NOTICE INVITING TENDER FOR
TRUNKEY BASIS

Supply, Installation, Testing, Commissioning, Training and Comprehensive Warranty Support for Air Traffic Services (ATS) Modernisation System for Indian Army Airfield

Ref: ITI/Def/Mktg/ATS/ACSFP/2026-27

ITI LIMITED

(A Govt. of India Enterprise)
ITI Limited, NSU-Delhi, First Floor, Core 6,
Scope Complex, Lodi Road, New Delhi-110003
website: https://www.itiltd.in/
Email: skumar_bcdel@itiltd.co.in
CIN No: L32202KA1950GOI000640

1. Introduction.

ITI Limited, a Public Sector Undertaking under the Department of Telecommunications, Ministry of Communications, is a leading Telecom equipment manufacturer and solution provider in India. The major customers are BSNL, BBNL, MTNL, Defense, Paramilitary forces, Railways, Banks, Central & State Govt. departments, Institutions and research organizations like ISRO.

ITI Limited has been undertaking various projects in all fields of telecommunications and information technology and also continuously deploying new technologies in the field of Telecom, ICT, Networking, e-Governance etc. ITI has diversified its operation and has been executing projects in the field of Smart Infrastructure (Smart Cities, Safe Cities, Smart Energy Meters, Smart Classrooms, Smart Poles etc), Bharatnet etc. ITI has been executing projects in latest technologies like GPON, OLT, ONT, OFC, HDPE etc.

ITI Limited would like to address the tender on turnkey basis for Supply installation commissioning and CAMC of CCTV cameras and accessories required for surveillance system.
In this connection ITI Limited, invites sealed tender from eligible bidders for addressing the above tender opportunity and implementing the project as per their scope of work finalized with ITI.

2. Important Dates.

Date of tender Upload	12.06.2026
Due Date for tender Submission	30.06.2026 up to 12:00 PM
Estimated Cost (Approx.)	Rs. 30,00,00,000/-
Technical Specification	**As per mentioned in GeM Bid-** GEM/2026/B/7410056 Dated: 20-05-2026
Pre Empanelment Queries/Pre Bid meeting	NO
ITI Contact Person	**Mr.Sandeep Kumar,** **DGM-Projects** **011-24368533,24360555** **Email:**-skumar_bcdel@itiltd.co.in **https://www.itiltd.in** **Helpdesk:** **Mr.Faiz Ahmad Khan,** **AEE-Projects** **e-mail: faizahmad_nsu@itiltd.co.in**
Tender Fee	Rs. 5,000/-+ Rs. 900/- = Rs. 5,900/-(Non-Refundable)
Earnest Money Deposit (EMD)	Rs. 89,10,000 /-
PBG/Security Deposit/e-PBG	3%
Duration of e-PBG required (Months)	86
All other additional terms and Condition	**As mentioned in Bid document.**
The Bank Details of ITI Limited for NEFT/RTGS/Net Banking :	The Bank Details of ITI Limited for NEFT/RTGS/Net Banking is as below: Online RTGS/ NEFT

	Bank: State Bank Of India, Industrial Finance Branch, Residency Road, Bangalore-560025 MICR: 560002059 IFSC: SBIN0009077 A/C No.: 10637729843 EMD may also accepted in the form of BG
Mode of submission	Thru ITI e-tender portal https://itilimited.ewizard.in/.
IoT System Certification Scheme (IoTSCS) - Certified Product list as per the Essential Requirements (ERs)	Please note that the certified product list meeting Essential Requirements (ERs) is available at-https://www.stqc.gov.in/iot-system-certification-schemeiotscs-0

3. Tender Scope of work & Technical compliance:-

As per Tender Reference/Bid Number: GEM/2026/B/7410056 Dated: 20-05-2026 ITI inviting TENDER/BID for

Supply, Installation, Testing, Commissioning, Training and Comprehensive Warranty Support for Air Traffic Services (ATS) Modernisation System for Indian Army Airfield. All the technical specification must compliance the end to end support of backend partner.

4**. Instruction to Bidders**

The bidders are required to submit soft copies of their bid electronically on the e-Wizard Portal using valid Digital Signature Certificates. Below mentioned instructions are meant to guide the bidders for registration on the e-Wizard Portal, prepare their bids in accordance with the requirements and submit their bids online on the e-Wizard Portal. For more information, bidders may visit the Portal (https://itilimited.ewizard.in/.).

a. REGISTRATION PROCESS ON ONLINE PORTAL:

Bidders to enroll on the e-Procurement module of the portal https://itilimited.ewizard.in/ by clicking on the link "Bidder Enrolment".

a) The bidders to choose a unique username and assign a password for their accounts. Bidders are advised to register their valid email address and mobile numbers as part of the registration process. This would be used for any communication from the e-Wizard Portal.
b) Bidders to register upon enrolment, with their valid Digital Signature Certificate (Class III Certificates with signing and Encryption key) issued by any Certifying Authority recognized by CCA India with their profile.
c) Only one valid DSC should be registered by a bidder. Please note that the bidders are responsible to ensure that they do not lend their DSCs to others which may lead to misuse.
d) Bidder then logs in to the site through the secured log-in by entering their user ID/password and the password of the DSC / e-Token.
e) After registration send mail to Helpdesk: helpdeskeuniwizarde@gmail.com for Account activation.
f) As per portal norms Registration Fee will be applicable.

b. TENDER DOCUMENTS SEARCH:

a) Various built-in options are available in the e-Wizard Portal like Department name, Tender category, estimated value, Date, other keywords, etc. to search for a tender published on the Online Portal.

b) Once the bidders have selected the tenders they are interested in, they may download the required documents/tender schedules. These tenders can be moved to the respective 'Interested tenders' folder.

c) The bidder should make a note of the unique Tender No assigned to each tender, in case they want to obtain any clarification/help from the Helpdesk.

5. BID PREPARATION:

a) Bidder should take into account any corrigendum published on the tender document before submitting their bids.

b) Please go through the tender advertisement and the tender document carefully to understand the documents required to be submitted as part of the bid.

c) Please note the number of covers in which the bid documents have to be submitted, the number of documents - including the names and content of each of the document that needs to be submitted. Any deviations from these may lead to rejection of the bid.

d) Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender document/schedule and generally, they can be in PDF/XLSX/PNG, etc. formats.

6. BID SUBMISSION:

a) Bidder to log into the site well in advance for bid submission so that he/she uploads the bid in time i.e. on or before the bid submission time. Bidder will be responsible for any delay due to other issues.

b) The bidder to digitally sign and upload the required bid documents one by one as indicated in the tender document.

c) Bidders to note that they should necessarily submit their financial bids in the prescribed format given by department and no other format is acceptable.

d) The server time (which is displayed on the bidders' dashboard) will be considered as the standard time for referencing the deadlines for submission of the bids by the bidders, the opening of bids, etc. The bidders should follow this time during bid submission.

e) All the documents being submitted by the bidders would be encrypted using PKI encryption techniques to ensure the secrecy of the data, which cannot be viewed by unauthorized persons until the time of bid opening.

f) The uploaded tender documents become readable only after the tender opening by the authorized bid openers.

g) Upon the successful and timely submission of bids, the portal will give a successful bid submission message & a bid summary will be displayed with the bid no. and the date & time of submission of the bid with all other relevant details.

h) The off-line tender shall not be accepted and no request in this regard will be entertained whatsoever.

i) As per portal norms Tender Processing Fee will be applicable.

7. AMENDMENT OF BID DOCUMENT:

At any time prior to the deadline for submission of proposals, the department reserve the right to add/modify/delete any portion of this document by the issuance of a Corrigendum, which would be published on the website and will also be made available to the all the Bidder who has been issued the tender document. The Corrigendum shall be binding on all bidders and will form part of the bid documents.

8. ASSISTANCE TO BIDDERS:

a) Any queries relating to the tender document and the terms and conditions contained therein should be addressed to the Tender Inviting Authority for a tender or the relevant contact person indicated in the tender.

b) Any queries relating to the process of online bid submission or queries relating to e- Wizard Portal, in general, may be directed to the 24x7 e-Wizard Helpdesk. The contact number for the helpdesk is 8448288994/86/87/89/88/81/90/92/82 011-49606060, 07903269552, 9355030608, 9055030613, 7903810198,

9355030606, 9315620706, 9355030623, 9355030628, 8800526452, 9205898228, 9122643040, 9355030604, eprochelpdesk.01@gmail.com, eprochelpdesk.44@gmail.com, eprochelpdesk.06@gmail.com.

c) The tender inviting authority has the right to cancel this e-tender or extend the due date of receipt of the bid(s).
d) The bid should be submitted through e-Wizard portal (https://itilimited.ewizard.in/) only.
e) All payments should be done through e-Wizard Payment gateway.

5(i)	**Eligibility Criteria of Applicants**	
	a	**<u>Company Profile</u>**: The Bidder shall be a Company incorporated /registered in India under Companies Act 1956/2013/ proprietorship/ partnership firm/ Limited Liability Partnership (LLP) and should be in operations continuously for at least 5 years as on the last date of submission of bid. 1) In case the bidder has executed any work/project with/for ITI in the last 5years, it is essential that a satisfactory certificate signed by at least DGM level/or above officer from ITI to be submitted for such project. 2) In case CMC followed by project execution, the CMC charges quoted by bidder are optional and ITI reserves the right to either award CMC to the bidder or float a separate tender at the end of project completion which will be abide by bidder. 3) Any financial liability (like contract processing fee, Agreement Stamp fee, Portal fee, BG making fee etc.) on ITI for this project will be borne by Bidder.
	b	a) Minimum average Turnover during each of the last three financial years (2022-23, 2023-24 and 2024-25), 30% of the total estimated Cost. b) Net Worth of the bidding entity during each of the last three financial years (2022-23, 2023-24 and 2024-25) should be in positive. c) The Bidder shall submit copy of Audited statements/CA certificate for last three years should be submitted along with technical proposal.
	c	**For Supply, Installation, Testing, Commissioning, Training and Comprehensive Warranty Support for Air Traffic Services (ATS) Modernisation System for Indian Army Airfield** For more details refer to scope of work as per GeM BID Documents.
	d	The bidder should not have been blacklisted or debarred by any Pvt Ltd/State / Central Government or their agencies or Public Sector Undertakings (PSUs) as on bid submission date for corrupt, fraudulent or any other unethical business practices or for any other reason. Undertaking as per the format attached in **Annexure-I** duly signed by authorized signatory of bidder.
	e	All the applicable annexures and documents is as per customer BID.
	f	The supply item/OEM must be as per manufacturer certifications mentioned in BID. The technical specification of all the supplied items/ equipments as per the Operational characteristics and features as mentioned in bid **Appendix-B.** All the above sites/solution & technical specifications must be complied with the original GeM Tender.
	g	Undertaking for willingness to work with ITI as per customer tender etc. terms and conditions.
	h	EMD (Back to Back Basis Rs. 89,10,000 /- EMD of unsuccessful bidders should be returned back once the contract is finalized. The bidder seeking EMD exemption, must submit the valid supporting document for the relevant category as per GeM GTC with the bid. Under MSE category, only manufacturers for goods and Service Providers for Services are eligible for exemption from EMD. EMD & Performance security should be in favour of Beneficiary, wherever it is applicable.
	i	Undertaking expressing willingness to sign agreement with ITI.

	j	Bidder shall provide valid OEM Authorization Certificate for all the products quoted as well as certify that the proposed product is not declared end of sale. OEM documents and all applicable annexures/appendix shall be provided as per required by customer RFP	
	k	Consortium is not allowed. Bid splitting not applied. No part bidding allowed.	
	l	ITI reserve the right to reject /cancel the bid at any time without assigning any reason.	
	m	The agency should have successfully completed similar works(definition of similar Work should be clearly defined) during the last 7 Years ending last day of the month Previous to the one in Which bids are received as indicated below: i. Three similar completed works each costing not less than 20% Of the estimated cost of work. OR ii. Two similar completed works each costing not less than 25% of the estimated cost of work OR iii. One similar completed work costing not less than 40% of the estimated cost of work. **Similar Work:-**The bidder/OEM must have the experience in the field of installation of the ATS subsystems such as VCCS, AGL, AWOS, Mobile ATC, or ATC Systems.	
	n	Our company reserves the right that if any product, service or equipment is being manufactured, its supply and service must be provided to us by the vendor.	
5(ii)		**General : Provide Compliance for the following**	**YES/NO**
	a	All activities like Proof of concept on "No Cost No Commitment" (NCNC) basis wherever applicable will be the responsibility of bidders	
	b	Bidder should be willing to impart required training during undertaking services & execution of project (if applicable)	
	c	Bidder should be willing to sign an exclusive agreement with ITI for smooth execution of the project and all commercial terms will be as per the customer Tender/PO on back-to-back basis.	
	d	PBG will be taken from back-end partner, once ITI will be declared L1. Performance Bank Guarantee (PBG) required for the bid will be borne by the selected bidder.	
	e	LD Clause: LD shall be as per ITI Clauses (@ 0.5% of order value per week or part thereof subject to a maximum of 10% of the undelivered portion/ the order value (if the item(s) cannot be used unless full supply is made) or to cancel the order and purchase the materials from alternative source at the risk and cost of the supplier) OR as per the customer PO/tender clause whichever is higher.	
	f	Payment Terms: a) Payment terms will be as per back to back basis. b) Payment to the vendor shall be done after deduction of all i. LD/recoveries imposed by customer (if any) ii. ITI's margin	

	g	The bidder shall give an undertaking for the following: a. To extend a fully back-to-back partnership b. To support ITI and bid in this tender with ITI as lead bidder c. To support ITI for preparation of the tender, post bid clarifications, technical presentations and any other requirements as per tender.	
	h	**Delivery Schedule:** Delivery Schedule as per the customer Bid/Tender/ PO on back-to-back basis.(if applicable)	
	i	**Consignee Details:** As per bid and if any changes will be provided after the award of the work	
	j	Bidder will be responsible for any shortcoming in the BOM and the same should be rectified free of cost	
	k	Bidder should not be insolvent (Self Declaration).	
	l	ITI reserve the right to reject or cancel the bid at any time without assigning any reason.	
5(iii)		**Checklist of documents/information to be submitted:**	
	a	Company Profile	
	b	Certificate of Incorporation a per clause 5(i)(a)	
	c	Memorandum & Articles of Association	
	d	Audited financial statements for the last 3 years (FY 2022-23, 2023-24 & 2024-25).	
	e	GST Registration Certificate	
	f	Copy of PAN Card	
	g	CIN (Corporate Identity Number), if applicable	
	h	Any other relevant registration documents on registration with other appropriate authorities (ESI, EPFO, etc.)	
	i	Authorization letter in the company letterhead authorizing the person signing the bid for this tender and Power of Attorney (POA).	
	j	Undertaking in letter head to indemnify ITI from any claims / penalties / statutory charges, liquidated damages, with legal expenses etc.	
	k	Undertakings in Company letter head as per Annexure I.	
	l	Bidders Details as per Annexure II.	
	m	Clause by clause compliance of tender terms with references to supporting documents as per Annexure III.	
	n	Pre-Contract Integrity Pact as per Annexure-V a) "Bidders participating in the tender have to agree to sign Integrity Pact on placement of order / contract" b) "Those bidders who are not willing to sign Integrity Pact will not be considered for bid opening"	

	o	The bidder should give an undertaking on the company's letterhead that all the documents/certificates/information submitted by them against this tender are genuine.
	p	Bidder shall submit technical data sheet by highlighting each complied specification. Wherever technical specifications and operational/functional requirements not mentioned in datasheet, OEM compliance shall be submitted.
	q	Work order / Contract clearly highlighting the scope of work, Bill of Material and value of the contract/order; and Completion / Commission Certificate issued & signed by the competent authority of the client entity on the entity's Letterhead.
	r	Complete tender and customer tender document duly signed and stamped on each page by the bidder be uploaded.
	s	Conditional bids will not be entertained and summarily rejected. Only online bids on https://itilimited.euniwizarde.inportal will be accepted and no physical bids will be accepted.
5(iv)		**Financial Bid:**
		L1 Evaluation Method: A- Lump sum Quote for supply and service items as per Schedule of Requirements (SoR) and Scope of Work (SoW) in INR (without Taxes) B- Margin to ITI as a percentage of A C - Absolute value of Margin = A*B D- Overall Quoted price=A-C • Duringevaluationbidderswithleast"D"willbeconsideredasL1. • The bid having higher value of "B" will be selected in case of tied D. • If the bidder is selected, during the final tender submission, the price to be quoted shall not be more than price "A" and the margin offered to ITI shall not be less than "B" **SoR & SoW Was as per Tender document and all clarifications & Amendments/Corrigendum**

09. Conditions of tender:

a) Bidder shall act as the Prime System Integrator and be responsible for end-to-end execution of the project.
b) Bidder shall conduct a site survey before bid submission and factor all requirements in the quoted price.
c) Supply shall include all hardware, software, accessories, cabling, interfaces and services required for successful commissioning, whether specifically mentioned in BOQ or not.
d) All equipment shall comply with applicable ICAO, DGCA, AAI, WMO, IEC/IS and Military Aviation standards.
e) Valid OEM Authorization Certificates for all major subsystems shall be submitted with the bid.
f) Only Class-I/Class-II Local Suppliers meeting Make in India requirements shall be eligible.
g) Bidder shall provide a Malicious Code/Cyber Security Certificate for all supplied hardware and software.
h) Factory Acceptance Test (FAT) and Site Acceptance Test (SAT) shall be mandatory before final acceptance.
i) Installation, integration, testing, commissioning and training shall be included in the scope of supply.
j) Minimum 03 years comprehensive onsite warranty shall be provided from the date of final acceptance.
k) OEM shall ensure spares and technical support availability for minimum 10 years.

l) Bidder shall provide operator and maintenance training to nominated personnel.
m) Complete technical documentation, manuals, drawings and as-built documents shall be supplied.
n) Response time for critical faults shall not exceed 24 hours.
o) System availability during warranty/AMC period shall be minimum 99.5%.
p) Bidder shall provide an undertaking for 04 years post-warranty AMC/CMC support.
q) Personnel deployed at site shall comply with MoD security and access regulations.
r) Purchaser reserves the right to conduct technical demonstration/evaluation on No Cost No Commitment basis.
s) Any equipment declared End-of-Life (EOL) during contract execution shall be replaced with equivalent or higher specification equipment at no additional cost.
t) Liquidated Damages (LD) shall be applicable for delays as per contract provisions.

10. Special Conditions of TENDER:

a. No advance will be paid to the bidder, even though ITI is eligible to get advance from the customer being a front end bidder.
b. The selected bidder, who has partnered with ITI for a particular tender/ project shall not partner with any other lead bidder for the same tender/project
c. If the bidder is selected, during the final tender submission, the margin offered to ITI shall not be less than the quoted price.
d. The estimated project amount stated in this document is provisional and subject to revision during the actual bidding process. Consequently, the bidder's quoted amount may also fluctuate (increase or decrease).
e. The work order for the actual RFP will be awarded based on the ratio of the bidder's quoted amount to the revised estimated project value, as compared to the initial estimated value stated in this document."
f. The requisite final solution to all the supplied equipments/Services must be end to end support till final solution as per RFP clause.

11. Other Terms and conditions:

Confidentiality

a) All documents, drawings, samples, data, associated correspondence or other information furnished by or on behalf of the Procuring Entity to the contractor, in connection with the contract, whether such information has been furnished before, during or following completion or termination of the contract are confidential.
b) If advised by the Procuring Entity, all copies of such information in original shall be returned on completion of the contractor's performance and obligations under this contract.

12. Transparency

All procuring authorities are responsible and accountable to ensure transparency, fairness, equality, competition and appeal rights. This involves simultaneous, symmetric and unrestricted dissemination of information to all likely bidders, sufficient for them to know and understand the availability of bidding opportunities and actual means, processes and time limits prescribed for completion of registration of bidders, bidding, evaluation, grievance redressal, award and management of contracts.
It implies that such officers must ensure that there is consistency, predictability, clarity, openness, equal opportunities in processes.

13. Fall Clause:

Fall clause is a price safety mechanism in rate contracts. The fall clause provides that if the rate contract holder reduces its price or sells or even offers to sell the rate contracted goods or services following conditions of sale similar to those of the rate contract, at a price lower than the rate contract price, to any person or organization during the currency of the rate contract, the rate contract price will be automatically reduced with effect from that date for all the subsequent supplies under the rate contract and the rate contract amended accordingly.

The provisions of fall clause will however not apply to the following:

i. Export/Deemed Export by the supplier;
ii. Sale of goods or services as original equipment prices lower than the price charged for normal replacement;
iii. Sale of goods such as drugs, which have expiry date;
iv. Sale of goods or services at lower price on or after the date of completion of sale/placement of order of goods or services by the authority concerned, under the existing or previous Rate Contracts as also under any previous contracts entered into with the Central or State Government Departments including new undertakings (excluding joint sector companies and or private parties) and bodies.

14. Price Variation

A suitable price variation formula should also be provided in the tender documents, to calculate the price variation between the base level and scheduled delivery date.

15. Risk Purchase

If the empanelled partner fails to adhere to the quality norms, delivery schedules and other terms and conditions contained in this Tender after acceptance of purchase order and if no agreement is reached on the revised delivery schedule maximum up to 15 Business Days, then buyer shall have the liberty to procure the material from an alternate source at the Empanelled partner's risk and cost, and the Empanelled partner shall be liable to make good the loss incurred by Buyer in this process

16. Indemnity:

The empanelled partner to indemnify ITI from any claims / penalties / statuary charges, liquidated damages, with legal expenses etc as charged by the customer. LD/ Penalties incurred on account of delay in supply, product failure during warranty if any and deficiency in Warranty and AMC services attributable to the partner shall be borne by the partner All terms and conditions of the customer tender/PO will be applicable to the empanelled partner on back to back bass without affecting the margin of ITI.

17. Arbitration:
Any dispute arising out of this TENDER shall be settled and resolved by any such Authorized person appointed by Chairman and Managing Director of ITI Limited.

18. Set Off:
Any Sum of money due and payable to the supplier under this contract may be appropriated by the purchaser or any other person contracting through the ITI and set off the same against any claim of the purchaser for payment of a sum of money arising out of this contract or under any other contract made by the supplier with the purchaser.

19. The interested partner may like to discuss the customer tender related information, TENDER Bidding Conditions, Bidding Process and clarifications, if any with the Deputy General Manager-Marketing

20. Intellectual Property Rights:

i. All deliverable, outputs, plans, drawings, specifications, designs, reports and other documents and software submitted by the contractor under this contract shall become and remain the property of the procuring entity

and subject to laws of copyright and must not be shared with third parties or reproduced, whether in whole or part, without: the procuring entity's prior written consent.

ii. The contractor shall, not later than upon termination or expiration of this contract, deliver all such documents and software to the procuring entity, together with a detailed inventory thereof.

iii. The contractor may retain a copy of such documents and software but shall not use it for any commercial purpose.

21. Language of offers:

The offers prepared by the Company and all the correspondences and documents relating to the offers exchanged by the companies shall be written in English language.

22. In the event that ITI is required to provide demonstration or working of the product to their buyers, the same shall be arranged by the bidder selected partner/OEM at latter's cost and expenditure.

23. Cost of TENDER:

The bidder shall bear all costs associated with the preparation and submission of his offer against this TENDER, including cost of presentation for the purposes of clarification of the offer, if so desired by ITI. ITI will, in no case be responsible or liable for those costs, regardless of the conduct or outcome of the TENDER process.

24. **Purchaser's Right to accept any bid and to reject any or All Bids or to cancel the TENDER:**

ITI Limited reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids, at any time prior to award of contract without assigning any reason whatsoever and without thereby incurring any liability to the affected bidder or bidders on the grounds of purchaser's action.

25. Amendment of TENDER:

At any time prior to the last date for receipt of offers, ITI, may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective bidder, modify the TENDER document by an amendment. In order to provide prospective bidder reasonable time in which to take the amendment into account in preparing their offers, ITI may, at their discretion, extend the last date for the receipt of offers and/or make other changes in the requirements set out in the Invitation for TENDER.

26. **Disclaimer:**

ITI and/or its officers, employees disclaim all liability from any loss or damage, whether foreseeable or not, suffered by any person acting on or refraining from acting because of any information including statements, information, forecasts, estimates or projections contained in this document or conduct ancillary to it whether or not the loss or damage arises in connection with any omission, negligence, default, lack of care or misrepresentation on the part of ITI and/or any of its officers, employees.

27. Accessibility of TENDER Document:

Complete Tender document with terms and conditions is provided in the following websites

(i) http://www.itiltd.in

(ii) https://itilimited.euniwizarde.in

(iii) http://eprocure.gov.in.

Annexure-I

Undertakings (To be in Bidder's Letter Head)

M/s .....do here by undertake the following

1. Are not blacklisted by Central Govt./ any State or UP Govt/ PSU/ organized sector in India

2. To work with ITI as per this TENDER and Customer Tender terms and conditions. Also, we agree to implement the project (scope of work as per Tender terms and conditions including investment) covering Warranty& post-warranty services, maintenance etc, in the event of ITI winning the contract on back-to-back basis.

