



Bharat Heavy Electricals Limited
Electronics Division
Mysore Road, Bangalore – 560 026

NOTICE INVITING TENDER

1. Tender Reference : BHEL/ITS/CCTV/2014-15/Out
2. Name of the work : Supply, Installation and Maintenance of Video Surveillance System
3. Duration of Contract : **Three Years – 3 years**
4. Earnest money deposit : Nil
5. Last date and time for the receipt of tender : before 13.00 Hours on 04-02-2015
6. Date and time for tender opening : At 13:30 Hours on 04-02-2015
7. Place of submission of tender : To be dropped in the **IT&S (Box No. 2)**
Tender Box kept in the Reception Area at BHEL,
Electronics Division, Mysore Road, Bangalore – 560 026
In case of any difficulty in dropping the tender in the designated tender box, it may be handed over to the following personnel before the due date and time:
 - 1) Mr. Gopalraju V R, IT&S, 26999546
 - 2) Mr. Rajat Kumar Das, IT&S, 26998976
 - 3) Mr. Sachin Kumar, IT&S, 26998471

This tender document contains Instructions to bidders, Scope of work, Price schedule etc. as follows.

1. Scope of Work and Instructions & Guidelines to bidders – Annexure I
2. Pre-Qualification Criteria – Annexure II
3. General Terms and Condition – Annexure III
4. Commercial Terms & Conditions and Compliance Format – Annexure IV
5. Technical Specifications & Compliance Format - Annexure V
6. Price Bid Format/Declarations/Certificate – Annexure VI
7. Terms & Conditions of Reverse Auction – Annexure VII

Note: The bidder shall return the duly filled in Tender Documents after affixing signature and seal on all pages.



Bharat Heavy Electricals Limited
Electronics Division
Mysore Road, Bangalore – 560 026

Annexure - I

1. SCOPE OF WORK:

- 1.1. The scope includes design, supply, installation, testing, training, maintaining of CCTV surveillance systems at
 - a) Electronics Division(hereafter referred as EDN), Mysore Road, Bangalore
 - b) Electronics Systems Division(hereafter referred as ESD), Electronics City, Bangaloreon outright purchase basis for a period of 3 years
- 1.2. The systems at EDN and ESD will be independent of each other
- 1.3. The systems have been detailed in document. However all accessories and licenses required for implementation of the systems shall be in Vendor scope within the quoted price, whether these are specifically mentioned herein or not. Any other equipment, module required for the safe and satisfactory operation, control, protection, monitoring, testing and maintenance of the system shall also be in vendor's scope.
- 1.4. The systems supplied shall be complete in all respects for reliable performance. The Vendor shall submit the detailed BOM, block schematic, video / control signal / network topology / power wiring diagram, details of poles along with the System Requirement Specification (technical write-up) and data sheets of system components describing the system as implemented.
- 1.5. BHEL reserves the right to not to order any individual item(s) like monitor, work station etc.

2. INSTRUCTIONS & GUIDELINES TO BIDDERS:

2.1. DEFINITIONS:

- a) **BIDDER:** Bidder means the Original Equipment Manufacturer/System Integrator who is offering the CCTV surveillance system for this tender. Bidder should be single entity and not a consortium.
- b) **VENDOR:** The successful bidder who will be installing and maintaining the CCTV surveillance system during the entire contract period.
- c) **OEM:** OEM means Original Equipment Manufacturer whose equipment is being offered by the bidder for this tender.
- d) **PURCHASER:** Bharat Heavy Electricals Limited, Electronics division, Mysore road, Bangalore 560 026, a Unit of Bharat Heavy Electricals Limited (A Govt. of India Undertaking) incorporated under the Companies Act having its registered office at BHEL House, Siri Fort, New Delhi-110049, India and shall be deemed to include its successors and assigns. It may also be referred to as BHEL.



Bharat Heavy Electricals Limited
Electronics Division
Mysore Road, Bangalore – 560 026

2.2. BIDDER TO INFORM HIMSELF FULLY:

- a) The bids for this tender are solicited only from Original Equipment Manufacturer/System Integrator who is offering the CCTV surveillance system. Bidder should be single entity and not a consortium. Financing agencies are not eligible for bidding.
- b) The bidder shall closely peruse all the clauses, specifications and requirements etc., indicated in the tender documents, before quoting. Should the bidder have any doubt about the meaning of any portion of the tender specifications or find discrepancies or omissions in the specifications or if the tender documents are found to be incomplete or require clarifications on any of the technical aspects, scope of work etc. he shall at once contact the official inviting the tenders, for clarifications, before submission of the tender.
- c) Bidders are advised to study all the tender documents carefully. Any submission of tender by the bidder shall be deemed to have been done after careful study and examination of the tender documents and with the full understanding of the implications thereof.

2.3. EXPECTATIONS FROM BIDDER

Bidder is required to give a total solution & services as per specifications enclosed. The Bidder is fully responsible for the services and the total solution. In case any extra item is required for complete functioning of the system, the same must be quoted.

3. SITE SURVEY

It may be noted that the detailed bill of quantities is provided as part of the document. However locations of equipment, measurements are not provided for installation related activities. Hence bidders are invited to conduct site survey of both locations (EDN and ESD) prior to submission of bids to assess the actual site condition and arrive at actual requirement like excavation, road cutting, installation, cabling, cable length required etc. Bidders are required to quote based on the survey for civil and installation activities.



Bharat Heavy Electricals Limited
Electronics Division
Mysore Road, Bangalore – 560 026

ANNEXURE – II

1. PRE- QUALIFICATION CRITERIA

- 1.1. Bidder should be an Authorized System Integration Partner for security surveillance (CCTV) system components like cameras, software, switches, servers and storage systems.

The bidder should provide, a valid certificate/Authorization Letter and Agreement copy (if any) by the OEM, clearly stating the relationship, guaranteeing support for offered components for a period of at least 3 years and authorizing the Partner to quote for this tender . The Certificate / Authorization Letter specific to this tender must be issued by Authorized Representative of the OEM.

- 1.2. The Bidder should have a Registered and Incorporated office in India. Corporate Identification Number (CIN) shall be provided by the bidder.
- 1.3. The Bidder should be ISO: 9000 certified and valid certificate should be submitted along with technical bid.
- 1.4. Bidder should have a clean track record, i.e. the bidder should not be under hold or blacklist by any of the BHEL units as on bid opening date. To this effect, a declaration should be given by the bidder
- 1.5. The Bidder's Average Annual financial turnover during the last 3 years, ending 31st March of the previous financial year, should be at least 30% of the reference value. Certificate from bankers/chartered accountant/IT return in this regard should be submitted along with the offer.
- 1.6. The bidder should have experience in successfully executing similar works, during last 7 years ending last day of month previous to the one in which applications are invited. The experience should be either of the following:
- Three similar completed works costing not less than the amount equal to 40% of the reference value.



Bharat Heavy Electricals Limited
Electronics Division
Mysore Road, Bangalore – 560 026

OR

- b. Two similar completed works costing not less than the amount equal to 50% of the reference value.

OR

- c. One similar completed work costing not less than the amount equal to 80% of the reference value.

“**Similar works**” means supply and installation of IP based CCTV Surveillance System in India.

Bidder shall provide customer references with number of equipment supplied and year of commissioning including details such as: Name of the unit / company, Name of the contact person; Address/ e-mail id, Mobile and Office phone of contact person, Month & year of commissioning of the CCTV System, Solution provided, System Guarantee, Service Support provided etc. for verification

Note:

For the purpose of evaluating, PQC reference value to be considered is Rs 85, 00,000 /-.

Bidders can submit PO copies which have been executed either on outright purchase basis or on lease basis. For POs on outright purchase basis, POs' values will be compared with the reference value. In cases where POs were executed on lease basis equivalent outright purchase values of the POs will be compared.

2. The proof of successful installation of CCTV Surveillance system should be attached with the technical bid.
3. The reference PO should be on the name of the bidder. The order copies of referred projects and successful completion/ performance certificate from the customer along with the offer is to be submitted.
4. In case bidder submits PO copy of order(s) in which video surveillance is a part of it, the bidder has to provide the break-up of the video surveillance portion explicitly.



Bharat Heavy Electricals Limited
Electronics Division
Mysore Road, Bangalore – 560 026

ANNEXURE – III

1. GENERAL TERMS AND CONDITIONS

1.1. SUBMISSION & OPENING OF BIDS

The offer shall be submitted in **Two** parts as follows in separate sealed envelopes.

1.2. PART-I : TECHNO-COMMERCIAL BID

This part shall consist of the following:

- a) Technical offer/ details including literature/leaflets, detailed BOM, block schematic, video / control signal / network topology / power wiring diagram, details of poles along with the System Requirement Specification (technical write-up) and data sheets of system components offered.
- b) Authorization letters from OEMs.
- c) Certificates enlisted in technical specifications.
- d) Technical Compliance Statement as per enclosed format only.
- e) Commercial terms compliance statement as per enclosed format only.
- f) Unpriced copy of price bid as per enclosed format only.
- g) Documentary evidence as mentioned in the prequalification criteria.

1.3. BHEL reserves the right to accept or reject the technical offer. Price bids of only techno-commercially short listed bidders will be opened. **The technical & commercial bid should not include prices.**

1.4. PART-II: PRICE BID

- a) Price bid containing PRICES only is to be submitted (in the enclosed Price Schedule format only). Prices shall be quoted in Indian Rupees only. Bidder has to give details of applicable Duties and Taxes.
- b) **Price Bid should not contain any technical details and/or Commercial Terms & Conditions** as the same are supposed to be contained in PART-I only so that the same can be evaluated before opening of Price Bid(s).

1.5. BHEL reserves the right to resort to **Reverse Auction** procedure to decide the lowest price bid among techno-commercially cleared bids. The bidders should provide consent letter agreeing for Reverse Auction. In case BHEL does not resort to Reverse Auction, the submitted price bids only shall be opened as per BHEL's standard practice without seeking revised quotes on account of BHEL not going for reverse auction. BHEL Terms & Conditions for Reverse Auction is as per Annexure VII.

1.6. **MARKING ON ENVELOPE:** Part-I and Part-II offers shall be submitted in two separate envelopes with bidder's distinctive SEAL and super-scribed as follows.



Bharat Heavy Electricals Limited
Electronics Division
Mysore Road, Bangalore – 560 026

- PART – I:**
- 1. TENDER ENQUIRY NUMBER AND ITEM DESCRIPTION**
 - 2. DUE DATE OF OPENING**
 - 3. “TECHNO-COMMERCIAL BID”**

- PART – II:**
- 1. TENDER ENQUIRY NUMBER AND ITEM DESCRIPTION**
 - 2. DUE DATE OF OPENING**
 - 3. “PRICE BID”**

- 1.7. Tenders should be addressed to the **AGM (IT&S), Electronics Division, Bharat Heavy Electricals Limited, Mysore Road, Bangalore – 560 026**. The full name and address of the bidder, the name of the work and date of opening should be indicated on the cover.
- 1.8. Tenders submitted by post should be sent by “**Registered Post with Acknowledgement Due**”. These should be posted with due consideration for any delay in postal delivery. Tenders received after the due date and time of opening of tenders are liable to be rejected.
- 1.9. If in any case, the date of tender opening falls on Holiday, the tender will be opened on the next working day.

2. General Instructions and Guidelines

- 2.1. The local address of the bidder, the name of the person to whom all the correspondence are to be addressed should be indicated with telephone number and FAX / E-mail address.
- 2.2. Bidder shall fill in all the required particulars in the format provided for this purpose in the tender documents and also sign each and every page of the tender document including the drawings attached there to before submitting tender.
- 2.3. Bidder shall not increase their quoted rates, once the bidder has submitted his quotation and during execution of the entire contract period in case his tender is accepted.
- 2.4. In case, bidder finds discrepancies or omissions in the drawings / specification / details attached to the tender documents or should be in doubt as to their meaning he should at once address to the authority inviting the tender for clarifications. Every endeavour is made to avoid any error which can materially affect the basis of the tender but the successful bidder shall take upon himself to provide for the risk of any error which may be subsequently discovered and shall make no subsequent claim on account thereof.
- 2.5. In the event of tender being submitted by a firm the tender must be signed separately and legibly by each partner or member of the firm or in their absence, by the person holding the power of Attorney on behalf of the firm concerned.



