

**GOVERNMENT OF ASSAM
ENVIRONMENT & FOREST DEPARTMENT**

**OFFICE OF THE
DIRECTOR, KAZIRANGA NATIONAL PARK AND
FIELD DIRECTOR, KAZIRANGA TIGER RESERVE,
BOKAKHAT, ASSAM.**

TENDER DOCUMENT

Installation of Automatic Sensor Based Vehicle Speed Regulatory System with Requisite Equipments at six specified animal corridor sections on NH-37 in Kaziranga National Park for management of vehicular traffic during wildlife crossings.



2018



TENDER NO: KNP/FG.733/Sensor/NH-37,

Dated: 21.05.2018

NOTICE INVITING TENDER

The Field Director, Kaziranga Tiger Reserve, Bokakhat invites electronic tender from eligible and registered suppliers / firms for supply, installation and commissioning of various equipments for **“Automatic Sensor Based Vehicle Speed Regulatory System with requisite equipments at six specified animal corridor sections on NH-37 in Kaziranga National Park for management of vehicular traffic during wildlife crossings”**. The animal corridors are approximately about 300m to 4 Km in length and 12m to 15 m wide on the highway.

The electronic tender should be submitted only through the official website i.e. <https://assamtenders.gov.in> on or before 5.00 pm of 01.06.2018. Covers should invariably be super-scribed as “Automatic Sensor Based Vehicle Speed Regulatory System with requisite equipments at six specified animal corridor sections on NH-37 in Kaziranga National Park for management of vehicular traffic during wildlife crossings” with name of the tenderer in block letters. Along with the soft copy of the tender documents, hard copy of the tender documents have to be submitted by post/person to the Field Director, Kaziranga Tiger Reserve, Bokakhat, so as to reach before the last date of submission, i.e., on or before 5.00 pm 01.06.2018.

Interested bidders can download the tender documents from the website www.assamtenders.gov.in and would be required to submit a scanned copy of a Demand Draft of Rs. 5,000/- (Rupees five thousand only) being the non-refundable tender fee in favour of Kaziranga Tiger Conservation Foundation, payable at Bokakhat along with the tender documents. The Demand Draft would be required to be submitted along with the hardcopy of the Technical Bid.

Eligibility and qualification criteria: The bids may be submitted by registered suppliers/firms who are a company registered under the Registration of Companies Act, 1956 or a proprietary firm in business in India or an authorized agent of a company registered abroad or an authorized agent of any Department, Wing or Ministry of the Govt. of India or other Govt of India PSUs or OEMs in India or abroad and or their authorised distributors in India manufacturing or dealing and having adequate experience in animal sensors/electronic sensor and control systems in the relevant field for at least three years.

This bid is for supply, installation and commissioning of various articles as mentioned in the table below for six Animal Corridors located on the NH37 and has to on the lines of the Pilot



Project at Miloni Animal Corridor of Kaziranga National Park. The tentative list of equipment for each site is given below for reference. However, the actual list and type of equipments may vary with the preference and experience of the tenderer.

1. Thermal Cameras for detection of wildlife movement.
2. Optical Cameras with near night vision, inclusive of optic fibres, for recording vehicle movement.
3. ANPR (Automatic Number Plate Recognizing System) – consisting of a set of 2 suitable cameras with Radar for speed capture and strobe light for night time capture with facility for real time alerting concerned authorities of over speeding.
4. Real time detection intrusion of wildlife, etc using Thermal Camera.
5. Installation of Solar Power 5 KVA with at least 2 hr back up and silent generator for power backup.
6. Traffic Lights on the Gantry to alert drivers for compliance.
7. Speed Sensors for Warning Vehicles of their Speed
8. Quality LED / Retro-Reflex displays screens to inform, educate and caution drivers while approaching the Animal Corridors.
9. Erection of steel Gantry with adequate overhead clearance to permit double-decker heavy vehicles to pass underneath.
10. Construction of a Control Room for each animal corridor to host the Server, Display, Storage, etc.

Sd/-
Field Director,
Kaziranga Tiger Reserve, Bokakhat

Memo No KNP/FG.733/Sensor/NH-37,

Dated: 21.05.2018

Copy to the Director of Information & Public Relation, Assam, Dispur, Guwahati– 06 along with 5 (five) copies of the “Notice” with a request to publish the same in at least two local dailies of the State and one prominent National Daily. This may kindly be published immediately for wide publicity.

Sd/-
Field Director,
Kaziranga Tiger Reserve, Bokakhat



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THE FIELD DIRECTOR,
KAZIRANGA TIGER RESERVE
BOKAKHAT.GOLAGAT DIST. ASSAM.

IMPORTANT INFORMATION

Bid Inviting Authority	THE FIELD DIRECTOR, KAZIRANGA TIGER RESERVE, BOKAKHAT, GOLAGHAT DISTRICT, ASSAM.
Tender No.	KNP/FG.733/Sensor/NH-37
Sale/Availability of Tender document	10.30 am to 4.30 pm on all working days starting from 22.05.2018 to 28.05.2018
Non-Refundable RFP Document Purchase Price	Rs. 5,000/- (Rs. Five Thousand only) in through demand draft issued by a scheduled nationalized bank, drawn in favour of 'Kaziranga Tiger Conservation Foundation' payable at Bokakhat.
Place of issue and submission of bid documents (changes, if any, will be notified separately)	Through the e tendering portal of Government of Assam. www.assamtenders.gov.in One Hard Copy of Technical Documentation to be submitted.
Address for Correspondence, Fax No., Tel No. etc.	THE FIELD DIRECTOR, KAZIRANGA TIGER RESERVE, BOKAKHAT, GOLAGHAT DISTRICT, ASSAM. Email: dir.kaziranganp@gmail.com Phone: 03776-268095
Earnest Money Deposit (EMD) payable	Rs. 22,84,000.00 (Rupees Twenty two lakhs Eighty four thousand Only) through a Bank Demand Draft drawn in favour of 'Kaziranga Tiger Conservation Foundation' payable at Bokakhat, Assam.
Bid Validity	90 Days
Last date & time for submission of bids	Up to 17:00 hours on 01.06.2018
Bid Opening	At 11:00 hrs on 02.06.2018



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Eligibility and Pre-Qualification:

S No	Eligibility Criteria	Documents to be submitted
1	The bids may be submitted by registered suppliers/firms who are a company registered under the Registration of Companies Act, 1956 or a proprietary firm in business in India or an authorized agent of a company registered abroad or an authorized agent of any Department, Wing or Ministry of the Govt. of India or other Govt of India PSUs or OEMs in India or abroad and or their authorised distributors in India manufacturing or dealing and having related experience in animal sensors/electronic sensor and control systems in the relevant field for at least three years.	Copy of the Incorporation Certificate, Memorandum of Association and Articles of Association. Brief Profile and Projects Undertaken
2	The bidder should not be blacklisted by the Govt. of India or the Govt. of Assam.	Declaration on the Letter head of the Firm
3	The bidder must have supplied successfully with customer satisfaction to the Govt. of India or Govt of Assam or any Govt. agency equipment such as camera, controllers, sensors, RF equipment, traffic control system etc. goods in last two years a minimum order value of Rs. 1.00 crore or more	Copy of the Order (s)
4	The bidder must have valid Income Tax PAN, GST registration, IEC Code for import/ export (applicable only for any items to be directly imported by the bidder.	To be submitted as per Chapter I of the tender document
5	The Bidder should have an average turnover of Rs.2 crore for the last three financial years	Certificate of a registered Chartered Accountant
6	Pre-Bid Meeting	Pre-Bid Meeting already conducted on 7/5/2018, for the same tender.
7	Quality Certification of ISO	Certificate Copy
8	Earnest Money Deposit	Demand Draft issued by a scheduled nationalized bank, drawn in favour of "Kaziranga Tiger Conservation Foundation" payable at Bokakhat.
9	Bidder as consortium	Memorandum of Understanding stating the Lead Bidder and the role of each of the members.



Instructions on Bidding System:

- a) The bidders have to submit Technical bid and Financial bid on the e-tender portal and one hard copy of the Technical Bid only as detailed in the Tender document.
- b) The bidders should scan and upload the respective documents in Technical bid and Financial bid documentation as specified in the e-tender portal.
- c) All formats/details have to be duly filled up and submitted in the bid failing which the bid submitted shall be summarily rejected.
- d) Submission of hard copy of the financial bid shall make cause the bid to be summarily disqualified.
- e) Prices should not be indicated in the Pre-Qualification Proposal or Technical Proposal but should only be indicated in the Financial Proposal failing which the bid submitted shall be summarily rejected.
- f) Each page of the bid documents / RFP should be duly signed by the tenderer as a token of acceptance of the terms and clauses.

Instruction for Hard Copy Submission:

The bidders should submit the hardcopies of the following only:

- a) Signed copy of bid document as a token of acceptance of the clauses and terms & conditions of the RFP.
- b) Original Demand draft in respect of document fee & EMD in separate Covers.
- c) Power of Attorney in Original for the authorised signatory.
- d) Printed supporting documents viz., annual report, technical reference sheet, product leaflet etc.
- e) All these above documents as mentioned above should be sealed in an envelope and to be submitted in the Office of the Field Director, Eastern Assam Wildlife Division, Bokakhat within the bid submission time & date mentioned in the bid document. The cover thus prepared should also indicate clearly the name, address, telephone number, E-mail ID and fax number of the bidder to enable the Bid to be returned unopened in case it is declared "Late".
- f) Only one hard copy is required to be submitted.

Other Conditions of bid submission:

- a) Purchaser will not hold any risk and responsibility regulating non-visibility of the scanned and uploaded documents. If documents are not visible, the same may not be evaluated at the risk of the bidder.
- b) The Documents that are uploaded online on e-tender portal only will be considered for Bid Evaluation.
- c) The Bidder shall bear all costs associated with the preparation and submission of its bid



- including cost of presentation for the purposes of clarification of the bid.
- d) The Bids prepared by the Bidder and all correspondence and documents relating to the bids exchanged by the Bidder and Purchaser, shall be written in English language, provided that any printed literature furnished by the Bidder may be written in another language so long the same is accompanied by an English translation in which case, for purposes of interpretation of the bid, the English translation shall govern.
 - e) It shall be deemed that the bidders have done careful study and examination of the Tender document and has fully understood the implications.
 - f) The response to the Tender should be full and complete in all respects. Failure to furnish the requisite information or submission of a proposal not substantially responsive to the Tender document in every respect will be at the bidder's risk and may result in rejection of the proposal and forfeiture of the EMD
 - g) All materials submitted by the bidder become the property of Purchaser and may be returned at its sole discretion.
 - h) A firm/Consortium can submit ONLY ONE bid.
 - i) No sub-contracting is allowed in this bid or Purchase Order.
 - j) Failure to furnish any of the uploaded documents, certificates, shall result in rejection of the bid. Purchaser shall not hold any risk on account of postal delay. Similarly, if any of the certificates, documents, etc., furnished by the Bidder are found to be false / fabricated / bogus, the bidder will be disqualified and blacklisted and action will be initiated as deemed fit and the Bid Security will be forfeited.
 - k) The hard copies and the soft copies submitted should be properly indexed, page numbered and appropriately flagged / tagged; and must contain the list of contents with page numbers. Any deficiency in the documentation may result in the rejection of the Bid.
 - l) The bid shall contain no interlineations, erasures or overwriting except as necessary to correct errors made by the Bidder, in which case such corrections shall be signed by the person or persons signing the bid.
 - m) The Tender should be signed on all the pages by the Bidder or his authorised representative and should be affixed with the bidder's Seal
 - n) All outstation bids can also be sent through registered post/ speed post/ courier but to reach before 5:00 pm on 29/5/2018, at the office of the Field Director.

Essential Terms and Conditions:

- a) Scope of Bid: The Purchaser issues these Tender Documents for the supply of Goods and Related Services incidental thereto as specified in Schedule of Requirements.
- b) All the essential accessories, software etc. required for full functioning of equipment must be included in the basic offer.



