



RailTel Corporation of India Ltd

(A Mini Ratna PSU under Ministry of Railways)

NOTICE INVITING EXPRESSION OF INTEREST (EOI)

EOI No.: RailTel/SR/SBC/BMRCL-CCTV Dated 14-02-2024

**For finalising BA/SI to participate in the tender called for by
BMRCL Tender No: BMRCL/O&M/TELE&AFC/CCTV/2023/02; Dt: 26/01/2024
for “UPGRADATION OF CCTV SYSTEM AND COMPREHENSIVE
ANNUAL MAINTENANCE CONTRACT”**

RAILTEL CORPORATION OF INDIA LIMITED
No-6/1, 12th Main,
Opp-Mount Carmel College,
Vasanthnagar, Bangalore 560 052
<https://www.railtelindia.com>

रेलटेल कॉर्पोरेशन ऑफ इंडिया लिमिटेड
(रेल मंत्रालय के अधीन एक मिनी रत्न सार्वजनिक उपक्रम)
नंबर-6/1, 12वीं मुख्य, माउंट कार्मेल कॉलेज के सामने,
वसंतनगर, बेंगलूर 560052

निविदा आमंत्रण सूचना

ईओआई नोटिस संख्या: रेलटेल/एसआर/एसबीसी/बीएमआरसीएल-सीसीटीवी दिनांक 14-02-2024

रेलटेल कॉर्पोरेशन ऑफ इंडिया लिमिटेड, (इसके बाद "रेलटेल" के रूप में संदर्भित) केवल बीएमआरसीएल, बेंगलूर के लिए उपयुक्त भागीदार के चयन के लिए रेलटेल के सूचीबद्ध बिजनेस एसोसिएट्स (बीए) बिजनेस पार्टनर (बीपी) / आईटी-आईसीटी बिजनेस पार्टनर्स से निविदा संख्या: बीएमआरसीएल / ओ एंड एम / टेली एंड एएफसी / सीसीटीवी / 2023/02 दिनांक 26/01/2024 के साथ संलग्न विवरण और विनिर्देशों के अनुसार "सीसीटीवी सिस्टम के उन्नयन और व्यापक वार्षिक रखरखाव अनुबंध" के लिए ईओआई आमंत्रित करता है।

ईओआई अनुसूची और अन्य विवरण इस प्रकार हैं:

1	वेबसाइट के माध्यम से ईओआई की उपलब्धता	16-02-2024 को 13:00 बजे से
2	बोली जमा करने की आरंभ तिथि	16-02-2024 को 13:00 बजे से
3	ऑफर जमा करने की अंतिम तिथि	23-02-2024 को 12:00 बजे से पहले
4	बोलीदाताओं के प्रस्तावों को खोलना	23-02-2024 को 12:30 बजे
5	टोकन बयाना राशि जमा	₹ 5,00,000/- **
6	निष्पादन बैंक गारंटी	एलओए का 3%
7	जेवी/कंसोर्टियम की अनुमति	नहीं
ऑफर https://railtel.enivida.com पर प्रस्तुत किए जाएंगे।		

** सफल बोलीदाता को रेलटेल से सूचना प्राप्त होने पर तुरंत एक बार में ₹ 34,39,145/- की शेष बयाना राशि जमा करनी होगी।

बीएमआरसीएल, बेंगलूर के सभी नियमों और शर्तों में काम का दायरा, आईटीटी, जीटीसी, भुगतान, एसएलए और जुर्माना, वारंटी आदि शामिल हैं, सभी बोली लगाने वालों द्वारा अनुपालन किया जाएगा और सफल भागीदार के साथ बैंक टू बैंक आधार पर लागू होगा। इस कार्यालय से एलओआई/एलओए/पीओ/एसओ जारी होने की तारीख से 03 महीने के भीतर सभी प्रकार से पूरा कार्य पूरा किया जाएगा।

बीएमआरसीएल, बेंगलूर का निविदा दस्तावेज इस ईओआई के अंत में रखा गया है। उद्धृत मूल्य सभी करों, शुल्कों, लेवी आदि सहित होगा।

सभी दस्तावेजों को पृष्ठ संख्या के साथ उचित अनुक्रमण और हस्ताक्षर के साथ प्रस्तुत किया जाना चाहिए।

किसी भी स्पष्टीकरण के लिए निम्नलिखित नामित अधिकारियों से संपर्क किया जा सकता है:

किसी भी स्पष्टीकरण के लिए निम्नलिखित नामित अधिकारियों से संपर्क किया जा सकता है:

प्रथम स्तर

एस.कृष्णमूर्ति

उप महाप्रबंधक/विपणन-तकनीकी

ईमेल: krish@railtelindia.com

दूसरा स्तर

के.कुमार

महाप्रबंधक/बेंगलूर

ईमेल: kumar@railtelindia.com

बोलीदाताओं से अनुरोध है कि वे ईएनआईटीआईडीए पोर्टल के साथ पंजीकृत हों और किसी भी संशोधन/शुद्धिपत्र के लिए समय-समय पर जांच करें।

RAILTEL CORPORATION OF INDIA LIMITED

(A Mini Ratna PSU under Ministry of Railways)
No-6/1, 12th Main, Opp-Mount Carmel College,
Vasanthnagar, Bangalore 560052

Notice Inviting Tender

EOI Notice No: RailTel/SR/SBC/BMRCL-CCTV Dated 14-02-2024

RailTel Corporation of India Ltd., (hereinafter after referred to as “RailTel”) invites EOIs from RailTel’s Empanelled Business Associates (BA) Business Partner (BP)/ IT-ICT Business Partners only for the selection of suitable partner for BMRCL, Bangalore Tender No: BMRCL/O&M/TELE&AFC/CCTV/2023/02 DT. 26/01/2024 for “UPGRADATION OF CCTV SYSTEM AND COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT” as per the description and specifications enclosed herewith.

The EOI schedule and other details are as under:

1	Availability of EOI through Website	From 13:00 Hrs. of 16-02-2024
2	Bid Submission Start Date	From 13:00 Hrs. of 16-02-2024
3	Last date for submission of offers	23-02-2024 before 12:00 Hrs
4	Opening of Bidder’s offers	12:30 Hrs of 23-02-2024
5	Token Earnest Money deposit	Rs.5,00,000/-**
6	Performance Bank Guarantee	3% of the LoA
7	JV / Consortium	Not allowed
Offers shall be submitted in https://railtel.enivida.com		

** The successful bidder shall submit balance Earnest Money deposit of Rs.34,39,145/- at once on the advice is received from RailTel.

All the terms & conditions of BMRCL, Bangalore including Scope of work, ITT, GTC, Payments, SLA & Penalties, warranty etc., shall be complied with by all bidders and applicable on back-back basis with the successful partner. Entire work shall be completed in all respects within 03 months from the date of issue of Lol/LoA/PO/SO from this office.

The tender document of BMRCL, Bangalore is placed at the end of this Eoi. Price quoted shall be all inclusive of taxes, duties, levies etc.,

All the documents must be submitted with proper indexing with page numbers & signed.

For any clarification following designated officials may be contacted:

1st Level

S.Krishnamurthy

Dy.General Manager/Mktg-Tech

Email: krish@railtelindia.com

2nd Level

K.Kumar

General Manager/Bangalore

Email: kumar@railtelindia.com

The bidders are requested to get registered with eNivida portal and do check from time to time for any Amendments/Corrigendum. For any interpretation, English version of NIT will be final.

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1. Introduction about RailTel

RailTel Corporation of India Limited (RailTel), an ISO-9001:2000 organization is a Mini Ratna Government of India undertaking under the Ministry of Railways. The Corporation was formed in Sept 2000 with the objectives to create nationwide Broadband Telecom and Multimedia Network in all parts of the country, to modernize Train Control Operation and Safety System of Indian Railways and to contribute to realization of goals and objective of national telecom policy 1999.

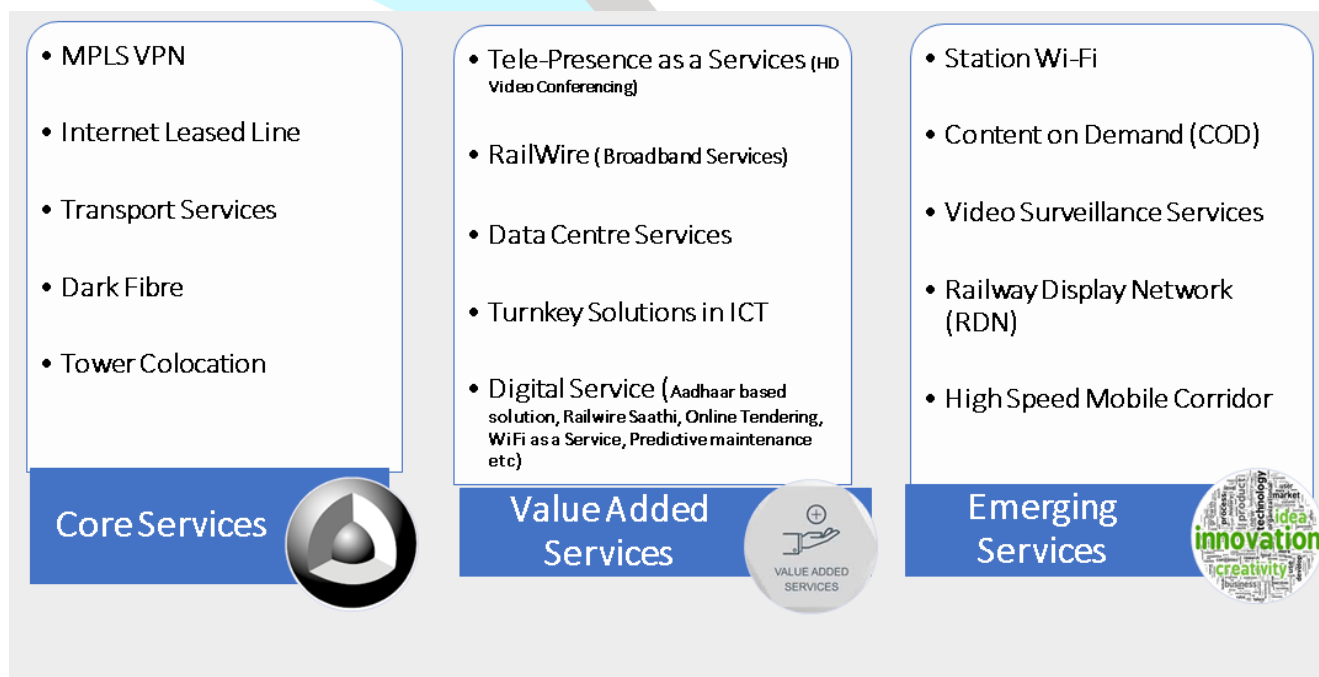
RailTel has approximately 60000 Kms of OFC along the protected Railway tracks. The transport network is built on high capacity DWDM and an IP/ MPLS network over it to support mission critical communication requirements of Indian Railways and other customers. RailTel has Tier-III Data Center in Gurgaon and Secunderabad hosting / collocating critical applications. RailTel is also providing Telepresence as a Service (TPaaS), where a High-Definition Video Conference facility bundled with required BW is provided as a Service.

For ensuring efficient administration across India, country has been divided into four regions namely, Eastern, Northern, Southern & Western each headed by Executive Director and Headquartered at Kolkata, New Delhi, Secunderabad & Mumbai respectively. These regions are further divided into territories for efficient working. RailTel has territorial offices at Guwahati, & Bhubaneswar in East, Chandigarh, Jaipur, Lucknow in North, Chennai & Bangalore in South, Bhopal, and Pune & Ahmedabad in West. Various other territorial offices across the country are proposed to be created shortly.

RailTel's business service lines can be categorized into three heads namely B2G/B2B (Business to Government and Business to Business) and B2C (Business to customers):

a) Licenses & Service portfolio:

Presently, RailTel holds Infrastructure Provider -1, National Long-Distance Operator, International Long-Distance Operator and Internet Service Provider (Class-A) licenses under which the following services are being offered to various customers:



b) CARRIER SERVICES

1. National Long Distance: Carriage of Inter & Intra -circle Voice Traffic across India using state of the art NGN based network through its Interconnection with all leading Telecom Operators
2. Lease Line Services: Available for granularities from E1, DS-3, STM-1 & above
3. Dark Fiber/Lambda: Leasing to MSOs/Telco's along secured Right of Way of Railway tracks
4. Co-location Services: Leasing of Space and 1000+ Towers for collocation of MSC/BSC/BTS of Telco's

c) ENTERPRISE SERVICES

1. Managed Lease Line Services: Available for granularities from E1, DS-3, STM-1 & above
2. MPLS VPN: Layer-2 & Layer-3 VPN available for granularities from 2 Mbps & above
3. Dedicated Internet Bandwidth: Experience the "Always ON" internet connectivity at your fingertips in granularities 2mbps to 155mbps

d) RETAIL SERVICES

Rail wire: Triple Play Broadband Services for the Masses. It is a pilot project undertaken by RailTel and currently services are offered out of Bangalore and nearby places.

2. Project Background and Objective of EOI

RailTel intends to participate in the **BMRL** Tender No: BMRL/O&M/TELE&AFC/CCTV/2023/02; DT. 26/01/2024 for "UPGRADATION OF CCTV SYSTEM AND COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT " as per the description and specifications enclosed herewith.

Accordingly, RailTel invites EOIs from RailTel's Empaneled Business Associates (BA) Business Partner (BP)/ IT-ICT Business Partners for the selection suitable partner for bidding in BMRL, BANGALORE Tender No: BMRL/O&M/TELE&AFC/CCTV/2023/02; DT. 26/01/2024 for "UPGRADATION OF CCTV SYSTEM AND COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT " as per the description and specifications enclosed herewith.

3. Scope of Work

The scope of work is as mentioned in the BMRL, BANGALORE Tender No: for BMRL/O&M/TELE&AFC/CCTV/2023/02; DT. 26/01/2024 for "UPGRADATION OF CCTV SYSTEM AND COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT" as per the description and specifications enclosed herewith.

- 3.1 **Schedule of Requirement** For detailed scope of work, may please refer to BMRL, BANGALORE tender document attached as part of EOI. RailTel intend to select a partner who is willing to accept all terms & conditions on back-to-back basis for their scope and portion of work. *In case of any discrepancy or ambiguity in any clause/ specification pertaining to scope of work area, the Tender released by end Customer (i.e. BMRL, BANGALORE) shall supersede and will be considered sacrosanct. (All associated clarifications, responses to queries, revisions, addendum, and corrigendum, associated Prime Service Agreement (PSA)/ MSA/ SLA also included).*

RAILTEL

4. Response to EOI guidelines

4.1 Language of Proposals

The proposal and all correspondence and documents shall be written in English.

4.2 RailTel's Right to Accept/Reject responses

RailTel reserves the right to accept or reject any response and annul the bidding process or even reject all responses at any time prior to selecting the partner, without thereby incurring any liability to the affected bidder or **Partner** or without any obligation to inform the affected bidder or bidders about the grounds for RailTel's action.

4.3 EOI response Document

The bidder is expected to examine all instructions, forms, terms and conditions and technical specifications in the bidding documents. Submission of bids, not substantially responsive to the bidding document in every aspect will be at the bidder's risk and may result in rejection of its bid without any further reference to the bidder.

All pages of the documents shall be signed in ink by the bidder including the closing page in token of his having studied the EOI document and should be submitted along with the bid. A copy of signed EOI along with its all Corrigendum/Addendum is required to be submitted through RailTel portal duly signed digitally.

4.4 Period of Validity of bids and Bid Currency:

Bids shall remain valid for a period of Six Months from the date of opening of Tender No. BMRCL/O&M/TELE&AFC/CCTV/2023/02; DT. 26/01/2024 of BMRCL, BANGALORE. If any extension is required by customer, then the same will be extended for further period.

4.5 Negotiation:

RailTel reserves the right to negotiate with the bidder to make the bid competitive. The tenderer/s shall not increase his/their quoted rates including payment terms in case the RailTel Administration negotiates for reduction of rates. Such negotiations shall not amount to cancellation or withdrawals of the original offer and the rates originally quoted will be binding on the tenderer/s.

4.6 All offers in the prescribed forms should be submitted before the time and at fixed for the receipt of the offers. In case the schedule of requirement quoted by tenderer is incomplete with reference to tender document, the offer is liable to be rejected.

4.7 ATTESTATION OF ALTERATION:

No scribbling is permissible in the tender documents. Tender containing erasures and alterations in the tender documents are liable to be rejected. Any corrections made by the tenderer/ tenderers in his /their entries must be signed and stamp (Not initiated) by him/them.

4.8 The offer should be submitted at <https://railtel.enivida.com> as mentioned in the NIT. The offer should be complete in all aspects.

4.9 Deleted

4.10 The bidder should submit along with all the applicable documents as per the EOI

4.11 Information to Bidder

4.11.1 Guidelines for preparations of response to this EOI - Bidder are requested to follow the below guidelines while preparing the response to EOI.

- a. The price bid should be in format provided in the Annexure-I, any bid not found responsive to the details mentioned in this document may be rejected.
- b. The bidder is requested to review the response before submission as the submitted responses shall be considered final and revisions may not be permitted unless there are genuine reasons for such revisions.
- c. Bidder should download the document and sign each page & fill the bid sheet (Annexure-I) attach all documents as required for this EOI document and submit the complete bid as explained in the EOI document. Late and delayed response to this EOI shall not be considered.

4.11.2 Bid Earnest Money (EMD): Rs.5,00,000/- to be paid in the form of RTGS/NEFT/DD alongwith the offer as a token EOI EMD and the successful bidder shall submit balance EMD of Rs.34,39,145/- at once on advice from RailTel in the form of RTGS/NEFT/DD/irrevocable Bank Guarantee in favour of RailTel Corporation of India Ltd as detailed below:

Bank Detail for RTGS:	Company Tax Details
Name: RailTel Corporation of India Ltd	PAN : AABCR7176C
Bank: Union Bank of India	GSTN: 29AABCR7176C1Z9
Branch: RP Road, Secunderabad	
A/C Number : 327301010373007	
IFSC Code : UBIN0805050	
MICR Code: 500026009	

4.11.3 Security Deposit / Performance Bank Guarantee: The selected Partner shall have to submit a Bank Guarantee against Security Deposit in proportion to the ordered value to RailTel as back-to-back arrangements for the Bid. The rate and value of SD/PBG shall be as per Tender No. BMRCL/O&M/TELE&AFC/CCTV/2023/02; DT. 26/01/2024 of BMRCL, Bangalore.

4.11.4 In the case the bid is successful the PBG also will have to be submitted to RailTel on back-to-back basis.

4.11.5 In case work share arrangements are mutually agreed between RailTel and **Partner** then the PBG will be proportionately decided.

4.12 Last date & time for Submission of EOI response

EOI response should be submitted to RailTel as explained in the EOI document. The bids submitted after the specified date and time mentioned in the EOI will be summarily rejected.

4.13 Modification and/or Withdrawal of EOI response

EOI response once submitted will be treated, as final and no modification will be permitted. No correspondence in this regard will be entertained.

No bidder shall be allowed to withdraw the response after the last date and time for submission. The successful bidder will not be allowed to withdraw or back out from the response commitments. In case of withdrawal or back out by the successful bidder, the Earnest Money Deposit shall be forfeited, and all interests/claims of such **Partner** shall be deemed as foreclosed. In addition, if selected partner withdraws its offer, then the **Partner** may be blacklisted.

4.14 Details of Financial bid for the above referred tender

The final bid for the tender will be prepared jointly with the selected **Partner** for its respective portion so that RailTel puts in an optimal bid with a good chance of winning the Tender. Moreover, RailTel reserves the right for further negotiation and deduction in prices from the selected Service Partner to keep the RailTel's bid in winning position in the BMRCL, BANGALORE tender.

4.15 Clarification of EOI Response

To assist in the examination, evaluation, and comparison of bids the purchaser may, at its discretion, ask the Service Partners for clarification. The response should be in writing and no change in the price or substance of the EOI response shall be sought, offered, or permitted.

4.16 Period of Association/Validity of Agreement

RailTel may enter into a pre-bid agreement with selected partner with detailed back-to-back Terms and conditions for respective selected portion of scope in each of the packages prior to submission of RailTel bid against BMRCL, BANGALORE Tender No. BMRCL/O&M/TELE&AFC/CCTV/2023/02; DT. 26/01/2024.

5 Eligibility Criteria for Partners:

The bidders must comply with the following conditions for their eligibility in the participation for the EOI. Submit necessary declarations/certifications as per Tender Terms and Conditions:

Sl. No.	Parameter	Eligibility Criteria	Supporting Documents to be Submitted	Compliance (Y/N)
A)	Association with RailTel	The Bidder Should be RailTel's Empaneled Business Associates (BA) Business Partner (BP)/IT-ICT Business Partners with validity of association at least upto the last date of submission of this bid. This is the primary and mandatory eligibility criteria; however, the bidder is also required to meet other eligibility criteria of this EOI.	Copy of LOI/Agreement.	
B)	Financial Conditions			
i)	Company Registration	Should be registered under Companies Act, 1956 or Companies Act 2013 or as amended and should have at least 3 years of operations in India as on bid submission date.	1. Certificate of Incorporation / Firm Registration 2. GST Registration 3. PAN Card	
ii)	Cumulative Turnover	a) Tenderer in its name should have in the last five financial years i.e., 2018-19, 2019-20, 2020-21, 2021-22 & 2022-23 achieved a minimum cumulative financial turnover of Rs.3500 Lakhs. For Startup & MSME the company should have achieved a minimum cumulative turnover of RS. 4 Crores in 2 Years including current Financial Year. BMRCL, Bangalore Tender No: BMRCL/O&M/TELE&AFC/CCTV/2023/02 DT. 26/01/2024 for "UPGRADATION OF CCTV SYSTEM AND COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT"	Turnover Certificate issued by the Statutory Auditors along with copy of the CA financial statements to be submitted.	

iii)	Positive Net worth	Bidder should also have a positive net worth.	Positive Net Worth Certificate issued by the Statutory Auditors along with copy of the CA audited financial statements required.	
iv)	Liquid assets	Liquid assets and/or availability of credit facilities of not less than Rs 200.00 Lakhs for meeting the fund requirement etc.	Credit lines/ letter of credit / certificates from banks is required.	

C)	Technical Conditions			
(i)	Work experience	Tenderer should have experience in IT / CCTV Project of Rs. 1.40 Cr or above in any of the following organizations: In any Metro Rail Corporation Limited/Central Govt. / State Govt. / PSU's / Govt. Bodies / Military Engineering Service/ Railways. / Private Companies	To this extent necessary PO copies/agreement copies / completion certificates. The information should also be submitted in the Annexure-XI	
(i)	MAF	The bidder needs to submit the documents required under MAF from the respective OEMs (edge device solution for hardware and software) as part of the solution mentioning Back-to-Back arrangement, TAC support, End of Support.	MAF as per the Tender Document of BMRCCL Tender No. BMRCCL/O&M/TELE&AFC/CCTV /2023/02 ; DT. 26/01/2024 the tender document. The bidder is required to submit two number of MAFs as mentioned below: (i) The first MAF is required to be addressed to RailTel referring this subject EOI in favour of Bidder. (ii) The Second MAF is required to be addressed to BMRCCL referring BMRCCL tender and in favour of RailTel.	
(ii)	PPLC - Purchase Preference Policy (linked with Local Content)	Bidder shall comply with the clauses as per the Tender Document and the bidder must submit the compliance certificate for the same as per the Tender Document	Need to comply with BMRCCL tender requirements, if any.	

A Copy of Purchase/Work Order & its Commissioning Certificate issued by Work Awarding Organization is to be submitted with EOI. Also, contact Details of concerned person i.e., Name/ Designation/Contact Number/Official Email ID, of the Work Awarding Organization needs to be mentioned.

For On-going projects, proof of satisfactory laying/part completion certificate for the desired quantity issued & signed by the competent authority of the client entity along with the supporting documents such as work order/purchase order clearly highlighting the scope of work, bill of material and value of the contract/ order.

a) "Similar Works" means **Installation and commissioning of Network Video CCTV System including**

Cameras, Video Management Software System, Access Level Layer 2/Layer 3 Switches or any related IT Systems with having obtained authorization from the OEM of the Video Management Software.

- b) Substantially completed works means those Works Which are at least 50% completed as on the date of tender submission (i.e gross value of Work done up to the last Date of Submission is 50% or more of the original contract price) and continuing satisfactorily.
- c) Last Five (5) Years shall be counted from 28 days prior to the date of submission of Tender.
- d) Completion certificates for works Issued by Private parties shall be Supported by TDS (Tax Deducted at Source) certificate.

6 Bidder's profile

The bidder shall provide the information in the below table:

Sl. No	ITEM	Details
1	Full name of bidder	
2	Full address, telephone numbers, fax numbers, and email address of the primary office of the organization/main/head/corporate office	
3	Name, designation, and full address of the Chief Executive Officer of the bidder's organization, including contact numbers and email Address	
4	Full address, telephone and fax numbers, and email addresses of the office of the organization dealing with this tender	
5	Name, designation, and full address of the person dealing with the tender to whom all reference shall be made regarding the tender enquiry. His/her telephone, mobile, Fax and email address	
6	Bank Details (Bank Branch Name, IFSC Code, Account number)	
7	GST Registration number	

7 Schedule of Rates (SOR): The bidder should quote as per the enclosed Annexure- I

8 Evaluation Criteria :

- 8.1 The **Partner** who fulfills the Eligibility criteria shall be further evaluated against the criteria mentioned in Annexure- II as applicable.
- 8.2 RailTel reserves the right to accept or reject the response against this EOI, without assigning any reasons. The decision of RailTel is final and binding on the participants.
- 8.3 The RailTel evaluation committee will determine whether the proposal/ information is complete in all respects and the decision of the evaluation committee shall be final.

9 Payment terms

- 9.1 All payments shall be paid on back-to-back basis. RailTel shall make payment to selected **Partner** after receiving payment from Customer as per the Payment terms defined in the BMRCL, Bangalore tender. In case of any penalty or deduction made by customer, same shall be passed on to partner if attributed to the **Partner's** portion of Scope.

9.2 For payment terms of BMRCL, Bangalore, bidders are advised to go the respective section of BMRCL, Bangalore Tender No. BMRCL/O&M/TELE&AFC/CCTV/2023/02; DT. 26/01/2024 and all its associated corrigendum/ addendum/clarifications.

10 Service Level Agreement

The selected bidder will be required to adhere to the SLA matrix as defined in the BMRCL, Bangalore Tender No. BMRCL/O&M/TELE&AFC/CCTV/2023/02; DT. 26/01/2024 for his scope of work and the SLA breach penalty will be applicable proportionately on the selected bidder, as specified in the Tender. The SLA scoring and penalty deduction mechanism for in-scope of work area shall be followed as specified in the BMRCL, Bangalore Tender. For payment terms of BMRCL, Bangalore, bidders are advised to go to the respective section of BMRCL, Bangalore Tender No. BMRCL/O&M/TELE&AFC/CCTV/2023/02; DT. 26/01/2024 and all its associated corrigendum/addendum/ clarifications. Any deduction by Customer from RailTel payments on account of SLA breach which is attributable to Partner will be passed on to the Partner proportionately based on its scope of work.

11 Roles and Responsibility of the BA/SI Partner

The BA/SI will be responsible for the work of “IT Network Infrastructure revamp at stations & Depots of BMRCL, BANGALORE “BMRCL, Bangalore Tender No. BMRCL/O&M/TELE&AFC/CCTV/2023/02; DT. 26/01/2024 and Corrigenda. The BA/SI should tightly integrate with OEM’s solution providers and will provide manpower resources of this work. BA/SI should have sufficient backup support required for liasoning, meetings, coordination to meet the timelines of the project and its successful completion. The BA/SI shall nominate technical SPOC and account manager for this project.

The BA/SI should thoroughly study the RFP and Corrigendum floated by BMRCL, Bangalore for compliance (enclosed).

- A. Documentation: BA/SI shall prepare High Level Design doc (HLD) and Low-Level Design doc (LLD) as part of implementation of the project under Eol. Bidder shall be responsible for all the documentation/ reports required at various stages of project during the currency of the project.
- B. Compliances: BA/SI shall be responsible for all the regulatory compliances related to fulfilment of delivery of this project under this Eol during its currency.

Above requirements are only indicative in nature and are only guidance of the bidder to assess the quantum of work. The BA/SI is required to apply their expertise to fulfil the required objective. In case of any discrepancy/typo-graphical error mentioned in this Eol then the conditions/specifications mentioned in the RFP & Corrigendum floated by BMRCL, BANGALORE , will prevail.

C. Governance Framework:

- RailTel will setup a governance team comprising of RailTel & BA/SI. The team will have minimum of 2 member each from RailTel and BA/SI lead by GM/RailTel/SC. The team size may increase if required based on approval of Competent Authority of RailTel.
- BA/SI shall deploy competent & experiences persons to be part of the governance team.

- The BA/SI shall comply with all the ITIL processes and shall be responsible for its implementation across the various activities and deliverables against the scope of the project.
- The BA/SI shall adhere to the governance framework put in by RailTel for the project deliverables.
- The Governance team among the other things will monitor the performance of the project and take corrective measures as required for successful delivery of the project.

The Governance Team shall be overseeing the coordination, periodical reviews, escalations, billing, documentation, customer interactions etc.

12. Arbitration

The parties through respective signatories shall settle any dispute or disagreement with respect to performance, non-performance, or defective performance of respective obligation amicably. In the event of disputes remaining unresolved, the parties shall refer the matter to a single arbitrator under arbitration law that may be applicable, whose appointment shall be done by CMD, RailTel Corporation of India Limited. The place of arbitration shall be New Delhi and the language used shall be English.

13. Force Majeure Clause

If at any time, during the continuance of this contract, the performance, in whole or part, by either party, of any obligation under this contract shall be prevented or delayed by reason of any war, hostility, act of the public enemy, Civil Commotion, Sabotage, Fires, Floods, Earthquakes, explosions, strikes, epidemics, quarantine restrictions, lockouts, any statute, statutory rules/regulations, order of requisitions issued by any Government Department or Competent Authority of acts of God (here-in-after referred to as event) then provided notice of the happening of any such event is given by either party to the other within twenty one days from the date of occurrence thereof, neither party shall, by reason of such event, be entitled to terminate this Contract nor shall either party have any claim for damage against the other in respect of such non-performance or delay in performance, and the obligations under the Contract shall be resumed as soon as practicable after such event has come to an end or ceased to exist, PROVIDED FURTHER that if the performance in whole or part of any obligation under this Contract is prevented or delayed by reason of any such event beyond a period as mutually agreed to by the RailTel and the Contractor or after any event or 60 days in the absence of such an agreement which ever is more, either party may at its option terminate the Contract provided also that if the contract is so terminated under this clause the RailTel may at the time of such termination take over from the Contractor at prices as provided for in the contract, all works executed or works under execution.

14. Integrity pact:

a) RailTel (RCIL) has adopted Integrity Pact Program and for implementation thereof all tenders relating to procurement of OFC, quad cable, prefab shelters, electronic equipment's, and its installation and/or commissioning etc. and other item(s) or activity/activities proposed to be carried out or required by the Company for the value exceeding Rs. 15 crores at a time including for repair and maintenance of cable/network and any other items required for special works assigned to RailTel (RCIL) will be covered under the Integrity Pact Program and the vendors are required to sign the IP document and submit the same to RailTel (RCIL) before or along with the bids.

b) Only those vendors who have purchased the tender document and signed the IP document can send their grievances, if any, to the Independent External Monitors (IEMs) through the nodal officer, GM (Admin & Security)/CO RailTel.

Name of IEMs and contact details:

- i) Smt. Vijaya Kanth, IRAS (Retd),
Sterling Manor, Flat F, No. 5/6, Flat F, Sterling Manor,
3rd Cross Street, Sterling Road, Nungambakkam, Chennai-600034.
E-Mail: vkanthmrl2003@yahoo.com, M.No. +91-9445868314
- ii) Shri. Vinayaka Rao Turaga, IOFS (Retd),
TURAGA House, Anne Baburao Colony, Penamaluru Vijayawada,
Andhra Pradesh-521139.
E-Mail: tvrao56@gmail.com, M.No. +91-9007723424

c) If the order, with total value equal to or more than the threshold value, is split to more than one vendor and even if the value of PO placed on any/each vendor(s) is less than the threshold value, IP document having been signed by the vendors at bid stage itself, the Pact shall continue to be applicable.

d) Bidder of Indian origin shall submit the Integrity Pact (in 2 copies) on a non-judicial stamp paper of Rs. 100/- duly signed by the person signing the bid. If the bidder is a partnership or a consortium, the Integrity Pact shall be signed by all the partners or consortium members.

e) Bidder of foreign origin may submit the Integrity Pact on its company's letterhead, duly signed by the person signing the bid.

f) The 'Integrity Pact' shall be submitted by the Bidder duly signed in all pages along with the Bid in a separate envelope, duly superscripted with 'Integrity Pact'. Tender received without signed copy of the Integrity Pact document will be liable to be rejected. Proforma for signing the Integrity Pact is available in Chapter-6 of this tender document (Form No. 6).

g) One copy of the Integrity Pact shall be retained by RailTel (RCIL) and the 2nd copy will be issued to the representative of the bidders during bid opening. If the Bidders representative is not present during the Bid opening, the 2nd copy shall be sent to the bidder by post/courier.

h) The Integrity Pact is applicable in this tender vide CVC circular no. 10/05/09 dt.18.05.09 and revised guideline of CVC circular no. 015/VGL/091 dt. 13.01.17 or the latest updated from time to time shall be followed.

The bidder shall submit the signed Integrity Pact (2 Copies) as per Annexure - XI

Note :

- 1) All the terms & conditions of BMRCL, Bangalore including Scope of work, ITT, GTC, Payments, SLA & Penalties, warranty etc., shall be complied with by all bidders and applicable on back-back basis with the successful partner. Entire work shall be completed in all respects within 06 months from the date of issue of Lol/LoA/PO/SO from this office.
- 2) The tender document of BMRCL, Bangalore is placed at the end of this Eol.
- 3) All the documents must be submitted with proper indexing with page numbers & signed.



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Annexure - I : Schedule of Requirement & Technical specification

Name of Work:

“UPGRADATION OF CCTV SYSTEM AND COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT :

SL NO	PART DESCRIPTION	QUANTITY	UNITS
A	VIDEO CCTV		
1	SUPPLY OF BOX / BULLET CAMERA - TYPE 1	540	NOS
2	SUPPLY OF BOX / BULLET CAMERA - TYPE 2	60	NOS
3	SUPPLY OF 128GB INDUSTRIAL GRADE MICRO SD CARD	600	NOS
4	SUPPLY OF VMS BASE LICENSE	1	NOS
5	SUPPLY OF VMS BASE LICENSE - REDUNDANT	1	NOS
6	SUPPLY OF VMS CHANNEL LICENSE	600	NOS
7	SUPPLY OF VMS CHANNEL LICENSE - REDUNDANT	600	NOS
8	SUPPLY OF VMS INEGRATION LICENSE	2	NOS
9	SUPPLY OF RECORDING SERVER / NVR	12	NOS
3	SUPPLY OF APPLICATION SERVER	4	NOS
10	SUPPLY OF 8 PORT POE SWITCH	12	NOS
11	SUPPLY OF 24 PORT POE SWITCH	24	NOS
12	SUPPLY OF NETWORK MANAGEMENT SOFTWARE SYSTEM	750	NOS
13	SUPPLY OF MONITORING WORKSTATION	12	NOS
14	SUPPLY OF 4K RESOLUTION KVM OVER IP	12	NOS
15	SUPPLY OF UTP CAT6 LSZH PATCH CORD	1200	NOS
16	SUPPLY & INSTALLATION OF UTP CAT6 LSZH CABLE & CONDUIT	30000	MTR
17	SUPPLY OF UTP CAT6 24 PORT LOADED PATCH PANEL	36	NOS
18	SUPPLY OF OPTICAL PATCH CORD	72	NOS
19	SUPPLY OF RJ45 CONNECTOR	600	NOS
20	SUPPLY OF 9U NETWORK RACK WITH ACCESSORIES	36	NOS
B	AI BASED FACIAL RECOGNITION SYSTEM		
1	SUPPLY OF FACIAL RECOGNITION SOFTWARE	24	NOS
2	SUPPLY OF FACIAL RECOGNITION SERVER	3	NOS
C	AI BASED VIDEO ANALYTICS SYSTEM		

1	SUPPLY OF AI BASED VIDEO ANALYTICS SOFTWARE	144	NOS
2	SUPPLY OF ANALYTICS CORE SERVER	4	NOS
3	SUPPLY OF ANALYTICS EDGE LPU	6	NOS
D	AUTOMATIC VEHICLE NUMBER PLATE RECOGNITION SYSTEM		
1	SUPPLY OF NUMBER PLATE RECOGNITION SOFTWARE	24	NOS
2	SUPPLY OF NUMBER PLATE RECOGNITION LPU	6	NOS
3	SUPPLY OF NUMBER PLATE RECOGNITION SERVER	2	NOS
E	INCIDENT MANAGEMENT SYSTEM		
1	SUPPLY OF PHYSICAL SECURITY & INCIDENT MANAGEMENT SOFTWARE SYSTEM	1	NOS
2	INTEGRATION OF PHYSICAL SECURITY & INCIDENT MANAGEMENT SOFTWARE SYSTEM	3	NOS
3	SUPPLY OF APPLICATION SERVER	6	NOS
F	DISPLAY VIDEO WALL		
1	SUPPLY OF 4K VIDEO WALL CUBES	1	NOS
2	SUPPLY OF 4K VIDEO WALL CONTROLLER	1	NOS
G	TVMs		
1	TVM 2000	20	NOS
2	TVM 4000	5	NOS
H	SERVICES & INSTALLATION		
1	SITE STUDY & DESIGN DOCUMENT	6	STATION
2	INSTALLATION PER STATION	6	STATION

Note: It is advised to visit the site and to get acquainted with the site conditions before quoting for the subject work.

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Annexure- II : Evaluation Process

- (i) All the bidders who fulfil the minimum eligibility conditions of this EOI shall be further evaluated on the price quoted and the selection of partner will be done on L1 (Lowest bid) basis.
- (ii) The evaluation shall be inclusive of quoted GST rates and bidder will be under obligation for quoting/charging correct rate of tax as prescribed under the respective Tax Laws. “GST rates as applicable, Vendor should furnish break up of GST rate” for items
- (iii) The bidders are required to quote as per the BoQ attached in the tender and upload the same.
- (iv) Blank or omitted items will be considered ‘Nil’ and treated as having Zero value. However, bidder is bound to provide all items as per the BoQ as per the terms and conditions of this EOI and BMRCL, BANGALORE tender, without any extra cost to RailTel.
- (v) In the annexure - I the bidders are requested to quote above/below/ at par for the percentages for each of the line item. The offer will be considered for all the line items put together as a whole and not as per the individual item wise.
- (vi) Rates quoted against each schedule in above should be inclusive of basic rate, including GST, Freight, Insurance, all taxes and any other charges or cost quoted by the tenderer.
- (vii) The engineer - in - charge can change i.e. add or delete or modify the location/ station/ Quantity/ materials as per the Railway requirement during the execution of the work. Detailed Technical specification are given in the Tender document.
- (viii) The bidders are required to meet all eligibility criteria mentioned in this tender document and financial bids of eligible bidders will be opened.
- (ix) Non- conformities between Figures and Words - If there is a discrepancy between words and figures, the amount in words shall be prevail.
- (x) Priority, if any, for selection of partner will be provided as per RailTel’s Business Associates policy and Agreed terms of Empanelment LOI/Agreement.

Annexure-III : Bid Security Declaration Form***(To be submitted on the Firm Letter Head)***

To, Date: _____ Tender No. _____

RailTel Corporation of India Ltd.

No-6/1, 12th Main, Opp-Mount Carmel College,
Vasanthnagar, Bangalore 560052

Sub : UPGRADATION OF CCTV SYSTEM AND COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT

I/We understand that, according to tender conditions, bids must be supported by a Bid Securing Declaration.

- a) I/We accept that I/We may be disqualified from bidding for any contract with RailTel for a period of three (3) years from the date of notification if I am/We are in a breach of any obligation under the bid conditions, made misleading or false representations in the forms, statements and attachments submitted in proof of the qualification requirements;
- b) If the bid is withdrawn or varied or modified in a manner not acceptable to the Employer during the validity or extended validity period duly agreed by the Bidder.
- c) Any effort by the Bidder to influence the Employer on bid evaluation, bid comparison or contract award decision.
- d) Fail to commence the work on the specified date as per LOA/Work order and/or sign the Agreement AND / OR furnish the required Performance security.

I/We understand this Bid Securing Declaration shall cease to be valid if I am/we are not the successful Bidder, upon the earlier of (i) the receipt of your notification of the name of the successful Bidder; or (ii) thirty days after the expiration of the validity of my/our Bid.

Signed: (insert signature of person whose name and capacity are shown)

in the capacity of (insert legal capacity of person signing the Bid Securing Declaration)

Name: (insert complete name of person signing the Bid Securing Declaration)

Duly authorized to sign the bid for and on behalf of (insert complete name of Bidder) Dated on ___ day of _____ (insert date of signing)

Corporate Seal (where appropriate)

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Annexure IV: Format for COVERING LETTER

(To be submitted on the Firm's Letter Head)

Eol Reference No:

Date:

To,

RailTel Corporation of India Ltd.
No-6/1, 12th Main, Opp-Mount Carmel College,
Vasanthnagar, Bangalore 560052

Sir/Madam,

Subject: UPGRADATION OF CCTV SYSTEM AND COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT

Reference: Tender No: BMRCL/O&M/TELE&AFC/CCTV/2023/02; DT. 26/01/2024

We, the undersigned bidder/s, having read and examined in detail all the bidding documents in respect to the RFP for procurement of firewall, do hereby propose to provide our services as specified in Tender.

Technical Response

We confirm having submitted the information as required by you in your Request for Proposal document. In case you require any other further information/documentary proof in this regard for evaluation of our bid, we agree to furnish the same in time to your satisfaction.

Deviations

We declare that all the services shall be performed strictly in accordance with the bid documents and there are no deviations from the requirements mentioned in this RFP

Performance Bank Guarantee

We hereby declare that in case the contract is awarded to us, we shall submit the contract performance bank guarantee in the form prescribed in the RFP.

Validity of this Bid

We agree to abide by this tender response for a period of 180 days after the date of opening of bids prescribed by the BMRCL, BANGALORE and it shall remain binding upon us with full force and virtue, until, within this period, a formal contract is prepared and executed. This tender response, together with your written acceptance thereof in your notification of award, shall constitute a binding contract between us and DoT.

We undertake, if our proposal is accepted, to adhere to the implementation plan for the Proposed System at DoT put forward in RFP or such adjusted plan as may subsequently be mutually agreed between us and DoT or its appointed representatives.

We also hereby declare that information furnished in this Tender is true, complete and correct to the best of my knowledge and belief. I undertake that in the event of any information being found false or incorrect at any stage, my bid shall be liable to be cancelled/ terminated without any notice or compensation in lieu thereof along with any legal proceedings.

We hereby declare that our bid is made in good faith, without collusion or fraud and the information contained in the bid is true and correct to the best of our knowledge and belief.

We understand that our bid is binding on us and that you are not bound to accept a Bid you receive.

It is hereby confirmed that I/We are entitled to act on behalf of our company/ corporation/ firm/ organization and empowered to sign this document as well as such other documents, which may be required in this connection.

We hereby submit EMD amount of Rs. _____ issued vide _____ from Bank _____.

Thanking you,
Yours faithfully

(Signature of the Authorized signatory)

Name :
Designation :
Phone No. :
Email id :
Date :

**Authorized Signatory
Name & Designation**

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Annexure V : Format for Self-Certificate & Undertaking

Self-Certificate (To be on company letter head)

EOI Reference No: RailTel/SR/SBC/BMRCL-CCTV; Dt. 14/02/2024

To,

RailTel Corporation of India Ltd.

No-6/1, 12th Main, Opp-Mount Carmel College,
Vasanthnagar, Bangalore 560052

Dear Sir,

Sub: Self Certificate for Tender, Technical & other compliances

- 1) Having examined the various Technical specifications in the EOI, we hereby confirm that we meet all specification.
- 2) We _____ agree to abide by all the technical, commercial & financial conditions of the BMRCL, BANGALORE Tender No. BMRCL/O&M/TELE&AFC/CCTV/2023/02; DT. 26/01/2024 pertaining to the portion against which the we have quoted in this EOI on back-to-back basis. We understand and agree that RailTel shall release the payment to selected partner after the receipt of corresponding payment from end client BMRCL, BANGALORE by RailTel. Further we understand that in case selected partner fails to execute assigned portion of work, then the same shall be executed by RailTel through third party or departmentally at the risk and cost of selected partner.
- 3) We agree to abide by all the technical, commercial & financial conditions of the BMRCL, BANGALORE Tender No. BMRCL/O&M/TELE&AFC/CCTV/2023/02; DT. 26/01/2024 pertaining to the portion against which the bidder has quoted in this EOI on back-to-back basis.
- 4) We hereby agree to comply with all OEM technical & Financial documentation including MAF, Technical certificates/others as per end to end requirement mentioned in the BMRCL, BANGALORE Tender No. BMRCL/O&M/TELE&AFC/CCTV/2023/02; DT. 26/01/2024 pertaining to the portion against which the bidder has quoted in this EOI. We are hereby enclosing the arrangement of OEMs against each of the BOQ item quoted as mentioned BMRCL, BANGALORE Tender No. BMRCL/O&M/TELE&AFC/CCTV/2023/02; DT. 26/01/2024 pertaining to the portion against which the bidder has quoted in this EOI.
- 5) We hereby undertake to work with RailTel as per BMRCL, BANGALORE tender terms and conditions. We confirm to submit all the supporting documents constituting/ in compliance with the Eligibility Criteria as required in the BMRCL, BANGALORE terms and conditions like technical certificates, OEM compliance documents.

Authorized Signatory
Name & Designation

Annexure-VI: Details of the Bidder

Sl. No.	Particulars	Details		
1.	Name of the Bidder			
2.	Address of the Bidder			
3.	Status of the Company (Public Ltd/ Pvt. Ltd)			
4.	Details of Incorporation of the Company	Date:		
		Ref. #		
5.	Details of Commencement of Business	Date:		
		Ref. #		
6.	Valid GST no.			
7.	Permanent Account Number (PAN)			
8.	Name & Designation of the contact person to whom all references shall be made regarding this tender			
9.	Telephone No. (with STD Code)			
10.	E-Mail of the contact person			
11.	Mobile No. of the contact person			
12.	Website			
13.	Financial Details (as per audited Balance Sheets) (in Cr)			
14.	Year	2020-2021	2021-2022	2022-2023
15.	Net Worth			
16.	Turn Over			
17.	PAT			

Authorized Signatory
Name & Designation

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Annexure- VII :

(To be executed on Non-Judicial Stamp Paper of Rs.100/-)

FORMAT OF POWER OF ATTORNEY (in original)

In favour of signatory/s to the Tender, duly authenticated by Notary Public.

POWER OF ATTORNEY IN FAVOUR OF ----- (Name, Designation, Company name)

TO ALL TO WHOM THESE PRESENTS shall come, I, (Name & address of the authorized person to sub-delegate/delegate powers, delegated on him by the Board of Directors) do hereby sub-delegate/delegate, in terms of the powers delegated to me by the Board of Directors, -----

-(name of the Co.) to Shri (name, designation & address of the Attorney) the following:

NOW KNOW YE AND THOSE PRESENTS that I, (Name & address of the authorized person to sub-delegate/delegate powers, delegated on him by the Board of Directors), do hereby authorize and empower Shri ----- (name, designation & address of the Attorney) to do severally amongst others, for the purpose of carrying on our business, the following:

- a) To represent lawfully the (name of the Co.) for obtaining bid/tender documents, prepare, sign, execute and submit tenders for execution of "UPGRADATION OF CCTV SYSTEM AND COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT
- b) To discuss the technical and financial matters, negotiate and accept prices and take decisions regarding terms and conditions and sign agreements and contracts and also to bind the (name of the Co.) to the arbitration clause included in the contract.
- c) For all or any of the purposes here of to sign and deliver or otherwise execute such deed or deeds, transfer or transfers, endorsement or endorsements and to perform such other acts, matters, things as the Attorney shall consider requisite or advisable as full and effectively as the Company could do, if present and acting there.

I, (Name & address of the authorized person to sub-delegate/delegate powers, delegated on him by the Board of Directors) in terms of the powers delegated to me by the Board of Directors of (name of the Co.), do hereby agree that all acts, deeds and things done by the said Attorney by virtue of this power of attorney, shall be construed as acts, deeds and things done by the Company.

