

Tender notification for the procurement of
OKD System Assembly, Testing and Deployment

This is a **Request for quote (RFQ)** from **domestic (India-based) manufacturers only** for procurement of **OKD System Assembly, Testing and Deployment** at the department of Electrical Communication Engineering (ECE), Indian Institute of Science (IISc), Bangalore. This RFQ is from domestic (India-based) equipment manufacturers.

1	Section 1	Bid Schedule	
2	Section 2	Eligibility Criteria	As specified by IISc
3	Section 3	Terms and conditions	As specified by IISc
4	Section 4	Specifications	Technical specifications
5	Section 5	Technical Bid	Annexure 1: Bidder details Annexure 2: Declaration regarding experience of bidder Annexure 3: Declaration regarding clean track record of the bidder Annexure 4: Declaration of acceptance of tender Annexure 5: Terms and conditions. Details of item quoted
6	Section 6	Commercial Bid	Quotation with Price, Technical specifications of the equipment
7	Section 7	Check List	Check list of documents to be submitted

Section 1- Bid Schedule

- | | | |
|----|--|--|
| 1. | Tender No. | ECE/VR-602-2026 |
| 2. | Tender Date | 15th September 2026 |
| 3. | Item Description | Procurement of QKD System Assembly,
Testing and Deployment |
| 4. | Tender Type | Two bid system
i. Technical Bid (Part-A)
ii. Commercial Bid (Part-B) |
| 5. | Place of tender submission | Department of Electrical Communication
Engineering
Indian Institute of Science
Bangalore 560012 |
| 6. | Last Date & Time for
submission of tender | 6 th October 2026 at 5:00 PM |
| 7. | For further clarification | Prof. Varun Raghunathan
Associate Professor
ECE Department
Indian Institute of Science
Bangalore – 560012, India
Email: varunr@iisc.ac.in |

Section 2 – Eligibility Criteria

Pre-qualification criteria:

1. The Bidder's firm should have existed for a minimum of 2 years. (Enclose Company Registration Certificate)
2. The Bidder should belong to either a local manufacturer or a Class 1/ Class 2 supplier distinguished by their "*local content*" as defined by recent edits to GFR. They should mention clearly which class they belong to in the cover letter.
 - a) Class 1 supplier: Goods and services should have local content of equal to or more than 50%.
 - b) Class 2 supplier: Goods and services should have local content of equal to or more than 20% and less than 50%.
3. Purchase preference as defined by the recent edits to GFR (within the "margin of purchase preference") will be given to Class-1 supplier.
4. Quote should come only from Indian Original Equipment Manufacturer (OEM) or their Indian authorized distributor.
5. Bidders offering imported products will fall under the category of non-local suppliers. They cannot claim themselves as Class-1 local suppliers/Class-2 local suppliers by claiming the services such as transportation, insurance, installation, commissioning, training, and other sales service support like AMC/CMC, etc., as local value addition.
6. The quotations should be on FOR-IISc Bangalore basis in INR only.
7. MSME can seek exemption to some qualification criteria. IISc follows GFR2017 for such details
8. The bidder should sign and submit the declaration for Acceptance of Terms and Conditions as per -Annexure 4.
9. The Bidder must not be blacklisted/banned/suspended or have a record of any service-related dispute with any organization in India or elsewhere. A declaration to this effect must be given as per Annexure 3.

Section 3 – Terms and Conditions

(A) Submission of Tender:

1. All documentations in the tender should be in English.
2. Tender should be submitted in two envelopes (two bid system).
 - a. Technical Bid (Part-A) – Technical bid consisting of all technical details and check list for to technical specifications. The technical proposal should contain a technical compliance table with 5 columns:
 - i. The first column must list the technical requirements, in the order that they are given in the technical requirement below.
 - ii. The second column should provide specifications of the instrument against the requirement. Please provide quantitative responses wherever possible.
 - iii. The third column should describe your compliance with a “YES” or “NO” only. Ensure that the entries in column 2 and column 3 are consistent.
 - iv. The fourth column should state the reasons/explanations/context for deviations, if any.
 - v. The fifth column can contain additional remarks from the Indian Original Equipment Manufacturer (OEM) or from their distributors. You can use this opportunity to highlight technical features, qualify response of previous columns, or provide additional details, compare your solution with that of your competitors or provide details as requested in the technical requirements table below.
 - b. Commercial Bid (Part-B) – Indicating item wise price for the items mentioned in the technical bid, as per the format of quotation provided in tender, and other commercial terms and conditions.
3. The technical bid and price bid should each be placed in separate sealed covers, superscripting on both the envelopes the tender no. and the due date. Both these sealed covers are to be placed in a bigger cover which should also be sealed and duly superscripted with the Tender No, Tender Description & Due Date.
4. The SEALED COVER superscripting tender number / due date & should reach the Department of ECE, Indian Institute of Science, Bangalore 560012, India, on or before due date mentioned in the tender notice. In case due date happens to be holiday the tender will be accepted on the next working day. If the quotation cover is not sealed, it will be rejected.
5. All queries are to be addressed to the person identified in “Section 1 – Bid Schedule” of the tender notice.
6. GST/other taxes, levies etc., are to be indicated separately. The BIDDER should mention GST Registration and PAN in the tender document (Indian Bidders only).
7. If price is not quoted in Commercial Bid as per the format provided in tender document the bid is liable to be rejected.
8. The Institute reserves the right to accept or reject any bid and to annul the bidding process and reject all bids at any time prior to the award of contract, without there by incurring any

