Syllabus subtopic: Science and Technology – developments and their applications and effects in everyday life

Prelims and Mains focus: about the likely regulations to be imposed on the registration of drones; Digital Sky Platform and its significance

News: The Centre is likely to tighten its drone regulations. The move to “step back” on the drone policy has been prompted by fresh red flags raised by security agencies.

Background

The move comes in the wake of two major global attacks involving unmanned aircraft systems over the last few months — the first in September, on Saudi Arabian refineries that impacted nearly half of the country’s global crude supply, and the other last week, when Iran’s top military commander General Qassem Soleimani was killed in Baghdad.

Likely safeguards to be implemented

- A newly launched, first-of-its-kind national unmanned traffic management mechanism called the “Digital Sky Platform” — a live platform for registration of manufacturers and operators of drones — could see fresh safeguards being built into the certification process.
- A ‘National Counter Rogue Drone Guidelines’, that seeks to lay down measures to be deployed in response to threats to vital installations from unmanned aircraft systems, which was in the works, could now be expedited.

India’s Drone policy

- While globally, the drone industry is seeing a boom, with an over 35 per cent annual market growth and an estimated 2,75,000 units reported to have been sold commercially, India has been measured in opening up its skies to drones (or Remotely Piloted Aircraft Systems, as they are referred to in technical parlance).
India has a ‘No Permission-No Takeoff’ (NPNT) clause for aerial unmanned objects, which implies that a drone cannot be operated in Indian skies unless the regulatory permission is received through the Digital Sky Platform. The pilot also needs certification, requiring a remote pilot licence or an ‘Unmanned Aerial Operator Permit’ (UAOP) before operating a drone.

In August 2018, the Centre came up with the first set of regulatory norms on the use of drones, which classified them based on their total weight with cargo and fuel for motive power (generally a battery), but with the rider that operations have to be limited to the line-of-sight. Then in January 2019, a white paper on drone policy 2.0 was released, that paved the way for wider application of drones, such as the delivery of goods beyond visual line of sight (BVLOS).

Subsequently, the Directorate General of Civil Aviation (DGCA) floated an expression-of-interest for conducting experimental BVLOS operations of drones, to which 32 proposals were received.

In August 2019, the work for the development and hosting of the Digital Sky Platform was awarded by the Airports Authority of India (AAI), and the hosting of a Beta version of this platform is learnt to have been cleared with requisite security certification.

This platform, currently live, allows operators to apply for a Unique Identification Number (UIN) — akin to the registration plate of a car — that needs to be issued for all drones (with the exception of the smallest category), and Unmanned Aircraft Operator Permit online for approval by the civil aviation regulator.

Classification of drones

- The Centre’s regulatory policy on the use of drones classifies them based on their total weight — ‘nano’ (up to 250 grams), ‘micro’ (250 g to 2 kg), ‘small’ (2-25 kg), ‘medium’ (25-150 kg) and ‘large’ (over 150 kg).
- The Digital Sky Platform regulates all drones in the micro and higher categories and divides the Indian airspace into three broad categories — Red, Yellow and Green.
- Red denotes “no fly zone” (includes airspace near international borders,
vital assets like Parliament House, nuclear installations, major airports); 
- **Yellow** signifies airspace requiring Air Defence Clearance or Air Traffic Control clearance; and 
- **Green** signifies unrestricted airspace zones. However, even for the Green zone, there is a need to get clearance from the Digital Sky Platform to commence operations.

Conclusion

The regulatory environment is a key factor impacting the pace of adoption of drone-powered solutions by government and business entities. The fresh security imperative could prompt a reset of the regulatory regime for commercial drones.

About Digital Sky Platform:

- The Digital Sky Platform is the first-of-its-kind national unmanned traffic management (UTM) platform that implements “no permission, no takeoff” (NPNT).
- Users will be required to do a one-time registration of their drones, pilots and owners.
- For every flight (exempted for the nano category), users will be required to ask for permission to fly on a mobile app and an automated process permits or denies the request instantly.
- To prevent unauthorized flights and to ensure public safety, any drone without a digital permit to fly will simply not be able to takeoff.
- The UTM operates as a traffic regulator in the drone airspace and coordinates closely with the defense and civilian air traffic controllers (ATCs) to ensure that drones remain on the approved flight paths.