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**DAILY EDITORIAL
ANALYSIS**

TOPIC

**Innate Limitations in
Executing iCET**

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INNATE LIMITATIONS IN EXECUTING ICET

Context

- Despite the seemingly successful talks between National Security Advisers (NSAs) of India and USA, to make progress on the bilateral Initiative on Critical and Emerging Technologies (iCET), structural challenges endure in its execution.

About the Initiative on Critical and Emerging Technologies (iCET)

- It is a collaborative framework between India and the United States that aims to facilitate outcome-oriented cooperation in critical and emerging technology areas.
- It was announced by the Indian Prime Minister and US President during the Quad Summit in Tokyo in May 2022.
- It seeks to elevate and expand the strategic technology partnership and defense industrial cooperation between India and the US.
 - ♦ It focuses on fostering collaboration across government, academia, and industry.

Key Technology Focus Areas

- **Artificial Intelligence (AI):** Both countries recognize the transformative potential of AI in various sectors. Collaborations in AI research, development, and applications are essential for societal well-being.
- **Quantum Computing:** Quantum technologies promise breakthroughs in computing power, cryptography, and secure communication. Joint efforts aim to harness quantum capabilities for mutual benefit.
- **5G/6G Telecommunications:** The rollout of advanced wireless networks is crucial for economic growth and national security. iCET encourages cooperation in developing and deploying 5G and beyond.
- **Biotechnology:** Advances in biotech can revolutionize healthcare, agriculture, and environmental sustainability. Collaborations focus on research, innovation, and technology transfer.
- **Space Technologies:** Space exploration, satellite communication, and Earth observation are areas of mutual interest. iCET promotes joint projects in space technology development.
- **Semiconductors:** As the backbone of modern electronics, semiconductors play a vital role. Cooperation aims to enhance semiconductor manufacturing and design capabilities.

Collaborative Projects (Specific Examples)

- **F-414INS6 Engines:** The iCET's defense component currently focuses on India locally manufacturing General Electric (GE) F-414INS6 afterburning turbofan engines for the under-development **Tejas Mk-II light combat aircraft**.
 - ♦ Negotiations have concluded for GE to transfer around 80% technology to Hindustan Aeronautics Limited for F-414 engines. However, critical know-how related to forging metallurgy discs for power pack turbines remains undisclosed.
- **MQ-9 Armed Reaper/Predator-B UAVs:** India is assembling 31 armed MQ-9 Reaper/Predator-B unmanned aerial vehicles (UAVs) for all three services.
 - ♦ Technology transfer from General Atomics Aeronautical Systems for assembling the MQ-9s stands at around 10-15%, including establishing a domestic maintenance, repair, and overhaul (MRO) facility for the UAVs.
- **Stryker Infantry Combat Vehicle:** Negotiations are ongoing for India to acquire, license-build, and co-develop the General Dynamics Land Systems Stryker.

Ongoing Negotiations

- The iCET also involves discussions about directly acquiring, license-building, and co-developing the General Dynamics Land Systems Stryker Infantry Combat Vehicle for the Indian Army.
 - ♦ However, innate limitations persist in all these ventures.

Innate Limitations in Executing iCET

- **Autonomy of U.S. Defense Companies:** Local industry officials and military analysts emphasize that the primary impediments lie in the autonomy of U.S. defense companies regarding technology transfer.
 - ♦ These technologies have been developed at immense cost at Washington's behest, and many companies zealously guard their **Intellectual Property Rights (IPR)** over them.
 - ♦ U.S. defense vendors are answerable to their shareholders, whose motivations are largely commercially driven. Consequently, the quantum of technology they are willing to transfer may be limited.
- **Strict Export Control Laws:** The U.S. has stringent export control laws related to military technologies.
 - ♦ The defense industrial complex in the U.S. is cautious about sharing critical military technologies via joint ventures, even if such collaboration aligns with Washington's strategic interests.
 - ♦ Balancing national security concerns with collaborative ventures is essential.
- **Technology Transfer:** While progress has been made in technology transfer, challenges remain. U.S. defense companies guard their intellectual property rights (IPR), impacting the extent of technology transfer.
- **Industry Motivations:** U.S. defense vendors prioritize commercial interests. Their willingness to transfer technology depends on shareholder motivations.

Conclusion and Way Forward

- The iCET represents a significant step toward strengthening the India-U.S. partnership in critical and emerging technologies. By addressing challenges and leveraging opportunities, both nations can drive innovation, enhance security, and shape a technologically resilient future.
- While the iCET aims to enhance India-U.S. defense collaboration through technology transfer, bureaucratic complexities and limited technology sharing pose significant challenges. Addressing these limitations will be crucial for realizing the full potential of this strategic initiative.

Source: TH

Mains Practice Question

[Q] Highlights the major limitations in executing the Initiative on Critical and Emerging Technologies (iCET), particularly in the context of U.S. defense companies and technology transfer? How do factors like Intellectual Property Rights (IPR) and export control laws impact the successful implementation of iCET?