3. To submit Security Deposit of 5% per transaction to customer/ITI (as decided by ITI),

4. that we will be equipped with the required manpower with qualifications, certifications and experience as mentioned in the customer tender.

5. to get required certificate& support (warranty & post-warranty/maintenance) in the name of ITI from the OEM as per customer tender requirement.

6. To obtain relevant statutory licenses for operational activities.

7. to sign MoU/Teaming Agreement, Integrity Pact with ITI for addressing the customer tender as per customer's tender terms and conditions.

8. to indemnify ITI from any claims / penalties/ statuary charges, liquidated damages, with legal expenses etc as charged by the customer.

9. to support the offered equipment for a minimum period of 10 years including warranty and AMC or as per customer tender conditions.

10. To supply equipment/components which conform to the latest year of manufacture.

11. The bidder should give certificate stating that all the hardware/ software supplied under the contract shall not contain any embedded malicious codes that could inhibit the desired functions of the equipment or cause the network to malfunction in any manner.

Annexure-II

Bidders Profile

1.	Name and address of the company			
2.	Contact Details of the Bidder (Contact person name with designation, Telephone Number, FAX, E- mail and Web site)			
3.	Area of the business			
4.	Annual Turnover for financial years (Rs in Cr)	2022-23	2023-24	2024-25
5.	IT Turnover for 3 financial years (Rs in Cr)	2022-23	2023-24	2024-25
6.	Positive Net Worth as on 31.03.2025			
7.	Date of Incorporation,			
8.	GST Registration number			
9.	PAN Number			
10.	CIN Number, if applicable			
11.	Number of manpower in company's rolls			
12	Work Experience details: **Annexure IV**			
13.	Certifications details like ISO or any other certification as per requirements of Customer.			

Annexure-III

Compliance Statement

Sl. No.	Clause No.	Clause	Compliance (Complied/Not Complied)	Remarks with Documentary Reference

Annexure- IV

Project Experience

Sl. No.	Name of project	Value	Name of customer	Attached Documentary Proof

Annexure - V

INTEGRITY PACT

TENDER No.

THIS Integrity Pact is made on……day of ..... 2025.

BETWEEN:

ITI Limited having its Registered & Corporate Office at ITI Bhavan, Dooravaninagar, Bangalore – 560 016 and established under the Ministry of Communications, Government of India (hereinafter called the Principal), which term shall unless excluded by or isrepugnant to the context, be deemed to include its Chairman & Managing Director, Directors, Officers or any of them specified by the Chairman & Managing Director in this behalf and shall also include its successors and assigns) ON THE ONE PART

AND:
…….. represented by
Chief Executive Officer (hereinafter called the Contractor(s), which term shall unless excluded by or is repugnant to the context be deemed to include its heirs, representatives, successors and assigns of the contractor ON THE SECOND PART.

Preamble:

WHEREAS the Principal intends to award, under laid down organizational procedures, contract for ……. of ITI Limited. The Principal, values full compliance with all relevant laws of the land, regulations, economic use of resources and of fairness/ transparency in its relations with its Contractor(s).

In order to achieve these goals, the Principal has appointed an Independent External Monitor (IEM), who will **monitor** the tender process and the execution of the contract for compliance with the principles as mentioned herein this agreement.

WHEREAS, to meet the purpose aforesaid, both the parties have agreed to enter into this Integrity Pact the terms and conditions of which shall also be read as integral part and parcel of the Tender Documents and contract between the parties.

NOW THEREFORE, IN CONSIDERATION OF MUTUAL COVENANTS STIPULATED IN THIS PACT THE PARTIES HEREBY AGREE AS FOLLOWS AND THIS PACT WITHNESSETH AS UNDER:

SECTION 1 – COMMITMENTS OF THE PRINCIPAL

The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles:

a. No employee of the Principal, personally or through family members, will in connection with the TENDER for or the execution of the contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the personal is not legally entitled to.

b. The Principal will, during the TENDER process treat all bidder(s) with equity and reason. The Principal will in particular, before and during the TENDER process, provide to all bidder(s) the same information and will not provide to any bidder(s) confidential/ additional information through

which the bidder(s) could obtain an advantage in relation to the TENDER process or the contract execution.

c. The Principal will exclude from the process all known prejudiced persons. If the principal obtains information on the conduct of any of its employee, which is a criminal offence under IPC/PC Actor if there be a substantive suspicion in this regard, the Principal will inform the Chief Vigilance Officer and in addition can initiate disciplinary action as per its internal laid down Rules/ Regulations.

SECTION 2 – COMMITMENTS OF THE BIDDER / CONTRACTOR

2.1 The Bidder(s)/Contractor(s) commits himself to take all measures necessary to prevent corruption. He commits himself observe the following principles during the participation in the TENDER process and during the execution of the contract.

a. The bidder(s)/contractor(s) will not, directly or through any other person or firm offer, promise or give to any of the Principal's employees involved in the TENDER process or the execution of the contract or to any third person any material or other benefit which he/ she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever (during the TENDER process or during the execution of the contract.

b. The bidder(s)/contractor(s) will not enter with other bidders/ contractors into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.

c. The bidder(s)/contractor(s) will not commit any offence under IPC/PC Act, further the bidder(s)/contractor(s) will not use improperly, for purposes of competition of personal gain, or pass onto others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.

d. The Bidder(s)/Contractor(s) of foreign original shall disclose the name and address of the Agents /representatives in India, if any. Similarly, the Bidder(s)/Contractor(s) of Indian Nationality shall furnish the name and address of the foreign principals, if any.

e. The Bidder(s) f Contractor(s) will, when presenting the bid, disclose any and all payments made, are committed to or intend to make to agents, brokers or any other intermediaries in connection with the award of the contract.

f. The Bidder(s)/Contractor(s) will not bring any outside influence and Govt bodies directly or indirectly on the bidding process in furtherance to his bid.

g. The Bidder(s)/Contractor(s) will not instigate third persons to commit offences outlined above or to be an accessory to such offences.

SECTION 3 – DISQUALIFICATION FROM TENDER PROCESS & EXCLUSION FROM FUTURE CONTRACTS

If the Bidder(s)/Contractor(s), during TENDER process or before the award of the contract or during

execution has committed a transgression in violation of Section 2, above or in any other form such as to put his reliability or credibility in question the Principal is entitled to disqualify Bidder(s)/Contractor(s) from the TENDER process.

If the Bidder(s)/Contractor(s), has committed a transgression through a violation of Section 2 of the above, such as to put his reliability or credibility into question, the Principal shall be entitled exclude including blacklisting for future TENDER/contract award process. The imposition and duration of the exclusion will be determined by the severity of the transgression. The severity will be determined by the Principal taking into consideration the full facts and circumstances of each case, particularly taking into account the number of transgression, the position of the transgressor within the company hierarchy of the Bidder(s)/Contractor(s) and the amount of the damage. The exclusion will be imposed for a period of minimum one year.

The Bidder(s)/Contractor(s) with its free consent and without any influence agrees and undertakes to respect and uphold the Principal's absolute right to resort to and impose such exclusion and further accepts and undertakes not to challenge or question such exclusion on any ground including the lack if any hearing before the decision to resort to such exclusion is taken. The undertaking is given freely and after obtaining independent legal advice.

A transgression is considered to have occurred if the Principal after due consideration of the available evidence concludes that based on facts available there are no material doubts.

The decision of the Principal to the effect that breach of the provisions of this Integrity Pact has been committed by the Bidder@)/ Contractor(s) shall be final and binding on the Bidder(sj/ Contractor(s), however the Bidder(s)/Contractor(8) can approach IEM(s) appointed for the purpose of this Pact.

On occurrence of any sanctions/ disqualifications etc arising out from violation of integrity pact Bidder(s)/ Contractor(s) shall not entitled for any compensation on this account.

Subject to full satisfaction of the Principal, the exclusion of the Bidder(s)/Contractor(s) could be revoked by the Principal if the Bidder ($)/ Contractor(s) can prove that he has restored/ recouped the damage caused by him and has installed a suitable corruption preventative system in his organization.

SECTION 4 – PREVIOUS TRANSGRESSION

4.1 The Bidder(s)/ Contractor(s) declares that no previous transgression occurred in the last 3 years immediately before signing of this Integrity Pact with any other company in any country conforming to the anti-corruption/ transparency International (TI) approach or with any other Public Sector Enterprises/ Undertaking in India of any Government Department in India that could justify his exclusion from the TENDER process.

4.2 If the Bidder(s)/ Contractor(s) makes incorrect statement on this subject, he can be disqualified from the TENDER process or action for his exclusion can be taken as mentioned under Section-3 of the above for transgressions of Section-2 of the above and shall be liable for compensation for damages as per Section- 5 of this Pact.

SECTION 5 – COMPENSATION FOR DAMAGE

5.1 If the Principal has disqualified the Bidder(s)/Contractor(s) from the TENDER process prior to the award according to Section 3 the Principal is entitled to forfeit the Earnest Money Deposit/Bid Security/ or demand and recover the damages equitant to Earnest Money Deposit/Bid Security apart

from any other legal that may have accrued to the Principal.

5.2 In addition to 5.1 above the Principal shall be entitled to take recourse to the relevant provision of the contract related to termination of Contract due to Contractor default. In such case, the Principal shall be entitled to forfeit the Performance Bank Guarantee of the Contractor or demand and recover liquidate and all damages as per the provisions of the contract agreement against termination.

SECTION 6 – EQUAL TREATEMENT OF ALL BIDDERS/CONTRACTORS

6.1 The Principal will enter into Integrity Pact on all identical terms with all bidders and contractors for identical cases.

6.2 The Bidder(s)/Contractor(s) undertakes to get this Pact signed by its subcontractor(s)/sub-empanelled partner(s)/ associate(s), if spy, and to submit the same to the Principal along with the TENDER document/contract before signing the contract. The Bidder(s)/Contractor(s) shall be responsible for any violation(s) of the provisions laid down in the Integrity Pact Agreement by any of its subcontractors/ sub-empanelled partners / associates.

6.3 The Principal will disqualify from the TENDER process all bidders who do not sign this Integrity Pact or violate its provisions.

SECTION 7 – CRIMINAL CHARGES AGAINST VIOLATIG BIDDER(S)/CONTRACTORS

7.1 If the Principal receives any information of conduct of a Bidder(s)/Contractor(s) or sub-contractor/ sub-empanelled partner/associates of the Bidder(s)/Contractor(s) which constitutes corruption or if the principal has substantive suspicion in this regard, the principal will inform the same to the Chief Vigilance Officer of the Principal for appropriate action.

SECTION 8 – INDEPENDENT EXTERNAL MONITOR(S)

8.1 The Principal appoints competent and credible Independent External Monitor(s) for this Pact. The task of the Monitor is to review independently and objectively, whether and to what extend the parties comply with the obligations under this pact.

Details of IEM appointed by ITI are as under:

Name: ShriAtul Jindal IFS (Retd.),
Independent External Monitor (IEM)
Address- 3/10 VisheshKhand Opp. Little Friend School Gomti Nagar,
Lucknow-226010(UP)
E-mail:` atulindia1947@gmail.com

IEM – II
Shri Benny John, IRS (Retd.),
Villa No. 36, Kent Plam Villas,
Fort Valley Township, Athani,
Kakkanad, Ernakulam,
Kerala – 682 030

8.2 The Monitor is not subject to any instructions by the representatives of the parties and performs his functions neutrally and independently. He will report to the Chairman and Managing Director of the Principal.

8.3 The Bidder(s)/Contractor(s) accepts that the Monitor has the right to access without restriction to all product documentation of the Principal including that provided by the Bidder(s)/Contractor(s). The Bidder(s)/Contractor(s) will also grant the Monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his project documentation. The Monitor is under contractual obligation to treat the information and documents Bidder(s)/Contractor(s) with confidentiality.

8.4 The Principal will provide to the Monitor sufficient information about all meetings among the parties related to the project provided such meeting could have an impact on the contractual relations between the Principal and the Bidder(s)/Contractor(s). As soon as the Monitor notices, or believes to notice, a violation of this agreement, he will so inform the Management of the Principal and request the Management to discontinue or take corrective action, or to take other relevant action. The monitor can in this regard submit non-binding recommendations. Beyond this, the Monitor has no right to demand from the parties that they act in specific manner, refrain from action or tolerate action.

8.5 The Monitor will submit a written report to the Chairman & Managing Director of the Principal within …….. to ……..Weeks from the date of reference or intimation to him by the principal and, should the occasion arise, submit proposals for correcting problematic situations.

8.6 If the Monitor has reported to the Chairman & Managing Director of the Principal a substantiated suspicion of an offence under relevant IPC/PC Act, and the Chairman & Managing Director of the principal has not, within the reasonable time taken visible action to proceed against such offence or reported it to the Chief Vigilance Officer, the Monitor may also transmit this information directly to the Central Vigilance Commissioner.

8.7 The word 'Monitor' would include both singular and plural.

SECTION 9 - FACILITATION OF INVESTIGATION

9.1 In case of any allegation of violation of any provisions of this Pact or payment of commission, the Principal or its agencies shall be entitled to examine all the documents including the Books of Accounts of the Bidder(s)/Contractor(s) and the Bidder(s)/Contractor(s) shall provide necessary information and documents in English and shall extend all help to the Principal for the purpose of verification of the documents.

SECTION 10 - LAW AND JURISDICTION

1.1 The Pact is subject to the Law as applicable in Indian Territory. The place of performance and jurisdiction shall the seat of the Principal.

1.2 The actions stipulated in this Pact are without prejudice to any other legal action that may follow in accordance with the provisions of the extent law in force relating to any civil or criminal proceedings.

SECTION 11 – PACT DURATION

This Pact begins when both the parties have legally signed it. It expires after 1 year on completion of the warranty/ guarantee period of the project /work awarded, to the fullest satisfaction of the Principal.

If the Bidder(s)/Contractor(s) is unsuccessful, the Pact will automatically become invalid after three months on evidence of failure on the part of the Bidder(s)/Contractor(s).

If any claim is lodged/made during the validity of the Pact, the same shall be binding and continue to be valid despite the lapse of the Pact unless it is discharged/determined by the Chairman and Managing Director of the Principal.

SECTION 12 - OTHER PROVISIONS

12.1 This pact is subject to Indian Law, place of performance and jurisdiction is the Registered & Corporate office of the Principal at Bengaluru.

12.2 Changes and supplements as well as termination notices need to be made in writing by both the parties. Side agreements have not been made.

12.3 If the Bidder(s)/Contractor(s) or a partnership, the pact must be signed by all consortium members and partners.

12.4 Should one or several provisions of this pact turn out to be invalid, the remainder of this pact remains valid. In this case, the parties will strive to come to an agreement to their original intentions

12.3 Any disputes/ difference arising between the parties with regard to term of this Pact, any action taken by the Principal in accordance with interpretation thereof shall not be subject to any Arbitration.

12.4 The action stipulates in this Integrity Pact are without prejudice to any other legal action that may follow in accordance with the provisions of the extant law in force relating to any civil or criminal proceedings.

In witness whereof the parties have signed and executed this Pact at the place date first done mentioned in the presence of the witnesses:

For PRINCIPAL For BIDDER(S)/CONTRACTOR(S)

…… ……

Name Designation Name Designation

Witness

1. …….. 1. ……..

2. …….. 2. . ……

AIRFIELD LIGHTING SYSTEM OF RUNWAY WITH NIGHT VISION GOGGLES COMPATIBLE LIGHT S, HELICOPTER APPROACH PATH INDICATOR, AERODROME BEACON, LANDING T, OBSTRUCTION LIGHTS, WINDSOCK, LAZER ANTI BIRD SYSTEM AND SOUND ANTI BIRD SYSTEM

1. **Gen.** This section explains the Airfield Lighting System design requirements. Airfield lighting like Runway, Taxiway for the Runway, Helipad & HAPI Lights are required for use as per ICAO norms, to provide continuous guidance to the pilot of an approaching aircraft, to taxiway, and Helipads.

2. **Design Standards.**

(a) The applicable standard for the design of this Lighting System and its facilities is as per International Civil Aviation Organization (ICAO) Annexure 14, Vol.II.

(b) International Civil Aviation Organization (ICAO) Annex 14. Vol.II (latest revision).

(c) ICAO ADM Part 4 Visual Aids.

(d) ICAO ADM Part 5 Electrical Systems.

(e) ICAO ADM Part 6 Frangibility

3. **Main Equipment.** The following equipment from reputed manufacturers shall cater to the requirement of the main equipment for Helipad Lighting System.

(a) Constant Current Regulators (CCRs).

(b) Elevated Runway & Taxiway Edge Light Fittings.

(c) Inset Approach and Perimeters Lights.

(d) Helicopter Approach Path Indicator.

(e) Isolation Transformers

(f) Illuminated Wind direction Indicators.

(g) Connector Kits (Primary & Secondary).

(h) 5KV grade 6sqmm Lighting Cable.

(j) Movement Area Guidance Signs.

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4. **Constant Current Regulator.**

(a) **Technical Characteristics.**

(i) Constant Current Regulator shall be of Microprocessor Controlled.

(ii) Interface with computerized Remote Control System through fiber optic / control cable or communication link compatible to standard Ethernet / PROFIBUS / JBUS comunication bus using dual redundant network.

(iii) The CCRs shall be compliant with provisions contained under FAA Advisory circular no AC 150/5345 10H (SPECIFICATION FOR CONSTANT CURRENT REGULATORS AND REGULATOR MONITORS) with upto date amendments for type L-829 CCRs.

(iv) CCRs shall be suitable for the following two-way control and monitoring data transfer.

(aa) ON / OFF and Seven steps brightness control of CCRs.

(ab) Output current recording periodically.

(ac) Fault indication and recording of the following.

(ad) Over-current rate.

(ae) Open circuit trip.

(af) Earth leakage trip indication.

(ag) Un-interrupted CCR operation in case of remote-control link failure.

(ah) 10% or greater drop in the Volt-Amperes (VA) delivered to the series circuit. Failure of a pre-set number of lamps in the series circuit.

(b) **Efficiency.** The efficiency of the regulator operated at its rated input voltage with 100 percent load at unity PF shall be not less than the value shown in table:-

Ser No	CCR Size (In KW)	Minimum overall Efficiency (per-
(i)	Less than 30	90
(ii)	50	93
(iii)	70	94

(c) **Power Factor**. The power factor for regulators of capacity 10KW and below shall not be less than 0.90 and for regulators of capacity more than 10KW, it shall be not less than 0.95. The power factor shall be measured with the regulator operating: -

(i) On the maximum intensity setting.
(ii) At rated input voltage.
(iii) Its rated load at unity PF.

(d) **Standard Input Voltage.**

(i) The CCR standard input voltage shall be single phase 230 V or two phase 415 V at 50 Hz alternating current (AC current).

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(ii) All CCRs must operate when the input voltage range is 230 V (+10% /- 5%) for 230 V systems or 415 V (+ 10 % /- 5%) for 415 V systems.

(iii) The CCRs may be provided with different voltage taps from which the correct supply voltage may be tapped.

(iv) The CCRs must be designed for momentary increases of voltage upto 120 percent of the nominal input voltage (duration of over voltage not longer than 50 milliseconds (ms) at no more than once per minute without shut down or damage.

(e) **Open Circuit Protection.**

(i) The CCR shall include an open circuit protective device to open the primary switch within 2.0 seconds after an open circuit is detected in the regulator output circuit.

(ii) The protective device shall reset within 2.0 seconds after the CCR control switch is turned off and re-energized. Alternatively, if a reset switch is provided, it may be used to reset the protective device and re- energies the regulator.

(iii) The protective device must not be tripped by load circuit switching or other transients.

(f) **Over Current protection.** CCRs shall include an over current protective device that opens the primary switch when the output current exceeds 100 percent (6.6 A or 20 A) by 5 percent.

5. **Inset Fixtures.**

(a) **Technical Characteristics.**

(i) Inset type light fittings suitable for Approach of Heli-runway.

(ii) Omni/Uni/Bi-directional light fixtures for perimeter of Helipad with top assembly, shal low bases, optical system.

(iii) LED for Approach lights as per manufacturers design to be operated on 6.6A system, colour filter holders, gasket, connecting leads etc. as specified in ICAO Annex-14 and ready for installation in a drilled hole in the pavement.

(b) **Applicable Specifications.**

(i) ICAO Annex-14. Aerodrome, Vol-I, with latest revisions.

(ii) ICAO Airport Design Manual Part 4, 5 and 6.

(iii) FAAAC 150/5345-46E, specification for inset type fittings.

(c) **Design requirements.**

(i) The fixtures would comprise of a top light assembly and a shallow base.

(ii) All interfaces of the top assembly and shallow base shall be machined to the same true finish.

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(iii) The shallow base shall be capable of installation in a drilled cavity not exceeding 150 mm in depth, in the existing concrete/asphalt Taxiway/Apron and equipped with helicoil. Stud type shallow bases not allowed.

(iv) The external portions of the top assembly which extends above the pavement, shall be smoothly sloped upwards from the edges.

(v) In case, more than one fitting is to be used to achieve the required photometric performance, such additional fittings and associated accessories e.g. isolating transform -ers, Secondary leads or lamp by pass device etc. i/c installation shall be considered as one fitting.

(d) **Power Consumption.** The total power consumption should be following: -

(i) Unidirectional (Approach) fitting @ 6.6ARMS - 65W.

(ii) Omni-directional fitting @ 6.6ARMS - <25 W.

(e) **Operating Temperatures.**

(i) With the unit operating at continuous full brilliancy and under maximum ambient conditions of temperature, no parts of the complete assembly will deteriorate or get damaged on account of thermal stresses applied under rain or snow conditions.

(ii) When the unit is operating at a continued full brilliancy, it shall dissipate the heat generated within, in such a manner that no component of the hardware develops tempera- ture, which can be hazardous to the aircraft tyres.

(f) **Optical Components.**

(i) The prisms shall be made out of heat resistant glass designed to withstand the heat build-up and also the thermal stresses on account of external rain or snow.

(ii) All reflectors used in the optical assembly shall have high specular reflectivity.

(iii) The optical system shall have provision for addition of filters of heat resistant materia wherever required. The chromaticity and other colour requirements of these filters would conform to the ICAO / FAA requirement specified in Annex.-14.

(iv) All components including optical top head and base receptacle shall be corrosion re sistant and shall not be affected by continued atmospheric action. Dissimilar materials in contact with each other, which will lead to bi-metallic corrosive action, shall not be used. All parts /components made up of stainless steel shall be rendered resistant to corrosion by plating, anodizing or painting.

(v) Prisms, gaskets and other parts of the units shall not be damaged by water, hammer action encountered during aircraft manoeuvre over the fixtures.

(vi) The base receptacle should have external ribs or other locking device feature so as to minimize vertical, lateral and rotational movements of the base receptacle from its in stalled position in the pavement.

(vii) The base receptacle shall be so constructed that it permits addition of adapter ring

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(lift rings) to take care of future increments on the pavement surface.

(viii) The top assembly unit shall have a portion extending into the base receptacle so as to restrict side motion and shear action when the unit is struck.

(g) **Water Tightness of the Unit.**

(i) The complete assembly shall be waterproof and shall remain so under all normal operating conditions. It shall also meet the requirements as per FAA specification for water leakage test.

(ii) Wherever gaskets are used, they should be of 'O' ring type properly seated in their grooves. Such gaskets shall be suitable of performing satisfactorily for a period of at least one year of operation which would include at least 15 top assembly removals and replacements. Under no circumstances bituminous or other similar sealing compounds shall be used on such joints

(iii) All hold-down bolts, nuts and washers shall be made of the best quality stainless steel and shall be corrosion resistant.

(iv) Hold-down bolts shall be hexagonal head type. There should be clearance for application of socket/torque wrenches. Such bolts heads shall not project above the surface.

(v) There shall be adequate clearance under the hold-down bolts to serve as a sump for foreign matters. This would enable the hold- down bolts to be properly tightened to the required torque value under normal field operation conditions.

(vi) Prisms in the top optical head shall be such as to render the top unit completely watertight under normal operating conditions.

(h) **Electrical Components.**

(i) All electrical components used in the fixtures shall be rated for at least 500V RMS value to ground) and shall have a current carrying capacity of at least 10 Amps.

(ii) High conductivity, non-corrosive metal suitable protected against corrosion shall be used for current carrying components. Aluminum will not be acceptable for this purpose.

(j) **Leads.** Leads furnished with inset fixture shall have stranded copper conductor with insulation rating to at least 600V and thermal rating to withstand the maximum operation temperatures encountered. The leads shall have sufficient spare length inside the base receptacle to permit servicing of the optical assembly without disconnection.

(k) **Routine or Production Tests and Acceptance Tests.**

(i) The light fixture assembly shall be tested in accordance with relevant ICAO Requirements and applicable FAA specifications.

(ii) For in-pavement lights, photometric tests must follow the shock and hydraulic impact tests to determine if the lamp filament has sustained any damage.