I, (Name & address of the authorized person to sub-delegate/delegate powers, delegated on him by the Board of Directors), further undertake to ratify and confirm whatever our said attorney shall do or cause to be done for the Company, the said Company, in the premises, by virtue of the powers hereby given.

WHEREAS, this sub-delegation is signed and delivered to Shri ----- (name & designation of the Attorney), on this _____ day of _____, 20 (Two thousand _____).

WHEREAS, even though this sub-delegation is signed on this _____ day of _____

_____ 20 _____ (Two thousand _____), will have effect from the date he signs and receives this delegation.

IN WITNESS WHEREOF, I, (Name & address of the authorized person to sub- delegate/ delegate powers, delegated on him by the Board of Directors) has, this _____ day of _____ 20 _____ (Two thousand _____) set my hands and subscribed my signature unto this instrument.

SIGNED AND DELIVERED ON

_____ BY
(Name of authorized person to delegate powers)

WITNESS:

SIGNED AND RECEIVED ON

_____ BY
(Name & designation of Attorney)

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**Annexure - VIII
Turnover Details****TO WHOMSOEVER IT MAY CONCERN**

This is to certify that the annual turnover furnished by << COMPANY NAME >> for last 5 years

Financial year	Total Turnover, Net worth, Profit & Loss Statement of the Company (Rs.)
2018-19	
2019-20	
2020-21	
2021-22	
2022-23	

This is as per the Statement of Accounts which has been duly verified by me and found correct.

Place:**Date:****Seal & Signature of
Chartered Accountant**

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Annexure- IX : Format for Undertaking on Litigation(s)

(To be submitted in firm/ company letter head)

This is to certify that << COMPANY NAME >> is not involved in any litigation that may have an impact of affecting or compromising the delivery of services as required under this RFP.

We also hereby declare that information furnished in this Tender is true, complete and correct to the best of my knowledge and belief. I undertake that in the event of any information being found false or incorrect at any stage, my bid shall be liable to be cancelled/ terminated without any notice or compensation in lieu thereof along with any legal proceedings against.

Thanking you,
Yours faithfully

(Signature of the Authorized signatory)

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Annexure-X: Non-Disclosure Agreement (NDA) Format**CONFIDENTIAL AND MUTUAL NON- DISCLOSURE AGREEMENT**

THIS AGREEMENT MADE ON THIS _____ DAY OF _____, 2020 AT

BETWEEN

_____ a company incorporated in India under the provisions of the Companies Act, 1956 and having its Registered Office at (Hereinafter referred to as "Company") represented by its Managing Director / CEO Mr./Ms _____ duly authorized for the same which expression shall unless repugnant to the meaning or context thereof be deemed to mean and include, its Directors, affiliates, successors and permitted assigns of the **FIRST PART**

AND

RailTel Corporation of India Limited, is a Government of India undertaking under the Ministry of Railways duly incorporated under the provisions of the Companies Act, 1956 and having its registered office and Corporate office at Plat-A, 6th Floor, Office Block Tower-2, East Kidwai Nagar, New Delhi- 110023 (hereinafter referred to as "RailTel") , represented by Dy. General Manager/Law & CS Mr. J.S. Marwah duly authorized for the same which expression shall mean and include unless repugnant to the context, its successors, representative and permitted assigns of the **SECOND PART**

WHEREAS

- A. Company is poised to provide _____ services to _____ for _____ project.
- B. RAILTEL is a Public Sector Undertaking (PSU under the Ministry of Railways), setup inter alia to exploit Indian Railway's large telecom infrastructure.
- C. COMPANY and RAILTEL are working-out/ negotiating a possible commercial and strategic business relationship (hereinafter Purpose).
- D. During the course of the above negotiations RAILTEL and COMPANY (including their affiliates may in conjunction with the purpose and for their mutual benefit, disclose to each other certain information being proprietary and/or of confidential nature, and/or RAILTEL and COMPANY may receive and share or be grant access by the other to such confidential and/or proprietary information which is considered trade secret, proprietary, confidential and/ or sensitive.
- E. The parties and its affiliates wish to ensure the protection and secrecy of their respective confidential information which may be disclosed, received or granted access to by the other party and wish to reduce to writing, their agreement in this respect.

NOW THEREFORE in consideration of the mutual promises, covenants and representations recorded herein by the parties hereto and such additional promises and understanding as are hereinafter set forth, the parties agree as follows:

1) Definition

For the purpose of this agreement, the term 'Confidential Information' shall mean and include any information or data of a scientific, technical, commercial or financial nature disclosed by the Disclosing party to the Receiving Party or which is obtained by a party from the other whether in writing, pictorially, in machine readable form, on disc, mail or orally, or by any other means/ modes of disclosure and including without limitation any information contained in any written or printed document, hardware, firmware and software, information related to technology and business activities (including, but not limited to, communication systems, telecommunication, business outlooks, revenue, pricing, trade secrets), computer programs, software (including, without limitations, code, software output, screen displays, file hierarchies and user interfaces), formulas, data, inventions, techniques, technology, know-how, processes, ideas, (whether patentable or not), schematics, specifications, drawings, product designs, product plants, programming, services, strategies, third party confidential information, and corporate and personnel statistics, customer lists (potential or actual) and other customer-related information, supplier information, sales statistics, market intelligence, marketing, business working, operations, parent, subsidiaries, affiliates and other business strategies and other commercial information of a confidential nature.

(a) The party disclosing the Confidential Information is referred herein to as "Disclosing Party" and the party to which such Confidential Information is disclosed is referred to herein as "Recipient Party".

(b) "Affiliate" of the Party shall mean the Company or other person who or which is either controlled by the respective Party or who controls the respective Party or who or which is controlled by same person/ entity who controls the respective Party, either by way of significant shareholding, voting rights or technical collaboration whether directly or indirectly through its affiliate.

2) Neither party shall be required to disclose any particular information (including but not limited to Confidential Information) to the other and disclosure of any such information shall be entirely voluntary and at the sole discretion of the parties and to the extent deemed necessary by it and is not intended to, and shall not, create any contractual or other relationship or obligation of any kind beyond the terms of this Agreement nor any provision or disclosure of information (including but not limited to Confidential Information) as contemplated hereunder, shall be construed as creating, conveying, transferring by one party on the other any rights, license or authority in or to the information provided. The parties hereto shall use the Confidential Information only for the limited purpose of exploring/ finalizing the possible business relationship between the parties hereto and for no other purpose whatsoever.

3) Both the parties acknowledge and understand that any exchange of confidential Information of any nature shall not commit or bind the other to enter into a contract or otherwise and

that neither party shall rely on any information provided by the other as a commitment or an inducement to act or not to act in any given manner. Further neither party shall be liable to the other in any manner whatsoever for any decisions, obligation, costs or expenses incurred, changes in business practices, plans, organization, products, services or otherwise of the other, as a result of this Agreement or any exchange of Confidential Information hereunder.

- 4) Both the Parties agrees and undertake to regard and preserve as Confidential Information provided by each to the other or which may be disclosed, received or granted access to by either party or come to the knowledge of either party in any manner in connection with the negotiations for the possible business relationship.
- 5)
 - (a) In maintaining the Confidential Information hereunder both parties agree that they shall not, without first obtaining the written consent of the other, disclose or make available to any person, firm or enterprise, reproduce or transmit, or use (directly or indirectly) for its own benefit or the benefit of others, any Confidential Information save and except that either party may disclose any Confidential Information to its Directors, officers, employees, or advisors on a "need to know" basis to enable them to evaluate such "Confidential Information" in connection with the negotiation for the possible business relationship between the Parties hereto.
 - (b) Both parties shall ensure that the said employee(s) and / or the said person(s) shall maintain confidentiality with regard to the disclosed Confidential Information, if any, and shall issue two suitable instructions and/or get two suitable written undertakings or agreements executed to binds its employees and/or the said person(s) to the same obligations of confidence and safeguarding as the parties hereto and to adhere to the confidentiality/ non-disclosure terms contained in this Agreement.
 - (c) Save and except for the purposes mentioned in clause (a) above both parties further agree that neither party will part with/ disclose any "Confidential Information" received by it to any other person directly or indirectly nor make copy(s) or reproduce in any way (including without limitation store in any computer or electronic system any written material/ documents containing "Confidential Information" and such written material/ documents will be retained under strict confidentiality by the receiving party.
 - (d) Both parties further agree that the confidential information which may pertain to or touch upon any regulatory aspects and/or dealings of either party with any statutory / government/ related agencies/ bodies, whether the said information is received verbally or in writing, will not be disclosed in any manner, either directly or indirectly, to any other persons except to its Directors, employees or advisors on a strictly 'need to know' basis.
 - (e) Both parties further agree to exercise the same degree of care that it exercises to protect its own Confidential Information of a like nature from unauthorised disclosure, but in no event shall a less than reasonable degree of care be exercised by either party.
- 6) It is mutually acknowledged and agreed that information shall not be considered "Confidential Information" to the extent, that such information : (a) at the time of disclosure was in the public domain or (b) is already known to the receiving party free of any

confidentiality obligation at the time it is obtained from other party; or (c) after disclosure is or becomes publicly known or available through no wrongful act of the receiving party; or (d) is rightfully received from a third party without restriction or (e) is approved for release, disclosure, dissemination or use by written authorization from the Disclosing Party; or (f) is required to be disclosed pursuant to a requirement of a governmental agency or law so long as the parties provide each other with timely prior written notice of such requirement and provide all reasonable co-operation in regard to taking protective action against such disclosure requirement; or (g) is disclosed after expiry of 5 (five) years from the date of expiry or earlier termination of this agreement.

However, before any party discloses any Confidential Information under clause 6, either party (to the extent permitted by law) uses its best endeavour to:

- (a) Inform other party of any circumstances and the information that will be disclosed
- (b) Give the other party a copy of a legal opinion indicating that disclosure is necessary
- (c) consult with the other party as to possible steps including without limitation, protective orders, or other appropriate remedy to avoid or limit disclosure and take those steps where they would not result in significant adverse consequences to the other party and
- (d) Gain assurances as to the confidentiality from the body to whom the information is to be disclosed.

If either party is unable to inform the other party before confidential information is disclosed, it will (to the extent permitted by law) inform the other party of the full circumstances of the disclosure and information that has been disclosed immediately after disclosure.

- 7) Both parties further agree and undertake not to disclose the information marked "Confidential Information" of the other to their agents or contractors without prior written approval from the other and without having first obtained from each agent or contractor a separate written agreement or undertaking binding them to the same obligations of confidence and safeguarding.
- 8) The parties further recognize that it may be necessary or appropriate for COMPANY to disclose Confidential Information to other Group Companies not named herein. For this purpose, COMPANY guarantees the observance and proper performance of other Group Company to whom Confidential Information is disclosed as above, of the terms and conditions of this agreement.
- 9) Both parties further agree to indemnify and keep indemnified each other against all actual loss and damage which the Disclosing Party may suffer because of any breach of this agreement by the Recipient Party of the Confidential Information. Always provided that
 - a. the Disclosing Party shall forthwith give written notice to the recipient Party of the loss and damage; and

- b. the Recipient Party shall be furnished with satisfactory documentary evidence of such actual loss and damage.

- 10) Both parties further agree that upon termination/ expiry of this Agreement or at any time during its currency, at the request of the Disclosing Party the Recipient Party shall promptly (and in any case, within 15 days of request), deliver to the Disclosing Party all copies of the Confidential Information in its possession or under its direct or indirect control or shall destroy all memoranda, notes and other writings prepared by the recipient party or its affiliates, Directors, officers, employees or advisors to the extent the same are based on the confidential information with a written statement to the effect that upon such return the Receiving Party has not knowingly retained in its possession or under its control, either directly or indirectly, any Information or copies of such (other than Confidential Information embedded in the Receiving Party's records).

The confidentiality obligations set out herein above shall survive any such return or destruction of Information. Further The provisions set out herein above shall not apply to copies of electronically exchanged Information made as a matter of routine information technology backup and to Information or copies thereof which must be stored by the receiving Party, its Affiliates or its advisers according to provisions of mandatory law, provided that such Information or copies thereof shall be subject to an indefinite confidentiality obligation according to the terms and conditions set forth herein.

- 11) Both parties acknowledge that the confidential information coming to the knowledge of the other may relate to and/or have implications regarding the future strategies, plans, business activities, methods, processes and or information of the parties which afford them certain competitive and strategic advantage. Accordingly neither party will use the confidential information or strategies, plans, business activities, methods, process, information, and /or competitive and strategic advantage to the other.
12. Each party understands that the other party may currently or in the future be developing information internally, or receiving information from third parties that may be similar to the "confidential Information" Accordingly, nothing in this agreement will be construed as a representation or inference that either party will not develop products, or have products developed for it, or enter into joint ventures, alliances, or licensing arrangements that, without violation of this agreement, compete with the products or systems embodying the "confidential Information".
13. Except as specifically provided herein, disclosure of confidential information by either party pursuant hereto shall not be deemed to grant to the Recipient party, any rights, interest or property in such confidential information and accordingly both parties agree that they will not directly or indirectly claim or submit any application for grant of any patent, copyright, design right or other intellectual property Rights in, to or on the basis of the confidential information.
14. The parties hereto acknowledge and agree that in the event of a breach or threatened breach by the other of the provisions of this Agreement, the party not in breach will have no adequate remedy in money or damages and accordingly notwithstanding anything contained in clause 18 hereof, the party not in breach shall be entitled to injunctive relief against such

breach or threatened breach by the party in breach : provided , however, no specification in this confidentiality Agreement of a specific legal or equitable remedy shall be construed as a waiver or prohibition of any other legal or remedies in the event of a breach or threatened breach of this Agreement and the remedies specified herein shall be in addition to all other reliefs and remedies available to the parties under prevailing laws.

15. No failure or delay by either party in exercising or enforcing any right, remedy or power hereunder shall operate as a waiver thereof, nor shall any single or partial exercise or enforcement of any right, remedy or power preclude any further exercise or enforcement of any right, remedy or power preclude any single or partial exercise or enforcement thereof or the exercise or enforcement of any of any other right, remedy or power.
16. Each Party acknowledges that the other Party makes no representation or warranty as to the accuracy or completeness of any of the Information furnished by or on its behalf. Only those representations and warranties which are made in a final definitive agreement relating to the purpose of the disclosure of the Information will have legal effect.

Each party represents and warrants to the other that it is a corporation duly organised and validly existing in the jurisdiction of its incorporation. Each party represents that it has full corporate power and authority to enter into this Agreement and to do all things necessary for the performance of this Agreement. The Disclosing Party warrants that the Confidential Information has not been provided in breach of any other agreements having legal binding of any nature with the third party(s).

Unless documented and agreed otherwise in respect of any individual disclosure of Confidential Information, each party warrants that it will use its best endeavours to ensure that any Confidential Information it discloses or it intends to disclose to the other party under the provisions of this agreement is complete and accurate but PROVIDED ALWAYS that the disclosing party has exercised such best endeavours:

The parties acknowledge that:

- (a) such Confidential Information as is disclosed by the Disclosing party under this Agreement is accepted by the Receiving Party at its own risk; and
 - (b) it releases the Disclosing party from all claims, actions, and suits in relation to such Confidential Information (including its use under this Agreement).
17. This agreement will be governed by the laws of India and jurisdiction shall be exclusively vested in the courts at New Delhi, India only.
18. If any matter arises between the parties about this agreement, then the parties shall meet to discuss the matter and shall negotiate in good faith to endeavour to resolve the matter arising the matter, however.
 - a. If any matter arising has not been resolved by the parties within thirty (30) days after the date the party raising the matter gave notice of it to the other party: then
 - b. the matter shall be submitted by either party to Arbitration. Arbitration shall be held in New Delhi, India. The arbitration shall be conducted as per the provisions of Indian

Arbitration and Conciliation Act 1996 and any statutory modification or re-enactment thereof.

c. Each party to the dispute shall appoint one Arbitrator each and the two Arbitrators shall appoint the third or the presiding Arbitrator. The arbitration proceedings shall be conducted in the English language. The courts of law at New Delhi, India alone shall have the jurisdiction. The arbitration award shall be final and binding upon the parties and judgement may be entered thereon, upon the application of either party to a court having jurisdiction.

d. Each party shall bear the cost of preparing and presenting its case, and the cost of arbitration, including fees and expenses of the arbitrators, shall be shared equally by the parties unless the award otherwise provides.

19. This agreement shall not be assignable or transferable by either party without the written consent of the other party.
20. No license to a Party hereto, under any trademark, patent, copyright or any other intellectual property right, is either granted or implied by the conveying of Information to such party.
21. This agreement shall remain valid for a period of 3 (three) years from the date of execution of this Agreement which term may be extended by mutual consent in writing of both the parties. This agreement may be terminated by either party by giving 30 (thirty) days' notices in writing to the other party without assigning any reason whatsoever. However, the obligations of each party hereunder shall survive the termination or earlier determination or expiry of this Agreement and shall continue and be binding upon the parties irrespective of whether the discussion between the parties materialize into a specific understanding/business relationship or not for a further period of 5 (five) years after termination / expiry of the agreement.
22. All notices required by this Agreement shall be in writing, and shall be personally delivered, sent by registered post or by commercial courier, addressed as follows:

To Company: Mr/Ms _____

To RAILTEL:

Attn: Mr. J. S. Marwah

RailTel Corporation of India Limited, Plat-A, 6th Floor,
Office Block Tower-2, East Kidwai Nagar, New Delhi- 110023

Nothing in this provision shall be construed to prohibit communication by more expedient means, such as by telephone or facsimile transmission, to accomplish timely communication. However, to constitute effective notice, written confirmation of a telephone conversation or an original of

facsimile transmission must be sent by registered post, by commercial carrier, or hand-delivered. Each party may change the address by written notice in accordance with this

paragraph. Notices delivered personally shall be deemed communicated as of actual receipt; mailed notices shall be deemed communicated as of four days after mailing, unless such date is a date on which there is no mail service. In that event communication is deemed to occur on the next mail service day.

23. This agreement supersedes all prior discussions and writings with respect to the confidential information and constitutes the entire Agreement between the parties with respect to the subject matter hereof and no modifications of this Agreement or waiver of the terms and conditions hereof shall be binding upon either of the parties hereto, unless approved in writing by an authorized representative of each party. In the event that any of the provisions of this Agreement shall be held by court or other Tribunal of competent jurisdiction to be unenforceable, the remaining portions hereof shall remain in full force and effect and this Agreement shall be interpreted and construed accordingly.
24. This Agreement is executed in duplicate, each of which shall be deemed to be the original and both when sent together shall be deemed to form one and single document.

IN WITNESS WHEREOF, the parties hereto have duly executed this Agreement as of the date and year written above.

For RailTel Corporation of India Ltd.

Sign:
Name:
Title:

Sign:
Name:
Title:

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**Annexure - XI PROFORMA FOR SIGNING THE INTEGRITY PACT
(On Stamp Paper of Rs.100/-)**

RailTel Corporation of India Limited hereinafter referred to as “The Principal”.

And, here in after referred to as “The Bidder/ Contractor”

Preamble.

The Principal intends to award, under laid down organizational procedures, contract/s forThe Principal values full compliance 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, the Principal will appoint an Independent External Monitor (IEM), who will monitor the tender process and the execution of the contract for compliance with the principles mentioned above.

Section 1- Commitments of the Principal

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

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.

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 process or the contract execution.

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 IPC/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.

The Bidder(s)/contractor(s) will not, directly or through any other persons 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 during tender process or during the execution of the contract.

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 contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.

The Bidder(s)/Contractor(s) will not commit any offence under the relevant IPC/PC Act; further the Bidder(s) /Contractors 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.

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 principals, 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 should be in Indian Rupees only. Copy of the “Guidelines on Indian Agents of Foreign Suppliers’ as annexed.

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 per the procedure mentioned in the “Guidelines on Banning of business dealings”. Copy of the “Guidelines on Banning of business dealings” is annexed.

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 be terminated 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 three years with any other company in any country conforming to the anti-corruption approach or with any other public sector enterprise in 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 for action can be taken as per the procedure mentioned in “Guidelines on Banning of business dealings”.

Section 6: Equal treatment of all Bidders / Contractors/Subcontractors.

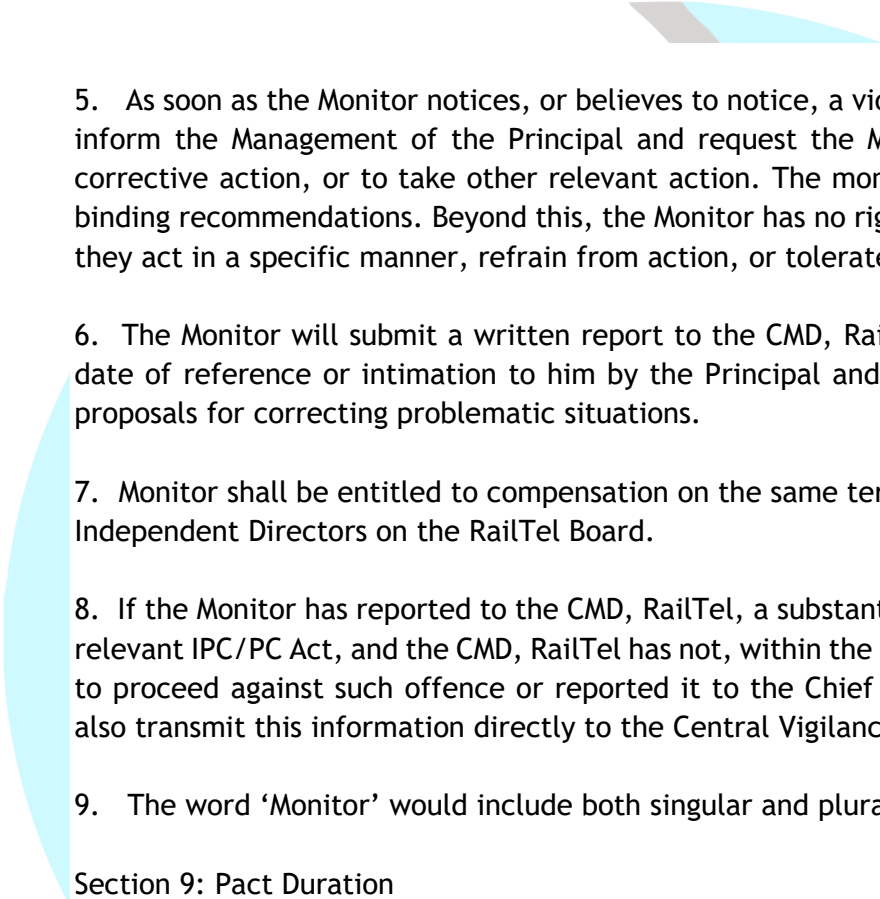
1. The Bidder(s)/Contractor(s) undertake(s) to demand from all subcontractors a commitment in conformity with this Integrity Pact, and to submit it to the Principal before contract signing.
2. The Principal will enter into agreements with identical conditions as this one with all bidders, contractors,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

Section 7: Criminal charges against violation by Bidder(s) / Contractor(s) / Sub contractor(s)

If the Principal obtains knowledge of conduct of a Bidder, Contractor or Subcontractor, or of an employee or a representative or an associate of a Bidder, Contractor or Subcontractor which constitutes corruption, or if the Principal has substantive suspicion in this regard, the Principal will inform the same to the Chief Vigilance Officer.

Section 8: Independent External Monitor / Monitors

1. The Principal appoints competent and credible Independent External Monitor for this Pact. The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement.
 2. The Monitor is not subject to instructions by the representatives of the parties and performs his functions neutrally and independently. He reports to the CMD, RailTel.
 3. The Bidder(s)/Contractor(s) accepts that the Monitor has the right to access without restriction to all project documentation of the Principal including that provided by the Contractor. The Contractor will also grant the Monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his project documentation. The same is applicable to Subcontractors. The Monitor is under contractual obligation to treat the information and documents of the Bidder(s)/ Contractor(s)/Subcontractor(s) with confidentiality.
 4. The Principal will provide to the Monitor sufficient information about all meetings among the parties related to the Project 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.
- 

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5. As soon as the Monitor notices, or believes to notice, a violation of this agreement, he will so inform the Management of the Principal and request the Management to discontinue or take corrective action, or to take other relevant action. The monitor can in this regard submit non-binding recommendations. Beyond this, the Monitor has no right to demand from the parties that they act in a specific manner, refrain from action, or tolerate action.
 6. The Monitor will submit a written report to the CMD, RailTel within 8 to 10 weeks from the date of reference or intimation to him by the Principal and, should the occasion arise, submit proposals for correcting problematic situations.
 7. Monitor shall be entitled to compensation on the same terms as being extended to provide to Independent Directors on the RailTel Board.
 8. If the Monitor has reported to the CMD, RailTel, a substantiated suspicion of an offence under relevant IPC/PC Act, and the CMD, RailTel has not, within the reasonable time taken visible action to proceed against such offence or reported it to the Chief Vigilance Officer, the Monitor may also transmit this information directly to the Central Vigilance Commissioner.
 9. The word 'Monitor' would include both singular and plural.

Section 9: Pact Duration

This pact begins when both parties have legally signed it. It expires for the Contractor 10 months after the last payment under the contract, and for all other Bidders 6 months after the contract has been awarded.

If any claim is made / lodged by either party 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 CMD of RailTel.

Section 10: Other Provisions

1. This agreement is subject to Indian Law, Place of performance and jurisdiction is the Registered Office of the Principal, i.e. New Delhi.
 2. Changes and supplements as well as termination notices need to be made in writing.
 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 remainder 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) (Office Seal)	(For & On behalf of Bidder/Contractor) (Office Seal)
Place -----	
Date -----	
Witness 1: (Name & Address)	
	----- ----- -----
Witness 2: (Name & Address)	
	----- ----- -----

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Annexure-XII: Past Performance details

Sl.No	Description	Details by the tenderer	Remarks, If any
1	Name of the Work		
2	Value of the work		
3	Letter of Award No and Date		
4	Original Period of completion		
5	Extended period of completion		
6	Portion of work of IT / VideoCCTV System		
7	No of geographically dispersed locations in which work has been done for		
8	No of cities/ towns covered with the network under the above work		

It is certified that the IT Network Infrastructure under the above work has been done in federated.

Annexure- XIII : Undertaking for End of Support

Date:

To
RAILTEL CORPORATION OF INDIA LIMITED
No-6/1, 12th Main,
Opp-Mount Carmel College,
Vasanthnagar, Bangalore 560 052

Subject: End of Support Letter

Reference: Tender Number -

Madam/Sir,

We <OEM> ensure that the devices quoted <Device Name and Model> for the above referenced tender will not be declared end of Support for a period of 5 years from the date of Supply.

Thanking You

For < OEM>
< (Authorized Signatory)>

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Annexure- XIV -
UNDERTAKING ON INDEMNIFICATION

We _____ (Bidders Name) hereby agree and undertake to indemnify, keep indemnifies, depended and hold harmless the RailTel & BMRCL and its Officers against all losses, penalties, costs and expenses, duties of any kind whatsoever which may arise on account of breach un-authorized act, fraud deed or any other acts of ours or any of our personnel. We hereby further agree and undertake to indemnify and keep indemnifies against any order passed by any executive, quasi-judicial or judicial authority wherein the Railtel & BMRCL is compelled to obey the order which arise due to breach of contract by us.

We _____ (Bidders name) shall indemnify, protect and defend at our own cost, New Mangalore Port Authority and its agents & employees from & against any/all actions, claims, losses or damages arising out of;

- i. Any violation in course of execution of the contract of any legal provisions or any right of third parties.
- ii. Failure to exercise the skill and care required for satisfactory execution of the contract.
- iii. Shall indemnify BMRCL against all claims for compensation by or on behalf of any workman employed by us in connection with the contract, for injury or death by accident under the Workman Compensation Act (Act VIII of 1923) as amended from time to time.

We _____ (Bidders name) shall be responsible for all commissions and omissions on part of manpower engaged for the purpose. BMRCL shall not be responsible in any manner whatsoever, in matters of injury/death/health etc. of our employees performing duties under the contract.

We _____ (Bidders name) hereby undertake that ,

- a. The workforce deployed under this contract will be provided with all the necessary safety gears and equipment for the job.
- b. Bidder/deployed staffs will follow all the required safety procedures while executing the job.

Sign and Seal of the Bidder/ Bidders Authorized representative

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**Annexure- XV -
Financial Bid Format**

Name of the work

“UPGRADATION OF CCTV SYSTEM AND COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT ”.

SL NO	PART DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	TOTAL PRICE
A	VIDEO CCTV				
1	SUPPLY OF BOX / BULLET CAMERA - TYPE 1	540	NOS		
2	SUPPLY OF BOX / BULLET CAMERA - TYPE 2	60	NOS		
3	SUPPLY OF 128GB INDUSTRIAL GRADE MICRO SD CARD	600	NOS		
4	SUPPLY OF VMS BASE LICENSE	1	NOS		
5	SUPPLY OF VMS BASE LICENSE - REDUNDANT	1	NOS		
6	SUPPLY OF VMS CHANNEL LICENSE	600	NOS		
7	SUPPLY OF VMS CHANNEL LICENSE - REDUNDANT	600	NOS		
8	SUPPLY OF VMS INGEGRATION LICENSE	2	NOS		
9	SUPPLY OF RECORDING SERVER / NVR	12	NOS		
3	SUPPLY OF APPLICATION SERVER	4	NOS		
10	SUPPLY OF 8 PORT POE SWITCH	12	NOS		
11	SUPPLY OF 24 PORT POE SWITCH	24	NOS		
12	SUPPLY OF NETWORK MANAGEMENT SOFTWARE SYSTEM	750	NOS		
13	SUPPLY OF MONITORING WORKSTATION	12	NOS		
14	SUPPLY OF 4K RESOLUTION KVM OVER IP	12	NOS		
15	SUPPLY OF UTP CAT6 LSZH PATCH CORD	1200	NOS		
16	SUPPLY & INSTALLATION OF UTP CAT6 LSZH CABLE & CONDUIT	30000	MTR		
17	SUPPLY OF UTP CAT6 24 PORT LOADED PATCH PANEL	36	NOS		
18	SUPPLY OF OPTICAL PATCH CORD	72	NOS		
19	SUPPLY OF RJ45 CONNECTOR	600	NOS		
20	SUPPLY OF 9U NETWORK RACK WITH ACCESSORIES	36	NOS		
B	AI BASED FACIAL RECOGNITION SYSTEM				
1	SUPPLY OF FACIAL RECOGNITION SOFTWARE	24	NOS		

2	SUPPLY OF FACIAL RECOGNITION SERVER	3	NOS		
C	AI BASED VIDEO ANALYTICS SYSTEM				
1	SUPPLY OF AI BASED VIDEO ANALYTICS SOFTWARE	144	NOS		
2	SUPPLY OF ANALYTICS CORE SERVER	4	NOS		
3	SUPPLY OF ANALYTICS EDGE LPU	6	NOS		
D	AUTOMATIC VEHICLE NUMBER PLATE RECOGNITION SYSTEM				
1	SUPPLY OF NUMBER PLATE RECOGNITION SOFTWARE	24	NOS		
2	SUPPLY OF NUMBER PLATE RECOGNITION LPU	6	NOS		
3	SUPPLY OF NUMBER PLATE RECOGNITION SERVER	2	NOS		
E	INCIDENT MANAGEMENT SYSTEM				
1	SUPPLY OF PHYSICAL SECURITY & INCIDENT MANAGEMENT SOFTWARE SYSTEM	1	NOS		
2	INTEGRATION OF PHYSICAL SECURITY & INCIDENT MANAGEMENT SOFTWARE SYSTEM	3	NOS		
3	SUPPLY OF APPLICATION SERVER	6	NOS		
F	DISPLAY VIDEO WALL				
1	SUPPLY OF 4K VIDEO WALL CUBES	1	NOS		
2	SUPPLY OF 4K VIDEO WALL CONTROLLER	1	NOS		
G	TVMs				
1	TVM 2000	20	NOS		
2	TVM 4000	5	NOS		
H	SERVICES & INSTALLATION				
1	SITE STUDY & DESIGN DOCUMENT	6	STATION		
2	INSTALLATION PER STATION	6	STATION		
	Total Pricing Schedule A	Total			
Pricing Schedule B:					
Name of work: "Comprehensive Annual Maintenance Charges for a period of 5 Years(extendable to 10 Years)"					
1	ANNUAL MAINTENANCE CHARGES (PERCENTAGE OF TOTAL VALUE OF SCHEDULE A)	Every Year	Percentage of the Value of SCHEDULE A to be paid every year for a period		

			of 5 Years (Extendable to 10 Years).	
--	--	--	---	--

Note:

Above rates are inclusive of packing, forwarding, freight, insurance, commissioning, warranty or any other charges & exclusive of GST.

The total cost column will be used for evaluation of the tender for determining the L1 cost.

रेलटेल
RAILTEL

BANGALORE METRO RAIL CORPORATION LIMITED



TENDER DOCUMENT

**Upgradation of CCTV System and Comprehensive Annual
Maintenance Contract**

**TENDER NO.
BMRCL/O&M/TELE&AFC/Surveillance/2023/02**

Volume 1

QUALIFICATION CUM TECHNICAL PACKAGE

JAN 2024

BANGALORE METRO RAIL CORPORATION LIMITED

**BMRCL Metro Rail Depot,
Old Madras Road, Near NGEF Bus Stop,
Baiyappanahalli, Bangalore - 560038
Karnataka, India**



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BMRCL

Tenderer

Tender No: BMRCL/O&M/TELE&AFC/Surveillance/2023/02		
Description of Work: Upgradation of CCTV System and Comprehensive Annual Maintenance Contract		
Sl.No.	Description	
1.	Earnest Money Deposit / Tender Security	INR 39,39,145/- (Indian Rupees Thrity Nine Lakhs Thrity Nine thousand One hundred and Forty Five only)
2.	Work Completion Period for Supply, Installation, Testing and Commissioning	04 Months from the Date of Signing of the Contract Agreement for all Reach 1 stations
3.	Duration of the CAMC Contract period	5 Years from the Date of Signing of the CAMC Contract Agreement for all the Reach 1 stations(Extendable to 10 Years)
4.	Cost of Tender Document (Non-refundable)	INR 1,18,000 /- [1,00,000 +18,000 (GST@18%)]
5.	Online Sale of Tender Documents	From 26/01/2024 until midnight of 23/02/2024
6.	Last date for seeking clarification as per Section-10, Annexure-6	18/02/2024 upto 17.30 Hrs (IST)
7.	Date & time of pre bid meeting	17/02/2024 at 11.30 Hrs (IST)
8.	Date and Time for submission of Tender	On 27/02/2024 from 11.00 Hrs (IST) to 15.00 Hrs (IST)
9.	Date and Time of opening of Tender (First and Second Cover)	On 27/02/2024 at 15.30 Hrs (IST)
10.	Date and Time of opening of Tender (Third Cover)	Will be intimated to the Qualified Tenderers
11.	Purchase of Tender documents	Tender documents can be downloaded from BMRCL's website by making payment through online Gateway or by depositing DD/Pay Order in BMRCL office.
12.	Place of Submission & Opening of Tenders	Office of the ED (O&M), Bangalore Metro Rail Corporation Ltd (O&M Wing), Admin Building, Baiyappanahalli Depot, S V Road, Bangalore – 560 038, Karnataka, India.
13.	Address for communication	The Manager (Tele & AFC, IT), Bangalore Metro Rail Corporation Ltd., Admin Building, Baiyappanahalli Depot, S V Road, Bangalore – 560 038, Karnataka, India. Ph No : +91-9449874570 Landline No: 080-25191103 Email Id : vinaykumar@bmrc.co.in



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SECTION 1: NOTICE INVITING TENDERS (NIT)

Tender No: BMRCL/O&M/TELE&AFC/Surveillance/2023/02

Date: 26-01-2024

1. Bangalore Metro Rail Corporation Ltd (BMRCL) invites Tenders (under Single stage- Two envelope System) from eligible Domestic Tenderers, having work experience in any Central Govt/State Govt/PSU's/Govt bodies/ MES/ Railway/ CPWD /KPWD/ BMRCL /Public Limited Companies for the works detailed in the Table below.

Tender No.	Name of work	Earnest Money Deposit / Tender Security (Rs.)	Cost of Tender document (Rs.)	Work Completion Period for Supply, Installation, Testing and Commissioning	Duration of the CAMC Contract Period
1	2	4	4	5	6
BMRCL/O&M/TELE&AFC/Surveillance/2023/02	Upgradation of CCTV System and Comprehensive Annual Maintenance Contract	39,39,145/-	1,18,000 /- [Rs.1,00,000 +18000 (GST @ 18%)]	04 Months from the Date of Signing of the Contract Agreement for Reach 1 stations	5 Years from the Date of Signing of the CAMC Contract Agreement for Reach 1 stations(Extendable to 10 Years)

2. The Tenderers shall submit Tenders for whole of the Works. The Tenderers are required to submit three separate sealed covers, one containing the '**Earnest Money Deposit / Tender Security**', and the Second Cover containing the Form of Tender and the details of their capability to undertake the Tender (as detailed in ITT Clause 2 and 3), any other submissions as per requirements of Tender Document and signed Tender document, and the Third Cover containing priced Bill of Quantities.
- The First Cover containing the '**Earnest Money Deposit / Tender Security**' shall be opened first.
 - The Second cover will be opened only when the 'EMD' has been found acceptable, and
 - The Third Cover will be opened only of those Tenderers who are found to be qualified to execute the tendered work.
- The Tenderers are advised to note the minimum **Qualification Criteria specified in Clause 3** of the **Instructions to Tenderers** to qualify for award of the Contract.
3. (a) Tenderers can download the Non-transferable Tender document against online payment of a non-refundable fee of INR 1,18,000.00 [100,000.00+18000.00(GST@18%)] from BMRCL's website www.bmrc.co.in during the period mentioned in 'Key Details'.

Procedure for Tenderers opting for online purchase of Tender documents:



- i. Visit web site: www.bmrc.co.in
 - ii. Register online (one time process).
 - iii. Make payment through Gate Way as available in the website.
 - iv. Once payment is successful, Download complete Tender document.
 - v. Frequently check website and also registered E-mail for any Addendum/ Corrigendum/ Answered Pre-bid queries.
 - vi. The Tender submittals containing **"Earnest Money Deposit / Tender Security", "Qualification cum Technical Package" and "Financial Package"** shall be sealed in separate covers as described in ITT clause 16.1 & 16.2 and should be submitted on the date, time and place as mentioned in 'Key Details'.
- (b) Alternatively, the Tenderers can also obtain **login password** for downloading Tender document, from the Registered Office of 'Bangalore Metro Rail Corporation Ltd', (O&M Wing), Admin building, Baiyappanahalli Depot, S V Road, Bangalore-560038, during all working days from 11.00 to 17.00 Hours (IST) of sale period of Tender document as mentioned in 'Key Details', on submission of a requisition letter and a non-refundable Tender fee in the form of Crossed 'Demand Draft' or 'Pay Order' issued by an Indian Scheduled Bank (excluding Co-operative Banks) or by a Scheduled Foreign Bank as defined in Section-2 (e) of RBI Act-1934 read with Second Schedule drawn in favour of **'Bangalore Metro Rail Corporation Limited', payable at Bangalore**.

Procedure for Tenderers opting for downloading of Tender documents using Login password against 'Demand Draft' or 'Pay Order'.

- i. Visit web site: www.bmrc.co.in
 - ii. Enter login pass word obtained from BMRCL on submission of 'Demand Draft' or 'Pay Order'.
 - iii. Download complete Tender document.
 - iv. Frequently check website and also registered E-mail for any Addendum / Corrigendum / Answered Pre-bid queries.
 - v. The Tender submittals containing **"Earnest Money Deposit / Tender Security", "Qualification cum Technical Package" and "Financial Package"** shall be sealed in separate envelopes as described in ITT clause 16.1 & 16.2 and should be submitted on the date, time and place as mentioned in 'Key Details'.
4. One set of downloaded Tender documents along with Employer's clarification on queries including addenda (if any) are to be submitted with the Tender submittal, untampered, duly signed and stamped on each page.
 5. Proof of payment of Tender fee / e-receipt shall be submitted along with 'Qualification cum Technical Package'.
 6. Micro and Small Enterprises registered with NSIC under a single point vendor registration scheme shall be facilitated by providing tenders sets free of cost and exempted from EMD." Under the provision stated in Circular No: FD130 Exp-12/2015 by Government of Karnataka.
 7. Tenders must be accompanied by **Earnest Money Deposit / Tender Security** specified in the Tender document drawn in favour of "Bangalore Metro Rail Corporation Ltd". Earnest Money Deposit / Tender Security will have to be in any one of the form of Demand Draft / Pay Order / Banker's Cheque/Bank Guarantee, payable and extendable at designated branch in Bangalore

and shall have to be valid for **45 days** beyond the validity of the Tender (i.e. 165 days from the date of submission of tender)..

8. Tenders shall be submitted in the office of the "The Executive Director (O&M), O & M Wing, Baiyappanahalli Depot, Bangalore Metro Rail Corporation Ltd at the address given, on 27-02-2024 from **11.00 Hrs. to 15:00 Hrs.** On the same day at **15:30 Hrs.** the tender will be opened. First, the Outer Cover will be opened. On opening of the Outer Tender Cover, it will be checked whether it contains Tender Securing Declaration in the First Cover, Second Cover (Qualification cum Technical Package), and Third Cover (Financial Package) separately or not. **IN CASE THEY ARE NOT SEPARATELY SEALED PROPERLY, THE TENDER OF SUCH TENDERER SHALL BE SUMMARILY REJECTED (as detailed in ITT Clause 16).**

Further, First Cover (**Earnest Money Deposit / Tender Security**) will be opened in the presence of the Tenderers or their authorized representative who wish to attend. Thereafter, Second Cover (Qualification cum Technical Package) will be opened, whose **Earnest Money Deposit / Tender Security** has been found acceptable as per clause 14 of ITT.

If the office happens to be closed on the date of receipt of the Tenders as specified, the Tenders will be received and opened on the next working day at the same time and venue.

9. Other details can be seen in the Tender documents and also available on web site: www.bmrcl.co.in.
10. Late Tenders, i.e., Tenders received after the stipulated time of submission of Tender on the specified date, shall not be accepted under any circumstances.
11. The **Earnest Money Deposit** is to be submitted as per Clause 14 of the 'INSTRUCTIONS TO TENDERERS'.
12. The Employer requires that Tenderers and Contractors observe highest standard of ethics during the procurement and execution of the Contract. In pursuance of this policy, The Employer;
- (a) Will reject the Tender for the Work or rescind the Contract, if the Employer determines that the Tenderer / Contractor has engaged in corrupt or fraudulent practices.
- (b) will declare a Contractor ineligible, either indefinitely or for a stated period of time, to be awarded a Contract, if the Employer, at any time, determines that the Tenderer or the Contractor has engaged in corrupt or fraudulent practices in competing for, or in executing, the Contract.
13. All Tenderers are hereby cautioned that Tenders shall be submitted without any deviation, alteration or modification. Tenders containing any deviation from contractual terms and conditions, specifications and other requirements shall be considered as non-responsive and shall be liable for rejection.
14. BMRCL reserves the right to accept or reject any or all Tenders without assigning any reason. No Tenderer shall have any cause of action or claim against BMRCL for rejection of his Tender.



Tender No. BMRCL/O&M/TELE&AFC/Surveillance/2023/02 Section 1:Notice Inviting Tenders

15. A firm after purchase of the Tender document in their name can submit the Tender in their firm name only.
16. Addendum / Corrigendum, if any will be intimated to all the Tenderers and also be will uploaded on web site: www.bmrc.co.in.
17. Last date for submission of queries in writing by Tenderers - 18-02-2024 up to 17:30 Hrs. and Pre-bid meeting shall be held on 17-02-2024 at 11.30 Hrs. at the " Office of the Executive Director (O&M), Bangalore Metro Rail Corporation Ltd (O&M Wing),Admin building, Baiyappanahalli Depot, S V Road,Bangalore-560038," Karnataka, India.
18. For further clarification details, contact The Manager (Tele & AFC, IT) O&M wing, Admin Building, Baiyappanahalli Depot, S V Road, Bangalore – 560 038, on Ph No : +91-9449874570, Email: vinaykumar@bmrc.co.in

Executive Director (O&M)
Bangalore Metro Rail Corporation Limited



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SECTION – 2 - INSTRUCTIONS TO TENDERERS**A. GENERAL****1. Description of the work**

Bangalore Metro Rail Corporation limited (BMRCL), a Special Purpose Vehicle (SPV) established under the Companies Act, 1956 (hereinafter referred to as “BMRCL” or “the Company” or “the Employer” or “the Client”), invites Tenders following Single Stage-Two envelope Tender procedure from the eligible Tenderers for **“Upgradation of CCTV System and Comprehensive Annual Maintenance Contract”**. (Hereinafter referred to as "the works") as per terms and conditions contained in this Tender documents.

2. Eligible Tenderers

2.1 Tenderers shall not be under a declaration of ineligibility for corrupt and fraudulent practices issued by the Government of Karnataka or BMRCL.

2.2 This is a Domestic Competitive Bidding. Sole Proprietorship Firm/ Partnership Firm/Private Limited Company/ Public Limited Company are eligible to apply

2.3 Any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Competent Authority. The Competent Authority for registration will be the Registration Committee constituted by the Department for Promotion of Industry and Internal trade (DPIIT). **For Details** refer to Order (Public Procurement No.1, F.No.6/18/2019-PPD) dated 23/07/2020 issued by Ministry of Finance, Department of Expenditure, Public Procurement Division.

2.3.1 This clause will not apply to bidders 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 projects.

2.3.2 All the participating tenderers are mandatorily required to submit a certificate along with the tender regarding their compliance with this clause/order in regard to restrictions of procurement from the bidders from countries sharing land borders with India as per the format included in Annexure-7 to these Contract Conditions. If such certificate given by a bidder whose bid is accepted is found to be false, this would be a ground for immediate termination and further legal action in accordance with law.

2.4 **Tenders from Joint ventures are not acceptable.**

2.5 The Tenderer should not have been blacklisted / debarred by any Government / Government undertaking / semi Government / Govt. Controlled Institutions/projects/ Reputed private organizations in India during last five (5) years. Also the Tenderer should not have rescinded the works after award of the contract during last five (5) years. The Tenderer shall provide an Undertaking as provided at Annexure – 4 of Section-10.

Note: Last five (5) years shall be counted from 28 days prior to the date of submission of the Tender.



- 2.6 The tenderer shall have the quality standards of ISO 9001:2015, ISO/IEC 20000-1:2018, ISO/IEC 27001:2013 and CMMI Level-3 or better for its quality management systems, information security management systems and service management systems. Relevant documents substantiating the same shall be submitted.

3. Qualification of the Tenderer

Tenderers who meet the below specified minimum Qualification Criteria will only be qualified.

3.1 Tender Capacity:

Eligible Tenderers will be qualified only if their available Tender capacity is more than the total Tender value. The available Tender capacity will be calculated as under:

$$\text{Assessed available Tender capacity} = (A \times N \times 1.5 - B)$$

Where;

A = Maximum value of works executed in any one year during the last five years (updated to 2022-23 price level) taking into account the completed as well as works in progress (Ref Section 3).

N = Number of years prescribed for completion of the works for which Tenders are invited.

B = Value, at 2022-23 price level, of existing commitments and on-going works to be completed during the next (12) Twelve months (i.e. period of completion).

Note: The statements showing the value of existing commitments and on-going works as well as the stipulated period of completion remaining for each of the works listed should be countersigned by the respective Employer in charge, not below the rank of an Executive Engineer or equivalent.

3.2 Work Experience:

- 3.2.1 The Tenderer should have executed the works / have experience in 'similar works' in any of the following organizations during last five (5) years:

(i) In any Metro Rail Corporation Limited/ Central Govt. / State Govt. / PSU's / Govt. Bodies / Military Engineering Service/ Railways.

3.2.2 The Bidder shall be

- (i) Original Equipment Manufacturer (OEM) of the Video Management System or authorized Partner of the OEM of the Video Management System

Or

- (ii) Public Sector Undertakings (PSUs) wholly or partially owned by the Central government, PSUs wholly or partially owned by the state government, Central Public Sector Enterprises or any other government bodies with Authorization from the OEMs of Video Management System as per the ANNEXURE-8.



In any of the above 2 cases (i and ii), the Bidders themselves or the OEMs proposed by the Bidders should have supplied, installed and commissioned Surveillance Systems with Box / Bullet Cameras, Video Management System's & Networking Systems in Railways / Metro Rail Stations / Metro Rail Depots in INDIA in the last Three (03) years. The Relevant Letter of Acceptance (LOA)/Work Orders/ Purchase Order copies and the Work completion certificates issued by the clients for the relevant works shall be furnished. The Bidders shall provide the Manufacturer Authorization form as per ANNEXURE-8 for all the BOQ items.

