



श्यामा प्रसाद मुखर्जी पोर्ट, कोलकाता
SYAMA PRASAD MOOKERJEE PORT, KOLKATA
Formerly Kolkata Port Trust

श्यामा प्रसाद मुखर्जी पत्तन, कोलकाता (भूतपूर्व, कोलकाता पत्तन न्यास)
SYAMA PRASAD MOOKERJEE PORT, KOLKATA
(Erstwhile Kolkata Port Trust)

(भारत सरकार के बंदरगाह, पोत परिवहन और जलमार्ग मंत्रालय के अधीन एक स्वायत्त निकाय)
(AN AUTONOMOUS BODY UNDER THE MINISTRY OF PORTS, SHIPPING AND
WATERWAYS, GOVERNMENT OF INDIA)

कोलकाता डॉक सिस्टम / KOLKATA DOCK SYSTEM
यांत्रिक व विद्युत अभियंत्रण विभाग
8, गार्डन रीच रोड, कोलकाता-700043

MECHANICAL & ELECTRICAL ENGINEERING DEPARTMENT
8, Garden Reach Road, Kolkata - 700 043

कार्य के लिए निविदा दस्तावेज़

“4NSD गेट कॉम्प्लेक्स के कंट्रोल रूम में नए कमांड कंट्रोल सेंटर का डिजाइन, आपूर्ति, स्थापना, परीक्षण और कमीशनिंग, जिसमें 1 वर्ष की वारंटी के बाद चार साल की CAMC शामिल है।”

Tender Document for the Work

"Design, Supply, Installation, Testing & Commissioning of New Command Control Centre in the Control Room of 4NSD Gate Complex with Four years CAMC post 1 year Warranty."

निविदा आमंत्रण सूचना संख्या: SMP/KDS/Mech/C/ADV/727 dated 05.05.2026
Notice Inviting Tender No.: SMP/KDS/Mech/C/ADV/727 dated 05.05.2026

साइट निरीक्षण / Site inspection:	19.05.2026 at 15:00 hrs.
प्रश्न करने की अंतिम तिथि (ईमेल)/Last date of submission of query (Email):	22.05.2026 by 17:00 hrs.
बोली-पूर्व बैठक / Pre-bid meeting:	25.05.2026 at 11:30 hrs.
ई-निविदा प्रस्तुत करने की आरंभिक तिथि/ Start date of submission of e-tender :	29.05.2026 from 12:00 hrs.
ई-निविदा की अंतिम तिथि/ Closing date for e-Tender:	08.06.2026 up to 12:00 hrs.
तकनीकी-वाणिज्यिक बोली खोलने की तिथि / Date of opening of Techno-commercial bid :	09.06.2026 at 12:00 hrs.

निविदा शुल्क / Tender Fee: Rs. 2950/- (जीएसटी सहित/including GST) (नॉन-रिफंडेबल /Non-Refundable)

मुख्य यांत्रिक अभियंता /Chief Mechanical Engineer
Tender Inviting Authority

TENDER DOCUMENT
SYAMA PRASAD MOOKERJEE PORT, KOLKATA
(Erstwhile Kolkata Port Trust)
KOLKATA DOCK SYSTEM

E-TENDER FOR "Design, Supply, Installation, Testing & Commissioning of New Command Control Centre in the Control Room of 4NSD Gate Complex with Four years CAMC post 1 year Warranty."

NOTICE INVITING TENDER No.: SMP/KDS/Mech/C/ADV/727 dated 05.05.2026

TENDER NOTICE

Mechanical & Electrical Engineering Department of Syama Prasad Mookerjee Port, Kolkata (SMP, Kolkata) invites E-Tender under single stage Two part system (i.e. Techno-Commercial Bid and Price Bid) for "Design, Supply, Installation, Testing & Commissioning of New Command Control Centre in the Control Room of 4NSD Gate Complex with Four years CAMC post 1 year Warranty." Bid Document may be downloaded from SMP, Kolkata website <https://smportkolkata.shipping.gov.in/> and CPP portal. Corrigenda or clarifications, if any, shall be hosted on the above mentioned websites only.

Schedule of Tender (SoT)

Tender No.	SMP/KDS/Mech/C/ADV/727 dated 05.05.2026
Mode Of Tender	e-Procurement System (Online Part I - Techno-Commercial Bid and Part II - Price Bid through CPP Portal). The intending bidders are required to submit their offer electronically through e-Tendering Portal. No physical tender is acceptable by Kolkata Dock System.
Estimated value of Tender(Excluding GST)	Rs.7,71,88,607.66 (Rupees Seven crore seventy one lakh eighty eight thousand six hundred seven and Paise Sixty six Only).
i) Earnest Money Deposit	The intending bidders should submit Earnest Money of Rs. 15,43,772/-.
ii) Tender Cost	The intending bidders should submit Tender cost of Rs. 2,950/- including GST @ 18%. For further details please see Clause No. 2 under Instruction to Tenderers.
Exemption from paying Bid Security/EMD and Tender Cost.	Refer to Clause No. 2 under Instruction to Tenderers.
Security Deposit/Performance Guarantee	Refer to clause no. 8 of Special Conditions of Contract (Annexure-C)
Date of NIT available to parties to download	09.05.2026 at 12:00 hrs.
Date and time of site inspection	19.05.2026 at 12:00 hrs.

	(For details regarding Pre-Bid meeting and site inspection refer to Clause no. 8 under Instruction to Tenderers.)
Date and time of Pre-Bid meeting	25.05.2026 at 12:00hrs. (For details regarding Pre-Bid meeting and site inspection refer to Clause no. 8 under Instruction to Tenderers.)
Date of starting of online submission of bid (Techno-Commercial Bid and price Bid) through CPP Portal	29.05.2026 from 12:00 hrs.
Date of closing of online submission of Bid.	08.06.2026 up to 12:00 hrs.
Date and time of opening of Techno-Commercial Bid	09.06.2026 at 12:00 hrs.
Date and time of opening of Price Bid	To be opened with prior intimation.

- Online tenders through NIC's CPP Portal for e-Procurement (GePNIC) are invited by Syama Prasad Mookerjee Port, Kolkata (Erstwhile Kolkata Port Trust) from GST registered domestic Contractors for executing the work.
- The tender document through NIC's CPP Portal for e-Procurement (GePNIC) is open from 09.05.2026 to 08.06.2026 and can be downloaded from the official website of SMP, Kolkata and through NIC's CPP Portal for e-Procurement (GePNIC).
- The complete tender document can be downloaded from Syama Prasad Mookerjee Port, Kolkata website: <https://smportkolkata.shipping.gov.in/> [Tender→ Mechanical & Elect. Eng. Dept.] and NIC's CPP Portal for e-Procurement (GePNIC) and bidders are required to submit tender offer through NIC's CPP Portal for e-Procurement (GePNIC) on or before the due date and time of submission. The tenderer shall upload the scanned copy of the DD instruments towards the cost of EMD and bid documents set as proof of payment towards EMD and cost of Bid documents while submitting the tender electronically in the NIC's CPP Portal for e-Procurement (GePNIC).
- The tender offer shall have to be submitted by the Tenderer only through NIC's CPP Portal for e-Procurement (GePNIC) as explained in the tender document.
- No physical tender is acceptable by Kolkata Dock System.
- Minutes of meeting /Corrigendum / addendum / clarifications, if any, shall be hosted on the <https://smportkolkata.shipping.gov.in/> and <https://eprocure.gov.in/eprocure/app> .

Note: In the event of any unforeseen closure of work / holiday on any of the above days, the same will be opened / held on the next working day without any further notice.

List of Annexure

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Chief Mechanical Engineer
Syama Prasad Mookerjee Port, Kolkata
Tender Inviting Authority &
Engineer of the Contract

Instructions for Online Bid Submission

This is an e-procurement event of Syama Prasad Mookerjee Port, Kolkata (Erstwhile Kolkata Port Trust).

The e-procurement service provider is NIC's CPP Portal for e-Procurement (GePNIC).

You are requested to read the terms & conditions of this tender before submitting your online tender. Tenderers who do not comply with the conditions with documentary proof (wherever required) will not qualify in the Tender for opening of price bid.

1.	Online tenders through NIC's CPP Portal for e-Procurement (GePNIC) are invited by Syama Prasad Mookerjee Port, Kolkata from GST registered domestic Contractors for executing the work. The tender document through NIC's CPP Portal for e-Procurement (GePNIC) is open from 09.05.2026 to 08.06.2026 and can be downloaded from the official website of SMP, Kolkata and through NIC's CPP Portal for e-Procurement (GePNIC). The complete tender document can be downloaded from Syama Prasad Mookerjee Port, Kolkata website: https://smpportkolkata.shipping.gov.in/ and NIC's CPP Portal for e-Procurement (GePNIC) https://eprocure.gov.in/eprocure/app and bidders are required to submit tender offer through NIC's CPP Portal for e-Procurement (GePNIC) on or before the due date and time of submission. The tenderer shall upload the scanned copy of the DD instruments towards the cost of EMD and bid documents set as proof of payment towards EMD and cost of Bid documents while submitting the tender electronically in the NIC's CPP Portal for e-Procurement (GePNIC). The tender offer shall have to be submitted by the Tenderer only through NIC's CPP Portal for e-Procurement (GePNIC) as explained in the tender document.
2.	The Techno-commercial Bid and the Price Bid shall have to be submitted online at https://eprocure.gov.in/eprocure/app (A). Part - I (Techno-Commercial bid): Would be opened electronically on specified date and time as given in the NIT. Bidder(s) can witness the opening of Techno-commercial Bid electronically. (B) Part - II (Price bid): Would be opened electronically of only those bidder(s) whose Part - I Techno-Commercial bid are acceptable by SMP, Kolkata. Such bidder(s) will be intimated the date of opening of Part II (Price bid) through valid e-mail/telephone/letter. Bidder(s) can witness the opening of Bids electronically.

	The tenderers are advised to offer their best possible rates. There would generally be no negotiations. Bidders are requested to submit their most competitive prices while submitting the price bid.	
3.	All entries in the tender should be entered in online Technical & Commercial Formats without any ambiguity.	
4.	In case of any clarification, please contact SMP, Kolkata (before the scheduled time of the e- tender). Contact person (SMP, Kolkata):	
	1. Mr. A. K. Kar Chief Mechanical Engineer Contact No. 033-7100 2017 Email: cme@smportkolkata.shipping.gov.in	
	2. Mr. D. Das Dy. Chief Mechanical Engineer-I Contact No. 033-7100 3325 Email: ddas@smportkolkata.shipping.gov.in	3. Mr. D. K. Kundu Superintending Engineer (E)-IV Contact No. 033-7100 3319 Email: dk.kundu@smportkolkata.shipping.gov.in
	4. Mr. N. C. Behera Executive Engineer (Elect.)-I Contact No. 033-7100 3245 Email: n.behera@smportkolkata.shipping.gov.in	
5.	All notices and correspondence to the bidder(s) shall be sent by email only during the process till finalization of tender by SMP, Kolkata. Hence, the bidders are required to ensure that their corporate email I.D. provided is valid and updated at the stage of registration of vendor with NIC's CPP Portal for e-Procurement (GePNIC) (i.e. Service Provider). Bidders are also requested to ensure validity of their DSC (Digital Signature Certificate).	
6.	E-tender cannot be accessed after the due date and time mentioned in NIT.	
7.	The bidder (s) must submit Earnest Money Deposit (EMD) OR self-attested copy of Udyam Registration Certificate for Micro and Small Enterprises (MSEs) issued by Dept. of Micro, Small and Medium Enterprises (MSME)/ Start- up certificate issued by DPIIT in relevant sector of work, as mentioned in the Bill of Quantities of instant Tender, to claim exemption from depositing EMD, failing which their tender would be summarily rejected. For further details please see Clause No. 2 under Instruction to Tenderers. (b). The process involves Electronic Bidding for submission of Tender Document Fee and EMD, Techno- Commercial Bid as well as Price Bid. (c). The e-tender floor shall remain open from the pre-announced date & time and for as much duration as mentioned above. (d). All electronic bids submitted during the e-tender process shall be legally binding on the bidder. Any bid will be considered as valid bid if it fulfils all the terms and conditions of the Tender Document. (e). It is mandatory that all the bids are submitted with digital signature certificate otherwise the same will not be accepted by the system. (f). SMP, Kolkata reserves the right to cancel or reject or accept or withdraw or extend the tender in full or part as the case may be without assigning any reason thereof.	

	(g). No deviation of the terms and conditions of the tender document is acceptable. Submission of bid in the e-tender floor by any bidder confirms his acceptance of terms and conditions for the tender. (h). Unit of Measure (UOM) is indicated in the e-tender Floor. Rate to be quoted in Indian Rupee Currency as per UOM indicated in the e-tender floor/tender document.
8.	The e-tender shall be governed by the terms and conditions mentioned therein.
9.	No deviation to the technical and commercial terms & conditions are allowed.
10.	SMP, Kolkata has the right to cancel this e-tender or extend the due date of receipt of bid(s) without assigning any reason thereof.
11.	The bidders <u>must upload</u> all the documents required as per Pre-qualification criteria and the documents enlisted under techno-commercial bid and Price-bid, failing which the tender shall lead to disqualification. Any other document uploaded which is not required as per the terms of the NIT shall not be considered.
12.	The bid will be evaluated based on the filled-in technical and commercial formats uploaded.
13.	The documents uploaded by bidder(s) will be scrutinized. In case any of the information furnished by the bidder is found to be false during scrutiny, EMD of defaulting bidder(s) will be forfeited. Punitive action including suspension and banning of business can also be taken against defaulting bidders.
14.	Price bid must be filled-up in EXCEL Sheet through NIC's CPP Portal for e-Procurement (GePNIC) (which is uploaded by SMP, Kolkata).
15.	EMD & Tender Fee is to be treated as essential documents and the same should be uploaded with the other essential documents.
16.	EMD & Tender Fee should reach this office physically before within 5 working days of opening of Tender document.

Note: The name 'Syama Prasad Mookerjee Port, Kolkata' has been abbreviated as SMPK or SMP, Kolkata in this tender document. Also, whenever the erstwhile name of 'Kolkata Port Trust' is found in tender document, it is to be read as 'Syama Prasad Mookerjee Port, Kolkata.' Also, 'Trustees' or 'Trust', if found, should be read as 'Authority' denoting the Board of Authorities/Board of Trustees of SMPK.

Instruction To Tenderers

Notice Inviting Tender No.: SMP/KDS/Mech/C/ADV/727 dated 05.05.2026

1. Pre-qualification Criteria of the Bidders:

- i. The firms must have either of the following as experience of having successfully completed similar works during last seven years, ending on 30.04.2026.
 - a) Three similar works where cost of each completed work should not less than ₹ 3,08,75,443.00 (40% of estimated cost).
Or
 - b) Two similar works where cost of each completed work should not less than ₹ 3,85,94,304.00 (50% estimated cost).
Or
 - c) One similar work where cost of completed work should not less than ₹ 6,17,50,886.00 (80% of estimated cost).

Note: All of the aforesaid values are excluding GST.

- ii. Here “**similar work**” means:
“Design, Supply, Installation, Testing & Commissioning of Integrated Command Control Centre”.
- iii. For evaluation purpose, the value of arriving at cost of similar work, the value of work executed shall be brought to current costing level by enhancing the actual value of work at simple interest @ of seven percent per annum, calculated from the date of completion to the date of Bid opening.
- iv. The experience of working as Sub-contractor, satisfying the Pre-Qualification Criteria shall also be considered, subject to submission of valid supporting documents issued by original contractor.

The Tenderers shall upload self-attested copies of supporting documents to fulfil the pre-qualification with respect to experience viz. copies of Work Orders in the name of tenderer for similar works, successful completion certificates from clients. The original documents may also be verified by SMP Kolkata Officials, if required.

- v. Average Annual financial turnover during the last three years ending 31st March of 2026, should be at least 30 % of the estimated cost i.e. ₹ 2,31,56,582 /-.
- vi. Audited Balance Sheet and Profit & Loss A/c of the bidding entity along with schedules and audit report, for last 3 years (2022-23, 2023-24 & 2024-25) duly certified by Chartered Accountant mentioning UDIN (Unique Document Identification Number). Self-attested & stamped copies to be uploaded. In the event of non-submission of Audited Balance Sheet for the financial year ending 31.03.2025, the turnover for that financial year has to be submitted in lieu, duly certified by Chartered Accountant mentioning UDIN.

- vii. TDS TRACES including 26AS to validate the legitimacy of the work completion certificate to be provided by the bidder.

2. Earnest Money Deposit (EMD) & Tender Cost: -

- i) Tender Cost: - The intending bidders should submit Tender cost of **Rs. 2,950/-** (Rupees Two Thousand Nine Hundred and Fifty Only) including GST @ 18%, in form of Demand Draft, Pay Order and Banker's Cheque.
- ii) The Earnest Money Deposit (EMD): - EMD for this tender is Rs. 15,43,772/- (Rupees Fifteen lakh forty three thousand seven hundred seventy two only)
- iii) Any bid not accompanied by the requisite EMD & Tender Cost shall be rejected as non-responsive and such bid will not be evaluated further.
- iv) The intending bidders should submit Earnest Money in the form of Insurance Surety Bonds, Account Payee Demand Draft, Banker's Cheque from any of the Scheduled Banks in India (as defined in section 2(e) of the RBI Act 1934), having branch in "Kolkata" safeguarding the purchaser's interest in all respects. The EMD should be payable at "Kolkata" and to be drawn in favor of "Syama Prasad Mookerjee Port Kolkata" on or before last date of bid submission. The bid security should remain valid for a period of not less than 45(forty-five) days beyond the final bid validity period.
- v) To claim exemption for EMD & Tender Cost, the bidder (s) are required to produce a self-attested copy of Udyam Registration Certificate for Micro and Small Enterprises (MSEs) issued by Department of Micro, Small and Medium Enterprises (MSME)/ Start-up certificate issued by DPIIT. The exemption from the payment of EMD & Tender Cost will be allowed only if the tender item of work/supply is covered in the enlistment statement attached Micro and Small Enterprises (MSEs) as defined in MSE Procurement Policy issued by Dept. of Micro, Small and Medium Enterprises (MSME)/ relevant sector of Start-up. No claim for exemption without the details stipulated above will be considered.
- vi) **Scanned copy of Earnest Money Deposit & Tender Cost / a self-attested copy of Udyam Registration Certificate/ Start-up certificate (as applicable) must have to be uploaded along with the Techno-commercial Bid of the e-Tender.**
- vii) **Hard Copy of "EMD" & "Tender Cost" in original shall reach to the office of Chief Mechanical Engineer, Mechanical and Electrical Engineering Department, Syama Prasad Mookerjee Port Kolkata, 8, Garden Reach Road, Kolkata -700 043, on or before bid opening date, failing which the bid will be treated as non-responsive and will not consider for further evaluation.**
- viii) The Earnest Money Deposit shall be refunded to the bidder (s) as follows:
- Successful bidder (s) - EMD would be refunded to the successful bidder on receipt of performance security.
 - Unsuccessful bidder(s) - within 30 days after finalization of the Techno- Commercial Bid(s).
- ix) **No interest shall be paid by SMP, Kolkata on the Earnest Money Deposit from the date of its receipt until it is refunded as indicated above under any circumstances.**

- x) A bidder's EMD will be forfeited if the bidder
- Withdraws or amends its/ his tender;
 - Impairs or derogates from the tender in any respect within the period of validity of the tender;
 - If the bidder does not accept the correction of his bid price during evaluation; and
 - If the successful bidder fails to sign the contract or furnish the required performance security within the specified period.

xi) Tenderers may note that non-submission of any of the aforesaid documents/non-fulfilment of any of the aforesaid criteria shall lead to disqualification of their offers.

3. The online Techno-commercial Bid must contain the following:

- Scanned copy of Earnest Money Deposit / a self-attested copy of Udyam Registration Certificate/ Start-up certificate issued by DPIIT (as applicable) must have to be uploaded along with the Techno-commercial Bid of the e-Tender, as mentioned in Clause 2 of Instruction to Tenderers.
- As mentioned in Clause 2 of Instruction to Tenderers, the "EMD" in original shall reach to the office of Chief Mechanical Engineer, Mechanical and Electrical Engineering Department, Syama Prasad Mookerjee Port Kolkata, 8, Garden Reach Road, Kolkata -700 043, within 5 working days of bid opening, failing which the bid will be treated as non-responsive and will not be evaluated further.
- Scanned copies of self-attested documents are also required to be submitted online:**
 - Covering letter for submission of tender, unconditionally accepting all the terms and conditions of the tender including the Addendum, if issued and declaring to have not been banned/debarred/delisted by the Central/State Govt. or any entity controlled by them or any other legal authority from participating in any Tender/Contract/Agreement of whatever kind, as per **ANNEXURE-G**.
 - Profile of the tenderer containing full name and office address of the Tenderer, names and designation of the officials of the Tenderer connected with the instant Tender, their land and mobile telephone nos., e-mail id and Fax No. etc. as per **ANNEXURE-F**.
 - Undertaking of the tenderer to be submitted in lieu of submission of signed copies of the Tender document in full, as per enclosed Pro-forma at **ANNEXURE -K**.
 - Details of the firm as per '**Schedule-O**' of the tender document as enclosed Pro-forma at **ANNEXURE -H**.
 - Scanned copy of declaration towards Restrictions under Rule 144 (xi) of General Financial Rules 2017 (to be printed under the letterhead of the bidder), as per **ANNEXURE - N**.
 - Scanned copy of Self-Certification of Local Content Declaration, under Public Procurement (Preference to Make in India) Order (to be printed under the letterhead of the bidder), as per **ANNEXURE - O**.
 - Copies of Audited Balance Sheet and Profit & Loss A/c of the bidding entity along with schedules and audit report, for last 3 years (2022-23, 2023-24 & 2024-25) duly certified by Chartered Accountant mentioning UDIN (Unique Document Identification Number). Self-attested & stamped copies to be uploaded. In the event of non-submission of Audited Balance Sheet for the financial year ending 31.03.2025, the turnover for that financial year has to be submitted in lieu, duly certified by Chartered Accountant mentioning UDIN.

- h. Documentary evidence (work orders, successful completion certificates from clients indicating the date of completion, value of work done etc.) of successful completion of similar work as proof of fulfilling the Pre-qualification Criteria of the tender.
- i. Scanned Copies of the following are to be uploaded:
 - i. PAN Card.
 - ii. GST Registration Certificate.
 - iii. Trade License/Registration.
 - iv. Professional Tax Clearance Certificate/ up to date tax payment Challan, if applicable.
 - v. Income Tax Return of last 3 years viz. 2022-23, 2023- 24 and 2024-25.
 - vi. Company Registration Certificate, if applicable.
 - vii. TDS including 26AS in support of authentication of submitted credential
- j. Statement to confirm the status of the Tenderer – whether a Partnership Firm, Company or Proprietorship Firm. If demanded by Syama Prasad Mookerjee Port, Kolkata, the tenderer would be bound to furnish necessary documents in support of their statement in this regard.
- k. **Registration under ESI Act:** All intending tenderer at the time of tender shall disclose all necessary documents as to whether they are covered under ESI Act or not.
 - (1) In case they are covered under ESI Act, they have to furnish the details of registration, failing which their tender would be liable to be cancelled.
 - (2) In case they are not covered under ESI Act or exempted, they would furnish necessary documents along with an Affidavit in original affirmed before a First-Class Judicial Magistrate on a Non-Judicial Stamp Paper worth Rs.10/- to that effect as per enclosed Performa at **ANNEXURE-I**.
 - (3) In case they are not covered under ESI Act, they must additionally indemnify SMP, Kolkata against all damages and accident occurring to his labour in a Non-Judicial Stamp Paper worth Rs.50/-. The same should be submitted along with Techno-commercial Bid as per enclosed Performa at **ANNEXURE-J**.
- l. **Registration under EPF Act:** Intending tenderers shall furnish the details of EPF Registration. In the event of non-applicability of Registration under EPF Act, the tenderer shall furnish documentary evidence for the same or shall furnish in lieu, a self-declaration citing reasons, as to why they do not come under EPF Act.
- m. **Power of Attorney:** The intended bidder should furnish the Power of Attorney (As per **ANNEXURE**), if applicable, as per the following:
 - (a) In case the Tender is submitted by a Proprietorship Firm, the same should be signed by Proprietor or representative person, holding a valid Power of Attorney from the Proprietor, in connection with this Tender. The signature of such Power of Attorney holder should be attested by the Proprietor.
 - (b) In case the Tender is submitted by Partnership Firm, the same should be signed either by partner, holding valid Power of Attorney from the partners or other person, holding valid Power of Attorney from the partners, in connection with this Tender. The signature of such Power of Attorney holder should be attested by the partners.
 - (c) In case the Tender is submitted by a Limited Company, the same should be signed by person holding valid Power of Attorney/ Authorisation, executed in his favour (in connection with the Tender) and the signature of such Power of Attorney holder/ Authorised person should also be attested, in accordance with the constitution of the Limited Company.

- n. A list of key technically qualified and skilled persons would be engaged to supervise and execute the work as per proforma in **Annexure-L**.
- o. Manufacturer's Authorisation Certificate for items as specified in technical specification.
- p. Checklist of Documents to be uploaded (**Annexure-M**).

N. B.-1: The bidder will have to produce the original documents or any additional documents, if asked for, to satisfy the Authorities for clarification of his documents or credibility.

N.B.-2: During techno-commercial evaluation of tender, an offer shall be considered non-responsive in case of non-submission of the following 'Essential' documents or non-fulfilment of following criteria:

- i. It is not accompanied by requisite EMD & Tender Fee,
- ii. It is not accompanied by valid certificate, if the bidder sought exemption from depositing Earnest Money & Tender Cost.
- iii. It does not meet the pre-qualification criteria as stipulated in the NIT,
- iv. It is not accompanied by Company Registration Certificate, as applicable,
- v. It is not accompanied by Power of Attorney, as per applicable clause of NIT.
- vi. It is not accompanied by Manufacturer's Authorisation Certificate as per applicable clause of NIT.

N.B.-3: In addition to the above, a bidder may be disqualified, even though the bidders meet the above qualifying criteria, if:

- 1. The bidder submits conditional offer / impose own terms and conditions / does not accept tender conditions completely / offer or tender if submitted with any deviation from the tender terms & conditions.
- 2. The validity of the offer is less than tender stipulation.
- 3. All the documents required as per tender are not uploaded or not submitted, even after asked for as shortfall documents as the case may be.
- 4. The bidder provides misleading or false information/representation in the forms, statements and attachments uploaded/submitted in proof of the qualification requirements and necessary action will be taken as per Terms & Conditions of NIT.
- 5. Record of unsatisfactory performance during the last seven years, such as abandoning of work or rescinding of contract for which the reasons are attributable to the non-performance of the contractor or inordinate delays in completion or financial bankruptcy etc.

The decision of SMP, Kolkata in this regard shall be final and binding on the Bidder.

- 4. Techno-commercial bids will be opened on the schedule date of opening of techno-commercial bid. Price Bids of only techno commercially qualified bidders shall be opened on a suitable date, to be intimated beforehand. However, for a single part single envelope tender both the Techno- commercial bids & Price Bids will be opened simultaneously for evaluation.
- 5. The Board reserves the right to accept or reject the tender without assigning any reason whatsoever.

6. The Board will not be responsible for any cost or expense incurred by the Tenderer in connection with preparation or submission of the tenders.
7. In case of unscheduled holiday, Strike/Bandh etc. on the scheduled date of Site Inspection, Pre-bid Meeting, submission of bids, opening of Techno-commercial or Price Bid, the same time (as per the schedule) on the next working day will be considered as scheduled time for the purpose of Site Inspection, Pre-bid meeting, submission of bids, opening of Techno-commercial or Price Bid, as the case may be. Here, Trustees' working day means Monday to Friday in between 9-30 hrs. to 18-00 hrs.
8. Should there be any doubt or ambiguity as to the meaning of any portion of the tender document or if any further information is required, the same shall be clarified/amended by SMP, Kolkata in the Site Inspection and Pre-bid meeting. No excuse of ignorance in this regard shall be accepted at a later date after the Pre-bid meeting. In the event of making any important clarification or amendment of terms of the tender, pursuant to the discussion in the Pre-bid meeting, the same shall be immediately hosted in SMP, Kolkata's website for information of all concerned and the same shall form a part of the Tender Document. Any offer having deviation from SMP, Kolkata's terms and conditions shall render such offer unacceptable to SMP, Kolkata. No alteration shall be made by the Tenderer in the tender document and the offer must be in accordance with the terms and conditions of the tender. The prospective tenderers may inspect the site prior to the date of Site Inspection and Pre-bid meeting in order to make themselves fully aware of the work, site and scope of work as mentioned in the Bill of Quantity as per tender. For attending the Pre-bid Meeting, the representatives of the tenderers should accompany proper authorizations letters from their respective organizations.
9. **Any offer having deviation from SMP, Kolkata's any of the terms and conditions or any alteration in the tender document of SMP, Kolkata is made by any bidder shall treated as non-responsive bid, accordingly the same will not be evaluated further.**
10. **Tender Condition regarding Public Procurement (Preference to Make in India) Order and Restrictions under Rule 144 (xi) of General Financial Rules 2017.**
 - A. **PREFERENCE TO MAKE IN INDIA**
 - I. The Provisions contained in Public Procurement (Preference to Make in India) Order, 2017 as amended by OM No. P-45021/2/2017-PP (BE-II) dt.16.9.2020, further as amended from time to time if any, shall be applicable for this tender.
 - II. Bidders shall submit Declaration and self- certification as per **ANNEXURE-O** under their letterhead, in their technical bid duly filling up all the blanks.
 - B. **Restrictions under Rule 144 (xi) of General Financial Rules 2017 [Order (Public Procurement No.1) of DOE, Public Procurement Division, No. F.No.6/18/2019 PPD, dt. 23.7.2020] and amendments/ clarifications issued subsequently by DOE.**
11. Bidder from a country sharing land border with India: As per the OM No. F6/18/2019-PPD dated 23.07.2020, and as amended / clarified from time to time, issued from Department of Expenditure (Public Procurement Division), Ministry of Finance, Govt. of India, any bidder from a country which shares land border with India will be eligible to bid only if the bidder is registered with the competent Authority as mentioned in the office memorandum. In this regard, the bidder has to submit a Declaration under their letterhead as per **Annexure-N**.

12. The quoted rate should be exclusive of GST. The rate quoted in the tender shall hold good and shall be binding on the tenderer notwithstanding any increase in the prices of the materials and labour or in the freights or levy or other charges whatsoever and the tenderers shall not be entitled to claim any increase over the rates quoted by them during the pendency of the contract.
13. **Validity of offer:** The offer shall remain valid for acceptance for a period of 90 days from the date of opening the Techno-commercial Bid. In the event of tenderer withdrawing their tender before the expiry of tender validity period of 90 days from the date of opening of the Techno-commercial Bid, the offer of such tenderer shall be cancelled and EMD deposited by them shall be forfeited. If tender process could not be finalized within 90 days, the EMD's to be revalidated accordingly.
14. The tenderers shall distinctly understand that they will be strictly required to conform to all the terms of the tender and their plea will not in any case be accepted as an excuse on their part for infringing of any of the conditions and they shall refrain from sending revised or amended quotations, after the closing date and time of the tender.
15. **Evaluation criteria:** For the purpose of qualification, the bidders shall have to satisfy the minimum Pre-qualification (experience and financial) Criteria of the tender. The bidders, who would qualify the eligibility as per the Pre-qualification Criteria under the Terms and Conditions of Tender of the Tender Document, would only be considered for evaluation. A two-stage procedure would be adopted in evaluating the proposal viz. technical evaluation and financial evaluation. The technical evaluation would be carried out prior to opening of price bid. **Only price bids of techno-commercially qualified bidders will be opened for further evaluation. The price bids will be evaluated on the basis of the total quoted price exclusive of GST as per the Bill of Quantities in Portal.**
16. If excess work is required to be carried out in addition to the quantities stipulated in BOQ, the amount will be paid on par with the quoted offer and as per actual measurement.
17. The contract document shall be drawn in English language only. The contract shall be governed by all relevant Indian Acts as applicable only within the jurisdiction of High Court of Kolkata, West Bengal, India including the Acts like The Major Authority Act, The Indian Contract Act, The Major Port Trusts Act, The Workmen's Compensation Act, The Minimum Wages Act, The Contract Labour (Regulation & Abolition) Act, The Dock Worker's Act, The Dock Safety Regulations, or any other act, rule as may be applicable.

It will be the duty of the contractor to abide by the provisions of the Act, Ordinances, Rules, Regulations, By-laws and procedures as are lawfully necessary in the execution of the works. The contractor will be fully responsible for any delay / damages etc. and keep the Engineer indemnified against all penalties and liabilities of any kind of noncompliance or infringement of such Acts, Ordinances, Rules, Regulations, By-laws and procedures.

The aforesaid regulations shall be deemed to be a part of this contract and any breach thereof shall be deemed to be a Breach of Contract. It will be obligatory on the part of Contractor to obtain necessary Labour License from the Competent Authority for deploying requisite nos. of labours in the work and submit the Engineer-In-Charge prior to commencement of the work.

The contractor shall also be required to comply regarding 'Workmen Compensation Act,1923 as amended by Amendment Act No. 65 of 1976', the Personal Injuries(Compensation Insurance) Act,1963 and any modifications thereof and rules made there under from time to time. The contractor shall take into account all the above said financial liabilities in his quoted rates and nothing extra, whatsoever, shall be payable to him on this account.

15. **Site Visit:** Bidders are advised to visit the site of work prior to submission of their bid. Bidder shall get himself thoroughly familiarized with the site conditions, existing road facilities for carrying materials etc. before submission of the e-tender. He may contact Superintending Engineer (Electrical)-IV for electrical portion of work at 8, Garden Reach Road, Kolkata-700 043 in this regard. Non-compliance of the same will in no way relieve the successful bidder of any of his obligations in performing the work in accordance with this Bid Document within the quoted price.
16. **Performance Guarantee:** As per relevant clauses of Special Conditions of Contract of this tender document.
17. Besides the above conditions all other terms & conditions as stated in this tender document including Special Conditions of contract, GCC etc. has to be taken into consideration by the bidder before quoting their offer.
18. **Scrutiny of e-tenderers:** During the course of examination of the Techno-commercial Bid, the bidders, if asked for, shall furnish any or additional document(s) for the purpose of evaluation of his/ their bids.

During evaluation of the tender, an offer shall be considered non-responsive in case:

- (i) the tender is not accompanied by requisite EMD or exemption from EMD is claimed without submission of acceptable proof of exemption, if applicable ;
- (ii) the validity of the offer is less than the validity stipulated in the tender ;
- (iii) the offer does not meet the Pre-qualification criteria of the tender ;
- (iv) the bidder submits conditional offer/impose own terms and conditions/does not accept tender terms and conditions of the tender in full ;
- (v) It is not accompanied by Company Registration Certificate, if applicable;
- (vi) It is not accompanied by Power of Attorney, if applicable, as given under point the 3.B.(XI), mentioned above;
- (vii) The tender is not in the prescribed format or is unsigned or not signed as per the stipulations in the bid document ;
- (viii) The bid departs from the essential requirements specified in the bidding document.
- (ix) Against a schedule in the list of requirements in the tender enquiry, the bidder (s) has not quoted for the entire requirement as specified in that schedule.

19. Duly filled Checklist of Documents to be uploaded (Annexure -M).

In addition to above, a bidder may be disqualified if:

- (a) The bidder provides misleading or false information in the statements and documents submitted ,

- (b) Record of unsatisfactory performance during the last seven years, such as abandoning of work or rescinding of contract for which the reasons are attributable to the non-performance of the contractor or inordinate delays in completion or financial bankruptcy etc.

The decision of SMP, Kolkata in this regard shall be final and binding on the Bidder.

20. Amendment to SMP Kolkata Tender Document :

SMP Kolkata may for any reason and at any time prior to the deadline for submission of tender, whether at its own initiative or in response to clarifications requested by the Tenderers, modify the SMP Kolkata's Tender Document by the issuance of Addendum/Corrigendum.

The Tenderers will have to regularly check the SMP Kolkata's website <https://smpportkolkata.shipping.gov.in/> and <https://eprocure.gov.in/eprocure/app> for any Addendum/Corrigendum published therein. SMP Kolkata will not be held responsible if the Tenderers have not read the Addendum/Corrigendum published.

In order to offer reasonable time for the prospective Tenderers to take Addendum/Corrigendum into account, or for any other reason, SMP Kolkata may, at its discretion, extend the Tender due date, if considered necessary.

Any Addendum/Corrigendum thus issued to all the Tenderers shall form part and parcel of the Agreement.

Special Conditions of Contract

Notice Inviting Tender No.: SMP/KDS/Mech/C/ADV/727 dated 05.05.2026

1. The Tenderer shall carefully examine the whole tender document and shall visit and inspect the site on his own, obtain all information, which may be necessary for the purpose of the tender/offer, as stated in Annexure-B above. The Tenderer is advised to acquaint himself with the job involved at the site, laws and by-laws enforced by the Govt. and other statutory bodies. No excuse of ignorance as to site condition and local information will be accepted. All costs/charges/expenses that may be incurred by the Tenderer in connection with the preparation of his tender shall be borne by the Tenderer and SMP, Kolkata accepts no liability in this regard.
2. Disclosure/indication of price in Techno-commercial part of the tender shall be liable to be disqualified.
3. Any quotation received for part supply or of doing a portion of the work with responsibility for carrying out remaining works by the Trustees, will not be considered.
4. No alteration shall be made by the Tenderer in the tender and the tender must be in accordance with the specification. Non-conformation to this instruction shall be treated as non-responsive & hence may disqualify the tender. The rate quoted in the tender shall hold good and shall be binding on the Tenderer. No escalation on the rates will be entertained during the contractual period.
5. The contract shall be governed by the Indian Contract Act and all payments due to the Contractor under the Contract shall be made in India in Rupee Currency only. No foreign exchange is payable on this contract.
6. The Contractor shall take adequate insurance cover for persons to be deployed for execution of this contract. The Contractor shall at his own expenses pay compensation for any injury, loss or reinstate and make good to the satisfaction of SMP, Kolkata for loss or damage accrued to any property or rights of SMP, Kolkata whatever, including SMP, Kolkata's agents/ servants/ employees, or any third party arising out of or in any way in connection with the execution or purported execution of the contract and further the contractor shall indemnify SMP, Kolkata against all claims enforceable against SMP, Kolkata (or agents/servants/employees of SMP, Kolkata) or which would be so enforceable against SMP, Kolkata where SMP, Kolkata is a private person, in respect of any such injury (including injury resulting to death), loss or damage to any person whomsoever or property including all claims which may arise under the Workmen's Compensation Act or otherwise.
7. Attention of the tenderer is drawn to clause no 3.4, 3.5, 3.6 of GCC regarding earnest money & performance guarantee in lieu of security deposit and clause no.8 of GCC regarding delay/extension of time/LD/ Termination of contract.
8. **Performance Guarantee:** The successful tenderer has to deposit 10% of the total contract value as Performance Security for the due fulfilment of the contract, within 21 days from the date of

issuance of the Work Order, failing which the contract may be rescinded without any further notice as per discretion of Engineer of the contract.

Performance Security may be furnished in the form of Insurance Surety Bond, Account Payee Demand Draft, from any of the scheduled banks in India or Bank Guarantee issued/ confirmed from any of the scheduled banks in India having branch in "Kolkata" in the form annexed hereto, safeguarding SMPK's interest in all respects. The Performance Security should be payable at Kolkata and drawn in favor of "Syama Prasad Mookerjee Port Kolkata".

Performance security should remain valid for a period of 6 months beyond the date of completion of all contractual obligations of the contractor, including successful completion of Defect Liability Period (DLP). Performance security would be refunded to the contractor without interest after the completion of DLP, subjected to successful completion of work. Before the Performance security is released a "No Claim Certificate" shall be furnished by the contractor as per the format given. The performance security will be forfeited and credited to the procuring entity's account in the event of a breach of contract by the contractor.

9. While submitting tender, the conditions of tender, the general conditions of contract and specifications, drawings etc. shall be read in conjunction with the bill of quantities.
10. Successful Tenderer shall be in all cases responsible for the execution of the work in accordance with the General Conditions of Contract, Specifications, Drawings if any, and the Bill of Quantities which the tenderer shall be deemed to have examined.
11. SMP, Kolkata reserves the right to disqualify any offer, in case they are satisfied that any bribe/commission, gift or advantage has been given, promised or offered by or on behalf of any of the Tenderers to any officer, employee or representative of SMP, Kolkata or any other person on his or their behalf in relation to the acceptance of this tender.
12. The Tenderer shall disclose the names of their Partners /Directors/ Members in the manner stipulated in this tender document. Any change in the composition of the same during subsequent stage of tender finalization as well as during the period of execution of the contract shall be immediately notified in writing to SMP, Kolkata. In the event of any Tenderer failing to comply with the aforesaid requirement, the tender/ contract, if entered into, may be terminated.
13. At any time, prior to the last date of submission of Tenders, SMP, Kolkata reserves the right to amend and modify the Tender Document. Such amendment shall be hosted in CPP Portal as well as in SMP, Kolkata's website and SMP, Kolkata would in no way be responsible for any likely ignorance of any prospective tenderer in this regard. Such amendment/ modification shall form part of the Tender and shall be binding upon all the Tenderers. SMP, Kolkata may, at its discretion, alter any of the major dates like pre-bid meeting, last date of submission and date of opening of the Tender etc. to enable the Tenderer(s) to have reasonable time to submit their offer after taking into consideration such amendment/modification.
14. The Contract shall be governed by all the acts as listed under Clause No. 4.1 of the General Conditions of Contract and also by all other relevant Acts/Laws/ Regulations/By-laws/Statutory Requirements including Dock Safety Regulations as may be in vogue as well as

any amendment thereof, if any, in executing the tender and during the pendency of the contract. It will be the sole responsibility of the Contractor to comply with the same.

15. **Completion Period:** 180 days from the date of placement of order letter.
16. The tenderer/s shall not rely merely on the descriptions given on the bill of quantities. The quantities shown on the bill of quantities are approximate only and the actual quantities will be intimated when formal order will be placed. While preparing the tender documents, if the tenderer feels that any essential item has been omitted from the bill of quantities the prices of which cannot be conveniently included under any other item, the tenderer shall request the Engineer to insert a suitable item at the time of Pre-bid meeting. Should the tenderer omit to mention the price of any item in the bill of quantities, the tender may be treated as cancelled.
17. The tenderer/s shall distinctly understand that:
 - A. They will be strictly required to conform to the General Conditions of Contract and Specification as contained in each of its clause.
 - B. Non-acceptance/or non-compliance of any of the above terms and conditions may render the tenders liable to rejection.

Tenderer/s shall also sign every page of the tender documents in token acceptance thereof.

