



भारतीय विमानपत्तन प्राधिकरण
AIRPORTS AUTHORITY OF INDIA
(मिनी रत्न श्रेणी - १ सार्वजनिक क्षेत्र का उद्यम)
(A Miniratna Category - 1 Public Sector Enterprise)
इम्फाल अंतरराष्ट्रीय हवाई अड्डा, इम्फाल - 795140
Imphal International Airport, Imphal - 795140



संदर्भ: भा.वि.प्रा./इम्फाल/ए.सी.एस./संचार आधार/पी. ओ.

दिनांक: 13/01/2021

सेवा में,

Sandeep Tradex Pvt. Ltd.
612, Marshall House
33/1, Netaji Subhas Road
Kolkata - 700001

विषय: इम्फाल हवाई अड्डा में 5 साल की सेवा सहायता सहित सी. एन. एस. सुविधाओं के सुदूर संकेत और सहायक सुविधा निगरानी के लिए ओएफसी रिंग नेटवर्क के हेतु कार्य आदेश।

महोदय,

उपरोक्त विषय पर इस कार्यालय का पत्र संख्या संदर्भ: भा.वि.प्रा./ इम्फाल/ए.सी.एस./संचार आधार/पी. ओ. दिनांक: 13/01/2021 आपकी सूचनार्थ एवं आवश्यक कार्यवाई हेतु प्रेषित किया जा रहा है।

संलग्नक: यथोपरि।

भवदीय,

(एस. मरियप्पन)

सं. महाप्रबंधक (संचार प्रभारी)

भा.वि.प्रा., इम्फाल हवाई अड्डा, इम्फाल-795140

स. दि. नि प्रभारी

CNS In Charge

भारतीय विमानपत्तन प्राधिकरण
Airports Authority of India
इम्फाल अंतरराष्ट्रीय हवाई अड्डा
Imphal International Airport

प्रति:

1. महाप्रबंधक (सी.एन.एस., उ.पूर्वी क्षेत्र), भा.वि.प्रा., गुवाहाटी हवाई अड्डा, गुवाहाटी-781015
2. विमानपत्तन निदेशक, इम्फाल हवाई अड्डा, इम्फाल-795140
3. वित् प्रभारी, भा.वि.प्रा., इम्फाल हवाई अड्डा, इम्फाल-795140

विमानपत्तन निदेशक का कार्यालय,
इम्फाल अंतरराष्ट्रीय हवाई अड्डा,
डा: तुलिहल, इम्फाल, मणिपुर - 795140
दूरभाष : (0385) 2455069 (ऑ.),
फैक्स : (0385) 2455076
ई-मेल: apdimphal@aai.aero

O/o The Airport Director
Imphal International Airport,
PO: Tulihal, Imphal, Manipur - 795140
Phone: (0385) 2455069 (O),
Fax : (0385) 2455076
e-mail : apdimphal@aai.aero



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Imphal International Airport, Imphal - 795140



Ref. No. AAI/IMP/ACS/CommunicationBackbone/PO

Date: 08/01/2021

13

To,

Sandeep Tradex Pvt. Ltd.
612, Marshall House
33/1, Netaji Subhas Road
Kolkata - 700001

Subject: Work Order for OFC Ring Network for "OFC Ring for CNS Equipment Remote Indications & Ancillary Facility Monitoring with 5 years' Service Support, at Imphal International Airport, Imphal".

References:

- (i) AAI E-Tender No 2020_AAI_64642_1
- (ii) AAI LOI Acceptance dated 09/01/2021.

Sir,

Reference is made to the above-mentioned correspondence and your offer submitted against above referred tender.

Airports Authority of India hereinafter referred to as purchaser, is pleased to place a Work Order for "OFC Ring for CNS Equipment Remote Indications & Ancillary Facility Monitoring with 5 years' Service Support, at Imphal International Airport, Imphal" as per details in Annexure-I of this work order, on M/s Sandeep Tradex Pvt. Ltd, hereinafter referred to as contractor, at a total cost of Rs. 1, 37, 60, 899.00 (Rupees One Crore Thirty-Seven Lakhs Sixty Thousand Eight Hundred Ninty Nine Only) exclusive of GST.

