ICT Standards Enabling SDGs

Presented by: Ju Liu

CCSA

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 Ju Liu
09:05-10:25	Sustainability in ATIS ICT Standards Enabling SDGs ETSI activity on Sustainability The All-Electric and Connected Society (AECS) IEEE Initiatives in Sustainability and Sustainable ICT Datacenter Energy Efficiency Benchmarks and Standards	ATIS Stephen Hayes CCSA Ju Liu 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	ITU standards driving Sustainable Digital Transformation ICT Standards Enabling SDGs Our contribution to the SDGs through standardization activities	ITU Dominique Wurges TSDSI Pamela Kumar TTC Hideyuki Iwata (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

Information distribution & interaction

Information processing & storage

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.)

+Intelligent

Information learning & inference

GSC

Global Standard is the key for the convergence of ICT and vertical industries, enabling the SDGs into realities.
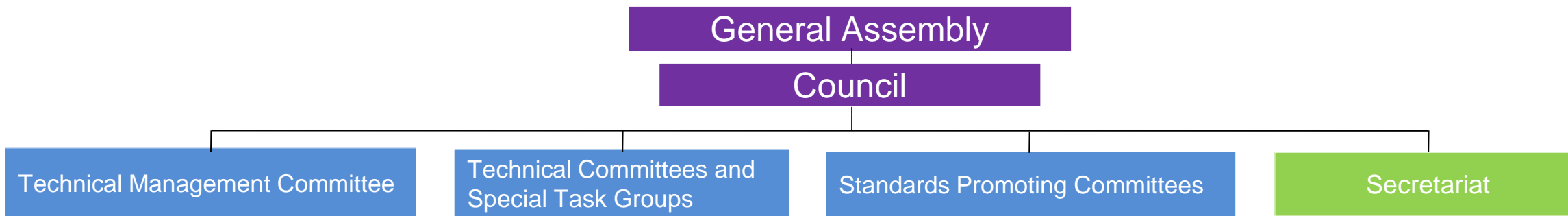
4

Opening speech and introduction

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CCSA Organizational Structure

General Assembly

Council

| Technical Management Committee | Technical Committees and Special Task Groups | Standards Promoting Committees | Secretariat |

