#### 外部委託業者の募集

References: IO/24/OT/10028957/YLI

#### "PBS 45 Fiber Optic Patch Panels TKC First Plasma Scope"

(トカマク複合施設ファーストプラズマスコープ内の光ファイバーパッチパネルの PBS45) IO 締め切り 2024 年 7 月 3 日(水)

#### ○はじめに

本事前情報通知 (PIN) は、作業契約の入札授与および実行につながる公開入札調達プロセスの最初のステップです。

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

#### 〇背景

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

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

#### 〇作業範囲

契約者は、次のネットワークインフラストラクチャー専用製品を提供しなければなりません:アダプター付きプリロードパッチパネル(19インチ / 1U)。

数量は以下の通りです:

PNI	説明	PC	QC	数量
I17240196	12個のデュプレックスLC固定アダプターを備えた1U高さのプリロー	Non-	QC	600
	ドパッチパネル	PIC	3	
I17240197	24個のデュプレックスLC固定アダプターを備えた1U高さのプリロー	Non-	QC	600
	ドパッチパネル	PIC	3	
I17437413	48個のデュプレックスLCアダプターを備えた1U高さのプリロードパ	Non-	QC	350
	ッチパネル(4つのモジュール、各12個のデュプレックスLCポート)	PIC	3	

詳細については、添付の技術仕様書TS\_B6R8XP\_v1\_1と各PNIの専用技術仕様要件を参照してください: I17240196 - 12個のデュプレックスLC固定アダプターを備えた1U高さのプリロードパッチパネル-

#### TS\_924UVB v1.2

I17240197 - 24個のデュプレックスLC固定アダプターを備えた1U高さのプリロードパッチパネル-

TS\_93LP29 v1.1

I17437413 - 48個のデュプレックスLC固定アダプターを備えた1U高さのプリロードパッチパネル(4つのモ

ジュール、各12個のデュプレックスLCポート) -TS\_8NUHRB v1.2

#### ○調達プロセスと目的

目的は、競争入札プロセスを通じて供給契約を落札することです。 この入札のために選択された調達手続きは公開入札手続きと呼ばれます。 オープン入札手順は、次の4つの主要なステップで構成されています。

- ステップ1-事前情報通知(PIN) 事前情報通知は公開入札プロセスの第一段階です。IOは、関心のある候補企業に対し、以下の概略日程に示された期日までに担当調達担当官に添付の関心表明フォームで以下の情報を 提出し、競争プロセスへの関心を示すよう正式に要請します。
  - 会社名
  - 登録の国名
  - 担当者名、emailアドレス、肩書および電話番号

#### <u>特に注意:</u>

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

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

ステップ 2-入札への招待

PIN の発行から 10 作業日経過後、提案依頼書(RFP)を 「IPROC」 に掲載します。この 段階では、担当の調達担当者に関心を示し、かつ IPROC に登録している関心のある候補企 業は、RFP が公表された旨の通知を受けることができます。その後、RFP に詳述されてい る入札説明書に従って提案書を作成し、提出します。

#### このツールに登録されている企業のみが入札に招待されます。

- ステップ 3・入札評価プロセス 入札者の提案は、IOの公平な評価委員会によって評価されます。入札者は、技術的範囲に沿って、かつ、RFPに記載された特定の基準に従って作業を実施するために、技術的遵守を証明する詳細を提供しなければなりません。
- ▶ ステップ 4-落札

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

#### ○概略日程

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6月19日
関心表明フォームの提出	2024年7月3日
iPROC での入札への招待 (ITT) の発行	2024年7月4日
明確化のための質問の締め切り	2024年8月1日
明確化のための質問への回答締め切り	2024年8月8日
入札提出	2024年8月15日
契約授与	2024年9月
契約調印	2024年9月

#### ○契約期間と実行

ITER機構は2024年の9月ごろ供給契約を授与する予定です。予想される契約期間は12か月の予定です。

#### ○経験

契約者は、IOの規則と安全性の要求に十分に準拠する能力と経験を持っていることを示す必要があります。

#### ○候補

参加は、個人またはグループ/コンソーシアムに参加するすべての法人に開放されます。法人とは、法 的権利及び義務を有し、ITER 加盟国内に設立された個人、企業又は機構をいいます。ITER 加盟国 は欧州連合(EURATOM メンバー)、日本、中華人民共和国、インド共和国、大韓民国、ロシア連邦 、アメリカ合衆国です。

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

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

コンソーシアムとして許可されるために、その点で含まれる法人はコンソーシアムの各メンバーをま とめる権限をもつリーダーをもたなければなりません。このリーダーはコンソーシアムの各目メンバ ーのために責任を負わなければなりません。 指名されたコンソーシアムのリーダーは、入札段階で、コンソーシアムのメンバーの構成を説明する 予定です。その後、候補者の構成は、いかなる変更も ITER 機構に通知することなく変更してはなり ません。かかる認可の証拠は、すべてのコンソーシアムメンバーの法的に授権された署名者が署名し た委任状の形式で、しかるべき時期に IO に提出しなければなりません。

どのコンソーシアムメンバーも IPROC に登録する必要があります。

【※ 詳しくは添付の英語版技術仕様書「PBS 45 Fiber Optic Patch Panels TKC (Tokamak Complex) First Plasma Scope」をご参照ください。】

ITER 公式ウェブ <u>http://www.iter.org/org/team/adm/proc/overview</u>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。



## PRIOR INDICATIVE NOTICE (PIN) OPEN TENDER SUMMARY IO/24/OT/ 10028957 /YLI

for

## PBS 45 Fiber Optic Patch Panels TKC (Tokamak Complex) First Plasma Scope

#### **Abstract**

The purpose of this summary is to provide prior notification of the IO's intention to launch a competitive Open Tender process in the coming weeks. This summary provides some basic information about the ITER Organisation, the technical scope for this tender, and details of the tender process for the procurement of PBS 45 Fiber Optic Patch Panels TKC First Plasma Scope.

## **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.

## 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 <u>www.iter.org</u>.

## 3 Scope of Work

The contractor shall supply the following products dedicated to network infrastructure: Pre-loaded patch panels with adaptors (19" / 1U).

