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**TENDER FOR SUPPLY OF TELEMTRY EQUIPMENT TO
NANDANKANAN ZOOLOGICAL PARK, BHUBANESWAR**

NOTICE NO. 47/PMU/NKZP/21.11.2024

Nandankanan Zoological Park, Bhubaneswar is inviting sealed Tender for the supply of telemetry equipment by reputed OEM/ Distributor for use in the project "Species recovery of gharial in river Mahanadi" for research & monitoring purpose.

- | | | | |
|------|------------------------------------------|---|------------|
| i) | Publication of Tender | : | 21.11.2024 |
| ii) | Tender Closing Date | : | 02.12.2024 |
| iii) | Opening of Technical and Financial Bid : | | 03.12.2024 |


DEPUTY DIRECTOR
NANDANKANAN ZOOLOGICAL PARK

Tender for Supply of Telemetry equipment

Nandankanan Zoological Park invites bid for the purchase of following equipment under "Species recovery of gharial in river Mahanadi Phase II": -

Sl. No.	Description of Product	Quantity	Earnest Money (In Rs.)	Tender fee (In Rs.)
I.	Backpack transmitter (Gharial), Advance Telemetry System, USA, Model= R1930T, Weight= 43 gm, Battery life= 843 days, Frequency range= 148.000-159.999 MHz, Temperature calibrated	13	5000	500
II.	Iridium/ GPS logger, D (Gharial), Advance Telemetry System, USA, Model= G5-LD, Frequency range= 146.000-153.999 MHz	1		
III.	Scientific receiver w/ nylon case, Advance Telemetry System, USA, Model= R410	1		
IV.	3-element folding Yagi Antenna, Model 13874, 150-154 MHz, with 5ft RG58 cable	1		
V.	Shipping and handling charges of the above equipment			
VI.	International document fee for the above equipment			

Note: - Required Technical Specifications of above equipment is specified in Annexure-A.

1. Important Dates and other conditions:

i)	Publication of Tender	:	21.11.2024 (10.00 IST)
ii)	Tender Closing Date	:	02.12.2024 (17.00 IST)
iii)	Opening of Technical and Financial Bid	:	03.12.2024 (11.30 IST)

a. A copy of Tender document can be downloaded from www.nandankanan.org. The Bidder shall submit the Tender fee (non-refundable) of Rs. 500/- (Rupees Five Hundred Only) through Demand Draft (in favour of Deputy Director, Nandankanan Zoological Park payable at Bhubaneswar) / online / electronic mode.

b. Similarly, the Earnest Money Deposit (EMD) of Rs. 5000/- (Rupees Five Hundred Only) shall be paid in favour of Deputy Director, Nandankanan Zoological Park through online/electronic mode or in shape of Demand Draft in favour of Deputy Director, Nandankanan Zoological Park payable at Bhubaneswar.

The bank detail is given below.

Account Name: DDO/Deputy Director, Nandankanan Zoological Park

Account Number: 00000011109326702

Address: O/o the Deputy Director, Nandankanan Zoological Park, Barang, Bhubaneswar, Khordha, Odisha, India, PIN-754005.

Bank: State Bank of India, Branch: Govt. Treasury, Bhubaneswar, Address: J.N. Marg, Bhubaneswar, Dist. Khordha, Odisha, India, PIN-751001, IFS code: SBIN0009025, MICR code: 751002006, SWIFT code: SBININBB270

c. Nandankanan Zoological Park reserve the right to vary the quantity of material at the time of placement of Supply Order/Signing of Contract.

d. Nandankanan Zoological Park reserve the right to place additional orders at the same rates upto 12 months of placing of supply order.

e. Nandankanan Zoological Park reserve the right to accept any bid and to annul

- the bid process and reject all bids at any time, without assigning any reason, prior to placement of supply order/ signing of contract, without thereby incurring any liability to the affected Bidder(s) or any obligation to inform the affected Bidder(s) of the grounds for the action.
- f. The Bidder shall mention the unit price including GST (as applicable)/any other applicable Tax or Duty and/or any other incidental expenses as per the format of financial bid provided. The bidder shall be selected on the basis of total price inclusive any taxes and charges, if any.
- g. Bidders are advised to study this Tender document carefully before participating. It shall be deemed that submission of Bid by the bidder has been done after their careful study and examination of the Tender document with full understanding to its implications.

