U.S.-India initiative on Critical and Emerging Technology

For Prelims: Initiative on Critical and Emerging Technologies (iCET)**,** OpenRAN network technology**,** QUAD**,** NATO**,** AI**,** quantum computing**,** semiconductors

For Mains: Potential benefits of cooperation in critical and emerging technology, Role of innovation ecosystems

Why in News?

Recently, **India and the United States** have taken a significant step towards strengthening their strategic partnership and driving **technology and defense cooperation.** Under the **Initiative on Critical and Emerging Technologies (iCET)**, the two nations have unveiled a roadmap for enhanced collaboration in high-technology areas.

- The initiative focuses on addressing regulatory barriers, aligning export controls, and fostering deeper cooperation in critical and emerging fields.

What is the iCET?

- **About:**
    - The iCET was announced by India and the US in May 2022 and was officially launched in **January 2023** and is being run by the **National Security Council of both countries.**
    - Under iCET, both countries have identified six areas of cooperation which would include co-development and co-production, that would **gradually be expanded to** QUAD**, then to** NATO, followed by Europe and the rest of the world.
    - Under iCET, India is ready to **share its core technologies** with the US and expects Washington to do the same.
    - It aims to promote collaboration in critical and emerging technology areas, **including** AI**,** quantum computing**,** semiconductors**, and wireless telecommunication.**
- **Focus Areas of the Initiative:**
    - AI research agency partnership.
    - Defense industrial cooperation, defense technological cooperation, and defense startups.
    - Innovation Ecosystems.
    - Semiconductor ecosystem development.
    - Cooperation on human spaceflight.
    - Advancement in 5G **and 6G technologies**, and adoption of **OpenRAN network technology** in India.
- **Progress Made So Far:**
    - Key achievements include the **Quantum Coordination Mechanism**, public-private dialogue on telecommunication, important exchanges on AI and space, MoU on establishing a **semiconductor supply chain**, and conclusion of a roadmap for defense industrial cooperation.
    - The two countries are close to finalizing a **mega jet engine deal,** and a new initiative called the **India-U.S. Defence Acceleration Ecosystem (INDUS-X)** is set to be

launched.
- Strategic Trade Dialogue has been established to address regulatory barriers and review export control norms.

How have been India's Relations with the US?

- **Economic Relations:**
  - The **U.S.** has emerged as **India's biggest trading partner in 2022-23** on account of increasing economic ties between the two countries.
  - The bilateral trade between India and the U.S. has increased by 7.65% to USD 128.55 in 2022-23 as against USD 119.5 billion in 2021-22.
  - Exports to the U.S. rose by 2.81% to USD 78.31 billion in 2022-23 as against USD 76.18 billion in 2021-22, while imports grew by about 16% to USD 50.24 billion.
- **International Cooperations:**
  - India and the United States cooperate closely at multilateral organizations, including the United Nations**,** G-20**,** Association of Southeast Asian Nations (ASEAN) **Regional Forum,** International Monetary Fund, World Bank**, and** World Trade Organization.
  - The United States welcomed India joining the UN Security Council in 2021 for a two-year term and supports a reformed UN Security Council that includes India as a permanent member.
  - Together with Australia and Japan, the United States and India convene as the **Quad** to promote a free and open Indo-Pacific and provide tangible benefits to the region.
  - India is also one of twelve countries partnering with the United States on the **Indo-Pacific Economic Framework for Prosperity (IPEF).**
  - India is a member of the **Indian Ocean Rim Association (IORA)**, at which the United States is a dialogue partner.
  - In 2021, the United States joined the International Solar Alliance headquartered in India, and in 2022 the **United States Agency for International Development (USAID)**.

What is OpenRAN Network Technology?

- **About:**
  - It is a non-proprietary version of the **Radio Access Network (RAN)** system.
    - A RAN is a major component of a wireless telecommunications system that **connects individual devices to other parts of a network** through a radio link.
  - Allows interoperability between cellular network equipment from different vendors.
- **Advantages of OpenRAN Network Technology:**
  - Creates a more open and flexible RAN architecture.
  - Based on open interfaces and virtualization.
  - Supported by industry-wide standards.
  - Cost reduction.
  - Increased competition.
  - Faster innovation.
- **Applications of OpenRAN Network Technology:**
  - Supporting 5G and 6G networks.
  - Enhancing network performance and security.
  - Enabling new services and capabilities.
  - Bridging the digital divide.

Source: TH