PNI	Description	РС	QC	Qty.
I17240196	Pre-loaded patch panel 1 Unit high with 12x duplex LC fix adapters	Non-PIC	QC3	600
I17240197	Pre-loaded patch panel 1 Unit high with 24x duplex LC fix adapters	Non-PIC	QC3	600
I17437413	Pre-loaded patch panel 1 Unit high with 48x duplex LC adapters (4 modules, 12 duplex LC ports each)	Non-PIC	QC3	350

Bill of Quantities as follows:

For more details, please see attached Technical Specification TS\_B6R8XP\_v1\_1 and the dedicated technical specification requirements for each PNI as follows:

I17240196 - Pre-loaded patch panel 1 Unit high with 12x duplex LC fix adapters – TS\_924UVB v1.2

I17240197 - Pre-loaded patch panel 1 Unit high with 24x duplex LC fix adapters – TS\_93LP29 v1.1

117437413 - Pre-loaded patch panel 1 Unit high with 48x duplex LC adapters (4 modules, 12 duplex LC ports each) – TS\_8NUHRB v1.2

## 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 Information Notice (PIN)

The Prior Information Notice is the first stage of the Open Tender process. The IO formally invites interested Suppliers to indicate their interest in the competitive process by returning to the Procurement officer in charge the attached "Expression of Interest and PIN Acknowledgement" by the date indicated under the procurement timetable.

#### Special attention:

Interested tenderers are kindly requested to register in the IO Ariba e-procurement tool called "IPROC". You can find all links to proceed along with instruction going to: https://www.iter.org/fr/proc/overview.

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

Step 2 - Invitation to Tender

After the deadline of expression of interest (as shown in the Procurement Time table) following the publication of the PIN, the Request for Proposals (RFP) will be published on our digital tool "Iproc". This stage allows interested bidders who have indicated their interest to the Procurement Officer in charge AND who have registered in IPROC to receive the notification that the RFP is published. They will then prepare and submit their proposals in accordance with the tender instructions detailed in the RFP.

#### Only companies registered in this tool will be invited to the tender.

Step 3 – Tender Evaluation Process

Tenderers proposals will be evaluated by an impartial evaluation committee of the IO. Tenderers must provide details demonstrating their technical compliance to perform the work in line with the technical scope and in accordance with the particular criteria listed in the RFP.

Step 4 – Contract Award

A Supply contract will be awarded on the basis of lowest price technically compliant according to the evaluation criteria and methodology described in the RFP.

#### **Procurement Timetable**

The tentative timetable is as follows:

Milestone	Date
Publication of the Prior Indicative Notice (PIN)	19/06/2024
Submission of expression of interest form	03/07/2024
Invitation to Tender (ITT) launched on iPROC	04/07/2024
Clarification Questions Deadline	01/08/2024
Clarification Response Deadline	08/08/2024
Tender Submission	15/08/2024

Contract Award	September 2024
Contract Signature	September 2024

## 5 Quality Assurance Requirements

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

## 6 Contract Duration and Execution

The ITER Organization shall award the Supply Contract around September 2024. The contract duration shall be 12 months.

## 7 Experience

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

## 8 Candidature

Participation is open to all legal entities participating either individually or in a grouping/consortium. A legal entity is an individual, company, or organization that has legal rights and obligations and is established within an ITER Member State, being, the European Union (represented by EURATOM), Japan, the People's Republic of China, India, the Republic of Korea, the Russian Federation and the USA.

Legal entities cannot participate individually or as a consortium partner in more than one application or tender of the same contract. A consortium may be a permanent, legally established grouping, or a grouping which has been constituted informally for a specific tender procedure. All members of a consortium (i.e. the leader and all other members) are jointly and severally liable to the ITER Organization.

In order for a consortium to be acceptable, the individual legal entities included therein shall have nominated a leader with authority to bind each member of the consortium, and this leader shall be authorised to incur liabilities and receive instructions for and on behalf of each member of the consortium.

It is expected that the designated consortium leader will explain the composition of the consortium members in its offer. Following this, the Candidate's composition must not be modified without notifying the ITER Organization of any changes. Evidence of any such authorisation shall be submitted to the IO in due course in the form of a power of attorney signed by legally authorised signatories of all the consortium members.

All consortium members shall be registered in IPROC.

## 9 Sub-contracting Rules

All sub-contractors who will be taken on by the Contractor shall be declared with the tender submission in IPROC. Each sub-contractor will be required to complete and sign forms including technical and administrative information which shall be submitted to the IO by the tenderer as part of its tender.

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

The IO reserves the right to approve (or disapprove) any sub-contractor which was not notified in the tender and request a copy of the sub-contracting agreement between the tenderer and its subcontractor(s). Rules on sub-contracting are indicated in the RFP itself.



To: Domestic Agencies (DAs)

## IO Tender Reference: IO/24/OT/ 10028957 /YLI

#### Title: PBS 45 Fiber Optic Patch Panels TKC First Plasma Scope

#### Subject: Prior Indicative Notice (PIN)

Dear colleagues,

The ITER Organization intends to launch an Open Tender process in the coming weeks as indicated above and in accordance with the details in the attached Prior Indicative Notice (PIN). In this regard, and to provide some introductory information about the forth-coming tender, we kindly request the attached PIN and Technical Specification (titled as "OT - PBS 45 Fiber Optic Patch Panels TKC First Plasma Scope" with IDM ref\_B6R8XP\_v1\_1) and its applicable technical requirement documents (924UVB\_v1\_2 & 93LP29\_v1\_1 & 8NUHRB v1\_2) to be published on your DA website with immediate effect for a period of 10 working days..

china

india

japan

korea

russia

usa

eu

The advance notification is to alert companies, institutions or other eligible entities to the forthcoming tender, and provide information to promote healthy competition, allowing interested parties time to decide whether to participate in the tender or not.

Please could you kindly acknowledge receipt of this e-mail and confirm once the PIN is published on your website.

Yours sincerely

Ye Li

Assistant Buyer Construction, Assembly & Logistics Section Procurement Division

## ANNEX I

## EXPRESSION OF INTEREST & PIN ACKNOWLEDGEMENT

To be returned by e-mail to: <u>Ye.Li@iter.org</u> with copy to <u>Andrew.Brown@iter.org</u>

TENDER	No.	IO/24/OT/ 10028957 /YLI
DESIGNA	TION of SERVICES:	Procurement of PBS 45 Fiber Optic Patch Panels TKC First Plasma Scope.
OFFICER	IN CHARGE:	Ye LI – Procurement Division ITER Organization
	WE ACKNOWLEDGE MENTIONED TENDER	HAVING READ THE PIN NOTICE FOR THE ABOVE $R$
	WE INTEND TO SUB	/IT A TENDER
Are you re	egistered in Iproc (only e	entities registered in Iproc will be invited to tender): YES NO, but we shall register before the tender launch
	Signature:	COMPANY STAMP
	Name:	
	Position:	
	Tel:	
	E-mail	
	Date:	



IDM UID

### version created on / version / status 30 May 2024 / 1.1 / Approved

EXTERNAL REFERENCE / VERSION

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

## Technical Specification - OT - PBS 45 Fiber Optic Patch Panels TKC First Plasma Scope

Technical Specification - OT - PBS 45 Fiber Optic Patch Panels TKC First Plasma Scope

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## 1 Preamble

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

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

## 2 Purpose

This technical specification is to define technical and managerial requirements of the ITER Organization (IO) under a supply contract for fiber optic pre-loaded patch panels as described in the Scope of Work section.

