



## **Q&A – Clarifications to Vendor Queries on MAQAN QKD Nodes Tender**

### **1. Request for detailed QULLA specifications (Page 8, Point 18).**

**Vendor Query:**

*Please share the detailed QULLA specifications so we can propose the most suitable solution. Key Manager must comply with ETSI GS QKD 014. Any proprietary QULLA specifications should be supported as mentioned in Point 25.*

**Response:**

*The Key Manager must comply with ETSI GS QKD 014 and the QULLA specifications, as stated in the tender. These QULLA specifications shall be shared on request, as per Point 18 and Point 19 in the technical specification. Any modifications required to support proprietary QULLA specifications shall be undertaken as per Point 25 (feature enhancement support for 3 years).*

---

### **2. Maximum loss and fiber requirements: Vendor requested confirmation.**

**Vendor Query:**

*Maximum loss for a QKD link should be 20 dB, actual fiber <100 km. Both quantum and classical (1 Gbps) channels should run bidirectionally on the same fiber. Confirm?*

**Response:**

*Yes. 4 adjacent DWDM channels on a single fiber shall be provided to carry all signals—quantum, classical post-processing traffic, clock sync, OTDR, and 10 Gbps bidirectional data.*

*The channel loss tolerance is ~20 dB, and operational distance is  $\geq 100$  km as specified in Table 1.*



---

### **3. Classical channel interface: LC/PC**

**Vendor Query:**

*May the classical channel interface be LC/PC?*

**Response:**

*Yes, this can be considered. The tender specifies SC/APC, but LC/PC may be accepted based on compatibility with deployment fiber.*

---

### **4. Power requirements: 230 V AC or -48 V DC**

**Vendor Query:**

*Confirm whether the system should operate on 230 V AC or -48 V DC.*

**Response:**

*Both power options are acceptable. If the vendor has two versions, IITM CDoT Samgnya Hub will select the appropriate version based on field fiber specifications. Vendor shall supply the selected version accordingly.  
(Refer Table 1, Point 14.)*

---

### **5. System height relaxation up to 6U**

**Vendor Query:**

*Can the height restriction (max 4U) be relaxed to 6U?*

**Response:**

*Yes, this can be considered, depending on fiber provider's rack availability.  
Original specification: 19-inch rack mount chassis, max 4U.*

---



---

**6. Clarification on required physical topology (trusted relay / ring / star).**

**Vendor Query:**

*Please clarify which physical topology is required for each city; costs vary depending on topology.*

**Response:**

*The vendor may decide the supported topology for a 3-node network, ensuring cost-effective all-to-all connectivity.*

*This applies to Bengaluru, Hyderabad, and Indore.*

*(Refer Page 6, Fig. 1a and tender wording.)*

---

**7. Rack supply**

**Vendor Query:**

*Should bidders supply the rack? If yes, required height and wall-mount?*

**Response:**

*No. Rack will be provided by the tendering authority at the installation site.*

---

**8. Are Bangalore, Hyderabad, and Indore connected over a quantum link?**

**Response:**

*No. The tender consists of three independent MAQAN networks, each with 3 nodes in its respective city. No inter-city quantum links are specified.*

*(Refer tender scope.)*

---

**9. Fiber type (Dark Fiber)—with or without repeater?**

**Response:**

*A single dark fiber core with 4 adjacent DWDM channels will be provided. Point-to-point link loss must be within ~20 dB. No intermediate repeater is specified.*

*(Refer Table 1, Point 16.)*



---

**10. Distance between nodes in each city (Bengaluru/Hyderabad/Indore/Chennai).**

**Response:**

*Each point-to-point link shall operate within ~20 dB channel loss. Exact distance may vary but will fall within this tolerance.*

*Fiber routes will be provided before deployment.*

---

**11. Existing ETSI GS 014 QKD / SKIP-enabled router availability**

**Response:**

*No such router exists at present.*

*However, all Key Access mechanisms are defined in ETSI GS QKD 014 and tender specifications.*

*(Refer Table 1, Point 18.)*

---

**12. Is the RFP for production or testbed?**

**Response:**

- *Hyderabad, Bengaluru, Indore → Live production environments with real users.*
- *Chennai → Testbed / controlled experimental environment.*

---

**13. Request to include TEC “Type Approval” certificate as mandatory.**

**Response:**

*The tender lists all required certifications/standards.*

*Compliance shall be as per the existing tender requirements only.*

*No additional certifications are mandated beyond what is already specified.*

*(Refer to tender conditions.)*