2. Nodal Officers

The Nodal officers for this Tender is as below:

Dr. Rashmi Ranjan Swain
Curator-cum-ACF (SM)
Nandankanan Zoological Park, Bhubaneswar.
Mobile No. 9438918571
Email: assistantdirector.nzp@gmail.com

Dr Rajesh Kumar Mohapatra, Biologist,
Nandankanan Zoological Park, Bhubaneswar.
Mobile No. 9438918583
Email: biologist.nkzp@gmail.com

Note: For any query, please contact from 10:00 A.M to 05:00 P.M on working days.

3. Scope of Work

The selected bidder would be required to supply the required number of equipment as per the following table:

SN.	Name of Equipment	Tentative Quantity
1.	Backpack transmitter (Gharial), Advance Telemetry System, USA, Model= R1930T, Weight= 43 gm, Battery life= 843 days,	13

	Frequency range= 148.000-159.999 MHz, Temperature calibrated	
2.	Iridium/ GPS logger, D (Gharial), Advance Telemetry System, USA, Model= G5-LD, Frequency range= 146.000-153.999 MHz	1
3.	Scientific receiver w/ nylon case, Advance Telemetry System, USA, Model= R410	1
4.	3-element folding Yagi Antenna, 150-154 5ft cable 13874	1
5.	Shipping and handling charges of the above equipment	
6.	International document fee for the above equipment	

Note-1 : The quantity may increase or decrease as per requirement or any other reason (s). Note-2 : Required Technical Specifications of above item are specified in Annexure-A.

- (i) **Equipment Delivery:** The selected bidder shall ensure the free on-site delivery of the complete order at the Office of the Deputy Director, Nandankanan Zoological Park, Barang, Bhubaneswar, Odisha-754005.
- (ii) **Warranty:** Selected bidder shall supply equipment along with the warranty of at-least Three years against manufacturing defects.

4. Eligibility Criteria for Bidders and documents required to be submitted along with Technical Bid.

- A. This Tender is open to all firms/companies registered in India.
- B. The OEM of the equipment should be registered in India since last 10 years.
- C. The bidder must be in the business of supplying and maintenance of same category equipment for at-least last three years. The bidder shall upload relevant documentary proof regarding the same along with the technical bid.
- D. The bidder or its OEM should have supplied same or similar category products for at least 50% of bid value, in last two years before the bid opening date to any State/Central Government department/agency or any Government company/PSU or any State/Central Government PSU. The bidder must attach at least one supply order along with Technical/financial bid.

- E. In case the bidder is not the OEM of the equipment, the bidder must be authorized to bid for the equipment by the OEM. Bidder shall upload an authorization letter from the OEM, along with the technical bid.
- F. Bidder shall upload a copy of document supporting annual turnover during the last three financial years (ending 31st March 2024).
- G. Bidder must not be blacklisted by any State/ Central Government, PSU or Government Company. The Bidder must attach an affidavit undertaking the same along with the Technical Bid.
- H. The bidder will have to submit/upload Technical Data sheet and OEM warranty declaration (wherever applicable) of the product with the bid for verification of Technical Specifications.
- I. Earnest Money Deposit (EMD): The Bidders shall submit the Earnest Money Deposit (EMD), through online/electronic mode. No interest shall be payable by Nandankanan Zoological Park authority on the Earnest Money deposited by Bidder.
- J. The bidder shall submit documents pertaining to bid, supporting documents and all correspondence etc. in English.
- K. **Withdrawal of bid:** No bid or any part of it will be permitted to be withdrawn/changed subsequent to the deadline for the submission of the bids.

5. Delivery

Free on-site delivery of the equipment shall be made by the selected bidder at Office of the Deputy Director, Nandankanan Zoological Park, Bhubaneswar, Odisha-754005.

6. Evaluation of Bids

The duly formed Tender Committee and Technical committee will technically and commercially evaluate the bids of all as per the following schedule/pattern:

- (A) Conditional bids shall be summarily rejected.

(B) The **Technical bids** shall be evaluated as per the following:

(B.1) Compliance to eligibility criteria: Compliance to the eligibility criteria and supporting documents specified in this Tender document. Non-compliance of ANY eligibility criteria shall result in dis-qualification of the bid.

(B.2) Compliance to the equipment specifications specified in this Tender: The bids found eligible according to the eligibility criteria would then be checked for compliance to the equipment's technical specifications mentioned in this Tender document. Non-compliance of any required specification shall result in dis-qualification of the bid.