## **3** Acronyms & Definitions

## 3.1 Acronyms

Abbreviation	Description
МТО	Material Take Off
CRO	Contract Responsible Officer
GM3S	General Management Specification for Service and Supply
ΙΟ	ITER Organization
PRO	Procurement Responsible Officer

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

## **3.2** Definitions

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

**Pre-loaded patch panel:** shall mean a pre-assembled patch panel, delivered in one single dedicated box including all related sub-components and parts as defined in the relevant specifications [ref. 2, 3 & 4].

## 4 Applicable Documents & Codes and standards

## 4.1 Applicable Documents

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

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

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

Ref	Title	IDM Doc ID	Version
1	General Management Specification for Service and Supply (GM3S)	82MXQK	1.4
2	Technical Specifications for PBS45 patch panel 12 duplex LC fix ports 1 unit for the Central network infrastructure	924UVB	1.2
3	Technical Specifications for PBS45 patch panel 24 duplex LC fix ports 1 unit for the Central network infrastructure	93LP29	1.1
4	Technical Specifications for PBS45 patch panel 96 F.O. strands 1 unit for the Central network infrastructure	8NUHRB	1.2
5			

## 4.2 Applicable Codes and Standards

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

Ref	Title	Doc Ref.	Version
CS1	IEC 61754 Fibre optic interconnecting devices and	Applicable	2013
	passive components	sections	
CS2			

## 5 Scope of Work

This section defines the specific scope of work, in addition to the contract execution requirement as defined in Ref [1].

## 5.1 Scope of Supply #1

### 5.1.1 Description

The contractor shall supply the following products dedicated to network infrastructure:

• Pre-loaded patch panels with adaptors (19" / 1U)

## 5.1.2 Bill of Quantities

PNI	Description	PC	QC	Qty.
I17240196	Pre-loaded patch panel 1 Unit high with 12x duplex LC fix adapters	Non-PIC	QC3	600
I17240197	Pre-loaded patch panel 1 Unit high with 24x duplex LC fix adapters	Non-PIC	QC3	600
I17437413	Pre-loaded patch panel 1 Unit high with 48x duplex LC adapters (4 modules, 12 duplex LC ports each)	Non-PIC	QC3	350

## 5.1.3 Technical requirements

For full details on the applicable technical requirements please use references [2,3 & 4] as follows:

## 5.1.3.1 I17240196 - Pre-loaded patch panel 1 Unit high with 12x duplex LC fix adapters

Refer to [2]: "Technical Specifications for PBS45 patch panel 12 duplex LC fix ports 1 unit for the Central network infrastructure" **924UVB v1.2** 

## **5.1.3.2 I17240197 - Pre-loaded patch panel 1 Unit high with 24x duplex LC fix adapters** Refer to [3]: "Technical Specifications for PBS45 patch panel 24 duplex LC fix ports 1 unit for the Central network infrastructure" **93LP29 v1.1**

## 5.1.3.3 117437413 - Pre-loaded patch panel 1 Unit high with 48x duplex LC adapters (4 modules, 12 duplex LC ports each)

Refer to [4]: "Technical Specifications for PBS45 patch panel 96 F.O. strands 1 unit for the Central network infrastructure" **8NUHRB v1.2** 

## 5.1.4 *Quality Control Provisions*

Each patch panel shall be verified before packaging and include a signed QC checklist as follows:

## 5.1.4.1 I17240196 - Pre-loaded patch panel 1 Unit high with 12x duplex LC fix adapters Refer to Appendix #1 Checklist

5.1.4.2 I17240197 - Pre-loaded patch panel 1 Unit high with 24x duplex LC fix adapters Refer to Appendix #2 Checklist

## 5.1.4.3 I17437413 - Pre-loaded patch panel 1 Unit high with 48x duplex LC adapters (4 modules, 12 duplex LC ports each)

Refer to Appendix #3 Checklist

## 5.1.5 Spare Parts

No spare parts are required part of this supply contract.

## 5.1.6 *Packing, preservation & shipping*

Each pre-loaded patch panel shall be packaged in its own individual box which should include the following:

- Inside:
  - o Pre-loaded patch panel
  - o Identification Sheet with subparts Bill of Quantities
  - o QC pre-loading checklist signed
- Outside:
  - o Label with the applicable PNI / Description as mentioned in section 5.1.2

## 5.1.7 Delivery Time

The maximum expected duration from the contract signature to the supply of the scope of work is 4 (four) months.

## 6 Location for Scope of Work Execution

The Contractor shall perform the work at their own location and deliver products preassembled as indicated.

## 7 IO Documents & IO Free issue items

No input nor free issue item is expected from IO.

## 8 List of deliverables

The Supplier shall provide IO with the documents and data required in the application of this technical specification, the GM3S Ref[1] and any other requirement derived from the application of the contract.

Additionally to GM3S Ref [1] you can find here below a minimum list of documents, but not limited to, that are required within the expected timing:

Technical Design Family (TDF)	Generic Document Title (GTD)	Further Description	Expected Timing (T0+x) *
Datasheet	DS	Manufacturer Datasheet	T0+2
Certificate	COC	Certificate of Conformity	2 weeks before delivery
List	PL	Packing List	1 week before delivery
Requirements	StR	Storage Requirements	1 week before delivery
Manual	IMM	Installation & Maintenance Manuals	1 week before delivery
Note	RN	Release Note	1 week before delivery
Checklist	QCC	QC Checklist	At delivery inside each package

(\*) T0 = Commencement Date of the contract; x in weeks.

Supplier shall prepare their document schedule based on the above and using the template available in the GM3S Ref [1] appendix II (click here to download).

## 9 Quality Assurance requirements

The Quality class under this contract is [QC3], [Ref 1] GM3S section 7 applies in line with the defined Quality Class.

## **10** Safety requirements

The scope under this contract does not cover for PIC and/or PIA and/or PE/NPE components.

## **11 Specific General Management requirements**

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

## **11.1** CAD design requirements

This contract does not imply CAD activities.

