



भारतीय विमानपत्तन प्राधिकरण
AIRPORTS AUTHORITY OF INDIA
KALABURAGI AIRPORT

TENDER FEE: Rs.1180/-



AIRPORTS AUTHORITY OF INDIA
KALABURAGI AIRPORT
KALABURAGI

E-TENDER DOCUMENT
For

**SITC OF OFC, RF LINK AND NETWORK COMPONENTS
FOR DVOR/DME INSTALLATION PROJECT AT AAI,
KALABURAGI AIRPORT**

REF : AAI/VOGB/CNS/ DVOR/ OFC& RF LINK /2022
E-Tender ID : 2022_AAI_114798
E-Tender portal : <https://etenders.gov.in/eprocure/app>
(Government of India, Central Public Procurement Portal)

Note: The **Digitally Signed** copy of this tender document shall be attached with the original page(s) without disturbing the original page format shall be uploaded with the **Technical Bid** in the CPP portal of Airports Authority of India. The changes in the content of the tender Document in any-other form will be considered as non-responsive offer.

Certified that this Tender Document contains 57 pages numbered 1 to 57

CNS In Charge
Airports Authority of India
Kalaburagi Airport
Kalaburagi - 585102

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SECTION-I

NOTICE INVITING e-TENDER (2 ENVELOPE OPEN TENDER)

1. Scope of Tender

S. No.	Name of the Work	Estimated Cost (Rs)	EMD (Rs.)
1.	SITC of OFC, RF link and network components for DVOR/DME installation project at Kalaburagi Airport. (Ref. Section - V, Scope of work, Schedule A)	Rs.35,78,938/- (GST extra as applicable)	Rs.71,579/-

Item Rate e-tenders are invited through the e-tendering CPP Portal by CNS In Charge, O/o Airport Director, AAI, Kalaburagi Airport, Kalaburagi-585102 on behalf of Chairman, A.A.I from the eligible contractors for the work **“SITC of OFC, RF link and network components for DVOR/DME installation project at Kalaburagi Airport”** at an estimated cost of **₹.35,78,938/- (Exclusive of GST)** .The scope of services is as per **Section V, Schedule-A.**

The tendering process is online at CPP-portal URL address <https://etenders.gov.in/eprocure/app> or www.aai.aero. Prospective Tenderers may download and go through the tender document.

Prospective Tenderers are advised to get themselves registered at CPP-portal, obtain 'Login ID' and 'Password' and go through the instructions available in the Home Page after log in to the CPP-portal or www.aai.aero.

They should also obtain Digital Signature Certificate (DSC) in parallel which is essentially required for submission of their application. The process normally takes 03 days time. The tenderer may also take guidance from AAI Help Desk Support through path aai.aero/tender/e-tender/help desk support.

- (i) For any technical related queries please call the Helpdesk. The 24x7 Help Desk details are as below:-

Tel: 0120-4200462, 0120-4001002,

Mobile: 91 8826246593 E-mail: support-eproc@nic.in

Tenderers are requested to kindly mention the URL of the Portal and Tender ID in the subject while emailing any issue along with the contact details.

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For any further technical assistance with regard to functioning of CPP portal the tenderer may contact to the following AAI help desk numbers on all working days only between

- (ii) 08.00 hrs to 20.00 hrs (Mon-Sat) - 011-24632950, Ext-3512 (Six Lines), E-Mail: eprochelp@aai.aero
- (iii) 09.30 hrs to 18.00 hrs (Mon-Fri) - 011-24632950 Ext-3523,
E-Mail: etendersupport@aai.aero sanjeevkumar@aai.aero and snita@aai.aero
- (iv) 09.30hrs to 18.00 hrs (Mon-Fri)-011-24657900, E-Mail: gmitchq@aai.aero

Tender processing fee of ₹ 1,180/- (including GST), non-refundable will be required to be paid **ONLINE**.

Following 2 envelopes shall be submitted through online at CPP-portal by the tenderer as per the following schedule: -

2. CRITICAL DATA SHEET

Publishing Date	Date 04/05/2022 from 1700 hrs
Bid Document Download / Sale Start Date (Next Day of Publishing Date)	Date 05/05/2022 from 1000 hrs
Clarification Start Date	Date 05/05/2022 from 1000 hrs
Clarification End Date	Date 24/05/2022 upto 1500 hrs
Bid Submission Start Date	Date 05/05/2022 from 1000 hrs
Bid Submission End Date	Date 25/05/2022 upto 1500 hrs
Last date and time of submission of ; 1. Proof of online submission of EMD. 2. Proof of online submission Tender processing fee 3. In case of exemption in SI No 1 & 2 document substantiating exemption 4. Unconditional Acceptance of AAI 's Tender Conditions.	Date 25/05/2022 from 1500 hrs
Bid Opening Date (Envelope- I)	Date 25/05/2022 at 1600 hrs
Bid Opening Date (Envelope- II)	Date 27/05/2022 at 1500 hrs
Tender Processing Fee online (Non-refundable)	₹. 1180/- (including GST) Non-refundable.
EMD online	Rs.71,579/-

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Envelope-I

(Tender processing fee, EMD, Technical Bid and Pre-qualification):- Bid containing following:

A. Tender processing fee, EMD:

- (I) Proof of Online payment against Tender Processing Fee.
- (II) Proof of Online Payment against EMD.

B. Technical Bid containing the following:

- (I) Scanned copy of Unconditional Acceptance of AAI's Tender Conditions.
- (II) Scanned copy of Permanent Account Number (PAN) and GST Registration Number.
- (III) Scanned copy of 'Undertaking' regarding Blacklisting/ Debarment on Company's Letter Head.
- (IV) Companies other than propriety firm shall submit, scanned copy of Authorization Letter/Power of Attorney along with copy of Certificate of Incorporation of the Company under Companies Act showing CIN/LLPIN/Name of Directors of the Company & Copy of Board Resolution regarding Authority to assign Power of Attorney. (Annexure-VII)
- (V) Proprietary firm shall submit scanned copy of Authorization Letter/Power of Attorney only if the tender is processed by a person other than proprietor. (Annexure-VII)

C. Qualifying requirements of contractors / tenderers containing the following:-

- (I) Proof of work executed in the last seven years. Firm or bidder should have satisfactorily completed similar works viz. Installation, Testing and Commissioning etc. as given in the scope of work, in government department/Public undertaking / Private sector (within India) meeting any one of the following criteria. (Phase/Part completion of the scope of work in a contract shall not be considered. However pre-determined phasing of the work will be accepted)
 - i. One order of value more than or equivalent to Rs. 28,63,150/- (80% of Estimated Cost)

or

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- ii. Two orders each of value more than or equivalent to Rs. 17,89,469/- (50% of Estimated Cost)
- or
- iii. Three orders each of value more than or equivalent to Rs. 14,31,575/- (40% of Estimated Cost)

The value of executed works shall be brought to current costing level by enhancing the actual value of work at simple rate of 7% per annum, calculated from the date of completion to the last date of submission of bid.

Date of publishing of NIT in AAI site will be taken as reference for assessing the eligibility criteria.

Experience certificate in respect of the above works should be issued by the end user agencies for whom the works have been carried out and endorsed by the bidder. Such performance/experience certificates should clearly indicate the following:

- Scope and Value of order or contract,
- Order or Contract No., Award date
- Order or Contract Completion date

Tenderers showing work experience certificate from non-government/non-PSU organizations should submit copy of tax deduction at sources (TDS) certificate(s) along with a certificate issued by registered Chartered Accountant, clearly specifying the name of work, total payment received against the work and TDS amount for the work.

ii) Should have annualized average financial turn over minimum of 30% of Estimated cost (i.e. ₹ 10,73,681/-) against works executed during the last three years ending 31st March of the previous financial year. As a proof, copy of abridged Balance Sheet along with Profit and Loss Account Statement of the tenderer should be submitted along with the application for works executed during last three financial years ending 31st March 2022. Tenderers showing continuous losses during the last three years in the balance sheet shall be summarily rejected.

iii) The firm/contractor should possess valid, ESI Registration, EPF Registration and GST Registration.

Scanned copy of all the Documents of Envelope - 1 mentioned above, shall be submitted on the CPP portal. **EMD of the value of ₹ 71,579/- shall be accepted ONLINE only.**



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Envelope I should contain scanned copies of the following as per NIT:

1. Proof of Online payment against Tender fee. (or Proof of exemption)
2. Proof of Online payment against EMD (or Proof of Exemption)
3. Digitally signed tender documents.
4. Unconditional Acceptance of AAI's tender conditions. (Annexure - I)
5. PAN card
6. GSTIN
7. Qualifying requirements of Agency as per NIT (Company registration, certificate of satisfactory completion of works, Turnover, Balance sheet, Profit & Loss statement etc.).
8. TDS certificates for non-Govt/Non- PSU firms as per NIT.
9. Power of Attorney or Authorization, if applicable. (Annexure - VII)
10. Undertaking regarding Blacklisting/ Debarment on Company's Letter Head.
11. Duly signed Technical specification compliance statement in the prescribed format given in Annexure-VIII.
12. Technical brochures with the detailed Technical Specification also should be enclosed.

3. Refund of EMD

The refund of EMD to tenderers, who fail to qualify in the eligibility/technical criteria, shall be initiated within 15 days of their rejection. For all tenderers who qualify and their financial bids are opened, the refund of EMD of all such tenderers except L-1 shall be processed within 15 days of opening of the financial bid.

4 Envelope – II : - The Financial e-Bid through CPP portal.

All rates shall be quoted in the form provided and no other format is acceptable. If the price bid has been given as a standard BOQ format with the tender document, then the same is to be downloaded and to be filled by all the tenderers. Tenderers are required to download the BOQ file, open it and complete the blue colored (unprotected) cells with their respective financial quotes and other details (such as name of the tenderer). No other cells should be changed. Once the details have been completed, the tenderer should save it and submit it online, without changing the filename. If the BOQ file is found to be modified by the tenderer, the bid will be rejected.

5 Bid Submission: -

The tenderer shall submit their application only at CPP Portal: **<https://etenders.gov.in/eprocure/app>**. Tenderer/Contractor are advised to follow the instructions provided in the tender document for online submission of bids. Tenderers are required to upload the **digitally signed file of scanned documents** as per Para2. Bid documents may be scanned with **100dpi with black and white** option which helps in reducing size of the scanned document. Uploading of application in



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location other than specified above shall not be considered. Hard copy of application shall not be entertained.

Not more than one tender shall be submitted by one tenderer or tenderers having business relationship. Under no circumstances will father and his son(s) or other close relations who have business relationship with one another (i.e., when one or more partner(s)/director(s) are common) be allowed to tender for the same contract as separate competitors. A breach of this condition will render the tenders of both parties liable to rejection.

Tenderer who has downloaded the tender from Central Public Procurement Portal (CPPP) website <http://etenders.gov.in/eprocure/app> shall not tamper/modify the tender form including downloaded price bid template in any manner. In case if the same is found to be tampered/modified in any manner, tender will be completely rejected and EMD would be forfeited and tenderer is liable to be banned from doing business with AAI.

6. Bids Opening Process is as below: -

Envelope-I (Tender fee, EMD, Technical bid and Pre-qualification):

Envelope-I containing documents as per Para2 (A), (B) and (C) (uploaded by the tenderers) shall be opened on date & time mentioned in CRITICAL DATA SHEET.

If the bidder has any query related to the Bid Document of the work, they should use 'Seek Clarification' on CPP portal to seek clarifications. No other means of communication in this regard shall be entertained.

If any clarification is needed from the tenderer about the deficiency in his uploaded documents in Envelope - I, he will be asked to provide it through CPP portal or email if required. The tenderer shall upload the requisite clarification/documents within time specified by AAI, failing which it shall be presumed that bidder does not have anything to submit and bid shall be evaluated accordingly.

The intimation regarding acceptance/rejection of their bids will be intimated to the tenderers through CPP portal.

Envelope-II (Financial Bid):

Envelope-II containing financial bid of the tenderers found to be meeting the technical criteria and qualifying requirements shall be opened on date & time mentioned in CRITICAL DATA SHEET. **(In case the date and time for opening of Envelope-II (Financial bid) is required to be changed, the same shall be intimated through CPP Portal).**



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AAI reserves the right to accept or reject any or all applications without assigning any reasons. AAI also reserves the right to call off tender process at any stage without assigning any reason.

AAI reserves the right to disallow the working agencies whose performance at ongoing project (s) is below par and usually poor and has been issued letter of restrain/Temporary or Permanent debarment/blacklisting by any department of AAI or Central/State Government. Depts./PSUs/World Bank/ADB etc

AAI reserves the right to verify the credential submitted by the tenderer at any stage (before or after the award the work). If at any stage, any information / documents submitted by the applicant is found to be incorrect/false or have some discrepancy which disqualifies the tenderer then AAI shall take the following action:

- a) Forfeit the entire amount of EMD submitted by the tenderer.
- b) The tenderer shall be liable for debarment from tendering in AAI, including termination of the contract apart from any other appropriate contractual/legal action.

