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Spotlight

First China Standardization Conference

首届中国标准化大会在南京召开

Exclusive Interview

ANSI President and CEO S. Joe Bhatia:
How ANSI meets challenges and leverages opportunities
in an evolving standards landscape

美国国家标准机构主席兼首席执行官乔·巴提亚:
ANSI如何在不断发展的标准格局中应对挑战并抓住机遇

Special Report

Insights on standards in the Two Sessions
全国两会“标准”声音



CHINA STANDARDIZATION PRESS



中国标准化研究院60周年

CHINA NATIONAL INSTITUTE OF STANDARDIZATION

60th ANNIVERSARY

China National Institute of Standardization (CNIS), founded in 1963, is affiliated to the State Administration for Market Regulation (SAMR). It is a national research institute for scientific research and services in basic and general, cutting-edge and comprehensive standardization areas.

By far, CNIS has built a standardization scientific research base covering more than 40 research fields in 14 major research sectors, 3 national key laboratories for market regulation as well as 7 professional laboratories, effectively supporting the high-quality economic and social development.



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Voices of standards heard!



During this year's Two Sessions, which are of great importance in the country's political calendar, representatives from all walks of life gathered in Beijing in March to discuss important topics of common concerns. Their insights and voices of the vital role of standards in supporting high-quality development are showcased in the SPECIAL REPORT column.

State Administration for Market Regulation (SAMR) will take effective measures to safeguard people's food safety, by meeting the "four strictest requirements" of food safety including the most rigorous standards proposed by Xi Jinping, General Secretary of the Communist Party of China (CPC) Central Committee, according to Luo Wen, Minister of SAMR.

In the EXCLUSIVE INTERVIEW column, with a number of overarching trends playing out in today's standardization landscape, Mr. S. Joe Bhatia, ANSI President and CEO, introduced the challenges and opportunities of ANSI in the working priorities such as the Evolving Standards Landscape initiative, international standardization, standards education, and participation of consumers.

"In standards, all voices add value and we strive to bring everyone to the table. And with so much growth and changes in standardization, building a robust pipeline of skilled and effective standards participants at every level is imperative. ANSI has been keenly focusing on building that capacity, and attracting and upskilling the next generation of standards professionals," Bhatia stressed.

The first China Standardization Conference was held in late March in Nanjing, capital of East China's Jiangsu province, which highlighted the close relationship between standards and a unified market. It is expected to become a platform for high-end standardization think tank, cooperation and exchange of domestic and international standardization work, and standardization knowledge promotion.

Another national focus recently is the unveiling of China Standards Innovation and Contribution Award 2022. The top national award in the standardization field is presented to organizations and individuals with outstanding contribution to the standardization work at industrial, national and international levels. You can find the list of winners in the FEATURES column.

With both national and international efforts, the voices of standards are and will be heard across the globe.



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SAC to strengthen the work of national standardization technical committees

Standardization Administration of China (SAC) recently released the *Guidelines on Strengthening the Work of National Standardization Technical Committees* to thoroughly implement the *National Standardization Development Outline*, accelerate the establishment of the standards system for high-quality development and further strengthen the construction of national standardization technical committees in the new era.

The document puts forward 15 targeted and operable measures in the five aspects including optimizing the technical committee system, strengthening the responsibilities of technical committees, enhancing the talents building, reinforcing the supporting role of secretariats, as well as regulating the management of technical committees.

It emphasizes that all relevant departments should continue to improve the work mechanism and supporting measures, create a favorable environment for the joint construction, governance and support of government, enterprises and social forces, and ensure the sound development of technical committees, providing vigorous technical support for standardization work.



SAMR plans to develop and revise elderly-oriented national standards

State Administration for Market Regulation (SAMR) recently released the special plan on developing and revising a batch of elderly-oriented national standards to assist in implementing the national coping strategy for aging population.

The plan includes 39 national standards basically covering the common life scenarios of the seniors, which fully considers the elderly-oriented requirements and services on facilities, articles and appliances.

In terms of household environment and products for the elderly, the development of general standards on elderly-oriented design of household products is put in the first place, and the elderly-oriented technical requirements in the standards on consumer products for the elderly will be strengthened.

In terms of transportation, the basic and general standards on public information guidance system and graphic symbols, and the standards on elderly-oriented allocation of facilities and equipment in the areas of urban rail transit, bus and electric vehicle, and civil aviation will be developed to continuously improve the transportation services for the seniors.

In terms of elderly care, the standards on friendly environment setting and evaluation will be developed for providing the community-oriented, home-based and institution-based senior care, especially taking into account the special requirements of seniors with cognitive disorder, to ensure their safety, comfort and dignity.

In terms of travel and leisure activities, the elderly-oriented requirements for hotels, scenic spots, and centers for leisure and health purposes will be systematically raised, and the requirements for the quality of travel agencies' tourism products for the seniors will be provided to further regulate the order of the senior tourist market and safeguard the legal rights and interests of the seniors.

In terms of culture, sports and fitness, the standards on the quality of books with large fonts will be developed to meet the reading demands of people with low eyesight. The elderly-oriented requirements for venues and equipment for fitness and sports as well as sports and health monitoring equipment will be developed to help the seniors to hold fitness and rehabilitation activities in a more reasonable, efficient and safer manner.

Standard on Chinese language for vocational education published



On the 14th UN Chinese Language Day, the launching ceremony of 2023 International Chinese Language Day was held at the Center for Language Education and Cooperation of Ministry of Education on April 20.

During the ceremony, the “China-Gulf Cooperation Council Bilingual Library for Cultural and Educational Exchanges and Mutual Learning among Civilizations” project was launched, and the *Chinese Proficiency Standards for Vocational Education* was published.

Developed by the Center for Language Education and Cooperation of Ministry of Education, the standard includes four main parts, including occupation scope, terms and definitions, grade and competence description, vocational communication strategies and cultural awareness. It delineates the application ability and level of Chinese for second language learners in specific occupational areas and tasks, and focuses on skilled and service fields.

The standard supports the simultaneous cultivation of language ability and vocational skills, and realizes the effective connection between language standards and vocational skill standards. It helps vocational Chinese learners to establish practical and well-directed learning targets. Also, it provides normative reference for teachers in the whole process of vocational education, which facilitates systematical vocational Chinese teaching.

China will vigorously support Chinese language education internationally, improve the school-running system, strengthen the construction of basic resources, and further promote language and cultural exchanges and cooperation between China and other countries, said Wu Yan, Vice Minister of Education.

With the deepening exchanges, Chinese language is becoming more popular in Indonesia, and many Indonesian schools have introduced Chinese courses. Djauhari Oratmangun, Indonesian Ambassador to China, stressed that the Chinese language has increasingly served as a bond connecting China with the world, especially Indonesia.

Open Compute Technology Committee established in Beijing



The development and successful experience of open compute in the internet industry have greatly stimulated the innovation of hardware infrastructure and deepened the recognition of the value of open compute. It has become the main innovation impetus of data centers, which facilitates the sustainable development of data center infrastructure through innovative global collaboration.

Therefore, the inaugurating ceremony and first summit of the Open Compute Technology Committee (OCTC) were held on April 24 in Beijing, which connected end users, system manufacturers, core component suppliers and scientific research institutions.

The event was participated by representatives from founding members including China Electronics Standardization Association (CESA), Baidu, China Mobile, Industrial and Commercial Bank of China, State Grid Corporation of China, and Inspur Electronic Information Industry Co., Ltd. and over 40 members covering upstream and downstream industrial chain.

Currently, OCTC has initiated the development of several standards for liquid cooling, rack-scale server, AI computing and relevant technologies. Its technical specifications under development are expected to fill the gap of open compute in standards for liquid plate cooler applied in data centers, which will promote the standardization and industrialization development in this field.

To promote open compute, Chen Yanling, Deputy Secretary-General of OCTC, believes that the most important is to develop new standards and establish new industrial types, in order to enable better accessibility, stronger ability of technological innovation and better product support.

OCTC will carry out its work in four aspects, namely innovation ability promotion, open compute standards system development, improvement of open compute industrial chain, and sound development of data centers. Developing open compute standards system is key to promote the efficient coordination, common prosperity and universal technological benefits of the open compute industry, said Duo Jing, Executive Secretary-General of CESA.

HIGHLIGHTS |

Chinese delegation attends the first plenary meeting of IEC/SyC SET

The first plenary meeting of IEC/SyC SET on sustainable electrified transportation was held during March 22 and 24 in Berlin, Germany, which was attended by more than 20 representatives from countries such as China, Germany, Italy and Sweden, as well as the IEC secretariat and liaison organizations in person or in virtual form.

IEC/SyC SET was established by IEC/SMB in June 2022 to discuss and address the standardization issues related to sustainable electrified transportation, and study the standardization cooperation with transportation, vehicle, energy, telecommunication and other industries, providing systematic standardization collaboration and guidance for sustainable electrified transportation system and its basic facilities.

During the meeting, IEC/SyC SET determined its working scope and targets, carried out interactive discussion, set up the Chair's Advisory Group and two Ad-Hoc Groups on sustainability criteria in electrified transportation and systems approach in smart charging for sustainable electrified transportation respectively, and discussed the key tasks such as the relevance of the conceptual model for sustainable electrified transportation.

ITU approves international standard on digital supply chain

The international standard ITU-T Y. 4910, *Maturity model of digital supply chain for smart sustainable cities*, was officially approved by the International Telecommunication Union (ITU) on March 28.

China has shared experience with international standardizers in digital transformation practices through its efforts on the association standard T/AIITRE 11005–2022, *Digital supply chain–Maturity model*, and relevant national standards under development, which are directed by the Information Technology Development Department of Ministry of Industry and Information Technology.

To assess the maturity of digital supply chains, the standard expounds the four dimensions, including system design (D1), platform empowerment (D2), business operation (D3) and efficiency & benefits (D4), and a maturity assessment model consisting of five levels. It will help government at all levels, industries and organizations to pin down the level of supply chain digitalization, identify the weak links, build a digital supply chain system through the levels, and serve the high-quality development of the real economy.

ISO publishes standard on classification of tea types

Tea is an aromatic beverage loved by people around the world, which has evolved into various types with different production processes.

ISO 20715:2023, *Tea—Classification of tea types*, was officially published in March. It delineates six types of tea including black tea, green tea, yellow tea, white tea, oolong tea and dark tea, and defines the terms of key processing procedures. The classification is based on tea processing technology and quality characteristics.

As its birthplace, China is a major producer and consumer of tea, and leads the cultivation, production and processing of tea globally. To regulate relevant standardization work, SAC/TC 339 on tea, set up in 2008, has developed GB/T 30766-2014, *Classification of tea*, and GB/T 35825-2018, *The method of tea classification by chemical analysis*, and shared them with international experts from India, the U.K., etc. for reference. Professor Wan Xiaochun, Director of State Key Laboratory of Tea Plant Biology and Resource Utilization, Anhui Agricultural University, has contributed leading effort to the development of the standard.

ISO 20715:2023 will regulate and facilitate the fair trade of tea and consumer rights globally, and bolster the export of characteristic tea products.

China holds the secretariat of ISO/TC 341 on heat supply network

The inauguration of the secretariat of ISO/TC 341, *Heat supply network*, was held in Beijing on April 11. China Urban Construction Design & Research Institute, a subordinate enterprise of China Construction Technology Consulting Co., Ltd. (CCTC), holds the secretariat, which is China's first ISO secretariat for standardization in the field of housing and urban-rural development.

The secretariat is important to the international standardization work on heat supply network, said Li Yubing, Deputy Director-General of Standards Innovative Management Department, SAMR. She suggested that experts engaging in the secretariat must be carefully selected to enhance the capability of participating in international standardization. Also, global resources should be pooled to develop the business plan for the next 3 years and promote the relationship with interconnected standards.

Sun Ying, President of CCTC, stressed that CCTC will support the secretariat for cooperation and mutual benefits. More efforts will be put into talent cultivation to boost the sustainable development of international standardization.