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

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
… …

CCSA strongly push the convergence of ICT and vertical industries, enabling the SDGs into realities.
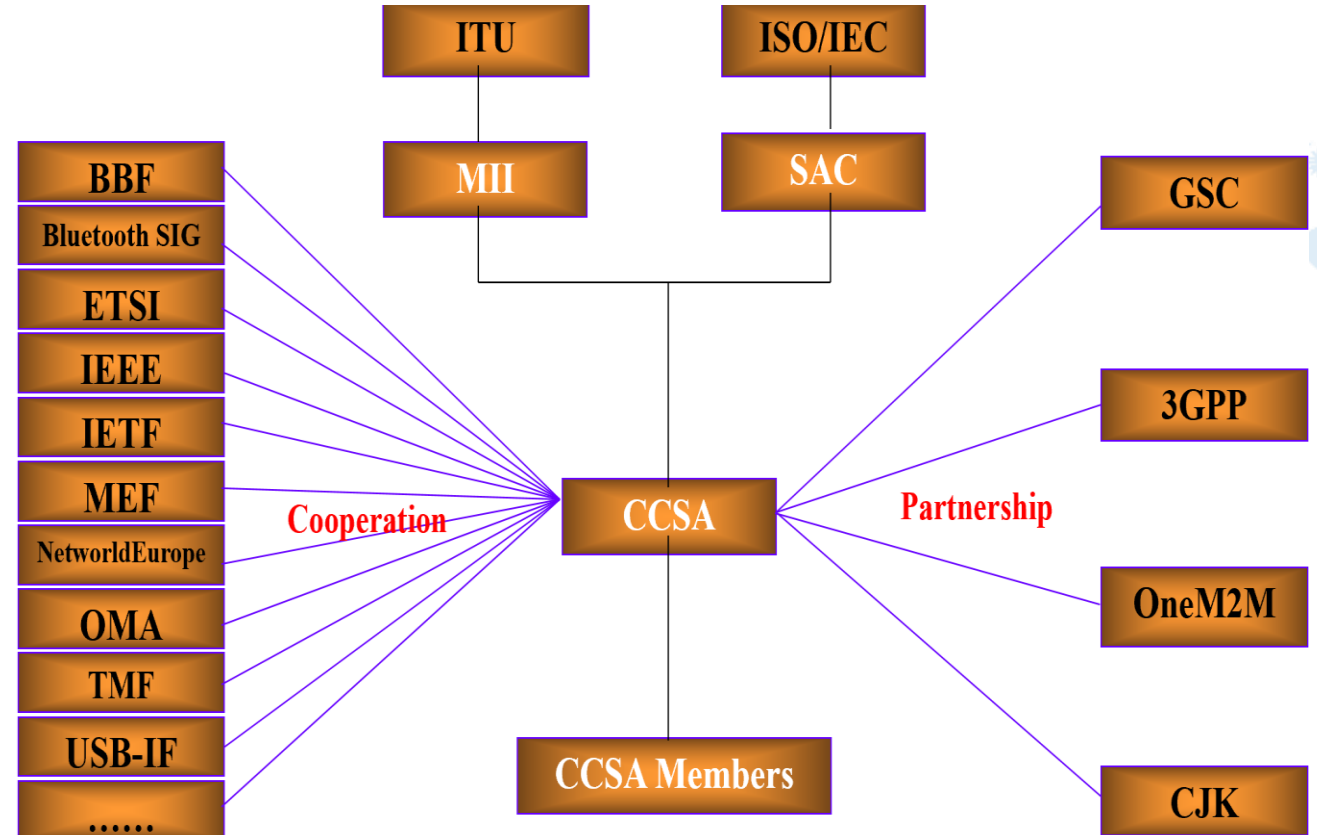
SUSTAINABLE DEVELOPMENT G☉ALS