18. **Warranty/Defect Liability Period:** The contractor shall make good at his own expenses of all defects, due to faulty design, materials and workmanship, which may develop under proper use during a period of 12 months from the date of commissioning/handing over of the entire work. Should any difference of opinion arise on any of the provisions of this clause, the decision of the Engineer shall be final and binding. In default, the Trustees will be at liberty to get the repairs done and reimbursed themselves so far as costs are concerned out of the amount lying with them as security deposit and/or performance guarantee so far as that is practicable. If the costs of such repairs exceeding the amount of security deposit/performance guarantee, the Contractor shall pay the balance to the Trustees forthwith on demand. Where the Contractor has submitted performance guarantee in lieu of cash security money, the cost of such repairs will be payable to the Trustees forthwith on demand.
19. **Permission from statutory bodies:** The Contractor shall make arrangement from his own cost for obtaining permission and relevant clearance from the statutory bodies such as Municipal Corporation, Electricity Authorities etc. on payment of necessary charges/fees etc.
20. **Entry Permit:** The Contractor shall be governed by the following provisions for interfacing safety custody and proper use of Dock Permits:
 - A. All representatives and workers of the contractor shall possess the RFID Dock Permit issued by Dock Permit Office at the recommendation of concerned officer/Engineer on monthly or daily basis, free of cost. A token charge as per applicable present rate per person per occasion will be levied for creation of new IDs in the permit system. A separate receipt indicating the details of the ID along with the amount charged will be issued which may be kept for future reference.

- B. The Contractor shall ensure that any Dock Permit issued to their workmen or representative by the Permit Office are not misused by un-authorized persons for entry into the protected dock area.
- C. It shall amount to breach of rules and regulations regarding entry into the prohibited area by the Contractor in case the Dock Permit issued at their request are found to be misused by any authority/person.
- D. Contractor and their workmen including driver & helper must use PPE i.e. safety helmet, safety shoe etc. at the time of work inside the dock premises.
- E. The Contractor and their defaulting employees shall be liable for legal action against them for breach of rules regarding entry into the protected area.
21. **Drawings:** On completion of all work, the Contractor shall furnish three copies of all “As made” drawings including cable route diagram to the Engineer without any cost.
22. Shock treatment chart, statutory warning signals, insulated mats, fire extinguisher, firefighting buckets filled with sand etc. are to be provided inside the installation as per statutory requirement without any extra cost.
23. **Specifications/ Codes and Standards:** All works under this contract will be executed according to the Trustees’ Specification for works. Whenever the details are not specifically covered in the specifications, relevant provisions in the latest revision and/ or replacements of the Indian Standard Specifications (IS) or any other International Code of Practice/ CPWD specifications/National Building Code, as per applicability, will be followed. The Contractor shall have to procure copies of such codes/ standards for ready reference of his own personnel as well as the Engineer or his representative at site at his own cost and without any additional reimbursement.
24. **Testing and commissioning:** Before each test, the Contractor shall obtain permission from the Engineer and all tests shall be conducted in presence of duly authorized representative and the Electrical Inspector wherever it is necessary. Record of each test shall be prepared after the test and this record shall be signed by the Contractor’s representative and/or his supervisor under whose direct supervision the installation has been carried out. Copies of those records in quadruplicate shall be submitted to the Engineer. The Testing & Commissioning and its related charges are to be borne by the Contractor at his own cost.
25. **Identification mark:** For identification of various equipment letter/figure writing of sizes varying from 12 mm. to 75 mm. with enamel paint of approved shade /standard ferules are to be carried out at the expenses of the contractor as per directive of Engineer.
26. The tenderer must produce evidence with his tender that he had experience and fully capable of carrying out work of this class and magnitude and by way of proof shall submit along with his tender under ‘Schedule-O’ a list of important works of a similar nature successfully carried out by him giving the dates of commencement and completion of such works and full particulars of his business organization.

27. **Cleaning during execution and after completion:**

Any damage done to the structures during execution of work should be made good by the contractor at his own cost. On completion of works, the contractor shall reinstate and make good at his own expense any property or land which might have been disturbed and/or damaged by his works. He should also clean the site as required during execution and fully clear the site after completion of all the works.

The contractor shall forward any usable material found during the course of maintenance at the work site or its vicinity to SMP, Kolkata store/yard, by obtaining prior permission of SMP, Kolkata official present at site & dispose of the debris beyond the port area all at his own expenses by his own transport and labour and clean out all part of the work and leave everything clean and tidy to the entire satisfaction of the Engineer.

28. **Protection of existing service:**

The contractor must pay full attention to the fact that the existing service facilities for SMP, Kolkata are not disturbed at any time due to storing of materials and rubbish and take every precaution to keep the entrance passage clear is the same are being used by the labourer. The contractor shall be held liable for all damage and inference to the existing service/structures caused by him in execution of works. Should any damage be done to the existing service/structures in general, the contractor shall make good the same and any further work considered necessary by the Engineer's representative without any delay otherwise the cost of such repairing shall be recovered from his running account bill for which Engineer's decision shall be final & binding.

29. **Safety Measures:**

The contractor shall adhere to safe construction practice, guard against hazardous and unsafe working conditions and follow all safety precautions for prevention of injury or accidents and safeguarding life and property. The contractor shall comply with relevant provisions of Dock Workers (Safety, Health and Welfare) Act - 1986 and Dock Workers (Safety, Health and Welfare) Regulation - 1990 and Safety Officer of the Trustees or Safety Inspectors shall be afforded all facilities for inspection of the works, tools, plant, machineries, equipment etc. wherever so required. The contractor shall further comply with any instruction issued by the Engineer, Trustees' Safety Officer, Safety Inspector in regards to safety which may relate to temporary, enabling or permanent works, working of tools, plants, machineries, equipment, means of access or any other aspect.

The contractor shall provide all necessary first aid measures, rescue and lifesaving equipment to be available in proper condition. The contractor shall provide **PPE's (Personal Protective Equipment)** such as, helmet, safety shoe etc. to all workers and shall also provide job specific PPE's e.g. safety belts for working at heights; protective face and eye shield, goggles, hand gloves for welding / gas cutting works; protective foot wear and gloves for hot works; facemasks, gloves and overalls for painting works, mixing and handling materials etc., as directed by the Engineer.

All safety rules shall be strictly followed while working on live electrical systems or installations as stipulated in the relevant safety codes. Use of hoisting machines and tackles including their attachments, construction tools, machineries and equipment shall comply with the relevant safety

codes. Before allowing workers in sewers, manholes, any duct or covered channel etc., the manhole covers shall have to be kept open and ventilated at least one hour in advance and necessary safety torches / lamps should be inserted first before allowing entry to the worker. Suitable hand gloves and other safety gear are to be provided by the successful contractor to the worker during handling / removing of slushes / sludge etc. without any extra cost. The contractor shall adopt all the above safety measures at his own cost.

The successful bidder shall also ensure that:

- (i) No damage is caused to plants and vegetation unless the same is required for execution of the project proper.
- (ii) The work shall not pollute any source of water / land / air surrounding the work site so as to affect adversely the quality or appearance thereof or cause injury or death to animal and plant life.
- (iii) His office & labour hutment etc. shall be maintained in a clean and hygienic condition throughout the period of their use and different effluents of the labour hutment shall have to be disposed of suitably.

30. **Forwarding of Materials:**

All dismantled unserviceable materials are to be disposed of beyond the office compound and in conformity with the Municipal/corporation Rule at the contractor's own cost. The contractor shall have to arrange transport for forwarding the saleable/ unusable/ defective/ usable materials that may be found during the process of execution of the work to the Trustees sales yard or any other site/ Godown including labour, transportations, loading, unloading all complete as per the direction of the Engineer.

- 31. SMP, Kolkata will issue necessary permits/ photo permits free of costs for all the personnel of the contractor or his sub-contractor who will be involved in the tendered work. On closure of the contract, all these permits shall have to be returned before finalization of the pending bills/ dues.
- 32. The Contractor shall arrange all necessary tools, tackles, equipment, measuring & testing equipment etc. required for commissioning of the work & maintenance work thereafter at no extra cost to SMPK.
- 33. The contractor shall start the work on "As-is-where-is" basis of the electrical installations.
- 34. The Contractor shall arrange the services, if any, required from indigenous/ foreign companies at no extra cost to SMPK.
- 35. The stores/equipment/plant/machineries shall strictly conform to the tender specifications and shall be capable of satisfactorily performing the duties intended for in the specification.
- 36. **Power Supply:** Electricity will be provided free of cost from nearest available source for carrying out the works, if necessary and wherever source of SMPK is available. If power source is not available, contractor has to arrange necessary provision at his own cost. SMPK will not bear any charges.

37. **Temporary Works:** The successful tenderer shall allow for providing labour and materials for the construction and removal of all temporary works, e.g. site office, site store, scaffolding, fencing, lighting, tube well and pipe lines etc. required for constructional purpose as well as for drinking water purpose of contractor's men, water supply, vats, platform, etc. as may be necessary for the successful execution, completion and maintenance of works without any extra cost to the Port Authorities and the rates should be quoted accordingly. No rent shall, however, be charged to the contractor for construction/erection of such temporary sheds and structures.
38. The contractor or his employees shall not use the premises allotted to him for any purpose other than for carrying out the work allotted as per the contract and shall not act in any manner as to cause any nuisance or annoyance to SMP, Kolkata or the participants /visitors at the port. In case, the staffs provided by the contractor to SMP, Kolkata are found to be indulging in any undesirable or unfair activities in the premises of SMP, Kolkata, the contractor will solely be responsible for all the consequences apart from the liberty of SMP, Kolkata office to lodge complaints before appropriate authorities.
39. The contractor shall have to arrange at his own cost for all necessary insurance coverage for men and materials to be used this contract.
40. SMP, Kolkata and the contractor will nominate a number of officers with their contact nos. indicating the chain of command at the field level that will operate within the terms of the contract to ensure minimum interruption, smooth functioning and optimum utilization of the electrical installations and the related distribution system.
41. The contractor shall conform to all the formalities as laid down in the Contract Labour (Regulation and Abolition) Act, 1970 and rules framed there under in vogue and subsequent amendments, if any, while executing the contractual works.
42. The Contractor shall supply two sets of properly bound operating, maintenance & fault finding manual to the Engineer along with three sets of complete general lay out, assembly drawings and illustrated spare parts catalogue, as applicable, for the stores/ plant/equipment/item.
43. The contractor shall try to ensure that all equipment covered under this tender must be available from indigenous sources and the tenderer/s shall confirm that spares will be available freely at least for a period of 5 years from the date of commissioning. No foreign exchange will be made available.
44. The tenderer/s shall submit manufacturers Test Certificates for all the bought-out items envisaged in the equipment.
45. **Agreement:** An Agreement shall have to be executed by the successful tenderer at his expense within 30 days from the date of issuance of Order letter on Non-judicial stamp paper of at least Rs. 100/- as per format enclosed with the General Conditions of Contract. All correspondence between the successful tenderer and SMP, Kolkata and all documents to be submitted from the date of opening of tender up to the issuance of work order should form part of the Contract Agreement.

46. For erection, if applicable, of the stores/ plant/ equipment/ machineries/ item, all connected work including grouting bolts, Base frame and Bed plate etc. shall be provided by tenderer. During erection all tools and tackles are to be provided by Tenderer. Tenderer should guard all equipment, etc. at site by his own men at his own cost. However, only space for keeping the materials for execution of the work may be provided by SMP, Kolkata on free of cost basis.
47. The firm /contractor shall at all times, during the continuance of agreement, obey and observe all direction and instruction given by the Engineer or his authorized officials.
48. The contract shall stand terminated automatically after completion of the work. The contract may be terminated at any time by SMP Kolkata, as per termination clause of GCC.
49. The responsibility in respect of the antecedents/Credentials of the persons engaged by the contractor rest with the contractor.
50. Operation and maintenance of all electrical installation in accordance with Manufacture's specification, instruction Manuals, IE Rules and other relevant rules are to be carried out.
51. The tenderer/s shall afford all facilities to the Engineer or his representative at their own arrangement for inspection and demonstration of the equipment, quoted for.
52. The tenderer shall along with the tender submit the detailed description of the equipment quoted for and enumerate the aspect of operation and maintenance facilities and shall enclose necessary literature.
53. The equipment shall be supplied and delivered at the specified site by the contractor at his own cost.
54. The contractor shall comply with the provisions of all the Acts, Laws, any Regulation or By- Laws of any Local or other Statutory Authority applicable in relation to the execution of the subject works, such as following laws, but not limited to the same. The contractor shall be deemed to indemnify and keep indemnified SMPK from and against all actions, claims, demands and liabilities whatsoever under and in respect of the breach of any of the provisions of any law, rules or regulations having the force of law, in relation to the execution of the subject works.
 - a) Minimum Wages Act, 1948 (Amended),
 - b) Employees Liabilities Act, 1938.
 - c) Industrial Dispute Act, 1938 and 1940.
 - d) The Contractor Labour (Regulation & Abolition) Act, 1970 or statutory amendments and modification thereof, any other laws relating thereto and Rules made there under from time to time. It will be the duty of the contractor to abide by the provisions of the Act.
 - e) Workmen Compensation Act, 1923 as amended by Amendment Act No.65 of 1976,
 - f) The Personal Injuries (Compensation Insurance) Act, 1963 and any modifications thereof and rules made there under from time to time. The contractor shall take into account all the above said financial liabilities in his quoted rates and nothing extra, whatsoever, shall be payable to him on this account,
 - g) EPF & MP Act 1952 and as amended from time to time.

h) The Building and Other Construction Workers (Regulation of Employment & Conditions of Service) Act, 1996 etc.

55. All payments like refund of Earnest Money, Security Deposit and all bills of contractors' will be paid through ECS. For this purpose, following details are to be furnished by the tenderer:

- i. Name of the bank :
- ii. Name of the Branch with Code No. :
- iii. Bank account no. :
- iv. Type of account : Saving/Current/Cash Credit
- v. MICR No :
- vi. IFSC Code :

The account shall have to be with a bank within the ECS zone prescribed by the RBI.

56. The successful tenderer shall have to supply materials and execute the work as per Technical Data provided in NIT.

57. All materials are to be supplied progressively as required at site subject to prior approval of Engineer or his representative.

58. During course of examination of Techno-commercial Bid, the bidders if asked for shall furnish any or additional documents for the purpose of evaluation of his/their bids. The price part of bid of those bidders who qualifies in the techno-commercial part as per qualifying criteria of the NIT shall be considered for price evaluation as per terms of tender document.

59. **Priority of Contract Documents:**

The several documents forming the Contract are to be taken as mutually explanatory to one another, but in case of ambiguity or discrepancies, the same shall be explained and adjudicated by the Engineer of the Contract (EoC), who shall thereupon issue to the Contractor instructions thereon which will be final and binding on the Contractor. Unless otherwise provided in the Contract, if the stipulations in the various documents forming a part of the Contract are found to be in variation in any respect then, unless a different intention appears, the provision(s) of one will override others (but only to the extent these are at variance) in order of precedence as given in the list below i.e. a particular item in the list will take precedence over all those placed lower down the list:

The following documents of the Contract Agreement will be in the following sequence:

- a) Letter of Intent (LoI) / Work Order
- b) Bill of Quantities
- c) Scope of work, Technical Specifications, Drawings
- d) Terms of Payment
- e) Instructions to the Tenderer & Techno-commercial Terms and Conditions
- f) Special Conditions of Contract
- g) General Conditions of Contract
- h) Any other document(s) forming part of the Contract.

60. The staff provided by the contractor to SMP, Kolkata are in case found to be indulging in any undesirable or unfair activities in the premises of SMP Kolkata, the contractor will solely be responsible for all the consequences apart from the liberty of SMP, Kolkata office to lodge complaints before appropriate authorities.
61. **Custodian Certificate:** After delivery at site the supplied materials are to be verified by SMP, Kolkata Officials and the custodian certificate is to be issued by the Contractor in this regard for consumption of such materials in the instant work.
62. **Termination of contract and Risk Purchase Clause:** Will be applicable as per **clause No. 8** of SMP, Kolkata's General Conditions of Contract.
63. **Special / Additional Security** may be arranged by the contractor at the site at no extra cost to SMP, Kolkata over and above the General Security provided within SMP, Kolkata premises by Port Security Authority. SMP, Kolkata will provide general security of the entire working area as per **ISPS (International Ship and Port Facilities Security)** code. Contractor shall have to arrange security for their equipment/office/stores etc. at their own cost and responsibility.
64. **Good Conduct:** If a bidder has had previous history of "**defined misconduct**" (such as banning from/ by any government sector, premature termination of a contract solely on bidder's fault, criminal case pending against the company or its owner/ current director filed by a government entity etc.), his offer is liable to be ignored.
65. Whenever instances of submission of fraudulent/ misleading document(s) are detected by the Port Authorities, appropriate penal action will be unleashed. It must be realized that submission of fraudulent/ forged document(s) to a Government department is not only a Civil/contractual offence, but might attract Criminal Culpability under Indian Penal Code. Competent Authority will take Range of punitive actions as per guidelines in case of detection of such fraud/forgery/deliberate misrepresentation of documents during the bidding process or afterwards.
66. **Preference to Make in India:** The policy of the Govt. of India to encourage "Make in India" and promote manufacturing and production of goods and services in India as per the "Public Procurement (Preference to Make in India), Order 2017- Revision regarding", circulated by the Department of Promotion of Industry and Internal Trade, Ministry of Commerce and Industry, Govt. of India vide Order No. P-45021/2/2017-PP (BE-II) dated 04.06.2020; subsequently revised vide Order No. P-45021/2/2017-PP (BE-II) dated 16.09.2020 will be applicable for this tender.
67. **Bidder from a country sharing land border with India:** Any bidder from a country which shares land border with India will be eligible to bid as per the OM No. F6/18/2019-PPD dated 23.07.2020 circulated by the Department of Expenditure (Public Procurement Division), Ministry of Finance, Govt. of India.
68. **Import from Prior Reference countries:** Attention is invited to the provision contained in Ministry of Power, Govt. of India's Order no. 25-11/06/2018-PG dated 02.07.2020 which reads that "Any import of equipment/components/parts from "prior reference" countries as specified or by persons owned by controlled by or subject to the jurisdiction or the directions of these prior

reference countries will require prior permission of the Govt. of India.” It is hereby clarified that for the purpose of aforesaid stipulation, “prior reference” country means a country which shares a land border with India. Attention is further invited to Ministry of Power, Govt. of India’s Order no. 25-4/1/2019-PG-Part (1) dated 02.07.2020 wherein it is clarified that “Notwithstanding above, it is further clarified that the restrictions related to “prior reference” countries will not apply in the following cases:

- A. The bidders/imports from those countries (even if sharing a land border with India) to which the Government of India has extended lines of credit or in which the Government of India is engaged in development of projects. Updated lists of countries to which lines of credit have been extended or in which development projects are undertaken are given in the website of Ministry of External affairs.
- B. Bona fide procurements made through GeM without knowing the country of bidder till the date fixed by GeM for the purpose.
- C. Bona fide small procurements, made without knowing the country of bidder and
- D. In projects which receive international funding with the approval of the Department of Economic Affairs (DEA), Ministry of Finance, the procurement guidelines applicable to the project shall normally be followed.”

69. **TERMS OF PAYMENT:**

The Bills should be submitted by the contractor in triplicate to the Office of Superintending Engineer (Electrical) or as per instruction, which are to be paid as follows:

A. **Electrical/ Electronic Part:**

- (a) 50% of related BoQ item rate will be paid against supply and delivery of **major items** of the said BoQ on production of proper purchase documents/delivery challans at site together with required Test Certificates etc. from appropriate authorities including inspection certificate of SMPK’s representative, as applicable and on submission of Custodian Certificate.
- (b) 30% of related BoQ item rate will be paid against installation and commissioning of **major items**.
- (c) 20% payment on commissioning, testing and handing over of the entire work after completion as per NIT.

B. **Civil Part:**

On account payment to the Contractor shall be arranged as and when required at the discretion of the Engineer on the basis of measurements of completed works at the quoted rates in the Bill of Quantities. The terms of payment shall be in accordance with Clause-6 of the General Conditions of Contract. The Bills should be submitted by the contractor in triplicate to the Office of Superintending Engineer (Netaji Subhash Dock) for Civil portion of work with necessary documents in original.

C. **CAMC Part**

- i. Payment shall be made on monthly basis. Bill is to be completed in all respects having proper certification of the work carried out during the billing period.
- ii. Payments to the labourers involved in the works are to be paid by the contractor as per “Minimum rates of wages” fixed by Central Government or State Government (whichever is higher), which are revised from time-to-time including related EPF & ESI and other statutory benefits, as applicable.

Each bill is to be accompanied with joint measurement sheet up to the date of for which the particular running account bill is submitted, duly signed & stamped by contractor along with their authorised representative. **Electrical portion of work is required to be certified by the supervisor with valid SCC number engaged by the contractor.**

The bills of the contractor will be processed for payment after deduction of all statutory taxes and duties as per clause no. 3.4, 3.5 & 3.6 of the 'General Conditions of Contract' Forms and Agreement. GST as applicable will be paid as per prevailing rates. In lieu of deduction of S.D., Performance Guarantee is to be submitted as per relevant clause of 'Performance Guarantee' & GCC.

The successful tendered shall get themselves registered under SAP module of SMPK, as per prevalent terms & conditions, for processing of bill for payment.

70. **Taxes & Duties:** The rate quoted by the tenderer should be considered to complete the work in all respect and should be exclusive of GST. GST will be paid extra at applicable rates at the time of supply of goods and services.

Relevant GST Clause:

- I. Supplier/Service Provider to confirm that the GST amount charged in Invoice is declared in its returns and payment of taxes is also made.
- II. The supplier/service Provider agrees to comply with all applicable GST Laws, including GST acts, rules, regulations, procedures, circulars and interaction there under applicable in India from time to time and to ensure that such compliance is done within the time prescribed under such laws. Supplier/Service Provider should ensure accurate transaction details, as required by GST Laws are timely uploaded in GSTN. In case there is any mismatch between the uploaded in GSTN by supplier/service provider and details available with SMP, Kolkata, then payment to supplier/service provider to the extent of GST relating to the invoice/s under mismatch may be retained from due payment till such time SMP, Kolkata is not sure that accurate tax amount is finally reflected in the GSTN to SMP, Kolkata's account and is finally available to the SMP, Kolkata in terms of GST Laws and that the credit of GST taken by SMP, Kolkata is not required to be reversed at a later date along with applicable interest.
- III. SMP, Kolkata has the right to recover mandatory loss including interest and penalty suffered by it due to any non-compliance of tax law by the supplier/service provider. Any loss of input tax credit to SMP, Kolkata for the fault of supplier shall be recovered by SMP, Kolkata by way of adjustment inconsideration payable.
- IV. Supplementary invoices/debit note/credit note for price revision to enable SMP, Kolkata to claim tax benefit on the same shall be issued by you for a particular year before September of the succeeding financial year.
- V. The purchase order/work order shall be void, if at any point of time you are found to be a blacklisted dealer as per GSTN rating system and further no payment shall be entertained.

72. SMPK reserves the right to include/exclude/drop any part of work or reduce/extend the duration of work as per actual condition prevalent during execution. Payment will be made as per actual work done.
73. **Rate for Payment against Extra Items:**
For any unforeseen work not covered under the Bill of Quantities and Condition of Contract, depending on contingent situation at site, if required for successful completion of the work, extra items have to be carried out by the Contractor.
- A. For Civil related work, if those items are already available in Authority' Schedule of rate, payment will be made on the basis of Authority' Schedule of rate; including surcharge in force at the time of acceptance of the tender, if any adopted by the Authority with due regard to the accepted contractual percentage, if any, thereon, otherwise, if the rates are not available in the SMPK Schedule of Rates, then the Special Rates will be prepared as follows:
- I. The rate of payment of work involving labour & material shall be fixed on the following basis.
- a. Cost of materials consumed including transport and wastage, plus
 - b. Cost of labour actually engaged in the works, plus
 - c. Taxes and Duties as applicable, plus
 - d. 16 % on the aggregate of (a) and (b) towards overhead, profit and cess.
- II. For any work involving only labour, rate of payment shall be fixed on cost of labour actually engaged in the work plus 11 % towards profit and cess.
- B. For items associated with electrical portion of work, the successful tenderer has to supply the materials and complete the work in all respect to the satisfaction of Engineer or his representative. Payment of additional work (not covered in BOQ) will be made as per PWD Schedule of Rate (SoR) and if the rate is not available in the said PWD SoR, CPWD schedule of rate will be followed. If the said rate is not available in any of the two SoR, payment for supply part will be made as per actual tax invoice plus 11% profit and cess.
74. **Disparity in Quoted Rate/Amount:** If there is any disparity between the quoted rate in percentage and the Tender Amount, the rate quoted in percentage shall prevail as the rate quoted by the tenderer and the Tender Amount shall be derived by adding/subtracting (as the case may be) this percentage with/from the Estimated Value put to tender. Similarly, in case of disparity between the rate quoted in figures and in words, the rate quoted in words shall prevail.
75. **Settlement of Disputes:** If a dispute of any kind whatsoever arises between the Employer and the Contractor in connection with or arising out of the contract or the execution of the works, the same shall be dealt as per relevant provisions of the General Conditions of Contract. However, in such cases of dispute, question or difference either during the execution of the work or any other time as to any matter or thing connected with or arising out of this Contract, the decision of the Engineer, SMP, Kolkata, thereon shall be final and binding upon all parties.
76. **Port Area Obligations:**
The Dock area is a custom bounded area and as such the contractor shall comply with all regulations of the Port and Custom authorities and those that may be imposed from time to time in respect of the transit of all of contractors' plants, vehicles, materials, and staff in the area.

Whenever regulations so require, permits shall have to be obtained for such transit of contractor's plants, vehicles, staff and workmen. The contractor shall instruct his staff and workmen to comply with all requirements in this "Restricted Area". The contractor shall suitably fence the area that may be allotted to him inside the "Bounded Area" of the port for stores and other requirements to the full satisfaction of the Port and Security Agencies. The contractor shall, abide by all the regulations and rules of Syama Prasad Mookerjee Port, Kolkata and those that may be issued from time to time without any extra cost to the SMP Kolkata.

77. **CONTRACT LABOUR LAWS:**

The contractor shall be required to comply with the Minimum Wages Acts, 1948, Employees Liability Act, 1938, Industrial Disputes Act, 1947, and The Contract Labour (Regulation and Abolition) Act, 1970, or statutory amendments and the modifications thereof, any other laws relating thereto and the rules made there under from time to time.

- (a) Payment to the labourers to be made as per the minimum wage rate fixed by Chief Labour Commissioner, Govt. of India or Govt. of West Bengal, whichever is higher and revision from time to time along with EPF / ESI and other statutory benefits, as applicable.
- (b) It will be the duty of the contractor to abide by the provisions of the Act, Ordinances, Rules, Regulations, By-laws and Procedures as are lawfully necessary in the execution of the works. The contractor will be fully responsible for any delay / damage etc. and keep the Engineer indemnified against all penalties and liabilities of any kind for non-compliance or infringement of such Acts, Ordinances, Rules, Regulations, By-laws and Procedures.
- (c) The contractor shall indemnify the Syama Prasad Mookerjee Port, Kolkata against payment to be made under or for the observance of the laws aforesaid without prejudice to his right to claim indemnity from his sub-contractor. The aforesaid regulations shall be deemed to be a part of this contract and any breach thereof shall be deemed to be a Breach of Contract. It will be obligatory on the part of Contractor to obtain necessary Labour Licence from the Competent Authority for deploying requisite Nos. of labours in the work and submit to the Engineer-In-Charge prior to commencement of the work.
- (d) The contractor shall also be required to comply regarding 'Workmen Compensation Act, 1923 as amended by Amendment Act No. 65 of 1976'. In addition to the above, the personal Injuries (Compensation Insurance) Act, 1963 and any modifications thereof and rules made there under from time to time. The contractor shall take into account all the above said financial liabilities in his quoted rates and nothing extra, whatsoever, shall be payable to him on this account.
- (e) The contractor shall indicate maximum number of workmen to be engaged on any day for execution of the work in the appropriate place in the **ABSTRACT FORM OF TENDER** & he shall have to obtain a regular / permanent license as per sec 12(1) of the Contract Labour Act. Further, whenever a contract work has commenced or completed, the contractor has to intimate the same to the Assistant Labour Commissioner (Central) / Labour Enforcement Officer (Central) in Form IV-A, within 15 days of such commencement or completion.
- (f) The contractor has to arrange for displaying the name of the Regional Labour Commissioner (Central), Asst. Labour Commissioner (Central) & Labour Enforcement Officer (Central) at his worksite (s). The contractor shall inform the Principal Employer the date, time & venue of disbursement to be made by him to his workers.
- (g) The successful bidder shall also be required to put up a notice at the site of work mentioning the date, time & venue of disbursement to be made by him to his workers and he or his authorized representative

shall have to be present during period of disbursement.

- (h) **Escalation /de-escalation clause:** Syama Prasad Mookerjee Port, Kolkata will reimburse the proportionate escalated / de-escalated minimum rates of wages to the contractor including ESI / EPF and Administration Charges on differential amount due to change in rate of minimum wages keeping aside other components like his profit, overhead charges, etc. Such escalation is only applicable for Part-I of BOQ of the tender for the nos. of labourers certified to be present during any period within the pendency of the contract in the following formula:

Escalation Amount for any period = (Rate at which the particular category of labourers has been paid during the period – the prevailing rate for the particular category of labourers as on the date of opening of Techno-commercial Bid) x nos. of labourers of that particular category certified to be present during the period. Similarly, if the rate at which the particular category of labourers has been paid during the period is lesser due to reduced minimum wages than the prevailing rate for the particular category of labourers as on the date of placement of order letter, the resulting amount as calculated in the above formula shall be deducted from the contractor's bill.

78. **Bonus payment:** The Contractor shall comply to the Employees' Bonus Rules & to pay Bonus once a year to his workmen accordingly, for which no extra payment shall be made to the Contractor.
79. All other terms and conditions excepting those mentioned separately shall be governed by SMP, Kolkata's General Conditions of Contract.

SCOPE OF WORK AND TECHNICAL SPECIFICATION

Notice Inviting Tender No.: SMP/KDS/Mech/C/ADV/727 dated 05.05.2026

1. Preparation of design of Command Control Center having CCTV surveillance system, lock gate automation system, NSD smart light system, solar system, Substation SCADA system, public address system (in 8 Nos. of NSD Gates), video conferencing system (1 in command control center, 5 nos. in M&EE Dept. of Subhash Bhawan-1 each in conference room & HoD room, 3 nos. in Dy. HoD rooms), Environment Monitoring system of NSD. One display unit will be utilized for surveillance. The design includes both hardware and software architecture. The architecture should be scalable for addition / deletion of new CCTV cameras & other facilities viz. RFID system, Biometric Attendance, Vessel Traffic Management System, Port Operation Management System, Drone System etc. Existing display units will be reutilized for video conferencing system.
2. Arrangement of vetting of above design drawing from any Govt. Institute/Organization.
3. Supply, installation, testing & commissioning of video wall, controller, server, display console, switch, camera, access control, environment monitoring sensors and all other accessories along with relevant software(s).
4. Design, supply, installation, testing and commissioning of command control room related civil, electrical, electronic work as per site requirement.
5. Audit of installed software/hardware from any valid CERT-In Empaneled Information Security Auditing Organization for VAPT assessment.
6. Submission of 3 set '**As Built Drawing**'.
7. Comprehensive maintenance of above Command Control Center for a period of four years post 1 year warranty as per instruction of Engineer or his representative.

Any work, considered required by the contractor and not mentioned hereunder, for successful completion of the project, is to be included in the item of bill of Quantity suitably which should be finalized in the pre bid meeting. The intending tenderer shall inspect the site of work in consultation with officials of SMP, Kolkata and acquaint himself with the nature of Work before preparing his tender. His attention is drawn to the Clause No.3.1 of the General Conditions of Contract in this regard. No excuse on ignorance as to the site General Conditions will be entertained. Unless otherwise specified, the work to be provided for by the contractor shall include but not be limited to the following:

- a) Provide all materials, supervision, services, scaffolding and temporary lighting as required for work purposes etc.
- b) Prepare and submit for review and assessment to the Engineer working drawings showing how the work is actually going to be done as may be required by him.
- c) The contractor shall carry out the work in phased manner as per availability of the site so that normal day-to-day activities are not affected for which no such extra payment will be entertained.

The work shall be carried out as per Indian Electricity Act, 2003, Central Electricity Authority (Measures relating to safety & electricity supply) Regulation, 2010 (and latest amendment) with latest revised IS code of Practice and relevant portion of National Building Code particularly with respect to

fire safety and also code of practice for fire safety of buildings (general): Electrical Installations, IS: 1646: 1997 and code of practice for earthing IS 3043:1987 and Dock Safety Rule & Regulation. The Contractor should arrange, at their own cost, all necessary tools, tackles, lifting machineries, transport etc., required for the execution of total work. They should also provide all materials, supervision, services, scaffolding and temporary lighting as required for work purpose etc.

Details of Manpower for Operation & Maintenance Work:

The contractor has to deploy necessary manpower which shall comprise one no. highly Skilled Technician and one nos. Un-skilled labours on all days in general shift.

The above man power shift timing may be rearranged as per the discretion of Section in Charge or his representative.

Statutory Weekly Roster Off day is to be provided to all workmen. But, required numbers of relievers are to be made available to compensate for any absence due to leave/sick/ Roster off etc. At no stage, short fall of staff will be accepted.

The qualification & experience of O&M work Persons will be as mentioned below:

Sl. No.	Designation	Qualification	Experience	No. of Person per day.
i.	Highly skilled technician	Diploma in Electronics/ Computer Science/ IT Engineering	Minimum Five-year working experience in IT sector.	1
ii.	Un-skilled labour	Stout body & good physique		1
			Total	2 Nos.

Penalties during O&M Work:

(a) Non availability of minimum strength of man power shall attract a penalty as per the table furnished below:

Sl No	Level of workmen	Penalty / man/shift
i.	Highly-Skilled Technician	1.25 times of prevailing daily wages
ii.	Un-skilled Labour	

(b) The AMC should be Comprehensive in nature. The maintenance includes routine & periodic maintenance, overhauling, breakdown maintenance, and repairing or replacement of defective components including supply of spare parts & all consumables. The Down-Time of the system/components should not be more than 24 hours (01 day) without any valid reason acceptable to Engineer/ his representative.

If the Contractor fails to restore the system/components within permissible down time or complete the maintenance work within the stipulated dates as communicated by the Engineer of the Contract/ his representative, the Contractor shall pay compensation per day @ 0.1% of total AMC value to the Port Authority as a penalty provided always that the amount of such compensation shall not exceed 10% of the total AMC value of work.

TOOLS, TACKLES and CONSUMABLES:

A) Required tools and tackles proposed to be used for execution of work mentioned in the tender including safety accessories are to be provided by the firm at his cost.

B) The Contractor shall make available the various tools and tackles that are required for operation and maintenance of the system/equipment.

C) The following are the minimum tools and tackles that are required to be made available at site all the time:

a. Tools:

- i. Tool Kit consisting of Screw Driver Set, Nose Pliers, and Cutting Pliers, Test lamp, Tester, Screw Driver, Adjustable Spanner, Hacksaw and Frames.
- ii. Digital clamp-on multi-meter.
- iii. Electrical Portable Drilling Machine (including Bits).
- iv. Emergency Light.
- v. Vacuum cleaner.
- vi. Laptop with required updated software
- vii. Network Tester

b. Consumables: All consumables as per the requirement is under the contractor's scope.

Technical Specification

1. **Display System:** The display system shall have at least 2 Nos. Active LEDs, 4nos. Motorised Display Console, Minimum 1 no. 16 Channel Input Video Wall Controller, 1no. ICCV Video Wall Controller, HDMI cable and other accessories as required. The minimum technical specification of above items is:

A. Active LED Display (MAJOR ITEM):

Sl No	Parameter	Specifications
1.	Video Wall Size	width 4.8m and height 2.7 m or more
2.	Video Wall Technology	Micro LED (Indoor) / Flip Chip (Chip On Board) Technology with a LED lifetime of minimum 100,000 hours or better
3.	Surface Coating	Anti Finger-print Surface Coating
4.	Cabinet Depth Size	Less than 44 mm
5.	LED Panel OR Cabinet Size	600mm x 337.5mm
6.	LED Panel OR Cabinet Weight	Max 8 Kg
7.	Total Resolution	3840 x 2160 pixels
8.	Pixel Pitch (mm)	Less than equal to 1.25mm
9.	Pixel Density	640000 pixel/ m2 or higher
10.	Processing	20 Bit or Higher
11.	LED Configuration	Micro LED (Indoor) / Flip Chip (Chip On Board) Technology with a LED lifetime of minimum 100,000 hours or better
12.	Pixel per Tile	Minimum 480 x 270 px (HxV)
13.	Cabinet Aspect Ratio	16:9
14.	Material	Die -Cast Aluminum/Magnesium
15.	Brightness Control	Manual / Automatic
16.	Color Temperature	Between 3200K - 9300K adjustable
17.	Video Frame Rate	Minimum 60Hz or better
18.	Operating Hours	24 x 7 x 365
19.	Operating Temp Range	0 ~ +40° C / Humidity 10 ~ 80% RH
20.	Brightness	brightness Adjustable upto 1200 cd/m ² or better
21.	Brightness Uniformity	Minimum brightness uniformity should be 95%
22.	Colors	280 Trillion Colors or higher
23.	Contrast	100000:1 or better
24.	Power Input	100 to 240 V (AC)
25.	Power Saving	Power Saving Standby Mode with 5 watt or less per cabinet
26.	IP Protection	Min IP50 or better
27.	Service access	Maintenance and installation of video wall should be from FRONT only.

28.	Certifications (Bidder to provide proof of certifications)	Video wall should have all safety certificates: Minimum [CE/EMC, FCC, UL] or BIS
29.	Serviceability	(1) OEM should have a support centre in India. (2) 5% Spare LED Modules along with Cards to be supplied in Spares to be kept at site.
30.	The cabinet shall have the following power consumption	Input Power <Max> : 300 W / Sq. Mt Input Voltage : 100 to 240 VAC Frequency : 50 - 60 Hz
31.	The cabinet shall support sleep mode for power consumption saving	Yes
32.	The cabinet shall be supported remote control for easy operation	Yes
33.	All the cables are connected from inside of the cabinets, no cables exposed outside the cabinet	Yes
34.	Country of Origin of LED Screen, LED Controller & LED Modules needs to be Declared	OEM and Product should not be from Countries Sharing Land Border with India. Valid Declaration needs to be submitted
35.	Warranty & Operation Compatibility	On-Site warranty of installed devices is for 2 years from the date of installation. To avoid any compatibility mis-match and long-term warranty support for 2 years LED Video Wall, LED Video Wall Mount, LED Manager, LED Controller and Software should be from same OEM
36.	A tender-specific Manufacturer Authorization Form (MAF) from the OEM is required from the bidder along with Techno-Commercial Bid.	

B. 16 Channel Video Wall (MAJOR ITEM):

Sl No	Specifications
1.	Support 4K signal acquisition and output
2.	16 HDMI inputs plus 16 HDMI outputs
3.	Support custom resolution output
4.	Support C/S client, browser and support API for automation
5.	Support screen group management
6.	Support HD/4K base map, subtitles
7.	Flying mouse control window movement, zoom
8.	Touch LCD screen function for preset management
9.	Support HDMI input audio capture
10.	Video Wall Control - Intel Xeon i7 core Processor
11.	32 GB RAM

12.	RAID 1, 240 x 2 GB SSD or better	
13.	Gigabyte Network Port	
14.	Preview card	
15.	9U Chassis , with minimum 19 slots in single controller	
16.	Redundant Power Supply	
17.	Wall Management Software with Perpetual Licenses	
18.	Any Source on Any Display	
19.	Source Overlapping	
20.	PIP and POP	
21.	Should be able to view Preview Remotely	
22.	Auto Source Detection	
23.	Ticker Scrolling Text	
24.	Unlimited Layouts without any restriction on display or multiple screens	
25.	up to 16 sources in single display	
26.	up to 16 Layouts can be Controlled by Crestron/ AMX Touch Devices	
27.	Multi Video wall Supports	
28.	Inbuilt Audio card with Mute/Unmute option on sources	
29.	Inbuilt Touch panel LCD on controller for layout management	
30.	Should be able to Annotate on live sources on video wall	
31.	Scheduling of Layouts	
32.	Supports Control by Web Browser	
33.	Support 4K Resolution Base Image on Whole Video Wall	
34.	Expandable up to 128 Inputs / outputs without adding external chassis	
35.	Expansion of Outputs without Loop in Loop out	
36.	User Management With Authentication, up to 3 Levels Admin, Technical officer, User	
37.	Custom Resolution for All types of display technology	
38.	Should be able to use Tablet PC to control Layouts	
39.	- Hot Swappable Graphic Card, Fan and Power supply	
40.	24 Slot PCI Express slot Chassis with capabilities to add Input and Output using any slot	
41.	Video wall controller with an inbuilt touchscreen interface	
42.	Luminance	300nit
43.	Certification	BIS, ISO, MII, ROHS
44.	A tender-specific Manufacturer Authorization Form (MAF) from the OEM is required from the bidder along with Techno-Commercial Bid.	

C. ICCC Video wall (MAJOR ITEM):

Sl No.	Specifications
1	Measures: 19", 4 HE
2	Intel® Core™ X-series Processors (16-core above)
3	Processor: Intel Xeon Gold or more
4	Memory: 64 GB DDR5 ECC RAM
5	Hard disk: 480 GB SSD x 2, Raid 1 Hot Swappable Expandable up to 1TB
6	Dual Redundant Power supply

7	OS Supports 64-bit Operating Systems Windows 10 LTSC IOT
8	Multi GPU Support
9	Storage RAID 0, 1, 5, 10
10	Intel® I210-AT, 1 x Gigabit LAN Controller(s) - Intel® I219-LM , 1 x Gigabit LAN Controller(s)
11	8 x USB 3.1 Gen 1 port(s) (6 at back panel, 2 at mid-board)
12	Available Inputs should be - VNC (Remote Desktop)
13	Browser Based URL Sources
14	04 HDMI Sources (1920x1080)
16	IP Streaming , Dashboards
17	4 output each port with 4K resolutions
18	Wall management should be browser based
19	Wall Management software for 24/7 Running Critical applications
20	Should not be Restricted to one type of screen technology, should be able to use Active LED, DLP Cubes, LCD displays, OLED, TFT and Cube Tiles
21	All the licenses should be included
22	Software should be able to control wall with single click of button from web url
23	Network based Inputs supports like H.264 video streams up to 8 simultaneous streams, Virtual Network Computing screen graphics simultaneous streams, Web URL windows simultaneous streams
24	Should be able to Drag and Drop video and data windows anywhere on the display wall
25	Should be able to Schedule, Save, Recall layouts appropriate to for specific situations, users or time of day
26	Should be able to control Telnet API for external command & control
27	Should have Offline and Online layout and preset management
28	Browse-based User Interface for Layout Management
29	images, video, live IP video stream (RTSP) Contents, RSS Feeds, Ticker
30	Remote Desktop over IP (VNC), web page and hardware input with Volume Control and Mute / unmute
31	Online Realtime Layout Creation, Scenarios (Playlists), Display-Specific
32	Should be able to Easily integrate native Windows applications like VNC client, IP video as "sources"
33	Real Time Source Management on Wall. Layout Management with Scheduling of all presets
34	Should have Ticker for scrolling text across the video wall can be placed anywhere on the wall or on specific source
35	Should have Hot keys to Launch sources and presets
36	Should be to Zoom In web sources, Smooth password save for Power BI and Tableau Dashboards
37	Should have free canvas option to place any content anywhere on display
38	Can annotate on live content bi-directionally with multiple users, Draw Shapes and White Boarding, Take Screenshot
39	Should have audio support with mute option

40	Should be able to do user management and define who can access sources, layouts etc.
41	AI Inbuilt which helps analysis and summarize data from dashboard, AI can be customized and integrate with camera for face detection, people counting etc.
42	A tender-specific Manufacturer Authorization Form (MAF) from the OEM is required from the bidder along with Techno-Commercial Bid.