How **ANSI** meets challenges and leverages opportunities in an evolving standards landscape

Interview with Mr. S. Joe Bhatia, ANSI President and CEO

ANSI如何在不断发展的标准格局中应对挑战并抓住机遇

访美国国家标准机构主席兼首席执行官 乔·巴提亚

Based on your years of work experience as ANSI President and CEO, what are the main developmental trends of the standardization field in the coming years?

It is a pleasure to speak with you and reach your audience in China and beyond.

As I see it, a number of overarching trends are playing out in today's standardization landscape. First, the rate of change in emerging technology areas is moving at an ever-increasing speed. To keep pace, the number of standards activities and venues has grown dramatically. Critical and emerging technologies like artificial intelligence (AI) and the Internet of Things (IoT) have spurred a rise in standards activities among consensus bodies, treaty organizations, consortia, fora, and the open standards space.

Globally, more government and private sector players are actively engaging in standards processes, which brings us to the second trend. There is a big push for globally-accepted, technically-sound standards that support critical and emerging technologies and global trade. The open, rule-based standards system—following the principles of the World Trade Organization (WTO) Technical Barriers to Trade (TBT) Agreement—fosters an ecosystem of growth, innovation, and opportunity. And that is why the U.S. prioritizes active engagement and leadership in international standardization venues like ISO and IEC, as well as other organizations that follow the WTO principles. This helps assure the integrity of the standards development process—a level playing field, open participation, and consensus—which enables globally relevant standards.

Third, given the increasing volume of standards activities, there is a strong need to attract and engage new standards participants. Many standards professionals are nearing retirement age, and we need to increase the capacity of the next generation to step in, take an interest in standards development, and participate actively and effectively. ANSI is working to attract underrepresented groups—including consumers—and bolster their capacity to contribute to the conversation.

Finally, the fourth big trend relates to the notable increase in the use of advanced technologies to develop and augment standards. The standardization community is on an accelerated track towards greater digitalization and machine learning technologies. Beyond the work being done within ISO and IEC, ANSI-accredited standards developing organizations are working to develop machine-readable—or “SMART”—standards and using new solutions to get there. Whether it’s augmented reality, AI, machine learning, or any other emerging technology being used, the digital transformation is helping to grow participation in standards development, increase efficiencies, speed time to market, and deliver innovative products to the end user.

To respond to the evolving standards landscape, what is the work plan and priorities of ANSI this year?

Given these high-level trends, ANSI’s Board of Directors launched the Evolving Standards Landscape initiative last year to address how ANSI and the broader U.S. standardization community can meet challenges and leverage associated opportunities. Four focus groups are examining areas related to education and training, messaging, organizing and convening, and the politicization of standards processes. I am very pleased that ANSI Board members have embraced this initiative, with 85% of members participating actively.

The current work plan is to engage the Board members, and the broader U.S. standardization community as well, in a close examination of the various issues. For instance, ANSI gathered broader input from our members at our Evolving Standards Landscape Summit during the World Standards Week in October 2022. And as the initiative progresses, we will continue to reach out to ANSI’s members, constituents, and other standardization stakeholders for their continued input. At this point, we can’t predict what the outcomes will be. But we will review all input and proposed action plans, and advance those that have broad consensus and impact.

Can you shed more light on the issues being discussed by the focus group on the politicization of standards processes?

At the beginning of the ANSI Board discussions on this topic, the members recognized that governments around the world are seeing the increasing importance of standards, especially in light of digitalization and other trends discussed above. In the U.S., we encourage government participation in standards processes, and in fact both the *U.S. Standards Strategy* and U.S. law and policy prioritize active government participation in and use of standards. In some cases, though, we have observed that governments may introduce political objectives into the standards process without fully understanding or considering the impact.

This phenomenon is not limited to only one country or government stakeholder, and ANSI's discussions so far have focused on the need to raise awareness among policymakers and others about the risks of politicization, as well as the existing standards processes and the robust safeguards that most organizations have in place to prevent undue influence. The specific recommendations are still in development, in coordination with other focus groups on the Evolving Standards Landscape initiative.

The U.S. is one of the most active members of ISO and IEC, with the participation of ANSI and its U.S. National Committee. What achievements have been made by ANSI in international standardization work? What experience can be shared?

In all of our activities, ANSI is committed to partnerships and standardization that meet global needs and support a global trading system. The *U.S. Standards Strategy* embraces the globally accepted WTO TBT standardization principles and urges U.S. public and private sector entities to work with their counterparts in other countries to assure that standardization is not used to develop barriers to global trade. Openness, balance, consensus, due process, and transparency—these are the principles that lead to high-quality, technically-sound standards that create value all around the world.

Through our leadership roles within ISO and IEC, including at the governance and policy levels, ANSI supports the open, rule-based system. And as newer players enter the field, the U.S. is proud to help support their capacity to participate meaningfully.

One recent example of the support that the U.S. provides to less experienced members of the international standardization community is ANSI's twinning arrangement with Association Sénégalaise de Normalisation—the standards body of Senegal—as co-secretaries of ISO Project Committee 305 on sustainable non-sewered sanitation systems. Twinning arrangements such as these provide a means to enhance developing countries' participation, effectiveness, and leadership in ISO technical work.

As with ISO, supporting the IEC system through participation at all levels is also key to our international collaboration strategy and allows us the opportunity to work directly with our colleagues around the globe. The U.S. recently expanded its participation through the IEC Business Advisory Committee, and assumed leadership roles within the IEC Governance Review and Audit Committee, and the IEC Diversity Advisory Committee. The U.S. is also pleased to work with China as



Mr. S. Joe Bhatia attends the SAC-ANSI Roundtable on Enterprise Standards held in Hangzhou, capital of Zhejiang province, China in July 2018.

co-convenors on the new SMB standardization evaluation group, SEG 15, *Metaverse*. This important group will explore the needs for standardization and opportunities in the area of metaverse and related technologies, including development of a common definition of metaverse, recommendation of an initial roadmap for standardization activities, and identification of appropriate organization of the work within the IEC.

Additionally, the U.S. further supported international collaboration through our hosting of the 2022 IEC General Meeting. The U.S.-hosted event in San Francisco welcomed more than 1,500 participants from the international IEC community in the spirit of global cooperation.

Our role as a leader and contributor to international forums wouldn't be successful without positive, cooperative relationships with our counterparts around the globe. And that is why ANSI continues to nurture and build on these relationships through collaboration, information sharing, and bilateral meetings with partners such as the Standardization Administration of China. We welcome further opportunities for collaboration in support of balanced trade and shared priorities.

ANSI has always attached great importance to standards education and made great efforts to engage the next generation of the standardization community, such as holding education and training activities and providing standards educational

resources. Why is standards education so important? What advances have been made by ANSI in this aspect, and what experience can be shared with other countries?

In standards, all voices add value and we strive to bring everyone to the table. And with so much growth and changes in standardization, building a robust pipeline of skilled and effective standards participants at every level is imperative. ANSI has been keenly focusing on building that capacity, and attracting and upskilling the next generation of standards professionals. Just last year, ANSI brought together our organizational and government members to examine this very important issue and develop strategies for new and better ways of engaging new participants.

We've been expanding access to our education and training resources, and emphasizing outreach to university faculty, students, and graduates to grow awareness and competencies in standardization. For example, our University Outreach Program makes certain international standards freely available to faculty and students in institutions of higher learning throughout the U.S. But more direct knowledge of the standards development process is also key. So last year, with HP Inc's sponsorship, ANSI hosted a virtual standards simulation workshop for new and emerging professionals, offering a hands-on training experience in standardization. We're looking to host more of these in the near future.

Additionally, ANSI's U.S. National Committee (USNC) to the IEC launched the Young and Emerging Professionals Program last year, providing a venue for getting new people involved in electrotechnology standardization. The USNC also kicked off the new Professional Mentoring Program, which matches emerging standards and conformity assessment professionals with more experienced professionals to promote retention, development, and the overall success of new participants.

Beyond the next generation, ANSI has also been updating and expanding our training courses for the entire community, including domestic and international standardization participants at all levels.

Finally, as standardization moves toward greater digitalization, ANSI has been working to enable faster and more efficient standardization and educating U.S. standards developing organizations on these technologies. We recently convened a series of meetings for our members and standards developing organizations to showcase and share insights on SMART standards and digital transformation efforts. We're seeing greater use of



Mr. S. Joe Bhatia delivers a speech at the International Symposium on Standardization Strategies held in Beijing, capital of China in November 2018.

advanced technologies in standards, like augmented reality applications, which add contextual digital information to a physical space; and AI applications, which enhance a user's understanding through contextual response to verbal questions. These technologies can also help to bring young people into the standardization community, both by attracting interest, and by making it easier for them to understand the content, application, and significance of standards.

“To improve the responsiveness of the standards system to the interests of consumers” is one of the requirements of the United States Standards Strategy (USSS) 2020. To support the implementation of the USSS, in May 2022, ANSI established the Consumer Participation Fund to encourage and foster participation of consumers in standards development activities. The 12-month pilot program is supported by five founding sponsors from the ANSI membership community—ASTM International, the International Association of Plumbing and Mechanical Officials (IAPMO), NSF International, UL Standards & Engagement (ULSE), and the Toy Association. Please introduce the pilot program and its establishment process. How does the program go now and will it become a long-term program in the future?

Consumer engagement in the voluntary consensus standards system is vital—not only for providing insights that can improve standards outcomes, but also to help assure the inclusiveness and integrity of the development process. However, through a series of ANSI-hosted roundtable sessions involving both consumer representatives and standards developing organizations, we heard from all corners of our community that attracting and engaging consumers is an uphill climb, with the steepest challenge often being a lack of financial resources to support participation at meetings.

Greater involvement in standards setting from individual consumers is critical to improving the safety of products that we all rely on every day. That is why ANSI and five founding sponsors launched the Consumer Participation Fund. With the goal of reducing financial barriers to participation, the fund reimburses eligible travel expenses and participation fees of consumer representatives involved in the development of a new or revised American National Standard.

To promote the fund's availability, we have been working with a range of consumer organizations, educating them about the important role consumers play in the voluntary standards process. Because of COVID-19, however, there haven't been many instances where consumers have requested travel funds, as they preferred to participate virtually. Now that COVID-19 is moving to the endemic phase and people are beginning to travel more, it is possible that we may extend the pilot period. Once the pilot ends, ANSI and an advisory group will assess the impact of the program and determine what, if any, changes need to be made to enhance the program—for example, if the eligible activities for reimbursement will be expanded. The initial focus during the pilot has been on health and safety standards.

Of course, a crucial aspect is ensuring the long-term sustainability of the fund. We will be reaching out broadly to both ANSI members and other potentially interested stakeholders to seek their feedback as well as additional commitments.

In the past few years, the COVID-19 pandemic has dramatically changed the way people work and live. How did ANSI adapt to the changes? What was the biggest challenge faced by ANSI in implementing the work plan? Any benefits gained from the changes that seemed negative and disruptive?

Without a doubt, the pandemic accelerated the digital transformation that was already underway in processes and systems across all sectors. ANSI and the U.S. standardization community are no exception. We've learned a lot along the way—and we continue to learn as we go.

Early in the pandemic, ANSI rapidly pivoted to new ways of doing things—virtually conducting operations, trainings, meetings, and more. Beyond our own business operations, we also sought to create solutions for the broader community. We quickly launched a portal with free access to international standards to help speed COVID-19 response efforts, including standards on medical equipment and devices; protective clothing used in health care settings; and business continuity management, security, and resilience. We also developed a webpage that became a hub of information for the U.S. standardization community—ansi.org/covid-19—with links to our members' activities related to COVID-19, as well as relevant international standardization activities from ISO and IEC. And our “**Navigating the New Normal**” webpage offers pandemic-related resources on hybrid and virtual meetings, workplace health and safety, business recovery and growth, and more.