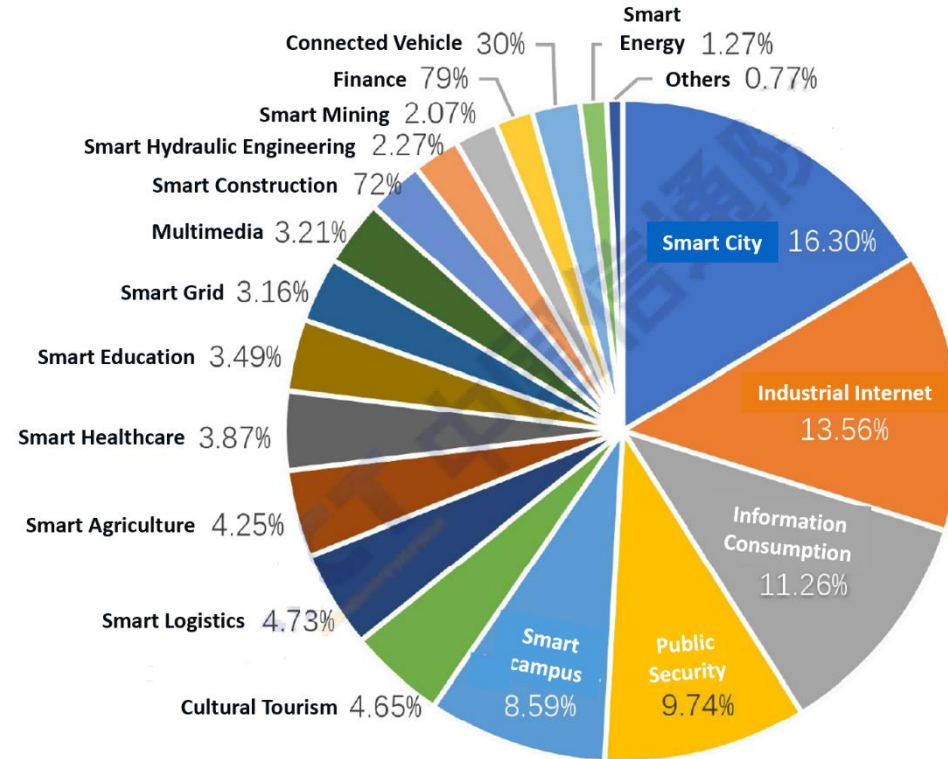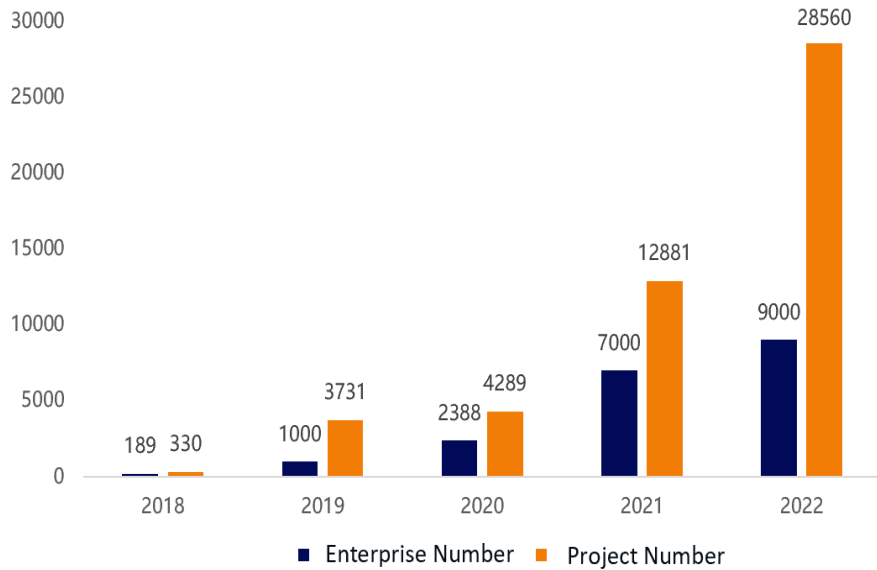# CCSA is Open to Vertical Industries & International Partners

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

Bar chart — Enterprise Number and Project Number, 2018–2022:

Year	Enterprise Number	Project Number
2018	189	330
2019	1000	3731
2020	2388	4289
2021	7000	12881
2022	9000	28560

Pie chart distribution:

- Smart City 16.30%
- Industrial Internet 13.56%
- Information Consumption 11.26%
- Public Security 9.74%
- Smart Campus 8.59%
- Cultural Tourism 4.65%
- Smart Logistics 4.73%
- Smart Agriculture 4.25%
- Smart Healthcare 3.87%
- Smart Education 3.49%
- Smart Grid 3.16%
- Multimedia 3.21%
- Smart Construction 72%
- Smart Hydraulic Engineering 2.27%
- Smart Mining 2.07%
- Finance 79%
- Connected Vehicle 30%
- Smart Energy 1.27%
- Others 0.77%

