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Spotlight

WAIC 2025 convened in Shanghai
2025世界人工智能大会在上海召开

Special report

2025 Qingdao Forum on International Standardization held successfully
高水平标准引领高质量发展
——2025青岛国际标准化大会成功举办

CHINA STANDARDIZATION PRESS

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For more information

The voluntary national standard
GB/T 29772-2024, *General requirements of electric vehicle battery swap station,*
has taken effect since July 1, 2025.

The implementation of the standard is expected to help electric vehicle battery swap stations to adapt to diversified needs and vehicle models, promoting the industry's orderly and healthy development.

Standards help build global trust and enable innovation in the AI era

Nowadays, we are witnessing the tremendous changes brought by AI technologies. What role can standards play in this process? How can we build global trust and enable responsible innovation?

To discuss these issues and find solutions, the International Forum on Standardization of Artificial Intelligence was held in July in Shanghai during the World Artificial Intelligence Conference 2025 (WAIC 2025), which gathered guests and experts from international organizations, government, academia, industry and research institutes. The event aims to discuss how to build global solidarity in the AI era, and how to leverage the role of standards, in particular international standards, to prevent risks and promote innovation and the sustainable development of AI.

The SPOTLIGHT Column presents a series of reports on the Forum including highlights of global experts' speeches. "AI standards developed jointly by ISO and IEC, help build global trust and enable responsible innovation by bringing clarity and coherence to an ever-changing AI landscape... By focusing on interoperability, transparency and safety, international standards create a universal language around AI—one that promotes trust, supports responsible governance and allows innovation to flourish across borders," said Dr. Sung Hwan Cho, ISO President in his speech.

Another big event is the 2025 Qingdao Forum on International Standardization held in July in Qingdao, which is a biennial, high-level event for international standardization since 2017, and creates a platform for high-end international communication and exchanges. The Forum set up 5 sub-forums with the following themes: capacity building and creating leadership in standardization, standardization of new energy and DC diversified applications, new infrastructure construction in airspace with standards as the foundation—driving the high-quality development of the low-altitude economy through standardization, the “AI + standardization" action cultivating future industries, as well as standardized approaches empowering industrial green and lowcarbon transformation.

“The IEC has been impacting global development for over 100 years since its inception. In each wave of technological innovation, IEC has played a crucial role behind the scenes in bringing technological advancements to the world safety. From the early adoption of electricity in homes to the next generation AI applications, we ensure new technologies are implemented safely and efficiently worldwide. Today, as we face a new era defined by digital transformation, clean energy and sustainability, the IEC’s mission becomes increasingly vital,” said Jo Cops, IEC President in his speech.

“The ISO’s vision is to make people’s life easier, safer, and better. That is why our whole strategy is fully aligned with the Sustainable Development Goals (SDGs) on that regard. We strongly believe that through international standards, we can accelerate the implementation of the SDGs. It is only five years left, so we have to implement our global commitment of around 200 countries to improve the quality of people’s life,” said Sergio Mujica, ISO Secretary-General at the Forum.

You may find more details in the SPECIAL REPORT column. Enjoy the reading!

THE EDITORIAL COMMITTEE
OF *CHINA STANDARDIZATION PRESS*

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Hainan Yiling Medical Industry Development Co., Ltd.

CONTENTS

GLOBAL VISION
国际视野

Supplement 最新标准公告 (free of charge)

Newly approved national standards of P. R. China (No. 14, 15, 17, 18 and 19 released in 2025)
中华人民共和国国家标准公告 (2025年第14、15、17、18、19号)

Downloads of national standards exceed 10 million times in the first half of 2025

In response to social needs, State Administration for Market Regulation (SAMR) had steadily promoted the full-text disclosure and free download of over 30,000 national standards that do not adopt international standards since the beginning of this year. In the first half of 2025, downloads exceeded 10 million times, providing strong support for the construction of a unified national market.

Social groups accessing national standards for free increased significantly. In the first half of this year, the average monthly downloads of national standards surged tenfold from 190,000 times last year to 2.03 million times. Online reading reached nearly 15 million times, and page views hit 89 million times. The disclosure of national standards for free has effectively broken information barriers in standards, ensuring equal rights for business entities to read and download national standards.

The download volume of the vast majority of national standards also increased sharply. In the first half of this year, over 28,800 national standards were downloaded more than 100 times, accounting for 93% of all freely downloadable ones, which is 19 times the number of those with over 100 downloads throughout 2024. Among them, mandatory national standards with over 100 downloads accounted for nearly 100% of all downloadable ones, while voluntary standards with over 100 downloads made up 93% of all downloadable ones. The widespread promotion and application of most standards are conducive to achieving “one market, one standard, one baseline”.

The promotion and application of key standards increased greatly. In the first half of this year, 1,420 national standards were downloaded over 1,000 times, and 34 were downloaded over 10,000 times; 2,653 standards were read over 1,000 times, and 161 were read over 10,000 times. Standards for products, safety, and fundamentals dominated in terms of both download and reading. Business entities are willing to adopt key standards, which indicates that these standards play a positive role in their production and operation activities.

SAMR will strengthen coordination to gradually realize the disclosure of all government-issued standards that do not adopt international standards on its unified national platform, enabling the public to better understand standards and advancing the construction of a unified national market.

National standard on credit commitment of business entities released

SAMR recently released the national standard GB/T 46277-2025, *Implementation guidelines for credit commitment of business entities*. The standard establishes basic principles for the implementation of the credit commitment of business entities, and provides relevant information such as types, basic contents, management procedures, and reward and punishment measures of the credit commitment. It provides operational guidelines for various business entities to conduct credit commitment in a standardized and orderly manner in administrative management matters.

Credit commitment is an important part of building a new market regulation mechanism based on credit. It is a key measure to innovate social governance methods, strengthen in-process and post-event regulation, and optimize business environment, which is also an important means to promote self-restraint and integrity operation of business entities.

Based on principles of the problem-oriented approach and urgent needs first, SAMR has carried out the research and development of the standard to address the lack of regulation basis in this field, promote the standardization of credit commitment of business entities, improve the effectiveness of credit regulation over business entities, and further exert the leading role of SAMR in building the credit system for business entities.

The standard will guide business entities to make public commitment to the society in a standardized way, incorporate their credit commitment into the credit records for social supervision, and serve as a reference for administrative departments in the in-process and post-event regulation of business entities.

GB/T 46277-2025 will help promote the self-restraint of business entities, and urge them to make self-improvement. It will play a positive role in building a market regulation credit system compatible with high-quality development, enhancing the efficiency of credit regulation, and facilitating smart regulation.

SAC/TC 611 on platform economy governance established

The inaugural meeting and the first plenary meeting of the National Standardization Technical Committee on Platform Economy Governance (SAC/TC 611) were held in Beijing on August 29. Deng Zhiyong, Vice Minister of SAMR and Administrator of National Standardization Administration of China (SAC), addressed the inaugural meeting.

The meeting highlighted the importance of standardization for platform economy governance. SAC/TC 611 is established to leverage the systematic supporting role of standardization in advancing the modernization of China's systems and capacity for governance. It will strengthen its leading role in clarifying market rules and regulating industrial development, promote the simultaneous improvement of the compliance operation level of platform enterprises with harmonized standards, and drive the transformation of the platform economy from scale expansion to quality optimization.

SAC/TC 611 will adhere to a problem-oriented approach, focus on key areas, critical links, and bottlenecks in platform economy governance, and strengthen the top-level design of rules and regulations. By laying a sound foundation of standards, the efficiency of standardization work for platform economy governance will be enhanced, and a scientific and systematic national standards system will be established. Also, efforts will be made to strengthen international exchanges and cooperation, helping standards and industries to go global.

The meeting approved institutional documents of SAC/TC 611, and reviewed the proposals of two national standards on the requirements for service management of live e-commerce platforms and the rules for submitting online transaction compliance data.

The meeting was attended by relevant industry experts and members of SAC/TC 611, who came from national and local authorities, enterprises, associations, research institutions and universities.

Standards and metrology empower the World Games 2025

During the World Games 2025 in Chengdu, Sichuan province, SAMR organized and guided the Sichuan Administration for Market Regulation, National Institute of Metrology, National Institute of Measurement and Testing Technology, and other relevant institutions to carry out the action on precision measurement, to support the great event.

Technological R&D and application, the innovation of standard materials, and the capacity building of measurement standard instruments provided guarantees for the safe and stable operation as well as the fair competition of the Games.

Cutting-edge metrology technologies provide robust technical support. SAMR urged metrology institutions to develop new technologies of energy and time-frequency measurement to ensure the safe and stable operation of the combustion system of the torch named “Zhumeng”, which means “chasing dreams”. Also, the application of time-frequency metrology in intelligent navigation robotic dogs enabled precise positioning, optimal route planning, and obstacle avoidance. These advanced metrology technologies safeguarded the operation of numerous smart devices during the Games, including intelligent transportation systems, unmanned security routing and inspection vehicles, and pool-cleaning robots.

Standard materials provide critical basis for ensuring fairness and integrity. SAMR emphasized the timely supply of high-purity ß-receptor agonist standard materials. By adopting internationally recognized metrological calibration procedures, a breakthrough was achieved in detection sensitivity to the level of one part per billion, ensuring the results were comparable, traceable, and arbitrable.

Standard measuring instruments have played a key role in guaranteeing the smooth and efficient operation of the Games. The stable operation of the events relied on the resilient support of metrological infrastructure. A comprehensive inspection was carried out at 17 core venues and surrounding areas in Chengdu. Through calibrating environmental monitoring equipment such as temperature and humidity sensors, anemometers, and $PM_{2.5}$ monitors, real-time traceability of microclimate parameters at the venues was realized.

ASEAN-Oriented Standardization Cooperation Forum held in Guangxi

Themed "innovative cooperation on AI standardization: empowering the building of China-ASEAN community with a shared future", the ASEAN-Oriented Standardization Cooperation Forum was convened on August 27 in Nanning, South China's Guangxi Zhuang autonomous region.

Wei Tao, Chairperson of the People's Government of Guangxi Zhuang autonomous region, Bai Qingyuan, Vice Minister of State Administration for Market Regulation (SAMR), as well as representatives from administrative departments and enterprises of ASEAN countries and international organizations attended the forum.

China attaches great importance to the international cooperation on standardization. The ASEAN-Oriented Standardization Cooperation Forum has been held for three consecutive sessions, which serves as an important platform for the standardization cooperation and exchanges between China and ASEAN countries, said Bai Qingyuan. SAMR will take this forum as an opportunity to deepen the harmonization of standards systems with ASEAN countries, and facilitate trade and investment; deepen standards cooperation in emerging fields, lead innovation, and promote development; strengthen capacity building and people-to-people exchanges, enhance the overall level of regional standardization, and jointly create a more open, inclusive and beneficial regional standardization cooperation ecosystem, promoting the continuous expansion of trade scale and the deeper integration of industrial chains between the two parties.

At the forum, the expert committee under the China-ASEAN Standardization Cooperation and Exchange Center was established, an initiative on standardization supporting the sustainable development of AI was announced, the action plan on cultivating China-ASEAN standardization talent for automobiles was released, and other fruitful results were achieved.

Chinese delegation wins two prizes at the 20th International Standards Olympiad

The 20th International Standards Olympiad was held in South Korea in mid August. The Chinese delegation won 2 prizes, among which Hangzhou Foreign Languages School (Junior High Division) won the Platinum Award, and Beijing Ritan High School (Junior High Division) won the Gold Award. It has been the second time for Chinese students to win the Platinum Award since 2022.