In terms of ANSI's own operations, because we had invested in our IT infrastructure, transitioning the business operations to virtual was pretty seamless: all staff had the equipment needed to carry on their responsibilities from home, and infrastructure was already in place for virtual meetings.

That's not to say there haven't been challenges. The biggest challenge may have been knowing when we could safely bring staff and members back into the office and in meetings. But once again, we have been grateful for how adaptable our staff, members, constituents, and partners have been. And now, people are networking and interacting again, which is so critical to business relationships.

In terms of standards meetings, the virtual environment has brought both challenges and opportunities. On the plus side, we have seen that virtual standards development efforts are engaging greater numbers of participants, including consumers. After all, virtual participation is much less expensive, allowing more stakeholders to become involved. But on the flip side, we have been hearing concerns from industry about the loss of face-to-face interaction in international meetings. The virtual environment makes relationship- and consensus-building more difficult, and both are essential ingredients of standardization work. We're also hearing from both U.S. and international participants about the challenges of international meetings taking place at all hours of the day and night.

It's likely that a virtual or hybrid model will continue to play a significant role in international standards development. Especially when it comes to international meetings, the standardization community needs to work together to find the right balance between in-person and virtual participation—leveraging the benefits of both, while minimizing any challenges.



Dr. Tian Shihong, SAC Administrator (L5 in the front row) and Mr. S. Joe Bhatia (L6 in the front row) at the SAC-ANSI Roundtable on Enterprise Standards

ANSI has signed the cooperative Memoranda of Understanding (MoUs) with peer organizations in China, such as Standardization Administration of China (SAC) in 2017, and Certification and Accreditation Administration of China (CNCA) in 2021. How will ANSI enhance cooperation with China this year? What achievements do you expect to be made in the cooperation?

Despite continued limitations on in-person meetings due to the COVID-19 pandemic, ANSI's communication and collaboration with Chinese stakeholders remained strong and robust over the past few years. With the renewed MoUs with SAC, CNCA, and the China Automotive Technology and Research Center (CATARC), ANSI has been in communication with these key organizations, among others, to exchange insights on the latest strategic developments and priorities. This year, I am pleased to continue to serve as a Foreign Adviser of the China Standardization Expert Committee (CSEC) for a third term, following the kind invitation from SAC. I appreciate this opportunity to provide input to support China's standardization reform under the guidance of the *National Standardization Development Outline*, as well as to foster further bilateral cooperation between SAC and ANSI. Finally, this past February, I was pleased to meet with Dr. Tian Shihong and the SAC delegation in person at the ISO Council meeting in Geneva, for the first time since 2019! Now that travel restrictions are loosening up, we hope to enjoy more in-person engagements.

We look forward to maintaining a constructive and mutually beneficial relationship with our Chinese counterparts, as we continue to collectively contribute to transparent, impartial, and inclusive international standards development.

Thank you again for the opportunity to reach your audience and speak of all these very important issues. 

First China Standardization

首届中国标准化大会在南京召开



Conference convened in Nanjing

The first China Standardization Conference was held on March 30-31 at the IEC International Standards Promotion Center (Nanjing) in Nanjing, capital of East China's Jiangsu province, which was jointly hosted by China Association for Standardization, People's Government of Nanjing city and Jiangsu Administration for Market Regulation.

The conference was attended by Tian Shihong, Vice Minister of State Administration for Market Regulation (SAMR) and Administrator of Standardization Administration of China (SAC), Hu Guangjie, Vice Governor of Jiangsu province, and Wang Liping, Chair of Nanjing Committee of Chinese People's Political Consultative Conference (CPPCC).

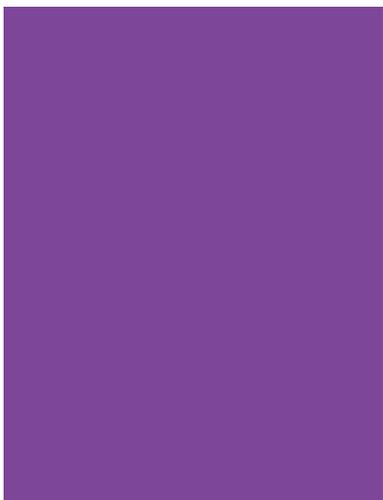
It serves as an effective measure to thoroughly learn the important instructions of Chinese President Xi Jinping on standardization, follow the guiding principles of the 20th CPC National Congress, and implement the *National Standardization Development Outline*. The conference is expected to become a platform for high-end standardization think tank, cooperation and exchange of domestic and international standardization work, and standardization knowledge promotion.

With "standards and a unified market" as the theme, the conference showcased the close relationship between standards and a unified market, further facilitating high-quality development. All standardizers are encouraged to improve the standards system to support the development of market regulations, exert the leading role of standards in stimulating the vitality of market entities, strengthen the coordination of standards to smooth the circulation of market elements, and expand the institutional opening up of standards to facilitate the interconnectivity of national and international markets.

The conference consisted of one main session, five parallel sessions and seven technical activities, where officers, savants and enterprise representatives shared their views on standardization in the fields such as low carbon, education, digitalization and energy.

Shu Yinbiao, Immediate Past President of IEC, Zhang Xiaogang, former President of ISO, Zhao Xiangeng and Xue Yusheng, Academicians of Chinese Academy of Engineering, Zhang Gang, Member of National Manufacturing Power Construction Strategy Advisory Committee, and Dong Mingzhu, Chair of the Board of Gree Electric Appliances Inc. of Zhuhai, attended and addressed the event. And Sergio Mujica, ISO Secretary-General, and Elena Santiago Cid, Director General of CEN and CENELEC, gave their addresses via video.

With the first Chinese branch of IEC located there, Nanjing has provided strong support for international cooperation on standards, and promoted the common benefits of international standardization.



Highlights of keynote speeches at the conference



Thoughts on the standardization of building a unified carbon market

Zhao Xiangeng

Academician of the Chinese Academy of Engineering

The *Opinions on Accelerating the Construction of the Unified National Market* issued by the CPC Central Committee and the State Council in April 2022 puts forward building the unified national market, especially in the area of carbon emission rights trading.

In July 2021, the national carbon trading system completed the first transaction. Carbon trade is now limited to the power industry. As of the end of 2021, 179 million tons of carbon emissions had been transacted with the volume of 7.661 billion yuan in 114 transaction days.

Building a unified market means that unified systems and rules and relevant markets should be developed in a coordinated way. It also indicates that the national carbon market should expand with more diversified trading bodies, trading varieties and methods.

Then, how can standardization promote the construction of the unified national market?

First, standards provide fundamental rules for the carbon market operation. Carbon trade standards offer solutions for the measurement, calculation, division and management of carbon emissions. So far, 16 standards for carbon emission monitoring, measurement and examination have been published. More than 30 relevant standards are being developed or revised, covering greenhouse gas measurement in industries and enterprises, measurement of project carbon emission reduction, enterprise's carbon management, and product carbon footprint. Moreover, 19 national standards for green product evaluation and green finance have been published. These standards provide strong support for carbon trade & supervision and green finance.

Second, standards restrain the behaviors of bodies in the carbon market. Mandatory energy conservation standards provide technical reference for strictly controlling the expansion of high energy consumption projects, phasing out the outdated production capacity, and accelerating the dealing of excess capacity. Now, there are 112 mandatory standards for energy consumption limit and 75 mandatory energy efficiency standards, effectively supporting the efforts on energy conservation, carbon emission reduction and pollution reduction.

Last but not least, standards guarantee the domestic and global economic circulation of the carbon market. ISO signed the London Declaration in 2021, committing to work with its members to support the achievement of the Paris Agreement, the United Nations Sustainable Development Goals and the United Nations Call for Action on Adaptation and Resilience through international standards. To this end, China is willing to contribute to the development of relevant international standards.



Standards internationalization advances the institutional opening up

Zhang Xiaogang
former ISO President

The report to the 20th CPC National Congress first put forward the institutional opening up of standards, which indicates that China's opening up is changing from elements to systems.

Standard is a technical and institutional tool jointly developed by all stakeholders. Although there are discussion, dispute and compromise in the process, a standard becomes the rules that all parties comply with after it is developed. Standards will play a bigger role when they go international, and that is why we choose to open the standards system as one of the effective approaches.

I believe that the institutional opening up will further promote the standardization reform in China, contributing more China's wisdom and solutions to the world.

In my opinion, the institutional opening up of standards covers three aspects. **First, the mutual recognition of Chinese standards and the international standards of IEC, ISO and ITU** aims to lay a solid foundation for the global trade facilitation and liberalization. In fact, "one standard, one test, accepted everywhere" is also the consensus reached by IEC, ISO and ITU many years ago, which makes the facilitation and liberalization of global trade possible.

Second, Chinese standards should be upgraded to be in line with or mutually recognized as globally advanced standards. It also indicates that leading Chinese companies improve their key competitiveness through standards in this process.

Third, the internationalization and marketization of Chinese standards. It means that China's advanced standards as well as good modes of government management, social governance and business management can be provided to promote global development.

The institutional opening up of standards is the new direction of the reform and opening up in China, which reflects the new value of standards and the new mission of standardization work. It will become another milestone in the high-quality development of the nation.



Standards play a decisive role in supporting the Single Market

Elena Santiago Cid

Director General of CEN and CENELEC

The theme of the conference is particularly timely and relevant: in 2023, the European Union celebrates the 30 Years of the European Single Market. The Single Market has established itself as one of the EU's greatest achievements.

Standards have shown to be an added value for the Single Market on the following elements:

Standards boost productivity and competitiveness, thus enabling job creation and economic growth. For example, in 2018, a team of researchers discovered that in the Nordic countries, standards had contributed to 39% growth in labor productivity and 28% GDP growth since 1976.

Standards build trust in safe, secure, sustainable and high-quality goods. Safety is a key priority and achievement for European standardization. 60% of the CEN and CENELEC portfolio of standards address safety aspects.

Standards protect the Single Market from the risk of fragmentation. A European standard is the same for all countries in the Single Market. Once a European standard is approved and published, all conflicting national standards must be withdrawn to remove internal technical barriers to trade.

Standards promote innovation. CEN and CENELEC develop standards for new technologies, supporting each stage of the innovation process. For example, we recently started European work on quantum technologies to enable the deployment of this innovative technology.

Standards foster a competitive European industry in international trade. Promoting international standards and contributing to their development is a prime objective for CEN and CENELEC. This is clearly stated in our Strategy 2030. Europe is the world's region that has the strongest ratio of alignment with international standards.

To address today's complex challenges such as climate change, we need a collective effort. Therefore, we are engaged in cooperation with relevant stakeholders worldwide, who are committed to international standardization as a tool to develop trade and welfare.

In this regard, CEN and CENELEC have enjoyed a fruitful relationship with SAC since China's accession to the WTO. We are pleased to have renewed our cooperation with SAC last year through a shared commitment to strengthening the international standardization system represented by ISO and IEC. Furthermore, China has an immense pool of young engineers, who can play an important role in ensuring the sustainability of the international standardization system.

The future is full of opportunities. I look forward to continuing with our joint effort to strengthen the ISO and IEC, always keeping the future generations in our mind.



Standards support high-quality development and enhance market competitiveness

Zhang Gang

Vice Chair of China Standardization Expert Committee

The report to the 20th CPC National Congress pointed out that high-quality development is the top priority of building a modern socialist country in all respects. How to use high standards to boost high-quality development is a big issue to be solved in this period. It is also of great significance to the shift of China's market from large scale to great competitiveness.

First, the supply-side structural reform in the field of standards can boost high-quality development, which is beneficial to building a more vigorous unified national market. *The National Standardization Development Outline* sets the goal of realizing “four transformations” by 2025, the first of which is to change standards supply from the government-dominated mode towards the mode of both government and market playing a big role. National, sectoral and local standards, the principal part of Chinese standards, have played a crucial role in ensuring the fundamental principles and giving technical guidance for a long time. However, in the future, association standards with the market attribute will certainly become the main part of the new-type standards system, and shoulder the responsibility of leading the high-quality development, injecting great power into the market.

