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Tender ref No. (ARDE/24ATT008/CMS II)

Minutes of TCEC meeting for Ready to fly Drone/UAV with transportation case

1. Telemetry group had raised a demand for **Ready to fly Drone/UAV with transportation case as per specs No. ARDE/TLM/DTRS/2023-24/DRONE/04** with Demand No **24TEL026**, at an estimated cost of Rs **63,72,000/-** (Rs Sixty Three Lakh Seventy Two Thousand only) through Open tender.

2. Nomenclature of store and Quantity:

Sr No.	Nomenclature of store	Quantity
1.	Ready to fly Drone/UAV with transportation case as per specs No. ARDE/TLM/DTRS/2023-24/DRONE/04	03 Nos.

3. The following TCEC members have attended the TCEC meeting on 17th May 2024.

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|------|----------------------------|--------------------|
| i. | Ms. Devyani Jadhav, Sc 'G' | - Chairperson |
| ii. | Mr. SS Phadke, Sc 'F' | - QA Rep. |
| iii. | Mr. Viwek Mahto, Sc 'E' | - Technical Expert |
| iv. | Mr. SR Kharate, TO 'C' | - Member MMD |
| v. | Mr. Dinesh Tilante, Sc 'E' | - User Rep. |

4. The Chairman welcomed all the members. The user rep. explained the necessity of the aforesaid item for the task project titled "Drone Base Telemetry System (DTRS)". Drones will be used to carry a payload up to 7 kg which consists of Telemetry Receiver, SDR, cameras and antennas. Drone with payload will be deployed near target area for capturing Telemetry data and fall of shot.

5. The tender No. **ARDE/24ATT008/CMS II (Tender ID: 2024_DRDO_644593_1)** was floated on eProcurement System (DPP) for Organizations under MoD dated 29th Feb 2024. The tender was opened on 28st March 2024.

6. Pre-bid was conducted on 11th March 2024. User rep explained the technical requirements of Ready to fly Drone/UAV with transportation case. Minutes of meeting is attached.(Page No.:145) Seven vendors attended the pre-bid as mentioned below:

Sr. No.	Name of the Firm
1.	M/s AEBOCODE Technologies, Panchkula
2.	M/s Adani Defence Systems & Technologies, Ahmedabad
3.	Z-Axis Unmanned Machine, Ahmedabad
4.	M/s MTAR Technologies Ltd, Hyderabad
5.	M/s Scandron Pvt Ltd, Bengaluru
6.	M/s Bit Mapper Integration Technologies Pvt Ltd, Pune

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7.	M/s Elmack Engg Services, Pune
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7. The following 11 firms responded with their Techno Commercial bid:

Sr. No.	Name of the Firm
1.	Aayan Network Technology Solutions Pvt Ltd, Delhi
2.	AEBOCODE Technologies Pvt Ltd, Panchkula
3.	Bit Mapper Integration Technologies Pvt Ltd, Pune
4.	Daarshik Aerospace Research and Technologies Pvt Ltd, Panipat
5.	Edall Systems, Bangalore
6.	EndureAir Systems Pvt Ltd, Noida
7.	Garuda Aerospace Pvt Ltd, Chennai
8.	M/s Kambill Systems Pvt Ltd, Delhi
9.	Optimized Solutions Ltd, Ahmedabad
10.	Scandron Pvt Ltd, Hyderabad
11.	Z-Axis Unmanned Machines Pvt Ltd, Ahmedabad

8. During technical evaluation, all the firms were asked to comply with each parameter of specifications. All have responded with their compliance for the same. (Reply attached)
9. For the Technical evaluation, demonstration of Drone/UAV for Task Project on "Drone based Telemetry Receiving Systems (DTRS)" was planned between 30/04/2024 and 15/05/2024 at ARDE Pashan Test Ranges. The time slots for the vendors were given in advance for preparation and readiness for the demo.
10. The technical demonstration of drone was carried out to assess the capabilities of firms, as well as stability & form factor of drones during flights.
11. Out of 11 vendors total 10 demonstrated their product at ARDE. 1 Vendor did not participate in the demonstration.

