

**QUESTIONNAIRE FOR UNDERTAKING PROJECT FOR RUNWAY
INDEPENDENT REMOTELY PILOTED AIRCRAFT SYSTEM (RPAS)
UNDER THE 'MAKE CATEGORY' OF DEFENCE ACQUISITION
PROCEDURE (DAP)-2020**

General Specification.

1. What is the general configuration of the Runway independent RPAS system? List the components of the system.
2. Can the RPAS system operate in plains, desert, jungles and hilly terrain in climatic conditions extant in India?
3. Is the RPAS system modular in design and capable of repair in field?
4. What is the service life of the RPAS system? Specify in number of years?
5. How many years of product support and provision of spares and maintenance assistance will be provided?
6. Has the system undergone any upgrade, if so, when? Are any upgrades of the systems planned, if so, the details of upgrades and schedule be provided?
7. Which model/version of the equipment is being provided?
8. Are simulators for training of the crew available and is it a part of the system being offered or is to be procured separately?
9. Is the Runway independent RPA compliant with the metric system?
10. Is the entire system ruggedized as per military standards 810 G and able to operate in conditions prevalent in India?
11. Can the system be transported by road, rail, air and ship?

Specifications of the Aerial Vehicle.

12. Is the aerial vehicle modular in design?
13. What is the material used in manufacture of the aerial vehicle?
14. Is the aerial vehicle transportable by containers? Specify the size and dimensions of the aerial vehicle and containers.
15. What is magnitude of radar and acoustic signature?
16. Is the absolute ceiling of the aerial vehicle 5,000 m or above? Specify altitude achieved.
17. Is the operational ceiling of the aerial vehicle 4,000 m or more? Specify altitude achieved.
18. Is the aerial vehicle capable of carrying different kinds of payloads including Electro Optical and IR with Laser Designator payload and ESM payloads? Can it carry more than one payload simultaneously? If yes specify the combination.
19. Can the aerial vehicle achieve an endurance of minimum 06 hours with all combinations of payloads?
20. Can the aerial vehicle achieve a range of minimum 150 kms with line of sight communication?

21. What is the mode of launch and recovery of the aerial vehicle? Specify the maximum altitude of launch and recovery and type of site required?
22. Specify the maximum speed and cruise speed of the aerial vehicle?
23. Can the aerial vehicle operate between temperatures of minus 30 degree to 55 degrees? Specify operating and storage temperatures.
24. Can the RPAS operate in wind speeds upto 30 knots? What are the takeoff and landing wind parameters for the aerial vehicle?
25. Can the aerial vehicle operate in minimum 15mm per hour rain conditions? Specify the limitations.
26. Specify if there is power back up and its duration?
27. Does the RPAS have identification of friend or foe (IFF) and Traffic Collision Avoidance System (TCAS)?
28. Does the RPAS have a satellite based navigation system including Indian Regional Navigation Satellite System (IRNSS)? Is there redundancy in navigation modes? Specify?
29. Does the aerial vehicle have Vertical Takeoff and Landing (VTOL) facility?

Specifications of Ground Control Station And Equipment.

30. Is the ground control system modular in design, ruggedized as per military grade standard 810G and capable of operating in conditions prevalent in India?
31. Is the ground control system containerized and capable of being transported by road, rail, air and ship? Dimensions of components be specified.
32. Specify the types of control stations with the systems and their use in brief.
33. Do the control stations have adequate space for accommodating required Crew Members during operations?
34. Can the system operate in temperatures from minus five degree to 45 degree centigrade?
35. Specify the mission planning capability of the system.
36. What are the modes of flight possible with the system? Give details of each mode. Is it possible to change the mode in flight?
37. Do the control stations have the software to control the RPAS and payload in real time, receive inputs from the payloads in real time and exploit the data from all payloads?
38. Do the control stations have the facility of electronic map display with provision for selection of scales and facility to upload digital maps of an area of minimum 500 square Kms?
39. Do the control stations display and record all flight parameters during mission?
40. Does the system provide necessary man-machine interface for the air vehicle operator and payload operator?
41. Is manned and unmanned interface available for controlling payload from other platform? Specify level of interface.

42. Does the system have the capability of integration with other aerial platforms to provide sensor inputs? Are there levels of interface to include active and passive inputs?
43. Do the control stations have coloured payload output capability with image exploitation facility, target acquisition, target coordinate and distance computation capability?
44. Do the control stations have post mission analysis capability?
45. Do the control stations provide voice communication facility between the operating crew?
46. Does the system have the capability to record video and still images along with map geographical tagging in the control station along with the capability to download on a secondary media? Is the hardware and software of the latest technology? Specify.
47. Does system have facility of line streaming of video/image images with geographical tagging from the station?
48. Does the system have the recording facility of entire flight parameters for checking during post mission analysis?
49. Does the system have a warning system to indicate failures/emergencies?
50. Is the system Electromagnetic Interference (EMI)/ Electromagnetic Pulse (EMP) hardened?
51. Is the system compatible with WGS 84 format and capable to incorporate the following map data:-
 - (a) Vector data - .dgn and .shp (of scale 1:2,50,000 and 1:50,000)
 - (b) Raster data – Geo TIFF (of scale 1:2,50,000 and 1:50,000)
 - (c) Digital Terrain Elevation Data (DTED) – Level-I and Level-II.
52. **Ground Support Equipment/Ground Support Test Equipment.** Give the specification and configuration of the equipment.