C) Verification of Bank Gurantee received by AAI from the agencies shall be done through structured financial messaging system (SFMS) of ICICI Bank. The successful bidder is required to submit BG in accordance with following **(As mentioned in Annexure-VII)**

Bank details:

CORPORATE NAME	:	AIRPORTS AUTHORITY OF INDIA
BANK NAME	:	ICIC BANK
IFSC CODE	:	ICIC0000007
BG ADVISING MESSAGE	:	IFN 760COV (BG ISSUE) IFN 767COV (BG AMENDMENT)
UNIQUE IDENTIFIER CODE	:	AAI CHENNAI for Kalaburgi Airport

Consortium/JV companies shall not be permitted.

~~Concessions to Indian Micro & Small Enterprises (MSEs) units registered with DIC/NSIC/KVIC/KVIB/Directorate of Handicraft and Handloom etc., to be given as per the provisions of Public Procurement Policy for MSEs order 2012 with up-to-date amendments, shall be applicable for tenders of supply/services and shall not be extended to construction work.~~

CNS In Charge
For Airport Director
Airports Authority of India,
Kalaburagi Airport.

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SECTION: II

Instructions for Online Bid Submission

The bidders are required to submit soft copies of their bids electronically on the CPP Portal, using valid Digital Signature Certificates. The instructions given below are meant to assist the bidders in registering on the CPP Portal, prepare their bids in accordance with the requirements and submitting their bids online on the CPP Portal.

More information useful for submitting online bids on the CPP Portal may be obtained at: <https://eprocure.gov.in/eprocure/app>.

REGISTRATION

Bidders are required to enroll on the e-Procurement module of the Central Public Procurement Portal (URL: <https://eprocure.gov.in/eprocure/app>) by clicking on the link “**Online bidder Enrollment**” on the CPP Portal which is free of charge.

As part of the enrolment process, the bidders will be required 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. These would be used for any communication from the CPP Portal.

Upon enrolment, the bidders will be required to register their valid Digital Signature Certificate (Class II or Class III Certificates with signing key usage) issued by any Certifying Authority recognized by CCA India (e.g., Sify / nCode / eMudhra etc.), with their profile.

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.

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.

SEARCHING FOR TENDER DOCUMENTS

There are various search options built in the CPP Portal, to facilitate bidders to search active tenders by several parameters. These parameters could include Tender ID, Organization Name, Location, Date, Value, etc. There is also an option of advanced search for tenders, wherein the bidders may combine a number of search parameters such as Organization Name, Form of Contract, Location, Date, Other keywords etc. to search for a tender published on the CPP Portal.

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 ‘My Tenders’ folder. This would enable the CPP Portal to intimate the bidders through SMS / e-mail in case there is any corrigendum issued to the tender document.

The bidder should make a note of the unique Tender ID assigned to each tender; in case they want to obtain any clarification / help from the Helpdesk.



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PREPARATION OF BIDS

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

Please go through the tender advertisement and the tender document carefully to understand the documents required to be submitted as part of the bid. 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 need to be submitted. Any deviations from these may lead to rejection of the bid.

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 / XLS / RAR / DWF/JPG formats. Bid documents may be scanned with **100 dpi** with black and white option which helps in reducing size of the scanned document.

To avoid the time and effort required in uploading the same set of standard documents which are required to be submitted as a part of every bid, a provision of uploading such standard documents (e.g. PAN card copy, annual reports, auditor certificates etc.) has been provided to the bidders. Bidders can use "My Space" or "Other Important Documents" area available to them to upload such documents. These documents may be directly submitted from the "My Space" area while submitting a bid, and need not be uploaded again and again. This will lead to a reduction in the time required for bid submission process.

SUBMISSION OF BIDS

Bidder should log into the site well in advance for bid submission so that they can upload the bid in time i.e. on or before the bid submission time. Bidder will be responsible for any delay due to other issues.

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

Bidder has to select the payment option as "**ONLINE**" to pay the tender fee / EMD as applicable and enter details of the instrument.

Bidders are requested to note that they should necessarily submit their financial bids in the format provided and no other format is acceptable. If the price bid has been given as a standard BOQ format with the tender document, then the same is to be downloaded and to be filled by all the bidders. Bidders are required to download the BOQ file, open it and complete the coloured (unprotected) cells with their respective financial quotes and other details (such as name of the bidder). No other cells should be changed. Once the details have been completed, the bidder should save it and submit it online, without changing the filename. If the BOQ file is found to be modified by the bidder, the bid will be rejected.

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, opening of bids etc. The bidders should follow this time during bid submission.

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All the documents being submitted by the bidders would be encrypted using PKI encryption techniques to ensure the secrecy of the data. The data entered cannot be viewed by unauthorized persons until the time of bid opening. The confidentiality of the bids is maintained using the Secured Socket Layer 128-bit encryption technology. Data storage encryption of sensitive fields is done. Any bid document that is uploaded to the server is subjected to symmetric encryption using a system generated symmetric key. Further this key is subjected to asymmetric encryption using buyers/bid openers' public keys. Overall, the uploaded tender documents become readable only after the tender opening by the authorized bid openers.

Upon the successful and timely submission of bids (i.e after Clicking "Freeze Bid Submission" in the portal), 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.

The bid summary has to be printed and kept as an acknowledgement of the submission of the bid. This acknowledgement may be used as an entry pass for any bid opening meetings.



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SECTION - III

INSTRUCTIONS TO BIDDERS

INTRODUCTION

1. DEFINITIONS

- 1.1. "AAI / The Buyer" means the Airports Authority of India.
- 1.2. "The Bidder / Vendor" means the individual or firm who participates in this tender and submits its bid.
- 1.3. "Project Leader AAI" means the AAI executive responsible for signing all documents from AAI side and shall coordinate all the activities of the project with the bidder / contractor.
- 1.4. "The Supplier / Contractor" means the individual or firm taking up the work as defined under the Notice Inviting Tender.
- 1.5. "The Works Order" means the order placed for the supply, installation, testing
Commissioning of systems / works by the Buyer on the Contractor signed by the Buyer including all attachments and appendices thereto and all documents incorporated by reference therein.
- 1.6. "The Purchase Order / Supply Order" means the order placed for the supply of items by the Buyer on the Supplier, signed by the Buyer including all attachments and appendices thereto and all documents incorporated by reference therein.
- 1.7. "The Contract" means the agreement signed between the Buyer and the Contractor as per the terms and conditions contained in the Works Order / Purchase Order.
- 1.8. "The Contract Price" means the price payable to the Contractor under the Works Order / Purchase Order for the full and proper performance of its contractual obligations.
- 1.9. "Non-responsive Bid" means a bid, which is not submitted as per the instructions to the bidders, or Earnest Money Deposit has not been submitted, or the required data has not been provided with the e-Bid, or intentional errors have been committed in the e-Bid.

2. AMENDMENTS TO BID DOCUMENTS

- 2.1. At any time, prior to the last date of submission of bids, the Buyer may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective Bidder, modify the bid documents by amendments.



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- 2.2 Amendments (if any) shall be notified through e-portal to all prospective bidders by the Buyer and these amendments will be binding on them.
- 2.3 Corrigendum in respect of any amendments will be published only in e-portal and AAI web-site. No further news-paper notification will be published.

3. BID PRICES

- 3.1. The price bid has been given as a standard BOQ format along with the tender document, then the same is to be downloaded and to be filled by all the bidders. Bidders are required to download the BOQ file, open it and complete the unprotected cells with their respective financial quotes and other details (such as name of the bidder). No other cells should be changed. Once the details have been completed, the bidder should save it and submit it online, without changing the filename. If the BOQ file is found modified by the bidder, the bid will be rejected.
- 3.2. The Unit Rate given in e-Tender portal for BOQ shall be taken as the correct basis for calculating all other data. In the event of any errors or Ambiguity in Unit Rates itself the Price Bid of the Vendor shall be rejected.
- 3.3. The tender rates shall be inclusive of all taxes excluding GST.
- 3.4. In case of composite works having components of SITC should be identified separately with value of goods and services, Tax rate, amount of tax so as to enable AAI to claim Input tax Credit on such items. Applicable Labor cess shall be added over and above.
- 3.5. In case of change in rate of Tax or any provision relating to levy of tax resulting in increase in burden of Tax on contractor, the contractor shall be entitled to receive any compensation for such increase in quantum of Tax payable by the contractor. Similarly, recovery shall be made from the contractor on account of decrease of rate of tax or any provision relating to levy of Tax.
- 3.6. The prices quoted by the bidder shall remain firm during the entire period of contract and shall not be subject to variation on any account. A bid submitted with an adjustable price quotation will be treated as non-responsive and rejected.
- 3.7. Post offer discount, if any, offered by the bidders shall not be considered. Bidders' planning to offer discount shall therefore modify their offers suitably while quoting and shall quote clearly net price taking into account discount, free supply etc. However, such discounts from the firm declared as L1 on the basis of post bid negotiations if any shall be considered and such negotiated offer when agreed by AAI & the bidder shall form a part of the financial Bid.

4.PERIOD OF VALIDITY OF TENDER (BID)

- 4.1 The tender (Bid) shall remain valid for a minimum of 90 days from the date of opening of the Cover/Envelope-II bid (Financial bid). The bidder shall not be entitled, to revoke or cancel the offer or to vary any term thereof, during the above period of validity without the consent in writing of AAI. In case of the

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bidder revoking or canceling the offer or varying any term in regard thereof, the bidder's earnest money deposit shall be forfeited.

- 4.2 If there is any delay in finalization of the tender due to unforeseen factors, all the bidders shall be asked to extend the validity for an appropriate period, specifying a date by which tender is expected to be finalized. The request and the responses thereto shall be made in writing. The tender process will not be vitiated if any tenderer declines to extend the offer as requested for.

5. FORMATS AND SIGNING OF BID

- 5.1. The e-Bid shall be digitally signed by the bidder at e-tendering portal duly authorized to bind the bidder to the contract. Written power-of-attorney in proper format accompanying the bid shall indicate the letter of authorization. (Annexure-V) The person or persons signing the bid shall sign all pages of the bid. The bids submitted shall be in proper readable format, encrypted as per e-tendering portal requirements. Standard Printed terms and conditions of the company other than the NIT conditions shall not be considered.

6. SEALING AND MARKING OF BIDS

- 6.1. The bidders shall digitally sign and encrypt their bid and upload the bid online at e-tendering portal.
- 6.2 If all documents are not digitally signed & encrypted, the buyer shall not accept such bids for evaluation purpose and treated as non-responsive. Such bid shall be liable to be rejected.

7.SUBMISSION OF BIDS

- 7.1 The buyer shall receive the bids online through CPP-portal not later than the scheduled date specified in the NIT.
- 7.2 The Buyer may, at its discretion extend this deadline for the submission of the bids by amending the bid documents in accordance with Clause 2 in which case all rights and obligations of the Buyer and bidders previously subject to the deadline will thereafter be subject to the deadline as extended.
- 7.3 The bidder shall submit his bid online at NIC CPP E-tendering portal only. The vendor shall download the tender document and submit the same in technical bid. No separate documents shall be acceptable. Only relevant attachments, if any other than the tender document, shall be listed out for reference.

8. LATE BIDS

- 8.1 E-portal systems shall not permit uploading of bids after the scheduled time of submission.



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9. CORRECTIONS / MODIFICATIONS AND WITHDRAWAL OF BIDS

9.1 The bidder may modify his digitally signed bid after submission **prior to the deadline** through provisions of e-tendering portal.

10. OPENING OF TECHNICAL BIDS

10.1 The Buyer shall open Technical Bids (Cover/Envelope-I&II) through e-portal on or after the Tender Opening Time and Date intimated.

13. CLARIFICATION / CONFIRMATION OF COMPLIANCE OF BIDS

11.1 To assist in the examination, evaluation and comparison of bids the Buyer may, at its discretion ask the bidder for the clarification / confirmation of compliance of its bid. The request for clarification / confirmation of compliance and the response shall be through e-portal. However, no post bid clarification / confirmation of compliance at the initiative of the bidder shall be entertained.

11.2 It may be noted that only enquires / clarifications submitted through e-portal shall be responded by responses through e-portal and no verbal / telephonic enquiry shall be entertained during the tender process.

12. EVALUATIONS AND COMPARISON OF SUBSTANTIALLY RESPONSIVE TECHNICAL BIDS:

The Buyer shall evaluate in detail the Technical Bids and determine whether the bid complies with all the Qualitative Requirements. A short-list of bidders qualifying technically shall be drawn and thereafter these short-listed bids shall be treated as par for the purpose of financial comparison. In case deviations are necessary on technology up-gradation all the bidders qualifying technically shall be given an opportunity to revise Financial Bids by way of submitting supplementary Financial Bids. Only technically successful bids will be considered for financial bid opening.

