10th Anniversary

GISC 2026

Global ICT Standards Conference 2026

Shaping the New AI Era: Global Standardization Policy and Strategy

Malaysia's AI Standardization Policy and Roadmap

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Chair of MTSFB IoT and SSC WG
Chair of MTSFB Reference Panel

ICT Standards and Intellectual Property:
Shaping the Physical AI

주최 과학기술정보통신부 지식재산처 주관 국립전파연구원 TTA IITP KEA kista ETRI

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Abstract

Malaysia is operationalizing its *AI Nation 2030* strategy and proposed *AI Governance Bill* by turning high-level principles into auditable technical standards. This presentation explores Malaysia's coordinated standardization ecosystem and details how MTSFB's AI Task Force (AITF) develops industry-led Technical Codes, spanning foundational taxonomy, AI-native networks, AIoT, cybersecurity, and Physical AI, aligned with ISO/IEC, ITU, and ETSI frameworks.

Global AI governance is moving from principles to law and standards

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Dec 2023

ISO/IEC 42001

First certifiable AI management system standard, from ISO/IEC JTC 1/SC 42

22 Jan 2026

Korea AI Basic Act

In force, with a grace period of at least one year before fines

19 Feb 2026

ITU-T FG-EAI

Focus Group on Embodied AI set up under ITU-T Study Group 21

10 Jul 2026

Malaysia AI Governance Bill

Public consultation paper released; feedback closed on 31 July

2 Dec 2027

EU AI Act, Annex III

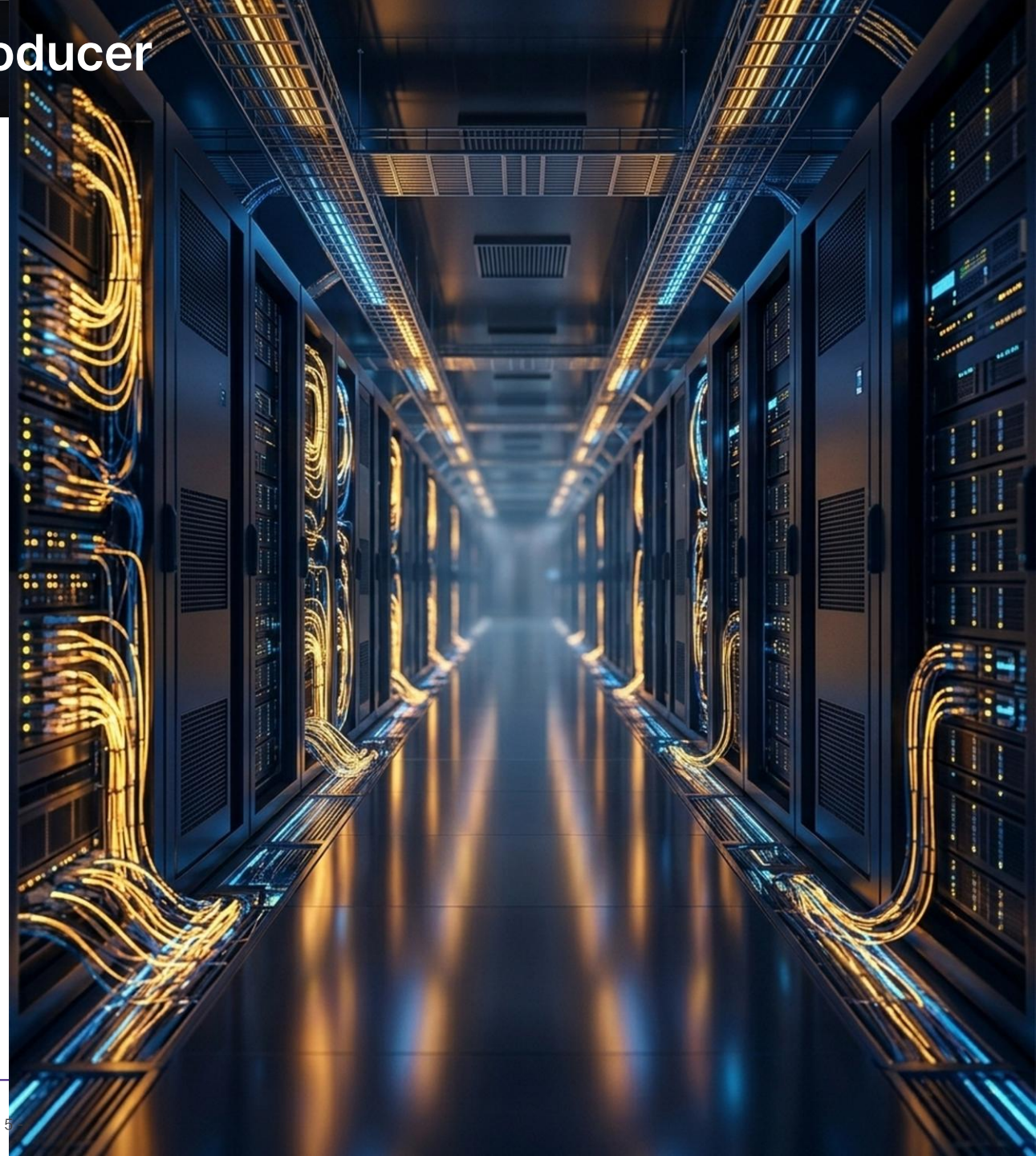
Revised date for stand-alone high-risk duties; harmonised standards still pending