D. HDMI Cable:

Sl No	Specifications
1	HDMI: Frame rate- 24, 25, 30, 50, or 60 fps; Chroma sampling- 4:4:4, 4:2:2, or 4:2:0; Color bit depth- 8 bits per colour; Signal type HDMI 2.0; Max. Video data rate 18.0 Gbps (6.0 Gbps per colour). Resolution range: Up to 4K @ 30 Hz (4096x2160) or UHD @ 30 Hz (3840x2160), 8 bit colour depth, max. 10.2 Gbps data rate. Male/Female Connector: Conductor Gauge-26AWG Tinned Copper Gold plated connector; Rating-UL VW-1 (Flame rate), CSA.

E. Motorized Display Console (MAJOR ITEM):

Sl No	Parameter	Specifications
DISPLAY		
1	Panel Technology	Edge LED Technology
	Display Area (mm)	476.64(H) x 268.11(V)
	Size	21.5"
	Pixel Pitch (mm)	0.248 x 0.248
	Screen Aspect	16:9
	Native Resolution	1920 x 1080
	Contrast Ratio	5000:1 (Typ)
	Brightness cd/ m2	300 (Typ)
	Colors	16.7M Colors
	Life Time (hours)	50,000
	Protective Glass	3mm with black border
CONNECTIVITY		
2	Analogue RGB Input	1xDB15
	Digital Input	1xDVI-D
	RS-232 Control	1xDB9
	RS-485/422 Control	2xRJ45 (In/Out)

CONTROL		
3	Remote Control	1xRS232, 1xRS485/422
	Manual Control	2 Pushbuttons (Up/Down), 2 Pushbuttons (Tilt adjustment)
ELECTRICAL		
4	Power Adaptor	170 ~ 240VAC to 12VDC, 47 ~ 53Hz
	Power Consumption	30W
	Energy Management	VESA DPMS
MECHANICAL		
5	Screen (mm)	545 x 337
	On-table Cover Plate (mm)	639 x 105
	Under-table Housing (mm)	622.5 x 623.5 x 93.5
ENVIRONMENTAL CONDITIONS		
6	Operation Temperature	0° to 50°
	Storage Temperature	-20° to 60°
	Operation Humidity (%)	5 to 90
	Storage Humidity (%)	5 to 90
OTHERS		
7	Certifications	[CE; RoHS, EAC, IECEE]/ BIS
	Plug & Play	VESA DDC2Bi
	Accessories	Mains Power Cord, User Manual

2. **Network Infrastructure:** The Network Infrastructure shall have at least (a) 2 Nos. Layer 3 Switch, (b) 4 Nos. Access Point, (c) 4 Nos. 24 port CAT6 Patch Panel, (d) 2 Nos. 24 Port Fiber Optic Rackmount LIU loaded with SC adapter plates, Splice Tray and SC Pigtails, (e) CAT6 UTP Cable, (f) CAT6 U/UTP Patch Cord, (g) 12 Core Single Mode Armoured OFC Cable, (h) SC to LC Duplex Fiber Optic Patch Cord, (i) LC to LC Duplex Armored Fiber Optic Patch Cord, (j) 1 Set. Real-time Controller, (k) 6 Nos. 2 MP Fixed Dome Camera, (l) 2 Nos. Access Control, (m) IP Remote Microphone, (n) Horn Speaker, (o) 1 Nos. Environment Monitoring Sensor & Controller, (p) 2 Nos. KVM Switch, (q) 6nos. VC camera with 12X Zoom, (r) 6nos. Digital Signal Processor, (s) 20nos. Wireless Conference Gooseneck Microphone, (t) 10nos. speaker amplifier, (u) 6nos. wireless transmitter and (v) 6nos. Battery Charging Unit as per site requirement. The minimum technical specification of above items is:

A. Layer 3 Switch (MAJOR ITEM):

Sl No	Parameter	Specifications
1	Physical Interfaces	The switch should have 48 x 1G Base-T Copper PoE+ Ports, 4 x 1G/10G Base-X Fiber SFP+, Ethernet: Out-of-band 1G port , Console: USB-C, Storage: 2 x USB-A, Full-width 1U rack mount
2	CPU / Memory	Must have or better :- CPU: Quad-Core Cortex-A57 ARMv8 1.8GHz 64-bit, RAM: 2 GB DDR4, Packet buffer memory: 16 MB, Flash: 512MB NAND 8-bit ECC
3	Performance	The switch must have the followings :- Stack height: 8 switches, Switching fabric: 128 Gbps Line-Rate, Throughput: 95.2 Mbps, Forwarding mode: Store-and-forward, 436 Watt PoE Budget, Address database size: 16K MAC addresses (48-bit MAC address), Number of VLANs: 4,093 (IEEE 802.1Q) simultaneously, Number of multicast groups= 2K IPv4, Number of multicast groups= 2K IPv6, ARP/NDP= 2K, Number of LAGs (802.3ad): 128 LAGs with up to 8 ports per group, Number of hardware queues for QoS: 8 (Standalone), Number of routes: 512 IPv4 Unicast routes, Number of routes: 256 IPv6 Unicast routes, Modular PSU for RPS, Jumbo frame support: up to 12K packet size, Mean time between failures (MTBF):7,82,300 hours or higher
4	L2 Service	The switch should have the followings:- Protocol based VLAN, IP Subnet, IPX, ARP, Subnet based VLAN,MAC based VLAN, Voice VLAN, Private Edge VLAN, Private VLAN, Guest VLAN, Double VLAN Tagging (QoQ),GARP with GVRP/GMRP,MVR (Multicast VLAN Registration),Multiple Registration Protocol (MRP),Multicast VLAN Registration Protocol (MVRP),LAG Hashing, LAG Member Port Flaps Tracking, UDLD support, Distributed Link Aggregation, Storm Control, Link Dependency, Spanning Tree Protocol, Per VLAN STP (PVSTP) with FastUplink and FastBackbone, Per VLAN Rapid STP (PVRSTP), STP Loop Guard, STP Root Guard, BPDU Guard, STP BPDU Filtering, STP BPDU Flooding, IGMP v2/v3 Snooping support, MLD v1/v2 Snooping support, Expedited Leave Function, Static L2 Multicast Filtering,MLDv1/2 Snooping Support,IGMPv2/3 Snooping Support, IGMP Proxy, MLD Proxy, Any Source Multicast (ASM),Source Specific Multicast (SSM),Multicast streams routing between subnets
5	L3 Services	The switch should supports :- Multicast Static Routes (IPv4, IPv6),DVMRP, Neighbor discovery (IPv4, IPv6),PIM-DM (IPv4, IPv6),PIM-SM (IPv4, IPv6), PBR, PIM multi-hop RP support, IPMC replication (hardware support),DHCP Client (IPv4, IPv6), DHCP Server (IPv4, IPv6),DHCP Snooping (IPv4, IPv6),DHCP/ BootP Relay (IPv4, IPv6) DHCP options 55, 66, 67, 125 and 150,Static Routing (IPv4, IPv6),Port based Routing, ECMP Static Routing, Port Based Routing, VLAN Routing RIP v1 and v2,OSPF v2 and v3,OSPF Flood Blocking, Route Redistribution,

		VRRP, VRRP Route/Interface Tracking, Loopback Interfaces, Tunnel interfaces, Router Discovery, IP Helper, IP Source Guard, IP Event Dampening, ECMP, Proxy ARP, Multinetting, ICMP v4 and v6, IPv4/IPv6, DNS v4 and v6 IPv6 Routing
6	QoS	The switch should have :- IEEE 802.1p CoS, DiffServ QoS, WRED (Weighted Deficit Round Robin), Single Rate Policing, Strict Priority queue technology, Auto-VoIP, iSCSI Flow Acceleration, IP DSCP, IP Precedence, IP TOS, L3 IPv6 Flow Label, Interface Traffic Shaping, PHB Support, Minimum Bandwidth per-interface
7	Security	The switch should support Broadcast, Multicast and Unicast Network Storm Protection, CPU Protection, DoS attack protection, ICMP throttling, Management ACL, Radius accounting, TACACS+, L2/L3/L4 Access Control List (ACL), MAC, IPv4, IPv6, TCP, UDP ACL, Protocol based ACL, ACL over VLAN, Dynamic ACL, IEEE 802.1x Radius Port Access Authentication, 802.1x MAC Address Authentication Bypass (MAB), Port Security, Dynamic ARP Inspection, MAC Filtering, Port MAC Locking, IEEE 802.1X Radius Network Access Control, IEEE 802.3x flow control, GMRP – Dynamic L2 multicast registration, GVRP – Dynamic VLAN registration, GARP -Generic Attribute Registration Protocol, Access Control Lists (ACLs) L2 / L3 / L4, Time-based ACLs, ACL over VLANs, IPv6 RA Guard Stateless Mode, Network Authentication Successive Tiering
8	Management	The switch must have the followings :- ISDP (Industry Standard Discovery Protocol), Out of band Management, 802.1ab LLDP and LLDP-MED, SNMP v1, v2 and v3, RMON 1, 2, 3, 9, sFlow, Command Line Interface (CLI), Web-based graphical user interface (GUI), Admin access control via Radius and TACACS+, Telnet, IPv6 Management, Dual Software (Firmware) images, Dual Configuration file (Text-based), Radius accounting, Malicious Code Detection, SNTp, XMODEM, Port Mirroring, Cable Test Utility, SSH v1/v2, SSL/HTTPS and TLS v1.0 for web-based access, File Transfer (uploads, downloads) through TFTP/HTTP, SCP/ SFTP/ HTTPS, Syslog, Non disruptive Config Management, Remote Port Mirroring (RSPAN), Persistent log supported, IEEE 802.3 10Base-T, IEEE 802.3 Ethernet, IEEE 802.3i 10BASE-T, IEEE 802.3u 100BASE-T, IEEE 802.3ab 1000BASE-T, IEEE 802.3z Gigabit Ethernet, 1000BASE-SX/LX, IEEE 802.3ae 10-Gigabit Ethernet, IEEE 802.3ad Trunking (LACP), IEEE 802.1AB LLDP STP, RSTP, MSTP, IEEE 802.1p Quality of Service IEEE 802.1Q VLAN tagging, IEEE 802.1v protocol-based VLAN
9	LEDs	The switch must have Per port: Speed, link, activity, Power, Fan, Stack Master, Stack ID leds.

10	Environmental	The switch should have Operating Temperature: 0° to 45°C, Operating Humidity: 90% maximum relative humidity, non-condensing
11	Certifications	The switch should have CE: EN 55032, VAPT, CISPR 32, VCCI, FCC, VAPT, RCM: AS/NZS, IEC 60950, UL listed, BSMI, EN 61000, MTCTE from TEC, BIS
12	Warranty	Switch should have Lifetime hardware replacement warranty, Lifetime free latest firmware support, Replacement with new product only and no refurbished products.
13	A tender-specific Manufacturer Authorization Form (MAF) from the OEM is required from the bidder along with Techno-Commercial Bid.	

B. Access Point (MAJOR ITEM):

Sl No	Parameter	Specifications
1	Physical Interfaces	Must have or better:- 1 x 100/1000/2.5GB BASE-T Gigabit Ethernet (RJ-45) ports with 802.3 af/at compliant, Two Internal antenna with 3.1/4.3 dBi for 2.4GHz/5GHz respectively, Four LED: Power and Cloud connection; LAN speed; 2.4GHz status; 5.0GHz status, Port for connecting 12V DC, 2.5A Power adapter
2	Standards	Should have WiFi 6 enabled, 802.3 a/b/g/n/ac/ax with WDS capabilities
3	Security	Should supports the following features from day 1:- Wi-Fi Protected Access (WPA, WPA2, WPA2 Enterprise, WPA3 standard), 802.11i, Wireless access control, MAC address filtering, Neighbor AP detection, VLAN creation, Bandwidth management, Guest network, VLAN per SSID, SSL support, LLDP, 802.1x RADIUS support with EAP TLS, TTLS, PEAP
4	Management	The access point must have Stand alone, Cloud based, App based management (Centralized management from anywhere anytime)

5	Other features	Should support the following features from day 1:- Bridge mode (PTP & PTMP), Repeater mode, Adjustable Transmit Power Control (TPC), Device detection, Identify type of wireless clients in the network, Business class WiFi based on next generation 802.11ax WiFi 6 technology on both 5.0GHz and 2.4GHz bands, Backward compatible to 802.11b/g/n/a/ac, Operating frequency ranges:-2.412-2.472GHz, 5.180-5.240GHz, 5.260-5.230GHz, 5.500-5.700GHz, Beacon interval :- 2.4GHzradio:100millisec., 5GHzradio:100millisec., Dual band 4x4 (2.4GHz and 5.0GHz) 8 streams of data for an aggregate throughput of up to 3.6Gbps, Theoretical Throughput per Band: 5.0GHz: 2400Mbps; 2.4GHz: 1200Mbps, Orthogonal Frequency Division Multiple Access (OFDMA), Target Wake Time (TWT), Basic Service Set Coloring (BSS Coloring), Bandsteering, Block SSID Broadcast, Ceiling mounting / Wall mounting (mounting kit must be given), Bidir and MU-MIMO support
6	Certifications	Should have FCC Part 15, CE EMC Report, EN 55032/24, EN 300 328, EN 301 893, EN 301 893, EN 62311(for Wi-Fi) , EN 62479 (for BT), IEC 60950-1 / IEC60950 / EN60950, EC 278/2009 certificates, MTCTE from TEC, BIS
7	Warranty	The Access Point must have a minimum 5 Years Hardware Replacement warranty with 5 Years free latest firmware support, 5 years controller subscription must be added from day 1 and must be replaceable with New Product Only but not with refurbished products.
8	A tender-specific Manufacturer Authorization Form (MAF) from the OEM is required from the bidder along with Techno-Commercial Bid.	

C. CAT6 UTP Cable:

Sl No	Parameter	Specifications
CAT6 U/UTP Patch Cord		
1	Type	Cat 6 U/UTP Patch Cords are key components of Cat 6 U/UTP End-to-End Solution and are designed to support data networks for 10/100BASE-T and 1000BASE-T applications. It should be available in 8 different colors.
2	Conductor	24 AWG stranded copper wire
3	Length	1 Mtr, 2 Meters
4	RJ45 plug and boot material	Clear polycarbonate
5	Outer Sheath	LS0H
6	RJ45 plug dimensions compliant with	ISO/IEC 60603-7-4 and FCC 47 Part 68
7	Contact material	0.35mm thick copper alloy

8	MIN operating life	750 insertion cycles
9	Sheath Material	LSZH
10	ROHS/ELV	Compliant
24 port CAT6 Patch Panel (MAJOR ITEM):		
1	Type	19" 24-port, loaded with Jack, A key product used in both Category 6 link and channel gigabit ethernet applications. The IDC section consists of V-shaped contacts that flex not fatigue when terminated. Each port should have shutter and can be colour coded to match jack outlets. Offering both front and rear labelling options, the patch panel is constructed of cold-rolled steel for additional strength and durability.
2	Ports	24
3	Plastic Housing Jack Connector	Polycarbonate, UL94V-0 rated or equivalent
4	Contact Plating	1.27 μ m Au/Ni
5	Front Connector interface	RJ45
6	Circuit Identification Scheme	Icons on each of 24-ports
7	Port Identification	9mm or 12mm Labels on each of 24-ports (to be included in supply)
8	Height 1 U	(1.75 inches)
9	ROHS/ELV	Compliant
CAT6 Information Outlet		
1	Type	Cat 6 Jack is designed to maintain clean secure connections. PCB based Information outlet design type/technology which protects it from dust and containments. Should have integrated bend limiting and strain relief unit for cable entry.
2	Wire terminal	200 termination cycles
3	Modular Jack	750 mating cycles
4	Plastic Housing	Polycarbonate, UL94V-0 rated or equivalent
5	IDC Contact Plating	Tin/Lead Plate
6	Faceplate	Square Plate with 1/2/4 port. 86 x 86 mm
7	ROHS/ELV	Compliant
CAT6 UTP Cable LSZH		
1	Type	Category 6 Unshielded Twisted Pair 4 pair cable shall be compliant with ANSI/TIA/EIA-568C.2. Additional Transmission Performance Specifications for 4-pair Category 6 Cabling.
a)	Type	Category 6 UTP cables shall extend between the work area location and its associated telecommunications closet and consist of 4 pair, 23 AWG, UTP.
b)		Supports ultrahigh speed data networks such as Gigabit Ethernet (1000 Base-T and 1000 Base-TX) and beyond.

2	Jacket:	The cable jacket shall be LSZH and LSZH sheath should Complying to: a. Fire rating IEC 60332-1, b. Acid gas IEC 60754-2 / BSEN 50267-1 c. Smoke density IEC 61034-2
3		Incorporates central spine maintaining pair separation during installation to ensure premium performance after installation.
4	Mechanical Characteristics	Construction: 4 twisted pairs separated by internal X shaped, 4 channel, polymer spine / full separator. Half shall not be accepted. Conductor Solid Copper Conductor Diameter 0.56 ± 0.005 mm (23 AWG) Insulator Polyolefin Outer Diameter 6.0 ± 0.4 mm Max. Temperature 70°C
5	ROHS/ELV	Compliant
6	ETL Test Report @900 MHz	Cable should have test by ETL / Intertek @900 MHz and test report should be submitted.
7	UL & ETL	UL Approved & ETL Verified
8	All components shall be ROHS compliant. All Components should be from single OEM.	
9	A tender-specific Manufacturer Authorization Form (MAF) from the OEM is required from the bidder along with Techno-Commercial Bid.	

D. 12 Core Single Mode, Armoured OFC Cable:

Sl No	Parameter	Specifications
12 fiber Single Mode, Armoured, Unitube, Gel filled cable		
1	Cable Type	12 fiber Single Mode, Armoured, Unitube, Gel filled cable complying to ISO.IEC 11801 - 2nd Edition, type OS2; AS/ ACIF S008; AS/NZS 3080,ITU-T REC G 652D, IEC 60793/60794, TIA 568, EIA 455; suitable for use in direct burial, outdoor ducts and backbone cabling.
2	Armour	Corrugated Steel Tape Armour -Thickness > 0.125mm
3	Water Blocking	Thixotropic Gel (Tube), Petroleum Jelly (Interstices)
4	Attenuation	@ 1310nm <=0.35 db/Km MAX @1550nm <=0.22 db/Km MAX
5	Numerical Aperture	0.14
6	Attenuation Discontinuity	Both Windows <0.10dB
7	Core/Mode-Field (um)	9
8	Clad Diameter (um)	125 + - 1
9	Coat Diameter	245 + - 10

10	Loose tube material	Single PBTP Loose tube filled with water blocking Thixotropic gel
11	Jacket material	UV Stabilized Polyethylene (HDPE)
12	Peripheral Strength Member	Two Steel wires / E-yarns
13	Tensile Strength	1000N
14	Crush Resistance	2000N/10 cm
15	Cable Diameter	9mm
16	Max. Bending Radius (during installation)	20 X Overall diameter
17	Max. Bending Radius (during full load)	10 X Overall diameter
18	Operating Temperature	-10 Degree C to +70 Degree C
Fiber Optic Rackmount LIU, loaded with SC adapter plates, Splice Tray and SC Pigtails		
1	Fiber Management Shelf	Configurable Fibre drawer is a 1U rack mount unit for storing and terminating incoming fibre cable. Using our vast range of 6 Pak Plates you can configure your fibre system to suit all fibre applications.
		Configurable. Fits up to four 6 Pak Plates/ Angled 6 Pak plates
		Management rings within system to accommodate excess fibre cordage behind the trough adapters and maintain fibre bend radius
		Sliding drawer for ease of reconfiguring fibres
		Rugged steel construction finished in attractive
		Accommodates 2 x 12 fibre Splice Trays
2	Compact size (mm)	45mm H x 485mm W x 255mm D
3	Optical Fibre Adapter Plates Loded	SC Adapter SM Plate
4	No of Adapter Plate Req	As per Requirement
5	Pigtail	SC, Single mode, 9/125 μ m - 1.5 mtrs
6	No of Pigtail Req	As per Requirement
SC to LC Duplex Fiber Optic Patch Cord 3 Mtr, 9/125 Micron		
1	Make and Type	SC to LC Duplex Fiber Optic Patch Cord 3 Mtr, 9/125 Micron
2	Cable Sheath	LSZH
3	Cable Diameter	1.8 mm twin zip
4	Ferrule	Ceramic
5	Buffer	Tight buffered
6	Insertion Loss	MAX .3 db
7	Return Loss	> 45 db
8	Temperature Range	-10 Degree C to +60 Degree C

9	ROHS	ROHS Compliant
LC to LC Duplex Armored Fiber Optic Patch Cord 3 Mtrs, 9/125 Micron		
1	Make and Type	LC to LC Duplex Armored Fiber Optic Patch Cord 3 Mtr, 9/125 Micron
2	Cable Sheath	LSZH
3	Cable Diameter	1.8 mm twin zip
4	Ferrule	Ceramic
5	Buffer	Tight buffered
6	Insertion Loss	MAX .3 db
7	Return Loss	> 45 db
8	Temperature Range	.-10 Degree C to +60 Degree C
9	ROHS	ROHS Compliant
Face Plate		
1	Feature	Single Gang square plate, 86mmx86mm, Port - Single / Dual / Quad as per req.
		Write on labels in transparent plastic window - supplied with plate
		Screw hole covers - to be supplied with plate
		Plug in Icons - Icon tree - to be supplied with plate
		Should be able to support variety of jacks - UTP, STP, Fiber, Coax etc.
2	A tender-specific Manufacturer Authorization Form (MAF) from the OEM is required from the bidder along with Techno-Commercial Bid.	

E. Real-time Controller (MAJOR ITEM):

Sl No	Parameter	Specifications
1	Optically Isolated Digital Input	16 Channels
2	High State	<1V LOGIC 1
3	Low State	>3.5V LOGIC 0
4	Isolation Voltage	1KV
5	Input Current	Low LOGIC: 1mA at 5V
6	Input Impedance	50K Ohms
7	Input State Display	In Built HMI Screen with the PLC Encoder
8	Aux. Supply	110V / 230V AC 50Hz, Surge & EMI Protection-- 275V, 40KA
9	Input Termination	4MM SQ High Quality Push Type Terminal Block
10	Isolated Analog Input	16 Channels, 1-5V / 2-10V / 4-20V DC Programmable.
11	Analog Function Block	2 Point Controller [<2V LOGIC 0, >3.5 to 10V LOGIC High]
12	Analog Input Impedance	10M Ohms
13	Channel Noise Filter	0-5 Selectable
14	Scan Rate	4ms.

15	Display Refresh Rate	250ms.
16	Processors	Real-time processor: Dual ARM® Cortex® A7; 500M Hz, plus ARM Cortex M3 ,32-bit low power consumption CPU or better Edge Application processor: Dual ARM Cortex A7; 500 MHz, plus ARM Cortex M3,32-bit low power consumption CPU or better
17	Memory	SRAM – 4 MB, battery backed static RAM DDR3 RAM – 256 MB, dynamic RAM or better NAND Flash – 256 MB, flash memory or better
18	File System Storage	Approximately 70 MB user storage or better Single-partition plug-in USB mass storage or better devices up to 32 GB FAT32 or better Single-partition plug-in MicroSD card up to 32 GB mass storage or better
19	Data Capacity	Real-time operating system: Maximum DNP3 and IEC60870-5-104 Data Logging Capacity: Up to 1 million datalog events in internal memory Database Capacity a. Maximum number of database objects: Typically 15,000 b. Maximum number of database objects linked with logic programming: Typically 6,000 c. Maximum DNP3 Outstation devices ³ : Approximately 90 d. Maximum DNP3 Outstation objects ³ : Approximately 15,000 across DNP3 Outstation devices e. Maximum Modbus Server Devices when polled using the configurable Modbus Scanner: 150 f. Maximum objects mapped from Modbus devices: 3,000 using Modbus scanner. Can be extended using IEC 61131-3 application.
20	4 Serial Ports	RS-485: 2-wire half-duplex operation maximum baud rate 115,200 bps RS-232: Tx/D, Rx/D, CTS, RTS, DCD, DTR RS-485: 2-wire half-duplex operation Maximum baud rate 115,200 bps
21	Serial Protocols	DNP3 subset level 4 outstation with DNP3 client and peer-to-peer, Modbus RTU server/client. Custom protocols can be developed
22	Ethernet Ports: 1, 2, 3, 4	8-pin modular RJ45 jack, 10/100 Mbps UTP (10/100 Base-T), transformer-isolated, independent ports
23	IP Protocols	1. level 4 in TCP or in UDP outstation with DNP3 client and peer-to-peer capability

		2. Modbus/TCP Server, Modbus/TCP Client 3. IEC 60870-5-104 controlled station 4. Secure SSH server, Secure HTTPS Web server, Telnet Server, FTP Server, NTP
24	USB Device Port	USB 2.0-compliant C-type receptacle
25	I/O Terminations	solid or stranded
26	Environment	-10...70 °C operating temperature when the unit is mounted horizontally on a vertical surface -10...85 °C storage temperature 5...95% relative humidity, non-condensing Pollution Degree 2, Installation Category I, Indoor use
27	Shock	IEC 61131-2 ½ sine, 15 ms,
28	Vibration	IEC 61131-2 5. 8.4 Hz: Amplitude controlled, 7.0 mm peak-to-peak 8.4. 150 Hz: Acceleration controlled, 1.0 g peak
29	Industrial Standards	CE Marking Compliance
30	Digital Inputs	1...20 12...24 Vdc
31	Pulse Counter Inputs	Max. 10 kHz (at 50% duty cycle) Built-in turbine preamplifier ⁴ for direct connection to turbine coils using short, shielded cable only. Max. 1.5 kHz (at 50% duty cycle) Shared with first 8 digital input channels on lower I/O board Max. 150 Hz (at 50% duty cycle)
32	Digital Outputs	Form A, NO (Normally Open) relays, 2 A @ 30 Vdc, Form A, NO relays, 2 A @ 30 Vdc
33	Analog Inputs	0...20 mA, 4...20 mA, 0...5 Vdc, 1...5 Vdc, 12-bit resolution, unipolar, non-isolated, voltage/current selectable by software, configurable for 30 mSec high speed update rate 0...20 mA, 4...20 mA, 0...5 Vdc, 1...5 Vdc, 24-bit resolution, single-ended, isolated from logic and chassis. Filtering configuration 'none' results in fast sampling @100 mSec total for all 8 channels, '50/60Hz' filter configuration results in sampling at 500mSec for all 8 channels
34	Analog Outputs	0...20 mA, 4...20 mA (voltage output with external resistor), 12-bit resolution over 0...20 mA range, single-ended, isolated from logic and chassis
35	Internal (System) Analog Inputs	a. Input power supply voltage monitor, 36 Vdc full scale b. Memory/RTC battery voltage monitor c. Internal temperature monitor, measurement range

		-40...75 °C
36	Clock calendar	±15 seconds per month at -10...70 °C
Web Control		
37	Industrial Gateway	The industrial router that combines cellular, Wi-Fi, and wired connectivity options with automatic WAN failover and GNSS capabilities. Serial communication interfaces enable integrating more varied devices into the solution ecosystem, while I/O and facilitate equipment control, automation, and event notifications.
38	Alarm	Micro controller-based TCP IP based master Alarm Generator with Voice Messaging / Tone system.
39	Enclosure	4U, Rack Mount IP 65 / Wall Mount Type
40	Working Temp.	Up to 50 Deg C
41	MTBF: (Mean Time Between Failures)	87600 Hrs
42	Humidity	90 RH Non-Condensing
43	Alarm Transmission	TCP/IP over Ethernet.
44	The Encoder Unit consists of wall mount / Rack mount panel assembled with Rack mount PLC CPU and hot swappable IO with 24V DC Power supply module. The system is easy expandable as per feature requirements.	
45	Primary voltage	100...240 V
46	Secondary power	10.8 W 24 V DC sensor power supply 16.8 W 24 V DC I/O module power supply and processor 8.3 W 3.3 V DC I/O module logic power supply Primary voltage limit: 85...264 V Network frequency limits: 47...63 Hz
47	Input current	0.31 A 240 V 0.61 A 115 V
48	Protection type	Internal fuse not accessible for primary
49	Line protection module	Separate line protection module needed for 16 channels with replaceable protection components
50	Other Features	Low and High logic can be modified and interchangeable with input voltages by User
51	A tender-specific Manufacturer Authorization Form (MAF) from the OEM is required from the bidder along with Techno-Commercial Bid.	

F. 2 MP Fixed Dome Camera (MAJOR ITEM):

Sl No.	Parameter	Specifications
1	Image Sensor Type	CMOS progressive

2	Image Sensor Size	1/2.8 inch or better
3	Camera Image Sensing capacity (Picture Mode)	2MP resolution or better
4	Resolution	D1 (704 x 480 Pixel), 720p (1280 x 720 Pixel),1080p (1920 x 1080 Pixel) or better
5	Electronic Shutter	1/10000s to 16/30s or better
6	Day/Night Capable	Yes, True day/night
7	IR illumination Range(mtr)	20 or better
8	Focal Length(mm)	2.5 (+/- 0.1mm) Motorized Varifocal Lens or better
9	Frame Rate (fps)	60fps or better
10	Video Compression	H.264, H.265, MJPEG
11	Video Streaming	4 streams or better
12	Privacy Masking	8 Zone or better
13	Image features	Defog, BLC, HLC
14	Audio Support	Mic Built in or better
15	Alarm Support	Yes. Alarm in and alarm out
16	Audio Compression	G.726 (ADPCM), AAC-LC*7, G.711
17	Protocols	TCP/IPv4 & v6, UDP/IP, HTTP, HTTPS, SSL/TLS, SMTP, DNS, NTP, SNMPv1/v2/v3, DHCPv4 & v6, RTP, MLD, ICMP, ARP, IEEE 802.1X,DiffServ, SFTP, MQTT, LLDP, RTSP, RTP, RTP/RTCP, DDNS, UPnP, IGMP, SRTP
18	Minimum Illumination for Capturing Color Image	0.02 or better, 0 lux with IR
19	WDR (Wide Dynamic Range)	132dB or better
20	SNR (Signal to Noise Ratio)	50 or better
21	On Board SD/SDHC Card Support	Yes
22	SD Card Memory(GB)	512 or better
23	ONVIF support	Support for all profiles, (G, M,S, T)
24	Available ROM for AI Application	Should be available
25	Available RAM for AI Application	Should be available
26	Installation Type	Indoor
27	Material of the Housing construction	Alluminium / Metal
28	Vandal Resistant Housing	Should be available
29	IK rating	IK10
30	Power Input	PoE
31	Operating Temperature	0 °C to 40 °C or better
32	Operating Humidity	Max 99% RH or better

33	Used SoC declaration	Must be available on datasheets or OEM website
34	Certification	UL, CE, FCC, BIS, NDAA, FIPS. STQC
35	SSL Certificate	GlobalSign / DigiCert device Certificate or similar should be pre-installed
36	Type of Camera Housing	Dome CAMERA
37	IP Camera with built-in AI Engine for Ready to installing 3rd party applications	Yes
38	Video analytics requirements	Intruder Detection, Loitering Detection, Direction Detection, Scene Change Detection, Object Detection, Cross Line Detection at camera level*(Edge based analytics)
39	A tender-specific Manufacturer Authorization Form (MAF) from the OEM is required from the bidder along with Techno-Commercial Bid.	

G. Access Control (MAJOR ITEM):

Sl No	Parameter	Specifications
1.	Biometric	Face Recognition
2.	Barcode and QR code	Device should support QR code reader
3.	RF Option	Universal Multi Card Reading module which readers which works on 13.56MHz frequency, MIFARE, MIFARE Plus, DESFire, DESFire EV1/EV2/EV3, HID iclass/seos/prox
4.	RF detection distance	Minimum 30 mm
5.	Mobile Credential	Frequency: 13.56MHz NFC Frequency: 2.4GHz BLE Certificates: ISO 27001 Encryption: AES-128/256 Compatible devices: iOS 7.0 above, Android 9.0 above
6.	CPU	1.5 GHz Quad Core or better
7.	Memory	32 GB Flash + 4 GB RAM or higher
8.	Algorithm Benchmarking	Algorithm used should be NIST Listed
9.	Single OEM for Software and Hardware	Device Manufacturer & Algorithm manufacturer should be from the same OEM.
10.	Database Encryption	AES 128 bit / 256-bit method
11.	GDPR or Personal Data Protection (PDPB India)	Must be supported with ToC (Face Template on card)
12.	Crypto chip	Supported
13.	LCD type	Minimum 5.3-inch IPS color LCD

14.	LCD resolution	Minimum 720 x 1280 pixels
15.	Sound	16bit
16.	Operating temperature	-20°C to 50°C
17.	Operating humidity	0% to 80%, non-condensing
18.	Camera	2MP
19.	Dimension	Compact form-factor
20.	IP rating (without external enclosure)	IP65 or higher
21.	IK rating	IK06 or higher
22.	Certificates	UL, BIS, CE, FCC, IC, RoHS, REACH, WEEE
23.	Recognition Distance	0.6 to 1.0 m
24.	Recognition Height	1.4 to 1.9 m
25.	Mask detection	Must support variety of masks (N95, 3-ply, Fabric)
26.	Matching speed	Within 0.3 seconds
27.	Enrolment Methods	Must support upload a photo or drag & drop
		Must support enrolment through an email link
		Must support Bulk enrolment through CSV import
		Must have integration with DB/ERP/HRMS for photo importing
28.	Live Face Detection	Must support anti-spoofing mechanism against Selfie, Photo, 3D Mask or 3D Face Replica Model based fake-face attacks
29.	Anti-Spoofing Tested	iBeta Certification required
30.	Max. User	100,000
31.	1:N Matching	Face: 50,000
32.	Text logs	50,00,000 or higher
33.	Max. Image Logs	50,000 or higher
34.	Ethernet	Supported (10/100/1000 Mbps, automatic MDI/MDI-X)
35.	WiFi (on-board)	Must be on-board - Support
36.	RS-485	1ch Host / Slave (Selectable)
37.	OSDP	Must support OSDP ver. 2.0 or higher
38.	Wiegand	1ch Input, 1ch Output
39.	Aux Inputs	3ch Inputs
40.	Relay	1 Relay
41.	POE+	Supported
42.	Intercom	Supported
43.	RTSP	Supported (To connect with third party VMS/ICCC Software)
44.	USB	USB 2.0 (Host)
45.	USB expansion port	Must support for future expansion
46.	Tamper Detection	Supported
47.	Power	DC 12 V DC 24 V (current: 1.2 A)

48.	Relay	2 A @ 30 VDC Resistive load
		1 A @ 30 VDC Inductive load
49.	Data transfer	Seamless integration with 2-way data transfer capability
50.	Enrolment	Seamless integration with direct enrolment from Master software
51.	Country of Origin	Critical components like Network card, wifi, MAC address should not be from countries share land border with India
52.	Land border Sharing guideline of GoI	Must comply.
53.	Local Presence in India - OEM must have direct office and support function in India.	Direct OEM Presence
54.	A tender-specific Manufacturer Authorization Form (MAF) from the OEM is required from the bidder along with Techno-Commercial Bid.	

H. IP Remote Microphone (MAJOR ITEM):

S1 No	Specifications
1	The IP remote microphone shall be able to make audio broadcasts with a built-in gooseneck microphone to IP audio endpoints via network. It shall be equipped with a built-in audio compressor to avoid distortion and achieve clear microphone announcements.
2	The IP remote microphone shall allow both individual and group broadcast by using SIP and Multicast protocols. The IP remote microphone shall be equipped with ten selection buttons which are function-assignable to activate a variety of different broadcasts and controls. Twenty multi-cast ports shall be available for group paging and shall have the facility of storing up to twenty audio files with the code of WAV or MP3 format internally.
3	The device shall have the flexibility of broadcasting these files from a calendar schedule at predetermined times or repeated when necessary triggered from a control input, or from remote API (HTTP).
4	Remote settings shall be achieved by connection to a Windows® based personal computer and by using the PC's browser, operational settings, functions and system status can be established.
5	The IP remote microphone shall have an electronically balanced 10k Ω AUX audio input with LINE/MIC selection with switchable ON/OFF 12 V DC phantom power and a corn-type monitor speaker. The built-in monitor speaker shall be able to be used for recording monitoring and two-way communications.
6	The independent volume control shall be available for AUX audio input and a built-in microphone.

7	The IP remote microphone shall have two control inputs and one control output with an additional 24 V DC mute contact. The IP remote microphone shall offer priority status among the various broadcast modes that will override and interrupt a lower priority broadcast.
8	Power source shall be supplied from a PoE switching hub.
9	A tender-specific Manufacturer Authorization Form (MAF) from the OEM is required from the bidder along with Techno-Commercial Bid

I. IP Horn Speaker (MAJOR ITEM):

SI No	Specifications
1	The IP horn loudspeaker shall be able to support various standard network protocols and forums such as API (Application Programming Interface), and shall be able to complement VMS (Video Management System) and other network video integration systems. For the deployment of multiple speakers, multi-cast paging shall be made possible via a SIP microphone or telephone.
2	The device shall be protected against the ingress of water and dust to IP 66 standards and shall be SIP compliant to broadcast clear and intelligible messages over a wide area via a single network cable.
3	There shall be two no-voltage control input and an open collector output for broadcast; internal audio source, calling to a SIP telephone and an external beacon, etc.
4	Remote settings of the IP horn loudspeaker shall be achieved by connection to a Windows® based personal computer and by using the PC's browser, operational settings, functions, speaker volumes and system status can be achieved.
5	The frequency response of the loudspeaker shall be between 280 Hz – 12.5 kHz measured on axis with a Sound Pressure Level (SPL) of 124 dB measured at 1 meter with a power input of 15 watts or 121dB with a power input of 8 watts measured at 1 meter.
6	The internal class-D amplifier shall be capable of producing up to 8 watts of power using PoE and up to 15 watts of power when using PoE+.
7	The IP horn loudspeaker shall operate in temperature conditions of between -30 to + 55 °C and shall be constructed from aluminum with an ABS resin reflector horn finished in an off-white (RAL 9010 equivalent), bracket, screws and bolts shall be stainless steel.
8	A tender-specific Manufacturer Authorization Form (MAF) from the OEM is required from the bidder along with Techno-Commercial Bid

J. Environment Monitoring Sensor & Controller (MAJOR ITEM):

SI No	Parameter	Specifications
Humidity Sensor		
1	Sensor range	0-100% RH (Relative Humidity)
2	RH Accuracy	± 5% RH, 2-80% RH non – Condensing, 25 °C

3	RH Linearity & Hysteresis	<2% RH typical, ±2% RH span maximum
4	RH Repeatability	±0.2% RH
5	RH Response Time	15 Sec in slowly moving air at 25 °C
6	Communication	1-Wire bus (Data, GND,+5V) - RJ11 male connectors
7	Montage drill:	Ø3mm
8	Operating temperature range	0°C to + 85°C.
Temperature Sensor		
1	Temperature range	-50°C to +125°C
2	Temperature resolution	0.1 °C
3	Temp. measuring accuracy	± 0.8°C in range from - 10°C to 80°C ± 2.0°C in whole range (- 50°C to + 125°C)
5	Communication	1-Wire bus (Data, GND, +5V) - RJ11
6	Storage temperature range	-30°C to +80°C
Wire for Temperature		
7	Probe dimension	Ø5.7mm, 60mm long, stainless steel
8	Cable probe	silicon cable 3m
Smoke Sensor		
1	Sensor Range: 0-1 switch	
2	Operating Environment: upto 70 °C, 5%-95% RH	
3	Output: Load Voltage 50V, Load Current 500mA	
4	Power Supply: 12V DC	
5	Connection Compatibility: Terminal Block	
Power Sensor 230V AC		
1	Measuring Parameter: AC Mains Voltage, UPS Output	
2	Output: 1-Wire UNI (2x RJ11)	
3	Measurement accuracy: 5%	
4	Resolution: 1V	
5	Measuring period: approximately 1s	
6	Electrical isolation: input voltage from 1-Wire UNI	
7	Mechanical: Fits on a DIN rail (2-unit width)	
8	Input voltage range: 100 to 250V AC (50Hz / 60 Hz)	
9	Consumption: max. 100mA	
10	Operating / storage temperature: -20°C to +80°C	
11	Cover: IP20	
Environment Controller		
1	General	Ethernet based monitoring solution and data transfer
2	Sensors	Supports Up to 8 external sensors (RJ11)
3	Input for Detectors	4 digital inputs for detectors
5	Data Logging	Internal memory up to 250000 values

6	Input/output	Minimum 4 Digital Inputs / 2 Digital Outputs,
		Minimum 2 relay outputs are possible
7	Features	Thermostat function to activate relay output through Modbus, TCP, XML protocols
		SNMP,TCP/IP Support and compatible for third party application software
		Warning Alerts Through E-mail alarm when abnormal temperature shoots up
		HTTPs, IPV6, SNMPv3 protocol compatibility and built-in web server
		MQTT compatibility which allows connecting to IoT Hub, MS Azure Internet of Things and other cloud services
		Compatible Mobile App Solution
8	Sensor Measurement	Range: 0°C to +80°C
9	Operating temperature:	0°C to + 85°C.
10	Humidity	20-80% R.H.
11	Casing	Stainless Steel casing with IP67 classifications
12	Protection	High Protection against water and total dust protection
13	Cable length availability	1,3 and 10 meters with RJ11 connectors
14	Accuracy	± 0.8°C
15	Resolution	0.1
16	Cable extension	up to 60 meter
17	Connection compatibility	Daisy Chain
18	A tender-specific Manufacturer Authorization Form (MAF) from the OEM is required from the bidder along with Techno-Commercial Bid.	

K. KVM Switch (MAJOR ITEM):

Sl No	Specifications
1	It should Integrated KVM console with 17.3" LED-backlit LCD monitor in a sliding housing with top and bottom clearance for smooth operation in a 1U high system rack
2	It should High port density RJ-45 connectors for up to 8 ports in a 1U housing
3	It should illuminate the keyboard and touchpad to allow visibility in low-light conditions
4	It should be offers resolutions of 1920 x 1080 (Full HD) @ 60Hz
5	It should Firmware upgradable.

