO, according to the as-built metrology of each Port. The aim of this contract is to manufacture the components prior to customization. As such, the geometry of components reflected in the drawings to be supplied in the scope of this contract will have to consider extra material wherever it is required to allow further customization (customization is not in scope of this contract). **See Section 7.1.5 for assumptions to be considered in the tendering process.

7.1.1 In-VV rails assembly

A pair of guiding **rails** that are rigidly fixed to the VV Port floor (Figure 2). Rails are made of SS 660 and their top surface is coated with Mo. Same concept is used for EQ and UP Ports, but rails for UP Ports are longer (Figure 3). The in-VV rails are installed in the Port by bolting to several rectangular attachments (**keys**) in SS 316L(N)-IG which are initially welded to the floor surface of the Port Extension (Figure 4). Rails are also provided with small components (bolts, shims) to allow their proper installation. All these components are to be supplied in the frame of the contract.

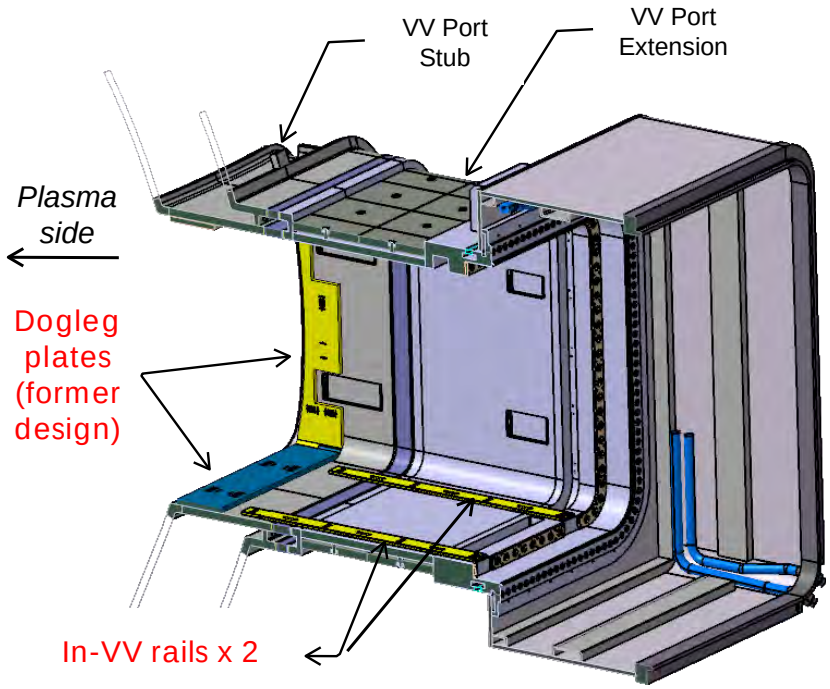

Figure 2. Section view of an EQ Port. Rails are installed on the floor of the VV Port Extension. Dogleg plates are installed of 4 surfaces of the VV Port Stub.

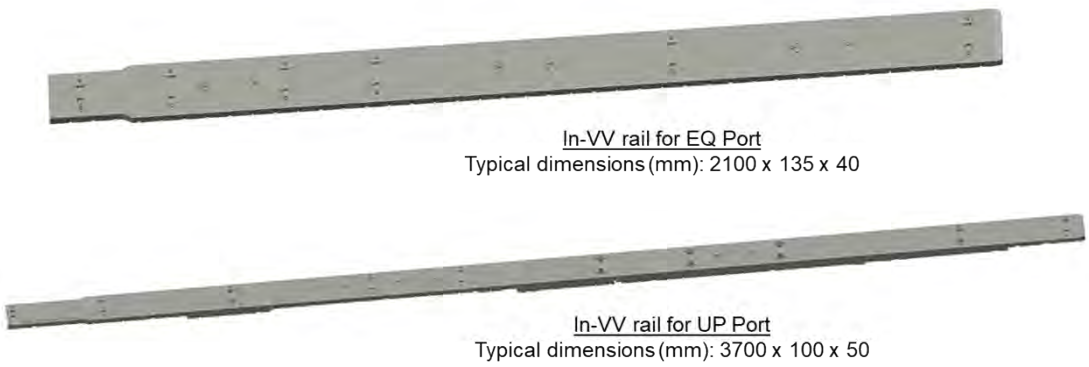

Figure 3. General view of in-VV rails for EQ and UP Ports.

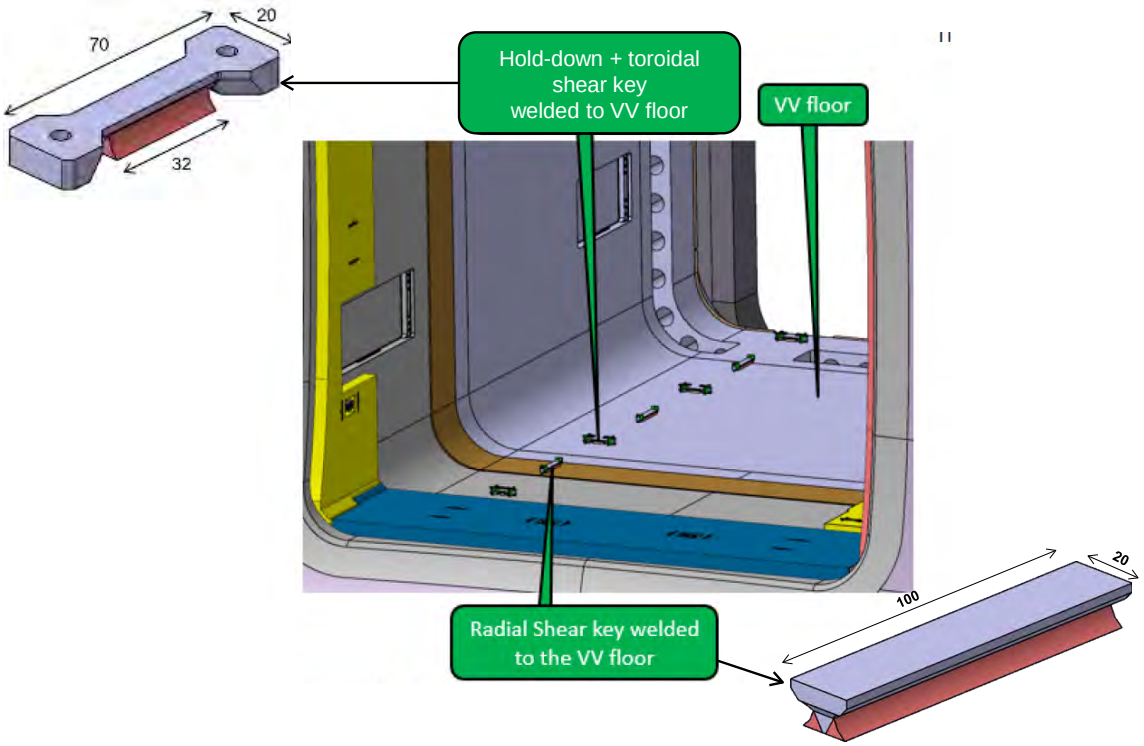

Figure 4. View of the rectangular keys welded to EQ Port Extension floor before rails installation.

7.1.2 Port Plug Skids assembly

A set of four metallic **skids** (2 front + 2 back) are attached to the lower surface of the Port Plug Structure (Figure 5). Each skid is an assembly of several parts, main ones being a housing in SS 316L(N)-IG, and a part in Al bronze CuAl10Ni5Fe4 which purpose is to slide on the in-VV rails (section 7.1.1). There are also some conical spring washers inside the skids (springs) to provide some flexibility in the PP insertion process. The skids part is coated with DLC. All these components are to be supplied in the frame of the contract (Figure 6).

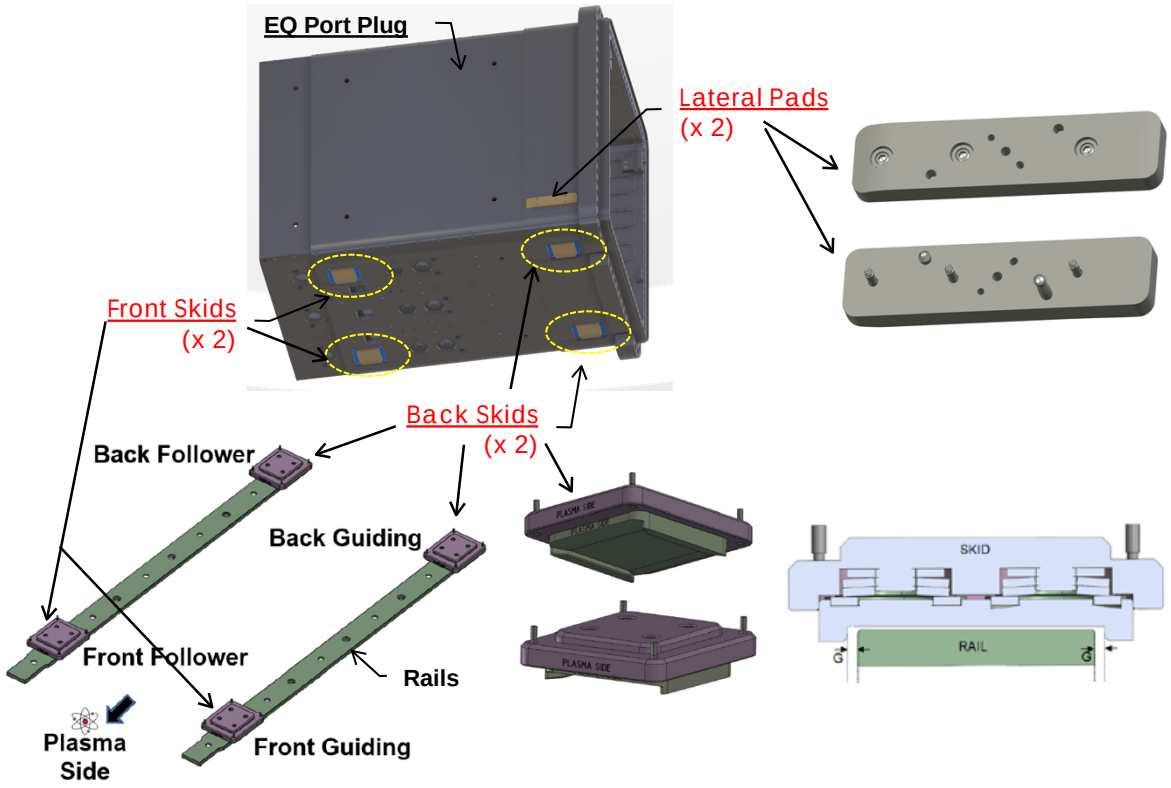

Figure 5. View of the EQ Port Plug equipped with 4 skids and 2 lateral pads. Skids are sliding on the top surface of in-VV rails. Same concept of skids and lateral pads is used for UP Port Plugs.