A total of 117 contestants from 39 junior and senior high school teams from 12 countries including China, Germany, and Singapore participated in this year's Olympiad. The teams from junior and senior high schools focused on the topics of "Wearable electronic devices and technologies—Requirements and test methods for health performance of smart watches" and "Robotics—Safety requirements for humanoid robots in industrial production" respectively. The Olympiad assessed the competitors' basic standardization knowledge, basic literacy, and capabilities to apply standardization knowledge to solve practical problems, enhancing teenagers' understanding and awareness of standardization.

Started in 2006, the International Standards Olympiad is an international event aimed at popularizing standardization knowledge among high school students worldwide, raising their awareness of standardization, and promoting international standardization exchanges among teenagers. Directed by SAMR (SAC), China Association for Standardization has been vigorously organizing Chinese students to join in the event since 2018, winning many honors.

ISO releases two standards for space systems

Recently, ISO 21740:2025, *Space systems—Launch window estimation and collision avoidance*, and ISO 16615:2025, *Space systems—Stable operation requirements for spacecraft attitude and orbit control system*, were officially published.

ISO 21740:2025 was jointly proposed by experts from China, the U.S., France and Japan. It establishes the general safety launch collision avoidance (safety LCOLA) requirements for the avoidance of collision between the collection of newly launched objects resulting from a space launch (including launch vehicle stages and payloads or released objects) and human-inhabited or human-habitable space stations and space vehicles. It can specify requirements for the analysis of launch times and procedures for identifying safe launch opportunities.

ISO 16615:2025 provides the criteria for stable on-orbit operation of the spacecraft's attitude and orbit control system (AOCS). It addresses factors affecting the spacecraft's on-orbit stability by specifying principles and requirements for establishing the spacecraft AOCS's capability for stable on-orbit operation.

As of now, 30 ISO standards in the field of aerospace have been released with the leading efforts of China. As a responsible major country, China vigorously participates in outer space governance, supports rule-making activities in this field, and promotes the building of a community with a shared future.

ISO sets up working group on non-metallic pipes

Proposed by China, the new working group ISO/TC 67/SC 2/WG 32, *Non-metallic pipes*, was approved for establishment by ISO recently. With Qi Dongtao, an expert from CNPC Tubular Goods Research Institute, serving as the convenor, the working group will facilitate the coordination of technologies and standards, as well as trade in terms of non-metallic pipes for oil and gas transportation.

Non-metallic pipes have strong corrosion resistance and long service life and are convenient for installation, which are a hot topic for the research and application in fields such as energy, chemical engineering and environmental protection.

As China's only technological innovation center for research on engineering materials, CNPC Tubular Goods Research Institute conducts in-depth research on the design and development, inspection and testing, failure analysis, and integrity management of non-metallic pipes. It has led the development and revision of over 10 national and sectoral standards, including GB/T 35185-2017, *Composite reinforced line pipe for the petroleum and natural gas industry*.

ISO releases technical specification on child care articles

Recently, ISO/TS 24929-2:2025, *Child care articles—General safety—Part 2: Mechanical hazards*, was officially published. Mechanical hazards in child care products refer to injuries that children may suffer due to potential mechanical risks, which result from product design, manufacturing, or assembly, such as cuts by sharp edges, extrusion by moving parts, and entanglement by accessories including cords.

Its development was led by Chinese experts in collaboration with experts from 15 countries including France, the U.S., Germany, and Japan. It provides a basis and guidance for further developing international safety standards for various specific products, which helps comprehensively ensure the safety of products for children.

WAIC 2025 convened in Shanghai

2025世界人工智能大会在上海召开

By Olive Liu
文/刘宏博

The World Artificial Intelligence Conference 2025 (WAIC 2025) and related exhibits and activities were convened in Shanghai on July 26-29. Taking "global solidarity in the AI era" as the theme, the conference built an international platform for cooperation and exchange, bringing China's wisdom and Shanghai's solutions to the world. During the conference, the International Forum on Standardization of Artificial Intelligence and the Emerging Markets and Developing Countries Forum on Bridging the AI Divide were held, gathering wisdom for AI to benefit humanity, and contributing to forming a global consensus.

International Forum on Standardization of Artificial Intelligence held

人工智能标准化国际合作论坛召开

On July 26, the International Forum on Standardization of Artificial Intelligence was held in Shanghai Expo Center. Guided by the WAIC organizing committee, the forum was hosted by the AIM Global Centre of Excellence (AIM Global CoE), and jointly organized by China Electronics Standardization Institute (CESI), Shanghai Artificial Intelligence Research Institute (SAIRI), and Bank of China Shanghai Branch. Aimed at building a high-end AI dialogue platform for the world to promote international exchange and cooperation, the forum attracted more than 200 guests and representatives from international organizations, governmental departments, universities, research institutes, and industrial leading companies. They held in-depth discussions on topics of technical standards, ethics and governance, and global coordination, and strove to form an AI standardization framework with global consensus.

Shan Zhongde, Vice Minister of the Ministry of Industry and Information Technology (MIIT), Xiao Han, Director General of the Standards Innovative Management Department of SAMR, and Zhang Ying, Deputy Secretary-General of Shanghai Municipal Government and Director of Shanghai Municipal Commission of Economy and Informatization, attended the forum and delivered speeches. Dr. Sung Hwan Cho, President of ISO, and Bilel Jamoussi, Deputy Director of ITU-T, delivered keynote speeches respectively, in which they emphasized the vital role of international standards in the orderly progress of AI. Standards exerted positive effects in the innovation, risk prevention, and sustainable development of AI. Therefore, more efforts will be made to promote to build an inclusive and responsible AI standards system for all, and involve more developing countries in the development and promotion of international AI standards in a more effective and fairer way. Renowned experts and representatives in the industry at home and abroad delivered keynote speeches as well. They have built consensus on AI governance and development from extensive perspectives such as AI international standards, industrial application, and ethics and values.

Several important achievements were released at the forum, such as the Ethics of AI Technology & Ethical Review & Assessment of Technology and other reports, the Joint Initiative for Agent Protocol Co-Construction and Sharing, Initiative on Synergistic Development of Financial Institutions and Artificial Intelligence, and AI & SDGs: Top 10 Beacon Initiatives. These achievements are expected to help build a healthy ecosystem of AI development, and create a paradigm for AI to empower the high-quality development of all industries.

A panel discussion was held during the forum. Hosted by Zhang Ping, Professor at Peking University, five guests from enterprises, universities, and research institutes exchanged extensively on topics such as global AI governance framework and coordination, a global consensus on responsible AI standards, and AI standardization empowering industrial intelligent ecosystem. All guests agreed that as AI technology grows with a fast and strong momentum now, the calling from AI industry of the world for united standards and coordination becomes immediate. An orderly development of AI industry demands clarifying the development path of international AI standards, and strengthening their innovation, coordination and sharing in AI industry among countries and regions.

With the main thread of “jointly developing technologies, jointly governing with standards, and jointly prospering the industry”, the forum gathered resources from international organizations, policy makers, academic institutes, and relevant enterprises, built consensus on the value of standards and deepened the global coordination. Looking into the future, all parties are going to redouble efforts to promote the development of open, inclusive, and responsible AI standards, so as to inject new momentum into AI standardization to empower high-quality development of industries.

Highlights of the guests' speeches

International AI standards: Forging trust and fueling innovation

Dr. Sung Hwan Cho
President of ISO

Today, I want to share how international standards can forge trust and fuel innovation, laying the foundation for a future where AI benefits everyone, everywhere.

First, AI standards, developed jointly by ISO and IEC—the International Electrotechnical Commission—help build global trust and enable responsible innovation by bringing clarity and coherence to an ever-changing AI landscape.

As developments in AI continue to emerge at speed, regulation is struggling to keep up and the proliferation of competing standards has created confusion rather than clarity. ISO and our partner IEC are addressing this challenge through the work of our expert committee on AI, SC 42, which takes a holistic, cohesive approach to AI standardization.

The suite of AI standards from ISO/IEC provides a toolkit for how to scale, develop and deploy AI technology responsibly. It addresses foundational topics such as terminology, risk management, cybersecurity and machine learning.

SC 42 also collaborates with technical committees in areas such as health informatics, financial services and conformity assessment. This means that AI considerations are embedded throughout our standards ecosystem.

As countries adopt diverse approaches to AI governance and regulation, we need global benchmarks in order to ensure security and interoperability across markets. The international standards developed by ISO and IEC are well-positioned to bridge this gap. They are trusted tools that businesses and policymakers can use to establish responsible AI governance, in line with good business conduct. These standards can underpin regulatory frameworks and provide appropriate guardrails for ethical, safe and trustworthy AI development.

ISO/IEC standards are fundamental to AI governance. There is no better illustration of this than our flagship ISO/IEC 42001—the world's first AI management system standard—which gives guidance on the responsible management and implementation of AI systems within organizations.

We have also just launched a new standard to ensure that the audit and certification of AI management systems is performed consistently and credibly. ISO/IEC 42006 will be pivotal to building confidence among customers and regulators in certification results.

By focusing on interoperability, transparency and safety, international standards create a universal language around AI—one that promotes trust, supports responsible governance and allows innovation to flourish across borders.

Second, our inclusive, consensus-driven approach ensures that all voices are heard. This means our AI standards reflect global perspectives—so that innovation benefits everyone, not just a few. The strength of ISO's standards development process lies in its consensus-based, multi-stakeholder inclusivity. We convene diverse voices, including developers, regulators, industry, academia and civil society, at both national and international levels, to agree on market-relevant international standards.

When it comes to AI, consensus ensures that standards are not only technically sound, but also socially responsible and globally relevant. Diversity and inclusion are vital to prevent a digital divide and address biases within AI systems, which often affect the most vulnerable in society.

ISO/IEC's AI technical community has input from over 60 countries, including not only those building the technology but also those most affected by it. This is crucial if we are to create truly global solutions.

However, we also acknowledge the size of the challenge. Almost three-quarters of ISO members are from developing countries and experience specific obstacles to participating in, and benefiting from, international standardization.

When developing countries participate fully in standardization, we all benefit from richer perspectives, broader innovation and more equitable outcomes.

That's why we provide targeted capacity-building support to our developing country members to increase their participation in standards development and uptake of international standards. In this new AI-driven age, it's vital that no one is left behind—because trust in AI begins with trust in the process that shapes it.

Last but not least, effective AI governance requires a socio-technical approach—one that recognizes the interdependence of people and technology.

AI governance is not only a technical challenge but also a societal one. Discussions around AI often focus on algorithms, data infrastructure and cybersecurity, while overlooking the broader ethical, social, environmental and economic implications. If governance frameworks ignore human values, they risk deepening inequality, reinforcing bias and eroding the very trust we seek to build.

It is therefore crucial that we approach AI governance with a socio-technical mindset. This means recognizing that humans and technology are interdependent and equally vital if AI systems are to function as intended.

By embedding socio-technical considerations into our standards, we can help create AI systems that are not only effective but ethical, inclusive and worthy of public trust.

The ISO, IEC and ITU are proud to be hosting the 2025 International AI Standards Summit, which will take place in Seoul on December 2-3. Our goal is simple but ambitious: to advance global AI governance through international standards.

AI partnership and standardization

Bilel Jamoussi
Deputy Director of ITU Telecommunication Standardization Bureau

As new innovation ecosystems emerge around AI, standards will be essential in bringing these ecosystems to the global scale. Our recent AI for Good Global Summit 2025 showcased our progress on AI standards in areas from networking, multimedia, energy efficiency to healthcare, food security, road safety and disaster risk reduction.

