ICT Standards Enabling SDGs

Presented by: Xuemin Wang

27/04/2023

Opening speech and introduction

ICT Standards Enabling SDGs

- CCSA activities towards SDGs
- A Few Thoughts on ICT Enabling SDGs

Agenda

Webinar	ICT Standards Enabling Global Sustainability Goals	
Date	**April. 27th UK 9:00 – 12:30**	
Agenda	**Talk Title**	**Speakers**
09:00-09:05	Opening speech and introduction	CCSA Xuemin Wang
09:05-10:25	… ICT Standards Enabling SDGs …	ATIS Stephen Hayes CCSA Xuemin WANG ETSI Christian Toche IEC Johannes Stein IEEE Robert Fish ISO David Reiner (10m presentation + 3m Q&A / Speaker)
10:25-10:55	**Break**	
10:55-11:35	… Introduction of TTC activities towards SDGs …	ITU Dominique Wurges TTC Hideyuki Iwata TSDSI Satish Jamadagni (10m presentation +3m Q&A / Speaker)
11:35-12:15	**Panel Discussion (9 speakers)**	
12:15-12:30	Summary	Top ideas from Panel members

ICT Enabling SDGs through Global Standards

Vertical Industries

Manufacturing

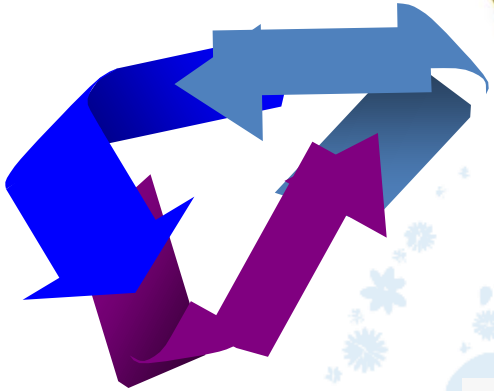
Energy

Health…

Transportation

Education

City…



ICT

Information transmission

Devices

Sensing Everything
(Terminal, sensor, etc.)

Connectivity

Connect Everything
(4/5G, optical NW, WLAN, NTN, etc.)

Cloud/AI

Service & Optimize Everything
(Storage, Big data, Computing, AI, etc.)

Information distribution & interaction

Information processing & storage

+Intelligent

Information learning & inference

Global Standard is the key for the convergence of ICT and vertical industries, enabling the SDGs into realities.