liability to the affected bidder or bidders or any obligation to inform the affected bidder or bidders.

9. The technical proposal must include references of at least 15 previous installations done within last 5 years of similar equipment from the equipment manufacturer. Please provide the names and contact addresses of the three independent referees, so that the committee can contact them independently to get references. Please provide the installation report.

10. Incomplete bids will be summarily rejected.

(B) Cancellation of Tender:

Notwithstanding anything specified in this tender document, IISc Bangalore, in its sole discretion, unconditionally and without having to assign any reason, reserves the rights:

- a. To accept OR reject lowest tender or any other tender or all the tenders.
- b. To accept any tender in full or in part.
- c. To reject the tender, offer not confirming to the tender terms.

(C) Validity of the offer:

The offer shall be valid 90 Days from the date of opening of the commercial bid.

(D) Evaluation of the offer:

1. The technical bid (Part A) will be opened first and evaluated.

2. Bidders meeting the required eligibility criteria as stated in Section 2 of this document shall only be considered for Commercial Bid (Part B) opening. Further, agencies not furnishing the documentary evidence as required will not be considered.

3. Pre-qualification of the bidders shall not imply final acceptance of the Commercial Bid. The agency may be rejected at any point during technical evaluation or during commercial evaluation. The decision in regard to acceptance and / or rejection of any offer in part or full shall be the sole discretion of IISc Bangalore, and decision in this regard shall be binding on the bidders.

4. The award of contract will be subject to acceptance of the terms and conditions stated in this tender.

5. Any offer which deviates from the vital conditions (as illustrated below) of the tender is liable to be rejected:

- a. Non-submission of complete offers.
- b. Receipt of bids after due date and time and or by email / fax (unless specified otherwise).
- c. Receipt of bids in open conditions.

6. In case any BIDDER is silent on any clauses mentioned in these tender documents, IISc Bangalore shall construe that the BIDDER had accepted the clauses as of the tender and no further claim will be entertained.

7. No revision in the terms and conditions quoted in the offer will be entertained after the last date and time fixed for receipt of tenders.

8. Lowest bid will be calculated based on the total price of all items tendered for Basic equipment along with accessories selected for installation, operation, pre-processing and post processing, optional items, recommended spares, warranty, annual maintenance contract.

(E) Pre-requisites:

The bidder will provide the prerequisite installation requirement of the equipment along with the technical bid.

(F) Warranty:

The complete system is to be under warranty period of minimum 1 year including free supply of consumables, spare parts, and data analysis software from the date of functional installation. Vendor should include cost of any spares that are expected to be needed during the warranty period, including electronics, subcomponents, and software. If the instrument is found to be defective, it must be replaced or rectified at the cost of the bidder within 30 days from the date of receipt of written communications from IISc, Bangalore. If there is any delay in replacement or rectification, the warranty period should be correspondingly extended.

(G) Purchase Order:

1. The order will be placed on the bidder whose bid is accepted by IISc based on the terms & conditions mentioned in the tender document.
2. The quantity of the items in tender is only indicative. IISc, Bangalore reserves the right to increase /decrease the quantity of the items depending on the requirement.
3. If the quality of the product and service provided is not found satisfactory, IISc, Bangalore reserves the right to cancel or amend the contract.