(B.3) Live/virtual demo of the proposed equipment: The bidders would be required to give a live/virtual demonstration of the equipment (if required by Nandankanan Zoological Park Authority).

7. **General criteria for Disqualification**

Nandankanan Zoological Park Authority will have the discretion to disqualify any bid(s) if:

- A. The Bidder fails to provide the information required in the Bid Proposal or any additional information as requested by Nandankanan Zoological Park during the Tendering process.
- B. The Bidder not fulfilling any terms & conditions specified in Tender document.
- C. Material inconsistencies in the information uploaded.
- D. Misrepresentations in the Bid Proposal or any supporting documentation.
- E. Incomplete or conditional bids that do not fulfil all or any of the conditions specified in this Tender document and/or bids not quoted as per the Tender document.
- F. Use of unfair means.
- G. Bids found unsigned, bids signed by unauthorized person and unsigned corrections in the bids.
- H. Bid offer with price variation clause.

Non-compliance of any requirement of this Tender document.

8. Acceptance of the Bid

Nandankanan Zoological Park reserve the right to accept any bid, reject all or any bids and to annul the Tendering process at any time without assigning any reason, thereby without incurring any liability to the affected bidder(s) or any obligation to inform the affected bidder(s) of the grounds of the action.

9. Cost involved in Tendering

The Bidder shall bear all costs associated with the preparation and submission of their Bid, including the cost of live/virtual demonstration of the proposed model of the equipment. Nandankanan Zoological Park will in no case be responsible or liable for any costs.

10. Return of EMD to unselected bidders

The Earnest Money Deposit (EMD) of the disqualified / unselected bidder(s) will be returned back to their account (from which the amount was paid) automatically.

11. Right to vary quantities at the time of award

Nandankanan Zoological Park reserve the right to vary the quantities and/or split the order among the selected bidder(s) and re-fix a delivery schedule. Nandankanan Zoological Park also reserve the right to order additional quantities during the contract period at a price not more than the unit price quoted in the contract/supply order.

12. +Additional Information/Clarification

Nandankanan Zoological Park reserve the right to seek any additional information and samples, as they may deem necessary to evaluate the bid. Bidders shall provide such additional information or clarification as sought by Nandankanan Zoological Park within the provided time frame.

13. Bidder's obligation to carefully examine the Tender document

The bidder is expected to examine all the instructions, forms, terms & conditions and specifications in the Tender document carefully. Failure to furnish all the information required by the Tender document may result in rejection of the bid.

14. Price

- A. Price will be calculated as total price of the equipment inclusive of GST and any other applicable Taxes/Duties.
- B. Shipping price and documentation charges to be quoted separately (inclusive of GST and any other applicable Taxes /Duties).
- C. A bid uploaded with a variable price will be treated as non-responsive and would be rejected.
- D. Bidder should certify that they have read and understood the terms and conditions applicable to the bidder and they undertake to supply as per these terms and conditions.

15. Delivery and penalty

Supply of the equipment shall be completed within 45 days from the date of placement of supply order.

16. Warranty and Penalties

- A. It shall be the responsibility of the selected bidder to effect necessary repairs and maintenance of equipment as and when required, during the contract period. The bidder would be required to address the complaints including shipping charges for the equipment.
- B. The bidder should also provide support repair and maintenance. If the complaint is not addressed within the stipulated period of 20 days, a penalty upto @ 0.05% of the total contract value per day will be levied on the bidder.
- C. If, however, the complaint is not addressed within 40 days period, a penalty upto @ 0.1% of the total contract value will be levied on per day basis, after the expiry of 40 days.
- D. No recovery of penalty will be made, if Nandankanan Zoological Park authority accepts the delayed completion of task and decides that the delay was due to reasons beyond the control of the bidder.

17. Inspection/Tests of the Equipment

- A. The inspection of the equipment may be carried out by Nandankanan Zoo Authority who shall have the power to inspect/verify the equipment supplied as per the supply order at any time before, during or after commissioning and to reject the same or any part or portion, in case of non-compliance of the supply order/contract specifications.
- B. Selected bidder shall neither claim nor be entitled to payment for any damaged supplies. Damaged supplies, if any, shall be replaced by the selected bidder at their own expense.
- C. The bidders would be required to give a live/virtual installation and demonstration of the equipment if required by Nandankanan Zoological Park Authority.