Malaysia Shifts from AI Consumer to Producer

US$115B

Projected 5-year AI contribution (~RM530B) to Malaysia's GDP

- AI Malaysia Berhad: Institutionalized July 2026 under Ministry of Digital to lead AI Nation 2030.
- Hyperscale Infrastructure: Backed by US$2.2B cloud investment and sovereign availability zones.
- Workforce Transformation: AIForMYFuture targets 800,000 Malaysians skilled in AI across sectors.



Three Policy Waves Anchor Malaysia's Responsible AI Transition

1. Foundation (2021–24)

- AI-RMAP 2021–25: Built national AI readiness under MOSTI.
- AIGE (Sept 2024): Set 7 ethical principles for 'AI for All.'
- PDPA 2024 Reform: Upgraded statutory data protection rules.
- National AI Office: NAIO set up under the Ministry of Digital

2. Mobilization (2025)

- JDN Public AI Guide: Directed safe civil service AI adoption.
- ASEAN GenAI Guide: Addressed 6 regional GenAI risk categories.
- AITF & MyTMAP2030: Kicked off MTSFB AI Task Force in June 2025.

3. Execution (2026–30)

- AI Nation 2030: 28 strategic initiatives across 5 catalysts.
- AI Governance Bill: Risk-based statutory bill consulted July 2026. To be tabled in Parliament in 2027.
- MY-AISafe & AICE: Launched AI Safety Institute & Ethics Code.
- AI Malaysia Berhad (NAIO): The national agency under the Digital Ministry driving the *AI Nation 2030* vision and national AI governance

Three roles now frame AI governance in Malaysia

COORDINATE

AI Malaysia Berhad

National AI lead agency under the Ministry of Digital. It coordinates policy, tracks Action Plan outcomes and leads global AI partnerships.

ASSURE

Malaysia AI Safety Institute

MY-AISafe builds technical capability for AI evaluations, red teaming, standards-setting and regulatory support.

REGULATE (PROPOSED)

Central AI Authority

Proposed in the AI Governance Bill as the anchor for national principles, working with delegated Sectoral Leads.

Standards bodies, including the Department of Standards Malaysia and MTSFB, supply the technical detail that all three roles depend on.