Bharat Heavy Electricals Limited
Electronics Division
Mysore Road, Bangalore – 560 026

2.6. Tenders are liable for rejection, If tender is:

- a) conditional and unsigned
- b) containing absurd rates and amounts
- c) incomplete or otherwise considered defective
- d) not in accordance with the tender conditions.
- e) not submitted in the prescribed forms.
- f) received after due date and time (late offer).

2.7. If the bidder deliberately gives wrong information in his tender, BHEL reserve the right to reject such tenders at any stage. Further the bidder will be liable for any damage caused.

2.8. Words imparting the singular number shall also be deemed to include the plural number and vice-versa where the context so requires.

2.9. No correspondence shall be entertained from the bidders after the opening of Price Bid(s).

2.10. Unsolicited revised Price Bids shall not be entertained at any stage of the tendering process and will lead to automatic disqualification of the party's bid.

2.11. Wherever ,Service Tax is applicable

- 1) The Tenderers shall furnish the service Tax Registration Number in their offer
- 2) If the Tenderer is not having Service Tax Registration Number, he shall submit an undertaking to the effect that in case he is awarded the contract, he shall register with Service Tax Authorities and furnish the Registration Number before commencement of work
- 3) Any offer not complying with the above clauses is liable to be rejected.

3. RATES

3.1. Rates to be quoted are net F.O.R. destination inclusive of freight, handling and packing charges, transit insurance, installation, insurance during the entire warranty period and on-site comprehensive maintenance including spares and deployment of service engineers during the entire warranty period and shall remain FIRM without any variation till completion of the contract. However, all applicable taxes like Service Tax, VAT will be reimbursed extra as per actuals.

3.2. Rates are to be quoted as per Price Bid Format only providing details of prevailing rates of taxes and duties. After opening of Price Bid, no request for any change in rates/tariff due to above will be entertained.



Bharat Heavy Electricals Limited
Electronics Division
Mysore Road, Bangalore – 560 026

- 3.3. Unit rates should be quoted in figures as well as in words in Indian Currency only, i.e. Rupees and Paise with reference to each model. The rates shall include taxes and duties payable on account of VAT, Sales Tax, Service Tax etc.
- 3.4. In quoting their rates, the bidders are advised to take into account all factors including any fluctuations in market rates. No claim for enhanced rates will be entertained on this account after acceptance of the tender or during the currency of the contract.
- 3.5. The charges like installation (excavating, road cutting, cable laying etc), project management, price of all types of cables, LIU, poles, mounting and other accessories etc. will be paid on completion of installation and acceptance. They will be paid at actual but limited to quoted figure.

4. TENDER EVALUATION

4.1. Stage-I: Evaluation of Technical & Commercial Bid

- a) Only those Bidders who meet all the requirements as per Qualification Criteria (**Annexure-II**) for Bidders will be considered for further evaluation.
- b) Technical and commercial bid of the bidder shall be evaluated for acceptability of Technical offer, technical suitability and acceptance of technical and commercial terms.
- c) During the Technical Evaluation of the bid, clarification and queries requested by BHEL shall be responded to within the reasonable time in order to avoid delay in evaluation of technical bid. Failure to do so may result in rejection of the bid.

4.2. Stage-II: Evaluation of the Price Bid:

- a) Technically cleared offers will be considered for price evaluation.
- b) Evaluation of the offer will be based on L1 of the total value for the entire scope of work (Total cost to BHEL).
- c) The Total Price shall be for the complete scope as per technical specifications, inclusive of comprehensive on-site maintenance including repair/replacement of parts during the entire warranty period, all taxes & duties, insurance, Freight & insurance charges, Packing & forwarding charges, any other incidental charges, etc. Applicable % of taxes& duties should be clearly indicated in price bid format.



Bharat Heavy Electricals Limited
Electronics Division
Mysore Road, Bangalore – 560 026

- d) The contract will be awarded to a single party for the total scope (EDN & ESD), based on the above evaluation.
- e) Discrepancy in Words & Figures-quoted in price bid
- 4.2.e.1. If, in the price structure quoted for the required goods/ services/ works, there is discrepancy between the unit price and the total price (which is obtained by multiplying the unit price by the quantity), the unit price shall prevail and the total price corrected accordingly, unless in the opinion of the purchaser there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted shall govern and the unit price corrected accordingly.
- 4.2.e.2. If there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and
- 4.2.e.3. If there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject of (4.2.e.1) and (4.2.e.2) above.
- 4.2.e.4. If there is such discrepancy in an offer, the same shall be conveyed to the bidder with target date up to which the bidder has to send his acceptance on the above lines and if the bidder does not agree to the decision of the purchaser, the bid is liable to be ignored
- f) The bidder shall quote as per the price bid format.

5. ETHICAL STANDARD:

- 5.1. Bidders are expected to observe the highest standard of ethics during the procurement and execution of this contract. In pursuit of this policy, BHEL will reject a proposal for award if it determines that the vendor being considered for award has engaged in corrupt or fraudulent practices in competing for the contract. for the purposes of this provision, the terms set forth below are defined as follows: a) “corrupt practice” means the offering, giving, receiving, or soliciting of anything of value to influence the action in the procurement process or in contract execution; and b) “fraudulent practice” means a misrepresentation of facts in order to influence a procurement process including collusive practices designed to establish bid prices at artificial, non-competitive levels to deprive the benefits of competition to BHEL. By signing the bid forwarding letter, the bidder represents that for the software it supplies, it is the owner of the intellectual property rights. Willful misrepresentation of these facts shall be considered a fraudulent practice without prejudice to other remedies that BHEL take.



Bharat Heavy Electricals Limited
Electronics Division
Mysore Road, Bangalore – 560 026

ANNEXURE – IV

1. COMMERCIAL TERMS & CONDITIONS

1.1. ORDER ACKNOWLEDGMENT

Letter of acceptance of the Order / Contract is to be submitted within one week. Otherwise it is deemed to have been accepted.

1.2. PERIOD OF CONTRACT:

The period of contract is for three years.

1.3. VALIDITY OF OFFER:

The offer should be valid for 3 months from the date of opening of technical bid.

1.4. PERFORMANCE BANK GUARANTEE:

The successful Bidder (herein after referred to as **vendor**) should furnish a bank Guarantee from BHEL Consortium Bank (**Annexure VIII**) or Nationalised Banks , at no extra cost in a pro-forma prescribed by BHEL for an amount equivalent to 20% (Twenty percent) of the value of the contract. The PBG shall be valid throughout the contract period. If PBG is issued by a Foreign counter part of the BHEL consortium Indian Bank, in case of claim against the PBG, it will be lodged in any one of the Indian counters of the Foreign bank's COUNTER PART of BHEL's consortium Indian Bank.

1.5. SUPPLY CONDITION:

All equipment supplied and installed shall be NEW and conforming to the contract technical specifications. The certificate of newness is to be furnished.

1.6. INSPECTION:

Ordered items shall be offered for pre-dispatch inspection before shipment. BHEL reserves the right to exercise the option to inspect the components on receipt at BHEL or give dispatch clearance based on vendor's inspection and other reports.

1.7. DELIVERY & INSTALLATION

- a) The vendor shall be responsible for timely delivery, installation and commissioning of all the hardware/software given in the scope of supply at BHEL's premises.
- b) Delivery and Installation period shall start from the date of placement of firm order.
- c) Delivery Period: **6 weeks from the date of order/LOI.**
Loading Factor for delivery period deviation: 2% per week upto max of 10% of the total quoted value (incl. of taxes) for the quoted delivery beyond the stipulated period



Bharat Heavy Electricals Limited
Electronics Division
Mysore Road, Bangalore – 560 026

- d) Installation Period: **12 weeks from the date of order/LOI.**
Loading Factor for installation period deviation: 2% per week upto max of 10% of the total quoted value (incl. of taxes) for the quoted installation period beyond the stipulated period.
- e) Items related to EDN scope shall be delivered at stores EDN.
- f) Items related to ESD scope shall be delivered at stores ESD.

1.8. PENALTY FOR LATE DELIVERY

For the delay in delivery, penalty shall be levied at the rate of 0.5% per week subject to a maximum of 5% of the total cost (incl. of taxes) of the equipment(s) not delivered in time. The penalty will be deducted from payments to vendor.

1.9. PENALTY FOR LATE INSTALLATION

For the delay in installation owing to the reasons attributable to the vendor, penalty shall be levied at the rate of 0.5% of the total project cost (incl. of taxes) subject to a maximum of 5% of the total project cost (incl. of taxes). The penalty will be deducted from payments to vendor.

1.10. PAYMENT TERM

An installation certificate will be issued by BHEL after completing the Acceptance Test Procedure (ATP) terms. Payment will be released after completion of installation and submission of invoices.

Equipment shall be under warranty and maintenance for a period of three years. Maintenance charges will be paid quarterly in arrears

Payment will be through Electronic Fund Transfer (EFT) only. Details regarding bank account shall be provided in BHEL's standard format. The EFT or Paylink Direct Credit Form is enclosed. Bidder needs to fill the details as per the EFT or Paylink Direct Credit Form and attach a copy of Cancelled Cheque with it.

Invoices shall be submitted for surveillance systems of EDN and ESD separately.

1.11. ACCEPTANCE TEST PROCEDURE (ATP)

- a) Complete system supply, installation and running of system as per requirements and technical specifications must be fulfilled.
- b) Soft copy and 3 sets of hard copies of complete system documentation, technical literature including the technical catalogues, maintenance and service manual, user manual of all the components like the cameras, network components, servers, client workstations, storage, software to be submitted.
- c) Details of configuration, various wiring diagrams, layout, Marking and labelling of



Bharat Heavy Electricals Limited
Electronics Division
Mysore Road, Bangalore – 560 026

all cameras, switches, all networking components involved, cables , ports , terminations, running instructions etc. to be submitted.(3 sets)

- d) Vendor should provide the complete technical specification and the address of the parties from whom components have been bought including cameras, switches, servers, client workstations, storage, software etc.
- e) Complete lay-out of the network architecture as built of the total system should be submitted by the vendor.
- f) Newness certificate: The Vendor has to submit the newness certificate of the equipment supplied.
- g) OEM support: The Vendor has to submit the certificate from the Original equipment manufacturer of the system components for their back to back support. Back to back support should be available during the entire contract period.
- h) Certificate: Vendor has to submit certificates as per technical specifications and any other relevant statutory documents.
- i) After the installation and commissioning of the system as per the technical specification following are to be done.
 - Demonstration of system in on line mode to prove the camera's performance during day and night. Demonstration of cameras working on backup in case of power failure.
 - Demonstration of various reporting features of the system.
 - Demonstration of smooth working of all software modules and interfacing with other components as per specification.
 - Demonstration of all the analytics and other features in each camera is to be proved through the video management and recording software.
 - Demonstration of the total system in online mode for 1 day continuously to prove the maximum transmission and reception data rate.
 - For demonstrating the health of the system in online mode, continuous video data transmission from all the cameras without any delay in the screen to be shown for a day.

1.12.BANK CHARGES

Unless otherwise specified, the Bank charges, if any, shall be to the account of Vendor.



Bharat Heavy Electricals Limited
Electronics Division
Mysore Road, Bangalore – 560 026

1.13.WARRANTY &MAINTENANCE

- a) The warranty and maintenance of equipment shall be undertaken, for the complete contract period.
- b) The warranty and maintenance will be comprehensive with spares and labour. The maintenance will be inclusive of replacement of all defective components during the warranty period. The defective component may be permitted out of BHEL premises with BHEL's permission.
- c) The maintenance shall include installation / maintenance of all system components and software patches.
- d) One qualified and experienced service engineer, after screening by BHEL, shall be stationed in EDN by the vendor for providing the desired levels of service at both EDN and ESD. The posted engineer shall be available during the normal working hours and working days of EDN. The roles and responsibilities of the service engineer will be as follows:
 - Equipment Health Monitoring
 - Coordinating with OEMs for spares
 - Preventive and breakdown maintenance
 - Installation of updates
 - Train operating personnel whenever required
 - Configuration of system whenever required
 - Reports to BHEL and his office
 - Cleaning and maintaining the items like camera lens, switches etc.