18. Payment Schedule

Sr. No.	Milestone	Payment
1	100% Delivery and Physical Inspection of equipment and successful commissioning.	100% of the contract value

19. Invoicing

- A. Invoice along with Delivery Challan in duplicate are to be sent by the selected bidder to the consignee. The duplicate of Delivery Challan will be returned by the respective indenting officers with the quantities or numbers received duly noted and signed thereon to the selected bidder.
- B. The payment shall be released after the inspection/verification of the equipment by Nandankanan Zoological Park Authority.

20. Sub- Contracting of the order

The selected bidder shall not assign or sublet the contract supply order without prior written approval of Nandankanan Zoological Park Authority.

21. Compliance with laws and permits

The selected bidder shall comply with all relevant rules, regulations, ordinances,

codes and laws relating to the work or the conduct thereof and shall secure and pay for any permits and/or licenses necessary for the execution of the work and selected bidder shall be responsible for the same.

22. Forfeiture of Earnest Money Deposit

- A. If the Bidder withdraws his bid before the expiry of validity or after the acceptance of the bid, the Earnest Money Deposited by the bidder will be forfeited.
- B. If the Bidder fails to comply with any of the terms, conditions or requirement of order and the technical specifications as indicated in the Tender document, the Earnest Money deposited by the Bidder will be forfeited.

23. Cancellation of Order

A. In the event of the selected bidder:

- (i) Failing to fulfil the order, or
- (ii) commit breach of any terms and conditions of this contract/supply order, or
- (iii) found repeatedly supplying goods liable to rejection hereunder, or failing, declining, neglecting or delaying to comply with any demand or requisition or
- (iii) otherwise not executing the same in accordance with terms of this contract/supply order, or
- (iv) the bidder or their agent or servants being guilty of fraud in respect of this contract, or
- (v) bidder and/or any of their partners or representatives found promising or offering any bribe or any pecuniary benefit or otherwise to any official/person connected with this Tender, or
- (vi) the bidder or any of their partners become insolvent or apply for relief as insolvent debtor or commence any insolvency proceedings or make any composition with their creditors or attempt to do so,

Nandankanan Zoological Park Authority shall be at liberty to cancel the supply order forthwith, to blacklist the bidder, to reclaim all or part of the money paid to the bidder and to initiate any criminal/civil proceedings against the bidder and/or their partners.

24. Consequences of Cancellation of Order

- A. Cancellation of order shall not affect any continuing obligations of the selected bidder under this Contract, which, either expressly or by necessary implication, are

to survive its expiry or termination, such as but not limited to confidentiality obligations of the selected bidder.

B. Upon cancellation of contract/ supply order for reasons whatsoever, Nandankanan Zoological Park Authority shall have the right to impose any or all of the following penalties: -

- (i) Forfeiture of Earnest Money deposited
- (ii) Black listing of the bidder
- (iii) Initiation of civil/criminal proceedings as the case may be
- (iv) Any other penalty as deemed appropriate

25. Arbitration

Any dispute, claim or difference relating to or arising out of this contract/supply order shall be referred for arbitration to the Deputy Director, Nandankanan Zoological Park or any other officer/official appointed by him/her and the decision so taken by the arbitrator shall be final and binding on all concerned. Where the matter involves claim of any amount that is awarded in such arbitration, the same shall be recoverable from the bidder out of dues pending/ an order of the civil court.



DEPUTY DIRECTOR
NANDANKANAN ZOOLOGICAL PARK

APPLICATION FORM-T (TECHNICAL BID) FOR SUPPLY OF TELEMETRY EQUIPMENT TO THE
 NANDANKANAN ZOOLOGICAL PARK, BHUBANESWAR-754005

(TO BE FILLED IN BY THE APPLICANT)

1.Name of the Applicant Entity.....

Address		.....
	
	
2	Telephone No (s):.....	
(i)	Fax Number:	
(ii)	STD Code	.....
(iii)	E-mail address	.....
(iv)	Website	.....

(v) Attach a self-attested copy of the valid:

- (a) Registration number
- (b) Trade license number
- (d) GST registration number

3.(i) Applicant's Legal Status.....

(Individual/Company/Proprietor/Partnership HUF/Society/Any Other, specify)

(ii) PAN Card No.:(Copy to be attached).....

