

National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS)

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What are Cyber Physical Systems (CPS)

- CPS are a **new class of engineered systems that integrate computation and physical processes in a dynamic environment.**
- CPS encompasses technology areas of Cybernetics, Mechatronics, Design and Embedded systems, Internet of Things (IoT), Big Data, Artificial Intelligence (AI) and many more.
- The CPS systems are intelligent, autonomous and efficient and are expected to drive innovation in sectors as diverse as agriculture, water, energy, transportation, infrastructure, security, health and manufacturing.

National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS)

In order to harness the potential of this new wave of technology and make India a leading player in CPS, the Union Cabinet approved the launch of National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS) to be implemented by the Department of Science & Technology (DST) with a total outlay of Rs. 3660 Crore for a period of five years

Aim of the mission

The Mission aims to create a strong foundation and a seamless ecosystem for CPS technologies by coordinating and integrating nationwide efforts encompassing knowledge generation, human

resource development, research, technology and product development, innovation and commercialization.

Implementation of the mission

- The mission will be implemented through a network of 15 Technology Innovation Hubs (TIHs), 6 Sectoral Application Hubs (SAHs) and 4 Technology Translation Research Parks (TTRPs).
- Each hub and technology park will follow a technology life cycle approach, addressing all stages viz. Knowledge-Development-Translation-Commercialization
- **The first Phase of NM-ICPS will focus on establishing six Technology Innovation Hubs (TIHs) in the following domain areas:**
 1. Artificial Intelligence and Machine Learning
 2. Technologies for Internet of Things and Everything (IOT & IOE), Sensors, Activators and Control
 3. Databanks & Data Services, Data Analytics
 4. Advanced Communication Systems
 5. Robotics & Autonomous Systems
 6. Cyber Security and Cyber Security for Physical Infrastructure
- The first phase of NM-ICPS will be implemented by the Science and Engineering Research Board (SERB).