13. OPENING OF THE FINANCIAL BIDS

13.1 Financial Bids of those vendors who qualify technically shall be opened through the e-portal.

13.2 The bidder shall issue authority letters to their representatives to attend the opening of financial bids.

13.3 The comparison for evaluation shall be of the total charges of the bid.

A short list of lowest bidders in ascending order shall be drawn and named L1, L2, L3 etc.

13.4. The Bidder's names, Bid prices, modifications, bid withdrawals and such other details as the Buyer, at its discretion, may consider appropriate; will be announced at the opening. These are as per the provisions given in CPPP.

[REF.AAI/VOGB/CNS/DVOR/OFC&RF LINK /2022](#)

NIT: SITC OF OFC, RF LINK AND NETWORK COMPONENTS FOR DVOR/DME INSTALLATION PROJECT



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14. CONTACTING THE BUYER

- 14.1. Canvassing in any form in connection with the tenders is strictly prohibited and the tenders submitted by the contractors who resort to canvassing are liable for rejection. Such rejected tenders will not be returned.
- 14.2. No bidder shall try to influence directly or through external source, the Buyer on any matter relating to its bid, from the time of publication of NIT till the time the contract is awarded.
- 14.3. Any effort by a bidder to influence the Buyer in the bid evaluation, bid comparison or contract award decisions shall result in the rejection of the bid, and such actions will be considered as bad performance for future Projects.

15. AWARD OF CONTRACT

- 15.1. The acceptance of the tender will be intimated to the successful bidder by AAI, either by fax, letter, e-portal or by e-mail.
- 15.2. AAI shall be the sole judge in the matter of award of contract and decision of AAI shall be final and binding.
- 15.3. AAI reserves the right to accept or reject any offer in full or partially.

16. RIGHT TO ACCEPT OR REJECT THE TENDERS

- 16.1. The right to accept the tender in full or in part/parts will rest with AAI. However, AAI does not bind itself to accept the lowest tender and reserves to itself the authority to reject any or all the tenders received without assigning any reason whatsoever.
- 16.2. Tenders not accompanied with prescribed information or incomplete in any respect, and/or not meeting prescribed conditions, shall be considered non-responsive and are liable to be rejected.
- 16.3. The Buyer reserves the right to accept or reject any bid or a part of the bid or 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 for the Buyer's action.
- 16.4. AAI also reserves the right at its sole discretion not to award any order for the tender called. AAI shall not pay any costs incurred in the preparation and submission of any tender.



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- 16.5. If the bidder gives wrong information in his/her Tender, AAI reserves the right to reject such tender at any stage or to cancel the contract, if awarded, and forfeit the Earnest Money.
- 16.6. Tenders that are not accompanied with proof of Earnest Money Deposit (EMD) paid through ONLINE shall be rejected outright.
- 16.7. Should a bidder have a relation or relations employed in AAI in the capacity of an officer, the authority inviting tender, shall be informed. In the event of failure to inform and in a situation where it is established that the relation or relations employed in AAI has / have tried to influence the tender proceedings then AAI at its sole discretion may reject the tender or cancel the contract and forfeit the Earnest Money.
- 16.8. The requirements indicated in this NIT are the minimum and bids of the firms not complying with these minimum requirements or having deviations equivalent to the minimum requirements shall be rejected. However, higher than the minimum requirements shall be technically acceptable without any additional financial implication.
- 16.9 Any correspondence after the opening of the technical bid, from the bidder, regarding the bid unless specifically sought by AAI shall not be considered. Such post bid offers/ clarifications may be liable for action as per clause 14 above.

17. ISSUE OF WORKS ORDER

- 17.1. The acceptance of the tender will be intimated to the successful bidder by AAI, either by Fax, Email, e-Portal or by letter.
- 17.2. The issue of a Works Order / Purchase Order shall constitute the intention of Buyer to enter into the contract with the bidder.
- 17.3. Acceptance of the Works order / Purchase Order will be deemed as effective from the date of issue of Works Order / Purchase Order.
- 17.4. AAI shall be the sole judge in the matter of award of contract and decision of AAI shall be final and binding.

18. SIGNING OF CONTRACT:

- 18.1 The issue of Works Order / Purchase Order shall constitute the award of contract on the bidder. The signing of the Agreement shall be completed within 30 days of the acceptance of the Works Order / Purchase Order.

19. ANNULMENT OF AWARD

- 19.1 Failure of the successful bidder to comply with the requirement of Clause 18 shall constitute sufficient ground for the annulment of the award and forfeiture of the EMD in which event the Buyer may make the award to any other bidder at his discretion or call for new bids.



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20. QUALITY ASSURANCE REQUIREMENTS

The supplier shall submit copies of Valid Certificates to ensure that all works comply with standards specified in the technical specifications.

21. TRANSFER OF TENDER DOCUMENT

Transfer of Tender Documents by one bidder to another is not permissible. Similarly transfer of tenders submitted by one bidder in the name of another vendor is not permissible.

22. CONTRACT MONITORING

- 22.1. The buyer shall hold regular contract monitoring meetings after the award of the contract to monitor the performance of the contract.
- 22.2. First such meeting shall be held within one week of award of the contract. The date and time of such meeting shall be intimated to the contractor / supplier by fax. / Post or e-mail. The date and time of subsequent meetings shall be decided and recorded in previous meetings.
- 22.3 The proceedings of each meeting shall be recorded and action as required towards successful completion of the project shall be initiated promptly by both AAI and the contractor. Project review meetings shall be with reference to milestone and contract performance analysis.



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SECTION: IV

GENERAL TERMS & CONDITIONS OF THE CONTRACT

1.Purpose & Scope

This document sets out the terms & conditions to be met in connection with the "SITC of OFC, RF link and network components for DVOR/DME installation project at Kalaburagi Airport" for the work as per details given in the notice inviting Tender with specifications in **Section V, Schedule-A, Detailed Scope of work.**

2.Compliance

- 2.1. The unconditional acceptance of all the terms & conditions of the NIT has to be uploaded through a letter. The format of the letter is attached at Annexure-I.
- 2.2. The submission of the tender will imply acceptance of all the tender condition by the bidder laid in tender document including all the Annexure(s) & schedules to the tender document.
- 2.3. The compliance to the terms & conditions should be supported by authenticated documentation wherever required.
- 2.4. The submission of unconditional acceptance as described at 2.1 is essential for the tender evaluation. The failure to submit the unconditional acceptance statement in the said format shall result in the tender being rejected.

3.Language and Currency

The bidder shall quote the rates in English language and international numerals. In the event of the order being awarded, the language of all services, manuals, instructions, technical documentation etc. provided for under this contract will be English. The bidders should quote only in Indian Rupees and the bids in currencies other than Indian rupees shall not be accepted.

4.Standard Conditions.

- 4.1. Standard printed conditions of the bidder to the offer, other than the conditions specified here, will not be acceptable.
- 4.2. For the purpose of the tender, the metric system of units shall be used. In the event of any discrepancy, the rates quoted by the bidder in the "basic unit rate" column will be the correct basis and not the amount worked out by them. Also, the rates quoted in words will be the correct basis and not the rate shown in figures.
- 4.3. Bidder's offers shall be with reference to section and clause numbers given in the tender schedules.



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- 4.4. In case of any ambiguity between details given in NIT and Tender, details given in Tender shall be considered as correct.

5. Earnest Money

- 5.1 EMD of the value of ₹. 71,579 /=- shall be accepted ONLINE only.
- 5.2 The EMD of the technically unsuccessful bidders shall be discharged / returned after the completion of the technical evaluation process.
- 5.3 The EMD of the unsuccessful bidders other than the lowest three bids shall be discharged/ returned promptly, after evaluation of financial bids.
- 5.4 The EMD of the unsuccessful bidders other than the lowest bidder shall be returned as soon as the work is awarded.
- 5.5. The EMD amount shall be forfeited in the following events.
- 5.5.1. If the successful bidder fails to enter into a contract with AAI within 15 calendar days after the receipt of the work order
- 5.5.2. If the successful bidder fails to submit the performance guarantee with AAI within 30 calendar days after the receipt of the work order.
- 5.5.3. In the event of not accepting the conditions of the contract even after agreeing to do so and submitting the letter of un-conditional acceptance of terms as per letter in Annexure-I.
- 5.6 No interest or any other expenses, whatsoever, will be payable by AAI on the EMD in any manner.

6. Security Deposit :

- 6.1. The successful bidder shall submit a Security deposit of the value equivalent to **10% (ten percent)** of the contract value in the form of an irrevocable and unconditional bank guarantee on scheduled commercial bank as per Performa attached as **Annexure - II**. The guarantee shall be submitted within 30 calendar days of the issue of letter of acceptance of his bid, and will be valid till 60 days after the completion of the contract. The Security Deposit amount shall be payable to AAI without any condition whatsoever and the guarantee shall be irrevocable.
- 6.2. The Security Deposit shall be deemed to govern the following guarantees from the successful bidder, in addition to other provisions of the guarantee.
- 6.3. The Security Deposit is intended to secure the performance of the entire contract. However, it is not to be construed as limiting the damages stipulated in any other clause.
- 6.4. The Security Deposit will be returned to the successful bidder at the end of Defect Liability Period **(12 months)** without interest.



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- 6.5. The EMD is liable for forfeiture and action will be taken as per terms if the Security Deposit is not submitted in time as stipulated above.

In case agency fails to deposit Security Deposit amount within thirty calendar days of the issue of letter of acceptance of his bid, the amount @10% of the gross amount of each running bill would be withheld till the S .D amount is recovered, against the total Security Deposit (i.e. 10 % of Work done amount). As and when, the agency submits the bank guarantee the withheld amount would be released but the interest shall not refundable to the agency.

7. Correspondence

All correspondence would be directly with the bidder and correspondence through agents will not be entertained.

8. Extension of Time

This work is urgent and hence the completion period as per contract shall be adhered to strictly. However, in case of extraordinary situations which may delay the commencement of the work, the contractor shall apply for extension in time. The amount of compensation for delay and waiver of compensation for delay in case of justified reasons shall be decided at the discretion of Accepting Authority and the same shall be final and binding on the contractor.

9. Compensation for Delay

- 9.1 Time is the essence of the Contract.

- 9.2 If the successful bidder fails to complete the supply / work within time fixed under the contract, he shall pay to the AAI without prejudice to any other rights or remedy as may be available to the purchaser, an agreed compensation amount calculated @ 1/2 % of the total value of the uncompleted portion of the work per week or part thereof subject to a maximum value equal to the value of the Security Deposit.

- 9.3 The amount of compensation for delay and waiver of compensation for delay in case of justified reasons shall be decided at the discretion of Accepting Authority and the same shall be final and binding on the contractor. Time taken by AAI and local statutory authorities for approval of drawings, design, estimate etc., force majeure reasons and any other reasons beyond control of the contractor shall be considered as justified reasons. The amount of compensation may be adjusted or set off against any sum payable to the contractor under this or any other contract with AAI.

- 9.4 Appeal for waiver of compensation for delay with due justification shall be decided as per the provisions of Delegation of Powers (DOP) of Airports



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Authority of India. The decision of the competent authority on appeal shall be final and binding on the contractor.

10. Force Majeure

- 10.1 AAI may grant an extension of time limit set for the completion of the work in case the timely completion of the work is delayed by force majeure beyond the contractor's control, subject to what is stated in the following sub paragraphs and to the procedures detailed therein being followed. Force Majeure is defined as an event of effect that cannot reasonably be anticipated such as acts of God (like earthquakes, flood, storms, pandemic etc.), acts of states, the direct and indirect consequences of wars (declared or un-declared), hostilities, national emergencies, civil commotion and strikes (only those which exceed a duration of ten continuous days) at successful Bidder's factory. The successful bidder's right to an extension of the time limit for completion of the work in above-mentioned cases is subject to the following procedures.
- 10.2 That within 10 days after the occurrence of a case of force Majeure but before the expiry of the stipulated date of completion, the bidder informs the AAI in writing about the occurrence of Force Majeure Condition and that the Bidder considers himself entitled to an extension of the time limit. The contractor shall submit the application for extension of time.
- 10.3 That the contractor produces evidence of the date of occurrence and the duration of the force majeure in an adequate manner by means of documents drawn up by responsible authorities.
- 10.4 That the contractor proves that the said conditions have actually been interfered with the carrying out of the contract.
- 10.5 That the contractor proves that the delay occurred is not due to his own action or lack of action.
- 10.6 Apart from the extension of the time limit, force majeure does not entitle the successful bidder to any relaxation or to any compensation of damage or loss suffered.

11. Patents, Successful bidder's Liability & Compliance of Regulations

- 11.1 Successful bidder shall protect and fully indemnify the AAI from any claims for infringement of patents, copyright, trademark, license violation or the like.
- 11.2 Successful bidder shall also protect and fully indemnify the AAI from any claims from successful bidder's workmen/employees, their heirs, dependents, representatives etc. or from any person(s) or bodies/ companies etc. for any act of commission or omission while executing the order.