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(iii) Unless otherwise specified, the in-pavement light fixtures must be tested under simulated installed conditions.

(iv) **Testing**

(aa) Each fixture must be energized and visually inspected for proper operation.

(ab) The optical assembly of all in-pavement fixture must be pressurized internally to 20 psi (137.90 kPa) and tested for leaks.

(ac) A sampling of all in-pavement and elevated fixtures must be subjected to the photometric tests.

(ad) In the photometric tests, the fixtures must meet the specified requirements of ICAO Annex-14.

(l) **Production Test Records.** Records showing actual test results of all tests required must be maintained for three years by the manufacturer. All records must be traceable to the units tested by serial number or test lot.

(m) **Factory Acceptance Tests**. Each fixture would be required clear the tests successfully before clearance to dispatch is issued: -

(i) **Photometric Test**. The Photometric test for inset light fixtures shall be in accordance with Aerodromes Annex-14 Vol.-1 of International Civil Aviation Organization (Latest Edition).
(ii) **Leakage Test**. This test shall be conducted as per the test procedures.
(iii) **Insulation Test.** This test shall be conducted as per the test procedures.

6. **Elevated LED Runway Edge Light**

(a) The Runway edge lights will comprise of elevated light units emitting variable intensity White & Yellow light.

(b) Runway edge Lighting circuits will be provided with minimum 5 stage intensity control.

(c) Runway Edge Lights will be installed on the Heli Runway for visual guidance.

(d) The lights should comply with Annexure 14, Vol.II.

7. **Elevated Taxiway Edge Light**

(a) **Technical Characteristics**

(i) The Taxiway edge lights will comprise of elevated light units emitting variable intensity blue light.

(ii) The Taxiway Edge Lights shall show up to at least 30 deg above the horizontal and at all angles in azimuth necessary to provide guidance to a pilot taxing in either direction.

(iii) Taxiway edge Lighting circuits will be provided with minimum 5 stage intensity control.

(iv) Taxiway Edge Blue Light will be installed on the Taxiway and Helipads.

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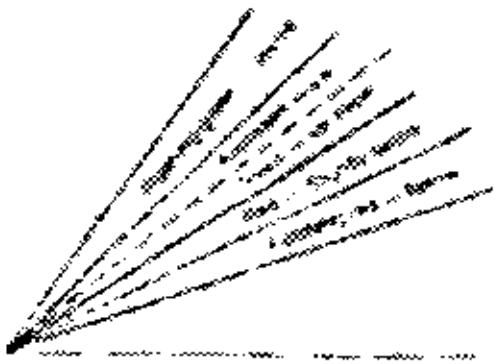
Description
Taxiway Edge, Apron & turning PAD lights Omni directional light output Blue Dome, Frangible body on Hinged arrangements.
1W LED lamp & <10 W total consumption of light which includes LED Driver, Lamp with typical Rated Life of 30,000 hours, Sturdy and Non Corrosive.

8. **Helicopter Approach Path Indicator (Technical characteristic)**

(a) The HAPI is to be provided to serve the approach to a heliport, being possible to be usec both day and night conditions, where there is needed to provide visual information on a required approach slope.
(b) The LED HAPI is designed to be visible in daylight/night visibility with an automatic switch of the intensity (100% or 30%); additionally, a manual selector switch allows a further adjustment of the intensity (10%) during night-time operations.
(c) The LED HAPI will be compatible to work with 2.8-6.6A power supply through Isolating transformer.
(d) The signal format of the HAPI shall be as per below figure

HAPI Signal format

Sector	Format
Above	Flashing green(2Hz)
On slope	Green
Slightly below	Red
Below	Flashing red (2 Hz)



(e) The State-of-the-art LED high flux technology source (1OOW) Safety switch in case of flashing failure & IP 66 (Complying to EN 60529) Internal display for initial levelling.

9. **Heliport Beacon (LED)**

(a) Identification of the heliport is difficult due to surrounding lights and long-range visual guidance is considered necessary and is not provided by other visual means, so heliport beacon is necessary to provide to identify the heliport.

(b) The heliport beacon shall be located on or adjacent to the heliport preferably at an elevated position and so that it does not dazzle a pilot at short range.

(c) The emitting color of beacon shall be White, green, and yellow.

10. **Series to Series Type Isolating Transformer For 5000 V Series Circuit**

(a) **Technical characteristics**

(i) The specifications are for a completely enclosed Thermoplastic Elastomer materials covered isolating transformer for use of 6.6 amps series airport Lighting circuits having nominal voltage ratings of 5000 volts.

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(ii) The transformer shall be water tight and shall be designed for direct burial in the earth or installation in a base.

(b) **Types of Isolating Transformers.** The transformer shall be suitable for Runway Lighting Fixtures. Following types are generally used at Airports. All rated for operation on 50 cycles per second.

Wattage	Primary Amps.	Secondary Amps
15	6.6	6.6
25	6.6	6.6
65	6.6	6.6
100	6.6	6.6
150	6.6	6.6

(c) **Transform Characteristics** The characteristics of the transformer shall be within the limits specified in the table.

Watt	Primary Amps.	Power Factor	% age Eff.	Secondary full load (Amp.)	Secondary short cir-cuited	Secondary load in ohms
15	6.6	0.95	70	6.53-6.67	6.6-7.1	0.34
25	6.6	0.95	80	6.53-6.67	6.6-7.1	1.15
65	6.6	0.95	80	6.53-6.67	6.6-7.1	1.60
100	6.6	0.95	85	6.53-6.67	6.6-7.1	2.44
150	6.6	0.95	85	6.53-6.67	6.6-7.1	3.58
200	6.6	0.95	90	6.53-6.67	6.6-7.1	4.82

Note: Voltage ratings shall be: Primary-5000V, Secondary-600V.

(d) **Temperature Rise** When a transformer is operated at rated load or when short-circuited or open- circuited with rated current and frequency in the prima The temperature rise, shall not exceed 55 deg C (131degF) as determined by the resistance method.

(e) **Insulation** The transformer shall be insulated for operation for a 5000V primary circuit.

Continuous Outdoor Service The transformer shall be constructed for continuous outdoor service, either buried directly in the ground, installed in an open or a sealed base, or submerged in water at any ambient temperature from a minimum of(-)15°C to a maximum of(+) 65°C at sea level.

(a) **Core and Coil**. The windings shall be completely insulated from each other and the core. Sharp corners and edges of the core and coil assembly shall be eliminated so that they should not cut the housing, if transformer is dropped or handled roughly.

(b) **Housing**

(i) The housing shall be completely enclosed, the core and coil assembly with lead sealed into the housing in such a way as to produce a completely water tight unit. All exposed parts of the transformer assembly shall be capable of withstanding outdoor exposure, immersion in water, exposure to gasoline and direct burial in earth containing large concentrations of oils, acids or alkali.

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(ii) One end of primary lead shall be equipped with a plug type connector. The other end of the primary lead shall be equipped with a receptacle. The cable for the primary leads shall be 19/0.75 mm (corona or ozone proof) single core cable, annealed tinned copper conductor insulated with composite insulation of HR- VIR/PCP sheathed or TPE cable suitable for 5000V operating voltage. Each primary lead shall extend not less than 60cm. plus or minus 7. 50cms.beyond the housing including the cable connector.

(iii) The secondary lead shall be equipped with a receptacle. The cable for secondary lead shall be 37/0.30mm (corona or ozone proof) twin core cable, annealed tinned copper conductor and sheathed with special type of PCP or TPE insulated & sheathed cable suitable for 600Voperating voltage.

(iv) The cable shall extend120 cms. plus or minus 7.50 cm, beyond the housing, including the cable connector. An approved water tight cap or plugs shall be furnished on each mating part of each plug or receptacle for protection during shipment and insulation from moisture.

11. **Specification For 06 Sq mm Airfield Lighting Cable & Secondary Leads**

(a) **Scope.** This standard covers the requirements for single core, copper conductor XLPE insulated, un-screened type airport Lighting cable for use on 5KV grade system with anti- rodent and anti-termite treatment as per IS:7098(Part II).

(b) **Applicable Specification**. The cable shall generally conform to IEC class II and shall comply with the recommendation of ICAO Aerodrome design manual Part 5 and with the FAA advisory circular.

(i) **Details** Size - 06 sq mm.

(ii) **Conductor Material.** High conductivity copper conductor.

(iii) **Semi- conductor layer.** To avoid local stress of the HV insulation as per the relevant international standards and OEM specifications.

(iii) **Screen.** Copper tape.

(iv) **Thickness of Insulation.** Average thickness of XLPE insulation should be such as to withstand the system voltage and test voltage as specified. In any case, the thickness of the insulation shall not be less than 1.6mm with applicable tolerance as per relevant standards.

(v) **Outer Sheath** Polyethylene (PE).

(aa) **Composition of outer sheath**. The sheathing shall be so designed so as to afford a high degree of mechanical protection and shall be oil and weather resisting.

(ab) **Thickness of Outer Sheath.** Outer sheath thickness should be sufficient to render enough electrical and mechanical strength without shielding so as to work smoothly under the duty conditions specified in FAA standards, with amendment up to date.

(c) **Operating Temperature**. - 40degC to +50degC.

(d) **Overall Diameter of Cable**. Has to be arrived at keeping in view the above duty conditions.

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(e) **Bending.** Bending radius of cable during laying should be minimum 12 times of outer diameter of cable or as per OEM recommendation.

(f) **Marking.** Manufacturer's trade name, voltage and year of manufacture, meter marking printed / embossed on the outer sheath at on every one meter interval of cable length.

(g) **Testing**. The cable shall be tested in accordance with relevant IEC/FAA specification with upto date amendments. All routine test and acceptance test shall be carried out as per relevant Standard Specification. Cable shall generally be supplied in standard drum length of 500/1000/ 2000 /3000M with 5% tolerance. Cable should be marked on each meter.

12. **Specification For Secondary Leads.**

(a) **Scope.** This standard covers the requirement for one core, copper conductor PVC insulated, PVC sheathed, unshielded type secondary leads for use on up to1KV grade system.

(b) **Applicable Specification** Secondary lead shall be generally conforming to relevant FAA standards and details specified below: -

(i) **Construction.** The cable shall have high conductive flexible copper conductor of circular cross section complying with the requirement of standards. The nominal cross section shall be 4 sq mm, confirming to relevant standards. Leads shall be suitable for operating on 600V/750V. The sheath shall be tightly and concentrically formed around the cores and shall be free from pores and other defects.

(ii) **Test.** The material used for the construction shall be suitable for continuous outdoor services either directly in the concrete/bituminous panel or pipe installed/open in sealed base or submerged in water at ambient temp. from 40 °C to 60 °C. The cable shall be able to with stand therma00l and mechanical stress under all weather conditions. The cable shall be factory sealed to ensure water tight and air tight arrangement.

(iii) **HV Test**. The test shall be done in accordance with relevant standard; the test voltage shall be1.KV RMS 50c/s.

(iv) **Insulating Resistance Test.** The insulation resistance shall not be less than 1000 Mega Ohms at 20°c. Test shall be carried out as per relevant standards.

(v) **Bending Test.** On completion of bending test, the sheath shall not have visible cracks or breaks etc.

13. **Specification For Connector Kits (Primary & Secondary)**

The secondary cables and primary cables shall be connected to the isolating transformers by watertight moulded plugs complying with FAA L-823 class B. The connectors for the primary cables shall include connection facilities for the metallic cable screen.

(a) Specification of primary cable connector is given below:-

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Primary Cable Connector		
S. No.	**Description**	**Technical Requirements (Minimum)**
1	Application	Airfield Lighting Equipment primary cable connector for the air-port Lighting series circuit for connection of Primary cable with Series Isolation
2	Grade	5 KV
3	Current rating	25 A
4	Cable type	Single Core, 6 Sqmm. Stranded copper conductor. Screened Copper / braided Cable
5	Screen Continuity	Insulated copper conductor
6	Connector Kit	Consisting of one plug, one receptacle, housing and all neces-sary arts for making the connectivity.
7	Other	Water tight post installation connection

(b) Specification of Secondary cable connector is given below: -

Secondary Cable Connector Kit		
S.No.	**Description**	**Technical Requirement (Minimum)**
1	Application	Airfield Lighting Equipment secondary cable connector for the airport Lighting series circuit for connection of secondary cable with Series isolation Transformers & with Light fitting
2	Grade	0.6 KV
3	Current rating	20 A
4	Cable type	1C x 4 Sqmm, Stranded copper conductor
5	Connector Kit	Unshielded Cable of OD 12.6 mm Consisting of one plug, one receptacle, housing and all necessary parts for making the assembly on secondary cable

14. **Specification For Led Type illuminated Guidance Signboard**

(a) **Sign Frame**. Aluminum Sheet of 2 mm thickness & powder coated.

(b) **Rear side** Minimum 2 mm white powder coated aluminum sheet.

(c) **Sign sheet on front** Shatter proof 4 mm thick polycarbonate sheets. Long life non-hygroscopic. Letters and symbols pasted by 3M Vinyl on the backside of the sign sheet.

(d) **Illumination** LED based (PCB mounted LED) assemblies , LED DC power supply cir cuit 36 V shall mount on upper portion of the sign suitable for operation between 2.8-6 .6 Amp.

(e) **Board Legs**. Aluminum frangible mounting legs (suitable for installation on concrete foundation). Mounting legs of each sign board should have frangible point located 50mm or less from the concrete pad.

(f) **Protection.** IP 65 Standard Protections.

(g) **Standard.** This standard covers detail requirements for Illuminated Guidance Sign

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Board to be installed in the pavement of Runways/ Taxiways/Apron. These specifications cover the requirement of internally uniformly illuminated guidance sign for use at Airport. The assembly of these sign shall be essentially consisting of a legend which shall be housed in a metallic housing. Signs shall be classified as mandatory, location and informative.

(h) **Applicable Specifications** ICAO Annex-14. Aerodrome, Vol. I, with J latest revisions ICAO Airport Design Manual Part 4, 5 and 6.

Size Overall size (length and height) of each sign board shall be determined based on the message to be in-scripted / conveyed on the fascia. Width and Height of each letter shall be in accordance to ICAO Annex .14 and Aerodrome Design Manual Part-IV & V. Drawing showing length, breadth and height of sign board shall be submitted for approval before manufacturing is commenced. For the purpose of payment of guidance sign measurement of board shall be taken as front face area visible sign sheet (in sq.mtr).

(j) **Requirement.** Each sign shall be complete in accordance with requirement and shall include mounting legs assembly, made of anodized minimum 2mm aluminum profile, with the breakable coupling. The poles shall be sealed on the top and should be grouted with cement concrete. The sign frame is constructed of anodized Aluminum profile. The sign face shall be made of 4 mm non-hygroscopic polycarbonate sheets. Letters and symbols are screen printed on the inside of the sign face. All screws, clamps, washer and nut/bolts should be made of stainless steel. The signs including all, required components shall be designed for continuous outdoor operations under following conditions.

(k) **Temperature**. Exposure to any temperature from -20°C to + 55°C.

(l) **Frangibility**. All signs should be frangible. The overall mass including mounting fixture should be limited to 24.5 kg/mtr length & total length of sign should not increase beyond 3 meters.

(m) **Humidity**. 0 to 100 %.

(n) **Rain.** Expose to driving rains.

(o) **Technical Characteristics.**

(i) Sign board should be in accordance with the relevant FAA/ICAO specification to avoid damage to aircraft if inadvertently struck, yet must be sufficiently rigid to withstand wind and jet blast from wide body aircraft. The mounting legs shall be frangible at the bottom, which should withstand wind pressure of jet blast.

(ii) Sign shall be internally illuminated. These shall be designed for operation from a series Lighting circuit with a maximum current of 6.6 Amp. The illumination shall be uniform over the sign face and visible at night time. Average lumen output shall be as per Appendix 4 of Annex.14 Vol-I of ICAO.

(iii) Signs made in multiple sections shall appear to the viewer as a single sign with a continuous border.

(iv) The spacing, stroke and shape of legends and symbols shall be in accordance with ICAO standard and recommended practices.

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(v) The signs design shall be capable of being energized at the lowest current setting and operated at any current value between 2.8 to 6.6 amps without an appreciable decrease in sign illumination.

(vi) Power input from the series Lighting circuit shall be made through an isolating transformer of suitable 6.6A rating.

(vii) All wiring and components shall be adequately rated and shall not be. operated in excess of the component manufacturer recommended rating.

(viii) To insure reduced energy and maintenance requirements, the sign light source shall utilize individual Light Emitting Diode (LED) assemblies. To insure long LED life and high lumen maintenance, individual LEDs shall be mounted directly on a heat sink panel and widely spaced.

(ix) The LED sign must maintain constant brightness at all CCR step settings. The same LED DC power supply circuit shall properly operate when powered from 2.8A-6.6A (5-step) 50 Hz series circuit. The LED DC power supply circuit shall impose a low load (VA) on the CCR and shall be mounted internally on the upper portion of the sign. To maximize maintenance personal safety, there shall be no more than 24V DC at any point inside the sign. In addition, the LED power supply circuit shall output a regulated DC current of 0.44 amps maximum. Individual sign LEDs shall be wired in a series /parallel combination that allows for redundancy in case of one or two consecutive LED failures. The LED sign shall be designed to operate in an ambient temperature range of -20°C to +55°C. The internal LED power supply circuit shall not require field calibration. The LED sign shall have an input power Factor >0.90 as measured on the primary of the isolation transformer. The sign shall include an on/off switch that by-passes the isolation transformer secondary current during maintenance activities.

(x) To insure maximum pilot visibility, the sign shall have a flat, vertical face and shall have illumination uniformity as per ICAO Annex. 14 luminance requirements. The sign face shall be a translucent color (white, yellow or red, black) according to the sign application type. Retro reflective panel shall not be used. The sign shall not use panel dividers on continuous messages. However, the sign shall have the capability of including panel dividers between different types of massages.

(p) **Finish** External surface of the signs, including mounting legs shall be painted /treated for corrosion resistance.

(q) **Workmanship** The equipment shall be fabricated in accordance with the highest quality workmanship. Wiring shall be neatly run laced. All sharp and burr shall be removed painted I treated surfaces shall be free from runs, blotches and scratches.

(r) **Test** All the routine I acceptance tests for sign boards light fixtures shall be in accord ance with relevant FAA (Latest Edition) specification for sign board / ICAO Annex. 14 Vol-I/ ICAO Aerodrome design Manuals (Latest Edition). The sign boards shall be tested in accordance with above specification with upto date amendments. The tenderer along with tender must submit a test certificate. certifying conformity of the sign boards as per the above specifications. Sign should be supplied with factory test report complying ICAO test parameters and chromaticity should be shown clearly in test report.

(s) **Grouting.** Each mounting leg shall be grouted with 1:2:4 CC foundations.

(t) **Platform**. 1:2:4 cement concrete shall be provided 1000mm from all around the board

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from the edges of sign boards and 100 mm thick.

(u) **Secondary Leads.** 2X4 sq.mm secondary lead of adequate length shall be provided with molded two pin connector / plug & receptacles etc. protected with required size of flexible pipe as directed by the engineer in charge.

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15. **Specification For HDPE Pipe**

(a) The DWC HDPE pipe should be made from rugged & virgin High Density Poly Ethylene material with double wall construction as per IS16205 Pa rt-24 with latest amendments. The HOPE pipe/duct should be free from cracks & have suitable mechanical strength to protect runway Lighting cables laid in Runway/Shoulder.

(b) The Pipe should have high ring stiffness, better impact strength & superior crush resistance. The pipe should have better ability to withstand heavy external loads when properly buried & back filled or compacted with concrete.

(c) The pipe should be chemically inert & should have anti rodent, anti- termite properties.

(d) HDPE pipe should have better resistance to flame propagation properties. Pipe should be laid at suitable slope while maintaining proper depth so that the water cannot be accumulated in pipes/fittings. At the time of laying of HDPE pipes.

(e) The guide wires to be provided in HDPE pipes for pulling of cables with proper arrangement to avoid blockage of pipes

(f) The length of pipe should be preferably single length to avoid joints /couplers.

16. **Specification Isolating Transformer Housing Box (Cylindrical).**

(a) Drawing of the Transformer Housing Boxes shall be got approved from the Engineer-in-Charge prior to commencement of fabrication.

(b) Transformer Housing Boxes shall be made out of Mild Steel having metal container of outside dia 330 mm, height 450 mm made of 10 mm thick all round, except the top surface, which should be 15 mm thick.

(c) The Mild Steel iron box should be suitable to receive a ground light fitting base plate on the top and underground housing suitable for keeping the isolating transformer along with connectors & leads.

(d) The housing should have one/two/three nos holes on the periphery wall,75 mm above bottom surface suitable to receive one/two/three Nos. 50 mm (OD) DWC HOPE pipe as required. The box should have two SS earth bolts of M10 x 40 mm tapped inside near the hole (Approximately 4" away from the hole center).

(e) The housing box should have a drain hole at the bottom suitably tapped to receive 15 mm dia, 250 mm length 'B' class GI pipe. The housing should have clear opening of 220 mm at the top surface and 6 Nos M10 tapped hole having center to center distance of 260 mm to receive fitting base plate and bolts as required as per the drawings enclosed. The holes should be properly machined & tapped to avoid any burr/sharp edges.

(f) Transformer Housing Box when installed with cover has to be water tight, accordingly necessary rubber gasket and bolts have to be provided for each cover plate.

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17. **Light Fixture Installation**

(a) **Inset Lights**

(i) All insets lights should be installed in shallow base cans.

(ii) Each base shall be installed such that the main beam of the light fitting is aligned within the tolerance of +0.5 deg to the required alignment.

(iii) The base can be installed horizontal to a tolerance of +0.5 deg.

(iv) Inset lights can be installed at their desired location within the tolerance of +20 mm in the longitudinal direction and within +10 mm in the transverse direction.

(b) **Inset Lights-Shallow Base**

(i) Insets lights shall be installed in the pavement material with a vertical conduit to connect the base to the secondary cable conduit located immediately below the light fitting location.
(ii) The secondary cable conduits/pipe shall be located accurately by survey and all conduits/pipe position shall be recorded during installation.
(iii) After the pavement construction to the finished level is complete, a core hole of suitable diameter shall be cored vertically downward to house the shallow base can.
(iv) The core shall be removed by means of a horizontal cutter to leave a clean and neatly cut horizontally surface for the bedding of the shallow base can. Hacking for remove of the core will not be permitted to avoid damage to the pavement infill below.
(v) The base shall be held permanently in place with an approved hard setting epoxy resin.
(vi) The light fitting shall be installed in the shallow base using the manufacturer's recommended fixings and to the manufacturers recommended torque setting.

(c) **Installation of Base Mounted Elevated Fittings**

(i) The base mounted fitting shall be installed over the box. The base of the elevated fitting may be used as cover over the same.
(ii) This shall be fixed with gasket over the box with bolts tightened to the required torque.
(iii) The isolating transformer is to be accommodated inside the box and the same shall be installed before the cover is fixed. The hardware portion of the fitting with the breakable coupling shall also be fixed on the base.

18. **Specification For Cable Laying.**

(a) **Laying Methods**

(i) Cables shall be laid in pipes, in ducts etc depending on availability of site, envi ronmental conditions and requirement.
(ii) During the preliminary stage of laying consideration should be given to proper lo cation of joint position so that when the cable is actually laid the joints are made in the most suitable places.
(iii) As far as possible water logged locations, carriage ways, pavements, proximity to telephone cables, water mains, inaccessible places, ducts, pipes etc. shall be avoided for joint position.

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(b) **Laying In Pipes/ Ducts**

(i) All cables shall be laid in DWC HDPE pipes including in location of road crossing, entry buildings, on poles, in paved areas through cutting.

(ii) Cable draw wires etc. may be employed for drawing cables through pipes / ducts.

19. **Specification For Pipe Earthing**

(a) **Electrode materials and dimensions**

(i) GI pipe electrodes shall be cut tapered at the bottom and provided with holes of 12 mm dia. Drilled not less than 75 mm from each other upto 2m of the length from the bottom.
(ii) Pipe electrode shall be buried in the ground vertically with its top at not less than 20 cm below the ground level.
(iii) In location, where the full length of pipe electrode is not possible to be in stalled due to meeting a water level, hard soil or rock, the electrode may be of reduced length, provided the required earth resistance result is achieved with or without additional electrodes or any alternative method of earthing may be adopted, with the prior approval of the Engineer-in- charge. Pipe electrodes may also be installed in horizontal formation in such exceptional cases.

(b) **Resistance of Earth.** The earth resistance at each electrode shall be measured. No earth electrode shall have a greater ohmic resistance then 5 ohms as measured by an ap proved earth testing apparatus.

20. **Installation of Transformer Housing Boxes**

(a) Transformer housing box has to be installed in cement concrete base (1:3:6) for 100 mm after providing 100 mm thick brick soiling.
(b) The cement concrete mixture of grade (1:2:4) (1 cement: 2 coarse sands: 4 graded stone of 20 mm nominal size) should be used for installation of transformer housing box i/c the pedestal.
(c) The top of the pedestal shall spread on all sides of the housing boxes and shall merge with the existing surface. The housing box should be properly aligned with theodolite, before the concrete pedestal is casted, all the associated pipes for the series cable and the secondary leads shall be provided and properly fixed with the housing box.
(d) The exposed surface of the concrete pedestal shall be finished with 12mm thick cement plaster of ratio 1:3 (1 cement: 3 coarse sand) on the top.