1.14.DEDUCTION FOR DOWNTIME

- a) QUARTERLY DOWNTIME CALCULATION FOR THE SUPPLIED EQUIPMENT&SERVICES

Vendor shall be responsible for running the system at the uptime of 99%. System here means Monitoring, Analysing and Recording of video captured from cameras. Vendor shall also be responsible for at least 98% uptime of each component of the system. The deduction for downtime will be as mentioned below. Deduction from quarterly payments to the vendor will be made for non-availability of the system and any of the components for not meeting the above uptime requirements.

- b) DOWNTIME CALCULATION
System(as total/full):

If the system is down for 5 hours beyond 1% of grace downtime in a quarter



Bharat Heavy Electricals Limited
Electronics Division
Mysore Road, Bangalore – 560 026

Quarterly maintenance charges of the **entire system** is Rs. A Then the deduction will be: Rs. $(A / 90) * (5/24)$

Component:

If any of the component is down for 10 hours beyond 2% of grace downtime in a quarter.

Quarterly Maintenance Charges of **the component** is Rs. B Then the deduction will be: Rs. $(B / 90) * (10/24)$

Note: Include component wise maintenance charges in price bid format

- 1) Vendor has to provide component wise break-up of maintenance charges.
- 2) Vendor has to provide quarterly uptime report of the system and components.
- 3) If any equipment is down continuously for a month in spite of being serviced, the equipment shall have to be replaced by the Vendor, without any extra charge.

1.15. TRAINING

Training of BHEL/CISF/Security personnel shall be part of the contract. During installation at respective locations the associated BHEL users shall be trained on the configuration and usage. Training will be provided separately for EDN and ESD personnel at EDN & ESD respectively.

1.16. INDEMNITY

- a) Vendor shall fully indemnify and keep indemnified the Purchaser against all claims which may be made in respect of the use of System, Software etc. by the Vendor, for infringement of any rights protected by patent, registration of designs or trademarks and legality of the Software. However the Vendor will have no obligation for any claim of infringement arising from third party products not supplied in the order, modifications and technical information/ instructions advised by purchaser and use of products prohibited by product manuals.
- b) In the event of any such claims being made against the Purchaser, Purchaser will inform in writing to the Vendor who shall at his own risk and cost either settle any such dispute or conduct any litigation that may arise there from.



Bharat Heavy Electricals Limited
Electronics Division
Mysore Road, Bangalore – 560 026

1.17. INSURANCE

Transit insurance coverage between vendor's works and project site shall be to the account of vendor.

1.18. CONFIDENTIALITY

Vendor shall, at all times, undertake to maintain complete confidentiality of all data, information, software, drawings & documents, etc. belonging to the Purchaser and also of the Systems, procedures, reports, input documents, manuals, results and any other company documents discussed and/or finalized during the course of execution of the order/contract. A third party non-disclosure agreement has to be submitted by the Vendor as per the following sample format.



Bharat Heavy Electricals Limited
Electronics Division
Mysore Road, Bangalore – 560 026

THIRD PARTY NON-DISCLOSURE AGREEMENT

I, _____, on behalf of the _____ (Name of Company),

acknowledge that the information received or generated, directly or indirectly, while working with BHEL on contract is confidential and that the nature of the business of the BHEL is such that the following conditions are reasonable, and therefore:

I warrant and agree as follows:

I, or any other personnel employed or engaged by our company, agree not to disclose, directly or indirectly, any information related to the BHEL. Without restricting the generality of the foregoing, it is agreed that we will not disclose such information consisting but not necessarily limited to:

- Technical information: Methods, drawings, processes, formulae, compositions, systems, techniques, inventions, computer programs/data/configuration and research projects.
- Business information: Customer lists, project schedules, pricing data, estimates, financial or marketing data,

On conclusion of contract, I, or any other personnel employed or engaged by our company shall return to BHEL all documents and property of BHEL, including but not necessarily limited to: drawings, blueprints, reports, manuals, computer programs/data/configuration, and all other materials and all copies thereof relating in any way to BHEL's business, or in any way obtained by me during the course of contract. I further agree that I, or any others employed or engaged by our company shall not retain copies, notes or abstracts of the foregoing.

This obligation of confidence shall continue after the conclusion of the contract also.

I acknowledge that the aforesaid restrictions are necessary and fundamental to the business of the BHEL, and are reasonable given the nature of the business carried on by the BHEL. I agree that this agreement shall be governed by and construed in accordance with the laws of country.

I enter into this agreement totally voluntarily, with full knowledge of its meaning, and without duress.

Dated at _____, this _____ day of _____, 20 _____.

Name
Company
Signature



Bharat Heavy Electricals Limited
Electronics Division
Mysore Road, Bangalore – 560 026

1.19. FORCE MAJEURE

Vendor shall not be responsible for delay in delivery resulting from acts/events beyond his control provided notice of the happening of any such act/event is given by the Vendor to the Purchaser within 15 days from the date of its occurrence. Such acts/events shall include but not be limited to acts of God, war, floods, earthquakes, strikes, lockouts, epidemics, riots, fire or Governmental regulations superimposed after the date of order/contract.

1.20. RISK PURCHASE

Purchaser shall reserve the right to terminate the order/contract and purchase from elsewhere at the risk and cost of the Vendor, either the whole or part of the Systems/goods, which the Vendor has failed to deliver within the stipulated Delivery period or if the same were not available, the best and the nearest available substitute(s) thereof. The Vendor would be liable to compensate the Purchaser for any loss, which the Purchaser may sustain by reason of such purchase. This clause will be operated only after completion of delivery period.

1.21. ARBITRATION:

All disputes or differences whatsoever which may arise at any time during execution of the Contract shall be mutually settled by BHEL and Vendor as per provision of the Contract. However, in the event such disputes cannot be settled mutually, such disputes shall be settled as per the Arbitration and reconciliation Act, 1996 of the Govt. of India and its subsequent amendments. In case of disputes with the Central PSUs, the same shall be settled at Bangalore as per the Guidelines of the Govt. of India. However, during the period such disputes are settled either by mutual discussions between the parties or by legal means, Vendor shall continue to do the work as per terms & conditions of Contract.

1.22. SUB-CONTRACTING

Order/contract or any part thereof shall not be sub-contracted, assigned or otherwise transferred without prior written consent of the Purchaser which will not be unreasonably withheld

1.23. LIMITATION OF LIABILITY

The Vendor's liability will be limited to the scope of this contract only.

1.24. COMPLIANCE TO ESI / PF ACTS

- a) The vendor shall comply with the provision of Employees Provident Fund and Miscellaneous Provisions Act 1952 and rules, regulations and other orders issued thereunder. He as an employer shall be liable to pay employer's contribution/deductions towards PF under the PF Act in respect of all labour employed by him for the execution of the contract in accordance with the provisions



Bharat Heavy Electricals Limited
Electronics Division
Mysore Road, Bangalore – 560 026

of the Employees Provident Funds and Miscellaneous Provisions Act, 1952 as amended from time to time. For this purpose he shall indicate the code number obtained from the Regional Provident Fund Commissioner or he should obtain a code number if he has not and produce the Photostat copy of the challan / receipt of monthly remittance of the contribution made by him to the PF Commissioner. Final payments due to him will be released only on production of a “No due certificate” from the Regional Provident Fund Commissioner if applicable. He shall also furnish such returns as are due, under the Act, to be sent to the appropriate authorities through the Principle Employer”.

- b) The Vendor should get himself registered with the E.S.I Authorities as an independent Employer, obtain a separate code number and remit the dues in respect of the labour employed by him for the work and produce the challans / Receipts of remittance of the ESI contributions due under the E.S.I Act to the Company authorities. He shall also furnish such returns, as are due under the Act, to be sent to the appropriate authorities through the Principal Employer.
- c) If any action is brought in by P.F. Commissioner/ESI authorities on BHEL for the work done by the Vendor for his labourers regarding PF/ESI amount due, short remittances, non-remittances etc., the Vendor shall defend the case on behalf of BHEL and/or reimburse BHEL the expenses so incurred.
- d) If applicable, the vendor shall insure all his labourers and materials. Any claim by his employees for damages shall be settled by the vendor even if action is against BHEL or to reimburse the legal expenses incurred by BHEL.
- e) Vendor shall produce necessary records, documents, explanation whenever he is called upon to by any Government agencies like ESI, PF, VIGILANCE etc.
- f) Above is applicable for the Service Engineer (refer Annexure IV, #1.13 d) stationed in EDN by the vendor for providing the desired levels of service at both EDN and ESD.

1.25.LOCAL PRESENCE:

The Vendor should have local presence in Bangalore with office having supporting staff for servicing and maintenance of the system. In case the bidder doesn't have an office in Bangalore, an undertaking for opening of office having supporting staff for servicing and maintenance of the system has to be provided along with the offer.

1.26. Electronic Funds Transfer (EFT) OR Paylink Direct Credit Form:

**Electronic Funds Transfer (EFT) OR
Paylink Direct Credit Form**

Please Fill up the form in **CAPITAL LETTERS** only.

TYPE OF REQUEST(Tick one): _____CREATE_____CHANGE

BHEL Vendor / Supplier Code:	
Company Name :	
Permanent Account Number(PAN):	
Address	

City:	PINCODE	STATE

Contact Person(s)	
Telephone No:	
Fax No:	
e-mail id:	

1 Bank Name:	
2 Bank Address:	
3 Bank Telephone No:	
4 Bank Account No:	
5 Account Type: Savings/Cash Credit	
6 9 Digit Code Number of Bank and branch appearing on MICR cheque issued by Bank	
7 Bank swift Code(applicable for EFT only)	
8 Bank IFSC code(applicable for RTGS)	
9 Bank IFSC code(applicable for NEFT)	

- A I hereby certify that the particulars given above are true, correct and complete and that I, as a representative for the above named Company, hereby authorise BHEL, EDN, Bangalore to electronically deposit payments to the designated bank account.
- B If the transaction is delayed or not effected at all for reasons of incomplete or incorrect information, I would not hold BHEL / transferring Bank responsible.
- C This authority remains in full force until BHEL, EDN, Bangalore receives written notification requesting a change or cancellation.
- D I have read the contents of the covering letter and agree to discharge the responsibility expected of me as a participant under ECS / EFT.

Date:

Authorised Signatory:

Designation:

Telephone NO. with STD Code

Company Seal

Bank Certificate

We certify that _____ has an Account No _____ with us and we confirm that the bank details given above are correct as per our records.

Date: _____ (.....)
Place: _____ Signature

Please return completed form along with a blank cancelled cheque or photocopy thereof to:

Bharath Heavy Electricals Ltd,

Attn:

Electronics Division, Mysore Road,

BANGALORE - 560 026

In case of any Query, please call : 080-26998xxx / 2674xxxx or fax no. 080-2674xxxx



Bharat Heavy Electricals Limited
Electronics Division
Mysore Road, Bangalore – 560 026

1.27. Nil

1.28. Nil

1.29. **COMMERCIAL TERMS COMPLIANCE STATEMENT**

S No	Description	Agreed / Yes	Not Agreed / No
1.29.1	Scope of Work: Whether the bidder has understood the scope work and indicated in the tender (If there is any clarification required, the same may be got cleared from the Executive in charge before submitting the offer).		
1.29.2	Period of Contract: The period of contract is for 3 years. However BHEL reserves the right to terminate the contract at any time without any prior notice or reasons whatsoever if in our judgment the performance is not satisfactory without any liability whatsoever on the part of BHEL.		
1.29.3	Validity of the Offer: Whether the bidder agrees to that offer should be valid for 3 months from the date of opening of technical bid.		
1.29.4	Performance Bank Guarantee: Whether the bidder agrees for furnishing PBG as per clause 1.4 of Annexure -IV.		
1.29.5	Supply Condition: Whether the bidder has agreed to supply and install all NEW equipment and agreed to furnish certificate of Newness as per clause 1.5 of Annexure -IV.		
1.29.6	Inspection: Whether the bidder has agreed to offer all components for pre-dispatch inspection at bidder works before shipment.		
1.29.7	Delivery & Installation: Whether the bidder has agreed to deliver and install equipment at BHEL as per clause, sub clauses of 1.7 of Annexure -IV.		