- 3.3 All Tenderers shall provide the requested information accurately and in sufficient detail.

Section 3: Qualification Information.

- 3.4 To qualify for award of this Contract,

- (a) Each Tenderer in its name should have in the last five financial year's i.e. 2017-18, 2018-19, 2019-20, 2020-21 & 2021-22 achieved in at least two financial years a minimum annual financial turnover of **Rs 7878.29 Lakhs**.
- (b) Each Tenderer in its name should have successfully completed or substantially completed similar works in any one year during last five (05) financial years either of the following:
 - i) **One (1)** similar work costing not less than the amount equal to **Rs. 1969.57 Lakhs**;
 - ii) **Two (2)** similar works costing not less than the amount equal to **Rs. 1575.65 Lakhs**;
 - iii) **Three (3)** similar works costing not less than the amount equal to **Rs. 1181.74 Lakhs**.
- (c) Each Tenderer or the OEM should have executed in any one year (individually or combined) during the last five years, the minimum quantities of work are as follows:
 - i) **Core / Access Network Switches – 200 Nos**
 - ii) **Box / Bullet Camera's – 2000 Nos**
 - iii) **Video Management System Software – 2000 Channels**
 - iv) **Facial Recognition System Software – 150 Nos**

Note: 1. "Similar Works" means **Installation and commissioning of Network Video Surveillance System including Cameras, Video Management Software System, Access Level Layer 2/Layer 3 Switches and related IT Systems with having obtained authorization from the OEM of the Video Management Software.**

2. **Substantially completed works** means those **works** which are at least **80% completed** as on the date of tender submission (i.e. gross value of **work** done up to the last date of submission is 80% or more of the original contract price) and continuing satisfactorily.

3. Last five (5) years shall be counted from 28 days prior to the date of submission of Tender.



4. Completion certificates for works issued by Private parties shall be supported by TDS (Tax Deducted at Source) certificates.

5. In case the Tenderer has executed works/contract for a client, which includes "other works in addition to **similar works**, then the Tenderer should provide a client certificate clearly indicating the amount of work done in respect of the "**similar work**" in support of work experience.

3.5 Each Tenderer should further demonstrate:

a) Availability by owning of the required / specified key and critical equipment for this work; and can also be deployed on lease / hire basis for all works provided, the relevant documents for availability for this work are furnished.

- a. Crimping Tool – 02 Nos
- b. Drilling Machine set – 02 Nos
- c. Scaffolding materials, Ladders and other tools etc., to cover 50 Mtrs long and height as required (Minimum 6.00M) – 1 set

b) Liquid assets and /or availability of credit facilities of not less than **Rs 1181.74 Lakhs** (Credit lines/ letter of credit/ certificates from banks) for meeting the fund requirement etc.

3.6 Not Used.

3.7 Not Used.

3.8 Even though the Tenderers meet the Qualification criteria in accordance with ITT Clause 3, they are subject to be disqualified if they have:

- (a) made misleading or false representations in the forms, statements and attachments submitted in proof of the qualification requirements; and/or
- (b) record of poor performance such as abandoning the works, not properly completing the Contract, inordinate delays in completion, litigation history, or financial failures etc.; and/or
- (c) Participated in the previous Tender for the same work and had quoted unreasonably high Tender prices and could not furnish rational justification.

3.9 Micro and Small Enterprises registered with NSIC under a single point vendor registration scheme shall be given in compliance to government of India's instructions to relax the condition of prior turnover & prior experience in all public procurements subject to their offer meeting of quality and technical specifications of the tender, BMRCL has decided that in case of offers from Micro & Small enterprises, the value/financial limits applicable for eligibility criteria for work experience and Eligibility criteria for average annual turnover (as mentioned in clause 3.4(a) & 3.4(b)) shall be 80% of the corresponding values for these criteria as mentioned in clause 3.4(a) & 3.4(b) above (subject to their offer meeting of quality and technical specifications of the tender).



- 3.10 The Tenderer shall mandatorily quote for all the BOQ items listed under 3.11 of Technical Specification(TS) – “List of New Assets to be Supplied, Installed and Maintained based on the Requirements of BMRCL for 5 Years(extendable to 10 Years)” and shall mandatorily propose only one OEM for each of the items listed under 3.11 – “List of New Assets to be Supplied, Installed and Maintained based on the Requirements of BMRCL for 5 Years(extendable to 10 Years)”
- 3.11 (a.) Non submission of the Prices for any of the BOQ Items in 3.11 of TS.
or
(b.) Non submission of the details of the OEM and its products technical specifications for any of the BOQ items in 3.11 of TS.
or
(c.) Non Submission of the relevant OEMs Metro Rail / Railways Experience (Having Supplied, Installed and Commissioned the Product in the Metro Rail Corporations / Railways in India)
or
(d.) Submission of More than One OEM for any of the BOQ item in 3.11 of TS.

Any of the 4 cases of (a.)(b.)(c.)(d.) above shall result in the rejection of the complete bid submitted by such Bidders.

4. **Cost of Tendering**

- 4.1 The Tenderer shall bear all costs associated with the preparation and submission of its Tender and BMRCL will in no case be responsible or liable for these costs, regardless of the conduct or outcome of the Tender process.

B. TENDER DOCUMENTS

5. **Content of Tender documents**

- 5.1 Tendering procedures and Contract terms are prescribed in the Tender documents. The Tender document shall include:

Volume 1 : Qualification cum Technical Package

1. Notice Inviting Tenders (NIT)
2. Instructions to Tenderers (ITT)
3. Qualification Information
4. Form of Tender (FOT)
5. General Conditions of Contract (GCC)
6. Special Conditions of Contract (SCC)
7. Technical Specifications
8. Drawings
9. Proforma of Bank Guarantees
10. Annexures

Volume 2 : Financial Package

1. Priced Bill of Quantities.

- 5.2 The Tenderer is expected to examine all Instructions, Forms, Terms, and Specifications in the Tender documents. Failure to furnish all information required by the Tender documents or submission of a Tender not substantially responsive to the Tender documents in every respect will be at the Tenderer's risk and may result in rejection of its Tender.

6. Clarification of Tender Documents

- 6.1 A prospective Tenderer requiring any clarification of the Tender documents may notify the Employer in writing or email at the Employer's mailing address indicated in the Notice Inviting Tenders. The Employer will respond in writing (Letter or email) to any request for clarification of the Tender documents which it receives no later than date specified in "Appendix to form of Tender" (section-4). Written copies of the Employer's response (including an explanation of the query but without identifying the source of inquiry) will be sent to all prospective Tenderers who have received the Tender documents and also will be uploaded in BMRCL's website: www.bmrc.co.in.

6.2 Pre-bid meeting:

- 6.2.1. The Tenderer or his authorized representative is invited to attend a Pre-bid meeting held at the Place, date and time indicated in 'Appendix to Form of Tender'.
- 6.2.2. The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage to enable the Tenderers to submit Tenders without conditions.
- 6.2.3. The Tenderer is requested to submit any questions in writing or email, as per the format attached as **Annexure-6**, to reach the Employer not later than the date specified in 'Appendix to Form of Tender'.
- 6.2.4. BMRCL will offer clarifications to the questions raised by the Tenderers and received by BMRCL (without identifying the source of enquiry) and the responses given will be transmitted to all purchasers of the Tender documents. Any modification of the Tender documents listed in ITT Sub-Clause 5.1 which may become necessary as a result of the Pre-bid meeting shall be made by the Employer exclusively through the issue of an Addendum pursuant to ITT Clause 7.
- 6.2.5. Non-attendance at the Pre-bid meeting will not be a cause for disqualification of a Tenderer.

7. Amendment of Tender documents

- 7.1 At any time prior to the deadline for submission of Tenders, the Employer may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective Tenderer, modify the Tender documents by an amendment / addenda. The same also will be uploaded on BMRCL's website: www.bmrc.co.in.
- 7.2 All prospective Tenderers who have downloaded the Tender documents will be notified of the addenda in writing or by email or by fax, and will be binding on them. The same also will be uploaded on BMRCL's website: www.bmrc.co.in.
- 7.3 To give prospective Tenderers reasonable time in which to take an amendment into account in preparing their Tenders, the Employer shall extend as necessary the deadline for submission of Tenders, in accordance with ITT Sub-Clause 17.2 below.



- 7.4 Without prejudice to the order of preference, the provisions in such addenda shall take priority over the Tender document issued previously. The Tenderers should acknowledge receipt of such addenda and list them in the tender submittals.

8. Language of Tender

- 8.1 The Tender prepared by the Tenderer, as well as all correspondence and documents relating to the Tender exchanged by the Tenderer and the Employer, shall be in English language. Supporting documents and printed literature furnished by the Tenderer may be in another language provided they are accompanied by an accurate translation of the relevant passages in the English language in which case, for purposes of interpretation of the Tender, the translated version in English shall govern.

C. PREPARATION OF TENDERS

9. Documents comprising the Tender

- 9.1 The Tender duly filled and submitted by the Tenderer shall be in three covers and shall contain the documents as follows:

9.1.1 First Cover: EMD / Tender Security

- a) Earnest Money Deposit (EMD) / Tender Security (in accordance with ITT Clause 14);

9.1.2 Second Cover: Qualification cum Technical Package

- a) The Form of Tender (in the format indicated in Section 4);
b) Qualification Information Form and Documents (in accordance with Section 3) and any other submissions as per requirements of Tender Document;
c) "One set of complete Tender documents downloaded from BMRL's website (including Employer's clarification and addenda, if any). in accordance to ITT clause 16.8";
d) Proof of payment of Tender fee / e-receipt.

and any other documents required to be completed and submitted by Tenderers in accordance with these instructions. **The documents listed under Sections 3 and 4 shall be filled in without exception.**

9.1.3 Third Cover: Financial Package

- a) Priced Bill of Quantities (in the format indicated in Volume 2);

9.2 Not used.

10. Form of Tender

The Tenderer shall complete the 'Form of Tender' furnished in the Tender documents and submit duly signed and stamped along with the Qualification Cum Technical Package. The Tenderer shall submit the Priced Bill of Quantities indicating amount with Financial Package.



11. Tender prices

11.1 The Contract shall be for the whole of the Works as described in Clause 1.0 of ITT, based on the Bill of Quantities submitted by the Tenderer.

11.1.1 The Quoted price shall be inclusive of Labour Cess Charges and duties under applicable law but exclusive of CGST and SGST as specific under GCC Clause 39. BMRCL shall pay the output CGST and SGST as invoiced by the contractor to BMRCL.

The Tenderer shall ascertain applicable duties under applicable Acts and shall be included in the quoted price but excluding the CGST and SGST.

11.1.2 The evaluation and comparison of Tenders shall be made accordingly by BMRCL. No claim will be entertained on this account after acceptance of the Tender or during the currency of the Contract.

11.1.3 **Income Tax (IT) deduction:** As per the prevailing rate, IT shall be deducted and remitted to the Income Tax authorities and Form 16A shall be furnished by BMRCL in proof of remittance to IT Department. For availing lower deduction of Income Tax, necessary certificate for each financial year issued by the Income Tax Authority shall be furnished by the Contractor, failing which IT at the maximum rate will be deducted.

11.2 The Tender is a Total Value wise evaluation Tender. The Cost of all the individual items under Priced Bill of Quantities of Vol2.Financial Package of this tender shall be computed for the entire work and the total cost shall be quoted. Any additional item/s not found in the BOQ and if it is required to be executed for completion of the work under this Contract, the rate for which shall be as per KPWD Schedule of Rates of the respective year. If the item required is not found in any of the Schedule of Rates of KPWD or CPWD, then rate shall be worked out as stipulated in GCC Clause 35.

11.3 The Percentage quoted by the Tenderer shall be fixed for the duration of the Contract and shall not be subject to adjustment on any account, unless provided otherwise in the General Conditions of Contract.

11.4 A Tender submitted with an adjustable price quotation will be treated as non-responsive and rejected, pursuant to ITT Clause 23.

11.5 The rates or percentage should be written in numerals only (in figures and words) (Limited to Two (2) decimals only). If the Tenderer writes/indicates any other matter/s the Tender will be summarily rejected".

11.6 Proof of GST paid to the government shall be submitted to BMRCL along with succeeding Bills and also the GST paid against the final bill shall be submitted before release of Performance Bank Guarantee.

12. Tender Currency

12.1 Prices shall be quoted in Indian Rupees only.



13. Tender validity

- 13.1 Tenders shall remain valid for a period as specified in Appendix to Form of Tender (Section 4) after the deadline date for Tender submission specified in Clause 17 of ITT. A Tender valid for a shorter period shall be rejected by the Employer as non-responsive.
- 13.2 In exceptional circumstances, prior to expiry of the original time limit, the Employer may request that the Tenderers may extend the period of validity for a specified additional period. The request and the Tenderers' responses shall be made in writing or by email. A Tenderer may refuse the request without forfeiting his Earnest Money Deposit. A Tenderer agreeing to the request will not be required or permitted to modify his Tender but will be required to extend the validity of his Earnest Money Deposit for a period of the extension and in compliance with ITT Clause 14 in all respects.

14. Earnest Money Deposit (EMD) / Tender Security

- 14.1 Pursuant to ITT Clause 9, the Tenderer shall furnish, as part of its Tender, an Earnest Money Deposit (EMD) / Tender Security in the amount as specified in Appendix to Form of Tender (Section 4).
- 14.2 The Earnest Money Deposit is required to protect the Employer against the risk of Tenderer's conduct which would warrant the security's forfeiture, pursuant to ITT Clause 14.8.
- 14.3 The Earnest Money Deposit shall be denominated in Indian Rupees and shall be in the following form :-

- a) A crossed Demand Draft /Pay Order / Banker's Cheque, issued in favour of **Bangalore Metro Rail Corporation Ltd** from an Indian Scheduled Bank (excluding Cooperative Banks) or from a Scheduled Foreign Bank as defined in Section 2(e) of RBI Act 1934 read with Second Schedule payable **at Bangalore**.

(OR)

- b) An irrevocable **Bank Guarantee** issued from an Indian Scheduled Bank (excluding Cooperative Banks) or from a Scheduled Foreign Bank as defined in Section 2(e) of RBI Act 1934 read with Second Schedule preferably drawn on and payable and extendable **at a designated branch in Bangalore** (*specify the name of the branch and address*) in the form given in **Proforma A of Section 9** to the Tender documents. However, 'Earnest Money Deposit' Bank Guarantee format is also available in <http://tenderb.bmrc.co.in/>

(OR)

- c) The amount shall be remitted via **NEFT or RTGS to the Bank account of Bangalore Metro Rail Corporation** as specified at the time of purchase of the document.

- 14.4 The Earnest Money Deposit shall be valid for a period as specified in Appendix to Form of Tender (Section 4) and remain deposited with the Employer from the date of opening of Tenders. If the validity of the Tender is extended, the Earnest Money Deposit (EMD) shall also be duly extended, failing which, the Tender after the expiry of the aforesaid period shall not be considered by the Employer.



- 14.5 The Earnest Money Deposit shall be submitted in its original form; copies will not be accepted; and No interest will be payable by the Employer on the Earnest Money Deposit. Any tender not accompanied by an acceptable Tender Guarantee is liable for rejection by the Employer.

However, BMRCL reserves the right to accept or reject the Tender Guarantee with any deficiency otherwise not materially affecting the technical qualification criteria of the Tenderer.

- 14.6 Unsuccessful Tenderer's Earnest Money Deposit (EMD) will be discharged / returned upon the Successful Tenderer signing the unconditional acceptance of the Letter of Acceptance (LoA) communicated by the Employer in pursuant to ITT clause 29 and furnishing the Performance Security by them pursuant to ITT clause 30.

- 14.7 The Successful Tenderer's Earnest Money Deposit (EMD) will be discharged upon the successful Tenderer furnishing the Performance Security pursuant to ITT Clause 30 and signing the Contract Agreement in pursuant to ITT clause 29.

- 14.8 The Earnest Money Deposit (EMD) may be forfeited:

- (a) If a Tenderer
 - (i) withdraws or amends or impairs or derogates its Tender during the period of Tender validity specified by the Tenderer on the Form of Tender; or
 - (ii) does not accept the correction of errors pursuant to ITT Clause 24.2; or
- (b) In case of a successful Tenderer, if the Tenderer fails:
 - (i) To sign the Contract Agreement in accordance with ITT Clause 29; or
 - (ii) To furnish Performance Security in accordance with ITT Clause 30.

- 14.9 Any Tender not accompanied by an acceptable Earnest Money Deposit and not secured as indicated in ITT Sub-Clauses 14.1 to 14.5 shall be rejected by the Employer as non-responsive, pursuant to ITT Clause 23.

- 14.10 Tenderers should ensure that the Earnest Money Deposit (EMD) envelope is available separately and not kept in **"Second" or "Third cover"** of the Tender document. If the Earnest Money Deposit (EMD) is kept elsewhere, the Tender will be summarily rejected.

- 14.11 Tenderers who submit EMD through Demand Draft / Pay order / Banker's Cheque needs to fill **Annexure-3 in Section-10**, along with a **cancelled cheque leaf** for refund of EMD through NEFT/RTGS.

- 14.12 Micro and Small Enterprises registered with NSIC under a single point vendor registration scheme shall be facilitated by providing tenders sets free of cost and exempted from EMD." Under the provision stated in Circular No: FD130 Exp-12/2015 by Government of Karnataka.

15. Format and signing of Tender

- 15.1 The Tenderer shall prepare one Original and a Copy of the documents comprising the Tender as described in ITT Clause 9, bound with the volume containing the Form of Tender, and clearly marked **"ORIGINAL"** and **"COPY"** as appropriate. In the event of discrepancy between them, the Original shall prevail.



- 15.2 The Original and a Copy of the Tender shall be typed or written in indelible ink and shall be signed by a person or persons duly authorized to sign on behalf of the Tenderer. The authorization letter shall be indicated by written Notarized Power-of-Attorney accompanying the Tender. All pages of the Tender submittals where entries, corrections or amendments have been made shall be initialed by the person signing the Tender.
- 15.3 The Tender shall contain no alterations or additions, except those to comply with instructions issued by the Employer, or as necessary to correct errors made by the Tenderer, in which case such corrections shall be initialed by the person signing the Tender.
- 15.4 Any individuals signing the Tender or other documents connected therein should specify whether he is signing:
- (i) as sole proprietor of the firm or as attorney of the sole proprietor;
 - (ii) as a partner or partners of the firm;
 - (iii) as a Director, Manager or Secretary in the case of a limited company with a copy of Notarized Power of Attorney duly authorized by a resolution passed by the Board of Directors or in pursuance of the authority conferred by Memorandum of Articles of Association.
- 15.5 The original Notarized Power of Attorney or other documents empowering the individual or individuals to sign should be furnished to the Employer for verification, if required.

D. SUBMISSION OF TENDERS

16. Sealing and marking of Tenders

16.1 Tender shall be placed in single outer cover consisting of three covers as explained below.

16.1.1 First Cover: EMD / Tender Security

The Tenderer shall submit the “**EMD / Tender Security**”, in accordance with ITT Clause 9.1.1, in a separate envelope marked “**FIRST COVER – EMD / Tender Security for Tender No. BMRL/O&M/TELE&AFC/Surveillance/2023/02.**” Do not open before 15:30 hours on 27-02-2024.”

16.1.2 Second Cover: Qualification cum Technical Package

- a) Original documents of “The Form of Tender, Qualification Information, any other submissions as per requirements of Tender Document, duly stamped and signed Tender Document”, in accordance with ITT Clause 9.1.2, shall be placed in one cover and marked “**ORIGINAL – QUALIFICATION CUM TECHNICAL PACKAGE for Tender No BMRL/O&M/TELE&AFC/Surveillance/2023/02.**”
- b) A copy of the above documents except Tender document shall be placed in a separate cover and marked “**COPY - QUALIFICATION CUM TECHNICAL PACKAGE for Tender No. BMRL/O&M/TELE&AFC/Surveillance/2023/02.**”

These two covers shall be placed in a single separate cover and marked “**SECOND COVER - QUALIFICATION CUM TECHNICAL PACKAGE for Tender No BMRL/O&M/TELE&AFC/Surveillance/2023/02. Do not open before 15: 30 hours on 27-02-2024**”.



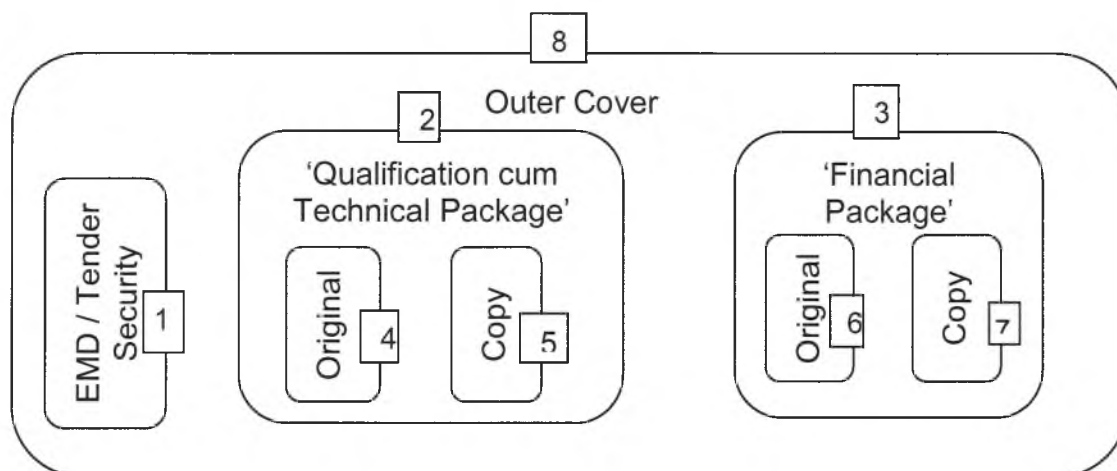
16.1.3 Third Cover: Financial Package

- a) Original documents of "Priced Bill of Quantities", in accordance with ITT Clause 9.1.3, shall be placed in one cover and marked "**ORIGINAL – FINANCIAL PACKAGE for Tender No. BMRL/O&M/TELE&AFC/Surveillance/2023/02.**"
- b) A copy of the above documents shall be placed in a separate cover and marked "**COPY – FINANCIAL PACKAGE for Tender No BMRL/O&M/TELE&AFC/Surveillance/2023/02.**"

These two covers shall be put in a single separate cover and marked "**THIRD COVER - FINANCIAL PACKAGE for Tender No BMRL/O&M/TELE&AFC/Surveillance/2023/02.**"

16.1.4 Outer Cover:

All the above three covers (the First cover, the Second Cover and the Third cover) shall be sealed in an **Outer Cover**. Thus there will be a total of **Eight Covers** altogether.



16.2 The inner and outer envelopes shall

- (a) be addressed to the Employer as given in Appendix to Form of Tender, And
- (b) bear the Project Name, the Notice Inviting Tenders (NIT) title, number and a statement "**Do not open before 15 : 30 hours on 27-02-2024**"

16.3 In addition to the identification required in ITT Sub-Clause 16.2, the inner envelopes shall indicate the **name and address of the Tenderer** to enable the Tender to be returned unopened in case it is declared late.

16.4 If the outer envelope is not sealed and marked as above, the Employer will assume no responsibility for the misplacement or premature opening of the Tender.

16.5 Telex, cable or facsimile or email Tenders will be rejected.

16.6 Offer / Tender / Bid shall be as per the "Instructions to Tenderers", "General Conditions of Contract" and "Special Conditions of Contract" given in the Tender documents. Each page of the Tender shall be signed and stamped by the Authorized Signatory of the Tenderer.



- 16.7 The Tenderer should avoid ambiguity in his Offer / Tender / Bid.
- 16.8 One set of complete Tender documents downloaded from BMRCL's website (including 'Employer's clarifications on pre-bid queries' and 'addenda' if any) untampered, signed and stamped on right hand bottom corner of each page shall be submitted with the Tender.
- 16.9 Tender document is not transferable and the party to whom Tender has been sold can only quote/submit their offer against the Tender. Tenderer cannot authorize any other party on his behalf. All correspondence will be made with the Tenderer to whom Tender document has been sold.
17. **Deadline for submission of the Tenders**
- 17.1 Tenders must be received by the Employer at the address specified in Appendix to Form of Tender not later than time and date given in the Notice Inviting Tenders (NIT) Section 1. In the event of the specified date for the submission of Tenders being declared a holiday for the Employer, the Tenders will be received up to the appointed time on the next working day.
- 17.2 The Employer may, at its discretion, extend this deadline for submission of Tenders by issuing an amendment in accordance with ITT Clause 7, in which case all rights and obligations of the Employer and the Tenderers previously subject to the original deadline will thereafter be subject to the deadline as extended.
18. **Late Tenders**
- 18.1 Any Tender received by the Employer after the deadline for submission of Tenders prescribed by the Employer, pursuant to ITT clause 17, will be rejected and / or returned unopened to the Tenderer.
19. **Modification and Withdrawal of Tenders**
- 19.1 The Tenderers may modify contents of **First or Second or Third covers** separately for each cover or withdraw their Tenders, after the Tender submission, provided that written notification of the "**MODIFICATION**" or "**WITHDRAWAL**" is received by the Employer prior to the deadline prescribed in ITT Clause 17.
- 19.2 Each Tenderer's modification separately for each cover or withdrawal notice shall be prepared, sealed, marked, and delivered in accordance with ITT Clause 15 and 16, not later than the deadline for submission of the Tenders with the outer and inner envelopes additionally marked "**MODIFICATION FOR FIRST / SECOND / THIRD COVER**" or "**WITHDRAWAL**", as appropriate.
- 19.3 No Tender may be modified subsequent to the deadline for submission of Tenders.
- 19.4 Withdrawal or modification of a Tender between the deadline for submission of Tenders and the expiration of the original period of Tender validity specified in ITT Sub-clause 13.1 above or as extended pursuant to ITT Sub-clause 13.2 may result in the forfeiture of Earnest Money Deposit pursuant to ITT Clause 14.8.



E. TENDER OPENING AND EVALUATION

20. Tender opening

20.1 Opening of First & Second Cover of all Tenderers and Evaluation to determine qualified Tenderers:

20.1.1 The Employer will open the First Cover (EMD / Tender Security) followed by the Second Cover (Qualification cum Technical Package) of the Tenders, whose **EMD** has been found acceptable, (except those received late or withdrawn), including “**MODIFICATIONS FOR FIRST / SECOND COVER**” made pursuant to ITT Clause 19, in the presence of the Tenderers or their representatives who choose to attend on the date and the place specified in ITT Clause 17. In the event of the specified date of Tender opening being declared a holiday for the Employer, the Tenders will be opened at the appointed time and location on the next working day.

20.1.2 Envelopes marked “**WITHDRAWAL**” shall be opened and read out first. The Tender of a Tenderer for which an acceptable notice of withdrawal has been submitted pursuant to ITT Clause 19 shall not be opened.

20.1.3 The Tenderers names, the presence or absence of Earnest Money Deposit (amount, format and validity), the submission of qualification information and such other information as the Employer may consider appropriate will be announced by the Employer at the Tender opening stage.

No Tender shall be rejected at Tender opening stage except for the late Tenders pursuant to ITT Clause 18 or Tenders not accompanied by an acceptable EMD. Late and withdrawn Tenders will be returned unopened to Tenderers.

20.1.4 The Employer shall prepare minutes of the Tender opening, including the information disclosed to those present in accordance with ITT Sub-Clause 20.1.3.

20.1.5 The Third Cover of all the Tenderers including modifications for Third Cover shall be placed in a large cover and securely sealed in the presence of the Tenderers or their representatives, who are present and also get the same signed by all those Tenderers or their representatives who remain present at the Tender opening. The large cover shall be kept in safe custody of the Employer.

20.1.6 The Employer will evaluate and determine whether each Tender (a) meets the eligibility criteria defined in ITT Clause 2; (b) is accompanied by the required **Earnest Money Deposit** as per stipulations in ITT Clause 14; and (c) meets the minimum qualification criteria stipulated in ITT Clause 3. The Employer will draw out a list of qualified Tenderers.

20.1.7 Tenders which are not accompanied by a valid **EMD / Tender Security** shall be considered as non-compliant and rejected. Second cover and Third cover of such Tenderers will not be opened.

20.1.8 All decisions whether a Tender is Non- Responsive, unacceptable or whether a **EMD / Tender Security** is fraudulent or unacceptable or non-compliant will be that of the Employer.

20.2 Opening of Third Cover of Qualified Tenderers and Evaluation:

20.2.1 The Employer will inform all the Qualified Tenderers the time, date and venue fixed for the opening of the Third Cover (Financial Package). The Employer will open the Third Covers of only those Tenderers who are found to be qualified to execute the tendered works at the appointed time and date in the presence of the Tenderers or their representatives who

choose to attend. In the event of the specified date of Third Cover opening being declared a holiday for the Employer, the Third Covers will be opened at the appointed time and location on the next working day.

- 20.2.2 Envelopes marked **"MODIFICATION FOR THIRD COVER"** shall be opened and the submissions therein read out in appropriate detail.
- 20.2.3 The Tenderers' names, the Tender prices, the total amount of each Tender, any discounts, Tender modifications and withdrawals, and such other details as the Employer may consider appropriate, will be announced by the Employer at the opening. No Tender shall be rejected at Tender opening.
- 20.2.4 The Employer shall prepare minutes of the Third Cover Tender opening, including the information disclosed to those present in accordance with ITT Sub-Clause 20.2.3.
- 20.3 The Tenderer's designated representatives who choose to attend the Tender opening will be required to sign the minutes recorded during the Tender opening. The omission of Tenderer's signature on the minutes shall not invalidate the content and effect of the record.

21. Process to be confidential

- 21.1 Information relating to the examination, clarification, evaluation, and comparison of Tenders and recommendations for the award of a Contract shall not be disclosed to Tenderers or any other persons not officially concerned with such process until the award to the successful Tenderer has been announced. Any effort by a Tenderer to influence the Employer's processing of Tenders or award decisions may result in the rejection of his Tender.

22. Clarification of Tender submittals

- 22.1 To assist in the examination, evaluation, and comparison of Tenders, the Employer may, at his discretion, ask any Tenderer for clarification of his Tender, including breakdowns of unit rates. The request for clarification and the response shall be in writing or by email, but no change in the price or substance of the Tender shall be sought, offered, or permitted except as required to confirm the correction of arithmetic errors discovered by the Employer in the evaluation of the Tenders in accordance with ITT Sub-clause 24.
- 22.2 Subject to ITT sub-clause 22.1, no Tenderer shall contact the Employer on any matter relating to its Tender from the time of the Tender opening to the time the Contract is awarded. If the Tenderer wishes to bring additional information to the notice of the Employer, it should do so in writing or email.
- 22.3 Any effort by the Tenderer to influence the Employer in the Employer's Tender evaluation, Tender comparison or contract award decisions may result in the rejection of the Tenderers' Tender.

23. Examination of Tenders and determination of responsiveness

- 23.1 The Employer will examine the Tenders to determine whether they are complete, whether any computational errors have been made, whether required sureties have been furnished, whether the documents have been properly signed, and whether the Tenders are generally in order.

The Employer may waive any minor informality or non-conformity or irregularity in a Tender which does not constitute a material deviation, provided such a waiver does not prejudice or affect the relative ranking of any Tenderer.



- 23.2 A substantially responsive Tender is one which conforms to all the terms, conditions, and specifications of the Tender documents, without material deviation or reservation. A material deviation or reservation is one (a) which affects in any substantial way the scope, quality, or performance of the Works; (b) which limits in any substantial way, inconsistent with the Tender documents, the Employer's rights or the Tenderer's obligations under the Contract; or (c) whose rectification would affect unfairly the competitive position of other Tenderers presenting substantially responsive Tenders.
- 23.3 If a Tender is not substantially responsive, it will be rejected by the Employer, and may not subsequently be made responsive by correction or withdrawal of the nonconforming deviation or reservation.

24. **Correction of errors**

- 24.1 Tenders determined to be substantially responsive will be checked by the Employer for any arithmetic errors. Errors will be corrected by the Employer as follows:

- (a) where there is a discrepancy between the rates/percentage in figures and in words, the **words will govern**; and
- (b) where there is a discrepancy between "quoted rate" and "amount derived", the quoted rate will govern and the amount will be calculated accordingly.
- (c) If no percentage rate has been indicated either in words or figures, the percentage rate shall be considered at par and amount shall be calculated accordingly.
- (d) where there is a discrepancy between the unit rate/percentage and the line item total resulting from multiplying the unit rate by the quantity, the unit rate/percentage as quoted will govern, unless in the opinion of the Employer there is an obvious gross misplacement of the decimal point in the unit rate, in which case the line item total as quoted will govern and the unit rate / percentage will be corrected.
- (e) If more than one percentage is quoted, then the Tender submitted by the Tenderer will be rejected.

- 24.2 The amount stated in the Tender will be adjusted by the Employer in accordance with the above procedure for the correction of errors and shall be considered as binding upon the Tenderer. If the Tenderer does not accept the corrected amount the Tender will be rejected, and the Earnest Money Deposit shall be forfeited in accordance with Sub-Clause 14.8 of ITT.

25. **Evaluation and comparison of Tenders**

- 25.1 The Employer will evaluate and compare only the Tenders determined to be substantially responsive in accordance with ITT Clause 23. No Tender will be considered if complete requirements covered in the Schedule is not included in the Tender.
- 25.2 In evaluating the Tenders, the Employer will determine for each Tender the evaluated Tender Price by adjusting the Tender Price as follows:
- (a) Making any correction for errors pursuant to ITT Sub-clause 24; and
 - (b) Making appropriate adjustments to reflect discounts or other price modifications offered.

- 25.3 The Employer reserves the right to accept or reject any variation, deviation, or alternative offer. Variations, deviations, and alternative offers and other factors which are in excess of the requirements of the Tender documents or otherwise result in unsolicited benefits for the Employer shall not be taken into account in Tender evaluation.
- 25.4 The Tenders received will be evaluated by the Employer to ascertain the lowest acceptable Tender in the interest of the Employer, as specified in the specification and Tender documents. Evaluation criteria not mentioned herein but mentioned specifically in the technical specifications will be taken into consideration in the evaluation of offers.
- 25.5 The estimated effect of the price adjustment conditions, under relevant Clause of the General Conditions of Contract, during the implementation of the Contract, will not be taken into account in Tender Evaluation.
- 25.6 If the Tender of the successful Tenderer is seriously unbalanced in relation to the Employer's estimate of the cost of the work to be performed under the Contract, the Employer may require the Tenderer to produce detailed price analysis for any or all items of the Bill of Quantities, to demonstrate the internal consistency of those prices with the construction methods and schedule proposed. After evaluation of the price analysis, the Employer may require that the amount of the Performance Security set forth in ITT Clause 30 be increased at the expense of the successful Tenderer to a level sufficient to protect the Employer against financial loss in the event of default of the successful Tenderer under the Contract, subject to condition as specified in Special Conditions of Contract.

F. AWARD OF CONTRACT

26. Award criteria

- 26.1 Subject to ITT Clause 28, the Employer will award the Contract to the Tenderer whose Tender has been determined to be substantially responsive to the Tender documents and who has offered the lowest evaluated Tender Price, provided that such Tenderer has been determined to be
- (a) eligible in accordance with the provisions of ITT Clause 2, and
 - (b) Qualified in accordance with the provisions of ITT Clause 3.

27. Employer's right to vary Quantities during the Contract

- 27.1 The Employer reserves the right during the pendency of Contract to increase or decrease the quantity of the items originally specified in the Bill of Quantity without any change in unit price or other terms and conditions as defined GCC Clause 34 and the respective Special Conditions of Contract.

28. Employer's right to accept any Tender and to reject any or all Tenders

- 28.1 Notwithstanding ITT Clause 26, the Employer reserves the right to accept or reject any Tender, and to cancel the Tender process and reject all Tenders, at any time prior to the award of Contract, without thereby incurring any liability to the affected Tenderer/s or any obligation to inform the affected Tenderer/s of the grounds for the Employer's action.
- 28.2 BMRCL reserves the right to accept the Tender in part or full which is beneficial to BMRCL. BMRCL's decision in this regard shall be final and binding.



29. Notification of award and signing of Agreement

- 29.1 The Tenderer whose Tender has been accepted will be notified of the award by the Employer prior to expiration of the Tender validity period by cable, email or facsimile confirmed by registered letter. This letter (hereinafter and in the General Conditions of Contract called the "Letter of Acceptance") will state the sum that the Employer will pay the Contractor in consideration of the execution, completion, and maintenance of the Works by the Contractor as prescribed by the Contract (hereinafter and in the Contract called the "Contract Price").
- 29.2 The notification of award will constitute the formation of the Contract, subject only to the furnishing of a performance security in accordance with the provisions of ITT Clause 30.
- 29.3 The Agreement will incorporate all agreements between the Employer and the successful Tenderer within 30 days of receipt of LOA, the successful Tenderer will sign the Agreement and deliver it to the Employer.
- 29.4 Upon the furnishing of the Security Deposit by the Successful Tenderer, the Employer will promptly notify the other Tenderers that their Tenders have been unsuccessful and will discharge its Earnest Money Deposit, pursuant to ITT Clause 14.
- 29.5 The cost of stamp duties and similar charges imposed by law shall be borne by the contractor.

30. Security deposit / Performance Security

- 30.1 Within 20 days of receipt of the Letter of Acceptance, the successful Tenderer shall deliver to the Employer, a Security deposit in accordance with GCC Clause 25 and format given in **Proforma B of Section: 9** for an amount as specified in 'Appendix to Form of Tender' (Section 4).

30.1.1 Tenderer shall furnish an additional Performance Security for abnormally low quoted Tenders which shall be calculated as below:

- i) If the Tender price offered by the lowest Evaluated Tenderer is lower than 10% but Upto 20% of the Estimated cost, then the additional performance security shall be calculated @ 10% of the difference in the (a) Estimated cost (as mentioned in NIT) - 10% of the estimated cost and (b) the Tender price offered by the lowest evaluated Tenderer.
 - ii) If the Tender price offered by the lowest evaluated Tenderer is lower than 20% of the estimated cost then the additional performance security shall be calculated @ 15% of the difference in the (a) Estimated cost (as mentioned in NIT) - 10% of the estimated cost and (b) the Tender price offered by the lowest evaluated Tenderer.
- 30.2 Failure of the successful Tenderer to comply with the requirements of ITT Sub-Clause 30.1 shall constitute sufficient grounds for cancellation of the award and forfeiture of the Earnest Money Deposit..

31. Corrupt or Fraudulent practices

- 31.1 The BMRCL requires that the Tenderers observe the highest standard of ethics during the procurement and execution of such Government Financed Contracts. In pursuance of this policy, BMRCL :



(a) defines, for the purposes of this provision, the terms set forth as follows :

- (i) "Corrupt practice" means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement process or in Contract execution; and
- (ii) "Fraudulent practice" means any omission or misrepresentation of facts in order to influence a procurement process or the execution of a Contract to the detriment of BMRCL/Government, and includes collusive practice among Tenderers (prior to or after Tender submission) designed to establish Tender prices at artificial non-competitive levels and to deprive BMRCL of the benefits of free and open competition;

(b) will reject a proposal for award if it determines that the Tenderer recommended for award has engaged in corrupt or fraudulent practices in competing for the Contract in question;

(c) will declare a firm ineligible, either indefinitely or for a stated period of time, to be awarded a Government financed contract, if it at any time determines that the firm has engaged in corrupt or fraudulent practices in competing for, or in executing, a Government financed contract

31.2 Furthermore, Tenderers shall be aware of the provision stated in sub-clause 47.2 of the General Conditions of Contract.

32. One Tender per Tenderer

Each Tenderer shall submit only one Tender. A Tenderer who submits or participates in more than one Tender (other than as a sub-contractor or in cases of alternatives that have been permitted or requested) will cause all the proposals with the Tenderer's participation to be disqualified.

33. Site visit

The Tenderer at his own responsibility and risk is encouraged to visit and examine the Site of Works and its surroundings and obtain all information that may be necessary for preparing the Tender and entering into a contract for construction of the Works. The cost of visiting the Site shall be at the Tenderer's own expense.

34. Make in India Order

Orders issued by the Government of India regarding eligibility to participate and for purchase preference to "Local Suppliers" to encourage 'Make in India' and promote manufacturing and production of goods and services in India shall apply to this procurement.

The bidder shall be considered as "Class-I Local Supplier" only if all the Items declared as per the List at ANNEXURE-9 is meeting the minimum local content criteria i.e 50% as per the Clause No. 5 of the Order No. P-45021/2/2017-PP (BE II) dated 16.09.2020 of Department for Promotion of Industry and Internal Trade under the Ministry of Commerce and Industry, Government of India. Any deviation herein will result in the bidder being



considered as Class-II Local Supplier or Non-Local Supplier and will not be eligible for the MII Purchase preference.

35. **Purchase Preference**

Purchase Preference will be as per the terms of Clause-3A(c), Clause 5, Clause 6, Clause 9 of the Public Procurement (Preference to Make in India), Order No. P-45021/2/2017-PP(BE II) dated 16.09.2020 of Department for Promotion of Industry and Internal Trade under the Ministry of Commerce and Industry, Government of India

36. While all efforts have been made to avoid errors in drafting the Tender documents and the Tenderer is advised to check the same carefully and seek clarification within the scheduled period only. No claim on account of any errors detected in Tender document shall be entertained.

-- XXX --



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SECTION 3 : QUALIFICATION INFORMATION

- 1.0 The information to be filled in by the Tenderer hereunder will be used for purposes of evaluating the eligibility and qualification of the Tenderer as provided for in Clause 3.1 of the Instructions to Tenderers. This information will not be incorporated in the Contract.

1.1	Constitution or legal status of Tenderer	(Attach copy)
	Agency in which Registered (with Registration No.)	 (Attach Copy)
	Principal place of business:	

		Financial Year	Total Value of works for the year (Rs. Lakh)	Multiplication factor for updation value of work done to 2022-23	Total value of Works updated to 2022-23 (Rs. Lakh)
1.2	Total value of works (*) executed and payments received year wise in the last five years (in Rs. Lakhs) #	2018-19		1.31	
		2019-20		1.23	
		2020-21		1.14	
		2021-22		1.07	
		2022-23		1.00	

* Value of work as defined in ITT clause 3.

- Attach Certificate from practicing Chartered Accountant

- 1.3 Information on works which are yet to be completed and works for which Tenders have been submitted as on the date of this Tender.

(A) Existing commitments and on-going works:

Description of Work	Place & State	Contract No. & Date	Name and Address of Employer	Value of Contract (Rs. Lakh)	Stipulated period of completion	Value of works ** remaining to be completed (Rs. Lakh)	Anticipated date of completion
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)

** Attach certificates duly attested by the Employer or Engineer-in-Charge of the ongoing works.

(B) Works for which Tenders already submitted:

Description of Work	Place & State	Name and Address of Employer	Estimated value of works (Rs. Lakh)	Stipulated period of completion	Date when decision is expected	Remarks if any
(1)	(2)	(3)	(4)	(5)	(6)	(7)

.....

- 1.4 Name, address, and telephone, telex, and fax numbers of the Tenderers' bankers who may provide references if contacted by the Employer.

- 1.5 Work performed as Prime Contractor (in the same name) on works of similar nature during the last five years counted 28 days prior to the date of Tender Submission. [With respect to ITT Clause 3.4(b)].

Project Name	Name of Employer	Description of Work	Contract Number	Value of contract Rs. Lakhs	Date of issue of Work order	Specified period of completion	Actual date of completion	Remarks explaining reasons for delay in completion of work
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

- 1.6 The following items of equipment are considered essential for successfully carrying out the works. The Tenderer should furnish all the information listed below:

Sl No	Item of Equipment	Requirement	Owned		Hired		Remarks
			Capacity	Age/Condition	Capacity	Age/Condition	
1	Crimping Tool	02 Nos					
2	Drilling Machine	02 Nos					
3	Scaffolding materials, Ladders and other tools etc to cover 50Mtrs long and height as required.(Minimum 6.00M)	1 Set					

- 1.7 Reports on the financial standing of the Tenderer, such as balance sheet, Profit and Loss statements and Auditor's reports for the last five years; (Provisional Financial Statement are not acceptable).
- 1.8 Qualification and experience of the key technical and Management personnel in permanent employment with the Tenderer and those that are proposed to be deployed on this Contract, if awarded.
- 1.9 Not Used
- 1.10 Quantities of work executed as a Contractor (in the same name) during the last five years counted 28 days prior to the date of Tender Submission. [With respect to ITT Clause 3.4(c)].

Year	Name of Work	Name of Employer	Quantity of work performed ***	Remarks (Indicate
------	--------------	------------------	--------------------------------	-------------------



			Item	Qty	Contract reference)
2018-19					
2019-20					
2020-21					
2021-22					
2022-23					

*** items of works for which data is required should tally with that specified in ITT clause 3

- 1.11 Evidence of access to financial resources to meet the qualification requirement specified in ITT Clause 3.5 (b): Cash in hand, Letter of Credit, etc. List them below and attach certificate from the Banker in the suggested format as under:

BANKER'S CERTIFICATE

This is to certify that M/s. is a reputed company with a good financial standing. If the Contract for this work, namely "..... (name of the work)" is awarded to the above firm, we shall be able to provide overdraft / credit facilities to the extent of Rs. to meet the working capital requirements for executing the above Contract, Apart from the facilities provided to the contractor, if any

Sd/-

Name of the Bank, Senior Bank Manger

Address:

- 1.12 Information on litigations in which the Tenderer is involved

Employer	Other Party(ies)	Details of dispute	Amount involved	Remarks showing present status

.....

- 1.13 The proposed methodology and program of works, backed with equipment planning and deployment, duly supported with broad calculations and quality control procedures proposed to be adopted, justifying their capability of execution and completion of the work as per technical specifications within the stipulated period of completion as per key details.

SECTION 4 : FORM OF TENDER

Tender No: BMRCL/O&M/TELE&AFC/Surveillance/2023/02

Description of Work: **Upgradation of CCTV System and Comprehensive Annual Maintenance Contract**

To:

The Executive Director (O&M),
Bangalore Metro Rail Corporation Ltd (O&M Wing)
Admin Building, Baiyappanahalli Depot,
S V Road,
Bangalore – 560 038,
Karnataka, India.

Dear Sir / Madam,

Having examined and understood the Instructions to Tenderers, General Conditions of the Contract, Special Conditions of Contract, Technical Specifications and any other documents forming part of the Tender document issued under Tender Notification No **BMRCL/O&M/TELE&AFC/Surveillance/2023/02** dated 26-01-2024 including any addendum/amendments, the receipt of which is hereby duly acknowledged, I/We the undersigned, hereby submit the fully completed Tender documents in duplicate, which includes the following for the said works;

- a) First Cover : Earnest Money Deposit (EMD) / Tender Security
- b) Second Cover : Qualification cum Technical Package
- c) Third Cover : Financial Package

I/We hereby agree to execute the Contract in conformity with the Specifications & Conditions of Contract enumerated in the Tender documents, for the sum stated & quoted in the Tender or such other sums as may be ascertained in accordance with the Bill of Quantities which are made part of the Financial Package.

This Tender and your written acceptance of it shall constitute a binding Contract between us. We understand that you are not bound to accept the lowest or any tender you receive.

We undertake that, in competing for (and, if the award is made to us, in executing) the above Contract, we will strictly observe the laws against fraud and corruption in force in India namely "Prevention of Corruption Act 1988".

We hereby confirm that this Tender complies with the Tender validity and Earnest Money Deposit (EMD) required by the Tender documents.

We undertake, if our Tender is accepted, to execute the Works in accordance with the Stipulated Completion Date specified in the 'Appendix to Form of Tender'.



If our Tender is accepted, we will submit the Performance Security for a sum equivalent to **Three (03) percent** of the Contract Price for the due performance of the Contract, in the form as prescribed in the Clause 25 of GCC.

We agree to abide by this Tender for the Tender Validity Period specified in Clause 13 of the ITT and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

We confirm that we comply with the eligibility requirements as per ITT Clause 2 and clause 3 of the Tender documents.

Dated this day of 2023.

Yours faithfully,

(Signature) (in the capacity of)

Duly authorized to sign Tender for and on behalf of
"....."