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- c) The quoted price should include complete installation, commissioning, demonstration, training and onsite support.
- d) On-site training on operation of equipment and software should be inclusive in the quoted price.
- e) The price should include on-site comprehensive warranty for at least one year period from the date of installation with additional quote for warranty support up to a total of 5 years in all, and should be effective for parts, cost of visit etc. for all the components /systems of the supplied equipment.
- f) The quote should provide list of organizations (in India and abroad) to whom such equipment have been supplied in past. This should be a part of the Technical bid.
- g) Printed information brochure/technical literature giving full details and specifications of the equipment to be supplied must be provided with the offer as part of technical bid. In absence of this the bid is liable to be rejected.
- h) Future upgrades of firmware/software /drivers required to enhance equipment performance or make it suitable for use with alternate computing machines should be made available as when released.
- i) Bids received without requisite EMD will not be considered and rejected.
- j) Tender would be based on the two bid system, one on Pre-qualification /Technical and the second on Financial. The Pre-Qualification / Technical bids will be opened first and examined.
- k) In the event of any of the above dates being declared as a holiday/closed day for the purchaser, the bids will be sold/received/opened on the next working day at the appointed time.
- l) The Purchase will not be responsible for any postal delay, if occurred
- m) The Purchase has right to reject/cancel any tender or all tenders without assigning any reason.
- n) The period for Commissioning all the Six Corridors will be **6 months** from the date of issue of Work Order. Extension of the time period, if any, may be granted by the Purchaser depending upon the ground situation and exigencies.

Amendment of Bidding Documents:

- a) At any time prior to the deadline for submission of bids, the Purchaser may amend the Bidding Documents by issuing addendum.
- b) Any addendum issued shall be part of the Bidding Documents and shall be communicated in writing to all who have obtained the Bidding Documents directly from the Purchaser and uploaded on the web site www.assamtenders.gov.in.
- c) To give prospective Bidders reasonable time in which to take an addendum into account in preparing their bids, the Purchaser may, at its discretion, extend the deadline for the submission of bids.



Preparation of Bids

- a) The Bidder shall bear all costs associated with the preparation and submission of its bid, and the Purchaser shall not be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.
- b) The Bid, as well as all correspondence and documents relating to the bid exchanged by the Bidder and the Purchaser, shall be written in the English language. Supporting documents and printed literature that are part of the Bid may be in another language provided they are accompanied by an accurate translation of the relevant passages into English in which case, for purposes of interpretation of the Bid, such translation shall govern.

Documents Comprising the Bid:

The Bid shall comprise the following:

- a) Bid Submission Forms and the applicable Price Schedules, in accordance with the formatted provided in the tender. Samples, wherever, requested, shall be submitted along with the bid.
- b) EMD or Bid Security, in accordance with the category wise prescribed in the tender.
- c) Written confirmation authorizing the signatory of the Bid
- d) Documentary evidences establishing the Bidder's eligibility to bid.
- e) Documentary evidences that the Goods and Related Services conform to the Bidding Documents
- f) Documentary evidence establishing the Bidder's authority to perform the contract if its bid is accepted; and contract is awarded (OEM/ Distributor authorization)
- g) Documentary evidence of the Bidder's qualifications to perform the contract shall be to the Purchaser's satisfaction.
- h) Un priced Bill of Materials (BoM)
- i) Reports on financial standing of the Bidder such as profit and loss statements, balance sheets and auditor's report for the past three years, bankers certificates, Company's PAN and Income Tax details etc.
- j) Any other document required in the Bid.

Price Schedules:

- a) The Bidder shall submit the Price Schedules for Goods and Related Services, according to their offered product as appropriate, in the format provided in the tender document.
- b) Prices shall be quoted as specified in the tender. The dis-aggregation of price components is required solely for the purpose of facilitating the comparison of bids by the Purchaser.



This shall not in any way limit the Purchaser's right to contract on any of the terms offered.

- c) Prices quoted by the Bidder shall be fixed during the Bidder's performance of the Contract and not subject to variation on any account, unless otherwise specified in the bid. A Bid submitted with an adjustable price quotation shall be treated as non-responsive and shall be rejected
- d) The Bidder shall quote in Indian Rupees.

Bid Prices and Discounts:

- a) The Bidder shall quote any unconditional discounts and indicate the method for their application in the Bid
- b) The price of the Goods quoted (ex works, ex factory, ex warehouse, ex showroom, or off-the shelf, as applicable) will not be considered.
- c) Prices should include all customs duties and sales tax and other taxes already paid or payable on the components and raw material used in the manufacture or assembly of the Goods.
- d) Any taxes or government levies that are to be borne by the purchaser has to be clearly mentioned by the bidder in the price schedule or terms of supply.
- e) The purchaser will not be liable to pay any taxes or government levies unless that same are mentioned in the price schedule/ terms of supply in the bid. In the event of the any taxes or levies not mentioned in the bid the bidder will not claim nor the purchaser will entertain any such claim.

Period of Validity of Bids:

- a) Bids shall remain valid for the period **specified in the tender** after the bid submission deadline date prescribed by the Purchaser. A bid valid for a shorter period shall be rejected by the Purchaser as nonresponsive.
- b) Bids shall remain valid for the period **specified in tender** after the bid submission deadline date prescribed by the Purchaser. A bid valid for a shorter period shall be rejected by the Purchaser as nonresponsive.
- c) The purchaser prior to the expiration of the bid validity period, can request bidders to extend the period of validity of their bids. The request and the responses shall be made in writing. Bid Security/EMD shall also be extended for a corresponding period by the Bidder.

Submission, Sealing and Marking of Bids:



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IT IS TO BE NOTED THAT ALL THE DOCUMENTS NEED TO BE UPLOADED IN THE E TENDER PORTAL. PHYSICAL COPIES OF THE PRE-QUALIFICATION AND TECHNICAL BID ONLY TO BE SUBMITTED TO THE TENDERER.

- a) It is a Two Part Bid comprising:
Part I: Pre-Qualification Bid & Technical Bid and
Part II: Price Bid/Commercial Bid (**TO BE UPLOADED IN E TENDER PORTAL ONLY**)
- b) EMD forms a part of the Pre-Qualification Bid.
- c) Proof of payment of Tender document fee is a part of the Pre-Qualification Bid.
- d) Pre-qualification and Technical Bid should be enclosed in an envelope and should be submitted to the tenderer.
- e) Each Envelope should be clearly addressed to the Purchaser, with Tender reference, due date, Category quoted for and the Item numbers.

Deadline for Submission of Bids:

- a) Bids must be received by the Purchaser at the address and no later than the date and time specified in the tender.
- b) The Purchaser may, at its discretion, extend the deadline for the submission of bids by amending the Bidding Documents, in which case all rights and obligations of the Purchaser and Bidders previously subject to the deadline shall thereafter be subject to the deadline as extended.
- c) The Purchaser shall not consider any bid that arrives after the deadline for submission of bids. Any bid received by the Purchaser after the deadline for submission of bids shall be declared late, rejected, and returned unopened to the Bidder.
- d) **Late Bids:** Bids received after the deadline for submission shall be termed as late Bids; and shall not be considered for evaluation.

Bid Opening

The Purchaser shall conduct the bid opening at the address, date and time specified in the tender.

Evaluation and Comparison of Bids

- a) **Confidentiality:** Information relating to the examination, evaluation, comparison, and post qualification of bids, and recommendation of contract award, shall not be disclosed to bidders or any other persons not officially concerned with such process until the Contract is awarded.
- b) Any effort by a Bidder to influence the Purchaser in the examination, evaluation, comparison, and post qualification of the bids or contract award decisions may result in the rejection of its Bid.



- c) From the time of bid opening to the time of Contract Award, if any Bidder wishes to contact the Purchaser on any matter related to the bidding process, it should do so in writing.

Clarification of Bids

- a) To assist in the examination, evaluation, comparison and post qualification of the bids, the Purchaser may, at its discretion, ask any Bidder for a clarification of its Bid. Any clarification submitted by a Bidder in respect to its Bid and that is not in response to a request by the Purchaser shall not be considered.
- b) The Purchaser's request for clarification and the response shall be in writing. No change in the prices or substance of the Bid shall be sought, offered, or permitted, except to confirm the correction of arithmetic errors discovered by the Purchaser in the Evaluation of the bids.

Responsiveness of Bids

- a) The Purchaser's determination of a bid's responsiveness is based on the contents of the bid itself and presentation/ demonstration to be made by the Bidder.
- b) A substantially responsive Bid is one that conforms to all the terms, conditions, and specifications of the Bidding Documents without material deviation, reservation, or omission. A material deviation, reservation, or omission is one that:
- Affects in any substantial way the scope, quality, or performance of the Goods and Related Services
 - Limits in any substantial way, inconsistent with the Bidding Documents, the Purchaser's rights or the Bidder's obligations under the Contract; or
 - If rectified would unfairly affect the competitive position of other bidders presenting substantially responsive bids.
- c) If a bid is not substantially responsive to the Bidding Documents, it shall be rejected by the Purchaser and may not subsequently be made responsive by the Bidder by correction of the material deviation, reservation, or omission.

Non-conformities, Errors and Omissions

- a. Provided that a Bid is substantially responsive, the Purchaser at its discretion may waive any nonconformities or omissions in the Bid that do not constitute a material deviation.
- b. Provided that a bid is substantially responsive, the Purchaser may request that the Bidder submit the necessary information or documentation, within a reasonable period of time, to rectify nonmaterial nonconformities or omissions in the bid related to documentation requirements. Such omission shall not be related to any aspect of the price of the Bid. Failure of the Bidder to comply with the request may result in the rejection of its Bid.



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Preliminary Examination of Bids

The Purchaser shall examine the bids to confirm that all documents and technical documentation requested in tender have been provided, and to determine the completeness of each document submitted.

Examination of Terms and Conditions;

Comparison of Bids

The valid Technical and Financial Bids shall be scored on a weight-age ratio of **70:30**. The scoring system would be as follows:

Technical bid scoring system		Max score	Marks scored by the bidder
1.	Technical capability of the firm/ agency in terms of available professionals, trained man power, etc	20	
2.	OEM status, manufacturing capability of related equipments, technical expertise, etc	25	
3.	History of supply of similar products in the past last two years of a minimum order value of Rs. 1.00 crore or more	25	
		70	
	Financial Bid Score	30	
	Total	100	

The bidder with the highest score will be declared L1.

Purchaser's Right to Accept Any Bid, and to Reject Any or All Bids

The Purchaser reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids at any time prior to contract award, without thereby incurring any liability to Bidders.

Award of Contract

Award Criteria:

The Purchaser shall award the Contract to the Bidder whose offer has been determined to be the lowest evaluated bid and is substantially responsive to the Bidding Documents, provided further that the Bidder is determined to be qualified to perform the Contract satisfactorily.



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Purchaser's Right to Vary Quantities at Time of Award

At the time the Contract is awarded, the Purchaser reserves the right to increase or decrease the Quantity of Goods and Related Services originally tendered without any change in the unit prices or other terms and conditions of the bid and the Bidding Documents.

Performance Security/ Bank Guarantee

- a. Within 14 (Fourteen) days of the receipt of Supply order/Work Order from the Purchaser, the successful Bidder, if required, shall furnish the Performance Bank Guarantee in accordance with the amount/percentage of order value as per the Bank Guarantee format provided by the purchase, which in this case shall be 10% of the award value. EMD of the successful bidder will be released only after PBG is submitted.
- b. Failure of the successful Bidder to submit the above-mentioned Performance Bank Guarantee or sign the Contract shall constitute sufficient grounds for the annulment of the award and forfeiture of the Bid Security. In that event the Purchaser may award the Contract to the next lowest evaluated Bidder, whose offer is substantially responsive and is determined by the Purchaser to be qualified to perform the Contract satisfactorily.

Terms of Purchase: (Commercial Terms)

Bidders should unconditionally accept to all the contract terms of the Purchaser as mentioned in the Tender Document.

- a. Prices to be Quoted: In Indian Rupees.
- b. **Delivery:** At Locations on the NH 37 as indicated by the purchaser.
- c. Offers will be valid for 180 days from the date of opening of the tender.
- d. Prices quoted will be firm prices and no conditional / variable prices will be accepted.
- e. **Warranty:** All supplies shall be with a warrant of One year or higher, which must be explicitly mentioned in the Technical & Financial Bid.
- f. **COMMENCEMENT OF WARRANTY PERIOD :** The warranty period of an item shall commence from the date of receipt of the item in good working condition and satisfactory installation / commissioning demonstration at the Kaziranga The warranty period and validity of warranty shall be extended for the period of delay in satisfactory installation and delay in warranty services.
- g. **Payment:** Payment shall be made as per schedule given below:
 - i. 50% payment on delivery of agreed goods at site.
 - ii. 35% on commissioning and successful demonstration of the system onsite
 - iii. Balance 15% after 30 days of successful operation, trial and running by the Bidder.
 - iv. The payment shall be effected within a period of two weeks following satisfactory inspection of the goods delivered and submission of the Invoice.