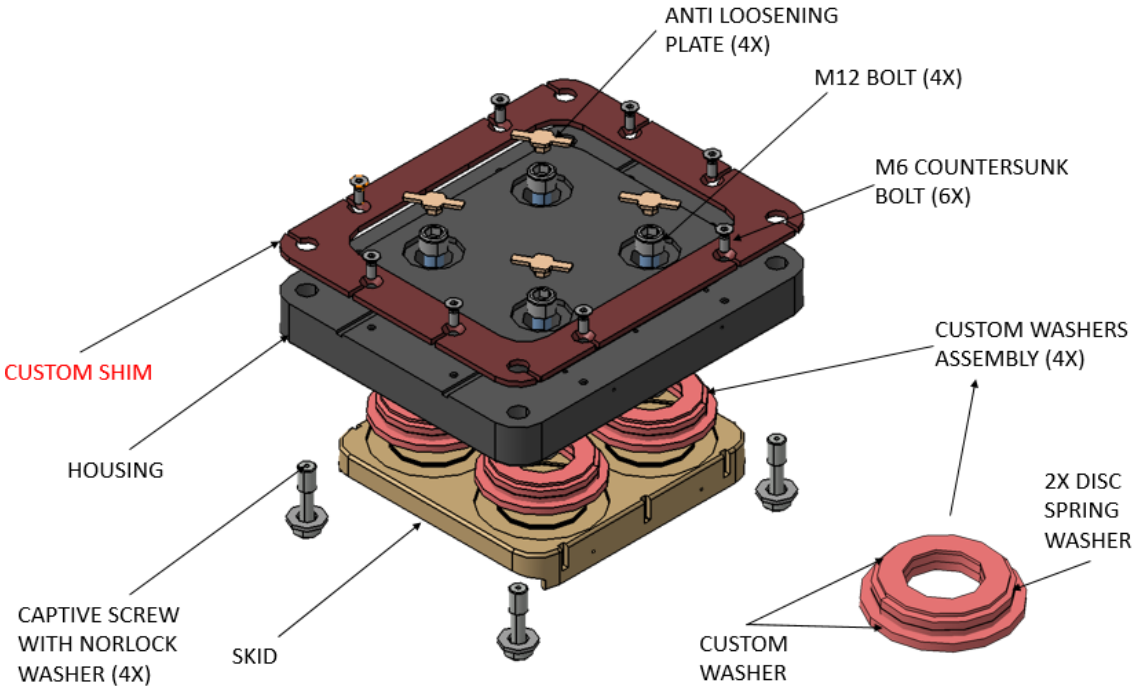

Figure 6. EQ port skids assembly (example of front skid).

7.1.3 Port Plug lateral pads assembly

A set of two **lateral pads** are installed on each side (left and right) of the Port Plug Structure (Figure 5). They ensure the final guiding of the Port Plug in the last centimetres of its insertion into the VV Port.

The Lateral pad is an assembly of several components fixed together (Figure 7). The lateral pad is provided with a customizable plate, Remote Handling compatible features (pin, dowel, pop-up and captive bolts) and one electrical insulation plate. Pads and custom plate are made of Copper Aluminium bronze CuAl10Ni5Fe4, the insulation plate is ceramic. The pad part is coated with DLC.

All these components are to be supplied in the frame of the contract (Figure 6).

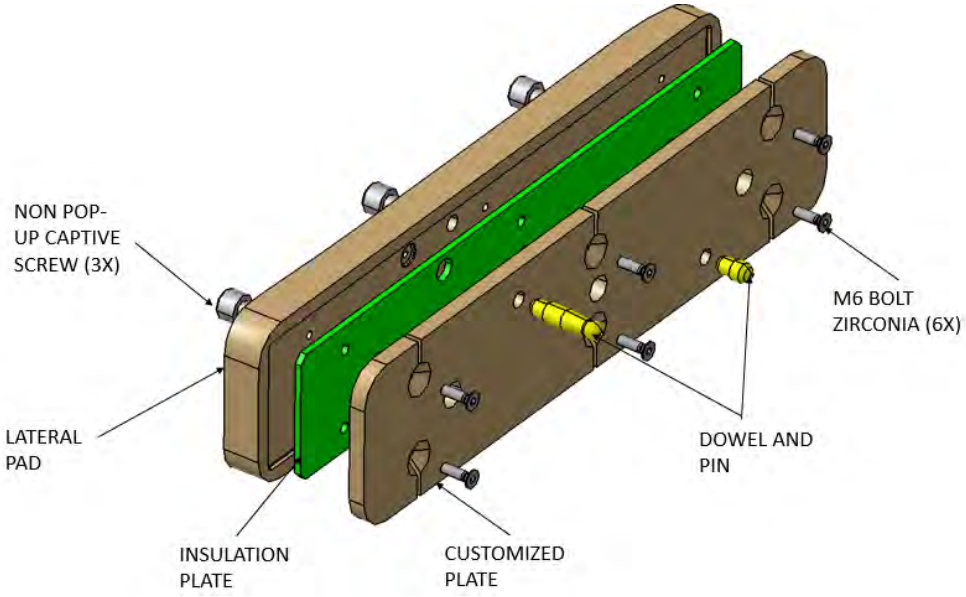

Figure 7. Lateral pad assembly for EQ port plug.

7.1.4 Dogleg plates assembly

In order to minimize neutron flux and dose outside the Vacuum Vessel, some **Dogleg Plates** are mounted permanently to the 4 surfaces of the VV Port Stub (top, right, left, and bottom) close to the plasma (Figure 2), only in the Equatorial Ports

The dogleg plates have a shielding function, by introducing a (second) labyrinth between VV and Port Plug, behind the one realized between the Port Plug and the Blanket. There are different arrangements of plates depending on the Port, and different plates geometries, but each single plate is bolted to 2 cylindrical attachments (**bosses**) which are welded to the VV Port stub surfaces (Figure 8). Dogleg plates and the bosses are made of SS 316L(N)-IG. All these components, including bolts and thermal shims, are to be supplied in the frame of the contract.

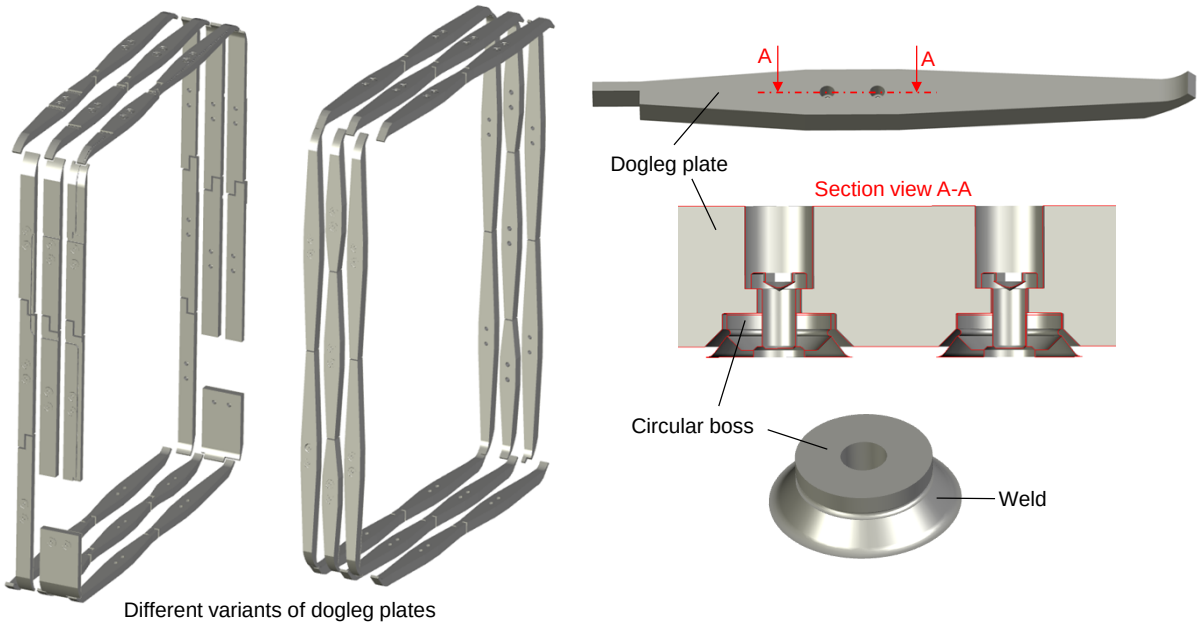

Figure 8. Example of dogleg plates design (2 different variants). Each single plate is bolted to 2 circular bosses welded to Port surfaces.

