



**DEPARTMENT OF FORESTS & ENVIRONMENT**

**GOVERNMENT OF JHARKHAND**

**OFFICE OF THE FIELD DIRECTOR, PALAMAU TIGER RESERVE**

**TENDER DOCUMENT FOR "UAV SURVEILLANCE SYSTEM" AT PALAMAU TIGER**

**RESERVE, JHARKHAND, DURING 2016-17**

**COST OF TENDER DOCUMENT Rs. 2500/- (NON-REFUNDABLE & NON-TRANSFERABLE)**

**CHAPTER-I: Tender Form**

**TENDER DOCUMENTS FOR "UAV SURVEILLANCE SYSTEM" AT PALAMAU TIGER**

**RESERVE, JHARKHAND, DURING 2016-17**

**Field Director Office, Palamau Tiger Reserve**

1. Name of Tenderer:
2. Firms Name and Address:
3. Telephone Numbers
  - i. Firm: \_\_\_\_\_
  - ii. Residence \_\_\_\_\_
  - iii. Mobile \_\_\_\_\_
4. Details of Attached Bank Draft:

<u>No.</u>	<u>Date</u>	<u>Name of Bank</u>	<u>Amount</u>
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5. PAN Card Number : \_\_\_\_\_ (Copy Attached)
6. Sales Tax Number: \_\_\_\_\_ (Copy Attached)
7. Service Tax Number: \_\_\_\_\_ (Copy Attached)
8. IEC Code Number \_\_\_\_\_ (Copy Attached)
9. CST Number \_\_\_\_\_ (Copy Attached)

10. Tender Specification of the “UAV Surveillance System”
11. Vat Registration
12. Annual Maintenance charge

Design, Implement and support “UAV surveillance system” for strategic locations at Palamau Tiger Reserve. The management intends to deploy UAV in the strategic locations in Palamau Tiger Reserve for surveillance and long term aerial mapping purposes and Monitoring tigers straying in the vicinity of reserve. Besides it will also help in reducing man-animal conflict and illicit felling activities.

The key objective of the system will be to provide accessibility to the remote areas using unmanned surveillance system. The system should be based on UAV technology to support seamless surveillance to ensure minimal setup and interference in the Forest. The System should be comprised of 3 UAVS.

- One multirotor with zoom camera with minimum 20x optical zoom capability.
- One multirotor with thermal camera.
- One fixed wing plane for long term mapping of the forest with Sony QX1 camera and stitching software.

## **CHAPTER II: UNDERTAKING OF THE TENDERER**

I/We have read carefully and examined the notice inviting tender, schedule, General Rules and terms and conditions of the contract, special conditions, Schedule of Rates and other documents and Rules referred to in the tender document.

I/We hereby tender my rates for the execution of the work as specified within the time stipulated in the schedule in accordance with all aspects with the specifications, designs drawings and instructions with such conditions so far as applicable

A sum of 150000/- (Rupees One Lakh fifty thousand only) of the quoted value is hereby forwarded as earnest money in the form of crossed demand draft/Bank Guarantee. If I/We, fail to commence or complete the work ordered in specified time I/We agree that the Department of Forests and Environment, Government of Jharkhand shall, without prejudice to any other right or remedy, be at liberty to forfeit the said Earnest Money absolutely

The said Earnest Money shall be retained by Department of Forests and Environment, Government of Jharkhand towards security deposit to execute all the works referred to in the tender documents upon the terms and conditions contained or referred to therein and to carry out such deviations as may be required by Department of Forests and Environment, Government of Jharkhand

I/We hereby declare that I/We shall treat the tender documents, specifications and other records connected with the work as secret/confidential and shall not communicate information derived there-from to any person other than a person to whom I/We have authorized to communicate the same or use the information in any manner prejudicial to the safety of Department of Forests and Environment, Government of Jharkhand.

I/We shall abide to all the laws and shall be responsible for making payments of all the taxes duties, levies and other Govt. dues etc. to the appropriate Govt. departments.

