GOVERNMENT OF INDIA
MINISTRY OF ELECTRONICS AND INFORMATION TECHNOLOGY
RAJYA SABHA
UNSTARRED QUESTION NO. 560
TO BE ANSWERED ON: 07.02.2025

STEPS TO DEVELOP SOVEREIGN AI CAPABILITIES

560. SHRI KARTIKEYA SHARMA:

Will the Minister of Electronics and Information Technology be pleased to state:

(a) whether Government has initiated efforts to develop sovereign Artificial Intelligence (AI) capabilities to ensure data security and independence in critical sectors; if so, the details thereof;
(b) the planned infrastructure, collaborations, and funding allocated for these initiatives; if so, the initiatives and the details thereof, State-wise; and
(c) the steps being taken to promote indigenous AI research and development, including support for startups, academic institutions and industry partnerships, to reduce dependency on foreign technologies?

ANSWER

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

(a) to (c): The Government of India emphasizes the concept of 'AI for All,' aligning with the Hon'ble Prime Minister's vision to democratise use of technology. This initiative aims to ensure that AI benefits all sectors of society, driving innovation and growth.

India is regarded as the Skills Capital in Technology and Artificial Intelligence. The most reliable ranking in AI is placing India among the top countries with AI Skills, AI capabilities, and policies to use AI.

Stanford University has ranked India among the top four countries along with the US, China, and the UK in the Global and National AI vibrancy ranking based on 42 indicators.

The Government has taken several steps to develop sovereign AI capabilities and to promote indigenous AI research and development, such as:

1. **IndiaAI Mission:** Union Cabinet led by Hon'ble Prime Minister has approved the **IndiaAI Mission** on 7th March 2024, a strategic initiative to establish a robust and inclusive AI ecosystem that aligns with the country's development goals. This mission is driven by a vision to position India as a global leader in artificial intelligence by focusing on following seven foundational pillars:
   i. **IndiaAI Compute Capacity**: The IndiaAI compute pillar envisions building a high-end scalable AI computing ecosystem comprising AI compute infrastructure of 10,000 or more Graphics Processing Units (GPUs).
   Towards the same objective, IndiaAI Independent Business Division (IBD) published a Request for Empanelment (RFE) on August 16, 2024, to empanel AI services on cloud including GPUs. 19 bidders had submitted proposals to empanel their AI cloud services. Against the target of 10,000 GPUs, outlined in the IndiaAI compute pillar, bidders have submitted 18,693 GPUs for empanelment.
   ii. **IndiaAI Innovation Centre (IAIC):** The AI Innovation Centre aims to develop and deploy indigenous Large Multimodal Models (LMMs) trained on India-specific data.
   A Call for Proposals has been launched under this pillar to support the development of foundational AI models, inviting startups, researchers, and entrepreneurs to collaborate on creating state-of-the-art AI models using Indian datasets. This initiative aims to establish indigenous AI models, which can be Large Multimodal Models,

Large Language Models (LLM), or Small Language Models (SLM), to address India-specific challenges across various sectors.

iii. **IndiaAI Datasets Platform**: The IndiaAI Datasets Platform (IDP) seeks to enhance access, quality, and utilization of public sector datasets to make them AI-ready.
The IDP aims to function as a unified data platform, integrating datasets from all existing data platforms as well as onboarding non-government data contributors and providing new-age AI-centric features.

iv. **IndiaAI Application Development Initiative**: The IndiaAI Application Development Initiative aims to develop, scale, and promote the adoption of impactful AI solutions to effectively tackle significant problem statements.
IndiaAI Innovation challenge was launched on 13th August 2024 for the themes of healthcare, agriculture, improved governance, climate change & disaster management and assistive technologies for learning disabilities. The Innovation Challenge was open to Indian innovators, startups, non-profits, students, academic/R&D organizations, and companies. A total of 900 applications have been received across the five focus areas.