Opening speech and introduction

ICT Standards Enabling SDGs

- CCSA activities towards SDGs
- A Few Thoughts on ICT Enabling SDGs

CCSA Organizational Structure

General Assembly

Council

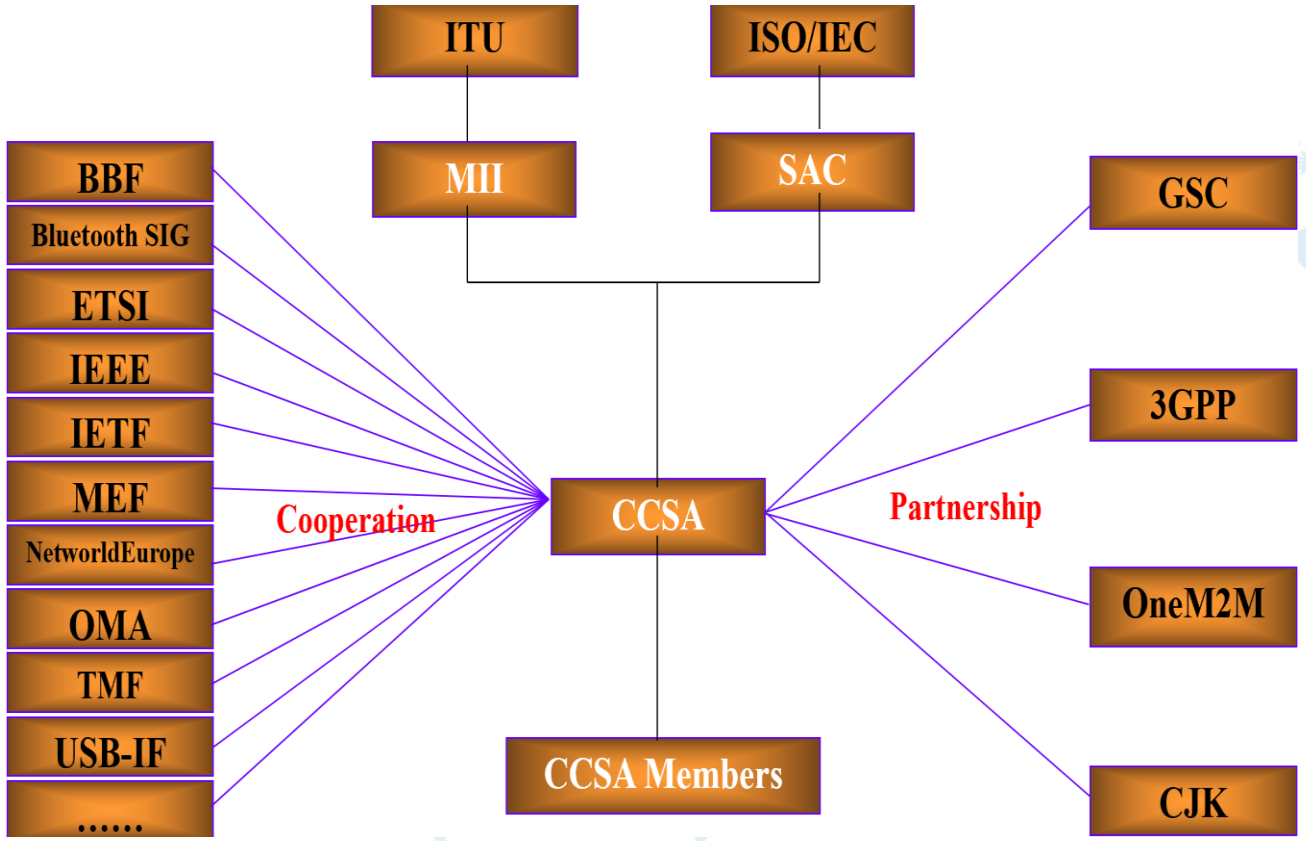
- Technical Management Committee
- Technical Committees and Special Task Groups
  - TC1: IP and Multimedia
  - TC3: Network and Switching
  - TC4: Communication Power Supply & Station Operational Environment
  - TC5: Wireless Communication
  - TC6: Transport and Access Network
  - TC7: Network management & Operation Support
  - TC8: Network and Information Security
  - TC9: Electromagnetic Environment & Protection
  - TC10: Ubiquitous Network (UN)
  - TC11:Mobile Internet Application and Terminal
  - TC12:Aerospace Communication
  - TC13: Industrial Internet
  - ST2: Energy Saving and Comprehensive Utilization of Telecom Products
  - ST3: Emergency Communication
  - ST7: Quantum Communication and Information Technology
  - ST9: Navigation and location Services
  - ST10: Information and Communication Cryptographic Application
- Standards Promoting Committees
  - TC601 Big Data
  - TC603 Trusted Blockchain
  - TC604 Financial Technologies
  - TC606 Open Data Center
  - TC607 Green Grid (China)
  - TC608 Cloud Computing Standards and Open Source
  - TC609 Internet Health
  - TC610 SDN / NFV Technology and Industry
  - TC613 Interactive Media
  - TC617 Edge Computing Industry Development and Technical Standards
  - TC619 Smart Home
  - TC620 IoT and Platform Interconnection Industry and Standards
  - TC621 Convergence of Computing and Network Industry and Standards
  - TC623 5G Applications Industry and Standards
  - TC625 XR Industry and Standards
  - … …
- Secretariat

CCSA strongly push the convergence of ICT and vertical industries, enabling the SDGs into realities.

