ETSI AI Conference 2024

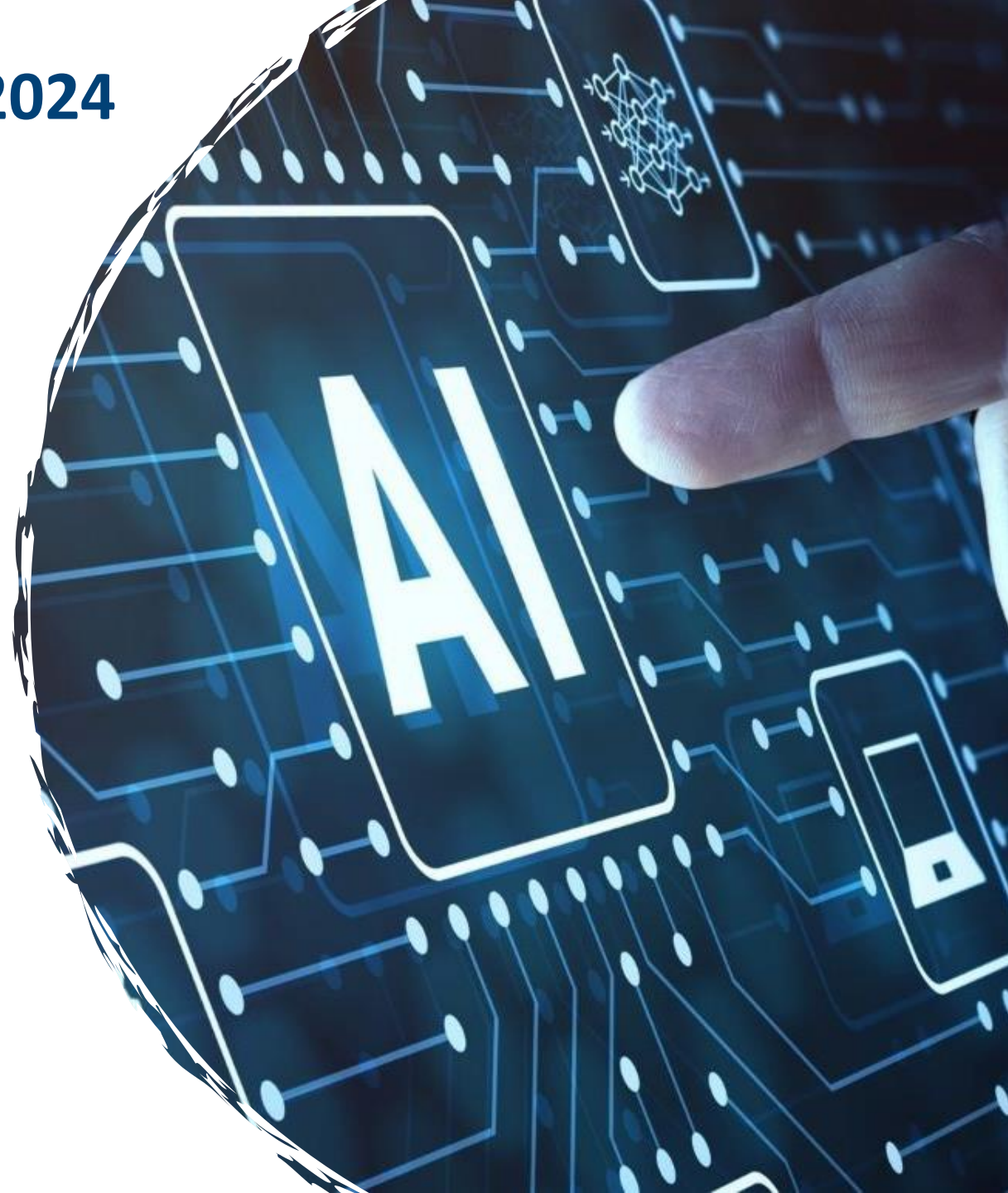# AI Regulation and Standardization in India

Presented by:

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EU Project SESEI

Project is a local presence in India

SESEI (**S**econded **E**uropean **S**tandardization **E**xpert in **I**ndia)
is a local face for the European standardization co
in India: Dinesh Chand Sharma

Why SESEI: India is a major trade partners for EU/EFTA, Increasing role of standards to gain market access, evolving & complex nature of regulatory and standardization landscapes, sharing best practices, and work together as partners

Priority Sectors/topics: Aligned with EU-INDIA TTC, Connectivity Partnership

Digitization: Strategic technologies, digital governance, and digital connectivity

Smart Cities/Urban Development, ITS, Quantum Technologies, Smart Grid/Meter, **Artificial Intelligence**, 5G/6G, Open RAN, M2M/IoT (Cyber-Physical Systems), DECT, Data Privacy, Satellite Communication, Blockchain, Digital Signature, Smart Manufacturing, e-Accessibility, cybersecurity, digital skills, digital platforms including Research and Innovation etc.

