



Pushpak Drone Mission

Why in News?

The central government has appointed the [Indian Institute of Technology Bombay \(IIT-B\)](#) to lead the 'Pushpak - National Mission on Drone Technology', which promotes the **development of indigenous [drone technology](#)** across various sectors.

Key Points

■ Overview of the Mission:

- The [Ministry of Electronics and Information Technology \(MeitY\)](#) launched the 'Pushpak - National Mission on Drone Technology' with a total grant-in-aid of Rs 82.7 crore.
- **Participating Institutes and Their Focus Areas:**
 - **IIT Bombay** has been appointed to **lead the mission**. It will focus on:
 - Developing hybrid drones and indigenous processors.
 - Creating [Unmanned Aerial Systems \(UAS\)](#) for disaster management, coastal monitoring, and specialised uses.
 - Facilitating collaboration between academia and industry to drive innovation in **next-gen drone technologies**.
 - **Veermata Jijabai Technological Institute (VJTI) Mumbai** will focus on:
 - Developing secure embedded systems and enhancing drone communication security.
 - Establishing a **dedicated drone security lab and forensic unit** to:
 - **Track drone flight patterns** within Indian airspace.
 - **Detecting and mitigating** drone-related **threats**.
 - Contribute to **long-term cybersecurity solutions** for drones.
 - Other participating institutions include:
 - CDAC-Thiruvananthapuram
 - CDAC-Bengaluru
 - IIT-Gandhinagar
 - IISER-Bhopal
 - Kalasalingam Academy of Research and Education (Tamil Nadu)

■ Mission Objectives and Strategic Vision:

- The Pushpak mission aims to make India **self-reliant** in drone technology through:
 - Advanced research and development (R&D).
 - Strategic partnerships with industry players.
 - Real-world testing and rapid commercialisation of technologies.
- The mission will function under the oversight of a [National Steering Committee \(NSC\)](#), comprising senior government officials and domain experts.

■ The mission aims to:

- Reduce reliance on foreign technologies.
- Enhance safety and [national security](#).
- Create employment opportunities in the drone sector.
- Advance core capabilities in [AI integration](#), **UAV traffic management**, and **indigenous manufacturing**.

■ Support for Innovation and Talent Development:

- Pushpak will promote **faster technology transfer from research labs to the market.**
- It will provide:
 - Incubation support to drone-based startups.
 - Advanced training opportunities for students and researchers in drone-related fields.

DRONE TECHNOLOGY



Drone is a pilotless flying machine, using aerodynamics for lift, can operate autonomously or remotely, and may carry lethal or nonlethal cargo.



COMPONENTS.

- ↳ Unmanned aircraft (UA)
- ↳ Control system (ground control station - GCS)
- ↳ Control link (specialized datalink)
- ↳ Other related support equipment



CLASSIFICATION.

(as per Drone Rules, 2021)

- ↳ Nano: <250 gm
- ↳ Small: 25 kg to 150 kg
- ↳ Micro: 250 gm to 2 kg
- ↳ Large: >150 kg
- ↳ Mini: 2 kg to 25 kg

APPLICATIONS

- ↳ **Mapping & Surveying** (asset inspection, roof inspections)
- ↳ **Agriculture** (bird control, crop spraying & monitoring etc)
- ↳ Multispectral/thermal/NIR cameras, **Aerial Photo/videography** and Live streaming events
- ↳ **Emergency Response** (search and rescue, marine rescue, fire fighting)
- ↳ **Disaster** (zone mapping, disaster relief etc)
- ↳ **Mining**
- ↳ **Monitoring Poachers**
- ↳ **Meteorology**, Aviation, Payload carrying

DRONES IN DEFENCE

Purpose

- Surveillance and Reconnaissance
- Search and Rescue
- Maritime Surveillance
- Combat Drones
- Offensive (heterogeneous SWARM drones)
- Counter-Terrorism Operations

India's Counter-Drone System

- **Indrajaal** (India's inaugural autonomous drone-defense dome)
- Procurement of combat-capable **Heron** drones from Israel
- Acquisition of **MQ-9B Armed Drones** from the US

RELATED REGULATIONS.

- ↳ Aircraft (Security) Rules, 2023
- ↳ Drones Rules, 2021 and Drone (Amendment) Rules, 2022



INDIA'S INITIATIVES.

- ↳ Digital Sky Platform
- ↳ No-Permission-No-Takeoff (NPNT) framework
- ↳ PLI Scheme for Drones
- ↳ Drone Shakti Scheme



ISSUES.

- ↳ Increased risk of armed attacks
- ↳ Data security
- ↳ **Cheaper cost** enables a larger population to procure drones
- ↳ Use of drones in warfare (**remote warfare**)
- ↳ **Procurement by non-state actors** can pose serious threats
- ↳ Ease in **delivering mass destruction weapons**



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