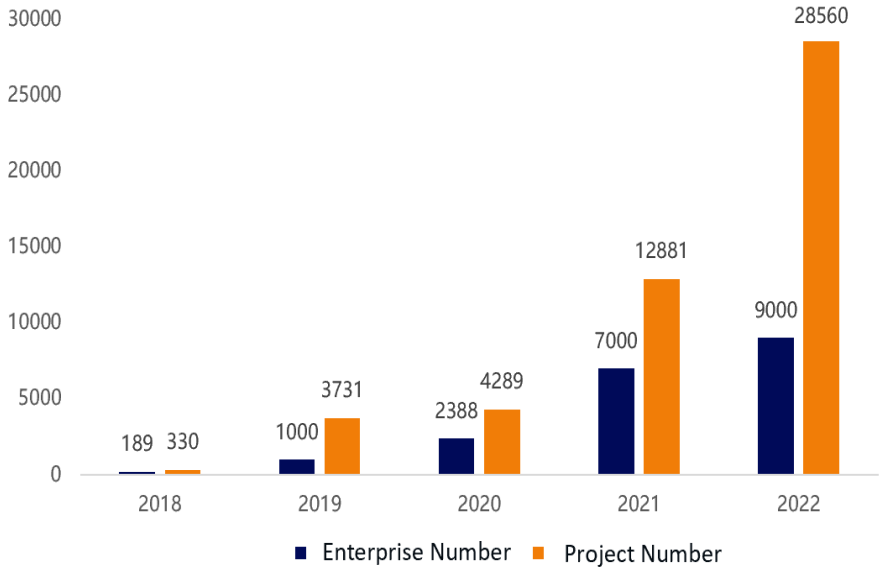
CCSA is Open to Vertical Industries & International Partners

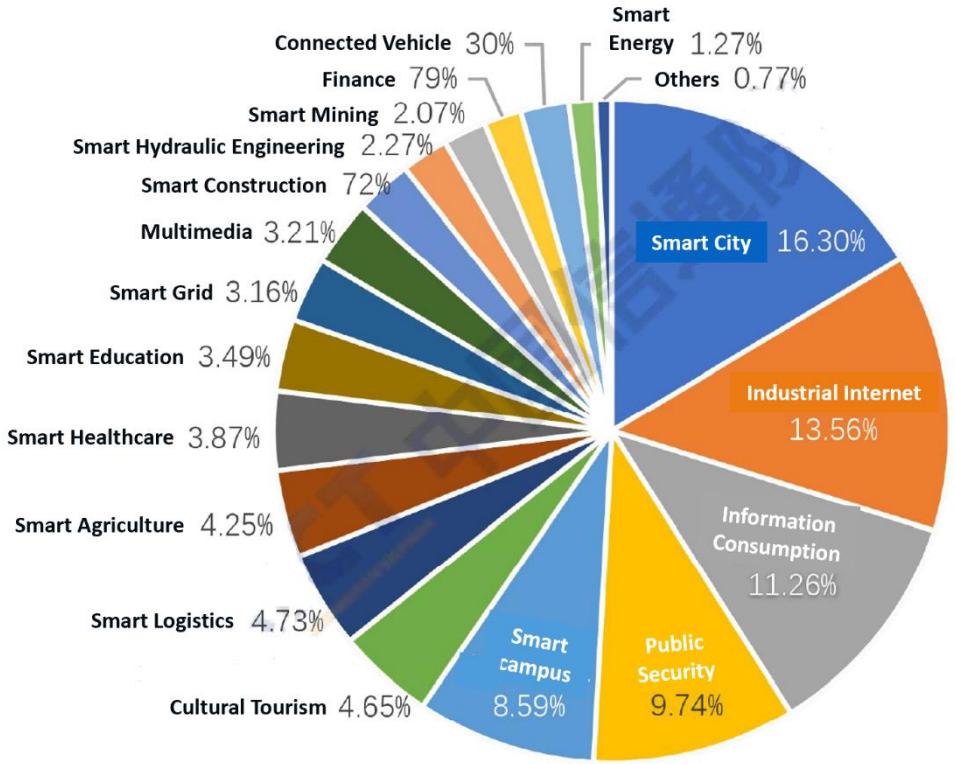
CCSA held its 19th General Assembly and new management team election on June 29th 2022

The size of the board was expanded to include more members from **vertical industries such as broadcasting, household appliance, electric power, automotive, manufacturing**, **Healthcare**, etc., and **more members from companies not headquartered in China**. 5 new members that are not headquartered in China joined the Board. They are **Ericsson (China) Communications Co. Ltd., Signify (China) Investment Co. Ltd., QUALCOMM Wireless Communication Technologies (China) Limited, BEIJING SAMSUNG TELECOM R&D CENTER, and DOCOMO Beijing Communications Laboratories Co., Ltd**.