21. **Light Gun**

(a) In the case of a radio failure or aircraft not equipped with a radio, or in the case of a deaf pilot, air traffic control may use a signal lamp (called "signal light gun" or "light gun" by the FAA) to direct the aircraft.
(b) The signal lamp has a focused bright beam and can emit three different colours: red, white and green.
(c) Air traffic control signal light guns are typically specified with a (white) center beam brightness of > 180,000 - 200,000 candela and are visible for roughly 4 miles in clear daylight conditions.

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22. **Laser & Sound Anti-Bird System**

(a) The aviation industry has been plagued by birds for decades. The most common collisions, bird strikes, happen during aircraft take-off or landing when birds are sucked into rotating props or jet engines. Although birds may seem minuscule in comparison to a large aircraft, they can, in fact, cause quite a bit of damage. Birds can be responsible for: -

(i) Destroying an airplane engine
(ii) Disabling the ground steering
(iii) Punching a hole in the airplane wing
(iv) Crumpling the nose cone of an airplane

(b) Laser and ultrasonic compatible. Dual colour, fat beam laser diodes with multiple random patterns.

(c) Covering the surface of airfield and LFA. Compatible to be remotely operated and directed in specific directions from ATC.

(d) Effective radius not less than 1000m.

23. **Technical Specification**

(a) Protection Coverage: 2 Km radius
(b) Frequency Range :2kHz-10kHz or better
(c) Decibel Level: upto 125 dB
(d) Solid-state electronics mounted inside a NEMA-type control box, suitable for almost any large outdoor application.
(e) Provision for Solar Power based operation with battery.

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QUANTITATIVE REQUIREMENTS FOR AFLS AND HAPI

S No	Item Description	A/U	Qty
Airfield Lighting System			
1	Airfield Lighting works Survey, project management & Supervision for conducting, cabling, testing for AFLS Lights, HAPI, Signage, confirmation to compliance of an standard in complete, to protect existing civil surfaces including Ground Calibrations (if required).	Job	1
2	Hardware & Software for Airfield Lighting Remote Control System for CCR Room. All lights should be centrally controllable (from touch screen display) in respect of individual switching ON/OFF of CCRs, intensity variation and change of mode like, NVG or NORMAL.	Set	1
3	Supply of LED Elevated leading IN/OUT Lights	Nos	48
4	Supply of Elevated Omni White/White or White/Yellow Runway Edge Lights – LED <45W, 6.6A	Nos	80
5	Supply of LED Helipad marker lights of 6.6A	Nos	48
6	Supply of Elevated Omni White Approach IR/NVG LED Lights of <65W,6.6A	Nos	12
7	Supply, install, testing commissioning of distance to go markers (DTGM) (size 1220mmx1220mm) consisting of two boards made of compressed aluminium sheet of 4mm thick blackodised on one side where the compressed aluminium sheet is supported in a frame made up of aluminium extrusion and the marking of the number/letter are of red retro reflective film on black background and shall comply DTGM sign board all as per OEM recommendation amd specification of ICAO Annex 14 complete.	Job	1
8	Supply of Elevated Threshold LED lights, Red & Green of 65W,6.6A	Nos	12
9	Supply of LED Helicopter Approach Path Indicator of 100W, with operation on 6.6A	Nos	2
10	Supply of NVG inset marker lights for Main helipad & Heli Runway with shallow base	Nos	40
Obstruction Lights			
11	Obstruction Hazard lights for Hangars	Nos	20
ATC Lights			
12	Supply, Installation, Testing and Commissioning of Heliport Rotating Beacon having green, white & yellow alternatively, suitable to operate on 220V ± 10%, 50Hz AC complying to ICAO Annex-14 Vol-1, including base frame, hardware, extension of electrical power from nearest switch to beacon, cable termination etc. complete as required.	Nos	1
13	Supply, install, testing, commissioning of frangible & LED type illuminated landing direction indicator (Landing - "T") conforming to ICAO Annex 14, volume I and suitable for operation on 230 V, 50 Hz, single phase AC supply and complete with following main components as required:- (a) Aluminium frame along with suitable mounting structure. Dimension shall conform to ICAO Annex 14 and frangibility of structure shall conform to ICAO Annex 14 & Aerodrome design manual part-6/FAA. The structure shall be powder coated with preferably aviation yellow paint. (b) 33 Nos. <10W nominal capacity LED lamps alongwith Lamps mounting arrangement for outdoor conditions with suitable electric connection using change over switch installed at ATC. Landing T indication by illumination and change over facility.	Nos	1

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	(c) Control box, internal copper wiring, provision for remote control operation. Providing and laying suitable cement concrete foundation for installation of landing as per OEM recommendation. (d) Supply, install, testing and commissioning of Frangible illuminated wind direction indicator confirming to ICAO Annex 14, Volume- I and suitable for operation on 230 V, 50 Hz, Single phase AC supply and complete with following main components as required. (e) 4.5 mtr height FRP frangible pole/mast. The frangibility shall confirm to ICAO Annex 14 & Aerodrome design manual part-6/FAA. The colour of pole/mast shall be preferably aviation Yellow Or red/white.		
14	(a) Wind sock assembly complete with slip rings, drum, bracket for drum, bearing, carbon brush with holder etc. (b) 20 W nominal capacity LED lamps along with Lamp mounting arrangement for outdoor conditions-04 Nos. LED Aviation obstruction light having aluminium cast body and red polycarbonate dome-01No. (c) Internal wiring, provision for remote control operations and electric cable reqd for connection Providing and laying suitable cement concrete foundation for installation of WDI as per OEM recommendations. **Note:-** Necessary Earth work & PCC foundation as per OEM recommendation is deemed to be included	Nos	1
15	Supply of LED type aviation signal light gun (ALDIS) capable of producing red, green and white signals with beam spread not less than 1° nor greater than 3°, minimum intensity of the coloured light not less than 6 000 cd, complying to ICAO Annex-2 and Annex-14 Vol-1 with upto date amendments etc. complete as required.	Nos	1
16	Supply of LED Guidance Sign Board of various sizes as per ICAO Annex.14 Vol.I (legends as approved by Engineer- in-Charge) made out of 2mm thick Aluminium sheet with suitable angle support with 1.5mm thick Aluminium backcover, 4mm thick polycarbonate sheet with glare free face, the letter & symbol should be printed on the inside of sign face made of self-adhesive film of 3mm applied on the inside face with required colouring, suitable arrangement shall be made for water tightness & locking arrangement. Signboard shall be uniformly internally illuminated with LED lights with 36 W LED DRIVER to achieve illumination level operated on input source 2.5 A to 6.6 A constant current without flickering including suitable rating isolating transformer, secondary leads, supporting frangible legs & frame etc. complete as required and as specified.	Sq mtrs	15
17	Supply of Elevated omnidirectional LED Taxiway/Apron Edge lights of max 10 Watts of colour blue alongwith mounting assembly (breakable coupling and other components), connecting leads, gasket all as per OEM recommendation and specification.	Nos	125
18	Supply and laying of Primary 1x6sqmm AGL cable of 5KV grade.	Set	1
19	Supply of 15W, 6.6/6.6A Isolating Transformer for Taxiway Edge Lights.	Nos	125
20	Supply of 25W, 6.6/6.6A Isolating Transformer for TOLF Inset,Marker Lights.	Nos	180
21	Supply of 100W, 6.6/6.6A Isolating Transformer for HAPI.	Nos	2
22	Supply of Primary connector kit (5KV grade, 6sqmm).	Nos	320
23	Supply of 1 KVA 6.6/ 6.6 amp CCRs in existing CCR Room compatible to operate in Normal Ambient temperature conditions without air conditioning for HAPI with circuit selector switch.	Nos	1

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24	Supply of 4 KVA 6.6/ 6.6 amp CCRs in existing CCR Room compatible to operate in Normal Ambient temperature conditions without air conditioning for HAPI with circuit selector switch.	Nos	1
25	Supply of 7.5KVA 6.6/6.6 amp CCRsin existing CCR Room in Normal Ambient temperature conditions without air conditioning.	Nos	1
26	Supply of 10KVA 6.6/6.6 amp CCRsin existing CCR Room in Normal Ambient temperature conditions without air conditioning.	Nos	1
27	Supply of MS Box for Transformer housing of 330x450mm height having 6mm thick plate all around and 10mm top plate with 225mm hole on top plate.	Nos	320
28	Supply and laying of DWC HDPE Pipe 63/50mm dia.	Set	1
29	Installation, Testing & Commissioning of Elevated lights	Nos	200
30	Installation of Transformer Housing box with concrete	Nos	320
31	Installation, Testing & Commissioning of HAPI	Nos	2
32	Installation, Testing & Commissioning of Connector Kits (Primary)	Nos	320
33	Installation, Testing & Commissioning of Transformers	Nos	320
34	Installation, Testing & Commissioning of CCRs	Nos	2
35	Supply and laying of LT Cable 1.1KV grade, 4x70sqmm armoured from Existing LT Panel to CCR Room.	Nos	100
37	Integration of all the equipments and services	Job	1
36	Supply & laying of 6 SWG GI Wire	Mtrs	20,000
37	Supply and provision of GI Pipe Earthing, for complete power circuit	Nos	25
38	Chemical Earthing Pits for CCR and formation of GI strip grid made out of 50x6 GI stri	Nos	4
39	Civil works including (1) Trench & Laying conduit of 350mm x 600mm depth	Job	1
40	**Standard Maintenance Tools** – for AFLSincorporating HV IR Tester, RMS Tong tester, Insulation Sleeves, Blower Gun in one tool kit	Job	1
41	**Laser Anti Bird System**	Nos	1
42	**Sound Anti Bird System**	Nos	1

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Annexure-II of Appx 'B'

VOICE COMMUNICATION CONTROL SYSTEM

1. **Gen:** The Voice Communication Control System (VCCS) shall be suitable as a mission critical platform designed and deployed for defence air traffic control applications. The system must facilitate secure ground to air and air to ground communication between ATC Towers and aircraft. The system shall be designed to operate in environments where internet connectivity is restricted or unavailable, and therefore must function on closed, isolated, and secure networks. It shall incorporate redundant architecture, ensuring resilience, reliability, and uninterrupted mission critical communication under all operational conditions.

2. The VCCS should be an unified communication system, which should provide seamless connectivity among ATC Tower, GCA, RT sets, other key Air Traffic Control, and Operation personnel.

3. The VCCS should provide Ground to Air & Ground to Ground voice communication on a single Lip-mike Headset for ATC, GCA & Base Ops controllers for effective Air Traffic Control & Management. The system should provide access to 4 Radio channels; Hotline Intercom between ATC & GCA, and VoIP based Intercom facility between a min of 15 strategic locations across the Air-Field. VCCS should provide a facility for monitoring and recording the complete communication operation of the RT controllers and replaying it later when necessary.

4. The VCCS system design should be based on voice over IP for EPABX and IP phone.

5. The network connectivity amongst various locations should be through internet protocol (IP) based network.

6. RT voice connectivity between RT Controllers and Radio Sets should be provided through direct routing so as to cut down on IP network and conversion delays. Optical fiber should used for long distance connectivity.

7. The VCCS system should provide facilities to connect external EPABX lines also, thus achieving a totally centralized facility for communication on the existing voice circuits and various ground control positions.

8. VCCS should provide a complete log of all voice communication along with operator screenshots, and provide a facility to replay them back in sequence in real-time.

1. **The following features should be present:-**

   (a) Real time record and replay facility.

   (b) Touch Screen displays for ease of operation.

   (c) Single touch selection/de-selection of Ground to Air communication.

   (d) Transmission control using touch display screen PTT or Foot PTT.

   (e) Access to 4 Radio transceiver.

   (f) Hotline Intercom between ATC and GCA.

   (g) 15 IP phones across the airfield using VoIP based Intercom facility.

   (h) Facility to connect to external EPABX lines, so that operators can make calls or receive calls from subscribers of PSTN exchange.

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(j) Voice recording/replay of individual ear-piece channels.

(k) Centralized Voice recording for all the 4 Radio Receivers.

Detailed Technical Specification

1. **Product Design and Functions must have the following.**

The main elements of the system should be:

(a) Server Subsystem

(b) Controller Work Position

(i) RT Controller

(ii) ICOM Controller

(c) Radio Interface units

(d) RIU Extn Units

(e) Radio Monitoring

(f) EPABX line interface

(g) Patch Panel

(h) IP Phones

Server Subsystem

1. The VoIP communication should be based on the central Server subsystem with Voice Switch, and other management software. For higher reliability and failsafe operation, the server subsystem should have dual redundant configuration.

2. In addition, all the other subsystems and equipment should be connected to the Server subsystem through a dual redundant network. In the event of failure of the basic network, all traffic should be diverted to the other (secondary) LAN so that overall system operation is not affected.

Controller Work Position (CWP)

1. There should be two types of CWP:

(a) RT controller

(b) ICOM Controller

2. RT Controllers should be ones who control RT channels and speak to and guide the aircraft pilots on RT channels. Essentially workstations for the RT Controllers should have RT channel support and accessibility while the workstations for ICOM Controller do not have RT channel accessibility.

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RT Controller and ICOM Controller Panel Positions

1. The RT and ICOM controller panel positions should have a PC with 15" TFT LCD Touch screen monitor, keyboard, mouse and lip-mic headset, at each controller position on the controller's Desk. These panels should have audio interface, and touch screen for selecting the channels, display for depicting the status, digital controls for various adjustments and interface for headset. RT controllers will also have a Foot PTT.

Radio Interface Units (RIU)

1. Radio Interface Units should be used to interface the Radios to the Network thereby allowing voice and control/ status information to be passed from radios to various operators and vice-versa over the network. One Radio Interface Unit should supports three radios.

2. There should be an embedded device for controlling voice, PTT, channel selection, etc of the radio.

System Design and Architecture

1. The system design of VCCS should meet the system requirements – both technical and operational – of the VCCS project.

2. The primary features of the system should be:-

   (a) Dual Redundant Servers.

   (b) Dual LAN Network.

   (c) Controller Work Position for RT and ICOM controllers.

   (d) Radio Interface Units for interfacing with Radios.

   (e) Radio Monitoring Units.

   (f) FXO Gateway.

   (g) Real time Recording with playback facility.

   (h) Radio Recording Station.

   (j) IP Phones.

   (k) Patch Panels.

3. Various subsystems and equipment defined in the system design are described in subsequent sections.

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Server Subsystem

1. The Server subsystem should comprise of two servers with Linux operating system and various server software applications configured in a redundant architecture. The two servers, after power up, get configured as primary and secondary. Each of the servers should continuously monitoring the health of the other server. On failure of the primary server, the secondary server shall take over thereby providing complete redundancy.

2. **Server Redundancy**

(a) DRBD and pacemaker for maintaining high availability of Servers.

(b) Both these software are used to get the redundancy i.e. if one server fails, the other server takes over.

Dual Redundant Servers

3. These should be the dual redundant Xeon based high performance Servers should be working on Red Hat Linux Operating System Enterprise Version 6.9 or higher.

(a) Technical Monitoring & Control System (TMCS)

(b) Record and Replay System

Technical Monitoring & Control System (TMCS)

1. Technical Monitoring and Control System (TMCS) should VCCS caters to the following activities:-

(a) Health status of RIU, IP phone and Operator console.

(b) Channel No. of various TX / Rx is broadcasted to all RT operators.

Record and Replay System

It records all types of voice, RT calls and also the screen shots. It provides the facility to replay the recorded sessions.

High availability Dual LAN

1. Servers, Controller Work Position for RT and ICOM, Radio Interface Units etc. support dual LAN. Failure of one LAN shall not hamper the operations in any way. All the subsystems shall switch to other LAN.

2. All the RT controllers at ATC, GCA are connected to the Soft switch through a Dual Redundant Network consisting of network elements like switches and routers.

3. High availability Dual LAN operation should be achieved with the help of NIC Teaming.

4. NIC teaming is the process of grouping together two physical NICs into one single logical NIC, which gives network tolerance.

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Radio Interface Units (RIU)

RIUs should be embedded devices that provide dual LAN interfaces for TR set. It interfaces and integrates with Controller Work Position and TR set interface for voice, PTT and radio parameters.

Transmit and Receive Radios

1. These should be VHF/UHF radios. The VCCS supports the following:-

   (a) Provision of 4 independent RT channels for Receivers.

   (b) Provision of 4 independent RT channels for Transmitters.

   (c) Each of the RT controllers should be provided with headset along with the control panel for selecting the desired channel.

   (d) Audio Channel Mapping : RT- Left ear, ICOM – Right ear.

   (e) Single key operation for selection of RT channel.

   (f) Speakers should display channel, indicating the one selected, and voice activation detection (VAD) for monitoring the 4 RT channels.

   (g) PTT Option: 2 touch PPT(RT/COM) + 2 foot PPT(RT/COM).

   (h) Each RT channel can be selected by more than one controller.

   (j) Visual indication should be provided on the monitor panel of each controller indicating the selected RT channel(s).

   (k) RT Selection : No Multi channel RT TX should be allowed , only one RT should be active at a time.

Controller Work Positions (CWP)

1. These should be essentially man-machine interface (MMI) equipment for facilitating ground to air radio telephony (RT) communication and ground communication between various entities of the Air Traffic Control setup, over the IP network.

2. There are two types of CWP in VCCS.

   (a) RT Controllers

   (b) ICOM Controllers

3. These should be configured around PC with Touch Screen monitor, keyboard, mouse, and lip-mike headset. RT Controller, in addition, also has a Foot PTT for RT communication.

4. Each CWP has audio interface, keyboard, mouse and touch screen display for selecting the channels, depicting their status, digital controls for various adjustments and interface for headset.

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Software Configuration

1. The following software should be used for designing the Record & Replay system:-

   (a) Operating system: Red Hat Enterprise Linux Version 6.9.

   (b) Web server: Apache

   (c) Replay client application

   (d) Language Used: JDK-1.6

Functionality

1. The Audio-Video record and playback system should be an application used to record voice activity simultaneously on each of sound devices connected to an operator console, along with capturing the screen of the console every one second, storing these on a record-replay server over Ethernet, and replaying the synchronized audio/video files according to the selected time of recording and the selected audio channel.

Video capture timer:

2. This should be activated at the moment when recording on any of the channels of a console is started and remains active until a stop capture command is received for all the recording channels. Screen Capture event occurs every one second after being activated i.e. delay between events should be at least one second. By default the recording is on at all the operators. The recorder captures the screen into a ".wav" file. To capture the screen video, JAVA package ffmpeg is used. The captured file is named as the current time and saved in the pre-configured directory on the server. After recording the quality of the picture is not degraded.

Record Server

1. The Server should be responsible for identifying the various active consoles. It maintains the active status of all the consoles and displays only currently active consoles along with their respective sound capture devices.

2. When an operator logs in, it first creates a TCP socket to record server for sending "recording on" flag. After sending the "recording on" flag, the CWP gets an acknowledgement from the recording server. The CWP then starts to capture the screen and sound. There is also a provision to record the calls from hard phone to hard phone. These calls are recorded on voice switch. Here all the channels being recorded are full duplex i.e. TX and Rx are mixed and then recorded

3. The CWP should sends the recorded file to Record & Replay (R&R) server using FTP every one minute. That is, to transfer the files from OC to R&R server, FTP protocol is used. If there is any error at application level during transfer of files then for the same session the files are resent when the network is connected.

4. The server should also maintains a directory accessible to the active consoles where the Audio/Screen files are saved. These files are continuously polled by the server to reprocess the file for merging the channel. The hard-disk capacity required for the record server for a time period of 24*7 for 30 days is 1.5TB.

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QUANTITATIVE REQUIREMENTS FOR VOICE COMMUNICATION CONTROL SYSTEM AT BATHINDA

Ser No	Item	A/U	Qty
01	Voice Communication Control System with Set 14 Mobile I-Com Sets (Motorola Sets)	Set	01
02	Recorder System	Nos	01
03	VOIP Comn System	Nos	01
04	HRDF	Nos	01

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Annexure-III of Appx 'B'

AUTOMATIC WEATHER OBSERVATION SYSTEM (AWOS)

1. **Gen** Automatic Weather Observation System is ideal to be used as powerful tool for evaluating real time data instantaneously for better decision by supervisor, aviator and ATC.

2. **Operational Characteristics and Features:-**

(a) Provide accurate real time information on weather parameters as per WMO format, along the runway length for Air Operations and Planning.

(b) Provide enhanced operational capability and safety for the aircraft operating from an Air Station by providing real time weather parameters and accurate weather assessment.

(c) Ensure availability of data in digital format at a single gateway. The end user should be able to assimilate these inputs at one go in quick time.

(d) Use of these real time Met observations for Weather Prediction and research studies.

(e) To keep pace with latest technology in the field for enhancing operational capability and Aircraft safety.

3. **Scope of Work** The complete equipment and sensors of Meteorological System need to be installed on turnkey basis shall also include the following:-

(a) Complete Installation required for the installation of all the equipment, power supply junction boxes, Supply and laying of Optical Fiber & Power Cables and installation of all the equipment.

(b) Provision for distribution of power from the main junction box (not more than 500 m) by underground power cable and installation of power junction boxes, switches etc. up to the individual equipment. To cater for optimum load of 5 KVA, shielded three core power cable (copper), to be laid underground at minimum of 18 inches depth.

(c) Dissemination of data from the equipment site to the main hub at the Met office through 48 core Optical Fiber Cables (ceramic double armed rodent proof) in ring architecture and through STP, CAT 6 cables within the Met and ATC building.

(d) Two-way data communication of data from Forecaster's Work Station to the Observer's Work Station unit at ATC tower through STP cable (CAT6).

(e) Provision of essential spares, test, calibration and measuring equipment as needed by OEM/ bidder (at bidder's cost) to maintain uninterrupted data collection.

(f) Installation, integration, commissioning and training of the personnel at the site.

4. **The complete system of Met system shall meet the following requirements: -**

(a) AWOS, its sensors and products generated by the system, shall conform to the ICAO and WMO standards or better.

(b) The equipment is to be located at sites representing the prevailing meteorological conditions at the air stations as per the **ICAO** standards.

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(c) A Central Data Processing Unit (CDPU), located in Met Office, shall collect data from the equipment and process it. The CDPU shall process the data towards integration of respective equipment and its display besides carrying out continuous diagnostics of the incoming data and the entire system as well. **CDPU** should be in **hot redundant** mode. Access Rights and Network Administration for the CDPU and other servers shall be provided and controlled by the forecaster. CDPU shall be provided with a four TB network attached storage system compliant with RAID5.

(d) The Aviation Watch Keeper at ATC will interact with Forecaster's Work Station (at Met office) and report visual observations such as cloud amount, cloud type, general visibility etc., for final preparation of METAR, SPECI, TAF, Warnings and other reports via the Observer's Workstation provided as part of the AWOS. The report generation should be automatic unless specified otherwise by the forecaster.

(e) LAN and WAN compatibility is to be provided at Forecaster's work station for dissemination of Weather reports (METAR, SPECI, TAF, SYNOP and Weather warnings) to users at the Air Station. Data as well as various reports generated will be stored on the Central Data Processing Unit hard disk. The CDPU should have one year data storing facility with provision for incremental backup. An additional four TB network attached storage system also to be provided.

(f) Provision in Forecaster's Work Station to input TREND information for METAR, SPECI, TAF and SIGMET reports. The forecaster's workstation should be able to communicate with the observer's workstation and CDPU. Forecaster's workstation should also have provision of auto generation of various reports with the help of CDPU.

(g) The data display (graphical and alphanumeric) should also be available on both Forecaster's and Observer's Workstation as per latest ICAO recommendations.

(h) AWOS shall operate continuously, providing real time weather data from various meteorological equipment, for support of aircraft operations. It will also provide half-hourly, special observations and other meteorological data for forecasting and climatology such as SYNOP, various autographic charts i.e. wind rose, barographs, thermograph, hygrograph etc.

(j) System design shall be based on open architecture in both hardware and software for changes, expansion and integration with central administration and independent security.

(k) All components shall be of modular design to facilitate changes, expansion and integration to support air station expansion/alteration and capable of operation in the airport environment. The system shall provide the ability to take out any component, including data processing units, for service without affecting overall system performance. This capability will be achieved by including redundant systems wherever required. The requirement for Automatic Weather observation System (AWOS), in addition to system integration, fiber optic network, display units and other associated Installation, shall consist of the following equipment: -

Equipment

5. Digital Current Weather Instrument System DCWIS. The DCWIS which is planned to near runway will be equipped with sensors for measuring Wind Direction, Wind Speed, Temperature, Humidity, Rain. DCWIS consists of the sensors capable of working under severe meteorological conditions such as heavy rainfall, strong winds, lightning and also in the electromagnetic interference normally present in the airport environment. All sensors should be NIST or WMO or IMD traceable or certified by the equivalent national agency of the OEM's country and they shall have the provision of removal

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(a) **System Configuration** Data logger system shall have Data logger, Broad band communication link and Landline link (OFC) with following specifications: -

(i) **Input Channels** 12 analog channels, Minimum 6 digital channels capable of being configured to sense TTL status and ports for interfacing sensors.