Among the key contributions to this global effort, China plays a particular pivotal role. Currently, 69 Chinese organizations are members of the ITU standardization activities, contributing the expertise and helping to drive forward the global development of AI-related standards. At the recently concluded summit, with strong support from China's Ministry of Industry and Information Technology, Chinese telecom operators, AI enterprises and research institutes participated actively. They showcased the country's significant achievements in AI standards and governance.

China has also achieved remarkable progress in AI innovation and real-world applications. In ITU's recently published the AI for Good Innovate for Impact Interim Report, which features 160 use cases from 28 countries. Chinese contributions made up nearly 30% of the total. The report highlights how Chinese startups and small and medium enterprises are delivering in platform AI solutions across multiple sectors.

Together with ISO and IEC and other key standards communities, we have just published two landmark resources on standards and policy considerations for multimedia authenticity. We have also launched the new AI standards exchange database to help establish technical foundation for AI innovation to achieve global impact. It would help standards bodies to coordinate their work and companies and policy makers and regulators to apply the comprehensive suites of AI standards.

AI is changing our world, but we have deep experience to build on. With every breakthrough in science and technology, we must continue coming together to develop the standards required to thrive in new frontiers. That is what our standardization processes are built for.

AI standardization in Europe

Sebastian Hallensleben
Chair of CEN-CENELEC JTC 21 on AI

If you look into the EU AI Act, you will find that the requirements are specified at a very high level. This is because the details are defined elsewhere. That is what standardization is doing.

If we look at the world of AI standardization, there are three tiers—the international tier, the European tier and the national tier. There are also AI standardization committees at all three levels.

Within Europe, it is CEN-CENELEC JTC 21 that gives the broad overview of standardization. On the regulation side, we have the EU AI Act. They collaborate under the New Legislative Framework (NLF). Regulation specifies high-level objectives and requirements, whereas standardization specifies a formally recognized path for implementing the requirements, which is more detailed. In the European system, these standards can be formally approved by the European Commission. Then they are called harmonized standards. They come with a so-called presumption of conformity, which means any organization that follows these standards is automatically assumed to be complied with the EU AI Act. So using the standards is not mandatory, but there is a very strong incentive in this way.

Looking inside JTC 21, it is structured into five working groups. What is surprising is the sheer size of JTC 21. It is the biggest committee that has ever been in operation in Europe, and we have 200 experts directly in JTC 21 coming from 25 countries. And there are over 1,000 national mirror committees. This is because of the breadth of stakeholders, interests and application areas.

I mentioned this because we need to remember that standardization has really two kinds of difficulties. Firstly, there is the visible difficulty, which is to develop a set of interconnected and consistent technical standards documents that are very important. What is invisible is the consensus of all relevant stakeholders reached in standardization work. This is what makes standardization powerful. But this is also particularly hard when a committee is as large as JTC 1.

I'd like to highlight one standard that has been discussed very frequently, that is ISO/IEC 42001:2023, *AI management systems*. The question is why not just adopt ISO/IEC 42001 for Europe? Unfortunately, this is not a viable path because there are a number of mismatches. ISO/IEC 42001, the EU AI Act and harmonized standards have different definitions of risk. They have different directions, towards an organization or towards a product. Because ISO/IEC 42001 is geared towards good practice, whereas in the EU AI Act and harmonized standards, there is a stronger focus on measurable and enforceable requirements. Therefore, we decided in JTC 21 to use specific standards for quality and risk management, but we still reference ISO/IEC 42001.

Promoting the high-quality development of AI

Taking its advantages as a state-owned financial institution, the Bank of China Shanghai Branch has formulated the action plan for the high-quality development of AI, which includes ten aspects.

First, it will invest no less than 100 billion yuan in the next five years to provide strong comprehensive financial support for various entities in Shanghai's entire AI industry chain.

Second, it will focus on the core development tracks in the industrial chain, build a roadmap for the AI innovation industry chain, and actively meet the financial needs of enterprises in key links to ensure precise allocation of resources.

Third, in application scenarios of integrating AI with finance, manufacturing, education, healthcare, culture and tourism, and urban governance, it will carry out in-depth cooperation with leading enterprises.

Fourth, it will set up a task force for AI service to provide a package of financial service solutions covering the entire lifecycle of major platforms and leading enterprises.

Fifth, at the data layer, it will explore data asset financing and full-process management, and innovate financial service models. At the computing power layer, it will actively connect with local governments to provide subsidy policies and financing support.

Sixth, it will provide exclusive services and preferential policies for top talent in the AI field.

Seventh, it will join hands with relevant laboratories and research institutes to improve the efficiency of AI technology transformation from laboratories to production lines, building an open innovation ecosystem with in-depth industry-university-research integration.

Eighth, actively aligning with international platforms, it will provide strong support for AI enterprises' overseas expansion.

Ninth, collaborating with core industrial clusters, it will explore new models of chain-based services in industrial clusters, jointly cultivate the industrial ecosystem, and build Shanghai's AI innovation strength.

Tenth, it will increase the application of AI technology in various intelligent application scenarios, and constantly upgrade and improve AI technology platforms.

Wang Mengying
Vice President of Bank of China Shanghai Branch

Global open source and international standards promote the inclusive development of large models

Lin Yonghua
Vice President and Chief Engineer of Beijing Academy of Artificial Intelligence

In the era of AI, especially large models, the importance of open source has become increasingly prominent. First, open source allows innovation to avoid starting from scratch. Through iterative innovation, it promotes technical exchanges and learning globally. Second, resources required for large model R&D are difficult for a single institution to obtain. The evaluation of general large models also requires the participation of experts from various industries. Third, without open source collaboration, it is difficult to form a unified upper-layer software ecosystem. Therefore, open source has become an important cooperation mechanism to promote the development of AI and large models.

There are two cases to illustrate how open source and international standards interact with each other.

First, a unified communication library for AI chips. Beijing Academy of Artificial Intelligence (BAAI), together with its partners, developed FlagOS, an open-source and unified system software stack for multiple AI chips. FlagCX, an important component of FlagOS, is used to address the issue of diverse communication libraries among different AI chip manufacturers. Together with upstream and downstream players, BAAI has develop the specification for interfaces of AI unified communication library. On this basis, BAAI is actively promoting the approval of a relevant ITU standard project.

Second, the evaluation standard for large models. It is crucial for understanding industrial development trends and comparing model performance. However, due to varied evaluation methods in the past, different codes could lead to disputes over results even with the same evaluation dataset. In 2023, BAAI took the lead in developing the IEEE P3419, *Standard for Large Language Model Evaluation*.

Open source enables innovation to be shared globally, while standardization is key to reaching consensus. They complement each other, reducing the barriers for global AI application and innovation, and driving the inclusive development of large models.

AI standards empower the sustainable development of industries

At present, the AI field is in a golden window period, which provides a historic opportunity for establishing new AI standards. Over the years, sensing enhanced AI technology has constantly developed, promoting the development and progress of industries. With the development of new technologies, the demand for standards has become more prominent.

The Global Center for Sensing Enhanced AI (GCSEA) is expected to integrate domestic and foreign resources and make joint efforts to promote the development of relevant sensing standards.

Looking ahead, the Center plans to promote the standardization work of sensing enhanced AI in the following aspects: first, establish a steering group for the standardization work, apply for the establishment of a working group under an international standards organization, gather experts to explore standards projects, and gradually establish relevant standardization technical committees, smoothing the three-level transmission mechanism of industrial white papers, national standards, and international standards; second, systematically promote the development of relevant standards, and construct the thinking, physical, technical, semantic and ethical coordinates of sensing data; third, take advantage of international standards to guide the development of the sensing industry in developing countries, so that these countries can keep up with the industrial development more quickly and share the convenience brought by AI.

AI technology is the collective wisdom of humankind, and the development of AI standards transcends the boundaries of regions, enterprises, and academia. We hope to break down technical silos through openness, resolve rule conflicts via collaboration, and safeguard ethical bottomlines with responsibility. Enabling every individual to benefit from AI technology should be our ultimate pursuit through standardization and international cooperation.

Bao Jie
Founder and Chief Scientist of QuantaEye Technologies and Executive Director of the Global Center for Sensing Enhanced AI (preparation)

Agentic AI with industrial copilot

Michael Schrapp
Global Head of Operation Copilot, and Head of Industrial AI at Siemens Digital Industries

It's a pleasure to be here and speak about the industrial copilot and generative AI and the changing applications. As you all know, generative AI has arrived since a few years ago, we have generative AI not only in the consumer world, but also in the industrial world. Siemens is very active in the industrial space.

We need to make AI real, because at the end in industry manufacturing, you are producing parts in the real world. So we need to make sure that AI and its applications can interact and comply with the real world.

AI needs to work in different settings on the shop floor, so we need to really make sure that it is reliable and always unbroken, which is what we are trying with our industrial copilots. And the ultimate idea is to bring generative AI to the entire life cycle and the entire value chains.

One of the means to achieve that is AI agents. Basically there will be a lot of agents in the future which can do enormous things. Also you will have a user interface AI that can select the right agents and understands all the different agents and users' instructions. Then you can design a 3D model of the component with an autonomous agent creating the factory line in order to produce the part.

Now you can produce all different kinds of parts without the need of manual interaction and changing the factory setup. That is why we say it is the big future of AI in industry and manufacturing. It is not done by one single tool or one single company. It is only possible if we have an open ecosystem. If we have different companies working together, making sure that the different applications and different agents can speak with each other, we can achieve our goals across the entire value chain.

Moving to post-compliance ethics applied to AI systems

Emmanuel Roberto Goffi
Co-Founder and Co-Director of Global AI Ethics Institute (Paris)

It's a great honor for me to talk about ethics applied to artificial intelligence here. Most of the problems that we are facing today come from a strong misunderstanding of what ethics means.

We tend to think ethics are merely about establishing principles that would help us mitigate risks and secure benefits expected from AI systems. We are on the wrong path. Ethics are much more complex than that. Ethics are about philosophy, not about politics. Ethics are more about asking questions to enlighten decision-making processes, then to provide one-size-fit-all solutions.

We are doing what I call cosmetics, which is a makeup using ethics-related vocabulary, notions and concepts to communicate and influence users and consumers, and to send messages to the market.

In 2024, a meta study entitled "Worldwide AI ethics: A review of 200 guidelines and recommendations for AI governance" pointed out the plethora of available principles. We are now overwhelmed with principles. The authors actually stressed that the biggest challenges we face in the field of regulation is that "ethical principles cannot be universalized, making the standardization of contextual ethical parameters a real challenge in the search for regulation input".

Ethical AI design will not be broadly adopted unless we are able to move to post-compliance ethics, which is ethics rooted in values, stemming from cultural considerations. It now falls to each country and each community to make its voice heard to promote its culture, its values and its interests. Post-compliance offers this opportunity to debate not from the standpoint of risk, which are often too difficult to assess and predict when it comes to fast evolving technologies massively adopted, but from the foundation of values. Applied ethics for AI systems will only be effective if grounded in solid axiological foundations.

First, making sure ethics applied to AI systems are culturally relevant. Second, making sure that ethics applied to AI systems are built on cultural derivative. Building ethics on values is a long-lasting approach, a vision for the future built on solid grounds. Building ethics on risk is a short-term approach, a vision for the next day. Ethical governance should not be viewed as a shackle on AI, but rather as a compass. Compliance is a shackle, while post-compliance is an open window for ethics.

编译/曹欣欣、靳吉丽、方洛凡
(Edited and translated by Cao Xinxin, Jin Jili and Fang Luofan based on the speeches at the meeting.)