5G Blooming Cup in China, Enabling SDGs into Realties





By the end of 2022, China had deployed 2.3 million 5G BS, accounting for around 60% of the world's total 5G BS. There were 561 million 5G mobile users, accounting for nearly 60% of the world.

5G2B has been replicated in leading industries such as energy, manufacturing, mining, port, and medical.

256
"5G+ Grid"

1796
"5G+ Factory"

201
"5G+Mines"

~90
"5G+Port"

523
"5G+Hospital"

Greener ICT Standards

Energy Saving & Products

1. **YD/T 3320.3-2020** The high heat density **thermal control equipment** for telecommunication – Part 3: Overhead convective unit
2. **YD/T 2435.3-2020** Guide for energy saving technology of **power supply and Room environment** for telecommunications— Part 3:Grade of energy efficiency of power supply
3. **YD/T 3767-2020** Technical Specifications of the hybrid Architecture with both commercial Power and uninterruptable Power Supply in **Data Center**
4. **YD/T 3032-2016** **Energy efficiency** requirements and measurement methods for **power and cooling** systems in telecommunication rooms and stations
5. **YD/T 2897-2015** Parameters and test methods for the **energy efficiency** - Optical transport network (**OTN**) equipment
6. **YD/T 2898-2015** Parameters and test methods of **energy efficiency** for optical transport equipment - Packet Transport Network（**PTN**）equipment
7. **YD/T 2899-2015** Parameters and test methods of **energy efficiency** for optical transport equipment Multi-Service transport platform（**MSTP**）equipment .....

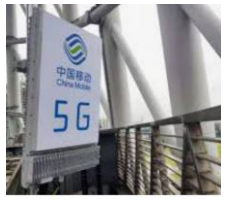
Green Energy

1. **T/CCSA 313-2021** **Aluminum air battery** system for telecommunication
2. **YD/T 1669-2016** The Off-Grid **Wind/PV hybrid power supply system** for telecommunications
3. **YD/T 3087-2016** The embedded **solar photovoltaic** power system for telecommunication
4. **GB/T 26263-2010** The power system of **wind energy** for telecommunication
5. **GB/T 26264-2010** The **photovoltaic** power system for telecommunication
6. **YDB051-2010** Power supply of **hydrogen fuel** cell for telecommunications.....

中国移动通信 CHINA MOBILE

By 2025, the comprehensive energy consumption per unit of telecom services will decrease by more than 20% compared with 2020.

Base Station



5G base stations use **integrated cabinets** and **distributed power** supply technologies to reduce energy consumption during construction

Cell Site Energy Saving

- Increase the temperature of the equipment room by 2–3°C - improves the **cooling efficiency by 7%.**
- Optimized **airflow** - saving energy by more than **2%**

... ...

ICT & Vertical Industry Converged Standards Enabling SDGs

CCSA

2B…

1. **YD/T 4134-2022 Industrial Internet** Time-Sensitive Network Requirements and Scenarios
2. **YD/T 4043-2022** Reference architecture of multi-center **medical** data collaborative analysis platform based on artificial intelligence
3. **T/CCSA 363-2022** 5G enables **remote driving** – Communication systematic technical requirements
4. **T/CCSA 438-2023** Technical Requirements of **New Smart City** Evaluation Index Application System
5. **T/CCSA 457-2023(T/CHEAA 0022-2023)** Technical requirements for data model and control interface of **Smart home** system equipment
6. **T/CCSA 425-2023 Power Industry** Robotic Process Automation (RPA) Implementation Requirements……