TERMS & CONDITIONS:

1.0 Price:

The items as per Annexure-I will be supplied and installed at the total cost of Rs. 1, 37, 60, 899.00 (Rupees One Crore Thirty-Seven Lakhs Sixty Thousand Eight Hundred Ninty Nine Only) exclusive of GST. The Prices are Exclusive of all applicable GST at prevailing rates. However, the prices are inclusive of installation, testing & commissioning charges and transportation, unloading, insurance etc. to Imphal International Airport, Imphal.

2.0 Time Schedule: [As per Section IV Clause no. 2.1]

The work as per the Notice Inviting Tender shall be completed within 90 days from date of agreement with AAI or as per the schedule submitted by the bidder whichever is less.

3.0 Terms of Payment: (As per Para 4 (Section: IV) of Tender document).

1. 70% of purchase order price for supply of items and 100% of freight, insurance, taxes and duties against receipt of goods at site in good condition.
2. Balance 30 % of goods cost and 100% of Installation, Testing and commissioning cost on completion of Installations and site acceptance by AAI.
3. Documents required for release of payment



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Imphal International Airport, Imphal - 795140



- a. Invoice + 2 copies
- b. Itemized Packing list + 2 copies
- c. Proof of dispatch of items etc.
- d. Site acceptance certificate of goods received at site in physically good packed condition.
- e. Installation / commissioning Certificate (As applicable for final payments). This clause will not be applicable for supply only contracts.
- f. Documents received certificate as applicable.
- g. Training Completion Certificate as applicable

4.0 Paying Authority:

The Airport Director, Airports Authority of India, Imphal International Airport, Imphal, Manipur-795140.

5.0 Consignee:

The Airport Director, Airports Authority of India, Imphal International Airport, Imphal, Manipur-795140.

(Kind Attn: Sh. S. Mariappan, JGM (CNS In-Charge)).

6.0 Liquidated Damages :(As per Para 9.6 (Section IV) of Tender document). A sum equivalent to 0.5 (half) per cent per week for the price of uncompleted portion / activity / delivery of contract cost executed / completed beyond delivery schedule will be recovered as liquidated damages. The total damages will not exceed 10 (Ten) per cent of the value of delayed goods. The liquidated damages will be calculated on the base cost without the Govt. taxes and duties.

7.0 Performance Bank Guarantee (PBG) /Security Deposit (SD) :

[As per Para 7 (Section: III) of Tender document]

1. The successful bidder shall furnish the Contract Performance Bank Guarantee (As per attached proforma in Annexure III of work order) as specified in the tender within 30 days of acceptance of purchase/work order. The value of Performance Bank Guarantee shall be 10% of the total project cost for contract period from the issue of purchase order. This has to be done in a fixed period of time as per terms and conditions of the tender to avoid any delay in execution of work. In case of delay in execution of work the bidder shall be required to proportionately extend the PBG. In case successful bidder fails to submit the PBG within stipulated period, interest @ 12% p.a. on performance Guarantee amount would be levied (non-refundable) for delayed period of submission and shall be deducted from EMD or First running Bill. In case successful bidder fails to submit performance bank guarantee within 30 days, AAI reserves the right to forfeit EMD and cancel the order.
2. The performance guarantee amount shall be payable to AAI without any condition whatsoever and the guarantee shall be irrevocable.
3. The performance guarantee will be returned to the successful bidder at the end of the period of liability without interest.
4. The successful bidder will be fully responsible for the guaranteed performance of the supplied systems under warranty period. In case of any problem after commissioning and during guarantee/warranty period the successful bidder will depute required resources to AAI's site to remove all defects at contractor's cost.