S. No.	Vendor	Date	Time Slot 1
1.	AEBOCODE Technologies Pvt Ltd, Panchkula	01/05/2024	1000 hrs to 1100 hrs
2.	Bit Mapper Integration Technologies Pvt Ltd, Pune	09/05/2024	15:30 hrs to 16:30 hrs
3.	Daarshik Aerospace Research and Technologies Pvt Ltd, Panipat	14/05/2024	1000 hrs to 1100 hrs
4.	Edall Systems, Bangalore	06/05/2024	1000 hrs to 1100 hrs
5.	EndureAir Systems Pvt Ltd, Noida	10/05/2024	15:30 hrs to 16:30 hrs

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6.	Garuda Aerospace Pvt Ltd, Chennai	07/05/2024	1000 hrs to 1100 hrs
7.	M/s Kambill Systems Pvt Ltd, Delhi	14/05/2024	15:30 hrs to 16:30 hrs
8.	Optimized Solutions Ltd, Ahmedabad	08/05/2024	1100 hrs to 1200 hrs
9.	Scandron Pvt Ltd, Hyderabad	10/05/2024	1000 hrs to 1100 hrs
10.	Z-Axis Unmanned Machines Pvt Ltd, Ahmedabad	08/05/2024	1000 hrs to 1100 hrs

12. During the demonstration of drone, performance of drone is evaluated in ARDE test ranges for a limited capability, as per the following technical requirements:

S.No.	Parameter	Range
1	Operating range	200 m
2	Operating Altitude (Max)	50 m
3	Endurance (Min)	20 min
4	Drone communication	2.4 GHz ,ISM band
5	Upward/Downward speed	2-3 m/s
6	Lateral speed	6-8 m/s

The Drone is physically verified for design & dimensions to meet ARDE's requirement. Detail discussion on technical aspects, vendor capabilities for design modification if required, is also carried out.

13. Total 9 Vendors out of 10 demonstrated the product matching the given form factor and found their performance satisfactory.
14. On the basis of demo and technical compliance received from firms, following firms are technically accepted:

Sr. No.	Name of the Firm
1.	AEBOCODE Technologies Pvt Ltd, Panchkula
2.	Bit Mapper Integration Technologies Pvt Ltd, Pune
3.	Daarshik Aerospace Research and Technologies Pvt Ltd, Panipat
4.	Edall Systems, Bangalore
5.	Garuda Aerospace Pvt Ltd, Chennai
6.	M/s Kambill Systems Pvt Ltd, Delhi
7.	Optimized Solutions Ltd, Ahmedabad
8.	Scandron Pvt Ltd, Hyderabad
9.	Z-Axis Unmanned Machines Pvt Ltd, Ahmedabad

15. On the basis of demo and technical compliance received from firms, following firms are technically rejected:

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Sr. No.	Name of the Firm	Reason for rejection
1.	Aayan Network Technology Solutions Pvt Ltd, Delhi	Not attended demo, in spite of given more days for demonstrations. (Correspondence email attached)
2.	EndureAir Systems Pvt Ltd, Noida	Attended the demo but form factor and design of drone was not as per requirement of ARDE.

16. The Comparative statement of technical specifications and the commercial terms quoted by the above firms against ARDE requirements are enclosed herewith (Appendix 'A').

Recommendations:

The Committee recommends consideration for opening of price bid & further processing the case.

Committee Members


SR. Kharate, TO 'C'
Member MMD


Dinesh Tilante, Sc 'E'
User rep.


Viwek Mahto, Sc 'E'
Technical Expert


SS Phadke, Sc 'F'
QA rep


Ms. Devyani Jadhav, Sc 'G'
Chairperson

Approved / ~~Not Approved~~


Dr. P. P. Parkhi, Sc 'G'

TECHNO-COMMERCIAL COMPARATIVE STATEMENT

Group: Telemetry

Demand No. 24TEL026 Dated: 21th Nov 2023

Tender Ref No.: ARDE/24ATT008/CMS II Dated: 26/02/24

No. of Bid Received: 11

No. of Bid Accepted: 09

No. of Bid Rejected: 02

PART- I (TECHNICAL)**Technical Comparative Statement****1. Technical Specification of Drone/UAV**

Sr. No.	Item Description and Specification	Value/Specification	Seller Name						Optimized Solution	Scandron Pvt. Ltd, Hyderabad	Z-Axis Unmanned Machine s Pvt. Ltd, ahmedabad
1	Operational altitude (Max)	200 m (AGL)	Aayan Networks Technology solutions Pvt. Ltd	Aebocod e Technology Pvt. Ltd	Bit Mapper Integration Pvt. Ltd	Daarshik Aerospace Research and Technologies Pvt. Ltd	Edall systems, Bangalore	Endureair Systems Pvt. Ltd, Noida	Garuda Aerospace Pvt. Ltd, Chennai	M/s kambill Systems Pvt. Ltd, Delhi	Optimized Solution ahmedabad
2	Drone Payload Capacity (Max)	7 kg	Complied	Complied	Complied	Complied	Complied	Complied	Complied	Complied	Complied
3	Payload Dimension	300 x 300 x 100 mm	Complied	Complied	Complied	Complied	Complied	Complied	Complied	Complied	Complied