Second, the deep integration of standardization and technical innovation can support high-quality development, which helps build a more competitive unified national market. On the one hand, the degree of integration determines the level of standardization development; on the other hand, the integration can provide strong support for industrial upgrading, and boost the efficient gathering and effective flow of all elements of economic growth, converting market resources into productivity and influence.

Third, the better “bringing in and going out” work pattern of Chinese standards helps build a unified national market with a higher level of opening up. The better “bringing in” means that we will adopt more advanced international or foreign standards, vigorously invite foreign experts to participate in standardization activities in China, and encourage international standards organizations to set up offices in China. And we will actively participate in the development of international standards, and use advanced Chinese standards to support the sales of China's products and services overseas.

Fourth, the innovation of the standardization system can help build an efficient, normative and fair unified national market. The innovation should be integrated into the construction of the national systems of industry, technical innovation, regional development, international trade, and global governance.



Promoting regional standardization to serve the unified national market

Shen Haibin

Director General of Jiangsu Administration for Market Regulation

Regional standardization is an important part of establishing the national standards system, which plays a fundamental and leading role in smoothing the circulation of regional economy. In recent years, market regulation departments of Jiangsu, Zhejiang and Anhui provinces and Shanghai city have joined hands to facilitate the integrated development of the Yangtze River Delta (YRD) using regional standardization as a key tool, achieving preliminary results.

First, the integrated cooperation mechanism of the YRD is established. The three provinces and Shanghai city have jointly set up the working group of YRD integrated standardization to discuss cooperation priorities, select the group leader in rotation, and hold meetings on a regular basis to track, supervise and manage important work and projects.

Second, a platform for international collaboration is built. We have built the first regional collaboration platform for international standardization in China, and pooled human resources to set up expert and talent centers, so as to share standardization resources in the YRD. Now, we have carried out the first batch of pilot projects on international standardization collaboration in 21 fields, such as 5G cable, new materials and smart nuclear power.

Third, unified management of standardization is carried out. The unified management mechanism is established to unify the process of soliciting opinions, applying for standards project, project approval, standards development, publication and application. The regional standardization work has been carried out in 24 fields with the release of 12 regional standards on the treatment of water pollution caused by ships, transportation service network, ancient city protection and development and other aspects.

In addition to facilitating regional standardization, Jiangsu province has taken measures to promote standardization based on its own strengths and characteristics. Jiangsu has implemented the “Standardization Plus” projects in ten key areas such as advanced manufacturing, rural rejuvenation and social governance, and actively explored the system of Director of Standards in companies, and the pilot projects of standard patent integration. As of now, Jiangsu has accumulatively held 10 secretariats of TCs or SCs of international standards organizations, and 75 secretariats of national standardization TCs or SCs. It has also led or participated in the development of 110 international standards and 6,461 national standards, and implemented 1,775 standardization pilot projects at the national or provincial levels, laying a solid foundation for the regional standardization in the YRD.



**Standardization system is a complex cyber-physical-social system
-Taking energy market system as an example**

Xue Yusheng

Academician of the Chinese Academy of Engineering

A complex system involving several fields needs the support of standardization and systematism, which are closely related. To ensure the coordination among subsystems in different areas of the complex system, researches must be conducted on the internal management of every link, and the normalization of relevant standards development. The IEC attaches great importance to the coupling of links in different layers, and the functions of different links in the same layer.

The smart grid in the future will integrate the cyber, physical and social elements, which is a very complex system involving many aspects such as economics, game behaviors and policy makers. Its standards system must combine elements in many fields and on a large time scale, so standard itself must be based on top-level design, and consider the safety of the whole system and all links, as well as the interactive function of these links.

In this regard, China has made a breakthrough by contributing to the relevant international standard. Based on the technological achievements and practical experience of the power network stability control team of State Grid Corporation of China, the SC 8C, *Network management in interconnected electric power systems*, at IEC/TC 8, *System aspects of electrical energy supply*, was established. The work scope of the SC 8C covers standardization in the field of network management in interconnected electric power systems, including functions with different time horizons, e.g. design, planing, operation, control and market integration. In March 2023, SC 8C published IEC TS 63384-1:2023, *Power system stability control—Part 1: Guideline for framework design of power system stability control*.



The world loves Chinese products of high standards

Dong Mingzhu

Chair of the Board of Gree Electric Appliances Inc. of Zhuhai

In Gree, some 1,000 employees participate in standards development, and standards are used everywhere, ranging from technical design, processing, manufacturing management to overall management of the company. Why Gree attaches such great importance to standards?

More than a decade ago, I met Mr. Zhang Xiaogang at a meeting. He asked about the condition of Gree at that time, and emphasized the value of standards, “standards can push forward a company to go further, and only standards can make Chinese products internationally recognized.”

Over the past years, Gree has benefited from its powerful market competitiveness brought by standards. Before 2015, as there was no energy label of air conditioner in China, consumers believed that a good air conditioner is the one blows strong wind. In fact, a good air conditioner doesn't directly blows wind to people, and Gree successfully produced such products through technical innovation. In the last decade, adhering to the development concept of “independent innovation”, Gree has created many patents, 39 of which are internationally advanced technologies. It has also actively transformed innovative technologies into standards, and spearheaded and participated in the development of more than 750 domestic and international standards. As a result, air conditioners of Gree have become the world-class products, winning the trust of consumers and enjoying great popularity at home and abroad.

The technical innovation of a company stems from its understanding of standards. In this process, I sincerely realized the importance of standards to high-quality development. Every company should have a right and clear understanding of standards, and invest human, material and financial resources in standardization work. Without high standards, a company cannot serve the world with good products. 

编译 / 曹欣欣 方洛凡

(Edited and translated by Cao Xinxin and Fang Luofan)

Digital transformation enables construction of a unified market

数字化转型赋能统一大市场建设



As one of the parallel sessions of the first China Standardization Conference, the “Digital Transformation Enabling Construction of A Unified Market” session was held by the China Electronics Standardization Institute (CESI) on March 30 in Nanjing.

The event was attended and addressed by Guo Chenguang, Deputy Director-General of Standards Innovative Management Department of SAMR, Chi Yu, Deputy Director-General of Industry and Information Technology Department of Jiangsu, Tan Lu, Officer from Ministry of Industry and Information Technology, Yang Jianjun, Secretary of the Party Committee and Vice President of CESI. Also, Phil Wennblom, Chair of ISO/IEC JTC 1, *Information technology*, addressed the meeting via video.

Speeches on digital transformation in fields such as transportation, energy, finance, and emerging technologies were given by attendees from China Communications Construction Co., Ltd., China Energy Investment Corporation, China Life Insurance Co., Ltd., China Association for Science and Technology, ZTE Corporation and Phoenix Contact (China) Co., Ltd.

The session offers a platform for stakeholders to discuss the economic value of data element market. Empowered by digital technology and based on the integration of national, sectoral and enterprise standards, we can reconstruct the multi-level supply chain system, promote the digital transformation of the real economy, and enhance the resilience of economic development, which will realize the goal of building a unified national market, forge China’s advantages on international economic cooperation, and boost the international economic circulation.

Also, the report titled *Standardization Implementation Path of Enterprise Digital Transformation* was released, which studies the practical achievements of enterprise digital transformation and clarifies the development ideas of enterprise digital transformation.



Digital transformation requires arduous task for standardization work

Guo Chenguang Deputy Director-General of Standards Innovative Management Department, SAMR

Report to the 20th National Congress of CPC highlights the tasks of building a unified national market, advancing reforms for the market-based allocation of production factors, and putting in place a high-standard market system.

Digital transformation is the core to promote the construction of unified national market. Attaching great importance to the standardization of digital transformation, SAMR has carried out a series of work together with relevant departments. As of now, 21 association standards have been published, with four national standards under development. Also, China has actively participated in the international standards development in ISO and IEC.

Future work will focus on the following aspects: First, based on the urgent needs in transforming and upgrading China's manufacturing industry, we will strengthen the development of key standards for reference architecture, management services, etc. Second, we will expedite the promotion and application of standards, by promoting new standards in hybrid forms and supporting local pilot programs. Third, we will deepen international cooperation, giving equal emphasis to "bringing in" and "going global". We will strengthen cooperation with international organizations, developed countries and Belt and Road countries, and take an active part in the development of relevant international rules and standards.



Developing standards for value and circulation of data element

Yang Jianjun Secretary of the Party Committee and Vice President of CESI

To establish a high-quality standards system and respond to industrial demands, CESI has been working on developing standards for value and circulation of data element, with joint efforts from relevant enterprises and public institutions.

Based on the work of the Big Data Working Group under SAC/TC 28 on information technology, a task force on enterprise digital transformation has been established to study the existing problems in digital transformation.

First, the main production element of digital economy is data, which means enterprises may face issues like reconstruction in their digital transformation. Second, the cost of digital transformation will influence the decision-making of enterprises and the final performance evaluation. Third, the capability of digital transformation varies in different enterprises, and the industrial digital gap is still to be eliminated. Fourth, more talents, especially for strategy making and management, are needed for the industrial development.



Digitalization forges new development advantages

Tan Lu Officer from Ministry of Industry and Information Technology

Digital technologies, such as cloud computing, big data and artificial intelligence, are empowering all walks of life, with a vital and far-reaching impact on the economic and social development. Digital transformation is the main thread of innovation and development of digital economy, which is also an inevitable choice to keep pace with the new scientific and technological revolution and industrial transformation, and an important driving force to build a modern industrial system and promote the construction of a unified market.

Guided by the Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era, we will thoroughly implement the spirit of the 20th CPC National Congress, promote the digital transformation of digital industry, and facilitate the innovative development of digital economy, by improving top-level design, accelerating the development and application of key standards, cultivating the market of data element, and boosting industrial transformation and upgrading.



Insights on standards for digital transformation

Phil Wennblom Chair of ISO/IEC JTC 1

ISO/IEC JTC 1, *Information technology*, was jointly established by ISO and IEC. At present, over 4,500 experts have participated in the work of ISO/IEC JTC 1, which consists of 37 participating members and 64 observing members.

It has published more than 300 standards in this field, with approximately 200 standards under development. The latest established working group is developing standards on quantum information technology, which will change much of the industry in few years.

There are two key driving factors to realize digital transformation. One is integrated specialized knowledge, namely cross-field cooperation. In this way, we can find new solutions and make breakthroughs to enhance capacity, performance and efficiency.

The other is technical standards, which combine expertise and best practices. By adopting technical standards published by trustworthy organizations, digital transformation can be realized, which also enables interoperability.



Exploration on digital transformation of energy

Yang Xu Deputy General Manager of Operation Management Department of Data Center, China Energy Investment Corporation

The China Energy provides products and services of whole industrial chains including coal, thermal power, transportation, chemical industry, and hydroelectricity. Echoing the call for establishing “Digital China”, it has vigorously boosted digital transformation, and has concluded experience in this area.

First, enhancing the cultivation of digital talents team and establishing an inventive mechanism for such talents. Energy enterprises may cooperate with technological innovative enterprises to train interdisciplinary talents.

Second, giving full play to industrial associations, which can effectively communicate with upstream and downstream enterprises of industry chains.

Third, promoting innovation of business model and stimulating value of data element. Based on big data analysis, we can reduce product costs, improve service quality, and further optimize resource allocation.



Standards and open source speed up digital prosperity

Tian Li Director of Standards Strategy Department of ZTE Corporation

High standards facilitate high-tech innovation, promote high-level opening up and drive high-quality development, which reveals the complementary relationship among standards, regulations and policies.

Standards can accelerate the application of digital transformation achievements, and provide technical support as an optional supplement to regulations, which can effectively benefit digital governance. In addition, standards developed by international organizations can actively respond to digital technology development and reduce trade barriers.

The standardization of digital transformation should follow seven principles: credibility, interoperability, security, data privacy, inclusiveness, sustainability and international collaboration.