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11.3 Successful bidder shall be responsible for compliance with all requirements under the laws and shall protect and indemnify completely the AAI from any claims/penalties arising out of any infringements and indemnify completely the AAI from any claims/penalties arising out of any infringements.

12. Settlement of Disputes

12.1 If a dispute of any kind whatsoever arises between the AAI and the Contractor in connection with, or arising out of the Contract or the execution of the works, whether during the execution of the Works or after their completion and whether before or after repudiation or after termination of the contract, including any disagreement by either party with any action, inaction, opinion, instruction, determination, certificate or valuation of the Project Leader or his nominee, the matter in dispute shall, in first place be referred to the O/o Regional Executive Director, AAI, Southern Region, Chennai Airport, who shall act as the conciliator on the matter. The disputes will firstly be settled by the Conciliator, failing which any party may invoke arbitration clause.

12.2 Unless the Contract has already been repudiated or terminated or frustrated the Contractor shall in every case, continue to proceed with the works with all due diligence and the Contractor and AAI shall give effect forthwith to every decision of the Project Leader or his nominee unless and until the same shall be revised, as hereinafter provided, by the Conciliator or in an Arbitral Award.

13. Arbitration and Law

13.1 Except where otherwise provided for in the contract, all questions and disputes relating to the provisions of this contract shall be settled under the Rules of Indian Arbitration and Conciliation Act, 1996, within thirty (30) days (or such longer period as may be mutually agreed upon from the date that either party notifies in writing that such dispute or disagreement exists. The Chairman, AAI shall appoint the single Arbitrator for settlement of any dispute with regard to this contract. The venue of Arbitration shall be in O/o RED, SR ,Chennai. The arbitration resolution shall be final and binding upon the parties and judgment may be entered thereon, upon the application of either party, by any court having jurisdiction.

13.2 Indian laws shall govern this contract.

14. TERMINATION FOR DEFAULT & RISK PURCHASE

14.1 The AAI may, without prejudice to any other remedy for breach of contract, by written notice of default, sent to the Contractor, terminate this Contract in whole or in part in any or the following events.



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- 14.2 If the Contractor fails to deliver any or all of the Items within the time period(s) specified in the Contract or any extension thereof granted by the AAI pursuant to Clause 8 & 9 of Section - IV.
- 14.3 If the Contractor fails to perform any other obligation(s) under Contract.
- 14.4 If the Contractor, in either of the above circumstances, does not remedy his failure within a period of 30 days (or such longer period as AAI may authorize in writing) after receipt of the default notice from AAI.
- 14.5 As a penalty to the Contractor, AAI shall forfeit the EMD. AAI in such case shall pay for the assessed value of the executed work that can be used. No payment shall be made for the efforts put in by the Contractor in case the same are of no value to AAI. The balance unfinished work of the project will be got done by fresh tendering on Contractor's risk and that extra expenditure will be recovered.

15. TERMINATION FOR INSOLVENCY

The AAI may at any time terminate the Contract by giving written notice to the supplier, without compensation to the Contractor, if the Contractor becomes bankrupt or otherwise insolvent as declared by the competent court provided that such termination will not prejudice or affect any right or action or remedy which has accrued or will accrue thereafter to AAI. In the event of termination for penalty to the contractor Clause 14.5 shall be applicable.

16. SET OFF

- 16.1 Any sum of money due and payable to the contractor (including security deposit refundable to him) under this contract may be appropriated by the Buyer to set off the same against any claim of the Buyer for payment of a sum of money arising out of this contract made by the Contractor with Buyer.
- 16.2 Any item belonging to AAI should not be taken out for maintenance/service / replacement/repair without the prior consent of APD or his authorized representative.
- 16.3 The bidder shall acquaint him with the proposed site of work, its approach roads, working space available before quoting his rates

17. Deviation in Quantity

AAI reserves the right to change the quantity or part thereof by plus or minus **30%** of the tendered quantity indicated in the BOQ.



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SECTION – V

SPECIAL TERMS AND CONDITIONS OF THE CONTRACT

For the purpose of the terms and conditions Airports Authority of India will be referred to as “AAI” and the firm providing “SITC of OFC, RF link and network components for DVOR/DME installation project at Kalaburagi Airport.” shall be referred as the “Contractor”.

The successful bidder must give his/her acceptance of work order within 07 days from the date of work order.

Time Period for completion of supply and Complete Installation is **60 days** from the date of issue of work order.

TECHNICAL SPECIFICATIONS & DETAILED SCOPE OF WORK

Name of work: SITC OF OFC, RF LINK AND NETWORK COMPONENTS FOR DVOR/DME INSTALLATION PROJECT AT AAI, KALABURAGI AIRPORT.

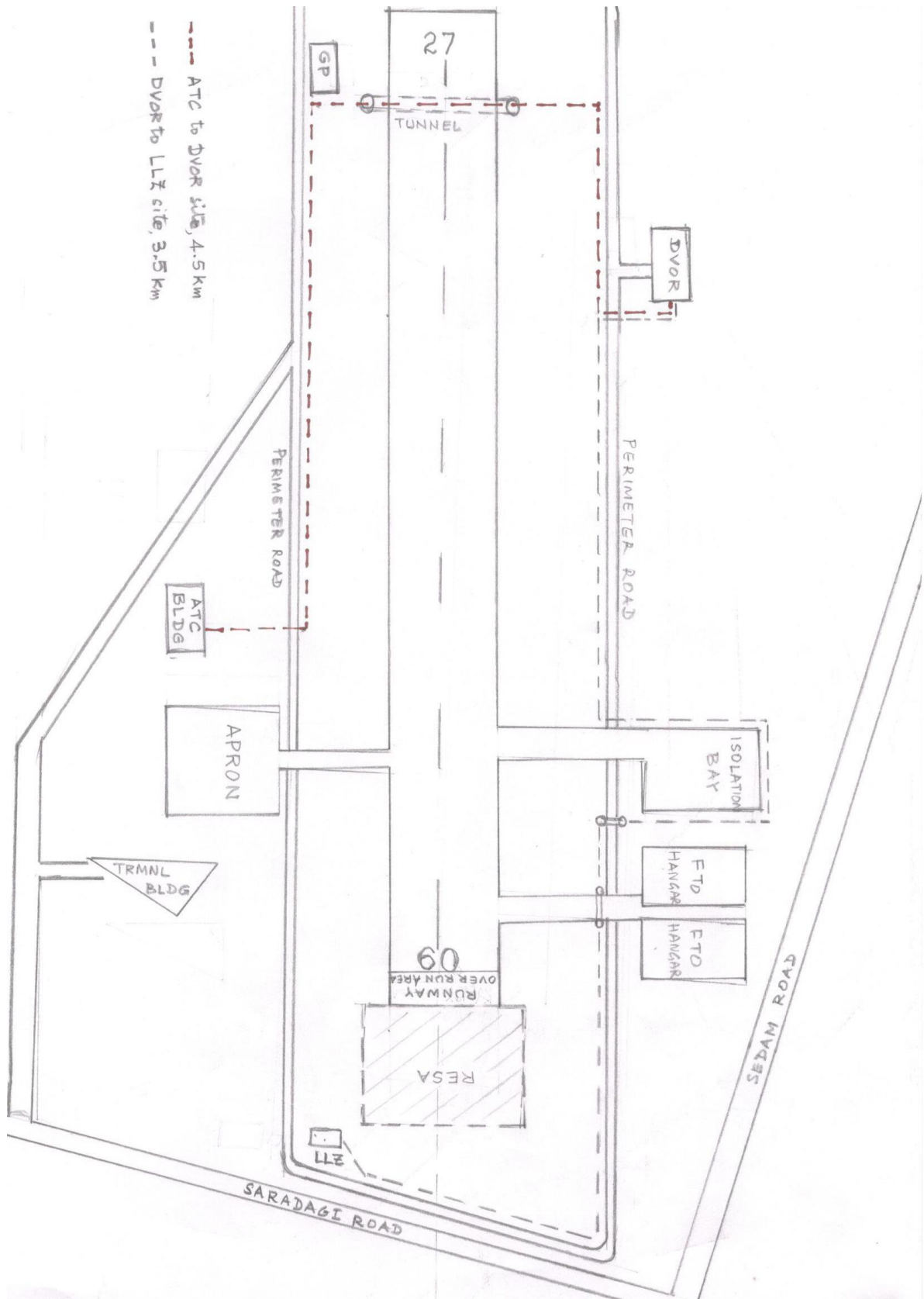
Guidelines for Installation, Testing and Commissioning

Please refer the diagram below.

1. Required fiber pulling / splicing works will need to be carried out. Testing and numbering all OFC cores need to be done.
2. Manholes shall be constructed as per specification, one each at ATS Building, proposed GP Site, DVOR site, either end of RUNWAY crossings, proposed LLZ site, OFC Cable joints and midway between larger lengths wherever distance between successive manholes is more than 300M. Not less than 5M fiber to be laid extra in each manhole.
3. Fixing and termination of LIU, Splicing of Pig tails, construction of Pull up chamber for OFC joining.
4. Network switches to be installed in each site and configured for automatic route change and communication restoration within seconds in case of failure in a particular section.
5. All equipment at each site to be integrated and interfaced to the network.
6. FXS/FXO pair for each site is to be configured and made operational.
7. Ancillary works related to cable laying like Road cutting and restoration, concrete cutting and restoration, fixing of OFC route markers, laying of HDPE Pipe, GI Pipe and PVC pipe to be carried out.
8. One 20 pair RC cable and Two CAT6 cables to be laid, from Equipment room RCU to ATC Tower with proper routing and labeling.



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SCHEDULE - A

SL.NO	DESCRIPTION OF ITEM	Quantity
1	24 Port L2 Managed Gigabit Switch with 4 SFP combo ports.	03
a)	<u>Architecture & Port Density:</u> Switch should offer Wire-Speed Non-Blocking Switching & Routing Performance at Layer 2 & Layer 3 The Access Switch should have Twenty-Four (24) 1GbE RJ45 ports and should have Four 1GbE/10GbE SFP+ Slots (1G should be ready to use from day 1, license upgradeable to 10G in future) Access Switch should support Stacking up to 8 Switches with more than 40 Gbps stacking bandwidth per Switch.	
b)	<u>Performance</u> Switching Bandwidth: Should provide non-Blocking switch fabric capacity of 128 Gbps or more. Forwarding Capacity: Should provide wire-speed packet forwarding of 95 Mpps or more.	
c)	<u>Layer 2 features</u> Should support 1K VLANs with 4K VLAN IDs Should support 10K MAC addresses or more. Shall support IP multicast snooping with support for IGMP v1, v2, v3 and MLD v1 & v2. Should support MRP ring protocol	
d)	<u>Layer 3 features</u> Should support minimum 1K IPv4 routes or more Should support Basic IPv4 and IPv6 Static Routing, ECMP, Host Routes, Virtual Interfaces, Routed Interfaces, Route Only and Routing between directly connected subnets from day 1. Should have an optional upgrade path, preferably software licensed based, to support the following Dynamic IPv4 & IPv6 Routing protocols and Multicast Routing Protocols. Dynamic IPv4 and IPv6 Routing protocols like RIP v1&v2, RIPng, OSPFv2, OSPFv3, VRRPv2 & VRRPv3. PIM-SSM, PIM Sparse, PIM Dense, PIM Anycast RP, and PIM passive IPv4 multicast routing	



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e)	<p><u>Security</u> Switch should support RADIUS, TACACS/TACACS+ and username/password for Authentication, Authorization and Accounting (AAA) with Local User Accounts and Local User Passwords. Should support secure communications to the management interface and system through SSL, Secure Shell (SSHv2), Secure Copy and SNMPv3 Should support IP Source Guard, DHCP snooping, DHCPv4, DHCPv6 and Dynamic ARP Inspection. Should support IPv4 and IPv6 ACLs with up to 500 rules per ACL and a minimum of 6K rules per system (Standalone Switch or Stack). Should support Byte and packet based broadcast, multicast, and unknown-unicast limits with suppression port dampening. Should support IPv6 Router Advertisement (RA) Guard. Should support Flexible Authentication with 802.1x Authentication and MAC Authentication.</p>	
f)	<p><u>Manageability</u> Should support manageability using Network Management Software with Web based Graphical User Interface (GUI). Integrated Standard based Command Line Interface (CLI), Telnet, TFTP, HTTP access to switch management/monitoring Should support Net Flow or sFlow or equivalent.</p>	
g)	<p><u>Physical Attributes:</u> Mounting Option : 19" Universal rack mount ears.</p>	
h)	<p><u>Mandatory Compliance :</u> All categories of Switches, Transceivers & Switch OS should be from same OEM.</p>	
i)	<p><u>Warranty</u> Switch should be quoted with TAC Support and onsite Warranty for 3 years or OEM warranty with NBD Hardware Replacement.</p>	
j)	<p><u>Product brochure</u> Vendor should provide printed technical catalogs/brochures for the quoted model containing technical specifications, features.</p>	
k)	<p><u>Temperature</u> Operating Temperatures: 0°C to 45°C Storage Temperatures: -40°C to 70°C</p>	
l)	<p><u>Humidity</u> Operating relative humidity: 5% to 95% at 45°C, non-condensing, non-operating relative humidity: 0% to 95% at 70°C, non-condensing</p>	
m)	<p><u>Make:</u> RUCKUS, CISCO, NETGEAR, HP</p>	
2	<p>SFP Module: 1G SFP Bi-Directional Module pair LC Connector, SM</p>	06



