



## Unmanned Combat Systems and Concerns

**Prelims:** Indian Navy Indian Ocean Region, Littorals, Artificial Intelligence.

**Mains:** Unmanned Combat Systems and Concerns. AI in Warfare.

### Why in News?

India is on a drive to induct **Unmanned Combat Systems (UCS)** into the military. In August, 2022 it inducted “Swarm Drones” into its mechanized forces, reiterating the importance of autonomous systems in creating a “future-proof” Indian Navy (IN).

- Despite their growing usage in armed conflict, artificially intelligent unmanned combat systems **raise questions of law, ethics and accountability.**

### What are Unmanned Combat Systems?

#### ▪ About:

- Unmanned Combat Systems (UCS) are **going to be the new age weapons overturning the rules of future war** and have been the focus of research and development of military powers.
- There are no generally accepted definitions for these so-called boasted core weapons of the 21<sup>st</sup> century.
- UCS from the research heading, is an **integrated combat system comprising unmanned combat platforms, task payloads, command and control (C2) systems and network systems.**
- For **field applications, they can be categorized into,**
  - Deep space unmanned systems
  - Unmanned aerial vehicle systems
  - Ground unmanned systems
  - Surface unmanned systems
  - Underwater unmanned systems

#### ▪ Significance:

- Faced with the increasingly complex international situation and brutal military wars, **the lives and safety of combat soldiers are greatly threatened.**
- At this time, the **unmanned combat System is becoming increasingly important** and has **gradually become an important attack and defense force** on the information battlefield.
- The biggest feature of the ground unmanned combat platform is that it can carry certain weapons and equipment under the premise of unmanned participation, and be remotely controlled through the **configured wireless communication equipment to conduct reconnaissance, surveillance, electronic interference, and direct combat.**
- UCS has a **higher degree of automation, good remote control, strong digital** communication ability and anti-interference, excellent target detection and recognition ability, good concealment, and strong adaptability to the ground environment.

## What are the Ethical Concerns Raised by AI Warfare?

- **Risk of Shared Liability:**
  - AI Warfare **enhances the risk of shared liability between networked systems**, particularly when **weapon algorithms are sourced from abroad**, and when the satellite and link systems that enable combat solutions are not under the control of the user.
- **Confidence Undermining:**
  - AI is characterized by a predisposition to certain kinds of data. Biases in the collection of data, in the set of instructions for data analysis, and in the selection of probabilistic outcomes muddle rational decision-making, undermining confidence in automated combat solutions.
- **Inconsistent with Laws of War:**
  - AI may automate weapon systems **in ways that are inconsistent with the laws of war**.
- **Cannot Make Informed Decision:**
  - A system of targeting human beings based on probabilistic assessments by computers that act merely on machine-learned experiences, they contend, **is problematic because the computer neither has access to all relevant data to make an informed decision nor recognises that it needs more information** to come up with an optimal solution.
  - If it erroneously used force in a theater of conflict, there is **no one to be held accountable, as blame can't be pinned on a machine**.

## What are Swarn Drones?

- **About:**
  - Swarm Drones are a **collection of small and lightweight aerial vehicles that can be controlled from the same station**.
  - These drones are **equipped with advanced communication systems which enables them to be controlled** as a collective.
  - Furthermore, through communication systems, **swarm drones can also communicate with each other** to create different flying formations for surveillance and attack modes.
  - Such drones can also carry a variety of payloads in a single mission and organize a **collaborative attack against an enemy unit**.
  - Backed by swarming algorithms and Artificial Intelligence software, **Swarm Drones can operate autonomously** with minimum human intervention
    - The AI software can also be used to **identify targets and expedite response in case of a surprise operation**.
- **Advantages:**
  - **All Weather Operations:** Swarm Drone System can be deployed at high altitudes, rough-weather conditions
  - **High Speed and Agility:** Drones are powered by advanced motors and can fly at a speed of 100 km per hour giving it high speed and agility for military operations.
  - **Employed for Different Missions:** Drones can be deployed by the armed forces for different types of offensive and defensive operations as they can carry out strikes against tanks, infantry combat vehicles, ammunition holding areas, fuel dumps and terror launch pads.
  - **ATR Feature:** Swarm Drones are backed by Artificial Intelligence and are equipped with the Automatic Target Recognition (ATR) feature, which can enable them to automatically recognise targets. ATR is capable of identifying tanks, guns, vehicles and humans and displaying them on the operators' screen to minimize the chances of a miss hit.

## Way Forward

- All parties to an armed conflict that any use of armed drones during the conduct of hostilities must comply with relevant **IHL (International humanitarian law)** principles.
- Hence, before deploying any armed drones, parties to the conflict must ensure that the **armed**

**drone is and can be directed against a military objective and will not cause excessive civilian harm.**

- In order to foster transparency and accountability for drone strikes, **parties need to properly articulate their policies governing the use of drones**, including how the likelihood for civilian harm is assessed, and provide for remedies for victims.
- All parties to the armed conflict that beyond compliance with IHL, **parties need to consider the humanitarian impact of their use of armed drones for the civilian population**, including the disruption of civilian infrastructure and mental health trauma.
- It is worth acknowledging that AI in warfare is not just a matter of combat effectiveness but also of warfighting ethics. AI-infused unmanned systems on the maritime battlefield **pose a degree of danger, making it incumbent upon the military to deploy its assets in ways that are consistent with national and international law.**

### **UPSC Civil Services Examination, Previous Year Question (PYQ)**

**Q. Consider the following activities: (2020)**

1. Spraying pesticides on a crop field
2. Inspecting the craters of active volcanoes
3. Collecting breath samples from spouting whales for DNA analysis

**At the present level of technology, which of the above activities can be successfully carried out by using drones?**

- (a)** 1 and 2 only
- (b)** 2 and 3 only
- (c)** 1 and 3 only
- (d)** 1, 2 and 3

**Ans: (d)**

**Source: IE**

PDF Reference URL: <https://www.drishtiias.com/printpdf/unmanned-combat-systems-and-concerns>