6	It should support Additional hot-pluggable USB mouse port on front panel (also functions as a USB peripheral port)
7	It should support Console selection via hotkey
8	It should have Standard 105-key keyboard
9	It should support Console lock - enables the console drawer to remain securely locked away in position when not in use
10	It should Supports Short-depth design allows you to work with your rack-mounting equipment in narrow spaces
11	It should Support Luminance - 250 cd/m ²
12	It should Contrast Ratio - 800 : 1
13	It should support Key board Mouse Emulation
14	It should have Dual Power Supply & support Audio enabled & Blade server support
15	It should have Virtual Media support lets you map DVD-CD-ROMs and other storage media to a remote server
16	It should Local console provides PS/2 and USB keyboard and mouse support & Two 10/100/1000 Mbps NICs for redundant LAN or two IP operation
17	It should have Two separate buses for one local console access and one remote over IP access
18	It should have A dedicated USB port directly connects to a laptop for easy console operation
19	It should support Message Board for communication among remote users & automatically synchronizes the local and remote mouse movements
20	It should be Keyboard pass through support, Exit Macros support & On-screen keyboard with multi-language support
21	It should support BIOS-level access & Video quality and video tolerance can be adjusted to optimize data transfer speed; monochrome color depth setting, threshold and noise settings for compression of the data bandwidth in low bandwidth situations
22	It should support Virtual media enables file applications, OS patching, software installation and diagnostic testing
23	It should Works with USB enabled servers in operating system and BIOS level & Support DVD/CD drives, USB mass storage devices, PC hard drives and ISO images
24	It should allow Remote authentication support: RADIUS, LDAP, LDAPS, and MS Active Directory
25	It should support IP/MAC Filter for enhanced security protection & Automated CSR creation utility and third-party CA certificate authentication
26	It Should support Local Console, browser-based, and AP GUIs offer a unified multi-language interface to minimize the user training time and increase productivity
27	It should support Browser-based UI in pure Web technology allows administrators to perform administrative tasks without pre-installed Java software package required

28	It should support Panel Array Mode available to both local console operators and remote access users & keyboard and mouse inputs can be duplicated on all the attached servers
29	It Should Ipv6 capable & support Port Share Mode allows multiple users to gain access to a server simultaneously
30	It should support Out-of-Band Access – Modem dial-in/ dial-out/ dial-back support
31	It should support Critical system event notification via SMTP email; SNMP trap and Syslog support
32	It should Maximum Input Power Rating – 100-240V AC; 50-60Hz; 1A
33	Multiplatform support – Windows, Linux, Mac, and Sun
34	It should have 4 push buttons for LCD control
35	It supports External Mouse / Peripheral – 1x USB Type A
36	It should have operating temperature 0-40°C & storage temperature -20 – 60°C
37	It should have humidity 0 – 80% RH, Non-Condensing
38	OEM Authorization Mandatory
39	IP KVM Switch & LCD Console from same OEM
40	OEM should not have Country of Origin in any Country which shares land border with India
41	A tender-specific Manufacturer Authorization Form (MAF) from the OEM is required from the bidder along with Techno-Commercial Bid.

L. Video Conferencing System (MAJOR ITEM)

Sl No	Specifications
1	4K AI , Dual Lens PTZ BAR Camera with AI-based Presenter Tracking (Face Recognition Auto Tracking) having following features:
1.a	i. Gesture Control ii. Speaker Auto Framing (AI Sound Source Localization with Auto Close-up Switching) iii. Group Framing iv. Smart Gallery Mode v. AI Mode Switching (Remote & Web) vi. AI-linked active speaker switching
2	BYOD Plug & Play (≤ 3 sec USB, driverless)
3	One-Click Wireless Projection up to 4K UHD (BYOM min. 1080p)
4	Encoding/decoding
5	In-built independent Wi-Fi module (non-PC dependent)
6	2 nos. transmit and 2 nos. receive dual antenna with min 15 meter Line of site
7	USB Type-C & Type-A combo supported for single cable AV and power

8	4K30P/1080P30/720P30 Closeup Camera with following features: i. Sensor type: 1/2.5" CMOS with min 8 MP ii. Focal Length : 12x optical zoom (f=4.4-51.1mm, F1.8-2.6) iii. FOV: Horizontal 70.1°-7.4°; Vertical 40.7°-4.2° or better iv. PAN Angle: -90°-+90° v. Tilt Angle: -23°-+23° vi. Preset Position: Min 250 vii. Must support Auto Focus viii. Must Support ePTZ ix. Support for Backlight Compensation and 2D & 3D Digital Noise Reduction
9	4K30P, 1080P30, 720P30 Panaromic Camera with following features: i. Sensor type 1/2.8 inches, CMOS, with min 8 MP ii. Lens Focal Length: 2.8mm, iii. FOV: Diagonal 107°, Horizontal 110°, Vertical 74.6° or better iv. Must support EPTZ v. Must support Auto White Balance vi. Must support Backlight Compensation vii. Support for Backlight Compensation and 2D & 3D Digital Noise Reduction
10	Connection Type USB 3.0 and backward compatible with USB 2.0
11	Compression Protocol support: H.264/MJPEG/YUY2
12	Video Communication Protocol support: USB 3.0 (UVC 1.1/UAC 1.0
13	Multi-OS support : Windows/macOS/Linux/Chromebook
14	Audio: dual 8W speakers, 6-mic beamforming array (8m pickup), 48KHz, and DMIC interface for microphone extension
15	I/O: USB 3.0 Type-C, USB 3.0 Type-A, HDMI In/Out, Dual RJ45 (1× PoE), WiFi 5 (BYOM/BYOD), Remote Control and Power Interface
16	Bidder should supply mandatorily one number of extended conference microphone with each VC system. If any additional extended microphone is required as per site requirement, then bidder must supply the same conference microphone with no extra cost.

Conference Microphone

1	Digital Array Microphone with min 6 omnidirectional mics for 360° pickup (min 3m range) with built-in AEC
2	sensitivity 38 dBFS
3	Signal to Noise Ratio: 65 dB(A)
4	Frequency response 50Hz-16kHz, 32K sampling HD broadband audio
5	I/O: i. RJ45 cascade network interface ii. USB Type-C (UAC1.0, audio communication, configuration & upgrade) iii. AUX1/AUX2 analog audio,
6	Power input: PoE cascade via 48V IEEE 802.3af or USB 5V 500mA power
7	compatible with Windows/Mac/Linux
8	supports desktop/lift/wall/ceiling mount installation

OPS

1	OPS module with Intel Core i5 11th Gen processor, 8GB DDR4 RAM, 256GB internal SSD, Intel UHD Graphics, HDMI/DP dual display (sync & async), Intel 10/100/1000M LAN, Wi-Fi with Bluetooth I/O: Min 1× HDMI 1.4 out, Min 3× USB 3.0, Min 1× USB 2.0, Min 1× RJ45, 1× Power, 1× Line-out, 1× Mic-in; Min 1× JAE 80-Pin, HDMI out, power input ;
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M. DSP (Digital Signal Processor), Wireless Microphone Amplifier Speaker, Wireless Transmitter and Battery Charging Unit (MAJOR ITEM):

Sl. No.	Parameter	Specifications
1	Digital Signal Processor	The DSP should have a 100% Full Duplex Echo Canceling - no attenuation during full-duplex.
		The system should have Automatic echo cancellation(AEC).
		The system should have Automatic Gain Control (AGC).
		The system should have Dynamic Noise reduction.
		The should have frequency response between 20 Hz - 20 KHz
		The DSP should have USB port for integrating with Unified Software solutions like Skype, Lync, etc.
		DSP Should have dual capability of Local Sound Reinforcement and Far end Audio to be sent for Video conferencing at the same time without any Noise and Echo. Whatever teacher or student speaks through Collar or hand held microphone and Gooseneck microphone all should be Going to Far end Location over Video Conference and also should come out of Speakers for local Sound Reinforcement so that everyone present in class can also hear clearly.
2	Wireless Microphone (Chairman Unit and Delegate Unit)	The DSP should have inbuilt Amplifier. It should come as one single unit as DSP-cum-Amplifier, from day 1. It should have inbuilt Receiver for Wireless Microphones from day 1.
		Wireless Table Top unit with built in speaker
		Internal high-fidelity loudspeaker
		High fidelity sound by zero loss audio transmit technology
		48K audio sampling rate and 20Hz~20KHz frequency response
		Support AGC (Automatic Gain Control,15 segment)/ AFC (Adaptive Feedback Cancellation)/ ANC(Active Noise Control 15 segment)/ Mix (Auto-Mix) technology

		Chairman unit has priority to close all other units or mute them temporarily and consent the request for speaking from delegate
		Control & Indicators: OLED Display, MIC ON/OFF,
		Chairman unit with priority button and consent button for the delegates, Volume up and down
		Socket for Pluggable Gooseneck microphone
		70 dB or better
		Frequency response : 20 ~ 20000Hz or better
		Cardioid, Sensitivity--46dBV/Pa,Length-485mm
		2Working hours once fully charged: 15 Hours or higher
3	Speaker Amplifier	The system having inbuilt digital amplifier.
		The Speaker Amplifier should consist of a minimum 50 Watts
		Speakers with wall mount accessories
		The Amplifier should have S/N Ratio of >80dB.
		The Amplifier should be inbuilt with DSP from day 1. Amplifier & DSP should come as single unit.
4	Wireless Transmitter	It should have Typical coverage range up to 30m or more
		It should have support of 50 conference unit
		128 bits AES digital encryption technology, with WAP2 secure connection, MAC address filtering, SSID-hiding.
		IEEE802.11ac, IEEE802.11a, IEEE802.11g, IEEE802.11b
		Wi-Fi technology and self-adjustment technology. The system should work in the 2.4Hz and 5GHz band and get the 50 channels for communication to coexist with other Wi- Fi network
		Output 16 segment equalized EQ to achieve sound field adjustment; pressure limit, which can recognize the noise gate passed by human voice. AGC automatic volume gain control; AFC automatic feedback suppression and auto-mix technology, advanced noise cancellation technology, Echo cancellation
		48K audio sampling rate and 20Hz~20KHz frequency response
		With USB audio recording
		1 Gigabit WAN/POE Port, 1Gigabit LAN
		Link Speed :1000Mbps or Higher
		DHCP or Manual IP address

	Battery Charging Unit	Capacity : Max 8 or more battery charging capacity at one time
		Power Consumption : <=20W
		Max 8 or more battery charging capacity at one time
Certification		. Proposed product must have CE, RoHS, FCC certification. Copy to be attached as proof
Local Content		The offered product shall have a minimum local content of 50% or more, in compliance with Government guidelines.
A tender-specific Manufacturer Authorization Form (MAF) from the OEM is required from the bidder along with Techno-Commercial Bid.		

3. **Server and Storage:** - The Server and Storage shall have at least 1 Set. Application and Database Server with HA (High Availability), 3 Nos. VMS Server, 1 Nos. NTP (Network Time Protocol) Server, 1 Nos. SAN Storage for CCTV Camera, 1 Nos. SAN Storage for ICCC Application and all other accessories required at site. The minimum technical specifications of above items are:

A. Application and Database Server with HA (High Availability) (MAJOR ITEM):

Sl No	Parameter	Specifications
1	Processor	Intel Xeon Latest Generation Silver with Clock Speed of 2.2 GHZ, 12 Core and 30 MB Cache.
2	Processor Stability	The appliance should be able to support Latest Generation Intel Xeon Scalable processors with up to 64 cores
3	Clock Speed	Base Speed of 2.2 GHZ per processor
4	Total Number of Cores	Minimum 12 Cores and expandability up to 64 Cores
5	RAM Scalability	Up to 16 DDR5 RDIMMS, 4800 MT/sec
6	RAM pre-loaded	64 GB DDR5 RAM
7	HDD Drive - Front Bay	Minimum 4x 3.5-inch 7200 rpm SATA (HDD/SSD), max 80 TB usable
8	Storage Controller	Hardware based RAID 5 Controllers
9	Form Factor	1U Rack
10	Power Supply	Redundant Power Supply
11	Display Port	1 VGA, 2 HDMI
12	Networking	Embedded 2 x 1 GB NIC
13	Chipset	C741
14	Warranty	3 Years Onsite NBD Hardware support

15	ISO Certifications	The Hardware OEM should be of repute with ISO 9001, ISO 14001, ISO 27001 and ISO 45001 certifications
16	CMMI Maturity Certification	The Hardware OEM should be CMMI Maturity Level 3 Certified and Certificate should be available on MQA/IAF website online
17	RoHS	The Hardware OEM should be RoHS certified and Certificate should be available on MQA/IAF website online
18	A tender-specific Manufacturer Authorization Form (MAF) from the OEM is required from the bidder along with Techno-Commercial Bid.	

B. VMS Server(MAJOR ITEM):

SI No	Parameter	Specifications
1	Processor	Intel Xeon Latest Generation Silver with Clock Speed of 2.2 GHZ, 12 Core and 30 MB Cache
2	Processor Stability	The appliance should be able to support Latest Generation Intel Xeon Scalable processors with up to 64 cores
3	Clock Speed	Base Speed of 2.2 GHZ per processor
4	Total Number of Cores	Minimum 12 Cores and expandability up to 64 Cores
5	RAM Scalability	Up to 16 DDR5 RDIMMS, 4800 MT/sec
6	RAM pre-loaded	32 GB DDR5 RAM
7	HDD Drive – Front Bay	Minimum 4x 3.5-inch 7200 rpm SATA (HDD/SSD), max 80 TB usable
8	Storage Controller	Hardware based RAID 5 Controllers
9	Form Factor	1U Rack
10	Power Supply	Redundant Power Supply
11	Display Port	1 VGA, 2 HDMI
12	Networking	Embedded 2 x 1 GB NIC
13	Chipset	C741
15	Warranty	3 Years Onsite NBD Hardware support
16	ISO Certifications	The Hardware OEM should be of repute with ISO 9001, ISO 14001, ISO 27001 and ISO 45001 certifications
17	CMMI Maturity Certification	The Hardware OEM should be CMMI Maturity Level 3 Certified and Certificate should be available on MQA/IAF website online
18	RoHS	The Hardware OEM should be RoHS certified and Certificate should be available on MQA/IAF website online

19	A tender-specific Manufacturer Authorization Form (MAF) from the OEM is required from the bidder along with Techno-Commercial Bid.
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C. NTP (Network Time Protocol) Server (MAJOR ITEM):

SL No	Specifications
1	Network Time Protocol (NTP) server with master clock accuracy of 50 ms or better, at least two 1G Ethernet port with all accessories etc. shall be supplied with complete required accessories, cabling, Licenses, Master Administrator Passwords etc. meeting requirements for the solution as per following specifications.
2	GPS/GLONASS/Navic input supported, Rack Mountable Type, NTP SERVER to maintain & display IP based NTP time across the network containing L2/L3 switches shall be supplied by the bidder.
3	NTP server shall act as master clock with accuracy better than 50ms in the network to which other clients shall interconnect over the network using NTP client software on windows or Linux OS and synchronize periodically.
4	It shall provide diagnostic and status ports/indications for automatic/manual intervention or web UI.
5	The GPS NTP server shall be equipped with 02 or more independent network RJ45 interfaces (10/100/1000 Mbps NTP output ports), Provide all interconnecting cable required for connection between NTP server and other client.
6	Network Protocol: NTP server shall support all the required networking protocols and NTP v2/ v3/ v4 /SNTP/ IPv4/ TELNET /SSH in particular.
7	SNMP v3 support for status and configuration and SNMP Trap messages shall be supported.
8	Contractor shall supply NTP server with all required accessories required for integration with SCCTV system and shall be configured by bidder including GPS Antenna/Converter Unit & Required RF/RG58 Coaxial cable etc. The credentials & Process shall be shared with authorized Executives during training also.
9	A tender-specific Manufacturer Authorization Form (MAF) from the OEM is required from the bidder along with Techno-Commercial Bid.

D. SAN Storage for CCTV Camera & ICCV Application (MAJOR ITEM):

Sl No	Parameter	Specifications
1	Processor	Intel Xeon Processor
2	Storage Capacity	Minimum 300 TB usable capacity to be offered to record all CCTV cameras at highest resolution and 25FPS with H.265 video compression 24/7 for 30 days.
3	Storage Type	Block Storage System with iSCSI / FC protocol
4	Controller	Dual Active hot swappable Controllers
5	Cache	32 GB memory spread across both controllers. SSDs will not be considered as Cache.

6	RAID	Storage System to be configured with RAID6 protection and Global Hot Spares.
7	HDD	Proposed Storage System should be configured using suitable 8TB/12TB/16TB/20TB/22TB/24TB 7200 RPM SATA/ SAS drives.
8	Scalability	Proposed Solution should be scalable to meet capacity and performance requirement using multiple Storage Arrays of same type.
9	Host Connectivity per Controller	Storage should support minimum 4 ports 10Gb iSCSI BaseT/ 4 ports 10Gb iSCSI SFP+/ 4 ports 32Gbps FC/ 4 ports 12Gbps SAS per controller. Bidder to offer suitable connectivity as per solution requirement. Bidder to offer SAN switches as per solution requirement.
10	Backend Connectivity	12Gbps SAS
11	Total Aggregate Storage Bandwidth	The proposed Storage Solution should ensure a minimum total aggregate bandwidth as defined by ICCC Software and camera OEM on a 90% Write & 10% Read, Random Video Workload. Storage OEM must provide Storage sizing and throughput calculations generated from their online sizing tool.
12	Storage Software Licenses	All relevant storage software licenses should be provided for entire supported storage capacity of the proposed Array.
13	Storage Management	Web based management- 1. HTML5 2. Single-array intuitive element manager 3. Common management tasks from convenient locations 4. Manage storage profiles, network connections, alerts etc.
14	Power Supply	Dual Redundant Power Supply
15	Warranty	3 Years Onsite NBD Hardware support
16	ISO Certifications	The Storage OEM should be of repute with ISO 9001, ISO 14001, ISO 27001 and ISO 45001 certifications
17	CMMI Maturity Certification	The Storage OEM should be CMMI Maturity Level 3 Certified and Certificate should be available on MQA/IAF website online
18	RoHS	The Storage OEM should be RoHS certified and Certificate should be available on MQA/IAF website online
19	Single Make	Video Storage & Video Appliance should be from the Same OEM for seamless operation

20	Warranty Data on Company Website	Product Authentication: The product warranty data should be available on OEM's website to ensure authentic material supply
21	A tender-specific Manufacturer Authorization Form (MAF) from the OEM is required from the bidder along with Techno-Commercial Bid.	

4. **Rack and Power Backup:** - The Rack and Power Backup shall have at least 2 Nos. 45U Smart Rack along with all accessories, 1 Set. 10 KVA Modular UPS along with Li-ion Battery, SPDs and other accessories as per site requirement. The minimum technical specifications of above items are:

A. 45U Smart Rack along with all accessories (MAJOR ITEM):

SN.	Parameter	Specifications
1	Integrated Infrastructure Solution	It is required to deploy the Micro Data Centre Solution for Critical IT Equipment. Site conditions require that the entire Micro Data Centre Solution to be delivered in CKD (Completely Knock-Down Condition) and Complete System to be assembled at site.
2	Scale and Density of Integrated Data Centre	The required solution comprises of Two Racks of 45U Height (Min) (Network Rack & Server Rack) each having effective total mounting space of minimum 45U per Rack available for User IT Equipment. Total 90U mounting space shall be available over 2 racks.
3	Inbuilt redundancy compliant to Tier II/III guidelines	The solution should be incorporating in-built redundancy for Power and Cooling in line with the requirements under Tier III guidelines. Other supportive utilities and services like Fire Detection & Suppressant, Electrical DB, Environment Sensor, Power Monitoring Sensor, Rack Access Control and Security should be provided with high availability of each equipment for this proposed requirement of Micro Data Centre Solution. Micro Data Centre Solution should have the feasibility of an integrated expansion of the available rack space in future by adding more racks in the same setup without taking any downtime or disturbing current setup. As mentioned in the specifications for the cooling panels, the Cooling Unit system solution offered should support the additional load as and when required by enhancing the capacity of the cooling units at the site. Cooling Unit design shall permit to enhance the overall rated capacity by 25-30% at site without replacing existing cooling units

		Apart from the various technical and functional parameters, aesthetics should also be given high importance and the entire set up should be designed to be aesthetically elevated.
4	Cooling System	Solution provided should have integrated Rack Side Mounted (Zero U) - Self-contained Split Type Cooling Unit designed for cooling the racks with 24X7 operations in all respect as per ISHRAE/ASHRAE standard and also integrated with a remote monitoring system. N+N Redundant cooling unit with each unit of minimum 7 KW x 2 capacity for 2 Rack Micro DC. It is required that Cooling Unit should not consume any rack usable space. EC Fans should be used for overall efficiency. These fans should be site replaceable as may needed for servicing. Variable speed is effectively implemented in line with the industry-standard best practices. It is required to run units in N+N redundancy mode where-in single unit will be active to support the heat load and second will be on available mode as needed at any point in time. It is required that these cooling units should be able to update with increase in their cooling capacity up to 30% of rated capacity in future as and when needed. This update will be required to be done at the site without disturbing the running set up. The design of cooling units must be the basis of best industry practices. The units should be user friendly and easy to maintain with minimal local expertise available. Power parameters and cooling conditions are to be monitored over IP. 7 KW Cooling Capacity X 2 Units on day1 and enhanced cooling capacity to 25-30% more as needed in future. Microprocessor-based controller for N+N Redundant Operation HMI Display for Physical level monitoring. Power consumption of all cooling units should be separately monitored and used to generate Energy Efficiency Reports periodically. Power Parameter, Inlet temperature, Outlet Temperature shall be displayed on top of cooling unit for physical level monitoring. Cooling Unit design should be in line with Rack design. Height and depth of the cooling unit should be same as that of rack. Width of the cooling unit should not exceed above 300mm.

		Cooling unit aesthetics look should be in line with rack. Cooling Unit Colour will be required to customize as required. Cooling Unit shall not mount inside the rack. Cooling Unit shall be mounted on side of the rack.
5	Out-Door Unit / Low Side Piping	Copper piping with insulation tube of elastomeric, nitrile foam between each set of outdoor and indoor unit as per above specification. Piping to be properly supported by MS clamp. All transmission wiring between indoor to outdoor units is kept in PVC conduit.
6	Racks	Individual modular racks should be of 45U (Height - Min) x 800 mm (width - Min) x 1400 mm (Depth - Min) Overall Depth of the setup should not be more than 1400mm All Steel Construction Rack with an Integral Base Frame should have the following features: - UDL Carrying Capacity of 1200 KG Minimum - Provision for Grouting Racks at the site as needed. - Efficient Space Management inside the rack ensuring maximum allowable space available for use. Similar space should be available at the rear of the rack also to facilitate the appropriate and efficient movement of air. 45U Rack Equipment Mounting Space Should be available in Rack. Thus a total of minimum 45U Space per rack will be required. 19" Mounting rails be provided with U Identification Numbers which are visible even after mounting of the equipment. All Rack Doors should be easily removable type to facilitate any installation and / or service activities. Side panels of the rack should be fully secured. Industry Standard Swing Handle Multi-point locking with Digital Locking should be provided. These locks should be able to confirm locking status electronically along with local LED Indications and remote monitoring of lock status. EM (Electro-magnetic) Locks or Solenoid Type of Locks should not be used for the rack-based access control solution. Rack colour should be customised as per customer demand / need. Required entity branding shall be done as per customer demand / need. Unique keys shall be provided for each racks.
7	Rack Accessories	Following Rack Accessories should be included: - Blank Panels for closing the opening/gaps in the front

		mounting rails - Rack internal Cable Management for Vertical and Horizontal Cables - Front Panel Mounting Hardware - Brush Panel / Glands / Seals for all Cable Entry Points in the cabinet
8	Rack Metered PDU with Local Top of the Rack Display Unit	Each rack be provided with 2 Nos of Metered PDU as under: - 20 Sockets of IEC C13 + 4 Sockets of IEC C19 - Single Phase, 32A PDU Rating - PDU Level Metering with Local Display on the front side of the rack - separately for Source 1 & 2 - This display in the front should also indicate temperature in the front and rear of the rack. - All type of meters used in the said display unit should have MODBUS RS485 Connectivity and these meters should be Hot Swappable in case of any requirement of the kind. (Typical arrangement of the display unit is as shown under) Top of the rack display shall be provided indicating Power & Environment Reading. Top of the rack display should not exceed height of 100mm.
9	Rodent Repellent System	SITC of Microprocessor based Master Controller with 16X2 LCD DISPLAY capable of operating in 4 ultrasonic frequency band spectrums. The controller should support upto 20 transducers in dedicated connection & 24 transducers in single loop and networkable on RS 485 having facility to support Hardwired Third Party BMS integration via Modbus & potential free NO-NC contacts. The system shall use UL and CE approved transformers for power supply. GUI Software capable of supporting: • Real Time Graphical Representation of the ultrasonic frequency band spectrum depicting the frequency oscillations within the current band. • Facility to generate a consolidated pdf summary report of all controllers or detailed pdf report of individual controller in real time or in a pre-defined schedule. • Parameter Configuration of the controller. • PCB view of each controller.
	Biometric Access Control System	Biometric Access Control should be provided at the on every individual rack level. Following specifications will apply to both the application areas. Biometric reader. Integrated DC Rack doors should have digital locking to permit only authorized persons to open the doors through a fingerprint reader. Design to be as per

10		TIA 942 guidelines. Access Control solution should support multi-level access control and also control based on 4 Eye Principle. All users to be authenticated at two levels. The system must support the remote opening of the doors as may be needed in a critical situation with administrative control.
		Biometric + Proxcard based Access control
		- In-built controller
		- Real-time monitoring over IP
		- Support for Remote Opening
		Proposed Biometric System should have built in Smart Card Reader.
		Proposed Biometric System should have built in camera to capture images of authorised and unauthorised user under data / event logs.
		Proposed System should give warning alarm in case of tampering with machine.
		Should be able to support any numbers of User Terminals, on LAN / WAN.
		System shall have monitoring facilities to detect the connectivity of machine with software.
		Terminal should be IP65, water proof & weather proof.
		System should be CE and FCC Certified.
		Proposed System shall have 1,00,000 transaction log capacity.
		Each Rack door should have electronic digital swing handle lock on front & rear door of each rack.
		Digital Swing handle lock shall be low power, gear motor-based technology. No EM (electromagnetic) lock shall be used at rack level
11	Rack Integrated Fire Detection and Suppression System	Digital swing handle lock shall have integrated sensor to detect lock and latch status
		Digital swing handle lock shall have integrated LED indicator
		Access Control System should integrate with MDC Monitoring Software for remote monitoring
		Fire detection and suppression system, modular type fire suppression system (FK-5-1-12) to cover entire racks. Dedicated nozzles for the suppressant should be provided in each logical compartment of the entire system. The design should be as per NFPA standards guidelines.
		Fire Detection and Suppressant System should not consume any rack space
		5MP Dome Camera.

12	Rack Surveillance Solution	Dome Camera shall be integrated with NVR.
		NVR with 2 TB Storage.
		Mechanical Arm for placing IP Camera on top of rack at appropriate angle.
13	Rack Monitoring Unit	We seek a bidder to propose an intelligent sensor management solution that provides a central hub for environmental monitoring, door sensor, physical access, asset location, and other monitoring and security sensors.
		The proposed solution should be a plug-and-play device capable of measuring data in remote areas. It should seamlessly integrate with Building Management Systems (BMS) and Data Center Management Information Systems (DCIM) software. This integration will enable us to accurately and swiftly monitor conditions from anywhere, providing valuable insights to optimize and enhance facility efficiency.
		Sensors: Temperature, Humidity, Air Flow, Differential Pressure, Water Leak, Vibration, Contact Closure and Door Lock
		Network: Gigabit (10/100/1000 BaseT) Ethernet port; secondary, redundant (10/100/1000 BaseT) Ethernet port. Optional Wi-Fi (802.11a/b/g/n)
		Cascading: Yes, Max 16 devices can be daisy chained using a single Ethernet or USB connection
		Ports: 1X Sensor Port (RJ45), 1X Console Port (RJ45), 2X Eth (1 Gig), 2X USB-A, 1X USB-B
		Form Factor: 1U
		It should have dual power input.
		Remote Management: HTTP(s); SSH; Telnet; RS-232 (Serial); Power IQ; SNMP version v2/v3; SMTP; JSON-RPC; Modbus TCP
		Single window monitoring of all power & environment parameter
		Real time monitoring over IP
		Integration and monitoring of all infra components with Rack Monitoring Unit.
	Rack UPS with batteries	10KVA Rack Mount UPS with N + N level Redundancy.
		Each UPS should not consume more than 3U of total rack space.
		Three phase input and Single-phase output

14		Display: Colored touch LCD screen
		Unity Power Factor i.e. 10KVA = 10KW
		Batteries shall be provided for 10 minutes backup on 80% load.
		UPS and batteries shall be mounted in Rack.
		Batteries shall be rack mounted
15	Electrical Power Distribution Board	Rack mount Distribution board shall be provided for Raw & UPS power distribution within Rack
		Rack mount DB should be equipped with appropriate rating of breaker and industrial socket
		Rack DB should be pre-terminated.
		DB shall be rack mounted in utility cabinet.
		Based on site condition, DB shall be customized as per site requirement
16	Services	On-Site Installation, Testing & Commissioning for all above mentioned component.
		Handover of Product documents, Operational Manual and As-built drawing.
		1 Year warranty on all above-mentioned components.
		On-site Training from Certified CDCP DC professional.
		Material Freight + Loading + Unloading
17	A tender-specific Manufacturer Authorization Form (MAF) from the OEM is required from the bidder along with Techno-Commercial Bid.	

B. 10 KVA Modular UPS along with Li-ion Battery(MAJOR ITEM):

Sl No	Specifications
A	GENERAL FEATURES
1	Supply, installation, testing and commissioning of 10 KVA/10KW N+1 True On-Line Double Conversion, modular type UPS. The 10 KW UPS system shall have facility for operating in N+N parallel redundant (load sharing) mode with similar 10 KVA/10KW N+1 modular UPS. All necessary hardware & accessories for Parallel operation should be included
2	Each UPS shall be DSP controlled with front end IGBT rectifier. Inverter shall be 3 Level IGBT based for highest efficiency. Each 10 KW N+1 KW UPS system should have provision to operate in parallel redundant mode, with similar UPS to provide redundancy in future (up to 4 nos. UPS frames/cabinets in parallel).
3	Each 10 KW N+1 KW UPS shall be with modular architecture with 3 nos of 3.4 KW Hot Swappable Power Modules of double conversion

	configuration, especially designed for mission critical applications, such that 01 module shall be redundant. In case of failure of any 01 module in the UPS frame, available power shall be 10 KVA. Individual Module size shall be of 5 KW. There shall be provision to scale up the UPS to minimum 20 KVA/KW through vertical expansion simply by inserting additional hot swappable power modules as and when necessary.
4	The frame for Each 10 KW N+1 KVA/KW UPS shall be in a space saving design, with standard IT 15~32U frame. UPS shall have flexibility for being configured at site as 1 Phase input – 1 Phase Output, 3 Phase input – 1 Phase Output and 3 Phase input – 3 Phase output without any modification
5	Each hot swappable UPM power module shall include a rectifier, battery converter, inverter and independent logic circuitry. There should be no common controller (either single or redundant) outside the modules.
6	Each UPS frame shall also have an STS Module comprising of a fully rated, continuous duty static bypass switch for high-speed transfers along with RS232 port, USB port, SNMP Slot, Dry contact ports. No module based static switches shall be acceptable
7	The control panel comprising of a Colour graphical LCD DISPLAY, touch screen based, with LED status indicators for monitoring of all measured parameters, UPS and battery status and alarms along with an inbuilt Oscilloscope that displays the waveform of the output voltage and current, and the bypass voltage. There shall be provision for Recording/Storing of waveforms of critical elements during fault conditions for rapid maintenance service diagnosis.
8	UPS should have inbuilt facility for Life cycle monitoring of critical components like fan, capacitors, battery which helps the UPS to predict the life of these components.
10	BATTERIES: Each 10 KW N+1 KW UPS shall have battery bank comprising of 10,080 VAH using 12V, VRLA Sealed Maintenance Free Batteries for 30 minutes backup time. Offered VRLA SMF batteries should comply with below: ☐ Long Design Float life of at least 10 years ☐ Made of Lead-Calcium-Tin alloy composition for long float service life ☐ Battery should be Manufactured in India (class 1 MII Product with >50% local content) ☐ Operating Temperature Range of 0°C - 45°C ☐ Self-discharge per month <3% of rated capacity at 25°C ☐ 03 years OEM standard warranty ☐ ISO 9001, ISO 14001 for manufacturing plant in India ☐ Brochure of Battery indicating above specifications with Make & Model to be specified The UPS shall have inbuilt 10 Amperes Charging Current to adequately charge the battery bank. The vendor has to supply the necessary battery rack and interconnecting cables (nyvin fire retardant type). There shall be provision for adding extra rack mounted charger module (2U) of 15 Amperes in order to allow proper charging of batteries in case extended autonomies are required. Technical Datasheet verifying this feature should be provided.

11	Energy Saver Smart sleep function: System should have capability to intelligently shutdown inactive power modules to increase energy savings and achieve higher efficiency	
12	Self-Test mode: System can perform a full load test without the connection of a load bank, processing power in a re-circulating fashion, using its own rectifiers and inverters as an internal load bank, generating significant savings in cost, time, coordination and power.	
13	Isolation Transformer of 20 KVA should be provided with each UPS for providing galvanic isolation between input & output. Isolation Transformer should be external to the UPS and placed inside a suitable enclosure with powder coated paint and provided with cast iron wheels at bottom and hooks for lifting the unit.	
B	DETAILED SPECIFICATION SHEET	
1	RATING	10 KW N+1 KVA/KW Modular On-Line UPS
2	Make & Model	To be Specified
	ELECTRICAL CHARACTERISTICS INPUT	
3	Rated input voltage	380 V; 400 V; 415 V, 3 Phase and 220 V; 230 V; 240 V, 1 Phase (user selectable)
4	Voltage tolerance	310~475 VAC OR 180~275VAC @100% load
5	Rated input frequency Frequency tolerance	50 or 60 Hz, user configurable 40 to 70 Hz
6	Input power factor, double conversion @100% load	> 0.99
7	Input current distortion at rated input current	< 3%, 100% load
	ELECTRICAL CHARACTERISTICS OUTPUT	
8	Crest factor	3:1
9	Rated output voltage	380 V; 400 V; 415 V, 3 Phase and 220 V; 230 V; 240 V, 1 Phase (user selectable)
10	Output voltage variation, steady state	± 1% (balanced load); ± 2% (unbalanced load)
11	Total voltage harmonic distortion 100% linear load 100% non-linear load	< 1% < 5%
12	Rated output frequency Output frequency variation	50 or 60 Hz, configurable ± 0.1 Hz
13	Overload capability	1 hour: 110%, 10 mins: 125%, 1 min:150%
14	Efficiency in double-conversion, rated linear load	≥95%
	BYPASS	
15	Type of bypass	Static
16	Bypass rating	20 KW
17	Bypass voltage range	380 V- 415 V
	BATTERY CHARACTERISTICS	

18	Battery technology	12V, VRLA SMF Batteries with compatibility for Li-ion Batteries
19	Nominal VAH capacity	10,080 VAH for 30 minutes Back-up
20	Battery start option	Yes
COMMUNICATION CIRCUITS		
21	Standard connectivity ports	USB/RS-232, BMS/SNMP card
22	System Display	Touch based graphical LCD display
23	Centralized UPS Monitoring & Management System	The proposed UPS shall have Centralized UPS Monitoring & Management system comprising of hardware and software, for real-time device monitoring and notification
ENVIRONMENTAL		
24	Acoustic noise at 1 m, in 25 °C ambient temperature	< 65 dBA
25	Ambient service temperature range	0°C to + 40°C without output power derating
COMPLIANCE WITH STANDARDS		
26	Quality	ISO 9001, ISO 14001, ISO 45001, PEP
27	Safety	IEC 62040-1
28	EMC	IEC 62040-2
29	E-Waste	EPR authorisation from CPCB, Govt of India
C	Installation & Commissioning	UPS should be installed, commissioned and maintained as per Govt Electrical standard practices. OEM/Bidder's Valid Govt electrical license to be enclosed with Bid
D	Additional Eligibility / Qualifying criteria for UPS OEM & Bidder	☐ OEM should have previous experience of having successfully supplied, installed & commissioned at least 15 units of ≥15 KW or higher capacity Modular UPS System in any Govt. or PSU Data Centre/Aviation/Server Room/Computer Centre Site in India. Documentary evidence such as details of Contract, Client Details to be furnished ☐ The bidder should submit documentary evidence in support of 100% compliance to the tender specifications. The bidder should submit the Datasheet and user/operation manual of the UPS system offered along with cross reference to the tender specifications, failure to submit the same may result in immediate disqualification.
E	A tender-specific Manufacturer Authorization Form (MAF) from the OEM is required from the bidder along with Techno-Commercial Bid	

C. SPD:

SI No.	Specifications
1	SPD shall support CAT 6 POE
2	300mA Max operating current
3	Common & Transverse Protection Modes
4	All Pairs lines protected
5	<5ns response time
6	100A(8/20us) max. surge rating
7	100Mbps(C5, POE Models) , 1000Mbps(C6 models) max data rate
8	25pF 5pF(single port models) Shunt Capacitance.
9	0Ω In line resistance
10	100BaseT, 1000BaseT, CAT6 standards compliance
11	RJ45 Connector type
12	Flying lead(single port) earth stud(Rack mount) earth connection
13	IP 66 / 67 (Single port) or(Multi port) enclosure material
14	From -10° to 85°c operating voltage
15	0-95% (R.H) Humidity
16	0-3650m Altitude
17	A tender-specific Manufacturer Authorization Form (MAF) from the OEM is required from the bidder along with Techno-Commercial Bid

5. **Software and Application:** It shall have at least 1 Nos. Integrated Command Control Software along with Dashboard, 1 Nos. VMS Software, 1 Nos. NMS (Network Monitoring System), Integrated Threat Intelligence software, Video Conferencing software and other accessories as per site with required life time license. The minimum technical specifications of above items are:

A. Integrated Command Control Software along with Dashboard (MAJOR ITEM):

SI No.	Specifications
1	System Architecture Architecture Type: Modular, Scalable, and Service-Oriented Architecture (SOA) Core Technologies: Frontend: React / Angular Backend: Java Spring Boot / Python Django Database: PostgreSQL / MS SQL Server / MongoDB Integration Layer: RESTful APIs, MQTT, OPC-UA, Modbus TCP/IP Visualization: GIS-based dashboard (2D/3D map), CCTV video wall integration

		○ Operating System: Windows Server / Linux (Ubuntu/CentOS) ○ Virtualization: Docker / Kubernetes-enabled microservices
2	CCTV Surveillance Management	• Integration with all IP Cameras, NVRs, and ICCS Software via ONVIF protocol • Live monitoring, playback, and video analytics (motion detection, intrusion, loitering) • Smart alerts for unauthorized entry, crowd detection, or fire/smoke events • Centralized health monitoring of all cameras • GIS Map-based video stream location tracking • AI-enabled object and face recognition • Storage videos in SAN system for those CCTV cameras (at max 50 nos.) whose do not have sufficient video streams for parallel integration with NVR and server.
3	Lock Gate Automation System	• Supervisory control and data acquisition for lock operations • Real-time monitoring of lock gate operations and associated system • Alarms monitoring • Control logic based on PLC/RTU integrated with ICCS via Modbus
4	Smart Light Control System	• Centralized monitoring of smart streetlights and facility lighting • Automatic ON/OFF and dimming based on ambient light sensors or schedules • Real-time energy consumption tracking and fault detection • Grouping and zoning of lights through GIS interface
5	KP Dock-II Solar Plant	• Real-time data acquisition for voltage, current, and power generation • Fault and performance analytics (e.g., panel degradation, inverter downtime) • Reporting dashboard for generation vs. consumption analysis

6	33KV Electrical Substation SCADA System	• Real-time monitoring of electrical distribution network • Integration with field IEDs, RTUs, and PLCs • Data acquisition for voltage, current, power factor, frequency, and breaker status • Alarm management and event logging • Energy analytics and load forecasting • Interface with firefighting system and emergency alerts
7	Common Features	• Unified Dashboard: Integrated visualization of all subsystems with GIS mapping features available (if required). • User Management: Role-based access control (Admin, Operator, Engineer). • Incident Management: Centralized ticketing and escalation workflow. • The entire feature uses various types of Sensor to collect the required information. The Sensor data will sent to the centralized Sensor gateway. Centralized Sensor gateway sends the data to the cloud application. Application store the data in PostgreSQL and other's DB, provide it to the end user, and will take preconfigured action based on the scenario. • The project follows agile model so it is easy to modify the existing modules and integrate new models later • The application uses Spring Boot Framework to avoid writing lots of boilerplate Code, Annotations and XML Configuration • The application uses JAVA as Middleware to support higher cross-functionality and platform independent • The application uses AngularJS as it single page application, two way binding • Reporting & Analytics: Customizable MIS, energy reports, incident summaries. • Data Archiving: Automatic archival of historical data for 90/180/365 days. • Cybersecurity: SSL encryption, firewall integration, and multi-factor authentication.

		• Integration Protocols: REST API, MQTT, OPC-UA, ONVIF, SNMP. • Audit & Compliance: ISO 27001 and IT security standards compliance.
8	System Performance and Scalability	• Uptime Requirement: $\geq 99.5\%$ • Latency: ≤ 2 seconds for live device data updates • Data Retention: Configurable (minimum 1 year) • Concurrent Users: Minimum 100 users (scalable to 500+) Expandable Architecture: Supports addition of new subsystems via API
9	Deployment & Maintenance	• Deployment Options: ◦ On-Premises / Cloud / Hybrid • Backup & Recovery: ◦ Automated daily database backup ◦ Failover support for high availability • Maintenance: ◦ Centralized software update management Remote diagnostics and support
10	Reports & Dashboards	• Real-time graphical dashboards for each subsystem • Alarm and alert status overview • Energy consumption & generation reports • Access logs and incident summaries • Custom report generation and export (PDF, Excel, CSV)
11	Security & Compliance	• Multi-layered authentication (username + biometric / RFID) • Encrypted communication over HTTPS • Audit trails for all system actions Compliance with ISO 27001, and data protection standards
12. Environment Monitoring		
1	DATA capturing	through LAN (http) / Email (POP3)
2	Compatible	to supplied Ethernet based monitoring unit
3	DATA output	Graph overview / MS Excel export / XML database / Email report / XML database / Email report
4	Application	Windows UI, Windows service (runs in the background, suitable for servers too)

5	MS Excel export	periodic, in the background, compatible with MS Excel 2007 and newer
6	License	to be provided for commercial version for 8/20/250 sensors
7	Compatibility	to Web Interface
8	Miscellaneous	Temperature Sensor , Humidity Sensor , Voltage/Power Sensor and Smoke Sensor should be integrated with Environment Monitoring Software
9	Primary Screen	Large, color-coded overview of the entire system. Real-time status indicator Key performance indicators ,Units Produced, Efficiency Prominent display of active alarms
10	Alarm Management	• A dedicated, always-visible alarm Audible alarm that can be silenced and acknowledged • Live alarm feed with push notifications for critical faults.
11	Technology	Frontend: Modern JavaScript framework (Angular) for a responsive Single-Page Application Database: Time-series database for efficient historical data storage, paired with a relational database for users, alarms, and metadata. Real-time Communication: WebSockets or Server-Sent Events for live status update
12	Real-Time Dashboard	Visual status overview of one or multiple systems. Key metrics and KPIs updated in real-time. Interactive
13	User Management & Authentication	Secure login via username/password. Role-Based Access Control
14	Availability & Reliability	Web Application Uptime: 99.5% The Data Gateway must be able to buffer data during network outages to the web server and sync upon reconnection
15	Security	All web communications must use HTTPS/TLS 1.2+. Passwords must be stored using strong, salted hashing Protection against common web vulnerabilities Session management with configurable timeout
16	Scalability	The architecture should support the addition of multiple systems to the same web platform without significant re-engineering
	A tender-specific Manufacturer Authorization Form (MAF) from the OEM is required from the bidder along with Techno-Commercial Bid.	