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	<p>1G Base LR (SM) Transceiver, Distance Support: Min 10Km Form Factor: SFP, Duplex LC Connector, Hot Pluggable MSA Compliant, RoHS, CE, FCC, UL, VCCI Power dissipation <1W Industrial temperature range: -40°C to 85°C Single 3.3V power supply Uncooled DFB Receiver limiting electrical Interface Single LC connector Built-in digital diagnostic functions</p>	
3	Single Mode 12 core Armoured Optic Fibre cable	8000 M #
	12-core, Single Mode, Corrugated steel tape Armored, Loose-tube, Water Swellable Tape, with 2 FRP Rods, Outdoor fiber cable fully conforming to ITU-T G.652.D	
	Construction details:	
	<p>Number of Cores: 12 Number of loose tubes: 1 Loose tube Inner Diameter: 1.7 ± 0.1 mm Loose tube Outer Diameter: 2.5 ± 0.1 mm Peripheral Strength member (2 FRP Rods): 1.0 ± 0.05 mm Moisture Barrier: Water Swellable Tape Armour: 0.150 mm ECCS Tape Outer Sheath: 1.8 mm (Nominal) HDPE - Black Overall Cable diameter: 8.5 ± 0.5 mm</p>	
	Cable Mechanical Characteristics:	
	<p>Tensile Strength: 1000 N Crush Resistance: 2000 N Impact Strength: 10Nm Minimum bend radius: 20 x D, D= Diameter of cable</p>	
	Temperature Performance:	
	<p>Installation: - 20 °C to + 70 °C Operation: - 20 °C to + 70 °C Storage: - 20 °C to + 70 °C</p>	
	Optical Fiber Characteristics:	

REF.AAI/VOGB/CNS/DVOR/OFC&RF LINK /2022

NIT: SITC OF OFC, RF LINK AND NETWORK COMPONENTS FOR DVOR/DME INSTALLATION PROJECT



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	<p>Attenuation: at 1310 nm ≤ 0.36 dB/km; at 1550 nm ≤ 0.23 dB/km</p> <p>Chromatic Dispersion: 1285 - 1330 nm ≤ 3.5 ps/nm.km</p> <p>Minimum 1550 nm ≤ 18 ps/nm.km</p> <p>Zero Dispersion Wavelength: 1300 - 1324 nm</p> <p>Zero Dispersion Slope: ≤ 0.092 ps/nm².km</p> <p>Polarization Mode Dispersion: ≤ 0.20 ps/$\sqrt{\text{km}}$</p> <p>Cable Cut-off Wavelength: ≤ 1260 nm</p> <p>Mode Field Diameter: at 1310 nm 9.2 ± 0.4 μm</p> <p>Mode field Concentricity Error: ≤ 0.8 μm</p> <p>Cladding Diameter: 125 ± 1 μm</p> <p>Cladding Non-circularity: ≤ 1 %</p> <p>Coating Diameter: 245 ± 10 μm</p> <p>Make: AMP, Finolex, Sterlite, BELDEN, Molex, Tyco</p>	
04	24 Port LIU with splice tray and SC adapter panel, Fully loaded	02
	<p>Sliding Fiber Management System 1U, 24 Core Fully loaded assemblies with Adapter plates and Splice tray and Splice accessories kit. Must conform to ISO/IEC 11801 operating standard.</p> <p>Should be robust 1U sliding patch panel designed to accept up to 2 removable faceplates with Plunger Grommet latching.</p> <p>Should be able accept LC Duplex, SC Simplex.</p> <p>Should allow easy access during installation or re-work with no disturbance of the existing cable or fibers.</p> <p>Splice tray colour should be blue, with transparent snap fit cover.</p> <p>Splice tray should have stacking option with removable hinge.</p> <p>Splice tray should have hinged splice rest position for easy fiber management.</p> <p>Should have Upto 4 standard cable entry points for, loose tube, tight buffer, and steel tape armoured cable.</p> <p>Fiber management system, should come fully loaded with fiber pigtails of 1.5m length, Splice tray and hardware kit.</p> <p>Fits in standard 19", should have Removable faceplate with plunger and grommet latching.</p> <p>Should have Built-in front cable management with Panel numbers and rack number identification port labeling.</p> <p>Should have High quality finish, with no sharp edges.</p>	



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	<p>Height: 1U (44.4mm)</p> <p>Width: 483mm</p> <p>Depth: 290mm</p> <p>Material: Cold-rolled steel</p> <p>Material Thickness: 1.2mm</p> <p>Material Coating: Electrostatic powder coating</p> <p>Colour: Black RAL 9004</p> <p>Operating Temperature: -40°C to +60°C</p> <p>Designed in Accordance With: TIA/EIA 568.C, ISO/IEC 11801, EN50173, IEC60304, IEC61754</p>	
	<p>SC Pigtail SM 9/125 micron</p>	48
	<p>SC-Style Pigtails 9/125, SC LSZH, Semi Tight pre terminated compatible with SC snap in adapter plates.</p> <p>Spliceable pigtail assembly</p> <p>250µm coated fiber in protective 900µm tubing.</p> <p>Compatible with fusion or mechanical splices.</p> <p>Cable length shall be minimum of 1.5 Meters</p> <p>Operating temperature -40° to +85°C.</p> <p>SM Connectors 220 Cycles, Blue.</p> <p>Ferrules shall be pre-radiused Ceramic .</p> <p>Attenuation not more than 0.75Db PER MATED PAIR.</p> <p>Shall be single mode OS2.</p>	
05	SC-LC OFC Patch Cord, Duplex 3M, SM	10#
	The patch cords should be terminated with zirconia ferrule connectors, manufactured with precision factory mounting and polishing techniques which helps assure high transmission quality.	
a	<p><u>FEATURES / BENEFITS</u></p> <p>Should conform to IEC, EIA-TIA or Telcordia performance requirements.</p> <p>Should be available in different fiber & connector types LC/PC, SC/PC, LC/APC , SC/APC.</p> <p>Must be available in standard and custom lengths.</p> <p>Should be REACH & SvHC compliant.</p> <p>Materials should be in compliant to RoHS2.</p>	



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b	<u>CHARACTERISTICS</u> Cable Material: LSZH Strength Member: Aramid Crush: 1000 N Operating Temperature: -20 °C to +60 °C Jacket Diameter: 2.0mm (zipcord) Secondary Buffer Diameter (2.0 mm): 900 ± 50 µm Minimum Bending Radius: 10D (installed) 20D (loaded) µm	
c	<u>MECHANICAL PROPERTIES</u> <u>(in Conformance to IEC 61300-2-x)</u> Mechanical endurance: 500 mating Vibration: 10-55 Hz, 0.75 amplitude Cable retention: Magnitude 50 N Cable torsion: 1.5kg-2.5 kg for 2mm-3mm cable diameter	
06	HDPE Pipe 2 inches	8000 M
	2 inches HDPE Pipe with related Accessories - Screws, Fillers, Connectors, Corners etc. Thickness: 2-5 mm The quoted product should be ISI certified. Pre-lubricated HDPE (High Density Polyethylene) pipes. Pressure Rating/ PN Class: 6 Material Grade: PE 63, PE 80, PE 100 Pressure: PN 2.5 TO 20 Section Shape: Round Color: Black Size/Diameter: 2-inch OD Packaging Type: In rolls	#
07	OFC Joint Enclosure 12 Core	02 #
	Type: Outdoor weather proof Features: FOSC tray Accessories for 12F OFC Make: RPG / 3 M or any DOT approved brand	
08	OFC Route marker for Cables Laid underground	250#
	16 SWG GI sheet Route Markers shall be erected in the shape of a flag of size 10 inch x 6 inch marked 'OFC-NAVAIDS'. The flag will be on a 3 feet iron rod out of which 1.5 feet will be embedded in the ground. Such markers will be laid throughout the cable route at an interval of about 30 m and at any turning in path of cable.	
09	GI Saddle and Accessories	

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		150 #
	Corrosion-Resistant Galvanized Iron Saddle and other accessories suitable for Fixing of 2 inch HDPE on wall.	
10	Manhole with Cast Iron Cover	12 #
	Rectangular Laterite/brick plastered Masonry of 1x1x1M Internal dimension cast iron cover of appropriate size	
11.a	OFC cable Laying - Hard Soils/ under road/ concrete surface	8000M #
	Trenching to a depth of 1M in Hard soil / under roads or concrete surface and laying HDPE Pipe and OFC cable through the pipe using necessary consumables, PVC couplings and back filling the trench. Roads and concrete cut areas shall be re-surfaced with concrete.	
b	Laying OFC cable through open trench and wall	
	Laying OFC cable through HDPE pipe in available Pipes, Open trenches / trenches covered with slabs and walls using required clamps and fixtures	
12	Installation, Configuration, Testing and Commissioning work	1 Job
	Installation of LIU and Network Switches and its configuration Standard Termination of 12 F OFC in LIU, fusion splicing of pig tails with Required fixtures, consumables. Splice loss should be less than 0.3 Db. OTDR Testing for the entire OFC cable network and report generation in PDF FORMAT	
13	19" 15U Wall Mount Rack + Power Distribution Unit + 1U Tray + Hardware accessories.	2
14	4 PORT FXS/FXO POTS Telephone over IP/Ethernet/LAN	1 Set
15	RS232 serial to IP convertor and serial cables	15
	RS 232 to IP – fast Ethernet converter No of port – ONE Asynchronous Interface: RS 232 Serial and TTL /CMOS (Asynchronous) Data Rates: up to 921.6 kbps, Characters: 7 or 8 data bits Parity: odd, even, none, Stop Bits: 1 or 2 Control Signals: RTS, CTS, DTR, DCD Flow Control: XON/XOFF, RTS/CTS Serial port connector - DB9	

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	<p>Should support Point to point MASTER/SLAVE configuration</p> <p>Network interface: Ethernet 10Base-T or 100Base-TX (Auto-Sensing),</p> <p>Connector: RJ-45</p> <p>Protocols: TCP/IP, UDP/IP, ARP, ICMP, SNMP, TFTP, Telnet, DHCP, BOOTP, HTTP, and Auto IP</p> <p>10Base-T connection & 100Base-TX connection.</p> <p>Management: SNMP, Telnet, serial, internal web server, and Microsoft Windows based utility for configuration</p> <p>Operating environment: -20° to 70°C</p> <p>Serial Cables:</p> <ol style="list-style-type: none"> 1. DB9 RS232 9 pin Serial cable. Both side female – 5 Metre length --- Qty 04. Make: SUPERLINK or equivalent 2. DB9 RS232 9 pin Serial cable. Both side female – 1 Metre length --- Qty 04 Make: SUPERLINK or equivalent 	
16	<p>Surge Protector for</p> <ol style="list-style-type: none"> 1. RS232 ports 2. LAN ports 	<p>10 08</p>
17	Laying of one 20 pair RC cable and Two CAT 6 cables from equipment room to ATC Tower	50 M
18	Point to Point RF Link (LOS distance is 1.25 kms)	02 Sets
	<p>RF Link- High-Radio System should operate in India WPC free licensed Band 5.825GHz - 5.875GHz in accordance with GSR 38 (E) dated 19th Jan 2007 for outdoor deployment. Performance Wireless Bridge - AC Protocol Support, Long-Range Point-to-Point (PtP) Link Mode, Selectable Channel Width, PtP: 10/20/30/40/50/60/80 MHz, PtMP: 10/20/30/40 MHz, Automatic Channel Selection, Transmit Power Control: Automatic/Manual, Automatic Distance Selection (ACK Timing), Strongest WPA2 Security</p>	
19	Warranty for SITC Work.	
	Minimum 3 years from the date of Site Acceptance Test (SAT)	

(#) - The quantity of works mentioned above is approximate and the actual amount paid will be as per actuals.



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1. Terms of Payment

- 1.1 Under the provision of Minimum Wages (Central) Rule 1950 the contractor is bound to allow to the labors directly or indirectly employed in the works one day rest for 6 days continuous work and pay wages at the same rate as for duty.
- 1.2 Income Tax or any other tax applicable shall be governed by the Govt. policies and be deducted at source at the rate in force at the time of payment. In case of any such deduction, the necessary certificate in due shall be provided by AAI.

2. Award of Contract

AAI is at its sole discretion in awarding the Contract and AAI may also have the sole discretion to terminate the contract.