(To be submitted duly printed, signed and stamped by the Authorized Signatory of Tenderer on Tenderer's letter pad)

APPENDIX TO FORM OF TENDER**SALIENT FEATURES OF CONTRACTS (CONTRACT DATA)**

Sl. No	Reference Contract clauses	Description
1.	Employer's Name & Address	Bangalore Metro Rail Corporation Ltd (O&M Wing), III Floor, BMTC Complex, K.H Road, Shanthinagar, Bangalore – 560 027, Karnataka, India
2.	Warranty (GCC clause 50)	The Warranty shall start from the date of acceptance by the Employer and shall continue until 12 months from that date of acceptance as in GCC clause 50.
3.	Validity of Tender (ITT clause 13)	180 days from the latest date of submission of Tenders as per ITT clause 13.
4.	Tender Security / Earnest Money Deposit (EMD) (See Clause 14 of ITT)	Tender Security/Earnest Money Deposit (EMD) of INR. INR 39,39,145/- (Indian Rupees Thirty Nine Lakhs Thirty Nine Thousand One Hundred and Forty Five only) in the form of Demand Draft / Pay Order / Banker's Cheque / Bank Guarantee in favour of the "Bangalore Metro Rail Corporation Ltd", preferably payable and extendable at Bangalore as defined in clause 14 of Instructions to Tenderers and shall have to be valid for 60 days beyond the validity of the Tender (i.e., (180+60) 240 days from the date of Tender submission).
5.	Contractor's Name & Address with telephone No and e-mail id	 (To be filled in by the Tenderer)



6.	Submission of queries and pre-bid meeting, date and time of Tender Submission and Tender opening, and Place	• Last date for submission of queries by Tenderers: Up to 17:30 Hrs (IST) on 18-02-2024 • Date of Pre-bid meeting : At 11:30 Hrs (IST) on 17-02-2024 • Date for Tender Submission: From 11:00 Hrs to 15:00 Hrs (IST) on 27-02-2024. • Date for Tender Opening: At 15:30 Hrs (IST) on 27-02-2024. • Place: Office of The Executive Director (O&M), Bangalore Metro Rail Corporation Ltd (O&M Wing) Admin Building, Baiyappanahalli Depot, S V Road, Bangalore – 560 038, Karnataka, India.
7.	The Work consists of	Upgradation of the CCTV System as per the specifications given in the Technical Specification and the Comprehensive Annual Maintenance Contract
8.	Start Date	The date of signing of 'Contract Agreement' (CA).
9.	Work Completion Period for Supply, Installation, Testing and Commissioning	04 Months from the Date of Signing of the Contract Agreement for Reach 1 stations

Sl. No.	Reference Contract clauses	Description
10.	The following documents also form part of the Contract (See Clause 2.2 of GCC)	(1) Contract Agreement (2) Letter of Acceptance, Notice to Proceed with the works (3) Instruction to Tenderers/ Bidders (4) General Conditions of Contract (5) Special Conditions of Contract (6) Form of Tender / Bid Form (7) Technical Specifications including scope of work (8) Bill of quantities (9) Drawings (10) Contractor's Proposals (11) All correspondence between the Tenderer and BMRCL from the date of issue of NIT and the date of issue of the LOA. (12) Any other document forming part of the Contract.
11.	The Site Data	BMRCL Metro Stations & Depots



12.	Amount of Performance Security (See Clause 25 of GCC)	a. 3 % of the Contract Value in INR. In the event of variations during the execution of the Contract which result in payments to the Contractor over and above the original contract price, the Performance Security shall be suitably adjusted at every 6 month at the request of the Employer. b. In the event of additional installations carried out during the 5 year contract period, the Performance Security shall be 3% of the cost of additional installations executed as per the unit rates quoted in vol2. Financial Package c. 3% of the CAMC cost (In pursuant with Clause 4.34 of Chapter 7-Technical Specifications) The Performance Security shall be in the form of Demand Draft / Pay Order / Banker's cheque / Bank Guarantee shall be drawn on and payable / extendable at a designated branch in Bangalore / RTGS/NEFT transfer to BMRCL bank account.
13.	Liquidated Damages (See Clause 40 of GCC)	The liquidated damages for the whole of the works are 0.1% of the Contract price per day. The maximum amount of liquidated damages for the whole of works is Ten percent (10%) of final Contract price.
14.	Program & Methodology (see clause 21 of GCC)	Work program shall be submitted within 15 days of issue of LoA or earlier as required by the Employer/Engineer.
15.	Payment upon Termination – Computation of additional cost to the Employer (GCC Clause 47.1)	The percentage to apply to the value of the work not completed representing the Employer's additional cost for completing the Works shall be <u>30 percent</u> .
16.	AS BUILT DRAWINGS (If applicable as per GCC Clause 45)	1. The date by which “as-built” drawings (in scale A2) in 2 sets are required is within 30 days of issue of certificate of completion of Whole or Section of the Work as the case may be. 2. The date by which Operating and Maintenance Manuals are required is within 30 days of issue of certificate of completion of Whole or Section of the Work as the case may be. 3. The amount to be withheld for failing to supply “as built” drawings or supply of Operation and Maintenance Manuals by the date required is 1% of the Final Contract Value.



Sl. No	Reference Contract clauses	Description		
		Sl. No	Type of Cover	Minimum cover for Insurance
17.	Insurance (GCC Clause 26)	(i)	Works and of Plant and materials	The Sum stated in the Agreement plus 20%
		(ii)	Loss or damage to equipment	Full replacement cost
		(iii)	Loss or damage to property	Full replacement cost
		(iv)	Personal injury or death Insurance (a) For Third Party	For normal works it could be Rs. 20 Lakh to cover 4 persons @ 5 Lakh each.
			(b) For Contractor's Employees or labour	In accordance with the statutory requirements applicable to Karnataka.
18.	The Schedule of Key and Critical Equipment to be deployed on the work as per agreed program of Works (GCC Clause 21).	Not Applicable		
19.	Duration of the CAMC Contract	5 Years from the date of signing of the CAMC contract agreement for Reach 1 stations(Extendable to 10 Years)		
20.	BMRCL O&M Bank Account Details	Bank Name: Bank of India Bank Account Number: 840420110000739 IFSC Code: BKID0008404 Branch: Cantonment branch, bangalore Account type: Current Account		



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SECTION: 5 GENERAL CONDITIONS OF CONTRACT**A. General****1. Definitions**

1.1 Terms which are defined in the 'Appendix to Form of Tender' are not also defined in the General Conditions of Contract but keep their defined meanings. Bold letters are used to identify defined terms.

- a. **"Bill of Quantities"** means the priced and completed Bill of Quantities forming part of the Tender.
- b. The **"Completion Date"** is the date of completion of the whole of the Works certified by the Employer in accordance with Sub Clause 42.1 of GCC.
- c. The **"Contract"** is the Contract between the Employer and the Contractor to execute, complete and maintain the Works. It consists of the documents listed in GCC Clause 2.2.;
- d. The **"Contractor"** is a person or corporate body whose Tender to carry out the Works has been accepted by the Employer. It means the person, firm or company with whom the order of the Works is placed and shall be deemed to include the Contractor's successors (approved by the Employer), representatives, heirs, executors and administrators, as the case may be unless excluded by the terms of the contract;
- e. The **"Contractor's Tender"** is the completed Tender document submitted by the Contractor to the Employer.
- f. The **"Contract Value"** or **"Contract Price"** means the price payable to the Contractor under the Contract for the full and proper performance of its contractual obligations;
- g. **"Days"** are calendar days; **"months"** are calendar months.
- h. A **"Defect"** is any part of the Works not completed in accordance with the Contract.
- i. The **"Warranty"** is the period mentioned in the 'Appendix to Form of Tender' and calculated from the Completion Date in accordance with Clause 50 of GCC.
- j. **"Drawing"** means the drawing or drawings specified in or annexed to the specification;
- k. The **"Employer"** or **"BMRCL"** means the Bangalore Metro Rail Corporation Limited or the person named as such in the Tender document and includes the legal successors or permitted assigns of the Employer,
- l. **"Engineer"** means any person/party nominated or appointed from time to time by the Employer to act as the Engineer for the purposes of the Contract and notified as such in writing to the Contractor.



- m. **"Engineer's representative"** means any person nominated by Engineer with the approval of the Employer who shall exercise the authority of the Engineer to the extent notified by the Engineer.
- n. **"Equipment"** is the Contractor's machinery and vehicles brought temporarily to the Site to construct/ execute the Works.
- o. The **"Initial Contract price"** is the Contract Price listed in the Employer's Letter of Acceptance.
- p. **"Letter of Acceptance"** means the letter or memorandum communicating to the Successful Tenderer the acceptance of his Tender and includes other communication modes included in the Instructions to Tenderers.
- q. **"Materials"** are all supplies, including consumables, used by the contractor for incorporation in the Works.
- r. **"Notice to Proceed"** means the notice issued by the Employer to the Contractor to proceed with the works at the site.
- s. **"Plant"** is any integral part of the Works which is to have a mechanical, electrical, electronic or chemical or biological function.
- t. The **"Project Site"** or **"Site"** means the place specified in the contract at which any work is required to be executed by the Contractor under the contract or any other place approved by the Employer for the purpose.
- u. **"Appendix to Form of Tender"** is the Salient Features of Contract that defines the documents and other information which comprise the Contract.
- v. **"Signed"** includes stamped, except in the case of acceptance of Tender or any amendment thereof;
- w. **"Specification"** means the Specification of the Works included in the Contract and any modification or addition made or approved by the Employer.
- x. The **"Start Date"** shall be the date of issue of 'Letter of Acceptance' (LOA) or the date specified in the 'Notice to Proceed', as the case may be.
- y. The **"Stipulated Completion Date"** is the date on which it is intended that the Contractor shall complete the Works. The Stipulated Completion Date is specified in the 'Appendix to Form of Tender'. The Stipulated Completion Date may be revised only by the Employer by issuing an extension of time.
- z. A **"Subcontractor"** is a person or corporate body who has a Contract with the Contractor to carry out a part of the work in the Contract which includes work on the Site.
- aa. A **"Variation"** is an instruction given by the Employer which varies the Works.
- bb. **"Works"** means what the contractor requires the contractor to construct, install and turn over to the Employer, as defined in the contract Data/ Description of the work / Technical specifications / Scope of works.



2. Interpretation

2.1 In interpreting these General Conditions of Contract and Special Conditions of Contract, singular also means plural, male also means female or neuter, and the other way around. Headings have no significance. Words have their normal meaning under the language of the Contract unless specifically defined. "Tender" / "Tendering" / "Tenderer" shall also mean "Bid" / "Bidding" / "Bidder". "Offer" also mean Tender / Bid.

2.2 The documents forming the Contract shall be interpreted in the following order of priority:

- (1) Contract Agreement
- (2) Letter of Acceptance, notice to proceed with the works
- (3) Bill of quantities
- (4) Technical Specifications
- (5) Drawings
- (6) Special Conditions of Contract
- (7) General Conditions of Contract
- (8) Contractor's Proposal and
- (9) Any other document listed as forming part of the Contract.

3. Law governing Contract

3.1 The law governing the Contract is the Laws of India supplanted by the Karnataka Local Acts.

4. Employer's decisions

4.1 Except where otherwise specifically stated, the Employer will decide contractual matters between the Employer and the Contractor.

5. Delegation

5.1 The Employer may delegate any of his duties and responsibilities to other people after notifying the Contractor and may cancel any delegation after notifying the Contractor.

6. Communications

6.1 Communications between parties which are referred to in the conditions are effective only when in writing. A notice shall be effective only when it is delivered (in terms of Indian Contract Act).

7. Not Used**8. Other Contractors**

8.1 The Contractor shall cooperate and share the Site with other contractors, public authorities, utilities, and the Employer.

9. Personnel:

- 9.1 The Contractor shall, unless otherwise provided in the Contract, make his own arrangements for the engagement of all staff and labour, local or other, and for their payment, housing, feeding and transport.
- 9.2 The Contractor shall employ the technical personnel (of number and qualifications) as may be stipulated by BMRCL from time to time during the execution of the work. The technical staff so employed shall be available at site as may be stipulated by the Employer.
- 9.3 If the Employer asks the Contractor to remove a person who is a member of the Contractor's staff or his work force stating the reasons, the Contractor shall ensure that the person leaves the Site within seven days and has no further connection with the work in the Contract.

9.4 Compliance with Labour Regulations

- 9.4.1 The Contractor shall, if required by the Employer, deliver to the Employer a return in detail, in such form and at such intervals as the Employer may prescribe, showing the staff and the numbers of the several classes of labour from time to time employed by the Contractor on the Site and such other information as the Employer may require.

10. Employer's and Contractor's risks

- 10.1 The Employer carries the risks which this Contract states are Employer's risks, and the Contractor carries the risks which this Contract states are Contractor's risks.

11. Employer's risks

- 11.1 The Employer is responsible for the excepted risks which are:

- (a) Rebellion, riot commotion or disorder unless solely restricted to employees of the Contractor or his Subcontractors arising from the conduct of the Works; or
- (b) a cause due solely to the design of the Works, other than the Contractor's design; or
- (c) any operation of the forces of nature (in so far as it occurs on the Site) which an experienced Contractor:
 - (i) Could not have reasonably foreseen; or
 - (ii) Could reasonably have foreseen, but against which he could not reasonably have taken at least one of the following measures;
 - (A) Prevent loss or damage to physical property from occurring by taking appropriate measures or
 - (B) Insure against such loss or damage."



12. Contractor's risks

- 12.1 All risks of loss of or damage to physical property and of personal injury and death which arise during and in consequence of the performance of the Contract other than the excepted risks are the responsibility of the Contractor.

13. Not used**14. Contractor to execute the Works**

- 14.1 The Contractor shall execute the Works in accordance with the Specification and Drawings.

15. The Works to be completed by the Stipulated Completion Date

- 15.1 The Contractor may commence execution of the Works on the Start Date and shall carry out the works in accordance with the program submitted by the Contractor, as updated with the approval of the Employer, and complete them by the Stipulated Completion Date.

16. Safety

- 16.1 The Contractor shall be responsible for the safety of all activities on the Site.

17. Discoveries

- 17.1 Anything of historical or other interest or of significant value unexpectedly discovered on the Site is the property of the Employer. The Contractor is to notify the Employer of such discoveries and carry out the Employer's instructions for dealing with them.

18. Possession of the Site

- 18.1 The Employer shall give possession of all parts of the Site to the Contractor. If possession of a part is not given by the date stated in the Contract or Notice to proceed, the reasonable extension of time may be given. However, no monetary claims whatsoever shall be paid to the Contractor or entertained on this account.

19. Access to the Site

- 19.1 The Contractor shall allow the Employer and any person authorized by the Employer access to the Site, to any place where work in connection with the Contract is being carried out or is intended to be carried out and to any place where materials or plant are being manufactured / fabricated / assembled for the works.

20. Instructions

- 20.1 The Contractor shall carry out all instructions of the Employer which comply with the applicable laws where the Site is located.

B. Time Control**21. Program**

- 21.1 Within the time stated in the 'Appendix to Form of Tender', the Contractor shall submit to the Employer for approval a Program showing the general methods, arrangements, order, and timing for all the activities in the Works within 15 days from the date of issue of LOA or earlier as required by the Employer.
- 21.2 The Employer's approval of the Program shall not alter the Contractor's obligations. The Contractor may revise the Program and submit it to the Employer again at any time. A revised Program is to show the effect of Variations.

22. Extension of the Time for Completion

- 22.1 The Employer shall extend the Time for Completion of the works if a Variation is issued and which makes it impossible for Completion to be achieved by the Stipulated Completion Date.
- 22.2 The Employer shall decide whether and by how much to extend the Stipulated Completion Date within 21 days of the Contractor asking the Employer for a decision upon the effect of a Variation and submitting full supporting information.

23. Delay ordered by the Employer

- 23.1 The Employer may instruct the Contractor to delay the start or progress of any activity within the Works. However, no monetary claims whatsoever shall be paid to the Contractor or entertained on this account.

24. Management meetings

- 24.1 The Employer may require the Contractor to attend a Management meeting. The business of a Management meeting shall be to review the progress achieved and the plans for remaining work.
- 24.2 The responsibility of the parties for actions to be taken is to be decided by the Employer either at the Management meeting or after the management meeting and stated in writing to be distributed to all who attended the meeting.

25. Performance Security / Security Deposit

- 25.1 Within 20 days of receipt of notification communicated by the Employer by issue of "Letter of Acceptance", the Contractor shall furnish a Performance Security (including additional security for unbalanced Tenders, if required) for an amount as specified in **Appendix to Form of Tender (Section 4)** in one of the following forms:

(a) A crossed Demand Draft / Pay Order / Banker's cheque in favour of the "**Bangalore Metro Rail Corporation Ltd.**" from an Indian Scheduled Bank (excluding Cooperative Banks)



or from a Scheduled Foreign Bank as defined in Section 2(e) of RBI Act 1934 read with Second Schedule **payable at Bangalore.**

(Or)

(b) An irrevocable Bank Guarantee issued from an Indian Scheduled Bank (excluding Cooperative Banks) or from a Scheduled Foreign Bank as defined in Section 2(e) of RBI Act 1934 read with Second Schedule preferably drawn on and **payable and extendable at a designated branch in Bangalore** (*specify the name of the branch and address*) in the form given in **Proforma B of Section 9** to the Tender documents. However, 'Performance Security' Bank Guarantee format is also available in <https://tenderb.bmrc.co.in>

(Or)

(c) RTGS / NEFT transfer to the BMRCL Bank Account number indicated in Appendix to Form of Tender (Section 4).

In case furnishing of an acceptable Performance Security is delayed by the Contractor beyond the period provided in GCC Clause 25.1, the Employer may forfeit the Earnest Money Deposit / Tender Security.

- 25.2 On the performance and completion of the Contract in all respects the Performance Security will be converted into Guarantee against warranty obligations of the Contractor. The Performance Security shall be valid up to 03 months beyond the Warranty Period for the Entire Work and the additional security for unbalanced Tenders shall be valid until a date 30 days from the date of issue of the certificate of completion. The Performance Security will be returned within 03 months after satisfactory completion of Warranty Period.
- 25.3 The Employer shall be entitled and it shall be lawful on his part to forfeit the amount of the Performance Security in whole or in part in the event of any default, failure or neglect on the part of the Contractor in the fulfilment or performance in all respects of the Contract under reference or any other Contract with the Employer.
The Employer shall also be entitled to deduct from the amount of the Performance Security any loss or damage which the Employer may suffer or be put by reason of or due to any act or other default, recoverable by the Employer from the Contractor in respect of the Contract under reference or any other Contract.
On occurrence of either of the aforesaid events, the Employer shall call upon the Contractor to maintain the amount of the Performance Security as its original limit by furnishing fresh Bank Guarantee of additional amount, provided further that the Employer shall be entitled to recover any such claim from any sum then due or which at any time thereafter may become due to the Contractor under this or any other Contracts with the Employer.
- 25.4 The Performance Security shall remain in full force and effect during the period that would be taken for satisfactory performance/ completion of the Works and fulfilment in all respects of the Contract and shall in the first instance be valid until 3 months beyond the Warranty Period. Before the expiry of the date of validity of the Performance Security, the Contractor on being called upon by the Employer from time to time shall obtain from the Guarantee Bank, extension of time for validity thereof for a period of six months, on each occasion. The extension or extensions aforesaid, executed on non-judicial stamp paper of appropriate value must reach the Employer at least thirty days before the date of expiry of the Performance Security on each occasion.
- 25.5 As and when an amendment is issued to the Contract, the Contractor shall, within 15 days of the receipt of such an amendment furnish to the Employer an amendment to the Performance Security rendering the same valid for the Contract as amended and up to 3



months beyond amended completion of Warranty Period. All expenses of this shall be borne by the Contractor.

- 25.6 The Performance Security and or any amendment thereto shall be executed on a Non-Judicial stamp paper of requisite money value in accordance with the laws of the country in which the same is/are executed by the party competent to do so.
- 25.7 If the Contractor, having been called upon by the Employer to furnish Performance Security, fails to furnish the same, it shall be lawful for the Employer :
- i) to recover from the Contractor the amount of Performance Security by deducting the amount from the pending bills of the Contractor under any Contract with the Employer or the government or any other person Contracting through the Employer or otherwise however, OR
 - ii) to cancel the Contract or any part thereof and to execute or authorize to execution of the Works at the risk and cost of the Contractor and in that event the provisions of clause GCC 46 & 47 of GCC shall apply as far as applicable.

26. Insurance

- 26.1 The Contractor shall prior to commencing the works, effect and thereafter maintain insurances , in the joint names of the Employer and the Contractor, (cover from the first working day after the Start Date to the end of Warranty Period), in the amounts stated in the 'Appendix to Form of Tender':
- (a) for loss of or damage to the Works, Plants and Materials and the Contractor's equipment;
 - (b) for liability of both Parties for loss, damage, death and injury to third parties or their property arising out of the Contractor's performance of the Contract including the Contractor's liability for damage to the Employer's property other than the Works and
 - (c) for liability of both Parties and of any Employer's representative for death and injury to the Contractor's personnel except to the extent that liability arises from the negligence of the Employer, any Employer's representative or their Employees.
- 26.2 Policies and certificates for insurance shall be delivered by the Contractor to the Employer for his approval before the Start Date. All such insurance shall provide for compensation to be payable to rectify the loss or damage incurred. All payments received from insurers relating to loss or damage shall be held jointly by the Parties and used for the repair of the loss or damage or as compensation for loss or damage that is not to be repaired.
- 26.3 If the Contractor fails to effect or keep in force any of the insurances referred to in the previous sub- clauses or fails to provide satisfactory evidence, policies or receipts, the Employer may without prejudice to any other right or remedy, effect insurance for the cover relevant to such default and pay the premiums due and recover the same as a deduction from any other monies due to the Contractor. If no payment is due, the payment of the premiums shall be a debt due.
- 26.4 Alterations to the terms of insurance shall not be made without the approval of the Employer.



26.5 Both Parties shall comply with any conditions of the insurance policies.

C. Quality Control

27. Identifying defects

27.1 The Employer shall check the Contractor's work and notify the Contractor of any Defects that are found. Such checking shall not affect the Contractor's responsibilities. The Employer may instruct the Contractor to search for a Defect and to uncover and test any work that the Employer considers may have a Defect.

28. Tests

28.1 If the Employer instructs the Contractor to carry out a test not specified in the Specification to check whether any work has a Defect and the test shows that it has a defect, the Contractor shall pay for the test and any samples. If there is no defect, the testing charges shall be borne by the Employer.

29. Correction of Defects

29.1 The Employer shall give notice to the Contractor of any Defects before the end of the Warranty Period, which begins at Completion and is defined in the 'Appendix to Form of Tender'. The Warranty Period shall be extended for as long as Defects remain to be corrected.

29.2 Every time notice of a Defect is given, the Contractor shall correct the notified Defect within the length of time specified by the Employer's notice.

30. Uncorrected defects

30.1 If the Contractor has not corrected a Defect within the time specified in the Employer's notice, the Employer will assess the cost of having the Defect corrected, and the Contractor will pay this amount or will be recovered from any amount due to the Contractor from the Employer including Performance Security.

31. Inspections and Tests

31.1 The Employer or its representative shall have the right to inspect and/or to test the materials or works to confirm their conformity to the Contract specifications at no extra cost to the Employer. Special Conditions of Contract and the Technical Specifications shall specify what inspections and tests the Employer requires and where they are to be conducted. The Employer shall notify the Contractor in writing in a timely manner of the identity of any representatives retained for these purposes.

31.2 Should any inspected or tested materials fail to conform to the specifications, the Employer may reject the materials or Works and the Contractor shall either replace the rejected materials or make alterations /rectifications necessary to meet specification requirements free of cost to the Employer.

31.3 The Employer's right to inspect, test and where necessary, reject the materials or Works at Project Site shall in no way be limited or waived by reason of the materials or Works having



previously been inspected, tested and passed by the Employer or its representative prior to the dispatch of the materials.

- 31.4 Nothing in GCC Clause 31 shall in any way release the Contractor from any warranty or other obligations under this Contract.

32. Acceptance Certificates:

On successful completion of acceptability test, receipt of deliverables etc, and after the Employer is satisfied with the completion of the Works, the Acceptance Certificate signed by the Contractor and the representative of the Employer will be issued. The date on which such certificate is signed shall be deemed to be the date of successful acceptance of the Works.

D. Cost Control

33. Bill of Quantities (BOQ)

- 33.1 The BOQ shall contain items for Surveillance System including installation, testing, and commissioning work (if any) to be done by the Contractor.
- 33.2 The BOQ is used to calculate the Contract Price. The Contractor is paid for the quantity of the work done at the rate in the BOQ for each item.

34. Variations

- 34.1 The Employer shall have power to order the Contractor to do any or all of the following as considered necessary or advisable during the progress of the work by him;
- (a) Increase or decrease of any item of work included in the Bill of Quantities (BOQ);
 - (b) Omit any item of work;
 - (c) Change the character or quality or kind of any item of work;
 - (d) Change the levels, lines, positions and dimensions of any part of the work;
 - (e) Execute additional items of work of any kind necessary for the completion of the works; and
 - (f) Change in any specified sequence, methods or timing of construction of any part of the work.
- 34.2 The Contractor shall be bound to carry out the work in accordance with any instructions in this connection, which may be given to him in writing by the Employer and such alteration shall not vitiate or invalidate the contract.
- 34.3 Variations shall not be made by the Contractor without an order in writing by the Employer, provided that no order in writing shall be required for increase or decrease in the quantity of an item appearing in the BOQ so long as the work executed conforms to the approved drawings.



- 34.4 The Contractor shall not make any alteration and/or modification of the Works, unless and until the Engineer instructs or gives consent to a Variation. If the Construction and/or Manufacture Documents or Works are not in accordance with the Contract, the rectification shall not constitute a Variation.

35. Payments for Variations

- 35.1 Payment for increase in the quantities of an item in the BOQ up to 25% of that provided in the Bill of Quantities shall be made at the rates quoted by the Contractor..
- 35.2 For quantities in excess of 125% of the tendered quantity of an item as given in the BOQ, the Contractor shall be paid at the rate entered in or derived from the Schedule of Rates (applicable for the area of the work and current at the time of award of contract) plus or minus the overall percentage of the original tendered rates over the current Schedule of Rates prevalent at the time of award of Contract.
- 35.3 If there is no rate for the additional, substituted or altered item of the work in the BOQ, efforts would be made to derive the rates from those given in the BOQ or the Schedule of Rates (applicable for the area of the work and current at the time of award of contract) and if found feasible, the payment would be made at the derived rate for the item plus or minus the overall percentage of the original tendered rates over the current Schedule of Rates prevalent at the time of award of contract.
- 35.4 If the rates for additional, substituted or altered item of work cannot be determined either as at 35.1, 35.2 or 35.3 above, the Contractor shall be requested to submit his quotation for the items supported by analysis of the rate or rates claimed, within 7 days.
- 35.5 If the Contractor's quotation is determined unreasonable, the Employer may order the Variation and make a change to the Contract Price which shall be based on Employer's own forecast of the effects of the Variation on the Contractor's costs.
- 35.6 Not Used
- 35.7 Under no circumstances the Contractor shall suspend the work on the plea of non-settlement of rates for items falling under this Clause.
- 35.8 The Rates Quoted for the BOQ items shall remain valid for a period of 5 Years from the date of award of the contract. BMRCCL shall at the rates quoted by the contractor, continue to procure the BOQ items during the 5 Year period(extendable to 10 Years) as and when required under a separate variation order subject to a maximum of 25% of the Total contractual value finalised under this tender in line with the guidelines of the KPPP act.

36. Submission of bills for payment

- 36.1 The Contractor shall submit to the Employer bills of the value of the work completed less the cumulative amount paid previously.
- 36.2 The Employer shall check the Contractor's bill and determine the value of the work executed which shall comprise of;



- (i) value of the quantities of the items in the BOQ completed and
- (ii) Valuation of Variations.

36.3 The Employer may exclude any item paid in a previous bill or reduce the proportion of any item previously paid in the light of later information.

37. Payments

37.1 Payments shall be adjusted for deductions for advance payments, if any, other recoveries in terms of Contract and taxes, at source, as applicable under the law. The Employer shall pay the Contractor within 60 days of submission of complete and valid Bill without any deficiency. The Contractor shall be liable to pay liquidated damages for shortfall in progress

37.2 Items of the Works for which no rate or price has been entered in will not be paid for by the Employer and shall be deemed covered by other rates and prices in the Contract.

38. Not Used

39. Taxes & Duties

39.1 The Contract Price quoted by the Contractor shall be in accordance with the respective Special Conditions of the Contract and the Employer will perform such duties in regard to the deduction of taxes at source as per applicable law.

40. Liquidated damages

40.1 The Contractor shall pay liquidated damages to the Employer at the rate per day stated in the 'Appendix to Form of Tender' for each day that the Completion Date is later than the Stipulated Completion Date (for the whole of the Works or the milestone as stated in the 'Appendix to Form of Tender'). The total amount of liquidated damages shall not exceed the amount defined in the 'Appendix to Form of Tender'. The Employer may deduct liquidated damages from payments due to the Contractor. Payment of liquidated damages does not affect the Contractor's liabilities.

40.2 If the Stipulated Completion Date is extended after liquidated damages have been paid, the Employer shall correct any overpayment of liquidated damages by the Contractor by adjusting the next payment of bill.

41 Cost of repairs

41.1 Loss or damage to the Works or Materials to be incorporated in the Works between the Start Date and the end of the Warranty Period shall be remedied by the Contractor at the Contractor's cost if the loss or damage arises from the Contractor's acts or omissions.

E. Finishing the Contract

42 Completion

42.1 The Contractor shall request the Employer to issue a Certificate of Completion of the Works and the Employer will do so upon deciding that the Work is completed.



43 Taking over

- 43.1 The Employer shall take over the Site and the Works within seven days of issuing a Certificate of Completion.

44 Final Bill / Account

- 44.1 The Contractor shall supply to the Employer a detailed account of the total amount that the Contractor considers payable under the Contract before the end of the Warranty Period. The Employer shall issue a Warranty Certificate and certify any final payment that is due to the Contractor within 90 days of receiving the Contractor's Final Bill / Account, if it is correct and complete. If it is not, the Employer shall issue within 90 days a Schedule that states the scope of the corrections or additions that are necessary. If the Final Bill / Account is still unsatisfactory after it has been resubmitted, the Employer shall decide on the amount payable to the Contractor and make payment within 60 days of receiving the Contractor's revised Final Bill / Account.

45 Not used**46 Termination**

- 46.1 The Employer may terminate the Contract if the Contractor causes a fundamental breach of the Contract.
- 46.2 Fundamental breaches of Contract include, but shall not be limited to the following:
- (a) The Contractor stops work for 45 days when no stoppage of work is shown on the current Program and the stoppage has not been authorized by the Employer;
 - (b) the Contractor becomes bankrupt or goes into liquidation other than for a reconstruction or amalgamation;
 - (c) the Employer gives Notice that failure to correct a particular Defect is a fundamental breach of Contract and the Contractor fails to correct it within thirty (30) days of receipt of notice of failure from BMRCL or within such further time period as BMRCL may have subsequently approved in writing ;
 - (d) the Contractor does not maintain safety and security which is required;
 - (e) the Contractor has delayed the completion of works by the number of days for which the maximum amount of liquidated damages can be paid as defined in the 'Appendix to Form of Tender'; and
 - (f) if the Contractor, in the judgment of the Employer has engaged in corrupt or fraudulent practices in competing for or in the executing the Contract.

For the purpose of this paragraph:

- (i) "Corrupt practice" means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement process or in Contract execution.

- (ii) "Fraudulent practice" means any omission or misrepresentation of facts in order to influence a procurement process or the execution of a Contract to the detriment of the Borrower, and includes collusive practice among Tenderers (prior to or after Tender submission) designed to establish Tender prices at artificial non-competitive levels and to deprive the Borrower of the benefits of free and open competition."

46.3 When either party to the Contract gives notice of a breach of Contract to the Employer for a cause other than those listed under Sub Clause 46.2 above, the Employer shall decide whether the breach is fundamental or not.

46.4 Notwithstanding the above, the Employer may terminate the Contract for convenience.

46.5 If the Contract is terminated, the Contractor shall stop work immediately, make the Site safe and secure and leave the Site as soon as reasonably possible.

47 Payment upon Termination

47.1 If the Contract is terminated because of a fundamental breach of Contract by the Contractor, the Employer shall prepare bill for the value of the work done less advance payments received up to the date of the bill, less other recoveries due in terms of the Contract, less taxes due to be deducted at source as per applicable law and less the percentage to apply to the work not completed as indicated in the 'Appendix to Form of Tender'. Additional Liquidated Damages shall not apply. If the total amount due to the Employer exceeds any payment due to the Contractor, the difference shall be a debt payable to the Employer.

47.2 If the Contract is terminated at the Employer's convenience or because of a fundamental breach of Contract by the Employer, the Employer shall prepare bill for the value of the work done, the reasonable cost of removal of Equipment, repatriation of the Contractor's personnel employed solely on the Works, and the Contractor's costs of protecting and securing the Works and less advance payments received up to the date of the certificate, less other recoveries due in terms of the Contract, and less taxes due to be deducted at source as per applicable law and make payment accordingly.

48 Property

48.1 All materials on the Site, Plant, Equipment, Temporary Works and Works are deemed to be the property of the Employer, if the Contract is terminated because of a Contractor's default.

49 Release from performance

49.1 If the Contract is frustrated by any event entirely outside the control of either the Employer or the Contractor, the Employer shall certify that the Contract has been frustrated. The Contractor shall make the Site safe and stop work as quickly as possible after receiving this certificate and shall be paid for all work carried out before receiving it and for any work carried out afterwards to which commitment was made.



F. OTHERS**50 Warranty Period**

- 50.1 The Contractor warrants that all Works executed under this Contract shall have no defect arising from materials or workmanship (except when the material is required by the Employer's Specifications) or from any act or omission of the Contractor, that may develop under normal use of the supplied materials or the Works in the conditions prevailing in the country of final destination.
- 50.2 This warranty shall remain valid for a period specified in Appendix to Form of Tender after the materials or Works or any portion thereof as the case may be, have been delivered to and accepted at the final destination indicated in the Contract. The Contractor shall, in addition, comply with the performance and/or consumption guarantees specified under the Contract. If for reasons attributable to the Contractor, these guarantees are not attained in whole or in part, the Contractor shall at its discretion either:
- a) make such changes, modifications, and/or additions to the Works or any part thereof as may be necessary in order to attain the Contractual guarantees specified in the Contract at its own cost and expense and to carry out further Performance Tests in accordance to respective Special Conditions of Contract / Technical Specification; OR
 - b) pay liquidated damages to the Employer with respect to the failure to meet the Contractual guarantees. The rate of these liquidated damages shall be as per GCC clause 40 or respective Special Conditions of Contract or as specified in the Technical Specifications.
- 50.3 The Employer shall promptly notify the Contractor in writing of any claims arising under this warranty.
- 50.4 Upon receipt of such notice, the Contractor shall, within the period of 3 days and with all reasonable speed, repair or replace the defective Works or parts thereof, free of cost at the ultimate destination. In the event of any correction of defects or replacement of defective material during the Warranty period, the Warranty for the corrected or replaced material shall be extended to a further period from the date of replacement/repair/renewal.
- 50.5 If the Contractor, having been notified, fails to remedy the defect(s) within 3 days, the Employer may proceed to take such remedial action as may be necessary, at the Contractor's risk and expense and without prejudice to any other rights which the Employer may have against the Contractor under the Contract.

51 Force Majeure

- 51.1 Notwithstanding the provisions of GCC Clauses 21, 22, 23, the Contractor shall not be liable for forfeiture of its performance security, liquidated damages or termination for default, if and to the extent that, its delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.
- 51.2 For purposes of this Clause, "Force Majeure" means an event beyond the control of the Contractor and not involving the Contractor's fault or negligence and not foreseeable. Such events may include, but are not limited to, acts of the Employer either in its sovereign or



Contractual capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and freight embargoes.

- 51.3 If a Force Majeure situation arises, the Contractor shall promptly notify the Employer in writing of such conditions and the cause thereof. Unless otherwise directed by the Employer in writing, the Contractor shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

52 Procedure for Resolution of Disputes

- 52.1 The Employer and the Contractor shall make every effort to resolve amicably through negotiation any disagreement or dispute arising between them under or in connection with the Contract.
- 52.2 If the Contractor is not satisfied with the decision taken by the Employer, the dispute shall be referred by either party to Arbitration within 30 days of the notification of the Employer's decision.
- 52.3 If neither party refers the dispute to Arbitration within the above 30 days, the Employer's decision will be final and binding.
- 52.4 The Arbitration shall be conducted in accordance with the arbitration procedure stated in the respective Special Conditions of Contract.

53 Patent Rights

- 53.1 The Contractor shall indemnify the Employer against all third-party claims of infringement of Intellectual Property rights of patent, trademark or industrial design rights arising from use of the materials or design or data or any part thereof in India.

54 Limitation of Liability

- 54.1 Except in cases of criminal negligence or willful misconduct, and in the case of infringement pursuant to GCC Clause 53,
- a) The Contractor shall not be liable to the Employer, whether in Contract, tort, or otherwise, for any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs, provided that this exclusion shall not apply to any obligation of the Contractor to pay liquidated damages to the Employer; and
- b) The aggregate liability of the Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price, provided that this limitation shall not apply to the cost of repairing or replacing defective Works / equipment.

55 Governing Language

- 55.1 The Contract shall be written in English language. Subject to GCC Clause 3, English language version of the Contract shall govern its interpretation. All correspondence and other documents pertaining to the Contract, which are exchanged by the parties, shall be written in the same language.



56 The Courts of Jurisdiction

- 56.1 Any suit or application, arising out of any dispute or difference on account of this Tender shall be filed in a competent court at Bangalore, Karnataka only and no other court or any other district of the country shall have any jurisdiction in the matter.

57 Notices

- 57.1 Any notice given by one party to the other pursuant to this Contract shall be sent to other party in writing or by facsimile or email or by hand (duly acknowledged) and confirmed in writing to the other Party's address specified in Special Conditions of Contract.

58 Use of Contract Documents and Information; Inspection and Audit by the Government

- 58.1 The Contractor shall not, without the Employer's prior written consent, disclose the Contract, or any provision thereof, or any specification, plan, drawing, pattern, sample or information furnished by or on behalf of the Employer in connection therewith, to any person other than a person employed by the Contractor in performance of the Contract. Disclosure to any such employed person shall be made in confidence and shall extend only so far as may be necessary for purposes of such performance.
- 58.2 The Contractor shall not, without the Employer's prior written consent, make use of any document or information enumerated in GCC Clause 58.1 except for purposes of performing the Contract.
- 58.3 Any document, other than the Contract itself, enumerated in GCC Clause 58.1 shall remain the property of the Employer and shall be returned (in all copies) to the Employer on completion of the Contractor's performance under the Contract if so required by the Employer.
- 58.4 The Contractor shall permit BMRCL to inspect the Contractor's accounts and records relating to the performance of the Contractor and to have them audited by Auditors appointed by the BMRCL, if so required by BMRCL.

59 Site Investigation Reports

- 59.1 The Contractor, in preparing the Tender, shall rely on any site investigation reports referred to in the 'Appendix to Form of Tender', supplemented by any information available to the Tenderer.

60. Approval by the Employer

- 60.1 The Contractor shall submit Specification and drawings showing the proposed Temporary Works to the Employer, who is to approve them if they comply with the Specifications and Drawings.
- 60.2 The Contractor shall be responsible for the design of Temporary Works
- 60.3 The Employer's approval shall not alter the Contractor's responsibility for design of the Temporary Works.



- 60.4 The Contractor shall obtain approval of third parties to the design of the temporary Works where required.
- 60.5 All Drawings prepared by the Contractor for the execution of the temporary or permanent Works, are subject to prior approval by the Employer before their use.

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SECTION 6 : SPECIAL CONDITIONS OF CONTRACT**1. General**

The following Special Conditions shall be read in conjunction with Section 5: General Conditions of Contract including Amendments/ Corrigendum thereto. If any provision in these Special Conditions is at variance with that of the aforesaid documents, the later shall be deemed to take precedence there over.

2. Scope of Work / Inspection of Site

The Tender is **Total Value Wise Evaluation Tender**. The cost of all the individual items shall be computed for the entire work and the Total cost shall be quoted. The work under this contract comprises of entire completion of the works described in the document and as specified in the Technical Specifications, Tenderer are advised to visit the Site(s) and ascertain for themselves the exact scope of work and its Working Conditions, viz. Working Hours, Availability of Site(s), availability of labour and materials and such other relevant conditions which effect the execution and the entire completion of the works etc. and quote their Tenders (Rate/Price) accordingly. Any claim whatsoever will not be entertained by the BMRCL at a later date. For the purpose of inspection of site, the Tenderer is advised to contact the Engineer who will give reasonable instructions/facilities thereof. The Tenderer shall be deemed to have inspected the site and its surrounding beforehand and taken into account all relevant factors pertaining to site in the preparation and submission of this Tender

3. Subcontracting (GCC Clause 7)

Prior approval of the Employer shall be obtained before sub-contracting any part of the works. However, the Contractor shall not subcontract the whole of the Works.

4. Compliance with labour regulations (GCC Clause 9.4)

During continuance of the contract, the Contractor and his sub-contractors shall abide at all times by all existing labour enactments and rules made there under, regulations, notifications and bye laws of the State or Central Government or local authority and any other labour law (including rules), regulations, bye laws that may be passed or notification that may be issued under any labour law in future either by the State or the Central Government or the local authority. The Contractor shall keep the Employer indemnified in case any action is taken against the Employer by the competent authority on account of contravention of any of the provisions of any Act or rules made there under, regulations or notifications including amendments. If the Employer is caused to pay or reimburse, such amounts as may be necessary to cause or observe, or for non-observance of the provisions stipulated in the notifications / bye laws / Acts / Rules / regulations including amendments, if any, on the part of the Contractor, Employer shall have the right to deduct any money due to the Contractor including his amount of Security Deposit. The Employer shall also have right to recover from the Contractor any sum required or estimated to be required for making good the loss or damage suffered by the Employer.

The employees of the Contractor and the Sub-Contractor in no case shall be treated as the employees of the Employer at any point of time.



5. Safety (GCC Clause 16)**Fire Precautions:**

- 5.1 The Contractor, his agents, representative, workmen etc., shall strictly observe the orders pertaining to fire precautions prevailing within the restricted area.
- 5.2 Motor transport vehicles, if any allowed by the Engineer to enter the restricted area, must be fitted with serviceable fire extinguishers.

6. Access to the Site (GCC Clause 19)**Security and Passes:**

- 6.1 Contractor's attention is invited to condition that, he shall employ only Indian Nationals after verifying their antecedent and loyalty. The contractor shall, maintain list of his agents, employees and work people concerned and shall satisfy the Engineer as to the bonafides of such people, and submit to the Engineer / Employer on demand.
- 6.2 The Employer shall at his discretion have the right to issue passes as per rules and regulations of the installation, area in force to control the admission of the contractor, his agents employees and work people to the site of the work or any part thereof. Passes should be returned at any time on demand by the Engineer or the authorities concerned and, in any case on completion of work.
- 6.3 The contractor and his agents, employees and workers shall observe all the Rules promulgated by the authority controlling the installation area in which the work is to be carried out. e.g. Prohibition of smoking and lighting, fire precautions, search of persons on entry and exit, keeping to specific route, observing specified timing etc., nothing extra shall be admissible for any man hours, etc., lost on this account.

6.4 Conditions of working in restricted area

Work under this contract lies in restricted area.

6.4.1 Visit to site within the restricted area

Permission to enter the restricted areas at the time of submission of Tenders can be obtained through the Employer or his authorized Representative. Tenderers are advised to send prior intimation of their agents, representatives etc., if any, dates and time of their proposed visit so that necessary arrangements may be made by Employer to secure admission. Whether a Tenderer visits the site or not he shall be deemed to have full knowledge of the restriction of entering into/exit from and working within the restricted area.

6.4.2 Entry/Exit

The contractor his agents/representatives, workmen etc., and his materials, carts, trucks or other means of transport etc., will be allowed to enter through and leave from only such gate or gates and such times as the employer or authorities in charge of the restricted areas may at their sole discretion permit to be used. The contractor's authorized representatives are required to be present at the place of entry and exit for the purpose of identifying his carts, trucks etc., to the personnel in charge of the security of restricted areas.



6.4.3 Identity Cards or Passes

The contractor, his agents and representatives are required individually to be in possession of an identity Card or Pass duly verified by the Employer or his authorized Representative. The identity card or pass will be examined by the Security Staff at the time of entry into or exit from the Restricted Area and also at any time or number of times inside the Restricted Area.

6.4.4 Identity of Workmen

- (i) Every workman shall be in possession of an identity card. The Identity Card will be issued after thorough investigation of the antecedents of the labourers by the contractors and attested by Officer-in-Charge of the unit concerned in accordance with the Standing Rules and regulations of the units.
- (ii) Contractor shall be responsible for the conduct and action of his workmen, agents or representatives.

6.4.5 Search

Thorough search of all persons and transport shall be carried out at each gate and for as many times as the gate is used for entry or exit and may also be carried out at any time or any number of times at the work site within the Restricted area.

6.4.6 Working Hours

6.4.6.1 The Metro stations are restricted areas, usually the work can be carried out during working days in the week and remain closed on the Sunday. The working hours available to contractor's labour & staff are 9.00AM to 6.00 PM, however appreciably reduced because of the time taken in security checks observed at the time of entry/exit and during working hours.

6.4.6.2 The exact working hours, days and non-working days observed for the restricted area, where works are to be carried out shall be deemed to have been ascertained by the contractor before submitting his tender. The Tenderer's attention is, invited to the fact that the total number of working hours for a restricted locations are prescribed in Regulations and they cannot be increased by the BMRCL.

6.4.6.3 Contractor's materials, transport etc., shall normally be permitted to go out of the area (Metro Stations) between 9.00 PM to 6.00 AM only.

6.4.6.4 In an emergency condition, Contractor may also be allowed to carry out the work beyond that mentioned in clause No. 6.4.6.1, but however, no movements of materials and transport out of site of work shall be permitted during night unless special permission is obtained from the higher authorities.

6.4.6.5 Some works has to be carried out during night after revenue hours, duly taking PTW (Permission to Work) on daily basis well in advance. Work shall not be allowed to carry out without prior PTW.

6.4.7 Work on Holidays

- (i) The contractor shall not carry out any work on Gazetted Holidays/Weekly holidays and other non-working days except when he is specially authorized in writing to do so by the Engineer or his Representative. The Employer may at his sole discretion, declare any day as holiday or non-working day without assigning any reasons for such declaration.



- (ii) The Contractor shall provide adequate lighting and safety arrangements when working on holidays. No increase in rates or additional payments shall be admissible for night work to the Contractor by the Employer.

6.4.8 Access to restricted area after completion of Works :-

After the works are completed and surplus stores etc. are removed, the contractor, his agents, representatives or workmen etc., may not be allowed to have access to the restricted area except for attending any rectification of defects pointed out to him by the Engineer / Employer.

6.4.9 Not Used

6.4.10 Co-operation with other Agencies

The contractor shall permit free access and generally afford reasonable facilities to other agencies or departmental workmen engaged by the BMRCL to carry out their part the work, if any, under separate arrangements.

6.4.11 Electric Supply

Electricity shall be provided on chargeable basis considering the unit rate charged by BESCOM to BMRCL (i.e. based on the prevailing rate/s of BESCOM), if available and feasible. Otherwise, the Contractor shall make his own arrangements at his own cost, for Electrical Power and gas required for his works. Work shall not be delayed for non-availability of electricity/gas.

6.4.12 Emergency Works

If, by reason of an emergency arising in connection with and during the execution of the Contract, any protective or remedial work is necessary as a matter of urgency to prevent damage to the Facilities, the Contractor shall immediately carry out such work, under intimation to the Engineer.

7. Inspections and Tests (GCC Clause 31)

7.1 Inspections and tests at final acceptance are as follows:

- (i) The inspection of the materials / Works shall be carried out to check whether the materials / Works are in conformity with the Technical Specifications attached to the contract and shall be in line with the inspection/test procedures laid down in the Technical Specifications and the General Conditions of Contract. Following broad test procedure will generally be followed for inspection and testing of works.
- (ii) The acceptance test will be conducted by the Contractor in presence of the Employer/ Engineer / their representative or any other person nominated by the Employer / Engineer. The acceptance will involve trouble-free operation. There shall not be any additional charges for carrying out acceptance tests. No malfunction, partial or complete failure of the Works should occur.
- (iii) In the event of the materials / Works failing to pass the acceptance test, a period not exceeding two weeks will be given to rectify the defects and clear the acceptance test, failing which the Employer reserves the rights to get the Works replaced / redone by the Contractor at no extra cost to the Employer.

7.2 Materials and Samples

7.2.1 The contractor shall produce samples of all materials/articles, fittings, accessories etc., that he proposes to use in the Works and get it approved in writing by the Engineer before incorporating in the work. The materials, articles etc., as approved shall be labeled as such and shall be signed by the Engineer and contractor's representative. The samples shall be kept in the custody of the Engineer till payment of final bill.