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5. The acceptance of valid reasons for non-compliance shall attracts a fine at the whole discretion of AAI (subject to maximum 10% of the Contract Value) and AAI's decision with regard to imposition of the fine shall be final. The fine shall be recovered from the Bank Guarantee.
6. The Performance Bank guarantee shall be valid for Five years" and six months from date of issue and the claim period shall be valid for 90 days from date of expiry.
- 8.0 **Force Majeure:**
As per Para 12(Section: III) of the Tender Document.
- 9.0 **Arbitration and Laws:**
As per Para 15 (Section: III) of the Tender Document.
- 10.0 **Guarantee/Warranty: (As per Para 10 (Section IV) of Tender document)**
 - 10.1 Minimum 5 Years' OEM WARRANTY on all supplied items with onsite support in case of any physical/Electronic breakdown/Un-Serviceability
 - 10.2 The contractor shall replace any parts; found defective during warranty period without any charges whatsoever to AAI. During warranty period, the contractor shall provide free replacement of any defective spares of the equipment supplied against this work.
 - 10.3 The responsibility of maintaining the stock of spare parts (original OEM) / subsystems needed for maintenance of the equipment under the purview of this contract shall be the responsibility of the SUCCESSFUL BIDDER.
 - 10.4 The Contractor shall ensure that the components under the purview of this contract are not down for more than 48 hours for major complaints from the time of registration of complaint. The above period shall however exclude Sunday and other public holidays or other periods when access to the user premises is restricted due security or other reasons, not directly under the control of AAI or the Contractor.
 - 10.5 The contractor shall replace any parts, including the supplied software found defective during warranty period without any charges whatsoever to AAI.
- 11.0 **Scope of Work & Schedule of Quantities:**
As per Section V of the Tender Document.
- 12.0 **Technical Requirement and Specification of work:**
As per Section VI of the Tender Document.
- 13.0 **All other Terms and conditions mentioned in Tender document will be applicable in case not mentioned here.**
- 14.0 **The Tender Document, Letter of Intent (LOI) and work order shall be made a part of agreement.**
- 15.0 **Testing & Site Acceptance Test (SAT)/Commissioning: (Annexure III of Tender Document)**

A SAT document will be prepared by the successful bidder for checking the complete performance and functionality of the OFC Ring system in coordination with Project in-charge.

*The SAT document must be approved by JGM (CNS) or his representative
- 16.0 GST registration number of AAI shall be mentioned in the bill/invoice to facilitate input tax credit for GST so paid by the supplier.



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- 17.0 As per format Annexure XIV, the Contractor shall execute an Agreement with AAI on non-Judicial stamp paper worth Rs.100/- for acceptance of the terms & Conditions of the Work Order. This letter of award of the work shall form a part of the contract and all terms and conditions mentioned in the tender document shall be binding on both the parties i.e. AAI and contractor. Original copy of the Agreement is to be submitted to this office within 5 working days from the receipt of the work order, along with the acknowledged copy of this work order.
- 18.0 The date of execution of the Agreement will be the date of acceptance of the work order.

S. Mariappan
JGM (CNS In-Charge)
AAI, Imphal Airport, Imphal.

Copy to:

1. General Manager(CNS-NER), AAI, LGBI Airport, Guwahati Assam-781015
2. Airport Director, AAI, Imphal International Airport, Imphal-795140.
3. Mgr. (Finance), AAI, Imphal International Airport, Imphal-795140.

स. दि. नि प्रभारी
CNS In Charge
भारतीय विमानपत्तन प्राधिकरण
Airports Authority of India
इम्फाल अंतराष्ट्रीय हवाई अड्डा
Imphal International Airport

S. Mariappan
JGM (CNS In-Charge)
AAI, Imphal Airport, Imphal.



Annexure - I

Scope of Work & Schedule of Quantities

Scope of Work

Brief Scope of work is given below. Any other work related for complete Operationalization of the OFC Ring system for Nav-Aids & Ancillary facilities monitoring will be the responsibility of successful bidder and at no cost to AAI. Payment for laying (HDD and physical excavation, back filling and works as decided by competent authority will be made on prorata basis as per actual as given in Schedule of Quantities.

Work is to be done in Operation area (Basic runway strip). So, Successful bidder shall be willing for execution of work in area instructed by Project In-Charge in Night (i.e. after watch closing at Airport). Time will be intimated by Project In-Charge.