3. Termination of Contract

- 3.1 The contract can be terminated either by AAI or contractor with notice of reasonable time. Contractor shall handover the contracted items in fully serviceable and functional condition at the time of closure of maintenance contract. Else, the defects shall be rectified at the risk and cost of contractor.
- 3.2 AAI shall terminate the contract and takeover the system maintenance at any time without notice, in case the services are not found satisfactorily.

4. Price

The contract rate should be quoted as per the BOQ format in CPP-Portal. No Deviation in the given format is acceptable. The rate quoted per item shall be inclusive of all statutory levies.

5. Taxes

- 5.1 The contractor is advised to get himself fully appraised to the financial implications including taxes while offering his rates. No claim whatsoever will be entertained in this regard at a later stage. Mandatory deductions will be deducted from the monthly payment.
- 5.2 Bidder shall be liable to pay any and all non-Indian taxes, duties, levies, lawfully assessed against AAI or bidder in pursuance of the contract. In addition, bidder shall be responsible for payment of all Indian duties, levies and taxes lawfully assessed against bidder for both corporate and personal Income and also all other taxes etc. relevant and applicable in respect of his property. Successful bidder shall arrange the Tax withholding order well in advance before claiming payment otherwise AAI will deduct the applicable tax at source as per prevailing rules.



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- 5.3 Successful bidder is required to produce Government of India notification towards taxes prevailing at the time of opening Technical Bid versus time of supply of the items while seeking claim towards increase in statutory taxes in India/State of India.
- 5.4 In case no payment is claimed by the bidder towards increase in statutory taxes, a certificate/undertaking is required to be given by bidder that statutory tax has not decreased during the period between date of opening Technical Bid & date of supply of the items. Any decrease in statutory taxes between the above said period shall be passed to AAI while claiming payments.

6. Advance

No advance payment shall be made to the contractor. However, 100% payment shall be made after the successful completion of work by AAI against the bill for the work done by the contractor after making statutory deductions including security deposit income tax etc. Security deposit shall be released after 3 (three) months from the date of expiry of the contract.

7. Rates quoted

- 7.1 The rates quoted in the tender shall remain valid for a period of 90 days from the date of opening of technical bid. If any tenderer withdraws during this period of validity, his EMD shall be forfeited.
- 7.2 Escalation of rates: The rates once approved shall be final and no escalation; deviation shall be accepted under any circumstances.

8. Replacing contract person

The contractor is liable to replace the contract person on the directives of AAI in the following conditions:

- If the person is not proficient enough to the requirement of the work.
- If the person is misbehaving
- If the person acting against the interest of AAI
- If the person is not punctual or irregular
- If the output of the person is not to the expectation of AAI

The decision/assessment of engineer-In-Charge on this matter will be final and binding.

9. Labour regulation



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In respect of person engaged directly and indirectly on the work, the successful tenderer (herein after called contractor) at his own expense will have to arrange the safety provisions to comply with the statutory regulation and CPWD safety codes for the persons deputed for the work.

10. Other requirements

It shall be the sole liability of the contractor (Including the contracting firm/company) to obtain and to abide by all necessary licenses/permission from authorities concerned as provided under the various labour legislation including the labour license obtained as per the provisions of the contract Labour Act, 1970. The Contractor shall arrange for the necessary Airport Entry Pass for the Persons employed for this Contract with concurrence from AAI, abiding to the existing as well as the future norms (if any change occurs) for obtaining the same. Also, the Contractor shall ensure that the Engineers and workmen employed for this contract shall abide by the rules and conduct of the AAI in force time to time. Contractor shall bear the cost of parking charges for the employees at airport.

The contractor shall be responsible for the following points during period of contract:

- a. The contractor will be bound by the labour laws, industrial rules and the contract labour (Regulation and abolition) act 1970 with up-to-date amendments. Contractor should obtain the labour license of this contract within a period of three months.
- b. The minimum rates of the wages of the staffs shall be payable as per the minimum wage Act 1948 and as per the notification of the regional labour commissioner (Central) from time to time.
- c. Maintaining of all the records of workers deployed for the works as per contract labour (regulation) and abolition act 1970.



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Annexure- I

UNCONDITONAL ACCEPTANCE LETTER

To,
CNS In Charge,
O/o Airport Director
Airports Authority of India,
Kalaburagi Airport,
Sedam Road, Srinivas Saradagi
Kalaburagi, Karnataka – 585102.

Sub: Acceptance of Terms & Conditions of Tender

Name of Work: SITC of OFC, RF link and network components for DVOR/DME installation project at Kalaburagi Airport.

Dear Sir,

I/we, the undersigned, offer to undertake SITC of OFC, RF link and network components for DVOR/DME installation project at Kalaburagi Airport in conformity with the terms & conditions of Tender.

The tender document for the works for SITC of OFC, RF link and network components for DVOR/DME installation project at Kalaburagi Airport have been provided to me/us by Airports Authority of India and I/We hereby certify that I/we have read and understood the entire terms and conditions of the tender documents made available to me/us, which shall form part of the contract agreement and I/we shall abide by the conditions/Clauses contained therein.

I / We hereby unconditionally accept the tender conditions of AAI's tender document in its entirety for the above works.

It is clarified that after unconditionally accepting the tender conditions in its entirety, it is not permissible to put any remarks / conditions (except unconditional rebates on quoted rates if any) in the tender uploaded and the same has been followed in the present case. In case any provisions of this tender are found violated after opening the tenders. I / we agree that the tender shall be rejected and AAI shall without prejudice to any other right or remedy be at liberty to forfeit the full said earnest money absolutely.

That, I/We declare that I/we have not paid and shall not pay any bribe to any officer of AAI for awarding this contract at any stage during its execution or at the time of payment of bills, and further if any officer of AAI asks for bribe/gratification, I shall immediately report it to the Appropriate Authority in AAI.

We understand that you are not bound to accept the lowest or any bid, you shall receive.

Date:

Yours Faithfully,

(Signature of the Tenderer)
Name & Address

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Annexure-II

**PROFORMA OF BANK GUARANTEE FOR CONTRACT PERFORMANCE
BANK GUARANTEE**

(To be stamped in accordance with Stamp Act)
(The non-judicial stamp paper should be in the name of issuing Bank)

To

CNS In Charge
O/o Airport Director
Airports Authority of India
Kalaburagi Airport,
Srinivas Saradagi,
Kalaburagi - 585102.

Bank Guarantee No.& Date: -----

Amount of Guarantee: _____
Guarantee Valid up to: _____
Last Date for Lodgment of Claim: _____

Dear Sir,

We, the Bank _____
hereby refer to the Purchase Order No. _____
dated _____ between the Airports Authority of India (as
Purchaser) and M/s. _____
providing substance for the work _____ to which
specific reference is made under the terms of the said contract, the Contractor is
required to provide a Bank Guarantee in the form acceptable to the Purchaser in
the _____ amount _____ of
Rs _____ (Rupees _____)
extending to the performance by the Seller of all the terms and conditions of the
contract.

In view of the foregoing and pursuant to the terms of the said contract, which
contract is referred to and made a part thereof as fully and to the same extent as
it copied at length therein, we hereby absolutely and unconditionally guarantee
to the Purchaser performance of the terms and conditions of the said agreement
to the extent of Rs. _____.

This guarantee shall be construed as an absolute, unconditional and direct
guarantee of the performance of the contract without regard to validity, regularity
or enforceability of any obligation of the parties of the contract. The Purchaser
shall be entitled to enforce this guarantee without being obliged to report initially
to any other security or any other remedy to enforce any of the obligations
herein guaranteed and may pursue any or all its remedies at one or at different

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times. Upon default of the contract item(s), we agree to pay to Purchaser on demand and without demur, the sum of Rs. _____ (Rupees _____) or any part thereof upon presentation of a written statement by the Purchaser that the amounts of said demand represent damages due from the Seller under the terms of the aforesaid contract. The determination of the fact of breach and the amount of damages sustained and/or liability under this guarantee shall be in the sole discretion of the Purchaser, which decision shall be conclusive and binding on the bank as guarantor.

It is mutually agreed that the Purchaser shall have the fullest liberty without effecting in any manner our obligations hereunder with or without our consent to vary any of the term of the said agreement or to extend the time or performance by the Seller from time to time, any of the powers exercisable by the Purchaser against the Seller and either to forbear or enforce any of the terms and conditions relating to the said agreement and we shall not be relieved from our liability by reason of any variation of any extension being granted to the Seller or for any forbearance act or omission on the part of the Purchaser or any indulgence by the Purchaser to the Seller or by any such matter or thing whatsoever, which under the law relating to sureties would but for this provision has effect of so relieving our obligations.

We undertake to pay to the Airports Authority of India ,money so demanded notwithstanding any dispute or disputes raised by the Supplier in any suit or proceeding pending before any Court or Tribunal relating thereto our liability under this present being absolute and unequivocal.

The payment so made by us under this bond shall be valid discharge of our liability for payment there under and the supplier shall have no claim against us for making such payment.

This guarantee will not be discharged due to the change in the constitution of the Bank of the Supplier.

We, the Bank _____ do hereby undertake that the payment against this guarantee should be available to Airports Authority of India on the first demand and notwithstanding any contestation of dispute by the party Furnishing the guarantee.

We, the Bank _____ undertake not to revoke this guarantee during its currency except with the previous consent of the Airports Authority of India in writing.

We the Bank _____ undertake that our liability under the guarantee is restricted to Rs. _____ (Rupees _____)

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_____))
Our guarantee will remain in force till _____.

This guarantee shall remain in force till _____ unless a claim under this guarantee is made within 3 months from the date. The Bank shall be relieved and discharged from all liabilities there under and Airports Authority of India shall have no right under these presents.

The amount under the Bank Guarantee is payable without any demur, merely on demand from the beneficiary. Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee and where the decision of the beneficiary in these counts shall be final and binding on the Bank. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs._____.

Notwithstanding anything herein contained, our liability under the guarantee shall

a) Be limited to a sum of Rs._____ (Rupees _____ only)

b) Stand completely discharged and all your rights under the guarantee shall stand Extinguished if no claim or demand is made upon us in writing and received by us on or before _____.

Branch Manager _____

For the Bank _____

Date: _____



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Annexure III

GST UNDERTAKING
(Successful bidder shall submit this undertaking)

To:
CNS In Charge
O/o Airport Director
Airports Authority of India,
Kalaburagi Airport,
Kalaburagi -585102.
Karnataka

Sub: Undertaking GST – Reg

Sir,

I, M/s._____, contracting in the capacity of proprietor,
hereby declare that,

M/s._____, contracting is registered under
GST and compliance of GST provision.

If non- compliance of GST provision and blockage of any input credit,
M/s._____, contracting responsible to indemnify AAI.

All input credits have been passed on to AAI by M/s._____.

Thanking you,

Yours faithfully,

(Signature of the Tenderer)
with rubber stamp



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Annexure – IV

PROFORMA OF LETTER FOR E-PAYMENT

To,
The Airport Director
Airports Authority of India
Kalaburagi, Karnataka – 585102

Subject: Request for E-Payment.

Sir,

Following particulars are given for effecting E-payment in respect of our claim / Bill.

S. No.	Particulars Details	Remarks
1	Name of the Party	
2	Office Address	
3	Type of Bidder's Company	
	(a) Sole Proprietor	
	(b) Partnership	
	(c) Private Ltd. Company	
	(d) Public Ltd. Company	
4	Name of Bank in which Party maintains A/c	
5	Bank Branch Code	
6	Bank Account No.	
7	IFSC Code	
8	PAN No.	
9	GST Registration Details.	
10	Vendor Classification for GST	
11	MICR Code	
12	NEFT Code	

We also enclose herewith a duly cancelled cheque of our bank account.

Thanking you,

Signature of authorized signatory
With seal
Yours faithfully

Note: Any erroneous information may lead to harmful transaction for which neither AAI or the Bank will be liable/ responsible.



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Annexure-V

Power of Attorney Format for the Authorized Person(s)

(Bidder shall submit irrevocable Power of Attorney on a non-judicial stamp paper of Rs.100/-signed by authorized signatory as per Memorandum of Articles authorizing the persons, who are signing this bid on behalf of the company)

POWER OF ATTORNEY

By this POWER OF ATTORNEY executed on _____, we, _____, a Company incorporated under the provisions of companies Act, 1956 having its Registered Office at _____ (hereinafter referred to as the 'Company') do hereby severally appoint, constitute and nominate _____ official(s) of the Company, so long as they are in the employment of the Company (herein after referred to as the 'Attorneys') to sign agreement and documents with regard to Tender No: AAI/VOGB/CNS/ DVOR/ OFC& RF LINK /2022 on _____ received from Airports Authority of India, Kalaburagi Airport, Kalaburagi 585102 for "SITC of OFC, RF link and network components for DVOR/DME installation project at Kalaburagi Airport and to do all other acts, deeds and things the said Attorneys may consider expedient to enforce and secure fulfillment of any such agreement in the name and on behalf of the Company.