7.2.2 Materials provided by the contractor for incorporation in the work shall unless otherwise specified in the Technical specifications, comply with the requirement of the latest relevant Indian Standard (IS) in the website of BIS i.e. www.bis.org.in and as specified in 'Karnataka Building Specifications (KBS)', 'Karnataka Roads & Bridges Specifications (KRBS)' and 'Karnataka Public Works Ports and Inland Water Transport Department (KPWP&IWTD)', Bangalore Circle. In case of any difference / discrepancy on the above, the condition in the interest of BMRCL shall prevail.

8. Variations (GCC Clause 34)

The Rates Quoted for the BOQ items shall remain valid for a period of 5 Years from the date of award of the contract. BMRCL shall at the rates quoted by the contractor, continue to procure the BOQ items during the 5 Year period as and when required under a separate variation order subject to a maximum of 25% of the Total contractual value finalised under this tender in line with the guidelines of the KTPP act.

9. Payments for Variations (GCC Clause 35)

Payments for variations shall be made in accordance to GCC Clause 35.

10. Taxes and Duties (GCC Clause 39)

10.1 The Contract price shall be inclusive of Labour Cess Charges and duties under applicable law but exclusive of CGST and SGST. BMRCL shall pay the output CGST and SGST as invoiced by the contractor to BMRCL

10.2 **Income Tax (IT) deduction:** As per the prevailing rate, IT shall be deducted and remitted to the Income Tax authorities and Form 16A shall be furnished by BMRCL in proof of remittance to IT Department. For availing lower deduction of Income Tax, necessary certificate for each financial year issued by the Income Tax Authority shall be furnished by the Contractor, failing which IT at the maximum rate will be deducted.

10.3 The Contract Price shall be inclusive of all charges of insurance, transportation up to destination, handling, installation, royalties & any other charges leviable and payable by the Contractor under the Contract, or for any other cause and including Tax to be deducted at source and shall be included in the Total Tender Price.

10.4 Contractors shall be entirely responsible for license fees, road permits and any other incidentals incurred until completion of the whole of the Works and handover to the Employer.

10.5 The Contractor shall maintain complete records of duties, other taxes and levies, etc.; payable to various authorities in relation to the Works and submit the receipts/records for verification as and when demanded in writing by the Employer.



- 10.6 Any increase in CGST and SGST shall not be paid in the extended period of Contract for which the Contractor alone is responsible for delay as determined by the Engineer while granting the extension of time". However, this shall not be applicable for "Variations".

11. Termination (GCC Clause 46)

- 11.1 The Fundamental breach of the contract shall also include that "the Contractor has contravened SCC Clause 3 (Subcontracting) and GCC Clause 9 (Personnel).

- 11.2 In the event the Employer terminates the Contract in whole or in part, pursuant to GCC Clause 46, the Employer;

- (i) shall forfeit the performance Security, and
- (ii) May carry out the Works, upon such terms and in such manner as it deems appropriate, Works similar to those incomplete, and the Contractor shall be liable to the Employer for any excess costs for such similar Works. However, the Contractor shall continue the performance of the Contract to the extent not terminated.

12. Procedure for Resolution of Disputes (GCC Clause 52)
Arbitration:

The procedure for arbitration shall be as follows:

- 12.1 In case of dispute or difference arising between the Employer and the Contractor relating to any matter arising out of or connected with this agreement it shall be settled in accordance with the Arbitration and Conciliation Act 1996, and its latest amendments. The disputes or differences shall be referred to a Sole Arbitrator. The Sole Arbitrator shall be appointed by agreement between the parties; failing such agreement, a request may be made by BMRCL to the High Court of Karnataka to take necessary measure for appointment of the Sole Arbitrator.
- 12.2 Arbitration proceedings shall be held at Bangalore, Karnataka, India.
- 12.3 The cost and expenses of arbitration proceedings will be paid as determined by the Arbitrator. However the expenses incurred by each party in connection with the preparation, presentation, etc., shall be borne by each party itself.
- 12.4 Performance under the Contract shall continue during the arbitration proceedings and payments due the Contractor by the Employer shall not be withheld, unless they are the subject matter of the arbitration proceedings.

13. Notices (GCC Clause 57)

For the purpose of all notices, the following shall be the address of the Employer and Contractor.

Employer:

Bangalore Metro Rail Corporation Ltd (O&M wing)
Office of Telecom & AFC Department,
Baiyappanahalli Metro Depot,



Swami Vivekananda Road (Old Madras road),
 Baiyappanahalli, Bangalore – 560 038,
 Karnataka, India

Contractor:

.....

.....

(To be filled in after the award of Contract).

14. Use of Contract Documents and Information; Inspection and Audit by the Government (GCC Clause 58)

14.1 Security of Classified Documents

The contractor shall not communicate any classified information regarding work to others without prior approval of Engineer. The contractor shall also not make copies of the design/drawings and other documents furnished to him in respect of works and he shall return all documents after completion of works or on earlier determination of contract. The contractor shall along with final bill, attach a receipt from the Engineer in respect of his having returned the classified documents as per condition of General Conditions of Contract.

15. Protection of Environment: (New Clause)

[[The Contractor shall take all reasonable steps to protect the environment on and off the Site and to avoid damage or nuisance to persons or to property of the public or others resulting from pollution, noise or other causes arising as a consequence of his methods of operation. During continuance of the contract, the contractor and his sub -contractors shall abide at all times by all existing enactments on environmental protection and rules made there under, regulations, notifications and bye-laws of the State or Central Government, or local authorities and any other law, bye-law, regulations that may be passed or notification that may be issued in this respect in future by the State or Central Government or the local authority.

16. Approved Materials (New Clause)

16.1 The Contractor shall obtain approved materials from manufacturers authorized stockiest where such authorized stockiest have been appointed. The contractor shall produce original receipt voucher of the same.

16.2 The Contractor shall ensure that approved materials are brought to site in original sealed containers/packing, without breaking manufacturer's markings.

17. Contract Extension

At the discretion of the employer the contract period may be suitably extended till completion of the work in consultation with the contractor with the same terms and conditions of the contract.

18. Payments (GCC Clause 37)

- (i) On Delivery : Ten percent of the Contract price shall be paid on receipt of Final Design Documents and As-Built Documents. Seventy percent of the Contract price shall be paid on receipt of goods and upon submission of documents specified in SCC Clause 3 above; and



- (ii) On Final Acceptance: The remaining twenty percent of the Contract price shall be paid to the Contractor in about 30 days after the date of acceptance Certificate issued by the Purchaser's representative of the respective delivery, installation and training and other necessary documents as finalised by BMRCL.
- (iii) The CAMC cost shall be paid on Quarterly basis subject to meeting the KPIs and performance management in line with the Clause No. 6.26, 6.27 and 6.28 of the Section 7 of the Technical specification.

BMRCL has registered itself in TReDS platform for acceptance of contractor's bills (factor unit), in case the contractor opts for the same.

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SECTION 7 – TECHNICAL SPECIFICATIONS**1. GENERAL**

- 1.1 All works under this contract shall be strictly carried out in accordance with General Rules, specifications, special conditions read in conjunction with Technical specification and General Conditions of Contract. Technical specification shall take precedence over the Schedule wherever in variance.
- 1.2 Materials to be provided by the contractor for incorporation in the work shall unless otherwise specified in the Technical specification comply with their requirements of the relevant Indian Standard (IS) including errata and amendments read in conjunction with latest edition. The contractor may, however, at his own discretion provide and incorporate in the works such materials complying with the requirement of any subsequently amended or revised edition of the corresponding IS without any price adjustment of the lump sum or while pricing deviation.

2. SCOPE OF WORK

- 2.1 The work under this contract comprises of entire completion of the work described in schedule 'A', and as specified in these Technical specifications. Tenderer are advised to visit the Site(S)/Building(S) and ascertain for themselves the exact scope of work and its Working Conditions, viz. Working Hours, Availability of Site(s), etc.; and quote their Tenders (Unit Rate) accordingly. Any claim whatsoever will not be entertained by the Employer at a later date.

2.2. The Scope of work constitutes the following:

- a. The Supply and Installation of the Surveillance Systems as detailed in 3.11 below shall be for upgrading the CCTV solution in Reach 1 Stations. BMRCL reserves the right to place orders for upgradation of other reaches also during the 5 year contract period from the date of issue of LOA as per the rates finalised in Vol-2 of the Financial Package.

3. Supply, Installation and Maintenance of the Surveillance System Infrastructure:

The scope of work also includes supply and installation of the Items listed under 3.11, List of New Assets to be Supplied, Installed and Maintained based on the Requirements of BMRCL for 5 Years(extendable to 10 Years) under Schedule A as per the needs of BMRCL. The Detailed Design and Technical Specification is given below.

3.11 List of New Assets to be Supplied, Installed and Maintained based on the Requirements of BMRCL for 5 Years.

BILL OF QUANTITIES – Schedule A			
SL NO	PART DESCRIPTION	QUANTITY	UNITS
A	VIDEO SURVEILLANCE		
1	SUPPLY OF BOX / BULLET CAMERA - TYPE 1	540	NOS
2	SUPPLY OF BOX / BULLET CAMERA - TYPE 2	60	NOS



3	SUPPLY OF 128GB INDUSTRIAL GRADE MICRO SD CARD	600	NOS
4	SUPPLY OF VMS BASE LICENSE	1	NOS
5	SUPPLY OF VMS BASE LICENSE - REDUNDANT	1	NOS
6	SUPPLY OF VMS CHANNEL LICENSE	600	NOS
7	SUPPLY OF VMS CHANNEL LICENSE - REDUNDANT	600	NOS
8	SUPPLY OF VMS INEGRATION LICENSE	2	NOS
9	SUPPLY OF RECORDING SERVER / NVR	12	NOS
3	SUPPLY OF APPLICATION SERVER	4	NOS
10	SUPPLY OF 8 PORT POE SWITCH	12	NOS
11	SUPPLY OF 24 PORT POE SWITCH	24	NOS
12	SUPPLY OF NETWORK MANAGEMENT SOFTWARE SYSTEM	750	NOS
13	SUPPLY OF MONITORING WORKSTATION	12	NOS
14	SUPPLY OF 4K RESOLUTION KVM OVER IP	12	NOS
15	SUPPLY OF UTP CAT6 LSZH PATCH CORD	1200	NOS
16	SUPPLY & INSTALLATION OF UTP CAT6 LSZH CABLE & CONDUIT	30000	MTR
17	SUPPLY OF UTP CAT6 24 PORT LOADED PATCH PANEL	36	NOS
18	SUPPLY OF OPTICAL PATCH CORD	72	NOS
19	SUPPLY OF RJ45 CONNECTOR	600	NOS
20	SUPPLY OF 9U NETWORK RACK WITH ACCESSORIES	36	NOS
B	AI BASED FACIAL RECOGNITION SYSTEM		
1	SUPPLY OF FACIAL RECOGNITION SOFTWARE	24	NOS
2	SUPPLY OF FACIAL RECOGNITION SERVER	3	NOS
C	AI BASED VIDEO ANALYTICS SYSTEM		
1	SUPPLY OF AI BASED VIDEO ANALYTICS SOFTWARE	144	NOS
2	SUPPLY OF ANALYTICS CORE SERVER	4	NOS
3	SUPPLY OF ANALYTICS EDGE LPU	6	NOS
D	AUTOMATIC VEHICLE NUMBER PLATE RECOGNITION SYSTEM		
1	SUPPLY OF NUMBER PLATE RECOGNITION SOFTWARE	24	NOS
2	SUPPLY OF NUMBER PLATE RECOGNITION LPU	6	NOS
3	SUPPLY OF NUMBER PLATE RECOGNITION SERVER	2	NOS

E	INCIDENT MANAGEMENT SYSTEM		
1	SUPPLY OF PHYSICAL SECURITY & INCIDENT MANAGEMENT SOFTWARE SYSTEM	1	NOS
2	INTEGRATION OF PHYSICAL SECURITY & INCIDENT MANAGEMENT SOFTWARE SYSTEM	3	NOS
3	SUPPLY OF APPLICATION SERVER	6	NOS
F	Video Wall		
1	Supply of 4K Video Wall	1	No
2	Supply of 4K Video Wall Controller	1	No
G	TVMs		
1	TVM 2000	20	No
2	TVM 4000	5	No
H	SERVICES & INSTALLATION		
1	SITE STUDY & DESIGN DOCUMENT	6	STATION
2	INSTALLATION PER STATION	6	STATION

4. The detailed Technical Specifications of each List item given above is listed here:

TECHNICAL SPECIFICATION

Box / Bullet Camera – Type 1			
OEM :			
PART NO :			
SI No	Parameter	Minimum Requirement	Compliance
1	Video Compression	H.265 or better	
2	Video Resolution	4MP or better	
3	Frame rate	Min. 25-30 FPS, Camera should support minimum 3 streams	
4	Image Sensor	1/1.8" Progressive Scan CMOS	
5	Lens Type	Varifocal	
6	Lens	3.6~12mm	
7	Minimum Illumination	Colour: 0.5 lux, B/W: 0 lux	
8	IR Cut Filter	Automatically Removable IR-cut filter	
9	Day/Night Mode	Colour, Mono, Auto	
10	S/N Ratio	≥ 50 Db	
11	Auto adjustment + Remote Control of Image settings	Auto adjustment + Remote Control of Image settings	



12	Audio	Audio Capture Capability, G.711, G.726 (Optional)	
13	Protocol	IPv4, IGMP, ICMP, ARP, TCP, UDP, DHCP, PPPoE, RTP, RTSP, RTCP, DNS, NTP, FTP, UPnP, HTTP, HTTPS, SMTP, 802.1x, SNMP, QoS, RTMP	
14	Security	Password Protection, IP Address Filtering, User Access Log, Watermark, Tampering Alarm, Access Policy, RTSP Authentication, User Authentication	
15	Operating conditions	-10 to 55°C (temperature), 5 to 90% (humidity)	
16	Casing	IP-66, IK10 rated	
17	Analytics	Tampering alert	
18	Alarm I/O	Minimum 1 Input & 1 Output contact for 3rd part interface	
19	Certification	BIS, CE-EMC, FCC, UL 62368, CE-RoHS	
20	Storage backup on network failure	Camera should support network failure detection, Camera should have the capability to start the recording automatically on SD card in case of connectivity between camera and NVR/Storage device goes down. SD card slot with support at least 128 GB Industrial Grade SD card	
21	Network Connectivity	RJ-45 Connector, 10/100Base-Tx	
22	Protection (Electrical)	Built in 4 Kv surge arrestor	
23	Protection (Environmental)	The housing(s) should be capable of withstanding vandalism and harsh weather conditions and should meet IP66, IK10 standards (certified).	
24	Night Vision	IR Range Upto 50 Mtrs.	

Box / Bullet Camera – Type 2

OEM :			
PART NO :			
Sl No	Parameter	Minimum Requirement	Compliance
1	Video Compression	H.265 or better	
2	Video Resolution	4MP or better	



3	Frame rate	Min. 25-30 FPS, Camera should support minimum 3 streams	
4	Image Sensor	1/1.8" Progressive Scan CMOS	
5	Lens Type	Varifocal	
6	Lens	9~30mm	
7	Minimum Illumination	Colour: 0.5 lux, B/W: 0 lux	
8	IR Cut Filter	Automatically Removable IR-cut filter	
9	Day/Night Mode	Colour, Mono, Auto	
10	S/N Ratio	≥ 50 Db	
11	Auto adjustment + Remote Control of Image settings	Auto adjustment + Remote Control of Image settings	
12	Audio	Audio Capture Capability, G.711, G.726 (Optional)	
13	Protocol	IPv4, IGMP, ICMP, ARP, TCP, UDP, DHCP, PPPoE, RTP, RTSP, RTCP, DNS, NTP, FTP, UPnP, HTTP, HTTPS, SMTP, 802.1x, SNMP, QoS, RTMP	
14	Security	Password Protection, IP Address Filtering, User Access Log, Watermark, Tampering Alarm, Access Policy, RTSP Authentication, User Authentication	
15	Operating conditions	-10 to 55°C (temperature), 5 to 90% (humidity)	
16	Casing	IP-66, IK10 rated	
17	Analytics	Tampering alert	
18	Alarm I/O	Minimum 1 Input & 1 Output contact for 3rd part interface	
19	Certification	BIS, CE-EMC, FCC, UL 62368, CE-RoHS	
20	Storage backup on network failure	Camera should support network failure detection, Camera should have the capability to start the recording automatically on SD card in case of connectivity between camera and NVR/Storage device goes down. SD card slot with support at least 128 GB Industrial Grade SD card	
21	Network Connectivity	RJ-45 Connector, 10/100Base-Tx	
22	Protection (Electrical)	Built in 4 Kv surge arrestor	

23	Protection (Environmental)	The housing(s) should be capable of withstanding vandalism and harsh weather conditions and should meet IP66, IK10 standards (certified).	
24	Night Vision	IR Range Upto 80 ~ 100 Mtrs.	

128 GB INDUSTRIAL GRADE SD CARD

OEM :

PART NO :

SL NO	PARAMETER	SPECIFICATION	COMPLIANCE
1	Formatted Capacity	128 GB	
2	Form Factor	microSDXC	
3	Interface	SDA 6.0	
4	Card Health Status Monitoring Capability	Yes	
5	Sequential Read Performance	100 MB/s	
6	Speed Class	UHS Speed Class 1 (U1)	
7	Sequential Write Performance	65 MB/s	
8	Endurance	Up to 384 TBW	
9	Operating Temperature	-25°C to 85°C	

VIDEO MANAGEMENT SYSTEM

OEM :

PART NO :

SL NO	SPECIFICATION	COMPLIANCE
	IP video management system for surveillance and storage of all managed cameras with the following functionality:	
1	No limitation on the maximum number of clients on one system	
2	The VMS can be expanded to include an unlimited number of camera channels	
3	Supported compression formats: MJPEG, MxPEG, MPEG-4, H.264 and H.265	
4	Supported audio compression formats: G.711 and G.726	



5	Support of Multi streaming channels. Up to 6 channels depending on the camera type.	
6	The VMS can manage an unlimited number of I/O-modules (in order to include potential-free contacts or for the automatic/manual control of third-party systems)	
7	Bi-Directional audio support with a push-to-talk functionality in the client	
8	Password management in encrypted format	
9	The data security function can be set individually for every camera. It must be possible to delete the image data of each camera automatically after a defined period.	
10	Configuration wizard for creating cameras and copying cameras that have been created, as well as immediate checking of the implemented configuration for errors.	
11	It must be possible to carry out multiple configurations of cameras and connected devices	
12	Search option in configuration mode for camera names and alarm scenarios to allow specific configuration items to be found quickly	
13	Wizard for copying alarm scenarios	
14	In the event of an alarm, it must be possible to start an audio playback on a client. The system must be supplied ready with pre-defined alarm sounds for this purpose. It must be possible to add other audio files in MP4 and WAV formats. In the event of an alarm, it must be possible to play the alarm sound on a loop.	
15	The system must offer the option of importing user-specific icons. The default icons for cameras, maps, layers, buttons, websites and IO modules must be usable separately. A minimum of the following formats must be supported as the file format: PNG, GIF, JPG and ICO. When importing the icons, the system must check that these are not greater than 50 KB to accelerate the loading of the icons.	
16	Patrol (to run automated actions with corresponding logging such as the control of preset positions, automatic opening of camera windows, switching of contacts, etc.). The patrol must be able to show cameras, layers or maps on dedicated screen and cameras only on one or multiple tiles of a layer.	
17	The VMS must permit freely selectable key combinations to hide and show control elements. In this process, each control element must be controlled separately or all together.	

18	The change to the different modes (live, archive, event LPR, configuration mode) must also be possible via a pre-defined key combination.	
19	Database license for unlimited storage capacity	
20	Storage of image data locally or on external storage systems (RAID, SAN, NAS, etc.) The specification of a UNC path must be sufficient to assign the storage space to the video management system	
21	The VMS must support multiple independent multimedia databases for managing and storing of audio- and video data. These multimedia databases must also be able to be used across locations.	
22	Manual, server-side image data export or local image data export from the client.	
23	Manufacturer-independent control of PTZ cameras by clicking in the image and/or by means of a separate joystick with the functions pan, tilt, focus incl. autofocus, zoom, iris control incl. auto iris, day / night switching incl. automatic switching.	
24	The user must have the option to modify the PTZ control to "Click-to-Center" (if this function is supported by the camera)	
25	Assignment of up to 1,000 priorities for PTZ control for users, sequences and alarm scenarios	
26	Support for standard USB joysticks	
27	The system shall support fisheye camera and be able to support image dewarping. There must be several possibilities to display the camera picture, such as virtual PTZ, panorama, double panorama, quad view or original fisheye view.	
28	It must be possible to save digital zoomed image details of a camera as preset positions. The digital preset positions must be available in both live and archive mode. The function must be independent of the camera used (standard digital zoom, dewarping). It must be possible to use the digital preset positions in combination with patrols and alarms. It must be possible to assign a digital preset to a specific layer tile displaying the camera.	
29	User administration with unlimited numbers of user and group profiles. These user and group profiles require the following functions to be individually configurable:	

a	View, which should be displayed when the respective user logs in on the respectively available monitors (incl. those of the possibly connected monitor wall).	
b	Definition of the refresh rate per displayed video stream. Different video display configurations may be assigned as "Selected", "Not Selected" or "Alarm". In addition to the selection criteria mentioned, different video streams that are provided on the camera side as a multi-stream can be displayed.	
30	Dual login is possible on the four-eye principle. This provides the best possible protection for sensitive areas such as recorded image data or specific cameras.	
31	Concurrent display of live and archive images of all cameras	
32	Representation of an "alarm view", consisting of: permanent playback of the pre-alarm time, permanent display of the post-alarm time, display of the alarm image as a still image and the live image in a multi-image view.	
33	Concurrent operation of live display, storage and archive mode	
34	Locking of the user interface	
35	Configurable font size for camera title bar in the user interface.	
36	Display of statistical camera connection data in the live image and preview images of cameras as mouseover thumbnails available both in the map and the camera search tree.	
37	Support for multicast between camera and server.	
38	Support of the camera-side digital inputs and outputs, if any, and other camera-side events, if any, such as Motion detection, coverage monitoring, video analysis functions and possibly fault messages.	
39	The following parameters of the camera / encoder must be parameterized via the VMS, without the aid of other tools such as browsers or similar:	
a	Virtual Cameras	
b	Note text in the picture including activating or deactivating	
c	Enable or disable the date and time display	
d	Rotate the image by 90 °, 180 °, 270 °, if supported by the camera / encoder	
e	Capture Mode	
f	Selection of the video stream	
g	Network transmission Mode	

h	refresh rate	
i	GOP length	
j	Compression of the video stream	
k	Resolution	
l	Bandwidth Control	
m	storing preset positions	
n	Edit preset positions	
40	A description field will give the possibility to administrators to enter any kind of information about the camera / encoder with free text.	
41	It must be possible to associate the following actions with any event within the VMS, e.g. to control external contacts:	
a	Inactivity of the video stream with specification of the timeout time	
b	Network error with indication of the dead time	
c	Start or stop the video stream	
42	Increase in playback speed of the archive recording by up to 50 times	
43	Frame by frame reverse playback for all displayed cameras.	
44	Frame by frame usage by clicking through the images stepwise forward and backward for all displayed cameras.	
45	Frame by frame usage by navigating through the images stepwise forward and backward using an USB jog dial for all displayed cameras.	
46	Frame by frame display when scrubbing the timeline for up to 4 displayed cameras using MPEG-4/H.264/H.265	
47	Frame by frame display when scrubbing the timeline for the selected camera if more than 4 cameras using MPEG-4/H.264/H.265 are displayed	
48	Multi-monitor/multi-user operation	
49	No limit on the minimum window size for secondary windows	
50	Manual and automatic connection of camera groups (e.g. tours)	
51	Selective connection of cameras to predefined panels of a layer	
52	Layers must support cameras, maps or web page display at the same time	
53	Layers must support focus tile feature, that allows an operator by double click on a camera to display it directly in the tile itself.	

54	Layers must support alarm tile, which will display alarm cameras from an active alarm scenario without addressing a specific screen or window	
55	It must be possible for layers created by users to be saved without the need for the user to have configuration rights for them	
56	Layers can be expanded to get additional tiles and entities already displayed in the original one will remain.	
57	Inputs and outputs for alarm integration or automatic/manual control of third-party systems via external I/O modules or camera I/Os operated directly from the GUI	
58	Areas of the image blurred using private zones can be made visible again by means of archive access with the relevant authorization	
59	It must be possible to display the alarm tracks in the archive timeline in at least 16 million different colors.	
60	ISearch: software tool for searching recordings very quickly for motion in the image	
61	Allocation of multiple ring memories per camera (standard memory, alarm memory). Separately configurable for each camera.	
62	Overwrite protection for selected recordings. This can be used across the board and without gaps both for standard recordings and alarm recordings as well as for a combination of both recording types. An overview of the protected recordings is available in the main menu of the VMS system. It must be possible for at least 75% of the ring memory volume to have overwrite protection.	
63	System notification in the event of the failure of recording after a freely defined period.	
64	Data aging, which allows the storage space of the video data to be reduced by specifying a point in time after which the frame rate of older recordings is automatically reduced to a specified value.	
65	An unlimited number of time- and/or alarm-controlled recordings are possible.	
66	Assignment of at least 10 alarm priorities for optimized alarm processing.	
67	Option of forwarding alarms by means of SNMP traps.	

68	Convenient searching for saved image data by means of search criteria such as camera, alarm type, alarm time from all authorized workstations across all the system's cameras.	
69	Manual or automatic, time-controlled or controlled by a trigger export of saved image data as individual images or video sequence in the formats BMP, JPG, AVI. It must also be possible to export SIP audio sources. A folder size can be predefined so that the exported sequences are saved in exactly the right size for CDs or DVDs. An image data export must also allow selected image material to be exported automatically at a later point in time with a time delay. Failed exports are restarted from the exact position where they stopped (resume available).	
70	Legally valid image data export in proprietary database format.	
71	It must be possible to secure video files backed up via image data export against unauthorized access with a password.	
72	It must be possible to export multiple cameras simultaneously and / or process independent export jobs in AVI or in proprietary format	
73	It must be possible for the AVI export to either request the original stream from the camera or encode it with a codec that ensure a proper ratio quality / size and overlay in the picture for camera name, date and time.	
74	Manual or automatic reference image comparison:	
a	Comparison for quick and easy checking of camera positions with the possibility of specifying a tolerance threshold.	
b	As a reference, both the live image and an archive image of a given date and time can be used.	
c	The execution of an automatic reference image comparison must be cyclical. The following intervals must be given:	
(i)	Interval indication in minutes	
(ii)	Interval indication daily at a specific time	
(iii)	Interval indication weekly on one or more days with indication of the time.	
d	The alarm threshold of the automatic reference image comparison can be used as starting criterion for any alarm scenario.	
e	The result of the manual reference image comparison is available as a printable report or PDF file. This report includes the reference image, the current image, and an image representing the changes and their percentage value	

75	The system must have server-side tamper detection that constantly monitors the video image for any changes, such as twisting, masking, fading, and so on. The alarm threshold must be adjustable over a threshold value and can be used as a start criterion for any alarm scenario.	
76	Single-user management: All connected components can be fully parameterized remotely from authorized workstations.	
77	Map module for visualizing the system with an unlimited number of detailed plans. All control elements can be positioned on the map user interface. This makes it very easy to work with the whole system even without detailed local knowledge.	
78	Buttons on maps must be polygonal, transparent and configurable with regard to color.	
79	Camera and multiple-camera selection by lasso (encircling of the required cameras) in the map for rapid inclusion of the video data in a monitor matrix	
80	The font colors that the VMS client has to use for the texts must be configurable. There must be at least 16 million colors available for selection.	
81	The video management system must provide its own calendar, in which individual holidays can be defined. The regional holidays are to be deposited as a template, so that they can be configured in a simple way.	
82	Multiple holiday calendars must be possible to assign them to different regions or countries covered by the video installation.	
83	SSL-encrypted transfer (high level of data security thanks to end-to-end encryption from the camera via the server to the client)	
84	Automatic system notifications by means of SMTP and SNMP and optional transmission of a daily overview of all system messages issued by means of SMTP.	
85	In addition, system messages on the client must be displayed by means of toast messages, regardless of the currently used modes.	
86	Integration of individual SIP audio sources (for connecting door intercoms, for example)	

87	System events such as the interruption of a connection to one or more cameras or video encoders, the interruption of recording and all other system events indicating a system malfunction must result in the transmission of an email or SNMP trap. These system events must be able to trigger events and be displayed in a clearly laid out panel, the type of notification must be selectable, and their number must be kept to a minimum by means of "flood protection" in order to prevent excessive email traffic.	
88	System events for resolved problems must be supported so that the resolution of an issue can be communicated.	
89	SNMP MIB file must be provided by the VMS to ensure a proper display of SNMP events sent to a monitoring 3rd party application.	
90	The system must be able to display the following information: system environment (operating system, architecture, Java version), system license, registered clients (IP address of the client PC), etc. The system administrator of the VMS must be able to receive the following information on the registered native clients in addition to those already mentioned: username, user profile, client variant, etc.	
91	The VMS client must be available as both an installable and a portable version (without installation).	
92	The video management system must offer the option of an autonomous application for the visualization of the exported sequences from the archive database (portable Viewer) of the video management system. It must be possible to display camera sequences exported in a proprietary format using a multiple layer (at least 4 cameras per layer) and they must not be subject to any loss of quality or changes in resolution or number of frames. The portable Viewer must ensure that all relevant information from the archived sequences, such as date, time, camera, etc., can be rendered, that slow-motion playback is possible both forward and backward and that individual images can be exported in a standard format such as .avi or .jpeg. The application must be available as both an installable and a portable version (without installation).	
93	The VMS system must be able to work with ONVIF and devices with ONVIF Profile-S drivers and operate with all of the functions supported by the device (camera)	

94	The VMS must perform a plausibility check when a new camera is created on the system to notify the administrator of an error during the configuration process.	
95	The VMS must be able to perform a recording playback with optimization of the bandwidth usage which allow to get a better playback of archive images in case of a small bandwidth by transcoding the video stream to optimize quality and/or framerate.	
96	The VMS must be able to handle bookmarks left by operators containing the following information:	
a	Name of the bookmark	
b	Timestamp	
c	Camera concerned	
d	Free description	
97	The VMS must give the possibility to operators to search for bookmarks recorded in the system by date and time, camera concerned or keywords from the name or the description of the bookmark.	
98	The VMS must display the bookmarks of a camera in its archive timeline.	
99	VoIP support. The VMS client must offer the option of registering with any SIP server and communicating with other SIP devices like (ECB) Emergency communication box which will be installed across city also IP PA system installed across city need to be integrate with VMS over VOIP SIP protocol.	
100	VMS shall support One Click Alarm Categorization Easy way to identify alarm types with preconfigured drop-down categories.	
101	VMS shall support Unlocking of Layouts Easy way to identify alarm types with preconfigured drop-down categories. Increased flexibility because results can be stored as Custom Layouts.	
102	VMS shall support Camera Forwarding Instant access on the fly in critical situation simply by forwarding active cameras to another user or AD group without involving the administrator and without having to change user rights. Improves collaboration!.	

103	VMS shall support Click2Track Fast analysis of where a person came from or where they are heading to. Works in both live and archive mode. Powerful tool with intuitive setup to support the VMS operator during tracking of suspicious incidents by creating clickable areas as links to other cameras.	
104	VMS shall support Advanced Map-Integration with Esri GIS.	
105	VMS does not have the limit and can support more than 200 cameras depending upon the bitrate/throughput of the server.	
106	VMS shall support Camera driver support reducing the time for camera integration.	
107	VMS shall support Advanced transcoding capabilities requiring less computation power.	
108	VMS shall support 3rd party integration is made easier with standard interface module.	
109	VMS shall support upto 100 tiles (10*10).	
110	VMS should support recording of operator screens for compliance and security purpose. All operator screens/monitors should be recording and stored for 30 days.	
111	VMS should support seamless integration with existing encoders of phase 1. Details of encoders will be provided to qualified bidders.	
112	VMS should support integration with existing decoders of phase 1 for interoperability of existing videowall. Details of decoders will be provided to qualified bidders.	
113	A centralized top level management software should be available for configuration, monitoring and reporting.	
114	A management software should support and manage many autonomous and/or semi-autonomous video management systems.	
115	Software shall manage any number of autonomous or semi-autonomous sites.	
116	The architecture should be client/server based and should provide a user interface accessible via web browser. The software communicates with the VMS of the sites via port 80 or 443. HTTP or HTTPS with at least TLS 1.2 supported for data transmission.	
117	The communication between the VMS and the web service must be designed so that the connection is always initialized by the system at the location	

118	The system can be administered and operated from a browser with appropriate authorization, thus allowing decentralized administration.	
119	It must be possible to log on to the system with the Active Directory user if the system has the appropriate authorization and configuration. If the browser is configured accordingly, it must also be possible to log on with the current user of the operating system.	
120	It must be possible to perform multiple configurations for quick setup and modification of functions of the VMS systems at the locations, using the same, repetitive settings. To do this, the software must make all users, user groups, and cameras of the individual VMS systems available for configuration.	
121	Configuration of the VMS systems: The software must have the ability to configure user rights in the connected systems at the same time. For example, it must be possible to allow or deny access to the live video streams of the VMS systems to one user (present in all locations) with little effort.	
122	The software must have the ability to configure user rights or group rights of the VMS. In addition, it must also be possible for users or activated or deactivated, and for users to belong to groups to be able to access the live video streams of the VMS systems quickly and easily via all VMS at the locations.	
123	The software must have the ability to configure camera parameters. In order to be able to make planned configuration adjustments, the system must be able to make the changes at a definable time. Furthermore, the changes can be undone at a defined time.	
124	The software must be able to perform at least the following configurations on the VMS:	
a	Change user password	
b	Change user rights	
c	Add/delete users	
d	Activate/deactivate users	
e	Changing the user's login options	
f	Change user group rights	
g	Activate/deactivate user groups	
h	Changing user group login options	
i	Removing and Assigning Users from Groups	



j	Configuration of camera parameters such as resolution, refresh rate and codec	
k	Recording depth for standard and alarm recording and pre-alarm buffer	
l	Enabling and disabling recording modes	
m	Setting the threshold values for recording monitoring	
125	The software for managing video management systems must be able to display system statuses and status changes of the connected video management systems.	
126	The software must also be able to display performance data such as: CPU usage, main memory usage, number of requests and response time of requests over time	
127	The software must also be able to receive system messages from the connected video management systems. The received system messages must be stored in the software database for a configurable period of time. In addition, it must be possible to search these messages at a later time	
128	The software can send system messages as e-mails depending on the type, category and functional unit concerned.	
129	The software must be able to display at least the status of the following units of the VMS:	
a	cameras (status in the VMS)	
b	VMS services	
c	Connection status to VMS	
130	The reporting module allows for easy and quick documentation of the important parameters of the VMS configuration (including camera reference and current image) as well as documentation of the changes made by the users.	
a	Inventory report incl. camera image comparison	
b	Audit report	
131	The VMS must provide an application for mobile devices. The following operating systems must be supported:	
a	Android 6.0 or higher	
b	iOS 9 or higher	
132	Mobile devices must have access via a WLAN and 3G/4G/5G network.	
133	The application must show live and archive images from cameras or layers in portrait or landscape mode.	

134	Display of live single camera gives the opportunity to the user to switch from classification stream to compensate any problem with available bandwidth.	
135	Display of archive allows the user to move timelines to go to a specific point in time requested to start the playback or use calendar functions to select a specific date/time to jump to.	
136	The listing of cameras will be organized in subfolders and branches coming from the connected system to provide a better overview.	
137	The user must have the possibility to search any camera or layer from the system with a filter tool.	
138	It must also be possible to trigger actions on the server by means of software buttons. The user can display and search for alarms in the application.	
139	A map section will help the user to understand where the cameras are located by displaying camera icons and give the possibility by tapping the camera icon to open the live or archive view easily.	
140	For establishing a connection rapidly, the user must have the option to save the password for the next logon.	
141	The number of saved connections in the application must be unlimited to be able to change quickly between different systems.	
142	Multiple server connection at the same time are possible, which allows user to receive notifications and watch cameras from different system at the same time.	
143	Access to the Platform-independent client access system via any web browser	
144	The Platform-independent client access network communication must be encrypted using SSL	
145	The through Platform-independent client access must give the possibility to load a custom SSL certificates to that end-users can take their own certificates to use the web client.	
146	No additional installations must be necessary on the client side	
147	Live and archive image display through Platform-independent client access	
148	Concurrent display of multiple cameras through Platform-independent client access	

149	The archive playback from multiple cameras must take place synchronously through Platform-independent client access	
150	The archive access is not permitted to be restricted through Platform-independent client access	
151	Cameras in the background must be paused so that the bandwidth is not unnecessarily burdened through Platform-independent client access	
152	PTZ functions and preset control of the cameras through Platform-independent client access	
153	Printing of individual image or saving on the client side through Platform-independent client access (web client)	

RECORDING SERVER / NVR			
OEM :			
PART NO :			
SL NO	PARAMETER	SPECIFICATION	COMPLIANCE
1	Processor	Intel XEON Processor 4210 2.2GHz, with minimum 10 Cores / 20 Threads – 2 NOS	
2	RAM	64GB RDIMM	
3	Storage	Minimum Raw 160 TB SAS	
4	Boot Drive	Redundant 2 * 500 GB SSD	
5	I/O	Redundant 2 x Gigabit LAN on Motherboard VGA and HDMI, 4 USB ports	
6	Peripherals	Standard USB Keyboard and Mouse.	
7	OS	Windows Server Data Centre edition	
8	Form Factor	Rack mounted	
9	Power Supply	Dual, Hot-plug, Redundant Power Supply (1+1)	
10	RAID Support	0, 1, 5, 6 or better	

8 PORT POE SWITCH		
OEM :		
PART NO :		
SL NO	SPECIFICATION	COMPLIANCE
1	The Switch and SFP should be from same OEM and all the mentioned features should be available from day 1 and if any license required, it must be included.	



2	The Switch should have 8 x 10/100/1000 BaseT ports PoE/PoE+ with power budget of 120W, uplinks with 2 x 100/1000 Mbps Ports. All the ports should be licensed from day 1.	
3	Switch Should provide minimum Non-Blocking switching fabric capacity of 12 Gbps or more.	
4	Forwarding Capacity: Should provide wire-speed packet forwarding of 17 Mpps or more.	
5	All Ethernet Switch ports shall be PoE & PoE+ compliant as per IEEE 802.3af and IEEE802.3at standard. The switch should be able to show power allocation consumption , reserved power , power consumption through LLDP, Power priority can be set based on requirement of critical, high or low requirement of the devices	
6	The switch should be capable to operate on AC or DC Voltage with provision of redundancy	
7	The switch should work at operating voltage for DC between 48V to 57V and for AC should have 230VAC 50Hz.	
8	For 230VAC 50Hz switch should have option for external Din rail Industrial grade fanless power supply	
9	Switch shall be without any moving parts (no fans)	
10	Switch Should have minimum MTBF 450000 hrs	
11	The switch should support ring protection through open standard protocol ERPS (ITU-TG 8032) or MRP.	
12	The switch should have MSTP, RSTP, private VLAN, PVLAN isolation, Voice VLAN, Voice VLAN Security to ensure non-voice device blockage, Link aggregation, IGMP Snooping v1, v2, v3, ARP Inspection, MLD Snooping, storm control, IP Source guard & Loop protection.	
13	The Switch should have QoS supporting 4 classes, 8 priority queue, IEEE802.1D, IEEE802.1p and IEEE802.1q	
14	Switch should support IPv4 and IPv6	
15	The switch should have layer 2 static routing	
16	The switch should have Console port for management and shall have web, CLI and SNMPv1,v2,v3 based management, HTTP & HTTPS, Traps , LLDP, LLDP-MED, port mirroring (1:1, N:1) and RMON Group (1,2,3,9)	
17	Switch should have DHCPv4 Client & Server , DHCP Snooping, DHCP Replay and DHCPv6 Client	
18	Switch should support minimum VLAN 4k , MAC 8k , Jumbo frames - 9200, ARP-256 and IGMP-1k	
19	The switch should have Telnet and SSH feature. Switch should have SNTP for time synchronization.	
20	The should should have layer 2 - 4 ACL feature with MAC based, packet based-Source and destination IP Address and TCP/UDP based filtering.	
21	Switch should have user and device authentication through 802.1x and MAC based, RADIUS & TACACS+	
22	Switch should have Syslog and sflow	
23	Switch should have Operating temperature minimum range -20°C to + 70°C and storage temperature -20 to +85 °C	
24	Switch should have humidity between 5% ~ 95%	



25	The switch should support Single Mode, Multi Mode, 100Mbps, 1000Mbps LC SFP	
26	The Switch should support bi-direction and uni-direction SFPs	
27	The Switch have IP30 rating	
28	The Switch should have standards and approvals EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8, EN 61000-6 2, EN 61000-6 4, EN 55032 and FCC	

24 PORT POE SWITCH - TYPE 1		
OEM :		
PART NO :		
SL NO	SPECIFICATION	COMPLIANCE
1	Product details- Please specify	
1.1	Please mention Make, Model No. and Part Code	
2	Architecture & Port Density	
2.1	The Switch should offer Wire-Speed Non-Blocking Switching	
2.2	The Access Switch should have Twenty (20) x 10/100/1000 BaseT ports uplinks with 2 x 1/10G SFP+ Ports with 250W POE Budget. All the ports should be licensed from day 1.	
2.3	Access Switch should support true Stacking of up to 8 Switches	
2.4	All accessories for stacking should be provided along with the switch.	
2.5	The above requested port combination to be achieved with in 1RU.	
2.6	Should support neighbour discovery protocol (LLDP)	
2.7	The switch should work at operating voltage of 230VAC 50Hz	
2.8	Ambient Conditions: Switch should support minimum 0 to + 45°C - continuous operating temperature range	
3	Performance	
3.1	Switching Bandwidth: Should provide Non-Blocking switch fabric capacity of 128 Gbps or more.	
3.2	Forwarding Capacity: Should provide wire-speed packet forwarding of 95 Mpps or more.	
3.3	Switch Should have minimum MTBF 400000 hrs	
4	Layer 2 features	
4.1	Should support 4K VLAN IDs	
4.2	Should support 16K MAC addresses or more.	
4.3	Shall support IP multicast snooping with support for IGMP v1, v2 and MLD v1 & v2	



4.4	Should support Jumbo Frames minimum 9216 bytes	
4.5	Should support 802.1s, 802.1w and MSTP	
5	Layer 3 features	
5.1	Should support Static router , RIP v1/v2 and OSPFv3 minimum 63 for IPv4 and 32 for IPv6 and VRRP	
6	QoS	
6.1	Switch Should support Traffic Classification based on Port, Mac address, IP address, IP Priority, DSCP priority, TCP or UDP port number and protocol type.	
7	Security	
7.1	Switch should support RADIUS, TACACS/TACACS+ and username/password for Authentication, Authorization and Accounting (AAA) with Local User Accounts and Local User Password, DAI and ARP Check, IP source guard; CPU protection	
7.2	Should support secure communications to the management interface and system through SSL, Secure Shell (SSHv2) and SNMPv3	
7.3	Should support IPv6 ND, IPv6 ACL, IPv4/IPv6 Dual Stack	
7.4	Should support ACLs 32 rules per ACL and a minimum ACL 1.5k per system .	
7.5	Should support configuring broadcast, multicast, and unknown-unicast limits	
7.6	Should support URPF, LAND attack, SYN Flood attack, Smurf attack, ping flood attack, TearDrop Attack and Ping of Death attack.	
7.7	Should support Flexible Authentication with 802.1x Authentication and MAC Authentication.	
8	Manageability	
8.1	Should support manageability using Network Management Software with Web based Graphical User Interface (GUI).	
8.2	Integrated Standard based Command Line Interface (CLI), Telnet, TFTP, HTTP access to switch management/monitoring	
8.3	Should support NetFlow or sFlow or equivalent	
8.4	Switch should support automation using API's to automate recurring tasks from day 1. All licenses for this to be included.	
8.5	Should support RJ45/USB/Type-C port for Console Access.	
8.6	Switch should support traffic flow analysis based on Netflow & sFlow or equivalent.	
8.7	Should support OAM 802.3ah, 802.1ag, ITU Y.173	

8.8	Should support DHCP Server, DHCP Client , DHCP Relay, DHCP v6 Server/Client and DHCP v6 relay	
8.9	Should support XML API or NETCONF	
9	Standards and Approval	
9.1	Should support RoHS, EN 55032 / 55022, EN 61000-3-2, EN 61000-3-3, EN 61000-4-11, EN 61000-4-8, EN 61000-4-5.	
10	Physical Attributes	
10.1	Mounting Option: 19" Universal rack mount ears	
11	Mandatory Compliance	
11.1	All categories of Switches, Transceivers & Switch OS should be from same OEM	
11.2	All licenses for the above-mentioned features to be provided on day 1.	
11.3	Products which are end of sale or announced end of sale should not be quoted.	
11.4	All stacking cables accessories, licenses to be included along with the switch from day 1.	
12	Support	
12.1	Switch should be quoted with 24/7 TAC Support.	

NETWORK MANAGEMENT SOFTWARE		
OEM :		
Part No :		
Sr. No.	Specification	Compliance (Yes/No)
1	NMS should be virtual / hardware-based appliance and from the same OEM providing switching and wireless solution	
2	Must be able to support minimum 125 Switches and should be scalable to support minimum 1000 switches on the same virtual appliance	
3	Must provide centralized management that should be able to manage wired, wireless components.	
4	Must allow system-level operations such as device discovery, event management, logging and application maintenance to be performed centrally.	

5	Must provide the capabilities to modify, filter, and create your own flexible views of the network. Must provide an audit trail (event log).	
6	Must allow for graphing or viewing in table format and multiple OIDs that are user selectable.	
7	Must allow scheduled events or tasks that the user can perform behind the scenes or schedule an event for another time in the future.	
8	Must provide a system wide deployment of VLAN configuration and monitoring capabilities.	
9	Must support RADIUS / LDAP Authentication.	
10	Must have SNMP MIB compile capability to integrate any SNMP compliant device	
11	Must provide a tool to find the physical location of systems and end users, and where they are connected, quickly and easily.	
12	Must provide automated functionality to ensure that appropriate services are available to each user, no matter where they log on.	
13	Must be able to authenticate users.	
14	Must allow IT administrators to easily define a number of pre-configured network policies, and designate select personnel to activate/deactivate these policies as appropriate	
15	Must provide a detailed inventory of products organized by device type.	
16	Must support the ability to present detailed configuration information including date and time of configuration saves, firmware version and file size.	
17	Must record a history of device attributes such as firmware, configuration changes and reports any changes made to the device.	
18	Must be able to generate valuable, in-depth reports for network inventory for planning purposes.	
19	Must support the ability to download firmware to single or multiple devices simultaneously and should support automatic or manual backup of configuration	
21	Must provide a web interface that contains reporting, dashboards, troubleshooting and monitoring tools.	
22	Must provide web-based flexible view, device views and event logs for the entire infrastructure.	
23	Must enable diagnosis of network issues and performance through real-time flow analysis.	



24	Must provide port level analysis capability and customizable reports.	
25	Should have the capability to reduce risk and ensure network configurations comply to HIPAA / PCI or equivalent with that analyses and assesses network configuration for compliance across entire wired / wireless network.	
26	Should have the ability to get actionable business insights and speeding up troubleshooting by separating network from applications	
27	All the Switches, Transceivers, AAA, Wireless controller (if any), Access points (If any) and NMS (if any) should be from the same OEM for better integration.	
28	The OEM should have TAC center in India and also 24x7 TAC support with Indian Toll free number – reflected in official website/documents.	

