

## **BRIEF OF PROJECT : PROCUREMENT OF RUNWAY INDEPENDENT REMOTELY PILOTED AIRCRAFT SYSTEM (RWI RPAS) UNDER MAKE-II CATEGORY**

1. **Name of Proposal.** Runway Independent Remotely Piloted Aircraft System (RWI RPAS).
2. **User Directorate.** Directorate General of Artillery.
3. **Operational Necessity.** RPAS/Drones have greatly impacted the modern battlefield. Within the category of RPAS, Vertical Take off and Landing (VTOL) concepts afford great operation/flexibility during employment. Surveillance and Target Acquisition (SATA) units provide the data of static and dynamic targets for engagement by the firepower resources, ie, Guns and Rockets. This sensor to shorter link is an operational necessity for effective destruction/degradation of time critical targets. Ground Based Sensors have limited surveillance depth. Therefore, there is an urgent need for aerial surveillance platform (RWI RPAS) with 80-100 km range for tactical surveillance, target acquisition, Direction of Own Artillery Fire (DOOAF) & Post Strike Damage Assessment (PSDA). RWI RPAS are ideal for mobile operations, reducing fixed-wing launch and recovery challenges while freeing troops from stationary runway constraints. The availability of RWI RPAS will enhance the operational capability as under:-
  - (a) Faster, shorter and responsive Sensor-Shooter Link to support real time engagement and more importantly provide observation and PSDA, as and when reqd.
  - (b) Enable observed fire for long range guns and rocket systems.
  - (c) Enable Post Strike Damage Assessment (PSDA) of Targets.
  - (d) Provides limited integral aerial surveillance capability to Commanders in Area of operations/ Area of Interest.
  - (e) Covers the gap between the mini RPAS and the HALE/ MALE class of RPAS.
4. **Broad Technological Specifications.**
  - (a) **Launch Method.** Catapult or Vertical Take-off and Landing (VTOL) with automatic take-off & landing capability.
  - (b) **Communications Range.** Minimum 80 km with single RPA through secure main & redundant data link.
  - (c) **Flight Endurance.** Minimum six hours.
  - (d) **Altitude of Operation (RPA).** Ceiling of 5000m Above Mean Sea Level (AMSL) and an adequate operational altitude so as not to be audible (during level flight) on ground directly underneath.
  - (e) **Payload.** Day and Night all weather High Definition/Infrared camera (gimbal stabilized) with a range of at least 20 km for detection & identification of ground elements like personnel, A & B vehicles, guns etc.

- (f) **Altitude of Operation [Ground Control Station (GCS)].** Upto 5000m AMSL.
- (g) **Ground Control Station (GCS).** A suitable GCS in a portable container module/ user configured operations space. Should be capable of controlling multiple RPAS. Remote Video Terminal (RVT) to be provided. It should be able to hand-over control of the RPA to another GCS.
- (h) **Security.** Suitable anti jamming/ spoofing features both for GPS/ IRNSS navigation & secure communication link. It should have capability to navigate through GPS denied environment.
- (j) **Software.** It should be indigenously developed with AI enabled features for object identification. It should be enabled for swarming.
5. **Estimated Quality.** Approximately 50 RWI RPAS & 10 sets of ground control infrastructure.
6. **Estimated Cost.** To be determined post interaction with vendors.
7. **Broad Time Lines.** To be determined post interaction with vendors.
8. **Misc.** A variety of RWI RPAS are available globally, like remotely piloted helicopters, fixed wing hybrid RPAS, tilt-rotor etc. However, the Indian Defence Industry has also adequately matured to develop such systems. Hence the indigenous manufacture of RWI RPAS will be aligned to the Atmanirbhar Bharat initiative. It will also deliver technological upgrades & uninterrupted logistical support to the deployed systems.
9. **Technology Scan.** A technology Scan of RWI RPAs existing globally was undertaken and the following RWI RPAs were analysed.

<b><u>Ser No</u></b>	<b><u>RWI RPA</u></b>	<b><u>Origin</u></b>
(a)	Camcopter S-100	Austria
(b)	FVR-90	Austria
(c)	SDO-50V2	Switzerland
(d)	Orlan-10	Russia
(e)	Scan-Eagle	USA
(f)	RQ-21	USA
(g)	Oribter 4	Israel
(h)	Sky Lark	Israel
(j)	Spy Lite	Israel

10. Contact No & Email ID of the offr is as under:-

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