GENERAL CONDITIONS OF CONTRACT

Definitions:

- a. **Purchaser** means the Field Director, Kaziranga Tiger Reserve, Forest Department, Govt. of Assam.
- b. **Bidder** means an entity purchasing this document and desires to participate in the bid for supply of the goods and services mentioned herein.
- c. **Bidding Documents/ Tender** refers to the collection of documents issued by the Purchaser to instruct and inform potential vendors of the processes for bidding, selection of the winning bid, and Contract formation, as well as the contractual conditions governing the relationship between the Purchaser and the Bidder.
- d. **Bidder/Vendor/Contractor/ Supplier** means the person(s) / Firm(s) whose bid to perform the Contract has been accepted by the Purchaser and is named as such in the Contract Agreement/ Work Order/ Purchase Order.
- e. **Contract** means the Contract Agreement/Order entered into the Purchaser and the vendor and /or Purchase/ Supply Order issued from the purchaser to the vendor, together with the Contract Documents referred to therein. The Contract Agreement and the Contract Documents shall constitute the Contract, and the term Contract shall in all such documents be construed accordingly.
- f. **Government** means the Government of Assam, unless otherwise stated.
- g. **OEM** means Original Equipment manufacturer company, that is incorporated in India, or abroad, who has management control over the manufacturing/production process, quality assurance, Procurement of Raw Materials/manufacturing process inputs, marketing & warranty services of the resultant products, of at least one manufacturing facility/factory where the manufacturing of equipment, Peripherals and related accessories is carried out; and which has been under continuous production of such devices or peripherals.
- h. **'Brand'** means the equipment trade name, trademark, logo etc protected by patent so as to establish proprietary rights analogous to those conveyed by letters patent or a patent, to the OEM of various equipment, Peripherals, and related accessories, and by which such equipment, Peripherals, and related accessories manufactured by the OEM are marketed and excludes the representation of a particular model name and/or number. The brand is displayed prominently on the body of the product in clear legible manner without any disfiguring or tampering.
- i. **Work / Purchase / Supply order** means the order placed by the PURCHASER on the successful bidder(s) for the execution of the works including therein all supply order documents.
- j. **Date of Award of Supply/Date of Purchase Order'** means the date on which the Purchase Order is awarded to Supplier, as evidenced in the Purchase Order document.



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- k. **Value of the Purchase Order/ Supply order** means the sum inclusive of all Taxes, Commissioning etc., and accepted for work allocated to the supplier, as mentioned in the supply order.
- l. **Documentary evidence** means any matter expressed or described upon any substance by means of letters, figures or marks intended to be used for the recording of that matter and produced before a court.
- m. **Rates/Prices** means prices of supply of equipment and services quoted by the bidder in the Price bid submitted by him and/or mentioned in the Purchase/ Supply Order.
- n. **Certified Copy** means photocopy of the original documents duly self certified – signed in ink by the authorized person of the bidder with the seal.

Governing Law:

The Contract shall be governed by and interpreted in accordance with the laws of India.

Change in Scope of Work:

The purchaser may at anytime give written order to the vendor for making variation, amendment and modification in the Supply order in respect of quantity, scope, extent, information, terms and conditions of the order

Liquidated Damages:

If the supplier fails to perform his obligations under the supply order, liquidated damages would be levied upon him as stated below:-

Liquidated damages for periods specified hereunder:

- a. Delay in furnishing the Performance Bank guarantee beyond the stipulated time period shall attract liquidated damages at the rate of ½ (half) percent of the total value of the supply order, per week, up to 2 (two) weeks of such delay period.
- b. Delay in supply and placement of equipment for final pre handover inspection by PURCHASER at Guwahati/ BOKAKHAT beyond the stipulated 10 (Ten) weeks from the issue of the supply order shall attract liquidated damages at the rate of ½ (half) percent of the total value of the supply order, per week, upto 10 (ten) weeks of such delay period.
- c. Delay in replacement of defective equipment within 4 weeks of its rejection at the Final inspection shall attract liquidated damages at rate of 1 (one) percent on the total value of the set of equipment, per week of delay up to 6 weeks of such delay period.
- d. Delay in delivery & handover of the quality passed equipment to the Purchaser and or its installation and commissioning within the agreed time from the date of issuance of purchase order or any other date(s) specified by the Purchaser shall attract liquidated damages at rate of 0.5% on the total value of the equipment not delivered and handed over, per day of delay up to 60 days of such delay period.



- e. Delay in replacement of the faulty equipment within 30 days, if in warranty period, as stipulated in the warranty clause stated in the supply order, shall attract liquidated damages at the rate of 1 (One) percent of the value of the set of equipment, per week of delay up to 4 (four) weeks of such delay period.
- f. Delay in providing for free-of-cost replacement of defective components /parts of the equipment during the warranty period or any other period of comprehensive warranty so specified in the supply order, from the date of supply and commissioning, as stipulated in the warranty clause stated in the supply order, shall attract 1 (one) percent of the value of the set of equipment, per week of delay upto 3 (three) weeks of such delay period.
- g. Delay in attending to and providing warranty services to the Purchaser, as specified in the supply order, shall attract 0.5% of the value of the set of equipment, per week of delay up to 3 (three) weeks of such delay period.

Liquidated damages for delays in excess of the period specified herein above:

- In the event that the delays/defaults/disruptions mentioned herein above, continue so as to exceed the period(s) so specified hereinabove, for levy of liquidated damages, the supplier in addition to levy of liquidated damages for the entire period(s) of such delays/defaults/disruptions, shall be liable for forfeiture of his Earnest Money Deposit (EMD), invocation of bank guarantee, and other damages, compensation, costs as deemed liable by the Purchaser. The Purchaser, in the event of levy of such damages, compensation, costs shall recover the same from the supplier by way of forfeiture of his Earnest Money Deposit (EMD), invocation of bank guarantee, and other claims of payment as the case may be; and in addition by direct claim of payment from the supplier subject to that such levies and recoveries do not exceed the total value of the supply order.

Force Majeure:

“Force Majeure” shall mean any event beyond the reasonable control of the Purchaser or of the Supplier, as the case may be, and which is unavoidable notwithstanding the reasonable care of the party affected and shall include, without limitation, the following:

- a. War, hostilities, or warlike operations (whether a state of war be declared or not), invasion, act of foreign enemy, and civil war;
- b. Rebellion, revolution, insurrection, mutiny, usurpation of civil or military government, conspiracy, riot, civil commotion, and terrorist acts;
- c. Confiscation, nationalization, mobilization, commandeering or requisition by or under the order of any government or de jure or de facto authority or ruler, or any other act or failure to act of any local state or national government authority.



- d. Strike, sabotage, lockout, embargo, import restriction, port congestion, lack of usual means of public transportation and communication, industrial dispute, shipwreck, shortage or restriction of power supply, epidemics, quarantine, and plague;
- e. Earthquake, landslide, volcanic activity, fire, flood or inundation, tidal wave, typhoon or cyclone, hurricane, storm, lightning, or other inclement weather condition, nuclear and pressure waves, or other natural or physical disaster;
- f. Failure, by the Supplier, to obtain the necessary export permit(s) from the governments of the Country(s) of Origin of the Information Technologies or other Goods, or Supplier's Equipment provided that the Supplier has made all reasonable efforts to obtain the required export permit(s), including the exercise of due diligence in determining the eligibility of the System and all of its components for receipt of the necessary export permits.

If either party is prevented, hindered, or delayed from or in performing any of its obligations under the Contract by an event of Force Majeure, then it shall notify the other in writing of the occurrence of such event and the circumstances of the event of Force Majeure within fourteen (14) days after the occurrence of such event. The party who has given such notice shall be excused from the performance or punctual performance of its obligations under the Contract for so long as the relevant event of Force Majeure continues and to the extent that such party's performance is prevented, hindered, or delayed. The party or parties affected by the event of Force Majeure shall use reasonable efforts to mitigate the effect of the event of Force Majeure upon its or their performance of the Contract and to fulfil its or their obligations under the Contract, but without prejudice to either party's right to terminate the Contract.

No delay or non performance by either party to this Contract caused by the occurrence of any event of Force Majeure shall:

- a. constitute a default or breach of the Contract;
- b. give rise to any claim for damages or additional cost or expense occasioned by the delay or non performance if, and to the extent that, such delay or non-performance is caused by the occurrence of an event of Force Majeure.

If the performance of the Contract is substantially prevented, hindered, or delayed for a single period of more than sixty (60) days or an aggregate period of more than one hundred and twenty (120) days on account of one or more events of Force Majeure during the time period covered by the Contract, the parties will attempt to develop a mutually satisfactory solution, failing which, either party may terminate the Contract by giving a notice to the other.

Force Majeure shall not include any events caused due to acts/omissions of such Party or result from a breach/contravention of any of the terms of the contract, Bid and/or the Tender. It shall also not include any default on the part of a Party due to its negligence or failure to implement the stipulated/proposed precautions, as were required to be taken under the contract.



The failure or occurrence of a delay in performance of any of the obligations of either party shall constitute a Force Majeure event only where such failure or delay could not have reasonably been foreseen or where despite the presence of adequate and stipulated safeguards the failure to perform obligations has occurred. In such an event, the affected party shall inform the other party in writing within five days of the occurrence of such event. The purchaser will make the payments due for Services rendered till the occurrence of Force Majeure. However, any failure or lapse on the part of the vendor in performing any obligation as is necessary and proper to negate the damage due to projected force majeure events or to mitigate the damage that may be caused due to the above mentioned events or the failure to provide adequate disaster management/recovery or any failure in setting up a contingency mechanism would not constitute force majeure, as set out above.

In case of a Force Majeure all Parties will endeavour to agree on an alternate mode of performance in order to ensure the continuity of service and implementation of the obligations of a party under the contract and to minimize any adverse consequences of Force Majeure.

The selected vendor agency shall advise the purchaser in writing, the beginning and the end of the above causes of delay, within seven days of the occurrence and cessation of the force majeure conditions. Unless otherwise directed by the purchaser in writing the vendor shall continue to perform its obligations under the Contract as far as is reasonably practical and shall seek all prevented by the force majeure event. In the event of a delay lasting for more than one month, if arising out of clauses of force majeure, purchaser reserves the right to cancel the contract without any obligation to compensate the vendor in any manner for what so ever reason, subject to the provision of clause mentioned. Purchaser may terminate this Contract, by giving a written notice of minimum 30 days to the vendor being unable to perform a material portion of the services for a period of more than 60 days. However, the vendor shall be entitled to receive payments for all services rendered by it under this Assignment.

Termination of contract:

The Purchaser may terminate the contract under the following circumstances:

- a. Where it comes to Purchaser's attention that the vendor or his team is in a position of actual conflict of interest with the interests of the Purchaser in relation to any of terms of the Bid, or this Contract.
- b. Where the Vendor's ability to survive as an independent corporate entity is threatened or is lost owing to any reason whatsoever including inter alia the filing of any bankruptcy proceedings against the vendor, any failure by the vendor to pay any of its dues to its creditors, the institution of any winding up proceedings against the vendor or the happening of any such events that are adverse to the commercial viability of the Vendor. In the event of the happening of any events of the above nature, the purchaser shall reserve the right to take



any steps as are necessary to ensure the effective transition of the project to a successor and to ensure business continuity.

- c. Termination for Default: The Purchaser may at any time terminate the Contract by giving 30 days written notice to the vendor without compensation in the Event of Default on the part of the Vendor which may include failure on the part of the vendor in respect any of its commitments with regard to any part of its obligations under its Bid, the Tender or under this Contract.
- d. Termination for Convenience: The Purchaser may by prior written notice sent to the vendor at least 3 months in advance terminate the Contract in whole or in part at any time for its convenience. The notice of termination shall specify that termination is for the Purchaser's convenience, the extent to which performance of work under the Contract is terminated and the date upon which such termination becomes effective.

The vendor may terminate the contract under the following circumstances:

- a. Where the payment of the vendor is overdue within stipulated time period. Overdue shall start from the last date on which he is entitled to receive such payments.
- b. In the event of non provision of dependencies by the Purchaser beyond 6 months from the date the request for such dependencies were raised by the vendor.