MONITORING WORKSTATION

OEM :

PART NO :

Sr. No.	Parameter	Specification	Compliance
A. CPU			
1	Processor	Intel i7 10th Gen or better	
2	Frequency	3.5 Ghz or better	
3	RAM	16GB	
4	HDD	500 GB SSD for OS	
5	OS	Windows 10 Professional or latest	
6	Interface	2* HDMI, VGA, 2 * USB 3.0	
7	Network Interface	Gigabit Ethernet	
8	Type	Business/Office/Pro edition CPU model should be able to work 24x7x365	

B. Monitor

OEM :

PART NO :

1	Display Size	24 " Monitor * 2 Nos	
2	Technology	IPS Panel, LED backlit LCD/TFT	
3	Resolution	Full HD / 4K	
4	Interface	HDMI / VGA / DP	
5	Power Input	AC / DC	



C. Graphics Card			
OEM :			
PART NO :			
1	Type	External	
2	RAM	8GB	
3	Video Interface	DP / VGA / HDMI * 2	
D. Keyboard & Mouse			
OEM :			
PART NO :			
1	Interface	USB Wired	
2	Type	Standard 104 keys	

4K KVM EXTENDER			
OEM :			
PART NO :			
SL NO	PARAMETER	SPECIFICATION	Compliance (Yes/No)
1	No of Displays	2	
2	Resolution	3840 x 2160 - 4K @ 30 Hz	
3	Port	HDMI / DP	
4	Transmission	UTP / Fiber	
5	Auxiliary Ports	USB 2.0 * 2	
6	Operating Temperature	0° C to 50° C	

CAT6 LSZH CABLE			
OEM :			
PART NO :			
SL NO	PARAMETER	SPECIFICATION	COMPLIANCE
1	Category	6 UTP Solid cable LSZH	
2	Conductor Metal	Bare Copper	
3	Pairs	2 Insulated conductors twisted together - 4 Pairs	
4	Cable Diameter	6.1 mm nominal	
5	Conductor	23 AWG (Solid)	
6	Insulation Material	HD-PE	



7	Sheath	LSZH - Low Smoke Zero Halogen (Flame Retardant)	
8	Frequency	250 MHz	
9	Standards	TIA/EIA 568-C.2, ISO/IEC 11801	
10	Length	0.25M, 0.5M, 1M, 2M, 3M, 5M, 10M, 20M, 305M	

24 Port / 48 Port Cat 6 UTP Loaded Patch Panel			
OEM :			
PART NO :			
SL NO	PARAMETER	SPECIFICATION	COMPLIANCE
1	Identification	ID Plate : PC, transparent color with paper	
2	Panel & Support Bar	SPCC, 1.5mm thickness with Black colour painted	
3	RJ45 Jack	Housing: PBT+Glass fiber UL94V-0 Contact Brackets: PBT+Glass fiber UL94V-0 Black Color	
4	RJ45 Jack Contact	Phosphor bronze with nickel plated	
5	IDC	Finish : 50 micro-inches Gold plated on plug contact area. Housing - PC, UL94V-0 Terminal : Phosphor Bronze with Tin plated	
6	Jack Bracket Set	ABS	
7	Size	1U / 2U	
8	Contact Resistance	20 Milliohms max.	
9	Insulation Resistance	100 Megaohms min. @ 500 VDC	
10	RJ45 Jack Life	750 Times min	
11	IDC Life	200 Times min	
12	Operating Temperature	-10 Degree To +60 Degree	

9U NETWORK RACK

OEM :			
PART NO :			
SL NO	PARAMETER	SPECIFICATION	COMPLIANCE
1	Enclosure Type	Wall Mount	



2	General Characteristics	The 19" wall mount cabinet are intended for digital infrastructure	
		The wall mount cabinets made up of steel frame structure	
		The 19" Wall mount cabinet comes in colours	
		The 19" Wall Mount cabinet can be equipped with rear cover for better sealing of the cabinets.	
		Equipment and accessories for the thermal and cable management such as cable manage, cantilever tray, cooling fan, power distribution unit	
3	Technical Characteristics Design	Top cover made up of CRCA sheet + powder coated	
		Bottom cover made up of CRCA sheet + powder coated	
		Side Panels made up of CRCA sheet + powder coated	
		Frame made up of CRCA sheet + powder coated	
		Recess angel made up of CRCA sheet + powder coated	
		Door trims made up of CRCA sheet + powder coated	
4	Corrosion Resistance	Salt spray test according to ISO 9227 (NSS test) and IEC EN 60068-2-11 (Ka test) for 168 hours: degree of rusting Ri1 according to ISO 4628-3, propagation ≤ mm according to ISO 4628-8	
5	Construction	19" Rack: Steel frame structure design, metal top cover with 2 fan provision and cable entry provision covered with edge protected rubber grommet, bottom cover with cable entry provision covered with edge protected rubber grommet provide, powder coated finish texture matt - 60 to 80 uM	
6	Front Door	Front glass single door with cam lock & key	
7	Panel	Front panel mounting hardware	

8	Cantilever	Cantilever Tray 255 mm D -Optional	
9	Fan	230C A/C 90 CFM fan mounted on top cover - Optional	
10	Cable Manager	Horizontal cable Manager 1U with PVC loops	
11	Weight Capacity	Weight carrying capacity (Certified - 30 Kg)	
12	Material	Racks to be preferably made out high quality Steelium CRCA sheets - 0.8/1.5 mm CRCA Sheets.	
13	Packaging	5 Ply Carton packaging with edge protectors	
14	Characteristics value Indicated (H x W x D)	6U / 9U x 600W x 550D	

FACIAL RECOGNITION SYSTEM		
OEM :		
PART NO :		
SL NO	SPECIFICATION	COMPLIANCE
General Requirements		
1	The system shall be able to work with IP Cameras as required and shall be able to identify multiple subjects of interest in real-time, through leading face and body recognition technology based on AI & Deep Neural networks and provide an alert when subject of interest of match is found.	
2	The alerts should be configurable as desired by the Operator – Silent Alert (Visual only), Pop-up alert (in a notification window), Loud/Audible alert depending on the requirement.	
3	The system should be able to use proven open-source tools and technologies to bring down the total cost of ownership of the solution as well as and reduce vulnerabilities to OS attacks. The system shall be deployed using microservices technology for easy serviceability.	
	The micro services should be containerised in pods using modern technology stack based on docker containers and Kubernetes orchestration to ensure scalability and availability.	

	The user interface of the system shall be web based with support for cross platform browsers like Google chrome so that clients can connect without any additional software installation.	
4	The FRS OEM should have participated in the recent NIST FRVT tests conducted for facial recognition in the past three years.	
5	The system shall provide a well-documented API with sample codes for integration with any third-party software.	
	The API should allow mechanisms for configuration of system parameters through external third-party systems as well as capability for third party systems to subscribe to system events like alerts etc. for real time notifications.	
6	The Watch list alerting platform shall support the following modes per video stream:	
	a) Face Recognition	
	b) Body Recognition	
	c) Person Recognition (Face + Body)	
7	The Face Recognition Engine / Algorithm shall be able to detect faces with side profile up to 60 degrees or higher to make it appropriate for non-cooperative / unconstrained facial recognition and surveillance use cases.	
8	The platform must be General Data Protection Regulation (GDPR) ready to address and aid any privacy regulations that may arise from the use of such software by various agencies in future.	
9	The FRS system shall make use of GPU technology instead of Traditional CPUs, to improve the computational performance in crowded environments and lower the total cost of ownership.	
Detection Capabilities		
10	Continuously detect and recognize moving and distant faces from different angles (including side profile views) without the person's cooperation	
11	Simultaneously detect up to 20 faces in any given frame in real time	
12	Detect a face with a minimum size of 48 x 48 pixels in any live stream which has a minimum rate of 10 frames per second	
13	Capture a face of anyone regardless of ethnicity and gender	
14	Automatically crop a face from a live video stream or an image	
15	Detect a partially hidden face / occluded face / face with masks	
16	Detect faces from an angle of at least $\pm 60^\circ$ horizontal, $\pm 30^\circ$ vertical	

17	The user shall be able to view a real time updated thumbnail list of the face/body detected in the system.	
Core Application Capabilities		
17	Latest generation of facial recognition technology – Real-time 1:N non-voluntary face recognition in the wild. Incorporating technology based on GPU for video processing.	
18	Detection and recognition of multiple face/body simultaneously in real time	
19	Real time alerting within up to 2 seconds following the event	
20	Ability to connect to and integrate with mobile phones for alerts and watchlist management	
21	Ability to work seamlessly – editing lists and enrolling new POIs (Persons of Interest) without interrupting the operation of the system	
Database, Watchlist and Enrolment Capabilities		
22	Create multiple groups (unlimited) within the watchlist based on different classifications and set a colour for each group	
23	Indicate the quality of image for each enrolment	
24	Easily manage and edit the watchlist by adding/deleting POIs and groups	
25	Enrol multiple POIs simultaneously using mass import functionality	
26	Enrol a POI directly (face/body) from the system detections acquired by the IP cameras / offline videos	
27	Work adequately with reference image (for enrolment) Face Size as low as 60 x 60 pixels	
28	Find a previous detection of a POI upon enrolment to watchlist (retrospective search) in near real time (<2 sec)	
Detection Features		
29	Detect event time, date, camera, subject identity if suspect matches with database	
30	Play a short video of the moment of detection without dependency on external systems	
31	Go to the moment of event and show other events / faces / body around the same time and location	
32	Search backwards for previous detections and/or recognitions (events) of the detected person (using Face/Body) without enrolment in near real time	

33	Privacy regulation mode – the system ignores any detected faces of people not enrolled in the watchlist (only pre-enrolled people will be recorded). This mode can be enabled / disabled as needed.	
Recognition Capabilities		
34	Ability to overcome the following conditions:	
	i. Changes in facial expression	
	ii. Changes in facial hair or hairstyle	
	iii. Changes by moderate aging (up to 15 years)	
	iv. Partially hidden faces	
	v. Changes in lighting conditions	
	vi. Head angles of $\pm 60^\circ$ horizontal or better, $\pm 30^\circ$ vertical	
35	Recognition time of less than 2 seconds for a database of up to 100K faces	
36	Ability to adjust the recognition threshold based upon a camera if needed.	
37	The system shall be able to natively support privacy masking within the camera FoV if needed without any dependency on the camera to do so to enhance performance, lower compute and minimise false alerts.	
Other Features		
38	Body detection shall allow identification of subjects based on upper and lower body colour as well as additional attributes like subject with or without backpack.	
39	System shall be able to search and shortlist suspects based on one or more of following search filters / attributes:	
	1. Gender	
	2. Upper Body Colour	
	3. Lower Body Colour	
	4. Backpack	
	5. Search by Date & Time	
	6. Search by Camera Group	
	7. Search by Detection status - Authorised / Unauthorised / Unknown	
40	System shall be able to support GIS map - System shall allow each camera added to be plotted on the GIS map (Latitude / Longitude). The GIS Map shall allow users to plot cameras and zones as different layers which can be enabled or disabled as required. The system shall be able to highlight a camera on the map which has alerts.	

41	System shall be able to show the real time route view that a subject has taken on the GIS map in order to give the user a visibility of which cameras the subject has crossed, and which areas has the subject covered thereby allowing tracking of suspects in real time based on the cameras added in the system.	
42	System shall allow custom acknowledge actions to be created which will be used by operators to acknowledge each alarm as a part of their SOP (Standard Operation Procedure)	
43	Since the Body search is based on upper and lower body colour which would change on daily basis, the system shall allow the user to define a retention period for the body images	
44	System shall allow the administrator to define time profiles which can be used for conditional authorisation of subjects based on allowed time range. This means that if contractual staff in an area is only allowed from 9 AM to 5 PM, the system shall not raise an alert during this time, but if the same subject is seen after this time, it shall immediately raise an alert.	
45	Software shall have a capability to learn and ignore a non-face (Photograph) being detected as a face in future detections (Supervised learning) to minimise false alerts	
46	Intelligent Quadrant Control: The system shall allow creation of subject groups and camera groups and mapping of subject groups to camera groups to create customised rules for conditional authorisation. This means that if a person is seen on a specific camera it shall give an alert while if the same person appears on another camera where he is authorised it shall not generate any alerts.	
47	All recognitions corresponding to a newly enrolled suspect shall also happen in real time for all the past detections of the same subject. Time required to perform the back search shall be less than 2 seconds for past 24 hours detections.	
Video & Image evidence of suspects		
48	Software shall provide multiple images of the suspect including zoomed in and zoomed out images and a short video marked / over lay with the bounding box on the suspect face which can be downloaded as evidence.	
Easy Monitoring of System Health		
49	Software shall have a dashboard showcasing health of key components in system like the backend services as well as cameras.	

Associate Search / Contact Tracing		
50	The system shall allow to search a list of all people who have been in association with an identified suspect – based on detection image selected. Association shall be determined based on the associate being seen in the same camera field of view or in a nearby time frame on the same camera (one or multiple cameras) and this feature would also be useful for contact tracing purposes.	
51	The associate search shall include filters like dwell time to filter out and sort all associates based on the amount of time spent with a Person of Interest.	
Email Alerts automation based on Subject groups		
52	The system shall be capable of configuring granular rules based on subject groups to define relevant people who should receive email alerts when subjects corresponding to this group are identified	
Analyse recorded footages & Still images from various sources		
53	The system shall be able to analyse recorded video footages as well as still images from various sources like wearable cameras, mobile phone cameras or IP cameras provided they are in standard media formats to be able to run an Inquiry based on Face / Body / Person recognition as needed.	
54	The system shall provide a dashboard for the end user to upload such videos / still images from the web client so that the user can create an inquiry case and then patch it to the search timeline based on the actual date and time of the incident. This will then allow all users to have a unified approach to search for results based on the systems search module related to the timelines to which the offline media has been tagged.	
Mask Detection capabilities		
55	The system shall feature a capability to classify subjects with and without masks and provide this information as a detection attribute on cameras configured for mask detection.	
56	The system shall also allow to configure specific camera to alert on subjects who are not wearing a mask to enforce COVID compliance.	
Alerting on unknowns		

57	The system shall allow specific cameras to be configured as restricted cameras – these will be cameras overseeing highly sensitive areas like VIP zones which will typically have very low footfalls. In case any unknowns are seen on such cameras, the system shall raise an unknown alert.	
Customised matching thresholds per subject group		
58	The system shall allow specific subject groups to have customised matching thresholds (which could be higher or lower than the usual) – the system will provide in such cases an ability to add an over-ride factor so that this will work in tandem with the camera thresholds. This should be linked to specific camera groups from the UI configuration so that on certain highly sensitive subjects the matching thresholds can be lowered than usual at the cost of a few false alerts to ensure that the subjects are not missed when crossing certain camera field of view.	
User Management		
59	The system shall allow multiple user roles to be created like admin / operator etc. so that the privileges for every user can be tailored as needed to ensure.	
60	Every user role shall also be linked to a user data group which can be configured by an administrator / super admin. The user data group shall define the camera groups and subject groups that an associated role is allowed to view within his login.	
61	The system shall have the capability to integrate with Active Directory. By establishing a connection with your Active Directory or Identity Provider (IDP), your users can access the system with their existing credentials.	
Audit Logs		
62	The system shall support audit logs – to allow users to View a complete list of all the actions taken by users and easily filter through the actions by date or by the user to get a better understanding of the changes made.	
Liveness Detection		
63	The system shall be capable of performing 2D liveness detection on any IP camera configured within the system – this capability shall provide a measure of the system's confidence with regards liveness for the detections made. Liveness score shall provide a metric to differentiate between a real face appearance and a spoof attempt (like someone showcasing photo on printed paper / mobile phone to a camera).	

	The liveness detection capability can be configurable so that it can be enabled / disabled per camera.	
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AI BASED VIDEO CONTENT ANALYTICS		
OEM :		
PART NO :		
SL NO	SPECIFICATION	COMPLIANCE
A	General	
1	The proposed video analysis solution should meet all the requirements detailed in this A&E specification document.	
B	Supported Cameras	
	ONVIF / RTSP	
1	The solution should support analysis of any ONVIF / RTSP video streams from fixed, angled or overhead cameras. These could be IP cameras or analog cameras via encoders.	
	Optical cameras	
1	The solution should support analysis of video streams of optical cameras.	
2	The solution should support minimal resolution of 480p and should be able to support higher resolution streams (i.e.: 720p / 1080p) to improve detection distance and accuracy. Maximum supported resolution should be 4k	
3	The solution should support analysis of video streams with minimal frame rate of 8 FPS.	
	Thermal cameras	
1	The solution should support analysis of video streams of thermal cameras	
2	The solution should support minimal resolution of QVGA (320 x 240 pixels) and should be able to support higher resolution streams to improve detection distance and accuracy.	
3	The solution should support analysis of video streams with minimal frame rate of 8 FPS.	
C	Video Analysis Technology	
	The solution should be based on Deep Learning technology for target detection and classification.	
	Target types	
1	The solution should support automatic detection and classification of the following target types:	
	Person: Standing, Fallen down (on the ground)	

	• Two Wheeled Vehicle: Motorcycle, Bicycle	
	• Vehicle: Car, Pickup truck, Van, Bus, Truck	
	• Object: Bags, Suitcases, Backpacks, Boxes	
	• Smoke and Fire: Smoke, Fire	
2	The solution should be able to automatically detect and ignore the following objects:	
	• Clouds	
	• Birds	
	• Dogs/cats	
	• Vegetation	
3	The solution should support detection of the existence or absence of Custom object types. The customer should be required to provide a relevant set of several hundred images of the desired object type, and custom object detection model should be prepared for the customer.	
D	Rule-Based Event Detection & Analysis Capabilities	
	Analytics Rules	
1	The solution should offer a suite of analytic rules to provide real-time detection of the following behaviors:	
	• Target/s moving in an area / loitering – the target is moving in the region of interest for a user-defined duration	
	• Target/s crossing a line – the target has crossed a user-defined line in a specific direction or in any direction	
	• Stopped vehicle – the target has stopped in the region of interest for a user-defined duration	
	• Vehicle speeding – the target vehicle crosses a line at a higher speed than defined	
	• Grouping – detection of a dense group of people (a configurable number) in the region of interest, detected for a user-defined duration	
	• Occupancy – detection of people (a configurable number) in the region of interest, detected for a user-defined duration	
	• Object left behind – detection of suitcase/bag/backpack left behind in the region of interest for a user-defined duration	
	• Asset protection – mark an object in the field of view and receive an alert when that object is removed	
	• Traffic counter-flow – a vehicle is travelling in the opposite direction	
	• Slip & Fall detection – a person is falling on the ground and detected lying on the floor	

2	Each detection rule should be applicable to the relevant target types. The user should be able to select several relevant target types for each detection rule.	
3	The solution should be able to detect the existence or disappearance of Custom objects in/from a user-defined region of interest.	
	Rule Configuration and Setup	
1	The solution should provide the ability to execute bulk operations for activating, deactivating, and scheduling of multiple analytics rules.	
2	The solution should enable any combination of analytics rules to run on the same camera simultaneously, without limitations.	
3	The solution should enable the operator to define multiple detection regions per camera.	
	Scene calibration	
	Each camera should support automatic and manual calibration. Calibration refers to the translation from pixels in the image to actual size (meters/feet) in different parts of the image:	
1	The system should automatically calibrate object sizes in the image based on standard sizes of DNN-classified targets in the scene, over time.	
2	The system should have the possibility to override the automatic calibration, or calibrate scenes where no movement occurs. Manual calibration should support different pixel to meters translations for different parts of the image, creating a flexible calibration mesh across the image frame.	
3	All calibration methods should support complex translations creating accurate translations also in challenging environments resulting from e.g. fish-eye/distorted camera images and scenes with multiple levels.	
	Event Generation	
1	The solution should provide real-time generation of events to alert operators when a behavior is detected that matches the user-defined rule.	
2	The solution should support simultaneous tracking of multiple of targets within the detection regions and/or the cross lines.	
3	The solution should generate a short event video clip for each detected event, showing several seconds before and after the event, and include a bounding box around the target that triggered the event.	
	Event Integration	
	The solution should be able to send the events to the following external systems:	
	• VMS	
	• Other systems based on WebHooks protocol (HTTP Push)	
	• Other systems based on SMTP protocol	
E	Anomaly Detection	

	The system should be able to continuously 'learn' the typical behavior of the scene. The system should then be able to automatically detect abnormal behaviors of detected targets and generate anomaly events in real-time.	
	Anomaly Detection Configuration	
1	The user should be able to activate/de-activate anomaly detection for a single or multiple camera/s.	
2	The user should be able to change the default anomaly detection configuration parameters for a single or multiple camera:	
	• Analyzed target types: multiple selection of relevant target types	
	• Anomaly detection sensitivity: measured by the average number of anomaly events to be generated daily/weekly	
	Anomaly Detection and Event Generation	
1	The system should analyze the behavior of a target based on the following parameters:	
	• The target's existence in the camera's field of view	
	• The target's path	
	• The target's size	
	• The target's speed	
2	The system should analyze the relations of several targets in the scene based on the following parameters:	
	• The number of targets in the scene and their location in the camera's field of view	
	• The distance between the targets in the scene	
3	The system should analyze the object's normal behaviors per the different week days and hours of day.	
4	The system should generate an anomaly event including an event clip with several seconds before and after the event date and time, bounding boxes around the relevant targets and description of the detected anomaly.	
	Anomaly Detection Training and User Feedback	
1	The system should require an initial learning ('training') period of a few weeks.	
2	The system should enable the user to fine tune the anomaly events by letting the user tag the anomaly events as relevant or irrelevant. irrelevant events should feed the ongoing training process and should subsequently be ignored.	
3	The system should re-learn the scene's normal behavior on a regular basis.	
F	Masking and anonymization	
	The solution should support static and dynamic video masking functionality. The functionality should be individually configurable per video stream.	
	Masking methods	
	Different masking methods should be supported:	

1	Static masking – A “black mask” that is statically applied to every frame of the video data. The masking should be applied to pre-defined polygons, thereby hiding the underlying image data.	
2	Object-based masking – A dynamic mask, “anonymization”, applied to every frame of the video data. The masking should be applied dynamically only to certain object type(s) in the image: Person / Two-Wheeled Vehicle (Motorcycle/Bicycle) / Vehicle (Car, Pickup truck, Van, Bus, Truck). The background should not be masked. This protects the identity of people in the camera view.	
3	Background masking – Everything that is not part of classified objects of types Person / Two-Wheeled Vehicle (Motorcycle/Bicycle) / Vehicle (Car, Pickup truck, Van, Bus, Truck) should be masked. This protects sensitive environments, such as homes and military facilities.	
4	Combination – Any or all of the methods above should be possible to combine freely.	
	Mask types	
	Different mask types should be supported	
1	Adaptive pixelization – A large, pixelized, version of the original image content should make up the mask. The mask pixelization size should be chosen dynamically depending on the camera resolution and object distance in order to ensure proper anonymization (identity protection) independent of the object size in pixels in the original image.	
2	Solid color – The mask should consist of a single solid color that replaces the original image data.	
	Masking implementations	
	Different masking implementations should be supported:	
1	Permanent – Each frame in the video data is permanently, destructively, masked. The original video data should not be possible to recover.	
2	Liftable – Each frame in the video data is masked for certain users with a lower permission level, but can be viewed without masking by users with a higher permission level.	
G	Video Investigation	
	Method of operation	
1	The system should analyze all cameras in real time and create metadata that will be stored in a database. It should be possible to search any camera with a delay of no more than 10 seconds from real time.	
2	The system hardware specification will facilitate the real time processing of all cameras.	
3	It should be possible to search any or all cameras in the installation simultaneously and without needing to process the cameras in small batches, regardless of the number of cameras installed in the system.	

	Defining Search Criteria	
1	The solution should not require the operator to apply any rule or behavior configuration in advance as a pre-requisite for performing video investigation.	
2	The video investigation should be conducted simultaneously over single or multiple selected cameras, either from a list or map.	
3	The solution should offer searching for the following suite of behaviors of the supported target types:	
	• Person / Two Wheeled Vehicle (Motorcycle/Bicycle) / Vehicle (Car, Pickup truck, Van, Bus, Truck) moving for a specified time, in the entire field of view (FOV) or in a specified area of interest (AOI)	
	• Person / Two Wheeled Vehicle (Motorcycle/Bicycle) / Vehicle (Car, Pickup truck, Van, Bus, Truck) crossing a line to a specific direction or in either directions	
	• People grouping for a specified time, in the entire FOV or in a specified AOI (based on a user-defined number of people threshold)	
	• Persons occupying for a specified time the entire FOV or a specified AOI (based on a user-defined occupancy threshold)	
	• Two Wheeled Vehicle (Motorcycle/Bicycle) / Vehicle (Car, Pickup truck, Van, Bus, Truck) that stopped for a specified time, in the entire FOV or in a specified AOI	
	• Bags/backpacks/suitcases that were added for a specified time, to the entire FOV or to a specified AOI	
4	The solution should allow filtering of search results based on target color characteristics. For people the solution should allow specifying upper body color and lower body color.	
5	The solution should be capable of searching over various time range options:	
	• Over the past N minutes, hours or days (e.g., over the past 3 hours; past 7 days)	
	• From a start date and time to an end date and time	
	• Over a recurring time interval across a date interval (e.g., between 8-9 a.m., every day between Jan 1-10)	
6	The solution should provide the capability to Search for Similar Targets: If a target is found, another search can be performed in the recorded video (generated from the same camera or any group of cameras) to find targets that are the same as or similar to the found target.	
	Viewing Search Results	
1	The solution should be able to display video recording for any search result around the time that the search target / behaviour was found, without requiring integration to a 3rd party recording solution.	

	The solution should continuously display a bounding box over the target (target tracking)	
	The solution should enable the user to Pause and Re-Play the video playback	
	The solution should enable the user to use the progress bar to navigate to any time position along the playback segment	
2	The solution should provide multiple options for viewing search results:	
	Event Thumbnails: After searching for the relevant results, the solution should be capable of displaying a thumbnail for each result, each of which shows the detected target. It should be possible to play back the video of each thumbnail.	
	Target Path / Location: After searching, the solution should be capable of displaying all motion paths in a scene over the field of view reference image. Motion paths should be colorized based on primary object class (Human, Vehicle, Two-wheeled vehicle) and filterable based on object class.	
	Heatmap: After searching, the solution should be capable of overlaying a grid where each cell is colorized depending on the amount of activity in that part of the image. It should be possible to filter the heat map overlay depending based on the object class.	
	Original video: After searching, the solution should be capable of showing the original video in an integrated video player.	
	Process and Investigation Capabilities	
1	The solution should provide the following process and investigation capabilities:	
	Save Search Query: Users should be able to save a search query with a given name for later reuse.	
	Save Search Results: Users should be able to save search results with snapshots of the detections and the results' identifying information (camera ID, time).	
	Export Clip: The solution should enable users to export a search result to a video file, for a single result as well as for a complete video summary. The exported clip will include the target tracking display.	
H	Statistics	
1	The solution should offer analytics rules to provide statistical analysis capabilities for multiple target types including but not limited to:	
	Count the number of targets moving directionally, i.e., crossing a virtual line/s that is operator-defined in the camera's field of view. The solution should optimize precise counting of targets by distinguishing individual targets in a cluster. If a cluster of 4 people crosses a line (for example), a count of 4 will occur rather than 1	
	Calculate average speed of vehicles crossing a line.	

2	The solution should offer statistics of events generated in the system, over time. Aggregation of events over cameras and hours/days should be supported.	
3	The solution should offer statistics of health alerts generated in the system, over time. Aggregation of events over cameras/devices/sources and hours/days should be supported.	
4	The statistical data should be available using APIs	
I	Geospatial Awareness	
	Geospatial Mapping	
1	The solution should enable the user to configure the following geospatial data per video source connected to the solution:	
	• The video source's location on a map • The video source's FOV (Field Of View) registration – correlation of points in the FOV with a map	
2	Alternatively, the solution should retrieve the geospatial data from 3rd party systems.	
	Geospatial Analysis	
1	The solution should be able to present real-time events or video investigation search results over a map.	
2	The solution should allow map-based selection of relevant cameras within a user-defined zone, for video investigation.	
3	The solution should be able to present a tracked target path over a map.	
J	System Health Monitoring	
1	The solution should self-monitor its main components to assure high availability and reliable video analysis. This monitoring should include the following aspects:	
	• Ability to properly pull the ONVIF/RTSP video stream • Minimal video stream frame rate and resolution • Scene lighting (too dark / saturated / blocked) • Event delivery status • Monitoring of analytics servers (the computer running the video analytics)	
2	The solution should support configurable thresholds for detecting and generating health alerts.	
3	The solution should be able to send health alerts to a configurable email recipients list.	
K	System Architecture	
	The solution should be based on the following main components:	
1	Analytics server(s) o The analytics server(s) pulls video streams from cameras and performs initial video analysis.	

	The analytics server(s) communicates with the core server(s).	
	The analytics server(s) should support low-bandwidth connection to the core services, down to ~5 kbps per camera.	
	The analytics server(s) should be able to scale to support any number of cameras and should support both scale-up and scale-out resource scaling to increase performance.	
	A GPU should not be required.	
	The analytics server should support both cloud-based, on-premise, and hybrid deployments. On-premise installations without internet access ("fully offline") should be supported.	
	Real-time event integrations to third-party systems from the analytics server should be supported.	
2	Core server(s) o The core server(s) should provide central management for all video analysis, rule configuration, and setup.	
	The core server(s) should support both cloud-based and on-premise deployments. On-premise installations without internet access ("fully offline") should be supported.	
	The core server(s) should be able to scale to support any number of cameras and should support both scale-up and scale-out resource scaling to increase performance.	
	The core server(s) should support high-availability deployments.	
	Multi-Tenant – the solution should support an unlimited number of separate accounts that should be completely isolated from each other.	
	An unlimited number of users – each account in the system should allow setting up an unlimited number of users.	
	Role-based authentication – each user in the system should be assigned a role with specific access permissions to different modules of the solution.	
	Real-time event integrations to third-party systems from the core server(s).	
3	Public API o The system should expose a public, documented, API.	
	The API should require authentication and encrypted communication.	
	The API should support all functionality in the system, including management of cameras and analytics, management of events and health alerts, monitoring of system health and real-time events, and the ability to create and get results from a video investigation.	

ANALYTICS CORE SERVER			
OEM :			
PART NO :			
SL NO	PARAMETER	SPECIFICATION	COMPLIANCE
1	CPU	A minimum of 24 processing cores (48 logical cores) based on Intel® Xeon® Skylake architecture or newer	
2	Memory	128 GB	
3	Storage	- o 250GB for Operating System and application - o 7GB per camera per month - o 5.5 write IOPS per camera - o 0.1MBytes/sec write Throughput per camera	
4	Supported operating systems	• Ubuntu 20.04, LTS 64-bit, Server Edition with no GUI installed • RedHat, RHEL 7.9, rhel-server-7.9-x86_64-dvd.iso	

INCIDENT MANAGEMENT SYSTEM		
OEM :		
PART NO :		
SL NO	SPECIFICATION	COMPLIANCE
	General Description	
A	Product – The Incident Management System (“IMS”) shall be an enterprise-level software which provides a unified viewing and management interface for security and facility sub-systems, including video surveillance, access control, intrusion, and incident management, enabling operators to manage situations in a consistent manner, regardless of the underlying integrated systems.	
B	The IMS shall embody the following characteristics:	
1	client/server architecture	
2	support multi-site, multiple-hierarchy deployment	
3	provide clear scalability	
4	central administration capability	
5	provide a well-documented SDK allowing third party integrations	
6	support local redundancy and high availability options	
7	utilize a standard MS/SQL database structure	
8	employ encrypted communications over TCP/IP LAN's and WAN's	



9	capable of running in a virtual environment	
10	operate on COTS computer hardware	
11	allow ingestion and processing of 10,000 events per second, scalable to 100,000 events per second	
12	monitor live deployed event applications for system performance and usage	
13	provide a mechanism to define key performance indicators, trends, leading Indicators and visualize the indicators on a web based configurable dashboard infrastructure	
14	provide a mobile portal to allow viewing of incidents and relevant details	
15	display a configurable indication of overall situation threat level	
16	provide communication capability to include email, text, telephone, intercom, mass notification, and application-based messages	
17	support a mobile app for field personnel, which enables its users to receive incident details (including tasks, forms, photos) and a comprehensive set of GIS capabilities, to ensure collaborative response aligned with the control room's operator	
18	Support the simulation of events, such as alarms, for training purposes.	
4.2	System Functions and Capabilities	
A	Operation	
1	The IMS shall provide a unified viewing and management GUI that enables operators to manage situations in a consistent manner, regardless of underlying integrated systems.	
2	The IMS shall process events automatically, perform correlations, prioritization and rule- based calculations based on a predefined business logic.	
3	The IMS shall facilitate the management of situations, as opposed to individual alarms.	
4	The IMS shall have facilities to support routine management, such as scheduler, quick launch activation, tour management tool, intercom and messaging and allow seamless escalation from routine to emergency management.	
5	The IMS shall have applications to support the complete operational cycle of Planning, Responding and Debriefing.	
6	The IMS shall be capable of running on a single or multi-screen environment.	
a	In multi-screen, all application panes shall be capable of being docked or undocked and moved to specific screens.	



7	The IMS shall support the planning and activation of dynamically adapting response plans to real time varying situations.	
8	The IMS system shall have an at-a-glance operational status view that will indicate all exceptions such as alarms, outstanding events that still require attention, and escalations.	
a	All individual high-level indications displayed in the summary view shall be linked to further related detailed information.	
9	Customization - The IMS system customizable functionality shall include:	
a	display layouts	
b	threat levels	
c	incident management including creating, updating, assigning, distributing, escalating	
d	video management	
e	GIS management	
f	icons management	
g	zone management	
h	sensors management	
i	asset management	
j	dynamically evolving response plans/procedures	
k	business process management	
l	exception lists	
m	authentication	
n	authorization	
o	forms	
p	reports	
q	Routine management (schedules, route tours, quick activations, etc.)	
r	skills management	
s	sounds management	
t	collaboration	
B	Incident Response Planning and Deployment	
1	Administrator/Planner capabilities	
a	define response plans offline to ensure that incidents will be handled consistently	
b	define conditional tasks with pre-configured branching options for presentation to users and with procedures and response plans which change dynamically based on users' selections	
c	define automatic procedure tasks that initiate actions, including	
i	sending messages	

ii	displaying video	
iii	popping up pre-configured GIS map views	
iv	adjusting incident's details, such as editing incident name or raising the severity level	
v	inserting another procedure into action	
d	define triggers on task status, initiating a pre-configured action	
e	define task escalation triggers	
f	define Job Titles, organization chart and groups	
g	assign tasks to a predefined group of Job Titles such that the first person who completes a task completes it for all	
h	associate predefined forms and attachments with incident types, procedures, and tasks	
i	define key performance indicators, trends, leading Indicators for visualization on a web- based configurable dashboard	
j	configure and monitor service levels and trigger actions for monitored key performance indicators	
k	configure skills to facilitate assignment of tasks	
l	configure "quick launch" actions	
2	System capabilities	
a	export, save and print out the entire procedure book	
b	provide current business status (snapshot) of organization's facilities, departments and a holistic perspective of incidents and situations, including incident handling time, number of false alerts, and number of active and closed incidents	
c	provide tools to analyse trends of selected incident system parameters	
d	assign procedure tasks to Job Titles during configuration for association with specific named individuals at time of incident	
C	Incident Management	
1	System capabilities	
a	provide for each incident to have its own tasks that become easily accessible when the incident is selected in the Incidents Log	
b	launch a list of tasks for operators to perform upon a selected incident trigger	
c	record, timestamp, and save all response actions performed on procedure tasks in the system's database along with the user who has taken the action	
d	Maintain a dedicated Incidents Log screen intuitively providing situation decision guidance support.	

e	Create an incident automatically based on pre-configured rules, on-demand by operators, or from scheduled triggers.	
f	Provide the ability to open incidents on-demand via pre-configured “Quick-Launch” action buttons and keyboard function keys.	
g	launch a procedure with a list of dynamic tasks when opening a new incident	
h	launch and attach any additional predefined procedure dynamically for an open incident	
i	distribute task assignments manually or automatically to individuals or Job Titles	
j	support the following methods of incident configuration:	
1)	Display an incident on a supervisor’s terminal only when it is escalated beyond a predefined severity level.	
2)	automatically sort open incidents by severity and by time	
3)	configure workstations to display incidents per the following criteria:	
>	only incidents “owned” by the logged in user	
>	only incidents of certain types	
>	only incidents that correspond to that site in the hierarchy	
>	only incidents beyond a certain predefined severity	
k	support the following methods of incident assignments:	
1)	claiming by acknowledge	
2)	automatic assignment per rule	
3)	assignment to a supervisor for dispatch to operators	
l	record/time-stamp defined procedural actions taken when managing the incident	
m	update incident properties, reassign incidents and add scheduled tasks automatically or on-demand	
n	recommend the most relevant procedures to deploy per incident	
o	escalate open or unmanaged incidents beyond a predefined period	
p	Assign a category (or incident type) to incidents, either automatically or on-demand and group incidents in the Incidents Log by site, owner, or category.	
q	Support ‘in-context’ single-click easy navigation to all relevant maps, cameras, pre-alarm video playbacks, sensors, attachments, and forms associated with the managed incident.	

r	View and edit multiple forms related to incidents and tasks. The forms with the most updated information shall be saved and accessible at any time.	
s	Search for incidents that share similar characteristics. The similar incidents display includes, at least, creation time, closure time, related sensors, created by, and deployed procedures.	
t	Add incident comments, in either a predefined form format or free text format, and task comments.	
u	search and display closed incidents per filtering criteria such as time & date, type, severity, and owner, despite closed incidents automatically disappearing from the incident log	
v	pop-up notifications when incidents are created and when they are escalated	
1)	reflect the severity of the incident with notification color	
2)	reflect the number of unread notifications	
3)	link popup to the relevant incident by a hyperlink or other means	
4)	dismiss popup notification by the operator	
5)	display according to the notification filter configuration	
w	support playing of configurable sounds upon creation or updating of incidents	
1)	types: text-to-speech, WAV sound-track files	
x	allow requiring a comment upon incident closure	
y	allow open/update/close incidents and map placement from external sources via Web API	
z	display the relevant user procedure tasks for each incident	
aa	discover automatically sensors and cameras closest to the incident source location (GIS feature, Incident location, sensor location) to define an "Impact Area"	
1)	allow the operator to draw and update the Impact Area shape and size on the GIS map	
2)	calculate Impact Area contacts originating from a sensor related to an incident	
bb	use the contact information for communication purposes (short messages, emails, outbound calls).	
cc	add, assign, and reassign tasks on-the-fly to a single user or a group of users.	
2	Mobile portal – The VMS mobile portal shall enable remote users to: The mobile solution shall enable remote users to:	

a	Create an incident from the field	
b	View incidents and relevant incident information including location and attachments	
c	Exchange comments with the control room operators and other users	
d	Support incident management in offline mode with ability to sync information when reconnected with network	
e	Use a native app (iPad) running IOS operating systems or web-based portal	
D	Video Management	
1	The IMS shall have a built-in virtual video matrix for the display and management of live and recorded video from multiple external video systems of different manufacturers and models.	
2	The IMS shall have proven integration and deployments with at least but not limited to the following video vendors:	
a	List required video integrations	
3	Video display functions:	
a	facilitate the presentation of video on external video walls or video monitors	
1)	recall and activate external video wall presentation salvos and presets	
b	definition of multiple secondary video matrix displays and rendering on separate monitors	
c	automatically display a searchable camera tree with all defined cameras and their respective site locations in the organization structure, and camera type and status clearly and visually reflected on the camera tree icon	
1)	types: PTZ, fixed	
2)	status: Alarm, Failure, Disconnected	
d	flexible adjustment of video matrix layouts to 1x1, 2x2, 3x3 and 4x4 cameras per screen	
e	full screen displays of video cameras without camera trees or other menus	
1)	enable double-clicking to toggle a camera display between original and full screen views	
f	setup and save video layouts consisting of matrix viewer configuration and displayed cameras, to be available for on demand display or for activation via automatic actions	

g	automatic popup of individual cameras, camera playbacks, video tours and multiple cameras per predefined trigger/actions or rules	
1)	clearly identify cameras popped up because of an alarm	
h	on-demand locking of individual video slots and/or the overall matrix display to prevent newly opened streams from replacing previously opened streams	
i	digital zooming of displayed video	
j	display a “panoramic” view of an environment by opening all surrounding cameras adjacent to a camera with a single-click	
k	configurable option to recall and restore video layouts and displayed cameras from just prior to application shutdown upon application restart	
4	Camera operations	
a	support the following on demand requests to open cameras:	
1)	drag-and-drop from the camera tree to a matrix viewer	
2)	double-click or right-click the camera from the camera tree	
3)	click on related camera from an incident	
4)	click on camera from a map view	
b	automatic popup of individual cameras and predefined camera groups upon detection of an event, or a combination of events	
c	camera PTZ control via mouse, joystick, or special function	
d	setup camera preset positions, to be activated on-demand directly from the camera tree or automatically upon triggered events	
1)	allow synchronization of camera presets with external video system settings	
e	configure virtual tours, which are	
1)	displayed as a predefined sequence of segments	
2)	configurable for display duration	
3)	subject to manual override	
4)	available for popup display on-demand or by automatic action triggered by rule/workflow	
f	allow administrators to configure camera orientation and Field of View (FOV)	
g	calibrate video camera orientation	
h	provide video pursuit capability, enabling users to track suspicious moving objects or people in real-time by opening a selected adjacent camera as the object or person moves out of a camera’s view	

i	control access to live video and PTZ control to cameras per users predefined roles	
5	Recording and playback functions	
a	support context-sensitive dropdown menus that provide as a minimum live video, playback, presets, and start/stop recording	
b	support video playback actions including fast forward, rewind, frame by frame, forward slow motion, and forward fast motion	
c	support defining a retention policy of video recordings, enabling to mark specific recording timeframes for retention even when the external video system recycles the allocated video storage space	
d	capture, save and export video clips of live and prerecorded video for post event distribution and analysis	
e	support viewing and playback from a primary or secondary NVR	
6	Auxiliary functions	
a	associate audio channels with video channels	
b	broadcast PA announcements to individual channels or to groups of channels	
c	support triggering pre-configured actions based on external video analytics events	
d	support dual video channels for external video system redundancy	
E	GIS Map Visualization	
1	The IMS shall include an inherent Geographic Information Systems (GIS) view, supporting real world coordinates with predefined coordinate systems.	
2	The GIS view shall provide a common operational picture enabling information sharing in real time between different users filtered based on predefined organization hierarchy.	
3	All GIS entities shall be automatically synchronized in the background between all client workstations.	
4	GIS map functions shall include 2D and 3D views, synchronized, displaying the same objects and areas, and easily switched from one view to the other.	
5	Navigation operations shall include pan, zoom in/out, and display all area.	
6	System administrators shall be able to define, set up, and name different GIS data layers and layer templates.	
a	Layer types supported:	
1)	geo-referenced raster images	

2)	incidents	
3)	assets	
4)	lines	
5)	labels	
6)	sensors	
7)	markers	
8)	zones	
9)	radar targets	
10)	AutoCAD plans	
b	The GIS map function shall further support:	
1)	layer types capable of being toggled on/off per pre-defined rules	
2)	saving of multiple GIS map views for later on-demand or automatic popup.	
3)	customization and real time activation of multiple-level drill downs by linking objects placed on map layers to other GIS views	
4)	definition and drawing of zones of arbitrary shapes and sizes and rendering as layers	
7	An operator shall be able to	
a	place predefined objects on map locations, including cameras, other sensors, alarm points, representation of sensor groups, vehicles, and people	
b	add points, polylines, and polygons to maps to identify multiple locations related to an incident	
c	place or directly open incidents on a map	
d	filter display multiple locations related to an incident	
8	The GIS map function shall allow display of relevant map context sensitive menus to allow various operations for selected objects.	
a	These menus shall vary according to permission level.	
b	Map context menus shall include the capability to send other user's messages, assign tasks initiate phone calls, and view the tasks presently assigned to selected users.	
9	The GIS map function shall provide the ability to track movements, real-time and historical, and status of all location-based technologies, including GPS and RFID.	
10	Sensors of the same type shall be displayed on maps via map icons and interacted with in a consistent manner regardless of external system manufacturer or model.	

11	The GIS map function shall support the searching of objects on the GIS map	
a	by name with support for wild cards and highlights for found object	
b	by geographical location	
12	Camera-related functions	
a	support the capability of authorized users to place cameras on their accurate GIS X:Y:Z locations via point and click or by entering coordinates	
b	reflect camera status via icons on the GIS map	
c	perform camera operations directly from the map	
d	open live video from the map in a floating window in the map context or in the video matrix	
e	support the displaying of all relevant cameras by clicking any arbitrary GIS map point location	
f	administratively associate individual cameras or groups of cameras, predefined in layouts, with GIS map zones	
1)	display zone cameras directly from the GIS map	
g	configure and toggle FOV transparent overlay on/off for presentation on the GIS map	
13	Zones management	
a	The IMS shall enable system administrators to create (draw) and manage geographic zones. or geo-fences, on top of the GIS map.	
b	The IMS shall be able to relate and/or control entities, incidents, pre-defined GIS views, predefined video layouts/cameras and attachments relevant to the zone in order to perform zone-based response operations.	
c	The IMS shall enable displaying, on-demand, all vehicles, people, and other entities and assets inside a pre-configured zone at runtime.	
d	Zones management shall be fully integrated with the IMS events correlation/ workflow / rules engine to support various triggers.	
e	The IMS shall support the definition of access control rules with automatic actions within a zone.	
F	Sensors Management	

1	The IMS shall have a dedicated module for the management of sensors including the capabilities to insert, edit, review status, command, sort, and group individual sensors integrated from multiple external systems.	
2	Sensor discovery and search - The IMS shall be able to	
a	query external systems and import relevant sensors into its database	
b	define flexible filtering criteria to organize sensors by type, system, and status	
c	allow users to locate sensors by name or other relevant field and to view their history	
d	identify if a sensor has been placed on a GIS map	
e	automatically recognize sensors associated with video functions	
3	Limits – System administrators shall be able to:	
a	define thresholds for maximum number of events reported per timeframe	
b	configure internal burst protection mechanism that buffer events and receive them sequentially, regardless of load.	
G	Access Control Management	
1	The IMS shall include an Access Control Systems (ACS) events view and management for unifying and controlling all connected ACS systems regardless of external manufacturer or brand.	
2	A discovery feature shall allow query and import of ACS readers and contacts as well as external ACS badge holders' details (including their pictures, if supported by the external system interface) as part of reported ACS events.	
a	Support filtering options to find relevant badge holders and add them to the system.	
3	Events	
a	Support an automatic association between ACS events and badge holders who triggered them.	
b	Provide links directly from the events list to related video cameras and ACS sensors.	
c	Provide links directly from the events list to related pre-event video playback.	
d	Support access from ACS event/sensor to its GIS map location where the GIS map view will change to highlight the relevant sensor.	

e	Provide an ACS view that enables users to pause/continue the real time scrolling of events.	
4	Queries	
a	Support queries directly from the ACS events list based on any of:	
1)	specific sensors (door readers)	
2)	badge holders	
3)	ACS event results	
4)	time and date	
5	Administrators shall be able to disable 'Access Granted' events logging in the IMS database during busy hours (to prevent duplicate logging of ACS events in both the external ACS system and the IMS system).	
a	ACS exceptions shall continue to be logged and trigger actions during these hours.	
6	The IMS shall be able to generate on-demand customizable access control reports.	
H	Asset Management	
1	The IMS shall provide the capability to define, search, and locate assets of various types, including vehicles, buildings, and people.	
2	The IMS shall provide a pre-configured list of typical assets along with their pre-configured attributes	
3	System administrators shall be able to:	
a	modify/add attributes to already existing asset types	
b	create new asset types with attributes	
c	create hierarchical asset groups and insert individual assets into these groups	
d	import external information in CSV format into an asset database	
4	Asset management shall be fully integrated with the IMS events correlation/ workflows / rules engine and shall allow defining various triggers based on specific assets, asset types, asset groups and assets attributes.	
5	The VMS shall enable assets to be displayed on maps with their corresponding GIS locations and unique icons.	
a	The context menu associated with an asset's map icon shall allow direct dialing of a phone number, if available.	
6	It shall be possible to associate assets with other assets, sensors, and incidents.	

a	The IMS shall support the correlation between two or more asset group elements for the sake of false alarms reduction.	
7	Exception lists	
a	The IMS shall support the creation and editing of multiple assets' exception lists, associated with different asset types and pre-configured priority setting.	
b	Exception lists shall be fully integrated with the IMS events correlation/ workflows / rules engine and will allow defining various triggers based on specific assets, asset types, asset groups and assets attributes.	
c	The IMS shall support whitelists and blacklists.	
1)	A white exclusive list shall trigger on an event involving an asset on that list.	
2)	A blacklist shall trigger on event for assets that do not belong to that list	
d	Exception lists shall be definable as global or local per site.	
e	The IMS shall allow authorized users to add/delete assets to exception lists in real time.	
I	Communications	
1	System users shall be able to compose new email messages with rich text (HTML) or Plain Text.	
2	The VMS shall allow email messages based on templates to be initiated by users in response to incidents or invoked by rules-based automatic actions.	
3	The IMS shall support on-demand or automatic outgoing call initiation.	
a	The IMS shall maintain an electronic telephone book that may be searched or used for on- demand calling.	
b	Calling capability shall be available via GIS map icons.	
c	SIP protocol shall be supported.	
4	The IMS shall have intercom generic logic functionality that allows operators to initiate and receive intercom calls.	
5	The IMS shall allow integration with external third-party mass notification systems.	
J	Business Process Management	
1	The IMS shall provide a visual environment to design business workflow processes that map business rules into a set of workflows to provide automatic responses.	
2	The visual environment shall provide:	

a	graphical capability that will allow system administrators business workflows with drag- and-drop flow-chart steps	
b	definition of activation rules	
c	the ability to identify potential threats coming from seemingly unrelated activities over time	
d	use of in-context variables to parametrically refer to real data which will trigger the workflows/rules	
e	an API to extend the workflow and business rules capabilities.	
3	The IMS shall support scheduled driven event management capability by providing asset- related open and close scheduling information managed by business process management.	
K	Operation Intelligence	
1	The IMS shall allow definition of key performance indicators, trends, leading indicators and visualize the indicators on a web based configurable dashboard infrastructure.	
2	The IMS shall allow configuration and monitoring of service levels for key performance indicators and triggering of actions towards the incident management system when those service levels are breached.	
3	The IMS shall provide current business status snapshots of the organization's facilities, departments and a holistic perspective of incidents and situations, including incident handling time, number of false alerts, number of active and closed incident and more	
4	The IMS shall provide tools to analyze trends in the business operation for incidents and alarms.	
5	Performance: ingestion and processing of 10,000 events per second with capability to scale to 100,000 events per second	
6	The IMS shall be able to graphically monitor applications for performance and resource usage, including CPU, memory, connection, and queues.	
7	The Operation Intelligence functionality is contained in the Operational Intelligence Center Module of Situator.	
L	Routine Operations	
1	The IMS shall have tools to facilitate and automate activities that are performed on a regular basis, including:	
a	define scheduled actions including regular reminders, sensor commands, and notifications.	
b	define and manage guard tours.	