4.Contact Executive(s)

(i) Name

(ii) Designation:

(iii) Tel. No(s) With STD Code:.....

Office: (a)Direct:.....

	(b)General	:	.....
	Mobile	:	.....
(iv)	E-mail ID	:	.....
5	Designation & address of:		.....
	the Income tax Authority		
	By whom the entity is		.....
	assessed.		
6	Name/Address of Bankers:.....		
	With A/c No./ Type		.....
	of Account		

7.(a)Details of enclosed Demand: No..... dated.....

Draft/Banker's Cheque/Pay

Order covering Application

Fee: Rs.500/- +GST (If tender paper is downloaded from website).

(b)Details of EMD (Rs. 5,000/-): No..... dated.....

1. Details of business associates, sister
Concerns, affiliates, subsidiaries, etc. if
any (attach proof)

Name of business associates/sister concerns/affiliates/subsidiaries etc. (attach separate sheet, if necessary)	Experience for supply of telemetry equipment
1	
2	
3	
4	

- 9 Date of establishment of the applicant's Business in supply of telemetry equipment (attach proof)
- 10 Turnover from supply of telemetry equipment business:

Financial Year	Annual Turnover from supply of telemetry equipment business (as per audited financial statement)
2020-21	
2021-22	
2022-23	

- i) As identity proof- Passport / Driving license/ Voter Identity card
- ii) As address proof –passport/ Electric bill/ Telephone bill/ Ration card
- iii) Copy of return of income tax of the last three years. (2020-21 to 2022-23)
- iv) Earnest money of Rs. 5,000/-
- v) Demand draft of Rs.500/- + GST as tender paper cost (non-refundable) in case the tender form is downloaded from the website.
- vi) Copy of CGST / SGST registration certificate & GST return for last 3 years (2020-21 to 2022-23)
- vii) Proof of a minimum of three years of continuous experience for satisfactory supply of telemetry equipment to Govt. Dept. / PSU in Odisha.

11. Any other information:

.....

12. I/we, hereby, declare that: -

I/We have read and understood & agreed to the Bid Documents, including Terms & Conditions forming integral part of the license agreement, etc.

I/we have read and understood the terms and conditions governing the supply of telemetry equipment: and I/We agree and undertake to be bound by the Bid Documents, and other Terms Conditions forming integral part of the license agreement.

That I/We understand that in case of any of the above information/documents (as given by us) is found to be incorrect, Nandankanan Zoological Park may reject the application, cancel the agreement, or revoke the license at any time, without giving any notice and in such a situation, I/We will not be entitled for refund of any part of license fee, security and other deposit.

I/we have not been barred by any office Department/Organization/Local Authority from supply of telemetry equipment.

Place:.....

Signature:

Date:.....

Name:

.....
(Authorized Signatory) – Copy of such authorization

Designation:.....

.....
(Capacity in which signed)

Full Address:.....

Company Seal :

**APPLICATION FORM-F (FINANCIAL BID) FOR SUPPLY OF TELEMTRY EQUIPMENT TO
NANDANKANAN ZOOLOGICAL PARK, BHUBANESWAR-754005**

(TO BE FILLED IN BY THE APPLICANT)

To

The Deputy Director,
Nandankanan Zoological Park
Baranga, Bhubaneswar.
Sir,

I/we hereby offer my rate for the award of contract for the supply of telemetry equipment from reputed National/Multi-National companies / Reputed Distributor / Stockists for the use in the Nandankanan Zoological Park for research and monitoring purposes.

The telemetry equipment shall be supplied (delivered at the Nandankanan Zoological Park at the cost of contractor) with a discount on MRP as annexed in the annexure-A will be considered during financial evaluation. This rate is quoted without any other conditions. Taxes/GST etc. shall be as per Govt. rules in force.

I agree to hold this offer valid for 100 days from the date of opening of tender and shall be bound by the communication of acceptance with you to be forfeited to the Government.

I have thoroughly understood the terms and conditions without any reservation.

I enclose herewith a demand draft for **Rs. 5,000/-** (Rs. Five thousand) only in favour of the Deputy Director as Earnest Money and the same shall be forfeited to the Government if I dishonour your offer of acceptance.

I have already paid income tax and enclose herewith the income tax return/ GST return certificate for 2020-21, 2021-22, 2022-23.