7.1.5 Customization of components – Extra-material assumptions for tendering purpose

Unless otherwise specified, the parts drawings provided by IO for tendering purpose are with nominal dimensions.

Some parts of the sub-assemblies shall be procured with extra material, in order to allow further customization before installation (IO scope).

The customization is not in the scope of this contract, therefore the manufacturing drawings and the procurement of components in the frame of the contract shall not consider any customization feature.

For tendering process, the following envelope assumptions can be considered for the extra-material to be added to the nominal dimensions. These extra material values will be confirmed/updated by IO in the Task Orders. The other parts are to be supplied with nominal dimensions as per drawings.

<u>Skids assemblies – EQ and UP ports</u>

- Customizable shim: extra thickness +5 mm.

<u>Lateral pads assemblies – EQ and UP ports</u>

- Customized plate: extra thickness +5 mm.

<u>In-VV rails – EQ ports</u>

- Rail: extra thickness +14 mm.
- Customizable shims: extra thickness +4 mm, extra height +14 mm.

In-VV rails – UP ports

- Rail: extra thickness +18 mm.
- Customizable shims: extra thickness +4x mm, extra height +18 mm.

Dogleg plates – EQ ports

- All plates: extra thickness +25 mm.
- Circular bosses: extra height +5 mm.

7.2 Items and Activities included in the Scope of Work

[B1_00-RQ-001]

The Scope of Work of this Contract comprises the following:

- Procurement of raw materials including extra material as needed, and including welding consumables if needed in the contract.
- The manufacturer is explicitly instructed to minimize welding operations whenever possible; Alternative suggestions such as machining or bolting are encouraged to reduce reliance on welding.
- Manufacturing of the components in compliance with the requirements of this generic Technical Specification and the applicable documents (section 5), and in consideration of the Referenced documents (section 6).
- Vendors may propose design improvements to streamline procurement and enhance the schedule, to be agreed by the IO.
- Identification of Commercial Off-The-Shelf (COTS) solutions is welcomed even if not suggested as such in the technical specification, and acceptance will be determined by the decision of the IO.
- Factory Acceptance Tests (FAT) after manufacture and prior to delivery.
- Packaging and Shipment of the components to the IO ensuring cleanliness preservation. The development and supply of specific tooling, transportation frames, instrumentation or any other device needed to ensure that the integrated port is not damaged and that factory qualification conditions are preserved during the transportation and delivery, are included in the scope of this contract.

[B1_00-RQ-002]

For all the tasks described above the following generic set of activities shall be considered during the execution of works:

- The creation and supply of Built-to-Print (BTP) drawings according to the 3D CATIA models including the manufacturing drawings, considering extra-material prior to customization as needed (see section 7.1.5), and complying with the requirements of Appendix B1_02.
- Manufacture of the components using established fabrication techniques under required Quality Systems with duly qualified personnel. All equipment shall be manufactured under a quality assurance plan, and with quality control, that shall follow specifically the requirements set out in the Management Specification of this contract.
- The conceptual design and manufacturing of drawings for jigs and fixtures (if needed) according to the Contractor’s manufacturing scheme. Note that these jigs are not defined in this Specification but may be required according to the manufacturing needs as defined per the manufacturer.

- At the end of factory fabrication, delivery of an End of Manufacturing Report (EoMR) per item including certificates of compliance / release notes, justification/tracking of non-conformances and Client's acceptance through tracking sheets, as-built drawings (dimensions) and testing reports.
- Production of manufacturing documentation listed in all Appendices and summarized in Appendix B1_13.
- The engineering analysis as needed, for example supporting deviation requests and non-conformances, in compliance with the requirements of Appendix B1_11.
- The design and manufacturing of any part or component's handling and transportation tools for use within the factory of during the delivery to the destination site of the items.

[B1_00-RQ-003]
The Scope of Work also comprises the following activities:

- Technical and Management reporting according to [1] and justification in meetings and with reports and presentations of the design of the handling and transportation tools mentioned in the point above before the start of manufacture.
- Full documentation of the complete manufacturing procedures and sequences (cutting, plate straightening, forging, machining, drilling, welding, cleaning, inspection, packing, handling and shipping).
- Development and qualification of welding and NDT procedures in accordance to the applicable C&S, if needed.
- Qualification of other NDT techniques proposed by the Contractor not included in the applicable C&S according to the Client's defined requirements, like special UT examination procedures, if needed.
- Qualification of other special manufacturing procedures required for the manufacturing of the components in the scope, like cleaning.
- Procurement of raw materials specified according to requirements and material specifications in Appendix B1_03.
- Quality Assurance, complying all the requirements set-out the GM3S Management Specification.
- Observance of licensing requirements defined in Article 5.3 of [1] along with the requirements of the applicable regulations.

7.3 Items/activities not included in the Scope of Work

[B1_00-RQ-004]
- Manufacture of integrated Port Plugs.
- Customization of the generic diagnostics components.
- Installation of the generic diagnostics components on diagnostics Port Plugs and VV ports.
- No analysis is foreseen considering the design provided by IO, but analysis may be needed in case of non-conformance (see [B1_00-RQ-002]).
- No welding activity is foreseen considering the design provided by IO.

7.4 Manufacturing of the components

[B1_00-RQ-005]

The final manufacturing sequence shall be defined by the Contractor and implemented in the Contract Management Plan (CMP) as described in Section 6.1.3 of the GM3S [1]. The resultant documents shall be subjected to the Client's approval.

7.5 Documentation to be supplied during the execution of the contract

[B1_00-RQ-006]

The Contractor shall provide the Client with the mandatory documents and data defined in Appendix B1_13. This list is given only as an example and is not exhaustive.

[B1_00-RQ-007]

Additional documentation supporting the proposed assembly, installation, testing, operation and maintenance shall be provided to the Client as well.

The system specific documents and data to be provided to the Client are defined in the sub-sections 7.5.1 to 7.5.3 inclusive.

Any document from the Contractor, produced during the execution of the contract, shall be sent to the Client for approval unless the documentation is explicitly marked as informative documentation.

The general rules for documentation management are defined in the GM3SS [1].

7.5.1 Documents to be issued prior to the manufacturing phase

[B1_00-RQ-008]

Prior to the commencement of the manufacturing stage a Manufacturing and Inspection Plan (MIP) as part of the CMP shall be produced by the Contractor in accordance to the requirements set out in the Management Specification. It shall encompass the whole scope of the Framework Contract and range from review of drawing, verification of materials, manufacturing operations, inspection and test to delivery.

7.5.2 Documents to be issued during the manufacturing phase

Documents to be produced by the Contractor during the manufacturing phase are classified into four different categories.

7.5.2.1 Technical manufacturing documents during the execution of the contract

[B1_00-RQ-009]

Technical manufacturing documents comprise all documents pertaining technical aspects of the manufacturing phase. Those documents shall be produced by the Contractor thorough the manufacturing stage. They are detailed section 5.2 of Appendix B1_13 attached to this Technical Specification and cover but are not limited to the following:

- BTP drawings including manufacturing drawings.
- Documents related to procurement activities.
- Documents related to fabrication process and their other than welding (marking, machining, forming, cleaning, handling…).
- Documents related to welding operations.
- Documents related to examination.
- Documents related to testing.
- Documents related to packing, shipping and storage.

7.5.2.2 Follow-up documents during the execution of the contract

[B1_00-RQ-010]

The follow-up of the manufacturing stages shall be documented through regular monthly reports on the manufacturing status to summarize the implementation of contract.

[B1_00-RQ-011]

These reports shall be produced in accordance with the Management Specification of the Framework Contract. Any delays, manufacturing problems, and alternative manufacturing methods deviating from the plan presented at the readiness review meeting shall be included.

7.5.2.3 Non-conformance and deviation documents

[B1_00-RQ-012]

Any divergence from the original specification for the works shall be documented by the Contractor and approved by the Client through non-conformance and deviation reports in accordance with the provisions set out in Management Specification of the Framework Contract. The NCRs will be initiated, processed and closed in the NCR Database, as explained further in this specification.

7.5.2.4 Documents related to engineering analyses

No particular engineering analysis is expected, however in case one had to be performed (for example in case of NCR), the following requirement is applicable.

[B1_00-RQ-013]

All engineering analyses performed during the manufacturing phase shall be supported and documented through analysis reports and analysis Acceptance Delivery Packages (ADPs) corresponding to the analysis activity as specified in Appendix B1_11 of this Technical Specification.

7.5.3 Documents to be issued at the end of the manufacturing phase

Along with all the deliverables, the Contractor shall provide the following documents:

7.5.3.1 As-Built documentation

[B1_00-RQ-014]

As-Built CAD 2D drawings and 3D models that are part of the ADP files, including the outcomes of the final factory acceptance dimensional control.

7.5.3.2 The Contractor's Release Note (CRN)

This is a control document that:

- Identifies the applicable requirements.
- Certifies that the equipment/service complies with these requirements.
- Records the status of the documentation.
- Highlights any outstanding obligation.

[B1_00-RQ-015]

This document shall be produced before the shipment, according to the requirements set out in the ITER Requirements Regarding Contractors Release Note [2].

7.5.3.3 End-of-Manufacturing report

The End-of-Manufacturing report lists all the documents produced during the fabrication phase and which demonstrate that the finally achieved quality of the components is acceptable according the Quality Requirements.

