Airship-based High Altitude Pseudo Satellite (AS-HAPS)

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Why in News?

Recently, Indian Air Force (IAF) has launched the AS-HAPS programme to develop unmanned air platforms capable of operating in the stratosphere (20–30 km altitude) for extended periods.

- **Aim –** To provide persistent intelligence, surveillance and reconnaissance (ISR) at significantly lower cost than satellites.

Programme Highlights

- **Lead Agency –** Directorate of Operations (Remote), of the Indian Air Force (IAF).
- **Procurement Framework –** Executed under **Make-I**, with the Centre funding up to 70% of development costs for a prototype to selected industry partners.
- **Prototype airship** – To carry out optical surveillance, electronic intelligence gathering and long-range communications.
- **Operating altitude –** Operates between high-altitude drones (12 km) and low-Earth orbit satellites (500–2,000 km).
- **Design –** Steerable airship, repositionable over areas of interest.
- **Payloads –** An array of sensors, radars and electro-optical systems for long-range surveillance planned to develop domestically.
- **Additional Plans –** Fixed-wing HAPS for conventional take-off and extended surveillance missions.

Global Context

- **Europe –** EUROHAPS project in prototype stage; Thales Alenia's Stratobus targets early 2030s.
- **US –** Tested high-altitude airships; none operational.
- **China –** High-altitude balloons spotted worldwide, including over India;

believed to be pursuing military-grade AS-HAPS.

Significance

- **Persistent ISR –** Long-duration surveillance without satellite costs.
- **Data Relay –** Bridges ground networks and satellites.
- **National Security –** Enhances India's surveillance and communication capabilities.

Reference

Business-standard | AS-HAPS