Bharat Heavy Electricals Limited
Electronics Division
Mysore Road, Bangalore – 560 026

1.29.8	Penalty for Late Installation: Whether the bidder agrees for the penalty by BHEL in case of late delivery and installation as per clause 1.8 of Annexure –IV.		
1.29.9	Penalty for Late Installation: Whether the bidder agrees for the penalty by BHEL in case of late delivery and installation as per clause 1.9 of Annexure –IV.		
1.29.10	Payment Term: Whether the Bidder agrees for Payment terms as per clause 1.10 of Annexure- IV.		
1.29.11	Acceptance Test Procedure: Whether the bidder has agreed for procedures as per clause, sub clauses 1.11 of Annexure –IV.		
1.29.12	Bank Charges: Whether the Bidder has agreed to bear the Bank charges, if any as per clause 1.12 of Annexure -IV.		
1.29.13	Warranty & Maintenance: Whether bidder has agreed to terms and conditions, as mentioned in clause, sub clauses of 1.13 of Annexure - IV.		
1.29.14	Deduction in Downtime: Whether the bidder has agreed for deduction in case of downtime as per clause, sub clauses of 1.14 of Annexure –IV.		
1.29.15	Training: Whether the bidder has agreed to provide training on usage for BHEL users, per clause 1.15 of Annexure- IV.		
1.29.16	Indemnity: Whether the Bidder agrees for indemnity terms as per clause 1.16 of Annexure- IV.		



Bharat Heavy Electricals Limited
Electronics Division
Mysore Road, Bangalore – 560 026

1.29.17	Insurance: Whether the Bidder has agreed to arrange Insurance, as per Clause 1.17 of Annexure -IV, for the complete Systems/Goods for any loss/damage/theft at his own risk and cost throughout the contract period. Claims, if any, will be dealt with the underwriters directly by Bidder.		
1.29.18	Confidentiality: Whether Bidder has agreed to maintain confidentiality as per Clause 1.18 of Annexure –IV. Bidder shall execute a third party non-disclosure agreement as per the sample format, in case of award of order.		
1.29.19	Risk Purchase: Whether the Bidder agrees for risk purchase as per clause 1.20 of Annexure –IV.		
1.29.20	Sub-Contracting: Whether the Bidder has agreed that the order/contract or any part thereof shall not be sub- contracted, assigned or otherwise transferred without prior written consent of the Purchaser.		
1.29.21	Limitation of Liability : Whether the Bidder has agreed for Limitation of Liability term as per clause 1.23 of Annexure- IV.		
1.29.22	Compliance to ESI / PF Act: Whether the Bidder agreed to comply with applicable ESI/PF rules and regulations as per clause 1.24 of Annexure- IV.		
1.29.23	Local Presence: Whether the Bidder has agreed for Local Presence term as per clause 1.25 of Annexure- IV..		



Bharat Heavy Electricals Limited
Electronics Division
Mysore Road, Bangalore – 560 026

1.29.27	Patents & Trademarks: Bidder shall at all times indemnify the Purchaser against all claims which may be made in respect of the Systems/goods/Software supplied by the Bidder, for infringement of any right protected by patent, registration of designs or trademarks and legality of usage of Software. In the event of any such claims being made against the Purchaser, Purchaser will inform the Bidder who shall at his own cost either settle any such dispute or conduct any litigation that may arise there from.		
1.29.28	Test Certificates: Whether the bidder has furnished relevant test certificates, certificates of newness of equipment, certificates as per technical specifications and any other statutory documents required.		
1.29.29	Submission of Certificates , Supporting Documents: Whether the bidder has enclosed all required documents supporting qualification criteria, certificates etc.		
1.29.30	EFT or Paylink Direct Credit Form: Whether bidder has filled EFT or Paylink Direct Credit details (Clause 1.26 of Annexure IV) and attached a copy of Cancelled Cheque (Clause 1.10 of Annexure IV)		



Bharat Heavy Electricals Limited
Electronics Division
Mysore Road, Bangalore – 560 026

ANNEXURE –V

1. TECHNICAL SPECIFICATIONS & COMPLIANCE FORMAT

1.1. General terms and conditions

- a) Scope of supply would also include cables, cable trays, junction boxes, earth wire and other accessories like standard brackets, nut-bolts, glands, lugs, conduit sleeves, etc., as required. Network Enclosures for housing power supplies etc., at Camera locations and also complete supply, routing, installation, termination and supply of Fiber optic cables required for the above. All required Software along with required licenses to be supplied
- b) Vendor shall consider licensed version of all application and system software required for completeness of the system. Vendor shall include warranty for satisfactory performance of the equipment under stipulated variations of voltage and frequency.
- c) Similar type of equipment shall be of same make. Mixing of different makes is not acceptable.
- d) Technical specifications have been detailed below. However all accessories and licenses required for implementation of the system shall be in Vendor scope within the quoted price, whether these are specifically mentioned herein or not. Any other/ additional equipment, module required for the safe and satisfactory operation, control, protection, monitoring, testing and maintenance of the system shall also be included by the Vendor within the quoted price.
- e) The system supplied shall be complete in all respects for reliable performance. The Vendor shall submit the detailed BOM, block schematic, video / control signal / network topology / power wiring diagram, along with the System Requirement Specification (technical write-up) and data sheets of quoted components describing the implementation as part of the offer.
- f) The system shall have an exclusive network for video surveillance at each location (EDN and ESD).
- g) Re-location: Three existing cameras have to be integrated with the proposed network. of cameras. One of them have to be re-located.



Bharat Heavy Electricals Limited
Electronics Division
Mysore Road, Bangalore – 560 026

1.2. Bill of Quantities

Bill of Quantities					
Sl. No.	Item Code	Item Description	Quantity		
			EDN	ESD	Total
1	CCTV01	PTZ camera	7	4	11
2	CCTV02	Box camera	11	8	19
3	CCTV03	Dome camera	2	11	13
4	CCTV04	Core switch	1	1	2
5	CCTV05	SFP Access Switch	3	3	6
6	CCTV06	100 Mbps SM SFP Trans receiver(Module)	25	23	48
7	CCTV07	Server	1 set	1 set	2 set
8	CCTV08	Storage	1	1	2
9	CCTV09	Media convertors SM 100Mbps	25	23	48
10	CCTV10	Junction box	23	23	46
11	CCTV11	Network enclosure	3	0	3
12	CCTV12	UPS 3 KVA	2	0	2
13	CCTV13	LED Monitor 42"	2	1	3
14	CCTV14	LED Monitor 32"	4	4	8
15	CCTV15	Workstation	2	2	4



Bharat Heavy Electricals Limited
Electronics Division
Mysore Road, Bangalore – 560 026

Bill of Quantities					
Sl. No.	Item Code	Item Description	Quantity		
			EDN	ESD	Total
16	CCTV16	VMS Software	1	1	2
17	CCTV17	Analytics Software comprising of 1) Tripwire 2) Motion Detection 3) Left out baggage Detection 4) Object Classification	8 3 1 3	6 0 1 0	
18	CCTV 18	Joy Stick and Keyboard (for Monitors)	1 set	1set	2sets
19	CCTV19	42 U Network rack for servers and storage	1 set	1 set	2 set
20	CCTV20	1 Gig SM SFP Trans receiver(Module)	6	6	12



Bharat Heavy Electricals Limited
Electronics Division
Mysore Road, Bangalore – 560 026

1.3. Technical Specifications and Compliance

A) Camera

Only following make(s) of camera can be quoted:

Bosch/Honeywell/Pelco/Sony/Axis/Panasonic/InfinoVA/Hikvision

1.3. A.1. PTZ

CCTV01: PTZ Camera				
Sl. No	Features	Qualifying Minimum BHEL Requirement	Complied (Yes /No)	Specifications offered by bidder / Remarks (to be filled by bidder)
1	Camera type	PTZ		
2	Make Offered	Vendor to specify		
3	Model Offered	Vendor to specify		
4	Certifications and Approvals	FCC, CE, UL,EN		
5	Camera 20x (or better) Day/Night	20x (4.7 to 94 mm)		
6	Imager	1/3" CCD or 1/3" CMOS (progressive scan)		
7	Television System	PAL		
8	Lens	F-1.6 ~ 3.5 , Focal length = 4.7 to 94 mm		
9	Optical Zoom	20x		
10	Digital zoom	12x		
11	Focus Mode	Auto ,Manual		
12	Iris	Automatic with Manual override		
13	Gain Control	Automatic/Manual		
14	Horizontal viewing angle	2.9° to 54.1°		
15	Electronic Shutter	1/4 ~ 1/10000 Sec		
16	Wide Dynamic Range	80 dB		
17	White Balance	Automatic with mode selection options		
18	Signal to noise ratio	-		
19	Minimum Illumination (at F1.6 and 30 IRE, slow shutter off)	Color: 0.8 lux and for B/W: 0.6 lux		
20	AGC	On/Off Switch/ Automatic		



Bharat Heavy Electricals Limited
Electronics Division
Mysore Road, Bangalore – 560 026

CCTV01: PTZ Camera				
Sl. No	Features	Qualifying Minimum BHEL Requirement	Complied (Yes /No)	Specifications offered by bidder / Remarks (to be filled by bidder)
21	Backlight compensation	Required		
22	Motion detection	In conjunction with VMS(Video Management System)		
23	Unattended object detection	-		
24	Day & Night Operation	Yes		
25	Pan angle	360 degree continuous/endless		
26	Tilt angle	0° to 90°		
27	Pan speed	0.1 ~ 280 Deg/Sec		
28	Tilt speed	0.1 ~ 160 Deg / Sec		
29	Power Supply	230VAC, 50Hz, *No separate DC line will be provided.		
30	Compression	M JPEG, H.264/MPEG-4 (with dual streaming)		
31	Resolution(PAL) in pixels	minimum 720p HD or higher		
32	Privacy Zones	4 or more		
33	Presets	Minimum 90 presets and 4 predefined tour		
34	Number of simultaneous clients	5		
35	Alarm Inputs	Minimum 4 or more		
36	Alarm Outputs	Minimum 1 or more		
37	Environment	IP66, metal casing (aluminium), (with heater and blower)		
38	Humidity	15-100% , relative, Condensing		



Bharat Heavy Electricals Limited
Electronics Division
Mysore Road, Bangalore – 560 026

CCTV01: PTZ Camera				
Sl. No	Features	Qualifying Minimum BHEL Requirement	Complied (Yes /No)	Specifications offered by bidder / Remarks (to be filled by bidder)
39	Operating temperature	0 to 50° Celsius		
40	View material	Impact resistant polycarbonate (PC) clear dome		
41	Mounting	Shall be Pole or with Stand / wall mounted / ceiling mounted / steel structure mounting		
42	ONVIF	ONVIF Profile-S		



Bharat Heavy Electricals Limited
Electronics Division
Mysore Road, Bangalore – 560 026

1.3. A.2. Box Camera

CCTV02: Box Camera				
Sl. No	Features	Qualifying Minimum BHEL Requirement	Complied (Yes /No)	Specifications offered by bidder/Remarks (to be filled by bidder)
1	Camera type	BOX		
2	Make/Model Offered			
3	Certifications and Approvals	<i>FCC, CE, UL,EN</i>		
4	Sensor Type	1/3" CCD or 1/3" CMOS		
5	Image Readout	Progressive scan		
6	Active Pixels (in pixels)	720p HD		
7	Television System	PAL		
8	Video Compression	M JPEG, H.264/MPEG-4 (with dual streaming)		
9	Video Frame rate	1 to 25 (PAL)		
10	Sensitivity (at F1.2 at 30IRE) (at F1.6 and 30 IRE, slow shutter off)	Color: 0.25 Lux		
11		Mono: 0.09 Lux		
12	Day & Night Operation	Yes		
13	Signal to noise ratio	-		
14	Electronic Shutter	1/50 to 1/10000 PAL or Auto		
15	Backlight compensation	Required On/Off		
16	Motion detection	In conjunction with VMS (Video Management System)		
17	Unattended object detection	In conjunction with VMS		
18	Local storage	SD/SDHC/SDXC slot supporting memory card (32GB)		
19	Environment	IP66, metal casing (aluminium), (with heater and blower)		
20	Humidity	20-93% , relative, Condensing		
21	Operating temperature	0 to 50° Celsius		