[B1_00-RQ-016]

The End-of-Manufacturing report shall comprise at least the following (other additional documents required to demonstrate the level of quality achieved during the manufacturing phase may be necessary):

- The Contractor's Release note (Certificate of Compliance).
- Documents related to procurement including material certificates, product qualification reports, etc...
- The welding data package if any.
- Production weld data sheets and production weld test coupons.
- Manufacturing procedures including the qualification reports of special manufacturing techniques if any
- Extracts from examination and test procedures including the qualification of examination techniques.
- Examination and test results.
- Engineering analyses reports required in the manufacturing phase.
- Final factory acceptance test reports.
- Shipping and delivery documents.
- Non-conformance reports.
- As built drawings.
- The final Contract Quality Plan including:
- The Contractor's Quality Management System for the Contract.
- The Contract Management Plan (CMP).
- The final (as built) Detailed Work Schedule.
- The final (as built) Manufacturing and Inspection Plan.
- The final Documentation Schedule.
- The final Subcontracting Schedule.
- The final Risk Register.
- A compilation of all Contract meeting minutes and reports.
- Final IP Report summarizing the information on IP provided foreground IPR declaration.

8 Contract execution

8.1 Foreseen Task Orders

The Framework Contract will be subdivided into several Task Orders as per IO request, to cover the full scope of procurement.

The work packages foreseen by the IO at the time of the tender process are described in Table 5 below. They are given for information only at this stage as they will be described in upcoming Task Orders from IO.

Some Task Orders may be released simultaneously.

The delivery of components will be done in several batches.

Task Order	Description	Expected starting date	Expected delivery date of components
TO#1	Procurement of raw materials for all generic diagnostic components (quantities in section 8.2).	June 2025	November 2025 *(delivery to contractor's site)*

TO#2	MRR, manufacturing, FAT and delivery of EQ and UP Port Plugs skids and lateral pads assemblies, including spares.	June 2025	February 2026 to June 2027 *(delivery to client's site)*
TO#3	MRR, manufacturing, FAT and delivery of EQ and UP in-VV rails assemblies, including spares.	June 2025	June 2026 to June 2028 *(delivery to client's site)*
TO#4	MRR, manufacturing, FAT and delivery of in-VV dogleg plates assemblies, including spares.	October 2025	September 2026 to June 2028 *(delivery to client's site)*

Table 5: Foreseen Task Orders (for information only).

8.2 Quantities of components to be manufactured

8.2.1 Baseline quantities

The generic diagnostics components are to be manufactured for the ITER diagnostics Equatorial and Upper ports, whose quantities are defined in Table **6**.

The quantities of components to be manufactured for **one** Port are given in the BoM reference [18].

Ports	Quantities
Equatorial Ports (EQ)	14 ports
Upper Ports (UP)	18 ports

Table 6: Baseline quantities.

8.2.2 Spares quantities

The list and quantities of spares components will be defined in the Task Orders.

The manufacturing a few dummy PP skids and lateral pads assemblies may also be included. Dummy assemblies have a more simple design and are made of equivalent standard raw materials (without impurity control).

At tender stage the following assumptions can be considered for the spare quantities:

- For nominal components (in-VV rails, dogleg plates, skids and lateral pads assemblies): 3 additional EQ ports, and 4 additional UP ports.
- For dummy components (skids and lateral pads assemblies): 2 additional EQ ports, and 2 additional UP ports.

8.3 Responsibilities

The responsibilities between the Parties is summarised in Table **7** and is further detailed in the following sections.

Activity	Client (IO)	Contractor
Phase 1 Preliminary Design (if applicable)		-
Preliminary Design		-
Preliminary Design Review		-
Phase 2 Final Design (if applicable)		-
Final Design		-
Final Design Review		-
Phase 3 Manufacture, Assembly, FAT and Deliveries		-
Manufacturing Readiness Review	**A**	**R**
Manufacturing	**A**	**R**
Factory Acceptance Testing	**A**	**R**
Packing and Delivery to the IO Site	**A**	**R**
Phase 4 Integration & Acceptance		-
Provisional Acceptance		-
Technical Support to Integration		-
Testing Readiness Review		-
		-
Technical Support to Testing		-
Final Acceptance		-

Table 7: Summary of responsibilities between the Client (IO) and the Contractor

R = Responsible for organizing, performing and for the content
A = Review/Comment/Accept/Approve

8.4 Delivery Place

All components to be manufactured in the frame of this contract shall be delivered to the IO site, Route de Vinon-sur-Verdon, 13067 Saint-Paul-lez-Durance cedex, France.

8.5 Estimated Duration

The Contract duration is 3 years.

The contract is scheduled to come into force in the second quarter of 2025. The overall supply is foreseen in several batches until from 2025 to 2028.

8.6 Place of execution

The work shall be executed off-site.

9 Technical Requirements

9.1 Classification of the components

The classification of the generic diagnostics components is given in the Bill of Materials [18] and summarized in **Table 8.**

SAFETY	SEISMIC	VACUUM	A&M	QUALITY	ESP/ESPN
Non-SIC	NSC	VQC-1B	A&M Class 1	QC-1	N/A

Table 8: Components classification.

[B1_00-RQ-017]

The Contractor shall consider the classification of Table **8** of the components in their manufacturing procedures as well as in the application of the requirements included in the Technical and GM3S Management Specifications.

9.2 Manufacturing Design Requirements

Engineering models at final design maturity, together with drawings needed for visual verification (e.g. general assembly drawings, dimensions, interface tolerances, etc.), shall be provided by the Client at the time of contract placement.

[B1_00-RQ-018]

A Manufacturing Plan shall be developed by the Contractor through the following steps:

- Before starting the manufacturing design, the Contractor shall propose the manufacturing route to be followed described in a document, *The top level manufacturing plan*, that will be submitted to the Client for approval.
- The Contractor shall prepare the draft Final Manufacturing models and drawings implementing the proposed and approved manufacturing approach. The draft Final Manufacturing models shall be checked and approved/accepted by the Client as well.
- The Contractor shall prepare the Final Manufacturing drawings based on the approved/accepted draft Final Manufacturing models.
- The Contractor shall prepare all manufacturing procedures and qualifications based on the Final Manufacturing drawings and the Top Level Manufacturing plan to be reviewed in a Manufacturing Readiness Review (MRR) prior to the manufacturing start.

[B1_00-RQ-019]

Concerning CAD design activities, the Contractor shall ensure that all designs, CAD data and drawings delivered to the Client comply with the Procedure for the Usage of the ITER CAD Manual [3], and with the Procedure for the Management of CAD Work and CAD Data (Models and Drawings) [4].

9.3 Material Requirements

9.3.1 Materials Procurement

Materials procurement shall follow requirements of Appendix B1_03 and its applicable sub-appendices (B1-03-A1 to B1-03-A10). See section 5.2 for full list.

9.3.2 Filler Material

No need of for welding activity and filler material is foreseen in the contract execution.

9.4 CAD activities and engineering drawings

CAD activities within the scope of the Framework Contract are managed through the System for the Management of Diagrams and Drawings (SMDD) which is the single common IO repository for all Diagrams and Drawings in pdf format.

CAD related activities within the scope covered by this Technical Specification shall follow the requirements in Appendix B1_02.

Engineering drawings (Appendix B1_08) and other documents of this Technical Specification define the fundamental design dimensions, tolerances and related requirements as a result of the design cycle carried out to achieve a suitable final design of In-Vessel Components. These engineering drawings specify final dimensions of the components at the reference temperature of 20˚C without taking into account mechanical deformation under self-weight.

9.5 Engineering analysis

Refer to section 7.5.2.4.

9.6 Manufacturing requirements

9.6.1 Cleanliness and vacuum quality requirements

Cleanliness is required during the whole manufacturing process and the preservation of cleanliness is a good practice for any component to achieve the necessary vacuum and quality standards and to minimise the time required for recovery from any contamination incident.

All components must be subjected to a rigorous cleaning procedure, consistent with the Vacuum Classification.

Operations relating to cleaning, inspection, protection and preservation, shall be performed in accordance with the requirements specified Appendix B1_07 of this Technical Specification.

Cleaning and cleaning checks shall be performed at several stages of assembly and manufacturing. Surface finish plays a major role to ensure adequate cleaning after machining. Cleaning procedure has to be established to ensure needed cleanliness requirements, especially in locations where accessibility is difficult and a possibility for local spots having unacceptable surface finish requirements exists.

9.6.2 Surface finish requirements

Requirements defined in Appendix B1_07 and B1_08 concerning surface finish for vacuum performance of vacuum exposed surfaces of in-vessel components shall be met.

9.6.3 Machining requirements

Common requirements for the Common Components mentioned on aspects like tolerances, surface finish conditions, cleaning and machining vacuum compatible fluids and applicable non-destructive examination are covered among others in Appendix B1_05 of this Technical Specification. They shall be observed.

Cutting and machining operations, shall be performed by qualified personnel using qualified procedures in accordance with specified requirements. This covers all the activities concerned, including DT and NDT.

9.6.4 Requirements related to special manufacturing processes

Special manufacturing processes other than those covered in previous sections and that may affect the quality of items shall be controlled by the development and use of specific procedures and by training personnel in these procedures. Such procedures shall be subjected to the Client’s approval before application in the context of manufacturing activities of this Contract.

Procedures for performing processes must be followed to ensure the consistency of the process.

Special processes shall be performed by qualified personnel using qualified procedures in accordance with specified requirements. This covers all the activities concerned, including DT and NDT.

9.6.5 Metrology and tolerances

During the different stages of the in-vessel components manufacturing several dimensional controls shall be required. Such inspections could be carried out by traditional linear measuring systems (e.g. meter, caliber, micrometer, thickness gauge) or by 3D dimensional inspection equipment (e.g. CMM, laser tracker, laser scanner, photogrammetric).