(H) Delivery, Installation and Training:

The bidder shall provide the lead time to delivery, installation and made functional at IISc, Bangalore from the date of receipt of purchase order. The system should be delivered, installed, and made functional within 9 months from the date of receipt of purchase order. The supply of the items will be considered as effected only on satisfactory installation and inspection of the system and inspection of all the items and features/capabilities tested by the IISc, Bangalore. After successful installation and inspection, the date of taking over of entire system by the IISc, Bangalore shall be taken as the start of the warranty period. No partial shipment is allowed. The bidder should also arrange for technical training to the local facility technologists and users.

(I) Payment Terms:

100% payments (except AMC) will be released after completion delivery and satisfactory installation subject to TDS as per rules. AMC cost (if ordered), after completion of warranty period will be released on half-yearly basis at the end of each six months subject to satisfactory services. Price basis must be on FOR-IISc Bangalore basis only. As per GFR no advance payment can be made to domestic vendors, unless an equal amount of bank guarantee is provided.

(J) Statutory Variation:

Any statutory increase in the taxes and duties subsequent to bidder's offer, if it takes place within the original contractual delivery date, will be borne by IISc, Bangalore subject to the claim being supported by documentary evidence. However, if any decrease takes place the advantage will have to be passed on to IISc, Bangalore.

(K) Dispute and Jurisdiction:

Any legal disputes arising out of any breach of contract pertaining to this tender shall be settled in the court of competent jurisdiction located within the city of Bangalore, India.

(L) General:

1. All amendments, time extension, clarifications etc., within the period of submission of the tender will be communicated electronically. No extension in the bid due date/time shall be considered on account of delay in receipt of any document(s) by mail.
2. The bidder may furnish any additional information, which is necessary to establish capabilities to successfully complete the envisaged work. It is however, advised not to furnish superfluous information.
3. The bidder may visit the installation site before submission of tender, with prior intimation.
4. Any information furnished by the bidder found to be incorrect, either immediately or at a later date, would render the bidder liable to be debarred from tendering/taking up of work in IISc, Bangalore.

Section 4 - Technical specifications

Technical Specifications – QKD System Assembly, Testing and Deployment

Please note that the requirements and options listed below are only guidelines. It does not disbar bids that do not meet the criteria listed. Vendors are requested to quote for equipment that meet the criteria to the best extent possible and list deviations. Deviations are NOT an automatic reason for disqualification. They will be discussed by the technical committee prior to making an informed decision.

Each QKD system meets the following high-level specifications

- Development of three-node and two-node topology ensuring cost-effective all-to-all connectivity.
- Performance: Finite size secure key rate ≥ 3 kbps
QBER $< 25\%$, operational distance 100 km over SMF-28
- Protocols: supports DPS, COW, TF, MDI or other proven protocols with security proofs.
- Architecture: Layered architecture including SDN agent, Key manager, Key pool, and Key Distillation Engine (KDE).
- Interoperability: Compliant with specifications and ETSI GS QKD standards

