**Enterprise Singapore**

# OVERVIEW OF INTERNATIONAL AND SINGAPORE

# STANDARDS ECOSYSTEM

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Director
Standards (Manufacturing)

6 December 2024

# What Are Standards?

- a document, **established by consensus and approved by a recognised body**, that provides for common and repeated use, rules, guidelines or characteristics for activities or their results aimed at achieving the optimum degree of order in a given context.

- provides **requirements, specifications, terminologies, methods of testing, codes of practice, guidelines**, etc. that can be **used consistently** to ensure that products, processes, services and systems are **fit for purpose**.



This is why all your credit cards fit into foreign cash machines and ATMs when you shop…



…why you can print documents in your "Brand A" computer on a "Brand D" printer…



…and easily make international calls to different countries based on fixed country codes…

# Hierarchy of Standards

**International** Standards
(e.g. ISO, IEC, ITU-T and CODEX)

Technical standards developed by one or more international standards organisations, which are available for consideration and use worldwide.

**Regional** Standards
(e.g. CEN, CENELAC)

Standards developed or adopted and promulgated by a regional organisation. Regional standards are generally voluntary in nature, representing the joint action of the national standards bodies of a regional group of nations.

**National** Standards
(e.g. SS, BSI, ANSI, etc)

Standards that are developed and published by a national standards body and made available to the public.

**Industry** Standards
(e.g. API)

Documents that contain requirements that have been agreed on by groups of companies and people working in specific industries or on specific types of products. Industry standards address product performance, safety, reliability and the methods for evaluating product performance, reliability and safety.

**Consortia** Standards
(e.g. Cloud Security Alliance)

Developed by companies who agree to work together to solve a specific market need. Consortia documents may offer a solution to a problem, but participation in standards-setting is generally limited to members of the consortia

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# Singapore has a robust National Quality Infrastructure (NQI) involving both public and private sectors

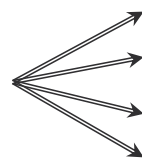| STANDARDS | TESTING, INSPECTION & CERTIFICATION (TIC) | ACCREDITATION | LEGAL METROLOGY | CHEMICAL / SCIENTIFIC METROLOGY |
|---|---|---|---|---|
| Develop and review Singapore and international standards to support national plans and emerging areas for enterprise growth and health and safety | Build capability of TIC players who assess enterprises' conformance to standards | Ensure impartiality and competence of CABs through accreditation programmes | Administer the Weights and Measures Act to ensure fair trade | Establish and maintain measurement standards at the highest level of accuracy in Singapore |

**Enterprise Singapore**
- **National Standards Body (NSB)**
- **National Accreditation Body (NAB)**
- **Singapore Good Laboratory Practice (GLP) Monitoring Authority**
- **Weights and Measures Office (WMO)**

# We adopt a synergistic approach in advancing the Singapore Standardisation Programme

## Enterprise Singapore as the National Standards Body

- **Administers** the Singapore Standardisation Programme
- **Formulates** the policies, strategies, programmes and procedures of the Singapore Standardisation Programme
- **Publishes** voluntary Singapore Standards and Technical References
- **Represents** Singapore at international and regional standards fora

## Singapore Standards Council *(appointed by Enterprise Singapore)*

- **Industry-led**
- **Sets up** committees & working groups to develop new standards and review existing standards
- **Advises and assists** Enterprise Singapore in implementing the policies, strategies, programmes and procedures of the Singapore Standardisation Programme