Consequences of termination of contract:

If the contract is terminated by the Purchaser, the Purchaser can exercise one or more of the following at its discretion:

- a. Retain such amounts from the payment due and payable by the Purchaser to the vendor as may be required to offset any losses caused to the Purchaser
- b. Invoke the Performance Bank Guarantee, forfeit the Earnest Money Deposit and recover such other costs/losses and other amounts from the vendor, which may have resulted from such default and pursue such other rights and/or remedies that may be available to the Purchaser under law.
- c. Blacklist the vendor and cancel the empanelment. However vendor shall not be blacklisted, unless and until such termination is on account of gross negligence or intentional breach of the terms of the Agreement by the vendor.
- d. Claim compensation from the vendor for any such loss, damages or other costs, incurred by the Purchaser.

Settlement of Disputes:

- a. Arbitration: In the case of a dispute or difference arising between the parties relating to any matter arising out of or connected with this Contract, such dispute or difference shall be referred to the award of two Arbitrators, one Arbitrator to be nominated by each party to the contract or in case of the said Arbitrators not agreeing, then to the award of an Umpire to be appointed by the Arbitrators in writing before proceeding with the



reference, and in case the Arbitrators cannot agree to the Umpire, he may be nominated by the Secretary, Indian Council of Arbitration, New Delhi.

- b. The award of the Arbitrators, and in the event of their not agreeing, of the Umpire appointed by them or by the Secretary, Indian Council of Arbitration, New Delhi, shall be final and binding on the parties. The Arbitration and Conciliation Act 1996, the rules there under and any statutory modification or re-enactments thereof, shall apply to the arbitration proceedings. The venue of arbitration shall be Guwahati, Assam. The language of arbitration shall be in English. Each party shall bear its own cost of Arbitration.
- c. Notwithstanding any reference to the arbitration in this clause –
 - a. the parties shall continue to perform their respective obligations under the Contract unless they otherwise agree;
 - b. the Purchaser shall pay the vendor any amount due to the vendor.

Confidentiality:

Neither the vendor nor the Purchaser will disclose to any third party without the prior written consent of the other party any confidential information which is received from the other party for the purposes of providing or receiving Services. Each party will take measures to protect the confidential information of the other party that, in the aggregate are no less protective than those measures it uses to protect the confidentiality of its own comparable confidential information, and in any event, not less than a reasonable degree of protection. Both parties agree that any confidential information received from the other party shall only be used for the purposes of providing or receiving Services under these Conditions of Empanelment or any other Conditions of Empanelment between the parties. These restrictions will not apply to any information which:

- a. Is or becomes generally available to the public other than as a result of a breach of an obligation under this Clause; or
- b. Is acquired from a third party who owes no obligation of confidentiality in respect of the information; or
- c. Is or has been independently developed or was known to it prior to receipt.
- d. Notwithstanding Clause mentioned above, either party will be entitled to disclose confidential information of the other (1) to its respective insurers or legal advisors on a need-to-know basis and shall ensure that such insurers and legal advisors maintain confidentiality of such information, or (2) to a third party to the extent that this is required by any or where there is a legal right, duty or requirement to disclose where reasonably practicable not less than 2 business days notice in writing is first given to the other party.
- e. Without prejudice to the foregoing provision of this clause above selected vendor may cite the performance of the services to clients and projective clients as an indication of its experience.



Purchaser's Property and Third Party Rights:

- a. The vendor on delivery of the product shall ensure that it does not and will not infringe any Intellectual property Rights held by any third party and has all necessary rights or has transferred the rights in writing and has the consents to make assignments, licenses and other transfers of all Intellectual Property rights . The vendor shall secure all necessary written agreements, consents and transfers of rights from Its employees and other persons or entities, whose services are used for development of the product.
- b. The Vendor shall indemnify Purchaser against all third party claims arising out of a court order or arbitration award for infringement of patent, trademark/ copy right arising from the use of the supplied services or any part there of.

Acceptance of Deliverables:

The equipment delivered by the vendor which is subject to the mutually agreed acceptance criteria shall be inspected and accepted by the Purchaser within a period of thirty days from the date of delivery. The review comments shall be provided within a period of thirty working days from the date of delivery. All Deliverables will be deemed to be accepted by the Purchaser on successful closure of all review comments. If no review comments have been provided, the deliverable will be deemed to be accepted by the Purchaser after 60 days from the date of delivery of the deliverable.

Jurisdiction:

All legal proceedings, if necessary arising to be instituted by any of the parties shall have to be lodged in courts situated in Guwahati and not elsewhere.

SPECIAL CONDITIONS OF THE CONTRACT

- a. The Supplier/ Bidder agrees to supply spare parts required for the operation and maintenance of the System, as stated below, for *a period of 5 (five) years including the period of warranty* Moreover, the price of such spare parts shall be those specified in the **spare parts price schedule submitted by the Supplier as part of its bid**. These prices shall include the purchase price for such spare parts and other costs and expenses (including the Supplier's fees) relating to the supply of spare parts. However, such costs shall not be part of the evaluation.
- b. The Supplier/bidder agrees to provide adequate training/ demonstration/ capacity building of the staff. If need be the Bidder may propose ToT from among the selected staff of the Park or part of the cost quoted, which must be delivered during the warranty period. Thereafter, if further trainings are required, the bidder may quote a price, if he thinks fit. However, such trainings shall be at the discretion of the Park authorities, nd subject to availability of funds. However, such costs shall not be part of evaluation.



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- c. Complete Systems Integration, if required by any product/ solution quoted by the Bidder/Supplier, must be part of the cost, and must include customization in software/ systems/ BIOS / or any hardware level customization for power supplies, connectors, cables, ports, panels, solar panels, batteries, poles, masts etc as per the requirements of the Park Authorities.
- d. All the licenses for wavelength/ frequency, Software, or any other product/ service procured exclusively under this Tender shall be in the name of the “Director, Kaziranga National Park, Bokakhat”. Any product for which the Supplier/ Bidder wants to retain exclusive IPR, and grant the Park Authorities only access for use, must be exclusively mentioned, and the cost of usage of the license must be quoted as a part of the Techno-Commercial Bid. It must find mention in the Un-priced and Priced Bill of Materials.
- e. The Bidders must submit the Un-priced Bill of Material (BoM) giving Category, Item, Make/Model/ Part No. And Specification In the Technical Bid; and the Priced Bill of Materials (BoM) in the Commercial Bid. A separate Un-priced BoM must also be included in Technical Bid for spares and consumables, and Priced BoM of spares/ consumables be included in the Commercial Bid. The BoM must clearly mention at the top “SPARES & CONSUMABLES”. In case the spares and consumables are available from open market, the same may be mentioned.
- f. In case any format is not available in the Tender Document, the Bidder may submit the same in Tabular format/ or otherwise for easy understanding.
- g. The Supplier may be required to pay royalties to the Purchaser when it licenses third parties to use the Custom Software developed exclusively for the Purchaser. This is intended to protect the Purchaser’s competitive edge and to allow the Purchaser to share in future profits made by the Supplier through exploitation of the Custom Software. Royalty arrangements will have to be backed up by obligations to report to the Purchaser regarding future sales of products to which royalties apply and audit rights of that the Purchaser can check that the Supplier’s reports are accurate, if necessary, by making royalty arrangements between the two.
- h. Any “Brand Name” developed during or after execution of the works shall be the property of the Purchaser, and the Supplier would require explicit permission, and may have to pay royalty charges to the Foundation in order to use the Brand so developed.
- i. ***No software escrow contract is required for the execution of the Contract.***
- j. The Software license, if so required, shall permit the Software to be used or copied for use or transferred to a replacement computer anywhere within the jurisdiction of the Purchaser/ Govt. provided the replacement computer falls within approximately the same class of machine and maintains approximately the same number of users, if a multi-user machine. In case extra licenses per user are to be paid by the Purchaser, the same must be mentioned in the Un-priced and Priced Bill of Materials (BoM) for the “SPARES & CONSUMABLES”. In every such case, the original number of permitted users must be mentioned in the main BoM. Depending upon the nature of the category/ product quoted



by the Bidder/ supplier, the following information must be accompanied in the Technical Bid:

- a. Project Organization and Management Plan;
 - b. Delivery and Installation Plan
 - c. Training Plan
 - d. Pre-commissioning and Operational Acceptance Testing Plan (if any)
 - e. Warranty Service Plan
 - f. Task, Time, and Resource Schedules
- k. The Supplier may have to “Brand”/ emboss/ print/ screen print / or display the name of the Purchaser, to be so specified by the Purchaser, on any of the equipment purchased by the Purchaser at no extra cost. This may be applicable to Site Installations, Wearable Products by the Field Staff, Custom Software etc. The branding may include using Logo/ name/ authority's name or any combination thereof, with one or multiple, displays at Site or on the product. Such a mark/ sign must be clearly visible from a distance and must be of good quality.
- l. The Bidder must also submit all drawings/ charts/ Standard Operating Procedures (SOP) for the products and installations in the Technical Bid. The Bidder must be prepared to alter / customize such documents based on the actual requirements of the Purchaser and the field conditions without any extra cost.
- m. The specifications provided in the Tender Document are indicative; and if the Bidder has better product/ specification to offer almost within the same cost, the Bidder may so mention that the product/ solution offered is better than that asked for. However, in case, such a solution becomes beyond the purchasing power of the Purchaser, the same may not be purchased.
- n. The Bidder may also provide alternate products/ solutions. However, in all such cases, the Bidder must clearly mention that its an alternate solution and justify as to how its better and or more cost effective than that asked for in the Tender. The Purchaser, if finds the technology suitable, may evaluate it further.
- o. All such alternate and or higher specification products also must be clearly a part of the Price Bid, and the prices along with spares and consumables must be mentioned in the Price Bid. The bidder must also indicate the same to be “ALTERNATE” or “HIGHER SPECIFICATION” solution both in the Technical Bid as well as Commercial Bid.



TECHNICAL SCOPE

Project Objective:

As stated in the beginning of this Document, a Pilot Project of the same nature has been commissioned at the Miloni / Kanchanjuri Animal Corridor. This project intends to implement holistic and integrated surveillance, and to have warning system to the plying traffic, while the Animals are crossing the National Highway NH37 along-with traffic control system which includes establishment and commissioning of Command and Control Centre (Video surveillance room with control over traffic of the SIX identified stretch of Highway) at Kaziranga National Park, with a mix of technologies as an AUTOMATED ANIMAL SENSOR SYSTEM. The system shall help:

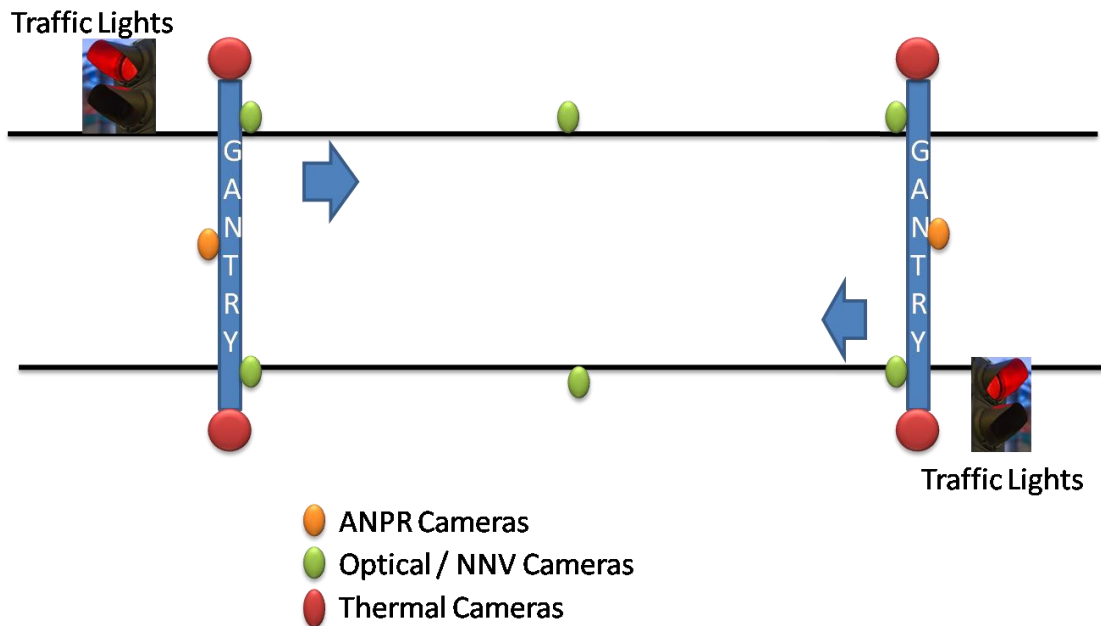
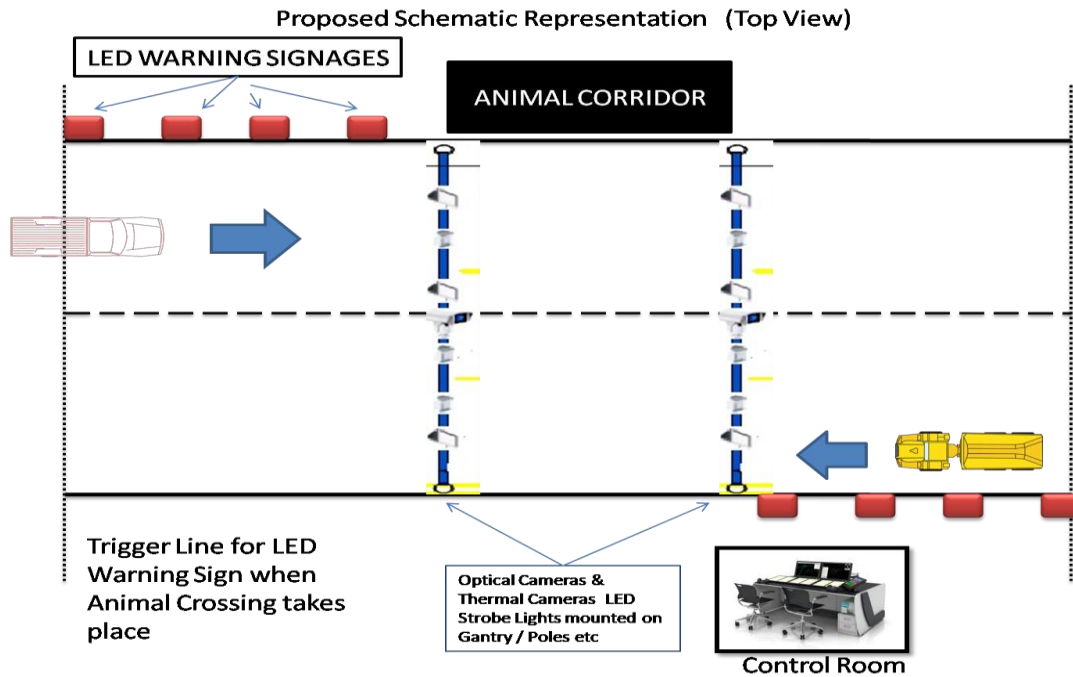
- a. To allow safe passage to wildlife to cross the highway without getting hit by vehicles Support Forest Administration to maintain & bring down the accident at minimum and zero level.
- b. To help in investigation of incident of hit and run case of wildlife
- c. Help in preventing, detecting and dealing with criminal activities with minimum turnaround time
- d. To provide alerts via SMS etc to the concerned.
- e. To monitor suspicious people, vehicles, objects etc. with respect to protecting & preserving rights of animals.
- f. To continuously monitor the location for keeping an eye on regular activities & for emergency support.

The proposed system may deploy VMS and Video analytics. This system should provide Alerts/ feedback to the park authorities/ Forest Department about movements etc. of wildlife on the corridor. Better Management of Security breaches based on alerts received from system Improved turnaround time in responding to any investigation case, faster access to evidence in case of security breach, law violation in the prescribed areas.

Supply, installation and commissioning of various articles as mentioned in the table below for SIX Animal Corridors located on the NH37. The tentative list of equipment for each site is given below for reference:

1. Thermal Cameras.
2. Optical Cameras with Near night vision
3. ANPR (Automatic Number Plate Recognizing System) – consisting a set of 2 Cameras with Radar for speed capture and strobe light for night time capture.
4. Solar Power 5 KVA with at least 2 hr back up and a 5 KVA silent generator for power backup.
5. Traffic Lights to warn the Vehicle movement.
6. Speed Sensors for Warning Vehicles of the Speed at which they are moving.
7. LED Display(s) to intimate the Vehicle Traffic while approaching the Animal Corridors.

8. Construction of Gantry and Control Room to host the Terminal Server / Display / Storage etc.,
9. Requisite poles, cabling inclusive of Optic Fiber for Positioning the Cameras.





Snapshot of Issues of Road Kill on NH37 Corridors of Kaziranga National Park

- a. Kaziranga National Park, situated on the floodplains of the Brahmaputra, consists primarily of grassland ecology interspersed with woodlands and water bodies.
- b. Kaziranga has a unique ecology sustained by the annual floods of the Brahmaputra.
- c. Rise of floodwater 3-4 m above the ground level is common.
- d. Animals migrate to the hills of Karbi Anglong on the South for safety and food.
- e. Animals move to and fro during other seasons also.
- f. Animals generally take some specific routes of migration.
- g. There are 6(six) animal corridors identified.
- h. The Hills of Karbi Anglong and the grass land of KNP cannot be separated for sustenance of the national park.
- i. What is paramount is a contiguous forest connecting the grassland and the foothills of Karbi Anglong.
- j. Protection on the Karbi Anglong side is also very important and effective conservation measures need to be taken in the entire watershed areas next to Kaziranga National Park.
- k. Animals meet with accidents while crossing the National Highway during migration.
 - l. About 25 animals get killed in road accidents on an average annually.
 - m. The on-corridor and off-corridor road kill has a ratio of about 55:45.
 - n. The type of animal killed is STREAKING animals like dears, wild boars.
 - o. Traffic management can bring down the incidence of road kill as can be seen from the result of 2014-15 which shows a drastic reduction to just 4 road kills due to stringent traffic management interventions.
 - p. Traffic management is difficult for the entire stretch of 56 KM of the NH-37 passing along the Kaziranga National Park especially convoys and barricades.
 - q. The traffic management plan should include NO STOPPAGE, NO CHAOS, NO NOISE, NO POLLUTION, NO ENCROACHMENT TO COMMERCIAL ACTIVITIES while controlling speed.
 - r. Proper corridor management plan is of paramount importance.
 - s. Also important is encouraging animals to take the specified corridors only for movement for safety and for precluding man-animal conflict.
 - t. Traffic management on the animal corridor
 - Controlling speed to below 40 KMPH
 - No overtaking
 - No horn
 - No stoppage
 - Speed Breakers
 - Proper Road signs with retro-reflective paint



- Installation of unmanned speed cameras with system to measure not only the instantaneous speed but also the average speed of vehicles in the corridor.
 - u. Photographs (day and night) will be captured for penalizing erring vehicles.
 - v. Animal sensors Systems will be placed on the animal corridors..
 - w. The signals from the animal sensors will be integrated with the speed control system.
 - x. Animal sensors will trigger flashing signs & beacons to warn drivers of animals approaching or on the road.



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BILL OF MATERIALS FOR EACH CORRIDOR

S. No	ITEM	Quantity
1	Thermal Camera	4
2	Optical Cameras	6
3	ANPR System (one on each gantry)	2
4	VMS + Analytics Software	1
5	Server + NAS	1
6	Display LED 55' for Control Room	1
7	Network Switches + Controller	As required
8	Solar Power with 2 Hr back up	1
9	Diesel Generator 5 KVA	1
10	Control Centre Civil Work & Construction of Gantry	1
11	Electricals inclusive of Lights, Earth, Cables Switches, Lightning Arrestor etc.,	1
12	Speed Sensor	2
13	LED Signage 8' X 4' (on either side of the Gantry)	2 Nos
14	LED Signage for Vehicle Speed Violation	2 Nos
15	Retro-Reflex Signage placed at Eye Level 8'X4'	2 Nos
16	Retro-Reflex Signage placed at Eye Level 6'X2'	2 Nos
17	Retro-Reflex Signage placed at Eye Level 6'X2' between the Gantry inside the Corridor Area	4 Nos
18	Retro-Reflex Signage placed on the Gantry (40' X 2')	2 Nos
19	Traffic Light (on each direction in front of Gantry) (AMBER & RED)	2 Sets
20	Cabling – CAT5 & Optic Fiber with protection	1
21	Poles (4 nos) + Fixtures	As required
22	Other Items, if any.	



Minimum Technical Specifications of the Equipment

Please note that following specifications are only tentative and minimum. However, Bidders can quote for improvised versions and latest equipment keeping in the view the objective of the project.

Thermal Module	
Image Sensor	Vanadium Oxide Un-cooled Focal Plane Arrays
Max. Resolution	384 × 288
Pixel Interval	17 μm
Response Waveband	8 μm to 14 μm
NETD	less than 40 mk (0.04°C), F#=1.0
Lens (Focal Length)	50 mm
MRAD	0.34 mrad
Field of View	7.47° × 5.61° (H × V)
Min. Focusing Distance	50 m
Aperture	F 1.0
Optical Module	
Max. Image Resolution	1920 × 1080
Image Sensor	1/2.8" Progressive Scan CMOS
Min. Illumination	Color: 0.001 Lux @(F1.2, AGC ON), B/W: 0.0001 Lux @(F1.2, AGC ON)
Shutter Speed	1s to 1/100,000s
Lens (Focal Length)	25 mm
Field of View	12.7° × 7.2°(H × V)
WDR	120 dB
Day & Night	IR cut filter with auto switch
Image Function	
Bi-spectrum Image Fusion	Fusion view of thermal view and overlaid details of the optical channel
Picture in Picture	Combines details of thermal and optical image PIP, overlay thermal image on optical image
Smart Function	
VCA (Video Content Analysis)	4 VCA rule types (Line Crossing, Intrusion, Region Entrance, and Region Exiting), up to 8 VCA rules
Temperature Measurement	3 temperature measurement rule types, 21 rules (10 points, 10 regions, and 1 line).
Temperature Range	-20°C to +150°C (-4°F to +302°F)
Temperature Accuracy	±8°C (±14.4°F)



Fire detection	Dynamic fire point detection, up to 10 fire points detectable.
Infrared	
IR Distance	Up to 100 m
IR Intensity and Angle	Automatically adjusted
Network	
Main Stream	Visible Light: 50Hz: 25fps (1920 × 1080), 25fps (1280 × 960), 25fps (1280 × 720), Visible Light: 60Hz: 30fps (1920 × 1080), 30fps (1280 × 960), 30fps (1280 × 720), Thermal: 50fps (384 × 288)
Sub Stream	Visible Light: 50Hz: 25fps (704 × 576), 25fps (352 × 288), 25fps (176 × 144), Visible Light: 60Hz: 30fps (704 × 480), 30fps (352 × 240), 30fps (176 × 120), Thermal: 50fps (384 × 288)
Video Compression	H.265/H.264/MJPEG, H.265+/H.264+ encoding with Baseline/Main/High Profile
Audio Compression	G.711u/G.711a/G.722.1/MP2L2/G.726/PCM
Protocols	IPv4/IPv6, HTTP, HTTPS, 802.1x, Qos, FTP, SMTP, UPnP, SNMP, DNS, DDNS, NTP, RTSP, RTP, TCP, UDP, IGMP, ICMP, DHCP, PPPoE
Simultaneous Live View	Up to 20
User/Host level	Up to 32 users, 3 levels: Administrator, Operator, User
Security Measures	User authentication (ID and PW), MAC address binding, HTTPS encryption, IEEE 802.1x, access control, IP address filtering
Integration	
Alarm Input	2-ch inputs (0-5V DC)
Alarm Output	2-ch relay outputs, alarm response actions configurable
Alarm Action	SD recording/Relay output/Smart capture/FTP upload/Email linkage
Audio Input	1 3.5mm Mic in/Line in interface. Line input: 2-2.4V[p-p], output impedance: 1KΩ±10%
Audio Output	Linear Level; Impedance: 600Ω
Reset	1 Reset Button
Ethernet	1 RJ45 10M/100M Self-adaptive Ethernet interface
SD Memory Card	Built-in Micro SD card slot, support Micro SD/SDHC/SDXC card (up to 128G), support manual/alarm recording
Analog Video Output	1.0V [p-p]/75Ω, PAL/NTSC/BNC