Terminals

1. **T/CCSA 435-2023** Technical requirements for universal control interfaces between **MR** applications and **terminals**
2. **YD/T 4110-2022** Technical requirements and test methods of **5G** superior universal module reliability for **industry terminals**
3. **YD/T 4157-2022** Transmission Performance Requirements and Test methods for speech recognition **devices in vehicle**
4. **YD/T 4133-2022** Technical requirements for security capability of **Internet of Things terminal** equipment for Low Power Cellular network
5. ……

Steel: remote production operation

✓**Machine replacement, 70% reduction in high-risk operations**
✓**Online operation and maintenance, and the patrol efficiency is improved by 60%**

Port: 5G unmanned truck

✓**Remote monitoring mode reduces personnel by 75%**
✓**Automatic operation in the whole process, 50% improvement in efficiency**

Cultural Tourism

Converged Media

Smart Home

Health Care

Mining

Power facility patrol

… …

Opening speech and introduction

ICT Standards Enabling SDGs

- CCSA activities towards SDGs
- A Few Thoughts on ICT Enabling SDGs

ICT Enablement for Greener Industries

CCSA

Green ICT Product & Solution | **Green O&M** | **Greener Industries**

Carbon Footprint 2% Base on LCA

ICT CO2e emissions, via NCI (Network Carbon Intensity) Index

Green Tech

5G IPv6+ Green Technology

F5G Fiber

POWERSTAR AI-enabled, Multi Dimensions

Network Coordination

Green Site

Lithium Battery

iSolar

Blade Outdoor equipment

Intelligent O&M

eMIMO

NetEco

Green CO & DC

Energy Efficient Intelligent

Server/Storage's Standardised Modular

Carbon Footprint -20%

ICT-enabled reduction in CO2e emissions

Greener Industries

Energy

Automotive

.....

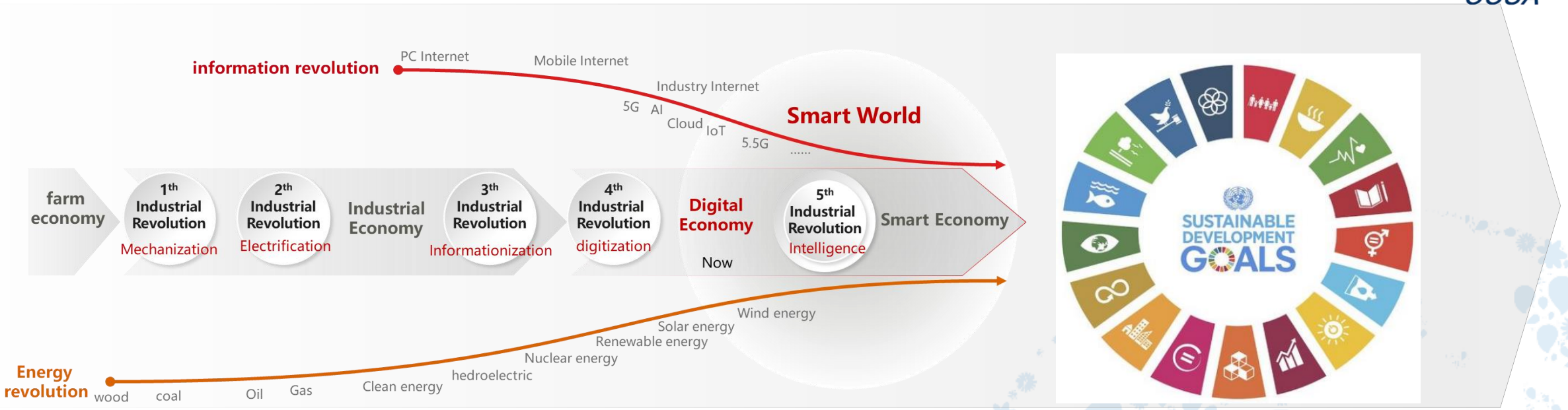
City

Manufacturing

.....