Digital technology usually involves data processing, model building, and software production, which are realized by codes. In this case, there is a de facto standard, namely open source. Open source and standards mutually complement and promote each other to promote digital innovation and technological application.

ZTE has been vigorously participating in standards and open source work in digitalization globally, and sharing its experience to help realize the SDGs. 

编译 / 方洛凡

(Edited and translated by Fang Luofan)

Standardization vocational education: practice, thoughts and future development

标准化职业教育：实践、思考与未来



Guo Chenguang Deputy Director-General of Standards Innovative Management Department, SAMR

Standardizers have witnessed profound changes in both the domestic and international situation. At the domestic level, due to the expansion of standardization fields and the shift towards the dual structure of standards supply system, standardizers need to grasp technologies, be adept in management and coordination, meet diverse demands, as well as support the development of new technologies in emerging fields. At the international level, amid the environment where standardization talents are highly valued, they need to understand domestic laws and regulations as well as international rules, and have excellent foreign language and communication skills.

Here are my suggestions for standardization vocational education: first, coordinating the efforts of education training, enhancing the publicity and promotion of standardization vocational education, and improving enterprises' standardization capability; second, carrying out education training in accordance with laws and regulations, and complying with the requirements of relevant policies; third, making all-out efforts to improve the capability of talents, pushing forward the policy making with other ministries and commissions, and making professional standardization talents play a big role.



Wang Xilin Director of National Center of Standards Evaluation, SAMR

In 2020, the National Center of Standards Evaluation (NCSE) of SAMR started the evaluation of “1+X” vocational education training on standards drafting and review, which will be officially approved as a pilot project of the Ministry of Education by the end of 2024. So far, NCSE has organized 16 online examinations with 3,638 applicants, and 2,856 of them were granted the certificate with a passing rate of 78%.

NCSE conducts training activities on standards drafting for the public, enterprises and national standardization technical committees on a regular basis every year. As an important service agency supporting national standardization work, NCSE will work on the “1+X” standardization vocational education together with local education institutions, and carry out the training, evaluation and promotion of the vocational certificate of standards drafting and review.

As an important part of the first China Standardization Conference, the session with the theme of “consolidating the foundation of standardization vocational talents, and boosting the normative construction of a unified national market” was held on March 30 in Nanjing, welcoming the participants from national and local government departments, colleges and universities, research institutes, associations as well as enterprises to share insightful viewpoints and fruitful experience.



Liu Zhaohui

Deputy Director of Professional Technical Talent Development Center of SAMR and Secretary General of Market Regulation Vocational Education and Teaching Steering Committee

With arduous efforts, the *Fundamental Methods of Standardization* has been included in the first six recommended textbooks of the national vocational education plan in 2021-2025. The Market Regulation Vocational Education and Teaching Steering Committee has recommended Shaanxi Institute of Standardization and another institution as the nation’s second batch of enterprise practice centers for vocational teachers, and introduced nine vocational schools as typical cases for vocational education reform and international cooperation & communication. Initial achievements have been made in the research on the talent demands, development trends of inspection, testing and certification industries, the status quo and development of majors such as standardization technology.

A standardization committee will be established in the Steering Committee to carry out the following work: first, making ongoing investigation and research to provide solutions for difficulties and bottlenecks; second, gradually forming the systematic teaching system and quality education resource system to meet the demands of training for standardizers in different areas and at various levels; third, actively advancing innovation and excellence, and establishing the evaluation mechanism for vocational capability of standardization talents.



Song Mingshun

Director of Development Committee and former President of China Jiliang University

China Jiliang University (CJLU) has always attached great importance to standardization education, and made outstanding achievements in this area. CJLU won the first ISO Award for Higher Education in Standardization in 2007. In 2018, the International Standardization Training Base was jointly established by SAC and ISO in Hangzhou city where CJLU is located, and the Talent Training Base for International Standardization was also established by SAC in Hangzhou.

CJLU has cultivated many undergraduate and graduate students on standardization in the past few years. Up to now, the standardization engineering major and the standardization technology major have been included in the national higher education and national higher vocational education respectively with a complete standardization vocational education textbook system. In 2021, the Standardization Education Research Center was established to study and establish the standardization knowledge system, and support the development and promotion of the “1+X” vocational certificate of standardization. It will contribute to the development of standardization talents in the country.



Qiang Yi

Member of China Standardization Expert Committee

The *Guidelines on Strengthening the High-skilled Talent Team in the New Era*, the national policy issued by the State Council, puts forward that we should improve the standards system and evaluation mechanism of vocational education. And the *National Standardization Development Outline* requires to strengthen standardization talent building, introduce standardization courses into the vocational education and further education at universities, and carry out integrated practices on standardization education. At the local level, the training for teachers, college enrollment and joint training between standardization association and vocational school are greatly supported by the local governments of Qingdao and Xi'an cities and Hunan province. To improve standardization vocational education, we should innovate its system, model and pattern, and develop the “1+X” standards with the government’s guidance, policy support and social involvement.



Tang Yizhi

Director of Department of Industrial and Educational Cooperation, Ministry of Education

How to exert the role of vocational education in standardization talent building? First, enhancing the research on vocational education standardization; second, introducing standardization courses into vocational education to promote the integration of professional teaching and standardization education; third, establishing the multilevel system for personnel cultivation and carrying out the cultivation of professional standardization talents. Meanwhile, a sound vocational capability evaluation system for standardization talents should be established. Through higher education, vocational education and tailored training sessions, it is expected that the standardization talents will have better professional capability in the near future.



Tang Renzhong

Director of MEM Center and Professor, Zhejiang University

The biggest challenge of standardization talent cultivation is to help students fully understand that standardization is a kind of strategy for solving problems, which requires systematic thinking capability. For this reason, Zhejiang University started the cultivation of standardization talents in the majors of Master of Engineering Management in 2017, in a move to train high-level talents for standardization construction and management in related projects, who have the capability of systematic thinking, innovation, problem solving and strategic development. In addition, more practical and professional standardization courses have been offered in different engineering majors at Zhejiang University.



Wang Haipeng

Deputy Director of Center for Economic and Technological Development, State Administration of Science, Technology and Industry for National Defense

As an important platform of leading the high-quality development, the standards innovation base on national defense takes standardization talent cultivation as one of its top priorities. It has coordinated the top-level design to comprehensively promote the standardization vocational education on national defense, systematically advanced the implementation by innovating the model of vocational training, and taken various measures to make targeted efforts. The first standardization training session on national defense was successfully held last year, and another six training sessions will be organized this year, which are expected to attract 1,000 trainees. We will also collaborate with the College of Standardization of China Jiliang University, and select experts to serve as supervisors for students of the standardization major.



Li Haibin

Vice President of Standardization Institute, China Academy of Machinery Science and Technology Group

Based on my experience, there are some existing problems related to standardization workers in China. For example, the structure of standardization personnel needs to be improved, so as the capabilities of international standardization workers. Here are my suggestions: first, we should create a good environment for them to learn and practice, and raise their standardization awareness in scientific research; second, standards should be included into various work of industries; third, more training activities and practices should be provided to them; fourth, there should be clear promotion channel for standardizers; last but not least, we should establish the talent pool and increase the incentive policies to display their value, so as to enhance the management and make good use of these talents.



Shi Yan

Secretary of the Party Committee, Liaoning University of Traditional Chinese Medicine

In the practical standardization work of traditional Chinese medicine (TCM), we focus on the following aspects: first, developing the international standards system on TCM, and taking the purpose, integrity and structure into full consideration; second, developing the standards in urgent need in terms of terminologies, education, organizational setting, requirements for practitioners and equipment of TCM to respond to the international development trends; third, in the work of ISO/TC 249/WG 5 on terminology and informatics of TCM, the Chinese experts have established a key laboratory on standards, inspection and testing, and created the majors of TCM standardization and TCM AI science and technology at Xin-Huangpu Joint Innovation Institute of Chinese Medicine, the first of its kind in the field. [CS](#)

编译 / 靳吉丽

(Edited and translated by Jin Jili)

China Standards Innovation and Contribution Award 2022 unveiled

2022年中国标准创新贡献奖揭晓

The China Standards Innovation and Contribution Award 2022, the highest national award in the standardization field, was unveiled at the ceremony held in Nanjing, capital of Jiangsu province on March 30, 2023. The event was attended by Tian Shihong, Vice Minister of SAMR and Administrator of SAC, Hu Guangjie, Vice Governor of Jiangsu, and Wang Liping, Chair of the Chinese People's Political Consultative Conference of Nanjing.

The biennial award, consisting of five types, is presented to organizations and individuals with outstanding contribution to the standardization work at industrial, national and international levels. This year's Standard Project Award goes to 60 standards projects, the Organization Award goes to 4 organizations, the Outstanding Contribution Award and the Excellent Youth Award are given to 4 experts and 3 experts respectively. Zhang Xiaogang, former ISO President, won the Lifetime Achievement Award.

Here, you can find the winners of the first prize of Standard Project Award, the Organization Award, the Individual Award. The list of the 50 winners of the second and third prize of Standard Project Award will be published on the next issue.

Standard Project Award 标准项目奖

The First Prize (10 items) 一等奖 (10项)