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Application Programming	Open-ended API, support ISAPI SDK and third-party management platform
Client	iVMS-4200
Web Browser	IE7+, Chrome18+, Firefox5.0+, Safari5.02+
Smart functions Distance Range	
Temperature Measurement	Object:2×2 m: 1170mtrs , Object:1×1 m: 590mtrs
Fire Detection	Object:2×2 m: 2940mtrs , Object:1×1 m: 1470mtrs
Wide Range Distance Coverage	
Detection Range	1.4×4.0m: 4510mtrs , 1.8×0.5m: 1471mtrs
Recognition Range	1.4×4.0m: 1127mtrs , 1.8×0.5m: 368mtrs
Identification Range	1.4×4.0m: 564mtrs , 1.8×0.5m: 184mtrs
General	
Menu language	English
Power	24 VAC± 25%, 12 VDC± 20%, two-core terminal block
	PoE (802.3at, class 4)
Power Consumption	24 VAC± 25%: 0.92 A, 12 VDC ± 20%: 1.9 A, max. 10W (22W with De-icing Heater On),
	PoE (802.3at, class 4): 42.5 V to 57 V, 0.4 A to 0.5 A
Working Temperature/Humidity	-40 °C to 60 °C (-40 °F to 140 °F), 90% or less
Protection Level	IP66 Standards 6000V Lightning protection, surge protection, voltage transient protection
Dimensions	535 mm × 171 mm × 400 mm (21.06 " × 6.73 " × 15.75 ")
Weight	Approx. 6 Kg (13.23 lb)

Optical Cameras:

Camera	
Image Sensor	1/1.8"progressive scan CMOS
Effective Pixels	2560(H) × 1440(V)
Scanning System	Progressive
Electronic Shutter Speed	Auto/Manual, 1 s to 1/100,000s
Min. Illumination	0.01Lux/F1.4(Color),0Lux/F1.4(IR on)
S/N Ratio	More than 50dB
Video Output	1 port
Features	



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Max. IR LEDs Length		50m ,Invisible IR
Day/Night		Auto(ICR) / Color / B/W
Backlight Compensation		BLC / HLC /WDR(140dB)
White Balance		Auto/Sunny/Night/Outdoor/Customized
Gain Control		Auto/Manual
Noise Reduction		3D
Privacy Masking		Up to 4 areas
Lens		
Focal Length		2.8mm~12mm
Max Aperture		F1.4
Focus Control		Motorized
Angle of View		2.8 to 12 mm, horizontal FOV 103.3° to 38.6°, vertical FOV 54.2° to 21.9°, diagonal FOV 124.2° to 44.3°
Lens Type		Motorized/ Auto Iris(DC)
Mount Type		Board-in Type
Video		
Compression		Main stream: H.265/H.264 Sub stream/third stream/fourth stream/fifth stream/custom stream: H.265/H.264/MJPEG
Resolution		2560(H) × 1440(V)
Image Enhancement		BLC, HLC, 3D DNR, Defog, EIS
Frame Rate	Main Stream	50Hz: 25fps (2560 × 1440, 1920 × 1080, 1280 × 720) 60Hz: 30fps (2560 × 1440, 1920 × 1080, 1280 × 720)
Sub Stream		50Hz: 25fps (704 × 576, 640 × 480) 60Hz: 30fps (704 × 480, 640 × 480)
Third Stream		50Hz: 25fps (1920 × 1080, 1280 × 720, 704 × 576, 640 × 480) 60Hz: 30fps (1920 × 1080, 1280 × 720, 704 × 480, 640 × 480)
Fourth Stream		50Hz: 25fps (1920 × 1080, 1280 × 720, 704 × 576, 640 × 480) 60Hz: 30fps (1920 × 1080, 1280 × 720, 704 × 480, 640 × 480)
Fifth Stream		50Hz: 25fps (704 × 576, 640 × 480) 60Hz: 30fps (704 × 480, 640 × 480)
Custom Stream		50Hz: 25fps (1920 × 1080, 1280 × 720, 704 × 576, 640 × 480) 60Hz: 30fps (1920 × 1080, 1280 × 720, 704 × 480, 640 × 480) Up to five custom streams are supported
Bit Rate		H.264 and H.265 encoding
Corridor Mode		Support
Audio /Alarm		
Compression		G.711a/ G.711u/AAC



Alarm Interface	2 inputs, 2 outputs (up to 24 VDC 1A or 110 VAC 500 mA)
General	
Smart detection	Motion detection, video tampering alarm, network disconnected, IP address conflict, illegal login, HDD full, HDD error
Security Measures	Password protection, HTTPS encryption, IEEE 802.1x port-based network access control, IP address filter, basic and digest authentication for HTTP/HTTPS, WSSE and digest authentication for ONVIF
Power Supply	DC12V, PoE (802.3at)
Power Consumption	12 VDC, 1.0 A, max.12 W; PoE (802.3at, 42.5 V to 57 V), 0.3 A to 0.2 A
Working Environment	-40°C~+60°C, Less than 95% RH
Ingress Protection	IP67, IK10

ANPR Cameras:

Camera	
Image Sensor	1/1.8" Progressive Scan CCD
Shutter Speed	1 s - 1/100,000 s
Day & Night	IR Cut Filter
Digital Noise Reduction	3D DNR
Detection Sensitivity	99%
LPR Accuracy	> 97%
Supplement Light	Strobe light/Xenon flash light
OCR	On-board ANPR engine
Capture Speed Range	5 to 250 km/h
Web Server	Support
Compression Standard	
Video Compression	H.265/H.264/MJPEG
Picture Format	JPEG
H.264 Type	Baseline Profile/Main Profile/High Profile
Video Bit Rate	32 Kbps –16 Mbps
Streaming	RTSP
Smart Features	
Function	Support license plate recognition, Radar Speed Measurement, Wrong-way Detection
Light Supplement Control	Supplement light synchronous with White or IR LED strobe-flashlight
Image	
Max. Resolution	2048× 1536
Main Stream	50Hz: 25fps (1920 ×1080, 1280 × 960,1280 × 720)
Sub Stream	50Hz: 25fps (352 × 288)



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Image Setting	Rotate mode, saturation, brightness, contrast, sharpness adjustable by client software or web browser
Supplement Light	3 LED supplement lights (strobe), 850 nm, angle: 40°, light supplement for license plate up to 30 m far away
SVC	Support
Network	
Network Storage	Support Micro SD/SDHC/SDXC card (128G),local storage, ANR
Protocols	TCP/IP,HTTP,HTTPS,FTP,DNS,DDNS,RTP,RTSP,RTCP, NTP,UPnP,IPv6, UDP,
API	ONVIF(Version 2.1),PSIA,ISAPI
Interface	
Communication Interface	2 RJ45 10M/100M/1000MEthernet port,5RS-485 interface, 1 RS-232 interface
Video Output	1Vp-p composite output (75 Ω/BNC)
Digital I/O	4-ch inputs, 6-ch outputs
Operating System	Linux
On-board storage	Built-in Micro SD/SDHC/SDXC slot, up to 128 GB
General	
Operating Conditions	-30 °C +70 °C(-4°F to +140°F), 5%~95%@40°C(104°F), non-condensing
Certifications	CE
Power Supply	100VAC~240VAC; Frequency: 48Hz~52Hz
Power Consumption and Current	<30W
Protection Level	IP54
Dimensions	180mm(W)×152.7mm(H)×636mm(D)(7.09×6.01×25.04 inch)
Weight	6.5±0.5kg(14.31lb±1.1lb)
Speed Radar	
	Design and Implementation base on Doppler principle
	Real-time vehicle speed detection
	Provide high-precision trigger signal for capture camera
	Traffic Camera Linkage
	Dual-direction Triggering
Supplement Light	
Power Supply	9.6V DC-16V DC
Central Frequency	24.15GHz
Center frequency deviation	≤ ±45 MHz
Antenna Beam Width	4.5°×6°
Working Temperature Range	-40°C~+70°C
Working Humidity Range	5%RH~95%RH
Measurement Accuracy	(-4~0)km/h
Trigger Consistency	≤1m
Velocity Range	(10~250)km/h



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Direction Information	Support
Double Trigger	Support vehicle front & rear triggering
Vehicle Length Information	Support
Traffic Information	Support
Remote Update	Support
Communication Interface	1ch RS485(RS232 optional)duplex
Dimension	210mm×172mm×50mm

5 KVA SOLAR System

S NO	MODULE	PARAMETER
	PV MODULE:	
1	SOLAR PV MODULE TYPE	Polycrystalline type
2	MANUFACTURER	ALPEX SOLAR
3	SIZE (Length x Width x Thickness)	1966 x 982 x 35
4	STANDARDS	IEC 61215/ EN 61730
5	Power (Pm) in Watt (nominal)	315 Watt
6	Open Circuit Voltage (Voc)	45.10 V
7	Short Circuit Current (Isc)	9.10 Amp
8	Maximum Power Voltage (Vmp)	36.42 V
9	Maximum Power Current (Imp)	8.65 Amp
10	No of Cells	72
	INVERTER/PCU	
1	DC input Voltage	96 V
2	Rated AC Power	5 kVA
3	Nominal AC Voltage	230 V
4	Nominal Frequency	1 Ph 50 Hz
5	Efficiency	90%
6	Charge Controller Type	MPPT
7	Operating Temperature Range	0-50 degree
8	Total Harmonic Distortion	THD less than 4%
9	DG Compatibility	Available
10	Ingress Protection	IP20
11	Protection Feature	Under and over Voltage & Surge protection
	BATTERY BANK(96V/300Ah)	
1	Type	Lead Acid Battery
2	Voltage	12 V
3	Battery Capacity	150 Ah
	MODULE MOUNTING STRUCTURE	
	Module mounting structure material	GI



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5 KVA Silent Generator near Specifications

Parameter		Specs
No of Cylinders		1
Rated Speed RPM		3000
Rated Current(AMP) Capacity @ 0.8PF	1 Phase	21.74
	3 Phase	NA
Cooling System (Air Cooled/Water Cooled)		Air
Door Type		SD
Side lifting DG set dimensions with top hood, if any (mm)	Length	1080
	Width	700
	Height	765
Fuel Tank Capacity		15
Approximate Dry Weight of DG set (Kg)		225
Centre lifting DG set dimensions with top hood, if any (mm)	Length	1050
	Width	700
	Height	745

SL = Side Lifting. CL = Center Lifting. SD = Single Door. DD = Double Door

SPEED SENSOR

Specifications	
S.No.	Functional Requirements
1	The system shall perform during day and night as well as in adverse weather conditions
2	It shall have built in diagnostic functions to quickly asses the validity of speed calibration
3	It shall adjust display intensity automatically to suit the ambient light conditions
4	It shall be modular in construction for ease of maintenance.
5	It shall display numeric speed
6	Measurement
	a. speed Range: 1 k.m/h to 99 K.m/h
	b. Maximum measuring error: up to 3k.m
	c Monitored section length:360 meter
Technical Requirements	
1	The speed display shall be formed using individual modules.