Site Description: There are total of TEN sites under consideration or as instructed by project in-charge during execution of work. 24 Core single mode Optical fibre has to be laid between these sites forming a ring. Total span of the OFC ring is approx. 12.5 kilometre. Out of these sites, one of the site is designated as "Master Site". The proposal is for establishing data transfer (Duplex) between Master site and other sites (fielded equipments) through optical fibre ring in real time. Status data from fielded equipments is available through serial interface.

All the networking devices used for the OFC Ring System shall have minimum 5-year warranty or the OEM warranty period, whichever is higher. The successful bidder will provide free-of-cost on-site service support for complete operationalized OFC Ring system, with no additional cost to AAI.

a) Horizontal directional drilling (HDD)

HDD shall be the preferred means for duct laying rather than excavation for quick completion of the project. There shall be no objection to resort to mechanical means to bore a hole of required size and to push through HDPE/PLB duct through horizontal bore at crossing.

b) Trenching & refilling of soft soil including supply of sand & bricks as required

EXCAVATION OF TRENCH will normally follow the path as instructed by project In-Charge. The line-up of the trench must be such that HDPE pipe(s) shall be laid in a straight line, both laterally as well as vertically, except at locations where it has to necessarily take a bend because of change in the alignment or gradient of the trench. All excavation operations shall include excavation and 'Getting out'. 'Getting out' shall include throwing the excavated materials at a distance of at least one meter clear off the edge of excavation. While trenching, the Contractor should not cause damage to any underground constructions belonging to other departments/agencies and any damage caused



should be made good at his own cost and expense. The depth of the trench from top of the surface shall not be less than 100 cms. Layer of Sand and Bricks are to be done before Back-Filling and Dressing of trench. The earth used for filling shall be free from all roots, grass, shrubs, vegetation, trees, sapling sand rubbish. Provided that the HDPE pipes have been properly laid in the trench at the specified depth, the backfilling operation shall follow as closely as practicable. The backfilling operation shall be performed in such a manner so as to provide firm support under and above the pipes and to avoid bend or deformation of the HDPE pipes when the pipes get loaded with the backfilled earth.

c) Laying of HDPE through trench / HDD

Preparatory to aligning the pipe for jointing, each length of the HDPE pipe shall be thoroughly cleaned to remove all sand, dust or any other debris that may clog, disturb or damage the optical fiber cable when it is blown at a later stage. The HDPE pipes shall be laid in GI Pipes as required at Runway/ Taxiways (concrete) crossings.

The electronic route marker should be placed such that it is at a depth of maximum three feet from the surface. The electronic route markers will be placed as instructed by project in-charge and shall be staggered along with PVC route markers.

Accessories required for jointing the duct/pipe shall be provided by successful bidder and nothing shall be paid extra against accessories.

- i. **Coupler:** The coupler shall be used to join two PLB HDPE ducts. The coupling shall be able to provide a durable water tight joint between two ducts without deteriorating the strength of the ducts. The strength of coupler shall match the primary strength of the PLB HDPE duct.
- ii. **End plug:** This shall be used for sealing the ends of empty duct, prior to installation of OFC cable and shall be fitted immediately after laying of the PLB HDPE duct, to prevent entry of any unwanted elements such as dirt, water, moisture, insects/rodents etc.
- iii. **Cable sealing plug:** This is used to hold the cable and prevent entry of any unwanted elements, as specified above
- iv. The **Guide rope** is drawn through the HDPE/PLB pipes/coils and safely tied to the end caps at either ends with hooks to facilitate pulling of the OF cables at a later stage.
- v. **Joint Chamber:** The Joint chamber shall be provided at every joint location to keep the OF cable joint well protected and also to house extra length of cable which may be required in the event of faults at a later date. The Joint chamber shall be Brick chamber as specified in BOQ. Joint Chamber shall be made at location decided by project in-charge in coordination with contractor, at T point, junctions and adjacent to operation building where termination is required.