# Singapore Standards Council (SSC)

**Mr Tay Jih-Hsin**
**Chair**
Managing Director, Swee Hin Power Systems
Pte Ltd

**Mr Andrew Chow**
**Deputy Chair**
Executive Vice President / Head Strategy, Urban
Solutions, ST Engineering

**Singapore Standards Council**

**Coordinating Committees**

Artificial Intelligence | Cybersecurity | Smart Nation | Silver Industry

**Standards Promotion Committee**

**12 Standards Committees**

Biomedical & Health | Building & Construction | Chemical | Electrical & Electronic | Environment & Resources | Food | Information Technology | Manufacturing | Safety & Quality | Services | Trade & Connectivity | Transportation
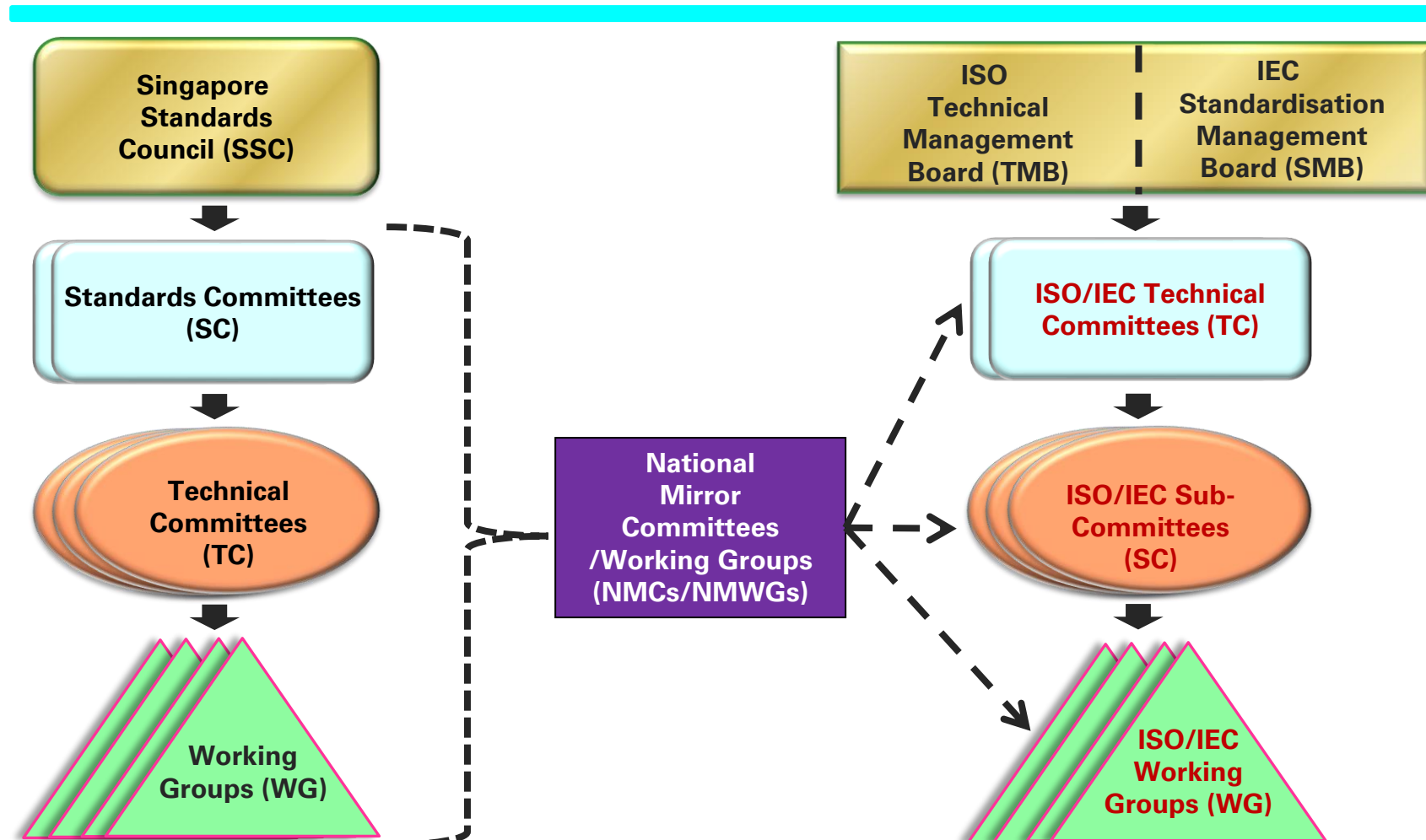
**Technical Committees**