## **11.2** [ANY OTHER SPECIFICITIES]

N/A

## **12** Appendices

## 12.1 Appendix #1 Pre-loading completion checklist for I17240196 - Preloaded patch panel 1 Unit high with 12x duplex LC fix adapters

ID	Check List	Result	Note
1	Is the rack mounting kit installed in the patch panel chassis?	Yes□ No□	
2	Are there minimum 4 cable entries in the back side of the patch panel?	Yes□ No□	
3	Are the 12 duplex LC adapters installed in the patch panel chassis?	Yes□ No□	
4	Are the 12 duplex LC adapters numbered?	Yes□ No□	
5	Is the splicing tray (24 fibers) installed in the patch panel chassis?	Yes□ No□	
6	Is the first splicing tray fixed (e.g. with nuts/screws) in the patch panel chassis?	Yes□ No□	
7	Is the splicing tray accessible at any time?	Yes□ No□	
8	Are the cable glands (2 pcs) placed inside the patch panel chassis in a dedicated bag?	Yes□ No□	
9	Are the cable glands fitting properly the patch panel back entries?	Yes□ No□	
10	Is the cable gland for 7mm to 14mm cable diameter?	Yes□ No□	
11	Are the cable entries covers (3 pcs) placed inside the patch panel chassis in a dedicated bag?	Yes□ No□	
12	Are the cable managers, screws, nuts, cable ties, etc. placed inside the patch panel chassis in a dedicated bag?	Yes□ No□	
13	Is the Fiber Optic Splice Protection Sleeves size 2.5mm x 45mm?	Yes□ No□	
14	Do the Fiber Optic Splice Protection Sleeves fit properly to the splicing tray?	Yes□ No□	
15	The Fiber Optic Splice Protection Sleeves are 24?	Yes No	
16	Are the Fiber Optic Splice Protection Sleeves placed inside the patch panel chassis in a dedicated bag?	Yes□ No□	

## **Contractor QC Signature**

Date

## 12.2 Appendix #2 Pre-loading completion checklist for I17240197 - Preloaded patch panel 1 Unit high with 24x duplex LC fix adapters

ID	Check List	Result	Note
1	Is the rack mounting kit installed in the patch panel chassis?	Yes□ No□	
2	Are there minimum 4 cable entries in the back side of the patch panel?	Yes□ No□	
3	Are the 24 duplex LC adapters installed in the patch panel chassis?	Yes□ No□	
4	Are the 24 duplex LC adapters numbered?	Yes□ No□	
5	Are the splicing trays (2 x 24 fibers) installed in the patch panel chassis?	Yes□ No□	
6	Is the first splicing tray fixed (e.g. with nuts/screws) in the patch panel chassis?	Yes□ No□	
7	Are the splicing trays accessible at any time?	Yes□ No□	
8	Are the cable glands (2 pcs) placed inside the patch panel chassis in a dedicated bag?	Yes□ No□	
9	Are the cable glands fitting properly the patch panel back entries?	Yes□ No□	
10	Are the cable glands for 7mm to 14mm cable diameter?	Yes□ No□	
11	Are the cable entries covers (3 pcs) placed inside the patch panel chassis in a dedicated bag?	Yes□ No□	
12	Are the cable managers, screws, nuts, cable ties, etc. placed inside the patch panel chassis in a dedicated bag?	Yes□ No□	
13	Is the Fiber Optic Splice Protection Sleeves size 2.5mm x 45mm?	Yes□ No□	
14	Do the Fiber Optic Splice Protection Sleeves fit properly to the splicing tray?	Yes□ No□	
15	The Fiber Optic Splice Protection Sleeves are 48?	Yes□ No□	
16	Are the Fiber Optic Splice Protection Sleeves placed inside the patch panel chassis in a dedicated bag?	Yes□ No□	

## **Contractor QC Signature**

Date

12.3 Appendix #3 Pre-loading completion checklist for 5.1.4.3 I17437413 - Pre-loaded patch panel 1 Unit high with 48x duplex LC adapters (4 modules, 12 duplex LC ports each)

ID	Check List	Result	Note
1	Is the rack mounting kit installed in the patch panel chassis?	Yes□ No□	
2	Are there minimum 4 cable entries in the back side of the patch panel?	Yes□ No□	
3	Are the 4 LC modules installed in the patch panel chassis?	Yes□ No□	
4	Are the 4 LC modules equipped with 12 duplex LC adapters each?	Yes□ No□	
5	Are the 4 LC modules adapters numbered?	Yes□ No□	
6	Are the 4 splicing trays installed in the patch panel chassis?	Yes□ No□	
7	Is the first splicing tray fixed (e.g. with nuts/screws) in the patch panel chassis?	Yes□ No□	
8	Are all the splicing trays accessible without having to disassemble the stack?	Yes□ No□	
9	Are the cable glands (2 pcs) placed inside the patch panel chassis in a dedicated bag?	Yes□ No□	
10	Are the cable glands fitting properly the patch panel back entries?	Yes□ No□	
11	Is the cable gland for 13mm to 18mm cable diameter?	Yes□ No□	
12	Are the cable entries covers (3 pcs) placed inside the patch panel chassis in a dedicated bag?	Yes□ No□	
13	Are the cable managers, screws, nuts, cable ties, etc. covers placed inside the patch panel chassis in a dedicated bag?	Yes□ No□	
14	Is the Fiber Optic Splice Protection Sleeves size 2.5mm x 45mm?	Yes□ No□	
15	Do the Fiber Optic Splice Protection Sleeves fit properly to the splicing tray?	Yes□ No□	
16	The Fiber Optic Splice Protection Sleeves are 96?	Yes□ No□	
17	Are the Fiber Optic Splice Protection Sleeves placed inside the patch panel chassis in a dedicated bag?	Yes□ No□	

## **Contractor QC Signature**

Date



## IDM UID **8NUHRB**

version created on / version / status 29 May 2024 / 1.2 / Approved

EXTERNAL REFERENCE / VERSION

## Manufacturing execution document

## **Technical Specifications for PBS45 patch panel 96 F.O. strands 1 unit for the Central network infrastructure**

This document is the tech spec for the patch panel 96 F.O. strands in 1 unit high

Approval Process						
	Name Action Affiliation					
Author	Sgarbi M.	29 May 2024:signed	IO/DG/CP/CIC/DCS			
Co-Authors						
Reviewers	Wilhelm B.	29 May 2024:recommended	IO/DG/CP/CIC/DCS			
Approver	Wallander A.	29 May 2024:approved	IO/DG/CP/CIC			
Document Security: Non-public - Unclassified						
	RO: Wilhelm Bjoern					
Read Access	Read Access AD: ITER, AD: External Collaborators, AD: IO_Director-General, AD: External Management Advisory					
Board, AD: IDM_Controller, AD: OBS - Data, Connectivity and Software Project (DCS), AD: Auditors, AD:						
ITER Management Assessor, project administrator, RO						

Change Log				
Technical Specifications for PBS45 patch panel 96 F.O. strands 1 unit for the Central network infrastructure (8NUHRB)				
Version	Latest Status	Issue Date	Description of Change	
v1.0	Approved	31 Mar 2023		
v1.1	Approved	04 May 2023	Requirements improvement. Addition of the Annex A	
v1.2	Approved	29 May 2024	Few typos have been corrected.	