Note: The above software shall have the features for integration with RFID system, Biometric system, Vessel Traffic Management system, Port Operation Management System, if required.

However, integration of these will be done upon availability of APIs and/ or database of said systems. Necessary hardware &/or software for transfer of data from any system to command control centre is to be provided as per requirement with additional cost, as per actual to be borne by SMPK.

B. VMS Software (MAJOR ITEM):

SI No.	Specifications
1	The IP Video Management Software should allow Live Viewing/Streaming, Recording and Management solution of Network Video surveillance systems & shall not have any Limit on the Number of Cameras to be Connected & shall be Scalable to Unlimited IP Cameras in Future by Augmentation of Camera channel Licenses & server Hardware Components.
2	The Open Platform Video Management Software (VMS) Application, should be Brand Agnostic, should not be from the same Camera OEM & should support various third Party ONVIF IP Cameras, this is Compulsorily required so that the Same VMS Software Applications can be scaled up in future by just Adding third Party ONVIF Compliant IP Cameras & Additional Software Licenses.
3	The Video Management Software shall be Client-Server based IP Video security solution that shall provide seamless management of Digital Video, Audio (If Supported by the Cameras) across an IP network. The video management Software shall provide full virtual matrix switching and control capability. Video from sites shall be possible to view from single or numerous workstations simultaneously at any time. Cameras, recorders, and viewing stations may be placed across the terminal in the IP network.
4	The Proposed VMS Software should be ONVIF S, G, T & M Profile Compliant & should be a Full Member of ONVIF. The Declaration of ONVIF S,G,T & M Profile shall be available on ONVIF Official Website www.onvif.org in the Conformant Devices. The Compliance/Conformance to the ONVIF Profile S, G, T and M should be available with the VMS Software OEM on or before the Date of Bid Publishing. A Certificate from ONVIF Indicating Membership details shall be Submitted as a Proof along with the technical Bid Documents.
5	The IP Video Management Software shall be Licensed & Perpetual Licenses to be Provided, such that they are Valid for Product's Lifetime.
6	The VMS Software shall be Windows based & shall be Compatible on Windows 10/11 Professional and Windows Server 2019/2022 Standard Edition
7	The VMS Software shall support iPad, Android and iPhone devices & shall also support web clients.
8	The Video Management System shall be a fully distributed solution, designed for limitless multi-site and multiple server installations requiring 24/7 surveillance with support for devices from different vendors. The Video Management System shall offer centralized management of all devices, servers and users and must empower a flexible rule-based system driven by schedules and events.

9	The VMS Software system shall be a scalable client – server architecture built using well known operating systems
10	The VMS Software management server shall be able to intelligently scan an IP network for new devices (cameras or servers) along with automatic model detection.
11	The VMS Software system shall provide an integrated secure, scalable and easily accessible software-based solution for the management of the existing & future physical security infrastructure
12	The VMS Software system shall provide a powerful and efficient management interface for all the security systems across all monitored sites.
13	The Video Management System shall contain recording servers used for recording video feeds and for communicating with cameras and other devices. The recording servers shall process the recordings and playback the video streams.
14	The management server shall allow access to a system manager in the form of Configuration Client from where the administrator can configure and manage all servers, cameras and users.
15	The Video Management System shall allow an unlimited number of cameras to be connected to each recording server and an unlimited number of recording servers to be connected to each management server across multiple sites, if required.
16	The Management Services of the VMS Software MUST come as one unit and not multiple loadable units on Multiple Individually Configurable Servers, the Management Server shall be loaded on a Single Machine, from which all the Cameras, Additional Recording Servers, Video Analytics Servers & Viewing Clients, shall be managed Centrally.
17	A Single Management Server shall be capable of managing multiple recording manager systems or Recording Servers.
18	It shall be possible to assign encoders and IP cameras to recording manager/Server
19	The VMS Software shall be based on a true open architecture that shall allow the use of non-proprietary workstation and server hardware, non-proprietary network infrastructure and non-proprietary storage.
20	The VMS Software must Support for recording of H.265+, H265, H.264, MPEG4 or MJPEG Video Streams in at minimum 1 fps to 60 FPS at minimum CIF to Full HD (1080p) and 4K resolution.
21	The VMS Software must support RTP over UDP Stream, RTP over TCP and HTTP Video streaming
22	The VMS Software must support multiple brand of IP cameras and encoders.
23	The VMS Software must support dual streaming Capabilities with Live Streaming and recording at different qualities of videos. (Min. different Streams should be available in the Cameras.)
24	The VMS Software should Support Multiple Storage Technologies like Network Attached Storage (NAS), Direct Attached Storage (DAS), Storage Area Network (SAN), local or network drives & S3 Block Storage.

	The VMS Software Application must Support for Defining different drive for each & every individual camera.
25	The VMS Software must have Option to define multiple recording paths
26	The VMS Software must have ability record audio along with video in same recording file. (For IP Cameras that Support Built in Microphone or an External Audio Input with an External Microphone connected to it).
27	The VMS Software must support for Pre-buffer and Post buffer recordings up to 10 minutes.
28	The VMS Software Application must have a Built in Storage and Bandwidth calculation tool, this shall Enable the Recoding size estimation for each hard disk attached to the server. This shall also enable to Option to check disk size requirement of individual camera based on the Current Camera Network Traffic/Bandwidth.
29	The VMS Software must have the Option to record at low frame(I-frame) and high frame rate on Motion
30	The VMS Software must have the feature to Export the desired portion of video in mp4, avi and asf formats in DVD/USB or any external device. Viewing of this recording must be playable on authorized player which shall be provided by software manufacturer or in media player on OS Windows, Linux/Unix or Apple Mac.
31	The VMS Software must have the feature to Export the recording in client and remote PC also with proper authentication.
32	The VMS Software must have the Functionality for Window-Pop up, Email, Sound alarm, SMS on recording/ video loss Event or any event.
33	The VMS Software must have the Functionality of email and SMS (Through SMS Gateway).
34	The VMS Software must Support for Automatic archiving of Video Recording after set number of days on First In First Out (FIFO) Basis and automatic recording deletion after disk full on FIFO Basis.
35	The VMS Software must Support for Edge Recording Synchronization: The VMS server and Camera should sync recordings in case of network or other communication failure between camera and VMS Software, through ONVIF G Profile
36	The VMS Software must Support for Encryption with the Ability to encrypt video while exporting. Selectable options of 56 bit, 128 bit and 256 bit encryption shall be available to the Operator/User for Exporting with Password Protection
37	The VMS Software must Support for Export of Signed video using public/private key Exchange.
38	The VMS Software should Support Failover for both the Recording Servers as well as the Management Servers. The Proposed VMS Software Solution Shall support native Fail over with in the application with no dependency on any external application for both hardware and application redundancy. Solutions with external clustering like Windows Clustering, Microsoft SQL Clustering and VMware or Hyper-V etc. should not be proposed. The native failover architecture must be for both management and recording servers.

39	The Fail over and Fall-back management and recording Server shall be on hot standby, ready to take over during the primary management server fails. No manual action from the user shall be required. The fail over time should not be beyond 30 Seconds.
40	The VMS Software Client Application should support for Live Streaming of minimum 110 cameras simultaneously on 1 screen. In Addition to Live Streaming on a Single Display, the VMS Software Client must Support for Video Wall Functionality to display on Multiple Displays.
41	The VMS Software Client Application should have a feature of Configurable Matrix views with user define size and number of cameras. Pre-defined views from full screen, 1x1 to 8x8.
42	The VMS Software Client Application should support Pre-Defined Camera Views sequencing with user driven & Configurable time interval.
43	The VMS Software Client Application must Support for Dual Streaming and Automatic Switching from Low to High Quality on Full screen mode. In Addition to Dual Streaming functionality, the VMS Software must also Support Direct Camera Streaming or Thru casting from the VMS Software Client GUI. The VMS Software must have Options to change Live View directly from cameras or from VMS server using RTSP and HTTP options
44	The VMS Software Client Application must have the Option to change Live View directly from cameras or from VMS server using RTSP and HTTP options
45	The VMS Software Client Application should support live view and Playback from minimum 10 clients- Both local and remote
46	The VMS Software Client Application should support event based playback.
47	The VMS Software Client Application must have the functionality to search based on Date/Time/Camera, Name, ID and Location for more than one camera simultaneously.
48	The VMS Software Client Application must have Customized camera views based on: User input number of cameras. User chosen shape and size.
49	The VMS Software Client Application must have Digital Zoom Capabilities: Both complete live picture and Zoomed picture should be visible simultaneously while zooming. Should be available On Live and Playback Videos. Zoom available on snapshots too.
50	The VMS Software Client Application must have PTZ Controlling Capabilities with the Following Functionalities: PTZ option available through mouse and joystick Gaming joystick as well as PTZ joystick options available On screen PTZ control with Click and Zoom facility PTZ presets and tours setting

51	The VMS Software Client Application should allow for creation of multiple camera sequences. It should be possible to set the dwell time for the cameras within the sequence.
52	Software should allow sequences control (pause/play, skip forwards, skip backwards).
53	The VMS Software Client Application should support Live view and Playback available at the same time with Playback window running side by side with live view window.
54	Event window with specific snapshot of that event should be shown simultaneously in Live view screen. Clicking on the event should play recording of that event time.
55	The VMS Software Client Application must have Playback Navigation Tree View with Recording server, camera list, year/months list and the date wise play list.
56	The VMS Software Client Application must have Playback option for frame-by-frame Playback.
57	The VMS Software Client Application must have Playback Video lock feature.
58	The VMS Software Client Application must have feature of Common Timeline for syncing of multiple cameras while playback.
59	The VMS Software Client Application must have Ability to make bookmark of any portion of video and view list of all bookmarks
60	The VMS Software Client Application must have feature for Instant Playback and Quick Search of event based recordings.
61	The VMS Software Client Application must have feature of Event based search: Event based Time line to quickly show coloured dots in Timeline and view recorded videos at the event time.
62	The VMS Software Client Application must have a feature of Playlist with files listed for each date. User can click on a date to play recordings.
63	E-map client should show icon blink and voice alert of the event. Should be able to take snapshots from Google Map if connected to internet. It should be possible to click on icon in a map to initiate PTZ camera preset, run PTZ pattern, view camera.
64	The VMS Software Application Two-way audio communication between camera and VMS Software. Option to send/broadcast Audio to multiple cameras
65	The VMS Software must have Ability to view live video on iOS and Android phones through Mobile Applications.
66	The VMS Software Mobile App must have the Provision for PTZ Control on Mobile App and Remote Locations
67	VMS Software Mobile App support for multiple sites spread across WAN to be controlled and viewed from central location.
68	The Mobile App must also Support for Audio Streaming along with Video Streaming.
69	The VMS Software must have the Capability of Automatic discovery of devices/IP Cameras using UPnP and/or ONVIF

70	The VMS Software Application shall have No software limit on number of cameras supported in single recording server (Any increase in the number of cameras should be possible by augmentation of hardware and license components)
71	The VMS Software Application must have the feature to Add all cameras with single click. Apply settings to multiple cameras of same model with single click.
72	Generate logs & reports in Graphical & Tabular form and export in pdf, excel or more format
73	The VMS Software Application must Support Failover with Automatic switching of user selected cameras to back-up server in case of failure.
74	Automatic Health check-up and activation of optimization modules once CPU reached more than 85%.
75	The VMS Software Application must have the Capability Add multiple recording servers under same management server. There shall no Limit on the No. of Recording Server that can be Added to a Single Management Server.
76	The VMS Software Application must support User role based cameras and features access. It should have the Capability to Define users with passwords and access to only specific cameras
77	Complete server logs including login access, system settings change, archiving events, video or recording loss and all activity done by administrator or any other user in the system.
78	VMS Software control of cameras and monitoring on client workstations shall be done through the administrator interface.
79	System watchdog feature be available to alert in case of failure of cameras and servers.
80	Should support multiple brand IP cameras, encoders, NVR's and DVRs. No restriction on camera hardware.
81	Should support ONVIF protocol including Profile-S, G, T & M.
82	Option to view cameras only on alarm. Matrix grid size should change automatically if alarms are generated from multiple cameras simultaneously
83	Automatic or manual reset & close option of video panel
84	The VMS Software Application must Support Failover for Management & Video Recording Servers. The System should support N: 1 or N: N failover for Recording Servers. Failover time should not be more than 30 seconds.
85	The VMS Software Application must have the Option to do failover of selected cameras in case of recording server failover.
86	The VMS Software Application must have the Option to add multiple recording servers under single Management Server.
87	The VMS Software licensing shall require MAC Id of Server/ Recorder only, not of camera devices.
88	The VMS Application must Supports up to minimum 50 clients simultaneously. Separate licensing required
89	The VMS Application must have Option to configure video analytics in same client as VMS Software

90	The VMS Software must support for Connecting Multiple External Storage Devices in the form of Primary & Secondary Storage Drive.
91	It must also have the Option of Storage Drive Redundancy, wherein if the Primary Drive is Unavailable then the VMS Software Application/Recording Server must Automatically Start Recording in the Secondary Configured Drive.
92	In Case of Recording has been done in Secondary Storage Drive, during the Failure of Primary Drives then after the Primary is restored the Recording that took place in the Secondary Drive shall be Synchronized in the Primary Drive.
93	The VMS Web Client shall have Dashboarding Capabilities, such that the Dashboard should Support for Drawings/Maps GIS Layer, OSM Layer, AutoCAD .shp File, .JPEG file format, .PDF file format, Customized Video Grid for Live & Playback of Video & Events Table
94	The VMS Web Client shall show the Camera details with Key Performance Indicators like, Total Cameras connected, Total Cameras Disconnected, Status Visualization in the form of Pie Chart
95	The VMS Web Client shall have a Reporting functionality in the form Camera Uptime, Downtime.
96	The VMS Web Client shall also show the Recording server status Report, Storage Space Available status & Reports.
97	The VMS Web Client must support for H.265 Codec Live & Playback Streaming.
98	The VMS Web Client shall support comprehensive data filtering for most reports based on entity type, event type, event timestamp, custom fields, and more.
99	The VMS Web Client shall support the following actions on a report: print report, export report to a PDF/Microsoft Excel/CSV file, and automatically email a report based on a schedule and a list of one or more recipients.
100	The Video Management Software Application should be an Open Platform Application & should not be from the Same Camera OEM.
101	The Proposed VMS Software should be ONVIF S, G, T & M Profile Compliant & should be a Full Member of ONVIF. The Declaration of ONVIF S,G,T & M Profile shall be available on ONVIF Official Website www.onvif.org in the Conformant Devices.
104	The VMS Software OEM shall have a direct Registered Office in India & should be in Operational as on the Last Date of Bid Submission.
105	The Proposed Video Management Software (VMS) Application should have undergone Audit as per OWASP Top 10 Security Risks from STQC. A Security Test Report/Certificate from STQC to be Submitted as a Documentary Evidence/Proof.
106	A tender-specific Manufacturer Authorization Form (MAF) from the OEM is required from the bidder along with Techno-Commercial Bid.

C. NMS (Network Monitoring System) (MAJOR ITEM)::

Sl No.	Specifications
General Parameters	

1	For effective operations and management of IT Operations, there is a need for an industry-standard Infrastructure Monitoring System. Given the expanse and scope of the project, NMS becomes very critical for IT Operations and SLA Measurement. Some of the critical aspects that need to be considered for operations of IT setup of are: Network Monitoring, Log Management.
2	The OEM of the proposed solution should be "Make In India" company .
3	The solution should be capable of running in Linux platform and should be 64-bit application to fully utilize the server resources on which it is installed.
4	The proposed NMS solution must comply with the following standards: CIS certification, ISO 27034-1 for application security, ISO 27001:2022 for information security management, GDPR for data privacy, and SOC 2 Type 2 for service organization controls.
5	OEM Should provide support for all upgrades and updates during the contract Period. The OEM should have a support center with Dedicated Support mail id and toll free number in INDIA. OEM Should provide escalation matrix along with bid submission.
6	OEM should provide configuration and training for minimum 3 days along with training material.
Network/Infra Monitoring	
7	The Monitoring Solution should provide Unified Architectural design offering seamless common functions including but not limited to: Event and Alarm management, Auto-discovery of the Network environment, Correlation, and root cause analysis, Reporting and analytics
8	The solution must provide discovery & inventory of heterogeneous physical network devices like Layer-2 & Layer-3 switches, Routers and other IP devices and do mapping of LAN connectivity with granular visibility up to individual ports level.
9	The operator should be able to build correlation rules in a simple GUI based environment where the Operator should be able to correlate cross domain events
10	The solution shall provide future scalability of the whole system without major architectural changes.
11	All the required modules should be from same OEM and should be tightly integrated for single pane of glass view of enterprise monitoring
12	The solution must offer interactive end-to-end network path mapping with hop-by-hop performance analysis, threshold-based alerting, and historical trend insights. It should correlate node-level metrics with service impact, enrich paths with metadata (e.g., ISP info, geo/IP), and support policy enforcement with contextual visualizations.
13	The solution must support custom dashboards for different role users such as Management, admin, and report users

14	The proposed solution should allow the application of advanced statistical transformations and functions over selected KPIs, including but not limited to: Anomaly Detection Forecasting Moving Average Median Function Logarithmic Scale Transformation Delta/Derivative Functionality
15	The solution should provide superior view of infrastructure health across system, networks, application and other IT Infrastructure components into a consolidated, central console
16	The proposed solution must provide comprehensive and integrated management of IT infrastructure components to maximize the availability of IT services and SLA performance.
17	The design functionality shall facilitate creation of templates used for monitoring key network resources, devices, and attributes. Default templates and best practice designs are provided for quick out-of-the- box implementation automating the work required to use OEM validated designs and best practices.
18	The proposed solution must provide Health Monitoring reports of the network with settable periodicity -@24 Hrs, 1 week, 1 month.
19.	The proposed solution must provide the graphical layout of the network element with modules drawn using different colors to indicate their status
20.	The proposed solution should have multiple alerting feature to get the notification via email, sms and third-party systems
21.	The proposed solution should provide alert console with alert summary such as no. of correlated alert, network alert, server alert, virtualization alert, cloud alert, application alert etc.
22.	The system must have provision to overlay alert on reported metric to understand alert triggering behaviour across multiple drill down pages
23.	Widgets should allow advanced visualization customizations, such as: Toggling legends, adding rotation and adding threshold markers Conditional formatting (icon/color based on thresholds) Column visibility toggles and value formatting Metric/unit conversion and display customization Text Widget to bifurcate sections
24.	The proposed solution should offer a wide variety of intuitive widget visualizations to represent telemetry data effectively, including: Line Chart, Area Chart, Stacked Bar, Horizontal Bar, Vertical Bar, Pie, Donut, Top-N, Grid/Table, Sparkline, Treemap, Sankey, Bubble, Heatmap, Geo-Map, and Gauge
25.	The proposed NMS solution must provide agentless as well as agent-based monitoring for server infrastructure. The agents should be able to set polling interval as low as 1 second with low overhead on target server infrastructure.

26.	The platform should include a dynamic runbook automation engine, allowing users to create, modify, and execute automation runbooks from the UI across a variety of incident response and administrative tasks.
27.	The solution should support custom plugin development using Go and Python, allowing tailored data collection logic and protocol support extensions.
Log Analytics	
28.	The solution should facilitate the transmission of the log data generated by the IT systems/ databases/ devices/ applications/ appliances/ operating systems to the central server. The solution must be in a position to collect logs from the IT sources like: Network devices, OS, Database, Middleware, Hypervisors, Applications & Security solutions, SAN devices, Security devices.
29.	The solution should have capability to collect the generated log in sequence. The log data must be transferred to the central server over the network on real-time basis or in occasional batches based on schedule or the amount of log data waiting to be transferred.
30.	Log Compression should facilitate storing of log file in a way that reduces the amount of storage space needed for the file without altering the meaning of its content.
31.	The proposed solution should enable easy parsing of multi-line logs by specifying regex expressions directly through an intuitive user interface.
32.	The proposed solution should support remote log collection utilizing HTTP, SSH, PowerShell, and JDBC protocols for robust and flexible remote log retrieval.
33.	The proposed solution should include extensive out-of-the-box (OOTB) log parsers capable of accurately parsing logs from diverse technologies and systems.
34.	The proposed solution should provide intuitive, UI-based dynamic log parser customization capabilities, including regex, delimiter-based, JSON, and custom plugins for specialized parsing requirements.
35.	The proposed solution should support remote log collection utilizing HTTP, SSH, PowerShell, and JDBC protocols for robust and flexible remote log retrieval.
36.	The proposed solution should have a built-in capability to forward collected logs to specified external destinations for streamlined data handling and integration.
37.	The proposed solution should enable easy parsing of multi-line logs by specifying regex expressions directly through an intuitive user interface.
38.	The proposed solution should facilitate keyword-based searches across both raw and indexed log data, ensuring comprehensive log data retrieval.
39.	The proposed solution should offer diverse visualization widgets including bubble charts, tree maps, geo-maps, etc., to facilitate rapid and insightful data visualization.
40.	The proposed solution should include detailed data collection statistics dashboards to optimize and fine-tune log ingestion processes.
41.	The proposed solution should support dynamic policy creation for custom grouping and filtering criteria.

42.	The proposed solution should allow both scheduled and real-time evaluations of defined policies based on custom criteria, ensuring proactive log management.
43.	The proposed log management solution should include out-of-the-box parsers for various operating systems, databases, applications, network devices, and syslogs. Additionally, if any collected logs cannot be parsed then the console must provide seamless automation to extract fields from collected logs via drag and drop functionality to avoid log parsing complexity of collected logs from various syslog/ windows/ application sources.
44.	The proposed solution should automatically detect log severity levels to facilitate immediate out-of-the-box (OOTB) analytics.
45.	A tender-specific Manufacturer Authorization Form (MAF) from the OEM is required from the bidder along with Techno-Commercial Bid.

D. Integrated Threat Intelligence(MAJOR ITEM):

SI No.	Specifications
1	Protects against the entire spectrum without requiring daily updates
2	Combines the best prevention technologies – machine learning, artificial intelligence (AI), indicators of attack (IOAs), exploit blocking and more – to stop ransomware, and malware-free and fileless attacks
3	Covers the gaps left by legacy AV and fully protects endpoints online and offline
4	Prevents silent failure by capturing raw events for automatic detection of malicious activity, providing unparalleled visibility, proactive threat hunting and forensic investigation
5	Unravels an entire attack in the easy-to-use interface enriched with context and threat intelligence data
6	Provides powerful response action to contain, investigate and remediate compromised systems
7	An elite team of security experts proactively hunts, investigates and advises on activity in your environment to ensure threats and high-priority alerts aren't missed
8	Alert prioritization uniquely pinpoints the most urgent threats in your environment and resolves false positives
9	Guided response provides clarity on an attack, showing you what to do next
10	Provides detailed visibility on USB device usage
11	Enables granular policy enforcement to ensure control over USB devices used in the environment
12	Makes it easy to create, manage and enforce policies
13	Defends against network threats and provides instant visibility to enhance protection and inform action

14	Enables fully understand the threats in the environment and easily prioritize responses with threat severity assessment
15	Eliminates guesswork so you can respond to threats decisively
16	Automatically determines the scope and impact of threats found in your environment
17	Provides a broader set of indicators of compromise (IOCs) for faster, better protection
18	Reduces cost and complexity by eliminating the need for constant signature updates, on-premises management infrastructure and complex integrations
19	Enables the industry's fastest deployment and rapid operationalization – without requiring a reboot after installation
20	Provides full, automated protection across endpoints without impacting endpoint performance and end-user productivity
21	Stops breaches and simplifies endpoint protection
22	Provides unparalleled real-time and historical visibility across endpoint events and activities
23	Accelerates investigation and remediation and ensures stealthy attacks don't go undetected 24/7
24	Orchestrates and automates complex workflows to simplify security operations and accelerate response
25	A tender-specific Manufacturer Authorization Form (MAF) from the OEM is required from the bidder along with Techno-Commercial Bid.

6. **Network Connectivity:** It shall have at least 10 pair of Wireless Transmitter and Receiver along with all other related accessories as per requirement. The minimum technical specification of above item is:

A. Wireless Transmitter and Receiver (MAJOR ITEM):

Sl No	Specifications
1	4.9-6 GHz (Must support 5.8GHz±1 % Unlicensed Band-India for ID & ODapplications)
2	802.11 a/n (2x2) Radio Dual Polarized with LTE Backhaul
3	I/O Connection -1 Ethernet Gigabit port : Data + PoE power input
4	1x SFP port: single mode or multi-mode fiber (including compatible SPF module)
5	Channel Bandwidth: 5,10,20,40 MHz
6	Maximum Tx Power: +29 dBm aggregate, 2x26 dBm per stream
7	Adaptive Modulation & Coding : BPSK to 64QAM or Better
8	Radio Antenna Port 2xN type for External Antenna
9	Architecture: Support for 90° / 120° Sectoral Antenna, Single Cable between I DU &ODU.

10	Radio Access Scheme: MIMO 2x2 – OFDM
11	Spectrum View: Built-in Spectrum Analyzer
12	Duplex Technology: Dynamic Time Division Duplex (TDD), Half Duplex
13	Spectral Efficiency : 6.3 Bits Hertz or Better
14	IPv6/IPv4 dual-stack management support , IPv6 pass through with tunneling NAT
15	Should have interference mitigation technique in radio
16	Encryption : AES128, WEP(64, 128, 154) WAP2 ,ASE -256 upgradable
17	QoS :4 levels supported, QoS with VLAN ID,VLAN Priority and DSCP
18	Latency : < 3msec
19	Frame Aggregation : Enable /Disable
20	VLAN: Data Tagging/Untagging , 802.1q transparency, VLAN Management, QinQ
21	Built-in syslog events can be viewed on the device or exported t for analysis
22	NAT : NAT configurable through Base St and CPE GUI
23	Integrated Lightning Protection: IEC61000-4-2 /61004-4
24	WPC certificate
25	Link Management: Link Manager
26	Protocol :SNMPv2, Telnet and HTTP
27	NMS Application :Web Based NMS
28	Web- based Management :Web access via browser
29	Power Feeding : Via Indoor Unit or PoE device
30	Power Consumption : ≤10W (ODU + POE)
31	Operating Temperatures: 0°C to 70°C
32	Humidity :100% condensing
33	IP67 (totally protected against dust and immersion) and NEMA 4x
34	RADIUS :Support and RADIUS supported for centralized admin access
35	Installation Management: Provides noise and RSSI signal levels as well as other statistical information, Measure signal strength, Real-time view and Link of available over the air bandwidth
36	Backup Configuration: Save Radio Configuration to Desktop or Drive
37	Power Supply: AC; UL/CSA approved 48 Volt POE system and DC power options
38	A tender-specific Manufacturer Authorization Form (MAF) from the OEM is required from the bidder along with Techno-Commercial Bid.

7. **Cyber-Security:** It shall include at least 1 Nos. Firewall, VAPT assessment and all other accessories/ services as required. The minimum technical specification of above item is:

A. Firewall:

Sl No.	Specifications
1	The proposed firewall solution should run on a hardened OS and delivered on purposeful built hardware appliance manufactured by offered firewall OEM only. Appliances should be rack mountable and 1RU.

2	The proposed firewall should not rely on proprietary asic and must be built on an open architecture utilizing multi-core CPUs to ensure protection and scalability against evolving security threats.
3	Solution should provide features of firewall, ipsec vpn, ips, application control, content awareness url filtering, anti-Bot, anti-virus/anti malware, dns security on some platform/appliance from day one.
4	Proposed firewall should have minimum 10 Gbps of NGFW throughput (including Firewall, application control and IPS) and 15 Gbps of IPS throughput.
5	Proposed firewall VPN throughput minimum 10 Gbps
6	Appliances should have minimum 4 Gbps threat prevention throughput (including firewall, ips, application control, anti-malware, dns security & url filtering) with logging from day one.
7	Proposed firewall hardware should be a multicore CPU architecture with a hardened 64-bit operating systems.
8	Proposed firewall support minimum of 32 GB of RAM and least 400 GB of SSD from day one
9	Network Interface and Management Ports from day one: a) 16 nos of 1G RJ45, 8nos 1G SFP and 4nos 10G SFP+ Ports b) RJ45 Console, Management, USB and HA Port Ports
10	Proposed firewall support minimum 120K new connections/sessions per second and 7 million concurrent connections
11	Proposed firewall support high availability features for redundancy Active-Active & Active-passive at gateway level.
12	Appliances should be supplied with the support for static and dynamic routing protocols RIP, OSPF and BGP.
13	The Firewall should provide stateful engine support for all common protocols of the TCP/IP Stack.
14	All internet based application shall be supported for filtering like Telnet, FTP, SMTP, Http, DNS, ICMP, DHCP, RPC, SNMP, Lotus Notes, Ms-Exchange etc.
15	IPSec encryption shall be supported with 3DES, AES-128 & AES-256 standards.
16	Shall provide IPv4 and IPv6 support including NAT64, NAT66/NTPv6 & NAT 46.
17	Solution should be able to configure access policy based on the following parameters: a) Source/Destination IP/Port b) Time and date access c) User/group role (after integration with AD) d) Combination of one or multiple of above mentioned parameter.
18	The antivirus signature database of proposed solution should comprise of up to date list of signature of virus malwares, spyware etc. Antivirus engine should support inspection of at least 50 file type
19	Solution should have rich Geo location features, and it should facilitate following Geo Location access policy scenario at least. a) Blocking/allowing for all objects based on source/destination Geo location. b) Blocking/allow for specific object (viz. web server, destination IP etc.) based on source/destination Geo location.

20	Solution should be able to detect & prevent & prevent unique communication patterns used by bots, i.e. Information about botnet family, and should eliminate threats and remove exploitable content, including active content and embedded objects (content disarm and reconstruction).
21	Solution should define qos traffic classes and shall support real-time prioritisation of traffic identity awareness features.
22	Solution should support more than 15000 (excluding custom signature) ips signatures and have at least 110 web & application categories from day one.
23	IPS should be able to collect packed capture for specific protections, microsoft, adobe iis/apache web server specific protections.
24	IPS profiles should have an option to create customer's own signature with an open signature than can be activated/ de-activities as per customer environment.
25	IPS should provide details information on each protection, including: vulnerability and threat descriptions, threat severity, release date cve reference, performance impact confidence index, threat severity etc.
26	Should have more than 10000+ pre-defined distinct application signatures (excluding custom application signatures) as an application detection mechanism to optimise security effectiveness, and should be able to create new application categories for operational efficiency.
27	The proposed device/OEM must have FCC, VCCI, IEC 62368, and RoHS certification.
28	Certifications and Documentation: a) Bidder should provide the tender specific manufacture authorization from the OEM. b) The OEM must have its technical support centre in India, and OEM support should be 24x7. c) Proposed firewall be TEC certified at the time of bidding. d) The firewall should belong to product family which minimally attains EAL4+/NDPP certified. Bidder to submit supporting documents.
29	A tender-specific Manufacturer Authorization Form (MAF) from the OEM is required from the bidder along with Techno-Commercial Bid

B. VAPT assessment

Sl No.	Specifications
1	Conducting the security Audit through External Auditor and carryout the required changes in NW
2	Network Security Audit or Vulnerability Assessment (VA) of the whole Network (All Router, equipment, amplifiers, DCN Network, TMN/ NMS Hardware & Software etc) shall be done after completion of SAT-III. The report of the Audit/ Test along with mitigation plan shall be submitted to customer. Further, adequate solution/ scheme shall be implemented in consultation with the competent Authorities, to mitigate the vulnerabilities reported in the vulnerability Assessment/ Security Audit.

3	Network shall be accepted by competent Authorities after implementation of mitigation plan & Taking Over Certificate (TOC) to be issued to contractor. The network audit/ Test shall be performed satisfying the Network Security guidelines.
4	SI partner has to arrange third party to conduct network security audit for complete network including NOC through CERT-In (the Indian Computer Emergency Response Team) empanelled parties before Taking over of the project by Employer
5	A tender-specific Manufacturer Authorization Form (MAF) from the OEM is required from the bidder along with Techno-Commercial Bid

8. **Interior and Civil Works** shall include Interior design, False Ceiling, Carpet Flooring, Wall Panel and other related work as per the requirement of Command Control Centre, arrangement of 2 Nos. 3 Seater Console Table, 6 Nos. Ergonomic Chair, 2 Nos. Sofa Set along with Side-Table, Flooring and other related accessories as per the requirement of site. A general civil plan of rooms to be developed is enclosed.

The minimum technical specification of above item are:

A. Interior and Wall Panel

Sl No	Specifications
Interior	
False Ceiling	
1	12 mm thick fire line Gypsum / POP false ceiling and lighting troughs 300 mm as per design including 100 mm high cornices as lighting pelmets on G.I. frame work, in G.I. vertical supports at every 450mm c/c and horizontal runners at every 900mm c/c self-taping metal screws to proper line and level. The same shall be inclusive of making holes and required framing for fixing electrical fixtures, A.C. grills etc. GI vertical supports to be anchored to slab by means of anchor fasteners
Partitions (wherever required as per approved drawing)	
3	Full height partition wall of 125 mm thick fireline gyp-board partition using 12.5 mm thick double fireline gyp-board on both sides with GI steel metal vertical stud frame of size 75 mm fixed in the door and ceiling channels of 75 mm wide to provide a strong partition. Glass wool insulation inside shall be provided as required. Fixing is by self-tapping screw with vertical studs being at 610 mm intervals. The same should be inclusive of making cut-outs for switch board, sockets, grill etc. It shall also include preparing the surface smoothly and all as per manufacture's specification etc. finally finishing with one coat of approved brand of fire resistant coating.
4	With glazing including the framework of 4" x 2" powder coated aluminum section complete (in areas like partition between server room & other auxiliary areas).
5	All doors should be minimum 1200 mm (4 ft.) wide.

6	MSI shall procure and install a raised door to match the door height and room aesthetic in accordance with the approved final layout and design. MSI shall consider standard parameters for developing the final height, width, point of load, and uniform distribution load of the raised door for the rooms based on type of furniture and overall load.	
7	MSI shall ensure the following features and parameters are considered while designing and commissioning the raised door: - Point of Load (PoL) shall be considered 20% more than the actual load - Uniform Distribution Load shall be calculated according to the final Point of Load - Noise-proof, Fire-retardant - Separate electrical and data cable tray under the raised door - Face of door tiles shall conform to the aesthetic part of the approved Design	
Carpet Flooring		
SI No	Parameter	Specifications
8	Construction	Level Loop
9	Pile Fibre Composition	100% Solution Dyed Polyolefin
10	Tufting Guage	5/51
11	Pile Weight	450 g/m or better
12	Total Weight	3000 g/m or better
13	Pile Thickness	Approx 3 mm
14	Total Thickness	Approx 5 mm
15	Tile Size	500 mm x 500 mm
16	Backing Structure	Non- Woven with Eco Back
17	Smoke Density	Passes (ASTM E662: GB/T 8627-1999)
18	Fire Class	Passes (ASTM E648: GB 8624-2006)
19	Static Propensity	<3.0KV (AATCC-134:GB/T.18044-2000)
Acoustic and Wall Panel for Control room		
20	Control room being dead zone in acoustical terms, threshold should be lower than the normal.	
21	Use of Acoustics and psychoacoustics measurements are must. Vendor to highlight the same in drawings.	
22	Materials which define acoustics; it's the detailing which ensures controlled reverberations & resonances and reflections.	

23	'Wooden Dots' FR Grades 600*1200/1200*2400*16mm made of exterior grade MDF or better backed with acoustical Fleece providing sound absorption of 0.65 NRC as per IS:8225-1987 (Equivalent to ISO:354-1985 & ASTM 423-90). The density per panel is 750-800 kg/m ³ . These slats are made from acoustical fibreboard with linear perforations for excellent uniformity. The perpendicular holes are available on the panel. Achieves sound reduction of 0.65 NRC tested as per IS:8225-1987 (Equivalent to ISO:354-1985 & ASTM 423-90). The panels come with tongue and groove. The planks are made from medium density fibreboard with laminate finish.
24	A tender-specific Manufacturer Authorization Form (MAF) from the OEM is required from the bidder along with Techno-Commercial Bid.
Painting for ICC Room	
25	Fire retardant paint of pre-approved make and shade to give an even shade over a primer coat as per manufacturers' recommendations after applying painting putty to level and plumb and finishing with 2 coats of fire retardant paint. Base coating shall be as per manufacturer's recommendation for coverage of paint.
26	For all vertical Plain surface.
27	For fireline gyp-board ceiling.
28	POP punning over cement plaster in perfect line and level with thickness of 10 - 12 mm including making good chases, grooves, edge banding, scaffolding pockets etc.
29	Fire retardant coating on all vertical surfaces, furniture etc. as per manufacturer's specification.

B. 3 Seater Console Table

Sl No.	Specifications
1	New Modular Control Console for 3 Operator (approx. size 3000W x 900D x 750H mm) with provision of placing of equipment as per Drawing.
Work Top	
2	The worktop shall be made of 18 mm Compact Laminate which is Composed of urea-free, thermosetting phenolic resin-treated high-quality kraft paper and melamine-treated décor paper. It must conform to IS: 2046-1995, EN 438:2016, and NEMA LD3-2005 standards. As Control room is 24 x7 working operation and high usages surface shall be high resistant to surface wear as per EN 438-2 should pass minimum 900 Cycles test. The Valid certificate/ test report must be submitted before supply of material (during execution). The surface should possess virus-bacterial, antifungal, high moisture resistance, high impact resistance, and stain resistance properties, in compliance with ISO 22196:2011, ASTM G21:2015, and ISO 4586 standards. The Compact Laminate must be Greenguard Gold certified as per UL 2818 for low chemical emissions. As Control room desk are design for long years and due to long working hours work top will be deform so tabletop material Flexural strength in Longitudinal

	direction minimum 149 N/mm ² and in Transverse direction 126 N/mm ² . Extruded PU edging/PVC Edge beading shall be deemed unacceptable.
3	From fire safety point of view the Tabletop shall be ASTM E84-23D Certified with class A fire rated for surface flame spread and smoke density measurements. Testing should be from any ISO/IEC 17025 accredited laboratory with scope of ASTM E 84. The console shall be RoHS certified (from UL/ Intertek).
Ergonomic Comfort Edge	
4	The front edge of consoles should be cut at an angle and core of the work-surface should be rounded to make smooth curve. This component comes in frequent contact with the operator. The front edge is meant to prevent injury (accidental impact) to operators during emergencies, and it also reduces contact stress. Audit certified design feature of Ergonomic Edge. Any type of PU edging/PVC T- beading shall be deemed unacceptable.
Side Legs	
5	Extreme end side leg shall be made of heavy duty extruded aluminum profiles to form a rectangular shape. Front corners of the frame must have curved die cast parts to avoid any sharp corners. It should have CRCA cover with curved designs to enhance the aesthetic appeal. All the components of the side legs shall be duly powder coated with 40+ microns over all surfaces. All sheet metal parts shall be finished with a durable, black, electrostatic powder coating. The structure shall allow easy assembly of shutters and gland plate in extremely rigid manner. The proposed console shall be Greenguard Gold certified.
Cabinet & Shutter	
6	The cabinet structure and shutter tiles shall be made of 12 mm Compact Laminate which is Composed of urea-free, thermosetting phenolic resin-treated high-quality kraft paper and melamine-treated décor paper. It must conform to IS: 2046-1995, EN 438:2016, and NEMA LD3-2005 standards. As Control room is 24 x7 working operation and high usage, the surface shall be high resistant to surface wear as per EN 438-2 should pass minimum 900 Cycles test. The Valid certificate/ test report must be submitted before supply of material (during execution). The surface should possess antibacterial, antifungal, high moisture resistance, high impact resistance, and stain resistance properties, in compliance with ISO 22196:2011, ASTM G21:2015, and ISO 4586 standards. The Compact Laminate must be Greenguard Gold certified as per UL 2818 for low chemical emissions (from UL/Intertek). As Control room desk are design for long years so cabinet and shutter material Flexural strength in Longitudinal direction minimum 149 N/mm ² and in Transverse direction 126 N/mm ²
7	To allow future extension and expansion, a weld-free system shall be proposed. Interconnecting joints shall not be visible. The structure shall be rigid enough to withstand BIFMA X5.5 tests (from UL/Intertek). The structure shall allow easy

	assembly of hinged shutters, tabletop, side leg and gland plate in extremely rigid manner.
8	From fire safety point of view the cabinet and shutter shall be ASTM E84-23D Certified with class A fire rated for surface flame spread and smoke density measurements. Testing should be from any ISO/IEC 17025 accredited laboratory with scope of ASTM E 84.
Monitor Lifting operation	
9	Hassle free ergonomic operations/adjustments and durability of the product, the monitor shall have Synchronous up down movement. The mechanisms shall be tested & certified for at least 1000 times synchronous up-down movement of monitor, up-down movement and these mechanisms shall be operated by using single touch panel. Surface to floor distance fixed 29.5" (750 mm). Height Adjustable 29.5 to 43" (750 to 1100 mm) customizable. Monitor shall be Adjustable with Electrical Drive. Each monitor shall have a maximum load carrying capacity of min 700N. Height Adjustable Speed is min 15 mm/s (0.6 in/s), height ranges from 29.5" to 43" (750mm to 1100mm).
Cable Raceway	
10	The control console shall be provided with a fully integrated cable management system to ensure the organized and concealed routing of all cables. The base structure shall incorporate a minimum of two (2) lateral raceways for horizontal cable distribution. A minimum of three (3) vertical raceways shall be provided to facilitate seamless cable transition from the base to the work surface. Additionally, the work surface shall include provision for lateral raceways, the placement and quantity of which shall be determined based on the size and configuration of the equipment being mounted within the console
Electrical, Utility and Safety Provisions	
11	Provision of two (02) numbers of 6-way Power Distribution Units (PDUs), each comprising 5/16 Amp universal sockets and integrated with a 16 Amp Miniature Circuit Breaker for circuit protection.
12	Provision of terminal blocks of appropriate current rating and in adequate quantity to ensure safe and organized power distribution.
13	Minimum provision of two (02) numbers of RJ45 jacks for data connectivity and two (02) numbers of RJ11 jacks for telecommunication interfaces.
14	The console shall also be equipped with a proper earthing terminal, internal LED lighting for visibility, CPU tray for equipment placement, ventilation fan with dedicated switch for cooling, and all other necessary accessories in sufficient quantity to ensure complete functionality and operational efficiency of the console system.