Panel discussion on cooperation of international AI standards and industrial application

Moderator

Zhang Ping
Professor at Peking University

Guests

Wang Xiaohui Dean of Economic and Technical Research Institute of State Grid Shanghai Electric Power Company
James Ong Founder and Executive Director of Artificial Intelligence International Institute (Singapore)
Xu Yang Director of AI Department, Information Technology Research Center, CESI
Qin Cheng CEO of Siemens Digital Technology (Shenzhen) Co., and General Manager of Siemens Xcelerator China
Peng Jin Vice General Manager of Technology Strategy and Development Department, Ant Group

Topic 1: Regarding sustainable development and global public interests, what should international AI standards focus on?

James Ong: Since 2019, I have witnessed the evolution of WAIC and found that a consensus on the philosophical and ethic level on advocating "AI for humanity" is necessary, since ethics factor carries more weight in standards development. I want to emphasize three points: AI assisting sustainable development, AI empowering a balanced global development, and human-AI coordination for preventing AI risks.

Xu Yang: We should consider an overall layout and coordinated standards system centered on AI full stack technology and applicable fields. Basic supporting standards play a vital role for the compatibility and adaptability of software and hardware at the bottom level; meanwhile leading and regulative standards also should be developed to promote extensive application of AI technologies especially in traditional industries which face challenges of applying AI technologies. In addition,

benchmark standards guiding healthy AI development should be developed to prevent bad conducts from driving out good technologies.

Wang Xiaohui: The power industry needs more standards especially in the sustainable development of AI. This wave of new grid system construction under the national strategy on carbon peak and neutrality brings an entry point for AI technology: the new load in the grid has source-load duality, rendering current grid operation unstable and hard to meet performance targets; with AI technology, both balance of the power flow and sensing of grid fluctuation in real time can be achieved.

In addition, international cooperation is needed for mutual promotion between power industry and AI technology to form a virtuous cycle in the long run, since power standards vary greatly among countries and regions. I call for unifying the general contents of international standards before countries develop their own specific standards, to enable AI to benefit more countries and cities in a win-win manner.

Qin Cheng: From the industrial perspective, I think standards are useless without practical ground. Real scenarios should be the priority for standards to fulfill their role, such as challenges that humanity faces, including climate change and education equality. It should be the principle for AI to empower livelihood, such as using standards to free humankind from repetitive labor in both vertical and horizontal domains.

Peng Jin: AI has a close connection with sustainable development. SDGs and ESG issues both require a large number of AI standards. In terms of environment, standards serve for calculating AI computing power to balance carbon emissions; in terms of social construction, AI promotes globalization of services, such as inclusive medical and financial AI service, and popularizes high-end services by using digital figures, meanwhile AI ethics and security remain the primary concern in AI governance. Born in the industrial era, standards mark the progress of industrial development and still bear a lot of saving graces in defining digital service. However, AI technologies differ greatly in their application scale and foundation, which makes extensive exchange and support of international standards necessary.

Topic 2: Can you give some suggestions about international AI standards from your professional point of view?

James Ong: The key to international AI standards is mutual recognition and trust based on shared interests and future. We should roll back to form a consensus on fundamental value regarding global collective issues. Through long-term exchange, we could find common pain points in the “bottom-up practice + top-down value alignment” manner, and coordinate the balance of different countries, standards and commercial interests. To make the community with a shared future for mankind underlies the development of AI technical and industrial standards and facilities standards application in all walks of life.

Xu Yang: We have found the gist of AI standardization, especially standardization governance, when undertaking the project of ISO/IEC JTC 1/SC 42, which is that standardization is always in a dynamic adjustment along with the progress of technologies and upgrading of industrial demands.

Wang Xiaohui: In practice, we have found the international coordination in AI evaluation a hard problem to address. Due to various endowments, economic conditions, and power demands, weights of the three key points—security, flexibility, and economy—vary in different countries, causing completely inconsistent review results of different standards. In this case, a self-developed evaluation system in one country will be in limited use and costly. Drawing on our overseas experience, our preliminary design is as follows.

First, dividing standards contents into two categories—core items and extension items. Core items cover globally accepted contents such as security and stability principles and equipment selection standards; extension items cover indicators that differ in countries, such as land costs and environmental protection requirements, and will be weighted by countries accordingly. Second, realizing data translation. For example, we can transform varied expressions of "99.999% reliability" in China and "power lost expected duration of 5 minutes" in other countries into unitary intermediate data and prepare for AI processing.

Qin Cheng: Industrial AI standards should promote the shift from a zero-sum game to the common prosperity through the whole AI ecosystem. For implementation, it is necessary to build a stock of reliable data to balance the security of private data and data transparency for industrial coordination; the supply side should integrate optimal solutions to each process to avoid malicious competition. In addition, criteria for AI talent skill level should be clarified to resolve the current information and skill silos among business, data, model developing and other sectors. Joint efforts from industrial and academic sides are called for to develop fundamental model standards for each sector and clarify the performance evaluation criteria, so as to promote large-scale application in the manufacturing industry.

Peng Jin: Data, model, and evaluation are integrated in the whole chain of R&D, deployment, and popularization of AI. Now the reinforcement learning (RL) phase requires deeper mining on expertise and industrial SOP data, therefore relevant standards should emphasize effectiveness rather than correctness. Concerted efforts are needed to better interpret models and diversify data expression. Models' comprehensive performance and adaptability should be tested and evaluated from multiple perspectives. In terms of security and verification, more standards should be developed and improved regarding AI features. For example, an access registration and verification mechanism should be established in the healthcare and financial sector for AI products. Meanwhile, an international communication mechanism is also needed to handle with the basic differentiated issues.

编译/刘宏博
(Edited and translated by Olive Liu)

Emerging Markets and Developing Countries Forum on Bridging the AI Divide and Opening Ceremony of AIM Global CoE held

新兴经济体与发展中国家弥合人工智能鸿沟国际合作论坛暨全球工业人工智能联盟卓越中心启用仪式举行

By Olive Liu
文/刘宏博

The Emerging Markets and Developing Countries Forum on Bridging the AI Divide and Opening Ceremony of AIM Global CoE were held on July 27 in Minhang district, Shanghai. The event was hosted by AIM Global CoE, and co-organized by Shanghai Artificial Intelligence Research Institute (SAIRI), Shanghai Technology Innovation Center, Shanghai Grand Neobay Investment Development Group, and Organizing Committee of AI Journey Conference. Asian Association of Business Incubation (AABI) and SAIRI served as the international partners.

The forum was aimed at promoting the opening up, cooperation and sharing of AI technology among emerging markets and developing countries, facilitating the cross-region and cross-industry

Amandeep Singh Gill, UN Under-Secretary-General and Secretary-General's Envoy on Digital and Emerging Technology
Liu Fang, Former Secretary-General of International Civil Aviation Organization (ICAO)
Dr. Sung Hwan Cho, President of ISO
Zou Ciyong, Deputy to the Director General and Managing Director of the Directorate of Technical Cooperation and Sustainable Industrial Development, UNIDO

exchange and capability building, and assisting to bridge global AI development divide. It attracted about 300 representatives from thinktanks, universities, governments, enterprises, and the media from over 20 countries and regions.

Tan Ruicong, Deputy Chief of Minhang District of Shanghai, attended the forum and delivered a welcome speech. Amandeep Singh Gill, UN Under-Secretary-General and Secretary-General's Envoy on Digital and Emerging Technology, Liu Fang, Former Secretary-General of International Civil Aviation Organization (ICAO), Dr. Sung Hwan Cho, President of ISO, Zou Ciyong, Deputy to the Director General and Managing Director of the Directorate of Technical Cooperation and Sustainable Industrial Development, United Nations Industrial Development Organization (UNIDO), delivered speeches respectively.

Gobind Singh Deo, Malaysia Minister of Digital, Abdulakhad Kuchkarov, CEO of IT Park Uzbekistan, Stella Christie, Indonesia Deputy Minister of Higher Education, Science, and Technology, and Vladimir Averbakh, Senior Managing Director of Advisory Board of the AI Alliance Network, gave keynote speeches on topics including AI strategy in emerging economies, AI infrastructure building, bridging AI divide among developing countries, and coordination of human and AI agents.

During the forum, the opening ceremony for the new site of AIM Global CoE was held. Witnessed by all guests, Song Haitao, Director General of AIM Global CoE, together with Amandeep Singh Gill, Liu Fang, Zou Ciyong, Dr. Sung Hwan Cho, and Tan Ruicong, announced the opening of the new site. As the first international institute specializing on AI cooperation under the UN framework, the center is going to attract more international cooperation projects, technologies, resources and talents and promote the innovation and upgrading of the AI industry.

To advance the high-level cooperation in the global AI industry, Jason Slater, Chief of UNIDO's Division for Digital Transformation and AI, signed the mutual member recognition agreement on behalf of AIM Global with Andrei Neznamov, Secretary General of the AI Alliance Network.

The AIM Global CoE signed strategic partnership agreements with multiple parties to deepen the coordination and innovation in key areas. It signed with Macao Translational Medicine Center to set up China Shanghai & Macao AI Translational Medicine Center, signed with Shanghai Polytechnic University to establish an institute for regional and national studies, and signed with QuantaEye Technologies to build the Global Center for Sensing Enhanced AI (GCSEA). The secretariat of the AI Alliance Network, GCSEA, Universidad Politécnica de Madrid, and Artificial Intelligence International Institute (Singapore) will be the first batch of entities to operate at the new site. It marks the beginning for an AI community to serve emerging economies.

Meanwhile, in response to China's AI Empowering Education initiative and promote a deep integration of fundamental education and cutting-edge technologies, SAIRI signed contracts with strategic partners including Qibao High School Education Group and Xiehe Education Group respectively to build an international AI education lab, and an AI+ education and innovation consortium to explore an exemplary path for nurturing new talents adapting to the intelligent era.

SAIRI is an innovative AI platform founded by Shanghai Municipal Government, Shanghai Jiaotong University and two enterprises, which is aimed at implementing key national strategies on AI development and reinforcing the innovation-driven development strategies. Since its founding in 2018, it has focused on the innovation of key AI technologies at the bottom level, breakthroughs of core application technologies, transformation of research achievements into industrial application, talent nurturing, and industrial ecosystem building. It has incubated over 30 hard & core technological companies, and become an influential research institute of new type in China's AI sector.

The forum included two panel discussions on "the development path of emerging economies" and "the long-term impact of AI on social and economic sectors" to pool the wisdom of experts from research institutes, enterprises, and international organizations at home and abroad to promote AI development in a fair manner and bridge digital divide through international cooperation.

After the forum, Amandeep Singh Gill, Zou Ciyong, Dr. Sung Hwan Cho, and Jason Slater visited the new site of AIM Global CoE. The AIM Global CoE was jointly set up by UNIDO, MIIT, and Shanghai Municipal Government for promoting transformation and upgrading of industries and manufacturing sector with AI empowerment and making more China's voice heard in the international AI industry. In the future, AIM Global CoE will make concerted effort with other parties to build an international innovation hub of AI, and help Minhang district to build an industrial cluster of AI with more global investment, faster innovation, and broader industrial upgrading.

On July 26, the UNIDO Global Call for AIM Global CoE was officially released by Zou Ciyong, Jason Slater, and Song Haitao at the World AI Conference 2025. It is another measure taken by UNIDO and Shanghai Municipal Government after the establishment of the first AIM Global CoE in the world in 2024. This event will be the starting point of follow-up measures to bridge digital gaps among nations and further exchange and share ideas and practical experiences across the world.