A principle-based law covering the full AI lifecycle

PROPOSED AI GOVERNANCE BILL

Scope and actors

- Systems placed on the market, designed, developed or used in Malaysia
- Systems used by a Malaysian deployer, wherever they are hosted
- Two actors: Developers and Deployers
- Exempt: personal use, and national defence and security

Five governance principles

1. Human dignity
2. Transparency and explainability
3. Accountability
4. Safety and security
5. Responsible data governance

Risk tiers, incident reporting and a sandbox

PROPOSED AI GOVERNANCE BILL

TIER 1

Unacceptable risk

Built or used with intent to cause harm

TIER 2

High risk

No intent to harm, but a risk of harm occurring

TIER 3

Low risk

No foreseeable material harm; baseline principles only

Harm is anchored to four categories: death, bodily injury, unlawful deprivation of fundamental liberty, and contravention of written law.

Incident reporting

Developers, deployers or the public can report, including near misses

AI Sandbox

Supervised testing, run centrally or through Sectoral Leads

The Action Plan - voluntary standards as part of the governance mix

AI ACTION PLAN · GOVERNANCE

TOOLS SECTOR REGULATORS CAN COMBINE

HARD LAW
Legislation

QUASI-BINDING
Regulatory guidelines

SOFT LAW
Voluntary standards

The mix depends on sector risk and maturity, and is reassessed over time.

Align with international standards

The principles-based framework should align with international standards, to support interoperability and investor confidence.

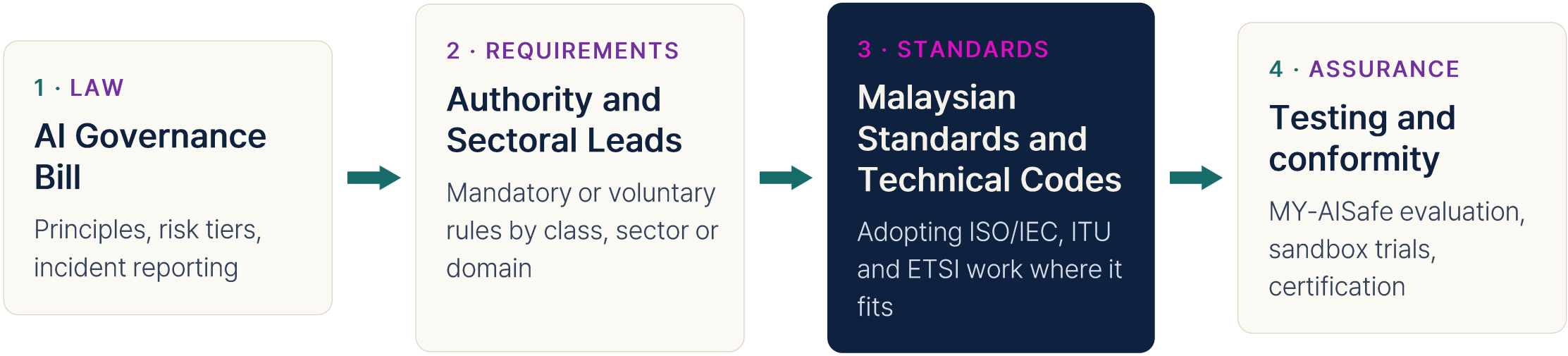
Tiered classification and certification

Criteria-based certification for Made-by-Malaysia AI across compute, data and models, with open benchmarks.

Coordinated Institutional Mandates Eliminate Regulatory Silos

Institution / Body	Parent Ministry	Core Mandate	Key 2025–2026 AI Deliverables
AI Malaysia Berhad (National AI Office)	Ministry of Digital	National Strategy, Policy & Safety Oversight	AI Nation 2030 (28 Initiatives), AI Governance Bill, MY-AISafe, Voluntary Code (AICE)
Dept. of Standards Malaysia (JSM)	MITI	National Standards Body (ISO/IEC SC 42 Member)	Adoption of MS ISO/IEC 42001, 23894, 42005, 22989; Co-Lead on MY-AI Standards Portal
MCMC & MTSFB (AI Task Force - AITF)	Ministry of Communications	ICT & Telecom Technical Codes (CMA 1998)	MyTMAP2030 Roadmap, AITF Technical Codes, Physical AI Framework, IoT Data Interop
SIRIM QAS & Cyber-Security Malaysia	MITI & Ministry of Digital	Conformity Assessment, Audit & Cyber Assurance	ISO/IEC 42001 AIMS Certification (Nov 2025), AI Deepfake & Media Authentication Tool