**Working Groups**

# Our structure mirrors that of ISO and IEC

# Singapore actively participates in international standards development

| | **P-Membership**<br>Able to vote on the standard<br>at various stage of development | **O-Membership**<br>Can observe and comment on the standards<br>being developed, but unable to vote | |
|---|---|---|---|
| **ISO**<br>SG is a full member since 1966 | 86<br>(e.g. Cybersecurity and privacy protection, Biometrics, AI, Nanotechnologies, Additive Manufacturing, Robotics, Block chain, E-commerce, Circular economy) | 97<br>(e.g. Water quality, Geotechnics, Unmanned aircraft systems, Facility management, Personal safety) | 183 |
| **IEC**<br>SG is a full member since 1990 | 24<br>(e.g. Electromedical equipment, Solar PV, Electrical energy storage systems, IoT, Smart manufacturing, Offshore Wind) | 55<br>(e.g. Lightning protection, Power electronic systems and equipment) | 79 |
| | 110 | 152 | |

# We are also sharing our experience and expertise at the global stage to promote good practices and to spur greater innovation

## Helming leadership at key international fora

**Ms Choy Sauw Kook**
Director-General, Quality & Excellence, EnterpriseSG
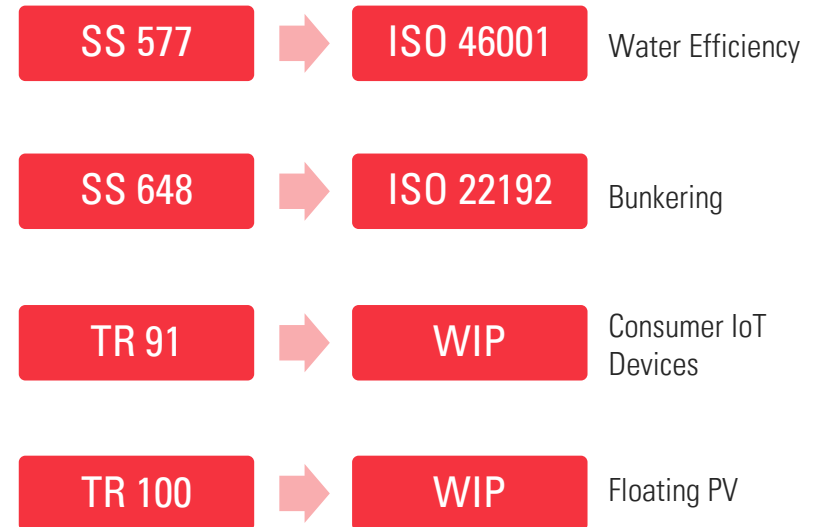
ISO Council Member 2024 – 2026