Bharat Heavy Electricals Limited
Electronics Division
Mysore Road, Bangalore – 560 026

CCTV02: Box Camera				
Sl. No	Features	Qualifying Minimum BHEL Requirement	Complied (Yes /No)	Specifications offered by bidder/Remarks (to be filled by bidder)
22	Lens Focal length	IR corrected f=5 to 50 mm, Varifocal, Auto Iris		
23	Lens Connector to camera	"C" or "CS"		
24	Power Supply	230VAC, 50Hz, *No separate DC line will be provided.		
25	Privacy Zones	4 or more		
26	Number of simultaneous clients	5		
27	View material	Impact resistant polycarbonate (PC) clear dome/ tempered glass		
28	ONVIF Conformance	ONVIF Profile-S		



Bharat Heavy Electricals Limited
Electronics Division
Mysore Road, Bangalore – 560 026

1.3. A.3. Dome Camera

CCTV03: Dome Camera				
Sl. No	Features	Qualifying Minimum BHEL Requirement	Complied (Yes /No)	Specifications offered by bidder/Remarks (to be filled by bidder)
1	Camera type	Dome		
2	Make Offered			
3	Model Offered			
4	Certifications & Approvals	<i>FCC, CE, UL,EN</i>		
5	Environmental	Indoor Pendant Housing		
6	Sensor Type	1/3” CCD or 1/3” CMOS		
7	Image Readout	Progressive scan		
8	Active Pixels (in pixels)	720p HD		
9	Television System	PAL		
10	Compression	M-JPEG, H.264/MPEG-4 (with dual streaming)		
11	Frame rate	1 to 25(PAL)		
12	–	–		
13	Sensitivity (at F1.2 at 30IRE) (at F1.6 and 30 IRE, slow shutter off)	Color: 0.2 Lux		
14		Mono: 0.03 Lux		
15	Signal to noise ratio	-		
16	Electronic Shutter	1/50 to 1/8000 PAL or Auto		
17	Backlight compensation	Required On/Off		
18	Motion detection	In conjunction with VMS (Video Management System)		
19	Unattended object detection	In conjunction with VMS		
20	Local storage	SD/SDHC/SDXC slot supporting memory card (32GB)		
21	Environment	Indoor IP 54		



Bharat Heavy Electricals Limited
Electronics Division
Mysore Road, Bangalore – 560 026

CCTV03: Dome Camera				
Sl. No	Features	Qualifying Minimum BHEL Requirement	Complied (Yes /No)	Specifications offered by bidder/Remarks (to be filled by bidder)
22	Humidity	20-80% , relative, Condensing		
23	Operating temperature	0 to 50° Celsius		
24	Lens Type	Auto focus zoom lens and manual		
25	Lens Focal length	3.8 to 9 mm / 2.8 to 12mm (as per site requirement) Varifocal, Auto Iris		
26	Power Supply	230VAC, 50Hz, *No separate DC line will be provided.		
27	PoE supply	IEEE 802.3 AF compliant		
28	Number of simultaneous clients	5		
29	View material	Vandal Proof		
	Mounting	Shall be Pole or with Stand / wall mounted / ceiling mounted / steel structure mounting		
30				
31	ONVIF Conformance	ONVIF Profile-S		



Bharat Heavy Electricals Limited
 Electronics Division
 Mysore Road, Bangalore – 560 026

B) Switches

Only following make(s) of Switches can be quoted: **Cisco/Juniper/Dell/HP/IBM/Extreme/Allied Telesis/D-Link**

Note: All switches should be of same make (OEM).

1.3. B.1. Core Switch

CCTV04: Core Switch			
Sl. No	Qualifying Minimum BHEL Requirement	Complied (Yes /No)	Specifications offered by bidder/Remarks (to be filled by bidder)
1	Switch Make Quoted		
2	Switch Model Quoted		
3	General Features		
3.1	The switch should have a minimum of 20 nos. Gigabit Ethernet ports		
3.3	Min 4 or more 1000 Mbps SFP ports		
3.4	Min 2 or more 10G SFP+ Ports. The support for 10G Ports should be enabled & should support connectivity with Server/Storage.		
3.5	Min 2 or more bidirectional physical stacking ports with stacking bandwidth support of 40G or higher in Full Duplex		
3.6	Switch should support redundant power supply. In case of power supply failure single power supply should be able to handle the complete load.		
4	Performance and Scalability		
4.1	Switch should be 1 RU rack mountable stackable in nature.		
4.2	Non-Blocking switch fabric capacity of 88 Gbps or more		
4.3	Shall have minimum 65 Mbps throughput		
4.4	Switch should have at least 256 MB DDR RAM		
4.5	The switch should support 1000 VLANs and 4000 VLAN IDs		
4.6	Should support 32K or more MAC addresses		
4.7	Should support 802.1Q		
4.8	Should support Ring Protection Switching or equivalent feature		



Bharat Heavy Electricals Limited
Electronics Division
 Mysore Road, Bangalore – 560 026

CCTV04: Core Switch			
Sl. No	Qualifying Minimum BHEL Requirement	Complied (Yes /No)	Specifications offered by bidder/Remarks (to be filled by bidder)
5	L3 Features		
5.1	Should support RIPv2/OSPFv2/OSPFv3, Route Redistribution		
5.2	Should support at least 64 Inter-VLAN IP routing		
	Should support min 64 IPv4/v6 Static Routes		
5.2	Should support Policy-based routing (PBR), L3 Multicast, BGP, IPv6 tunnelling technologies, VRRP		
6	Quality of Service (QoS) & Control		
6.1	Should support DiffServ / TOS Marking & Policing		
6.2	Should support min 8 Queues per port		
6.3	Should Support for IGMP v1, v2 and v3		
7	Management		
7.1	Should support Web GUI		
7.2	Minimum Configuration deliverable		
7.3	Should support CLI, IPv4/IPv6 dual-stack, SNMP v1/v2c/v3, System log,		
	Should support DHCP Relay		
	Should have Serial/RJ-45 Console Port for CLI configuration		
8	Security		
8.1	Should support Access Control List		
	Should support Port Security		
	Should support DHCP Snooping + ARP Inspection + IP		
	Should support DHCP Server Screening or DHCP trusted		
	Should support ARP Spoofing Prevention or ARP		
	Should support Port/Host based 802.1x access control		
<p><i>The core switch will be connected to VMS sever or/and Video Analytics server and Storage. So necessary transceivers or/and necessary cables have to be considered by bidder with this switch so that there should not be any communication related problems among Storage and VMS and/or Video analytics server.</i></p>			



Bharat Heavy Electricals Limited
Electronics Division
 Mysore Road, Bangalore – 560 026

1.3. B.2. SFP Access Switches

CCTV05:SFP Access Switches			
Sl. No	Qualifying Minimum BHEL Requirement	Complied (Yes /No)	Specifications offered by bidder/Remarks (to be filled by bidder)
1	Switch Make Quoted		
2	Switch Model Quoted		
3	Switch required details		
3.1	Min 16 or more 100/1000 Mbps SFP Ports		
3.2	Min 8 or more 100/1000 Mbps RJ45 Copper		
3.3	Min 2 or more bidirectional physical stacking ports with stacking bandwidth support of 40G or higher in Full Duplex		
3.4	Switch should support redundant power supply		
4	Performance		
4.1	8.8 Gbps of Switching Fabric		
4.2	MAC Address Should be able to support : 8k,		
4.3	Should be able to Support jumbo frames		
4.4	Link Aggregation or mirroring to span across multiple units of the stack		
4.5	128MB SDRAM		
4.6	IPV6 management		
5	Layer 2		
5.1	Static and Dynamic VLAN with 1024 VID support		
5.2	802.1q VLAN tagging		
5.3	802.3ad Link Aggregation		
5.4	IGMP v1, v2, v3 snooping		



Bharat Heavy Electricals Limited
Electronics Division
Mysore Road, Bangalore – 560 026

CCTV05: SFP Access Switches			
Sl. No	Qualifying Minimum BHEL Requirement	Complied (Yes /No)	Specifications offered by bidder/Remarks (to be filled by bidder)
6	Quality of Service		
6.1	Should deliver 4 priority queues per port		
6.2	WRR/Strict/ST+WRR mode Queue handling		
6.3	Port-based and flow-based bandwidth control		
6.4	Should be able to classify packets according 802.1p priority / VLAN / IPv4/v6 address		
7	Link Aggregation		
7.1	Should support link aggregation adhering to IEEE 802.3ad standards		
7.2	Should be able to support 8 links per group, 128 groups per stack		
8	Layer 3		
8.1	VLAN IP Interfaces		
8.2	Static/Default routing		



Bharat Heavy Electricals Limited
Electronics Division
 Mysore Road, Bangalore – 560 026

1.3. C. Server

CCTV07:Video Management System & Video Analytics Server				
Sl. No	Features	Qualifying Minimum BHEL Requirement	Complied (Yes /No)	Specifications offered by bidder/Remarks (to be filled by bidder)
1	Server make quoted			
2	Server model quoted			
3	Processors	Two * Intel® Xeon® E5-2650 (2.0GHz/8-core)		
4	Processor Cache Memory	20 MB L3 Cache per Processor		
5	Chipset	Intel® C600 Series Chipset		
6	Memory	Should be populated with 2 * 8GB DDR-3 RDIMMs.		
7	RAID Controller	Latest generation Embedded hardware SAS Raid Controller with at least 512MB Flash or Battery backed cache and support for RAID 0, 1, 1+0, 5		
8	Hard Drive	Should be populated with 2 * 600GB 10K Rpm.		
8.1	bays	Server should support at least 4 Hot-plug 2.5” SFF HDD bays		
9	Ethernet Ports	2 * 1Gbps ports		
10	Other Ports	At least 5 * USB 2.0 Ports; 1 * Serial Port; 1 * VGA Port/DB-15 ports		



Bharat Heavy Electricals Limited
Electronics Division
 Mysore Road, Bangalore – 560 026

CCTV07:Video Management System & Video Analytics Server				
Sl. No	Features	Qualifying Minimum BHEL Requirement	Complied (Yes /No)	Specifications offered by bidder/Remarks (to be filled by bidder)
11	Optical Drive	Internal DVD-RW		
12	Power Supply and Fans	Hot-plug Redundant PSUs		
13.1	Remote Management	Should be able to provide full out of band remote management capabilities, troubleshoot and remediate the Server from any location		
13.2		Should be able to power on & off the Server remotely		
13.3		Should be capable of remotely deploying, updating, monitor and maintaining servers with or without a systems management software agent installed and provide virtual KVM functionality		
13.4		Should be capable of remotely doing firmware, BIOS updates, independent of the OS installed		
14	Power Monitoring	Should be capable of providing power monitoring at server hardware level for power savings		
15	Single OEM	Server management software should be from the same OEM brand as that of the server		
16.1	Operating System	Should support latest Microsoft Windows, RedHat Linux & VMware Operating Systems		
16.2		Microsoft Windows 2008/2012 License (Standard/Enterprise) should be included as part of the Server		



Bharat Heavy Electricals Limited
Electronics Division
Mysore Road, Bangalore – 560 026

CCTV07:Video Management System & Video Analytics Server				
Sl. No	Features	Qualifying Minimum BHEL Requirement	Complied (Yes /No)	Specifications offered by bidder/Remarks (to be filled by bidder)
17.1	Security	Power-on password		
17.2		Administrator's password		
18	Antivirus software	Latest software at the time of supply. Updates to be provided during the entire support period.		
19	Mouse	Optical mouse with scroll		
20	Monitor for Console/Rack	21" HD LED Monitor		
21	Rack Support	Should be of rack form factor with required rack rails		

The core switch will be connected to VMS sever or/and Video Analytics server and Storage. So necessary transceivers or/and necessary cables have to be considered by bidder with this switch so that there should not be any communication related problems among Storage and VMS and/or Video analytics server.