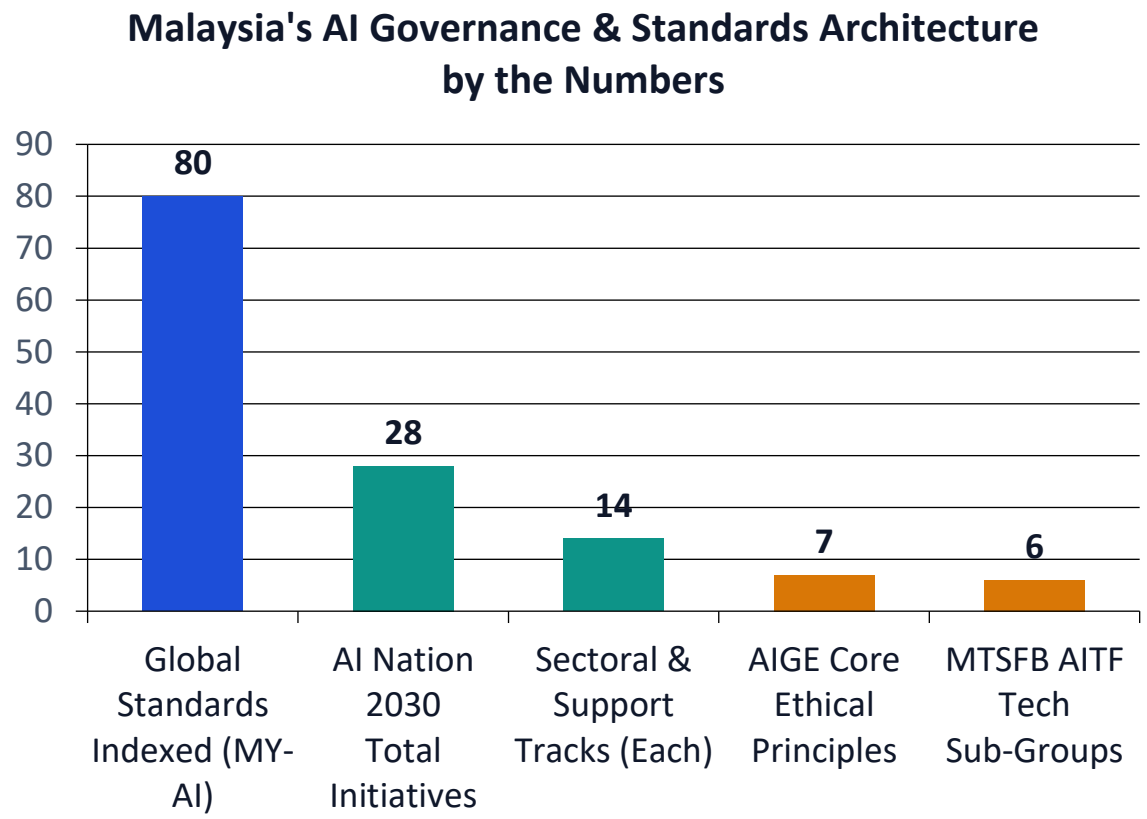
From law to assurance: where standards sit



MTSFB's AI Task Force works at step 3, for the communications and multimedia sector.

Turning Policy Principles into Auditable Trust

- **Urgent Trust Catalyst:** 67,735 online fraud cases (>RM2.7B losses in 2025) drove action.
- **MY-AI Portal (Mar 2026):** Co-launched by NAIO, Standards Malaysia (JSM), and CyberSecurity MY.
- **ISO/IEC SC 42 Adoption:** Indexes 80+ standards including ISO/IEC 42001, 23894, and 42005.
- **SIRIM QAS Certification:** Accredited national ISO/IEC 42001 AIMS audits launched Nov 2025.



