Bhargavastra Counter Drone System

Prelims: *Current events of national and international importance | Defence*

Why in News?

Recently, Army was given a demonstration of Bhargavastra, an indigenous counter-swarm drone system developed under the Make-II programme.

Bhargavastra system –

- It is mounted on a vehicle and integrates
  - A Command-and-Control Vehicle (equipped with radar)
  - Electro-Optical/Infrared (EO/IR) sensors and
  - Passive radio-frequency detectors (linked through a network).
  - Alongside, a launcher vehicle carries multiple launch tubes.
- **Developed by –** Solar Defence and Aerospace Ltd. (SDAL)
- **C4I Suite –** Generates real-time air picture, issues alerts, assigns targets, initiates firing sequence.

C4 *– Command, Control, Communications, Computers;* ***I*** *– Intelligence*

- **Detection Range –** Large UAVs up to 10 km, smaller drones up to 6 km.
- **Operational Terrain –** Designed for deserts to high-altitude regions (>5,000 m).
- **Kill Mechanism**
  - **Dual Layered**
  - **Unguided micro-rockets** (lethal radius – 20 m).
  - **Precision-guided micro-missiles** (intercepts up to 2.5 km).
- **Soft Kill –** Electronic jamming for non-kinetic neutralisation.

Hard-Kill (Kinetic) – *Unguided rockets + precision-guided missiles*

- **Resilience –** Resistant to conventional Electronic-Warfare measures like jamming.
- **Architecture –** Multi-layer engagement neutralises both individual drones and swarms.
- **Cost-Effective –** Cheaper alternative to expensive surface-to-air missiles against low-cost drones.
- **Integration –** Seamless with armed forces' existing networks.
- **Unique Feature –** Fully integrated, vehicle-mounted platform with swarm neutralisation not yet deployed elsewhere.

Reference

TOI | Bhargavastra

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