No. 序号	Name of standard project 项目名称	Main departments involved 主要完成单位	Main contributors 主要完成人
1	<p>5 standards including GB/T 25122.4-2018, <i>Railway applications—Power converters installed on board rolling stock—Part 4: Traction converter for EMU</i></p> <p>GB/T 25122.4—2018《轨道交通机车车辆用电力变流器 第4部分: 电动车组牵引变流器》等5项标准</p>	<p>CRRC Zhuzhou Electric Locomotive Co., Ltd.; CRRC Yongji Electric Locomotive Co., Ltd.; Locomotive and Rolling Stock Research Institute, China Academy of Railway Sciences; CRRC Qingdao Sifang Co., Ltd.; CRRC Qingdao Sifang Locomotive Research Institute Co., Ltd.; Zhuzhou CRRC Times Electric Co., Ltd.; Zhuzhou Converting Technology National Engineering and Research Center Co., Ltd.; CRRC Dalian Electric Traction R&D Center Co., Ltd.; CRRC Qishuyan Locomotive Co., Ltd.; Xiangtan Electric Manufacturing Group</p> <p>中车株洲电力机车研究所有限公司、中车永济电机有限公司、中国铁道科学研究院机车车辆研究所、中车青岛四方机车车辆股份有限公司、中车青岛四方车辆研究所有限公司、株洲中车时代电气股份有限公司、株洲变流技术国家工程研究中心有限公司、中车大连电力牵引研发中心有限公司、中车戚墅堰机车有限公司、湘潭电机股份有限公司</p>	<p>Feng Jianghua, Hu Jiayi, Song Shuquan, Wu Donghua, Liu Da, Zhang Yi, Wan Weiwei, Lu Yang, Liu Gui, Wu Qiang, Liu Kean, Liu Haitao, Rao Peinan, Xia Meng, Gao Yongjun</p> <p>冯江华、胡家喜、宋术全、吴冬华、刘大、张义、万伟伟、陆阳、刘贵、吴强、刘可安、刘海涛、饶沛南、夏猛、高永军</p>
2	<p>ITU—T G.8113.1:2016, <i>Operations, administration and maintenance mechanisms for MPLS-TP in packet transport networks</i></p> <p>ITU—T G.8113.1:2016《分组传送网络多协议标签交换传送子集(MPLS—TP)的操作管理维护(OAM)机制》</p>	<p>China Mobile Limited, Huawei Technologies Co., Ltd., China Academy of Information and Technology, ZTE Corporation, FiberHome Telecommunication Technologies Co., Ltd.</p> <p>中国移动通信集团有限公司、华为技术有限公司、中国信息通信研究院、中兴通讯股份有限公司、烽火通信科技股份有限公司</p>	<p>Li Han, He Jia, Li Fang, Zhao Fuchuan, Fan Zhiwen, Duan Xiaodong, Ao Li, Wang Lei, Zhang Haiyi, Zhang Dechao, Han Liuyan, Cheng Weiqiang, Jiang Rong, Liu Aihua, Zhao Zhipeng</p> <p>李晗、贺佳、李芳、赵福川、范志文、段晓东、敖立、王磊、张海懿、张德朝、韩柳燕、程伟强、江榕、刘爱华、赵志鹏</p>
3	<p>2 standards including GB/T 35965.1—2018, <i>Protocol for emergency information exchange—Part 1: Early warning message</i></p> <p>GB/T 35965.1—2018《应急信息交互协议 第1部分: 预警信息》等2项标准</p>	<p>School of Public Policy & Management, Tsinghua University; Beijing Global Safety Technology Co., Ltd.; China National Institute of Standardization; Tsinghua Shenzhen International Graduate School; National Warning Information Release Center</p> <p>清华大学公共安全研究院、北京辰安科技股份有限公司、中国标准化研究院、清华大学深圳国际研究生院、国家预警信息发布中心</p>	<p>Yuan Hongyong, Huang Quanyi, Zhang Fan, Qin Tingxin, Su Guofeng, Wang Jinyu, Zhao Huiqiang, Yang Xiuzhong, Bai Jingyu, Wang Fei, Cao Zhiyu, Zhong Shaobo, Chen Tao, Liu Yong, Zhang Yajing</p> <p>袁宏永、黄全义、张帆、秦挺鑫、苏国锋、王金玉、赵会强、杨秀中、白静玉、王飞、曹之玉、钟少波、陈涛、刘勇、张亚京</p>
4	<p>GB/T 31464—2015, <i>The grid operation code</i></p> <p>GB/T 31464—2015《电网运行准则》</p>	<p>State Grid Corporation of China, China Southern Power Grid, China Huaneng Group Co., Ltd., China Energy Investment Corporation, State Power Investment Corporation Limited, China Datang Corporation Ltd., China Electric Power Research Institute Co., Ltd., State Grid Electric Power Research Institute Co., Ltd., Northwest Electric Power Design Institute Co., Ltd. of China Power Engineering Consulting Group</p> <p>国家电网有限公司、中国南方电网有限责任公司、中国华能集团有限公司、国家能源投资集团有限责任公司、国家电力投资集团有限公司、中国大唐集团有限公司、中国电力科学研究院有限公司、国网电力科学研究院有限公司、中国电力工程顾问集团西北电力设计院有限公司</p>	<p>Xin Yaozhong, Leng Xiwu, Luo Jianyu, Sun Weizhen, Zhao Zigang, Duan Laiyue, Lyu Yuechun, Zhang Mingliang, Han Gang, Ren Zhigang, Wang Yi, Liu Chun, Ding Jie, Li Yong, Li Xiang</p> <p>辛耀中、冷喜武、罗建裕、孙维真、赵自刚、段来越、吕跃春、张明亮、韩刚、任志刚、王毅、刘纯、丁杰、李勇、李翔</p>

No. 序号	Name of standard project 项目名称	Main departments involved 主要完成单位	Main contributors 主要完成人
5	<p>GB/T 50378—2019, <i>Assessment standard for green building</i></p> <p>GB/T 50378—2019《绿色建筑评价标准》</p>	<p>China Academy of Building Research Co., Ltd., Shanghai Research Institute of Building Sciences Co., Ltd., Chinese Society for Urban Studies, China Academy of Urban Planning & Design, Tsinghua University, China State Construction Engineering Corporation, China Building Materials Academy Co., Ltd., North China Municipal Engineering Design & Research Institute Co., Ltd., Shenzhen Institute of Building Research Co., Ltd., China Urban Construction Design & Research Institute</p> <p>中国建筑科学研究院有限公司、上海建科集团股份有限公司、中国城市科学研究会、中国城市规划设计研究院、清华大学、中国建筑股份有限公司、中国建筑材料科学研究总院有限公司、中国市政工程华北设计研究总院有限公司、深圳市建筑科学研究院股份有限公司、中国城市建设研究院有限公司</p>	<p>Wang Qingqin, Han Jihong, Zeng Jie, Wang Xiaofeng, Wang Youwei, Ye Qing, Lu Qin, Lin Borong, Yang Jianrong, Meng Chong, Shan Caijie, Song Ling, Lin Changqing, Yang Liu, Li Guozhu</p> <p>王清勤、韩继红、曾捷、王晓锋、王有为、叶青、鹿勤、林波荣、杨建荣、孟冲、单彩杰、宋凌、林常青、杨柳、李国柱</p>
6	<p>3 standards including ISO 15746—1:2015, <i>Automation systems and integration—Integration of advanced process control and optimization capabilities for manufacturing systems—Part 1: Framework and functional model</i></p> <p>ISO 15746—1:2015《自动化系统与集成 制造系统先进控制与优化软件集成 第1部分：框架和功能模型》等3项标准</p>	<p>Zhejiang University, Beijing Research Institute of Automation for Machinery Industry Co., Ltd., Shenzhen Polytechnic, No. 3 Research Institute of the Ministry of Public Security, Zhejiang Zhongzhida Technology Co., Ltd., Dalian University of Technology, Liaoning Petrochemical University, NingboTech University, Zhejiang Zhongchuang Tiancheng Technology Co., Ltd.</p> <p>浙江大学、北京机械工业自动化研究所有限公司、深圳职业技术学院、公安部第三研究所、浙江中智达科技有限公司、大连理工大学、辽宁石油化工大学、浙大宁波理工学院、浙江中创天成科技有限公司</p>	<p>Su Hongye, Xie Lei, Sun Jiexiang, Xu Weihua, Lu Shan, Ye Jianwei, Zhang Yanhui, Wang Yiqin, Li Xiaochen, Shao Hanshan, Wang Yue, Shen Qinghong, Ma Longhua, Zhu Li, Xu Ming</p> <p>苏宏业、谢磊、孙洁香、徐巍华、卢山、叶建位、张艳辉、王一钦、李啸晨、邵寒山、王越、沈清泓、马龙华、朱理、徐鸣</p>
7	<p>ISO/IEC 9798—3:2019, <i>IT Security techniques—Entity authentication—Part 3: Mechanisms using digital signature techniques</i></p> <p>ISO/IEC 9798—3:2019《IT安全技术 实体鉴别 第3部分：采用数字签名技术的机制》</p>	<p>Xi'an Xidian Jietong Wireless Network Communication Co., Ltd., National Engineering Research Center for Wireless Network Security Technology, WAPI Alliance, Commercial Cryptography Testing Center of State Cryptography Administration, State Radio Monitoring Center Testing Center, National Research Center for Information Technology Security, China General Technology Research Institute</p> <p>西安西电捷通无线网络通信股份有限公司、无线网络安全技术国家工程研究中心、中关村无线网络安全产业联盟、国家密码管理局商用密码检测中心、国家无线电监测中心检测中心、国家信息技术安全研究中心、中国通用技术研究院</p>	<p>Du Zhiqiang, Li Qin, Huang Zhenhai, Yan Xiang, Cao Jun, Zhang Bianling, Zheng Li, Tie Manxia, Zhang Guoqiang, Zhang Lulu, Li Dong, Tao Hongbo, Wang Hong, Liu Kewei, Hu Yanan</p> <p>杜志强、李琴、黄振海、颜湘、曹军、张变玲、郑骊、铁满霞、张国强、张璐璐、李冬、陶洪波、王宏、刘科伟、胡亚楠</p>

No. 序号	Name of standard project 项目名称	Main departments involved 主要完成单位	Main contributors 主要完成人
8	<p>ISO 21378:2019, <i>Audit data collection</i></p> <p>ISO 21378:2019《审计数据采集》</p>	<p>Computer Technology Center of National Audit Office of China; Audit Service Center of China National Audit Office for Foreign Loan and Assistance Projects, National Audit Office of China; Nanjing Audit University; Oracle China; SAP China; China Kingdee Software Co., Ltd.; Yonyou Network Technology Co., Ltd.</p> <p>审计署计算机技术中心、审计署国外贷款项目审计服务中心、南京审计大学、甲骨文(中国)软件系统有限公司、思爱普(中国)有限公司、金蝶软件(中国)有限公司、用友网络科技股份有限公司</p>	<p>Yang Yunyi, Yang Li, Lyu Tianyang, Lu Jing, Wang Shurong, Peng Tao, Wang Wenyu, Zhou Weipei, Yan Ming, Jin Jiwen, Yu Xueqiang, Dai Baochun, Ren Xiaohui</p> <p>杨蕴毅、杨莉、吕天阳、卢靖、王姝蓉、彭涛、王文煜、周维培、严明、金纪文、于学强、戴宝纯、任晓慧</p>
9	<p>GB/T 23001—2017, <i>Integration of informatization and industrialization management systems—Requirements</i></p> <p>GB/T 23001—2017《信息化和工业化融合管理体系 要求》</p>	<p>National Industrial Information Security Development Research Center, China Enterprise Confederation, China Research Institution of Electronic Product Reliability and Environment Testing, China Academy of Information and Communication Technology, China Electronics Standardization Institute, Tsinghua University, Beijing Research Institute of Automation for Machinery Industry Co., Ltd., Zhejiang Enterprise Information Association, Yonyou Network Technology Co., Ltd., Xuzhou Construction Machinery Group Co., Ltd.</p> <p>国家工业信息安全发展研究中心、中国企业联合会、中国电子产品可靠性与环境试验研究所、中国信息通信研究院、中国电子技术标准化研究院、清华大学、北京机械工业自动化研究所有限公司、浙江省企业信息化促进会、用友网络科技股份有限公司、徐工集团工程机械股份有限公司</p>	<p>Zhou Jian, Zhang Wenbin, Zhao Guoxiang, Zheng Yongliang, Yu Xiuming, Li Qing, Li Xiaodong, Chen Jie, Song Maoen, Liu Xiaoyin, Li Jun, Wang Zhilin, Wang Tao, Liu Rongmeng, Zhou Yi</p> <p>周剑、张文彬、赵国祥、郑永亮、于秀明、李清、黎晓东、陈杰、宋茂恩、刘小茵、李君、王志林、王涛、柳荣梦、周翼</p>
10	<p>GJB 8848—2016, <i>Electromagnetic environmental effects test methods for systems</i></p> <p>GJB 8848—2016《系统电磁环境效应试验方法》</p>	<p>Omitted</p> <p>略</p>	<p>Omitted</p> <p>略</p>

Organization Award 组织奖

State Grid Corporation of China
国家电网有限公司

Aviation Industry Corporation of China, Ltd.
中国航空工业集团有限公司

National Standardization Technical Committee on Information Security
全国信息安全标准化技术委员会

China Jiliang University
中国计量大学

Individual Award 个人奖

Lifetime Achievement Award 终身成就奖

Zhang Xiaogang
张晓刚

Outstanding Contribution Award 突出贡献奖

Huang Tiejun 黄铁军	Peking University 北京大学
Yang Jialin 杨嘉霖	Omitted 略
Dong Mingzhu 董明珠	Gree Electric Appliances Inc. of Zhuhai 珠海格力电器股份有限公司
Fei Benhua 费本华	International Centre for Bamboo and Rattan 国际竹藤中心

Excellent Youth Award 优秀青年奖

Zeng Yan 曾焱	Huawei Technologies Co., Ltd. 华为技术有限公司
Wei Sha 韦莎	China Academy of Information and Communications Technology 中国信息通信研究院
Li Pengcheng 李鹏程	AVIC China Aero-polytechnology Establishment 中国航空综合技术研究所

An overview of Two Sessions 2023

2023年全国两会概览

The Two Sessions, which refer to the annual meetings of the National People's Congress (NPC), the national legislature, and the Chinese People's Political Consultative Conference (CPPCC), the top political advisory body, were convened in Beijing from March 4 to March 13, 2023.

The Two Sessions are of great importance in the country's political calendar. The government work report was delivered by Chinese Premier Li Keqiang on behalf of the State Council to the first session of the 14th NPC on March 5, which was later adopted on March 13. The report provided a review of the government work in 2022 and over the past five years and made recommendations for the government work in 2023.