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

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

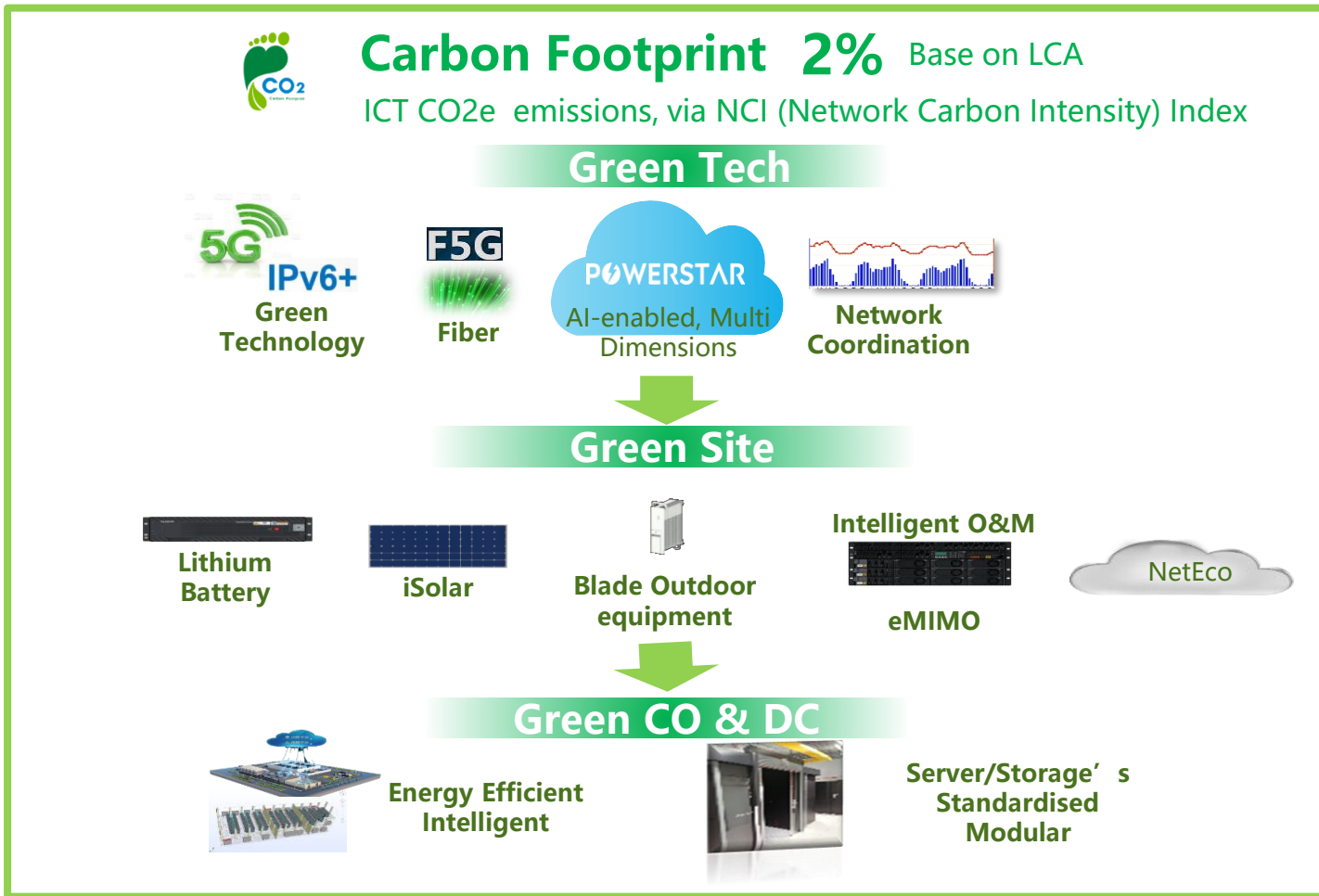- CCSA activities towards SDGs
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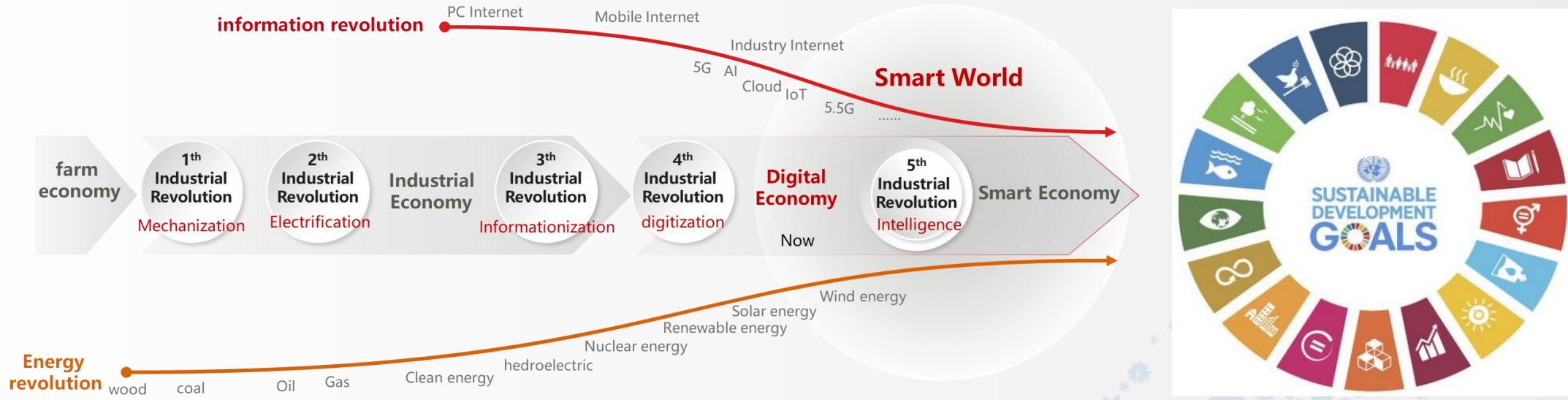# ICT Enablement for Greener Industries