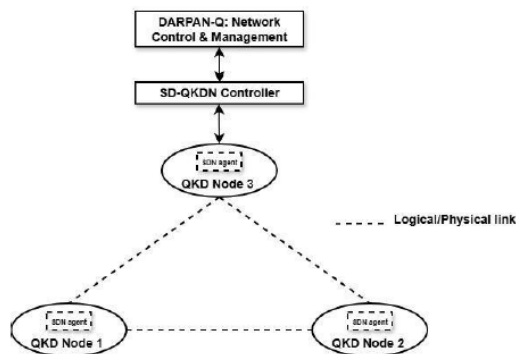


Fig. 1a. 3 Node Topology

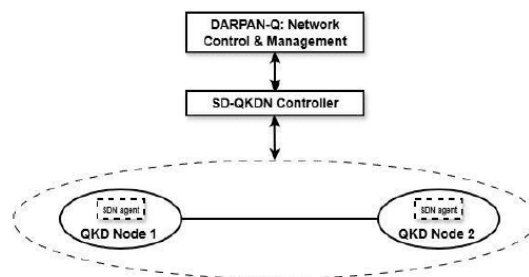


Fig. 1b. 2 Node Topology

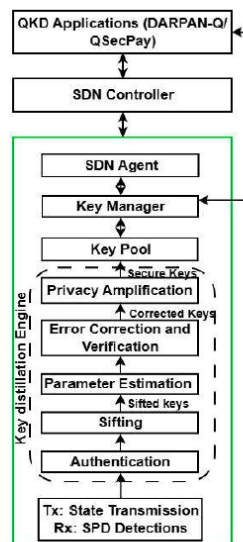


Fig. 2 Layered Architecture of a typical QKD node

Technical Specifications	Values/ Range
Item Name	QKD System – Assembly, Testing and Deployment
Topology	Three node and Two node Topology – ensuring const-effective all-to-all connectivity
Finite-size secure key rate	≥ 3 kbps
Maximum mean photon number	0.25
Quantum bit error rate (QBER)	$< 25\%$
Raw key block size for post-processing	5 Mbits (minimum)
Stability Parameters	QBER, secure key rate, key access attempts, with 1% failure to comply with the defined parameters, calculated each month
QKD Protocols	DPS, COW, TF, MDI or any other protocol with clear security proof
Quantum Operational Distance	100 km over SMF-28 fiber
Classical Operational Distance	100 km over SMF-28 fiber
Channel Loss Tolerance	~ 20 dB
Operational mode	Continuous and single instance based provisioning
System Interface	USB and Ethernet (1 Gbps) Debug Terminal, HDMI (optional)
Optimized Interface	SC Panel
Quantum Wavelength	ITU Grid
Fiber Type	SMF-28
Fiber Interface for Quantum Channel	SC/APC
Fiber Interface for Classical Channel	SC/ APC
Detector Type	SPAD in gated mode
Power Requirement	230 V, 50 Hz and 48 V DC operation
Mechanical Dimension Optical Unit	19-inch rack mount chassis Maximum 4U, Complaint to TEC/SD/DD/EMC-221/05/OCT-16
Wavelength Division Multiplexing	4 adjacent DWDM channels to carry all quantum, classical post-processing traffic, clock sync, OTDR channel and bidirectional data traffic at 10 Gbps
Key Pool	On node/ on-premise softcore TPM, TPM-based or better
Key manager and Key access	QKD node shall support node based key manager that shall comply with ETSI GS QKD 014 and QUILA specifications in this regard. The QUILA specifications shall be shared on request. Key access shall be request-response based.
SDN requirement	The SDN agent in the QKD node shall comply with QUILA controller specifications. The QUILA specifications shall be shared on request (operable as shown in figure 1)
Communication: SDN controller to SDN agent Key manager and user application	REST service and JSON data over as data. Encrypted and authenticated using Chacha20Poly1305 algorithm.

Vendor interoperability	All vendor nodes shall comply with the interoperability requirements set forth by the consortia.
PQC fail safe mechanism between each QKD pair	Yes
On node VPN access/ remote access	Yes

Other requirements:	
1.	Detailed test report supporting the above required specifications including laser spectrum, auto-correlation traces at all the wavelengths to be provided with the equipment at the time of delivery
2.	Expected performance data sheets to be included with the technical bid
3.	Compatible operating system(s) for the interface software should be specified. Suitable software drivers available should be specified and made available
4.	Please include other options currently available which can be added later
5.	Cost of shipping to Indian Institute of Science, Bangalore to be included
6.	Warranty terms to be specified in the commercial proposal and is subject to negotiations
7.	Payment terms to be specified in the commercial proposal and is subject to negotiations
8.	List of acceptance tests for on-site (vendor) inspection and after installation at IISc
9.	A set of basic experiments for performing routine checks of acceptable operation with clear instructions to be provided
10.	Please provide details of the number of trained personnel in India, number in southern region or in Bangalore who can service the instrument
11.	Service credentials: The supplier should have at least five similar installation in India. Customer list with contact details mandatory to prove your credential
12.	Authorisation letter from OEM manufacturer to be included
13.	Vendor must provide complete compliance statement against each technical specification and other requirements listed above

Section 5 – Technical Bid

The technical bid should furnish all requirements of the tender along with all annexures in this section and be submitted to:

The Chair, ECE Department
ATTN: Varun Raghunathan
Associate Professor
ECE department
Indian Institute of Science
Bangalore, Karnataka 560012
varunr@iisc.ac.in
Phone: +91-80-2293-3473

Annexure-1:

Details of the Bidder

The bidder must provide the following mandatory information & attach supporting documents wherever mentioned:

Details of the Bidder

Sl. No Items Details

1. Name of the Bidder
2. Nature of Bidder (Attach attested copy of Certificate of Incorporation/ Partnership Deed)
3. Registration No/ Trade License, (attach attested copy)
4. Registered Office Address
5. Address for communication
6. Contact person- Name and Designation
7. Telephone No
8. Email ID
9. Website
10. PAN No. (attach copy)
11. GST No. (attach copy)

Signature of the Bidder

Name

Designation

Seal Date:

Annexure-2:

Declaration regarding experience

To,
The Chair,
Dept. of Electrical Communication Engineering,
Indian Institute of Science,
Bangalore – 560012, India