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## 1 Purpose

This technical specification is to define the technical requirements for the supply of PBS-45 modular patch panels 96 F.O. strands 1 unit high for the Central I&C network infrastructure.

## 2 Scope

The supplier shall provide the following products for the network infrastructure.

## **3** Definitions

Term	Definition
BOM	Bill Of Material
CODAC	Control, Data Access and Communication
COTS	Commercial off the shelf
I&C	Instrumentation and Control
IO	ITER Organization
PBS	Plant System Breakdown
PIC	Protection Important Component
QC	Quality Control
SM	Single-Mode
SMF	Single-Mode Fiber

For a complete list of ITER abbreviations see: ITER Abbreviations (ITER\_D\_2MU6W5).

## **4** References

[RD01]. XXXX

## 5 Requirements and conditions

## 5.1 Technical requirements

#### 5.1.1 General requirements

- [REQ-PTH-001] The patch panel shall be 19-inch.
- [REQ-PTH-002] The patch panel shall have a Removable Top Cover.
- [REQ-PTH-003] The patch panel shall be modular.
- [REQ-PTH-004] The patch panel shall be pre-assembled (LC/UPC/OS connectors, splicing trays, rack-mounting kit).
- [REQ-PTH-005] All the remaining components dedicated to a single patch panel that cannot be pre-assembled by the supplier prior to delivery to IO (such as: screws, nuts, cable glands, cable managers, Splice Protection Sleeves, etc. etc.) shall be placed inside each patch panel chassis in dedicated bags.

#### 5.1.2 Cubicle support requirements

[REQ-PTH-006] Each patch panel shall be provided with a Rack mounting kit (side brackets), pre-assembled on the patch panel chassis.

#### 5.1.3 Cable entry requirements

- [REQ-PTH-007] The patch panel shall be equipped with minimum four (4) cable entry holes, two on the left side and two on the right side in the rear of the patch panel chassis.
- [REQ-PTH-008] These four (4) entries shall be sized to accommodate cable glands that can fit cable diameters between 13mm and 18mm.
- [REQ-PTH-009] The related two (2) cable glands and three (3) blind covers shall be provided un-assembled and placed in a dedicated bag inside each patch panel chassis.

#### 5.1.4 LC/UPC Modules requirements

- [REQ-PTH-010] The modules shall be four (4), twelve (12) duplex LC/UPC/OS2 adapters each.
- [REQ-PTH-011] The adapters shall be numbered from bottom left to top right.

[REQ-PTH-012] The modules shall be provided pre-assembled on the front panel with the capability of being removable at any time.

#### 5.1.5 Splicing trays requirements

- [REQ-PTH-013] The splicing trays shall be four (4), for twenty-four (24) fibers each.
- [REQ-PTH-014] The splicing trays shall stackable, one bonded to the other element.
- [REQ-PTH-015] The splicing trays shall be provided pre-assembled with the first element of the pile from the bottom fixed to the patch panel chassis with screw and/or nuts.
- [REQ-PTH-016] The splicing tray pile shall be able to be opened from one side, at any time.
- [REQ-PTH-017] The splicing trays shall be adapted for the Fiber Optic Splice Protection Sleeves size [REQ-PTH-022]
- 5.1.6 Accessories requirements
  - [REQ-PTH-018] The patch panels shall be equipped with cable managers.
  - [REQ-PTH-019] The patch panels shall be equipped with two (2) cable glands, for 13mm to 18mm cables diameter.
  - [REQ-PTH-020] The patch panel shall be equipped with removable covers for not used cables entries.
  - [REQ-PTH-021] The patch panels shall be equipped with all the necessary screws and nuts to fix the rack mounting kit, the splicing trays, the LC/UPC adapter modules and all the components that need to be fixed.
  - [REQ-PTH-022] The patch panel shall be equipped with 96 Fiber Optic Splice Protection Sleeves (2.5mm x 45mm).

## 5.1.7 Component requirements sample

This section aims to provide a general overview of all the patch panel components in order to facilitate the comprehension of the requirement reported in the previous sections:

<b>Description/Function</b>	Sample
Rack mounting kit – Can be either directly incorporated to the patch panel chassis or a separated component that shall be fixed to the patch panel chassis sides.	
Cable entry – From rear side	
Cable glands for 13mm to 18mm cables diameter	Lock NutWasherBodySealSealing NutOOO <t< td=""></t<>

Cable entries cover	
LC/UPC/OS2 modules (12 duplex LC adapters)	
Splicing trays – The first tray shall be Fixed to the patch panel chassis, and they shall be stackable	





## 5.2 Fiber optic and accessories compatibility

Fiber optic cables and all their related connectivity accessories should originate from the same manufacturer in order to minimize compatibility issues.

## 5.3 Materials and lifetime

All products shall be new and of the highest quality. All products shall be designed, manufactured, tested and supplied in accordance with the specification, and the applicable standards as mentioned.

## 6 Bill of Material

The below table shows all the necessary components to build the modular patch panel 96 F.O. strands 1 unit high.