Our Service Tax registration No. is \_\_\_\_\_ and CST registration No. \_\_\_\_\_. The PAN No. under the Income Tax Act is \_\_\_\_\_ TIN NO. \_\_\_\_\_ I/We shall be responsible for the payment of the respective taxes to the appropriate authorities and should I/we fail to do so, I/we hereby authorize Department of Forests and Environment, Government of Jharkhand to recover the taxes due from us and deposit the same with the appropriate authorities on their demand

Dated

Signature

Place: (Name of Tenderer with seal)

Witness

Signature:

Name

Postal Address

## **CHAPTER-III :INSTRUCTIONS FOR TENDERER**

1. Department of Forests and Environment, Government of Jharkhand Invites sealed offers for the “UAV Surveillance System” at Palamau Tiger Reserve Jharkhand from IT Service Providers.
2. Tenders should only be dropped in the tender box kept in the **Office of Field Director, Palamau Tiger Reserve, P.O. Daltonganj Dist., Palamau – 822101**, on or before 10/02/2017 till **1.00 PM**. Tenders received after the time and dates shall not be considered. Covers should invariably be super-scribed “**UAV Surveillance System**” at **Palamau Tiger Reserve, Jharkhand & also name of the tenderer in block letters**.
3. **Eligibility and qualification criteria:**
  - A. The bidder shall meet the following requirements:
  - B. The bidder should have experience in required technology applications
  - C. The bidder should have either experience of working with private bodies or State or Central Government
  - D. The bidder should be backed by State or Central Government Institutions and must show proof of developing similar technology in participation with State or Central Government Institutions

(iv) The bidder should have consistently strong financial performance

(v) Bidder shall furnish Service Tax, CST, Sales Tax, VAT registration no. along with the IEC Code number if applicable.

(vii) Firms black listed by Government of Jharkhand are barred from participating in this tender

  - B. The documentary evidence for meeting the eligibility criteria must mandatorily be submitted along with offer.
4. Bid should be submitted in two cover system containing two parts as detailed below

Part I: Technical bid to be kept in the sealed cover marked as “**Technical Bid**”.

Part II: Commercial bid to be kept in the second sealed cover marked as “**Financial Bid**”

**Technical Bid:** The Technical bid shall contain the technical specifications of all the instruments /equipment’s/software/structures which will be used for UAV Surveillance System, documentary evidences for meeting the eligibility criteria and qualification in envelop, filled tender forms and the EMD DD.

**Financial Bid:** The Financial bid shall contain only the rates offered by the bidders for UAV Surveillance System.

The Technical Bid will be opened and eligible bidders meeting all the requirements will be short listed. The bidders may be required to give presentation of their solution before the **technical committee** constituted for this purpose. Thereafter, Financial Bid of only short listed bidders will be opened. The date of opening financial bid will be informed to the short listed bidders. All bidders are requested to mention their Email-ID and mobile contact number on the cover of the envelope containing Bid documents.

Successful Bidder will be required to sign Memorandum of undertaking (MOU) in connection with implementation/Installation of the project. The MOU will include availability of Service Centre and Service Engineer, Standard of Performance, Use of Contract Documents performance contract etc.

5. Bidders are required to quote rates including all the taxes and duties. Rates should be quoted F.O.R. door delivery basis at the desired site of Palamau Tiger Reserve, Jharkhand including installation and testing. The rate should be written only in prescribed form enclosed with the tender document. No price preference shall be given to the bidder for this tender.
6. The selected bidder should deploy “UAV Surveillance System” within 45 days from the date of issue of sanction order. If the bidder fails to deliver and install system to perform the services within the period specified in terms and conditions of the tender document the purchaser shall without prejudice to its other remedies shall deduct 1% per day and maximum deductions shall be 10% of the order value, as liquidated damages, or the delivery price of the delayed goods or unperformed services for each day of the delay until actual delivery or performance. Once the maximum is reached the purchaser may consider termination of contract. The decision on delay and circumstances shall be taken by the Field Director, Palamau Tiger Reserve Jharkhand or any other competent authority.
7. Account Payee Demand Draft, Fixed Deposit Receipt or Bank Guarantee of Rupees 150000/- (Rupees One Lakh fifty thousand only) in favour of Field Director, Palamau Tiger Reserve, payable at Medininagar from any Nationalised Bank is to be submitted along with the tender as Earnest Money Deposit (EMD). Unsuccessful bidder EMD shall be released after finalization of tender and for the successful bidder EMD shall be released after receiving the Performance Security Deposit.
8. Successful Bidder shall be required to submit Account Payee Demand Draft, Fixed Deposit Receipt or Bank Guarantee on any scheduled bank @5% of the total price quoted for the project as a Performance Security Deposit.
9. The bid should reach to the authority within the specified time frame. No bid shall be accepted after the last date and time for receiving the bid.
10. The bid shall be submitted as per the terms and conditions as laid down in the tender document. If any bid found faulty shall liable to be summarily to be rejected.
11. Successful bidder has to submit project execution summary phase wise payment shall be done based on work evaluation.
12. Liquidated damages may be imposed for defaults/inordinate delays on the part of the supplier.
13. No representation shall be accepted after opening of the tender.
14. The Field Director, Palamau Tiger Reserve, Jharkhand reserves the right to change the date and time of tender opening.
15. The Field Director, Palamau Tiger Reserve, Jharkhand also reserves the right to accept, reject or cancel tender without assigning any reason.
16. All the payment shall be made after deducting all taxes, surcharges etc. which are payable to government as Tax deduction or source (TDS). Any Tax exemptions shall not be given or entertained in this office.
17. Successful bidders shall be there to provide operational and training support for the UAV system for 2 months after Completion of the installation. Bidder shall also provide monthly/Yearly cost bid of extending this support period.
18. Bidder shall provide detailed warranty conditions for all equipment used.
19. In the event of any dispute, Field Director, Palamau Tiger Reserve, Jharkhand Shall be the arbitrator authority and his decision shall be binding on both parties and no further appeal shall be entertained.
20. All the disputer are subjected jurisdiction of Jharkhand court.