15	The console shall be tested for tri-axial seismic performance as per IS 1893 (Part 4): 2015, conditions of Seismic Zone V with a Peak Ground Acceleration (PGA) input of 0.8g. During the course of physical product testing at Test lab, the console shall demonstrate no structural cracks or damage, thereby confirming its satisfactory structural performance under simulated seismic conditions. The minimum strain value recorded during the Zone V test shall less than 150 micro strain ($\mu\epsilon$). Documentary evidence confirming compliance, including the test report, shall be submitted along with the bid.
16	The Console shall be passed Greenguard Gold, ROHS & BIFMA x 5.5 from UL/Intertek.
17	A tender-specific Manufacturer Authorization Form (MAF) from the OEM is required from the bidder along with Techno-Commercial Bid.

C. Ergonomic Chair

Sl No.	Specifications
1	High Back with Sliding Seat
2	Mesh Back, Cushion Headrest & fibre-filled nylon Backbone in Grey
3	Auto Tilt-Tension mechanism self-control with multi-position locking
4	3-Way Adjustable Armrest
5	Gaslift for Seat height adjustment
6	Standard 5-prong Nylon Base
7	Fabric Seat & Mesh as per Interior Colour
8	A tender-specific Manufacturer Authorization Form (MAF) from the OEM is required from the bidder along with Techno-Commercial Bid.

D. Sofa Set along with Side-Table:

Sl No.	Specifications
1	The top shall be of Upholstery with PU Finish. The sofas are made of solid wood base, reinforced with supportive addendum in the seat. Engineered wood panels form/support the overall design structure, they synergise with the solid wood to offer unparalleled life to the product. Foam padding of multi-density and varying thicknesses provide cushion for the sofa. PU foam used is made Hennecke foam plants using German Technology capable of producing the high-quality flexible polyurethane foam. It provides unparalleled comfort, ease of use and durability. The foam used is 32 Density for seating areas and 28 Density for backrest. The supersoft foam used is in seating areas in 32-35 Density High-resilience (HR) foam which is unique and rarely used by manufacturers. Interwoven high tensile elastic bands for optimum comfort and endurance OR As per EIC approval.

2	A tender-specific Manufacturer Authorization Form (MAF) from the OEM is required from the bidder along with Techno-Commercial Bid.
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E. Data Center with all glass partition, Floor and other related accessories:

SI No	Specifications	
Partitions (wherever required as per approved drawing)		
1	Full height partition wall of 125 mm thick fireline gyp-board partition using 12.5 mm thick double fireline gyp-board on both sides with GI steel metal vertical stud frame of size 75 mm fixed in the door and ceiling channels of 75 mm wide to provide a strong partition. Glass wool insulation inside shall be provided as required. Fixing is by self-tapping screw with vertical studs being at 610 mm intervals. The same should be inclusive of making cut-outs for switch board, sockets, grill etc. It shall also include preparing the surface smoothly and all as per manufacture's specification etc. finally finishing with one coat of approved brand of fire resistant coating.	
2	With glazing including the framework of 4" x 2" powder coated aluminum section complete (in areas like partition between server room & other auxiliary areas).	
3	Fire Rated Wire Glass minimum 6 mm thick for all glazing in the partition wall complete. (External windows not included in this).	
4	All doors should be minimum 1200 mm (4 ft.) wide.	
5	MSI shall procure and install a raised door to match the door height and room aesthetic in accordance with the approved final layout and design. MSI shall consider standard parameters for developing the final height, width, point of load, and uniform distribution load of the raised door for the rooms based on type of furniture and overall load.	
6	MSI shall ensure the following features and parameters are considered while designing and commissioning the raised door: - Point of Load (PoL) shall be considered 20% more than the actual load - Uniform Distribution Load shall be calculated according to the final Point of Load - Noise-proof, Fire-retardant - Separate electrical and data cable tray under the raised door - Face of door tiles shall conform to the aesthetic part of the approved Design	
Carpet Flooring (Approx. 1200 Sq. ft)		
SI No	Parameter	Specifications
7	Construction	Level Loop

8	Pile Fibre Composition	100% Solution Dyed Polyolefin
9	Tufting Guage	5/51
10	Pile Weight	450 g/m or better
11	Total Weight	3000 g/m or better
12	Pile Thickness	Approx. 3 mm
13	Total Thickness	Approx. 5 mm
14	Tile Size	500 mm x 500 mm
15	Backing Structure	Non- Woven with Eco Back
16	Smoke Density	Passes (ASTM E662: GB/T 8627-1999)
17	Fire Class	Passes (ASTM E648: GB 8624-2006)
18	Static Propensity	<3.0KV (AATCC-134:GB/T.18044-2000)
Acoustic and Wall Panel for Control room		
19	Control room being dead zone in acoustical terms, threshold should be lower than the normal.	
20	Use of Acoustics and psychoacoustics measurements are must. Vendor to highlight the same in drawings.	
21	Materials which define acoustics; it's the detailing which ensures controlled reverberations & resonances and reflections.	
22	'Wooden Dots' FR Grades 600*1200/1200*2400*16mm made of exterior grade MDF or better backed with acoustical Fleece providing sound absorption of 0.65 NRC as per IS:8225-1987 (Equivalent to ISO:354-1985 & ASTM 423-90). The density per panel is 750-800 kg/m3. These slats are made from acoustical fibreboard with linear perforations for excellent uniformity. The perpendicular holes are available on the panel. Achieves sound reduction of 0.65 NRC tested as per IS:8225-1987 (Equivalent to ISO:354-1985 & ASTM 423-90). The panels come with tongue and groove. The planks are made from medium density fibre board with laminate finish.	
23	A tender-specific Manufacturer Authorization Form (MAF) from the OEM is required from the bidder along with Techno-Commercial Bid.	
Painting		

24	Fire retardant paint of pre-approved make and shade to give an even shade over a primer coat as per manufacturers' recommendations after applying painting putty to level and plumb and finishing with 2 coats of fire retardant paint. Base coating shall be as per manufacturer's recommendation for coverage of paint.
25	For all vertical Plain surface.
26	For fireline gyp-board ceiling.
27	POP punning over cement plaster in perfect line and level with thickness of 10 - 12 mm including making good chases, grooves, edge banding, scaffolding pockets etc.
28	Fire retardant coating on all vertical surfaces, furniture etc. as per manufacturer's specification.

Electrical

- 16A plug point/ AC power point- Concealed wiring through conduit pipe/Race way with FRLS 2x4sq. mm. + 1x2.5 sq. mm. copper wire including supply of all accessories as per site requirement.
- 5A plug/Light point - Concealed wiring through conduit pipe/Race way with FRLS 2x1.5sq. mm. + 1x1.5 sq. mm. copper wire including supply of all accessories as per site requirement.
- Main DB to SDB- Concealed wiring through conduit pipe/Race way with FRLS 2x6sq. mm. + 1x4 sq. mm. copper wire including supply of all accessories as per site requirement.
- SDB to switch board/ plug- Concealed wiring through conduit pipe/Race way with FRLS 2x4sq. mm. + 1x2.5 sq. mm. copper wire including supply of all accessories as per site requirement.
- LED luminaries- Sufficient no. of recess mounted LED luminaries to maintain 300 Lux (lumen/m²) to be uniformly distributed.
- Individual light should be controlled by individual switch.
- Plug, Socket, switch – Modular type.
- Main DB- 1 no. 63 A TPN MCB of Breaking capacity 25kA MCB as a Incomer, outgoing suitable no. of 6-32 A SP MCB Breaking capacity 10kA, concealed in wall after cutting the wall & mending good the damages to original finish incl. inter connection with suitable size of copper wire and neutral link & provision for earthing attachment including supply of all accessories as per site requirement.
- Sub DB- 1 no. 32 A SPN MCB of Breaking capacity 10kA MCB as a Incomer, outgoing suitable no. of 6-32 A SP MCB Breaking capacity 10kA, concealed in wall after cutting the wall & mending good the damages to original finish incl. inter connection with suitable size of copper wire and neutral link & provision for earthing attachment including supply of all accessories as per site requirement.
- Individual light and power circuit load shall be as per CPWD/PWD work manual.
- Earthing with 50 mm dia GI pipe 3.64 mm thick x 3.04 Mts. long, 13 mm dia x 80 mm long GI bolts, double nuts, double washers, below the ground level with treatment of soil by using salt & charcoal or coke. Extra for providing masonry enclosure on the top of the earth electrode of overall size 86.36 cm x 86.36 cm x 46 cm deep (below Ground level) complete with cemented brick work (1:6) of 25 cm width duly plastered with cement mortar (inside) CI hinged inspection cover of size 36.56 cm x 35.56 cm with locking arrangement, GI reducer including drilling holes

on the GI pipe with supplying & fixing earth bus bar of galvanized (Hot Dip) MS flat 50 mm x 6 mm on wall having clearance of 6 mm from wall including providing drilled holes on the busbar complete with GI bolts, nuts, washers, spacing insulators etc. including supply of all accessories as per site requirement.

- The Lightning Protection System shall be designed, supplied, and installed in full compliance with IS/IEC 62305 standards and the provisions of the National Building Code of India (NBC 2016). All materials, components, and installation practices shall adhere to the prescribed safety, performance, and quality requirements to ensure effective protection against lightning hazards including supply of all accessories as per site requirement.
- AC Stater- 240 V, 25 A, Modular type starter with 25A Modular switch type SP MCB Breaking capacity 10kA necessary connections with FLRS Cu wire and earth continuity wire etc. including supply of all accessories as per site requirement.
- The successful bidder will dismantle the existing ACs handed over to SMPK. The bidder has to design and prepare heat load for making Air Conditioning environment in control room & Data centre room. The said design is to be vetted by Govt. Org/Institute as per scope of contractor without any additional cost. Accordingly, they have to supply split/cassette type ACs with all accessories and install in totality. The supplied are to be energy efficient (five star) as per BEE rated.

PREAMBLE TO THE BILL OF QUANTITIES

Notice Inviting Tender No.: SMP/KDS/Mech/C/ADV/727 dated 05.05.2026

1. The Bill of Quantities must be read with the General Conditions of Contract, the Special Conditions of Contract and the Particular Specifications of Work and the Bidder is deemed to have examined the above documents and to have thoroughly familiarized himself with the total scope of work and its mode of execution.
2. The quantities given in the Bill of Quantities are approximate only and are given to provide a common basis for tendering. Payment will be made according to the quantities of each item of work actually carried out at the accepted rates as per Order Letter. The measurements of each item of work shall be measured jointly by the Engineer or his Representative.
3. General direction and description of work or materials given elsewhere in the contract documents are not necessarily repeated in the description of items in the Bill of Quantities.
4. The percentage rates entered by the Contractor in the Bill of Quantities shall be deemed to cover the complete and finished work, inter-alia, all costs and expenses which may be required for successful completion of the works together with all risks, liabilities, contingencies, insurance, octroi, royalties, taxes and obligations imposed or implied by the Contractor.
5. Where separate items such as mobilization, demobilization, temporary works etc., have not been provided in the Bill of Quantities for works required under the Contract, then the cost of such works shall be deemed to have been included in the prices and rates of other items.
6. Without affecting the generality of the foregoing provisions, the prices entered in the Bill of Quantities by the Contractor shall include inter-alia, all costs and expenses involved in or arising out the followings:
 - a. The provision, storage, transport, handling, use distribution and maintenance of all materials, plans, equipment machineries and tools including all costs, charges dues demurrages or other outlays involved in the transportation.
 - b. The provision and maintenance of all his staff and labours and their payments, accommodation, transport, taxes and other requirements.
 - c. Setting out including measurement and supervision.
 - d. The provision, storage, transport, use handling, distribution and maintenance of consumable stores, fuel.
 - e. All First Aid, Welfare and safety requirements.
 - f. Damage caused to the works, plants, materials and consumables stores caused by weather.
 - g. License, fees and other charges for compliance of Government Acts and Rules that are in force and applicable.
7. The Contractor should be held responsible for the safe custody of materials, machineries etc. at site procured by him or issued to him by the Trustees.
8. This being a **percentage rate tender**, the Bidder shall quote his rates in E-Tendering Portal as percentage **above/below / at par** with respect to the estimated value of tender, based on his own analysis. The Tender Price thus established would be taken for comparative evaluation of E-Tenderers.

BILL OF QUANTITIES**Notice Inviting Tender No.:** SMP/KDS/Mech/C/ADV/727 dated 05.05.2026

Name of the Work: " Design, Supply, Installation, Testing & Commissioning of New Command Control Centre in the Control Room of 4NSD Gate Complex with Four years CAMC post 1 year Warranty."

Sl. no	Description of work	Qty.	Unit	Rate in Rs.	Amount in Rs.
Part-I (Electrical/Electronic Work)					
1	Design, supply, installation, testing & commissioning of Display system in all respect as per site condition incl. all accessories in terms of technical specification and scope of work.	1	Lot.	1,58,99,603.00	1,58,99,603.00
2	Design, supply, installation, testing & commissioning of Network Infrastructure in all respect as per site condition incl. all accessories in terms of technical specification and scope of work.	1	Lot.	79,53,343.33	79,53,343.33
3	Design, supply, installation, testing & commissioning of Server and Storage System in all respect as per site condition incl. all accessories in terms of technical specification and scope of work.	1	Lot.	1,25,18,765.00	1,25,18,765.00
4	Design, supply, installation, testing & commissioning of Rack and Power Backup in all respect as per site condition incl. all accessories in terms of technical specification and scope of work.	1	Lot.	67,05,650.00	67,05,650.00
5	Design, supply, installation, testing & commissioning of Software And Application's in all respect as per site condition incl. all accessories in terms of technical specification and scope of work.	1	Lot.	92,41,400.00	92,41,400.00
6	Design, supply, installation, testing & commissioning of Network Connectivity in all respect as per site condition incl. all accessories in terms of technical specification and scope of work.	1	Lot.	17,50,280.00	17,50,280.00
7	Design, supply, installation, testing & commissioning of Cyber-Security in all respect as per site condition incl. all accessories in terms of technical specification and scope of work.	1	Lot.	23,66,700.00	23,66,700.00

8	Design, supply, installation, testing & commissioning of electrical & air conditioning work in all respect as per site condition incl. all accessories in terms of technical specification and scope of work.	1	Lot.	20,72,259.33	20,72,259.33
Part-II (Civil Work)					
9	Design, supply, installation, testing & commissioning of Interior and Civil Works in all respect as per site condition incl. all accessories in terms of technical specification and scope of work.	1	Lot.	50,50,136.00	50,50,136.00
Part-III (CAMC Work)					
10	CAMC cost of entire system				
(a)	1st year CAMC cost post 1 year defect liability period	1	Year	32,68,172.33	32,68,172.33
(b)	2nd year post CAMC cost	1	Year	33,68,172.33	33,68,172.33
(c)	3rd year post CAMC cost	1	Year	46,43,900.00	34,01,505.67
(d)	4th year post CAMC cost	1	Year	35,92,620.67	35,92,620.67
Total in Rs. (excluding GST)					7,71,88,607.66

Note:

1. The quantity above may increase or decrease as per requirement for which payment will be made as per actual.
2. All the above rate is excluding GST and rate should be quoted in online portal exclusive of GST and should be considered to complete the work in all respect.
3. GST will be paid extra at as per actual.

PRICE SHOULD BE EXCLUSIVE OF GST

Tenderer to fill up the following [score out which is not applicable]

PRICE NOT TO BE QUOTED HERE

(a).....%	}	Below par (-) Rs.
(in figures)		
.....Percent	}	At par NIL
(in words)		
(b).....%	}	Above par (+) Rs.
(in figures)		
.....Percent	}	
(in words)		
(c).....%	}	
(in figures)		
.....Percent	}	
(in words)		

Total Tendered Amount: Rs. _____

Total tendered amount (in words) [**Price not to be quoted here**].....

[The prices quoted shall be including all statutory levies excluding GST, which shall be paid extra]

Permanent Income Tax A/C. No.

Date:

(Signature of Tenderer)

[Total amount of tender, completion time and preliminary time as quoted /stated above are to be carried over to Form of Tender attached]

Witness:

(Name in block letters)

Address:

Occupation:

Profile of Tenderer / FORM -D

This is to confirm that we agree to abide by all the terms and conditions of this NIT No SMP/KDS/Mech/C/ADV/727 dated 05.05.2026 , those mentioned in the “General Conditions of Contract” enclosed with this Tender Document as well as decisions taken in the pre-bid techno-commercial conference, if any. Our relevant particulars are furnished hereunder:

Particulars	To be filled in by the Tenderer or to be mentioned as “none ”
Name of the Tenderer	
Name of the owner(s) of the Tenderer	
Full postal address of the Tenderer including Police Station	
Telephone No. of the Tenderer	
Fax No. of the Tenderer	
E-mail ID of the Tenderer	
Name of the contact person of the Tenderer	
Mobile/land line Telephone No. of the contact person of the Tenderer.	
Name of the partners/directors/ members, as applicable, in this particular contract	
Name of their authorized representative(s) who would handle the contract on their behalf.	

Date

Signature of the Tenderer

Office seal of the Tenderer

**[DOCUMENT TO BE DOWNLOADED, FILLED IN UNDER BIDDER'S LETTERHEAD,
SIGNED, SCANNED AND UPLOADED]**

Covering Letter

Ref. No.....

Date:

The Chief Mechanical Engineer,
SMP, Kolkata,
Mechanical and Electrical Engineering Department,
8, Garden Reach Road,
Kolkata – 700 043

Dear Sir,

1. We, ...(Name of Tenderer) having examined the Tender Document and understood its contents, hereby submit our Tender for.....

(NIT No. SMP/KDS/Mech/ Dated..... and confirm that we unconditionally accept all the terms and conditions of the same including the Addendum (if issued).

2. All information and proofs provided in the Tender including Addendum and in the Appendices are true and correct and all documents accompanying such tender are true copies of their respective originals.

3. We shall make available to SMP, Kolkata (hereinafter referred to as SMPK) any additional information it may find necessary or require to supplement or authenticate the Tender.

4. We, ... (Name of Tenderer) hereby undertake that we will abide by the decisions of SMPK in the matter of examination, evaluation and selection of Successful Tenderer and shall refrain from challenging or questioning any decision taken by SMPK in this regard. We further acknowledge the right of SMPK to reject our tender without assigning any reason or otherwise and hereby waive our right to challenge the same on any account whatsoever.

5. We also certify the following:

(a) We have not been debarred by the Central/State Govt. or any entity controlled by them or any other legal authority from participating in any Tender/Contract/Agreement of whatever kind.

(b) We have also not been expelled from any project or contract nor have had any contract terminated for breach in the last 3 years ending on the date of opening of the techno commercial part of the tender.

6. We declare that:

(a) We have examined and have no reservations to the Tender Document, including the Addendum, if any, issued by SMPK thereon.

(b) We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf will engage in any corrupt, fraudulent or coercive practices to influence the evaluation process of the tender.

7. We understand that SMPK reserves the right to accept or reject any tender and to annul the tendering process and reject all tenders at any time without any liability or any obligation for such acceptance, rejection or annulment without assigning any reason thereof.

Yours faithfully,

Signature of Tenderer

Name:

Designation:

Date:

Seal of the tenderer.....

SYAMA PRASAD MOOKERJEE PORT, KOLKATA**SCHEDULE - "O"**

Tenderers must fill in the undernoted column:

Name of the Bidder:

Sl. No.	Full particulars of similar works carried out by Tenderer	Value of work in Rs.	Completion time as per Contract	Actual completion time	Name and Addresses of Authorities for whom work was carried out	Details of Authorities to whom reference can be made		
						Full Postal Address	Phone / Mobile No.	Email ID
1.	(i) Name of work.							
	(ii) W.O. No. & Date.							
2.	(i) Name of work:							
	(ii) W.O. No. & Date:							
3.	(i) Name of work:							
	(ii) W.O. No. & Date:							

SYAMA PRASAD MOOKERJEE PORT, KOLKATA

SCHEDULE - "O"

The Tenderer are also requested to furnish the following particulars:

Sheet - 2

A. In case of a Limited Company:

1. Name of the Company :
2. Address of its present registered office :
3. Date of its incorporation :
4. Full name and address of each
of its Directors – any special particulars
as to Directors if desired to be stated :
5. Name, address and other necessary
particulars of Managing Agents, if any,
appointed by the Company :
6. Copies of Memorandum and Articles of
Association (with the latest amendments,
if any) :
7. Copies of audited Balance Sheets of the
Company for the last three years. :

SYAMA PRASAD MOOKERJEE PORT, KOLKATA

SCHEDULE - "O"

Sheet - 3

B. In case of a Firm:

1. Name and address of the firm :
2. When business started :
3. If registered, a certified copy of Certificate of Registration :
4. A certified copy of the Deed Of Partnership :
5. Full name and address of each of the Partners and the interest of each partner in the Partnership. Any special particulars as to Partners if desired to be stated :
6. Whether the firm pays income tax over Rs.10, 000/- per year :

SYAMA PRASAD MOOKERJEE PORT, KOLKATA

SCHEDULE - "O"

Sheet - 4

C. In case of an Individual:

1. Full name and address of the Tenderer; any special particulars of the Tenderer if desired to be stated :
2. Name of the father of the Tenderer :
3. Whether the Tenderer carried on business in his own name or any other name :
4. When business was started any by whom :
5. Whether any other person is interested in the business directly or indirectly, if so, name, address, etc. of such persons and the nature of such interest. :
6. Whether the Tenderer pays income tax over Rs.10,000/- per year :

DATED, the.....

Signature of Tenderer

Pro-forma of Affidavit for exemption from ESI ACT
On the Rupees Ten Non – Judicial Stamp Paper

BEFOR THE 1ST CLASS JUDICIAL MAGISTRATE AT-----
AFFIDAVIT

I ----- son of ----- aged about -----
Years, by faith -----, by occupation -----, residing at-----
-----do hereby solemnly affirm and declare as follows:

1. That I am the proprietor/Partner of ----- having office at -----and
carrying on business on the said name and style.

(In case the above Deponent is an enlisted Contractor at SMP, Kolkata, the same should be
mentioned in affidavit.)

2. THAT my aforesaid Firm is exempted from E.S.I. Act and the said Firm has no valid E.S.I
Registration.

3. THAT the present affidavit is to be files before the SMP, Kolkata as per the clause no -----
----- of Tender no-----issued by SMP, Kolkata in respect of the work (the
name of the work is to be mentioned)

That the statements made above are all true to be the best of my knowledge and belief.

That in the event the declaration is found to be wrong and false, I will be held responsible for all
the consequences in respect of compliance of The Employees State Insurance Act, 1948

DEPONENT

Identified by me

Indemnity Bond for exemption under ESI ACT
On the Rupees Fifty Non - Judicial Stamp Paper
INDEMNITY BOND

By THIS BOND I, Shri/Smt-----, son of Shri/Smt---
 -----Residing at ----- by
 occupation -----the Partner/Proprietor/Director-----having office at -
 ----- am a tenderer under Mechanical Engineering Department, SMP, Kolkata(A
 statutory body under MPA Act, 2021)

2. WHEREAS , the said SMP, Kolkata asked the every tenderer, who is not covered under E.S.I Act or exempted to furnish an Indemnity Bond in favour of Mechanical Engineering Department, SMP, Kolkata against all damages and accident to the Labourer Tenderer/contractor.
3. NOW THIS BOND OF INDEMNITY WITNESSTH THAT the Tenderer/contractor named herein above shall indemnify the SMP, Kolkata AGAINST ALL DAMAGES AND ACCIDENT OCCURRING TO THE Labourers of the Tenderer/contractor as demanded by the SMP, Kolkata and which shall be legal and /or claimed by the SMP, Kolkata during the execution of the work stated in the NIT No----- of -----
4. AND the contractor hereunder agrees to indemnity and at all times keep indemnified the SMP, Kolkata and its administrator and representative.
5. And also all such possible claim or demand for damages and accidents. In the event the declaration is found to be wrong and false, the tenderer will be held responsible for all the consequences in respect of compliance of The Employees State Insurance Act, 1948.

In WITNESS WHEREOF I-----, the Partner/Proprietor/Director-----
 Hereto setand seal this the----- Day of-----In the year----- at-----.

Sureties

1. Signature:

Name:

Address:

2. Signature:

Name:

Address:

3. Witness

Signature

Name:

Address:

Signature of the Indemnifier

**[DOCUMENT TO BE DOWNLOADED, FILLED IN UNDER BIDDER'S LETTERHEAD,
SIGNED, SCANNED AND UPLOADED]**

Undertaking to be submitted in lieu of uploading/submitting signed copy of full tender document.

Ref. No.....

Date

.....

The Chief Mechanical Engineer,
SMP, Kolkata,
Mechanical and Electrical Engineering Department,
8, Garden Reach Road,
Kolkata – 700 043

Dear Sir,

We, ...(Name of Tenderer) have fully read and understood the entire Tender Document, GCC, and Addenda, if any, downloaded from the instant e-tender and no other source, and will comply to the said Tender document, GCC and Addenda.

We are submitting this undertaking in lieu of submission of signed copy of the full Tender document.

Yours faithfully,

Signature of Tenderer (or Power of Attorney).....

Name:

Designation:

Date:

Seal of the tenderer

Minimum electrical technical staff to be deployed for supervision and execution of work:

Sl. No.	Designation	Qualification	Experience
i.	Highly skilled technician	Diploma in Electronics/ Computer Science/ IT Engineering	Minimum Five-year working experience in IT sector.
ii.	Un-skilled labour	Stout body & good physique	
			Total

Note:

1. Bidder needs to submit authorization letter for the aforesaid staff and supporting educational and experience document during techno-commercial bid. During execution, if the declared technical staff(s) are to be replaced with another staff, prior intimation has to be given to Engineer In-charge for due approval along with aforementioned supporting documents.
2. Additionally, the contractor needs to deploy other technical staff, labours etc. as required for smooth and timely completion of work.

Checklist for documents to be uploaded**[Bidder to submit this document completely filled up for evaluation of its offer]****Name of the Firm:**

Sl. No.	Documents to be uploaded as per instructions of NIT	Details of Documents as Uploaded
1	Earnest Money (details of DD no./ Banker's Cheque No./ Insurety Bond No, with date or NSIC/DIC/Udyog Aadhar No. with validity period, if applicable, to be mentioned here)	
2	Tender Fee (details of DD no./ Banker's Cheque No./ Insurety Bond No. with date or NSIC/DIC/Udyog Aadhar No. with validity period, if applicable, to be mentioned here)	
3	PAN No.	
4	GST Regn. certificate No.	
5	Electrical Contractor License Details (No. & Validity period)	
6	ESI Regn. No. (If registered)	
7	Affidavit/Indemnity Bond Uploaded (Yes/No) (If ESI Registration is not applicable for the firm)	
8	PF Regn. No.	
9	Trade License Details	
10	Professional Tax No.	
11	Undertaking (Annexure-I) Uploaded (Yes/No)	
12	Form -D, Covering letter Uploaded (Yes/No)	
13	Schedule 'O' Uploaded (Yes/No)	
14	Schedule 'T' Uploaded (Yes/No)	
15	Status of Tenderer (i.e. Pvt. Ltd./Partnership/Proprietorship etc.)	
16	TDS including 26AS in support of authentication of submitted work credential	
17	Power of Attorney, (for Pvt. Ltd. or Ltd. Company or Partnership Firm or Proprietorship Firm, as per applicable clause of NIT)	

18	Company Registration Certificate, as applicable		
19	"Financial Turnover (Average of Last 3 year turnover shall be 30% of the Tender value)"	FY: 2022-23	Rs.
		UDIN:	
		FY: 2023-24	Rs.
		UDIN:	
		FY: 2024-25	Rs.
		UDIN:	
20	Details as required for ECS Payment [Scanned copy of unissued cheque is to be uploaded.]	Name of Bank with Code	
		Branch Name	
		Type of A/C	
		A/C no.	
		MICR Code	
		IFSC No.	

Note: No field is to be left blank.

Signature of Tenderer.....

Name:

Designation:

Date:

Seal of the Tenderer.....

**Format of Certificate for Tenders for Works under Rule 144 (xi) in the
General Financial Rules (GFRs), 2017
(To be submitted under Letter head of the Bidder)**

To

(Name and address of Tender Inviting Authority)

DECLARATION BY AUTHORISED SIGNATORY OF THE FIRM

Dear Sir,

Ref: Your Tender No._____dated _____

I/We, the undersigned,_____ (full name), do hereby
declare, in my capacity as _____ of
M/s._____ (name of bidder entity), that:

1. I have read the Orders (Public Procurement No. 1,2 &3) dt 23rd July 2020 & 24th July 2020 on the subject of Restrictions under Rule 144 (xi) of the General Financial Rule (GFRs), 2017 regarding restrictions on procurement from a bidder of a country which shares a land border with India.
2. I/we certify that M/s._____ (name of bidder entity)
 - a) **is not from such a country.** I hereby certify that this bidder fulfils all requirements in this regard and is eligible to be considered. **OR,**
 - b) **is from such a country** (strike out whichever is not applicable), and has been registered with the Competent Authority. I hereby certify that this bidder fulfils all requirements in this regard and is eligible to be considered. [Where applicable, evidence of valid registration by the Competent Authority is attached)
3. I/We the Bidder agree and undertake that if the contract is awarded to us, we will not sub- contract or outsource any work and / or any part thereof to a contractor from such countries, unless such contractor is registered with the Competent Authority and proof of same is obtained. I / we hereby certify that this bidder fulfils all requirements in this regard and is eligible to be considered and I/ We submit the proof of registration herewith

[Wherever applicable, evidence of valid registration by the Competent Authority shall be attached]

4. I understand that the submission of incorrect data and / or if certificate / declaration given by M/s. _____ (name of bidder entity) is found to be false, this would be a ground for immediate termination and further legal action in accordance with law as per Clause 12 of Public Order on Restrictions under Rule 144 (xi) of the General Financial Rules (GFR's), 2017.

5. This declaration cum undertaking is executed by us through our Authorized signatory/ies after having read and understood the Office Memorandum and Order (Public Procurement No.1,2,3) dated 23rd and 24th July 2020 of Ministry of Finance, Department of Expenditure, Public Procurement Division, Government of India including the words defined in the said order which shall have the same meaning for the purpose of this Declaration cum Undertaking.

Executed at _____ On this the _____ day of _____ By Authorized Signatory.

(Signature and Name)

Seal of the Bidder

*Note: Where applicable, evidence of valid registration by the Competent Authority shall be attached.

FORMAT FOR PROVIDING SELF-CERTIFICATION REGARDING LOCAL CONTENT REQUIREMENT FOR 'CLASS-I LOCAL SUPPLIER'/ 'CLASS-II LOCAL SUPPLIER'

[To be filled on Bidder's Letter Head and uploaded, duly signed & stamped]

Reference No.

Date :

Name of Work: _____

TENDER NO.: NIT No. _____ Dated _____

Name of the Bidder, submitting the Bid: _____

Address: _____

**To,
Chief Mechanical Engineer
Kolkata Dock System,
Syama Prasad Mookerjee Port, Kolkata**

Sir,

We have read and understood the provisions of revised "Public Procurement (Preference to Make in India) Order, 2017" dated 19.07.2024, issued in partial modification of Order No. P-45021/2/2017-B.E.-II dated 15.06.2017 [as amended by Order No. P-45021/2/2017-B.E.-II dated 28.05.2018, Order No. P-45021/2/2017-B.E.-II dated 29.05.2019, Order No. P-45021/2/2017-B.E.-II dated 04.06.2020 & Order No. P-45021/2/2017-B.E.-II dated 16.09.2020], by Department for Promotion of Industry & Internal Trade (Public Procurement Section), Ministry of Commerce and Industry, Government of India [hereinafter referred to as 'PPP-MII Order'].

In line with the provisions of the 'PPP-MII Order', We, M/S. [Enter the name of the Bidder] (hereinafter referred to as "Bidder") submit self-certification to **Syama Prasad Mookerjee Port, Kolkata** (hereinafter called as "SMPK") , regarding Local Content in Goods / Services, to be supplied by the Bidder, in connection with the work related to " _____ " (*Name of the Work*), wherein we have agreed to abide by the terms and conditions of the 'PPP-MII Order'.

In consideration of the above referred Tender floated / issued by "SMPK", Mechanical and Electrical Engineering Department, We, M/s _____ of (hereinafter referred to as "Bidder") certify that we have offered the Service with local content of----- %.

Details of the location(s) at which the local value addition will be made:

i)

ii)

iii)

We further certify that, in case we are awarded an order against this tender, the supplies against such order will comply with above indicated Minimum Local Content.

Date:

Signature:

Place:

Name of the Authorised Signatory:

Designation:

Official Seal of the Firm:

General Conditions of Contract
Forms and Agreements

Sanctioned by the Trustees under Resolution No. 92 of the 6th Meeting held on 27th
May, 1993

Including Addendum Sanctioned by the Trustees Meeting held on July, 2014

KOLKATA PORT TRUST
KOLKATA DOCK SYSTEM & HALDIA DOCK COMPLEX

GENERAL CONDITIONS OF CONTRACT

	CLAUSE		PAGES
1.	AMENDMENT TO GENERAL CONDITIONS OF CONTRACT	...	GC 1
2.	DEFINITION	...	GC 2 - GC 3
3.	DUTIES & POWERS OF ENGINEER & ENGINEER'S REPRESENTATIVE	...	GC 3 - GC 5
4.	THE TENDER/OFFER AND ITS PRE-REQUISITES	...	GC 5 - GC 9
5.	THE CONTRACT & GENERAL OBLIGATIONS OF CONTRACTOR	...	GC 9 - GC 14
6.	COMMENCEMENT, EXECUTION AND COMPLETION OF WORK	...	GC 14 - GC 17
7.	TERMS OF PAYMENT	...	GC 18 - GC 20
8.	VARIATION AND ITS VALUATION	...	GC 20 - GC 22
9.	DELAY/EXTENSION OF COMPLETION TIME/LIQUIDATED DAMAGE/TERMINATION OF CONTRACT	...	GC 22 - GC 24
10.	MAINTENANCE AND REFUND OF SECURITY DEPOSIT	...	GC 24 - GC 25
11.	INTERPRETATION OF CONTRACT DOCUMENTS, DISPUTES & ARBITRATION	...	GC 25 - GC 27
12.	FORMS GC-1, GC-2, GC-3		
13.	FORM OF AGREEMENT		
14.	PROFORMA FOR B.G. FOR CONTRACT PERFORMANCE		
15.	INTEGRITY PACT DOCUMENT: PROFORMA		
16.	ADDENDUM		

GC - 1
AMENDMENT TO GENERAL CONDITIONS OF CONTRACT

❖ **CI-3.4 THE TENDER/OFFER & ITS PRE-REQUISITES**

Table under sub-clause (a)

PREVIOUS			AS AMENDED		
Estimated Value of Work	Amount of Earnest Money		Estimated Value of Work	Amount of Earnest Money	
	For Works Contract	For Contract of Supplying Materials or Equipment only		For Works Contract	For Contract of Supplying Materials or Equipment only
Up to Rs. 1,00,000/-	5% of the estimated value of work	1% of the estimated value of work	Up to Rs. 10 Crore	2% of the estimated value of work	1% of the estimated value of work
Over Rs. 1,00,000/-	2% of the estimated value of work subject to a maximum of Rs. 20,000/- and minimum of Rs. 5,000/-.	½% of the estimated value of work subject to a maximum of Rs. 10,000/- and minimum of Rs. 1,000/-.	Over Rs. 10 Crore	2% on first Rs. 10 Crore + 1% on the balance	½% of the estimated value of work subject to a maximum of Rs. 10,000/- and minimum of Rs. 1,000/-.

[AMENDMENT SANCTIONED BY THE BOARD OF TRUSTEES VIDE RESOLUTION NO 210 OF THE TRUSTEES' MEETING HELD ON 26.02.2013]

Table under sub-clause (d)

PREVIOUS			AS AMENDED		
Class of Registration	Amount Of Fixed Security	Financial Limit Of Each Tender	Class of Registration	Amount Of Fixed Security	Financial Limit Of Each Tender
A	Rs 10,000/-	Any tender priced uptoRs 2,00,000/-	A	Rs 50,000/-	Any tender priced up to Rs 10,00,000/-
B	Rs 5,000/-	Any tender priced uptoRs 1,00,000/-	B	Rs 25,000/-	Any tender priced uptoRs 5,00,000/-
C	Rs 2,500/-	Any tender priced uptoRs 50,000/-	C	Rs 15,000/-	Any tender priced uptoRs 3,00,000/-

[AMENDMENT SANCTIONED BY THE BOARD OF TRUSTEES VIDE RESOLUTION NO 82 OF THE TRUSTEES' MEETING HELD ON 12.10.2012]

1. DEFINITIONS

- 1.0 In the contract, as here in after defined, the following words and expressions shall have the meaning herein assigned to them, except where the context otherwise required.
- 1.1 "Employer" or "Board" or "Trustees" means of the Board of Trustees for the Port of Kolkata, a body corporate under Section 3 of the Major Port Trusts Act, 1963, including their successors, representatives and assigns. **Employer**
- 1.2 "Chairman" means the Chairman of the Board and includes the person appointed to act in his place under Sections 14 and 14A of the Major Port Trusts Act, 1963 **Chairman**
- 1.3 "Contractor" means the person or persons, Firm or Company whose tender/offer has been accepted by the Trustees and includes the Contractor's representatives, heirs, successor and assigns, if any, permitted by the Board/Chairman. **Contractor**
- 1.4 "Engineer" means the Board's official who has invited the tender on its behalf and includes the Manager (Infrastructure & Civic Facilities) or other official as may be appointed from time to time by the Employer, with written notification to the Contractor, to act as Engineer for the purpose of the Contract, in place of the "Engineer" so designated. **Engineer**
- 1.5 "Engineer's Representative" means any subordinate or Assistant to the Engineer or any other official appointed from time to time by the Engineer to perform the duties set forth in Clauses 2.4 to 2.6 hereof. **Engineer's Representative**
- 1.6 "Work" means the work to be executed in accordance with the Contract and includes authorised "Extra Works" and 'Excess Works" and "Temporary Works". **Works**
- 1.7 "Temporary Works" means all temporary works of every kind required in or about the execution, completion or maintenance of the works and includes (without thereby limiting the foregoing definitions) all temporary erections, scaffolding, ladders, timbering, soaking vats, site offices, cement and other godowns, platforms and bins for stacking building materials, gantries, temporary tracks and roads, temporary culverts and mixing platforms. **Temporary works**
- 1.8 "Extra Works" means those works required by the Engineer for completion of the Contract which were not specifically and separately included in the schedule of items of the works i.e. (Bill of Quantities) of the tender. "Excess Works" means the required quantities of work in excess of the provision made against any item of the bill of Quantities. **Extra works and Excess works**
- 1.9 "Specifications" means the relevant and appropriate Bureau of Indian Standard's specifications / International Standard's Specifications (latest revisions) for materials and workmanship unless stated otherwise in the Tender. **Specification**

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1.10	“Drawings” means the drawings referred to in the Tender and specification and any modification of such drawings approved in writing by the Engineer and such other drawings as may from time to time be furnished or approved in writing by the Engineer.	Drawings
1.11	“Contract” means and includes the General and Special Conditions of Contract, Specifications, Drawings, priced Bill of Quantities, the Tender / Offer, the letter of acceptance of the Tender/Offer, the Contract Agreement, if separately entered into and the Schedule of Rates and Price, if any, adopted by the Trustees at their discretion.	Contract
1.12	“Constructional Plant” means all appliances or things of whatsoever nature required or about the execution, completion or maintenance of the works or temporary works and includes (without thereby limiting the foregoing definition) all machinery and tools but does not include materials or other things intended to form or forming part of the permanent works.	Constructional Plant
1.13	“Site” means the land, waterways and other places, on, under, in or through which the works are to be executed by the Trustees for the purpose of the Contract.	Site
1.14	“Contract Price” means the sum named in the letter of acceptance of the Tender/Offer of the Contractor, subject to such additions thereto and deductions therefrom as may be made by the Engineer under the provisions here in after contained.	Contract Price
1.15	“Month” means English Calendar Month.	Month
1.16	“Excepted Risks” are riot in so far as it is uninsurable, war, invasion, act of foreign enemies, hostilities) whether war be declared or not), Civil War, rebellion, revolution, insurrection or military or usurped power or use or occupation by the Trustees of any portion of the works in respect of which a certificate of completion has been issued (all of which are herein collectively referred to as the excepted risks).	Excepted Risks
1.17	Word importing the singular only, also includes the plural and vice-versa where the context so requires.	Singular/ Plural
1.18	The heading and marginal notes in these General Conditions of Contract shall not be deemed to be part thereof or be taken into consideration in the interpretation or construction thereof or of the contract.	Headings/ Marginal Notes.
1.19	Unless otherwise stipulated the work “Cost” shall be deemed to include overhead costs of the Contractor, whether on or off the site.	Cost
2.0	DUTIES & POWERS OF ENGINEER & ENGINEER’S REPRESENTATIVE.	
2.1	The Contractor shall execute, compete and maintain the works in terms of the contract to the entire satisfaction of the Engineer and Shall comply with the Engineer’s direction on any matter whatsoever.	Engineer’s Authority

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2.2	The Contractor shall take instructions from the Engineer and subject to limitation of Clause 2.5 hereof, from the Engineer's Representative.	Authority of Engineer's Representative
2.3	<i>The Engineer shall have full power and authority:</i> (a) to supply to the contractor from time to time during the progress of the works such further drawings and instructions as shall be necessary for the purpose of proper and adequate execution and maintenance of the works and the contractor shall carry out and be bound by the same. (b) to alter or modify the specification of any material and workmanship and to inspect the work at any time. (c) to order for any variation, alteration and modification of the work and for extra works. (d) to issue certificates as per contract. (e) to settle the claims & disputes of the Contractor and Trustees, as the first referee. (f) To grant extension of completion time.	Engineer's Power
2.4	<i>The Engineer's Representative shall:</i> (i) watch and supervise the works. (ii) test and examine any material to be used or workmanship employed in connection with the work. (iii) have power to disapprove any material and workmanship not in accordance with the contract and the contractor shall comply with his direction in this regard. (iv) take measurements of work done by the contractor for the purpose of payment or otherwise. (v) order demolition of defectively done work for its reconstruction all by the Contractor at his own expense. (vi) have powers to issue alteration order not implying modification of design and extension of completion time of the work and (vii) have such other powers and authorities vested in the Engineer, which have been delegated to him in writing by the Engineer under intimation to the Contractor.	Power of Engineer's Representative.