vi. **Rubber Bush:** To prevent entry of rodents into PLB HDPE DUCTS, the ends of PLB HDPE DUCTS are sealed at every manhole and joint using rodent resistant hard rubber bush (cap) after optical fiber cable is pulled. The rubber bush should be manufactured from hard rubber with grooves and holes to fit into 40 mm PLB HDPE DUCTS pipe, so that it should be able to prevent the entry of insects, rodents, mud, and rainwater into the PLB HDPE DUCTS pipe.

d) **Laying of fiber optic cable through HDPE/ trench/ HDD**

The cables shall be blown by blowing machine through already laid HDPE. Only blowing of cables is permitted and pulling of cables shall not be resorted to by the contractor, as tension applied on cable may lead to deterioration/breaking of fibers. All GI Pipe/Optical Fiber cable shall be properly earthed.

Optical Fiber Cables should be blown through Permanently Lubricated HDPE Duct of 40mm-OD. Wherever GI pipes are used for protection, the two ends of the pipes should be properly sealed to protect HDPE pipe from sharp edge of GI pipe and to bar the entry of rodents.

e) **Smart route marker**

The markers should be placed in the trench after partial backfilling of earth and should be aligned directly over the HDPE duct such that it is not more than 3 feet deep from the surface. The exact location of the electronic route marker should be recorded as part of the documentation and in the measurement book.

f) **Physical PVC route marker**

The exposed portions shall be of retro-reflective type for visibility in Day/Night (Preferably Red paint). Writings shall be from retroreflective materials for clear visibility in night. The minimum size shall be 300 x 300 mm. (Diameter) It shall be at least embedded in ground up to 500 mm depth.

PVC markers shall be installed at locations as decided by Project in-charge.

g) **Splicing**

The fibers are to be spliced at joints/required positions & at both ends (Terminations) in the equipment room as directed by the Project-in-charge.

A minimum of 20 meters of cable of each end is coiled in the jointing pit to provide for jointing to be carried out at convenient location as well as spare length to be available for future use in case of failures. Proper care must be taken when removing the inner sheath to ensure the fibers are not scratched or cut with the stripping knife or tool.

OTDR reading taken for all splices in this organized state and recorded on the test sheet to confirm that all fibers attenuation are within 0.1db per splice. This OTDR test will confirm fibers were not subjected to excessive stress during the organizing process



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- h) OFC joint chamber & Cable Blowing.** 10-inch thickness of brick side walls & 10/15mm-thick metal cover of appropriate size as chamber cover with hinge joint. Minimum 20/500 mtr cable to kept inside the chamber
Minimum 6 inch of chamber shall be filled with Sand
After blowing of the cables is completed, both ends of the HDPE pipe in each joint chamber should be sealed by hard rodent resistant rubber bush, to avoid entry of rodents/mud into HDPE pipes.
- i) Installation & configuration of Switch & controller for temperature and humidity sensor system, Rack Fixing & dressing, Over all integration, testing, commissioning & documentation**
The work involves integration of the RADAR, DVOR/HPDME, GP/DME, LLZ, NDB, Fire Station, Old Technical building sites with New Technical block cum Control tower on 24 core SM Optical Fiber Cable. The OFC has to be laid in dual ring between all these sites. Supplier is to supply the Hardware and software required to interface the fiber network to DVOR, DME, GP, NDB and LLZ equipment such that RCMS/RMM of DVOR, DME, GP and LLZ station is operational from Equipment room at ATS complex. Required fiber splicing is to be carried out during the installation. This is for the purpose of remote monitoring, controlling and maintenance of Nav-Aids facilities. The work also involves integration of SCCTV camera system, Analogue telephone system, Access Control equipment, Environment monitoring system, UPS status, Room temperature status and the proposed intranet terminals at these sites with the Fiber Optic Cable.
Other salient works to be carried out on site are as follows:
- Splicing and enclosing of laid OFC and it shall be properly buried.
 - Check end to end connectivity of OFC cable
 - Termination of 24 core SM OFC in LIU and splicing of SC-pigtails cables with 24 core SM OFC cable.
 - Interfacing of LIU and Ethernet switch SFP module with SC-LC or SC-pigtails cables.
 - Configuration of RS 232 serial to IP converter and interfacing with Ethernet switch and CNS equipment (DVOR/DME, GP/DME, LLZ and RCMS/RMMs).
 - Configuration and installation of FSK to Ethernet converter (Pair) for establishing link between NDB & HPDME equipment.
 - Installation, configuration and integration of all IP based equipments to the NAVAIDS integrated display system.
 - Fixing of patch panel including suitable connectors, Jointing box, Outdoor inspection chambers, Route marker etc.
 - Installation of hardware (as mentioned in BOQ) at respective sites.
 - Configuration of networking devices, as per the site requirement.
 - Establishing data connectivity between fielded equipment and supplied networking device.