Green & Clean technologies : Clean Energy, Energy Efficiency (Green ICT), Environment, Circular Economy including Resource Efficiency, Waste Management, Energy storage technologies, Electric mobility, Green Hydrogen, Advanced biofuels including R&I etc.

Other topics of mutual interests such as Rail, Ropeways, Machinery Safety etc.

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AI Policies & Standards in India

AI - Introduction

Because of Digitization, Big Data, Deep Data, Data Science capabilities and availabilities (M2M/IoT, Smart Cities, Industry 4.0 etc.):

- Artificial Intelligence (AI) is emerging very fast these days and is affecting widely the entire industry e.g. automation, data management, integration of smart technology.

"Artificial intelligence (AI) refers to the simulation of human intelligence in machines that are programmed to think like humans and mimic their actions"

- According to IDC report, AI market in India is anticipated to reach USD 7.8 billion by 2025 from USD 3.1 billion in 2020

- AI applies to a variety of sectors : smart manufacturing, robots, autonomous cars, virtual reality, healthcare, interactive speech interfaces, visual recognition, data analysis/manipulation, home appliances, cybersecurity or spatial programming.

- Over 60%-70% of the companies expect AI to have a high or a very high impact on business areas that are "entirely unknown to the company today".

- In December 2023, India, the Chair of the Global Partnership on Artificial Intelligence (GPAI), successfully hosted the GPAI Summit
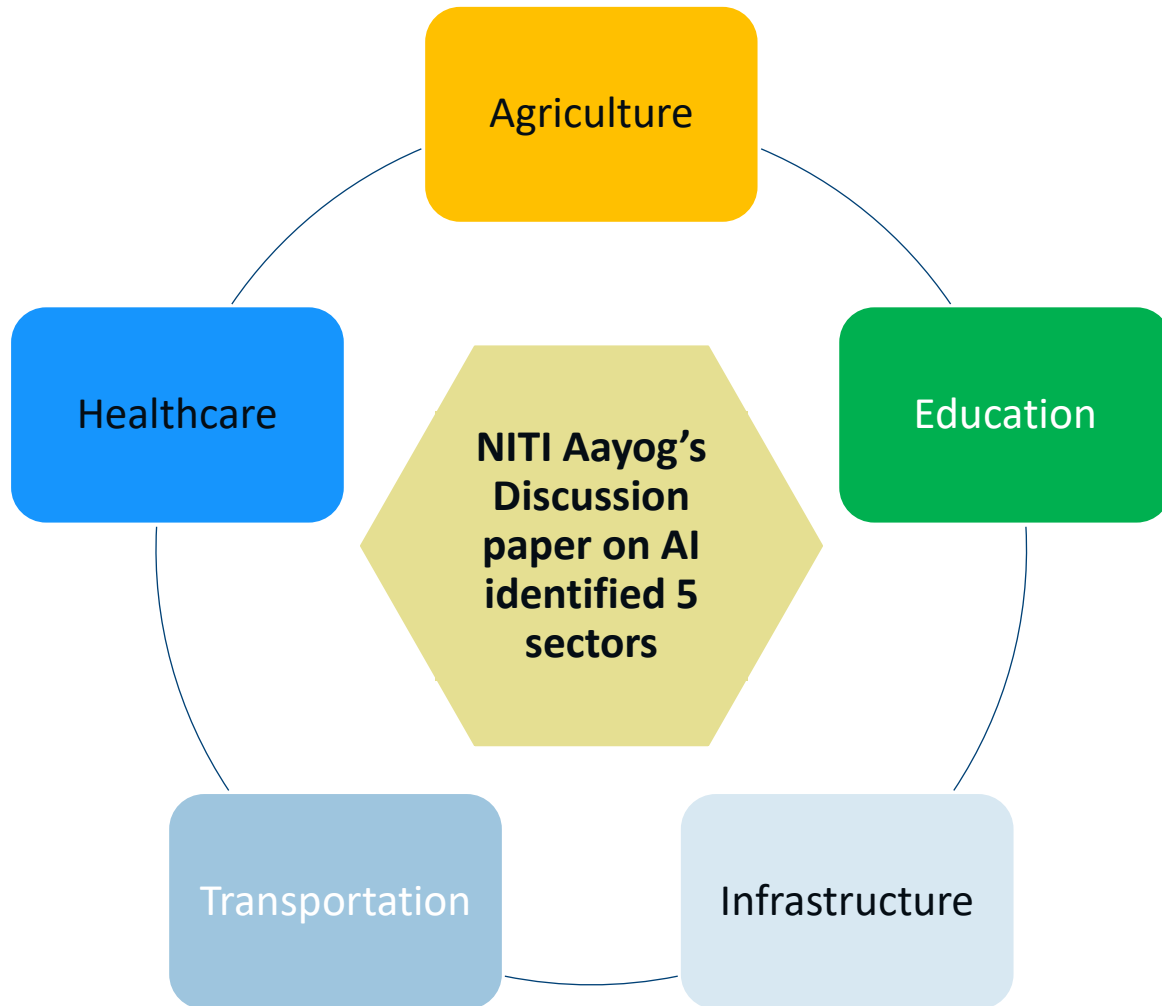
Task Force on AI