All the components are grouped in one single PNI I17437413 that represent the pre-assembled patch panel:

Item	Description	PIC	QC	ITER Reference	Quantity	Assembled
	Pre-assembled patch panel 1 Unit high with 48x duplex LC adapters (modular)	Non- PIC	QC3	I17437413		
1	Patch panel chassis 1 Unit high with 4 slots for duplex LC adapter modules				1 pcs	
2	Rack mounting kit				1 kit	Pre-assembled
3	12 duplex LC/UPC adapter modules				4 pcs	Pre-assembled
4	24 Fibers Optical Splice Tray				4 pcs	Pre-assembled
6	Cable gland for 13mm to 18mm cables diameter				2 pcs	Dedicated bag
7	Cable managers				1 kit	Dedicated bag
8	Screws and nuts				1 kit	Dedicated bag
9	Cable entries covers				3 pcs	Dedicated bag
10	2.5 x 45mm Fiber Optic Splice Protection Sleeve-Single Fiber				96 pcs	Dedicated bag

## Annex A

The following table is the checklist that should guarantee the QA during the FAT and/or SAT for the provisioning of the patch panels:

ID	Check List	Result	Note
1	Is the rack mounting kit installed in the patch panel chassis?	Yes□ No□	
2	Are there minimum 4 cable entries in the back side of the patch panel?	Yes□ No□	
3	Are the 4 LC modules installed in the patch panel chassis?	Yes□ No□	
4	Are the 4 LC modules equipped with 12 duplex LC adapters each?	Yes□ No□	
5	Are the 4 LC modules adapters numbered?	Yes□ No□	
6	Are the 4 splicing trays installed in the patch panel chassis?	Yes□ No□	
7	Is the first splicing tray fixed (e.g. with nuts/screws) in the patch panel chassis?	Yes□ No□	
8	Are all the splicing trays accessible without having to disassemble the stack?	Yes□ No□	
9	Are the cable glands (2 pcs) placed inside the patch panel chassis in a dedicated bag?	Yes□ No□	
10	Are the cable glands fitting properly the patch panel back entries?	Yes□ No□	
11	Is the cable gland for 13mm to 18mm cable diameter?	Yes□ No□	
12	Are the cable entries covers (3 pcs) placed inside the patch panel chassis in a dedicated bag?	Yes□ No□	
13	Are the cable managers, screws, nuts, cable ties, etc. covers placed inside the patch panel chassis in a dedicated bag?	Yes□ No□	
14	Is the Fiber Optic Splice Protection Sleeves size 2.5mm x 45mm?	Yes□ No□	
15	Do the Fiber Optic Splice Protection Sleeves fit properly to the splicing tray?	Yes□ No□	
16	The Fiber Optic Splice Protection Sleeves are 96?	Yes□ No□	
17	Are the Fiber Optic Splice Protection Sleeves placed inside the patch panel chassis in a dedicated bag?	Yes□ No□	



version created on / version / status 29 May 2024 / 1.1 / Approved

EXTERNAL REFERENCE / VERSION

## Manufacturing execution document

# Technical Specifications for PBS45 patch panel 24 duplex LC fix ports 1 unit for the Central network infrastructure

This document is the tech spec for the patch panel 24 duplex LC fix ports 1 unit high

Approval Process					
	Name	Action	Affiliation		
Author	Sgarbi M.	29 May 2024:signed	IO/DG/CP/CIC/DCS		
Co-Authors					
Reviewers	Wilhelm B.	29 May 2024:recommended	IO/DG/CP/CIC/DCS		
Approver	Wallander A.	29 May 2024:approved	IO/DG/CP/CIC		
		Document Security: Non-public - Un	classified		
	RO: Wilhelm Bjoern				
Read Access	ad Access AD: ITER, AD: External Collaborators, AD: IO_Director-General, AD: External Management Advisory				
	Board, AD: IDM_Controller, AD: OBS - Data, Connectivity and Software Project (DCS), AD: Auditors, AD:				
	ITER Management Assessor, project administrator, RO				

	Change Log				
<b></b>	10 .6 6				
I echnica	al Specifications fo	or PBS45 patch p	oanel 24 duplex LC fix ports 1 unit for the Central network infrastructure		
			(3311 23)		
Version	Latest Status	Issue Date	Description of Change		
v1.0	Approved	14 Jun 2023			
v1.1	Approved	29 May 2024	Few typos have been corrected.		

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## 1 Purpose

This technical specification is to define the technical requirements for the supply of PBS-45 patch panels 24 duplex LC ports 1 unit high for the Central I&C network infrastructure.

## 2 Scope

The supplier shall provide the following products for the network infrastructure.

## **3** Definitions

Term	Definition
BOM	Bill Of Material
CODAC	Control, Data Access and Communication
COTS	Commercial off the shelf
I&C	Instrumentation and Control
IO	ITER Organization
PBS	Plant System Breakdown
PIC	Protection Important Component
QC	Quality Control
SM	Single-Mode
SMF	Single-Mode Fiber

For a complete list of ITER abbreviations see: ITER Abbreviations (ITER\_D\_2MU6W5).

## **4** References

[RD01]. XXXX

## 5 Requirements and conditions

## 5.1 Technical requirements

#### 5.1.1 General requirements

- [REQ-PTH-001] The patch panel shall be 19-inch.
- [REQ-PTH-002] The patch panels are made with a pull-out design for easy access to fibers and fiber splice trays.
- [REQ-PTH-003] The patch panel shall be pre-assembled (LC/UPC/OS connectors, splicing trays, rack-mounting kit).
- [REQ-PTH-004] All the remaining components dedicated to a single patch panel that cannot be pre-assembled by the supplier prior to delivery to IO (such as: screws, nuts, cable glands, cable managers, Splice Protection Sleeves, etc. etc.) shall be placed inside each patch panel chassis in dedicated bags.

#### 5.1.2 Cubicle support requirements

[REQ-PTH-005] Each patch panel shall be provided with a Rack mounting kit (side brackets), pre-assembled on the patch panel chassis.

#### 5.1.3 Cable entry requirements

- [REQ-PTH-006] The patch panel shall be equipped with minimum four (4) cable entry holes, two on the left side and two on the right side in the rear of the patch panel chassis.
- [REQ-PTH-007] These four (4) rear entries shall be sized to accommodate cable glands that can fit cable diameters between 7mm and 14mm.
- [REQ-PTH-008] The related two (2) cable gland and three (3) blind covers shall be provided un-assembled and placed in a dedicated bag inside each patch panel chassis.

#### 5.1.4 LC/UPC ports

- [REQ-PTH-009] The patch panel shall be equipped with twenty-four (24) duplex LC/UPC/OS2 fix adapters.
- [REQ-PTH-010] The adapters shall be fixed to the chassis with two (2) screws each.

- [REQ-PTH-011] The adapters shall be numbered from left to right.
- [REQ-PTH-012] The adapters shall be provided pre-assembled on the front panel with the capability of being removable at any time.

### 5.1.5 Splicing trays requirements

- [REQ-PTH-013] The splicing tray shall be two (2), for twenty-four (24) fibers each.
- [REQ-PTH-014] The splicing tray shall be fixed to the patch panel chassis with screw and/or nuts.
- [REQ-PTH-015] The splicing tray shall be able to be opened from one side, at any time.
- [REQ-PTH-016] The splicing trays shall be adapted for the Fiber Optic Splice Protection Sleeves size [REQ-PTH-021]

#### 5.1.6 Accessories requirements

- [REQ-PTH-017] The patch panels shall be equipped with cable managers.
- [REQ-PTH-018] The patch panels shall be equipped with two (2) cable glands, for 7mm to 14mm cables diameter.
- [REQ-PTH-019] The patch panel shall be equipped with removable covers for not used cables entries.
- [REQ-PTH-020] The patch panels shall be equipped with all the necessary screws and nuts to fix the rack mounting kit, the splicing tray, and all the components that need to be fixed.
- [REQ-PTH-021] The patch panel shall be equipped with 48 Fiber Optic Splice Protection Sleeves (2.5mm x 45mm).