(ii) **Input Voltage Range** 0 to 1.0 V.

(iii) **A/D Converter** 24-bit resolution or better as required system.

(iv) **Input protection** Surge protection against lightning.

(v) **Scan Rate** At least all channels once every second hour should be selectable.

(vi) **Logging Mode** User selectable 1 min to 1 hr.

(vii) **Averaging and Integrating Periods** 1, 2, 3, 5, 10 minutes, 1 hr and 24 hrs selectable.

(viii) **Display.** Suitable alphanumeric LCD or better display to view settings, current and logged data.

(ix) **Keypad**. Built in sealed membrane or touch screen alphanumeric keypad for system set up and data viewing operation (without PC or Laptop).

(x) **Communication.** Suitable Interface for land line (OFC) link connectivity need to be provided.

(xi) **Data Retrieval**. In case of communication link failure, suitable attachment to electronically collect and transfer the data from air station site to Met Office through Flash card or any other suitable solid state memory module.

(xii) **Real Time Clock (RTC).** In-built RTC with drift less than 1 minute/ month with the provision to set the clock on daily basis automatic & manual and fully time synchronization with the server.

(xiii) **Operating Power Supply**. 12 V DC or as required with automatic charging facility and 230 V AC ±10%, 50 Hz.

(b) **Other Features.** Micro-controller based modular design using state of-the-art technology, compact and lightweight, Leak-proof internal rechargeable battery backup for data and set-up retention in memory and provision to check calibration of data logger are the other essential features required.

7. **Frangible AWOS 6-meter Tower**

(a) **Standards.** The offered frangible masts and supports should comply with:

(ii) ICAO Aerodrome Design Manual Part 6- Frangibility
(iii) FAA Specification AC 150/5345-45

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(b) The offered masts should have been dynamically tested through full scale impact testing as per the ICAO and FAA Guidelines. Computerised simulation test will not be accepted. Both ICAO and FAA full impact testing certificate need to be provided.

(c) A valid Certificate from third party Certified agency for compliance with ICAO guidelines Aerodrome Design Manual Part-6, Chapter 5 and US Department of Transportation, FAA Advisory Circular No 150/5345-45 C, April 2007 should be submitted along with the Technical proposal.

(d) **Specification of 6 M Frangible Mast**

(i) The offered masts and supports shall be fully frangible over its complete height.
(ii) The offered mast should have the capability to be lowered for maintenance. The lowering mechanism should be hinge system and lowering to be undertaken by maximum 2 persons.
(iii) No realignment shall be required when raising the mast after it has been lowered for servicing.
(iv) The masts shall be made of glass fibre reinforced composite or other sufficiently Suitable lightweight material in compliance to ICAO requirement.
(v) The colour of the masts shall be achieved through the use of a UV stabilized gel coat and surface finish to prevent structural or aesthetic deterioration.
(vi) The masts and their components shall be fully resistant to environmental conditions. They shall maintain their physical properties and resistdeterioration through their expected life cyclein temperatures ranging from-30°C to +60°C, being exposed to ultraviolet radiation from the sun, rain, humidity and maritime climates.
(vii) The masts must be sufficiently strong and rigid to meet operational requirements for normal service for wind levels up to 140 km/hr.
(viii) Cross Arm should be provided with radiation shield to mount Temperature and Humidity sensor at 2 meter height
(ix) Mounting should be provided for wind sensor
(x) Lightingarrestor copper rod, Mounting Insulator, Copper Earthling cable 50 sq mm with Green Insulator, 16mm copper rod 8 feet X 2 numbers connected by a 25 X 5 mm bus-bar should be used for the chemical Lighting pit. The earth resistance should be less than 0.5 ohms.
(xi) The Base Plate should be stainless steel to avoid any rusting and damage

8. **5 Meter Externally illuminated Wind Direction Indicator.**

Bidder should provide 5 meter externally illuminated Wind Direction Indicator as per the below specs:

(a) 4.5 meter Frangible Lattice tower as per ICAO & FAA standard.
(b) Stainless steel bottom hinge base plate
(c) Stainless Steel mounting bolts with accessories.
(d) Wind cone mounting H assembly.
(e) Windsock cloth Size 2 (ICAO & FAA)
(f) 4 externally illuminated LED Lights (Philips Brand).
(g) 1 Obstruction Light.
(h) Isolation Box
(j) Colour Aviation Red & White.
(k) Foundation template
(l) The frangible tower should have Third party full crash test certificate as per compliance for full impact testing with ICAO guidelines Aerodrome design manual Part-6, chapter 5 and US department of transportation, FAA Advisory circular No 150/5345-45-C, April 2007)

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General Features

9. The open system architecture should be provided for suitable integration of various instruments installed at Runway site and meteorological data display systems installed at Met Office and ATC.

10. Central Data Processing Unit (CDPU) should be based on latest state of art server operating system viz. Windows or Linux etc (should be compatible to the project requirements) having provision for modems, device server & other communication equipment. The system should be provided with a hot standby. They should be typically mounted on the same rack.

11. The Data output from Central Data Processing Unit (CDPU) should be interfaced through TCP/IP Ethernet interface. System should be provided with web based data management facility from LAN or remote site. Digital display should have separate interface in order to have single display unit in different configuration to display pressure, temperature, dew- point, cloud, visibility and RVR data (user selectable) . Weather reports (such as METAR, SPECI, TAF etc.) should be able to transmit through AFTN and GTS interface. Report should be in accordance with ICAO recommended format. Runway light setting interface unit is to be provided. The time accuracy of the whole system including work-stations should be synchronized with reliable & accurate time source through external GPS.

12. The Local Area Network (LAN) should be a high speed, fault tolerant data network connecting computers, printers & other devices. Workstations should be personal computers working with the same operating system as available on Central Data Processing Unit, having 21 inch high resolution LED screen. The CDPU should work independent of the work stations. This means work station & applications on them can be freely started & stopped with no adverse effects on the rest of the system. Two workstations are defined as per their applications such as:-

(a) Forecaster workstation

(b) Observer's workstation

13. The Central Data Processing Unit software should have the following capabilities: -

(a) It should provide capabilities for background processes, which starts automatically when operating system is started.

(b) Input and Output system control for the data flow to & from the runway sensors. It should also monitor the operation of the data logger, data transmitters & the sensor themselves. Validation of report correctness, AFTN and GTS data transmission, control on digital display.

(c) Meteorological calculation & validation of incoming measurement data & should be able to derive additional variables (such as QNH, Dew Point etc.) to be used by other services & end user application.

(d) Validation should be possible for the incoming data and diagnostic services for input/output system and also for data to be provided.

(e) Provision of message generation and transmission of meteorological reports e.g. METAR, SPECI etc in WMO specified format.

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Work Station Functions

14. The machine should set to log on with a default configurable role suitable for that specific console. The access to the system should be controlled through security prompt & password. System should provide provision/applications for the following:-

(a) The observer to input various data manually and to edit various products generated by the system.

(b) Retrieval of raw and generated data (including statistical products) from the data base of the data processing unit.

(c) Graphical display of various weather parameters observed at the air field.

(d) Monitoring status of various equipment for maintenance and troubleshooting.

15. Event monitor application shall be able to view the events generated by the processing unit and to acknowledge the alarm conditions. Data faults include:-

(a) Communication faults.

(b) Sensor faults.

(c) Missing data.

(d) Value too high or too low.

(e) Value higher or lower than airport operating maxima.

(f) Value jumping too rapidly.

(g) Value frozen within a small range of value.

16. The system should monitor the current weather & time and prompt all operators (audio and visual prompt) to generate message as per standard ICAO or WMO format. The system should automatically generate SPECI whenever the SPECI condition is observed. The system should not transmit invalid and unapproved data. The message transmission scheduling should be configurable. The templates for manually generating following reports should be available:-

(a) METAR and SPECI.

(b) Aerodrome Warning.

(c) TAF.

17. The bidder should give an undertaking that changes suggested by ICAO or WMO in method of reporting or format during the warranty or AMC period will be incorporated without any additional cost.

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18. **Application or System Software - General Requirements.**

(a) The software license should be for lifetime of equipment. There should not be any hard ware key or switch to enable or disable the software.

(b) The software package should be designed to automatically collect, process, verify, display, archive, format and report the environmental parameters necessary to support aviation operations. The software package should accept manual intervention to edit and augment reports. The package should be user friendly and calculate the meteorological parameter like dew point from humidity and temperature. All the communication between Central Data Processing Unit and workstation and observer workstation should be based on TCP/IP.

19. **Data Manipulation and Storage.** The provision for performing number of statistical, arithmetic and logical calculation for the stored data should be available such as:-

(a) Min and Max calculations.
(b) Averaging.
(c) Unit conversion.
(d) Scaling and offset.
(e) Precision pressure elevation.
(f) Cross wind and Track wind and wind rose.
(g) Marked discontinuity.
(h) MOR and background luminance to RVR.
(j) QFE to QNH.
(k) Daily extreme values.
(l) Averaging and analyzing of cloud parameters.

20. The above mentioned values should be derived from raw data used for message generation & display purpose stored on the system hard disk or on external source. Measured and calculated data as well as transmitted reports are required to be archived for a period of one year in the hard disk. There should be a provision for Indian Navy intranet on standard TCP IP based data storage and retrieval facility at Kechi. Data can be transferred and retrieved through standard FTP. A data back-up facility also should be the part of the CDPU system. The archive and backup facility for the data transfer from the database on to the external removable medium should be provided. The external media should store the following: -

(a) One year data for all the parameters.

(b) Resolution: One minute, configurable.

(c) Stored parameters: All relevant measured and calculated variables, transmitted reports and system alarms.

21. **Update Intervals for CDPU**

(a)	Wind data	2sec
(b)	Pressure	60sec
(c)	Temp	60 sec
(d)	Dew point	60 sec (to be derived from Relative Humidity and Air Temperature)

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Server and Workstation Specifications

22. **Hot redundant Server (CDPU) Specification**. (1 set at each station). Central Data Computing System will be a Server System with hot redundancy having capability of storing the data on both the servers and auto switch over facility. The server should have 1.2 TB x 3 HOD for data receiving, retrieval and archiving with software for receiving, processing, visualisation, data basing and archiving and communication accessories including cables, modems, switches etc. The hardware details of the servers(two Numbers identical servers required for Hot redundancy located within Met Office in 19" rack) and other specifications are as follows:-

(a) The servers will be fixed in a 19" (800x1000mm) 42 U rack with casters and glass door. The architecture of the servers should be 100% redundancy.

(b) Server will be loaded with original software's and should be always in Hot position to take over from main server to secondary server and vice versa.

(c)The data base will be updated in the server in real time to avoid any loss of data in case of server failure.

(d) The performance and benchmark during the acceptance of system will include: -

(i) RAID 5 implemented on server with 3 hard discs in each server.
(ii) The server will be connected to a common keyboard and monitor.
(iii) 24 port Giga switch will be installed in the rack.

(e) Memory- 64 GB RAM ECC DOR RAM.

(f) HOD- 3* 1.2 TB (hot plug)

(g) Networking- 2 x 1000 MBPS Ethernet controller.

(h) Power Supply- Redundant Hot Pluggable power supply, 2 x 600 W or more (N* 1 redundancy)

(j) Monitor- 22" Flat Panel LCD Monitor.

(k) NAS 1 number: 12 Terra Byte of NAS drive should be provided.

23. **Configuration of Work Station**

Workstation configuration (2 Nos. each station to work as forecaster and observer system) is as follows: -

(a) Processor- Intel® Core TM i7 processor 14700 (20C (8P+12E), 28T, 2.1 GHz, 5.4 GHz, 33MB, 65W)
(b) Chipset-Intel B760
(c) RAM- 32GB DDR5 4800 MHz non-ECC UDIMM
(d) Storage- M.2 1TB PCIe NVMe SSD
(e) OS- Windows 11 Pro
(f) LED- 23.8"
(g) Keyboard- Std USB Keyboard
(h) Mouse- USB Optical Mouse
(i) Warranty- 3 Years

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Display Units

24. **24" Wall Mounted or Tabletop Display** The data to be displayed on 24" LCD screens is QFE, QNH, Wind parameters, temperatures, as per Para above in accordance with ICAO specifications, for use of ATC and associated controls. The parameter required to be displayed are as follows: -

(a) Atmospheric pressure
(b) Instant Temp (in °C)
(c) Instant Dew point Temp (in °C)
(d) Wind (Direction and Speed) (2 min. average, 10 min. average, Max. wind, Min. wind).
(e) Rain fall data

25. For all displays, the real time data display is to generate graphical (images) and text formats. User should be able to customize display option for current and historical data, color scale, Units, height, time span, background color and image size and quality.

Printers

26. **Colour Ink Jet Printer.**
(One in No) Printer Type-Print, Scan, Copy and Fax with ADF, Nozzle Configuration-800 x 1 nozzles each (Black, Cyan, Magenta, Yellow), Print Direction-Bi-directional printing, Maximum Resolution-4800 x 1200 dpi, Minimum Ink Droplet Volume- 3.8 pl, Print Speed Draft Text - Memo, A4 (Black Colour)- Up to 32 ppm / 32 ppm, Maximum Monthly Duty Cycle (pages)- 66,000, Automatic 2-sided printing- Yes (up to A3), Copy Speed ISO 29183, A4 (Black / Colour), Flatbed Simplex: Up to 23 ipm / 23 ipm, ISO 24735, A4 (Black / Colour), ADF Duplex: Up to 19 ipm / 19 ipm, Maximum Copy Size-A3, Scanner Type-Flatbed colour image scanner, Sensor Type-CIS, Optical Resolution-1200 x 2400 dpi, ADF (Duplex) Monochrome 200dpi Flatbed: 5 sec, ADF (Simplex / Duplex): Up to 26.0 ipm / 11.5 ipm, Colour 200dpi- Flatbed: 10 sec, ADF (Simplex / Duplex): Up to 9.0 ipm / 6.0 ipm, Type of Fax- Walk-up black-and-white and colour fax capability, Receive Memory / Page Memory-6MB, Up to 550 pages (ITU-T No.1 chart), ADF Function Support Paper Thickness-64-95 g/m2, Paper Capacity-50 pages (80 g/m2), USB Host- USB Host (Scan to memory device / Storage function), Paper Feed Method-Friction feed, Number of Paper Trays-3 (Front 2, Rear 1), Paper Hold Capacity- Input Capacity- Cassette 1: 250 sheets (80 g/m2), 50 sheets of Premium Glossy Photo Paper Cassette 2: 250 sheets (80 g/m2) Rear Tray: 50 sheets (80 g/m2), 20 sheets of Premium Glossy Photo Paper, Output Capacity Paper Size- 125 sheets (80 g/m2), 20 sheets of Premium Glossy Photo Paper- A6, A5, A4, B6, B5, Half Letter, Executive, 16K, Indian-Legal, Letter, 8.5 x 13", Legal 8.5 x 14" (216 x 356 mm), 4 x 6", 5 x 7",8 x 10", 16:9 wide, Envelopes #10, DL, C6, C4, Maximum Paper Size- 215.9 x 6000 mm (8.5 x 236.2"), Interface- USB 2.0, Network- Ethernet, Wi-Fi IEEE 802.11b/g/n, Wi-Fi Direct (8 connections) Network Protocol - TCP/IPv4, TCP/IPv6, LPD, IPP, PORT9100, WSD, Network Management Protocols- SNMP, HTTP, DHCP, BOOTP, APIPA, PING, DDNS, mDNS, SNTP, SLP, WSD, LLTD, Security Functions- Limit Access Function, PIN No. Certification, LDAP Address Book, IP Address Filtering, Panel Admin Mode, Operating System Compatibility- Windows XP / Vista / 7 / 8 / 8.1 / 10 Windows Server 2003 / 2008 / 2012 / 2016 / 2019 Mac OS X 10.6.8 or later, Power Consumption-Operating | Standby | Sleep | Power Off- 20 W | 10.3 W | 0.9 W | 0.2 W, OEM MAF to be provided by the bidder during bid submission.

27. **B&W Laser Jet Printer**
(One in No) Printer Type- Monochrome A4 Laser Multifunctional, Core functions-Print, Copy, Scan and Send, Copy speed- 1-sided : Up to 43/43 pages/min (A4), 2-sided : Up to 36/36 pages/min (A4), Multiple copies- Up to 999 copies, Copy density- Automatic or Manual (9 Levels), Document feeder paper- A4 - 50 sheets, Scan speed (ipm: BW / Colour; A4)- Copy (600dpi): Send (300dpi): 1-sided Scanning: 20, 2-sided Scanning: 34, 1-sided Scanning (BW/CL): 38/13, 2-sided Scanning (BW/CL): 70/26, Pull scan specifications- ScanGear MF For both TWAIN and WIA, Memory-Standard: 1.0GB

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RAM, Storage- eMMC: 2GB, Interface connection Network-1000Base-T/100Base-TX/10Base-T Wireless LAN (IEEE 802.11 b/g/n), Wi-Fi Direct connection, Others- USB 2.0 (Host) x2, USB 2. (Device) x1, Network security- TLS 1.3, IPSec, IEEE802.1X authentication, SNMPv3, Firewall, Fun tionality (IP/MAC Address Filtering),Enabling/Disabling (Network Applications, Remote UI, USB Inte face), G3 FAX separation from LAN, USB Port separation from LAN, Document security- Print Secu rity (Secure Print, uniFLOW Secure Print), Scan Security (Encrypted PDF, Device Signatur PDF/XPS), Send Data Security (Restricted E-mail/File send functions, Security confirming FAX num ber, Allow/Restrict Fax Driver Transmissions, Allow/Restrict Sending from History), Paper supply ca pacity A4, 80g/m2 (gsm) Standard-Paper Cassette: 550 sheets Multi-purpose tray: 100 sheets, Max imum- 2 300 sheets (with PAPER FEEDER PF-C1x3) 2 300 sheets (with PAPER FEEDER PF-C1x3 A4, 80g/m2 (gsm)- Standard: 150 sheets, Warm-up time- From power on: 14s or less *Time fron device power-on until copy ready (not print reservation)From sleep mode: 4s or less, Print spee (BW)- 1-sided : Up to 43/43 pages/min (A4), 2-sided : Up to 36/36 pages/min (A4), Print resolutio (dpi)- 600 × 600, Direct print- Direct printing available from USB memory and LPR Supported fil types: TIFF, JPEG, PDF and XPS (only LPR), Printing from mobile and cloud application- Apple Air Print, Canon PRINT Business, Mopria and uniFLOW Online, Operating system- UFRII: Windows® 8.1/10/Server 2012/Server 2012 R2/Server 2016/Server 2019, MAC OS X (10.11 or later) PCL: Win dows® 8.1/10/Server 2012/Server 2012 R2/Server/ 2016/Server 2019 PS: Windows® 8.1/10/Serve 2012/Server 2012 R2/Server 2016/Server 2019, MAC OS X (10.11 or later), Power source AC220-240V: 3.9A, 50/60Hz, Power consumption- Maximum: Approx. 1 420W or less, OEM MAF t be provided by the bidder during bid submission.

INSTALLATION

Cable Connectivity

28. **Connectivity Through Optical Fiber Cable Link.**
The outputs from the equipment mentioned at Para 4 will have to be integrated to CDPU or severs at the Met Office. The connectivity will be through optical fiber cable (OFC) link from the equipment locations to e Met building where it will be fused into S P (Shielded Twisted Pair), CAT 6 cable (within the building) r connectivity to Met office, ATC etc.

29. **Laying of Optical Fiber Cable (G .652.D)**
Rodent proof optical fiber Cable, 16 core, single mode (G.652.D standard) ITUT complied which is ceramic double armed, is to be laid in 20 mm PLHDPE conduit of 200 m or 500 m or 1000 m coils (as per requirement) with standard laying procedures confirming to IEEE. The cable is to be installed at a minimum depth of one meter with standard laying procedures. The rocky areas and areas where one meter depth is not possible, the conduit should be covered with GI pipes and concrete and sealed to avoid damage due to rodents.

e cable and joints should be able to withstand water logging. Provision for defect rectification or repairs ed to be considered. The OFC network will also be maintained by the bidder against AMC. As the stallation of OFC is in Air field environment hence, protocols laid down by ICAO and Aerodrome Author- ies will also have to be catered.

30. **Redundancy of Link.** The requirement is of operational nature and failure of system may affect operational efficiency. Hence, Optical Fiber Cable link (OFC) will be connected in ring architecture to ensure redudancy.

31. **Internal Connectivity (Met Office and ATC)** The connectivity within the building will be achieved through CAT 6, STP cable. Servers will be connected to display units. Output of CDPU will also be displayed at display screens, Forecasters Work Station, Observer's Work Station at ATC and Met Office. In addition, a two-way connectivity from Met Forecaster's Station to Observers' Work Station at ATC building will be achieved through CAT6, STP cables.

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32. **Quantity of Communication Cable.** Approximate requirement for the station for single mode OFC is about 10000 M (including casing and laying) and 25000M for STP CAT 6 Cable (in conduit including laying). Bidders may assess and verify the requirement during site visit and quote accordingly.

33. **Laying and Connecting of Electric Cable.** Provision to be made for distribution of power from the main junction box (not more than 1 km) by underground power cable and by installation of power junction boxes and switch etc. up to the individual equipment. The shielded three core power cable (copper) needs to cater for optimum load of 10 KVA and 5 KVA to be laid underground at minimum of 18 inches depth. Rate to be quoted inclusive of laying cost.

34. **Switches Junction boxes etc.** The accessories like switches, junction boxes, etc required for connection in OFC and power cables should also be coated.

35. **Protection for Exposed Equipment. Switches. Junction Boxes etc.** Protection against weather to be provided as per standard international norms.

36. **Equipment Installation Related Construction.** Installation related to equipment installation or for any other requirement will have to be undertaken by the bidder.

37. **Thunderstorm Detection and Lighting warning System:** Thunderstorm Detection and Lighting warning system should measure the static electric field generated by thunderclouds and detect nearby lightning. The Data should be displayed and graphed on the desktop computer using GUI software. The System should provide electrical charge for the range of 30 Kms Radius with alarm function available on the computer with relay output for visual red, yellow and green lights with siren in the ATC. The detailed specs are as under: -

(a) Range - Minimum 30 Km
(b) Accuracy - 5% +/- 0.05 kV/m
(c) Response time - 0.1 seconds
(d) Number of Alerts – 1, 2 or 3 configurable
(e) Configuration Port - USB
(f) Status Data Port - USB, RS-485
(g) Customizable alarm distances and electric field levels
(h) SMS text messaging and E-mail alarm notifications Aluminum and stainless-stee parts throughout for corrosion resistance. Separate PC should be provided along with 21 inch screen for the display of real time Lighting data.

38. **Ceilometer & RVR** Ceilometer and RVR are Part of AWOS and are used for measurement of Cloud and Visibility respectively.

(a) **Laser Ceilometer for Cloud Height Measurement** The cloud height system shall be based on the principle of Light Detection and Ranging (LIDAR) with pulse diode laser. It shall comprise of built-in tests and comprehensive self- diagnostic routines to identify the malfunction/failed module automatically to determine fault in sub-system without the need for on-site trouble shooting. Sub- system shall be replaceable without the need for on-site calibration. The system shall be provided with internal heaters and blower to keep the lenses free from condensation and accumulation of dirt and prevention of frost generation on window. The system should meet the following conditions I requirements:-

(i) System should strictly be in conformity to all ICAO and WMO requirements for reporting data on height of base of low clouds or vertical visibility for aviation operation and research purpose. (ICAO Annexure-111 and WMO no. 731)

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(ii) The system should have Enhanced Single Lens Technology with Height measurement starting from virtually Zero.

(i) The Ceilometer being can be directed either vertically or tilted for cloud base measurements. The tilt angle should be 10 to 12 deg from vertically.

(ii) Reliable operation during all weather conditions for vertical visibility and cloud detection during precipitation.

(iii) Fully automatic operation with excellent accuracy and stability. Fast measurement for the detection of thin cloud layers below a solid cloud base and simultaneous measurement of at least three cloud layers. Extensive built-in monitoring to verify performance and to generate warning before failures actually occurs.

(iv) Cloud base measuring range 0 - 25,000 ft or better

(v) Reporting Resolution 10 ft. or 5 m Unit selectable

(vi) Accuracy (Hard Target) 1 % or +/- 5 m.

(vii) Type of sensor Laser InGaAs diode, 910 nm.