AND THE COMPANY hereby agrees to ratify and confirm all acts, deeds and things the said Attorneys shall lawfully do by virtue of these authorities here by conferred.

INWITNESSWHEREOF, this deed has been signed and delivered on the day, month and year first above written by Secretary of the Company/Authorized Signatory, duly authorized by the Board of Directors of the Company vide its resolution passed in this regard.

By order of the Board

For _____

Company Secretary/Authorized Signatory

Attorney Signature of

Mr. _____

Attorney Signature of

Mr. _____

(Attested)

(Company Secretary/Authorized Signatory)

REF.AAI/VOGB/CNS/DVOR/OFC&RF LINK /2022

NIT: SITC OF OFC, RF LINK AND NETWORK COMPONENTS FOR DVOR/DME INSTALLATION PROJECT



भारतीय विमानपत्तन प्राधिकरण
AIRPORTS AUTHORITY OF INDIA
KALABURAGI AIRPORT

Annexure-VI

PERFORMA FOR UNDERTAKING FOR BLACKLISTING

(To be submitted along with Envelope A)

To,
The Airport Director
Airports Authority of India,
Kalaburagi Airport,
Kalaburagi –585102

TENDER NO.: AAI/VOGB/CNS/ DVOR/ OFC& RF LINK /2022
NAME OF WORK: SITC of OFC, RF link and network components for DVOR/DME installation project at Kalaburagi Airport

Sub: Undertaking

Sir,

In compliance with the tender requirement for the above-referred work:

1. I/We undertake that, our firm or none of our firm's Partners or Directors have been blacklisted or any case is pending or any complaint regarding irregularities is pending, in India or abroad, by any global international body like World Bank/International Monetary Fund/World Health Organization, etc. or any Indian State/Central Governments Departments or Public Sector Undertaking of India.
2. I/We undertake that, our firm or our subsidiary firm or our parent firm has not submitted alternate or partial bid(s).
3. I/We undertake that, our firm possess the required tools, plants, skilled manpower, etc. required for execution of work as per scope of the tender. I/We also undertake that no part of the scope of work shall be sublet or outsourced to any third party without written consent from AAI.
4. I/We undertake that, the complete responsibility to carry out the works and their completion as per scope of the tender shall be of our firm only.
5. I/We undertake that, our firm or its Partners or its Directors or Sole Proprietor do not have any outstanding dues payable to the Airports Authority of India.

Yours faithfully,

Dated:

Signature of bidder firm authorized Signatory

Name:

On behalf of:

Address:

Telephone: Fax:

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Annexure-VII

Advisory: For Applicant and its BG Issuing Bank Branch.

It is to be noted that along with physical BG; we have also activated an online facility to view the issued BG cover message transmitted to ICICI Bank through SFMS platform.

- For availability of BG in this platform, it is necessary that BG issuing/amending bank send the BG advice in the form of message format IFN 760COV (BG Issuance) / IFN 767COV (BG Amendment) via SFMS (Structured Financial Messaging System) as provided by RBI.
- In the event of BG issuing/amending bank not sending the message IFN 760COV/ IFN 767COV or **committing any error while capturing the details** at least in the below field, **BG confirmation through online portal would not be updated.**

Request you to notify your bank (BG issuing bank) to update below details at time of submission of BG issuance/amendment request to their respective banks:

BG advising message – IFN 760COV/ IFN 767COV via SFMS

IFSC CODE: ICIC0000007

Corporate Name- Airport Authority of India

<u>Field Number</u>	<u>Particulars (to be mentioned in Row 1)</u>
7037	<unique identifier> (LIST ATTACHED)

Please note that the issuing bank while issuing/amending the BG, should ensure that the above information is correctly captured in the message i.e. IFN 760COV/ IFN 767COV.

Please find below indicative request letter format to be sent to issuing bank for ensuring transmission of BGs through SFMS.

S No.	Name of the AAI Unit	Email ID	UNIQUE IDENTIFIER CODE (7037)
1	Corporate Headquarters	precheckbgv@aaiaero	AAICORHQ
2	RHQ-NR	bgv.rhqnr@aaiaero	AAIRHQNR
3	JAMMU	bgv.jammu@aaiaero	AAIJAMMU
4	SRINAGAR	bgv.srinagar@aaiaero	AAISRINAGAR
5	AMRITSAR	bgv.amritsar@aaiaero	AAIAMRITSAR
6	CHANDIGARH	bgv.chandigarh@aaiaero	AAICHANDIGARH
7	JAIPUR	bgv.jaipur@aaiaero	AAIJAIPUR
8	JODHPUR	bgv.jodhpur@aaiaero	AAIJODHPUR
9	UDAIPUR	bgv.udaipur@aaiaero	AAIUDAIPUR
10	KHAJURAHO	bgv.khajurao@aaiaero	AAIKHAJURAO
11	CATC ALLAHABAD	bgv.catc@aaiaero	AAICATC



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12	SAFDARJUNG AIRPORT	bqv.safdarjung@aai.aero	AAISAFDARJUNG
13	VARANASI	bqv.varanasi@aai.aero	AAIVARANASI
14	DEHRADUN	bqv.dehradun@aai.aero	AAIDEHRADUN
15	RHQ-WR	bqv.rhqwr@aai.aero	AAIRHQWR
16	INDORE	bqv.indore@aai.aero	AAIINDORE
17	BHOPAL	bqv.bhopal@aai.aero	AAIBHOPAL
18	RAJKOT	bqv.rajkot@aai.aero	AAIRAJKOT
19	VADODRA	bqv.vadodra@aai.aero	AAIVADODRA
20	SURAT	bqv.surat@aai.aero	AAISURAT
21	AURANGABAD	bqv.aurangabad@aai.aero	AAIAURANGABAD
22	JUHU	bqv.juhu@aai.aero	AAIJUHU
23	NAGPUR	bqv.nagpur@aai.aero	AAINAGPUR
24	PUNE	bqv.pune@aai.aero	AAIPUNE
25	GOA	bqv.goa@aai.aero	AAIGOA
26	AHMEDABAD	bqv.ahmedabad@aai.aero	AAIAHMEDABAD
27	RHQ-ER	bqv.rhqer@aai.aero	AAIRHQER
28	GAYA	bqv.gaya@aai.aero	AAIGAYA
29	PATNA	bqv.patna@aai.aero	AAIPATNA
30	RANCHI	bqv.ranchi@aai.aero	AAIRANCHI
31	BHUBNESHWAR	bqv.bhubneshwar@aai.aero	AAIBHUBNESHWAR
32	RAIPUR	bqv.raipur@aai.aero	AAIRAIPUR
33	PORTBLAIR	bqv.portblair@aai.aero	AAIPORTBLAIR
34	BAGDOGRA	bqv.bagdogra@aai.aero	AAIBAGDOGRA
35	PAKYONG-SIKKIM	bqv.pakyong@aai.aero	AAIPAKYONG
36	RHQ-SR	bqv.rhqsr@aai.aero	AAIRHQ-SR
37	CALICUT	bqv.calicut@aai.aero	AAICALICUT
38	TRIVANDRUM	bqv.trivandrum@aai.aero	AAITRIVANDRUM
39	COCHIN-CIAL	bqv.cochin@aai.aero	AAICOCHIN
40	COIMBATORE	bqv.coimbatore@aai.aero	AAICOIMBATORE
41	MADURAI	bqv.madurai@aai.aero	AAIMADURAI
42	TIRUCHIRAPALLI	bqv.tiruchirapalli@aai.aero	AAITIRUCHIRAPALLI
43	HYDERABAD	bqv.hyderabad@aai.aero	AAIHYDERABAD
44	TRIPUTI	bqv.tripati@aai.aero	AAITRIPATI
45	VIJYAVADA	bqv.vijyavada@aai.aero	AAIVIJYAVADA
46	VISAKHAPATNAM	bqv.visakhapatnam@aai.aero	AAIVISAKHAPATNAM
47	BANGALORE	bqv.bangalore@aai.aero	AAIBANGALORE
48	MANGALURU	bqv.mangaluru@aai.aero	AAIMANGALURU
49	RHQ-NER	bqv.rhqner@aai.aero	AAIRHQNER
50	AGARTALA	bqv.agartala@aai.aero	AAIAGARTALA
51	DIMAPUR	bqv.dimapur@aai.aero	AAIDIMAPUR
52	DIBRUGARH	bqv.dibrugarh@aai.aero	AAIDIBRUGARH



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53	SILCHAR	bgv.silchar@aai.aero	AAISILCHAR
54	IMPHAL	bgv.imphal@aai.aero	AAIIMPHAL
55	GUWAHATI	bgv.guwahati@aai.aero	AAIGUWAHATI
56	KOLKATA AIRPORT	bgv.kolkata@aai.aero	AAIKOLKATA
57	CHENNAI AIRPORT	bgv.chennai@aai.aero	AAICHENNAI
58	CHENNAI PROJECT	bgv.chennaiproj@aai.aero	AAICHENNAI PROJECT
59	RAU-SAP	bgv.rausap@aai.aero	AAIRAUSAP

(e)

Annexure II

Request Letter: Transmission of Bank Guarantee Cover Message <to be submitted
by applicant to BG issuing bank>

Date: _____

The Manager,

(Bank),

(Branch)

Sub: Inclusion of unique identifier code of AAI while transmitting BG cover messages where
beneficiary bank is ICICI Bank (IFSC-ICIC0000007).

Dear Sir/Ma'am,

I/We, _____, request you to include unique identifier _____ in
field 7037 of the SFMS cover messages IFN COV 760 (for BG issuance) and IFN COV 767 (for BG
amendment) while transmitting the same to the beneficiary bank (ICICI Bank-IFSC-
ICIC0000007).

Thanking You,

(Vendor/Customer/Concessionaire)

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Annexure - VIII

Technical Specifications – Compliance Statement

(To be filled and submitted along with Technical Bid)

SL. NO	DESCRIPTION OF ITEM	Make / Model	Complied
1	24 Port L2 Managed Gigabit Switch with 4 SFP combo ports.		
a)	<u>Architecture & Port Density:</u> Switch should offer Wire-Speed Non-Blocking Switching & Routing Performance at Layer 2 & Layer 3 The Access Switch should have Twenty Four (24) 1GbE RJ45 ports and should have Four 1GbE/10GbE SFP+ Slots (1G should be ready to use from day 1, license upgradeable to 10G in future) Access Switch should support Stacking up to 8 Switches with more than 40 Gbps stacking bandwidth per Switch.		
b)	<u>Performance</u> Switching Bandwidth: Should provide Non-Blocking switch fabric capacity of 128 Gbps or more. Forwarding Capacity: Should provide wire-speed packet forwarding of 95 Mpps or more.		
c)	<u>Layer 2 features</u> Should support 1K VLANs with 4K VLAN IDs Should support 10K MAC addresses or more. Shall support IP multicast snooping with support for IGMP v1, v2, v3 and MLD v1 & v2. Should support MRP ring protocol		
d)	<u>Layer 3 features</u> Should support minimum 1K IPv4 routes or more Should support Basic IPv4 and IPv6 Static Routing, ECMP, Host Routes, Virtual Interfaces, Routed Interfaces, Route Only and Routing between directly connected subnets from day 1. Should have an optional upgrade path, preferably software licensed based, to support the following Dynamic IPv4 & IPv6 Routing protocols and Multicast Routing Protocols. Dynamic IPv4 and IPv6 Routing protocols like RIP v1&v2, RIPng, OSPFv2, OSPFv3, VRRPv2 & VRRPv3. PIM-SSM, PIM Sparse, PIM Dense, PIM Anycast RP, and PIM passive IPv4 multicast routing		

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e)	<p><u>Security</u></p> <p>Switch should support RADIUS, TACACS/TACACS+ and username/password for Authentication, Authorization and Accounting (AAA) with Local User Accounts and Local User Passwords.</p> <p>Should support secure communications to the management interface and system through SSL, Secure Shell (SSHv2), Secure Copy and SNMPv3</p> <p>Should support IP Source Guard, DHCP snooping, DHCPv4, DHCPv6 and Dynamic ARP Inspection.</p> <p>Should support IPv4 and IPv6 ACLs with up to 500 rules per ACL and a minimum of 6K rules per system (Standalone Switch or Stack).</p> <p>Should support Byte and packet based broadcast, multicast, and unknown-unicast limits with suppression port dampening.</p> <p>Should support IPv6 Router Advertisement (RA) Guard.</p> <p>Should support Flexible Authentication with 802.1x Authentication and MAC Authentication.</p>		
f)	<p><u>Manageability</u></p> <p>Should support manageability using Network Management Software with Web based Graphical User Interface (GUI).</p> <p>Integrated Standard based Command Line Interface (CLI), Telnet, TFTP, HTTP access to switch management/monitoring</p> <p>Should support Net Flow or sFlow or equivalent.</p>		
g)	<p><u>Physical Attributes:</u></p> <p>Mounting Option : 19" Universal rack mount ears.</p>		
h)	<p><u>Mandatory Compliance :</u></p> <p>All categories of Switches, Transceivers & Switch OS should be from same OEM.</p>		
i)	<p><u>Warranty</u></p> <p>Switch should be quoted with TAC Support and onsite Warranty for 3 years or OEM warranty with NBD Hardware Replacement.</p>		
j)	<p><u>Product brochure</u></p> <p>Vendor should provide printed technical catalogs/brochures for the quoted model containing technical specifications, features.</p>		
k)	<p><u>Temperature</u></p> <p>Operating Temperatures: 0°C to 45°C</p> <p>Storage Temperatures : -40°C to 70°C</p>		
l)	<p><u>Humidity</u></p> <p>Operating relative humidity: 5% to 95% at 45°C, non-condensing, Non-operating relative humidity: 0% to 95% at 70°C, non-condensing</p>		
m)	<p><u>Make:</u></p> <p>RUCKUS, CISCO, NETGEAR, HP</p>		
2	<p>SFP Module : 1G SFP Bi-Directional Module pair LC Connector, SM</p>		



