Significance of Unmanned aerial vehicles

What is the issue?

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- US Navy has decided to replace its Aircrafts gradually with UAVs.
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- There is a strong demand for India over the UAV venture.
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What are the significance of UAVs?

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- Unmanned Aerial Vehicles are the best for search and strike missions with low calibre high accuracy guided weapons.
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- Controlled from a ground station, the UAV either flies a pre-planned path or can be dynamically controlled.
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- UAV’s has high endurance, which allows a high success rate for search and strike missions.
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- The roles of UAVs are gradually increasing in the civil sector, ranging from the delivery of packages to the shooting of high-quality aerial films.
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What are the short comings with UAVs in replacing MAVs?

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- **Sensors -** Present sensors do not have the capacity to replicate the appreciation by a human eye and pose a limitation in operations.
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- **Dynamic Situation Processing -** Decision-making autonomy is required, It cannot be explicitly expressed mathematically, a human is essential.

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- **Communication -** Their inability is to capture high fidelity data, based on directions from the ground station, receive, decrypt and process it to execute a command.
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- **Speed and Manoeuvrability -** They are low speed and consequent low manoeuvrability as compared to manned fighter aircraft and this makes them vulnerable.
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- **Weapon Carrying Capacity -** UAVs are capable of carrying low calibre/low weight weapons in limited numbers as compared to manned aircraft.
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- **Safety -** UAV accident rates are four to five times higher than that of manned aircraft.
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- **Endurance -** Autonomous inflight refuelling could keep the UAV in the air for days.
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- **Risk -** The control of UAV is heavily dependent on electromagnetic waves, which are susceptible to interference/jamming/technical malfunctions.
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What is Indian UAV Scenario?

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- By 2050, at least 50 per cent of combat missions would be designated to UAVs and that would require a large fleet of various types of UAVs.
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- While Israel and USA are leaders in UAV technology and operations, the Indian UAV programme is in its infancy.
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- Going by the example of the Light Combat Aircraft (LCA), the production of an Indian combat mission capable UAV is at least a couple of decades away.
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- To meet that challenge, it would be prudent to establish a joint venture for the production of UAVs in India under the Strategic Partnership programme.
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Source: IDSA

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