The successful holding of the forum and the launch of the new site are solid steps taken for the further development of global AI cooperation and bridging AI divide. The forum has built international consensus and held in-depth discussions on key topics of inclusive AI technology, AI capacity building, and sustainable development path. Participants expect to set up an open, fair, and inclusive global AI layout with joint efforts, make technologies benefit more countries and regions in the world, and inject stronger momentum into achieving UN Sustainable Development Goals.

2025 Qingdao Forum on International Standardization held successfully

高水平标准引领高质量发展——2025青岛国际标准化大会成功举办

By Jin Jili
文/靳吉丽

The 2025 Qingdao Forum on International Standardization was held at the Qingdao International Conference Center on July 9. With the theme of "high-level standards leading high-quality development", the forum was hosted by Qingdao Municipal People's Government and organized by Qingdao Administration for Market Regulation.

The forum was addressed by Deng Zhiyong, Vice Minister of SAMR and Administrator of SAC, Wang Guiying, Vice Governor of Shandong Provincial People's Government, and Ren Gang, Deputy Secretary of CPC Qingdao Municipal Committee and Mayor of Qingdao Municipal People's Government. The open ceremony was presided over by Zhao Shengcun, Vice Mayor of Qingdao Municipal People's Government.

Adhering to the principle of innovation-driven development, SAMR (SAC) has established a mechanism for synchronizing standards development, scientific and technological innovation, and industrial application, and accelerated the iteration and upgrading of standards, helping traditional industries show new vitality, and facilitating emerging industries to form new engines for development, Deng Zhiyong said in his address.

So far, SAMR has provided standardization capacity training for over 100 developing countries, constantly offering new opportunities to the world. It has signed cooperation agreements with standardization bodies in more than 70 countries and regions and some international organizations, and steadily expanded the institutional opening up of standards, contributing Chinese wisdom to the development of international standardization.

In recent years, Shandong province has vigorously implemented the standardization strategy, and extensively carried out pilot projects for national standardization innovation-oriented development, making new achievements in standardization work. Shandong has focused on optimizing the institutional design, cultivating innovation platforms, improving relevant standards systems, and deepening international exchanges and communication, Wang Guiying noted.

As of now, Shandong has set up 32 provincial-level innovation centers and 43 key projects for standardization strategy. It has led and participated in the development of 338 international standards, over 11,400 national standards, and over 14,000 sectoral standards. It has successfully held the secretariats of 11 international standardization technical bodies.

Remarkable results have been made in Qingdao city over the past few years. Up to now, Qingdao has participated in the development and revision of 266 international standards and more than 3,800 national standards, and held the secretariats of 27 international and national standardization technical committees. Qingdao has been selected as one of the first batch of national standardization innovation-oriented cities, Ren Gang emphasized.

Qingdao has focused on improving industrial competitiveness through standardization. Since the beginning of the 14th Five-Year Plan period (2021-2025), the number of national standards in the industrial field developed and revised by Qingdao has an average increase of 25% annually. Qingdao has focused on promoting the development of new productive forces through standardization. It has undertaken more than 20 national-level standardization pilot projects in the field of new quality productive forces.

At the forum, the Qingdao Initiative on Strengthening Standardization Cooperation among National Standardization Bodies of the Shanghai Cooperation Organization was released. According to the initiative, SCO members will advance cooperation in the following areas: establish a cooperation mechanism among SCO members and observer states in the field of standardization, set up joint working groups, create standards database, and develop action plan; focus on priority areas of shared interest, strengthen the exchange of standardization information, improve standard coordination and mutual recognition, and promote coordinated regional development of standards; support forward-looking cooperation projects by promoting standardization research and knowledge exchange in areas such as artificial intelligence, quantum technology, new energy vehicles, and digital transformation.

The International Standards Service Station was officially launched, which is committed to integrating international and national standardization resources, providing services such as information tracking, promotion, and application of international standards, and helping enterprises participate in international standardization activities more efficiently.

The Chinese version of the ISO Standards Quest was officially released. The ISO Standards Quest is a competitive educational and popular science game that enables more people to understand the importance of standardization through an approach of combining education with entertainment.

A total of 146 Chinese national standards in foreign language version were officially released, ranging from food, agricultural machinery, fire protection to emergency robots. So far, 2,484 national standards in foreign language version have been released, which include 11 languages such as English, Russian, French, and German, and cover more than 20 fields such as agricultural products, food, consumer goods, and metallurgy.

The 2025 International Standardization Youth Star Competition was officially initiated. The competition will be held in Qingdao with 5 different themes: smart green ports, power batteries, short-range communications, natural biomedicine, and engineering construction.

The event invited several guests to deliver speeches, including heads of international standards organizations such as Jo Cops, IEC President, Sergio Mujica, ISO Secretary-General, and Renaud de Barbuat, GS1 President, heads of national standard bodies from Germany, Uzbekistan, and other countries; and representatives from universities, research institutes and enterprises including Tsinghua University, China Electronics Standardization Institute, and Hisense Group.

The forum set up 5 sub-forums focusing on the following themes: capacity building and creating leadership in standardization, standardization of new energy and DC diversified applications, new infrastructure construction in airspace with standards as the foundation—driving the high-quality development of the low-altitude economy through standardization, the "artificial intelligence + standardization" action cultivating future industries, as well as standardized approaches empowering industrial green and low-carbon transformation. At each sub-forum, participating experts and scholars shared latest concepts and research results of standardization in their respective fields.

The forum not only highlighted the international perspective but also actively implemented the national requirements on the leading and upgrading role of standards in promoting high-quality economic development. Representatives at home and abroad put forward recommendations on how standardization can help Qingdao develop new quality productive forces and build an innovation-oriented industrial system.

Held every two years since 2017, the forum has become a high-level grand event for international standardization and a high-end exchange platform of China, as well as an important carrier for building consensus, expanding opening up, and promoting industrial and technical international cooperation through standards connectivity.

The forum has effectively facilitated international exchanges and mutual learning in standardization, built consensus on international standardization cooperation, and enhanced the international influence of Chinese standards, playing a vital role in driving the institutional opening up of standards.

Highlights of the guests' speeches

IEC empowers high-quality infrastructure for tomorrow

Jo Cops, IEC President

The IEC has been impacting global development for over 100 years since its inception. In each wave of technological innovation, IEC has played a crucial role behind the scenes in bringing technological advancements to the world safety. From the early adoption of electricity in homes to the next generation AI applications, we ensure new technologies are implemented safely and efficiently worldwide. Today, as we face a new era defined by digital transformation, clean energy and sustainability, the IEC's mission becomes increasingly vital at the beginning of the 21st century.

Firstly, the IEC provides a unique institutional framework for collaborations. Thousands of experts worldwide develop best in class internationally agreed solutions, incorporating contributions from industry, academia, governmental and nongovernmental organizations, and testing laboratories. There are some obvious benefits across industries, ensuring safety, reliability and consumer protection. Standards and conformity assessment services serve as safeguards, setting benchmarks for safety protocols and ensuring products and systems meet essential safety requirements. They minimize risks of accidents, product failure and hazardous materials in the market, protecting both workers and end users.

Secondly, facilitating innovation and market access. Standards provide a foundation for innovation by defining consistent and transparent criteria. They enable innovators to build on established guidelines, allowing new technologies to be constructed and providing trusted frameworks and opening doors to global markets by ensuring compatibility across borders.

Thirdly, supporting effective policy implementation. Standards are powerful tools that help regulators enforce safety, quality and environmental goals to clearly defined and measurable criteria. As the world addresses sustainability, IEC standards play a pivotal role in driving energy efficiency and environmental stewardship. They established frameworks for designing, installing and operating energy efficient systems, facilitating the implementation of public objectives and policy objectives. Our work ensures that rapidly evolving technology can be leveraged efficiently, safely and equally for all.

The IEC is building tomorrow's infrastructure from supporting clean energy technologies like solar, wind and smart grids, to guiding the safe deployment of emerging technologies, including quantum technologies, robotics, and AI. As AI rapidly evolves, we have developed standards for the entire AI ecosystem.

I conclude by emphasizing the benefits that international standards and conformity assessment can unlock in today's globalized economy to build quality infrastructure, you must get involved. The first reason is that you can access to global markets. Second, you can have influence in standards development. Third, you can gain early insights into market trends. Fourth, it helps reduce the costs and increase efficiency. Last but not least, it enhances your reputation.

ISO standards help create a better future

Sergio Mujica, ISO Secretary-General

In the ISO, we have three pillars. The first pillar is the ISO members. Now we have 174 members, one representing one country. I would like to recognize that China plays a very important role in the governance of ISO, as China is a permanent member of the ISO Council and the Board of Directors, and also a permanent member of the Technical Management Board.

The second pillar is our technical activities. We don't write our standards, and the standards are written by technical experts appointed by the ISO members. Now we have around 800 technical committees and subcommittees, and an incredible portfolio of over 25,000 international standards. And 75% of the ISO members are developing countries.

The third pillar is the headquarter in Geneva, which supports the system and coordinates our work.

Our vision is to make people's life easier, safer, and better. That is why our whole strategy is fully aligned with the Sustainable Development Goals (SDGs) on that regard. We strongly believe that through international standards, we can accelerate the implementation of the SDGs. It is only five years left, so we have to implement our global commitment of around 200 countries to improve the quality of people's life.

We intervene in the three pillars of sustainable development. The first one is economic growth. We have studied the situation in a number of highly developed countries and developing countries. It is found that through standards we can contribute 20%-30% of the increase of the GDP annually. The second is that we have important standards on social responsibility and occupational health and safety. The third is about environmental issues. Now we are cooperating with the United Nations, as ISO standards on SDGs support every organization and everyone to implement the climate commitments.

Trusted identification and trusted product data: GS1's vision for collaborative global standards

Renaud de Barbuat, GS1 President

GS1 is an international standards organization, which focuses on product identification and product data, helping businesses and governments to improve commerce and supply chain.

Why trusted data is essential to high-quality development? More than 50 years ago, GS1 was initiated with the bar code, a profound transformation of the way we work and live. From then on, a simple scan connected a physical product to its digital identity. It transformed commerce, improving supply chains and enabling safer healthcare. Collaboration between industry and governments, and a strong partnership with ISO and IEC laid the foundations for the global adoption of a common product identification over the past 50 years and all around the world.

Now bar code is used by more than 25 industries in 150 countries. Over 1 billion products are distinctly identified with the bar code and the bar code is scanned more than 10 billion times a day around the world. This simple scan leads to massive efficiencies in stores and supply chain, but it also leads to an additional benefit that is very often forgotten, which is trust. It creates trust of consumers.

It is a very visible example of the power of international standards and how they can contribute to high-quality economic and social development. Global adoption has been driven by those benefits—efficiency and trust.

But other factors that we should also keep in mind when thinking about continuing our collective journey towards high-quality development, that is simplicity. Broad adoption cannot be achieved if it is too complex.

We need to think of all our future initiatives with simplification, objective, and collaboration. This would not have happened without strong collaboration between all industry stakeholders and collaboration with international and local standards organizations. It is important to have global startups because many products are crossing boundaries, but it is also important to foster adoption locally when you have to reach as many users as possible.

Now, China is leading the world in this migration to QR code powered by GS1, with more than 23 million products already carrying this type of bar code. This is more than all the other countries of the world combined.

Standards as the foundation of innovation and cooperation

Christopher Millward, President and Managing Director of USITO

Basic communication standards that we rely upon reduce friction for consumers, customers and businesses, speed innovation and allow for cross-border collaboration among companies. That is critical for establishing global baselines of trust. What standards can do that politics cannot is to bring people together, encourage collaboration, and encourage trusting relationships and the ability to share and develop interoperable communication systems.