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	<p>1G Base LR (SM) Transceiver, Distance Support: Min 10Km</p> <p>Form Factor: SFP, Duplex LC Connector, Hot Pluggable</p> <p>MSA Compliant, RoHS, CE, FCC, UL, VCCI</p> <p>Power dissipation <1W</p> <p>Industrial temperature range: -40°C to 85°C</p> <p>Single 3.3V power supply</p> <p>Uncooled DFB</p> <p>Receiver limiting electrical</p> <p>Interface</p> <p>Single LC connector</p> <p>Built-in digital diagnostic functions</p>		
3	Single Mode 12 core Armoured Optic Fibre cable		
	<p>12-core, Single Mode, Corrugated steel tape Armored, Loose-tube, Water Swellable Tape, with 2 FRP Rods, Outdoor fiber cable fully conforming to ITU-T G.652.D</p> <p>Construction details:</p> <p>Number of Cores: 12</p> <p>Number of loose tubes: 1</p> <p>Loose tube Inner Diameter: 1.7 ± 0.1 mm</p> <p>Loose tube Outer Diameter: 2.5 ± 0.1 mm</p> <p>Peripheral Strength member (2 FRP Rods): 1.0 ± 0.05 mm</p> <p>Moisture Barrier: Water Swellable Tape</p> <p>Armour: 0.150 mm ECCS Tape</p> <p>Outer Sheath: 1.8 mm (Nominal) HDPE - Black</p> <p>Overall Cable diameter: 8.5 ± 0.5 mm</p>		
	<p>Cable Mechanical Characteristics:</p> <p>Tensile Strength: 1000 N</p> <p>Crush Resistance: 2000 N</p> <p>Impact Strength: 10Nm</p> <p>Minimum bend radius: 20 x D, D= Diameter of cable</p>		
	<p>Temperature Performance:</p> <p>Installation: - 20 °C to + 70 °C</p> <p>Operation: - 20 °C to + 70 °C</p> <p>Storage: - 20 °C to + 70 °C</p>		

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	Optical Fiber Characteristics:		
	<p>Attenuation: at 1310 nm \leq 0.36 dB/km; at 1550 nm \leq 0.23 dB/km</p> <p>Chromatic Dispersion: 1285 - 1330 nm \leq 3.5 ps/nm.km</p> <p>Minimum 1550 nm \leq 18 ps/nm.km</p> <p>Zero Dispersion Wavelength: 1300 - 1324 nm</p> <p>Zero Dispersion Slope: \leq 0.092 ps/nm².km</p> <p>Polarization Mode Dispersion: \leq 0.20 ps/vkm</p> <p>Cable Cut-off Wavelength: \leq 1260 nm</p> <p>Mode Field Diameter: at 1310 nm $9.2 \pm 0.4 \mu\text{m}$</p> <p>Mode field Concentricity Error: $\leq 0.8 \mu\text{m}$</p> <p>Cladding Diameter: $125 \pm 1 \mu\text{m}$</p> <p>Cladding Non-circularity: $\leq 1 \%$</p> <p>Coating Diameter: $245 \pm 10 \mu\text{m}$</p> <p>Make: AMP, Finolex, Sterlite, BELDEN, Molex, Tyco</p>		
04	24 Port LIU with splice tray and SC adapter panel, Fully loaded		
	<p>Sliding Fiber Management System 1U, 24 Core Fully loaded assemblies with Adapter plates and Splice tray and Splice accessories kit. Must conform to ISO/IEC 11801 operating standard.</p> <p>Should be robust 1U sliding patch panel designed to accept up to 2 removable faceplates with Plunger Grommet latching.</p> <p>Should be able accept LC Duplex, SC Simplex.</p> <p>Should allow easy access during installation or re-work with no disturbance of the existing cable or fibers.</p> <p>Splice tray colour should be blue, with transparent snap fit cover.</p> <p>Splice tray should have stacking option with removable hinge.</p> <p>Splice tray should have hinged splice rest position for easy fiber management.</p> <p>Should have Upto 4 standard cable entry points for, loose tube, tight buffer, and steel tape armoured cable.</p> <p>Fiber management system, should come fully loaded with fiber pigtails of 1.5m length, Splice tray and hardware kit.</p> <p>Fits in standard 19", should have Removable faceplate with plunger and grommet latching. Should have Built-in front cable management with Panel numbers and rack number identification port labeling.</p> <p>Should have High quality finish, with no sharp edges.</p>		



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	<p>Height: 1U (44.4mm)</p> <p>Width: 483mm</p> <p>Depth: 290mm</p> <p>Material: Cold-rolled steel</p> <p>Material Thickness: 1.2mm</p> <p>Material Coating: Electrostatic powder coating</p> <p>Colour: Black RAL 9004</p> <p>Operating Temperature: -40°C to +60°C</p> <p>Designed in Accordance With: TIA/EIA 568.C, ISO/IEC 11801, EN50173, IEC60304, IEC61754</p>		
	<p>SC Pigtail SM 9/125 micron</p> <p>SC-Style Pigtails 9/125, SC LSZH, Semi Tight pre terminated compatible with SC snap in adapter plates.</p> <p>Spliceable pigtail assembly</p> <p>250µm coated fiber in protective 900µm tubing.</p> <p>Compatible with fusion or mechanical splices.</p> <p>Cable length shall be minimum of 1.5 Meters</p> <p>Operating temperature -40° to +85°C.</p> <p>SM Connectors 220 Cycles, Blue.</p> <p>Ferrules shall be pre-radiused Ceramic .</p> <p>Attenuation not more than 0.75Db PER MATED PAIR.</p> <p>Shall be single mode OS2.</p>		
05	SC-LC OFC Patch Cord, Duplex 3M, SM		
	<p>The patch cords should be terminated with zirconia ferrule connectors, manufactured with precision factory mounting and polishing techniques which helps assure high transmission quality.</p>		
a	<p><u>FEATURES / BENEFITS</u></p> <p>Should conform to IEC, EIA-TIA or Telcordia performance requirements.</p> <p>Should be available in different fiber & connector types LC/PC, SC/PC, LC/APC , SC/APC.</p> <p>Must be available in standard and custom lengths.</p> <p>Should be REACH & SvHC compliant.</p> <p>Materials should be in compliant to RoHS2.</p>		



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b	<u>CHARACTERISTICS</u> Cable Material: LSZH Strength Member: Aramid Crush: 1000 N Operating Temperature: -20 °C to +60 °C Jacket Diameter: 2.0mm (zipcord) Secondary Buffer Diameter (2.0 mm): 900 ± 50 µm Minimum Bending Radius: 10D (installed) 20D (loaded) µm		
c	<u>MECHANICAL PROPERTIES (in Conformance to IEC 61300-2-x)</u> Mechanical endurance : 500 mating Vibration : 10-55 Hz, 0.75 amplitude Cable retention : Magnitude 50 N Cable torsion: 1.5kg-2.5 kg for 2mm-3mm cable diameter		
06	HDPE Pipe 2 inches		
	2 inches HDPE Pipe with related Accessories - Screws, Fillers, Connectors, Corners etc. Thickness : 2-5 mm The quoted product should be ISI certified. Pre-lubricated HDPE (High Density Polyethylene) pipes. Pressure Rating/ PN Class : 6 Material Grade : PE 63, PE 80, PE 100 Pressure : PN 2.5 TO 20 Section Shape : Round Color : Black Size/Diameter : 2 inch OD Packaging Type : In rolls		
07	OFC Joint Enclosure 12 Core		
	Type: Outdoor weather proof Features: FOSC tray Accessories for 12F OFC Make: RPG / 3 M or any DOT approved brand		
08	OFC Route marker for Cables Laid underground		
	16 SWG GI sheet Route Markers shall be erected in the shape of a flag of size 10 inch x 6 inch marked 'OFC-NAVAIDS'. The flag will be on a 3 feet iron rod out of which 1.5 feet will be embedded in the ground. Such markers will be laid throughout the cable route at an interval of about 30 m and at any turning in path of cable.		
09	GI Saddle and Accessories		
	Corrosion-Resistant Galvanized Iron Saddle and other accessories suitable for Fixing of 2 inch HDPE on wall.		
10	Manhole with Cast Iron Cover		

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	Rectangular Laterite/brick plastered Masonry of 1x1x1M Internal dimension cast iron cover of appropriate size		
11.	OFC cable Laying - Hard Soils/ under road/ concrete surface		
a	Trenching to a depth of 1M in Hard soil / under roads or concrete surface and laying HDPE Pipe and OFC cable through the pipe using necessary consumables, PVC couplings and back filling the trench. Roads and concrete cut areas shall be re-surfaced with concrete.		
b	Laying OFC cable through open trench and wall		
	Laying OFC cable through HDPE pipe in available Pipes, Open trenches / trenches covered with slabs and walls using required clamps and fixtures		
12	Installation, Configuration, Testing and Commissioning work		
	Installation of LIU and Network Switches and its configuration Standard Termination of 12 F OFC in LIU, fusion splicing of pig tails with Required fixtures, consumables. Splice loss should be less than 0.3 Db OTDR Testing for the entire OFC cable network and report generation in PDF FORMAT		
13	19" 15U Wall Mount Rack + Power Distribution Unit + 1U Tray + Hardware accessories.		
14	4 PORT FXS/FXO POTS Telephone over IP/Ethernet/LAN		
15	RS232 serial to IP convertor and serial cables		
	<p>RS 232 to IP – fast Ethernet converter</p> <p>No of port – ONE Asynchronous</p> <p>Interface: RS 232 Serial and TTL /CMOS (Asynchronous)</p> <p>Data Rates: up to 921.6 kbps, Characters: 7 or 8 data bits</p> <p>Parity: odd, even, none, Stop Bits: 1 or 2</p> <p>Control Signals: RTS, CTS, DTR, DCD</p> <p>Flow Control: XON/XOFF, RTS/CTS</p> <p>Serial port connector - DB9</p> <p>Should support Point to point MASTER/SLAVE configuration</p> <p>Network interface: Ethernet 10Base-T or 100Base-TX (Auto-Sensing),</p> <p>Connector: RJ-45</p> <p>Protocols: TCP/IP, UDP/IP, ARP, ICMP, SNMP, TFTP, Telnet, DHCP, BOOTP, HTTP, and Auto IP</p> <p>10Base-T connection & 100Base-TX connection.</p> <p>Management: SNMP, Telnet, serial, internal web server, and Microsoft Windows based utility for configuration</p> <p>Operating environment : -20° to 70°C</p> <p>Serial Cables:</p> <p>DB9 RS232 9 pin Serial cable. Both side female – 5 Metre length --- Qty 04.</p> <p>Make: SUPERLINK or equivalent</p> <p>DB9 RS232 9 pin Serial cable. Both side female – 1 Metre length --- Qty 04</p> <p>Make: SUPERLINK or equivalent</p>		

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16	Surge Protector for 1. RS232 ports 2. LAN ports	10 08	
17	Laying of one 20 pair RC cable and Two CAT 6 cables from equipment room to ATC Tower		
18	Point to Point RF Link (LOS distance is 1.25 kms) (Two sets for redundancy)		
	RF Link- High-Radio System should operate in India WPC free licensed Band 5.825GHz - 5.875GHz in accordance with GSR 38 (E) dated 19th Jan 2007 for outdoor deployment. Performance Wireless Bridge - AC Protocol Support, Long-Range Point-to-Point (PtP) Link Mode, Selectable Channel Width, PtP: 10/20/30/40/50/60/80 MHz, PtMP: 10/20/30/40 MHz, Automatic Channel Selection, Transmit Power Control: Automatic/Manual, Automatic Distance Selection (ACK Timing), Strongest WPA2 Security		
19	Warranty for SITC Work.		
	Minimum 3 years from the date of Site Acceptance Test (SAT)		