Specifications of Data Link.

53. Give the architecture of the data link system. What are the frequency bands of the systems?
54. Does the system have a minimum of two controlling channels in two separate bands? Are the controlling channels encrypted and secure against jamming?
55. Does the down link provide essential parameters in telemetric form to monitor the air vehicle and real-time reports of the payloads?
56. Does the system have a warning system to identify interference, jamming or interception?
57. Does the data link system provide the facility to create an embedded and encryption layer?
58. What is the effective line of sight range in various combinations of communications?

59. Does system provide fail safe mechanism in case of loss of data link communication.

Specification of Payloads.

60. **Electro Optical/Infra Red (EO/IR) Payload with Laser Designator.**

- (a) Is the payload an integrated payload on a single gimbed platform with day coloured CCD, FLIR and laser designator.
- (b) Does the CCD and IR camera have continuous zoom facility? The capability be specified.
- (c) Detection and recognition range by CCD and FLIR be specified.
- (d) Range and accuracy of the laser designator be specified.

61. **Short Wave Infrared (SWIR)/Medium Wave Infrared (MWIR) Payload.**

Does the system have a payload with SWIR and MWIR capability? What are the specifications of the payload?

62. **Miscellaneous.** Indicate if any other payload is being offered with brief description and capability.

63. **Remote Video Terminal (RVT).** Does the system have the facility of RVT to receive inputs from the payload, capabilities of the system be specified.

64. **Maintenance.**

- (a) Briefly describe the maintenance philosophy of the system and echelons of repairs/maintenance. What is the infrastructure required for various levels of maintenance.
- (b) Does the system facilitate conduct of continuous operations by RPAS?
- (c) Specify the overhaul and change time of major components.
- (d) Are spares and repair facilities available in India?
- (e) Is continuous product support for the complete life of the equipment being provided?
- (f) Level of Maintenance Transfer of Technology (MToT) being offered.
- (g) Specify warranty and Annual maintenance being offered.

65. **Miscellaneous.**

- (a) Level of maintenance and repair training being offered.
- (b) Operator/Crew training being offered.

INFORMATION PROFORMA FOR INDIAN VENDORS

1. **Name of the Vendor/Company/Firm.**

(Company, in brief, to be attached)

2. **Type (Tick the relevant category).**

- (a) Original Equipment Manufacture (OEM) : Yes/No
- (b) Authorised Vendor of foreign Firm : Yes/No (attach details, if Yes)
- (c) Others (give specific details)

3. **Contact Details.**

Postal Address:

City : _____ State : _____

Pin Code : _____ Tele : _____

Fax : _____ URL/Web Site : _____

4. **Local Branch/ Liaison Office in Delhi (if any).**

Name & Address : _____

Pin code _____ Tele : _____ Fax : _____

5. **Financial Details.**

(a) Category of Industry (Large/Medium/Small Scale) : _____

(b) Annual turnover: _____ (in INR)

(c) Number of employees in firm: _____

(d) Details of manufacturing infrastructure: _____

(e) Earlier contracts with Indian Ministry of Defence/ Government agencies:

<u>Contract Number</u>	<u>Equipment</u>	<u>Quantity</u>	<u>Cost</u>

6. **Certification by Quality Assurance Organisation.**

<u>Name of Agency</u>	<u>Certification</u>	<u>Applicable from (Date & Year)</u>	<u>Valid till (Date & Year)</u>

7. **Details of Registration.**

<u>Agency</u>	<u>Registration No</u>	<u>Validity(Date)</u>	<u>Eqpt</u>
DGS&D			
DGQA/DGAQA/DGNAI			
OFB			
DRDO			
Any other Government Agency			

8. **Membership of FICCI/ASSOCHAM/CII or other Industrial Association.**

<u>Name of Organisation</u>	<u>Membership Number</u>

9. **Equipment/ Product Profile (to be submitted for each product separately).**

(a) Name of Product: _____
(Should be given category wise for e.g. all products under night vision devices to be mentioned together)

(b) Description (attach technical literature): _____

(c) Whether OEM or Integrator: _____

(d) Name and address of Foreign collaborator (if any): _____

- (e) Industrial Licence Number: _____
 - (f) Indigenous component of the product (in percentage): _____
 - (g) Status (in service/design & development stage): _____
 - (h) Production capacity per annum : _____
 - (j) Countries/ agencies where equipment supplied earlier (give details of quantity supplied): _____
 - (k) Estimated price of the equipment _____
10. Alternative for meeting the objectives of the equipment set forth in the RFI.
11. Any other relevant information: _____
12. **Declaration**. It is certified that the above information is true and any changes will be intimated within five (05) working days of occurrence.

(Authorised Signatory)