- Aug 2017, Ministry of Commerce and Industry constituted the "Task Force on AI for India's Economic Transformation"
- **Vision:** Embed AI in our Economic, Political and Legal thought processes so that there is systemic capability to support the goal of India becoming one of the leaders of AI-rich economies
- **Mission:** Leverage AI for Economic Benefits , Creation of policy and legal framework to accelerate deployment of AI technologies, Concrete 5 year horizon recommendations for specific Government, Industry and Research programs
- **Domains of Focus:**

• Manufacturing	• AADHAAR/Big Data
• Fintech	• Environment
• Healthcare	• National Security
• Agriculture/Food Processing	• Enablers for AI Technology development
• Education	• Enablers for AI entrepreneurship
• Retail/Customer Engagement	• Enablers for AI product commercialization
• Human and Robot interaction/intelligent automation	• General/other issues related to AI
• Aid for Differently Abled/Accessibility Technology	• Public Utility Services

Click here to view the Report of the Task Force.

National Strategy on AI

NITI Aayog's Discussion paper on AI identified 5 sectors

- Agriculture
- Education
- Infrastructure
- Transportation
- Healthcare

- In June 2018, Government think-tank, NITI Ayog unveiled its **discussion paper on national strategy on AI** which aims to guide R&D in new and emerging technologies.

- Identified five sectors — healthcare, agriculture, education, smart cities and infrastructure and transportation — to focus its efforts on implementation of AI.

- As a follow up, in Feb 2021, NITI Aayog has also released "Responsible AI for All" approach document.

  - ✓ Part-1 aims to establish broad **ethics principles** for design, development and deployment of AI in India – drawing on similar global initiatives but grounded in the Indian legal and regulatory context.

  - ✓ Part 2 - Operationalizing Principles for Responsible AI was released in August 2021 which identifies the various mechanisms needed for operationalizing seven principles identified in Part-1.

  - ✓ Part 3 - Responsible AI for All: Adopting the Framework – A use case approach on Facial Recognition Technology (FRT)": establishes a framework for responsible and safe development and deployment of FRT within India (Nov-22)

MEITY and DoT committees on AI

Ministry of Electronics and Information Technology (MEITY) had created four committees to create a policy framework and to develop the ecosystem for Artificial Intelligence (Feb-2018):

These committees have released following reports on AI (July-2019):

- ✓ Report of committee - A on platforms and data on AI
- ✓ Report of committee - B on leveraging AI for identifying national missions in key sectors
- ✓ Report of committee - C on mapping technological capabilities, key policy enablers required across sectors, skilling, reskill
- ✓ Report of committee - D on cyber security, safety, legal and ethical issues

Department of Telecommunications (DoT): has formed a committee on standardisation in AI technologies to develop necessary AI standards. **Committee has five Working Groups (WGs): Oct - 2019**

- ✓ WG 1: Standardisation of the functional architecture, AI architecture and data structures.
- ✓ WG 2: Standardisation of the type of interfaces and protocols, technologies employed, systems deployed, benchmarking practices.
- ✓ WG 3: Standardisation in Trustworthiness; digital rights and ethical standards in AI; preserving algorithm openness; Security and compliance aspects.
- ✓ WG 4: Standardisation in Interoperability Standards; technological mapping and leveraging AI for national missions.
- ✓ WG 5: Development of Indian AI Stack.