Today we are building roads that lead to quantum technologies, artificial intelligence and blockchain technologies, but the rules of those roads are yet to be written. The industry has an important role to play in developing rules of the road. Those rules need to start with a very basic foundation, such as data identification secured by design standards, standards for privacy protection, and watermarking, tracing and accountability of AI technologies and algorithms. These are all very achievable objectives, and they form together a foundation of trust that customers and governments worldwide can rely upon.

An example is NIST frameworks. I call attention to these, because these are usable anywhere in the world. They are open frameworks designed to be interoperable and allow companies in different jurisdictions and political environments to adopt. They are voluntary, which is critical when it comes to developing standards. They are based on risk management. If we want to realize the opportunity of artificial intelligence and emerging technologies, we have to first in the standards community deal with risk management.

There are a number of competing priorities and national frameworks that are unavoidable. I don't think that our goal is to try to create one world system that rules them all. Our goal is to ensure that our systems are interoperable. I believe very strongly that the companies that build those technologies have an important critical role in providing the foundation for that framework.

The reforms in the field of technical regulation and standardization in Uzbekistan

Umid Shodjalilov, Deputy Director of Uzbekistan Institute of Standards

Uzbekistan Institute of Standards (UIS), founded in 1969, is the national standardization body of Uzbekistan. There are over 32,000 national standards in Uzbekistan. Last year, UIS revised the working regulations of all technical committees, which were established in accordance with the organizational structure of ISO.

At present, UIS has standardization training courses covering 54 directions, and more than 1,700 experts have received relevant training. UIS ranks the 95th in terms of the Quality Infrastructure for Sustainable Development (QI4SD) and 80th in terms of the Global Quality Infrastructure Index (GQII). It is a member of ISO and an associate member of IEC. In the UIS, 40 experts have participated in the activities of various ISO technical committees, and 251 experts have participated in the discussion of IEC projects as observer members.

In the next step, UIS hopes to improve its rankings, obtain IEC membership, and participate more actively in ISO technical committees. The system for international standards translation with artificial intelligence will be launched in September this year. In terms of coordinating technical committees, UIS plans to increase the number of enterprise representatives in technical committees, with an expected increase of 70%. In terms of optimizing standards, it has analyzed the existing national standards, and will revoke more than 3,000 standards that do not meet WTO requirements. In addition, it will promote the application of more than 5,000 standards among enterprises.

In terms of standardization activities, UIS will establish a national platform where all standards are converted into machine-readable formats. It will organize seminars and training of technical committees, and send middle school students to take part in the International Standards Olympiad to be held in South Korea in August. In addition, it will set up the Annual Standardization Expert Award. In the near future, UIS will adopt about 4,200 international standards, aiming to improve the country's standardization level and standardization rankings.

Smart standards for an all-electric and connected society

Florian Spiteller, Member of DKE Executive Board

In IEC, we have the vision of an all-electric and connected society in which regenerative electrical energy is economically accessible for everybody as the primary form of energy, sustainably powering the growth of our society. It is a vision that we can make it come true, but what do we need for it?

The first step will be the coupling of different sectors. At the moment, these sectors are very independent from each other. So we need to generate energy for all of them simultaneously. What we will do in the future is that those sectors are coupled with a data link. When all those sectors can talk to each other, we will need less energy because we can better balance it.

We have standards to connect different sectors. The standards will not just be PDF files or books. They will be smart standards. We are already on the way towards smart standards. In the future, you will have a digital standard which can not only be read by a computer or a machine but also be executed. When we look further to the future, we can even envision that machines with AI write their own standards. But it is a long way to go.

When we have different versions of digital standards, we need a more complex content management system. When we sell and deliver the standards, they will not be just texts for experts. They will be digital delivery. Basically, everything will change. Through smart standards, different parts of the value chain and business models will change.

Wherever there are changes, there are opportunities and challenges. That is why it is so important that we have such a strong collaboration between China and Germany to exchange on the different views and bring this forward.

Digital transformation and its role in achieving carbon neutrality and sustainable green development

He Kebin, Academician of the Chinese Academy of Engineering and President of Institute for Carbon Neutrality, Tsinghua University

High-quality standards serve as the value scale for consensus on the conversion of green benefits. Taking carbon emissions in production cycle and carbon footprints in life cycle as examples, it is arduous work to significantly improve their comparability, credibility, and manageability. At present, there are over 1,400 ISO standards in the dual carbon field. In China, there are over 1,400 relevant national standards, over 3,000 sectoral standards, over 1,900 local standards, and over 800 association standards, forming a comprehensive supporting system.

However, the problem we face now is the low level of systematization, which is crucial for the design and development of standards for the green and low-carbon development, especially given the diversity, complexity, and cross-disciplinary nature of the content involved.

Taking product carbon footprint standards as an example, it is essential to establish verification standards that are transparent, traceable, and disclosable, accounting method standards that bring scientificity and standardization, and standards for data governance and quality control. The global community must make concerted efforts to enable the technologies we develop and bring to the market to become the new driving force for development.

In January this year, Tsinghua University took the lead in establishing the Carbon Footprint Industry Technology Innovation Alliance, which is to integrate all relevant technologies into unified technical guidelines, and develop data guideline standards tailored to China's context in line with relevant global standards.

In the future, an interconnected standards system will become a key engine for international trade and industrial development. In particular, factors such as green transformation, carbon footprint, and carbon emissions will be interconnected, driving the shift of focus to the development of green industries, and forcing the upgrading of traditional industries. Thereby, a globally interconnected standards system will be formed, which is our common goal.

Creating an intelligent future: building a new paradigm for global AI governance through collaborative standardization

Yang Xudong, President of China Electronics Standardization Institute

A new round of technological revolution and industrial transformation is accelerating. New-generation information technologies such as AI are increasingly integrated into all areas and the entire process of economic and social development, and are becoming key factors in reshaping global resource elements, the global economic structure, and the global competition pattern.

According to UNCTAD's Technology and Innovation Report 2025: Inclusive Artificial Intelligence for Development, AI represented a $189 billion market in 2023, and is estimated to reach $4.8 trillion by 2033. Standardization has become a vital issue of global development, application and governance of AI for its fundamental and leading role.

In terms of communication and exchange, standardization means can clarify and unify the terms, concepts, meanings, and management and application models of AI, avoiding communication barriers and governance gaps caused by ambiguous concepts, to establish a globally unified governance discourse system. In terms of technology, standards can guide AI development towards safety, reliability, and controllability, reducing the risks of AI application. In terms of industrial application, standards for industrial large models and large model integrated machines should be developed in key industries such as manufacturing, finance, healthcare, and education, supporting the evaluation of AI products and services in the market and ensuring their quality. In terms of governance system construction, standards can serve to define the concept and process of AI ethics review, and establish a full lifecycle prevention and response mechanism for AI risks, promoting the integrated development of AI governance.

China has made progresses in the field of AI standardization. The national standardization group on AI has been set up for overall planning and policies; the SAC/TC 28/SC 42 on AI is responsible for the development and revision of national standards for AI. Also, a national guideline for building the comprehensive standardization system of AI industry was jointly released by four national departments, to orchestrate industrial forces, accelerate the intelligent transformation and upgrading of industries, standardize the order of industrial development, and promote global cooperation and exchanges.

Driven by standard-technology-industry synergy: reshaping a new paradigm for sustainable global development

Alec Saltikoff, WSSO CEO & Secretary-General

The World Sustainability Standards Organization (WSSO) was established in October 2023. This organization aims to unify various standards in the fields of sustainable development such as energy, carbon sinks, green finance, ecological environment industries, energy conservation and environmental protection, carbon neutrality-related technologies, and ESG. WSSO supports the implementation of projects stipulated in the Paris Agreement such as the carbon market, and enhance the global coordination efforts in areas such as the digital currency of central banks and the carbon payment settlement system by connecting the digital currencies of various countries.

What is really important to understand is that shaping the future of global sustainability is not just simply technology or obligation, it is a concern of the value chain. We aim to achieve global sustainability and build the entire value chain from A to Z. In the context of the new industrial revolution, standardization is not only about compiling rules, but also about regulating processes. We can even ignore the details and only need to establish regulatory technologies and frameworks. In this process, governments also play a crucial role, because without the government and governance, the relevant rules cannot be implemented, let alone regional collaboration.

In 2023, the Global Carbon Infrastructure Standards and Action Alliance was announced in China, bringing regulatory frameworks to governments for further energy governance. In 2024, WSSO and Chinese Research Academy of Environmental Sciences signed the strategic cooperation agreement, which will deepen practical cooperation in the field of sustainable development, innovate the internationalization path of ecological environment standards, and create new impetus for accelerating the harmonious modernization.

Innovation navigates industrial evolution, standards underpin a better life

Zhang He, CIO of Hisense Group

Over the years, Hisense has formed an operation model that integrates production, sales and R&D globally, and built a global collaborative R&D system, which has laid a solid foundation for standardization. Hisense keeps including advanced achievements and mature production experience in standards, injecting impetus into the innovation and high-quality development of the industry.

In the display industry, technology and standards develop in a way that mutually boosts each other. Hisense has joined hands with industry peers to build a full-chain ecosystem covering technological innovation, standards development and industrial collaboration.

Up to now, Hisense has led and participated in the development of 70 international standards, as well as 560 national and sectoral standards. Hisense experts have won the IEC 1906 Award for three times in the field of display, with an expert serving as the convener of IEC/TC 110/WG 10 on laser display. The working group promotes the rapid and high-quality development of laser display under the impetus of both technological innovation and standards development.

In the field of intelligent transportation, Hisense took the lead in the development of 7 Chinese national standards for intelligent system of bus rapid transit, clarifying the requirements for system design, construction and testing, and effectively solving the problems of system complexity, inconsistent system interfaces and inconsistent construction requirements in different regions.

Hisense believes that open standards can better promote global carbon reduction than closed technologies. We calls on the industry to further strengthen standards cooperation, fully leverage the role of standards in reaching consensus, integrate the entire chain of R&D, manufacturing, and application, support the rapid application and implementation of technologies, and make full use of international standards platforms to build an open, inclusive, and mutually beneficial international technology cooperation ecosystem.

编译/曹欣欣、靳吉丽、方洛凡
(Edited and translated by Cao Xinxin, Jin Jili and Fang Luofan based on the speeches at the meeting.)

Sub-forum on capacity building and creating leadership in standardization held

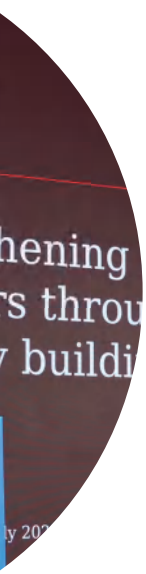
标准化人才培养与能力建设分会召开

By Cao Xinxin
文/曹欣欣

To exchange experiences and progress in standardization capacity building at home and abroad, the sub-forum on capacity building and creating leadership in standardization was held on July 9.

The sub-forum was hosted by the Qingdao Municipal People's Government and co-organized by the International Standardization Training Base (Qingdao), Qingdao University, International Standardization Outstanding Contribution Foundation, and Shandong National Standards Center of Technical Evaluation, which was expected to inject new vitality into the industrial development and provide new ideas for improving the talent cultivation system.

In the address, Dou Hu, Deputy Director-General of Shandong Administration for Market Regulation stated that relying on the International Standardization Training Base (Qingdao), international standardization training has been carried out, with more than 5,300 trainees. A team of interdisciplinary standardization talents has been built, cultivating 120 technical managers and standardization technology consulting experts. Five universities including Jinan University and Qingdao University have been supported to carry out the construction of standardization disciplines and specialties.