GC - 5

2.5	<i>Provided always that the Engineer's Representative shall have no power:</i> (a) to order any work involving delay or any extra payment by the Trustees, (b) to make variation of or in the works; and (c) to relieve the Contractor of any of his duties or obligations under the Contract.	Limitation of Engineer's Representative's Power
2.6	Provided also as follows: (a) Failure of Engineer's Representative to disapprove any work or materials shall not prejudice the power of the Engineer thereafter to disapprove such work or materials and to order the pulling down, removal, breaking-up thereof and re-constructing at the contractor's cost and the contractor shall have no claim to compensation for the loss if any sustained by him. (b) If the contractor shall be dissatisfied by reason of any decision of the Engineer's Representative, he shall be entitled to refer the matter to the Engineer who shall thereupon confirm, reverse or vary such decision. (c) Any written instructions or written approval given by the Engineer's Representative to the contractor, within the terms of delegation of power and authority vested in the Engineer to his Representative in writing, shall bind the contractor and the Trustees as though it had been given by the Engineer, who may from time to time make such delegation.	Engineer's Overriding Power
3.0	THE TENDER/OFFER AND ITS PRE-REQUISITES	
3.1	The Contractor shall, before making out and submitting his tender/ offer, be deemed to have inspected and examined the site, fully considered all factors, risks and contingencies, which will have direct and indirect impact on his expenses and profit from the work and shall be specifically deemed to have taken the following aspects into consideration:	The tender must encompass all relevant aspects/ issues.
	(a) The form and nature of the site and its surroundings including their sub-surface, hydrological, tidal and climatic conditions, the means of access to the site and all other local conditions, including the likely charges and costs for temporary way-leave, if any, required for the work.	Site & Local condition.
	(b) The drawings, specifications, the nature and extent of work to be executed and the quality, quantity and availability of the required materials and labour for the work and the need to execute the work to the entire satisfaction of the Engineer, and also by complying with the General and Special Conditions of Contract.	Drawing/ Specification/ Nature & extent of work to be done.

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	(c) The accommodation required for the workmen and site office, mobilisation/ demobilisation and storage of all plant, equipment and Construction materials.	Accommodation for Contractor's men/materials.
	(d) The sources and means of procurement of water for drinking, washing and execution of work, and source and availability of electrical power, all at Contractor's cost.	Water for drinking etc. /Electrical power.
	(e) Payment of taxes and duties and compliance of all applicable statutes, ordinances and law together with the rules made thereunder, the rules, regulations and bye-laws of public bodies or any local or other authority by the Contractor, keeping the Trustees indemnified against penalties and liabilities of every kind arising from the Contractor's failure in such compliance.	Payment of Taxes/duties and observance of all statutes.
	(f) Payment of all kinds of stamp-duty for executing the agreement or for any legal instrument including Bank Guarantees and Indemnity Bonds.	Payment of Stamp Duty by the Contractor.
3.2	The Contractor's tender shall be in ink on the Tender Forms supplied by the Trustees, unless stipulated otherwise in the Notice Inviting the Tender and shall be faultless in figures and free from erasing. Corrections, if any, shall only be made by scoring out and initialling of the revised figure.	
3.3	If required by the Engineer or the Trustees, the Contractors in their tender or subsequently, shall disclose the names of their owners/partners/share holders at the required points of time. The failure in this regard shall be treated as a breach and a contract, if entered into, shall be liable to be cancelled.	Disclosure of Owner's name.
3.4	(a) Unless otherwise stipulated in the Notice Inviting Tender / Offer, every tender must be submitted with Earnest Money of the amount calculated as per the following scale.	Earnest Money and Security Deposit.
	Estimated Value of Work	Amount of Earnest Money
		For Works Contract
		For Contract of Supplying Materials or Equipment only
	Up to Rs. 1,00,000=00	5% of the estimated value of work
	Over Rs. 1,00,000=00	2% of the estimated value of work subject to a maximum of Rs. 20,000/- and minimum of Rs. 5,000/-.
		1% of the estimated value of work
		½% of the estimated value of work subject to a maximum of Rs. 10,000/- and minimum of Rs. 1,000/-.

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	(b) Earnest Money shall be deposited with the Trustees' treasurer in cash or by Banker's Cheque of any Kolkata Branch of a Nationalised Bank of India drawn in favour of SMP, Kolkata or in the form of any "Account Payee" Draft of any Nationalised Bank of India drawn in favour of "SMP, Kolkata" and payable at Kolkata/Haldia, as the case may be, and the receipt granted therefor be kept attached to the Tender/Offer in the Sealed Cover.	Method of Paying E.M.												
	(c) Earnest Money of unaccepted tender shall be refunded without any interest through A/c. Payee Cheque drawn on a Nationalised Bank of Kolkata / Haldia.	Refund of E.M.												
	(d) The enlisted (registered) Contractors of the Trustees who have deposited fixed Security with the Trustees' FA & CAO / Manager (Finance) according to his Class of Registration, shall be exempt from depositing the Earnest Money, as per the following scale:	Exemption from E.M. to Regd. Firms												
	<table border="1"> <thead> <tr> <th>Class of Registration</th><th>Amount of Fixed Security</th><th>Financial Limit of Each Tender</th></tr> </thead> <tbody> <tr> <td>A</td><td>Rs. 25,000/-</td><td>Any tender priced up to Rs.5,00,000/-</td></tr> <tr> <td>B</td><td>Rs. 10,000/-</td><td>Any tender priced up to Rs.2,00,000/-</td></tr> <tr> <td>C</td><td>Rs. 5,000/-</td><td>Any tender priced up to Rs.1,00,000/-</td></tr> </tbody> </table>	Class of Registration	Amount of Fixed Security	Financial Limit of Each Tender	A	Rs. 25,000/-	Any tender priced up to Rs.5,00,000/-	B	Rs. 10,000/-	Any tender priced up to Rs.2,00,000/-	C	Rs. 5,000/-	Any tender priced up to Rs.1,00,000/-	
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	(e) (i) Tender submitted without requisite Earnest Money may be liable to rejection. (ii) If before expiry of the validity period of his Tender/Offer, the tenderer amends his quoted rates or tender/offer making them unacceptable to the Trustees and/or withdraws his tender/offer, the Earnest Money deposited shall be liable to forfeiture at the option of the Trustees.	Tender without EM liable to rejection. Forfeiture of E.M. before Acceptance of offer.												
	(f) The Earnest Money of accepted tender/offer shall be retained by the Trustees as part of the Security Deposit, for which a separate Treasury Receipt shall be issued to the Contractor after cancellation of the previous Receipt of Earnest Money.	E.M. to be converted to part S.D.												
	(g) Balance security for works contract shall be recovered by deduction from all progressive Bill (including final Bill, if necessary) @ 10% of the gross value of work in each such bill, so that the total recovery may not exceed the quantum computed as per the under noted percentages of the total value of work actually done up to the stage of completion.	Mode of recovery of balance S.D.												

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	Value of Work	% of Security Deposit for works contract.	% of Security Deposit For contract of supply-ing materials & equipment only.	Scale of S.D. recovery.
	For works up to Rs.10,00,000/-.	10% (Ten percent)	1% (One percent)	
	For works costing more than Rs.10,00,000/- and up to Rs.20,00,000/-	10% on first Rs.10,00,000/- + 7½% on the balance.	1% on first Rs.10,00,000/- + ½% on the balance.	
	For works costing more than Rs.20,00,000/-	10% on first Rs.10,00,000/- + 7 ½% on the next Rs.10,00,000/- + 5% on the balance.	1% on first Rs.10,00,000/- + ½% on the next Rs.10,00,000/- + ¼% on the balance.	
	(h) Balance Security for Contract of supplying materials and equipment computed in terms of the percentages given above, shall have to be deposited with the Trustees' Treasurer in advance and within 30 days from the date of placement of supply order, either in cash or by A/c. Payee Draft of a Nationalised Bank of India drawn in favour of SMP, Kolkata and payable at Kolkata/Haldia, as the case may be.			S.D. for supply contracts to be deposited in advance.
	(i) No interest shall be paid by the Trustees to the Tenderer/Contractor on the amount of Earnest Money/Security Deposit held by the Trustees, at any stage.			No interest payable on E.M. /S.D
3.5	(i) The Security Deposit shall refunded to the Contractor in terms of Clause 9.3 hereinafter and subject to deduction, if any, under the provision of Sub-clause 3.5 (ii) herein below. Id, however, the Contract provides for any maintenance period. 50% of the Security Deposit may be refunded against any of the treasury Receipt for that amount on expiry of half of the maintenance period and the balance deposit on the expiry of the said maintenance period and after the Engineer has certified the final completion of work in Form G.C.2 and the Contractor has submitted his "No Claim" Certificate in Form G.C.3.			Mode of refund of S.D.
	(ii) The Security Deposit/Earnest Money may be liable to forfeiture at the option of the Trustees, if the Contractor fails to carry out the work or to perform/ observe any of the conditions of the Contract. The Trustees shall also be at liberty to deduct any of their dues from the Security Deposit, fixed Security, Earnest Money or from any sum due or to become due to the Contractor under any other contract.			Forfeiture of S.D.

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3.6	If stipulated in the contract as a Special Condition, the contractor shall have to submit to the Engineer a performance Bond in the form of an irrevocable guarantee from Kolkata/Haldia Branch, as the case may be, of any Nationalised Bank of India in the proforma annexed hereto and for the sum and period as mentioned in the letter of acceptance of the Tender/Offer, within 15 days from the date of such letter, failing which the Contract shall be liable to be terminated and the earnest money shall be liable to forfeiture; all at the discretion of the Engineer. The cost of obtaining this or any other Bank Guarantee and/or the revalidation thereof, wherever required, has to be borne by the Contractor and it shall be his sole responsibility to arrange for timely revalidation of such Bank Guarantee, failing which and for non-fulfilment of any contractual obligation by the Contractor, the Engineer and/or the Trustees shall be at liberty to raise claim against the Guarantee and/or enforce the same unilaterally.	Bank Guarantee in lieu of Cash S.D. in certain cases
3.7	"Every Tenderer/ Bidder shall submit, in respect of a tender value of more than Rs 5 Crore, along with their tender comprising Special Conditions of Contract, General Conditions of Contract, BOQ, Earnest Money, etc. a document called Integrity Pact Agreement duly signed by their authorized representative. The Proforma of the Integrity Pact Agreement shall as specified in the GCC. In case of tender value more than Rs 5 Crore, the Integrity Pact Agreement is an essential part and parcel of bid document to be submitted by each tenderer, without which the tender shall not be considered."	
4.0	THE CONTRACT & GENERAL OBLIGATIONS OF CONTRACTOR	
4.1	(a) The contract documents shall be drawn-up in English language.	English language to be used
	(b) The contract shall be governed by all relevant Indian Acts. As applicable only within the jurisdiction of the High Court at Kolkata, India, including the following Acts : 1. The Contract Act (India), 1872. 2. The Major Port Trusts Act, 1963. 3. The Workmen's Compensation Act, 1923. 4. The Minimum Wages Act, 1948. 5. The Contract Labour (Regulation & Abolition) Act, 1970. 6. The Dock Workers' Act, 1948. 7. The Arbitration and Conciliation Act (1996) (in the case of a definite Arbitration Agreement only).	Applicability of laws on the contract
4.2	After acceptance of his Tender/Offer and when called on to do so by the engineer or his representative, the contractor shall, at his own expense, enter into and execute a Contract Agreement to be prepared by him in the form annexed hereto. Until such Contract Agreement is executed, the other documents referred to in the definition of the term 'Contract' here-in-before, shall collectively be the Contract.	Contractor to Execute Contract Agreement.
4.3	Several documents forming the contract are to be taken as mutually explanatory of one another. Should there be any discrepancy, ambiguity, omission or error in the various contract documents, the Engineer shall have the power to correct the same and his decision shall be final and binding on the parties to the Contract.	Interpretation of contract documents - Engineers' Power

4.4	Two copies of the Drawings referred to in the general and special Conditions of Contract and in the Bill of Quantities, shall be furnished by the Engineer to the Contractors free of cost for his use on the work, but these shall remain the property of the Trustees and hence, the Contractor shall return them to the Engineer or his Representative on completion of the work, if not torn or mutilated on being regularly used at site.	All Drawings are Trustees' property.
4.5	The Contractor shall prove and make at his own expense any working or progress drawings required by him or necessary for the proper execution of the works and shall, when required, furnish copies of the same free of cost to the Engineer for his information and/or approval, without meaning thereby the shifting of Contractor's responsibility on the Engineer in any way whatsoever.	Contractor to prepare working / progress drawings
4.6	The Contractor shall not directly or indirectly transfer, assign or sublet the Contract or any part thereof without the written permission of the Engineer. Even if such permission be granted, the Contractor shall remain responsible (a) for the acts, defaults and neglect of any sub-contractor, his agents, servants or workmen as fully as if these were the acts, defaults or neglects of the Contractor himself or his agents, servants or workmen and (b) for his full and entire responsibility of the contract and for active superintendence of the works by him despite being sublet, provided always that the provision of labourers on a "piece rate" basis shall not be deemed to be sub-letting under this clause.	Contractor cannot sub-let the work
4.7	Unless otherwise specified, the Contractor shall be deemed to have included in his Tender/Offer all his cost for supplying and providing all constructional plant, temporary work. Materials both for temporary and permanent works, labour including supervision thereof, transporting to and from the site and in and about the work, including loading, unloading, fencing, watching, lighting, payment of fees, taxes and duties to the appropriate authorities and other things of every kind required for the construction, erection, completion and maintenance of the work.	Contractors' price is inclusive of all costs
4.8	The Contractor shall be solely responsible for the adequacy, stability and safety of all site operations and methods of construction, even if any prior approval thereto has been taken from the Engineer or his Representative. The Contractor shall not be responsible for the correctness of the design or specification of the Temporary and Permanent works formulated by the Engineer; but the Contractor shall be fully responsible for the correct implementation thereof, as also for any design and specification prepared/proposed/used by the Contractor.	Contractor is responsible for all construction process, except for correctness of design and specification formulated by the Engineer.
4.9	Whenever required by the Engineer or his representative, the Contractor shall submit to him the details of his (a) programme for execution of the work, (b) proposed procedure and methods of work, (c) proposed deployment of plant, equipment, labour, materials and temporary works. The submission to and/or any approval by the Engineer or his Representative to any such programme or particulars shall not relieve the Contractor of any of his obligations under the contract.	Contractor to submit his programme of work

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	If for any reason the contractor be unable to adhere to his earlier programme, he shall submit his revised programme for completion of work within the stipulated time whenever asked to do so.	
4.10	Necessary and adequate supervision shall be provided by the Contractor during execution of the works and as long thereafter as the Engineer or his representative shall consider necessary during the maintenance period. The Contractor or his competent and authorised agent or representative shall be constantly at site and instructions given to him by the Engineer or his representative in writing shall be binding upon the Contractor subject to limitation in Clause 2.5 hereof. The Contractor shall inform the Engineer or his representative in writing about such representative/agent of him at site.	Contractor to supervise the works
4.11	The Contractor shall employ in execution of the Contract only qualified careful and experienced persons and the Engineer shall be at liberty to direct the Contractor to stop deployment of any of his staff, workmen or official at site and the Contractor shall within 48 hours comply with such instruction without any demur whenever the Engineer shall feel that the deployment of the person concerned will not be conducive to the proper and timely completion of the work.	Contractor to deploy qualified men and Engineer's power to remove Contractor's men
4.12	The Contractor shall be responsible for the true and proper setting out of the works in relation to reference points/lines/levels given by the Engineer in writing. The checking of any setting-out or of any alignment or level by the Engineer or his Representative shall not in any way relieve the contractor of his responsibility for the correctness thereof and he shall fully provide protect and preserve all stakes, templates, bench marks, sight rails, pegs, level marks, profile marks and other things used in setting out the works.	Contractor is responsible for line, level, setting out etc.
4.13	From the commencement of the works till issue of the completion certificate in Form G.C.1, vide Clause 5.12 hereof, the contractor shall take full responsibility for the care thereof. Save for the excepted risks, any damage, loss or injury to the work or any part thereof shall be made good by the Contractor at his own cost as per instruction and to the satisfaction of the engineer, failing which the Engineer or his Representative may cause the same to be made good by any other agency and the expenses incurred and certified by the Engineer shall deem proper. This Clause will not apply to that part of the work, which might have been taken over by the Trustees on partial completion of the work and in such case the Contractor's obligation will be limited to repairs and replacement for manufacturing or construction defects during the Maintenance period (Guarantee Period) as per the directions of the Engineer as also for defects/damages if any caused to the work by the Contractor during such repairs and replacement in the maintenance period.	Contractor is responsible to protect the work

4.14	The Contractor shall at his own cost protect support and take all precautions in regard to the personnel or structure or services or properties belonging to the Trustees or not which may be interfered with or affected or disturbed or endangered and shall indemnify and keep indemnified the Trustees against claim for injury, loss or damage caused by the Contractor in connection with the execution and maintenance of the work to the aforesaid properties, structures and services and/or to any person including the Contractor's workmen. Cost of Insurance Cover, if any, taken by the Contractor shall not be reimbursed by the Trustees, unless otherwise stipulated in the Contract.	Contractor is responsible for all damages to other structures / persons caused by him in executing the work.
4.15	The Contractor shall immediately inform the Engineer's Representatives if any fossil, coins, articles of value or antiquity and structures and other remains or things of geological or archaeological importance be discovered at site which shall remain the property of the Trustees and protect them from being damaged by his workmen and arrange for disposal of them at the Trustees' expense as per the instruction of the Engineer's Representative.	Fossils, Treasure travois, etc. are Trustees' property
4.16	The Contractor shall be deemed to have indemnified and shall indemnify the Trustees against all claims, demands, actions and proceedings and all costs arising therefrom on account of: (a) Infringement of any patent right, design, trademark or name or other protected right in connection with the works or temporary work. (b) Payment of all royalties, rent, toll charges, local taxes, other payments or compensation, if any, for getting all materials and equipment required for the work. (c) Unauthorised obstruction or nuisance caused by the contractor in respect of Public or Private or Private road, railway tracks, footpaths, crane tracks, waterways, quays and other properties belonging to the Trustees or any other person. (d) Damage/injury caused to any highway and bridge on account of the movement of Contractor's plants and materials in connection with the work. (e) Pollution of waterway and damage caused to river, lock, sea-wall or other structure related to waterway, in transporting contractor's plants and materials. (f) The Contractor's default in affording all reasonable facilities and accommodation as per the direction of the Engineer or his Representative to the workmen of the Trustees and other agencies employed by or with the permission and/or knowledge of the Trustees on or near the site of work.	Contractor to Indemnify the Trustees against all claims for loss, damage, etc.
4.17	Debris and materials, if obtained by demolishing any property, building or structure in terms of the Contract shall remain the property of the Trustees.	Dismantled materials Trustees' property

4.18	The Contractor's quoted rates shall be deemed to have been inclusive of the following : (a) Keeping the site free of unnecessary obstruction and removal from site of constructional plant wreckage, rubbish, surplus earth or temporary works no longer required. (b) Cleaning and removal from site all the surplus materials of every kind to leave the site clean and tidy after completion of the work, without which payment against final bill may be liable to be withheld. (c) Precautionary measures to secure efficient protection of Docks, the River Hooghly and other waterways against pollution of whatever nature during execution and maintenance of the works and to prevent rubbish, refuse and other materials from being thrown into the water by the Contractor's men or those of his agency. (d) Making arrangements for deployment of all labourer and workers, local or otherwise including payment for their wages, transport, accommodation, medical and all other statutory benefits and entry permits, wherever necessary. (e) Making arrangements in or around the site, as per the requirements of local authority or the Engineer or his Representative for preventing (i) spread of any infectious disease like smallpox, cholera, plague or malaria by taking effective actions for destruction of rats, mice, vermin, mosquitoes, etc. and by maintaining healthy and sanitary condition, (ii) illegal storage and distribution of Drugs, Narcotics, Alcoholic liquor, Arms and Ammunitions, (iii) unlawful, riotous or disorderly conduct of the Contractor's or his Sub-Contractor's workmen, (iv) deployment of workmen of age less than 16 years.	Contractor's quoted rates/price must be all inclusive
4.19	Every direction or notice to be given to the Contractor shall be deemed to have been duly served on or received by the Contractor, if the same is posted or sent by hand to the address given in the tender or to the Contractor's Site Office or to the Registered Office of the Contractor. The time mentioned in these conditions for doing any act after direction or notice shall be reckoned from the time of such posting or despatch.	Notice to Contractor.
4.20	The Contractor and his Sub-contractor or their agents and men and any firm supplying plant, materials and equipment shall not publish or caused to be published any photographs or description of the works without the prior authority of the Engineer in writing.	Contractor not to publish photograph or particulars of work

4.21	The Contractor shall at the Trustees' cost to be decided by the Engineer render all reasonable facilities and Co-operation as per direction of the Engineer or his representative to any other Contractor engaged by the Trustees and their workmen to the Trustees' own staff and to the men of other Public Body on or near the site of work and in default the Contractor shall be liable to the Trustees for any delay or expense incurred by reason of such default.	Contractor to provide facilities to outsiders
4.22	The work has to be carried out by the Contractor causing the minimum of hindrance for any maritime traffic or surface traffic.	Work to cause minimum possible hindrance to traffic movement
4.23	All constructional plants, temporary works and materials when brought to the site by the Contractor shall be deemed to be the property of the Trustees who will have lien on the same until the satisfactory completion of the work and shall only be removed from the site in part or in full with the written permission of the Engineer or his Representative.	Trustees' lien on Contractor's Plant & Equipment.
5.0	COMMENCEMENT, EXECUTION AND COMPLETION OF WORK.	
5.1	The Contractor shall commence the work within 7 days of the receipt of Engineer's letter informing acceptance of the Contractor's tender/offer by the Trustees or within such preliminary time as mentioned by the Contractor in the Form of Tender or the time accepted by the Trustees. The Contractor shall then proceed with the work with due expedition and without delay, except as may be expressly sanctioned or ordered by the Engineer or his Representatives, time being deemed the essence of the contract on the part of the contractor.	Preliminary time to commence work an maintenance of steady rate of progress
5.2	The Contractor shall provide and maintain a suitable office at or near the site to which the Engineer's Representative may send communications and instructions for use of the Contractor.	Contractor's site office
5.3	Unless specified otherwise in the contract or prior permission of the Engineer has been taken, the contractor shall not execute the work beyond the working hours observed by the Engineer's Representative and on Sundays and Holidays observed in the Trustees' system, except in so far as it becomes essential on account of tidal work or for safety of the work. If the progress of the work lags behind schedule or the work has been endangered by any act or neglect on the part of the contractor, then the Engineer or his Representative shall order and the contractor at his own expense shall work by day and by night and on Sundays and Public Holidays. Any failure of the Engineer or his Representative to pass such an order shall not relieve the contractor from any of his obligations. The Engineer's decision in this regard shall be final binding and conclusive.	Contractor to observe Trustees' working hours

5.4	Unless stipulated otherwise in the contract all materials required for the work shall be procured and supplied by the contractor with the approval of the Engineer or his Representative and subject to subsequent testing as may be required by the Engineer or his Representative. The Engineer shall exercise his sole discretion to accept any such materials.	Contractor to supply all materials as per requirement of the Engineer or his representative
5.5	Unless stipulated otherwise in the contract all materials, workmanship and method of measurement shall be in accordance with the relevant Codes (Latest Revision) of the Bureau of Indian Standards and the written instructions of the Engineer or his Representative. Where no specific reference is available in the contract, the material and workmanship shall be of the best of their respective kinds to the satisfaction of the Engineer.	Materials & Works
5.6	Samples shall be prepared and submitted for approval of the Engineer or his representative, whenever required to do so, all at the Contractor's cost.	Contractor to submit samples for approval
	Unless stipulated otherwise in the contract, the cost of any test required by the Engineer or his representative in respect of materials and workmanship deployed on the work, shall be borne by the Contractor.	Contractor to arrange all testing at his own cost.
5.8	Regarding the supply of any materials by the Trustees to the contractor in accordance with the contract, the following conditions shall apply:	
	(a) The Contractor shall, at his own expense, arrange for transporting the materials from the Trustees' Stores, watching, storing and keeping them in his safe custody, furnishing of statement of consumption thereof in the manner required by the Engineer or his representative, return of surplus and empty container to the Trustees' Stores as per the direction of the Engineer or his Representative.	The Contractor shall account for and look after the Trustees' materials
	(b) Being the custodian of the Trustees' materials, the contractor shall remain solely responsible for any such materials issued to him and for any loss or damage thereof for any reason other than "Excepted Risks", the Contractor shall compensate the Trustees' in the manner decided by the Engineer and shall at no stage remove or cause to be removed any such material from the site without his permission in writing.	Contractor to compensate for loss and damage to Trustees' materials
	(c) The Trustees' materials will generally be supplied in stages and in accordance with the rate of progress of work but except for grant of suitable extension of completion time of work as decided by the Engineer. The Contractor shall not be entitled to any other compensation, monetary or otherwise, for any delay in the supply of Trustees' materials to him. The Contractor shall, however, communicate his requirement of such materials to the Engineer from time to time.	Delay in supply of Trustees' materials will only entitle the Contractor for extension of completion time of work

	(d) Unless stipulated otherwise in the contract, the value of the Trustees' materials issued to the contractor shall be recovered from the contractor's bills and/or any of his other dues, progressively according to the consumption thereof on the work and/or in the manner decided by the Engineer or his representative and at the rate/s stipulated in the contract. These rates shall only be considered by the contractor in the preparation of his tender/offer and these will form the basis of escalation/variation, if in future the contractor is required to procure and provide any such material on the written order of the Engineer consequent on the Trustees' failure to effect timely supply thereof.	Recovery from Contractor for Trustees' materials under normal circumstances
	(e) If the Engineer decides that due to the contractor's negligence, any of the Trustees' materials issued to the contractor has been - (i) lost or damaged, (ii) consumed in excess of requirement and (iii) wasted by the contractor in excess of normal wastage, then the value thereof shall be recovered from the contractor's bills or from any of his other dues, after adding 19 ¼% extra over the higher one of the followings - (1) The issue rate of the materials at the Trustees' Stores and (2) The market price of the material on the date of issue as would be determined by the Engineer.	Recovery from Contractor for Trustees' materials under other circumstances.
5.9	The Engineer or his Representative shall have the power to inspect any material and work at any time and to order at any time - (I) for removal from the site of any material which in his opinion is not in accordance with the contract or the instruction of the engineer or his representative, (ii) for the substitution of the proper and suitable materials, or (iii) the removal and proper re-execution of any work which in respect of material and workmanship is not in accordance with the contract or the instructions of the Engineer. The Contractor shall comply with such order at his own expense and within the time specified in the order. If the contractor fails to comply, the Engineer shall be at liberty to dispose any such materials and re-do any work in the manner convenient to the Trustees by engaging any outside agency at the risk and expense of the contractor and after giving him a written prior notice of 7 days.	Contractor to replace materials/work not acceptable to the Engineer or his Representative
5.10	No work shall be covered up and put out of view by the contractor without approval of the Engineer or his Representative and whenever required by him, the contractor shall uncover any part or parts of the work or make openings in or through the same as may be directed by the Engineer or his representative from time to time and shall reinstate or make good those part of works thus affected to the satisfaction of the Engineer, all at the cost of the contractor. The Trustees shall reimburse such cost as determined by the Engineer, if the initial covering up was with prior written order of the Engineer or his Representative.	Contractor to seek approval of Engineer or his Representative before covering up any portion of work

5.11	On a written order of the Engineer or his Representative, the contractor shall delay or suspend the progress of the work till such time the written order to resume the execution is received by him. During such suspension the contractor shall protect and secure the work to the satisfaction of the Engineer or his Representative. All extra expenses in giving effect to such order shall be considered by the Trustees, unless such suspension is – (a) otherwise provided for in the contract, or (b) necessary by reason of some default on the part of the contractor, or (c) necessary by reason of climatic conditions on the site, or (d) necessary for proper execution of the works or for the safety of the works or any part thereof. The Engineer shall settle and determine such extra payment and/or Extension of completion time to be allowed to the contractor, as shall, in the opinion of the Engineer be fair and reasonable, and the same shall be final and binding on the Contractor.	Contractor to suspend work on Order from Engineer or his Representative
5.11.1	If at any time before or after commencement of the work the Trustees do not require the whole of the work tendered for the Engineer shall notify the same to the contractor in writing and the contractor shall stop further works in compliance of the same. The Contractor shall not be entitled to any claim for compensation for underived profit or for such premature stoppage of work or on account of curtailment of the originally intended work by reason of alteration made by the Engineer in the original specifications, drawings, designs and instructions.	
5.12	When the whole of the work has been completed to the satisfaction of the Engineer and has passed any final test prescribed in the contract, the contractor shall, within 21 days of submission of his application to the Engineer, be entitled to receive from him a certificate for completion of work in Form G.C.1, annexed hereto. If any part of the total work having been completed to the satisfaction of the Engineer, be taken over and/or used by the Trustees, the Contractor shall on application be entitled to partial completion certificate in the Form G.C.1 indicating the portion of the work covered by it, so that the Contractor's liability during maintenance period of the contract, if any, shall commence from the date mentioned in such certificate so far as the completed portion of the work is concerned.	Completion Certificate G.C.1.

6.0	TERMS OF PAYMENT:	
6.1	No sum shall be considered as earned by or due to the Contractor in respect of the work till final and satisfactory completion thereof and until a certificate of final completion in Form G.C.2 has been given by the Engineer. On account payments, if any, made prior to issue of the certificate in Form G.C.2, shall all be treated as mere advance, which shall stand recoverable in full or in part, if the Engineer so decides in the context of Contractor's unfulfilled contract condition, if any.	All interim payments are advances till issue of Certificate in Form G.C.2
6.2	All payments shall be made to the Contractor only on the basis of measurements of actual work done, as recorded in the Trustees' measurement books and at accepted tendered or at agreed rates, as the case may be, except as otherwise provided in the contract and when the Engineer decides any other rate for change in the scope of work or omission, if any, on the part of the Contractor.	Payment on the basis of measurements at agreed rates.
6.3	For work of sanctioned tender value more than Rs.50,000/- or having an initially stipulated completion period of 4 months or more, on account payments may be made at the discretion of the Engineer or his Representative at intervals deemed suitable and justified by him. Provided always that subject to execution of work of substantial value in the context of the contract price, the interval of such on account payments shall be decided by the Engineer or his Representative, which shall ordinarily not be less than 1 month in between two payments for on account bill and/or advance.	Limitation for on account payment
6.4	Measurement for works done shall be progressively taken by the Engineer's Representative and entered in the Trustees' Measurement Book, at intervals deemed suitable and proper by him and/or the Engineer. The Contractor or his duly accredited Representative or Agent shall remain present at the time of such measurement and assist the engineer's Representative in every manner required by him. After the measurements taken have been entered in the Measurement Book, the Contractor or his Agent shall sign the Measurement Book at the end of such Measurements over the Contractor's Rubber Stamp as a token of acceptance of all such measurements, recorded above and prior to such signature. If the Contractor or his Agent fails to participate even after 3 days written notice from the Engineer's Representative, the measurement shall be taken ex-parte by the Engineer's Representative and those shall be accepted by the Contractor.	Recording of measurements

6.5	Based on the quantum of work and the value thereof computed in the Measurement Book, the Contractor shall type out his bill in the proforma approved by the Engineer and submit the same to the Engineer's Representative in quadruplicate, duly signed by him or his accredited Agent over his Rubber Stamp. The Engineer or his Representative may in his absolute discretion, allow advance payment against such bill to the extent of an amount not exceeding 75% of the "net payable" sum of the said bill, subject to adjustment thereof against the bill at the time of checking and auditing the bill at the Trustees' end. The measurement Book will not be handed over to the Contractor; but he will obtain the abstracts of quantities, amounts and recoveries to type out the bill.	Contractor to prepare and submit his bills
6.6	At the discretion of the Engineer or his Representative and only in respect of accepted offers/where estimated amount put to tender would be Rs.2,00,000/- or more, advance payment may be made to the extent of 75% of the value of any material purchased and brought to the site by the Contractor. Provided always that - (i) the materials shall, in the opinion of the Engineer or his Representative be of imperishable nature, (ii) the value of such materials shall be assessed by the engineer or his Representative at their own discretion, (iii) a formal agreement has been drawn up with the contractor, under which the Trustees secure a lien on the contractor's materials, (iv) the materials are safe-guarded by the contractor against losses, shortage and misuse due to the contractor postponing the execution of the work or otherwise,	Advance payment against Non-perishable materials
	(v) in the event of storage of such materials within the Trustees' protected areas in the Docks, the contractor shall submit an Indemnity Bond in the proforma and manner acceptable to Trustees' whereby the contractor shall indemnify the Trustees against all financial loss/damage, on account of loss/damage to such materials for whatever reasons,	

	(vi) in the event of storage of such materials outside the Trustees' protected areas the Contractor shall submit to the Engineer an irrevocable Bank Guarantee favouring the Trustees and for the same sum as is being advance, in the proforma and manner acceptable to the Trustees. The Guarantee shall be of a Kolkata/Haldia Branch of any Nationalised Bank or a Schedule Commercial Bank, as the case may be, acceptable to the Trustees and shall remain valid till the anticipated period of consumption of such materials in the work. The Bank Guarantee must bear an undertaking by the issuing Bank guaranteeing automatic payment of the guaranteed sum to the Trustees by the Bank on the date of expiry of the validity of the Guarantee, unless with the prior written approval of the Engineer on behalf of the Trustees, the Bank has extended the validity of the Guarantee.	
	(vii) The amount of advance shall be recoverable from the contractor's bills or any other dues, progressively with the consumption of the materials on the basis of quantity consumed. Consequent on full recovery of the advance the Indemnity Bond/Bank Guarantee, vide Sub-clause (v) & (vi) above, shall be returned to the Contractor duly discharged by the Engineer on behalf of the Trustees.	
6.7	No certificate of the Engineer or his representative shall protect the Contractor against or prevent the Trustees from obtaining repayment from the Contractor, in case the Engineer or his representative should over certify for payment or the Trustees should over-pay the Contractor on any account.	Recovery for wrong and over payment
6.8	No claim for interest shall be admissible or payable to the Contractor at any stage and in respect of any money or balance or Bank Guarantee, which may be due to the Contractor from the Trustees, owing to dispute or otherwise or for any delay on the part of the Trustees in making interim or final payment or otherwise.	Interest not admissible to Contractor
7.0	VARIATION AND ITS VALUATION:	
7.1	The Quantities set out in the Bill of Quantities of the tender shall be treated as estimated quantities of the work and shall never be deemed as actual or correct quantities of the works to be executed by the contractor in fulfilment of his obligation under the contract.	Quantities in Bill of Quantities of Tender
7.2	The Engineer shall have the power to order the Contractor in writing to make any variation of the quantity, quality or form of the works or any part thereof that may, in his opinion, be necessary and the Contractor upon receipt of such an order shall act as follows:	Engineer's power to vary the works

7.2	(a) Increase or decrease the quantity of any work included in the contract. (b) Omit any work included in the contract. (c) Change the Character or quality or kind of any work included in the contract. (d) Change the levels, lines, position and dimensions of any part of the work, and (e) Execute extra and additional work of any kind necessary for completion of the works	
7.3	No such variation shall in any way vitiate or invalidate the contract or be treated as revocation of the contract, but the value (if any) of all such variations evaluated in accordance with the Engineer's sole decision shall be taken into account and the contract price shall be varied accordingly.	Variation by engineer do not vitiate the contract
7.4	Provided always that written order of the Engineer shall not be required for increase or decrease in the quantity of any work upto 15% where such increase or decrease is not the result of any variation order given under this clause but is the result of the quantities exceeding or being less than those stated in the bill of quantities. Provided also that verbal order of variation from the Engineer shall be complied with by the Contractor and the Engineer's subsequent written confirmation of such verbal order shall be deemed to be an order in writing within the meaning of this clause.	Where written order for variation is not needed
7.5	(a) The Contractor shall not be entitled to any claim of extra or additional work unless they have been carried out under the written orders of the Engineer. (b) The Engineer shall solely determine the amount (if any) to be added to or deducted from the sum named in the tender in respect of any extra work done or work omitted by his order.	Payment for extra or additional, or omitted work or substituted work, Engineer's powers
	(c) All extra, additional or substituted work done or work omitted by order of the Engineer shall be valued on the basis of the rates and prices set out in the contract, if in the opinion of the Engineer, the same shall be applicable. If the contract does not contain any rates or prices directly applicable to the extra, additional or substituted work, then the Engineer may decide the suitable rates on the basis of Schedule of Rates (including surcharge in force at the time of acceptance of tender), if any, adopted by the Trustees with due regard to the accepted contractual percentage, if any thereon. In all other cases the Engineer shall solely determine suitable rates in the manner deemed by him as fair and reasonable, and his decision shall be final, binding and conclusive.	

	(d) If the nature or amount of any omission or addition relative to the nature or amount of the whole of the contract work or to any part thereof shall be such that, in the opinion of the Engineer, the rate of prices contained in the contract for any item of the works or the rate as evaluated under sub-clauses (b) and (c) of this clause, is by reason of such omission or addition rendered unreasonable or in-applicable, the Engineer shall fix such other rate or price as he deems proper and the Engineer's decision shall be final, binding and conclusive.	
8.0	DELAY / EXTENSION OF COMPLETION TIME / LIQUIDATED DAMAGE / TERMINATION OF CONTRACT	
8.1	Should the quantum of extra or additional work of any kind or delayed availability of the Trustees' materials to be supplied as per contract or exceptionally adverse climatic conditions and natural phenomenon or strikes, lock-outs, civil commotion or other special circumstances of any kind beyond the control of the Contractor, cause delay in completing the work, the contractor shall apply to the Engineer in writing for suitable extension of completion time within 7 days from the date of occurrence of the reason and the Engineer shall thereupon consider the stated reasons in the manner deemed necessary and shall either reject the application or determine and allow in writing the extension period as he would deem proper for completion of the work with or without the imposition of "Liquidated Damage" Clause (No.8.3 hereof) on the Contractor and his decision shall be final and binding on the Contractor. If an extension of completion time is granted by the Engineer without imposition of liquidated damage, from the Clause No.8.3 of the Liquidated damage shall apply from its date of expiry, if the work be not completed within the extended time, unless stated otherwise in the decision communicated by the Engineer, as aforesaid.	Extension of completion time
8.2	a) If the Contractor fails to complete the work within the stipulated dates or such extension thereof as communicated by the Engineer in writing, the Contractor shall pay as compensation (Liquidated Damage) to the Trustees and not as a penalty, ½% (half percent) of the total value of work (contract piece) as mentioned in the letter of acceptance of the tender/offer, for every week or part thereof the work remains unfinished. Provided always that the amount of such compensation shall not exceed 10% of the said value of work. The amount of Liquidated damages shall be determined by the Engineer, which shall be final and binding.	'Liquidated Damage' and other compensation due to Trustees

	(b) Without prejudice to any of their legal rights, the Trustees shall have the power to recover the said amount of compensation/damage in Sub-clause (a) of this clause, from any money due or likely to become due to the Contractor. The payment or deduction of such compensation/damage shall not relieve the Contractor from his obligation to complete the work or from any of his other obligations/liabilities under the contract and in case of the Contractor's failure and at the absolute discretion of the Engineer, the work may be ordered to be completed by some other agency at the risk and expense of the Contractor, after a minimum three days' notice in writing has been given to the Contractor by the Engineer or his Representative.	
8.3	Without being liable for any compensation to the Contractor, the Trustees may, in their absolute discretion, terminate the contract and enter upon the site and works and expel the Contractor there from after giving him a minimum 3 days' notice in writing, due to occurrence of any of the following reasons and decision of the Trustees in this respect, as communicated by the Engineer shall be final and conclusive: (i) The Contractor has abandoned the contract.	Default of the Contractors remedies & powers/Termination of Contract.
	(ii) In the opinion of the Engineer, either the progress of work is not satisfactory or the work is not likely to be completed within the agreed period on account of Contractor's lapses.	
	(iii) The Contractor has failed to commence the works or has without any lawful excuse under these conditions has kept the work suspended for at least 15 days despite receiving the Engineer's or his Representative's written notice to proceed with the work.	
	(iv) The Contractor has failed to remove materials from site or to dismantle or demolish and replace work for 7 days after receiving from the Engineer or his representative the written notice stating that the said materials or work were condemned and rejected by him under these conditions.	
	(v) The Contractor is not executing the works in accordance with the contract or is persistently or flagrantly neglecting to carry out his obligations under the contract.	
	(vi) Any bribe, commission, gift or advantage is given, promised or offered by or on behalf of the contractor to any officer, servant or representative of the Trustees or to any person on his or their behalf in relation to the obtaining or to the execution of the contract.	
	(vii) The Contractor is adjusted insolvent or enters into composition with his creditors or being a company goes into liquidation either compulsory or voluntary.	

8.3.1	Upon receipt of the letter of termination of work, which may be issued by the Engineer on behalf of the Trustees, the Contractor shall hand over all the Trustees' tools, plant and materials issued to him at the place to be ascertained from the Engineer, within 7 days of receipt of such letter.	
8.3.2	In all such cases of Termination of work, the Trustees shall have the power to complete the work through any other agency at the Contractor's risk and expense and the Contractor shall be debited any sum or sums that may be expended in completing the work beyond the amount that would have been due to the Contractor, had he duly completed the work of the work in accordance with the contract.	
8.3.3	Upon termination of contract, the Contractor shall be entitled to receipt payment of only 90% of the value of work actually done or materials actually supplied by him and subject to recoveries as per contract, provided the work done and materials conform to specifications at the time of taking over by the Trustees. The payment for work shall be based on measurements of actual work done and priced at approved contract rates or other rates, as decided by the Engineer. The payment for materials supplied shall be at the rates as decided by the Engineer, which shall I in no case be more than market rates prevailing at the time of taking over by the Trustees. The Engineer's decision in all such case shall be final, binding and conclusive.	
8.3.4	The Trustees shall have the power to retain all moneys due to the Contractor until the work is completed by other agency and the Contractor's liabilities to the Trustees are known in all respect.	
9.0	MAINTENANCE AND REFUND OF SECURITY DEPOSIT	
9.1	On completion of execution of the work the Contractor shall maintain the same for a period, as may be specified in the form of a Special Condition of the Contract, from the date mentioned in the Initial Completion Certificate in Form G.C.1. Any defect/fault, which may appear in the work during aforesaid maintenance period, arising, in the sole opinion of the Engineer or his representative, from materials or workmanship not in accordance with the contract or the instruction of the Engineer or his representative, shall, upon the written notice of the Engineer or his representative, be amended and made good by the Contractor at his own cost within seven days of the date of such notice, to the satisfaction of the Engineer or his representative, failing which the Engineer or his representative shall have the defects amended and made good through other agency at the Contractor's risk and cost and all expenses, consequent thereon or incidental thereto, shall be recoverable from the Contractor in any manner deemed suitable by the Engineer.	Contractor's obligation for maintenance of work.