I agree to abide by all the terms and conditions set out in the tender notice without any reservation/objection. The following documents are enclosed along with the tender.

Seal and Signature of tenderer

Place:
Date:

ON NON-JUDICIAL STAMP PAPER OF .100/-

AFFIDAVIT

I, _____, son/daughter/wife of _____
resident of _____ Deputy Director/Partner/Proprietor of
M/s. _____ having its registered office at _____ do hereby
solemnly declare and affirm as under:

1.	That I / firm / company have / has the requisite licenses and approvals including license for supply of telemetry equipment.
2.	That there has been no case / litigation whatsoever against me / firm /company or any other legal entity in which I / we have controlling share any law which restricts me / firm / company from supply of telemetry equipment and /or to enter into the Agreement.
3.	That I / firm/company are / is financially sound to undertake such an agreement.
4.	That I / firm / company or any other legal entity in which I / we have controlling share has / have never been barred from supply of telemetry equipment anywhere in Odisha by any agency / Govt. Department.
5.	That I / we understand and agree that the contract for supply of telemetry equipment in the Nandankanan Zoological Park for which I am / we are submitting my / our bids as per the Bid Notice / Bid Documents.
6.	That I / we undertake and agree that the Deputy Director, Nandankanan Zoological Park will have the sole right to revoke / cancel the License agreement on violation of any terms & conditions of the bid document and / or Agreement.
7.	That I / we undertake to pay the amounts as demanded by the Deputy Director, Nandankanan Zoological Park towards damage if caused to the Nandankanan Zoological Park.
8.	That I / we have not been debarred from participating in the bidding process by any Govt. agency / PSU etc.
9.	That I / we declare that no criminal case is pending against me/us in any court of law in the country.
10.	That I /we have read all the terms & conditions forming part of the License Agreement (Annexure-A) and agree to abide by them in entirety.

DEPONENT

Annexure-A

List of Telemetry equipment required for Nandankanan Zoological Park

The bidder needed to fill up details of percentage of discount on M.R.P. (inclusive of GST) in the 'Quoted amount' column of the below table.

Sl. No.	Description of Product	Quantity	Quoted Amount (in USD)	Quoted Amount (in INR)
I.	Backpack transmitter (Gharial), Advance Telemetry System, USA, Model= R1930T, Weight= 43 gm, Battery life= 843 days, Frequency range= 148.000-159.999 MHz, Temperature calibrated	13		
II.	Iridium/ GPS logger, D (Gharial), Advance Telemetry System, USA, Model= G5-LD, Frequency range= 146.000-153.999 MHz along with Wildlink communication Module (Model=17621)	1		
III.	Scientific receiver w/ nylon case, Advance Telemetry System, USA, Model= R410	1		
IV.	3-element folding Yagi Antenna, Model 13874, 150-154 MHz, with 5ft RG58 cable	1		
V.	Shipping and handling charges of the above equipment			
VI.	International document fee for the above equipment			

I. Backpack transmitter (Reptile Glue on) (Advance Telemetry System, USA)

Technical Specifications-

Transmitter type: Crystal controlled 2-stage

Calibration tolerance: ± 2.5 kHz

Frequency stability: ± 2.5 kHz, -20°C to $+40^{\circ}\text{C}$

Pulse rate and width: Typical on time 20ms, off time 1100ms (controlled by uC)

Pulse rate variation: 0.01%/volt, $\pm 0.01\%$ for temperatures -20°C to $+40^{\circ}\text{C}$

Battery: Lithium

Activation: By removing magnet

Encapsulation: Electrical resin, water-proof, specific gravity: 1.12

Model: R1930T

Battery: 3.5V (16M)

Battery capacity (days): 843 days (40ppm)

Dimension (in mm): 25X56X9X15

Weights (grams): 43

Frequency range= 148.000-159.999 MHz

Temperature calibrated

II. G5-LD Series Iridium/GPS Logger (Advance Telemetry System, USA) Specifications

Large Data Transmission Capacity: Receive animal location data via website, up to 24 location fixes per day, up to 6 downloads per day. Data files include: latest location, aggregate location since deployment (both .txt), and Google map compatible (.kml).

Programmable GPS Sampling Rates: User programs the number of fixes to collect per 24-hour period in one-hour increments, and the calendar days of the year on which to collect fixes. Program may be remotely modified via website.