Additionally, a final factory acceptance dimensional inspection shall be carried out after completion of the components.

The ITER Dimensional Metrology Handbook (DMH) [7] outlines the requirements for dimensional control of the components, assemblies and systems for the ITER machine. In addition the handbook provides significant guidance and helpful information on best practise for large volume metrology applications.

The requirements to follow during the execution of dimensional controls on components as well as particular requirements related to the dimensional control for final factory acceptance are defined in Appendix B1_09 of this Technical Specification which is devoted to organize dimensional inspections activities on base of the object to inspect, time of inspection and accuracy required.

Requirements in Appendix B1_06 concerning dimensional control conditions, equipment, their calibration and certification, etc.; shall be applied during the different stages of the manufacturing of in-vessel components where required according to the Top Level Manufacturing Plan delivered by the Contractor.

9.7 Inspection and testing

During the different stages of the manufacturing several inspections and testing operations shall be required in order to provide demonstration of compliance with requirements of this Technical Specification.

Inspection and testing operations and methods shall be subjected to the requirements defined in Appendix B1_06 of this Technical Specification.

Inspection and testing operations will be listed in the MIPs.

10 Acceptance

10.1 Intermediate Acceptance Tests at the Contractor's Site

Apart from the dimensional control, several acceptance tests as defined in Appendix B1_10 of this Technical Specification shall be performed at the Manufacturer site prior to the delivery.

[B1_00-RQ-020]

Client's factory acceptance criteria shall comprise the following:

- Identification of the components and parts in the Scope of Work.
- Approval of the End-of-manufacturing report by the Client and sign of the Certificate of Compliance.
- Successful completion of the final factory dimensional control (Appendix B1_09).
- Successful completion of all acceptance tests (Appendix-B1_10).
- Control of stamping and marking of manufactured items (Appendix B1_12).
- Checks of the final cleaning (Appendix B1_12).
- Checks of packing provisions and the transportation plan to ensure that the integrity of the component is preserved until arrival at the site (Appendix B1_12).

- Conformance with requirements as set out in the main Contract and this Technical Specification.

For each type of test, acceptance criteria and possible exemptions or alternative test are provided in Appendix-B1_10 of this Technical Specification as well as a detailed description of manufacturing, quality and follow-up documents to be prepared before and after the tests have taken place.

10.2 Provisional Acceptance at the Client delivery site

[B1_00-RQ-021]

The components shall be provisionally accepted by the Client from the moment that the components have been delivered, documented, and successfully tested in accordance with this Technical Specification. The Client will further on issue a Provisional Acceptance Certificate which will formalize and conclude the provisional acceptance process.

[B1_00-RQ-022]

The Certificate of Provisional Acceptance shall be signed by both the Client and the Contractor, after the acceptance of each component and its related documentation.

[B1_00-RQ-023]

Ownership of the components shall be transferred from the Contractor to the Client upon Provisional Acceptance at the Client Site.

[B1_00-RQ-024]

The transfer of ownership to the Client shall not relieve the Contractor of its obligations under this Contract and enforce the remedy of observed of non-conformities of the components during the warranty period.

[B1_00-RQ-025]

The Contractor shall bear the risk of loss or damages to the components during the execution of this Contract up to delivery (at the arrival of the components an inspection will be held to check and formalize eventual damage incurred during transport). Any risk of loss or damage shall be transferred from the Contractor to the Client upon delivery and Provisional Acceptance.

10.3 Final Acceptance

[B1_00-RQ-026]

The Contractor shall provide commercial warranty as per IO Supply Contract General Conditions covering repair or replacement of the components up to one year after the Provisional Acceptance of the item.

[B1_00-RQ-027]

The Final Acceptance shall be granted upon expiry of the warranty period and when all defects or damages have been rectified.

[B1_00-RQ-028]

The Final Acceptance Certificate shall be signed by both the Client and the Contractor.

11 Requirements for labelling, cleaning and cleanliness preservation, packaging, handling, shipment and storage

11.1 Labelling and Traceability

All components shall be clearly marked in a permanent way and in a visible place with the IO official numbering system according to the document ITER Numbering System for Components and Parts [8] and requirements stated Appendix B1_12.

11.2 Cleaning and Cleaning Preservation

Final cleaning shall ensure effective cleaning without damage to the surface finish, material properties or metallurgical structure of the materials in accordance to requirements of section 5 of Appendix B1_12. They shall be observed.

The demonstration of meeting the above cleaning requirements represents a Hold Point (HP).

11.3 Packaging and Handling

Particular attention shall be given to the many small pieces to be delivered and will adapt the packaging accordingly, in order to make their identification and counting as easy as possible.

Any special Client's or regulatory transportation requirements shall be documented and provided to the Contractor prior to shipment.

The Contractor shall design and supply appropriate packaging, adequate to prevent damage during shipping, lifting and handling operations according to requirements of Appendix B1_12.

Each shipment shall be accompanied by a Delivery Report shall be prepared by the Contractor and signed by a representative of the Client and its Contractor.

11.4 Shipment, Transportation and Delivery

Before the shipment, the mandatory DRR documents shall be issued as per requirements of Appendix B1_12. The Release Note shall be prepared in accordance with the ITER Requirements Regarding Contractor's Release Note [2] and approved by the Client.

Upon receipt of the package, the Client shall open the package and make a visual inspection of its content.

In the case of anomalies the Client shall make any additional relevant remark on the inspection.

A decision on acceptance of the delivery of the components will be made by the Client.

If the components are in an acceptable condition, the Client will sign the Delivery Report.

12 Preliminary list of control points

The contract follow-up is undertaken following the procedures and requirements defined in the GM3S specification [1]. For the implementation of the follow-up scheme the Contractor is required to implement a number of Control Points in said scheme. This list of control points comes from the Client's understanding of the implementation of the Contract and therefore it is subjected to discussion and agreement with the Contractor once the definitive manufacturing route has been defined.

[B1_00-RQ-029]

The preliminary list of control points required by the Client during the *manufacturing design* development and subjected to the Contractor's assessment is given in Table 9.

[B1_00-RQ-030]

The control points shall be linked to milestones and deliverables which define the detailed contents of the WPs and also the Acceptance Delivery Packages (ADP) to be considered as partial achievements during the execution of the Contract.

The preliminary distribution of HPs, milestones and associated deliverables as well as their organization into WPs for all activities included in manufacturing design is described in Table 9.

The Table 9 only gives the recommended project management. Based on this, the Contractor shall prepare the respective MIPs according to the final proposed manufacturing plan following a similar scheme as the one presented above. The list of NPs, RPs, HPs, W, R and S to be implemented during the various phases of this Framework Contract shall be defined by the Client, as regards to actual project phasing.

Table 9: Preliminary list of control points, WP descriptions, milestones and associated deliverables for the manufacturing activities of the components.

Common manufacturing activities for all components					
WP	**Activities**	**PIA**	**IO**	**Comments**	**Deliverable**
WP	**1. Project Management**	**PIA**	**IO**	**Comments**	**Deliverables**
WP-1	*1.1 Quality and Management Plan (QP)*	*NO*	**HP-1**	*Check the QP compliant with 22MFMW*	*Quality Plan*
	1.2 Manufacturing and Inspection Plan (MIP)	*NO*		*Check that the sequence of inspection operations is consistent with TS*	*MIP*
	1.3 Documentation Schedule (DS)	*NO*		*Check the applicable documentation list*	*Documentation Schedule*
	1.4 Detailed Work Schedule (DWS)	*NO*		*Check the manufacturing and delivery schedule*	*DWS*
	1.5 Subcontracting Schedule (SS)	*NO*		*Check the quality documentation of sub suppliers*	*SS*
	1.6 Risk Register (RR)	*NO*		*Check Risk Register*	*RR*
WP	**2. Manufacturing procedures qualification**	**PIA**	**IO**	**Comments**	**Deliverables**
WP-2	*2.1 Approval of manufacturing drawings and reports*	*NO*	**HP-2 (MRR)**	*Consistency of manufacturing-engineering drawings // Design modifications (if any) approved*	*Manufacturing drawings & technical notes of engineering analyses*
WP-3	*3.1 Approval of manufacturing procedures*	*NO*	**HP-3 (MRR)**	*Manufacturing procedures to be approved before starting concerned manufacturing operations*	*Manufacturing procedures*
	3.2 Approval of Material Test Reports (Chemical and Mechanical)	*NO*	**HP-3 (MRR)**	*Material Test reports to be approved before starting concerned manufacturing operations*	*Material Test Reports*
	3.3 Cleaning procedures qualification (if required)	*NO*	**R / W**	*Check qualification of cleaning procedures & acceptance criteria*	*Cleaning procedure qualification (proposal)*
	3.4 Approval of cleaning procedures	*NO*	**HP-3 (MRR)**	*Check that (qualified/proposed) cleaning procedures meet TS requirements*	*Cleaning work plan / procedures*
	3.5 Approval of the forming procedure (if required)	*NO*	**HP-3 (MRR)**	*Check that (qualified/proposed) forming procedure meet TS requirements*	*Forming procedure (qualified)*
WP-4	*4.1 Volumetric examination techniques qualification (if required)*	*NO*	**R / W**	*Check consistency of NDE with the Detailed Manufacturing Plan*	*Test plan (proposal)*
	4.2 Approval of NDE qualification files	*NO*	**HP-5 (MRR)**	*Check that qualified UT volumetric examination technique is adequate for concerned welds*	*Test plan (qualified)*
	4.3 Leak testing procedure qualification (if required)	*NO*	**R / W**	*Manufacturing operations follow-up*	*Leak test procedure (proposal)*
	4.4 Approval of leak testing qualification files (if required)	*NO*	**HP-6 (MRR)**	*Check that qualified leak testing procedure is in accordance to TS*	*Leak test procedure (qualified)*
	4.5 Approval of final dimensional control procedures	*NO*	**HP-6 (MRR)**	*Check that proposed final dimensional control procedures meet TS requirements*	*Final dimensional control procedure*
	4.6 Approval of baking procedure (If required)	*NO*	**HP-6 (MRR)**	*Check that proposed baking procedure meet TS requirements*	*Baking procedure*
	4.7 Approval of outgassing test procedure (If required)	*NO*	**HP-6 (MRR)**	*Check that proposed outgassing test procedure meet TS requirements*	*Outgassing procedure*
	4.8 Approval of testing procedure (if required)	*NO*	**HP-6 (MRR)**	*Check that proposed procedures meet TS requirements*	*Testing procedure*

13 Schedule requirements

13.1 Time Schedule Management: the Detailed Work Schedule (DWS)

13.1.1The Detailed Work Schedule (DWS)

[B1_00-RQ-031]

The Contractor shall produce a detailed work schedule (DWS) showing all phases of the Contract and explaining how the overall Client's schedule included in the Contract will be complied with. This Detailed Work Schedule shall be submitted to the Client for approval/acceptance, before starting any work in relation to the Contract.