Other Initiatives on AI

National AI portal (indiaai.gov.in):

- It works as a one-stop digital platform for AI related developments in India, sharing of resources such as articles, start-ups, investment funds in AI, resources, companies and educational institutions related to AI in India

Centre of Excellence (CoE) for AI by NIC:

- CoE in AI by NIC has been established with the motto of 'Inclusive AI' for responsive governance, to work towards improving Govt. service delivery to citizens.

AI Research, Analytics and knowledge Assimilation (AIRAWAT):

- NITI Aayog, the Government of India's think tank, released an Approach Paper on "AIRAWAT- Establishing an AI Specific Cloud Computing Infrastructure for India" in January 2020 urging the government to set up India's first AI-specific cloud computing infrastructure, 'AIRAWAT'.

  - ✓ AIRAWAT aims to bolster AI research, development, and application in India

  - ✓ AIRAWAT is being planned to be established based on the recommendations made by the National Strategy for Artificial Intelligence (NSAI)

  - ✓ Government intends to resolve key computing challenges regarding, before building AI-centric computing infrastructure in India

  - ✓ It will work towards facilitating the work of all stakeholders (startups, researchers, etc) involved in the AI research and application ecosystem

Growth Drivers and key Challenges in India

Growth Drivers:

▪ **Data availability for AI model training**: Access to diverse datasets is crucial for training AI models, and India's data abundance can contribute to AI advancements.

▪ **Increasing professionals in AI:** In recent years, India has seen a significant growth of professionals skilled in AI.

▪ **Increasing number of AI Startup**: India has seen a surge in AI startups working on diverse applications, from healthcare to agriculture.

▪ **Favourable Government policies** such as National AI Strategy to promote its adoption.

Key Challenges:

▪ **Data quality:** impacts the performance, accuracy, and reliability of AI models.

▪ **Data security and privacy:** AI brings a range of security and privacy vulnerabilities, which can subsequently exacerbate any organizations exposure to cyber risk and geopolitical risk.

▪ **Limited AI expertise:** India need to focus on AI expertise in coming years.

▪ **Lack of AI and cloud computing infrastructure:**
   ✓ India's own AI-first compute infrastructure, **AIRAWAT** developed by NITI Aayog, is a cloud platform for Big Data analytics with advanced AI processing capabilities.

▪ **Lack of integrity and ethics with AI/ML solutions:**
   ✓ With the advent of AI products and algorithms and their increasing role in decision making, ethics and morality have emerged as a major challenge for the AI solution providers.

AI: Standardization

Bureau of Indian Standards (BIS):

BIS LITD 30: Artificial Intelligence Sectional Committee: responsible for standardization in the area of Artificial Intelligence and Big Data. It is the National Mirror Committee for ISO/IEC JTC1/SC42 with same Title & Scope.

- IS/ISO/IEC/TR 24028: 2020: Information technology AI Overview of trustworthiness in artificial intelligence.

- IS/ISO/IEC/TR 24029-1: 2021: AI Assessment of the robustness of neural networks Part 1: Overview

- IS/ISO/IEC/TR 24030: 2021: AI Use cases.

- IS/ISO/IEC/TR 24368: 2022: AI Overview of Ethical and Societal Concerns

- IS/ISO/IEC/TR 24372: 2021: AI Overview of computational approaches for AI systems

- IS/ISO/IEC 24668: 2022: AI Process management framework for big data analytics

- IS/ISO/IEC 38507: 2022: Information technology Governance of IT Governance implications of the use of artificial intelligence by organizations.

Telecommunication Engineering Centre (TEC) under Department of Telecom (DoT), Ministry of Communications has formed a committee on "standardisation in AI technologies" to develop necessary "AI standards".

- Committee has released its **Indian AI Stack discussion paper** on September 2, 2020, with the intention of mitigating impediments in AI deployment and essentially make AI uniform for application across sectors.

  ✓ The AI Stack paper highlighted five major horizontal pillars and one main vertical pillar - thus covering some of the most crucial aspects in AI deployment today including security, data storage, privacy, customer experience and computing.

In July 2023, Telecommunication Engineering Centre (TEC), DoT has unveiled a Standard (No. TEC 57050:2023) for "Fairness Assessment and Rating of Artificial Intelligence Systems".

- This Standard enumerates detailed procedures for accessing and rating artificial intelligence systems for fairness.

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