**Field Director, Palamau Tiger Reserve**  
**Department of Forests & Environment, Jharkhand**

## **ADDITIONAL SPECIAL CONDITIONS FOR TENDER DOCUMENT DOWN LOADED FROM WEBSITE.**

- a) Tenderers may note that permitting of downloading of tender document is an added facility for convenience of Tenderer/s. Field Director, Palamau Tiger Reserve Jharkhand however, reserves right to extend this facility for selected works or continue only with direct sale of tender forms. In case, tender document is not uploaded on website or download failure or delay or incomplete document downloaded, whatsoever, Field Director, Palamau Tiger Reserve Jharkhand shall not be responsible in anyway. Field Director, Palamau Tiger Reserve Jharkhand shall not be responsible for any direct/indirect loss of business/profit resulting from inability to use this facility.
- b) The Tenderer/s shall download & print the Tender document solely for bidding for above work and downloaded document shall not be used, copied or reproduced for any other purpose.
- c) The end of tender document is indicated by "End of Tender Document" marker. Tenderer/s should carefully see that above marker appears on the last page of downloaded tender document to ensure that downloaded document is complete. Tenderer is suggested to check the integrity and completeness of document before submission.
- d) The tender document downloaded from website though does not bear signature of authority shall have same authority as having directly purchased from mentioned office. Tenderers while submitting his offer must sign all pages of tender document.
- e) The downloaded and printed tender document along with the various other documents should be submitted as per details mentioned in tender document. The Tenderer should clearly write on main tender cover and also on the top of sealed cover "Tender documents downloaded from website/received by Email.
- f) The Tenderers are required to pay non-refundable cost of tender document in the form of demand draft drawn on any nationalised bank in favour of **Field Director, Palamau Tiger Reserve, Jharkhand** payable at Jharkhand while submitting their offer. In case they fail to furnish the requisite cost of tender document in prescribed form, their offer shall be rejected. The cost of EMD shall not be merged with cost of tender form and shall be separately furnished.
- g) The Tenderer/s shall maintain the integrity of downloaded tender document and shall not make any change/addition/deletion/tampering, whatsoever, in the downloaded documents. The Tenderer/s offer shall be rejected and full earnest money shall be forfeited, in case it is detected after submission of offer, that they have made any modification in downloaded documents. In case such modification is noticed even after award of contract, Field Director, Palamau Tiger Reserve Jharkhand is liable to terminate the contract on contractor's default. In addition, Field Director, Palamau Tiger Reserve Jharkhand reserves the right to take action against the firm as deemed fit, which may include Banning of Business Dealings with the firm and the firm is also liable to be prosecuted as per the law. After award of work, agreement, wherever necessary, will be prepared based on the master copy of tender document available in the mentioned office. In case, any discrepancy is noted in tender document submitted by Tenderer, the Master document kept with authority shall prevail and decision of Field Director, Palamau Tiger Reserve Jharkhand thereon shall be final and binding on Tenderer/Contractor.
- h) Tenderer/s shall print the tender document on good quality A4 size papers and printed document shall be clearly legible. The document shall be properly bound and

page numbers shall be in serial order as mentioned in downloaded documents. The Tenderer/s shall not be reimbursed with the cost of stationery, printing and binding etc. Offer of Tenderer/s is liable to be rejected by Field Director, Palamau Tiger Reserve Jharkhand if tender document is not printed or bound as per above instructions. Further, Tenderer shall bear expenses of Internet connection and telephone charges, if any for downloading of tender document.