[B1_00-RQ-032]

The DWS shall be in the form of a fully-resourced programme based on the Work Breakdown Structure defined in the MIP identifying all significant milestones, deliverables, activities and their interdependencies, durations and anticipated start and finish dates and the project critical path(s), including sub-contractors activities.

[B1_00-RQ-033]

This document shall be built following the practices, formats, methods and standards described in the ITER Planning & Scheduling Manual [16] and the document Required Scheduling Standards [17].

[B1_00-RQ-034]

The official Contract scheduling software shall be Primavera. This is a requirement for the call-for-tender Schedule as well as for the DWS.

[B1_00-RQ-035]

For the DWS, activities shall be given in detail. It will include resources (number and category) and milestones for witnessing and hold points and shall be sent in native format to the Client for approval.

13.1.2Schedule requirements for Call-for-Tender / Framework Contract

[B1_00-RQ-036]

The Contractor has to develop a fully logics-driven DWS showing all the phases to arrive to the acceptance of the deliverables.

[B1_00-RQ-037]

A full list of the assumptions adopted in the DWS explaining in detail the level of confidence considered shall be submitted as well.

[B1_00-RQ-038]

In case the Contractor arrives at the conclusion that it is not possible to deliver the final products on the time schedule required, he shall develop a longer DWS listing the reasons for it in detail.

[B1_00-RQ-039]

The Calendar (or Calendars) has to be the one of the Country (Countries) in which the work is foreseen to be performed and has to include all national holidays.

[B1_00-RQ-040]

The activity names have to be self-explanatory, i.e., they must also be properly understood without referring to the corresponding WBS entry.

[B1_00-RQ-041]

The schedule has to be submitted in Adobe Acrobat PDF format and in the native format of the planning software (in case of Primavera in its export file, XER extension). Both are necessary in order to consider the schedule as valid.

[B1_00-RQ-042]

The Contractor shall also set out the process of reporting progress against the DWS to the Client.

13.2 The Documentation Schedule

[B1_00-RQ-043]

The Contractor shall provide a Documentation Schedule following the format defined in the template included in the Section 14 of GM3S [1] detailing all documents, records, drawings, plans, schedules, manuals and data relevant to the implementation of the Framework Contract, including work performed by Subcontractors, and the performance of the Works and the Contractor's other duties, obligations and liabilities pursuant to the Contract.

[B1_00-RQ-044]

The Contractor shall update the Documentation Schedule throughout the whole execution of the Framework Contract.

[B1_00-RQ-045]

The Documentation Schedule shall include at least the documents linked with main milestones and deliverables.

For the items linked with milestones and with specific deliverables, the use of a draft document lists should to be included into the document schedule. For every document from the list, identification of related activities in the DWS will be included.

[B1_00-RQ-046]

During the execution of the activities, the Documentation Schedule shall be maintained as the reference for document status within the Contract.

13.3 The Subcontracting Schedule

[B1_00-RQ-047]

The Contractor shall provide a Subcontracting Schedule according to the template provided in the Section 14 of GM3S:

- All major or critical items and activities to be subcontracted by the Contractor.
- Specifications of the associated items or activities to be performed.
- The identity of the relevant Subcontractor, including details of his contact officer.
- Proof of the Subcontractor's qualification, including for example ISO 9001 certification or the Contractor's assessment report in respect of the subcontractor's quality system.

[B1_00-RQ-048]

Subcontracting shall not start until the relevant Subcontracting Schedule has been accepted by the Client.

[B1_00-RQ-049]

The Subcontracting Schedule shall be updated as necessary, and the updated schedule shall be subjected to the same acceptance procedure as the original Subcontracting Schedule.

[B1_00-RQ-050]

The Contractor shall not implement a revision of the Subcontracting Schedule until it has been approved by the Client in writing.

[B1_00-RQ-051]

Client's acceptance of the Subcontracting Schedule shall not relieve the Contractor of any contractual obligations and responsibilities.

14 General management requirements

This section provides additional requirements to the GM3S specification [1] which is fully applicable.

14.1 Requirements of Section 6.1.3 (Contract Management Plan)

This section of GM3S applies in full along with the following additional requirements

[GM3S_6.1.3-RQ-001]

The Contract Follow-up shall be performed through an assembly of separate and well-identified documents, the Contract Management Plan (CMP), which shall cover the whole Scope of the Framework Contract, including work performed by Subcontractors.
The CMP is a formal document in which it shall be described how the Contractor intends to execute their works. It shall identify the Scope of work, the organisational structure proposed; key processes which will be carried out and roles and responsibilities within the Contract.

[GM3S_6.1.3-RQ-002]

The CMP shall comprise of a main document and other subsidiary plans as detachable documents: the Manufacturing and Inspection Plan (MIP), the Document Schedule, the Detailed Work Schedule (DWS), the Contract Risk Register and the Subcontracting Schedule.

[GM3S_6.1.3-RQ-003]

The CMP main document shall include different Sections in which the Objectives, Activities and Responsibilities of the Contract shall be detailed according to what it is stated in following subsections.

These elements are not exhaustive and may be supplemented by the Contractor as considered appropriate.

[GM3S_6.1.3-RQ-004]

In this part of the CMP the Contractor shall describe his understanding of the nature of the works and requirements of the Framework Contract.

[GM3S_6.1.3-RQ-005]

It shall describe the strategy for execution of the works and shall include a description of the project's key drivers and details of the sequencing of key activities.

[GM3S_6.1.3-RQ-006]

This Section shall set out the Contractor's plan for resourcing the project.

[GM3S_6.1.3-RQ-007]

It shall include details of the Contractor's mobilisation plan and an organisation chart identifying the resources, organisation and responsibilities allocated at senior and intermediate management level and the personnel appointed to these positions as well as defining the allocation of responsibilities between consortium members, if applicable.

[GM3S_6.1.3-RQ-008]

Particular reference shall be made to the provision of Suitably Qualified and Experienced Personnel (SQEP) to the project and a SQEP register for all significant positions within the Contractor's proposed organisation.

[GM3S_6.1.3-RQ-009]

Names shall be attached to key roles with evidence that they are Suitably Qualified and Experienced for the role.

[GM3S_6.1.3-RQ-010]

Significant subcontracts associated with the work shall be identified as well. In particular the Contractor shall identify the names, experience and contact details of:

- The Contractor's Technical Responsible Person (TRP) in charge of the Framework Contract.
- The Contractor's Quality Representative for the Framework Contract.

[GM3S_6.1.3-RQ-011]

The Contractor's TRP shall be responsible for the provision of the Works including the planning, performance and control of all of the Works, and all work assigned to Subcontractors. He shall keep and maintain the DWS and time schedules and issue the progress reports.

[GM3S_6.1.3-RQ-012]

The Contractor's Quality Representative shall be responsible for ensuring that the quality requirements are met and that the Quality Plan, quality procedures and detailed work instructions are followed throughout the duration of the Framework Contract.

[GM3S_6.1.3-RQ-013]

The Contractor's Quality Representative shall assess and control the Management Quality System of his Subcontractors', including any works carried out at Subcontractors' premises.

[GM3S_6.1.3-RQ-014]

The Contractor shall not change or replace his TRP or Quality Representative without the prior agreement of the Client.

The Stop Work Authority (SWA) establishes the responsibility and authority of any individual to stop work when an unsafe condition or act could result in an undesirable event. The SWA process involves a stop, notify, correct, and resume approach for the resolution.

[GM3S_6.1.3-RQ-015]

The Contractor shall state his Stop Work Authority internal guideline.

[GM3S_6.1.3-RQ-016]

This guideline shall include that for stopped work associated with defined safety systems, notification shall be given to the Client explaining reason for stop work and proper justification for restarting that work activity

14.2 Requirements of Section 6.1.4.2 (Periodic Report) of GM3S

This GM3S section 6.1.4.2 applies in full along with the following additional requirements.

[GM3S_6.1.4.2-RQ-001]

The Contractor shall provide the Client with a monthly progress report on the status of the activities under this Framework Contract by the 1st calendar day of the following month.