Malaysian Technical Standards Forum Bhd (MTSFB)

01 TC Development

Develop & maintain technical code

02 Collaboration Platform

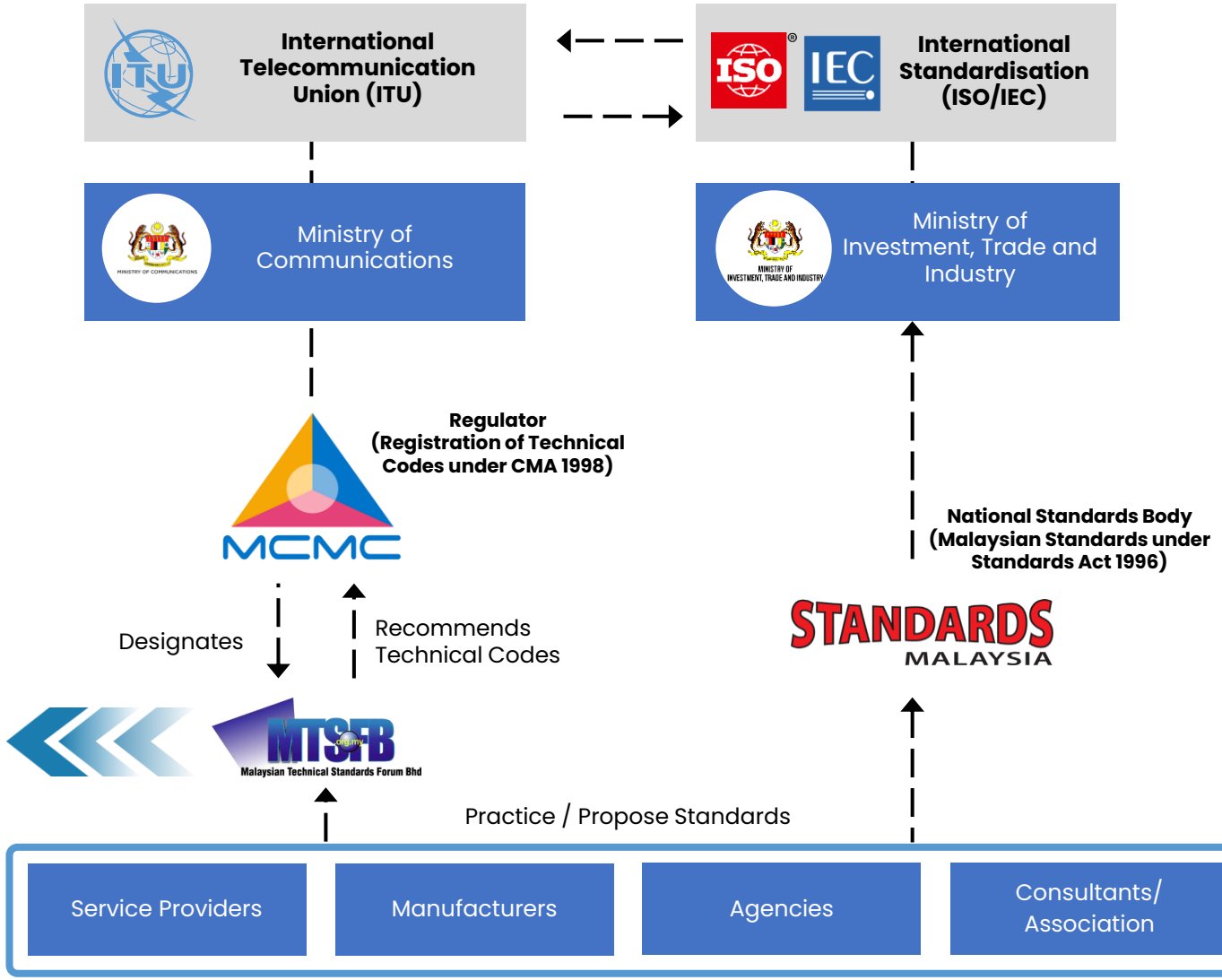
Central platform for collaboration on the standardisation process and technology sharing