SDG Icons:
6 CLEAN WATER AND SANITATION | 7 AFFORDABLE AND CLEAN ENERGY | 11 SUSTAINABLE CITIES AND COMMUNITIES | 12 RESPONSIBLE CONSUMPTION AND PRODUCTION | 13 CLIMATE ACTION | 14 LIFE BELOW WATER | 15 LIFE ON LAND

Green ICT Product & Solution

Green O&M

Greener Industries

Carbon Footprint 2% Base on LCA

ICT CO_2e 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 CO_2e emissions

Greener Industries

Energy

Automotive

......

City

Manufacturing

......
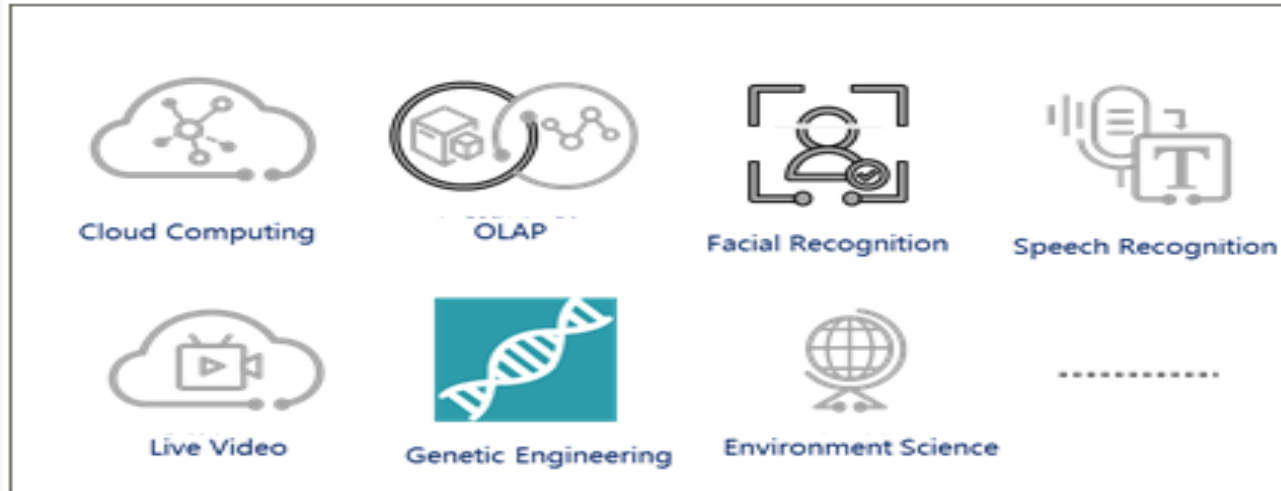
Others etc. Greener Production and Living

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

Cloud Computing · OLAP · Facial Recognition · Speech Recognition · Live Video · Genetic Engineering · Environment Science

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.