2	Speed display must be constructed using corrosion resistant panel with LED pixels in row: column matrix.	
3	Scanning/Multiplexing ratio shall be 1/8 or better.	
4	The LED Cluster shall consist of individual LED`s rated for out-door use.	
5	Shall support an industry standard communication interface such as TCP/IP on Ethernet OR GSM or Bluetooth to help setting the preset speed and retrieve log data.	
6	Shall maintain time record of over speeding vehicle of each case of over speeding in a log file that can be retrieved over the connected network or using a locally connected laptop.	
7	It shall optionally be possible to configure the display to send real time speed violation and time) over the connected network while recording the same.	
8	It shall be possible to control the brightness of displays automatically using built-in light sensors.	
9	All PCB`s shall be of FR4 material, 1.6mm thick and LED matrix PCB shall be 2.4mm thick. PCBs shall be of the quality suitable for use in environment conditions specified.	
10	The equipment shall allow local diagnostics via laptop connected to its communication port.	
12	The equipment shall comply with the following Physical and electrical specifications:	
	Functions	Specification
	<i>Display size in inches</i>	<i>18 inch high x 9.6 inch width per digit</i>
	<i>Viewing Angle</i>	<i>15 to 30 degrees</i>
	<i>Color and Wavelength (nM)</i>	<i>Amber (590)</i>
	<i>Luminous Intensity</i>	<i>7500 candela per meter square.</i>
	<i>Power Feed</i>	<i>230V AC @ 50Hz or Solar 50 watt with battery back up</i>
	<i>Mounting</i>	<i>Fixed over existing gantry or a separately erected pole</i>
	<i>Humidity</i>	<i>0 to 95% Non-Condensing</i>
	<i>Operating Temperature (Ambient)</i>	<i>(-40°C to 85°C)</i>
	<i>Construction</i>	<i>Weatherproof outdoor non sealed ventilated, NEMA 4X-12 ,IP 65 standard</i>
	<i>Communication</i>	<i>Ethernet , GSM (3G/GPRS) OR Blue-tooth</i>
	<i>Protocol</i>	<i>TCP/IP</i>
	<i>Operation</i>	<i>Software for VAS display sign configuration and log file retrieval.</i>
	<i>Colour and Format</i>	<i>MUTCD Compliant</i>
13	Data Collection and Statistical Analysis & Reporting	



1	Traffic data collected and stored by location
2	Stealth Mode (capture baseline traffic data with speed display off)
3	Download through wireless connection
4	Statistical Reporting & Charts
	a. Summary Reports
	b. Weekly Reports
	c. Period Comparison Reports
	d. Full custom reports and charts
5	Reporting Parameter
	a. Average Vehicle Count
	b. Total Vehicle Count
	c. Average Speed
	d. Average Number of Speed Violations
	e. Total Number of Speed Violations
	f. Minimum and maximum speed

VMS + Analytics Software

Functional Specifications	<p>The IP video management system software shall consist of base software with individual, non-expiring licenses in the required quantity.</p> <p>The IP video management system software updates shall be downloadable from a publicly available website.</p> <p>The IP video management system shall support recording of JPEG, MPEG-4 and H.264 IP streams.</p> <p>The IP video management system shall also support third-party H.264 Megapixel video streams up to 10 Megapixel resolution</p> <p>The IP video management system shall have a fully open architecture with support for both IP-specific camera as well as cameras with ONVIF compliance.</p> <p>The IP video management system shall support automatic detection of IP cameras. Third-party IP cameras shall be automatically detected dependent on IP driver versions and manufacturers specifications.</p> <p>The IP video management system shall support an unlimited number of systems connected over a network. Each system shall contain two 1GB network ports; one for IP camera/encoder data, and one to connect to a network for client computer access.</p> <p>The IP video management system shall be viewed, managed, and played back through a single user interface simultaneously with client software</p> <p>The IP video management system shall remote surveillance of live video and remote playback of video recordings</p> <p>The IP video management system shall support real time notifications of detected events and remote monitoring of event videos.</p>
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Video Analytics	<p>The IP video management system shall start panic recording of live videos and playback of panic recordings.</p> <p>The IP video management system shall support registration of up to 1024 devices.</p> <p>The IP video management system shall allow simultaneous remote software upgrades and multi play system setup.</p> <p>The IP video management system shall be capable of continuous scheduled alarm/event and motion recording. Pre- and post- alarm recording shall also be available and shall be fully programmable on a per channel basis.</p> <p>The IP video management system shall allow archival of video data to computers or SAN storage devices over a network connection with the optional Archive Utility. The archival schedule shall be either automatic at user-defined intervals or manual and shall be configurable per connected camera.</p> <p>The IP video management system shall display device system logs</p> <p>The IP video management system shall monitor live emaps</p> <p>The IP video management system shall support SSL for security</p> <p>The IP video management system shall support authority settings by user groups for security.</p> <p>The IP video management system shall support intuitive and user friendly GUI</p> <p>Support SD Card Playback</p> <p>The IP video management system shall support5 all live viewing, searches, emaps, and condition monitoring can be executed simultaneously by supporting multi docking of screens.</p> <p>Should support the following Video Analytics: Audio Detection, Tampering and Trip zone per channel. as standard supply.</p> <p>The following are the envisaged parameters for the Video Analytics of the VMS:</p> <p>The video analytics (VA) shall be an inbuilt solution from the VMS manufacturer where the video analytics software is included in the basic VMS installation package. The VCA should run in the same Recorder as that of the VMS. Separate Hardware shouldn't be required.</p> <p>The Video Analytics (VA) shall be designed to provide Intelligent Video Analysis for 24/7 surveillance with support for 3rd party devices.</p> <p>The VA configuration shall work as an independent application.</p> <p>The VA shall allow each camera to have Up to 40 detection zones that are polygonal with a variable number of vertices so that any shape can be supported. Detection zone can also be a line, which can have one or many segments. The VA shall be flexible to use Rule based Analytics in any fixed camera in the project.</p> <p>The VA configuration shall have easy to use graphical user interface with live alarms list for easy parameter fine tuning and feedback.</p>
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	<p>The VA alarms shall be recorded in the VMS similarly like other alarms, for example motion detection, audio detection and digital input alarms. The VMS shall store the VA alarm video and image files for export. The VA shall support video from any camera supported by the VMS. The VA shall support cameras using any of the video compression formats H.264/MPEG4/MJPEG. The VMS shall support scheduling so that that VA alarms can be enabled or disabled for a certain period of time The VA software shall be usable for both indoor and outdoor video environment. The video analytics shall have an easy to use 3D calibration tool where 3D calibration objects are matched to the actual camera viewing scene. The calibration parameters include camera height, camera viewing angle and camera tilt angle. (Picture of 3 D Calibration tool of the Software to be attached with the tender document as proof of the same)</p>
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Server + NAS

Hardware Features	Rack Mount Type
Intel® Xeon® processor E5-2600 v4 product family	
Supports RAID Levels 0,1+5	
Support minimum 4 HARD DRIVE Bay X 1 Bays: 3.5” Internal, SATA II – Up to 4 TB capacity for each disk.	
Maximum of 3.0G Gbps transfer rate (SATA II)	
Easy expandibility to large storage pool	
Should be supplied with 16 TB Internal HDD	
Connectivity through 1Giga Lan Port or eSATA	
Seamless connectivity to Network Video Recorder and Video Management System	
External Power Supply 100-240VAC	
CE, FCC	

Display

S. No.	Features	Detailed Technical Specification
	Screen Size	55 inches diagonal
	Resolution	Full HD (1920 x 1080) or higher
	Backlight	LED-Backlit TFT LCD
	Aspect Ratio	16:9
	Pixel density	40 dpi
	Refresh rate	60 Hz
	Luminance	700 cd/m ² (typ.) or higher



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Contrast	3500:1 (typ.) or higher
Viewing angle	H 178° V 178°
White point	10,000 K
Color depth	10 bits
Calibration	Built in automatic color and brightness calibration- without using external color meters/sensors
Precision	Internal 10 bit processing
Backlight lifetime	60,000 h (typ)
MTBF	100,000 h (half brightness)
Cooling	Ultra low noise fans
Screen haze	44%
Dimensions	1213 x 684 x 98.2 mm 47.8" x 26.9" x 3.87"
Active screen diagonal	54.6" (1388 mm)
Active screen area	1210 mm x 680 mm 47.63" x 26.79"
Weight	29.2 kg
Bezel width	3.5 mm 0.14" or smaller
Display port 1.1	1 input, 1 output or more
Ethernet port	2
HDCP	Yes
HDMI 1.4a	1 input or more
USB	1 input (USB 2.0)
DVI	2 inputs or more
Remote Control	External dongle with approx. 1m 3.5mm Stereo Male to IR Receiver
OPS Open Pluggable Specification	Yes
Energy Star	Yes
AC input voltage	100-240 VAC, 50-60 Hz
Power consumption	290 W (max) 180 W (min)

Network Switch

Sl. No.	Detailed Technical Specifications
1	Minimum 24 ports of 10/100/1000 base-T PoE and 2 SFP+ uplink ports (populated with required modules).
2	1 U Rack mountable and should provide stacking of minimum 8 switches with 40Gbps of dedicated stacking bandwidth (All required accessories, licenses to be provided).



3	88 Gbps or higher Backplane capacity and minimum 65 Mpps of forwarding rate for both IPv4 and IPv6
4	The switch should support internal/ external RPS
5	Should support Non-blocking and distributed forwarding hardware architecture
6	All interfaces should provide wire speed forwarding for both Fiber and copper modules
7	Support for at least 4000 VLANs & 16k MAC address
8	It should support IGMP snooping v1 & v2
9	It should have static IP routing and RIP from day 1
10	Should be upgradable to OSPF, OSPFv3, RIPng, PIM, MLD in future
11	Switch should support 8 hardware queues per port
12	Dynamic Host Configuration Protocol (DHCP) snooping
13	Switch should support LLDP and LLDP-MED capabilities
14	Should support IP source guard & DAI
15	Should support Secure Shell (SSH) Protocol and Simple Network Management Protocol Version 3 (SNMPv3).
16	Switch needs to have console port for administration & management
17	Management using CLI, GUI using Web interface should be supported
18	FTP/TFTP for upgrading the operating System
19	IEEE 802.1x support
20	IEEE 802.1D Spanning-Tree Protocol
	IEEE 802.1p class-of-service (CoS) prioritization
	IEEE 802.1Q VLAN
	IEEE 802.3 10BASE-T specification
	IEEE 802.3u 100BASE-TX specification
21	Switch should support redundant power supply.
22	Switch should able to support management via CLI, Web interface
	SNMP v1,v2,v3
	Switch should be manageable through both IPv4 & IPv6.
	Switch should be FCC Part 15, ICES-003, VCCI Class A, EN 55022, EN 55024, EN 300386, CAN/CSA 22.2 No.60950-1, IEC60950-1, Reduction of Hazardous Substances (ROHS) 6 certified
	Should have modular OS and should support configuration roll back to recover mis-configured switch to last known good configuration
23	The switch should be EAL3/NDPP certified from Day 1 for the quoted products and should be of same series

CAT 6 Cable

S.No	Detailed Technical Specifications
	UTP Outdoor Cat 6 Cable, TIA-568C.2, Outer Sheath LSZH, Category-6 (305 Mtrs./1000 feet per Box)
1	Minimum Specifications:
.1	Shall be of 4 twisted pairs of 23 AWG solid conductors



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1.2	Shall support network line speeds up to 1 gigabits per second.
1.3	Shall be 4-pair Unshielded twisted pair with a cross filler/ divider/ isolator, meeting Category 6 tested to 250 MHz or more as per TIA-568C.2.
1.4	Shall support 1000Base -TX and Video, Voice and have NVP of 69 - 70% or more
	Conductor Resistance : < 9.38 Ohm/100 m & Mutual Capacitance : < 5.6 nF/100m
1.5	Inner Sheath Material – PE
1.6	Insulation – High Density Polythene and cable should be in Black color.
1.7	Cable diameter shall be less than 7.2 mm and the pulling force exerted on the cable shall not exceed 14 Kg.
1.8	The Category 6 Solution shall fully comply with the link segment specifications for 1000 Base-TX in addition to the ANSI/TIA and ISO/IEC Category 6 requirements.
1.9	Shall have the length printed on the outer jacket of the cable after every meter.
1.10	The cable shall be IP 65 rating
1.11	Operating Temperature shall be in the range: -20 deg. to +70 deg.
1.12	Shall be RoHS Compliant All cat 6 Information Outlet with Enclosure & Cat 6 patch cords Shall be IP 65 compliant to prevent from water and dust

Optical Fiber Cable – (where buried, necessary protection needs to be provided).

Sr.No.	Detailed Technical Specifications
1	Fiber Optic Cable shall be ISO/IEC-11801-9/125 μ , OS2 Indoor/Outdoor, IEC 60332-3, IEC 61034, IEC 60754-1, and Non-Metallic armour with water blocking Gel.
2	Fiber Patch Panel should be Front & Rear mountable with splice tray and loaded connection
3	Fiber Joint Closure and fiber patch cords should be IP rated.



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BID FORMATS

PRE-QUALIFICATION BID FORM:

To
The Field Director,
Kaziranga Tiger Reserve,
Bokakhat, Golaghat District, Assam
PIN – 785612

Sir,

I/ we the undersigned bidder / Consortium bidders do hereby submit our best offers in response to your Tender No and that our offer is valid for 180 days from the date of submission of the offer, and in case if required, we shall have no objection in extending the validity of our offer for another 180 days or any suitable period required by you. During the bid process period, we shall not withdraw our offer. Further, we understand that the bid can be cancelled in full or part without assigning any reason thereof; and that you may place the order, in event of our bid being successful, in full or part, or may not place an order without assigning any reason.

