Report on India's Participation in the IC Value Chain and LTSCT Objectives

Evidence of India's Participation in the IC Value Chain

India plays a crucial role in the Integrated Circuit (IC) value chain, contributing significantly to various stages including design, development, manufacturing, and distribution. This involvement is demonstrated through several key areas:

1. IC Design and Development

a. Major Design Services and R&D Centers

- **Intel India**: Operates a major R&D facility in Bangalore, focusing on microprocessors and chipsets. It has contributed to the development of various Intel processors.
- **Qualcomm India**: Based in Bangalore, it works on Snapdragon SoCs and modem technologies, significantly impacting mobile chipset advancements.
- **Texas Instruments India**: With facilities in Bangalore and Hyderabad, it specializes in analog and embedded processing solutions.
- **Analog Devices India**: Its Bangalore center develops high-performance analog, mixed-signal, and DSP ICs.
- **Cadence Design Systems**: Provides essential EDA tools for IC design through its Bangalore office.
- **Sierra Circuits**: Offers PCB design and manufacturing services, supporting IC design and prototyping.

Startups and Indian Origin

Tata Elxsi

- **Revenue**: $350 million (2023).
- **Products**: Provides semiconductor design services and IoT solutions. Noteworthy products include **automotive electronics for ADAS** and **custom IoT platforms**

Sasken Technologies

- **Revenue**: $127 million (2023).
- **Products**: Offers semiconductor IPs and embedded software. Key offerings include **communication system IPs** and **IoT solutions**.

Ineda Systems

- **Revenue**: Specific figures are not disclosed; funded by investors like Synopsys.
- **Products**: Develops low-power processors and SoCs for mobile and automotive applications. Notable products include the **Dhanush SoCs** for wearables and **energy-efficient processors** for IoT.

Saankhya Labs

- **Revenue**: Not publicly disclosed; supported by venture capital.
- **Products**: Specializes in RF ICs and communication systems. Recent innovations include the **DTV Receiver IC** for digital TV and advanced **5G communication chips**.

2. IC Manufacturing and Assembly

a. Semiconductor Fabrication Facilities

- **Samsung Semiconductor Plant**: Investing $230 million in a R&D and design center in Bangalore, highlighting India's role in semiconductor technology.
- **GlobalFoundries**: Runs an R&D facility in Bangalore focused on advanced semiconductor technologies.
- **Micron Technology**: Engages in memory and storage R&D at its Bangalore site.

b. IC Assembly and Testing

- **STMicroelectronics**: Operates an assembly and test facility in Greater Noida.
- **Qualcomm**: Includes IC testing and verification at its Bangalore facility.

3. Supply Chain and Distribution

a. Semiconductor Distribution

- **Avnet India, RS Components, Element14 India**: Major distributors of ICs and electronic components in India.

b. Electronic Manufacturing Services (EMS)

- **Foxconn India and Wistron India**: Involved in the assembly of electronic devices and components.

5. Government Initiatives

- **National Policy on Electronics (NPE)** and **Production Linked Incentive (PLI) Scheme**: Promote domestic semiconductor manufacturing.
- **Semiconductor Mission**: Aims to bolster India’s semiconductor ecosystem.

6. Global Collaborations

- **India-Singapore and India-USA Semiconductor Partnerships**: Facilitate collaborative efforts in semiconductor R&D.

7. Case Studies and Success Stories

- **Micron Technology’s Investment** and **Qualcomm’s Mobile SoCs**: Illustrate India’s significant role in memory IC and mobile processor development.

LTSCT Objectives and Scope

Overview The collaboration between CP PLUS and L&T Semiconductor Technologies (LTSCT), under the Ministry of Electronics & Information Technology (MeitY), marks a milestone in India's surveillance technology sector. This partnership focuses on developing indigenous Indian IP SoCs and advanced AI IP CCTV products.

Objectives and Goals

- **Develop Indigenous IP SoCs**: Create specialized SoCs for the Indian surveillance market.
- **Produce AI IP CCTV Products**: Develop advanced AI-driven surveillance solutions for domestic and international markets.
- **Economic Contributions**: Enhance local manufacturing and generate employment, contributing to India's GDP.
- **Technological Innovation**: Emphasize data security and technological excellence in surveillance solutions.

Vision and Future Prospects

- **Atmanirbhar Bharat**: Reinforces India's commitment to self-reliance in technology and manufacturing.
- **Industry Leadership**: Sets new standards in surveillance technology with advanced AI solutions.
- **Market Expansion**: Addresses growing demand for surveillance solutions in India and globally.

Conclusion:

The CP PLUS and LTSCT collaboration is a significant advancement in India's surveillance technology landscape, focusing on indigenous SoCs and AI solutions. It supports economic growth, technological innovation, and strengthens India's global presence in technology.