03 Value Creation

TC adoption and grant award for solutions to address industry-specific problems as input to TC development

04 Outreach & Advocacy

Drive the onboarding of experts, members and partners for standardisation programs



Established as CLBG:
8 June 2004

Designated as the Technical Standards Forum by MCMC :
27 October 2004

Our Vision

MTSFB envisions becoming the leading standardisation body and national reference point for communications and multimedia standards that empower Malaysia's digital growth and innovation.

Our Mission

Our mission is to empower collaborative innovation by providing a dedicated platform for industry players to unite and forge cutting-edge standards for the communications and multimedia sector.

Share knowledge on technology advancement and bring technology implementation to new levels with the inclusion of the standard production, promotion and adoption.

MTSFB Structure, Control & Governance

General Meeting / Advisory



CEO & Executives

Board of Directors



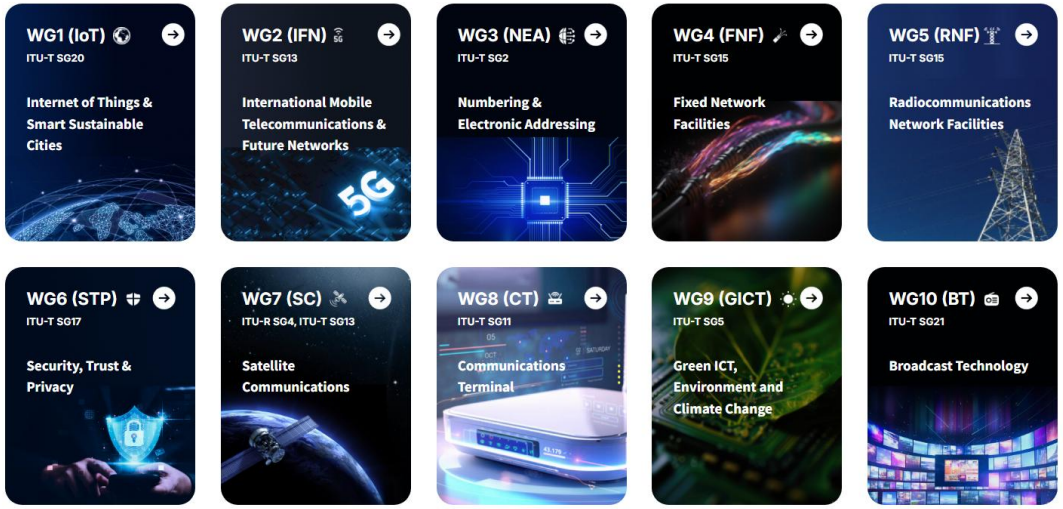
Reference Panels





Working Groups

700 Contributors Developing Technical Codes



AI TC Development Plan



MyTMAP2030 provides recommendations for MTSFB to establish a TC development plan (2025 – 2030) with focus areas that include AI.

2025	2026	2027	2028 & Beyond
Artificial Intelligence Standards Task Force (AITF) Structure & Experts			
a. Workplan 2026 / 2027			
	b. Study & Recommendation		
		c. High Priority & High Impact TC Development	

AI Standard Task Force

Artificial Intelligence Task Force Leaders
Chair: Dr Gopinath Rao Sinniah, Favoriot
Vice Chair (Industry): En Muhammad Qusairy, TM
Vice Chair (Academia) : Dr Azizul Azizan, UTM