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- xii. Data connectivity between Master site and Fielded equipments shall be using STP/RSTP/MSTP or equivalent protocol, enabling uninterrupted data flow.
 - xiii. Configured networking devices shall effectively block the data flow through redundant paths, avoiding broadcast storm
 - xiv. Established network convergence time shall be better than 300 ms, in case of one of physical link failure.
 - xv. Switching of data flow direction shall be transparent.
 - xvi. Data connectivity between Master site and fielded equipment shall ensure data flow in near real time.
 - xvii. At the Master site end, status data stream of each fielded equipment shall be separated out, converted into serial data, so as to enable display of equipment status on respective status panels.
 - xviii. Data flow solution shall be implemented by utilizing optimum no. of networking devices so as to keep system delay at minimum.
- j. Successful bidder will be required to submit/ carry out following before the Site Acceptance Test (SAT) of the OFC Ring system:**
- i. Vendor shall impart one day on job training on configuration of networking devices. The scope of training shall also include addition or deletion of new sites, writing of configuration script etc.
 - ii. Vendor shall provide complete documentation (Hard Copy as well as Soft Copy) of system performance, configuration and any other details required by AAI.
 - iii. Any special software used in the system, a licensed copy of same shall be provided to AAI for preservation and future reference.
 - iv. Two copy of coloured route layout diagram in A1 size shall be provided for the laid OFC Ring and connectivity of network equipment.



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Schedule of Quantities

Sl. No.	Item Description	Qty.	Price Quoted	Remarks
1.	24 port L3 Fully Managed switch with 12 nos. 1G copper port + 12 Nos. 1G SFP slot.	1 Nos.	170000.00	
2.	16 port L2 Fully Managed switch + 2 Nos. 1G SFP slot.	9 Nos.	747000.00	
3.	1G SFP module	28 Nos.	154000.00	
4.	Minimum 42" Large formal Display	2 Nos.	99000.00	
5.	Serial to IP converter with one 10/100BaseT (RJ45) Ethernet Interface & two RS-232/422/485 Serial interface	10 Nos.	255000.00	
6.	RS 232 DB9 Female to Female cable 3 Mtrs.	10 Nos.	4000.00	
7.	RS 232 DB9 Female to Female adaptor	5 Nos.	2500.00	
8.	RS 232 DB9 male to male adaptor	5 Nos.	3000.00	
9.	NAVIDS monitoring system with Server & 2 Displays of 21".	2 Nos.	700000.00	
10.	IP base controller for sensing humidity with software with minimum two year valid calibration certificate	7 Nos.	210000.00	
11.	IP base controller for sensing temperature with software with minimum two year valid calibration certificate	7 Nos.	595000.00	
12.	Workstation for monitoring system	2 Nos.	220000.00	
13.	24 Core Single Mode fiber Optic Cable (Steel armoured)	12500 Mtrs.	1250000.00	
14.	24 Port LIU loaded with SC SM Pigtales, SC Adaptor & Splice tray	10 Nos.	175000.00	

सी.एन.एस. प्रभारी अधिकारी का कार्यालय,
इम्फाल विमानपत्तन, डा: तुलिह, मणिपुर, इम्फाल - 795140
दूरभाष : (0385) 2455648 (ऑ.),
फेक्स : (0385) 2455067