[GM3S_6.1.4.2-RQ-002]

The progress reports shall follow the format defined in the required format and contain all information that the Contractor considers relevant to properly reflecting the progress of the activities including but not be limited to:

- Progress of the works compared to the Detailed Work Schedule (DWS) including relevant pictures of stages of fabrication as a proof.
- Update of the Contract Schedule.
- Update on Intellectual Property Rights.
- Re-programmed activities required to recover time on any activities behind the Detailed Work Schedule.

- Deviations requested and Non-conformances raised.
- Work scheduled over forthcoming month.
- Materials Availability.
- List of personnel and category involved in each activity.
- Update of the list of documents and Documentation Schedule, including identification of the activities related with every document in the Schedule.

[GM3S_6.1.4.2-RQ-003]

All documents referenced in the Progress Reports shall also be submitted together with the Progress Reports in electronic format a minimum three (3) working days in advance prior to the date of Progress Meeting.

[GM3S_6.1.4.2-RQ-004]

The Contractor shall report as soon as possible to the Client of any occurrence that could delay or jeopardize the proper execution of activities related to this Framework Contract.

14.2.1 Requirements of Section 6.4 (Subcontracting) of GM3S

This section of GM3S applies in full along with the following additional requirements.

[GM3S_6.4-RQ-001]

The Contractor shall ensure that each Subcontractor of the whole chain of Contractors has a Quality System compliant with this Management Specification.

[GM3S_6.4-RQ-002]

The Contractor shall issue an assessment report for each Subcontractor of the whole chain of Contractors.

[GM3S_6.4-RQ-003]

Failing this, the Contractor shall undertake all the necessary actions to establish and maintain quality for each Subcontractor's activities and premises, in conformity with this Management Specification.

[GM3S_6.4-RQ-004]

The Contractor shall ensure that purchased or subcontracted items, services and materials are supplied together with their certificate of conformity to the specified requirements.

14.3 Requirements of Section 8.4.2 (Requirement for Manufacturing Inspection Plan) of GM3S

This section of GM3S applies in full along with the following additional requirements.

For effective and efficient manufacturing process control, IO has implemented an interactive Manufacturing Data Base (MDB) platform. MDB is basically an electronic MIP, with a well-structured and flexible data-storage that can be adapted to any procurement or contract and allows full traceability.

The sequence and current status of all the manufacturing activities can be accessed online from anywhere by all the stakeholders. It provides an easy cross-referencing with all the reference documents and drawings and permits the manufacturer to upload all the records generated (inspection reports, testing records etc.) during manufacturing.

The Manufacturing Database applies the global ICP security scheme. Each Contractor can only access its own data which is only to relevant IO team (usually division). Access rights are fully transparent (e.g., a Contractor can always check who is given access to its data) and flexible, i.e. extra restrictions can be applied if needed.

[GM3S_8.4.2-RQ-001]

All the manufacturing activity shall be through an approved MIP. There shall be one top level MIP for each major assembly, which shall refer to multiple MIPs, as per the requirement. Once the MIP template is approved, IO will integrate it with MDB for managing the manufacturing activity.

All the manufacturing documents (procedures, plans, records, reports etc.,) shall be submitted by the Contractor to the Client through the Client's MDB. All the documents that need review and which are revision control documents (like procedures, etc.,) are to be uploaded for review in IDM / SMDD first and once they are approved by IO, shall be referred in MDB as hyperlinks. All the reports that get generated (any inspection, examination and testing report) shall be uploaded in MDB for the approval of IO. All the control points (Hold Point, Notification Point and Authorization to Proceed Points) shall be managed through MDB.

[GM3S_8.4.2-RQ-002]

The MDB access shall be given only for the manufacturing activities of the Contractor. All the manufacturing activities of the subcontractors beyond the Contractor shall be through a paper MIP (and not in MDB). After completion of this (paper) MIP, the finalised MIP and associated documents (e.g., EOMR) shall be uploaded in the MDB at appropriate stage of the main manufacturing by the Contractor.

[GM3S_8.4.2-RQ-003]

All the manufacturing and testing activity shall be through a documented plan.

The Contractor shall provide a Manufacturing and Inspection Plan (MIP) describing the sequence of the work, milestones, control points and required reviews. This shall also provide a work breakdown structure and the corresponding detailed schedule.

[GM3S_8.4.2-RQ-004]

It shall identify as a minimum, the following:

- Requirements originated from the development and validation strategy as defined in the Technical Specification (qualification and validation requirements, needs for mock-up or prototypes…).
- A list of the required hold points, witness points (required by the Client or a third-party inspection agency), notification points and all reports, reviews, and approvals, as required.
- Identification of all activities and inspections / tests / examinations to be performed in order to comply with the applicable legislation, standards or codes and requirements as specified in the Technical Specification.

[GM3S_8.4.2-RQ-005]

For each particular activity, the MIP shall:

- Identify all the required input documents (procedures, plans etc.,)
- Identify the applicable requirements and instructions.
- Identify whether or not that activity is to be witnessed or whether notification is required.
- Identify the provision for recording the verification and completion of the listed operations.

[GM3S_8.4.2-RQ-006]

The level of detail in the MIP shall be such as:

- To prevent the inadvertent bypassing of critical test and inspection points.
- To enable adequate planning, monitoring and verification of key activities.

[GM3S_8.4.2-RQ-007]

The MIP shall encompass the whole Scope of the Framework Contract, including any work to be performed by Subcontractors.

[GM3S_8.4.2-RQ-008]

To ensure that activities are carried out as directed in the MIP, the Contractor shall make the document directly accessible to those carrying out the Works.

[GM3S_8.4.2-RQ-009]

The MIP shall be in English but shall also be available in a language easily understood by those carrying out the manufacturing activity.

[GM3S_8.4.2-RQ-010]

For some sequences of the MIP, a more detailed inspection and test plans (ITP) might be required.

[GM3S_8.4.2-RQ-011]

For these, the reference of the detail plan shall be indicated in the sequence entry of the MIP. The detailed plan shall have the same outline format as the MIP.

[GM3S_8.4.2-RQ-012]

Client's acceptance of the MIP shall not in any way limit the Contractor's duties and obligations pursuant to the Framework Contract nor diminish any liability on its part in respect thereof.

[GM3S_8.4.2-RQ-013]

The MIP shall follow and be built according to the Procedure for implementation of a Manufacturing and Inspection Plan [14]. The format of the MIP shall be according to the template included in [15]. No change to this format will be accepted without the prior written approval of the Client.

Many of the manufacturing operations foreseen are very similar for both Equatorial Ports and Upper Ports. This is why some of these operations may be considered as part of a common group applicable to both the components (ie.: qualification of common manufacturing processes).

14.4 Requirements of Section 8.4.7 (Inspections) of GM3S

This section of GM3S applies in full along with the following additional requirements

[GM3S_8.4.7-RQ-001]

Planned and documented audits shall be performed by the Client to verify compliance with the technical and quality requirements of the Contract.

[GM3S_8.4.7-RQ-002]

These activities may be extended to the Contractor's Subcontractors, and the Contractor shall ensure that Client's right to conduct periodic audits, reviews, surveillance and inspection of the quality system and verification of its compliance with all quality and technical requirements of the Framework Contract, is incorporated into any subcontract.

[GM3S_8.4.7-RQ-003]

In the event of deficiency detected in the Quality System, the Contractor shall implement, or ensure that the Subcontractors implement, corrective actions, in accordance with a schedule agreed by the Contractor.

[GM3S_8.4.7-RQ-004]

The Contractor shall conduct periodic audits, reviews, surveillance and inspection of the activities, including those performed by Subcontractors. The Contractor shall notify the Client in advance to allow the Client to attend this activity.

[GM3S_8.4.7-RQ-005]

The Client shall have the right to dispatch its own inspectors or personnel to attend any of these activities.

[GM3S_8.4.7-RQ-006]

The Client shall have the right to be accompanied by observers in respect of any scheduled visit to the Contractor's premises for the purpose of any audit, review, surveillance or inspection. [GM3S_8.4.7-RQ-007]

Any observer who attends the Contractor's premises with the Client shall be identified and notified to the Contractor in advance.

[GM3S_8.4.7-RQ-008]

The observers shall be bound by appropriate confidentiality obligations, to be agreed in advance.

[GM3S_8.4.7-RQ-009]

The Contractor shall, take all necessary measures to allow appointed representatives of the French safety authorities the same unrestricted access as is accorded to the Client. The Contractor shall, at the request of the Client, provide a representative able to explain, in French, the issues and progress to the French safety authorities. Such access shall be coordinated in advance with the Contractor.

[GM3S_8.4.7-RQ-010]

Inspections will be in accordance with the ITER Procurement Quality Requirements [2].

[GM3S_8.4.7-RQ-011]

In case of concerns regarding the quality of the manufacturing activities, the Client reserves the right to perform unscheduled inspections in accordance with the ITER Procurement Quality Requirements [2].

[GM3S_8.4.7-RQ-012]

The Client may also request the Contractor to carry out on-the-spot checks in addition to the checks foreseen in the Technical and Management Specifications. In such a case, the Client has to provide a description of its concerns and the rationale behind such request. Upon receipt of such request, the Contractor shall evaluate the potential impact of such unscheduled inspections on the production costs and schedule. Based on all these considerations, the Parties shall agree on a course of action to tackle such issues. The actual date(s) of the unscheduled inspections shall be determined by agreement between the Parties

[GM3S_8.4.7-RQ-013]

The Contractor shall inform the Client of all locations where Contract is implemented.

[GM3S_8.4.7-RQ-014]

The Contractor shall take all necessary measures to allow the Client unrestricted access to all of the Contractor's documentation, premises and personnel (including that of its Subcontractors) during all stages of the Contract for the purpose of such audit, review, surveillance and inspection as the Client may consider necessary.

