GOVERNMENT OF INDIA
MINISTRY OF ELECTRONICS AND INFORMATION TECHNOLOGY
LOK SABHA
UNSTARRED QUESTION NO. 2564
TO BE ANSWERED ON: 07.08.2024

DEVELOPMENT OF ADDITIVE MANUFACTURING (3D PRINTING) IN INDIA

2564. SHRI P.P. CHAUDHARY:

Will the Minister of ELECTRONICS AND INFORMATION TECHNOLOGY be pleased to state:

(a) the details of the National Strategy for Additive Manufacturing (NSAM) released in 2022, including its key objectives and implementation progress;
(b) the number and locations of centres dedicated to Additive Manufacturing (AM) technologies established so far, and their specific focus areas;
(c) whether the Government has set any targets for the growth of the AM sector in India, is so, the details thereof;
(d) the steps being taken to promote collaboration between the National Centre for Additive Manufacturing (NCAM) and other organizations in the AM ecosystem;
(e) the measures planned to address challenges in developing indigenous AM machines, materials and software; and
(f) whether the Government has any plans to incentivise the adoption of AM technologies across various industries, if so, the details thereof;

ANSWER

MINISTER OF STATE FOR ELECTRONICS AND INFORMATION TECHNOLOGY
(SHRI JITIN PRASADA)

(a) to (f): To cater to the next-generation digital manufacturing and mitigate immediate disabilities of local industries, MeitY released "National Strategy on Additive Manufacturing" (NSAM) on 24th February, 2022. Additive Manufacturing ("AM"), the next generation digital manufacturing technology, has immense potential to revolutionize India's manufacturing and industrial production landscape through digital processes, communication, imaging, architecture and engineering. With the release of the strategy document, the innovation and R&D ecosystem in Additive Manufacturing isbeing encouraged through a participatory approach involving industry, academia and government. The strategy is to transform the existing research knowledge base to develop indigenous additive manufacturing-grade materials, 3D printing machines, 3D printed products and capacity building in the area. These efforts would target Indian AM ecosystem across various sectors, including electronics, photonics, medical devices, and agri & food processing etc.

Key objectives of the National Strategy for Additive Manufacturing (NSAM) are:

- Encourage domestic manufacturing across the value-chain to promote "Make in India" and "AtmaNirbhar Bharat."
- Increase domestic value addition in core and ancillary components, machines, materials and software
- Reduce import dependency of domestic market by developing local skill, technology, scale of production etc.
- Encourage global market leaders to establish global bases for manufacturing AM components and sub-assemblies in India, further strengthening India's domestic manufacturing ecosystem.
- Nurture domestic additive manufacturing industries.

- Establish a "National Center on AM" for harnessing AM transformation and driving capabilities by continuously engaging all key stakeholders.
- Promote Innovation and Research Infrastructure for commercialization of end-user application based industrial AM products suited for domestic and global markets.
- Strengthen India's collaborations with global AM organizations and Innovation and Research Centres.
- Create and update innovation roadmap for AM technologies.
- Promote ease for adoption of AM in India by introducing policy interventions.

MeitY has initiated seven centres, dedicated to development and deployment of AM technologies which are as follows:

- National Center for Additive Manufacturingat M/s NCAMF (National Center for Additive Manufacturing Foundation), Hyderabad, Telanganafor creating and enabling a sustainable ecosystem for product innovation in India
- National Additive Manufacturing Center- Westat M/s GUNI AMF (Ganpat University, Additive Manufacturing Foundation), Mehsana, Gujarat for deployment of AM in six states of India (Gujarat, Maharashtra, Madhya Pradesh, Haryana, Punjab and Rajasthan)
- Center of Excellence on Additive Manufacturing at Centre for Materials for Electronics Technology (CMET) Pune, Maharashtra for Opto-Electronics Center
- Center of Excellence on Additive Manufacturing at Andhra Pradesh MedTech Zone (AMTZ) campus, Visakhapatnam, Andhra Pradesh for Medical Device Sector
- Center for Promotion of Additive Manufacturing at Centre for Development of Advanced Computing (CDAC)Kolkata, West Bengal for Agri & Food Processing
- Center for Promotion of Additive Manufacturing at Indian Institute of Technology (IIT) Mandi, Himachal Pradesh for Renewable Energy and Distributed Manufacturing using customized 4D & 3D Technologies
- Additive Manufacturing based cost-effective optical computing chips (OCC) at Indian Institute of Science (IISc)Bangalore, Karnataka

These centres are acting as hubs to develop AM technologies which includes printable materials, 3D printing machines, design for AM or DfAM (software), printed products for various new & existing AM application sectors, engage start-ups for development and commercialization, train manpower at various levels and raise awareness among stakeholders of Indian AM ecosystem.

The specific achievements till date against the targets specified in National Strategy for Additive Manufacturing (NSAM) are as follows:

- 31technologies have been developed;
- 42start-ups have been engaged;
- 25 products have been developed;
- 5Additive Manufacturing Centres have been created;
- 22,953 manpower has been trained; and
- awareness programs for 10,000 personnel have been completed.

The National Centre for Additive Manufacturing (NCAM) at M/s NCAMF, Hyderabad, Telangana, serves as an aggregator of knowledge and resources, and as an accelerator for technology adoption and advancement in the Indian digital manufacturing sector. NCAM actively collaborates with various organizations within the AM ecosystem, including Indian AM industry associations, state governments, national and international standard bodies, academia, start-ups, and MeitY AM centres. The centre has conducted 60 workshops, conferences, and technical events across India to promote AM, with support from other organizations within the AM ecosystem. Additionally, NCAM has successfully facilitated investments from global companies for manufacturing and R&D in India and has actively engaged start-ups and SMEs in the development of additive manufacturing technologies and intellectual property rights (IPR).

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