The report proposes the main projected targets for development in 2023 as follows:

GDP growth of around
5 percent

Around **12 million**
new urban jobs

Surveyed urban unemployment
rate of around **5.5 percent**

CPI increase of around
3 percent

Growth in personal income
that is generally in step
with economic growth

Steady increases in both
the volume and quality of
imports and exports

A basic equilibrium in the
balance of payments

Grain output of over
650 million metric tons

Continued reductions in energy
consumption per unit of GDP and in
the discharge of major pollutants,
with priority on controlling fossil
fuel consumption

Steady improvements
in the quality of the
eco-environment

(Data source: Xinhua News Agency)

Insights on standards in the Two Sessions

全国两会“标准”声音

During this year's Two Sessions, representatives from all walks of life across the country gathered to discuss the important topics of common concerns, such as artificial intelligence, new energy, carbon peak and neutrality, green development, technological innovation as well as people's well-being. And the vital role of standards stands out in supporting the high-quality development. Let's find out their insights on standards.

Safeguarding food safety with effective measures

Food safety is the most concerned issue for people's well-being and one of our main responsibilities, said Luo Wen, Minister of State Administration for Market Regulation (SAMR). SAMR will take effective measures to safeguard people's food safety, by meeting the "four strictest requirements" of food safety proposed by Xi Jinping, General Secretary of the Communist Party of China (CPC) Central Committee, which is to implement the "most rigorous" standards, the "strictest" supervision, the "harshest" penalties and the "most serious" accountability.

First, improving the risk control mechanism with early detection, warning and handling. We will further improve the mechanisms for consulting, forewarning and emergency handling of food safety risks, expand the channels of problem discovery, and take preventive measures. Meanwhile, we will enhance law enforcement to investigate and punish breach of laws and regulations.

Second, putting the main responsibilities of enterprises in place. As required in the *Regulations on Supervising and Managing the Implementation of Main Responsibilities of Enterprises* released in 2022, we will mobilize enterprises to set up the food safety management system with daily control, weekly investigation and monthly scheduling, truly putting the main responsibilities of enterprises in place.

Third, implementing the local management responsibilities. We will speed up establishing the long-term work mechanism with precise control and terminal effect, and specify the three lists on responsibilities, tasks and inspection and one letter of commitment to figure out the people, facts and responsibilities involved in case of an issue of food safety.



Luo Wen
Minister of State
Administration for Market
Regulation



Lin Longan

Member of the CPPCC
National Committee

On artificial intelligence

Improving the standards system on artificial intelligence

“Intelligence plus”, an issue of national concern, is a hot topic for driving the economic transformation and upgrading and the replacement of old growth drivers with new ones, said Lin Longan, Member of the CPPCC National Committee and Founder of Yuzhou Group. In his view, the problems in AI development include slow update and insufficient coverage of standards, less coordination among existing standards, and inadequate standardization awareness of enterprises.

Lin advised to accelerate standards development and revision to improve the standards system on AI, make overall planning and coordination of standardization work, and encourage more enterprises to participate in standardization activities. He also indicated that competent departments should make concerted efforts to harmonize the basic and common standards and coordinate the resource allocation, and facilitate research institutes and enterprises to participate in standardization activities, enabling the smooth standardization work at all levels.

On new industrialization

Establishing the high-quality standards system on new industrialization

To advance the new industrialization, Zhou Yunjie, Deputy to the NPC and Chair of the Board and CEO of Haier Group, believed that we should value the high-level application of industrial data. However, the problems of industrial data application in China lie in three aspects: the data is large in number but with a low proportion of effective mining and utilization; the data analysis and processing capability of most platforms is inadequate in terms of resource allocation and system value increment; and data flow among platforms is largely hindered by barriers from the perspective of data interconnectivity.

Therefore, Zhou suggested on establishing the high-quality standards system on new industrialization, carrying out pilot and demonstration projects in leading enterprises, and expediting the promotion of standards; facilitating SMEs to benefit from affordable AI application; and cultivating professional service providers on industrial big data to set relevant standards and rules.



Zhou Yunjie

Deputy to the NPC

On new energy

Promoting the all-round standardization of electric vehicle battery

Recharging difficulty is a hidden trouble for the sustainable development of the electric vehicle industry. Apart from overall layout and supporting policies on cell switching model of electric vehicles, we should mobilize enterprises and industrial associations to harmonize relevant standards, especially standards on battery specification and charging facilities, to drive the all-round standardization of electric vehicle battery, according to Feng Xingya, Deputy to the NPC and General Manager of Guangzhou Automobile Group.

Meanwhile, unbalanced development of chip industrial chain and insufficient application of domestic chip products require the improved supporting measures and standards system. To increase the application of domestic chip products, Feng advised to accelerate the industrial transformation and R&D and application of high-end chips, increase the incentive policies, and improve the supporting measures and mechanisms and the technical specifications and testing standards in subdivided fields.

Improving policies and standards for solutions of new energy storage

There are still barriers to break through in the development of new energy storage as a disruptive technology supporting the future energy development. Policies, standards and business models need to be improved at all levels to promote the high-quality development of new energy storage, said Song Hailiang, Member of the CPPCC National Committee and Party Secretary and Chair of the Board of China Energy Engineering Co., Ltd.

After sorting out the status quo and challenges of new energy storage, Song put forward rapidly building the sound industrial chain and innovation chain. First, improving the standards system by innovating standards management mechanism and developing technical standards in major fields. Second, making breakthrough in key technologies by establishing industrial alliances. Third, enhancing the extension and cultivation of industrial chain by supporting specialized and sophisticated SMEs to lead the coordinated development of the upstream and downstream in the industrial chain.



Feng Xingya
Deputy to the NPC



Song Hailiang
Member of the CPPCC
National Committee



He Hong

Deputy to the NPC

On carbon peak & neutrality and green development

Developing new national standard on vehicle emissions quickly

With decades of efforts, major strides have been made in the governance of vehicle emissions in China. GB 18352.6-2016, *Limits and measurement methods for emissions from light-duty vehicles (CHINA 6)*, has almost kept pace with those in the advanced countries. To maintain the standard at the internationally advanced level, we need to upgrade it quickly, said He Hong, Deputy to the NPC and Academician of Chinese Academy of Engineering.

Besides involving competent administrative departments, he advised to absorb the opinions from multiple parties and make in-depth analysis to ensure the reasonableness and applicability of standards development; take the status quo of national economic and social development into account; set an appropriate period between the time of standard release and implementation, which provides enough time for enterprises' technical R&D and localization and helps ensure the supply security of the entire industrial chain.



Wang Yongsheng

Deputy to the NPC

Improving the standard on stainless steel application

As a green new material, stainless steel has broad prospects for future development. But, there are some problems such as insufficient awareness, incomplete policies, and narrow application scope. Wang Yongsheng, Deputy to the NPC and Chair of the Board of Taishan Steel Group, suggested expediting the development and improvement of relevant standards and regulations, prioritizing the application of stainless steel in key projects and new infrastructure fields like big data center, and reducing the tax rate of stainless steel processing.

Speaking of how to promote the high-quality industrial development, Wang believed that on the one hand, the government needs to strengthen its supporting and guiding role; on the other hand, enterprises need to further raise their innovation capacity in key links and major fields, build a cross-disciplinary and cross-regional team to make key technological breakthrough, and continue major innovation in the areas of green development, low carbon and intelligent manufacturing.

Developing green new building materials based on standards

Magnesium alloy industry is a strategic emerging industry in China, and alloy formwork is a recyclable building material of high turnover rate in line with the guiding direction of industrial policies, according to Jia Zhenglan, Member of the CPPCC National Committee and Deputy Secretary-General of CPPCC Shaanxi Committee. She highlighted the advantages of magnesium alloy building formwork including high turnover rate, excellent construction quality, low costs, high construction efficiency, high heat dissipation performance, and low safety risks.

Since systematic design, normalized management and safety of use are the main factors restricting magnesium alloy building template products to enter the construction industry, developing product standards becomes the primary target for magnesium building formwork to step into the market. Therefore, Jia advised to develop relevant national standards, push forward the application of magnesium alloy building templates, and facilitate the green transformation and high-quality development of both the construction industry and the magnesium industry.



Jia Zhenglan

Member of the CPPCC
National Committee

Perfecting the standards system on carbon peak and neutrality

It is essential to do a good job in carbon peak and neutrality in the petrochemical industry, since it is a prominent pillar industry of national economy and an industry with high energy consumption and carbon emission. Targeting at the existing problems of the industry when pursuing achievement of the carbon peak and neutrality goals, Dai Hegen, Member of the CPPCC National Committee and Chair of the Board of China National Chemical Engineering Group, put forward his suggestions in three aspects.

First, strengthening the technical innovation in the area of carbon peak and neutrality by establishing technical alliances to conduct technical R&D and industrial cooperation. Second, improving the relevant standards system construction to bolster carbon emission reduction with harmonized standards. Third, establishing low-carbon demonstration chemical industrial parks to explore their implementation path of carbon neutrality.



Dai Hegen

Member of the CPPCC
National Committee



Deng Zhonghan

Member of the CPPCC
National Committee

On technological innovation

Standards on core technologies are key to technological innovation

Technological innovation is inseparable from standards innovation, and core technical standards are key to technological innovation, according to Deng Zhonghan, Member of the CPPCC National Committee and Academician of Chinese Academy of Engineering. He appealed to the government and enterprises to attach importance to core technical standards, and expected to get the support from the public.

The SLoT national standard on surveillance video and audio coding (SVAC) was released by the end of 2010. Later, other national standards such as GB/T 25724 and GB/T 35114 were published to make up the standards system, part of which was adopted in the Recommendation H.627 of ITU. With the application of the technological achievements in hundreds of key projects, standards have stimulated the application of multiple technologies, which have hatched the industrial chain. Deng emphasized that with the great support from the government, technological professionals should be bold in making innovations to achieve the rejuvenation of China.



Feng Jianghua

Member of the CPPCC
National Committee

Developing Chinese standards via innovation

As a technological professional, Feng Jianghua, Member of the CPPCC National Committee and Chief Engineer of CRRC Zhuzhou Institute Co., Ltd., stressed the important role of standards in cultivating the systematic and autonomous capability of key technologies. He also underlined the significance of talent cultivation, and considered high-level skilled talent team as the important basis to support the manufacturing industry and boost the high-quality economic growth.

Feng advised to explore the changes in demands for high-level skilled talents under the background of the upgrading intelligent manufacturing industry in terms of top-level design, and evaluate them from multiple perspectives; realize the industry-oriented development, accelerate the cultivation of skilled talents of emerging occupations, and strengthen the discipline and specialty layout in major fields; deepen the multi-party cooperation, establish an efficient platform on talent cultivation, and speed up the team building.

On agricultural development

Pushing forward the standardization of agricultural products

In terms of rural revitalization, local special products facilitate farmers to increase income and get rich, and meet people's demand for a better life. However, we should not ignore several problems, such as the low standardization level of agricultural production and the uneven quality of local specialties. Yu Ruifen, Member of the CPPCC National Committee and Co-founder of Shanghai Laiyifen Co., Ltd., proposed a few suggestions.

First, integrating standardization in the whole process of agricultural production, promoting new agricultural technologies, building bases of high-quality agricultural products, implementing the brand strategy of agricultural products, and carrying out the certification of relevant products. Second, increasing financial input, and developing and revising national, sectoral, local and association standards step by step. Third, establishing the mechanisms of cooperatives, facilitating the industrial development by means of cooperation, and encouraging leading enterprises and industrial leaders to set up the mechanisms conforming to industrial characteristics with shared risks and benefits.