O/o The CNS IN-CHARGE
Imphal Airport, PO: Tuliha, Manipur, Imphal - 795140
Phone: (0385) 2455648 (O),
Fax : (0385) 2455067

15.	OFC Patch cord Single Mode SC-LC Duplex OS2	36 Nos.	64800.00	
16.	Cat 6A UTP Cable	3 Boxes	45900.00	
17.	12U Wall Mount Networking Rack with all accessories	8 Nos.	76000.00	
18.	27U floor Mount Networking Rack with all accessories	1 Nos.	32400.00	
19.	60 MM GI pipe	100 Mtrs.	35000.00	
20.	40 MM HDPE Pipe	10000 Mtrs	1190000.00	
21.	Smart route marker	50 Nos.	102500.00	
22.	Smart Marker Locator with In-Built GPS & Marker Database Software	1 No.	399000.00	
23.	Supply & installation of Physical PVC route marker	30 Nos.	83400.00	
24.	Laying of fiber optic cable through HDPE/ trench/ HDD/PVC conduit.	11500 Mtrs.	977500.00	As per Actual
25.	Supply of PVC Conduit	200 mtrs	10000.00	As per Actual
26.	Laying of HDPE through trench/ HDD	10000 Mtrs.	990000.00	As per Actual
27.	Trenching & refilling of soft soil including supply of sand & bricks as required	1500 Mtrs.	675000.00	As per Actual
28.	Horizontal directional drilling (HDD)	9500 Mtrs.	3249000.00	As per Actual
29.	Splicing	360 Nos.	108000.00	As per Actual
30.	Optical Time Domain Reflectometer (OTDR) for testing the integrity of fiber optic cables.	1 No.	175000.00	
31.	Splicing Machine for fiber optic fusion splicer	1 No.	210000.00	
32.	OFC joint chamber: 10-inch-thick wall with inside dimension 2' x 2' x 2.5' feet. An underground chamber having 2 x 2 x 2.5 feet inner space, 10-inch thickness of brick side walls & 10mm-thick metal cover of appropriate size as chamber cover with hinge joint &	25 Nos.	349500.00	As per Actual



भारतीय विमानपत्तन प्राधिकरण
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इम्फाल अंतराष्ट्रीय हवाई अड्डा, इम्फाल - 795140
Imphal International Airport, Imphal - 795140



	locking mechanism. Minimum 20 mtr cable to kept inside the chamber			
33.	OFC joint chamber: 10- inch-thick wall with inside dimension 3 x 3 x 3.5 feet. An underground chamber having 3 x 3 x 3.5 feet inner space, 10-inch thickness of brick side walls & 15mm thick metal cover of appropriate size as chamber cover with hinge joint & locking mechanism. Minimum 500 mtr cable to kept inside the chamber	01 No.	24300.00	As per Actual
34.	Installation & configuration of Switch & controller for temperature and humidity sensor system, Rack Fixing & dressing, Over all integration of all networking devices, testing, commissioning & documentation including 5 year service support .	1 No.	379099.00	


S. Mariappan
JGM (CNS In-Charge)
AAI, Imphal Airport, Imphal

स. दि. नि प्रभारी
CNS In Charge
भारतीय विमानपत्तन प्राधिकरण
Airports Authority of India
इम्फाल अंतराष्ट्रीय हवाई अड्डा
Imphal International Airport

Signature Not Verified

सी.एन.एस. प्रभारी अधिकारी का कार्यालय,
इम्फाल विमानपत्तन, डा: तुलिह, मणिपुर, इम्फाल - 795140
दूरभाष : (0385) 2455648 (ऑ.),
फैक्स : (0385) 2455067

O/o The CNS IN CHARGE
Imphal Airport, Imphal, Manipur, Imphal - 795140
Phone: (0385) 2455648 (A),
Fax : (0385) 2455067
Digitally signed by WAIKJHOM JOHN
SINGH
Date: 2021.01.15 10:23:31 IST
Location: eProcurement System for
Central PSUs