Ref: Tender No: XXXXXXXXXX Dated: XXXXX
Supply and installation of “QKD System Assembly, Testing and Deployment” at ECE
Department, IISc Bangalore

Sir,
I've carefully gone through the Terms & Conditions contained in the above referred tender. I
hereby declare that my company / firm has ---- years of experience in
supplying and installing -----

(Signature of the Bidder)

Printed Name

Designation, Seal

Date:

Annexure-3:

Declaration regarding track record

To,
The Chair,
Dept. of Electrical Communication Engineering,
Indian Institute of Science,
Bangalore – 560012, India

Ref: Tender No: XXXXXXXXXX Dated: XXXXX
Supply and installation of “QKD System Assembly, Testing and Deployment” at ECE
Department, IISc Bangalore

Sir,
I've carefully gone through the Terms & Conditions contained in the above referred tender. I hereby declare that my company/ firm is not currently debarred / blacklisted by any Government / Semi Government organizations / institutions in India or abroad. I further certify that I'm competent officer in my company / firm to make this declaration.

Or

I declare the following S.No Country in which the company is Debarred
/blacklisted / case is Pending Blacklisted / debarred by Government / Semi
Government/Organizations/ Institutions

Reason:

Since when and for how long:

(NOTE: In case the company / firm was blacklisted previously, please provide the details regarding period for which the company / firm was blacklisted and the reason/s for the same).

Yours faithfully

(Signature of the Bidder)

Name

Designation, Seal

Date:

Annexure – 4:

Declaration for acceptance of terms and conditions

To,
The Chair,
Dept. of Electrical Communication Engineering,
Indian Institute of Science,
Bangalore – 560012, India

Ref: Tender No: XXXXXXXXXX Dated: XXXXX
Supply and installation of “QKD System Assembly, Testing and Deployment” at ECE
Department, IISc Bangalore

Sir,
I've carefully gone through the Terms & Conditions as mentioned in the above referred tender document. I declare that all the provisions of this tender document are acceptable to my company. I further certify that I'm an authorized signatory of my company and am, therefore, competent to make this declaration.
Yours faithfully,

(Signature of the Bidder)

Name

Designation, Seal

Date

Annexure – 5:

Details of items quoted

- a. Company Name
- b. Product Name
- c. Part / Catalogue number
- d. Product description / main features
- e. Detailed technical specifications
- f. Remarks Instructions to bidders:

- 1. Bidder should provide technical specifications of the quoted product/s in detail.
- 2. Bidder should attach product brochures along with technical bid.
- 3. Bidders should clearly indicate compliance or non-compliance of the technical specifications provided in the tender document.

Section 6 – Commercial Bid

The commercial bid should be furnished with all requirements of the tender with supporting documents as mentioned under:

S.No.	Description	Cat. Number	Quantity	Unit Price	Sub total
1.	Essential items noted in the technical specification				
1.a.	... (details of essential items)				
1.b	...				

2.	Optional items noted in the technical specification				
2.a	... (details of essential items)				
2.b	...				

3. Accessories for operation and installation

4. All Consumables, spares and software to be supplied locally

5. Warranty (3 years)

6. AMC 3 years beyond warranty

Any additional items

S.No.	Description	Cat. Number	Quantity	Unit Price	Sub total
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Addressed to:

The Chair, Department of Electrical Communication Engineering
Attn: Prof. Varun Raghunathan
Dept of ECE
Indian Institute of Science
Bangalore – 560012, India

Section 7 – Checklist

(This should be enclosed with technical bid- Part A)

The following items must be checked before the Bid is submitted:

A. Sealed Envelope “A”: Technical Bid

1. Section 5- Technical Bid (each page signed by the authorized signatory and sealed) with the below annexures:
 - a. Annexure 1: Bidders details
 - b. Annexure 2: Declaration regarding experience
 - c. Annexure 3: Declaration regarding clean track record
 - d. Annexure 4: Declaration for acceptance of terms and conditions
 - e. Annexure 5: Details of items quoted
2. Copy of this tender document duly signed by the authorized signatory on every page and sealed.

B. Sealed Envelope “B”: Commercial Bid

Section 6: Commercial Bid

Your quotation must be submitted in two envelopes: Technical Bid (Envelope A) and Commercial Bid (Envelope B) super scribing on both the envelopes with Tender No. and due date and both of these in sealed covers and put in a bigger cover which should also be sealed and duly super scribed with Tender No., Tender description & Due Date.