- i)** The Tenderer/s shall keep themselves updated about any modification in tender notice and tender document issued by authority through newspapers, website or E-mail or any other means and shall act accordingly. It is the responsibility of the Tenderer to check any correction or any modifications published subsequently in Web site and the same shall be taken into account while submitting the tender. Tenderer's offer is liable to be rejected if they have not enclosed all the corrections/corrigendum along with downloaded tender documents.
- j)** The "Additional Conditions for Tender Document downloaded from Website" must be signed by the Tenderer and enclosed along with the Tender document failing which the tender is liable to be rejected.
- k)** Tenderers may carefully note that their Purchase order or Contract Agreement, as the case may be, for this work is liable to be terminated at any time later, in case any of the information furnished by them is found to be untrue or any adverse points come to light subsequently. The decision of authority in this regard shall be final and binding.
- l)** No Fax or E- mail tender document will be accepted NOR will any reply to these affect be given.
- m)** The following declaration should be given by the Tenderer while submitting the Tender -:

#### Declaration

I/We have downloaded the tender document from the website <http://www.jharkhand.gov.in/forests> under tender option/received the document by Email and I/We have not tampered/modified the tender forms in any manner. In case the document is found to be tampered / modified, I/We understand that my/our tender is liable to be rejected and full earnest money deposit will be forfeited and I/we am/are liable to be banned from doing business with Field Director, Palamau Tiger Reserve Jharkhand and/or prosecuted.

Signature of Tenderer

Firm's seal

Date

**CHAPTER-IV : Technical Bid**  
**Tender Specifications of the "Design, Implement and Support UAV Surveillance System" at Palamau Tiger Reserve**

Design, Implement and support UAV Surveillance System for Palamau Division area for monitoring of tigers.

The key objective of the system will be to provide accessibility to the remote areas using unmanned surveillance system.

The System should Comprise of 3 UAVs with following specification.

**MultiRotor with zoom camera:** Two units of Quadcopter /Octacopter are required with following features. One unit should have daylight zoom camera as payload and second unit should have thermal camera as payload.

- Minimum Flight time with camera payload included : 25 minutes
- Full autonomy. The drone should have GPS and be capable of doing autonomous missions.
- Multirotor system should be capable of doing a top speed of at least 15m/s while maintaining excellent stability.
- Multirotor system should be operable in winds as high as 50kmph.
- Failsafe options for “out of range” or “battery low” like conditions are must. System should provide RTL(return to launch) or Land options in such case.
- Visual Daylight camera Requirement
  - Min camera resolution: 1080p
  - Min optical zoom for camera: 20x (digital zoom should not be counted in this)
  - Camera zoom should be controllable from Ground station application or radio controller.
  - Camera pitch should be controllable from ground.
  - Camera should provide live view down to ground station.
  - Camera should always record full resolution video on board the camera irrespective of live view.
- Thermal camera requirement:
  - Min resolution: 320p
  - Camera pitch should be controllable from ground.
  - Camera should provide live view down to ground station.
  - Camera should always record full resolution video on board the camera irrespective of live view.



- FLIR Tau series camera is preferred but any other camera that satisfying the above specification will be acceptable.

#### **Mapping fixed wing UAV/Plane Requirements:**

- Min Flight time: 1 hour.
- Camera: Sony QX1 with prime lenses or equivalent full frame camera.
- Either standalone software or online service subscription of atleast one year should be provided for stitching the images taken with this UAV.
- Plane should be able to operate in 50kmph wind conditions.
- Mapping missions and software support is must for fixed wing UAV.

#### **Antenna tracker and operational requirements:**

- All UAVs should use common autopilot and communication technology.
- The controller should have a standalone range of minimum 2 kms. But the equipment for all three UAVs should be pluggable to antenna tracker for range extension upto 10kms.
- Antenna Tracker should be tripod mounted and portable.
- All equipment should come in hard case for easy transportation from one place to another.
- The communication technology used should only use ISM license free frequency bands and should honour radiated power regulatory requirement in their respective bands.

#### **Support Requirement:**

- Minimum 4 months of onsite support has to be provided for operation and training purposes. At least one person should be deployed onsite at **Palamau Tiger Reserve** for this purpose. This period is in addition to any installation period that might be required. So, this support period starts from the days when all systems are operational.
- All equipment should be accurately rated in terms of its flight time life / operational life and warranty in the bid.