Further, I/ we submit particulars as below:-

General Information of the BIDDER (To be filled by every bidder, including details of the wherever relevant member of the Consortium Bid)

Sl. No.	Particular	Details
a	Nature of Bid (Single/ Consortium) If Consortium, then Name of other member of the Consortium. Name of Lead Bidder Whether enclosed Pre-Qualification Bid Form for the other Member	
b	Name of the Bidder	
c	Registered address	
d	Telephone / Fax no	
e	Web site Email id	
e	Legal status (Company/Firm/Partnership Firm) with Proof of Registration to be submitted.	
f	Date of Establishment	
g	Income Tax PAN	
h	GST Registration No.	
i	ISO certificate nos. With details	



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j	IEC Number	
k	Contact Person Details: Name Designation E-mail Phone	
l	Group/Sub Group for which this Bid is applicable	
m	EMD Details (Bank Draft number, date, value, Bank Name, Branch name)	

Details of bidder's organisation/associates including the present business in the last Three(3) years

Sl no	Core business & sector	Revenue from Core business	Non core business & sector	Revenue from Non-Core business	No of employees & no of employees in North East	Any other remarks
1.	CC Cameras, Video Surveillance Management Solutions / Sensor related surveillance					

Brief financial details (as on 31st March for the last three years)

Particulars	2015-16	2016-17	2017-18
Turn Over			
Net Income			
Net Profit			
Net Worth			

EMD Details (Add row for another entry):

Sl no	Amount	DD No:	Bank & Branch
1			
2			



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Particulars of similar in nature implemented (Add row for more categories)

Category	Goods/ Services provided including Supply, erection, commissioning, warranty support/ annual maintenance.(Please mention the names of items involved with quantity)	Client address & work order value (Attach copies of work orders)	Time period of execution	Status of the project	Any other remarks

Any other document enclosed as proof of eligibility etc.

Undertaking by the authorized representative of the firm/Power of attorney /Company Secretary that the bidder was not blacklisted either by Govt. of Assam/its agencies or by any Security agencies of Govt. of Assam/Central Govt. in the last five years for breach of trust , fraudulent, & corrupt practices as per format.

Enclosures to be submitted with Pre-Qualification Bid:

- a. Pre-Qualification Form duly filled for the bidder (including a separate form duly filled by the Consortium Bidder partner)
- b. EMD in a separate sealed envelope with “EMD” inscribed on the top of the envelop
- c. Court Fee Stamp of Rs. 8.25 or more on the first page of the tender document purchased by the bidder.
- d. A DD for the amount of Rs. 5000.00, as Document Fee in favour of “Kaziranga Tiger Conservation Foundation” payable at Bokakhat.
- e. Tender document (In original) signed and stamped in ink on each page by the authorized signatory of the bidder
- f. Authorization/ Authority Letter of the “Authorized Signatory”
- g. Consortium agreement (in case of consortium bid)
- h. Turnover Certificate duly signed by Auditor for last three financial years.
- i. Copies of PAN Card/ VAT/ Sales tax/ Service Tax registration/ IEC / ISO certificates.
- j. Incorporation certificate
- k. Memorandum of Association/ Partnership Deed of the company together with any orders from the Hon'ble High Court for merger/ split/ acquisition etc., or similar orders of change of ownership of the company etc from appropriate authority.
- l. Documentary proof of experience in each category.



m. Undertaking that the firm is not black listed

I further undertake to abide by the Terms and Conditions of the Tender Documents, which I have carefully read and understood.

Yours faith fully,

Signature

(Power-of-attorney issued on Non Judicial Stamp Paper of Rs. 100/-)

Seal of the bidder



Authorization/OEM certificate for the products quoted

Category (Sensor/ Camera/ Thermal/ RF/ Traffic Control/ IT/ Fixtures/ Others)	Item Name	Brand/Make/Mo del/Part No.	OEM Name/ Address	Authorization Letter No. Date	Reference Page No. in the Bid
1	2	3	4	5	6

Details of Similar Systems quoted

Category (Sensor/ Camera/ Thermal/ RF/ Traffic Control/ IT/ Fixtures/ Others)	Item (Exact or similar nature)	Brand/Make/Model/Part No. of the product quoted	Name of product already deployed in the field (in case the product in the column 3 is of recent origin) [In case if there are LOIs against the product, the same should also be mentioned in Column 5]	Documentary proof (Mention here page numbers in the bid for reference)

Certifications/Standards/TEC/STQC/IMD or approvals against the products quoted, if applicable, by any other authority:

Category (Sensor/ Camera/ Thermal/ RF/ Traffic Control/ IT/ Fixtures/ Others)	Item	Brand/Make/Model/Part No. of the product quoted	Agency	Certificate Name	Documentary Proof (Page number of the document in the Bid)
Attach all the relevant Documents					



AMC and maintenance Infrastructure in Assam (Guwahati/ Golaghat/ Bokakhat/ Nagaon/ Jakhlabandha) against the product quoted

Category (Sensor/ Camera/ Thermal/ RF/ Traffic Control/ IT/ Fixtures/ Others)	Items (May club several items together, or all)	Brand/Make/ Model/Part No. of the product quoted	Name of Agency Respos ible for AMC/ mainten ance	Contact Details including name & address, Phone No. (If applicable)	Nature of relationship/ Own center/ Franchisee/ Call Center/ FMS/ Off shore support etc.	Time in hours for providing the support / troubleshooting
1	2	3	4	5	6	7

Warranty & AMC of the products quoted (Separate Table for each category)

Category (Sensor/ Camera/ Thermal/ RF/ Traffic Control/ IT/ Fixtures/ Others)	Item	Brand/Make/Model/Part No. of the product quoted	WARRANTY PERIOD	Proposed Number of years as AMC (Maximum 5 years)
1	2	3	4	5

Format of Technical Compliance Statement:

(It is Mandatory to submit technical compliance for every offered item)

TECHNICAL COMPLIANCE STATEMENT

Category / Item No: / Offered Make : Model:

Feature Asked For	Requested Specifications	Offered Specifications	Complied/ Deviation (If deviation or enhancement/ alternate/ additional solution
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Technical FEATURE Statement Deviation/Enhancements ETC.

Category : _____
Item Name _____

(FORM TO SUBMITTED CATEGORY WISE ONLY / ITEM WISE)

Features/ Specification Requested	Feature Quoted	Deviation/Enhancement/ Alternate Proposal or Specification with specific mention of technical superiority/ or likely savings in costs
1	2	3



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NOTE: PHYSICAL COPY OF THE FINANCIAL BID SHOULD NOT BE SUBMITTED. TO BE UPLOADED ONLY

Financial Bid Format

S. No	ITEM	QTY	COST	TAXES	TOTAL
1	Thermal Camera	4			
2	Optical Cameras	6			
3	ANPR System (one on each gantry)	2			
4	VMS + Analytics Software	1			
5	Server + NAS	1			
6	Display LED 55' for Control Room	1			
7	Network Switches + Controller	LS			
8	Solar Power with 2 Hr back up	1			
9	Diesel Generator 5 KVA	1			
10	Control Centre Civil Work & Construction of Gantry	1			
11	Electricals inclusive of Lights, Earth, Cables Switches, Lightning Arrestor etc.,	1			
12	Speed Sensor	2			
13	LED Signage 8' X 4' (on either side of the Gantry)	2 Nos			
14	LED Signage for Vehicle Speed Violation	2 Nos			
15	Retro-Reflex Signage placed at Eye Level 8'X4'	2 Nos			
16	Retro-Reflex Signage placed at Eye Level 6'X2'	2 Nos			
17	Retro-Reflex Signage placed at Eye Level 6'X2 between the Gantry inside the	4 Nos			



सत्यमेव जयते

	Corridor Area				
18	Retro-Reflex Signage placed on the Gantry (40' X 2')	2 Nos			
19	Traffic Light (on each direction in front of Gantry) (AMBER & RED)	2 Sets			
20	Cabling – CAT5 & Optic Fiber with protection	1			
21	Poles (4 nos) + Fixtures	As required			
22	Other Items, if any.	LS			
TOTAL FOR EACH CORRIDOR					

In Words

Rupees _____ for each Corridor

Annual Maintenance Contract after the Initial Warranty Period of One Year

S No	Year	Percentage	Taxes
1	II Year		
2	III Year		
3	IV Year		
4	V Year		



PERFORMANCE BANK GUARANTEE FORMAT

*(To be submitted on award of Supply order)
(To be signed and executed in Non judicial stamp paper of value Rs. 100/-)*

Ref.
Bank Guarantee No.
Date :

To
The Field Director,
Kaziranga Tiger Reserve,
Bokakhat, Distt. Golaghat, Assam
PIN – 785612

Dear Sirs,

In consideration of the Field Director, Kaziranga Tiger Reserve, Bokakhat, representing the Kaziranga Tiger Conservation Foundation, in short known hereinafter as the Foundation which expression shall unless repugnant to the context or meaning thereof include its successors, administrators & assigns) having awarded to M/s_____ with its Registered/Head Office at _____ (hereinafter referred to as the ‘Supplier’ which expression shall unless repugnant to the context or meaning thereof, include its successors, administrators, executors and assigns) a Supply order by issue of Foundations’ Letter of Intent No. dated. and the same having been unequivocally accepted by the Supplier, resulting in a supply order bearing No. dtd. valued at Rs. for _____ *scope of supply order*) and the supplier having agreed to provide a Project Performance Bank Guarantee for the faithful performance of the Supply & allied services under the Supply order and allied matters equivalent to 5(%). (Five percent) of the said value of the Supply order to the Foundation.

We. (Name and Address of Bank, Tel. No. Fax. No., responsible person). having its Head Office at and a branch of the Bank in Guwahati at (Name and Address of Bank, Tel. No. Fax. No., responsible person) thereinafter referred to as the ‘Bank’, which expression shall, unless repugnant to the context or meaning thereof, include its successors, administrators, executors and assign) do here by guarantee and undertake to pay the Foundation, on demand, any and all monies payable by the Supplier to the extent of as aforesaid at any time up to ... (days/months/years) without any demur, reservation, supply order, recourse or protest and/or without any reference to the Supplier. Any such demand made on the Bank shall be conclusive and binding notwithstanding any difference/dispute between the



Foundation & the Supplier or any dispute pending before any Court, Tribunal, Arbitrator or any other authority. The Bank undertakes not to revoke the guarantee during its currency without, previous consent of the Foundation and further agrees that the guarantee herein contained shall continue to be enforceable till the Foundation discharges this guarantee.

The Foundation shall have the fullest liberty without affecting in any way the liability of the Bank under this guarantee, from time to time to extend of the time for performance of the supply order by the Supplier. The Foundation shall have the fullest liberty, without affecting this guarantee, to postpone from time to time the exercise of any powers vested in them or of any right which they might have against the Supplier, and to exercise the same at any time in any manner, and either to enforce or to forbear to enforce any covenants, contained or implied, in the supply order between the Foundation and the Supplier or any other course or remedy or security available to the Foundation. The Bank shall not be released to its obligation under these presents by any exercise by the Foundation of its liberty with reference to the matters aforesaid or any of the or by reason of any other act of omission or commission on the part of the Foundation or any other indulgences shown by the Foundation or by any other matter or thing whatsoever which under law would, but for this provision have the effect of relieving the bank

The Bank also agrees that the Foundation at its option shall be entitled to enforce this guarantee against the Bank as a principal debtor, in the first instance without proceeding against the Supplier and not withstanding any security or other guarantee the Foundation may have in relation to the Supplier's liabilities.

Notwithstanding anything contained herein above our liability under this guarantee is restricted to and it shall remain in force upto and including and shall be extended from time to time for such period, as may be required, by _____ on whose behalf this guarantee has been given.

Any such demand of payment made on the Bank by the Foundation under this Bank guarantee, shall be in the form and manner made by the Foundation, and such demand of payment shall be paid to the Foundation within 3(three) working days of service of the notice.

Notwithstanding anything contained herein:

Our liability under this bank guarantee shall not exceed Rs.(Rupees only).

This bank guarantee shall be valid up to

And

Our liability to make payment shall arise and we are liable to pay the guarantees amount or any part thereof under this Guarantee, only and only if you serve upon us a written claim or demand in terms of the guarantee on or before

Dated this day of at

Signature of Authorized person of the Bank with seal.

// End of the Document //