## 5.1.7 Component requirements sample

This section aims to provide a general overview of all the patch panel components in order to facilitate the comprehension of the requirement reported in the previous sections:



Cable entries covers	
Splicing trays – The tray shall be Fixed to the patch panel chassis, and shall accommodate 24 fibers	
Fiber Optic Splice Protection Sleeves - (2.5mm x 45mm)	

Cable managers, screws and nuts	
Overall images – How the patch panel should look like once assembled	

## 5.2 Fiber optic and accessories compatibility

Fiber optic cables and all their related connectivity accessories should originate from the same manufacturer in order to minimize compatibility issues.

## 5.3 Materials and lifetime

All products shall be new and of the highest quality. All products shall be designed, manufactured, tested and supplied in accordance with the specification, and the applicable standards as mentioned.

## 6 Bill of Material

The below table shows all the necessary components to build the 1 Unit patch panel 24 duplex LC fix ports.

All the components are grouped in one single PNI I17240197 that represent the pre-assembled patch panel:

Item	Description	PIC	QC	ITER Reference	Quantity	Assembled
	Pre-assembled patch panel 1 Unit high with 24 duplex LC adapters	Non- PIC	QC3	I17240197		
1	Patch panel chassis 1 Unit high with 24 duplex LC adapter				1 pcs	

### ITER\_D\_93LP29 v1.1

2	Rack mounting kit		1 kit	Pre-assembled
3	Duplex LC/UPC adapter		24 pcs	Pre-assembled
4	Fibers Optical Splice Tray for 24 F.O.		2 pcs	Pre-assembled
6	Cable gland for 7mm to 14mm cables diameter		2 pcs	Dedicated bag
7	Cable managers		1 kit	Dedicated bag
8	Screws and nuts		1 kit	Dedicated bag
9	Cable entries covers		3 pcs	Dedicated bag
10	2.5 x 45mm Fiber Optic Splice Protection Sleeve-Single Fiber		48 pcs	Dedicated bag

## Annex A

The following table is the checklist that should guarantee the QA during the FAT and/or SAT for the provisioning of the patch panels:

ID	Check List	Result	Note
1	Is the rack mounting kit installed in the patch panel chassis?	Yes□ No□	
2	Are there minimum 4 cable entries in the back side of the patch panel?	Yes□ No□	
3	Are the 24 duplex LC adapters installed in the patch panel chassis?	Yes□ No□	
4	Are the 24 duplex LC adapters numbered?	Yes□ No□	
5	Are the splicing trays (2 x 24 fibers) installed in the patch panel chassis?	Yes□ No□	
6	Is the first splicing tray fixed (e.g. with nuts/screws) in the patch panel chassis?	Yes□ No□	
7	Are the splicing trays accessible at any time?	Yes□ No□	
8	Are the cable glands (2 pcs) placed inside the patch panel chassis in a dedicated bag?	Yes□ No□	
9	Are the cable glands fitting properly the patch panel back entries?	Yes□ No□	
10	Are the cable glands for 7mm to 14mm cable diameter?	Yes□ No□	
11	Are the cable entries covers (3 pcs) placed inside the patch panel chassis in a dedicated bag?	Yes□ No□	
12	Are the cable managers, screws, nuts, cable ties, etc. placed inside the patch panel chassis in a dedicated bag?	Yes□ No□	
13	Is the Fiber Optic Splice Protection Sleeves size 2.5mm x 45mm?	Yes□ No□	
14	Do the Fiber Optic Splice Protection Sleeves fit properly to the splicing tray?	Yes□ No□	
15	The Fiber Optic Splice Protection Sleeves are 48?	Yes□ No□	
16	Are the Fiber Optic Splice Protection Sleeves placed inside the patch panel chassis in a dedicated bag?	Yes No	



## IDM UID **924UVB**

version created on / version / status 29 May 2024 / 1.2 / Approved

EXTERNAL REFERENCE / VERSION

### Manufacturing execution document

# Technical Specifications for PBS45 patch panel 12 duplex LC fix ports 1 unit for the Central network infrastructure

This document is the tech spec for the patch panel 12 duplex LC fix ports 1 unit high

Approval Process				
	Name Action Affiliation			
Author	Sgarbi M.	29 May 2024:signed	IO/DG/CP/CIC/DCS	
Co-Authors				
Reviewers	Wilhelm B.	29 May 2024:recommended	IO/DG/CP/CIC/DCS	
Approver	Wallander A.	29 May 2024:approved	IO/DG/CP/CIC	
		Document Security: Non-public - Un	classified	
		RO: Wilhelm Bjoern		
Read Access	ead Access AD: ITER, AD: External Collaborators, AD: IO_Director-General, AD: External Management Advisory			
	Board, AD: IDM_Controller, AD: OBS - Data, Connectivity and Software Project (DCS), AD: Auditors, AD:			
ITER Management Assessor, project administrator, RO				

Change Log					
Technical Specifications for PBS45 patch panel 12 duplex LC fix ports 1 unit for the Central network infrastructure					
	(924UVB)				
Version	Latest Status	Issue Date	Description of Change		
v1.0	Approved	14 Jun 2023			
v1.1	Signed	29 May 2024	Few typos have been corrected.		
v1.2	Approved	29 May 2024	Addressed previous comment		

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## 1 Purpose

This technical specification is to define the technical requirements for the supply of PBS-45 patch panels 12 duplex LC ports 1 unit high for the Central I&C network infrastructure.

## 2 Scope

The supplier shall provide the following products for the network infrastructure.

## **3** Definitions

Term	Definition	
BOM	Bill Of Material	
CODAC	Control, Data Access and Communication	
COTS	Commercial off the shelf	
I&C	Instrumentation and Control	
IO	ITER Organization	
PBS	Plant System Breakdown	
PIC	Protection Important Component	
QC	Quality Control	
SM	Single-Mode	
SMF	Single-Mode Fiber	

For a complete list of ITER abbreviations see: ITER Abbreviations (ITER\_D\_2MU6W5).