1)	The guard tour capability shall be fully integrated with the rules engine and shall allow triggering various actions in case of exceptions.	
2)	The IMS shall support multiple means of guard checkpoint reporting, including badge swipe, pressing of a dry-contact button, GPS tracking, and direct communication.	
M	Administration	
1	Configuration and customization capabilities shall be determined by logged in users' credentials. IMS menus, views, and permission levels.	
2	IMS shall enable system administrators to :	
a	create and define an arbitrary number of access authentications and authorizations (functional permissions) policies	
b	define user roles that will be associated with predefined authentication and authorization policies and access permissions	
c	define and view users and properties including security roles, contact information, communication channels, skills/education, 3rd party ACS IDs, presentation icons when placed on GIS maps, and photos	
d	view presently logged in users, terminate an active user session, reset users' sessions, and force users to change their login password on next login attempt	
e	undock application views (such as video matrix, GIS map for example) and select to display them on different monitors	
f	save and lock a preferred layout, displayed whenever the application is restarted	
g	bypass the application and dock all views into the main application screen, in the event of failure of the main configuration screen	
3	IMS configurable policies shall support customizable authentication policies including password length, special characters, and maximum number of failed logins before access is denied.	
4	IMS configurable policies shall support authorization policies for each functional area of the Control Room application software, including GIS maps, sensors, video, incidents, messages, threat levels, and guard tours.	
5	The IMS shall support specific terminals/workstations authorization settings such as: allow only users of specific roles to login, allow only client	



	machines with specified IP addresses to log into the server, allow terminals to view only incidents of specified types, allow terminals to view only incidents above specified priority, allow terminals to view only the incidents assigned to the logged in user.	
6	Security - The IMS shall	
a	be 'Firewall Friendly' allowing the customization of client-server TCP/IP communication ports	
b	provide a client application which does not require local Windows administration permissions on client workstations	
c	support configurable authentication against Microsoft Active Directory.	
1)	provide Single-Sign-On access for users who log in to client workstations using their Microsoft Active Directory credentials	
d	encrypt data communication channels between client workstations and servers	
e	ensure that all stored and transmitted passwords are encrypted	
7	Forms	
a	The IMS shall enable planners to define, import, and associate custom forms with incident types, tasks, and procedures.	
b	Forms shall be used by operators in real-time to collect and save incident related details and shall always be automatically synchronized between all workstations.	
c	The IMS system shall keep version control of imported modified forms such that all form variations are always available for post-event debriefing purposes.	
d	The IMS shall enable operators to enter a location in a form field which results in the location being displayed on the GIS.	
e	The IMS shall enable integration with an external form server via Web services.	
8	Reports	
a	The IMS shall provide a repository of built-in relevant reports, including:	
1)	Incident Reports	
>	Detailed incident reports shall include an incident summary, all the tasks associated with the incident, sensor related activities, relevant snapshots, and maps.	
2)	Periodic Reports	
3)	Maintenance Reports	
4)	Statistical Reports	

b	The IMS shall have a built-in reporting engine that will allow on-demand or automatic report generation, configurable by an Administrator and with customization options	
c	Administrators capabilities:	
1)	configure the system to automatically generate and send/distribute reports as part of the situation management flow.	
2)	define reports generation and distribution per a predefined schedule	
3)	create and import custom reports developed externally, populating report input parameters with IMS database table values	
d	User capabilities:	
1)	generate and send report packages containing incident-related content including forms, video clips, snapshots, and related emails	
2)	print and save reports in various file formats including Excel, MHT, and PDF	
N	Collaboration among stakeholders	
1	The VMS shall enable stakeholder collaboration where incidents/tasks triggered automatically or manually by control room operators are distributed to the correct owners in incident/task context, such collaboration to include:	
a	allowing departments to work autonomously	
b	allowing logical locations or project groups to work autonomously	
c	allowing inter-department collaboration	
2	Collaboration shall include content such as markups, comments, tasks, and forms.	
O	Server Monitoring	
1	The IMS monitoring tool shall monitor all core server components including the database and other used Windows components.	
2	The monitoring tool shall have a server GUI that will indicate the status of all application components (services) and enable administrators to setup keep-alive intervals and recovery routines.	
3	The IMS shall have an internal monitoring watchdog mechanism to automatically identify and recover from server application faults.	

4	Notification methods shall include email, LAN communication, and text messaging.	
a	Notification emails shall not be stored in the database tables.	
5	The IMS shall manage and create/update applicable logs for the monitoring tool.	
6	The IMS shall perform keep-alive checks on the status of externally connected systems.	
7	Recovery routines shall include restarting a service and notifying administrators when exceeding a predefined number of restarts.	
4.3	Integration Requirements	
A	The IMS shall be designed and built to allow smooth and fast integration with all control room systems, sensors, and edge-devices.	
B	External systems interfaces shall be available separately from the core product, come with their own installers, and not require any modification to core product version.	
C	The external system interface installation framework shall be consistent in structure, wizards, steps, and GUI regardless of the integrated system.	
D	The IMS shall have SDK to provide developers with the resources they need to integrate third party sensors, systems, and edge-devices into the system.	
E	The IMS shall have a means for authorized administrators to centrally manage the external system interfaces.	

APPLICATION SERVER			
OEM :			
PART NO :			
SL NO	PARAMETER	SPECIFICATION	COMPLIANCE
1	Processor	Intel XEON Processor 2.2GHz, with minimum 12 Cores / 24 Threads – 2 NOS	
2	RAM	128GB	
3	Storage	Minimum Raw 20 TB SAS	
4	Boot Drive	Redundant 2 * 500 GB SSD	
5	I/O	Redundant 2 x Gigabit LAN on Motherboard VGA and HDMI, 4 USB ports	
6	Peripherals	Standard USB Keyboard and Mouse.	



7	OS	Windows Server Data Centre Edition / Ubuntu	
8	Form Factor	Rack mounted	
9	Power Supply	Dual, Hot-plug, Redundant Power Supply (1+1)	
10	RAID Support	0, 1, 5, 6 or better	

VIDEO WALL			
OEM :			
PART NO :			
SL NO	PARAMETER	SPECIFICATION	Compliance
1	Technology	DLP based rear cube projection	
2	Display Unit	Individual cube should be equipped with multiple laser banks and each laser bank should have an array of diodes. Single or multiple diode failure should not impact image display on the screen	
3	Screen Size	Each cube size to be 70" (70 Inches diagonally) or more with complete configuration of (20 cubes) with covered base. All cubes have to be of the exactly same size, configuration and model wise mandatorily. Depth of each cube should be 575 mm or lower.	
4	Resolution	Resolution of each cube should be minimum 3840 * 2160 pixels	
5	Aspect Ratio	16:09 for each video wall cube	
6	Brightness	Brightness of projection engine should be minimum 2200 lumens	
7	Contrast Ratio	Dynamic contrast should be 1,200,000:1 or better	
8	Wall Uptime	The light source lifetime of the laser shall be min 1,00,000h Economy usage mode	
9	Viewing Angle	CSI screen with Half gain viewing angle of H : $\pm 36^\circ$ C and V: $\pm 34^\circ$ C with Hard Backing to prevent bulging	
10	Screen to Screen gap	Screen to Screen Gap: Upto 0.2 ~0.5 mm at 23~25° C temperature	
11	Input	Control BD Input terminals: Input: 1 x Digital DVI, 1 x DP	
12	Operating Temperature	The VDW shall have an operational temperature between five degrees Celsius (As per City condition and requirement) to forty degrees Celsius (As per City condition and requirement).	

13	Relative Humidity conditions for operation	The VDW shall have a relative humidity of 20% to 80%, non- condensing or better.	
14	Power	The AC input power shall be 110-240 VAC +/- 10% at 50/60 Hz +/- 1Hz. Power consumption of each cube shall be less than 350W.	
15	Others	Each cube of the VDW shall have its own LAN Port and video wall access by IP Address to provide standard information like status and health	
		• RS232/RS-422/IR/ IP control	
		• On Screen Display (OSD)	
		• IR and IP based remote control	
		• Flicker free image on the Large Screen with pixel clock speed $\geq 500\text{MHz}$	
		• The dashboard shall be capable of simultaneously displaying one (1) to one hundred (100) sixteen (16) independent sets of information on the video display wall. Specific outputs to be displayed shall be chosen by operators.	
		• VDW shall be capable of displaying high definition (HD) and standard definition (SD) content.	
		• Auto color and brightness management mechanism to be provided.	
		• Screen should be anti-reflective and not bulge out or bulge in.	
		• All video display cubes shall have a consistent image quality and uniform brightness across the display wall.	
		• Each display cube shall not exceed a thermal dissipation of twelve hundred (1200) BTU per hour under normal operating conditions..	
		• Each cube should have a screen size of 1550 mm wide and 872 mm high. The cube size can have a tolerance of $\pm 5\%$ in size	
		• Video Wall, Video Wall Controller and Software should be from same OEM would be preferred for better compatibility.	
		• A pedestal shall be provided to support the VDW. Pedestal shall be physically secured to the concrete floor of the building.	

TVM 2000 Specifications

Device	Components	Details	Compliance
PC	Processor	Broadcom BCM2712 2.4GHz quad-core 64-bit Arm Cortex-A76 CPU (Raspberry Pi)	
	RAM	LPDDR4X-4267 SDRAM (4GB and 8GB SKUs available at launch)	
	Storage	MicroSD card slot, with support for high-speed SDR104 mode	
	Lan port	Dual-band 802.11ac Wi-Fi®, Bluetooth 5.0, Gigabit Ethernet, with PoE+ support	
	USB port	2 × USB 3.0 ports, supporting simultaneous 5Gbps operation 2 × USB 2.0 ports	
Touch monitor	Size	21.5" diagonal, Active matrix TFT LCD (LED) Pcap	
	Aspect ratio	16:09	
	Active area	476.64 mm x 268.11mm	
	Resolution	1920 × 1080 @ 60 Hz	
	Response time	≤14ms	
	Contrast ratio	3000:1	
	Video interface	VGA/HDMI	
	Power	Input: DC 12V±5%	
	Touch lifespan	≥50,000,000 times	
Thermal Printer	Printing method	Thermal	
	Resolution	203 dpi	
	Printing speed	200 mm/s	
	Character set	PC437, PC850, PC858, PC860, PC862, PC863, PC864, PC865, PC866, internationa	
	Printing Format	Height/Width from 1 to 8, bold, reverse, underlined, italic	
	Paper width	from 54 to 82.5 mm	
	Paper thickness	from 63µm to 120µm	
	Sensors	Paper input Printhead temperature Cover closing Black mark on non-thermal left side Anti-jam (presenter model only, optional for standard model) Ticket output (optional on standard model) Near paper end (optional) Roll holder with multiple paper position and right/left side fastening up to 80mm (NPE sensor not included)	



		Standard roll holder up to 80mm (NPE sensor not included)	
	MCBF	1,000,000 cut	
Unattended POS device	Display	5" TFT WXGA 720 x 1280	
	Comms Configurations	4G + Ethernet + WiFi (Dual band) + Bluetooth 5.0	
	Ports	2 RS232 1 USB Host 1 USB OTG 1 LAN 1 MDB Slave 1 HDMI 1 Digital I/Os 1 Mic & Speaker 1 MDB Master & Executive 1 SMA (optional) 1 SIM slot (optional)	
	Card Readers	Chip & PIN NFC Contactless Magnetic Stripe	
Speakers	Audio speakers		

TVM 4000 Specifications

Device	Components	Details	Compliance
PC	Processor	Core i5 10th generation or higher	
	RAM	DDR4 8 GB	
	Storage	512 SSD	
	Lan port	1	
	USB port	6	
Touch monitor	Size	32" diagonal, Active matrix TFT LCD (LED) Pcap	
	Aspect ratio	16:09	
	Active area	700.6mm x 395.1mm	
	Resolution	1920 x 1080 @ 60 Hz	
	Response time	≤14ms	
	Contrast ratio	1000:1 (standard Values)	
	Video interface	VGA/HDMI/Display P	
	Power	Input: DC 12V±5%	
	Touch lifespan	≥50,000,000 times	
Cash Acceptor	Type	Bulk note acceptor	
	Cassette capacity	1400 notes	
	Note acceptance	1.5 sec or higher	



	speed		
	Escrow capacity	15 notes or higher	
Thermal Printer	Printing method	Thermal	
	Resolution	203 dpi	
	Printing speed	150 mm/s	
	Character set	54 character code tables	
	Printing Format	Height/Width from 1 to 8, bold, reverse, underlined, italic	
	Paper width	76, 80 ± 0,5 mm	
	Paper thickness	from 63 µm to 88 µm	
	Sensors	Head temperature, paper presence, near paper end, black mark, ticket out	
	MCBF	1.000.000 cut	
	Features	Anti-jamming system, Anti-intrusion shutter, Anti-splash paper exit	
Unattended POS device	Display	5" TFT WXGA 720 x 1280	
	Comms Configurations	4G + Ethernet + WiFi (Dual band) + Bluetooth 5.0	
	Ports	2 RS232 1 USB Host 1 USB OTG 1 LAN 1 MDB Slave 1 HDMI 1 Digital I/Os 1 Mic & Speaker 1 MDB Master & Executive 1 SMA (optional) 1 SIM slot (optional)	
	Card Readers	Chip & PIN NFC Contactless Magnetic Stripe	
Speakers	Multimedia speakers		

- 4.1 All the Technical Scope mentioned above must be mandatorily part of the product and should be complied with as part of the contract.
- 4.2 The VMS, ENCODER & PSIM shall be from a single OEM for seamless integration & interoperability. The VMS shall also be pre integrated with Phase 1.
- 4.3 All the switches supplied shall be of open standard from Day 1. The switches should not have any proprietary protocols. All the switches shall support third party MSA(Multi Source Agreement) Compliant SFP Modules mandatorily. Same shall be provided under declaration by OEM.
- 4.4 The SFP/SFP+/XFP required for the completion of this contract shall be ascertained by the contractor as per the final design approval given by BMRCL and the Installation and commissioning of these SFP/SFP+/XFPs shall be under the scope of the Contractor.
- 4.5 Contractor shall keep sufficient Nos. of spares and consumables required for replacement during servicing and Breakdowns to avoid any delay.
- 4.6 BMRCL shall reserve the right to Procure and Install the Items listed in 3.11 above during the 5 Years period of the contract(extendable to 10 years) as per the needs of BMRCL in the existing and upcoming stations. A survey of the Existing and upcoming station needs to be performed by the contractor and suitable BOQ quantities may be suggested for the approval of competent authority as per the needs of BMRCL taking into considerations the Laws and Rules passed by the State and central Governments from Time to time and also as per the CCTV Surveillance Acts passed by the State and central Governments or as per the recommendations of the Ministry or Security Departments or any Nodal Agency like Karnataka State Police Department, Intelligence Bureau(IB), Ministry of Home Affairs(MHA), National Criminal Records Bureau(NCRB) etc. during the tenure of the Contract.
- 4.7 The contractor shall plan the Scheduled Preventive Maintenance activity, in such a way that, the activities shall be uniformly spread throughout the year. The Contractor shall depute Five (5) Nos of sufficient trained, Experienced and competent personnel in different shifts (as indicated in Appendix-4) for carrying out Preventive servicing / Breakdown maintenance. The deployed man power should be Minimum Engineer Graduate in Computer Science/Information Science or equivalent and should have 2 years' experience in IT / Surveillance and Networking Domain knowledge. A dedicated project Manager with 15+ Years of experience in the IT / Surveillance field with Networking Domain knowledge shall be deployed. The field staff shall be categorized as Level 1, Level 2 and Level 3 with 2, 5 and 8 years of experience respectively working in surveillance field. Submission of the resume of the employees and the approval of BMRCL is mandatory before onboarding of the employees.
- 4.8 The Contractor shall submit the detailed Preventive Maintenance Schedule for Employer's approval before starting the works. The contractor shall strictly follow the approved Maintenance Schedule.
- 4.9 Quarterly Payments under this CAMC shall be made subject to Completion of all activities as per the approved maintenance schedule. Quarterly Payments will not be released if there is any lag in Installation or Maintenance Schedule.
- 4.10 CAMC cost would be calculated as per the percentage of value of new Assets installed in BMRCL Station/premises as quoted in Vol2 of the Financial package and the new assets so installed shall maintained for a period of 5 Years. The CAMC contract is extendable for a period of 10 Years without any cost escalations or price variations. The CAMC cost paid by BMRCL through out the period of the contract i.e 5 years(extendable to 10 Years) remains the same as finalized in the Vol2 of the Financial package of the tender. Thereby protecting BMRCL against Price variations, CPI changes, WPI changes and Dollar price fluctuations.



- 4.11 The stations which are newly commissioned or stations which are outside of this CAMC will have to be taken up for upgradation only after successful completion of the existing DLP period or as per the upgradation requirements of BMRCL.
- 4.12 All scheduled planned maintenance work which requires shutdown of any essential equipment, passenger amenity equipment's, emergency equipment's shall be normally carried out in non-revenue hours (night shift). However, these criteria can be relaxed by engineer in charge on case to case basis depending upon redundancy available of particular equipment, passenger load on station, weather condition or requirement of particular equipment at that time. The scheduled activity performed after revenue hours should be based on weekly maintenance block provided. An integrated block will be communicated by BMRCL to all concerned and a maintenance plan is to be made in line with this.
- 4.13 The contractor shall carry out the checks/works during Preventive Maintenance/Servicing as per the approved maintenance schedule.
- 4.14 The TVM 2000 and TVM 4000 shall be deployed at 2 Metro stations as finalized by BMRCL and shall be completely managed with the deployment of 9 Nos of Executives to work as Customer care operators as well as to educate the passengers about the usage of TVMs. These people shall be conversant in Kannada and English Languages. There shall be the deployment of one Project Manager for accounting and MIS Reports of TVMs.

5. **BREAKDOWN MAINTENANCE.**

- 5.11 In case of any breakdown, the contractor shall depute their engineer for servicing of the defective system. If any components have to be replaced, it must be done as per the timelines at Appendix-3.
- 5.12 A failure / breakdown shall be registered to the contractor when any defect is noted by the Concerned Site In charge of BMRCL due to any of the following:
- Operational defect
 - Failure of any Component/system.
 - Failure of any Sub-component/sub-system
 - Any Maintenance lapse (whether material or workmanship)

The contractor shall not provide any excuse for not attending any breakdown occurring on account of the above-mentioned conditions except for breakdown occurring on account of Physical Damage to the equipment's due to any extreme cause. All breakdown occurring on account of present/previous operational problem, maintenance lapse, ageing, power fluctuation /interruption, failure due expiry of designed life, etc., of component/subcomponent/ system/subsystem shall be the responsibility of the contractor. The scope of Breakdown Maintenance shall include the attending/rectification of the Breakdown and failures occurring in the system at any time during 24hrsx365days inclusive of all Sundays &Holidays.

The Maintenance Contractor personnel will perform the maintenance and troubleshooting (as per manuals) and restore the working with stock of spare module/card/equipment wherever necessary

The Maintenance Contractor personnel will perform the maintenance and troubleshooting (as per manuals) and restore the working with stock of spare module/card/equipment wherever necessary

Minor Breakdown: The Minor failures/defects (due to which the Surveillance System does not get affected) occurring in the system during operation which includes repairing/replacement of defective items shall be done by the contractor within the time specified as follows (also as detailed in Appendix-3):

Response Time (Max) : 02 Hours

Rectification Time (Max) : 06 Hours

Major Breakdown: Major failures (due to which operation of Surveillance System gets affected) taking place in the system which cover all type of Breakdown of the Major Equipment's and which includes Repair/Replacement of Assemblies, Sub-Assemblies, and Components, etc., as a whole shall be attended and rectified within the time frame specified as follows (also as detailed in Appendix-3):

Response Time (Max) : 02 Hours

Rectification Time (Max) : 04 Hours

The contractor shall be responsible for ensuring prompt & proper attention to breakdowns/failures along with undertaking detailed root-cause analysis of the breakdown/failure, so that appropriate corrective measures are taken to prevent their recurrence in future.

- 5.13 Soon after detection of any failure in the Surveillance System, BMRCL will notify the contractor to depute their engineers on the site on urgent basis. The vendor should provide immediate support services with 2 hours response time for Severity 1 & 2 problems. Engineer will respond back immediately with remote support upon intimation and would reach site within 2 hours of intimation if problem is not resolved thru Remote dial in support

The system faults and their severity levels are defined as:

- Severity 1 This is defined as a failure, which denies or severely limits users "access to a live" or on-line system.
- Severity 2 This is defined as a failure that results in diminished functionality of the system / diminished functionality to the users.
- Severity 3 This is defined as the problem in the redundant unit or the local problem which don't affect group of users or impacts only the non-critical services.
- Severity 4 System issues fall within this category include assistance with routine or planned maintenance upgrades for a system. Issues within this category are always operations or procedures that have planned for some time in advance

- 5.14 The contractor shall attend any number of breakdown calls at no additional cost within the contract period.

6 Maintenance Requirements/ Terms and Conditions:

- 6.11 The Contractor shall maintain the entire Surveillance System in good working order at all times.

- 6.12 The Contractor shall replace all the faulty components without any compromise in service. The Contractor shall maintain adequate quantity of consumable and contingent spare parts in his custody in order to minimize the shutdown time.
- 6.13 During the period of contract, wherever required components shall be replaced with the item of OEM only for reasons of compatibility & characteristics. Replacement of item of other make / other part number is not acceptable. In this regard, the bidder has to furnish authorization from OEM for the supply / replacement of major components. In case the bidder is OEM then self-declaration for the supply / replacement of major components shall be furnished.
- 6.14 The Contractor shall provide Preventive maintenance service reports duly signed jointly by both Contractor and Employer, detailing the overhauling made on each sub system of the Surveillance System. In case of replacement of defective parts reasons for its failure shall be indicated in the service report.
- 6.15 The spares utilized shall be from the original equipment manufacturer for the supplied equipment.
- 6.16 The Contractor staff shall be provided with Smart phones with data pack and shall keep the phone active for attending to any call, the cost of which shall be borne by the contractor
- 6.17 The Contractor will have to engage a minimum of 4 Nos of well trained staff on site in 2 Shifts of 8 Hours each and 3 Nos of Staff in the Night Shift to ensure proper Maintenance and to attend Breakdown calls round the clock all 7 days a week & 365 days a year inclusive of all holidays& Sundays. BMRCL shall utilize the additional manpower only if required and the same shall be intimated to the contractor as and when the need arises. The contractor shall deploy this additional manpower within 48 hours of intimation in writing by BMRCL.
- 6.18 **Tools &Test Equipment:**
The contractor shall bring all tools and test equipment which is essential in day to day use in both preventive and breakdown maintenance. The contractor shall maintain tools and test equipment's along with its calibration certificate (if any). If the list of tools and test equipment's is found insufficient, the same shall be augmented for preventive and breakdown maintenance of all the equipment's covered under the contract.
- 6.19 **Performance & Quality Audit:**
BMRCL will perform random and periodic audits to ascertain the quality of maintenance to meet expected levels of KPI. The contractor will be penalized for the non-conformances observed during the audit. The contractor should strive to exceed the expectations of BMRCL through continual improvements in methods, sequences, processes and practices.
- 6.20 **Penalty for Non-Conducting Of Preventive Maintenance Activity as per Appendix-2:**

If the contractor fails to Perform a particular preventive maintenance activity as per time schedule and procedure laid down in the employer's requirement in the tender due to shortage of spares/manpower or any other reason, then a penalty of Rs.1000/-

for every period of 48 hrs shall be levied upon the contractor for each such maintenance activity, which shall be in addition to the cost assessed by BMRCL for cost implications which would come on BMRCL as a result of non- fulfilment of carrying out the CAMC work as per time schedule or procedure laid down

6.21 Penalty for Delay for Attending the Breakdowns/Faults:

If any major equipment is out of order for more than the time specified either due to lack of proper attention or due to non-availability of man power, then BMRCL shall impose a penalty of Rs 50000/- for every period of 24 hours for which the equipments is out of service. If a minor equipment remains in fault for more than the time specified, then also a penalty of Rs.10000/- shall be imposed for every period of 24 hours, for which the equipment is out of service. The decision of BMRCL is final and binding on the contractor on the imposed penalty.

6.22 Procedure for Rectification of faults delayed beyond maximum permissible time:

In the event of breakdown of any equipment in which the contractor is not able to rectify the fault within the maximum permissible time as prescribed in Appendix-3, due to any reason and the Employer desires to rectify the faulty system in order to ensure proper function of the system, then the Employer can carry out the rectification of the faulty equipment from the OEM or its authorized dealer. The expenditure incurred against the rectification of the faulty equipment shall be paid either by the contractor directly to the agency deployed by the Employer or Employer will pay the bill to the agency (deployed by the Employer for rectification of the faulty equipment) and recover the same amount from the running bills of the contractor. The decision of the Employer in this regard shall be final and binding on the contractor.

6.23 Service Reports:

As per the BMRCL prescribed format, where in information pertaining to details related to breakdowns/failures, complaints registered by authorized representative of BMRCL to the contractor is elaborated. The above details would also clearly bring on record the failures/breakdowns cases, cause of the failures, corrective action taken for rectification of failure and time taken for closure of the complaint. The above data/record will have to be correctly and properly maintained and produced by the contractor, as the same would enable BMRCL to effectively monitor the CAMC work being undertaken by the contractor.

Quarterly summary of the failure report along with the analysis giving details of nature of faults, remedial action taken shall be submitted to the BMRCL in a separate format prescribed by BMRCL

6.24 Procedure for handing over of complete system:

The contractor shall be required to conduct a joint assessment with BMRCL before the start of second last quarter of CAMC (i.e. before the start of 39th quarter of CAMC) for identification of all defects persisting in the system which are covered under CAMC. The contractor shall be required to attend and rectify all such defects (assessed during above joint inspection) before the completion of the contract period of Ten Year of CAMC. The system shall be handed over to BMRCL after completion of contract period in working condition after duly verifying the closure of all the defects arising in the system during the period of contract. At the end of the contract period or on termination, all the equipment, hand tools, software or maintenance data or hard



copies of maintenance documents or maintenance manuals or any other items belonging to BMRCL shall be handed back in good condition. Any damages as assessed by BMRCL, shall be recovered from the contractor

6.25 Replacement of a System/Body on account of External Damage.

In the event of failure of any equipment requiring complete replacement on account of any external damage, the same shall not be covered under the scope of contract of CAMC. However the contractor shall carry out a detailed inspection of the system and there after submit a technical cum commercial offer for replacement of the equipment. The above submitted offer of the contractor shall be examined by BMRCL in all respects (i.e. technical, financial, commercial etc.) for taking further needful action in this regard.

6.26 Key Performance Indicators (KPI):

Key performance indicator and criteria for evaluation is given below:

- a) Completion of preventive maintenance and checks as per the schedule in Appendix-2 (20%)
- b) Corrective maintenance, Rectify the defects in time by in-house staffs (20%)
- c) Staff Technical Competency: Be Conversant with the Operations & Maintenance of the equipment pertaining to the system and adequate training shall be given for all maintenance staffs.(10%)
- d) Have the plan for the day's work and consolidated weekly plan shall share to system manager. (5%)
- e) Punctuality of staff, on time reporting, Wearing uniform with necessary PPE, safety and protective gear for work. Should be civil and courteous while on duty. Should adhere to the rules / procedures (10%)
- f) Inventory management – Tools, Instruments, etc., Should timely arrange for tools required for the work. (15%)
- g) Report the failures occurring in the equipment under CAMC and coordinate works for rectification. (5%)
- h) Keep and update records like equipment checklist, defects register, maintenance register, etc. (10%)
- i) Should move from one station to another in need of emergency and other requirements for work. Should coordinate with other agencies for any work. (5%)

6.27 Performance Management:

The overall performance grading will be done on a monthly basis in each station. The payment as per the bill raised by the contractor will depend upon the overall score obtained by the contractor in each station. The payment terms shall be as below:-

Monthly Score of 85% and above: 100% payment
 Monthly Score of between 80% to <85%: 95% payment.
 Monthly Score of between 75% to <80%: 85% payment
 Monthly Score of between 60 to <75%: 75% payment
 Monthly Score of <60%: 60% payment

If the score is consistently below 60% for 3 consecutive months in a period of one year from the date of issue of LOA then the contract will be subjected to termination. However the CAMC Payment will be made on Quarterly Basis.



6.28 Documentation of Maintenance Records

The following minimal records are to be properly maintained in agreed Digital /Hard forms.

- Record of Preventive Maintenance schedule and status.
- Record of Job card, PTW applied/Closed.
- Record of Tools including special tools.
- Record of Corrective Maintenance.
- Record of failures and analysis, updated Failure report.
- Record of faulty items. (Segregated as repairable and non-repairable)

6.29 Deployment of a 5 Seater 4 Wheeler vehicle 24/7 at BMRCL Premises.

A brand new 5 Seater, 4 Wheeler vehicle as approved by BMRCL shall be deployed under this contract for movement of Personnel and materials in case of emergencies throughout the period of the CAMC contract. The vehicle shall be available 24/7 and shall be utilized as per the requirements of BMRCL. The deployment of sufficient number of Drivers for 24/7 operations and the periodic maintenance of the Vehicle as per the Vehicle OEM recommendations is the responsibility of the contractor under this CAMC contract. The necessary documents of periodic vehicle maintenance shall be produced as and when requested by BMRCL.



Appendix-1

List of New Assets to be Supplied, Installed and Maintained under this CAMC contract for a period of 5 Years(extendable to 10 years).

SCHEDULE A:

SL NO	PART DESCRIPTION
A	VIDEO SURVEILLANCE
1	SUPPLY OF BOX / BULLET CAMERA - TYPE 1
2	SUPPLY OF BOX / BULLET CAMERA - TYPE 2
3	SUPPLY OF 128GB INDUSTRIAL GRADE MICRO SD CARD
4	SUPPLY OF VMS BASE LICENSE
5	SUPPLY OF VMS BASE LICENSE - REDUNDANT
6	SUPPLY OF VMS CHANNEL LICENSE
7	SUPPLY OF VMS CHANNEL LICENSE - REDUNDANT
8	SUPPLY OF VMS INEGRATION LICENSE
9	SUPPLY OF RECORDING SERVER / NVR
3	SUPPLY OF APPLICATION SERVER
10	SUPPLY OF 8 PORT POE SWITCH
11	SUPPLY OF 24 PORT POE SWITCH
12	SUPPLY OF NETWORK MANAGEMENT SOFTWARE SYSTEM
13	SUPPLY OF MONITORING WORKSTATION
14	SUPPLY OF 4K RESOLUTION KVM OVER IP
15	SUPPLY OF UTP CAT6 LSZH PATCH CORD
16	SUPPLY & INSTALLATION OF UTP CAT6 LSZH CABLE & CONDUIT
17	SUPPLY OF UTP CAT6 24 PORT LOADED PATCH PANEL
18	SUPPLY OF OPTICAL PATCH CORD
19	SUPPLY OF RJ45 CONNECTOR
20	SUPPLY OF 9U NETWORK RACK WITH ACCESSORIES
B	AI BASED FACIAL RECOGNITION SYSTEM
1	SUPPLY OF FACIAL RECOGNITION SOFTWARE
2	SUPPLY OF FACIAL RECOGNITION SERVER
C	AI BASED VIDEO ANALYTICS SYSTEM



1	SUPPLY OF AI BASED VIDEO ANALYTICS SOFTWARE
2	SUPPLY OF ANALYTICS CORE SERVER
3	SUPPLY OF ANALYTICS EDGE LPU
D	AUTOMATIC VEHICLE NUMBER PLATE RECOGNITION SYSTEM
1	SUPPLY OF NUMBER PLATE RECOGNITION SOFTWARE
2	SUPPLY OF NUMBER PLATE RECOGNITION LPU
3	SUPPLY OF NUMBER PLATE RECOGNITION SERVER
E	INCIDENT MANAGEMENT SYSTEM
1	SUPPLY OF PHYSICAL SECURITY & INCIDENT MANAGEMENT SOFTWARE SYSTEM
2	INTEGRATION OF PHYSICAL SECURITY & INCIDENT MANAGEMENT SOFTWARE SYSTEM
3	SUPPLY OF APPLICATION SERVER
F	DISPLAY OF VIDEO WALL
1	SUPPLY OF 4K Video Wall
2	SUPPLY OF 4K Video Wall Controller
G	TVMs
1	TVM 2000
2	TVM 4000
H	SERVICES & INSTALLATION
1	SITE STUDY & DESIGN DOCUMENT
2	INSTALLATION PER STATION

Appendix-2

Preventive maintenance schedule of Surveillance Systems

Details of Maintenance Schedules of various IT. Sub-systems		
Sub-system	Period	Details of Maintenance
1. Surveillance Systems	Daily, Weekly, Monthly, Half yearly, Yearly.	The Preventive Maintenance List shall be proposed by the Contractor and the approval of BMRCL shall be obtained for finalizing the Preventive Maintenance Schedules

Appendix-3

The Maximum permissible rectification time for system faults is given in below table. This will be reviewed periodically based on requirements

Permissible Fault Rectification Time (Max.)		
S N.	Fault Details	Max. Permitted Time to Rectify the faults
1	Major Surveillance System failure affecting Live Monitoring of Cameras and/or Recordings	4 hours
2	Major software failure affecting Live Monitoring of Cameras and/or Recordings	4 hours
3	Major hardware failure affecting Live Monitoring of Cameras and/or Recordings	4 hours
4	Major hardware failure NOT affecting Live Monitoring of Cameras and/or Recordings	6 hours
5	Major software failure NOT affecting Live Monitoring of Cameras and/or Recordings	6 Hours
6	Major or critical alarms rectification, NOT affecting Live Monitoring of Cameras and/or Recordings	6 Hours

Appendix-4

Man Power Deployment Under this AMC		
S N.	Shift Details	Total Manpower to be deployed
1	Shift A: 05:00 hrs to 14:00 hrs	2 No's
2	Shift B: 14:00 hrs to 23:00 hrs	2 No's
3	Shift C: 23:00 hrs to 05:00 hrs	1 No's

.....XXXX.....



SECTION 8 – DRAWINGS

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SECTION 9: PROFORMA OF BANK GUARANTEES

PROFORMA – A: Form of Bank Guarantee for Tender Security / Earnest Money Deposit

PROFORMA – B: Form of Bank Guarantee for Performance of Contract



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PROFORMA - A**FORM OF BANK GUARANTEE FOR TENDER SECURITY /
EARNEST MONEY DEPOSIT****To**

BANGALORE METRO RAIL CORPORATION LIMITED (BMRCL)
III FLOOR, BMTc COMPLEX,
K.H.ROAD, SHANTHINAGAR,
BANGALORE- 560027.
KARNATAKA, INDIA.

1. **WHEREAS** “.....(*Name and Address of the Tenderer*)” (hereinafter called the “Tenderer”) has undertaken for submission of Tender in pursuance of Contract No. (*work of*) Bangalore Metro Rail Project to be specified) (hereinafter called “the Tender”)

2. **AND WHEREAS** it has been stipulated in the concerned Tender notification issued by Bangalore metro Rail Corporation Limited (BMRCL) which expression shall unless repugnant to the context or the meaning thereof, include its successors, administrators, executors and assignees, herein after called the Employer) to the Tenderer that the Tenderer shall furnish to EMPLOYER (BMRCL) with a Bank Guarantee as per the conditions of the Tender, from an Indian scheduled Bank (excluding Cooperative Bank) or from a schedule Foreign Bank as defined in Section 2(e) of RBI Act 1934 r/w second schedule for, the sum specified herein below as Tender security for compliance of the obligation and performance, in accordance with the concerned Tender conditions.

3. **AND WHEREAS** we..... (*the name and full address of the Bank including Email address*) having registered office at (hereinafter referred to as the issuing Bank) which expression shall unless repugnant to the context or the meaning thereof, include its successors, administrators, executors and assignees, do hereby agree to give the Contractor such a Bank Guarantee, drawn and payable at Bangalore through Bangalore Branch.

4. **NOW therefore**, we hereby affirm that we are the guarantor and responsible to EMPLOYER (BMRCL) and their successor, on behalf the Tenderer up to a total sum of INR- (*amount of Guarantee to be specified in figure and words*), and we hereby further unconditionally, irrevocably and without demur undertake to immediately pay you, upon your first written demand and without cavil, or arguments any sum or sums within the limits of Indian Rupee..... (*Bank guarantee amount to be specified*) as aforesaid without your needing to prove or to show grounds or reasons for your demand, by depositing/crediting to the Current A/c. of EMPLOYER (BMRCL), the sums specified therein.

5. This Bank Guarantee is cashable or extendable at our designated Branch in Bengaluru (Bangalore) Karnataka, India, as mentioned below:

Name of the Bank, Branch and contact details Address

Telephone no: & Fax No:

E-mail Address

Branch Manager Name & Mobile No:

Bank Zonal Office Address, Telephone No:, Fax Number,

E-mail Address

6. “This Bank Guarantee shall be encashed unless renewed by the Contractor at the request of the Employer, before the due date”.



BMRCL

7. The Bank is liable to pay the EMPLOYER (BMRCL), any amount upto and inclusive of the aforementioned full amount upon written order from the EMPLOYER (BMRCL). The Bank will pay the money required by the EMPLOYER (BMRCL) immediately on demand without delay without reference to the Tenderer and without the necessity of a previous notice or of judicial or administrative procedures and without it being necessary to prove to the Bank the liability or damages resulting from any defects or shortcomings or debts of the Tenderer.

8. BMRCL shall have full rights to encash this Bank Guarantee at any time during the guarantee period and the Tenderer shall have no right or claim whatsoever in the matter of encashment of the Bank Guarantee amount by the Employer (BMRCL). The Bank will have their responsibility in terms of the guarantee and obligation, to make immediate payment to the EMPLOYER (BMRCL), without the consent of the Tenderer and without referring the matter to the Tenderer.

9. Courts at Bangalore, Karnataka, India shall have exclusive jurisdiction to adjudicate disputes arising out of encashment of the Guarantee, and we, the said Bank, undertake not to revoke this Guarantee during its currency, except with the previous consent of the Employer in writing and agree that any change in the constitution of the Bank shall not discharge our liability hereunder.

10. This Bank Guarantee will not be discharged due to the change in the constitution of the Tenderer or change in the constitution of the issuing bank

11. This guarantee is executed and issued by Shri who is/are authorized by the Bank for issuing the guarantee in its behalf and his ID No. and Email address being.....

12. The Banks liability under this Guarantee shall not exceed the amount of INR.....
(to be specified in words and figures).

13. This guarantee shall be valid for (period to be specified) till (Period to be mentioned).

14. The pendency of any dispute or arbitration or other proceedings shall not affect this guarantee in any manner.

15. It is hereby agreed that the liability of the Bank under this guarantee shall cease on the first occurrence of either of the following events:

a) Payment by the Bank of the Guaranteed sum in full to the Employer/
BMRCL

or

b) Receipt of written communication from the Employer/BMRCL, to the issuing Bank, along with the Original Bank Guarantees discharging the Bank of its liability covered by this Bank Guarantee.

SIGNATURE AND SEAL OF THE GUARANTOR SIGNATURE AND SEAL OF THE GUARANTOR

NAME OF THE BANK NAME OF THE BANK

ADDRESS ADDRESS

Notes:

1. The stamp papers of appropriate value shall be purchased in the name of the Bank, who issue the Bank Guarantee.
2. The Bank Guarantee shall be from an Indian Scheduled bank (excluding Cooperative Banks) or from a schedule Foreign Bank as defined in Section 2(e) of RBI Act 1934 read with Second Schedule, preferably drawn on and payable/extendable at a designated branch at Bangalore only.



PROFORMA – B**FORM OF BANK GUARANTEE FOR PERFORMANCE OF CONTRACT**

To
BANGALORE METRO RAIL CORPORATION LIMITED (BMRCL)
BMRCL Metro Rail Depot,
Old Madras Road, Near NGEF Bus Stop,
Baiyappanahalli, Bangalore - 560038
Karnataka, India.

1. **WHEREAS** “.....(*Name and Address of the Contractor*)” (hereinafter called the “Contractor”) has undertaken for due performance of Contract, in pursuance of Contract No. (*description of the Contract work of Bangalore Metro Rail Project to be specified*) (hereinafter called “the Contract”)

2. **AND WHEREAS** it has been stipulated in the concerned Contract awarded by Bangalore Metro Rail Corporation Limited (BMRCL) hereinafter called the “Employer” which expression shall unless repugnant to the context or the meaning thereof, include its successors, administrators, executors and assignees, to the Contractor that the Contractor shall furnish to EMPLOYER (BMRCL) with a Bank Guarantee for due performance of Contract from an Indian scheduled Bank (excluding Cooperative Bank) or from a schedule Foreign Bank as defined in Section 2(e) of RBI Act 1934 read with second schedule for, the sum specified herein below as security for compliance of the obligation and performance of the Contractor, in accordance with the concerned Contract.

3. **AND WHEREAS** we (*the name and full address of the Bank including Email address*) having registered office at (hereinafter referred to as the issuing Bank) which expression shall unless repugnant to the context or the meaning thereof, include its successors, administrators, executors and assignees, do hereby agree to give the EMPLOYER (BMRCL) on behalf of the Contractor such a Bank Guarantee, drawn and payable at Bangalore through our Bangalore Branch.

4. **NOW therefore**, we hereby affirm that we are the guarantor and responsible to EMPLOYER (BMRCL) and their successors, on behalf of the Contractor upto a total sum of INR (*amount of Guarantee to be specified in figure and words*), Further, we hereby unconditionally, irrevocably and without demur undertake to immediately pay you, upon your first written demand and without cavil, or arguments any sum or sums within the limits of the sum specified in this Bank Guarantee as aforesaid without you being required to prove or to show grounds or reasons for your demand, by depositing/crediting to the Current A/c. of EMPLOYER (BMRCL), the sums specified.

5. This Bank Guarantee is encashable or extendable at our designated Branch in Bengaluru (Bangalore) Karnataka, India, as mentioned below:

Name of the Bank, Branch and contact details

Address

Telephone no: & Fax No:

E-mail Address

Branch Manager Name & Mobile No:

Bank Zonal Office Address, Telephone No:, Fax Number,

E-mail Address

6. “This Bank Guarantee shall be encashed unless renewed by the Contractor at the request of the Employer, before the due date”.



7. BMRCL shall have rights to encash this Bank Guarantee at any time during the guarantee period and the Contractor shall have no right or claim whatsoever in the matter of encashment of the Bank Guarantee amount by the Employer. The Bank will have their responsibility in terms of the guarantee and obligation, to make immediate payment to the EMPLOYER (BMRCL), without the consent of the Contractor and without referring the matter to the Contractor.

8. The Bank shall be liable to pay the EMPLOYER (BMRCL), any amount upto and inclusive of the aforementioned full amount upon written order from the EMPLOYER (BMRCL) to indemnify the BMRCL for any liability of damage resulting from any defects and/or shortcomings of the Contractor and/or the debts the Contractor may have incurred, to EMPLOYER(BMRCL) and/or any parties involved in the Works under the Contract mentioned above, whether these defects and/or shortcomings and/or debts are actual and/or estimated and/or expected. The Bank will deliver the money required by the EMPLOYER (BMRCL) immediately on demand without delay without reference to the Contractor and without the necessity of a previous notice or of judicial or administrative procedures and without it being necessary to prove to the Bank the liability or damages resulting from any defects or shortcomings or debts of the Contractor.

9. Courts at Bangalore, Karnataka, India shall have exclusive jurisdiction for adjudicating the disputes arising out of encashment of the Guarantee, and we, the said Bank undertake not to revoke this Guarantee during its currency, except with the previous consent of the Employer in writing and agree that any change in the constitution of the Bank shall not discharge our liability hereunder.

10. This Bank Guarantee will not be discharged due to the change in the constitution of the Contractor or change in the constitution of the issuing bank.

11. This Deed of guarantee is signed and executed by Shri who is/are authorized by the Bank for issuing the guarantee in its behalf and his ID No. and Email address being

12. The Bank's liability under this Guarantee shall not exceed the amount of INR.
(to be specified in words and figures)

13. This guarantee shall be valid for till

14. The pendency of any dispute or arbitration or other proceedings shall not affect this guarantee in any manner.

15. It is hereby agreed that the liability of the Bank under this guarantee shall cease on the happening of any of the following events:

a) Payment by the Bank of the Guaranteed sum in full to the Employer/BMRCL

Or

b) Issue of written communication by the Employer / BMRCL, to the issuing Bank, along with the Original Bank Guarantees discharging the Bank of its liability covered by this Bank Guarantee. .

Date

SIGNATURE AND SEAL OF THE GUARANTOR

NAME OF THE BANK

ADDRESS

Notes:

- 1 The stamp papers of appropriate value shall be purchased in the name of the Bank, who issue the Bank Guarantee.
- 2 The Bank Guarantee shall be from an Indian Scheduled bank (excluding Cooperative Banks) or from a schedule Foreign Bank as defined in Section 2(e) of RBI Act 1934 read with Second Schedule, preferably drawn on and payable/extendable at a designated branch at Bangalore only.

SECTION 10: ANNEXURES

ANNEXURE 1 - FORM OF CONTRACT AGREEMENT

ANNEXURE 2 - CHECKLIST

ANNEXURE 3 - DETAILS OF BANK ACCOUNT

ANNEXURE 4 - FORMAT OF DECLARATION TOWARDS DEBARMENT/ BLACKLISTING

ANNEXURE 5 - UNDERTAKING

ANNEXURE 6- FORM FOR SEEKING CLARIFICATION ON TENDER DOCUMENT

**ANNEXURE 7- CERTIFICATE FOR COMPLIANCE OF RESTRICTIONS IN REGARD TO PROCUREMENT
FROM BIDDERS FROM COUNTRIES SHARING LAND BORDERS WITH INDIA**

ANNEXURE 8 - MANUFACTURER'S AUTHORIZATION FORM (MAF)

ANNEXURE 9 - MAKE IN INDIA (MII) DECLARATION



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ANNEXURE-1**FORM OF CONTRACT AGREEMENT****CONTRACT No. BMRCL/O&M/TELE&AFC/Surveillance/2023/02****Upgradation of CCTV System and Comprehensive Annual Maintenance Contract**

This Contract Agreement (hereinafter referred to as the "Contract") is made at Bangalore on the day of, 20.... by and between:

BANGALORE METRO RAIL CORPORATION LIMITED, a Public Limited Company incorporated under Companies Act 1956 and a 50 : 50 Joint Venture of Government of India and Government of Karnataka for the purposed of execution of a Mass Rapid Transit System in the city of Bengaluru, represented herein by its Executive Director (O & M), authorized to sign and bind the Company, with its registered and corporate office located at III Floor, BMTC Complex, K.H. Road, Shanthinagar, Bengaluru 560 027, Karnataka State, India hereinafter referred to as the "BMRCL" or the "**EMPLOYER**", as the case may be, which expression shall unless excluded by or repugnant to the context or meaning thereof be deemed to include its successors and assigns, of the one part,

and

M/s.(Name of the Contractor)....., a(legal status).....Company incorporated under Companies Act 1956, having its office at(Contractor's office address)represented herein by Mr..... [Name and designation of the representative), authorized to sign and bind the Company under the Power of Attorney datedand the Board Resolution dated.....,who shall be responsible to the Employer under the **Contract No BMRCL/O&M/TELE&AFC/Surveillance/2023/02 for "Upgradation of CCTV System and Comprehensive Annual Maintenance Contract"**, hereinafter referred to as the "**CONTRACTOR**" which expression shall unless excluded by or repugnant to the context or meaning thereof be deemed to include its successors and assigns, on the other part,

Hereinafter, BMRCL/Employer and Contractor are collectively referred to as "Parties" and individually as "party".