Standard VHF Beacon Included: VHF transmitter is user programmable on a daily on/off hourly schedule. The minimum on time is one hour per day.

Turning off the VHF transmitter during periods when it will not be monitored saves power, enabling longer battery life.

Windows® Based Collar Communication Software Included: Software is used to program the collar location fix rate, VHF beacon and duty cycle. Compatible with most MS Windows® OS's. Changes to program may also be remotely commanded on-the-fly via the ATS Iridium website.

Activity Sensor Included: Records movement percentage since the last GPS coordinate

was recorded.

Mortality Sensor Included: Allows the researcher to know when the animal has not moved within a 4, 6-, 8-, 10- or 12-hour time period. The mortality schedule may be changed via website command. Mortality notifications are sent via e-mail or text.

Ambient Air Temperature Sensor Included: Records external temperature each time a GPS location is acquired, accurate to ± 2 degrees Celsius with resolution to one degree.

GPS Engine: Global Top Ivory Series MT3339 Engine.

LIFE: Typical life is variable; factors affecting life include number of GPS fixes per day, number of Iridium data transmissions per day, visibility of GPS and Iridium satellites, and VHF on-time per day. Life calcs based on VHF on 8 hrs/day, 6 locations/day, uplinked every 2 days

Expect 4 years of life

MEMORY: On board data storage • Datum = WGS84

256K nonvolatile data storage memory (64,000 GPS locations)

Weight: ~ 600 grams (1.32 lbs)

Size: ~ 152mm x 57 mm x 50 mm

Battery: 1 D Cell

WARRANTY:

G5L Series GPS loggers are covered by a limited warranty for one year from time of shipment, or up to the calculated minimum battery life, whichever occurs first. Collars may not be refurbished.

It should be supplied with Wildlink communication Module (Model=17621).

III. R410 Scanning receiver (Advance Telemetry System, USA) Specifications

GENERAL

- Frequency range: Any specified 4 MHz range from 140 to 220 MHz
- Channel spacing: 1 kHz
- Input impedance: 50 ohms
- Minimum discernible signal (MDS): -150 dBm (0.007 uv into 50 ohms)
- Noise figure: 3 dB maximum
- Speaker: 8 ohms
- Frequency stability: ± 1 kHz -20°C to 50°C
- IF frequency: 10.7 MHz
- IF bandwidth: 6 dB ± 2 kHz; 80 dB ± 7 kHz
- Image rejection: > 150 dB
- RF gain control range: > 110 dB
- Operating voltage range: 3 to 6 volts DC
- Dwell time (scan time): Programmable, 1 to 60 seconds

CONTROLS

- Channel selector
- Auto scan/memory bypass
- Incremental frequency up/down
- Audio level
- RF gain
- Dwell time (scan rate)
- Receiver on/off
- Add to memory

DISPLAYS

- Selected frequency: LCD (0.5" digits) with backlight for night use
- Battery status: "low batt" indicator flashes when battery voltage is low
- Signal level: LCD display bar graph

CONNECTIONS

- Antenna: BNC
- Headset: Receptacle for 1/4" mono phone plug

POWER

- 4 "AA" replaceable alkaline batteries (18 hours)

PHYSICAL

- Size: 10.6 cm wide x 16.5 cm long x 6.5 cm high (4.2" x 6.5" x 2.5")
- Weight: 0.7 kg (1.6 lbs) with batteries
- Accessories: Included: Padded nylon case
Optional: David Clark headset

ENVIRONMENTAL

- Operating temperature: -20°C to 50°C
- Storage temperature: -70°C to 60°C
- Humidity: 95% non-condensing

WARRANTY

- One-year parts and labor on materials and workmanship

IV. 3-element folding Yagi-Antenna (Advance Telemetry System, USA) Specifications

Model: 13874

Gain: Isotropic: 7.7 dBi, Dipole: 5.6 dBi

Half power width: Horizontal-plane: 59°, Vertical-plane: 95°

Folded dimensions: 85.1x10.2x4.4 cm (33.5x4x1.75 in.)

Weight: 0.54 kg (1.2 lb) to 0.71 kg (1.6 lb)

Range of Ant Height: 76 cm (30 in.) to 81 cm (32 in.) (For 141-175 MHz)

Range of Ant Length: 106 cm (42 in.) to 86 cm (34 in.) (For 141-175 MHz)

It should be supplied with 1.52m (5ft) RG58 cable.