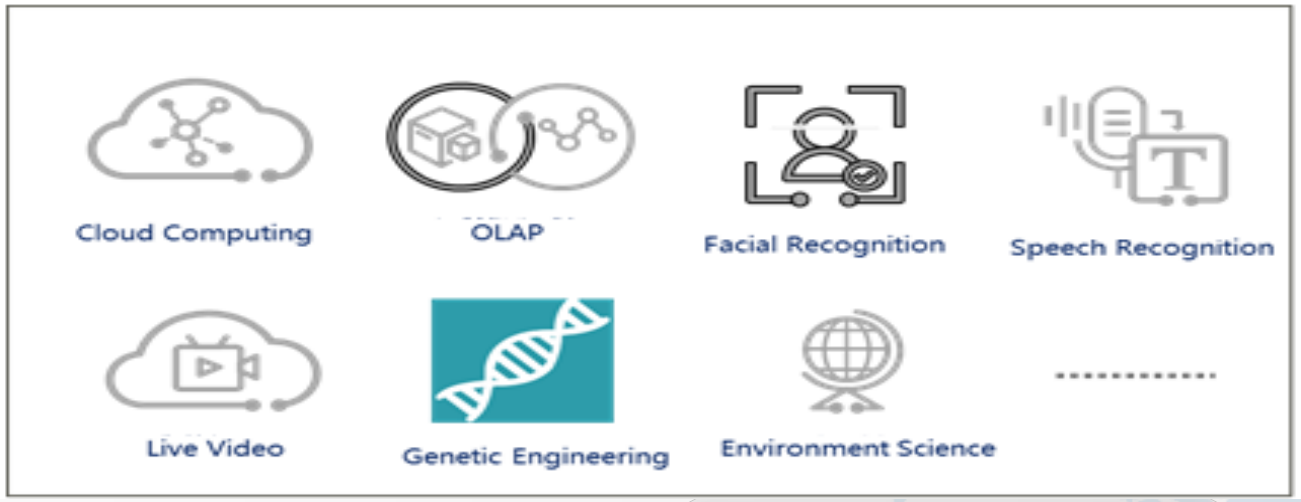
Others etc. Greener Production and Living

Cloud/ AI Enablement for SDGs



Standards guide development of energy-saving technologies, EE benchmarks promote technological innovation.

New applications in server market are gradually covered by EE standards



ICT Converged with Healthcare Address Global Healthcare Unsustainable Cost Growth

Aging

Chronic Disease

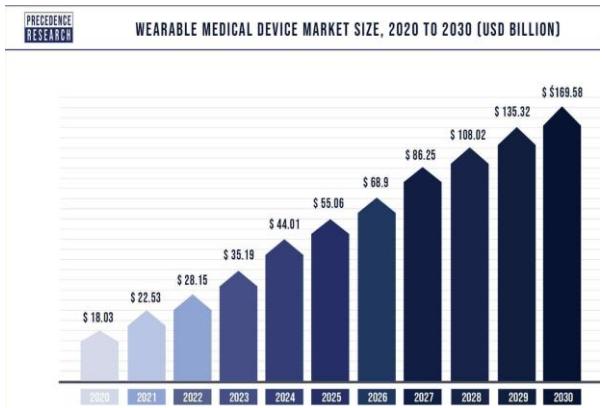
Doctors' low density

Globally Traditional healthcare is Unsustainable

Prediction - In Europe, the forecast data of the IMF in 2015, **healthcare expenditure will account for 9.5% of the EU's total GDP in 2030 and 11.9% in 2050**.
In fact, by **2020**, health spending in Europe already account for **nearly 11% of GDP**, far more than expected.