IndiaAI also launched the CyberGuard AI Hackathon: Cybercrime prevention in collaboration with the Indian Cybercrime Coordination Centre (I4C). Participants were expected to develop sophisticated AI solutions leveraging Natural Language Processing (NLP) models that can be used to analyse, classify, and improve the accuracy of citizen-reported cybercrime incidents on NCRP (National Cybercrime Report Portal).

v. **IndiaAI FutureSkills**: IndiaAI FutureSkills Pillar envisions to augment the number of graduates, post-graduate and PhDs in AI domain. Further, it envisions setting up Data and AI Labs in Tier 2 and Tier 3 cities across India, to impart foundational-level courses in Data and AI.
IndiaAI fellowship are being awarded annually to 400 B.Tech and 500 M.Tech students working in AI domain from All India Council for Technical Education (AICTE) recognized engineering institutions.
IndiaAI has established IndiaAI Data Lab in National Institute of Electronics & Information Technology (NIELIT's) Delhi centre and & ICET, Nagaland. Additionally, IndiaAI in collaboration with NIELIT plans to establish 27 data labs in Tier 2 and Tier 3 cities across the country, details of which are placed at Annexure I.

vi. **IndiaAI Startup Financing**: IndiaAI Startup Financing pillar is to provide support to AI startups at all stages. Multiple rounds of stakeholder consultations have been held to deliberate on the scheme for supporting AI Startups at Pre-Seed, Seed and Growth stage.

vii. **Safe & Trusted AI:** This pillar enables the implementation of Responsible AI projects including the development of indigenous tools and frameworks, self-assessment checklists for innovators, and other guidelines and governance frameworks.
Eight Responsible AI Projects have been selected to address the need for robust guardrails to ensure the responsible development, deployment, and adoption of AI technologies. The projects cover a range of critical themes, including Machine Unlearning, Synthetic Data Generation, AI Bias Mitigation, Ethical AI Frameworks, Privacy-Enhancing Tools, Explainable AI, AI Governance Testing, and Algorithm Auditing Tools. The details of the selected projects are given at Annexure II.

The implementation of 'IndiaAI Mission' with a total outlay of Rs. 10,371.92 Cr is for a period of 5 years. The detailed allocation of budgetary outlay among its seven key pillars is as follows:

Components	**Total Expenditure** (₹ Cr)
IndiaAI Compute Capacity	4563.36
IndiaAI Innovation Centre (IAIC)	1971.37

IndiaAI Datasets Platform	199.55
IndiaAI Application Development Initiative	689.05
IndiaAI FutureSkills	882.94
IndiaAI Startup Financing	1942.5
Safe & Trusted AI	20.46
IndiaAI Overheads and Contingency @1%	102.69
Total	10,371.92

2. **Digital India Bhashini:** Bhashini, as part of India's National Language Translation Mission (NLTM), aligns with the principles of sovereign AI by focusing on creating AI-driven language solutions using domestic infrastructure, data, and talent. Sovereign AI refers to a nation's ability to independently develop and manage AI technologies to maintain control over its data, ensure privacy, and address specific local needs. Bhashini embodies these ideals by leveraging India's linguistic datasets, fostering vernacular content creation, and providing translation tools for 22 scheduled Indian languages. Furthermore, it enhances national competitiveness by enabling local innovation in AI while reducing reliance on foreign technologies. By integrating advanced AI capabilities like natural language processing and machine learning, Bhashini demonstrates how sovereign AI can address localized challenges while contributing to broader national objectives such as digital inclusion and economic growth.
3. **National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS):** Department of Science & Technology (DST), Government of India, is spearheading the National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS). Under this mission, 25 Technology Innovation Hubs (TIHs) have been established in reputed institutions across India, with 23 currently active. Each TIH specializes in cutting-edge domains such as Artificial Intelligence (AI), Machine Learning (ML), Robotics, Internet of Things (IoT), Robotics, Cybersecurity, and FinTech etc. The TIH has four major activities i.e. 1. Technology Development, 2. Human Resource & Skill Development, 3. Innovation, Entrepreneurship & Start-Up Ecosystem and 4. International Collaborations.
   One such TIH, namely, IHUB NTIHAC Foundation (C3i Hub) set up at IIT Kanpur is working in the Technology Vertical " Cyber Security and Cyber Security for Physical Infrastructure".