(viii) Eye safety Class Strictly follow Class 1M IEC/EN60825-1

(ix) Cloud layers Up to three simultaneously

(x) Sampling time Programmable from 2 sec to 2 min

(xi) Output Data:

(xii) Cloud height (up to 3 layers) and status information

(xiii) Cloud height, status and backscatter profile

(xiv) Cloud height and internal monitoring data

(xv) Sky Condition

(xvi) Protection. The main Laser Ceilometer units installed in the field should withstand and be capable of operating the voltage fluctuations (110 VAC to 280 VAC) from the A/C mains (50 Hz) and must have inbuilt protection for the surge and lightning.

(b) **Transmitter System**

(i) Transmission Source Pulsed diodes (laser type preferred).

(ii) Peak Power The laser output power should be sufficient to cover the entire detection range up to 25,000 ft.

(iii) Wavelength of Laser Emission Infrared Laser (InGaAs diode, 910 nm Laser Diode)

(iv) Eye Safety strictly follow Class 1M IEC/EN60825- 1

(v) Optical System Suitable to project vertical and tilted beam of laser light with provision for easy adjustment of exact measurement of the cloud bases.

(c) **Receiver System**

(i) Receiver Collection Avalanche photodiode with suitable optics and gain control.

(ii) Measuring Range 0 - 25,000 ft or better

(iii) Accuracy 1 % or +/- 5 m

(iv) Reporting Resolution 10 ft. or 5 m Unit selectable

(v) Selectivity Operation should not be affected by extraneous light. The attenuation on account of precipitation should not affect the detection of base of low clouds. Detection of base of low cloud height should be possible under rainy and foggy conditions.

(d) **Environmental Operating Conditions**

(i) Heater. Heater arrangement for maintaining temperature near the lenses with auto control.

(ii) Operating Temperature. -20°C to +55°C or better.

(iii) Operating RH. 0 to 100%.

(iv) Wind Speed Survival. 55 mis or better.

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(e) **Visibility Sensor for RVR (Forward Scatter Meter)** It should reliably calculate the visibility reducing effect of precipitation, allowing meteorological optical range (MOR) reporting in the most challenging conditions and it should have capability to provide runway visual range (RVR). Self-diagnostics and modular design should enable short service times. Redundancy of data communication should be available for critical cases such as airport use. It should comply with ICAO, FAA, and WMO requirements and uses WMO and NWS weather codes in reporting.

Present Weather	
Identifies	Different types of precipitation like rain, freezing rain, drizzle, Fog, mist, haze (smoke, sand) or clear
Visibility Measurement	
Measurement range (MOR)	10 m to 20 KM or better
Reporting Resolution	1 m
Accuracy	+/- 25 m upto 150 m +/- 50 m for 150 to 500 m +/-10% 500 to 2000 m
Scattering Angle (main receiver)	42°C ±0.25 °C
Sampling Frequency	5 MHz
Environmental Conditions	
Operating temperature	-20°C to +60 °C
Operating humidity	0 to 100 %RH
Wind Speed	Upto 60 m/s
General Specification	
Outputs	RS-232, RS-485
Power supply	12 V DC-50 V DC (electronics)
Protection class	IP66
Installation accessories	Support arm for mast installations
Calibration setup	Shall supply required Calibration setup/filters for maintenance of accuracies of its output as per ICAO requirements
Tools	All required tools along with system shall be supplied
Background Luminance Sensor	Background Luminance sensor should be connected to the visibility sensor for BLM correction

39. QUANTITATIVE REQUIREMENTS FOR AWOS

Ser No	Item	A/U	Qty
01	AWOS with Lighting Detection System. Ceilometer & RVR	Set	01

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Annexure-IV of Appx 'B'

PTZ DAY & NIGHT CAMERAS FOR ATC RECORDING

1. **General** A highly modern Artificial Intelligence enabled Position, Tilt and Zoom camera is required to record all the Flying Activities within the control zone of ATC for operational requirements, training requirements and most importantly the flight safety in which all take off and landing are to be recorded.

2. **Technical Specifications**

   (a) Day and Night cameras with central rewritable and recording facility of 14 days.
   (b) High Resolution HD Day and Night IR PTZ Camera with min 2km range.
   (c) NVR 16 ports.
   (d) Quantity – 09 in number
   (e) Frangible Masts/ non-frangible Poles and allied accessories as required to cover the airfield.
   (f) Bosch/ Sony or equivalent branded systems.
   (g) Centralised and integrated HDD display minimum 40"
   (h) Failure alert/ Fault Warning mechanism.

3. **QUANTITATIVE REQUIREMENTS FOR PTZ DAY & NIGHT CAMERAS FOR ATC RECORDING AT BATHINDA**

Ser No	Item	A/U	Qty
01	PTZ Day and Night Camera, 2 km Range with Mast (Frangible/NonFrangible as per ground requirement, 14 days recording)	Nos	09

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Annexure-V of Appx 'B'

POWER GENERATION SYSTEM FOR ATC EQUIPMENT

1. **General** In an operational scenario, the power failure can jeopardize the operation and in case of aviation, it could be even fatal. Therefore, an alternate power generating system is considered essential.

2. **Technical Specification**

(a) The generator should be an eco-friendly and silent system.

(b) 125 KVA SILENT DG Set, complied to CPCB-IV comprising of engine Coupled to 125 KVA, Engine 6 Cylinder, 4 Stroke in-line water cooled. 415 V alternator mounted on a common base frame, complete with Fuel tank, Batteries & Leads, AVM Pads, Residential Silencer, First fill of lube oil, Controller and Exhaust Pipes including Auto mains Failure panel with load management for 125 KVA new DG, OEM MAF to be provided by the bidder during bid submission.

(c) Installation including creation of foundation to suit above specified DG Set complete with grouting.

3. **QUANTITATIVE REQUIREMENTS FOR POWER GENERATION SYSTEM FOR ATC EQUIPMENT**

Ser No	Item	A/U	Qty
01	125 KVA Genr with accessories & civil works	Set	01

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Annexure-VI of Appx 'B'

STABILISED UNINTERRUPTED POWER DISTRIBUTION NETWORK

1. **General.** To ensure functionality of all systems for safe air operations including runway lights, HAPI, a stabilized uninterrupted power supply must be provided.

2. **Technical Specification.**

(a) Supply & Provisioning of UPS of 60kVA/48kW, Input Phase: 3PH+N+PE, Rated Input Voltage: 400 Vac, Acceptable Voltage Range: 285~500Vac, Frequency Range: 45-55Hz @50Hz, 55-65Hz@60Hz, Auto Sensing for 50/60Hz UTILITY, Power Factor: >=0.85 (>=0.94, with filter), Generator Input: Support. OUTPUT: Voltage: 400 Vac, Power Factor: 0.8, Voltage Regulation: ±1%, Frequency Range: ±0.05% , Synchronized with utility on AC mode, Current Crest Ratio: 3:1, Harmonic Distortion: <=2% THD (Linear Load), Output Waveform: Pure Sine-wave, Phase Tolerance120 o + 0.5 o (Balanced and Unbalanced Load), Overload Capacity: 105%~110%, 60 min~110%~125% 10min~125%~150% 1min, Transfer Time:0ms (Utility to Battery), 0ms (Utility to Bypass), Economic Mode (ECO Mode): Support (set by LCD), Bypass output when UPS off: Support (set by LCD), Efficiency: Up to 94% Double Conversion Mode, 99% Eco Mode. BATTERY TYPE: VRLA, Charge Model: Float, charging voltage (VDC): (Depend upon no. of battery). Function, Communication & Standard: Display: LCD+LED (Load/Battery/Input/Output/Operating Mode Information), Protection Function: Over Temperature, Fan Fault, EPO, Output short Circuit, Low Voltage of Battery, Over or lack of input Voltage overload and so on, Communication: Standard: RS232 Optional: USB, RS485, Dry contact, Intelligent slot, Parallel, SNMP card, Relay card, Modbus, Standard: IEC/EN62040-1, 62040-2. 62040-3, Complying to CE. OEM MAF to be provided by the bidder during bid submission.

(b) Installation including Formation of Trenches to suit single or multilayer installation (Power/Power, Power/Network, Power/AFLS) 350mm x 500mm/750 mm depth, (3) HDD for crossing of finished surfaces like Taxiways and Roads in complete, however existing ducts shall be used for crossing the runways. (4) Chamber installation for joint enclosures (5) Route markers in complete.

3. **QUANTITATIVE REQUIREMENTS FOR STABILISED UNINTERRUPTED POWER DISTRIBUTION NETWORK**

Ser No	Item	A/U	Qty
01	60 KVA UPS with Batteries, Power distribution network and cable	Set	01

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ATC AND USER CONSOLES

1. **General** The various systems and devices installed in an airfield are required to be housed suitably so that their controls are reachable to the user and displays are visible to the users in an integrated manner. This requirement prerequisites user specific consoles with proviso to accommodate systems hardware, controls, displays, power and signal cables.

2. **Technical Requirement**

(a) Operator integrated control Work Desk (equipped with flight plan Information system control console, Situation Display control console, Airport Sensor Data display with decision support data base, Airfield Lighting control console, RCMS, Time server AND Provision to position communication sets, writing pad including the hardware to suit ATC space but excluding the communication sets) made of processed wood with provision to position Displays for above systems, Mounting provisions of communication sets, Monitors, Key Boards to suit ATC Environment to include:-

(b) VCCS

(c) PTZ day & night cameras

(d) Airfield Lighting control console cum RCMS for AFLS + HAPI

(e) Slave Panel Display Clocks

(f) AWOS

(g) Printers

3. GPS Time clocks -1 wall mounted and 4 table mounted slave clocks are required for display of IST and UTC time.

4. **QUANTITATIVE REQUIREMENTS FOR ATC AND USER CONSOLES**

Ser No	Item	A/U	Qty
01	ATC accessories & consoles with civil works	Set	01

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TRAILER MOUNTED MOBILE ATC

1. **General** Trailer Mounted Mobile ATC can be used to establish safe air traffic control for milita deployment in case of active war scenario. It will help in efficient management of airspace for safe a efficient conduct of flying operations.

2. **Technical Specifications**

S.No	Parameter	Description
(a)	Type	Container with 360 deg view and tilted and tinted glass to avoid glare effect inside ATC
(b)	Sitting	Provision of sitting arrangement and foldable bunker bed for 3 person. Modular & foldable interior furniture.
(c)	AC	Air Conditioned with external power option
(d)	Power	Provision of silent generator along with power change over switch and module.
(e)	Lighting	Sufficient Lighting to meet Day & Ni operational requirement. Also, to fit ATC beacon light, as optional.
(f)	Hydraulic Lift	Option to lift the cabin and locking option to raise and lock the lift at various heights levels upto 10 feet (with a height gap of 01-02 feet)
(g)	Staircase/Ladder	Provision of staircase/ ladder compatible with the container at all heights.
(h)	Communication	02 x A210 Ground to Air VHF Transceiver radio set Adequate power supply points and ports for fitments of requisite antennas.
(j)	Earthing Protection	ATC Cabin must have sufficient earthing points for safety.
(k)	Floor Mat	Product Type: Anti Slip Polyester Woven Fabric, Backside: Smooth/ Soft sanded, Material Thickness (carrier/ total): 1.5 mm, Weight: 2200-2400 g/m2 Glass Content: 24-28%, Barcol Hardness: 45-55 Barcol, Tensile Strength: 80 N/mm2, Tensile – elongation: 1.6%, Tensile-e-modulus: 6475 N/mm2 Flexural Strength: 65 N/mm2, Flexural-e-modulus: 3100 N/mm2, Certification: The floor covering offered shall be tested for determination of anti-slip properties in workrooms and areas with slip danger, in accordance with the walking method – ramp test specified in DIN 51130:2014-02. The bidder shall submit a valid test certificate from an accredited laboratory/agency confirming compliance with the required slip resistance class (R9 to R13, as applicable). OEM MAF to be provided by the bidder during bid submission.
(l)	Interior Safety	Interior fitting must be fireproof. Entire cabin must be thermo-conditioned using correct insulation materials/panels, suitable to the requirements as per environmental conditions.
(m)	Sound Proofing	Adequate sound proofing with correct and suitable materials.

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S.No	Parameter	Description
(n)	Mount	Trailer based. 04 x all terrain tyres with a spare tyre
(o)	Fire Safety	Fire retardant interior material. Provision of fitment for adequate and suitable firefighting equipment
(p)	Camouflage	Exterior surface must be designed and painted to have camouflage, as per terrain suitability.
(q)	Antenna & allied accessories for Tracking of Helicopters	Mobile ATC should be equipped with Antenna and allied hardware for integration of existing Virtual Helicopter Radar of the station and portable helicopter borne transponder.

3. QUANTITATIVE REQUIREMENTS FOR TRAILER MOUNTED MOBILE ATC

Sr. No	Item	A/U	Qty
01	Mobile ATC with all accessories, VHF System, Met System with scissor lift	Set	03

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Annexure-IX of Appx 'B'

SPECIFICATIONS FOR SERVER & WORK STATION

1. **Server Specification**

(a) Form Factor - Max. 2U (including all units) rack mounted with sliding rails

(b) Configured CPUs - One nos. x86 Architecture based Intel Xeon Gold /AMD Turin Latest Generation processor. Each processor with clock speed of 2.0GHz base frequency, processor with 24 Cores. Supports DDR5 4000 or better memory, 45MB cache or higher

(c) Performance Benchmark - Specrate2017_fp_base >420, Specrate2017_int_base >390, SPEC Benchmark report meeting the above performance criterion along with reports for the same server model and processor configuration must be attached with technical bid

(d) System utility with AI Frameworks Preloaded - System should be preloaded with Preco piled frameworks (CPU & GPU optimized MxNet, CuDNN, Caffe and Pytorch) to be supplied with the system, license must be in named of Customer organization, Data sheet of utility must be submitted with bid

(e) Job Scheduling Utility License - Unified system management/monitoring toolset for configration, diagnosis and management of the system. Toolset/Manager must be capable of supporting package and image based provisioning, intuitive web interface for managing and customize the node, And tool set with provisioning, monitoring, and reporting capabilities. With JOB scheduling capabilities on single node for CLI and GUI based end user applications. S/W utility must be from the H/W OEM and not from a third party vendor. Product datasheet with demonstration details must be shared

(f) NVMe Support - At least Two or more drive /Slots must have native support for NVMe drives

(g) Memory configured - 64GB DDR5 4400MHz Registered ECC RAM installed from day one. Total 16 DIMM Slots or Higher

(h) Disks Bays - 12 LFF Nos. or more 3.5" HDD/SSD Bays

(i) RAID Controller - RAID Controller SAS3 12Gbps with 1GB Cache and Supports RAID levels 0, 1 ,5,6,10

(j) SSD & HDD - 3 x 1200GB SAS 10K RPM HDD Drives installed from day one

(k) System Management Utility - Dedicated IPMI Management Port with Activated Licenses. Out of band Management Capabilities, Stack with a full IPMI implementation, Hardware Health monitor, Remote power control Etc. Product datasheet/manual must confirm the compliance.

(l) I/O slots - 4 x PCIe 5.0 x16 and 1 x M.2 Slots or more

(m) Interconnect - 2 x 1Gbps Ethernet Ports with thru onboard or add on Controller

(n) Other ports - Front: 2x USB 3.0; Rear: 1 x 1G (IPMI) dedicated port, 1 x VGA, 2 x USB 3.0 Ports

(o) OS - Ubuntu 64-bit latest version Preloaded

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(p) OS Certification - Quoted Model must be listed on OS official website of Windows, RHEL Linux and certificate copy must be attached with bid

(q) Power Supply - N+1 or more 80 Plus 800W Redundant Titanium rated Power Supplies

(r) Monitor - 22" or higher LED Monitor IPS (1920x1080) resolution

(s) KBD + Mouse - Standard Keyboard + Optical Mouse (Wireless +USB)

(t) Cooling Subsystem - Monitoring of cooling sub system of server through metering utility, speed control, and PWM

(u) Power and Temperature - Real-time power meter, graphing, thresholds, alerts & capping with historical log data. Temperature monitoring wide indicators

(v) Warranty – 3 Years

(w) Regulatory - OEM must be BIS, ISO, Govt. Of India E-Waste Regulation Compliance/ Registered, all Certificate copy must be attached with bid

(x) Security Compliance - Automated BIOS/System level encryption to authenticate input an output data passing thru. System information including, keys, passwords and digital certific stored/created must be secured from external software attacks. Cryptographic functions off for system security. Details of utility must be submitted with bid

(y) MII Compliance - Make in India System offered must comply with DIPPs notification no. P-45021/2/2017-PP(BE-II) with revisions till date and compliance with P-45021/102/2019-B Part (1) (E-50310) Office Memorandum issued by GoI. OEM Certificate should be subm with bid

2. **Work Station Specification**

(a) Processor- Intel® Core TM i7 processor 14700 (20C (8P+12E), 28T, 2.1 GHz, 5.4 GHz, 33MB, 65W)

(b) Chipset-Intel B760

(c) RAM- 32GB DDR5 4800 MHz non-ECC UDIMM

(d) Storage- M.2 1TB PCIe NVMe SSD

(e) OS- Windows 11 Pro

(f) LED- 23.8"

(g) Keyboard- Std USB Keyboard

(h) Mouse- USB Optical Mouse

(j) Warranty- 3 Years

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Date: 2026.06.12 17:17:19

In Lieu of IAFD-931

BOARD PROCEEDING

Proceedings of	:	Board of Offrs
Assembled at	:	668 Army Avn Sqn (R&O), C/O 56 APO
On the day	:	Sep 2025 and subsequent days
By the order of	:	Commanding Officer, 668 Army Avn Sqn (R&O)
For the purpose of	:	To carry out market survey for upgradation of Air Traffic Services at 668 Army Avn Sqn (R&O) out of OCPP fund for FY 2025-26.

PRESIDING OFFICER

(IC-76395A Lt Col Sameer Sharma)

MEMBERS

(IC-87342F Maj Vivek Kumar Singh)

(IC-87401H Maj Nitin Kumar)

1. The board having assembled pursuant to order proceeded to carry out reasonable cost as per para 13.3 of DPM 2009 for upgradation of Air Traffic Services at 668 Army Avn Sqn (R&O) out of OCPP fund for FY 2025-26.

2. The market survey of reasonable rates for upgradation of Air Traffic Services at 668 Army Avn Sqn (R&O) out of OCPP fund for FY 2025-26 has been carried out and quotations of the fwg vendors were obtained :-

   (a) AMA Private Ltd.

   (b) SGS Weather & Environmental System Pvt Limited.

   (c) Vardhman Airport Solution Pvt Ltd.

3. Also a copy of supply order of CATS, Nashik Road obtained to ascertain the cost of the similar proj executed recently.

4. **Recom of the Board**. The tentative approx cost for upgradation of Air Traffic Services at 658 Army Avn Sqn (R&O) out of OCPP fund for FY 2025-26 after comparing with market survey and cost of similar proj executed at CATS, Nashik Road is Rs 29,78,00,000.00 (Rupees twenty nine crore seventy lakh only) (Comparative statement att as Appx). It is recom that the market survey price of the above mentioned proj be fixed at Rs **29,70,43,927.56** (Rupees twenty nine crore seventy lakhs forty three thousand nine hundred twenty seven and fifty six paisa only)

Presiding Officer : (IC-76396J Lt Col Sameer Sharma)

Members 1. (IC-87342F Maj Vivek Kumar Singh)

2. (IC-87401H Maj Nitin Kumar)

COUNTERSIGNED

ANUPAM KUMAR TYAGI
Colonel
Commanding Officer
658 Army Avn Sqn (R&O)

Station: [illegible]
Date: 01 Oct 2025

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Date: 2026.06.12 17:17:19 I

MARKET SURVEY

Ser No	Offered Item	A/U	Qty	Seller Name and Total Cost: AMA Pvt Ltd	SGS Weather & Environmental Sys Pvt Ltd	Vardhman Airport Solutions Pvt Ltd	Remarks
01	Airfield Lighting System of Runway with Night Vision Goggles Compatible Lights, Helicopter Approach Path Indicator, Aerodrome Beacon, Landing T, Obstruction Lights, Windsock, Lazer Anti Bird System and Sound Anti Bird System.	Set	01	6,38,06,143.00	7,30,49,930.00	6,54,49,522.00	
02	Voice Communication Control System with 14 Mobile I-Com sets (Motorola Sets)	Set	01	5,11,66,160.00	5,10,01,900.00	7,28,13,13[illegible].00	
03	Automatic Weather Station (AWOS) with Frangible Mast, Lightening Detection System, Runway Visual Range and Ceilometer (No of locations 6)	Set	01	2,82,81,830.00	2,31,27,000.00	3,06,00,000.00	
04	PTZ Day and Night Camera, 2 km Range with Mast (Frangible/Non Frangible as per ground requirement, 14 days recording)	Nos	09	94,22,065.00	81,09,000.00	1,91,73,845.00	
05	125 KVA Genr with accessories & civil works	Set	01	31,63,060.00	25,65,200.00	41,82,000.00	
06	80 KVA UPS with Batteries, Power distribution network and cable	Set	01	31,98,195.00	30,06,580.00	41,99,136.00	
07	ATC accessories & consoles with civil works	Set	01	70,03,932.00	58,79,036.00	86,17,200.00	
08	Mobile ATC with all accessories, VHF System, Met System with scissor lift	Set	03	9,60,00,625.00	7,0[illegible],50,800.00	9,12,00,000.00	
09	Servers, Racks, NPT Server, OFC & Data cable Network with Accessories	Set	01	1,73,48,860.00	91,70,088.00	41,04,840.00	
10	Turn Key installation, commissioning, training and documentation	Job	01	72,45,000.00	55,12,000.00	-	
Total cost				28,97,03,940.00	25,17,32,142.00	28,89,41,648.00	
Total GST @ 18%				5,21,46,709.20	4,53,11,785.56	5,20,09,499.00	
Total cost with 3 year warranty incl				34,18,50,649.20	29,70,43,927.56	34,09,51,147.00	

Presiding Officer

(IC-7[illegible] Lt Col Sameer Sharma)

Members

(IC-87342F Maj Vivek Kumar Singh)

(IC-874[illegible] Maj Nitin Kumar)

COUNTERSIGNED

अनुपम कुमार ठाकुर
ANUPAM KUMAR THAKUR
कर्नल
Colonel
[illegible]

Station: c/o 56 APO

Dated: 08 Oct 2025

STATEMENT OF CASE FOR UPGRADATION OF AIR TRAFFIC SERVICES AT COMPOSITE AVIATION BASE (CAB) BATHINDAOUT OFOTHER CAPITAL PROCUREMENT PLANUNDER MAJOR HEAD 4076, MINOR HEAD 103 CODE HEAD 908/49 FOR THE FINANCIAL YEAR 2025-26

1.	**Unit/Directorate/Office initiating the SOC**		668 Army Avn Sqn (R&O) c/o 56 APO
2.	**Name of the item (s)/ services being procured:-**		
	(a)	Category (Ex ordnance, Medical, IT, Engineering, MT, Electricals, Electronic, Clothing, **Aviation**, General, FOL, Machinery, Spares, Communications, Navigational, Provisions, Weapons, Armament, Ammunition, Repairs, Services and other categories (to be specified)	Upgradation of Air Traffic Services in South Western Theatre.
	(b)	Nomenclature of items	Details of upgradation to be upgraded this project attached as **Appendix A**.
	(c)	Specification/ Qualitative Requirement	BOQ for Technical Specification attached as IAFD-931 to **Appendix B. (Flag B)**
3.	**Justification for procurement** :-		
	(a)	Authority, if any, under which the proposal is being initiated - Govt Rules/Orders, Service specific instructions etc to be quoted.	(i) Government of India Ministry of Defence, Department of Defence (Acquisition Wing Secretariat)letter number 1 (8)/D (Acq)/19-PI dated 07 December 2020. (ii) HQ 10 Corps letter No 0415009A/ 01255/ACSFP/2024-25 dt 30 Apr 2024. (**Flag A**) (iii) HQ 10 Corps letter No 0415009A/OCPP/ 2025-26 dt 20 Feb 2025 (Ser No 15 of Appx A). (iv) HQ South Western Comd letter No 48172/GS/ACSFP/OCPP/2025-26 dt 30 Apr 2025 for carry fwd list.(Ser No 74 of Appx A)
	(b)	If it is a scaled items - Reference number and date of the Government letter/Service HQ letter authorizing the scale to be quoted	Scaled (Serial No 108 & 112 of WET No 411114/ 2022 dt Aug 2022- Page No 11) (Copy encls). ETS 414102/2021 & ETS 414103/2021 (copy encls)
	(c)	**If it is a non-scaled item, the following information to be provided** :-	
		(i) Which item was serving the purpose till the date?	NA
		(ii) How the present proposal will serve the purpose?	NA
		(iii) Whether scaling action has been initiated? if yes, reference number to be given. If not, reasons for not doing so to be given.	NA

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(IC-78695A Lt Col Sameer Sharma)

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3	(d)	Broad purpose of item being procured :-	The items being produced will modernize the Air Traffic Control of Composite Aviation Base, Bathinda. The Air Traffic Control at present is using equipment, which is outdated, modernization of the same will facilitate aviation operations in day and night for all aircrafts, thus increasing the operational efficiency of aviation assets in South Western Command. This modernization will enhance the safe flying operations in the base.
	(e)	Detailed justification from user	**General**. The facilities at CAB, Bathinda are of old vintage and were catered to meet requirement of one Aviation Squadron which was located initially at the base. These have not been upgraded to accommodate accretion of additional helicopter units and Remotely Piloted Aircraft System Flights at CAB, Bathinda. Further, the Air services available at CAB, Bathinda are also grossly equipment available with helicopter like Advance Light Helicopter Mark II, Advance Light Helicopter Mark IV and RPAS. (i) **Airfield Lighting System**. Presently 212 main runway lights, 48 Helipad runway lights. Landing T, Windsock, Leading in lights and Helipad lights are available at Base. However, the intensity of lights cannot be adjusted as per requirement as well as unsuitable for Night Vision Goggle flying due to non-availability of IR lights. Present Airfield lighting systems is also not conducive for Take Offs and Landings RPA by External Pilot. Therefore, there is requirement of upgradation of Airfield Lighting System at Army Aviation Base, Bathinda. Airfield lighting like Runway lighting, Taxiway lighting, Helipad and HAPI Lights are required for use as per ICAO norms, to provide continuous guidance to the pilot of approaching aircraft. (ii) **Voice Communication Control System**. At present, the Base has three Base VHF Airband Transreceiver (IC-A200), one Base VHF Airband Transreceiver (IC-A120) and six Hand Held ICOM IC-A25C. However, the integration of Radio Communication from Air to ground and ground to ground (Between Air Traffic Control) and crash bay services as well as between other Air Traffic Control and IAF Agencies) is not available. Hence, requirement for better air space control, there is a requirement for upgradation of existing Voice Communication Control System due to increase in the air traffic at Bathinda Aviation Base and to accommodate future expansion of the Base.