More accessible, flexible, less costly

2030 169.58B$



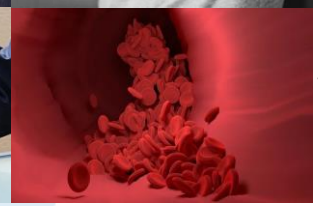
Wearables are the future

Sleep apnea

CHD

Parkinsonism

Vascular health



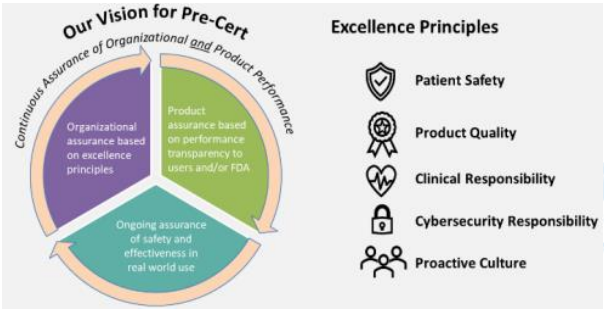
IEC

信标委 NITS

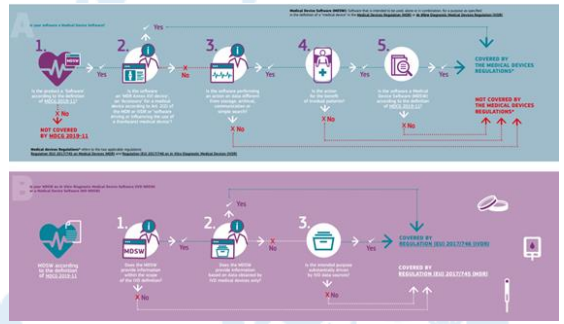
IEEE

- ✓ Materials
- ✓ Measurement
- ✓ Interoperability
- ✓ Application

Standardization is on going



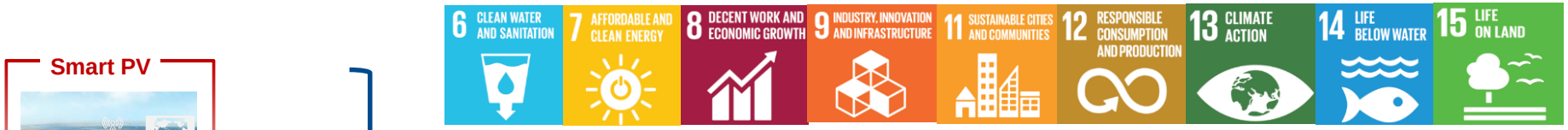
FDA Pre-cert



MDCG : Software Guidance

Legislation & Regulation is on going

ICT Drives the Energy Industry to Be Digitalized and Intelligent

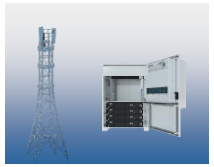


Smart PV

Energy storage platform

Data Center

Site energy



EV and Charging

Trends

Digitalization

Intelligence

Accelerating Clean and Low Carbon Transformation of Power Generation with Digital and Intelligent Technology

- Accelerate digital design, construction, and intelligent upgrade of traditional power system
- Develop new energy power forecast technology
- Promote a series of new standards, such as "Smart Photovoltaic Power Generation" and "Smart Electrochemical Energy Storage Power Stations"

Standards to be enhanced

International carbon emission standards could play a more important role in promoting energy transformation

- NCIe
- Carbon Footprint
- Carbon Handprint

CCSA

Thank you for your attention

Follow us on:

Panel Discussion - ICT Standards Enabling Global Sustainability Goals

Strategies & Directions

- Trigger 1 ICT Standards Enabling SDGs Top Priorities & Achievements
- Trigger 2 ICT Standards Enabling SDGs Top Challenges & Suggestions
- Trigger 3 How to enhance global cooperation for ICT Standards Enabling SDGs

ICT Standard Next Step & Challenges

- Trigger 1 ICT Enablement for Greener Industries - How to improve computable, measurable standards ?
- Trigger 2 Cloud/ AI Enablement for SDGs – How to improve Energy Efficiency standards + Benchmarks ?
- Trigger 3 How ICT could address unsustainable cost growth in the Healthcare Industry ?

Reference

https://en.wikipedia.org/wiki/Vertical_and_horizontal_market

A **vertical market** is a market in which vendors offer goods and services *specific* to an industry, trade, profession, or other group of customers with specialized needs.
A **horizontal market** is a market in which a product or service meets a need of a wide range of buyers across different sectors of an economy.[1][2]