Sub-Groups



Foundational Concepts & Terminology



AI System Design & Architecture



AI Data & Model Management



AI Performance & TEVV



AI Security & Resilience



AI Ethics, Transparency & Accountability

A layered framework for AI standards in the Physical AI era

5 · Sector applications	Telecommunication, Smart manufacturing, logistics, healthcare, smart cities
4 · Physical and embodied AI	Safety, interoperability, benchmarking, human–machine interaction
3 · AI-enabled networks	AI-native networks, edge computing, green data centres
2 · Security, trust and data	AI security, privacy, data quality and data governance
1 · Foundations	Terminology, trustworthiness, risk and AI management systems

Adopt international work first, and build only where gaps remain

Domain	International reference	Malaysian approach
AI management	ISO/IEC 42001 (AI management system)	Reference for organisation-level governance
Risk and impact	ISO/IEC 23894 and ISO/IEC 42005	Map to the Bill's three risk tiers
AI security	ETSI EN 304 223 (baseline cyber security for AI)	Basis for an AI security Technical Code
Embodied and agentic AI	ITU-T FG-EAI, FG-TIDA, FG-AI4SSC	Contribute to the Physical AI framework
Regional	APT ASTAP, oneM2M	Carry Malaysian work items into regional bodies

AITF Standardizes Taxonomy, System Architecture, and Data Pipelines

1. Taxonomy & Scope

- ISO/IEC 22989 Sync: Harmonizes local ICT and AI terminology.
- Capability Tiers: Classifies ML, GenAI, Agentic & Physical AI.
- Procurement Clarity: Standardizes definitions for MCMC & SLAs.

2. System Architecture

- 5G-Advanced & SRv6: Integrates AI across IMT-2020 and 6G cores.
- Open Middleware: Prevents lock-in via oneM2M service layers.
- Edge-Cloud Split: Balances device, edge, and cloud workloads.

3. Data & Models

- Syntactic Interop: Builds on draft TC MTSFB2605R0 IoT schemas.
- Dataset Governance: Mandates provenance, bias checks, and PDPA.
- Model Lifecycle: Tracks training, drift, and version audits.

Verifiable TEVV, Zero-Trust Security, and XAI Anchor Public Trust

4. Performance & TEVV

- TEVV Benchmarks: Standardizes testing, verification & validation.
- Continuous Auditing: Aligns with ETSI TS 104 008 conformity checks.
- Localized Context: Validates accuracy on Malaysian datasets.

5. Security & Resilience

- Adversarial Defense: Blocks data poisoning and model extraction.
- AIoT Edge Security: Pairs with MTSFB IoT authentication codes.
- Zero-Trust Links: Verifies sensor-to-cloud telemetry streams.

6. Ethics & Oversight

- AICE Operationalized: Turns July 2026 Ethics Code into tech specs.
- Explainable AI (XAI): Requires audit logs for critical utilities.
- Human-in-the-Loop: Enforces human sign-off on high-risk tasks.

Technical Codes in the pipeline

LAY THE FOUNDATIONS

- Foundational AI Concepts, Taxonomy for Malaysia's Telco/ICT Sector
- AI System design and Architecture: Interoperable & Scalable AI Systems in Communication Network

CONNECT AND ACT

- AIoT Reference Framework
- Agentic AIoT Requirements
- AI Agent Authority & Autonomy in Telecom Network

SECURE AND DEFEND

- Artificial Intelligence - Cybersecurity Requirements for Telecommunication and Multimedia Sector
- Artificial Intelligence – Model Inference Security Requirements
- AI-based Intrusion Detection & Autonomous Mitigation Framework for 5G networks

Five global trends shaping our roadmap

1. From Voluntary Principles to Binding Assurance	Shift from high-level ethics to statutory risk tiers and certifiable management systems (ISO/IEC 42001)
2. Rise of Agentic & Physical/Embodied AI	Moving beyond screen-based GenAI to autonomous network agents, robotics, and cyber-physical systems (ITU-T FG-EAI).
3. AI-Native Networks & Edge-Cloud Convergence	Deep integration of AI into 5G-Advanced, 6G, and IoT architectures requiring open interoperability (oneM2M).
4. Continuous TEVV & Adversarial Resilience	Transitioning from one-off pre-deployment checks to continuous conformity auditing (ETSI TS 104 008), zero-trust telemetry, and deepfake mitigation.
5. Global & Regional Standard Harmonization	Adopting international baselines (ISO/IEC, ITU, ETSI) first while localizing only for national regulatory, linguistic, and infrastructural gaps.