**Item wise Technical detail should be given in the following format.**

<b>S.No.</b>	<b>Items</b>	<b>Technical Specifications</b>	<b>Remark</b>

All the Items, technical specifications documentary proof must be annexed.

**Signature**

**Name & Seal of the tenderer.**

**CHAPTER-V : Financial Bid (Quoting in Indian National Rupees (INR)**

(Format for quoting price bid in INR. Separate print may be used & attached with tender document.  
The tenderer)

Details of Item(s)	Cost Per Unit in Rs.	Discount in Rs.	Taxes, if any	Total cost* in figure in words
			<u>VAT:</u> <u>Service Tax:</u>	

\* Total cost inclusive of system establishment and operational.

It is certified that I/We am/are authorized to sign the bid for and on behalf of M/S

.....

.....

Witness : 1) .....

2) .....

Address .....

**Signature**

**Name & Seal of the tenderer.**



**CHAPTER-VI:Agreement**

I/ We, the M/S -----agree to accept the Terms and Conditions governing this Tender document and process thereafter in letter and spirit. It is Certified that I/We am/are authorized to sign this Agreement for and on behalf of M/S.....

Name & Seal of the tenderer

## CHAPTER-VII

### Format of Bank Guarantee

To

The Field Director,  
Palamau Tiger Reserve, Jharkhand

Your order No. \_\_\_\_\_ for the supply and delivery of \_\_\_\_\_ has been accepted by M/s \_\_\_\_\_.

In accordance with the terms of payment of said order, we have agreed to pay the balance of \_\_\_% of the contract price of the supplier/service provider/bidder, furnishing you with and acceptance Performance Bank Guarantee for 5% of the total contract value, i.e. Rs. \_\_\_\_\_ for the due performance by supplier of all its contractual obligations and to be valid for a period of 12 months for the date of supplier/service provider/bidder of all its contractual obligations and to be valid for a period of 12 months for the date of bank guarantee for this purpose you have agreed to accept our guarantee.

In consideration thereof, we hereby guarantee payment of and undertake to pay Rs. \_\_\_\_\_ and remit to you on demand and without demur the sum of Rs. \_\_\_\_\_ being 5% of the total value of the contract on receipt of your information that the supplier/service provider/bidder has committed a breach of contract in any of its contractual obligations.

This guarantee shall be valid for a period of 12 months from the date of Installation of equipment in satisfactory condition and in any event shall expire on \_\_\_\_\_, you shall have the right to file/make your claim on us under the guarantee for a period of sixty days from the said date of expiry.

This guarantee shall not be revoked without your express consent and shall not be affected by your granting time or any other indulgence to the supplied or for any other reason whatsoever.

Notwithstanding anything, contained herein above our liability under this guarantee is restricted to Rs. \_\_\_\_\_ and this guarantee will remain in force up to and inclusive of \_\_\_\_\_ unless an action to enforce a claim under the guarantee is filed against us within sixty days from the date of expiry i.e. on or before \_\_\_\_\_, all rights under the guarantee shall be forfeited and we shall be relieved and discharged from all liabilities there under.

Signatory Bank with Seal

**\*\*\*\*END OF TENDER DOCUMENT\*\*\*\***

## Annexure-I

### Items and Technical Specifications of "UAVSurveillance System" (Tentative\*\*\*)

#### Control Room Tentative Items

S.No.	Item	Technical Specification
1	Quadcopter/Octocopter with visual zoom camera	Minimum 600mm UAV with ground station equipment and transportation hard case. Zoom camera should be integrated with the system.
2	QuadCopter/Octacopter with thermal Camera	Minimum 600mm UAV with ground station equipment and transportation hard case. Thermal camera should be integrated with the system.
3	Fixed wing/Plane UAV with Sony QX1 class mapping camera	Min 2000mm wing span fixed wing UAV with ground station equipment and transportation hard case. Stitching software should be provided with clear workflow.
4	Laptop with all the software installed for both multirotors and fixed wing UAV.	Intel Core i7 class laptop with all the required software preinstalled.
5	Antenna tracker	Pluggable antenna tracker for range extension upto 10km. Antenna tracker should be easy to plug and should work with all three UAVs. Antenna tracker should come with its own hard case for transportation.

\*All the above said items qualifying, technical Specifications details must be annexed.

\*\* Item number 11 is used at site as well as control room.

\*\*\* The number of items depends on the solution designed by the bidder. The above annexure is suggestive the bidder can add items and specify in the Bill of Material or the financial bid.