Sig of Proj Offr

(IC-76285A Lt Col Sameer Sharma)

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FINDINGS OF THE BOARD

3 The BOO was carried out detailed analysis of Technical specifications/Qualitative requirements for Upgradation of Air Traffic Services for Composite Aviation Base (CAB), Bathinda, from OCPP fund for FY 2025-26.

RECOMMENDATIONS OF THE BOARD

4. Recommended Technical Specification /Qualitative Requirements for Upgradation of Air Traffic Services is enclosed as per Appx B (Annex I to Annex IX).

Presiding Officer : (IC-75884Y Lt Col Harish Majila)

Member 1. (IC-77324L Maj Apoorv Tiwari)

2. (IC-84444M Maj Shevate Shreetej Raju)

[illegible]
[illegible] KUMAR TOMAR
[illegible]
Colonel
[illegible]
Commanding Officer
[illegible]
[illegible]

बिड संख्या/Bid Number: GEM/2026/B/7410056

दिनांक /Dated: 20-05-2026

बिड दस्तावेज़ / Bid Document

बिड विवरण/Bid Details	
बिड बंद होने की तारीख/समय /Bid End Date/Time	04-07-2026 11:00:00
बिड खुलने की तारीख/समय /Bid Opening Date/Time	04-07-2026 11:30:00
बिड पेशकश वैधता (बंद होने की तारीख से)/Bid Offer Validity (From End Date)	180 (Days)
मंत्रालय/राज्य का नाम/Ministry/State Name	Ministry Of Defence
विभाग का नाम/Department Name	Department Of Military Affairs
संगठन का नाम/Organisation Name	Indian Army
कार्यालय का नाम/Office Name	**********
कुल मात्रा/Total Quantity	19
वस्तु श्रेणी /Item Category	Airfield Lighting System of Runway with Helicopter Approach Path Indicator , Voice Communication Control System , Automatic Weather Station AWOS with Frangible Mast , PTZ Day and Night Camera System for Air Traffic Control Recording , Power Generation System , Stabilized Uninterrupted Power distribution network for Air Traffic Services Equipment , ATC and user consoles , Trailer Mounted Mobile ATC , Server and Work Station
GeMARPTS में खोजी गई स्ट्रिंग्स / Searched Strings used in GeMARPTS	Air traffic control modernisation to include airfield lighting system, voice communication and control system automatic weather observation system and power generation
GeMARPTS में खोजा गया परिणाम / Searched Result generated in GeMARPTS	VCCS: Voice communication and control systems (AAI), Digital Voice Recording and Replay System for airports (AAI)
अधिसूचना के लिए चयनित प्रासंगिक श्रेणियाँ / Relevant Categories selected for notification	• ATM (Air Traffic Management) Automation System (AAI)
बीओक्यू शीर्षक /BOQ Title	Air traffic services modernisation
बिडर का न्यूनतम औसत वार्षिक टर्नओवर (3 वर्षों का) /Minimum Average Annual Turnover of the bidder (For 3 Years)	1485 Lakh (s)
मूल उपकरण निर्माता का औसत टर्नओवर (गत 3 वर्षों का)/OEM Average Turnover (Last 3 Years)	2376 Lakh (s)
उन्हीं/समान सेवा के लिए अपेक्षित विगत अनुभव के वर्ष/Years of Past Experience Required for same/similar service	3 Year (s)

बिड विवरण/Bid Details	
वर्षों के अनुभव एवं टर्नओवर से एमएसई को छूट प्राप्त है / **MSE Relaxation for Years Of Experience and Turnover**	Yes | Complete
स्टार्टअप के लिए अनुभव के वर्षों और टर्नओवर से छूट प्रदान की गई है / **Startup Relaxation for Years Of Experience and Turnover**	Yes | Complete
विक्रेता से मांगे गए दस्तावेज़/**Document required from seller**	Experience Criteria,Past Performance,Bidder Turnover,Certificate (Requested in ATC),OEM Authorization Certificate,OEM Annual Turnover,Compliance of BoQ specification and supporting document *In case any bidder is seeking exemption from Experience / Turnover Criteria, the supporting documents to prove his eligibility for exemption must be uploaded for evaluation by the buyer
क्या आप निविदाकारों द्वारा अपलोड किए गए दस्तावेज़ों को निविदा में भाग लेने वाले सभी निविदाकारों को दिखाना चाहते हैं? संदर्भ मेनू है/**Do you want to show documents uploaded by bidders to all bidders participated in bid?**	Yes (Documents submitted as part of a clarification or representation during the tender/bid process will also be displayed to other participated bidders after log in)
बिड लगाने की समय सीमा स्वतः नहीं बढ़ाने के लिए आवश्यक बिड की संख्या। / **Minimum number of bids required to disable automatic bid extension**	3
दिनों की संख्या, जिनके लिए बिड लगाने की समय-सीमा बढ़ाई जाएगी। / **Number of days for which Bid would be auto-extended**	7
ऑटो एक्सटेंशन अधिकतम कितनी बार किया जाना है। / **Number of Auto Extension count**	1
विगत प्रदर्शन /**Past Performance**	50 %
बिड से रिवर्स नीलामी सक्रिय किया/**Bid to RA enabled**	Yes
रिवर्स नीलामी योग्यता नियम/**RA Qualification Rule**	H1-Highest Priced Bid Elimination
बिड का प्रकार/**Type of Bid**	Two Packet Bid
प्राथमिक उत्पाद श्रेणी/**Primary product category**	Airfield Lighting System of Runway with Helicopter Approach Path Indicator
तकनीकी मूल्यांकन के दौरान तकनीकी स्पष्टीकरण हेतु अनुमत समय /**Time allowed for Technical Clarifications during technical evaluation**	5 Days
निरीक्षण आवश्यक (सूचीबद्ध निरीक्षण प्राधिकरण /जेम के साथ पूर्व पंजीकृत एजेंसियों द्वारा)/**Inspection Required (By Empanelled Inspection Authority / Agencies pre-registered with GeM)**	No
अनुमानित बिड मूल्य / **Estimated Bid Value**	300000000
मूल्यांकन पद्धति/**Evaluation Method**	Total value wise evaluation

बिड विवरण/Bid Details	
मध्यस्थता खंड/Arbitration Clause	No
सुलह खंड/Mediation Clause	No

ईएमडी विवरण/EMD Detail

एडवाईजरी बैंक/Advisory Bank	State Bank of India
ईएमडी राशि/EMD Amount	8910000

ईपीबीजी विवरण /ePBG Detail

एडवाइजरी बैंक/Advisory Bank	State Bank of India
ईपीबीजी प्रतिशत (%)/ePBG Percentage(%)	3.00
ईपीबीजी की आवश्यक अवधि (माह) /Duration of ePBG required (Months).	86

(a). जेम की शर्तों के अनुसार ईएमडी छूट के इच्छुक बिडर को संबंधित केटेगरी के लिए बिड के साथ वैध समर्थित दस्तावेज़ प्रस्तुत करने है। एमएसई केटेगरी के अंतर्गत केवल वस्तुओं के लिए विनिर्माता तथा सेवाओं के लिए सेवा प्रदाता ईएमडी से छूट के पात्र हैं। व्यापारियों को इस नीति के दायरे से बाहर रखा गया है।/EMD EXEMPTION: The bidder seeking EMD exemption, must submit the valid supporting document for the relevant category as per GeM GTC with the bid. Under MSE category, only manufacturers for goods and Service Providers for Services are eligible for exemption from EMD. Traders are excluded from the purview of this Policy.

(b).ईएमडी और संपादन जमानत राशि, जहां यह लागू होती है, लाभार्थी के पक्ष में होनी चाहिए। / EMD & Performance security should be in favour of Beneficiary, wherever it is applicable.

लाभार्थी /Beneficiary :

GSO 1 Avn
HQ SOUTH WESTERN COMMAND ACSFP CELL, Department of Military Affairs, Indian Army, Ministry of Defence (Bijender Singh Ahlawat)

बोली विभाजन लागू नहीं किया गया/ Bid splitting not applied.

एमआईआई खरीद वरीयता / MII Purchase Preference

एमआईआई खरीद वरीयता / MII Purchase Preference	Yes
मेक इन इंडिया विक्रेताओं को खरीद में प्राथमिकता, यदि उनका मूल्य L1+X% तक की सीमा में है / Purchase Preference to MII sellers availabele upto price within L1+X%	20
मेक इन इंडिया खरीद में प्राथमिकता के लिए बिड की मात्रा का अधिकतम प्रतिशत / Maximum Percentage of Bid quantity for MII purchase preference	50

सार्वजनिक खरीद (मेक-इन-इंडिया को प्राथमिकता) आदेश 2017 के अनुसार केवल क्लास 1/क्लास 2 के स्थानीय आपूर्तिकर्ताओं को ही भागीदारी की अनुमति है दिनांक 16.09.2020 (समय-समय पर संशोधित एवं लागू) / Allow participation only from Class 1/Class 2 local suppliers as per the Public procurement(Preference to Make-in-india) order 2017 date 16.09.2020(as amended and applicable time to time)	Yes, in compliance with the MII ORDER : DPIIT Order(as amended and applicable time to time)

एमएसई खरीद वरीयता/MSE Purchase Preference

एमएसई खरीद वरीयता/MSE Purchase Preference	Yes
सूक्ष्म और लघु उद्यम मूल उपकरण निर्माताओं को खरीद में प्राथमिकता, यदि उनका मूल्य L1+X% तक की सीमा में हो / Purchase Preference to MSE OEMs available upto price within L1+X%	15
सूक्ष्म और लघु उद्यम को खरीद में प्राथमिकता के लिए बिड की मात्रा का अधिकतम प्रतिशत / Maximum Percentage of Bid quantity for MSE purchase preference	25

1. If the bidder is a Micro or Small Enterprise as per latest orders issued by Ministry of MSME, the bidder shall be relaxed from the eligibility criteria of "Experience Criteria" as defined above subject to meeting of quality and technical specifications. The bidder seeking Relaxation from Experience Criteria, shall upload the supporting documents to prove his eligibility for Relaxation.
2. If the bidder is a Micro or Small Enterprise (MSE) as per latest orders issued by Ministry of MSME, the bidder shall be relaxed from the eligibility criteria of "Bidder Turnover" as defined above subject to meeting of quality and technical specifications. If the bidder itself is MSE OEM of the offered products, it would be relaxed from the "OEM Average Turnover" criteria also subject to meeting of quality and technical specifications. The bidder seeking Relaxation from Turnover, shall upload the supporting documents to prove his eligibility for Relaxation.
3. If the bidder is a DPIIT registered Startup, the bidder shall be relaxed from the the eligibility criteria of "Experience Criteria" as defined above subject to their meeting of quality and technical specifications. The bidder seeking Relaxation from Experience Criteria, shall upload the supporting documents to prove his eligibility for Relaxation.
4. If the bidder is a DPIIT registered Startup, the bidder shall be relaxed from the the eligibility criteria of "Bidder Turnover" as defined above subject to their meeting of quality and technical specifications. If the bidder is DPIIT Registered OEM of the offered products, it would be relaxed from the "OEM Average Turnover" criteria also subject to meeting of quality and technical specifications. The bidder seeking Relaxation from Turnover shall upload the supporting documents to prove his eligibility for Relaxation.
5. The minimum average annual financial turnover of the bidder during the last three years, ending on 31st March of the previous financial year, should be as indicated above in the bid document. Documentary evidence in the form of certified Audited Balance Sheets of relevant periods or a certificate from the Chartered Accountant / Cost Accountant indicating the turnover details for the relevant period shall be uploaded with the bid. In case the date of constitution / incorporation of the bidder is less than 3-year-old, the average turnover in respect of the completed financial years after the date of constitution shall be taken into account for this criteria.
6. Experience Criteria: In respect of the filter applied for experience criteria, the Bidder or its OEM of the product offered in the bid {themselves or through reseller(s)} should have regularly, manufactured and supplied same or similar Category Products to any Central / State Govt Organization / PSU for number of Financial years as indicated above in the bid document before the bid opening date. Copies of relevant contracts and delivery acceptance certificates like CRAC to be submitted along with bid in support of having supplied some quantity during each of the Financial year. In case of bunch bids, the category of primary product having highest value should meet this criterion.
7. OEM Turn Over Criteria: The minimum average annual financial turnover of the OEM of the offered product during the last three years, ending on 31st March of the previous financial year, should be as indicated in the bid

document. Documentary evidence in the form of certified Audited Balance Sheets of relevant periods or a certificate from the Chartered Accountant / Cost Accountant indicating the turnover details for the relevant period shall be uploaded with the bid. In case the date of constitution / incorporation of the OEM is less than 3 year old, the average turnover in respect of the completed financial years after the date of constitution shall be taken into account for this criteria.
8. Preference to Make In India products (For bids < 200 Crore):Preference shall be given to Class 1 local supplier as defined in public procurement (Preference to Make in India), Order 2017 as amended from time to time and its subsequent Orders/Notifications issued by concerned Nodal Ministry for specific Goods/Products. The minimum local content to qualify as a Class 1 local supplier is denoted in the bid document. If the bidder wants to avail the Purchase preference, the bidder must upload a certificate from the OEM regarding the percentage of the local content and the details of locations at which the local value addition is made along with their bid, failing which no purchase preference shall be granted. In case the bid value is more than Rs 10 Crore, the declaration relating to percentage of local content shall be certified by the statutory auditor or cost auditor, if the OEM is a company and by a practicing cost accountant or a chartered accountant for OEMs other than companies as per the Public Procurement (preference to Make-in -India) order 2017 dated 04.06.2020. Only Class-I and Class-II Local suppliers as per MII order dated 4.6.2020 will be eligible to bid. Non - Local suppliers as per MII order dated 04.06.2020 are not eligible to participate. However, eligible micro and small enterprises will be allowed to participate .The buyers are advised to refer the OM No.F.1/4/2021-PPD dated 18.05.2023.
OM_No.1_4_2021_PPD_dated_18.05.2023 for compliance of Concurrent application of Public Procurement Policy for Micro and Small Enterprises Order, 2012 and Public Procurement (Preference to Make in India) Order, 2017.

9. Purchase preference will be given to MSEs having valid Udyam Registration and whose credentials are validated online through Udyam Registration portal as defined in Public Procurement Policy for Micro and Small Enterprises (MSEs) Order, 2012 dated 23.03.2012 issued by Ministry of Micro, Small and Medium Enterprises and its subsequent Orders/Notifications issued by concerned Ministry. If the bidder wants to avail themselves of the Purchase preference, the bidder must be the manufacturer / OEM of the offered product on GeM. Traders are excluded from the purview of Public Procurement Policy for Micro and Small Enterprises and hence resellers offering products manufactured by some other OEM are not eligible for any purchase preference. In respect of bid for Services, the bidder must be the Service provider of the offered Service. Relevant documentary evidence in this regard shall be uploaded along with the bid in respect of the offered product or service and Buyer will decide eligibility for purchase preference based on documentary evidence submitted, while evaluating the bid. If L-1 is not an MSE and MSE Seller (s) has / have quoted price within L-1+ 15% (Selected by Buyer) of margin of purchase preference /price band defined in relevant policy, such MSE Seller shall be given opportunity to match L-1 price and contract will be awarded for 25% (selected by Buyer) percentage of total quantity. The buyers are advised to refer the OM No. F.1/4/2021-PPD dated 18.05.2023 OM_No.1_4_2021_PPD_dated_18.05.2023 for compliance of Concurrent application of Public Procurement Policy for Micro and Small Enterprises Order, 2012 and Public Procurement (Preference to Make in India) Order, 2017. Benefits of MSE will be allowed only if seller is validated on-line in GeM profile as well as validated and approved by Buyer after evaluation of documents submitted.
10. Estimated Bid Value indicated above is being declared solely for the purpose of guidance on EMD amount and for determining the Eligibility Criteria related to Turn Over, Past Performance and Project / Past Experience etc. This has no relevance or bearing on the price to be quoted by the bidders and is also not going to have any impact on bid participation. Also this is not going to be used as a criteria in determining reasonableness of quoted prices which would be determined by the buyer based on its own assessment of reasonableness and based on competitive prices received in Bid / RA process.
11. Past Performance: The Bidder or its OEM {themselves or through re-seller(s)} should have supplied same or similar Category Products for 50% of bid quantity, in at least one of the last three Financial years before the bid opening date to any Central / State Govt Organization / PSU. Copies of relevant contracts (proving supply of cumulative order quantity in any one financial year) to be submitted along with bid in support of quantity supplied in the relevant Financial year. In case of bunch bids, the category related to primary product having highest bid value should meet this criterion.

12. Reverse Auction would be conducted amongst all the technically qualified bidders except the Highest quoting bidder. The technically qualified Highest Quoting bidder will not be allowed to participate in RA. However, H-1 will also be allowed to participate in RA in following cases:

i. If number of technically qualified bidders are only 2 or 3.
ii. If Buyer has chosen to split the bid amongst N sellers, and H1 bid is coming within N.
iii. In case Primary product of only one OEM is left in contention for participation in RA on elimination of H-1.
iv. If L-1 is non-MSE and H-1 is eligible MSE and H-1 price is coming within price band of 15% of Non-MSE L-1
v. If L-1 is non-MII and H-1 is eligible MII and H-1 price is coming within price band of 20% of Non-MII L-1

Airfield Lighting System Of Runway With Helicopter Approach Path Indicator

(क्रमशः श्रेणी 1 और श्रेणी 2 के स्थानीय आपूर्तिकर्ता के रूप में अर्हता प्राप्त करने के लिए आवश्यक/Minimum 50% and 20% Local

Content required for qualifying as Class 1 and Class 2 Local Supplier respectively)

तकनीकी विशिष्टियाँ /Technical Specifications

Specification Document	View File
BOQ Detail Document	View File

Advisory-Please refer attached BOQ document for detailed consignee list and delivery period.

परेषिती/रिपोर्टिंग अधिकारी तथा मात्रा/Consignees/Reporting Officer and Quantity

क्र.सं./S.No.	परेषिती/रिपोर्टिंग अधिकारी /Consignee Reporting/Officer	पता/Address	मात्रा /Quantity	डिलीवरी के दिन/Delivery Days
1	**********	**********Bathinda	1	180

Voice Communication Control System

(क्रमशः श्रेणी 1 और श्रेणी 2 के स्थानीय आपूर्तिकर्ता के रूप में अर्हता प्राप्त करने के लिए आवश्यक/Minimum 50% and 20% Local Content required for qualifying as Class 1 and Class 2 Local Supplier respectively)

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क्र.सं./S.No.	परेषिती/रिपोर्टिंग अधिकारी /Consignee Reporting/Officer	पता/Address	मात्रा /Quantity	डिलीवरी के दिन/Delivery Days
1	**********	**********Bathinda	1	180

Automatic Weather Station AWOS With Frangible Mast

(क्रमशः श्रेणी 1 और श्रेणी 2 के स्थानीय आपूर्तिकर्ता के रूप में अर्हता प्राप्त करने के लिए आवश्यक/Minimum 50% and 20% Local Content required for qualifying as Class 1 and Class 2 Local Supplier respectively)

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क्र.सं./S.No.	परेषिती/रिपोर्टिंग अधिकारी /Consignee Reporting/Officer	पता/Address	मात्रा /Quantity	डिलीवरी के दिन/Delivery Days
1	**********	**********Bathinda	1	180

PTZ Day And Night Camera System For Air Traffic Control Recording

(क्रमशः श्रेणी 1 और श्रेणी 2 के स्थानीय आपूर्तिकर्ता के रूप में अर्हता प्राप्त करने के लिए आवश्यक/Minimum 50% and 20% Local Content required for qualifying as Class 1 and Class 2 Local Supplier respectively)

तकनीकी विशिष्टियाँ /Technical Specifications

Specification Document	View File
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परेषिती/रिपोर्टिंग अधिकारी तथा मात्रा/Consignees/Reporting Officer and Quantity

क्र.सं./S.No.	परेषिती/रिपोर्टिंग अधिकारी /Consignee Reporting/Officer	पता/Address	मात्रा /Quantity	डिलीवरी के दिन/Delivery Days
1	**********	**********Bathinda	9	180

Power Generation System

(क्रमशः श्रेणी 1 और श्रेणी 2 के स्थानीय आपूर्तिकर्ता के रूप में अर्हता प्राप्त करने के लिए आवश्यक/Minimum 50% and 20% Local Content required for qualifying as Class 1 and Class 2 Local Supplier respectively)

तकनीकी विशिष्टियाँ /Technical Specifications

Specification Document	View File
BOQ Detail Document	View File

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परेषिती/रिपोर्टिंग अधिकारी तथा मात्रा/Consignees/Reporting Officer and Quantity

क्र.सं./S.No.	परेषिती/रिपोर्टिंग अधिकारी /Consignee Reporting/Officer	पता/Address	मात्रा /Quantity	डिलीवरी के दिन/Delivery Days
1	**********	**********Bathinda	1	180

Stabilized Uninterrupted Power Distribution Network For Air Traffic Services Equipment

(क्रमशः श्रेणी 1 और श्रेणी 2 के स्थानीय आपूर्तिकर्ता के रूप में अर्हता प्राप्त करने के लिए आवश्यक/Minimum 50% and 20% Local Content required for qualifying as Class 1 and Class 2 Local Supplier respectively)

तकनीकी विशिष्टियाँ /Technical Specifications

Specification Document	View File
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परेषिती/रिपोर्टिंग अधिकारी तथा मात्रा/Consignees/Reporting Officer and Quantity

क्र.सं./S.No.	परेषिती/रिपोर्टिंग अधिकारी /Consignee Reporting/Officer	पता/Address	मात्रा /Quantity	डिलीवरी के दिन/Delivery Days
1	**********	**********Bathinda	1	180

ATC And User Consoles

(क्रमशः श्रेणी 1 और श्रेणी 2 के स्थानीय आपूर्तिकर्ता के रूप में अर्हता प्राप्त करने के लिए आवश्यक/Minimum 50% and 20% Local Content required for qualifying as Class 1 and Class 2 Local Supplier respectively)

तकनीकी विशिष्टियाँ /Technical Specifications

Specification Document	View File
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परेषिती/रिपोर्टिंग अधिकारी तथा मात्रा/Consignees/Reporting Officer and Quantity

क्र.सं./S.No.	परेषिती/रिपोर्टिंग अधिकारी /Consignee Reporting/Officer	पता/Address	मात्रा /Quantity	डिलीवरी के दिन/Delivery Days
1	**********	**********Bathinda	1	180

Trailer Mounted Mobile ATC

(क्रमशः श्रेणी 1 और श्रेणी 2 के स्थानीय आपूर्तिकर्ता के रूप में अर्हता प्राप्त करने के लिए आवश्यक/Minimum 50% and 20% Local Content required for qualifying as Class 1 and Class 2 Local Supplier respectively)

तकनीकी विशिष्टियाँ /Technical Specifications

Specification Document	View File
BOQ Detail Document	View File

Advisory-Please refer attached BOQ document for detailed consignee list and delivery period.