9.2	The Contractor shall not be considered completed and the work shall not be treated as finally accepted by the Trustees, until a Final Completion Certificate in Form G.C.2 annexed hereto shall have been signed and issued by the Engineer to the contractor after all obligations under the Contract including that in the maintenance period, if any, have been fulfilled by the Contractor. Previous entry on the works or taking possession, working on using thereof by the Trustees shall not relieve the Contractor of his obligations under the contract for full and final completion of the work.	Certificate of final completion
9.3	On completion of the contract in the manner aforesaid, the Contractor may apply for the refund of his Security Deposit by submitting to the Engineer (I) The Treasury Receipts granted for the amount of Security held by the Trustees, and (ii) his "No further claim" Certificate in Form G.C.3 annexed hereto (in original), where upon the Engineer shall issue Certificate in Form G.C.2 and within two months of the Engineer's recommendation, the Trustees shall refund the balance due against the Security Deposit to the Contractor, after making deduction therefrom in respect of any sum due to the Trustees from the Contractor.	Refund of Security Deposit
10.0	INTERPRETATION OF CONTRACT DOCUMENTS, DISPUTES AND ARBITRATION	
10.1	In all disputes, matters, claims, demands or questions arising out of or connected with the interpretation of the Contract including the meaning of Specifications, drawings, designs and instructions or as to the quality of workmanship or as to the materials used in the work or the execution of the work whether during the progress of the works or after the completion and whether before or after the determination, abandonment or breach of the contract the decision of the Engineer shall be final and binding on all parties to the contract and shall forthwith be given effect to by the Contractor.	Engineer's decision
10.2	If the Contractor be dissatisfied with any such decision of the Engineer, he shall within 15 days after receiving notice of such decision require that the matter shall be referred to Chairman, who shall thereupon consider and give a decision.	Chairman's award.
10.3	If, however, the Contractor be still dissatisfied with the decision of the Chairman, he shall within 15 days after receiving notice of such decision require that within 60 days from his written notice, the Chairman shall refer the matter to an Arbitrator of the panel of Arbitrators to be maintained by the Trustees for the purpose and any such reference shall be deemed to be a submission to arbitration within the meaning of Indian Arbitration Act, 1940 or any statutory modification thereof.	Arbitration.
10.3.1.	If the Arbitrator so appointed is unable or unwilling to act or resigns his appointment or vacates his office due to any reason whatsoever, another person from panel shall be appointed as Sole Arbitrator and he shall proceed from the stage at which his predecessor left it.	

10.3.2	The Arbitrator shall be deemed to have entered on reference on the date he issues notice to both the parties fixing the date of first hearing.	
10.3.3	The time limit within which the Arbitrator shall submit his award shall normally be 4 months as provided in Indian Arbitration Act, 1940 or any amendment thereof. The Arbitrator may, if found necessary, enlarge the time for making and publishing the award, with the consent of the parties.	
10.3.4	The venue of the arbitration shall be either Kolkata or Haldia as may be fixed by the Arbitrator in his sole discretion. Upon every or any such reference the cost of any incidental to the reference and award respectively shall be in the discretion of the Arbitrator who may determine, the amount thereof or by whom and to whom and in what manner the same shall be borne and paid.	
10.3.5	The Award of the Arbitrator shall be final and binding on all parties subject to the provisions of the Indian Arbitration Act 1940 or any amendment thereof. The Arbitrator shall give a separate award in respect of each item of disputes and respective claim referred to him by each party and give reason for the award.	
10.3.6	The Arbitrator shall consider the claims of all the parties to the contract – within only the parameters of scope and conditions of the contract in question.	
10.3.7	Save as otherwise provided in the contract the provisions of the Arbitration Act, 1940 and rules made thereunder, for the time being in force, shall apply to the arbitration proceedings under this Clause.	
10.4	The Contractor shall not suspend or delay the work and proceed with the work with due diligence in accordance with Engineer's decision. The Engineer also shall not withhold any payment, which, according to him, is due or payable to the Contractor, on the ground that certain disputes have cropped up and are likely to be referred to arbitration.	
10.5	Provided always as follows:	
	[a] Nothing of the provisions in paragraphs 10.3 to 10.3.7 hereinabove would apply in the cases of contracts, where tendered amount appearing in the letter of acceptance of the tender / offer is less than Rs.40,00,000/-.	
	[b] The Contractor shall have to raise disputes or differences of any kind whatsoever in relation to the execution of the work to the Engineer within 30 days from the date of occurrence of the cause of dispute and before the preparation of the final bill, giving detailed justifications, in the context of contract conditions.	

	[c]	Contractor's dispute if any arising only during the maintenance period, if any, stipulated in the contract, must be submitted to the Engineer, with detailed justification in the context of contract conditions, before the issuance of final completion certificate in Form G.C.-2 ibid. No dispute or difference on any matters whatsoever, the Contractor can raise pertaining to the Contract after submission of certificate in form G.C.3 by him.	
	[d]	Contractor's claim / dispute raised beyond the time limits prescribed in sub-clauses 10.5[b] and 10.5 [c] hereinabove, shall not be entertained by the Engineer and / or by any Arbitrator subsequently.	
	[e]	The Chairman / Trustees shall have the right to alter the panel of Arbitrators, vide Clause 10.3 hereinabove, on their sole discretion, by adding the names of new Arbitrators and / or by deleting the names of existing Arbitrators, without making any reference to the Contractor.	

THE BOARD OF TRUSTEES FOR THE PORT OF KOLKATA

FORM OF TENDER

To

.....

.....

.....

I/We _____

having examined the site of work, inspected the Drawings and read the specifications, General & Special Conditions of Contract and Conditions of the Tender, hereby tender and undertake to execute and complete all the works required to be performed in accordance with the Specification, Bill of Quantities, General & Special Conditions of Contract and Drawings prepared by or on behalf of the Trustees and at the rates & prices set out in the annexed Bill of Quantities within _____ months / weeks from the date of order to commence the work and in the event of our tender being accepted in full or in part. I / We also undertake to enter into a Contract Agreement in the form hereto annexed with such alterations or additions thereto which may be necessary to give effect to the acceptance of the Tender and incorporating such Specification, Bill of Quantities, Drawing and Special & General Conditions of Contract and I / We hereby agree that until such Contract Agreement is executed the said Specification, Bill of Quantities, Conditions of Contract and the Tender, together with the acceptance thereof in writing by or on behalf of the Trustees shall be the Contract.

THE TOTAL AMOUNT OF TENDER Rs. **NOT TO BE QUOTED**

(Repeat in words).....

.....

I / We require _____ days / months preliminary time to arrange and procure the materials required by the work from the date of acceptance of tender before I We could commence the work.

I / We have deposited with SMPK, vide Receipt No. _____ of
 _____ as Earnest Money.

I / We agree that the period for which the tender shall remain open for acceptance shall not be less than four months.

 Dated:
 Seal)

(Signature of Bidder with

WITNESS :			
Signature :		Name of the Bidder : (In Block letters)	
Name : (In Block letters)		Address :	
Address :			
Occupation :			

Syama Prasad Mookerjee Port, Kolkata

FORM G.C.1

Contractor _____

Address -----

Date of completion:

Dear sir (s),

This is to certify that the following work viz:-

Name of work:

Estimate No. E.E.0.....Dt.....

C.E.O.....Dt.....

Work Order No.....

Allocation.....

Contract No.

Which was carried out by you is in the opinion of the undersigned complete in every respect on the _____ day of _____ 20 in accordance with terms of the Contract and you are required to maintain the work as per Clause 62 of the General Conditions of Contract and under provisions of the Contract for a period of _____ week(s) / month(s) / year(s)

from the _____ day of _____ 20.....

to _____ day of _____ 20..... .

Yours faithfully,

Signature.....
(ENGINEER/ENGINEER'S REPRESENTATIVE)

Name.....

Designation.....

OFFICE SEAL

Syama Prasad Mookerjee Port, Kolkata

FORM G.C.2.

Certificate of Final Completion.

The Financial Adviser & Chief Accounts Officer
The Manager (Finance), Haldia Dock Complex.

This is to certify that the following work viz:-

Name of work:

Estimate No. E.E.O.....dt.....
C.E.O.....dt.....

Work Order No.....

Contract No.

Resolution & Meeting No.

Allocation:

Which was carried out by Shri/Messrs..... is now complete in every respect in accordance with the terms of the Contract and that all obligations under the Contract have been fulfilled by the Contractor.

Signature.....

(ENGINEER/ENGINEER'S REPRESENTATIVE)

NAME.....

DESIGNATION.....

OFFICE SEAL

Syama Prasad Mookerjee Port, Kolkata

FORM G.C.3

(‘NO CLAIM ‘CERTIFICATE FROM CONTRACTOR)

The Engineer
Syama Prasad Mookerjee Port, Kolkata

Kolkata.

(Atten :.....)

Dear Sir,

I / We do hereby declare that I / we have received full and final payment from the Syama Prasad Mookerjee Port, Kolkata for the execution of the following work viz:-

Name of work: _____

Work Order No:- _____

Contract No. _____

Agreement No.....Dt.....

and I / we have no further claim against the Syama Prasad Mookerjee Port, Kolkata in respect of the above-mentioned job.

Yours faithfully,

(Signature of the Contractor)

Dated _____

Name of Contractor.....

Address:

(OFFICIAL SEAL OF THE CONTRACTOR)

Syama Prasad Mookerjee Port, Kolkata
PROFORMA OF FORM OF AGREEMENT

THIS AGREEMENT made this.....day of.....20.... between the Board of Major Port Authority for Shyama Prasad Mookerjee Port, Kolkata, a body corporate constituted by the Major Port Authorities Act, 2021 (hereinafter called "Board" which expression shall unless excluded by or repugnant to the context be deemed to include their successors in office) of the one part and
(herein after called " the Contractor ", which expression shall unless excluded by or repugnant to the context be deemed to include its heirs, executors, administrators, representatives and assignees or successors in office) of the other part.

WHEREAS the Board is desirous that certain works should be executed / constructed, viz.

.....and have accepted a Tender/Offer by the Contractor for the execution and maintenance of such work NOW THIS AGREEMENT WITNESSETH as follows:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in General Conditions of Contract hereinafter referred to.
2. The following documents shall be deemed to form and be read and construed as part of this Agreement, viz.
 - (a) The said tender/offer and the acceptance of the tender/offer
 - (b) Instruction to Tenderers,
 - (c). Terms and Conditions of Tender,
 - (c) Special Conditions of Contract
 - (d) Scope of Work,
 - (e) General Conditions of Contract,
 - (f) Specifications
 - (g) Bill of quantities
 - (h) Board's Schedule of Rates and Prices (if any).
 - (i) All correspondence by which, the contract is added, amended, varied or modified in any way by mutual consent.
3. In consideration of the payments to be made by the Board to the Contractor as hereinafter mentioned, the Contractor hereby covenant with the Trustees to execute and

maintain the work in conformity in all respects with the provisions of the contract.

4. The Board hereby covenants to pay to the Contractor, in consideration of such execution and maintenance of the Work, the Contract Prices at the times and in the manner prescribed by the Contract.

IN WITNESS whereof of the parties hereto have caused their respective Common Seals to be hereunto affixed (or have hereunto set their respective hands and seals) the day and year first above written.

The Seal
of
.....
.....

Was hereunto affixed in the presence of:

Name
.....
Address
.....
...

Or

SIGNED, SEALED AND DELIVERED

By the said
.....

In the presence of:

Name
.....
.

Address:
.....

The Common Seal of the Board was hereunto affixed in the presence of:

Name.....

Address:

Draft Pro-forma of Bank Guarantee (Performance Bond) in lieu of cash Security Deposit, to be issued by the Kolkata Branch, as the case may be, of any Scheduled Commercial Bank in India on Non-Judicial Stamp Paper worth Rs.50/- or as decided by the Engineer/ Legal Adviser of SMP, Kolkata.

To

The Board of Major Port
Authority of Syama
Prasad Mookerjee Port,
Kolkata

BANK GUARANTEE NO.....DATE.....

Name of issuing Bank.....

Name of Branch.....

Address.....

In consideration of the Board of Major Port Authority of Syama Prasad Mookerjee Port, Kolkata, a body corporate - duly constituted under the Major Port Authorities Act, 2021, having agreed to exempt Shri/Messrs a proprietary / Partnership / Limited / Registered Company, having its Registered Office at (hereinafter

referred to as "The Contractor") from cash payment of Security Deposit / Payment of Security Deposit through deduction from the Contractors' bills under the terms and conditions of a contract made between the Board and the Contractor for (write the name of the work as per Work Order) in terms of the Work order No..... dated..... (hereinafter referred to as "The Contractor"), from cash payment of Security Deposit/Payment of Security Deposit through deduction from the Contractor's bills under the terms and conditions of a contract made between the Board and the Contractor for (write the name of the work as per Work Order) in terms of the Work Order No.....dated (hereinafter referred to as the said contract) for the due fulfilment by the contractor of all the terms and conditions contained in the said contract, on submission of a Bank Guarantee for Rs only)

We.....Branch,

Kolkata.....further agree that if a written demand is made by the Board through any of its officials for honouring the Bank Guarantee constituted by these presents, We, ... Branch Kolkata shall have no right to decline to cash the same for any reason whatsoever and shall cash the same and pay the same so demanded to the Board within a week from the date such demand by an A/c. Payee Banker's Cheque drawn in favour of 'Syama Prasad Mookerjee Port, Kolkata', without any demur. Even if there any dispute between the Contractor and the Board, this would be no ground for us, ...(Name of Bank),

Branch Kolkata.....to decline to honour the Bank Guarantee in the manner aforesaid. The very fact that we, ... Branch, Kolkata decline or fail or neglect to honour the Bank Guaranteed in the manner aforesaid shall constitute sufficient reason for the Board to enforce the Bank Guarantee unconditionally without any reference, whatsoever, to the contractor.

2. We,.....Branch, Kolkata.....further agree that a mere demand by the Board at any time and in the manner aforesaid, is sufficient for us,.....Branch, Kolkata
.....to pay the amount covered by this Bank Guarantee in full and in the manner aforesaid and within the time aforesaid without reference to the contractor and no protest by the contractor, made either directly or indirectly or through Court, can be valid ground for us, ...Branch, Kolkata to decline or fail or neglect to make payment to the Board in, the manner and within the time aforesaid.
3. We,.....Branch, Kolkata further agree that the Bank Guaranteed herein contained shall remain in full force and effect, during the period that is taken for the due performance of the said contract by the contractor and that is shall continue to be enforceable till all the dues of the Board under and/or by virtue of the terms and conditions of the said contract have been fully paid and its claim satisfied and/or discharged in full and/or till the certify that the terms and conditions of the said contract have been fully and properly observed/fulfilled by the contractor and accordingly, the Board have discharged the Bank Guarantee, subject however, that this guarantee shall remain valid up to and inclusive of day of 20.....and subject all so that the provision that the Board shall have no right to demand payment against this guarantee after the expiry of 6(six) calendar months from the expiry of the aforesaid validity period up to or any extension thereof made by us,
.....Branch, Kolkata in further extending the said validity period of this Bank Guarantee on Non-Judicial Stamp Paper of appropriate value, as required/determined by the Board only on a written request by the Board to the contractor for such extension of validity of this Bank Guarantee.
4. We, ...Branch, Kolkata further agree that, without our consent and without affecting in any manner our obligations hereunder, the Board shall have the fullest liberty to vary from time to time any of the terms and conditions of the said contract or to extend the time for full performance of the said contract including fulfilling all obligations under the said contract by the contractor or to postpone for any time or from time to time any of the powers exercisable by the Board against the contractor and to forebear or enforce any of terms and conditions relating to the said contract and We, ... Branch, Kolkata.....shall not be relieved from our liability by reason of any such variation or extension being granted to the contractor or for any forbearance, act or commission on the part of the Board or any indulgence by the Board to the contractor or by any such matter or thing of whatsoever nature, which under the law relating to sureties would, but for this provision, have effect of so relieving us Branch, Kolkata.....
5. We, ...Bank, ... Branch, Kolkata do also agree that SMPK at their option shall be entitled to enforce this Guarantee against us.... ..Branch, Kolkata as principal debtor in the first instance without producing against the Contractor and notwithstanding any security or other guarantee that SMPK may have in relation to the Contractor's liabilities.

6. We Branch, Kolkata lastly undertake not to revoke this Bank Guarantee during its currency except with the previous consent of the Board in writing.

7. Notwithstanding anything to the contrary contained herein:

- a. Our liability under this Guarantee shall not exceed ₹.....(Indian Rupees)
- b. This bank Guarantee shall be valid up to (expiry date)
- c. We are liable to pay the guaranteed amount or any part thereof under this Bank Guarantee only and only if you serve upon us a written claim or demand on or before.....(last date of claim).

SIGNATURE.....

NAME.....

DESIGNATION.....

(Duly constituted attorney for and on behalf of) BANK.....

BRANCH.....

Kolkata.....

(OFFICIAL SEAL OF THE BANK)

Note: In case of Bank Guarantee is submitted from a Branch of a Nationalized / Scheduled Bank of India, other than Kolkata Branch, the same should be routed through any Kolkata Branch of the said Nationalized / Scheduled Bank in India and such Branch shall confirm the same and standby for all the commitments under the Bank Guarantee. In all cases, any dispute regarding Bank Guarantee will be adjudicated under the jurisdiction of Calcutta High Court.

Note: While issuing bank Guarantee issuing applicant must mention receiver's detail as ICICI Bank IFSC ICIC0006952 Branch- Kolkata Gillander House, in BG text at which SFMS IFIN 760 messages to be sent by issuing bank, to establish the authenticity of given BG.

Proforma of Unconditional and Irrevocable Insurance Surety Bond towards Bid Security
(For Indian Bidders)
BID BOND

Ref. No.....

Insurance Surety Bond No..... Dated.....

To,

Syama Prasad Mookerjee Port, Kolkata

[Address of tender Inviting Authority mentioned in tender]

Sirs,

1. Whereas Syama Prasad Mookerjee Port, Kolkata, a permanent body having perpetual succession and a common seal constituted under The Major Port Authorities Act 2021 having its registered office at 15 Strand Road, Kolkata-700001 and one of its offices at _____ (address of the Tender Inviting Authority) (hereinafter called "SMPK" which expression shall unless repugnant to the context or meaning thereof include all its successors, administrators, executors and assignees) has floated a Tender No. _____ dated _____ and M/s _____ having Head / Registered office at _____ (hereinafter called the 'Bidder' which expression shall unless repugnant to the context or meaning thereof mean and include all its successors, administrators, executors and permitted assignees) have submitted a bid bearing Reference No. _____ dated _____ and Bidder having agreed to furnish, as a condition precedent for participation in the said tender, an unconditional and irrevocable Insurance surety Bond of Indian Rupees (in figures) _____ (Indian Rupees (in words) _____ only) for the due performance of Bidder's obligations as contained in the terms of the Notice Inviting Tender (NIT) and other terms and conditions contained in the Bidding documents supplied by "SMPK" which amount is liable to be forfeited on the happening of any contingencies mentioned in said documents.

2. We (name of **Indian Insurance Company**) India having head / registered office at _____, registered under the laws of _____ and registered with Insurance Regulatory and Development Authority of India (IRDAI) (herein after referred to as "the Insurer" which expression shall, unless repugnant to the context or meaning thereof, include all its successors, administrators, executors and permitted assignees) guarantee and undertake to pay immediately on first demand by any official of "SMPK", the amount of Indian Rs. _____ (in figures) (Indian Rupees (in words) _____ only) in aggregate at any time without any demur and recourse, and without "SMPK" having to substantiate the demand. Any such demand made by any official of "SMPK" shall be conclusive and binding on the Insurer and the Insurer shall immediately remit the amount to "SMPK" in the manner provided at para 7 below irrespective of any dispute or difference raised by the Bidder.

3. The Insurer confirms that this Insurance Surety Bond has been issued with observance of appropriate laws of the country of issue i.e. India.

4. The Insurer also agree that this Insurance Surety Bond shall be irrevocable and governed and construed in accordance with Indian Laws and subject to exclusive jurisdiction of High Court at Calcutta.

5. This Insurance Surety Bond shall be irrevocable and shall remain in force up to _____ (minimum the period of bid validity which is 180 days) and any demand/claim in respect thereof should reach the Insurer (through email or registered post or speed post or courier) on or before _____ (Indicate date of expiry of claim period which includes minimum one month period from the date of expiry of this Insurance surety Bond).

6. Notwithstanding anything contained hereinabove, our liability under this Insurance Surety Bond is limited to Indian Rs (in figures) _____ (Indian Rupees in words) _____ only) and this Insurance Surety Bond shall remain in force until _____ (indicate the date of expiry of Insurance Surety Bond)

7. All Claims of 'SMPK' (beneficiary) against this Insurance Surety Bond, shall be remitted by the..... (Insurer's name to be inserted) to the following account of 'SMPK' only through electronic transfer of funds, unless otherwise specifically communicated by 'SMPK':

- 1) Beneficiary Account Name: Syama Prasad Mookerjee Port, Kolkata
- 2) Bank Name: State Bank of India
- 3) Branch: SPECIALISED INSTITUTIONAL BANKING, KOLKATA (14524)
- 4) Bank Account Number: 00000011143631170
- 5) IFSC Code: SBIN0014524

8. Any claim under this Insurance Surety Bond must be received by Insurer on or before _____ (Indicate date of expiry of claim period which includes minimum one month period from the date of expiry of this Insurance Surety Bond). If no such claim has been received by us on or before the said date, the rights of "SMPK" under this Insurance Surety Bond will cease. However, if such a claim has been received by us on or before the said date, all the rights of 'SMPK' under this Insurance Surety Bond shall be valid and shall not cease until Insurer has satisfied that claim.

9. The Insurer hereby agrees to waive rights of subrogation against "SMPK" and its respective Board Members, officers, agents, representatives and employees. This extension is not applicable for subrogation rights against any third parties other than mentioned above.

In witness whereof, the Insurer, through its authorized officer, has set its hand and stamp on this _____ day of _____ at _____.

(Signature)

Full name, designation and official address (in legible letters) with Insurer's stamp.

Dated.....

Note:

(i) This Insurance Surety Bond / all further communications relating to the Insurance Surety Bonds should be forwarded to _____ (Insert the address of the tender inviting Authority mentioned in the Tender) only. Insurance Surety Bond, duly executed as per the above format, is to be enclosed with the offer.

**INSTRUCTIONS FOR FURNISHING UNCONDITIONAL AND IRREVOCABLE INSURANCE
SURETY BOND TOWARDS BID SECURITY**

1. The Insurance Surety Bond shall be from an Indian Insurance Company (Insurer) as per guidelines issued by Insurance Regulatory and Development Authority of India (IRDAI).
2. The Insurance Surety Bond by Indian Bidders will be given on non-judicial stamp paper/e-stamp paper as per stamp duty applicable at the place where Insurer is issuing the Insurance Surety Bond.
3. The non-judicial stamp paper/franking receipt should be either in name of the Insurer issuing the Insurance Surety Bond or the bidder. Insurance Surety Bond is not applicable for Foreign Bidders.
4. Insurance Surety Bond can be submitted only if a bidder/contractor is required to submit Bid Security/Bid Bond in Indian Currency only.
5. The expiry date as mentioned in clause 5 & 6 should be minimum the bid validity period, unless otherwise specified in the bidding documents and to be extended as per instruction of SMPK, failing which the bid may be cancelled including invoking of Insurance Surety Bond for EMD.
6. The expiry of claim period as mentioned in clause 5 & 8 should be arrived at by adding one month period from the date of expiry of the Insurance surety Bond.
7. A letter from the issuing Insurer of the Insurance Surety Bond confirming that said Insurance Surety Bond / all future communication relating to the Insurance Surety Bond shall be forwarded to the Tender Inviting Authority at its address as well as email as mentioned in NIT/Tender document, should be attached with the Insurance Surety Bond.
8. Matter to be mentioned in covering letter to be submitted by Bidder along with insurance surety bond

1.	Insurance Surety Bond No	:	
2.	Date of execution of Insurance Surety Bond	:	
3.	Expiry date of Insurance Surety bond	:	
4.	Expiry date of claim period of Insurance Surety Bond	:	
5.	Bidder's Name	:	
6.	Insurance Surety Bond Amount	:	
7.	Tender No	:	
8.	Nature of Insurance Surety Bond	:	Earnest Money Deposit
9.	Insurer Details	Insurer Name:	
		Address:	
		Email Id:	
		Phone No:	

**Proforma of Unconditional and Irrevocable Insurance Surety Bond towards Performance Security
(For Indian Bidders)
BID BOND**

Ref. No.....

Insurance Surety Bond No..... Dated.....

To,

Syama Prasad Mookerjee Port, Kolkata

[Address of tender Inviting Authority mentioned in tender]

Sirs,

1. Whereas Syama Prasad Mookerjee Port, Kolkata, a permanent body having perpetual succession and a common seal constituted under The Major Port Authorities Act 2021 having its registered office at 15 Strand Road, Kolkata-700001 and one of its offices at _____ (address of the Tender Inviting Authority) (hereinafter called "SMPK" which expression shall unless repugnant to the context or meaning thereof include all its successors, administrators, executors and assignees) has floated a Tender No. _____ dated _____ and M/s _____ having Head / Registered office at _____ (hereinafter called the 'Bidder' which expression shall unless repugnant to the context or meaning thereof mean and include all its successors, administrators, executors and permitted assignees) have submitted a bid bearing Reference No. _____ dated _____ and Bidder having agreed to furnish, as a condition precedent for participation in the said tender, an unconditional and irrevocable Insurance surety Bond of Indian Rupees (in figures) _____ (Indian Rupees (in words) _____ only) for the due performance of Bidder's obligations as contained in the terms of the Notice Inviting Tender (NIT) and other terms and conditions contained in the Bidding documents supplied by "SMPK" which amount is liable to be forfeited on the happening of any contingencies mentioned in said documents.

2. We (name of **Indian Insurance Company**) India having head / registered office at _____, registered under the laws of _____ and registered with Insurance Regulatory and Development Authority of India (IRDAI) (herein after referred to as "the Insurer" which expression shall, unless repugnant to the context or meaning thereof, include all its successors, administrators, executors and permitted assignees) guarantee and undertake to pay immediately on first demand by any official of "SMPK", the amount of Indian Rs. _____ (in figures) (Indian Rupees (in words) _____ only) in aggregate at any time without any demur and recourse, and without "SMPK" having to substantiate the demand. Any such demand made by any official of "SMPK" shall be conclusive and binding on the Insurer and the Insurer shall immediately remit the amount to "SMPK" in the manner provided at para 7 below irrespective of any dispute or difference raised by the Bidder.

3. The Insurer confirms that this Insurance Surety Bond has been issued with observance of appropriate laws of the country of issue i.e. India.

4. The Insurer also agree that this Insurance Surety Bond shall be irrevocable and governed and construed in accordance with Indian Laws and subject to exclusive jurisdiction of High Court at Calcutta.

5. This Insurance Surety Bond shall be irrevocable and shall remain in force up to _____ (minimum the period of bid validity which is 180 days) and any demand/claim in respect thereof should reach the Insurer (through email or registered post or speed post or courier) on or before _____ (Indicate date of expiry of claim period which includes minimum one month period from the date of expiry of this Insurance surety Bond).

6. Notwithstanding anything contained hereinabove, our liability under this Insurance Surety Bond is limited to Indian Rs (in figures) _____ (Indian Rupees in words) _____ only) and this Insurance Surety Bond shall remain in force until _____ (indicate the date of expiry of Insurance Surety Bond)

7. All Claims of 'SMPK' (beneficiary) against this Insurance Surety Bond, shall be remitted by the..... (Insurer's name to be inserted) to the following account of 'SMPK' only through electronic transfer of funds, unless otherwise specifically communicated by 'SMPK':

- 1) Beneficiary Account Name: Syama Prasad Mookerjee Port, Kolkata
- 2) Bank Name: State Bank of India
- 3) Branch: SPECIALISED INSTITUTIONAL BANKING, KOLKATA (14524)
- 4) Bank Account Number: 00000011143631170
- 5) IFSC Code: SBIN0014524

8. Any claim under this Insurance Surety Bond must be received by Insurer on or before _____ (Indicate date of expiry of claim period which includes minimum one month period from the date of expiry of this Insurance Surety Bond). If no such claim has been received by us on or before the said date, the rights of "SMPK" under this Insurance Surety Bond will cease. However, if such a claim has been received by us on or before the said date, all the rights of 'SMPK' under this Insurance Surety Bond shall be valid and shall not cease until Insurer has satisfied that claim.

9. The Insurer hereby agrees to waive rights of subrogation against "SMPK" and its respective Board Members, officers, agents, representatives and employees. This extension is not applicable for subrogation rights against any third parties other than mentioned above.

In witness whereof, the Insurer, through its authorized officer, has set its hand and stamp on this _____ day of _____ at _____.

(Signature)

Full name, designation and official address (in legible letters) with Insurer's stamp.

Dated.....

Note:

(i) This Insurance Surety Bond / all further communications relating to the Insurance Surety Bonds should be forwarded to _____ (Insert the address of the tender inviting Authority mentioned in the Tender) only. Insurance Surety Bond, duly executed as per the above format, is to be enclosed with the offer.

**INSTRUCTIONS FOR FURNISHING UNCONDITIONAL AND IRREVOCABLE INSURANCE
SURETY BOND TOWARDS PERFORMANCE SECURITY/ SECURITY DEPOSIT**

1. The Insurance Surety Bond shall be from an Indian Insurance Company (Insurer) as per guidelines issued by Insurance Regulatory and Development Authority of India (IRDAI).
2. The Insurance Surety Bond by Indian Bidders will be given on non- judicial stamp paper/e-stamp paper as per stamp duty applicable at the place where Insurer is issuing the Insurance Surety Bond.
3. The non-judicial stamp paper/franking receipt should be either in name of the Insurer issuing the Insurance Surety Bond or the bidder. Insurance Surety Bond is not applicable for Foreign Bidders.
4. Insurance Surety Bond can be submitted only if a bidder/contractor is required to submit Bid Security/ Bid Bond in Indian Currency only.
5. The expiry date as mentioned in clause 5 & 6 should be minimum the bid validity period, unless otherwise specified in the bidding documents and to be extended as per instruction of SMPK, failing which the bid may be cancelled including invoking of Insurance Surety Bond for EMD.
6. The expiry of claim period as mentioned in clause 5 & 8 should be arrived at by adding one month period from the date of expiry of the Insurance surety Bond.
7. A letter from the issuing Insurer of the Insurance Surety Bond confirming that said Insurance Surety Bond / all future communication relating to the Insurance Surety Bond shall be forwarded to the Tender Inviting Authority at its address as well as email as mentioned in NIT/Tender document, should be attached with the Insurance Surety Bond.
8. Matter to be mentioned in covering letter to be submitted by Bidder along with insurance surety bond

1.	Insurance Surety Bond No	:	
2.	Date of execution of Insurance Surety Bond	:	
3.	Expiry date of Insurance Surety bond	:	
4.	Expiry date of claim period of Insurance Surety Bond	:	
5.	Bidder's Name	:	
6.	Insurance Surety Bond Amount	:	
7.	Tender No	:	
8.	Nature of Insurance Surety Bond	:	Performance Security/Security Deposit
9.	Insurer Details	Insurer Name:	
		Address:	
		Email Id:	
		Phone No:	

INTEGRITY PACT

Between

Syama Prasad Mookerjee Port, Kolkata (**SMP, Kolkata**) hereinafter referred to as “**The Principal/
Employer**”.

And

..... hereinafter referred to as “**The Bidder/Contractor**”

Preamble

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

In order to achieve these goals, an Independent External Monitor (IEM) appointed by the principal, will monitor the tender process and the execution of the contract for compliance with the principles mentioned above.

NOW, THEREFORE,

To avoid all forms of corruption by following a system that is fair, transparent and free from any influence/prejudiced dealings prior to, during and subsequent to the currency of the contract to be entered into with a view to:-

Enabling the PRINCIPAL/EMPLOYER to get the contractual work executed and/or to obtain/dispose the desired said stores/ equipment at a competitive price in conformity with the defined specifications/ scope of work by avoiding the high cost and the distortionary impact of corruption on such work /procurement/ disposal and Enabling BIDDERS/ CONTRACTORS to abstain from bribing or indulging in any corrupt practice in order to secure the contract by providing assurance to them that their competitors will also abstain from bribing and other corrupt practices and the PRINCIPAL/EMPLOYER will commit to prevent corruption, in any form, by its officials by following transparent procedures.

Section 1 - Commitments of the Principal/ Employer.

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

- a. No employee of the Principal, personally or through family members, will in connection with the tender for, or the execution of a contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.
- b. The Principal will, during the tender process treat all Bidder(s) with equity and reason. The Principal will, in particular, before and during the tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential/ additional information through which the Bidder(s) could obtain an advantage in relation to the tender process or the contract execution.
- c. The Principal will exclude from the process all known prejudiced persons.

- (2). If the Principal obtains information on the conduct of any of its employees which is a criminal offence under the Indian Penal Code (IPC)/Prevention of Corruption (PC) Act, or if there be a substantive suspicion in this regard, the Principal will inform the Chief Vigilance Officer and in addition can initiate disciplinary actions.

Section-2 –Commitments of the Bidder(s) / Contractor(s)

- (1) The Bidder(s)/Contractor(s) commit himself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the tender process and during the contract execution.
- a. The Bidder(s) /Contractor(s) will not directly or through any other person or firm, offer, promise or give to any of the Principal's employees involved in the tender process or the execution of the contract or to any third person any material or other benefit which he/she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.
 - b. The Bidder(s)/Contractor(s) will not enter with other Bidders into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contract, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.
 - c. The Bidder(s)/Contractor(s) will not commit any offence under the relevant IPC/PC Act; further the Bidder(s)/Contractor(s) will not use improperly, for purposes of competition or personal gain, or pass on to others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.
 - d. The Bidder(s)/Contractor(s) of foreign origin shall disclose the name and address of the Agents/representatives in India, if any. Similarly the Bidder(s)/Contractor(s) of Indian Nationality shall furnish the name and address of the foreign principles, if any. Further details as mentioned in the "Guidelines on Indian Agents of Foreign Suppliers" shall be disclosed by the Bidder(s)/Contractor(s). Further, as mentioned in the Guidelines, all the payments made to the Indian agent/representative have to be in Indian Rupees only. Copy of the "Guidelines on Indian Agents of Foreign Suppliers" is annexed and marked as Annex-A.
 - e. The Bidder(s)/Contractor(s) will when presenting his bid, disclose any and all payments he has made, is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract.
- (2). The Bidder(s)/Contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.

Section-3-Disqualification from tender process and exclusion from future contracts

If the Bidder(s)/Contractor(s) before award or during execution has committed a transgression through a violation of Section 2 above, or in any other form such as to put his reliability or credibility in question, the Principal is entitled to disqualify the Bidder(s)/Contractor(s) from the tender process or take action as considered appropriate.

Section 4-Compensation for damages

- (1) If the Principal has disqualified the Bidder(s) from the tender process prior to the award according to Section 3, the Principal is entitled to demand and recover the damages equivalent to Earnest Money Deposit/ Bid Security.
- (2) If the Principal has terminated the contract according to Section 3 or if the Principal is entitled to terminate the contract according to Section 3, the Principal shall be entitled to demand and recover from the Contractor liquidated damages of the contract value or the amount equivalent to Performance Bank Guarantee.

Section 5-Previous transgression

- (1) The Bidder declares that no previous transgressions occurred in the last 3 years from the date of signing the Integrity pact with any other Company in any country conforming to the anti-corruption approach or with any other Public Sector Undertaking / Enterprise in India, Major Ports/ Govt. Departments of India that could justify his exclusion from the tender process.
- (2) If the Bidder makes incorrect statement on this subject, he can be disqualified from the tender process or action can be taken as considered appropriate.

Section 6- Equal treatment of all Bidders/Contractors/Sub-Contractors

- (1) The Bidder(s)/Contractor(s) undertake(s) to demand from all subcontractors a commitment in conformity with this Integrity Pact, and to submit it to the Principal before contract signing.
- (2) The Principal, will enter into agreements with identical conditions as this one with all Bidders, Contractors and Sub-contractors.
- (3) The Principal will disqualify from the tender process all bidders who do not sign this Pact or violate its provisions.

Section 7- Other Legal actions against violating Bidder(s)/ Contractor(s)/ Sub Contractor(s)

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

Section 8 - Role of Independent External Monitor (IEM):

- (a) The task of the Monitors shall be to review independently and objectively, whether and to what extent the parties comply with the obligations under this pact.
- (b) The Monitors shall not be subject to instructions by the representatives of the parties and shall perform their functions neutrally and independently.
- (c) Both the parties accept that the Monitors have the right to access all the documents relating to the contract.
- (d) As soon as the Monitor notices, or has reason to believe, a violation of this pact, he will so inform the authority designated by the Principal and the Chief Vigilance Officer of Kolkata Prot Trust.
- (e) The BIDDER/ CONTRACTOR(s) accepts that the Monitor has the right to access without restriction to all contract documentation of the PRINCIPAL including that provided by the BIDDER/ CONTRACTOR. The BIDDER/ CONTRACTOR will also grant the Monitor, upon his request and demonstration of a valid

interest, unrestricted and unconditional access to his contract documentation, if any. The same is applicable to sub-contractors. The Monitor shall be under contractual obligation to treat the information and documents of the Bidder/Contractor/ Sub-contractor(s) with confidentiality.

(f) The Principal/ Employer will provide to the Monitor sufficient information about all meetings among the parties related to the contract provided such meetings could have an impact on the contractual relations between the Principal and the Contractor. The parties offer to the Monitor, the option to participate in such meetings.

(g) The Monitor will submit a written report to the designated Authority of Principal/ Employer/ Chief Vigilance Officer of Syama Prasad Mookerjee Port, Kolkata within 8 to 10 weeks from the date of reference or intimation to him by the Principal/ Employer/ Bidder/ Contractor and should the occasion arise, submit proposals for correcting problematic situation. BIDDER/ CONTRACTOR can approach the Independent External Monitor (s) appointed for the purposes of this Pact.

(h) As soon as the Monitor notices, or believes to notice, a violation of this agreement, he will so inform the Management of the Principal and request the Management to discontinue or to take corrective action, or to take other relevant action. The Monitor can in this regard submit non-binding recommendations. Beyond this, the Monitor has no right to demand from the parties that they act in a specific manner, refrain from action or tolerate action.

(i) If the Monitor has reported to the Principal substantiated suspicion of an offence under the relevant IPC/PCA, and the Principal/ Employer has not, within reasonable time, taken visible action to proceed against such offence or reported to the Chief Vigilance Officer, the Monitor may also transmit this information directly to the Central Vigilance Commissioner, Government of India.

(j) The word 'Monitor' would include both singular and plural.

Section 9 – Facilitation of Investigation:

In case of any allegation of violation of any provisions of this Pact or payment of commission, the PRINCIPAL/EMPLOYER or its agencies shall be entitled to examine all the documents including the Books of Accounts of the BIDDER/CONTRACTORS and the BIDDER/CONTRACTOR shall provide necessary information and documents **in English** and shall extend all possible help for the purpose of such examination.

Section 10 – Pact Duration:

The pact beings with when both parties have legally signed it and will extend upto 2 years or the complete execution of the contract including warranty period whichever is later. In case bidder/contractor is unsuccessful this Integrity Pact shall expire after 6 months from the date of signing of the contract.

If any claim is made/lodged during this time, the same shall be binding and continue to be valid despite the lapse of this pact as specified above, unless it is discharged/ determined by Chairman, SMP Kolkata.

Section 11 – Other Provisions:

(1) This agreement is subject to Indian Law. Place of performance and jurisdiction is the Registered Office of the Principal in Kolkata.

(2) Changes and supplements as well as termination notices need to be made in writing in English.

(3) If the Contractor is a partnership or a consortium, this agreement must be signed by all partners or consortium members.

- (4) Should one or several provisions of this agreement turn out to be invalid, the reminder of this agreement remains valid. In this case, the parties will strive to come to an agreement to their original intentions.

(For & on behalf of the Principal)

(For & on behalf of Bidder/Contractor).

(Office Seal)

(Office Seal)

Place :

Date :

Witness 1:

(Name & Address)

.....

.....

Witness 2:

(Name & Address)

.....

.....

GUIDELINES FOR INDIAN AGENTS OF FOREIGN SUPPLIERS

- 1.1 There shall be compulsory registration of Indian agents of Foreign suppliers for all Tenders. An agent who is not registered with SMP, Kolkata shall apply for registration in the prescribed Application-Form.
- 1.2 Registered agents will file an authenticated Photostat copy (duly attested by a Notary Public)/Original certificate of the principal confirming the agency agreement and giving the status being enjoyed by the agent and the commission/ remuneration/salary/retainer ship being paid by the principal to the agent before the placement of order by SMP Kolkata.
- 1.3 Wherever the Indian representatives have communicated on behalf of their principals and the foreign parties have stated that they are not paying any commission to the Indian agents, and the Indian representative is working on the basis of salary or as retainer, a written declaration to this effect should be submitted by the party (i.e. Principal) before finalizing the order.
- 2.0 DISCLOSURE OF PARTICULARS OF AGENTS/REPRESENTATIVES IN INDIA. IF ANY.**
- 2.1 Tenderers of Foreign nationality shall furnish the following details in their offer:
 - 2.1.1 The name and address of the agents/representatives in India, if any and the extent of authorization and authority given to commit the Principals. In case the agent/representative be a foreign Company, it is to be conformed whether it is real substantial Company and details of the same shall be furnished.
 - 2.1.2 The amount of commission/ remuneration included in the quoted price(s) for such agents/ representatives in India.
 - 2.1.3 Confirmation of the Tenderer that the commission/remuneration if any, payable to his agents/ representatives in India, is to be paid by SMP, Kolkata in Indian Rupees only.
- 2.2 Tenderers of Indian Nationality shall furnish the following details in their offers:**
 - 2.2.1 The name and address of the foreign principals indicating their nationality as well as their status, i.e. whether manufacturer or agents of manufacturer holding the Letter of Authority of the Principal specifically authorizing the agent to make an offer in India in response to tender either directly or through the agents /representatives.
 - 2.2.2 The amount of commission/remuneration included in the price(s) quoted by the Tenderer for himself.
 - 2.2.3 Confirmation of the foreign principals of the Tenderer that the commission/remunerations, if any, reserved for the Tenderer in the quoted price(s), is to be paid by SMP, Kolkata in India in equivalent Indian Rupees.
- 2.3 In either case, in the event of contract materializing, the terms of payment will provide for payment of the commission/remuneration, if any payable to the agents/representatives in India in Indian Rupees on expiry of 90 days after the discharge of the obligations under the contract.
- 2.4 Failure to furnish correct and detailed information as called for in paragraph-2.0 above will render the concerned tender liable for rejection or in the event of a contract materializing, the same liable to termination by SMP Kolkata. Besides this there would be a penalty of banning business dealings with SMP, Kolkata or damage or payment of a named sum.

ADDENDUM

Modification of clause no.3.4 of GCC as sanctioned vide Reso. No.210 by the Board of Trustees for the Port of Kolkata in the 13th Meeting held on 26.02.2013.

- i. **Earnest Money:** Earnest money deposit @ 2% of the estimated cost will be applicable for works / service / O&M contract only and not for procurement contract for which existing system as mentioned in the GCC should be followed.
- ii. **There will be no minimum ceiling of Earnest Money** which will be @ 2% of estimated cost of projects upto Rs.10 crore. EMD of project estimated above Rs.10 crore will be Rs.20 lakh + 1% of estimated cost by which it exceeds Rs.10 crore.
- iii. **Upto Rs.10 lakh Earnest Money** will be accepted by Banker's cheque / Demand Draft / Pay order. EMD beyond Rs.10 lakh may be accepted in the form of Bank Guarantee issued by an Indian Nationalized / Scheduled Bank.
- iv. **Refund of Earnest money** to other than L-1 bidders will be made within 2 month of opening of bid or on finalization / acceptance of tender, whichever is earlier.

Signature Not Verified

Digitally signed by DILIP KUMAR KUNDU
Date: 2026.05.08 18:24:04 IST
Location: eProcure-EPROC