



## DRDO & Research & Development:

### DRDO's Key Milestones

**Kaveri Engine on LCA Tejas :** In a significant step toward self-reliance in aerospace technology, the DRDO confirmed that its indigenous Kaveri engine will soon be tested on a manned aircraft, the Light Combat Aircraft (LCA) Tejas. This is a crucial phase aimed at validating the engine's performance in real-world conditions and demonstrating India's capability to design, integrate, and test a homegrown jet engine on a fighter jet.

**Support for MSMEs:** The DRDO's Defence Technology and Test Centre (DTTC) in Lucknow organized a conclave to engage with Micro, Small, and Medium Enterprises (MSMEs) and startups. The goal is to build the capacity of these local industries for defence R&D and production, strengthening the Uttar Pradesh Defence Industrial Corridor and contributing to the Aatmanirbhar Bharat (self-reliant India) initiative.

**Next-Gen Fighter Engine :** India's Gas Turbine Research Establishment (GTRE) has officially selected French aerospace company Safran to co-develop a next-generation 120 kN thrust engine for the Advanced Medium Combat Aircraft (AMCA). This collaboration, valued at approximately \$7 billion, is a major step toward accelerating India's ambitious aero-engine programs.

**ASAT System Integration:** The Ministry of Defence (MoD) is preparing to integrate India's tested and validated Anti-Satellite (ASAT) missile system into the "Sudarshan Chakra Sky Shield." This move will enhance India's offensive space capabilities, allowing it to disrupt adversaries' satellite surveillance of Indian Air Force bases.

### Other R&D & Innovation News

**Carbon Capture Technology:** A report highlighted the critical need for stronger policies and industry initiatives to deploy Carbon Capture, Utilization, and Storage (CCUS) on a large scale in India. The technology is seen as a vital lever to decarbonize the power sector and achieve India's climate goals under the Paris Agreement.

**Augmented Reality (AR) in Education:** The Tambaram corporation in Chennai is launching AR and VR smart classes in its schools. The initiative, starting with a trial run at the Municipality Higher Secondary School, aims to use immersive technology like VR headsets and tablets to simplify scientific concepts for students and encourage an interest in science and technology.





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## MCQS

1.What is the primary purpose of testing the indigenous Kaveri engine on the LCA Tejas?

- A) To transport supplies to remote areas.
- B) To validate the engine's performance and demonstrate India's self-reliance.
- C) To be used as a new training aircraft.
- D) To replace the engine on all existing fighter jets.

**Answer:** B) To validate the engine's performance and demonstrate India's self-reliance.

The text states this is a "crucial phase aimed at validating the engine's performance... and demonstrating India's capability to design, integrate, and test a homegrown jet engine."

2.What is the main goal of the DRDO's conclave with MSMEs and startups in Lucknow?

- A) To recruit new employees for the DRDO.
- B) To build capacity for defence R&D and production in local industries.
- C) To sell DRDO's products to small businesses.
- D) To provide financial assistance for civilian projects.

**Answer:** B) To build capacity for defence R&D and production in local industries.

The article says the conclave was organized "to build the capacity of these local industries for defence R&D and production."

3.What is the name of the French company collaborating with India to co-develop a next-generation engine for the AMCA?

- A) Airbus
- B) Dassault Aviation
- C) Safran
- D) Thales

**Answer:** C) Safran







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The text specifies that India's GTRE has "officially selected French aerospace company Safran to co-develop a next-generation... engine for the Advanced Medium Combat Aircraft (AMCA)."

**4.What is the purpose of integrating the Anti-Satellite (ASAT) missile system into the "Sudarshan Chakra Sky Shield"?**

- A) To protect from enemy aircraft.
- B) To enhance India's offensive space capabilities.
- C) To monitor weather patterns.
- D) To improve satellite-based communication.

**Answer:** B) To enhance India's offensive space capabilities.

The passage explains that this move "will enhance India's offensive space capabilities, allowing it to disrupt adversaries' satellite surveillance."

**5.Which technology is the Tambaram corporation in Chennai using to simplify scientific concepts for students?**

- A) 3D printing and robotics.
- B) Artificial Intelligence (AI) and machine learning.
- C) Augmented Reality (AR) and Virtual Reality (VR) smart classes.
- D) Biometrics and data analytics.

**Answer:** C) Augmented Reality (AR) and Virtual Reality (VR) smart classes.

The article states that the Tambaram corporation "is launching AR and VR smart classes in its schools... to simplify scientific concepts for students."

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