Zhang Yongyan, Director-General of Qingdao Administration for Market Regulation, said that at present, Qingdao holds 27 secretariats of international and national standardization technical committees. It has led or participated in the development and revision of 266 international standards, with 65 experts in international standardization technical bodies, 488 experts in national standardization technical committees. So far, 1 expert has won the ISO Excellence Award, and 2 experts have won the IEC 1906 Award.

ISO Secretary-General Sergio Mujica shared ISO's ideas and experiences in strengthening capacity building in his speech. In terms of sustainable development and climate change, ISO is helping developing countries understand relevant knowledge and select some ISO standards for training. They seek local support to provide training, and ensure that these training meet local needs. At present, there are about 25,000 ISO international standards. ISO will find the most relevant standards to provide training so that people can adopt these standards.

Dennis Chew, Director of IEC Asia-Pacific Regional Center, introduced the IEC Young Professionals Programme, which aims to cultivate the next generation of standardization experts. The programme provides a one-week IEC courses once a year, and young experts can participate in subsequent activities. Young people can observe many meetings of technical committees to see what happens in IEC. They can draw inspiration from these meetings, laying a solid foundation for their future work.

Florian Spiteller, Member of DKE Executive Board, shared the practice of the Next Generation DKE programme. Through the programme, DKE provides opportunities for young experts to choose different projects according to their own time. DKE also invites them to experience DKE's work, allowing them to understand how standardization work is done, especially how the work of technical committees is carried out.

Song Mingshun, Former President of China Jiliang University and Chairman of Belt and Road University Alliance for Standardization Education and Academics, stated that the University Alliance holds a summer camp every year. This year is the third session, which is held at the Yixing Environmental Protection Research Institute of Nanjing University. More than 30 undergraduates and postgraduates from 12 universities participated in this summer camp, which can raise their awareness of standards and improve their skills.

Experts such as Zhang Longqiang, President and Chief Engineer of China Metallurgical Information and Standardization Institute, Zhou Qing, Vice President and Professor of Hangzhou Dianzi University, Zhao Wenhui, Deputy Director of the Sub-Institute of Standardization Theory and Strategy, China National Institute of Standardization, Wang Binhou, Director of Standards and Patents of Haier Group, Li Xinghua, Professor at Shandong University of Science and Technology, and Li Minghan, Director of International Standards Technology of Jinan Institute of Quantum Technology delivered keynote speeches.

The event provides a good opportunity to deepen cooperation, optimize the education model, and spark new ideas to cultivate more interdisciplinary standardization experts.

Sub-forum on standardization of new energy and direct-current diversified applications held

新型能源与直流多元应用标准化分会召开

By Cao Xinxin
文/曹欣欣

The sub-forum on standardization of new energy and direct-current diversified applications was held on July 9, which gathered leaders and experts to discuss how to thoroughly implement the national green power direct connection policy proposed in the transformation of the energy landscape, pool wisdom to tackle bottlenecks in the industrialization of DC technology, and leverage the role of standardization in coordinating and regulating the diversified applications of DC technology. It was designed to promote the establishment of a collaborative, open, and advanced global standards system for DC technology.

The event was addressed by Sun Yuyou, Deputy General Manager of China Certification & Inspection Group (CCIG), Sun Ying, Deputy Director of Energy Research Institute, National Development and Reform Commission, Zhang Wei, Director of Consumer Product Certification Division of Certification and Supervision Department, State Administration for Market Regulation (SAMR), Li Jie, Deputy Director of Qingdao Administration for Market Regulation, and Song Yujun, Deputy President of Haier Smart Home Co., Ltd. The opening ceremony was presided over by Liu Gang, Deputy General Manager of China Quality Certification Centre.

Sun Yuyou stated that the standardization of new energy carries the significant responsibility of driving green transformation, leading industrial innovation, and shaping a zero-carbon future.

Due to its high efficiency and flexibility, DC technology has become the key to resolving the contradiction between supply-demand uncertainty and grid coordination capabilities. Standardization is fundamental for breaking down technical barriers and strengthening the foundation of safety. It is necessary to establish a comprehensive standards system covering the entire lifecycle and industrial chain, said Sun Ying.

Zhang Wei focused on the synergistic role of certification and standards, emphasizing that the DC ecosystem is a breakthrough point for the energy revolution and must be led by standards.

Li Jie introduced Qingdao's practices in DC standardization: relying on the National Technical Standards Innovation Base to advance research on critical standards such as hydrogen safety and energy storage systems; supporting companies such as Haier and Hisense in leading the development of over 200 international standards; and establishing the IEC Promotion Center (Qingdao) to provide one-stop international cooperation services.

Several deliverables were released, including the Industry and Technology Development Report of LVDC in China (2025), and the First Listing for "Sino-German DC100" Direct-Current Applications in China. The Research Project on the Integrated Development of Standards, Testing, and Certification for DC End-use Products in Next Generation Energy Systems was launched by CCIG. The Qingdao Initiative on Global Standardization and Co-innovation of Direct-Current User-side Voltage Class was released. In addition, the Global Direct-Current Product Certification Consortium was established, and the Sino-German Joint Working Group on International LVDC Standardization was set up.

Experts from industry, academia and the standardization fields delivered thematic reports at the forum. Ma Dejun, Chair of IEC/SyC AAL, Vice Chair of IEC/TC 61, Chair of IEC/TC 59/SC 59N, and Vice Chair of China Battery Industry Association analyzed the technology and industry development trends of DC powered products. He pointed out that in response to carbon policies such as the EU's Carbon Border Adjustment Mechanism (CBAM) and the New Batteries Regulation, China needs to set internationally harmonized carbon rules.

Zhang Jianhua, Leader of the Standards Working Group for Microgrids of IEC/TC 8, and Professor and Doctoral Supervisor at North China Electric Power University gave an in-depth analysis of the technological trends and application prospects of hybrid AC/DC distribution networks from the perspective of constructing new power systems.

During the session on "Frontier Exploration and Standardization Empowerment", seven experts shared insights from dimensions such as international standards, energy efficiency systems, and zero-carbon practices, outlining a roadmap for standardizing new energy and DC technologies.

The forum brought together diverse expertise, not only clarifying the direction for standardizing new energy and DC technologies but also highlighting the guiding value of "standards first" in driving industrial transformation.

Sub-forum on driving high-quality low-altitude economy held

标准化驱动低空经济高质量发展分会召开

By Jin Jili
文/靳吉丽

With the theme of "new infrastructure construction in airspace with standards as the foundation—Driving the high-quality development of the low-altitude economy", a sub-forum brought together representatives from government departments, research institutes, universities, and enterprises to probe into the key role of standardization in the development of the low-altitude economy.

Chengyang district of Qingdao city is speeding up the development of low-altitude economy. It has conducted major projects such as the Qingdao Low-altitude Economy Inspection and Testing Base, and collaborated with China Aero-Polytechnology Establishment (CAPE) to build the Low-altitude Economy Standard Test Base, said Lu Zhaogang, Deputy Head of Chengyang district, Qingdao city, during his address.

Qingdao is actively building a standardization system for the low-altitude economy, and consolidating the foundation of safety through the power of standards, driving the low-altitude economy to become a new growth engine for urban development, said Wang Yingjun, Deputy Director of Qingdao Administration for Market Regulation.

Li Yan, Deputy Director of SAMR Defective Product Recall Technical Center, put forward suggestions such as strengthening the top-level design of the industry, safeguarding the bottom line of product safety, encouraging industry-university-research-application cooperation to transform technological innovation achievements into standards, and actively participating in the development and revision of international standards.

A number of major cooperation projects were signed or launched on the scene, marking that Qingdao has taken substantial steps in the standardization of the low-altitude economy. China Electronics Standardization Institute (CESI) and Qingdao Administration for Market Regulation signed a strategic cooperation agreement. The two parties will carry out in-depth cooperation in standards development, testing and certification, industrial research, and talent cultivation of electronic information technologies.

The project for the Low-altitude Economy Standard Test Base was officially launched. The base, jointly built by CAPE and Chengyang district of Qingdao, will create an innovation platform integrating standards research, achievement transformation, as well as verification and testing. The practical situation of the low-altitude economy in Chengyang district was introduced as well.

The construction plan of the Provincial Public Service Platform for Inspection and Testing of Low-altitude Aircraft was officially released. With Qingdao as the core, the platform will build a full-chain technical service system covering scientific research, consulting, standards development, inspection and testing, and airworthiness certification, and create an internationally leading platform for the utilization and verification of low-altitude technologies. Subsequently, the inaugural ceremony of the platform was held, marking that this major provincial-level platform has officially entered the substantive construction stage.

At the event, six experts gave keynote speeches. Liu Daxiang, Academician of the Chinese Academy of Engineering and Professor at Beihang University, elaborated on the importance of standardization from the perspective of aviation emergency rescue. Chen Congxi, Director of the Low Altitude Economic Development Working Committee of China Aeronautical Owners and Pilots Association compared domestic and foreign experiences in low-altitude flight standardization. Zhang Bing, Director of the Navigation Mark Center of CAPE interpreted the Guidelines for the Construction of the Standards System for the Low-altitude Economy.

Zheng Wei, Academician of the Russian Academy of Engineering and Director of the Institute of Space Remote Sensing and Marine Surveying, Harbin Institute of Technology (Weihai) shared the application of combined satellite gravity and BeiDou/GNSS-R satellite altimetry inversion technology in underwater intelligent navigation. Xu Ming, former Chief Engineer of CAPE, interpreted the application of research and development guarantee in low-altitude economy security assurance. Wang Wenfeng, Deputy Director of the IoT Research Center, CESI shared the ideas on the construction of the standards system for the low-altitude equipment industry.

The event has not only promoted the implementation of a number of major cooperation projects and platforms but also clarified the core position of standardization in the development of the low-altitude economy. Qingdao is accelerating the construction of a full-chain ecosystem with standardization as the cornerstone, contributing its solutions to the high-quality development of the low-altitude economy.

Sub-forum on “artificial intelligence + standardization” action cultivating future industries held

“人工智能+标准化”行动培育未来产业分会召开

By Fang Luofan
文/方洛凡

Standardization serves as a critical foundation for the large-scale and industrialized development of the AI sector.

With the theme that “standards lead the future, AI empowers industries”, the sub-forum on “artificial intelligence + standardization” action cultivating future industries was held to focus on the needs of AI and future industries, and promote the exchange of international standardization concepts. It aimed to facilitate the joint forces of industry, academia, and research institutes, and accelerate the integration of technologies and standards. The sub-forum deepened international cooperation with standardization to address challenges of technological transformation, boost the high-quality industrial development, and foster an advanced ecosystem for future industries.

The sub-forum brought together representatives from domestic and international universities, research institutes, and organizations, including Volgograd State University, Belarusian State Institute for Standardization and Certification (BelGISS), China Electronics Standardization Institute (CESI), and China National Institute of Standardization (CNIS), to discuss the organic integration of AI and standardization.

The Qingdao AI standardization platform was officially launched at the forum. The platform enables the digitalization of the whole process of association standards development and revision. On the one hand, it integrates resources, leads industrial development, and fosters an open and shared ecosystem, serving as a one-stop comprehensive information hub. On the other hand, it offers consulting services related to local, sectoral, and national standards, which supports industry, academia, and research institutes in jointly building a standards system for the AI industry, and promotes its high-quality development.

The development of two association standards was initiated at the forum, which are the *Guidelines for evaluating the application capability of industrial large model scenarios based on artificial intelligence* and *General technical requirements for data quality in intelligent manufacturing*. The standards will provide guidance for the application of industrial large models and data quality management in intelligent manufacturing, helping enterprises advance their technologies and industrial competitiveness.