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16	Safety Features	±5°	Complied	Complied	Complied	Complied	Complied	Complied	Complied	Complied	Complied	Complied	Complied	Complied	Complied
		a. Return to launch point if communication is lost b. Return to launch point if battery power goes below critical level c. Return to launch point if wind speed is more than 45 kmph d. Don't cross predefined geo fencing													
17	Mandatory Accessories	1. Case for storage & transportation 2. Tool kit for assembly & cleaning material	Complied	Complied	Complied	Complied	Complied	Complied	Complied	Complied	Complied	Complied	Complied	Complied	Complied
18	Ground Control station (GCS)	Remote control with panel display	Complied	Complied	Complied	Complied	Complied	Complied	Complied	Complied	Complied	Complied	Complied	Complied	Complied
19	Camera	Positioned at drone base	Complied	Complied	Complied	Complied	Complied	Complied	Complied	Complied	Complied	Complied	Complied	Complied	Complied
20	Camera Pixel	≥ 20 Megapixels	Complied	Complied	Complied	Complied	Complied	Complied	Complied	Complied	Complied	Complied	Complied	Complied	Complied

PART-II (COMMERCIAL)

Sr. No.	Terms and Conditions Parameter	Seller Name									
		ARDE Terms and Conditions	Aebocode Technology Pvt. Ltd	Bit Mapper Integration Pvt. Ltd	Daarshik Aerospace Research and Technologies Pvt. Ltd	Edall systems, Bangalore	Garuda Aerospace Pvt. Ltd, Chennai	M/s kambill Systems Pvt. Ltd, Delhi	Optimized Solutions Ltd, ahmedabad	Scandron e Pvt. Ltd, Hyderabad	Z-Axis Unmanned Machines Pvt. Ltd, ahmedabad
1	Validation of Quotation	180 days from the of tender opening	Complied	Complied	Complied	Complied	Complied	Complied	Complied	Complied	Complied
2	EMD	NA	Complied	Complied	Complied	Complied	Complied	Complied	Complied	Complied	Complied
3	MII Undertaking	Class I	Complied	Complied	Complied	Complied	Complied	Complied	Complied	Complied	Complied
4	Delivery Schedule	Required within 03 months from the date of supply order/ contract placement	Complied	Complied	Complied	Complied	Complied	Complied	Complied	Complied	Complied
5	Installation, Commissioning & Training	Required for 5 days at ARDE, Pune	Complied	Complied	Complied	Complied	Complied	Complied	Complied	Complied	Complied
6	Delivery Term	Free at ARDE, Pune	Complied	Complied	Complied	Complied	Complied	Complied	Complied	Complied	Complied
7	Payment Term	As per RFP	Complied	Complied	Complied	Complied	Complied	Complied	Complied	Complied	Complied
8	Guarantee/ Warranty	12 Months	Complied	Complied	Complied	Complied	Complied	Complied	Complied	Complied	Complied
9	Permanence cum warranty bond (to be	As per RFP Part III (Special terms &	Complied	Complied	Complied	Complied	Complied	Complied	Complied	Complied	Complied

submitted by successful vendor)	conditions), in favor to the Director, ARDE.	Complied	Complied	Complied	Complied	Complied	Complied	Complied	Complied
10	Validity of Performance Bank Guarantee	The Bank Guarantee should be valid up to 60 days beyond warranty period.	Complied	Complied	Complied	Complied	Complied	Complied	Complied

Committee Members

SR Kharate
SR Kharate
TO 'C'
Member MMD

Dinesh Tilante
Dinesh Tilante
Sc 'E'
User Rep.

SS Phadke
SS Phadke
Sc 'F'
QA Rep.

Viwek Mahto
Viwek Mahto
Sc 'E'
Technical expert

Devyani Jadhav
Devyani Jadhav
Sc 'G'
Chairperson

Approved/ Not Approved

PP Parkhi 04.06.24
Dr. PP Parkhi, Sc 'G'