Source : www.pib.nic.in Date : 2018-12-08

CABINET APPROVES NATIONAL MISSION ON INTERDISCIPLINARY CYBER-PHYSICAL SYSTEMS

Relevant for: Science & Technology | Topic: Indigenization of technology and developing new technology

Cabinet

Cabinet approves National Mission on Interdisciplinary Cyber-Physical Systems

15 Technology Innovation Hubs, six Application Innovation Hubs and four Technology translation Research Hubs to be set up

Posted On: 06 DEC 2018 9:14PM by PIB Delhi

The Union Cabinet chaired by Prime Minister Shri Narendra Modi today has approved the launching of National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS) to be implemented by Department of Science &Technology at a total outlay of Rs. 3660 crore for a period of five years.

Details:

The Mission addresses the ever increasing technological requirements of the society, and takes into account the international trends and road maps of leading countries for the next generation technologies. The mission implementation would develop and bring:

i. Cyber Physical Systems (CPS) and associated technologies within reach in the country,
ii. adoption of CPS technologies to address India specific National / Regional issues,
iii. produce Next Generation skilled manpower in CPS,
iv. catalyze Translational Research,
v. accelerate entrepreneurship and start-up ecosystem development in CPS,
vi. give impetus to advanced research in CPS, Technology development and higher education in Science, Technology and Engineering disciplines, and
vii. place India at par with other advanced countries and derive several direct and indirect benefits.

Implementation strategy:

The NM-ICPS is a comprehensive Mission which would address technology development, application development, human resource development & skill enhancement, entrepreneurship and start-up development in CPS and associated technologies. The Mission aims at establishment of 15 numbers of Technology Innovation Hubs (TIH), six numbers of Application Innovation Hubs (AIH) and four numbers of Technology Translation Research Parks (TTRP). These Hubs & TTRPs will connect to Academics, Industry, Central Ministries and State Government in developing solutions at reputed academic, R&D and other organizations across the country in a hub and spoke model. A strategic approach involving a suitable mix of Academic, Industry and Government is proposed to be adopted. Strong Steering and Monitoring Mechanisms in the form of Mission Governing Board (MGB), Inter-Ministerial Coordination

Committee (IMCC), Scientific Advisory Committee (SAC) and other Sub-Committees will guide and monitor the Mission implementation. The Hubs & TTRPs have four focused areas along which the Mission implementation would proceed, namely (i) Technology Development; (ii) HRD & Skill Development; (iii) Innovation, Entrepreneurship & Start-ups Ecosystem Development; (iv) International Collaborations.

Impact:

CPS technologies provide a cutting edge to a Nation's scientific, engineering, and technological innovative capabilities; support other missions of the government, provide industrial and economic competitiveness and have truly became a Strategic Resource. Volume, scale and complexity of emerging applications demand continued evolution of new technologies for the foreseeable future. The proposed Mission would act as an engine of growth that would benefit national initiatives in health, education, energy, environment, agriculture, strategic cum security, and industrial sectors, Industry 4.0, SMART Cities, Sustainable Development Goals (SDGs) etc. CPS is an integrated system of upcoming technology, which in turn is being taken up on priority basis by countries in the race for development. CPS will indeed bring a paradigm shift in entire skill sets requirement. The job opportunities will be enhanced through the Mission by imparting advanced skills and generating skilled manpower as per the requirement of the industry/ society. As Innovation, Entrepreneurship and Start-up Ecosystem is an integral part of the proposed NM-ICPS, the start-ups will also create a number of technology driven job opportunities in CPS and allied areas. Accordingly, it is estimated that, about 40,000 jobs will be created in the short term and about 2,00,000 in long term.

Benefits:

The Mission will feed the Central Ministries/ Departments and State Govts and also the Industry to effectively use the CPS technologies in their projects and schemes for the benefit of the society.

States/districts covered:

NM-ICPS is a Pan India Mission and covers entire gamut of India that includes Central Ministries, State Governments, Industry and Academia.

Background:

CPS and its associated technologies, like Artificial Intelligence (Al), Internet of Things (IoT), Machine Learning (ML), Deep Learning (DP), Big Data Analytics, Robotics,Quantum Computing, Quantum Communication, Quantum encryption (Quantum Key Distribution), Data Science & Predictive analytics, Cyber Security for physical infrastructure and other infrastructure, have pervaded and is playing a transformative role in almost every field of human endeavour all most in all sectors. It has become imperative for government and industries to be prepared to adopt these emerging and disruptive technologies in order to remain competitive, drive societal progress, generate employment, foster economic growth and to improve the overall quality of life and sustainability of the environment.

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