Where Malaysia and partners can work together

ALIGN

Map standards together

Share gap analyses and link national work to AIPP, ITU, ISO/IEC and ETSI, using the ITU AI Standards Exchange database of 870+ standards.

TEST

Share assurance practice

Exchange evaluation and red-teaming methods between safety institutes, and pilot Physical AI testbeds across borders.

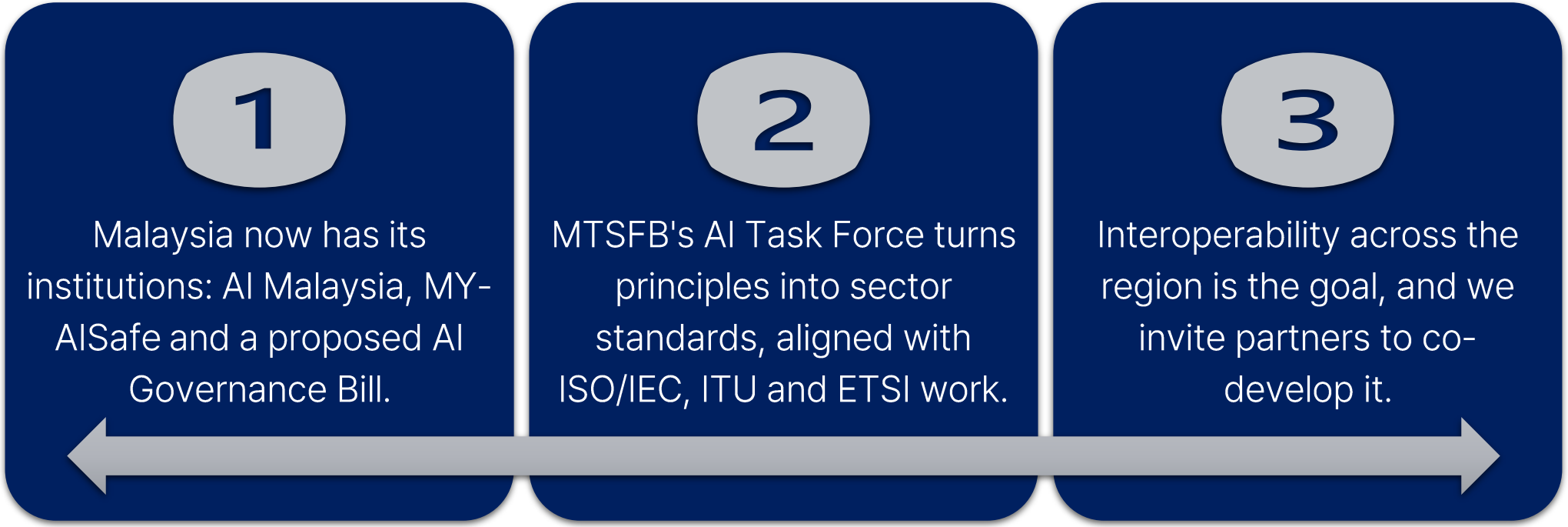
BUILD CAPACITY

Grow standards expertise

Malaysia adopts ISO/IEC, ITU, and ETSI standards and invites Asia-Pacific partners to co-develop interoperable frameworks and cross-border Physical AI testbeds

Our ask: co-develop interoperable, mutually recognised AI standards across Asia-Pacific.

Three points to take away



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- Thank you -

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ICT Standards and Intellectual Property:
Shaping the Physical AI

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