[GM3S_8.4.7-RQ-015]

The Client reserves the right to make unscheduled visits to the Contractor's or Subcontractors' premises in which the manufacturing activities are developed, and free access shall be provided at reasonable times.

[GM3S_8.4.7-RQ-016]

The Client or his representatives shall be permitted to take photographs and / or video recordings of any activity relating to the Contract. The material so obtained shall remain confidential.

[GM3S_8.4.7-RQ-017]

The Client shall have the right to deploy permanent inspectors working at the Contractor's premises/facilities to supervise and monitor the Contractor's work both in terms of quality and schedule.

[GM3S_8.4.7-RQ-018]

Should this be required, the Contractor shall reserve an office near to his premises/facilities for the inspectors, equipped with a telephone and facsimile with international access, and computers with internet access.

14.4.1 Requirements of Section 8.7.3 (Deviation Request) of GM3S

This section of GM3S applies in full along with the following additional requirements, if DR is originated by the Subcontractor.

[GM3S_8.7.3-RQ-001]

When a deviation is foreseen, the Contractor shall prepare a proposal with a technical justification and discuss it with the Client. If the proposal is considered beneficial, the Contractor shall request the Client's approval by issuing a Deviation Request in the format of the Contractor's Deviation Request Template [13]. The Contractor is permitted to use their internal templates (ensuring that the file contains IO cover page). The internally approved DR shall be uploaded into IDM so that the DR has a well-defined UID (as long as the IDM is the DR management tool). It shall contain the mandatory information as per Section 5.2 of [12].

[GM3S_8.7.3-RQ-002]

The Deviation Request shall contain or refer to all relevant material available to enable an informed decision to be taken. In particular, it shall include an assessment of the Deviation's consequences in terms of cost, delay, risk and quality. The four main steps of the DR process that shall be followed is detailed in Section 6.2 along with Figure-1 (Flowchart of DA/CONT-DR) of [12].

[GM3S_8.7.3-RQ-003]

The deviation shall be implemented by the Contractor only after reception of the Deviation Request approved and signed by the Client.

14.5 Requirements of Section 8.8 (Non-conformity) of GM3S

This section of GM3S applies in full along with the following additional requirements

Internal Non-conformances

[GM3S_8.8-RQ-001]

- Contractors and sub-contractors may identify any internal NC that need to be managed internally within the performer's organization without involving IO and other external entities, when they satisfy the following criteria:
  - NC will not affect the technical requirements of the final products and activities delivered to IO or different other entities (other DAs, Contractor, contractor) in the scope of ITER project,
  - NC will not have impact on contractual requirements
  - NC will not have impact on cost and schedule related to ITER project and
  - NC will not have impact on regulatory requirements applicable for ITER project.
- Internal NC of performers shall be recorded using performer's NCR templates and internal database (if applicable). A list (log/ register) of internal NCRs need to be maintained by the performer to allow strict control of NCR stages, trend reports and analyses. This internal NCR log shall be available at IO/ DAs request during the audits and inspections.

15 Other contract requirements

15.1 Risk Management

[B1_00-RQ-052]
Risk management will be performed in accordance with the IO Risk Management Plan.

[B1_00-RQ-053]

The Contractor shall, within ninety (90) calendar days of the entry into force of the Framework Contract, draw up and submit to the Client, for information, a plan for managing risks associated with implementing the Contract (hereinafter referred to as the Contract Risk Register).

[B1_00-RQ-054]

The Contract Risk Plan shall set out a register of the risks which may impinge on the successful execution of the Contract following the applicable Contractor's Risk Management System and, for each identified risk shall provide:

- A summary assessment of likelihood of the risk materializing and of the potential consequences for the successful execution of the Contract.
- A review of performance against approved DWS and actions to identify potential development of delays.
- Possible measures and actions for risk exposure reduction or mitigation and conditions for triggering such measures.
- An attribution of responsibility in the structure of the Contractor for managing the risk.
- A plan, consistent with the Contract Schedule, and arrangements for regular monitoring and review of the risk.

[B1_00-RQ-055]

The Contractor shall implement possible measures for risk reduction and mitigation following a graded approach and shall provide to the Client progress reports on a quarterly basis in accordance with an agreed to template.

[B1_00-RQ-056]

If and when conditions to trigger specific risk reduction and mitigation measures occur, the Contractor shall inform the Client promptly. The Parties shall consult on the appropriate actions to be taken and on their consequences for the execution of this Framework Contract

[B1_00-RQ-057]

The Contractor shall provide and maintain a Contract Risk Register, following its Risk Management System.

15.2 System Compliance – Contractor's quality system

[B1_00-RQ-058]

The Contractor's Quality System for the Contract shall be compliant with the following documents:

- ITER Procurement Quality Requirements [9].
- Procurement Requirements for Producing a Quality Plan [11].

[B1_00-RQ-059]
Contractors with a Certified Quality Management System based on a recognised Quality Standard(s) shall also include:

- Copy of the valid Quality Management System Certification.
- Quality Manual reference.

- A statement of compliance with the General Requirements (Section 6.0)
- Requirements, the Licensing Requirements (Section 5.3).

Management of Responsibility Allocation

[B1_00-RQ-060]

The Contractor shall identify and define the key roles to ensure that:

- The activities performed within the Scope of the Framework Contract are planned, implemented and controlled and their progress monitored.
- The Framework Contract requirements (Technical and Management) are reviewed and the review recorded.

Management of Deliverables

[B1_00-RQ-061]

The Contractor shall define:

- The procedure to handle Documentation and Records.
- A Flowchart for the Documentation Flow process/procedure, including the interaction with the Client.
- The Configuration Management records definition to guarantee that the documentation of the items to be procured is accurate and consistent with the actual physical design of the item and their maintenance.
- The procedure of acceptance requirements review/verification before despatch.
- The Manufacturing and Inspection Plan update process.

Subcontracting Management

[B1_00-RQ-062]

The Contractor shall define the Subcontracting Management System to comply with this Management Specification.

Assessment and Validation Management

[B1_00-RQ-063]

The Contractor shall define a System to comply with the Assessment and Validation Requirements set out in the Technical Specification. This System shall include:

- A procedure defining how the Contractor will monitor and record the compliance with the MIP.
- A procedure defining how the Contractor will supervise and monitor all measurement and testing equipment used in the execution of the works.

Incoming Materials Management

[B1_00-RQ-064]

The Contractor shall define a procedure detailing how and when acceptance of goods and materials to site/premises are controlled according to the requirements set out in the Technical Specification of the Framework Contract.

[B1_00-RQ-065]

This procedure shall include for the provision for review and acceptance of manufacturer’s compliance Certificates, Independent Accreditation Certificates and any associated Test Certificates relating to the materials being delivered.

Design Management

[B1_00-RQ-066]

The Contractor shall describe in accordance with the Technical Specification of the Framework Contract:

- The Design Management System (including review, verification & validation).
- The Design review procedure.
- The Independent Verification methods and indicate who will make this verification.

Resources Management

[B1_00-RQ-067]

The Contractor shall define the Resource Management and Training System to comply with the Contract requirements.

[B1_00-RQ-068]

The Contractor shall provide details of his Resource Management system, detailing where applicable:

- The number and type of personnel involved in each of the Contract activities.
- Measures in place to ensure adequate recruitment of sufficiently experience personnel.
- Specific training provided to its personnel.
- Specific qualifications held by those performing particular operations, especially operations requiring special control measures and / or supervision.

[B1_00-RQ-069]

The Contractor shall maintain a register of all employees and those of his subcontractors, which shall demonstrate that all workers are appropriately qualified for the activities they shall be required to carry out.

The Contractor shall maintain a list of all the approved subcontractors / sub-Contractors and the activities they are planning to subcontract. An Approved Contractor's List (ASL) shall be prepared giving the details of all subcontractors / sub Contractors, the activity/(ies) they shall perform, their Quality Management System (ISO etc.,), accreditations (needed for testing laboratories) if any, list of certified/qualified experts (if NDE is subcontracted), audits / surveillance plans conducted for selection of the subcontractor/sub Contractor etc.

All these documents shall be transmitted to the Client for review

15.3 Change Management and Amendments

[B1_00-RQ-070]

Any changes to the requirements of the Framework Contract proposed by either the Client or the Contractor during the course of execution of the Contract are subject to the Deviation Request process described in ITER Requirements Regarding Contractors Deviations and Non Conformities.

[B1_00-RQ-071]

The proposed Deviation Request will be jointly assessed by the Client's TRO and the Contractor's TRP in charge of the Contract on the basis of consideration of threshold levels for change management defined in the ITER Configuration Management Plan [10].

15.4 Reporting on Intellectual Property

[B1_00-RQ-072]

The Contractor shall identify all the tasks/operations that can lead to results as well as the results themselves that can take the form of an invention, information, business confidential information, trade secrets, software, etc.

[B1_00-RQ-073]

The Contractor shall prepare a declaration of IP foreground as soon as the foreground is created.

[B1_00-RQ-074]

In addition to the foreground declaration the Contractor shall inform on any IP relevant issue such as requests for access to IP by third parties or any IP issue that may impede performance of the Contract.

[B1_00-RQ-075]

The Contractor shall include any IP related information in an independent annex attached to the progress reports and to the End-of-Manufacturing Report (the IP Progress Report and the IP Final Report) to ensure that relevant information is protected.

[B1_00-RQ-076]

The Contractor will identify in the IP reports any confidential information to ensure the confidentiality and the proper management of strategic IP information (for example trade secrets or information on patentable subject matters).

The purpose of the Final IP Report is to have a compilation of IP relevant information that can be detached from the End-of-Manufacturing Report, as a standalone document, without losing its value.