## **4** References

[RD01]. XXXX

## 5 Requirements and conditions

## 5.1 Technical requirements

#### 5.1.1 General requirements

- [REQ-PTH-001] The patch panel shall be 19-inch.
- [REQ-PTH-002] The patch panels are made with a pull-out design for easy access to fibers and fiber splice trays.
- [REQ-PTH-003] The patch panel shall be pre-assembled (LC/UPC/OS connectors, splicing trays, rack-mounting kit).
- [REQ-PTH-004] All the remaining components dedicated to a single patch panel that cannot be pre-assembled by the supplier prior to delivery to IO (such as: screws, nuts, cable glands, cable managers, Splice Protection Sleeves, etc. etc.) shall be placed inside each patch panel chassis in dedicated bags.

#### 5.1.2 Cubicle support requirements

[REQ-PTH-005] Each patch panel shall be provided with a Rack mounting kit (side brackets), pre-assembled on the patch panel chassis.

#### 5.1.3 Cable entry requirements

- [REQ-PTH-006] The patch panel shall be equipped with minimum four (4) cable entry holes, two on the left side and two on the right side in the rear of the patch panel chassis.
- [REQ-PTH-007] These four (4) rear entries shall be sized to accommodate cable glands that can fit cable diameters between 7mm and 14mm.
- [REQ-PTH-008] The related two (2) cable glands and three (3) blind covers shall be provided un-assembled and placed in a dedicated bag inside each patch panel chassis.

## 5.1.4 LC/UPC ports

- [REQ-PTH-009] The patch panel shall be equipped with minimum twelve (12) duplex LC/UPC/OS2 fix adapters.
- [REQ-PTH-010] The adapters shall be fixed to the chassis with two (2) screws each.

- [REQ-PTH-011] The adapters shall be numbered from left to right.
- [REQ-PTH-012] The adapters shall be provided pre-assembled on the front panel with the capability of being removable at any time.

### 5.1.5 Splicing trays requirements

- [REQ-PTH-013] The splicing tray shall be one (1), for twenty-four (24) fibers each.
- [REQ-PTH-014] The splicing tray shall be fixed to the patch panel chassis with screw and/or nuts.
- [REQ-PTH-015] The splicing tray shall be able to be opened from one side, at any time.
- [REQ-PTH-016] The splicing trays shall be adapted for the Fiber Optic Splice Protection Sleeves size [REQ-PTH-021]

#### 5.1.6 Accessories requirements

- [REQ-PTH-017] The patch panels shall be equipped with cable managers.
- [REQ-PTH-018] The patch panels shall be equipped with two (2) cable glands, for 7mm to 14mm cables diameter.
- [REQ-PTH-019] The patch panel shall be equipped with removable covers for not used cables entries.
- [REQ-PTH-020] The patch panels shall be equipped with all the necessary screws and nuts to fix the rack mounting kit, the splicing trays, and all the components that need to be fixed.
- [REQ-PTH-021] The patch panel shall be equipped with 24 Fiber Optic Splice Protection Sleeves (2.5mm x 45mm).

## 5.1.7 Component requirements sample

This section aims to provide a general overview of all the patch panel components in order to facilitate the comprehension of the requirement reported in the previous sections:



Cable entries covers	000
Splicing trays – The tray shall be Fixed to the patch panel chassis, and shall accommodate 24 fibers	
Fiber Optic Splice Protection Sleeves - (2.5mm x 45mm)	



## 5.2 Fiber optic and accessories compatibility

Fiber optic cables and all their related connectivity accessories should originate from the same manufacturer in order to minimize compatibility issues.

## 5.3 Materials and lifetime

All products shall be new and of the highest quality. All products shall be designed, manufactured, tested and supplied in accordance with the specification, and the applicable standards as mentioned.

## 6 Bill of Material

The below table shows all the necessary components to build the 1 Unit patch panel 12 duplex LC fix ports.

All the components are grouped in one single PNI I17240196 that represent the pre-assembled patch panel:

Item	Description	PIC	QC	ITER Reference	Quantity	Assembled
	Pre-assembled patch panel 1 Unit high with 12 duplex LC adapters	Non- PIC	QC3	I17240196		

### ITER\_D\_924UVB v1.2

1	Patch panel chassis 1 Unit high with minimum 12 duplex LC adapter	1 pcs	
2	Rack mounting kit	1 kit	Pre-assembled
3	Duplex LC/UPC adapter	12 pcs	Pre-assembled
4	Fibers Optical Splice Tray for 24 F.O.	1 pcs	Pre-assembled
6	Cable gland for 7mm to 14mm cables diameter	2 pcs	Dedicated bag
7	Cable managers	1 kit	Dedicated bag
8	Screws and nuts	1 kit	Dedicated bag
9	Cable entries covers	3 pcs	Dedicated bag
10	2.5 x 45mm Fiber Optic Splice Protection Sleeve-Single Fiber	24 pcs	Dedicated bag

## Annex A

The following table is the checklist that should guarantee the QA during the FAT and/or SAT for the provisioning of the patch panels:

ID	Check List	Result	Note
1	Is the rack mounting kit installed in the patch panel chassis?	Yes□ No□	
2	Are there minimum 4 cable entries in the back side of the patch panel?	Yes□ No□	
3	Are the 12 duplex LC adapters installed in the patch panel chassis?	Yes□ No□	
4	Are the 12 duplex LC adapters numbered?	Yes□ No□	
5	Is the splicing tray (24 fibers) installed in the patch panel chassis?	Yes□ No□	
6	Is the first splicing tray fixed (e.g. with nuts/screws) in the patch panel chassis?	Yes□ No□	
7	Is the splicing tray accessible at any time?	Yes□ No□	
8	Are the cable glands (2 pcs) placed inside the patch panel chassis in a dedicated bag?	Yes□ No□	
9	Are the cable glands fitting properly the patch panel back entries?	Yes□ No□	
10	Is the cable gland for 7mm to 14mm cable diameter?	Yes□ No□	
11	Are the cable entries covers (3 pcs) placed inside the patch panel chassis in a dedicated bag?	Yes□ No□	
12	Are the cable managers, screws, nuts, cable ties, etc. placed inside the patch panel chassis in a dedicated bag?	Yes□ No□	
13	Is the Fiber Optic Splice Protection Sleeves size 2.5mm x 45mm?	Yes□ No□	
14	Do the Fiber Optic Splice Protection Sleeves fit properly to the splicing tray?	Yes□ No□	
15	The Fiber Optic Splice Protection Sleeves are 24?	Yes□ No□	
16	Are the Fiber Optic Splice Protection Sleeves placed inside the patch panel chassis in a dedicated bag?	Yes□ No□	