   Some technological tools have been developed by the TIH to develop sovereign AI capabilities to ensure data security and independence in critical sectors:
   - **Malware Analysis Framework (MAF):** Provides an AI-ML-powered malware detection and analysis solution that performs file-type specific analysis for various types of files, including PDF, APK, PE, ELF, etc. in real-time a with minimum accuracy 99.13%.
   - **H.A.M.M.E.R:** A Honeypot Orchestration and Threat Intelligence gathering framework and tool with a SOAR (security orchestration, automation, and response, uses logic rules) engine implemented for attacker engagement (deployed on the cloud).
4. **BharatGen:** TIH Foundation for IOT And IOE set up at IIT Bombay is working in Technology verticals " Technologies for Internet of Things & Internet of Everything". The TIH is spearheading *BharatGen*, a multimodal, multilingual large language model initiative aimed at developing advanced generative AI models tailored to India's linguistic, cultural, and socio-economic diversity. This ambitious project is being executed in collaboration with faculty from IIT Bombay, IIT Madras, IIT Mandi, IIT Kanpur, IIT Hyderabad, and IIIT Hyderabad, with a sanctioned funding of ₹235.16 crore. As part of the initiative, AI hardware is being deployed across these IITs to provide students with cutting-edge computational resources for AI applications. Additionally, the project envisions strategic collaborations with startups to develop and enhance India’s sovereign AI capabilities.

5. **AI Research, Analytics and Knowledge Dissemination Platform (AIRAWAT):**MeitY along with CDAC has implemented the project on AIRAWAT (AI Research, Analytics and Knowledge Dissemination Platform) for providing a common compute platform for AI research and knowledge assimilation. This AI computing infrastructure is being used by all technology innovation hubs, research labs, scientific communities, industry and start-ups, and institutions with National Knowledge Network.

   The 200 AI Petaflops AIRAWAT PoC (40 Nodes or 320 A100 GPUs) integrated with 210 AI Petaflops of PARAM Siddhi – AI (42 Nodes or 336 A100 GPUs) has been ranked 75^{th} in Top500 List in year 2023, putting India among top supercomputing league.

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Annexure I

List of Data & AI labs planned by IndiaAI in collaboration with NIELIT in Tier 2 and Tier 3 cities across the country:

S.No.	NIELIT Centre	State/UT
1	Gorakhpur	Uttar Pradesh
2	Lucknow	Uttar Pradesh
3	Shimla	Himachal Pradesh
4	Aurangabad	Maharashtra
5	Patna	Bihar
6	Buxar	Bihar
7	Muzaffarpur	Bihar
8	Kurukshetra	Haryana
9	Ropar	Punjab
10	Haridwar	Uttarakhand
11	Bikaner	Rajasthan
12	Tezpur	Assam
13	Bhubaneswar	Odisha
14	Calicut	Kerala
15	Guwahati	Assam
16	Itanagar	Arunachal Pradesh
17	Srinagar	J&K
18	Jammu	J&K
19	Ranchi	Jharkhand
20	Imphal	Manipur
21	Gangtok	Sikkim
22	Agartala	Tripura
23	Aizawl	Mizoram
24	Shillong	Meghalaya
25	Kohima	Nagaland
26	Leh	Ladakh
27	Silchar	Assam

Annexure II

The details of the selected projects under "Safe & Trusted AI" Pillar are as under:

NAME OF THE THEME	SELECTED APPLICANT	TITLE OF THE PROJECT
Machine Unlearning	IIT Jodhpur	Machine Unlearning in Generative Foundation Models
Synthetic Data Generation	IIT Roorkee	Design and Development of Method for Generating Synthetic Data for Mitigating Bias in Datasets; and Framework for Mitigating Bias in Machine Learning Pipeline for Responsible AI
AI Bias Mitigation Strategy	National Institute of Technology Raipur	Development of Responsible Artificial Intelligence for Bias Mitigation in Health Care Systems
Explainable AI Framework	DIAT Pune and Mindgraph Technology Pvt. Ltd.	Enabling Explainable and Privacy Preserving AI for Security
Privacy Enhancing Strategy	IIT Delhi, IIIT Delhi, IIT Dharwad and Telecommunication Engineering Center (TEC)	Robust Privacy-Preserving Machine Learning Models
AI Ethical Certification Framework	IIIT Delhi and Telecommunication Engineering Center (TEC)	Tools for assessing fairness of AI model
AI Algorithm Auditing Tool	Civic Data Labs	ParakhAI - An open-source framework and toolkit for Participatory Algorithmic Auditing
AI Governance Testing Framework	Amrita Vishwa Vidyapeetham and Telecommunication Engineering Center (TEC)	Track-LLM, Transparency, Risk Assessment, Context & Knowledge for Large Language Models

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