Bharat Heavy Electricals Limited
Electronics Division
 Mysore Road, Bangalore – 560 026

1.3. D. Storage

Only following make(s) of Storage can be quoted: **IBM, Dell, HP, EMC, Hitachi, Netapp**

CCTV08:Storage				
Sl. No	Features	Qualifying Minimum BHEL Requirement	Complied (Yes /No)	Specifications offered by bidder/Remarks (to be filled by bidder)
1	Storage Make Quoted			
2	Server Model Quoted			
3.1	*Storage Capacity	EDN: Storage system should be configured with 42TB of usable capacity in RAID-5		
3.2		ESD: Storage system should be configured with 42TB of usable capacity in RAID-5		
4	RAID Support	Support for RAID level 0, 1, 1+0, 5		
5	Controller	The Storage array should have controllers		
6	Operating System Support	The storage array should support minimum Microsoft Windows 2008, RedHat Linux, VMware Operating Systems		
7	Power Supplies and FANS	Fully redundant and hot-plug Power Supplies & Fans		
<p><i>The core switch will be connected to VMS sever or/and Video Analytics server and Storage. So necessary transceivers or/and necessary cables have to be considered by bidder with this switch so that there should not be any communication related problems among Storage and VMS and/or Video analytics server.</i></p>				
<p><i>* The prices should also be provided for storage system configured with usable capacity of 15 TB and 30 TB separately.</i></p>				



Bharat Heavy Electricals Limited
Electronics Division
 Mysore Road, Bangalore – 560 026

1.3. E. Video Management System and Analytics Software

CCTV16 and CCTV17:Video Management System and Analytics Software				
Sl. No	Features	Qualifying Minimum BHEL Requirement	Complied (Yes /No)	Specifications offered by bidder/Remarks (to be filled by bidder)
1	Make offered			
2	Model offered			
3	General	Shall be IP-enabled security software solution. It shall support seamless unification of remote IP ONVIF compliant video management systems (VMS) & Third Party Systems like Video Analytics.		
4	Certification	Shall support industry standard (ONVIF) for the interface of IP-based physical security products and shall be based on a server/client model.		
5	Open Architecture	Shall be based on a true open architecture that shall allow for use of non-proprietary workstation and server hardware, non-proprietary network infrastructure and non-proprietary storage.		
6	Scalability	Shall offer a complete and scalable video surveillance solution which allows cameras to be added on a unit-by-unit basis. The database shall support at least 250 cameras.		
7	Compatible with third party Product	Shall support ONVIF compatible cameras from different manufacturers.		



Bharat Heavy Electricals Limited
Electronics Division
Mysore Road, Bangalore – 560 026

CCTV16 and CCTV17:Video Management System and Analytics Software				
Sl. No	Features	Qualifying Minimum BHEL Requirement	Complied (Yes /No)	Specifications offered by bidder/Remarks (to be filled by bidder)
8	Windows Based	Shall be a Windows service that can be configured to start when the operating system is booted and run in the background irrespective of whether a user is logged onto the machine or not. The VMS Software shall be compatible with a Windows®2008 /Windows 2012 Server operating system.		
9	Role-based architecture	Shall consist of a role-based architecture, Roles shall move from one server to another without disturbing the regular operations.		
10	I-frame	Shall have ability to configure the key frame interval (I-frame) per second to minimise network traffic.		
11	Multicasting	Shall have the ability to manage multi-cast directly from the camera to minimize network traffic. Shall support dynamically switching the video resolution according to the Tile Size on Monitoring Screen. High Resolution Video feed while watching single camera on screen and Low Resolution Video feed while watching Cameras in Multiple tiles.		



Bharat Heavy Electricals Limited
Electronics Division
 Mysore Road, Bangalore – 560 026

CCTV16 and CCTV17:Video Management System and Analytics Software				
Sl. No	Features	Qualifying Minimum BHEL Requirement	Complied (Yes /No)	Specifications offered by bidder/Remarks (to be filled by bidder)
12	Independent Camera controls	Each camera shall be settable independently. Any alteration to settings of one camera should not affect the recording and display settings of other cameras		
13	Keyboard control	Shall be able to use multiple CCTV keyboards to operate the entire set of cameras throughout the system, including cameras of various manufacturers, including their PTZ functionalities.		
14	Multiple Video Streaming	Shall be capable of handling multiple video streams from the same camera; users shall be free to use any one of them based on their assigned usage. The standard video stream usages are: Live, Recording, Remote Monitoring.		
15	Prevention from data corruption	Shall avoid corruption of the recorded video that introduces delay when the servers become operational after a hardware or power failure.		
16	Logs for audit trails	Shall support the generation of audit trails. Audit trails shall consist of logs of operator/administrator additions, deletions, and modifications.		
17	Health Monitoring	Shall monitor health and log health-related events. A Health Monitoring task and Health History reporting task shall be available for live and historical reporting.		



Bharat Heavy Electricals Limited
Electronics Division
 Mysore Road, Bangalore – 560 026

CCTV16 and CCTV17:Video Management System and Analytics Software				
Sl. No	Features	Qualifying Minimum BHEL Requirement	Complied (Yes /No)	Specifications offered by bidder/Remarks (to be filled by bidder)
18	Audit Reports	Shall support Audit trails report generation. They shall be able to track changes made within specific time periods. Querying on specific users, changes, affected entities, and time periods shall also be possible.		
19	Incident Reports	Shall support Incident reports, which shall allow the security operator to create reports of incidents that occurred during a shift. Incident reports shall allow entities, events, and alarms to be added to support the report's conclusions.		
20	Storage	Storage of captured video shall be on industry-standard storage devices. Aggregate storage shall scale independently and without limit to meet extensive video application requirements. The recording shall be stored for at least 90 days and should be flexible to scale upto 120 days recording for future requirements.		
21	Mobile devices compatibility	Shall support mobile apps for various off-the- shelf smartphones and tablets (iPAD / iPhone / Blackberry & Android-Compatible Smartphones). The mobile apps shall communicate with the VMS's Mobile Server over any Wi-Fi or wireless IP connection. Presently supply of license is not required.		
22	Software Functionalities	Shall have following functionalities		



Bharat Heavy Electricals Limited
Electronics Division
Mysore Road, Bangalore – 560 026

CCTV16 and CCTV17:Video Management System and Analytics Software				
Sl. No	Features	Qualifying Minimum BHEL Requirement	Complied (Yes /No)	Specifications offered by bidder/Remarks (to be filled by bidder)
22.1		Live video monitoring and playback of archived video.		
22.2		Alarm management.		
22.3		Reporting, including creating custom report templates and incident reports		
22.4		Dynamic graphical map viewing.		
23	Remote Administration	Shall allow the administrator or users with appropriate privileges to change the system configuration. The VMS shall provide decentralized configuration and administration of the VMS system from anywhere on the IP network.		
24	Authentication and Access right	Shall provide an authentication mechanism, which verifies the validity of the user. As such, the administrator (who has all rights and privileges) can define specific access rights and privileges for each user in the system.		
25	Monitoring capability	Shall allow monitoring more than 16 cameras and shall support multiple monitors to be connected to a single computer.		
26	Uninterrupted video Monitoring	Shall provide the uninterrupted video Monitoring for Operator. The live monitoring of Operator remains available even if the Main Server becomes unavailable.		
27	Digital Zoom	Shall support Digital Zoom on Live & Playback Video Streams also the operator shall be able to control pan-tilt-zoom, iris, focus, and presets.		



Bharat Heavy Electricals Limited
Electronics Division
Mysore Road, Bangalore – 560 026

CCTV16 and CCTV17:Video Management System and Analytics Software				
Sl. No	Features	Qualifying Minimum BHEL Requirement	Complied (Yes /No)	Specifications offered by bidder/Remarks (to be filled by bidder)
28	Bookmarking	Shall allow operators to bookmark the concerned videos & browse through a list of all bookmarks created on the system and select any bookmarked event for viewing.		
29	Image Front	Shall provide still image export to PNG, JPEG, GIF, and BMP format with Date and Time stamp, and Camera Name on the image (snapshot). The SOFTWARE shall also provide tools to export video on various media such as a CD-ROM.		
30	Monitoring capability	Shall support multiple monitors to be connected to a single computer (Upto 4 monitors) & will allow monitoring at least 16 live feeds on each Monitor.		
31	Recording On-Event	Shall be able to record any video input in response to an hard association of alarm to camera . Any alarm can trigger recording on any or all cameras.		
31.1		Optionally, any camera shall be programmable to record at up to the maximum capture rate (FPS) available from the system in response to an alarm		
32	Recording on Schedules	Shall be capable of executing any number of internal recording schedules defined by the administrator. Schedules shall be remotely configurable and control the following actions:		
32.1		Amount of allocated storage (any combination of cameras for any duration from 1 hour to 30 days).		



Bharat Heavy Electricals Limited
Electronics Division
 Mysore Road, Bangalore – 560 026

CCTV16 and CCTV17:Video Management System and Analytics Software				
Sl. No	Features	Qualifying Minimum BHEL Requirement	Complied (Yes /No)	Specifications offered by bidder/Remarks (to be filled by bidder)
32.2		Monitoring of physical alarms (during specified periods)		
32.3		Monitoring of motion alarms (during specified periods)		
32.4		The VMS shall be able to support Variable Bit Rate (VBR) and Constant Bit Rate (CBR) for optimum bandwidth utilization.		
32.5		Moving of a PTZ unit to a predefined position		
33	Playing Back Video	Retrieved video shall be displayed automatically in a window. It shall be possible to display the playback window beside the live video window. A date/time stamp shall be shown with the video and updated for each frame that is displayed. It shall be possible to playback multiple cameras simultaneously for all cameras at the highest recorded resolution.		
34	Playback Controls	When a playback window is selected, the following controls shall be made available to control the playback of the video:		
34.1		Play – forward and reverse.		
34.2		Pause.		
34.3		Single frame – forward and reverse.		
34.4		Move to beginning to ending of video segment		
34.5		The speed of playback shall be variable, including or 1/2x, 1/4x, 2x, and 4x normal speed. The recorded video shall also be capable of being navigated quickly using a shuttle search (slide bar). Video frames shall be displayed while the slide bar is being moved to assist in finding the frame of interest.		



Bharat Heavy Electricals Limited
Electronics Division
Mysore Road, Bangalore – 560 026

CCTV16 and CCTV17:Video Management System and Analytics Software				
Sl. No	Features	Qualifying Minimum BHEL Requirement	Complied (Yes /No)	Specifications offered by bidder/Remarks (to be filled by bidder)
35	Time Synchronization	Shall allow for clock synchronization to occur manually or from a central location through a network time protocol (NTP) server or enterprise management server.		
35.1		Shall allow the cameras to time sync with its clock.		
36	Video Loss Detection	Shall constantly monitor all video inputs for a synchronization signal and, if enabled, notify the administrator if a signal loss is detected.		



Bharat Heavy Electricals Limited
Electronics Division
 Mysore Road, Bangalore – 560 026

1.3. F. Video Management System and Analytics Software

CCTV16 and CCTV17: Video Management System and Analytics Software					
Sl. No	Features	Qualifying Minimum BHEL Requirement	No of cameras where particular VA is required (EDN + ESD)	Complied (Yes/No)	Specifications offered by bidder/Remarks (to be filled by bidder)
		Make offered			
		Model Offered			
1	General Features				
1.1		Should support both indoor and outdoor environment			
1.2		Should support setting of minimum and maximum object size for detection			
1.3		People Search: Shall identify individuals with specific features and store these characteristics into the metadata repository. Shall have ability to search for features of a person like wearing yellow shirt etc.			
1.4		Should support open VMS			
1.5		Should be able to stream the Analytics video to VMS using open interface protocol like ONVIF			
1.6		Shall be able to store all alarm details in its own database			
1.7		Security Sealing Video Evidence: A video clip from a live or playback video window shall be capable of being saved to the local PC or other network storage location in native format. The captured information shall include the video clip itself, any audio data if recorded, and associated location, camera, time, date and event details.			