परेषिती/रिपोर्टिंग अधिकारी तथा मात्रा/Consignees/Reporting Officer and Quantity

क्र.सं./S.No.	परेषिती/रिपोर्टिंग अधिकारी /Consignee Reporting/Officer	पता/Address	मात्रा /Quantity	डिलीवरी के दिन/Delivery Days
1	**********	**********Bathinda	3	180

Server And Work Station

(क्रमशः श्रेणी 1 और श्रेणी 2 के स्थानीय आपूर्तिकर्ता के रूप में अर्हता प्राप्त करने के लिए आवश्यक/Minimum 50% and 20% Local Content required for qualifying as Class 1 and Class 2 Local Supplier respectively)

तकनीकी विशिष्टियाँ /Technical Specifications

Specification Document	View File

BOQ Detail Document	View File

Advisory-Please refer attached BOQ document for detailed consignee list and delivery period.

परेषिती/रिपोर्टिंग अधिकारी तथा मात्रा/Consignees/Reporting Officer and Quantity

क्र.सं./S.No.	परेषिती/रिपोर्टिंग अधिकारी /Consignee Reporting/Officer	पता/Address	मात्रा /Quantity	डिलीवरी के दिन/Delivery Days
1	**********	**********Bathinda	1	180

क्रेता द्वारा जोड़ी गई बिड की विशेष शर्तें/Buyer Added Bid Specific Terms and Conditions

1. **Generic**

   After award of contract – Successful Bidder shall have to get Detailed Design Drawings approved from buyer before starting fabrication. Successful Bidder shall submit Detailed Design Drawings for Buyer's approval, within 15 days of award of contract. Buyer shall, either approve the drawings or will provide complete list of modification required in the drawings within 15 days. Seller shall be required to ensure supply as per approved Drawings with modifications as communicated by Buyer. If there is delay from buyer side in approval of drawing– the delivery period shall be refixed without LD for the period of delay in approval of Drawing.

2. **Generic**

   Actual delivery (and Installation & Commissioning (if covered in scope of supply)) is to be done at following address

   11 Field Ordance Depot
   Bathinda
   Punjab
   PIN 151004
   C/o 56 APO
   .

3. **Generic**

   Bidder financial standing: The bidder should not be under liquidation, court receivership or similar proceedings, should not be bankrupt. Bidder to upload undertaking to this effect with bid.

4. **Generic**

   Bidders shall quote only those products (Part of Service delivery) in the bid which are not obsolete in the market and has at least 7 years residual market life i.e. the offered product shall not be declared end-of-life by the OEM before this period.

5. **Generic**

   Bidders are advised to check applicable GST on their own before quoting. Buyer will not take any responsibility in this regards. GST reimbursement will be as per actuals or as per applicable rates (whichever is lower), subject to the maximum of quoted GST %.

6. **Generic**

   Bidder shall submit the following documents along with their bid for Vendor Code Creation:

   a. Copy of PAN Card.

   b. Copy of GSTIN.

   c. Copy of Cancelled Cheque.

   d. Copy of EFT Mandate duly certified by Bank.

7. **Generic**

   Data Sheet of the product(s) offered in the bid, are to be uploaded along with the bid documents. Buyers can match and verify the Data Sheet with the product specifications offered. In case of any unexplained mismatch of technical parameters, the bid is liable for rejection.

8. **Generic**

   End User Certificate: Wherever Bidders are insisting for End User Certificate from the Buyer, same shall be provided in Buyer’s standard format only.

9. **Generic**

   Experience Criteria: The Bidder or its OEM {themselves or through reseller(s)} should have regularly, manufactured and supplied same or similar Category Products to any Central / State Govt Organization / PSU for 3 years before the bid opening date. Copies of relevant contracts to be submitted along with bid in support of having supplied some quantity during each of the year. In case of bunch bids, the primary product having highest value should meet this criterion.

10. **Generic**

    For hazardous chemical/item, all precautionary measure as per regulation from the point of transportation/ handling/ storage/ safety/ health/ environment to be undertaken/ specified before dispatch. During dispatch, proper symbol for the hazard/ MSDS/ Batch No./ date of manufacturing/ Gross Weight/ Net Weight/ shelf Life etc are to be written/ printed/ pasted on the body of the packing.

11. **Generic**

    Installation, Commissioning, Testing, Configuration, Training (if any - which ever is applicable as per scope of supply) is to be carried out by OEM / OEM Certified resource or OEM authorised Reseller.

12. **Generic**

    Malicious Code Certificate:

    The seller should upload following certificate in the bid:-
    (a) This is to certify that the Hardware and the Software being offered, as part of the contract, does not contain Embedded Malicious code that would activate procedures to :-
    (i) Inhibit the desires and designed function of the equipment.
    (ii) Cause physical damage to the user or equipment during the exploitation.
    (iii) Tap information resident or transient in the equipment/network.
    (b) The firm will be considered to be in breach of the procurement contract, in case physical damage, loss of information or infringements related to copyright and Intellectual Property Right (IPRs) are caused due to activation of any such malicious code in embedded software.

13. **Generic**

    IT equipment shall be IPv6 ready from day one.

14. **Generic**

Manufacturer Authorization: Wherever Authorised Distributors/service providers are submitting the bid, Authorisation Form /Certificate with OEM/Original Service Provider details such as name, designation, address, e-mail Id and Phone No. required to be furnished along with the bid

15. **Generic**

Non return of Hard Disk: As per Buyer organization's Security Policy,Faulty Hard Disk of Servers/Desktop Computers/ Laptops etc. will not be returned back to the OEM/supplier against warranty replacement.

16. **Generic**

OPTIONAL SITE VISIT:

1. The Bidder is advised to visit and examine the installation site and its surroundings and obtain for itself on its own responsibility all information that may be necessary for preparing the Bid. The costs of visiting the site shall be borne by the Bidder.

Yes

2. The Bidder representative shall be allowed entry upon consignee premises for such visits, only upon the express conditions that the Bidder will release and indemnify the Buyer and Consignee against all liabilities arising out of such visit including death or injury, loss or damage to property, and any other loss, damage, costs, and expenses incurred as a result of such visit.

3. The Bidder shall not be entitled to hold any claim against Buyer for noncompliance due to lack of any kind of pre-requisite information as it is the sole responsibility of the Bidder to obtain all the necessary information with regard to site, surrounding, working conditions, weather etc. on its own before submission of the bid.

17. **Generic**

Products supplied shall be nontoxic and harmless to health. In the case of toxic materials, Material Safety Data Sheet may be furnished along with the material.

18. **Generic**

Shelf Life: The Product/Spare parts to be supplied as part of the services must have minimum

7 Years
Shelf Life. On the date of supply, minimum
7 Years
usable shelf life should be available / balance.

19. **Generic**

Scope of supply includes Training: Number of employees to be trained

13
, Place for Training
Bathinda
and Duration of training
14
days.

20. **Generic**

1. The Seller shall not assign the Contract in whole or part without obtaining the prior written consent of buyer.
2. The Seller shall not sub-contract the Contract in whole or part to any entity without obtaining the prior written consent of buyer.
3. The Seller shall, notwithstanding the consent and assignment/sub-contract, remain jointly and severally liable and responsible to buyer together with the assignee/ sub-contractor, for and in respect of the due performance of the Contract and the Sellers obligations there under.

21. **Generic**

The seller is required to print logo as per buyer's requirement.

22. **Generic**

While generating invoice in GeM portal, the seller must upload scanned copy of GST invoice and the screenshot of GST portal confirming payment of GST.

23. **Generic**

Without prejudice to Buyer’s right to price adjustment by way of discount or any other right or remedy available to Buyer, Buyer may terminate the Contract or any part thereof by a written notice to the Seller, if:
i) The Seller fails to comply with any material term of the Contract.
ii) The Seller informs Buyer of its inability to deliver the Material(s) or any part thereof within the stipulated Delivery Period or such inability otherwise becomes apparent.
iii) The Seller fails to deliver the Material(s) or any part thereof within the stipulated Delivery Period and/or to replace/rectify any rejected or defective Material(s) promptly.
iv) The Seller becomes bankrupt or goes into liquidation.
v) The Seller makes a general assignment for the benefit of creditors.
vi) A receiver is appointed for any substantial property owned by the Seller.
vii) The Seller has misrepresented to Buyer, acting on which misrepresentation Buyer has placed the Purchase Order on the Seller.

24. **Scope of Supply**

Scope of supply (Bid price to include all cost components) : Supply Installation Testing Commissioning of Goods and Training of operators and providing Statutory Clearances required (if any)

25. **Turnover**

Bidder Turn Over Criteria: The minimum average annual financial turnover of the bidder during the last three years, ending on 31st March of the previous financial year, should be as indicated in the bid document. Documentary evidence in the form of certified Audited Balance Sheets of relevant periods or a certificate from the Chartered Accountant / Cost Accountant indicating the turnover details for the relevant period shall be uploaded with the bid. In case the date of constitution / incorporation of the bidder is less than 3 year old, the average turnover in respect of the completed financial years after the date of constitution shall be taken into account for this criteria.

26. **Turnover**

OEM Turn Over Criteria: The minimum average annual financial turnover of the OEM of the offered product during the last three years, ending on 31st March of the previous financial year, should be as indicated in the bid document. Documentary evidence in the form of certified Audited Balance Sheets of relevant periods or a certificate from the Chartered Accountant / Cost Accountant indicating the turnover details for the relevant period shall be uploaded with the bid. In case the date of constitution / incorporation of the OEM is less than 3 year old, the average turnover in respect of the completed financial years after the date of constitution shall be taken into account for this criteria. In case of bunch bids, the OEM of CATEGORY RELATED TO primary product having highest bid value should meet this criterion.

27. **OEM**

IMPORTED PRODUCTS: In case of imported products, OEM or Authorized Seller of OEM should have a registered office in India to provide after sales service support in India. The certificate to this effect should be submitted.

28. **Purchase Preference (Centre)**

Purchase preference to Micro and Small Enterprises (MSEs): Purchase preference will be given to MSEs as defined in Public Procurement Policy for Micro and Small Enterprises (MSEs) Order, 2012 dated 23.03.2012 issued by Ministry of Micro, Small and Medium Enterprises and its subsequent Orders/Notifications issued by concerned Ministry. If the bidder wants to avail the Purchase preference,

the bidder must be the manufacturer of the offered product in case of bid for supply of goods. Traders are excluded from the purview of Public Procurement Policy for Micro and Small Enterprises. In respect of bid for Services, the bidder must be the Service provider of the offered Service. Relevant documentary evidence in this regard shall be uploaded along with the bid in respect of the offered product or service. If L-1 is not an MSE and MSE Seller (s) has/have quoted price within L-1+ 15% of margin of purchase preference /price band defined in relevant policy, such Seller shall be given opportunity to match L-1 price and contract will be awarded for percentage of 15% of total value.

29. **Purchase Preference (Centre)**

Purchase Preference linked with Local Content (PP-LC) Policy:

The bid clause regarding “Preference to Make In India products” stands modified in this bid and shall be governed by the PPLC Policy No. FP-20013/2/2017-FP-PNG dated 17.11.2020 issued by MoP&NG as amended up to date. Accordingly, bidders with Local Content less than or equal to 20% will be treated as “Non Local Supplier”. The prescribed LC shall be applicable on the date of Bid opening. Sanctions on the bidders for false / wrong declaration or not fulfilling the Local Content requirement shall be as per the PPLC policy. Further following additional provisions are added in the certification and verification of local content provision of the Preference to Make in India clause:

i. In case of foreign bidder, certificate from the statutory auditor or cost auditor of their own office or subsidiary in India giving the percentage of local content is also acceptable. In case office or subsidiary in India does not exist or Indian office/subsidiary is not required to appoint statutory auditor or cost auditor, certificate from practicing cost accountant or practicing chartered accountant giving the percentage of local content is also acceptable.
ii. Along with Each Invoice: The local content certificate (issued by statutory auditor on behalf of procuring company) shall be submitted along with each invoice raised. However, the % of local content may vary with each invoice while maintaining the overall % of local content for the total work/purchase of the pro-rata local content requirement. In case, it is not satisfied cumulatively in the invoices raised up to that stage, the supplier shall indicate how the local content requirement would be met in the subsequent stages.
iii. The bidder shall submit an undertaking from the authorized signatory of bidder having the Power of Attorney along with the bid stating the bidder meets the mandatory minimum LC requirement and such undertaking shall become a part of the contract.

30. **Service & Support**

Dedicated /toll Free Telephone No. for Service Support : BIDDER/OEM must have Dedicated/toll Free Telephone No. for Service Support.

31. **Service & Support**

Escalation Matrix For Service Support : Bidder/OEM must provide Escalation Matrix of Telephone Numbers for Service Support.

32. **Inspection**

Nominated Inspection Agency: On behalf of the Buyer organization, any one of the following Inspection Agency would be conducting inspection of stores before acceptance:
Pre-dispatch Inspection at Seller Premises (applicable only if pre-dispatch inspection clause has been selected in ATC):

At the seller primises

Post Receipt Inspection at consignee site before acceptance of stores:
At consignee site before acceptance of stores : Boards of officers nominated by buyer

33. **Certificates**

Bidder's offer is liable to be rejected if they don't upload any of the certificates / documents sought in the Bid document, ATC and Corrigendum if any.

34. **Certificates**

ISO 9001: The bidder or the OEM of the offered products must have ISO 9001 certification.

35. **Certificates**

The bidder is required to upload, along with the bid, all relevant certificates such as BIS licence, type test certificate, approval certificates and other certificates as prescribed in the Product Specification given in the bid document.

36. **Warranty**

Bidder / OEM has to give an undertaking that after expiry of warranty period, it will provide Comprehensive Maintenance Service for next 4 years for the offered products at the rate not more than 7 % of contract price per annum. Buyer reserves the right to enter into a CMC agreement with the Successful Bidder / OEM after expiry of the Warranty period at above mentioned rate and the payment for the CMC charges would be made Annually after rendering of the CMC Services of the relevant CMC period. Performance Security of the successful bidder shall be forfeited if it fails to accept the CMC contract when called upon by the buyer. CMC would include cost of

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(Upload the undertaking). The original Performance Security of contract will be returned only after submission and verification of AMC Performance Security for 10% of total CMC value valid up to CMC period plus 2 months (if there is no other claim).

37. **Warranty**

Warranty period of the supplied products shall be 3 years from the date of final acceptance of goods or after completion of installation, commissioning & testing of goods (if included in the scope of supply), at consignee location. OEM Warranty certificates must be submitted by Successful Bidder at the time of delivery of Goods. The seller should guarantee the rectification of goods in case of any break down during the guarantee period. Seller should have well established Installation, Commissioning, Training, Troubleshooting and Maintenance Service group in INDIA for attending the after sales service. Details of Service Centres near consignee destinations are to be uploaded along with the bid.

38. **Warranty**

Successful bidder will have to ensure that adequate number of dedicated technical service personals / engineers are designated / deployed for attending to the Service Request in a time bound manner and for ensuring Timely Servicing / rectification of defects during warranty period, as per Service level agreement indicated in the relevant clause of the bid.

39. **Purchase Preference (State)**

Bid reserved for MSE from the State of Bid Inviting Authority: Procurement under this bid is reserved for purchase from Micro and Small Enterprises from the State of Bid Inviting Authority having valid Udyam Registration and whose credentials are validated online through Udyam Registration portal. If the bidder wants to avail themselves of the reservation benefit, the bidder must be the manufacturer / OEM of the offered product on GeM. Traders are excluded from the purview of Public Procurement Policy for Micro and Small Enterprises and hence resellers offering products manufactured by some other OEM are not eligible to participate in this bid. In respect of bid for Services, the bidder must be the Service provider of the offered Service. Relevant documentary evidence in this regard shall be uploaded along with the bid in respect of the offered product or service, and Buyer will decide eligibility based on documentary evidence submitted, while evaluating the bid. Benefits of MSE will be allowed only if seller is validated on-line in GeM profile as well as validated and approved by Buyer after evaluation of documents submitted.

40. **Purchase Preference (State)**

Purchase preference to Micro and Small Enterprises (MSEs): Purchase preference will be given to MSEs from the State of Bid Inviting Authority having valid Udyam Registration and whose credentials are validated online through Udyam Registration portal as defined in Public Procurement Policy for Micro and Small Enterprises (MSEs) Order, 2012 dated 23.03.2012 issued by Ministry of Micro, Small and Medium

Enterprises and its subsequent Orders/Notifications issued by concerned Ministry / State of Bid inviting authority. If the bidder wants to avail themselves of the Purchase preference, the bidder must be the manufacturer / OEM of the offered product on GeM. Traders are excluded from the purview of Public Procurement Policy for Micro and Small Enterprises and hence resellers offering products manufactured by some other OEM are not eligible for any purchase preference. In respect of bid for Services, the bidder must be the Service provider of the offered Service. Relevant documentary evidence in this regard shall be uploaded along with the bid in respect of the offered product or service and Buyer will decide eligibility for purchase preference based on documentary evidence submitted, while evaluating the bid. If L-1 is not an MSE and MSE Seller (s) has / have quoted price within L-1+ 15 % of margin of purchase preference /price band defined in relevant policy, such MSE Seller shall be given opportunity to match L-1 price and contract will be awarded for 10 percentage of total quantity. The buyers are advised to refer the OM No. F.1/4/2021-PPD dated 18.05.2023 OM_No.1_4_2021_PPD_dated_18.05.2023 for compliance of Concurrent application of Public Procurement Policy for Micro and Small Enterprises Order, 2012 and Public Procurement (Preference to Make in India) Order, 2017. Benefits of MSE will be allowed only if seller is validated on-line in GeM profile as well as validated and approved by Buyer after evaluation of documents submitted.

41. **Past Project Experience**

Proof for Past Experience and Project Experience clause: For fulfilling the experience criteria any one of the following documents may be considered as valid proof for meeting the experience criteria:a. Contract copy along with Invoice(s) with self-certification by the bidder that service/supplies against the invoices have been executed.b. Execution certificate by client with contract value.c. Any other document in support of contract execution like Third Party Inspection release note, etc.Proof for Past Experience and Project Experience clause: For fulfilling the experience criteria any one of the following documents may be considered as valid proof for meeting the experience criteria:a. Contract copy along with Invoice(s) with self-certification by the bidder that service/supplies against the invoices have been executed.b. Execution certificate by client with contract value.c. Any other document in support of contract execution like Third Party Inspection release note, etc.

42. **Buyer Added Bid Specific ATC**

Buyer Added text based ATC clauses

Fabrication/Construction or any new structure of surface if required for installation of any module/equipme nt as mentioned in the scope of work of the project will be carried out by the seller at no extra cost.
Any damage to the existing building/Infrastructure caused by the seller during the implementation/Installa tion of the project will be made good by seller.Tolerance Clause: To take care of any change in the require ment during the period starting from issue of RFP till placement of the contract, Buyer reserves the right to 20 % plus/minus increase the quantity of the
required goods upto that limit without any change in the terms and conditions and prices quoted by the seller. While awarding the contract, the quantity ordered can be increased or decreased by the buyer withi n this tolerance limit.
MII Content :
1. Attention of the bidder/vendor is drawn to DIPP order No P-45021/2/2017-B-E-II dated 15 Jun 2017, Order No -40521/2/2017_PP (BE-II) dated 28 May 2018 and GOI ministry of commerce and industry department f or promotion of industry and internal trade (Public Procurement Section) dated 04 Jun 2020.
2. The bidder /vendor will ensure compliance with policies as promulgated by GOI with respect to procure ment and MII content and will furnish a certificate for the same. Vendor/bidder will be solely responsible for violation of any such policies.
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अस्वीकरण/Disclaimer

The Additional Terms and Conditions (ATC) have been incorporated by the Buyer after approval of their Competent Authority. The Buyer ,is solely responsible for the impact of these clauses on the bidding process, its outcome, and consequences thereof including any restriction arising in the bidding process due to these ATCs and including the modification of technical specifications and / or terms and conditions governing the bid.All representations / grievances pertaining to the ATC clauses shall be raised with the buyer organization directly and not with GeM.If any of the clause(s) is/are incorporated by the Buyer regarding the following, the bid & resultant contract shall be treated as null & void. Further, GeM reserves the right, at its sole discretion, to cancel the bid forthwith, without issuance of any prior notice or intimation :-

1. Publishing Custom / BOQ bids for items for which regular GeM categories are available (unless such Custom / BOQ item is bunched with the major regular product Category Item).
2. Mandating procurement of / from specific Brand / Make / Model / Manufacturer / Dealer except in case of Single Bid / Proprietary Article Certificate (PAC) Buying.
3. Inclusion of disqualification criteria related to suspension of seller / service provider, where such suspension period has already expired.
4. Mandating submission of documents in physical form as a pre-requisite to qualify bidders.
5. Publishing bids on GeM for procurement of works.
6. Procurement of Goods by creating a Service bid on GeM & vice-versa.
7. Seeking sample with bid or approval of samples during bid evaluation process. However, trial / sample, as the case may be, shall be permitted in cases where trial / sample are allowed as per approved and published procurement policy of the Buyers' controlling Ministry / Department / State / Public Sector Enterprises Headquarters. If there is any violation of trial / sample clause with regard to approved policy of the Buyers' Ministry / Department / State / Public Sector Enterprises Headquarters, then this is to be determined and redressed by the concerned Buyer Organisation only.
8. Seeking experience from specific organization / department / institute only or from foreign / export experience.
9. Creating bid for items from incorrect categories.
10. Reference of conditions published on any external site or reference to external documents/clauses.
11. Asking for any Tender fee / Bid Participation fee, as the case may be.
12. Buyer added ATC Clauses which are in contravention of clauses defined in bid detail section, including specifications, EMD Detail, ePBG Detail and MII and MSE Purchase Preference sections of the bid, unless otherwise allowed by the applicable GeM GTC.
13. Any ATC clause in contravention with GeM GTC Clause 4 (xiii) (h) will be invalid. In case of multiple L1 bidders against a service bid, the buyer shall place the Contract by selection of a bidder amongst the L-1 bidders through a Random Algorithm executed by GeM system.
14. In a category based bid, adding additional items, through buyer added, additional scope of work/ additional terms and conditions/or any other document. If buyer needs more items along with the main item, the same must be added through bunching category based items or by bunching custom catalogues or bunching a BoQ with the main category based item, the same must not be done through ATC or Scope of Work.

Further, if any seller has any objection/grievance against these additional clauses or otherwise on any aspect of this bid, they can raise their representation against the same by using the Representation window provided in the bid details field in Seller dashboard after logging in as a seller. Buyer is duty bound to reply to all such representations and would not be allowed to open bids if he fails to reply to such representations.

All GeM Sellers/Service Providers shall ensure full compliance with all applicable labour laws, including the provisions, rules, schemes and guidelines under the four Labour Codes i.e. the Code on Wages, 2019; the Industrial Relations Code, 2020; the Occupational Safety, Health and Working Conditions Code, 2020; and the Code on Social Security, 2020 as and when notified and brought into force by the Government of India.

For all provisions of the Labour Codes that are pending operationalisation through rules, schemes or notifications, the corresponding provisions of the pre-existing labour enactments (such as The Minimum Wages Act, 1948, The Payment of Wages Act, 1936, The Payment of Bonus Act, 1965, The Equal Remuneration Act, 1976, The Payment of Gratuity Act, 1972, etc. and relevant State Rules) shall continue to remain applicable.

The Seller/ Service Providers shall, therefore, be responsible for ensuring compliance under:

- **All notified and enforceable provisions of the new Labour Codes as mentioned hereinabove; and**
- **All operative provisions of the erstwhile Labour Laws until their complete substitution.**

All obligations relating to wages, social security, safety, working conditions, industrial relations etc. and any other statutory requirements shall be strictly met by the Seller/ Service Provider. Any non-compliance shall constitute a breach of the contract and shall entitle the Buyer to take appropriate action in accordance with the contract and applicable law.

This Bid is governed by the General Terms and Conditions, conditions stipulated in Bid and Service Level Agreement specific to the Service, as the case may be, as provided in the Marketplace.

However, in case of Service, if any condition specified in General Terms and Conditions is contradicted by the conditions stipulated in Service Level Agreement specific to said Service, then it will over-ride the conditions in the General Terms and Conditions.

यह बिड सामान्य शर्तों के अंतर्गत भी शासित है /This Bid is also governed by the General Terms and Conditions

जेम की सामान्य शर्तों के खंड 26 के संदर्भ में भारत के साथ भूमि सीमा साझा करने वाले देश के बिडर से खरीद पर प्रतिबंध के संबंध में भारत के साथ भूमि सीमा साझा करने वाले देश का कोई भी बिडर इस निविदा में बिड देने के लिए तभी पात्र होगा जब वह बिड देने वाला सक्षम प्राधिकारी के पास पंजीकृत हो।बिड में भाग लेते समय बिडर को इसका अनुपालन करना होगा और कोई भी गलत घोषणा किए जाने व इसका अनुपालन न करने पर अनुबंध को तत्काल समाप्त करने और कानून के अनुसार आगे की कानूनी कार्रवाई का आधार होगा।/In terms of GeM GTC clause 26 regarding Restrictions on procurement from a bidder of a country which shares a land border with India, any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Competent Authority. While participating in bid, Bidder has to undertake compliance of this and any false declaration and non-compliance of this would be a ground for immediate termination of the contract and further legal action in accordance with the laws.

---धन्यवाद/Thank You---