**Mr Andrew Chow**
Head of Strategy, Urban Solutions, ST Engineering

IEC Board Member 2022 – 2024

**Mr Tan Yee Teck,**
Director, Accreditation & Assurance, EnterpriseSG

APAC EXCO Member 2024 – 2027

## Elevating Singapore's national standards to the international level

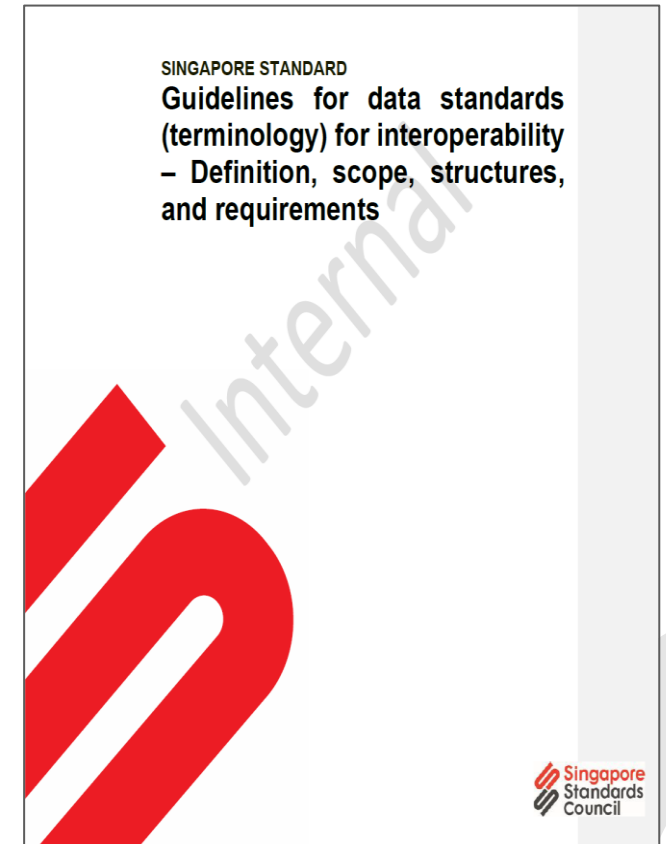| | | |
|---|---|---|
| SS 577 → | ISO 46001 | Water Efficiency |
| SS 648 → | ISO 22192 | Bunkering |
| TR 91 → | WIP | Consumer IoT Devices |
| TR 100 → | WIP | Floating PV |

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# Example of an upcoming Singapore Standard

The Guidelines for Clinical Data standards (terminology) for Interoperability provides the foundation to meaningful exchange of health information.
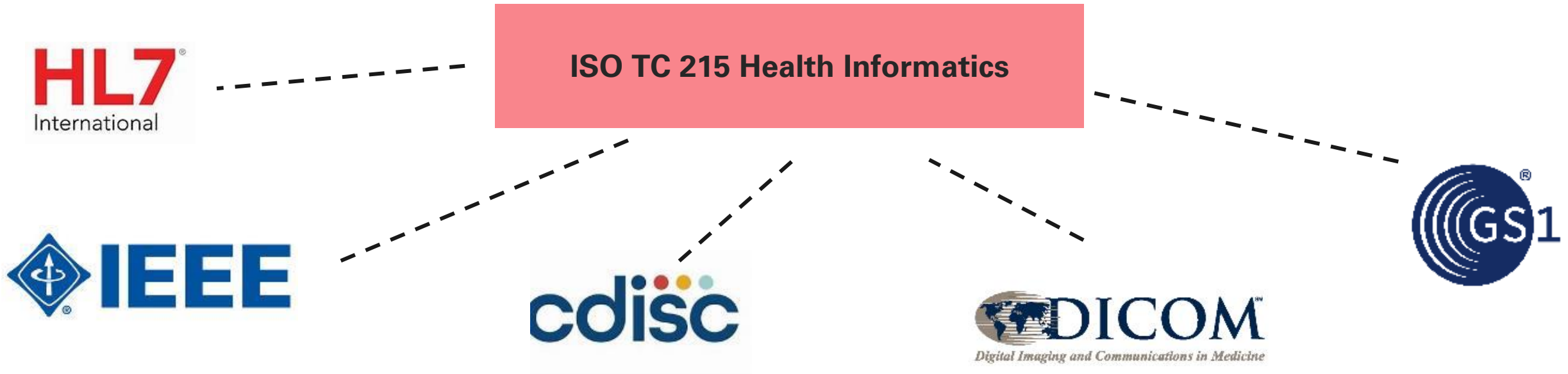
This upcoming new national standard aims to:

- Provide pertinent information on the data standards and their use in Singapore's healthcare system
- Help vendors or providers interested in entering the local ecosystem understand the landscape and requirements.
- Facilitate more efficient and seamless experience when contributing and exchanging data with other systems and providers.

**Estimated publication:** Mid 2025

SINGAPORE STANDARD
**Guidelines for data standards (terminology) for interoperability – Definition, scope, structures, and requirements**

Singapore Standards Council

# There have been examples of industry or consortia standards elevating to International Standards



ISO TC 215 Health Informatics

HL7 International · IEEE · cdisc · DICOM Digital Imaging and Communications in Medicine · GS1

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# Food for thought: should OMOP elevate to International Standard?

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GrowingEnterprises SG

# THANK YOU

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