Bharat Heavy Electricals Limited
Electronics Division
 Mysore Road, Bangalore – 560 026

CCTV16 and CCTV17: Video Management System and Analytics Software					
Sl. No	Features	Qualifying Minimum BHEL Requirement	No of cameras where particular VA is required (EDN + ESD)	Complied (Yes/No)	Specifications offered by bidder/Remarks (to be filled by bidder)
1.8		Integration of Site Maps			
1.8.1		Shall be capable of importing two dimensional (2D) images of floor plans, building or campus layouts or other facility or site geometries. 2D images shall be supported in .bmp or .wmf formats. Also should support Auto CAD, SHP, JPG.			
1.8.2		A series of interactive icons shall be provided to deploy on top of the imported map images and support the following functions:			
1.8.3		These icons shall indicate the location of each physical camera and its approximate field of view, and of alarm inputs and other security equipment deployed within that map area.			
1.8.4		These icons shall be positionable using simple drag-and-drop movement.			
1.8.5		The camera icons shall have a point-and-click interface to launch on demand a live video window from the selected fixed or PTZ camera.			
1.8.6		The alarm icons shall provide an immediate, visual means of identifying incident locations and when clicked shall provide relevant alarm and site/location details.			
1.8.7		It shall be possible to layer or nest multiple maps within the primary client screen to leverage these virtual representations across even very large or complex facilities and surveillance deployments			
1.8.8		Maps should support video pop-ups			



Bharat Heavy Electricals Limited
Electronics Division
 Mysore Road, Bangalore – 560 026

CCTV16 and CCTV17:Video Management System and Analytics Software					
Sl. No	Features	Qualifying Minimum BHEL Requirement	No of cameras where particular VA is required (EDN + ESD)	Complied (Yes/No)	Specifications offered by bidder/Remarks (to be filled by bidder)
2	VA Features				
		The following events should give alerts			
2.1	<i>Intrusion detection features</i>				
2.1.1		Tripwire/Line crossing: Shall detect people or vehicle crossing virtual line in either direction. Shall have capability to mark object size with mouse Configurable for multi-segment tripwire location, direction of line crossing, definable maximum and minimum object sizes, colour of objects, speed of objects	8+6		
2.1.2		Trespass: Shall detect people or vehicle entering or exiting virtual area in either direction. The virtual area can be of any shape.	0+0		
2.1.3		Camera Tampering: Shall detect camera tampering by vandals. The tampering can be obstruction of camera, changing the direction of camera or blinding the camera with strong light by vandals	Applicable to all cameras		
2.1.4		Camera Movement Stop: Shall trigger an alert when a Pan-Tilt-Zoom (PTZ) camera stops moving. Wait time before triggering alarm shall be configurable.	Applicable to all PTZ cameras		



Bharat Heavy Electricals Limited
Electronics Division
 Mysore Road, Bangalore – 560 026

CCTV16 and CCTV17:Video Management System and Analytics Software					
Sl. No	Features	Qualifying Minimum BHEL Requirement	No of cameras where particular VA is required (EDN + ESD)	Complied (Yes/No)	Specifications offered by bidder/Remarks (to be filled by bidder)
2.2	<i>Suspicious incidence detection features</i>				
2.2.1		Motion Detection Alert: Shall detect motion in a specified region of the camera's field of view. Shall have capability to mark object size with mouse Configurable for minimum and maximum object sizes, minimum number of frames motion should last, minimum number of objects.	3+0		
2.2.2		Region Alert: Shall detect various types of object behaviours within a zone, such as starting, stopping, entering, leaving, etc. Shall have a number of choices regarding how the moving object interacts with the region of interest. Shall have capability to mark object size with mouse. Configurable for minimum and maximum object size.	0+0		
2.2.3		Left out baggage detection\Abandoned Object detection: Shall detect object left out or abandoned beyond certain pre-defined period. Configurable for minimum object size, maximum object size and wait time before triggering alarm.	1+1		



Bharat Heavy Electricals Limited
Electronics Division
 Mysore Road, Bangalore – 560 026

CCTV16 and CCTV17:Video Management System and Analytics Software					
Sl. No	Features	Qualifying Minimum BHEL Requirement	No of cameras where particular VA is required (EDN + ESD)	Complied (Yes/No)	Specifications offered by bidder/Remarks (to be filled by bidder)
2.2.4		Object Classification : Shall be able to classify objects like human and vehicles.	3+0		
2.3	Alerts and Events		Applicable for all Cameras		
2.3.1		Shall send alert Meta data with the following information so that alerts can be searched and categorized based on this information in the viewer.: a. Timestamp (date & time) b. Alert Name c. Alert Type d. Alert location e. Text Description f. Region associated			
2.3.2		Shall be able to store the alarm videos and images for export			
2.3.3		The activities that can be triggered automatically in response to alarms shall include:			
2.3.3.1		Pop-up of live incident video on defined workstations or video wall monitors.			
2.3.3.2		Orientation of PTZ cameras to specified preset positions.			



Bharat Heavy Electricals Limited
Electronics Division
Mysore Road, Bangalore – 560 026

CCTV16 and CCTV17:Video Management System and Analytics Software					
Sl. No	Features	Qualifying Minimum BHEL Requirement	No of cameras where particular VA is required (EDN + ESD)	Complied (Yes/No)	Specifications offered by bidder/Remarks (to be filled by bidder)
2.3.3.3		A single mouse click shall allow monitoring personnel to immediately view live video associated with an alarm incident. The option to display emergency response procedures, security or other contact information, and this information shall be modifiable as necessary for multi-site installations.			
2.3.3.4		Initiation of preset camera and map (see following Section) viewing sequences. Each alarm shall also cause an automatic record of all operator response actions to be logged in an interactive folder system that contains links to the specific audio (if applicable) and video record of the incident. Clicking on an alarm shall cause that data to be rendered on screen automatically. The log shall also include a record of all operator screen activity for post-alarm analysis, personnel reviews or training.	Applicable for all Cameras		
2.4		VA Performance			
2.4.1		Shall have the ability to handle tree swaying, wind and rain	All cameras		



Bharat Heavy Electricals Limited
Electronics Division
Mysore Road, Bangalore – 560 026

1.3. G. Joystick and keyboard (CCTV18)

Joystick and keyboard for controlling the video should be provided.

1.3.H. Monitor Unit (CCTV13,CCTV14)

Only following make(s) of Monitor unit can be quoted: **Samsung, LG, HP, Dell, Sony**
LED Monitor Size and type: 42” or higher,

LED Monitor Size and type: 32” or higher,

Necessary cables between switch, decoders

& monitor of necessary length should be supplied. The monitors shall be with necessary controls like colour, brightness, contrast adjustment and monitor ON/OFF & remote control.

1.3.I. PC Workstation for Monitoring (CCTV15)

PC Work Station will be used for monitoring of the CCTV system. There should be provision to place the monitor on the free hanging stand on wall or ceiling. Accordingly the cable between CPU & monitor to be considered which may be around 15-20 M as the CPU may have to be placed at different location. The Work stations to be considered with specification such that there should not be any congestion during large data flow of videos. Original operating system to be supplied with proper license along with each work station.

PC workstation should have following features:

S.No.	Feature	Requirement
1.	Base System	4th Gen Intel® Core™ i5-4570 Processor
2.	Operating System	Windows 8 Pro 64-bit
3.	Memory	16GB 1600MHz DDR3
4.	Primary Hard Drive	1 TB 3.5inch Serial ATA (7,200 Rpm) Hard Drive
5.	Hard Drive Configuration	SATA, no RAID, 1 Hard Disk
6.	Graphic Card	HD Graphics Card Min 2GB VRAM
7.	Keyboard	Normal USB Keyboard
8.	Mouse	Normal USB Mouse
9.	Warranty	3 Years 24x7 Comprehensive onsite Warranty

Note: Two 42” industrial display monitors will be connected to each PC in control room which will display all the camera videos simultaneously. However bidders may provide equivalent solution in control room within quoted price.



Bharat Heavy Electricals Limited
Electronics Division
Mysore Road, Bangalore – 560 026

1.3.J. Media Converters (CCTV09)

It should work on 230V AC.

Only following make(s) of Media convertor can be quoted: **Moxa/N-Tron/Digilink/Digisol/CTC-union/D-Link/MRO-TEK/Allied-Telesis**

1.3.K. UPS (CCTV12)

UPS WITH BATTERY BACKUP FOR 30 MINUTES :

Application: Power supply requirement for IP CCTV

Rack Form Factor

Only following make(s) of UPS can be quoted: **Emerson, APC, Hitachi-Hirel**

1. Input:

Note : Power sockets with proper earth near to UPS will be provided by BHEL.

- Nominal AC Input Voltage: 1 Phase 230V AC + Neutral + Earth , 50 Hz
- Line low/ High transfer: + 15%
- Frequency range: + 5%
- Power factor: >0.9

2. Output

- Voltage: 220VAC/ 230VAC/ 240VAC
- Voltage Regulation: + 1%
- Frequency: 50 Hz+/- 0.1%
- Output waveform: Pure sinewave
- Harmonic distortion: < 2% (linear load) / 5 % nonlinear load
- Power factor: 0.7 to unity
- Crest factor: 3:1
- Inverter overload capacity: 110% 15 min./ 125% 10 min./ 150% 1 min./ > 150% 1 sec.
- Efficiency (AC – DC): 90%
- Bypass: Static bypass

3. Battery

- Battery type: SMF

4. Communication interface

- Standard: RS 232 port for software interface

5. Display

- Standard: 2 line x 20 characters, Backlight LCD
- AC input voltage, AC input frequency, Battery voltage, AC output voltage , AC output frequency, AC output, load %, Temperature
- UPS status(Mains fail, Individual phase fail, Battery low DC high, Overload with shut down time, Output low, Output high, Over temperature, UPS bypass)



Bharat Heavy Electricals Limited
Electronics Division
Mysore Road, Bangalore – 560 026

6. General

- Operating temperature: 0 to 50 Deg C
- Humidity: Upto 95% RH, no condensing
- Noise level: < 60 dB @ 1 meter

1.3.L. Installation requirements:

Industry best practices of laying cables, routing, cable termination, erection of poles, mounting etc. shall be adhered to. Prior approval from BHEL to be obtained for erection/installation.

Cables should be laid in HDPE pipes for a length of six feet wherever they are entering and exiting the ground. Wherever road cutting is involved the cables should run through GI pipes(ISI marked) of suitable diameter. Two cables are to be run from the switch and the cameras are to be connected alternatively on these two cables in daisy chain. Power cables from UPS are to run along with the fibres to the cameras.

1.3.M. Specification for 3-core Power Cables

Armoured, 3 core FRLS (red, green & black), 2.5/1.5 square mm (as required), conductor of annealed copper with ISI mark.

1.3.N. Specification for OFC Cables

Armoured single mode (SM) fibre cable: 6 core/12 core (as required), 9/125, OS2 Single mode, Gel Filled. High density polyethylene, anti-termites, anti - rodent suitable for direct burial application, Should be compliant to EIA/TIA 568B.

1.3.O. Specification for Ethernet Cables

Ethernet cables should be of Solid 4 pair 23 AWG, Cat 6, UTP Cable and meet the latest TIA/EIA-568-B.2 Category 6 specifications. Current Rating @ 1.5 Amps, Contact Resistance @ 20 mΩ max, Dielectric Strength @ 1000V AC and Insulation Resistance > 500 MΩ

1.3.P. Specification for Fibre Patch Cords and accessories

Fibre Patchcords / Pigtails / Couplers / Connectors to be supplied.

1.3.Q. Junction Box (CCTV10)

Weather proof and rodent proof junction box to house LIU and media converter. It should be Pole/wall mounted. Louvers with mesh should be provided at the bottom of doors for ventilation.

1.3.R. Network Enclosure (CCTV11)

Louvers with mesh should be provided at the bottom of doors for ventilation.

Gland plates should be provided to prevent rodent entry.

Network Enclosure of reputed make, with 2 numbers of cooling fans for mounting Ethernet Switch, LIU as required. Dimension of the enclosure should be as required.

1.3.S. Pole

Poles shall be selected according to the location with standard sizes in order to optimize the coverage and camera types. Bidder is required to furnish details of location wise type of pole proposed like 3mm thick, 100/125/150 mm diameter etc. The poles should be of GI and painted.