Rolf Schmidt, China National Distinguished Expert and Distinguished Professor at Tongji University, emphasized in his online address that AI and standardization are not only about how we respond to the most transformative and disruptive technology of our era, but also about reaching the balance among safety and innovation, global cooperation, and economic competition. Recently, ISO/IEC JTC 1/SC 42 has preliminarily developed standards for terminology on artificial intelligence, machine learning, and AI risk management. National standardization bodies and regulatory agencies worldwide are also accelerating related efforts. The EU's Artificial Intelligence Act is widely regarded as the world's first comprehensive regulatory framework for AI systems. Standardization will serve as a compass in this rapidly evolving era, providing direction, building trust, and fostering cross-border collaboration.

Zhang Qun, Deputy Director of the Information Technology Research Center of CESI, elaborated on the practice on artificial intelligence standardization at international, national, and industrial levels, offering valuable perspectives and insights. Gan Keqin, Deputy Director of Sub-Institute of High and New Technology Standardization of CNIS, shared the principles, methodologies, and application cases of integrating large models with standards.

Moreover, international experts shared the Russian Federation's experience in artificial intelligence standardization and discussed the prospects for AI standardization development in Belarus. Domestic experts engaged in exchanges and discussions on topics such as smart television, artificial general intelligence, industrial large models, and how standards safeguard the innovative future of AI industries.

The event not only facilitated the exchange of advanced experiences and ideas, but also symbolized a shared commitment to shaping the future. By providing a platform for dialogue, experts from around the world jointly built a bridge connecting the past, present, and future of standardization and artificial intelligence, advancing cooperation in AI standardization.

Sub-forum on industrial green and low-carbon transformation held

标准化赋能产业绿色低碳转型分会召开

By Jin Jili
文/靳吉丽

With the theme of "standardized approaches empowering industrial green and low-carbon transformation", a sub-forum was held to promote the application of the carbon footprint management system in China, advance the wide implementation of relevant standards, and accelerate the globalization process of green product trade through high-level communication.

Lyu Xuefeng, Director of Qingdao Institute of Bioenergy and Bioprocess Technology (QIBEBT), Chinese Academy of Sciences, emphasized in his address that the product carbon footprint management system is the important support for industrial green transformation. The geographic information system-life cycle assessment (GIS-LCA) technology has been originally proposed and adopted as the core content of the national standard GB/T 24067-2024, *Greenhouse gases—Carbon footprint of products—Requirements and guidelines for quantification*.

Based on the GIS-LCA technology, the world's first space carbon accounting cloud platform has been established, which has served over 2,500 institutions and delivered notable outcomes in its demonstration projects in Zhejiang province, Chongqing city and other regions, according to Xie Kechang, Academician and former Vice President of Chinese Academy of Engineering (CAE).

Deng Zhi, Vice Mayor of Jiaozhou city, a county-level city in Qingdao, shared Jiaozhou's explorations and practices in green and low-carbon development as the core area of China-Shanghai Cooperation Organization (SCO) Local Economic and Trade Cooperation Demonstration Zone. He Kebin, Academician of CAE and President of the Institute for Carbon Neutrality at Tsinghua University, shared his insights into carbon neutrality in terms of methods, data and standards.

A ceremony was held to release achievements related to the GIS-LCA technology. The GIS-LCA international standards conformance attestation was officially awarded by TÜV Rheinlandto promote the global application of the GIS-LCA technology. The MA-GISLCA-DPP International Product Digital Passport Platform was officially launched, which integrates GIS-LCA space carbon accounting capabilities with digital passports to display green attributes of products and sustainable development achievements of enterprises. The Yangtze River Economic Belt · Yellow River Basin Industrial Green & Intelligent Linkage Initiative was officially initiated, which will utilize GIS-LCA technology to facilitate the green and coordinated development of key areas and industries in related provinces and cities. In addition, the international standardization work of World Sustainable Standards Organization (WSSO) was officially started.

During the keynote speech session, eight experts with rich experience from international organizations, government departments, research institutes, universities and enterprises shared their latest research results, successful cases, and insightful views. Their topics focused on sustainable information disclosure, urban low-carbon development, standardization policies, application of the GIS-LCA technology, Tiangong LCA data system building, building of national dual carbon standards system, challenges in technical trade measures, and capacity building for dual control of carbon emissions. At the end, the Yangtze River Economic Belt · Yellow River Basin Ecological Partnership Joint Action Consensus was signed by many organizations including QIBEBT.

A roundtable forum invited experts from government, industry, universities, and research institutes to discuss practical issues such as how the GIS-LCA technology can overcome the barriers of standards, technologies and mechanisms, help enterprises reduce carbon-related barriers in cross-border trade, and establish a unified enterprise carbon footprint certification system, as well as how various regions can use the GIS-LCA technology to design carbon reduction paths and optimize the industrial layout.

Subsequently, two representatives from Shandong Institute of Metrology and Shandong Institute of Standardization shared Shandong's practices in green and low-carbon development based on their work experience.

The event attracted more than 100 experts and scholars to have in-depth exchanges, and propose solutions for empowering green and low-carbon transformation with standardization, contributing wisdom and strength to achieving the dual carbon goals and the global green transformation. CS

Measuring the impact of AI systems

The recent 2025 AI Index Report from Stanford University revealed that skepticism about the ethical conduct of AI companies is growing, and trust in fairness is shrinking. There is also less confidence that personal data will be protected and fewer people believe AI systems are unbiased and free of discrimination.

Trust and transparency are essential for AI to deliver on its promises in a safe and responsible way. Governments are stepping up with new AI-related regulations, and international standards such as ISO/IEC 42001 have been developed to support them, but a lot more needs to be done to reduce potential risks and address societal concerns.

One effective way is for organizations that use or develop AI systems to conduct an AI systems impact assessment. Through comprehensively analyzing the full impact of the system and developing ways to address any negative ones, companies can improve the safety of AI and help cultivate trust.

ISO/IEC 42005 guides organizations through such an impact assessment, providing guidance on evaluating the effects of AI systems on people and society, and how to integrate this into AI risk management. This includes consideration of the intended uses and performance, data quality, risks and benefits and measures to address any harm that could be caused.

It enables AI system developers to design their systems safely and effectively, aligned with values of fairness and transparency and taking a human-centered approach. It also supports broader governance and risk management practices, reinforcing trust and societal acceptance of AI systems.

ISO/IEC 42005 is an important component of a suite of international standards for AI that include governance (ISO/IEC 38507), risk management (ISO/IEC 23894) and conformity assessment (ISO/IEC 42001) activities, which together can cultivate trust and accountability wherever AI is present.

(Source: IEC)

CEN and CENELEC respond to the Gender Equality Strategy 2026-2030

CEN and CENELEC responded to the public consultation on the Gender Equality Strategy 2026-2030, outlining the work already being carried out to achieve these goals and how the Gender Equality Strategy can further support progress.

As standards have a direct impact on the safety, health, and well-being of individuals, gender-responsive standards are needed to reflect the needs, experiences, and characteristics of all users. CEN and CENELEC are actively working on the integration of gender perspectives throughout the standardization process.

In this new position paper, we highlight the work already underway to support gender equality goals and also outline ways the Gender Equality Strategy can contribute to this progress. CEN and CENELEC identified three key recommendations:

1. Support gender-responsive standardization across EU policy areas: Standardization should be recognized as a key lever for implementing gender equality objectives, especially in areas such as health, safety, digitalization, and industrial policy.

2. Promote the collection and use of gender-disaggregated data: Anthropometric and other relevant datasets that are disaggregated by sex, gender, age, and other relevant factors are critical for developing inclusive and safe products.

3. Encourage inclusive stakeholder engagement in standardization: It is essential to have broader systematic inclusion of diverse stakeholders in consultations and standard development processes to better reflect the lived experiences and needs of a wider population.

By embedding gender perspectives into standards, we can create safer, more inclusive solutions for all. CEN and CENELEC remain committed to working with policymakers, industry, and stakeholders to ensure the Gender Equality Strategy 2026–2030 drives meaningful and lasting change.

(Source: CEN/CENELEC)

Cyber Resilience Act and Horizontal Standards Workshop

September 23, Madrid, Spain & online

Organized by UNE, the Cyber Resilience Act and Horizontal Standards Workshop is a unique opportunity to gain insights into the key elements of the Cyber Resilience Act (CRA) and to participate in discussions with other experts to influence the future of cybersecurity and resilience in Europe through the horizontal standards that are developed to support the CRA.

The workshop will give an overview of the CRA, highlighting the key role of standardization and the way forward. The workshop will provide a comprehensive understanding of how standards can effectively mitigate risks, enhance cybersecurity posture, and ensure that products and services are aligned with the legal expectations set forth by the CRA.

For more information on the event website: **https://www.cencenelec.eu/news-events/events/2025/2025-09-23-workshop-cyber-resilience-act-and-horizontal-standards/**

Space Sustainability Forum

October 7-8, Geneva, Switzerland

Following the success of the inaugural Space Sustainability Forum in September 2024, this two-day event will bring together global leaders and experts to address the most pressing challenges in space sustainability and explore innovative solutions for the future of space-based systems and exploration.

Key discussions will focus on managing satellite constellations, advancing exploration from Low Earth Orbit to Lunar, and achieving an effective Space and Spectrum Situational Awareness (S3A) as a critical element for mission success, security, and sustainability of space radiocommunications systems.

With rapid advancements in the space sector, this Forum is a must-attend event for policymakers, industry leaders, regulators, and space experts committed to the sustainable and responsible use of space. For more information on the event website: **https://www.itu.int/ssf/**

World Standards Day

October 14

International standards are a cornerstone of global collaboration, ensuring interoperability, fostering trust, and accelerating multi-stakeholder cooperation to drive sustainable development.

This year, the World Standards Day will explore how standards provide a shared framework that enables meaningful collaboration across industries, governments, and organizations to achieve common objectives.

Themed “a shared vision for a better world”, WSD 2025 focuses on SDG 17—partnerships for the goals. The campaign will highlight concrete examples that demonstrate the power of partnership and the impact of working together through standards.

For more information on the event website: **https://www.worldstandardsday.org/home.html**

IEEE Global Public Health Forum

November 6, London, the United Kingdom

Climate change is reshaping global health, deepening inequities, and challenging the resilience of health systems. This inaugural forum brings together health executives, clinicians, innovators, and researchers to explore how AI can support climate-sensitive, inclusive, and adaptive healthcare systems. Using the integration of climate and health data as a central case study, we will examine how technology can reshape models of care, strengthen public health intelligence, and prepare the healthcare workforce.

The Forum seeks to spotlight exemplary UK-led initiatives with the potential to inform global strategies. It will also contribute to the ongoing rethinking of governance models and the development of future-fit leadership frameworks essential for stewarding AI-enabled health systems.

For more information on the event website: **https://web.cvent.com/event/e1eb1c84-86a9-4935-a0f4-5b839cdba19f/summary**

公益广告

SHARED VISION FOR A BETTER WORLD

STANDARDS FOR SDGs

WORLD STANDARDS DAY
14 OCTOBER

IEC ISO ITU

GB 12955-2024, *Fire-resistant doorsets*

a new mandatory national standard of China, was released by SAMR and SAC on October 28, 2024, which will be implemented on May 1, 2026.

The standard will replace the 2008 version. It specifies the classification, code, size, model, technical requirements, testing methods, inspection rules, sign, packaging, transportation, storage and other aspects, which is applicable to the design, manufacturing and quality test of fire resistant doors for industrial and civil construction.

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