2030 169.58B$

WEARABLE MEDICAL DEVICE MARKET SIZE, 2020 TO 2030 (USD BILLION)

2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
$18.03	$22.53	$28.15	$35.19	$44.01	$55.06	$68.9	$86.25	$108.02	$135.32	$169.58

More accessible, flexible, less costly

Wearables are the future
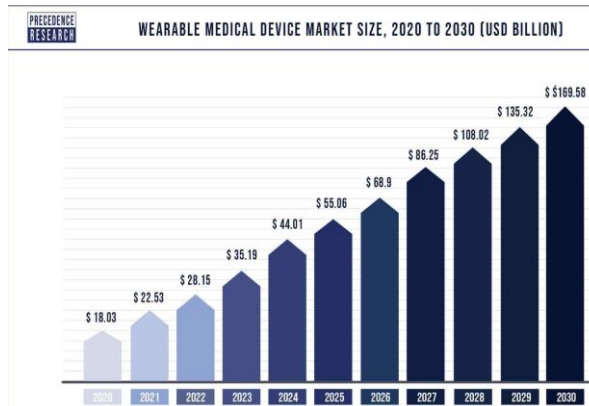
Sleep apnea · CHD · Parkinsonism · Vascular health

Standardization is on going

IEC · 信标委 NITS · IEEE

✓ Materials
✓ Measurement
✓ Interoperability
✓ Application

Our Vision for Pre-Cert

Excellence Principles
- Patient Safety
- Product Quality
- Clinical Responsibility
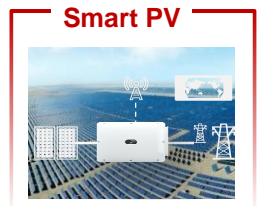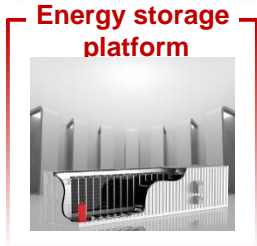- Cybersecurity Responsibility
- Proactive Culture
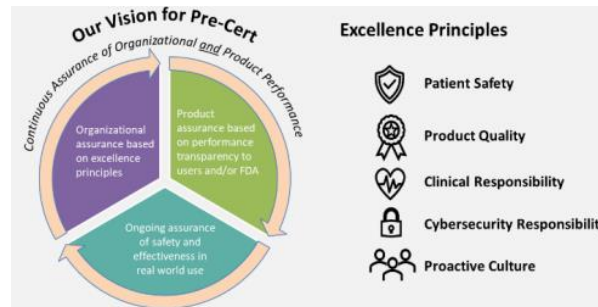
FDA Pre-cert
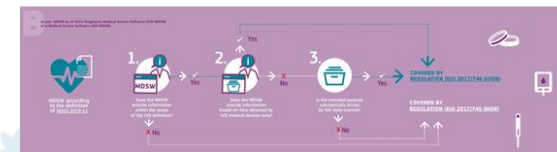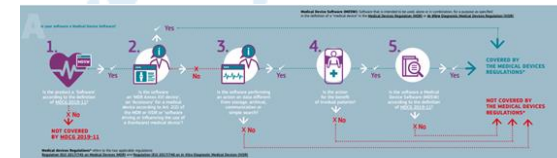
MDCG : Software Guidance

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

Thank you for your attention

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16

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

≡   WIKIPEDIA
The Free Encyclopedia

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]