Bharat Heavy Electricals Limited
Electronics Division
 Mysore Road, Bangalore – 560 026

ANNEXURE VI
Price Bid

Annexure A: OUTRIGHT PURCHASE												
IT Equipments												
S.No	Item Description (For Supplying and commissioning at BHEL Bangalore)	EDN Qty	ESD Qty	Total	Unit Price	EDN Price	ESD Price	Total Price	% of Tax & Duties	EDN Price (incl. of taxes)	ESD Price (incl. of taxes)	Total Price (incl. taxes) (in Rs.)
		Q1	Q2	A=Q1+Q2	B	P1=Q1*B	P2=Q2*B	C=A*B	D			
1	IT_1											
2	IT_2											
3	IT_3											
4	IT_4											
5	**IT_5											
Total for IT Equipment												
Non-IT Equipments												
S.No	Item Description (For Supplying and commissioning at BHEL Bangalore)	EDN Qty	ESD Qty	Item (Qty)	Unit Price	EDN Price	ESD Price	Total Price	% of Tax & Duties	EDN Price (incl. of taxes)	ESD Price (incl. of taxes)	Total Price including Taxes, Duties
		Q1	Q2	A=Q1+Q2	B	P1=Q1*B	P2=Q2*B	C=A*B	D			
1	Non_IT_1											
2	Non_IT_2											
3	Non_IT_3											
4	Non_IT_4											
5	**Non_IT_5											
Total for Non-IT Equipment												
EDN Installation		1	0	1								
ESD Installation		0	1	1								
Total Cost of IT and Non-IT												

Note : Outright price for stoarge with usable capacity of 15 TB and 30 TB needs to be provided separately, as per the Price Bid format.

**Any other equipment, module required for the safe and satisfactory operation, control, protection, monitoring and testing of the system shall also be included by the Vendor within the quoted price



Bharat Heavy Electricals Limited
Electronics Division
 Mysore Road, Bangalore – 560 026

Annexure B: Maintenance charges																
IT Equipments																
S.No	Item Description (For Supplying and commissioning at BHEL Bangalore)	EDN Qty	ESD Qty	Total	Unit Maintenar	EDN Maintenance charges per quarter	ESD Maintenance charges per quarter	% Break-up for Material portion	Applicable tax for Material portion	Tax rate applicable for Material portion	% Break-up for Service portion	Applicable tax for Service portion	Tax rate applicable for service portion	EDN total per quarter	ESD total per quarter	Total maintenance charges per quarter
		Q1	Q2	A=Q1+Q2	B	P1=Q1*B	P2=Q2*B	I	VAT, etc	K	L	Service Tax, etc	N	M1 = G*(1+I*K+L*N)	M2 = H*(1+I*K+L*N)	M1+M2
1	IT_1															
2	IT_2															
3	IT_3															
4	IT_4															
5	**IT_5															
Total for IT Equipment																
Non-IT Equipments																
S.No	Item Description (For Supplying and commissioning at BHEL Bangalore)	EDN Qty	ESD Qty	Item (Qty)	Unit Price	EDN Maintenance charges per quarter	ESD Maintenance charges per quarter	% Break-up for Material portion	Applicable tax for Material portion	Tax rate applicable for Material portion	% Break-up for Service portion	Applicable tax for Service portion	Tax rate applicable for service portion	EDN total per quarter	ESD total per quarter	Total maintenance charges per quarter
		Q1	Q2	A=Q1+Q2	B	P1=Q1*B	P2=Q2*B	I	VAT, etc	K	L	Service Tax, etc	N	M1 = G*(1+I*K+L*N)	M2 = H*(1+I*K+L*N)	M1+M2
1	Non_IT_1															
2	Non_IT_2															
3	Non_IT_3															
4	Non_IT_4															
5	**Non_IT_5															
Total for Non-IT Equipment																
Total for IT and Non-IT																

Note : Outright price for storage with usable capacity of 15 TB and 30 TB needs to be provided separately, as per the Price Bid format.

**Any other equipment, module required for the safe and satisfactory operation, control, protection, monitoring and testing of the system shall also be included by the Vendor within the quoted price



Bharat Heavy Electricals Limited
Electronics Division
Mysore Road, Bangalore – 560 026

NOTE:

1. Outright purchase rate for each major component (as mentioned in Bill of Quantities) (clause 1.2 of ANNEXURE –V) is to be given.
2. Unpriced price bid format shall be submitted along with techno-commercial bid.



Bharat Heavy Electricals Limited
Electronics Division
Mysore Road, Bangalore – 560 026

ANNEXURE-VII

Terms & Conditions of Reverse Auction

Against this enquiry for the subject item/ system with detailed scope of supply as per enquiry specifications, BHEL may resort to “REVERSE AUCTION PROCEDURE” i.e., ON LINE BIDDING (THROUGH A SERVICE PROVIDER).

The philosophy followed for reverse auction shall be English Reverse (No ties).

1. For the proposed reverse auction, technically and commercially acceptable bidders only shall be eligible to participate.
2. Those bidders who have given their acceptance for Reverse Auction (quoted against this tender enquiry) will have to necessarily submit “online sealed bid” in the Reverse Auction. Non-submission of “online sealed bid” by the bidder for any of the eligible items for which techno-commercially qualified, will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines in vogue.
3. BHEL will engage the services of a service provider who will provide all necessary training and assistance before commencement of on line bidding on internet.
4. In case of reverse auction, BHEL will inform the bidders the details of Service Provider to enable them to contact & get trained.
5. Business rules like event date, time, bid decrement, extension etc. also will be communicated through service provider for compliance.
6. Bidders have to fax the Compliance form (annexure IV) before start of Reverse auction. Without this, the bidder will not be eligible to participate in the event.
7. In line with the NIT terms, BHEL will provide the calculation sheet (e.g., EXCEL sheet) which will help to arrive at “Total Cost to BHEL” like Packing & forwarding charges, Taxes and Duties, Freight charges, Insurance, Service Tax for Services and loading factors (for non-compliance to BHEL standard Commercial terms & conditions) for each of the bidder to enable them to fill-in the price and keep it ready for keying in during the Auction.
8. Reverse auction will be conducted on scheduled date & time.
9. At the end of Reverse Auction event, the lowest bidder value will be known on auction portal.
10. The lowest bidder has to fax/e-mail the duly signed and filled-in prescribed format for price breakup including that of line items, if required, (Annexure VII) as provided on case-to-case basis to Service provider within two working days of Auction without fail.



Bharat Heavy Electricals Limited
Electronics Division
Mysore Road, Bangalore – 560 026

11. In case BHEL decides not to go for Reverse Auction procedure for this tender enquiry, the Price bids and price impacts, if any, already submitted and available with BHEL shall be opened as per BHEL's standard practice.
12. Bidders shall be required to read the "Terms and Conditions" section of the auctions site of Service provider, using the Login IDs and passwords given to them by the service provider before reverse auction event. Bidders should acquaint themselves of the "Business Rules of Reverse Auction", which will be communicated before the Reverse Auction.
13. If the Bidder or any of his representatives are found to be involved in Price manipulation/ cartel formation of any kind, directly or indirectly by communicating with other bidders, action as per extant BHEL guidelines, shall be initiated by BHEL and the results of the RA scrapped/ aborted.
14. The Bidder shall not divulge either his Bids or any other exclusive details of BHEL to any other party.
15. In case BHEL decides to go for reverse auction, the H1 bidder(s) (whose quote is highest in online sealed bid) may not be allowed to participate in further RA process.



Bharat Heavy Electricals Limited
Electronics Division
Mysore Road, Bangalore – 560 026

ANNEXURE-VIII

List of Consortium Bank			
	Nationalised Bank		Nationalised Bank
1	Allahabad bank	19	Vijaya Bank
2	Andhra bank		Public Sector Banks
3	Bank of Baroda	20	IDBI
4	Canara Bank		Foreign bank
5	Corporation bank	21	CITI Bank N.A
6	Central bank	22	Deutsche Bank AG
7	Indian Bank	23	The Hongkong and Shanghai Banking Corporation Limited
8	Indian Oversea Bank	24	Standard Chartered Bank
9	Oriental bank of Commerce	25	The Royal Bank of Scotland N.V.
10	Punjab National Bank	26	J P Morgan
11	Punjab & Sindh Bank		Private bank
12	State Bank of India	27	Axis Bank
13	State Bank of Hyderabad	28	The Federal Bank Limited
14	Syndicate Bank	29	HDFC
15	State Bank of Travancore	30	Kotak Mahindra Bank
16	UCO Bank	31	ICICI
17	Union Bank of India	32	Indusind Bank
18	United Bank of India	33	Yes Bank

Note:

- All BGs must be issued from BHEL consortium banks listed above.
- BHEL may accept BG from other Nationalised Banks also which are not listed above.
- BG will not be accepted from Scheduled Banks and Co-operative Banks.
- This list is subject to changes. Hence vendors are requested to check this list every time before issuing BGs



Bharat Heavy Electricals Limited
Electronics Division
Mysore Road, Bangalore – 560 026

***CHECKLISTFORBIDDER**

<i>Following Documents need to be enclosed/furnished with Techno-commercial Bid</i>				
Annexure	Clause / Sub-Clause	Conditions	Yes / No	NA
I	1.4	The detailed BOM.		
I	1.4	Block schematic, video / control signal / network topology / power wiring diagram.		
I	1.4	System Requirement Specification (technical write-up)		
I	1.4	Data sheets of quoted components/ models .		
II	1.1	The Certificate / Authorization Letter, issued by Authorized Representative of the OEM, specific to this tender stating the relationship, guaranteeing support for offered components for a period of at least 3 years and authorizing the Partner to quote for this tender.		
II	1.2	Supporting document(s) stating that the Bidder have Registered and Incorporated office in India.		
II	1.3	A valid ISO: 9000 certificate copy of the Bidder.		
II	1.4	Declaration for clean track record		
II	1.5	Certificate from bankers/chartered accountant/IT for Financial Turnover.		
II	1.6	Customer references with number of equipment supplied and year of commissioning including details.		
II	2	Proof of successful installation of CCTV Surveillance system.		
II	3	Order copies of referred projects and successful completion/ performance certificate from the customer.		
III	1.2 b	Technical offer and other details.		
III	1.2 d	Certificates enlisted in technical specifications.		
III	1.2 e	Technical Compliance Statement as per enclosed format.		
III	1.2 f	Commercial terms compliance statement as per enclosed format.		
III	1.2 g	Unpriced copy of price bid as a part of Techno-commercial bid.		
III	1.2 h	Any other documentary evidence as per prequalification criteria (if mentioned/ not mentioned above).		
III	1.5	Consent letter agreeing for Reverse Auction.		

Note: The checklist provided here is for the convenience of bidder. This may help bidder in speeding up the tender submission. The checklist may not contain all the required details. Please refer to the tender document for the complete list. * For sake of understanding



Bharat Heavy Electricals Limited
Electronics Division
 Mysore Road, Bangalore – 560 026

***CHECKLISTFORBIDDER**

<i>Please check following information has been provided</i>				
Annexure	Clause / Sub-Clause	Item Description	Yes / No	NA
III	1.3	The Technical & Commercial Bid should not include prices.		
III	1.4 a	Price Bid contains PRICES only and prices in Indian Rupees .		
III	1.6	Part I (Techno-commercial Bid) and Part II (Price Bid) submitted in twoseparate envelope with bidder's distinctive SEAL and properly super-scribed		
III	1.7	Tender addressed properly.		
III	1.8	Tender if submitted by post and should be sent by "Registered Post with Acknowledgement Due"		
III	2.1	Local address of the bidder to whom all the correspondence are to be addressed		
III	2.2	All the required particulars has been filled in the format provided for this purpose in the tender documents and also signed each and every page of the tender document including the drawings attached there before submitting tender		
III	2.5	The tender has been signed separately and legibly by each partner or member of the firm or in their absence, by the person holding the power of Attorney on behalf of the firm concerned.(if the tender is being submitted by a firm)		
III	3	Rates quoted as per clause, sub clauses of 3 of Annexure III		
III	3.2	Whether rates quoted are as per Price Bid Format only providing details of prevailing rates of taxes and duties.		
III	4.2 e	Price quoted in words and Figures should be similar		
III	4.2 f	Whether bidder indicated all the applicable taxes.		
IV	1.10	Whether Copy of Cancelled Cheque enclosed		
IV	1.28	EFT/Paylink Direct Credit details as per format		
Note: The checklist provided here is for the convenience of bidder. This may help bidder in speeding up the tender submission. The checklist may not contain all the required details. Please refer to the tender document for the complete list. * For sake of understanding				

END