WHEREAS, the Employer invited Tenders for Contract No.....vide notification no.....dated.....and the Contractor has in response submitted a Tender for "**Upgradation of CCTV System and Comprehensive Annual Maintenance Contract**" (hereinafter referred to in this Agreement as "the Works") and agrees to undertake performance of the Works under the terms and conditions set forth in this Contract.

AND WHEREAS, the Contractor emerged as the successful Tenderer and the Employer awarded the Contract to the Contractor and the Contractor agrees for "**Upgradation of CCTV System and Comprehensive Annual Maintenance Contract**" under the Terms and conditions specified in this Contract Agreement and the other Contract Documents, forming part thereof.

NOW THEREFORE THE PARTIES HEREBY AGREE AS FOLLOWS:



BMRCL

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Tenderer

Clause 1: Words and Expression

In this Contract, all the words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract hereinafter referred to.

Clause 2: The Contract Documents

2.1 The following shall be deemed to form and be read and construed as a part of the Agreement

- (a) Letter of Acceptance No. dated
- (b) The Tender (Bill of Quantities)
- (c) Instruction to Tenderers/ Bidders
- (d) General Conditions of Contract
- (e) Special Conditions of Contract
- (f) Bid Forms/ Tender Forms
- (g) Technical Specifications including scope of work
- (h) Drawings-Attached
- (i) Employer's clarification to Pre-bid Queries and Addendum No.....dated.....
- (j) Contractor's 'Qualification cum Technical' and Financial proposals submitted vide letter no.....dated.....
- (k) All correspondence between the Tenderer/ Bidder and BMRCL from the date of issue of NIT and the date of issue of LOA.
- (l) Performance Security in the form of Bank Guarantee issued by.....(name & address of the issuing bank)....., vide BG No.....dated.....amounting tovalid Upto..... and its authenticity confirmed by the bank vide their letter No.....dated.....
- (m) Any other document forming part of this Contract.

2.2 All of the foregoing documents, together with this Contract Agreement, are referred to herein as the Contract. Also incorporated into the Contract and made part hereof, are all codes, standard specifications, and similar requirements that are referred to therein. In the event of a conflict, inconsistency, ambiguity or discrepancy between the contents of the Contract, the order of precedence shall be according to the General Conditions of Contract.

Clause 3: Integration

The Employer and the Contractor agree that this Contract Agreement, together with other Contract Documents, expresses all of the agreements, understandings, promises and covenants of the parties, and that integrates, combines and supersedes all prior and contemporaneous negotiations, understandings and agreements, whether written or oral and that no modification or alteration of the Contract Documents shall be valid or binding on either party, unless expressed in writing and executed with the same formality as this Contract Agreement, except as may otherwise be specifically provided in the Contract Documents.

Clause 4: Contract Price and Completion Time:

The Contract price shall be inclusive of Labour Cess charges and duties under applicable law but exclusive of CGST and SGST. BMRCL shall pay the output CGST and SGST as invoiced by the contractor to BMRCL. Hence as per clause 39 of General Conditions of Contract and respective



Special Conditions of Contract) and completion time for executing the works under the Contract is as below:

1.	Total Contract Price	Rs..... (Indian Rupees.....only).
2.	Date of Commencement of Works	Date of issue of Letter of Acceptance (LOA) as per clause 29 of ITT.
3.	Work Completion Period for Supply Installation, Testing and Commissioning	04 Months from the Date of Signing of the Contract Agreement for Reach 1 stations.
4.	Duration of the CAMC Contract period	5 Years from the Date of Signing of the CAMC Contract Agreement for Reach 1 stations(Extendable to 10 Years)

Clause 5: Obligations of the Contractor:

The mutual rights and Obligations of the Employer and the Contractor shall be as set forth in the Contract and in particular:-

- a) The Contractor agrees, subject to the terms and conditions of the Contract, to perform efficiently and faithfully all of the Works of “**Upgradation of CCTV System and Comprehensive Annual Maintenance Contract**” under the Contract Concreting, plastering, Flooring, Tiling, painting, carpentry works, Structural glazing works etc. requisite *for or* incidental to the successful completion of the Works and in carrying out all duties and obligations imposed by the Contract
- b) The Contractor shall ensure full compliance with Tax laws of India with regard to this Contract and shall be solely responsible for the same. He shall submit copies of acknowledgements evidencing filing of returns and shall keep the Employer fully indemnified against liability of tax, interest, penalty etc., of the Contractor in respect thereof, which may arise.

Clause 6: Obligation of the Employer

The ‘EMPLOYER’ agrees, subject to the terms and conditions of the Contract, to pay Contractor the amount specified and at the rates and terms and in the manner set forth in the Contract.

Clause 7: Governing Law

This Contract is construed/interpreted and enforceable under the applicable laws of the Republic of India.

Clause 8: Language

This Contract Agreement and the other Contract Documents are made in the English language.

Clause 9: Notices



All Notices called by the Terms of the Contract shall be in writing in English Language and shall be delivered by hand or by registered mail with acknowledgement due. All notices shall be deemed to be duly made by the party to whom it is addressed at the following address or such other addresses as such party may subsequently notify the other.

To Employer:

Bangalore Metro Rail Corporation Ltd.
III Floor, BMTC Complex,
K.H Road, Shanthinagar,
Bangalore – 560 027,
Karnataka, India

To Contractor:

.....
.....
.....
.....
.....

Clause 10: Jurisdiction of Court

The Courts at Bengaluru shall have exclusive jurisdiction in respect of all the disputes arising out of this Contract Agreement between the Parties.

IN WITNESS WHEREOF, the Parties hereto have caused this Contract to be signed in their respective names by the hands of their authorized representatives on the day and date first above written.

For Bangalore Metro Rail Corporation Limited**The Contractor****Employer**

()

(.....)

Proprietor**The Executive Director (O & M)****M/s****WITNESS****WITNESS**

()

()

Note:

This Contract Agreement is tentative and may be modified as considered necessary at the time of finalization /signing of the Contract.



ANNEXURE-2**CHECK LIST**

- (A) The following check list is intended to help the Tenderers in submitting offer which are complete. An incomplete offer is liable to be rejected. Tenderers are advised to go through the Tender documents and the list carefully and take necessary action.
- (B) Tenderers are also required to submit copy of the checklist, duly marked, along with their offer.

The Tender submittals shall consist of the following:

I. QUALIFICATION CUM TECHNICAL PACKAGE		
a.	Earnest Money Deposit (Clause 14 of ITT)	Submitted / Not Submitted
b.	Form of Tender on firm's Letter head (Clause 10 of ITT)	Submitted / Not Submitted
c.	Notarized Power of Attorney (Clause 15.2 of ITT) / Attested copy of the Partnership deed / Ownership record to demonstrate the authority to sign the Tender submittals.	Submitted / Not Submitted
d.	One set of downloaded untampered Tender documents along with Employer's clarification on queries including addenda (if any) duly signed and stamped on each page (Clause 16.8 of ITT) (Original only)	Submitted / Not Submitted
e.	Proof of payment of Tender Fee/e-Receipt	Submitted / Not Submitted
f.	Evidence of 'Tenderer's Eligibility and Qualification Criteria (Clause 2 & 3 of ITT) and Qualification Information (Section 3) with CA's certifications.	Submitted / Not Submitted
g.	Copy of PAN card	Submitted / Not Submitted
h.	Copy of GST Registration certificate	Submitted / Not Submitted
i.	Bank Details in prescribed Proforma given in Annexure-3 in Section-10 along with a cancelled Cheque leaf (clause 14.11 of ITT)	Submitted / Not Submitted
j.	Undertakings as per prescribed Proforma given in Annexure-4 & Annexure-5 in Section-10.	Submitted / Not Submitted
k.	Constitution or legal status of Tenderer as per clause 1.1 of Section 3.	Submitted / Not Submitted
l.	List of works executed and payments received year wise in the last five years as per clause 1.2 of Section 3 duly certified by CA.	Submitted / Not Submitted
m.	Existing commitments and ongoing works as per clause 1.3 (A) of Section 3.	Submitted / Not Submitted
n.	Works for which Tenders already submitted as per clause 1.3 (B) of Section 3.	Submitted / Not Submitted
II. FINANCIAL PACKAGE		
a	Priced Bill of Quantities in the format prescribed in Volume -2 (Clause 10 of ITT)	Submitted / Not Submitted



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ANNEXURE-3

DETAILS OF BANK ACCOUNT FOR REFUND OF EMD

- Name of the Firm/Tenderer:
- Name of the account to which amount to be remitted:
- Complete Address:
- Name of the Bank:
- Branch:
- Address of the Bank Branch:
- Account Type:
- Account Number:
- IFS Code of the Bank Branch:
- MICR Code of the Bank Branch:
- Whether a cancelled Cheque of the Tenderer/Firm is submitted: Yes or No (please tick)

Certified that the information furnished above is correct.

Signature of the Tenderer



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ANNEXURE-4**FORMAT OF DECLARATION TOWARDS DEBARMENT / BLACKLISTING**

We, M/s.[Name of the Tenderer]....., herein after called " the Tenderer", do hereby affirm and declare that we have NOT been Black listed /Debarred by any Government / Government undertaking / semi Government / Govt. Controlled Institutions/projects/ Reputed private organizations in India, during the last Five (5) years. Also we have not rescinded the works after award of the contract during the last Five (5) years.

In case it is found that above statement is not true, any time during effect of this Tender or currency of the Contract entered between the parties based on the above statement, BMRCL reserves its rights to terminate the Contract and forfeit the Tender Security / Performance Security at its discretion.

Place:

Signature of the Tenderer

Date:

Name

Designation

Seal of the Company

Phone

Note :

Last five (5) years shall be counted from 28 days prior to the date of submission of Tender



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ANNEXURE-5**UNDERTAKING**

We, M/s..... [Name of the Tenderer]....., herein after called "the Tenderer", do hereby affirm and undertake to abide by all the terms, conditions and specifications given in the Tender document while performing the contractual obligations relating to **"Upgradation of CCTV System and Comprehensive Annual Maintenance Contract"** of BMRCL, Bangalore. We do hereby affirm and undertake to follow all labour laws that are applicable from time to time.

We also undertake that the Tender submittals do not contain any deviation or amendment or modification or change of any type whatsoever with regard to tender conditions and specifications.

Place:

Signature of the Tenderer

Date:

Name

Designation

Seal of the Company

Phone

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ANNEXURE-6**FORM FOR SEEKING CLARIFICATION ON TENDER DOCUMENT**

To,

The Executive Director (O&M)
 Bangalore Metro Rail Corporation Ltd (O&M Wing),
 Admin Building, Baiyappanahalli Depot,
 S V Road,
 Bangalore – 560 038,
 Karnataka, India.

Dear Sir,

Sub:(Name of the Work)

Ref:(Tender No.).

In reference to the above Tender, we need the clarification on the following clauses

Sl No.	Section No	Section Description	Clause No.	Tender Condition	Tenderer's Queries
1					
2					
3					
4					
5					
6					
7					
8					

Name of the Tenderer

Telephone:

Email:

Date:

Signature of the Tenderer



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ANNEXURE-7

CERTIFICATE FOR COMPLIANCE OF RESTRICTIONS IN REGARD TO PROCUREMENT FROM BIDDERS FROM COUNTRIES SHARING LAND BORDERS WITH INDIA

I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India (Restrictions in regard to procurement from the bidders from countries sharing land borders with India, BMRCL letter dated 24/02/2021) and in this regard I certify that (Please tick either (a) or (b) below as applicable and strike out the option which is not applicable)

(a) I certify that I am not from such a country; or

(b) I am from such a country and have been registered with the Competent Authority. I hereby certify that I fulfill all requirements in this regard and eligible to be considered. Evidence of valid registration by the Competent Authority is attached."

.....

Signature and seal of Tenderer



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ANNEXURE-8**Manufacturer's Authorization Form (MAF)**

(This form has to be provided by the OEMs of the hardware and software solution providers as per the format or a similar format capturing the relevant information provided below. This letter of authority should be on the letterhead of the Original Equipment Manufacturer (OEM) and should be signed by a person competent and having the power of attorney to bind the manufacturer.)

To,
The Executive Director (O&M)
Bangalore Metro Rail Corporation Ltd (O&M Wing),
Admin Building, Baiyappanahalli Depot,
S V Road,
Bangalore – 560 038,

Subject: Manufacturer's Authorization Form Ref: Tender No.
BMRCCL/O&M/TELE&AFC/Surveillance/2023/02, Dated 26-01-2024

Dear Sir,

We M/s. _____ (Name of the OEM) who are established and reputable manufacturers of (List of Goods/Services as per the BOQ) having factories or product development centres at the locations or as per list attached, do hereby authorize M/s. _____ (Name and address of the Bidder) to bid, negotiate and conclude the contract with you against Tender No. **BMRCCL/O&M/TELE&AFC/Surveillance/2023/02**, Dated 26-01-2024 for the above goods manufactured or services provided by us.

We hereby extend, our warranty for the hardware goods supplied by the bidder and or maintenance or support services for software products against this invitation for bid by (Name of the Bidder) as per requirements and for the duration of contract as specified in this Tender.

Further, we declare that we meet the following criteria (as applicable) detailed below:

- Products or technology quoted are neither end-of-sale nor end-of-life as on the Date of installation and commissioning and are not end-of-support till the successful completion of the CAMC Contract period of this Tender or whichever is later.
- We have not have been blacklisted / barred by any State / Central Government Department or Central / State PSUs in last 5 years.
- We have not filed for bankruptcy and are profitable for at least last 5 consecutive financial years.
- We have quality standard certifications viz. ISO 9001 or ISO 14001 or ISO 27001, or ISO 20000 as applicable, as on date of Tender release.
- We have a registered office in India and have been directly present for last __ years, from date of Tender publication. We also have a development centre in India.
- We have an installed base of at least 100% of the quantities proposed in the BoQ for the quoted product or technology globally (including India).

Thanking you,

Yours faithfully,



BMRCCL

176

Tenderer

(Signature)

For & on behalf of M/s. _____ (Name of OEM)

Name :

Designation :

Place :

Date :



ANNEXURE-9**MAKE IN INDIA (MII) DECLARATION:**

The Bidder or the OEM bidding for the Tender No **BMRCCL/O&M/TELE&AFC/Surveillance/2023/02**, dated 26-01-2024 shall provide the Make In India Declaration on the Bidder's Letter Head as per the Table given below. The Percentage of Local content declaration shall be in accordance with the Order No. P-45021/2/2017-PP (BE II) dated 16.09.2020 of Department for Promotion of Industry and Internal Trade under the Ministry of Commerce and Industry, Government of India.

Make In India - Content Declaration				
Sl. No.	Description	Make & Model	Local Content Percentage	Class-I Local Supplier or Class-II Local Supplier or Non-Local Supplier.
A	VIDEO SURVEILLANCE			
1	SUPPLY OF BOX / BULLET CAMERA - TYPE 1			
2	SUPPLY OF BOX / BULLET CAMERA - TYPE 2			
11	SUPPLY OF 8 PORT POE SWITCH			
12	SUPPLY OF 24 PORT POE SWITCH			
13	SUPPLY OF NETWORK MANAGEMENT SOFTWARE SYSTEM			
16	SUPPLY OF UTP CAT6 LSZH PATCH CORD			
17	SUPPLY & INSTALLATION OF UTP CAT6 LSZH CABLE & CONDUIT			
18	SUPPLY OF UTP CAT6 24 PORT LOADED PATCH PANEL			
19	SUPPLY OF OPTICAL PATCH CORD			
21	SUPPLY OF 9U NETWORK RACK WITH ACCESSORIES			
F	VIDEO WALL			
1	SUPPLY OF 4K VIDEO WALL			
2	SUPPLY OF 4K VIDEO WALL CONTROLLER			
G	TVMs			
1	TVM 2000			
2	TVM 4000			

.....
Signature and seal of Tenderer



END OF DOCUMENT



BANGALORE METRO RAIL CORPORATION LIMITED

namma
metro



Driving Bangalore Ahead

TENDER DOCUMENT

**Upgradation of CCTV System and Comprehensive Annual
Maintenance Contract**

**TENDER NO.
BMRCL/O&M/TELE&AFC/Surveillance/2023/02**

**Volume 2
FINANCIAL PACKAGE**

JAN 2024

**Bangalore Metro Rail Corporation Ltd.
BMRCL Metro Rail Depot, , Old
Madras Road, Near NGEF Bus
Stop, Baiyappanahalli,
Bangalore - 560038 Karnataka,
India**



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PRICED BILL OF QUANTITIES**Pricing Schedule A:****Name of work: "Upgradation of CCTV System and Comprehensive Annual Maintenance Contract"**

BILL OF QUANTITIES					
SL NO	PART DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	TOTAL PRICE
A	VIDEO SURVEILLANCE				
1	SUPPLY OF BOX / BULLET CAMERA - TYPE 1	540	NOS		
2	SUPPLY OF BOX / BULLET CAMERA - TYPE 2	60	NOS		
3	SUPPLY OF 128GB INDUSTRIAL GRADE MICRO SD CARD	600	NOS		
4	SUPPLY OF VMS BASE LICENSE	1	NOS		
5	SUPPLY OF VMS BASE LICENSE - REDUNDANT	1	NOS		
6	SUPPLY OF VMS CHANNEL LICENSE	600	NOS		
7	SUPPLY OF VMS CHANNEL LICENSE - REDUNDANT	600	NOS		
8	SUPPLY OF VMS INEGRATION LICENSE	2	NOS		
9	SUPPLY OF RECORDING SERVER / NVR	12	NOS		
3	SUPPLY OF APPLICATION SERVER	4	NOS		
10	SUPPLY OF 8 PORT POE SWITCH	12	NOS		
11	SUPPLY OF 24 PORT POE SWITCH	24	NOS		
12	SUPPLY OF NETWORK MANAGEMENT SOFTWARE SYSTEM	750	NOS		
13	SUPPLY OF MONITORING WORKSTATION	12	NOS		
14	SUPPLY OF 4K RESOLUTION KVM OVER IP	12	NOS		
15	SUPPLY OF UTP CAT6 LSZH PATCH CORD	1200	NOS		
16	SUPPLY & INSTALLATION OF UTP CAT6 LSZH CABLE & CONDUIT	30000	MTR		
17	SUPPLY OF UTP CAT6 24 PORT LOADED PATCH PANEL	36	NOS		
18	SUPPLY OF OPTICAL PATCH CORD	72	NOS		



19	SUPPLY OF RJ45 CONNECTOR	600	NOS		
20	SUPPLY OF 9U NETWORK RACK WITH ACCESSORIES	36	NOS		
B	AI BASED FACIAL RECOGNITION SYSTEM				
1	SUPPLY OF FACIAL RECOGNITION SOFTWARE	24	NOS		
2	SUPPLY OF FACIAL RECOGNITION SERVER	3	NOS		
C	AI BASED VIDEO ANALYTICS SYSTEM				
1	SUPPLY OF AI BASED VIDEO ANALYTICS SOFTWARE	144	NOS		
2	SUPPLY OF ANALYTICS CORE SERVER	4	NOS		
3	SUPPLY OF ANALYTICS EDGE LPU	6	NOS		
D	AUTOMATIC VEHICLE NUMBER PLATE RECOGNITION SYSTEM				
1	SUPPLY OF NUMBER PLATE RECOGNITION SOFTWARE	24	NOS		
2	SUPPLY OF NUMBER PLATE RECOGNITION LPU	6	NOS		
3	SUPPLY OF NUMBER PLATE RECOGNITION SERVER	2	NOS		
E	INCIDENT MANAGEMENT SYSTEM				
1	SUPPLY OF PHYSICAL SECURITY & INCIDENT MANAGEMENT SOFTWARE SYSTEM	1	NOS		
2	INTEGRATION OF PHYSICAL SECURITY & INCIDENT MANAGEMENT SOFTWARE SYSTEM	3	NOS		
3	SUPPLY OF APPLICATION SERVER	6	NOS		
F	DISPLAY VIDEO WALL				
1	SUPPLY OF 4K VIDEO WALL CUBES	1	NOS		
2	SUPPLY OF 4K VIDEO WALL CONTROLLER	1	NOS		
G	TVMs				
1	TVM 2000	20	NOS		
2	TVM 4000	5	NOS		
H	SERVICES & INSTALLATION				
1	SITE STUDY & DESIGN DOCUMENT	6	STATION		
2	INSTALLATION PER STATION	6	STATION		



	Total Pricing Schedule A	Total	
Pricing Schedule B: Name of work: "Comprehensive Annual Maintenance Charges for a period of 5 Years(extendable to 10 Years)"			
1	ANNUAL MAINTENANCE CHARGES (PERCENTAGE OF TOTAL VALUE OF SCHEDULE A)	Every Year	Percentage of the Value of SCHEDULE A to be paid every year for a period of 5 Years (Extendable to 10 Years).

FINANCIAL BID PROPOSAL SHEET		
Particulars	In Figures	In Words
Total Quoted Price for Schedule-A (a)	Rs.....	Rupees only
Total Quoted Price for Schedule-B (b)	Rs.....	Rupees only
Total Quoted Tender Price = [(a) + (b)] (Total Quoted Price for Schedule-A + Total Quoted Price for Schedule-B)	Rs.	Rupees only

The Total Listed BOQ Price – Schedule A:
Indian Rupees:

_____ (in figures)



Only. (In words)

**The Total CAMC Cost to be paid every Year during the contract period- Schedule B:
Indian Rupees:**

_____ (in figures)

Only.

(In words)

**The Final Tender Price for evaluation
Indian Rupees:**

_____ (in figures)

Only.

(In words)

Financial Note:

1. The Tenderer shall quote the unit price and Total price accurately under Schedule A above.
2. The Tenderer shall quote the CAMC cost to be paid by BMRCL every year for a period of Five (5) years accurately under Schedule B above. BMRCL reserves the right the extend the contract for a period of 10 Years at the same prices quoted above without any price variations or cost escalations.
3. The Tenderer shall quote the 'financial bid proposal sheet' accurately as indicated above in both Figures and Words.
4. The quoted price shall be inclusive of all applicable Taxes and excluding GST and shall remain valid for a period of 5 Years(extendable to 10 Years) from date of acceptance of the BOQ Items..
5. Where there is a discrepancy between the Total Quoted Tender price of schedule A & B and quoted Total Tender Price in Financial Bid Proposal Sheet, the lowest of the two shall govern as Total Quoted Tender Price for this Tender. If the lowest figure is obtained from the Total Quoted Tender Price of Financial Bid Proposal Sheet, contractor should submit revised Breakup Price List.
6. The CAMC cost will also include the deployment of Manpower in multiple shifts as per the



details indicated in Appendix 4 of Section 7: Technical Specifications.

7. The Contract Price shall be inclusive of all charges of insurance, transportation up to destination, handling, installation, royalties & any other charges leviable and payable by the Contractor under the Contract, or for any other cause and including Tax to be deducted at source and shall be included in the Total Bid Price.
8. The Contractor shall be entirely responsible for license fees and any other incidentals incurred until completion of the whole of the Works and handover to the Employer.
9. The Contractor shall maintain complete records of duties, other taxes and levies, etc.; payable to various authorities in relation to the Works and submit the receipts/ records for verification as and when demanded in writing by the Employer.
10. Any increase in GST shall not be paid in the extended period of Contract during implementation of the solution for which the Contractor alone is responsible for delay as determined by the Engineer while granting the "extension of time". However, this shall not be applicable for "variations" and for the CAMC contract. BMRCL will pay as per the prevailing GST rates during the 5 Year CAMC period (or for the extended period of 10 years).
11. **UNPRICED ITEMS:** Items against which no rate or sum is entered by the Bidder, whether quantities are stated or not, such bids shall be summarily rejected.

SIGNATURE OF THE BIDDER

--- XXX ---



BMRCL

Tender No: BMRCL/O&M/TELE&AFC/Surveillance/2023/02**Description of Work:** Upgradation of CCTV System and Comprehensive Annual Maintenance Contract

Amendment-1 dated: 09/02/2024

	Clause / Page No	Amendments			
1	Volume 1: Qualification Cum Technical Package, Section 7: Technical Specifications, under point no 04, Video Wall, Page no 133-134	REPLACE			
		SL NO	PARAMETER	SPECIFICATION	Compliance
		1	Technology	DLP based rear cube projection	
		2	Display Unit	Individual cube should be equipped with multiple laser banks and each laser bank should have an array of diodes. Single or multiple diode failure should not impact image display on the screen	
		3	Screen Size	Each cube size to be 70" (70 Inches diagonally) or more with complete configuration of (20 cubes) with covered base. All cubes have to be of the exactly same size, configuration and model wise mandatorily. Depth of each cube should be 575 mm or lower.	
		4	Resolution	Resolution of each cube should be minimum 3840 * 2160 pixels	
		5	Aspect Ratio	16:09 for each video wall cube	
		6	Brightness	Brightness of projection engine should be minimum 2200 lumens	
		7	Contrast Ratio	Dynamic contrast should be 1,200,000:1 or better	
		8	Wall Uptime	The light source lifetime of the laser shall be min 1,00,000h Economy usage mode	



	Clause / Page No	Amendments				
		9	Viewing Angle	CSI screen with Half gain viewing angle of H : $\pm 36^{\circ}$ C and V: $\pm 34^{\circ}$ C with Hard Backing to prevent bulging		
		10	Screen to Screen gap	Screen to Screen Gap: Upto 0.2 ~0.5 mm at 23~25° C temperature		
		11	Input	Control BD Input terminals: Input: 1 x Digital DVI, 1 x DP		
		12	Operating Temperature	The VDW shall have an operational temperature between five degrees Celsius (As per City condition and requirement) to forty degrees Celsius (As per City condition and requirement).		
		13	Relative Humidity conditions for operation	The VDW shall have a relative humidity of 20% to 80%, non- condensing or better.		
		14	Power	The AC input power shall be 110-240 VAC +/- 10% at 50/60 Hz +/- 1Hz. Power consumption of each cube shall be less than 350W.		
		15	Others	• Each cube of the VDW shall have its own LAN Port and video wall access by IP Address to provide standard information like status and health		
				• RS232/RS-422/IR/ IP control		
				• On Screen Display (OSD)		
				• IR and IP based remote control		
				• Flicker free image on the Large Screen with pixel clock speed $\geq 500\text{MHz}$		



	Clause / Page No	Amendments				
				• The dashboard shall be capable of simultaneously displaying one (1) to one hundred (100) sixteen (16) independent sets of information on the video display wall. Specific outputs to be displayed shall be chosen by operators.		
				• VDW shall be capable of displaying high definition (HD) and standard definition (SD) content.		
				• Auto color and brightness management mechanism to be provided.		
				• Screen should be anti-reflective and not bulge out or bulge in.		
				• All video display cubes shall have a consistent image quality and uniform brightness across the display wall.		
				• Each display cube shall not exceed a thermal dissipation of twelve hundred (1200) BTU per hour under normal operating conditions..		
				• Each cube should have a screen size of 1550 mm wide and 872 mm high. The cube size can have a tolerance of $\pm 5\%$ in size		
				• Video Wall, Video Wall Controller and Software should be from same OEM would be preferred for better compatibility.		
				• A pedestal shall be provided to support the VDW. Pedestal shall be physically secured to the concrete floor of the building.		



Clause / Page No	Amendments																																													
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		<table><tr><th>Sl. No.</th><th>Parameters</th><th>Specification</th><th>Compliance (Yes/No)</th></tr><tr><td>1.</td><td rowspan="2">Overview Display</td><td>The displays shall utilize direct LED lit LCD panel technology with 1,20,000 Hours Lifetime of LED, with a matrix of 6 X 4.</td><td></td></tr><tr><td>2.</td><td>All panels shall of 55" diagonal size with Screen gap <0.89mm</td><td></td></tr><tr><td>3.</td><td>Native Resolution per Panel</td><td>In order to achieve acceptable image quality for both video and graphics, and to avoid pixel loss, panel must be of native resolution of 3840x2160 pixels</td><td></td></tr><tr><td>4.</td><td>Aspect Ratio</td><td>16:09</td><td></td></tr><tr><td>5.</td><td>Backlight</td><td>Direct LED with 700 Nits of brightness and 1,20,000 Hours lifetime of LED minimum</td><td></td></tr><tr><td>6.</td><td>Brightness</td><td>The "Typical" Luminance specification must be 700 Cd/m2 (nits) or higher with a "Typical" Static Contrast Ratio of 1200:1 or greater in normal operation.</td><td></td></tr><tr><td>7.</td><td>Viewing angle</td><td>Each display shall utilize a high contrast screen (anti glare) with sizes of 55" diagonal. The screen shall have a H 178°/V 178° viewing angle or greater.</td><td></td></tr><tr><td>8.</td><td>Connectivity</td><td>USB, RS232 In, RS 232 Out, DP-OUT (DP1.2), HDMI-IN (HDMI 2.0), DP-IN (DP1.2), LAN</td><td></td></tr><tr><td>9.</td><td>Ethernet ports</td><td>1</td><td></td></tr><tr><td>10.</td><td>Power control</td><td>1 AC power ON/OFF switch</td><td></td></tr></table>	Sl. No.	Parameters	Specification	Compliance (Yes/No)	1.	Overview Display	The displays shall utilize direct LED lit LCD panel technology with 1,20,000 Hours Lifetime of LED, with a matrix of 6 X 4.		2.	All panels shall of 55" diagonal size with Screen gap <0.89mm		3.	Native Resolution per Panel	In order to achieve acceptable image quality for both video and graphics, and to avoid pixel loss, panel must be of native resolution of 3840x2160 pixels		4.	Aspect Ratio	16:09		5.	Backlight	Direct LED with 700 Nits of brightness and 1,20,000 Hours lifetime of LED minimum		6.	Brightness	The "Typical" Luminance specification must be 700 Cd/m2 (nits) or higher with a "Typical" Static Contrast Ratio of 1200:1 or greater in normal operation.		7.	Viewing angle	Each display shall utilize a high contrast screen (anti glare) with sizes of 55" diagonal. The screen shall have a H 178°/V 178° viewing angle or greater.		8.	Connectivity	USB, RS232 In, RS 232 Out, DP-OUT (DP1.2), HDMI-IN (HDMI 2.0), DP-IN (DP1.2), LAN		9.	Ethernet ports	1		10.	Power control	1 AC power ON/OFF switch		
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	Clause / Page No	Amendments			
		11.	LCD Size	55"	
		12.	Backlight Type	D-LED	
		13.	Plane Frame Joint	< 0.89mm	
		14.	Resolution Support	3840x2160	
		15.	Brightness	700cd/m ² (typ.)	
		16.	Contrast Ratio	1200:1(typ.)	
		17.	Response Time	8ms(typ.)	
		18.	Pixel Pitch mm	0.63x0.63 HxV	
		19.	Refreshing Frequency	60 Hz	
		20.	Viewing Angle	178° / 178° HxV	
		21.	Lifespan	1,20,000 hrs (min.)	
		22.	Color Gamut (X% NTSC)	72%(typ.)	
		23.	View Area (mm)	1209.63x680.4 HxV	
		24.	Display Colors	1.07B 10bit	
		25.	IR-IN	1 Port ϕ3.5mm mini	
		26.	USB	1 Port USB2.0 Interface: Type-A	
		27.	RS232-IN	1 Port RJ45	
		28.	RS232-OUT	1 Port RJ45	
		29.	DP-OUT (DP1.2)	1 Port Max Resolution: 3840x2160 @ 60Hz	
		30.	HDMI-IN (HDMI 2.0)	2 Port Max Resolution: 3840x2160 @ 60Hz	
		31.	DP-IN (DP1.2)	2 Port Max Resolution: 3840x2160 @ 60Hz	
		32.	LAN	1 Port Interface	
		33.	Power Input	AC 100 V ~ 240 V, 50/60 Hz	



Clause / Page No		Amendments			
		34.	Operating temperature	0 ~ +40C°	
		35.	Operating humidity	20% ~ 85% RH Non-Condensing.	
		36.	Housing	Industrial Grade Metal	
		37.	Storage Temperature	0°C to +60°C	
		38.	Modules	The Display Modules, Display Mount, Display Controller & Software should be from a single OEM	
		Video Wall Controller			
		39.	Processor	4K Video Wall Controller Seamless HDMI Processor Upto 4K@60hz	
		40.	Outputs	24 Outputs each supporting 3840×2160 Resolution @60Hz	
		41.	Inputs	6 Inputs each supporting 3840×2160 Resolution @60Hz	
		42.	Remote Control Functions	Turn on/off Video Walls Call Presets	
		43.	Redundant Power Supply	Yes	
		44.	Cooling	Should be equipped with FAN for cooling	
		45.	Network	1 Port (1Gbps)	
		46.	Operating Temperature	0° to 40°C 32° to 104°F	
		47.	Humidity	Max. 80% Rh (noncondensing) @ 40°C	



Clause / Page No		Amendments				
		48.	Software	Different Video Walls Group Management must support.		
		49.	Software	Roaming, Splicing, Drag, Preview Signal, Image Overlay and Group Moving Function.		
		50.	Software	Customised Preset or Preset Group and Play Interval Time		
		51.	Software	Auto Detect and Alarm I/O Card Real-Time Operating Temperature		
		52.	Software	Virtual Mouse Control Signal Window on the Video Walls Directly.		
		53.	Software	Remark Function in the Virtual Control Software Interface.		
		54.	Software	Split One Complete Signal Image As Separate Signal Window.		
		55.	Software	Interval Black Line Scanning in Order to Protect LCD Video Walls.		
2	Volume 1: Qualification Cum Technical Package, Section 7: Technical Specifications, under point no 04, 8 Port PoE Switch, Page no 88-90	REPLACE				
		SL NO	SPECIFICATION			COMPLIANCE
		1	The Switch and SFP should be from same OEM and all the mentioned features should be available from day 1 and if any license required, it must be included.			
		2	The Switch should have 8 x 10/100/1000 BaseT ports PoE/PoE+ with power budget of 120W, uplinks with 2 x 100/1000 Mbps Ports. All the ports should be licensed from day 1.			
		3	Switch Should provide minimum Non-Blocking switching fabric capacity of 12 Gbps or more.			



	Clause / Page No	Amendments		
		4	Forwarding Capacity: Should provide wire-speed packet forwarding of 17 Mpps or more.	
		5	All Ethernet Switch ports shall be PoE & PoE+ compliant as per IEEE 802.3af and IEEE802.3at standard. The switch should be able to show power allocation consumption , reserved power , power consumption through LLDP, Power priority can be set based on requirement of critical, high or low requirement of the devices	
		6	The switch should be capable to operate on AC or DC Voltage with provision of redundancy	
		7	The switch should work at operating voltage for DC between 48V to 57V and for AC should have 230VAC 50Hz.	
		8	For 230VAC 50Hz switch should have option for external Din rail Industrial grade fanless power supply	
		9	Switch shall be without any moving parts (no fans)	
		10	Switch Should have minimum MTBF 450000 hrs	
		11	The switch should support ring protection through open standard protocol ERPS (ITU-TG 8032) or MRP.	
		12	The switch should have MSTP, RSTP, private VLAN, PVLAN isolation, Voice VLAN, Voice VLAN Security to ensure non-voice device blockage, Link aggregation, IGMP Snooping v1, v2, v3, ARP Inspection, MLD Snooping, storm control, IP Source guard & Loop protection.	
		13	The Switch should have QoS supporting 4 classes, 8 priority queue, IEEE802.1D, IEEE802.1p and IEEE802.1q	
		14	Switch should support IPv4 and IPv6	
		15	The switch should have layer 2 static routing	
		16	The switch should have Console port for management and shall have web, CLI and SNMPv1,v2,v3 based management, HTTP & HTTPS, Traps , LLDP, LLDP-MED, port mirroring (1:1, N:1) and RMON Group (1,2,3,9)	
		17	Switch should have DHCPv4 Client & Server , DHCP Snooping, DHCP Replay and DHCPv6 Client	



	Clause / Page No	Amendments			
		18	Switch should support minimum VLAN 4k , MAC 8k , Jumbo frames - 9200, ARP-256 and IGMP-1k		
		19	The switch should have Telnet and SSH feature. Switch should have SNTP for time synchronization.		
		20	The should should have layer 2 - 4 ACL feature with MAC based, packet based-Source and destination IP Address and TCP/UDP based filtering.		
		21	Switch should have user and device authentication through 802.1x and MAC based, RADIUS & TACACS+		
		22	Switch should have Syslog and sflow		
		23	Switch should have Operating temperature minimum range -20°C to + 70°C and storage temperature -20 to +85 °C		
		24	Switch should have humidity between 5% ~ 95%		
		25	The switch should support Single Mode, Multi Mode, 100Mbps, 1000Mbps LC SFP		
		26	The Switch should support bi-direction and uni-direction SFPs		
		27	The Switch have IP30 rating		
		28	The Switch should have standards and approvals EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8, EN61000-6 2, EN61000-6 4, EN 55032 and FCC		
		WITH			
		Sr. No.	Parameter	Specification	Compliance (Yes/No)
		1	General	Should have 10-port Gigabit Ethernet switch (8 x 10/100/1000 BaseT PoE+ ports, 2 x GE SFP slots), managed, fanless design	
		2	Power Budget	Should have Power budget of minimum 120 W	



Clause / Page No		Amendments			
		3	Management	Web-interface , HTTP/HTTPS, Telnet, SSH v2, SNMP V1/V2/V3	
		4	Diagnostics	LED, Syslog, Port mirroring (1:1, N:1), RMON , Loop protection, sflow	
		5	Configuration	CLI - Console port/Telnet, Web based management, Full featured MIB support	
		6	Security	User password protection, Privilege levels, ACL (min 128 entries), 802.1x, AAA support, TACACS+/Radius Support, Arp inspection	
		7	Redundancy Functions	STP (IEEE 802.1d), RSTP (IEEE 802.1w), ERPS (G.8032) Convergence time ≤ 50ms ,, LACP	
		8	QoS	CoS, TOS/DSCP, port priority (IEEE 802.1D/p), VLAN (IEEE 802.1Q), IGMP snooping, Storm Control, MLD Snooping	
		9	Time Synchronization	NTP Client	
		10	PoE Management	IEEE 802.3at/af, PoE power management, PoE device auto-checking, PoE diagnostic	
		11	Operating Temperature	-40 to +60 °C	
		12	Mounting	Din Rail	
		13	Protection Class	IP 30	
		14	MTBF	Should be greater than 4 lakh hours.	



Clause / Page No		Amendments																																							
		15	EMC Interference Immunity	EN 61000-4-2 electrostatic discharge EN 61000-4-3 electromagnetic field EN 61000-4-4 fast transients EN 61000-4-5 surge voltage EN 61000-4-6 conducted immunity																																					
		16	EMC Emitted Immunity	FCC CFR47 Part 15 Class A EN 55032 Class A																																					
3	Volume 1: Qualification Cum Technical Package, Section 7: Technical Specifications, under point no 04, 24 PORT POE SWITCH - TYPE 1, Page no 90-92	REPLACE <table><tr><th>SL NO</th><th>SPECIFICATION</th><th>COMPLIANCE</th></tr><tr><td>1</td><td>Product details- Please specify</td><td></td></tr><tr><td>1.1</td><td>Please mention Make, Model No. and Part Code</td><td></td></tr><tr><td>2</td><td>Architecture & Port Density</td><td></td></tr><tr><td>2.1</td><td>The Switch should offer Wire-Speed Non-Blocking Switching</td><td></td></tr><tr><td>2.2</td><td>The Access Switch should have Twenty (20) x 10/100/1000 BaseT ports uplinks with 2 x 1/10G SFP+ Ports with 250W POE Budget. All the ports should be licensed from day 1.</td><td></td></tr><tr><td>2.3</td><td>Access Switch should support true Stacking of up to 8 Switches</td><td></td></tr><tr><td>2.4</td><td>All accessories for stacking should be provided along with the switch.</td><td></td></tr><tr><td>2.5</td><td>The above requested port combination to be achieved with in 1RU.</td><td></td></tr><tr><td>2.6</td><td>Should support neighbour discovery protocol (LLDP)</td><td></td></tr><tr><td>2.7</td><td>The switch should work at operating voltage of 230VAC 50Hz</td><td></td></tr><tr><td>2.8</td><td>Ambient Conditions: Switch should support minimum 0 to + 45°C - continuous operating temperature range</td><td></td></tr></table>				SL NO	SPECIFICATION	COMPLIANCE	1	Product details- Please specify		1.1	Please mention Make, Model No. and Part Code		2	Architecture & Port Density		2.1	The Switch should offer Wire-Speed Non-Blocking Switching		2.2	The Access Switch should have Twenty (20) x 10/100/1000 BaseT ports uplinks with 2 x 1/10G SFP+ Ports with 250W POE Budget. All the ports should be licensed from day 1.		2.3	Access Switch should support true Stacking of up to 8 Switches		2.4	All accessories for stacking should be provided along with the switch.		2.5	The above requested port combination to be achieved with in 1RU.		2.6	Should support neighbour discovery protocol (LLDP)		2.7	The switch should work at operating voltage of 230VAC 50Hz		2.8	Ambient Conditions: Switch should support minimum 0 to + 45°C - continuous operating temperature range	
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	Clause / Page No	Amendments		
		3	Performance	
		3.1	Switching Bandwidth: Should provide Non-Blocking switch fabric capacity of 128 Gbps or more.	
		3.2	Forwarding Capacity: Should provide wire-speed packet forwarding of 95 Mpps or more.	
		3.3	Switch Should have minimum MTBF 400000 hrs	
		4	Layer 2 features	
		4.1	Should support 4K VLAN IDs	
		4.2	Should support 16K MAC addresses or more.	
		4.3	Shall support IP multicast snooping with support for IGMP v1, v2 and MLD v1 & v2	
		4.4	Should support Jumbo Frames minimum 9216 bytes	
		4.5	Should support 802.1s, 802.1w and MSTP	
		5	Layer 3 features	
		5.1	Should support Static router , RIP v1/v2 and OSPFv3 minimum 63 for IPv4 and 32 for IPv6 and VRRP	
		6	QoS	
		6.1	Switch Should support Traffic Classification based on Port, Mac address, IP address, IP Priority, DSCP priority, TCP or UDP port number and protocol type.	
		7	Security	
		7.1	Switch should support RADIUS, TACACS/TACACS+ and username/password for Authentication, Authorization and Accounting (AAA) with Local User Accounts and Local User Password, DAI and ARP Check, IP source guard; CPU protection	



	Clause / Page No	Amendments		
		7.2	Should support secure communications to the management interface and system through SSL, Secure Shell (SSHv2) and SNMPv3	
		7.3	Should support IPv6 ND, IPv6 ACL, IPv4/IPv6 Dual Stack	
		7.4	Should support ACLs 32 rules per ACL and a minimum ACL 1.5k per system .	
		7.5	Should support configuring broadcast, multicast, and unknown-unicast limits	
		7.6	Should support URPF, LAND attack, SYN Flood attack, Smurf attack, ping flood attack, TearDrop Attack and Ping of Death attack.	
		7.7	Should support Flexible Authentication with 802.1x Authentication and MAC Authentication.	
		8	Manageability	
		8.1	Should support manageability using Network Management Software with Web based Graphical User Interface (GUI).	
		8.2	Integrated Standard based Command Line Interface (CLI), Telnet, TFTP, HTTP access to switch management/monitoring	
		8.3	Should support NetFlow or sFlow or equivalent	
		8.4	Switch should support automation using API's to automate recurring tasks from day 1. All licenses for this to be included.	
		8.5	Should support RJ45/USB/Type-C port for Console Access.	
		8.6	Switch should support traffic flow analysis based on Netflow & sFlow or equivalent.	
		8.7	Should support OAM 802.3ah, 802.1ag, ITU Y.173	
		8.8	Should support DHCP Server, DHCP Client , DHCP Relay, DHCP v6 Server/Client and DHCP v6 relay	
		8.9	Should support XML API or NETCONF	
		9	Standards and Approval	



Clause / Page No		Amendments		
		9.1	Should support RoHS, EN 55032 / 55022, EN 61000-3-2, EN 61000-3-3, EN 61000-4-11, EN 61000-4-8, EN 61000-4-5.	
		10	Physical Attributes	
		10.1	Mounting Option: 19" Universal rack mount ears	
		11	Mandatory Compliance	
		11.1	All categories of Switches, Transceivers & Switch OS should be from same OEM	
		11.2	All licenses for the above-mentioned features to be provided on day 1.	
		11.3	Products which are end of sale or announced end of sale should not be quoted.	
		11.4	All stacking cables accessories, licenses to be included along with the switch from day 1.	
		12	Support	
		12.1	Switch should be quoted with 24/7 TAC Support.	
		WITH		
		Sr. No.	Specification	Compliance (Yes/No)
		1.0	<u>Product details- Please specify</u>	
		1.1	Please mention Make, Model No. and Part Code	
		2.0	<u>Architecture & Port Density</u>	
		2.1	The Switch should offer Wire-Speed Non-Blocking Switching	
		2.2	The Access Switch should have Twenty-Four (24) x 10/100/1000 BaseT ports PoE/PoE+ with power budget of 360W, uplinks with 2 x 1/10G SFP+ Ports. All the ports should be licensed from day 1.	
		2.3	Access Switch should support true Stacking of up to 4 Switches	
		2.4	10G SFP+ port should be used either as uplink or stacking port.	



	Clause / Page No	Amendments		
		2.5	The above requested port combination to be achieved with in 1RU.	
		2.6	Should support neighbor discovery protocol (LLDP)	
		2.7	The switch should work at operating voltage of 230VAC 50Hz suited for Indian conditions with power supply	
		2.8	Ambient Conditions: Switch should support minimum 0 to + 45°C - continuous operating temperature range	
		3.0	<u>Performance</u>	
		3.1	Switching Bandwidth: Should provide Non-Blocking switch fabric capacity of 128 Gbps or more.	
		3.2	Forwarding Capacity: Should provide wire-speed packet forwarding of 95 Mpps or more.	
		3.3	Switch Should have minimum MTBF 250000 hrs	
		4.0	<u>Layer 2 features</u>	
		4.1	Should support 4K VLAN IDs	
		4.2	Should support 16K MAC addresses or more.	
		4.3	Shall support IP multicast snooping with support for IGMP v1, v2, v3 and MLD v1 & v2	
		4.4	Should support Jumbo Frames minimum 9216 bytes	
		4.5	Should support ERPS Ring Protocol or equivalent with failover time maximum up to 50ms.	
		4.6	Should support 802.1s, 802.1w and MSTP	
		5.0	<u>Layer 3 features</u>	
		5.1	Switch Should support Static router	
		5.2	Switch Should support ERPS (G.8032) ring network protocol	
		6.0	<u>QoS</u>	
		6.1	Switch Should support Traffic Classification based on Port, Mac address, IP address, IP Priority, DSCP priority, TCP or UDP port number and protocol type.	
		7.0	<u>Security</u>	
		7.1	Switch should support RADIUS, TACACS/TACACS+ and username/password for Authentication, Authorization and Accounting (AAA)	



	Clause / Page No	Amendments	
			with Local User Accounts and Local User Password, DAI and ARP Check, IP source guard; CPU protection
		7.2	Should support secure communications to the management interface and system through SSL, Secure Shell (SSHv2) and SNMPv3
		7.3	Should support IPv6 ACL, IPv4/IPv6 Dual Stack
		7.4	Should support ACLs 2K rules per ACL
		7.5	Should support configuring broadcast, multicast, and unknown-unicast limits
		7.6	Should support DDoS.
		7.7	Should support Flexible Authentication with 802.1x Authentication and MAC Authentication.
		8.0	<u>Manageability</u>
		8.1	Should support manageability using Network Management Software with Web based Graphical User Interface (GUI).
		8.2	Integrated Standard based Command Line Interface (CLI), Telnet, TFTP, HTTP access to switch management/monitoring
		8.3	Should support NetFlow or sFlow or equivalent
		8.4	Switch should support automation using API's to automate recurring tasks from day 1. All licenses for this to be included.
		8.5	Should support RJ45/USB/Type-C port for Console Access.
		8.6	Should support OAM 802.3ah,
		8.7	Should support DHCP Server, DHCP Client , DHCP Relay, and DHCP v6 relay
		8.8	Should support XML API or NETCONF
		9.0	<u>Standards and Approval</u>
		9.1	Should support RoHS, EN 55032, EN 61000-3-2, EN 61000-3-3, EN 61000-4-11, EN 61000-4-8, EN 61000-4-5 or equivalent.
		10.0	<u>Physical Attributes</u>
		10.1	Mounting Option: 19" Universal rack mount ears
		11.0	<u>Warranty</u>
		11.1	Switch should be quoted with 24/7 TAC Support.