Yu Ruifen

Member of the CPPCC
National Committee

Well-facilitated farmland construction strengthens the foundation of food security

With the improvement in both quantity and quality, the well-facilitated farmland construction in China still encounter some problems, such as tough tasks in construction and transformation, imperfect market-oriented operation system, and inadequate role of digital empowerment, said Lou Xiangping, Deputy to the NPC and General Manager of China Mobile Henan Company Limited.

Lou advised to drive the well-facilitated farmland construction with overall planning towards higher quality, better efficiency and more benefits, and strengthen the foundation of food security in an all-round way. First, enhancing policies and measures to promote the sustainable development of well-facilitated farmlands. Second, encouraging multiple participation with the dominant role of government to gradually explore new market operation models. Third, accelerating the digital farmland construction to vigorously build the digital barrier of food security.



Lou Xiangping

Deputy to the NPC

On people's well-being

Expediting the construction of the standards system on food safety



Chen Nan

Deputy to the NPC

The standards system on food safety in China has basically solved the problem of crossed, repeated and contradictory standards. But there are some problems in the practical application, in particular in terms of food classification. Chen Nan, Deputy to the NPC and Chair of the Board of Sanquan Food Co., Ltd., said that due to no unified standards, enterprises and regulators many have misunderstanding in the application and execution of standards, which probably leads to risks of food safety regulation.

Chen suggested teasing out the existing standards and rules related to food industrial development again and further improving the standards system on food safety. Through enhancing cross-department collaboration, conflicting standards can be avoided to promote the cohesion of food standards to supplement each other, and boost the high-quality development of the food industry with the strictest standards.

National standards on precooked food promote sound industrial development



Zheng Simin

Deputy to the NPC

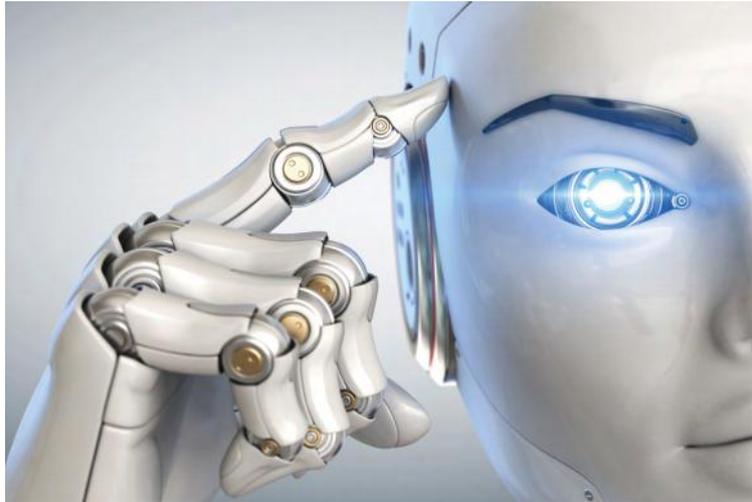
With the booming development of the precooked dish industry, the prominent problems such as a lack of production standards and inadequate R&D innovation have made the sound industrial development a key focus. To address these problems, Zheng Simin, Deputy to the NPC and Chair of the Board of Delisi Group Co., Ltd., proposed her suggestions in three aspects.

First, improving the standardization system of full production management process by rapidly developing national, local or sectoral standards to prevent food safety risks, regulating business behaviors and creating a good market environment. Second, speeding up formulating and releasing the plan for the high-quality industrial development of precooked dishes, developing refined supporting policies, and cultivating mature market entities to exert the role of leading enterprises in the industrial chain. Third, increasing investment in scientific research, setting up the funds for the industrial development, and building the brands with regional characteristics. [CS](#)

编译/靳吉丽

(Edited and translated by Jin Jili based on the news in Chinese)

DIN and DKE publish 2nd edition of the *German Standardization Roadmap on Artificial Intelligence*



The German Institute for Standardization (DIN) and the German Commission for Electrical, Electronic & Information Technologies (DKE) of DIN and VDE now published the English versions of the *German Standardization Roadmap on AI (2nd edition)*.

The roadmap is part of the German government's AI Strategy and was commissioned by the Federal Ministry for Economic Affairs and Climate Action (BMWK). The roadmap updates the results of the first edition and presents an expanded and updated analysis of the current state of and need for international standards for AI.

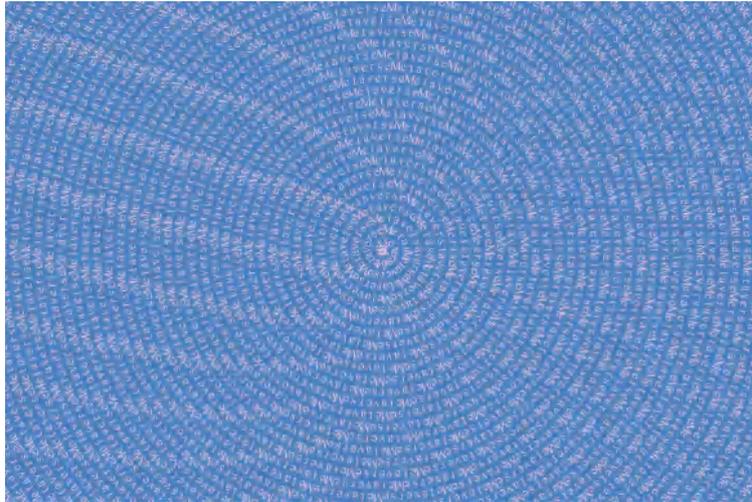
This forms the basis to establish a globally recognized seal of approval for trustworthy technology. Six overarching recommendations for action and more than 100 standardization needs were formulated with the active participation of more than 570 experts from industry, science, civil society, and politics. In addition to the previous key topics from the first edition such as fundamentals, security/safety, testing and certification, industrial automation, mobility as well as medicine, the 2nd edition also focuses on the new aspects of sociotechnical systems, financial services, and energy/environment.

Artificial intelligence is a powerful technology that is developing rapidly. This offers huge opportunities, but also poses risks. Therefore, the European Commission wants to regulate artificial intelligence more closely: Stricter requirements for AI systems will apply across the EU in the future. With the planned Artificial Intelligence Act (AIA) the EU is responding to that need. This legal framework attributes a central role to standards pertaining to high-risk AI applications: Requirements for AI systems, such as transparency, robustness and accuracy, are to be technically specified through harmonized European Standards.

With the *German Standardization Roadmap on AI*, standardization needs are identified with the aim of feeding them into the European and international standardization bodies.

(Source: CEN/CENELEC)

How standards can support the emerging industrial metaverse



The industrial metaverse will empower industries to solve extraordinarily complex real-world problems digitally. That is according to a new report from the *MIT Technology Review* and Siemens.

The emergent industrial metaverse explores the potential impacts on business and society, as well as the challenges ahead and innovative use cases that will shape the future. It highlights the essential role of standards to foster interoperability and facilitate the entry of SMEs by enabling the development of less expensive solutions.

At the core of the industrial metaverse are digital twins, which simulate real-world objects in detail. According to the report, the next generation of digital twins will be photorealistic, physics-based, AI-enabled and linked in metaverse ecosystems.

The report says that the resource efficiencies enabled by industrial metaverse solutions may increase business competitiveness while also continually driving progress towards sustainability, resilience and decarbonization goals. It also suggests that everyday life will be radically changed, with the industrial metaverse helping to solve “real problems”.

The key capabilities and ecosystems that will enable the metaverse to achieve these benefits are still emerging. These include connectivity, computational power, the trustworthiness of digital twin technology, interoperability, privacy and security.

These are all areas where standardization can help. International standards already exist to ensure the trustworthiness and safety of the specific technologies used in the metaverse. IEC has created a Systems Evaluation Group (SEG 15) to explore the needs of the metaverse. It will develop a common understanding and definition of the metaverse, investigate the need for standardization and provide recommendations for an initial roadmap. It will engage with technical committees in IEC, as well as ISO and all other relevant organizations.

(Source: IEC)

2nd Global FRMCS Conference

June 7-8, Paris, France



The Future Railway Mobile Communication System (FRMCS) is the future worldwide telecommunication system designed by the International Union of Railways (UIC), in close cooperation with the different stakeholders from the rail sector, as a key enabler for rail transport digitalization.

The UIS FRMCS project will be the railway system's next big development over the decade to come, as it will be key in progressing railway digitalization and paving the way for train modernization, by directly serving new technology like automatic train operations (ATO) or the Train Control and Monitoring System (TCMS). Not only this but FRMCS will improve security for railway services, increase cost optimization for railway assets, as well as boost capacity and service performance.

During the two-day event, the following topics will be presented and discussed, including the status and plans of the UIC specification stream, the status of 3GPP and ETSI standardization, the regulatory situation, and other related subjects.

For more information on the event website: <https://uicfrmcs.org/?lang=en>

ETSI IoT Conference 2023

July 4-6, Sophia Antipolis, France

The ETSI IoT Conference (formerly ETSI IoT Week) will be of particular interest to organizations and stakeholders interested in the service and operational areas of IoT: industry, SMEs, R&D and academia, decision and policy makers, users of the IoT standards such as cities, governments, and societal actors.

By attending this face-to-face event in ETSI, attendees will benefit from a unique opportunity to come together to exchange with experts, network with other IoT stakeholders, visit the demonstrations, share experiences and actively contribute to the shaping of future IoT solutions and standards. Also, online participation will be possible, for attendees only, to follow the conference presentations and panels.

This gathering of IoT experts has become the must-attend event for anyone involved in IoT and who understands the importance of standard-enabled technologies for IoT service deployments. For more information on the event website: <https://www.etsi.org/events/2208-etsi-iot-conference-2023>



2023 IEEE Power & Energy Society General Meeting

July 16-20, Florida, the U.S.



The 2023 IEEE Power & Energy Society (PES) General Meeting (GM) will be held in person, whose theme is “Meeting the Energy Needs of a Dynamic World”. The IEEE PES GM is the premier annual power and electrical engineering event that will bring together leading PES members, power and electrical engineers, key academics, and engineering students from all over the world.

The aim is to provide an international forum for experts to network, promote, share, and discuss vital issues and progressive developments that impact the field of electrical and power engineering.

For more information on the event website: <https://pes-gm.org>

2023 International Symposium on High Voltage Engineering

August 28-September 1, Glasgow, U.K.



ISH 2023 will provide an excellent forum to present results, advances and discussions among engineers, researchers and scientists, and share ideas, knowledge and expertise on high voltage engineering. At ISH 2023, the challenges of high voltage engineering in the next decades will be shared and these include HVDC, distributed generation, smart design and operation of power networks, including integration of renewable energies, green energy generation, and all their attendant challenges.

For more information on the event website: <https://ish2023.org>

CNIS expert elected Chair of APEC EGEE&C

The 60th Meeting of the Asia-Pacific Economic Cooperation (APEC) Expert Group on Energy Efficiency & Conservation (EGEEC 60) was held on March 27 in Hong Kong, China.

Recommended by National Energy Administration, Liu Meng, Associate Research Fellow from Resource and Environment Sub-institute of CNIS, was elected the Chair of EGEE&C, whose term of office is tenable for two years from July 1, 2023 to June 30, 2025. And Jovian Cheung, recommended by the Electrical and Mechanical Services Department of Hong Kong, was elected the Vice Chair of EGEE&C.

Established by the APEC Energy Working Group (EWG) in 1993, the EGEE&C works on energy efficiency and conservation, which is open to all APEC member economies. Meetings are held regularly for experts to exchange the information of the policies, standards and projects in their countries, and to put forward technical suggestions on EWG's work in the field of energy efficiency and conservation.

The EGEE&C elects one member economy as chair and one member economy as vice chair for a two-year term of office. It is the responsibility of the chair to organize researches and technical communications of the expert group, and to periodically report to the EWG.

Approved by National Energy Administration, as China's counterpart of EGEE&C, CNIS participates in relevant activities and the implementation of APEC cooperative projects in the field of energy conservation and low carbon. Since 2015, CNIS experts have served as chair and vice chair of EGEE&C, and played a crucial role in facilitating the sustainable development of the group, which has been highly recognized by representatives from other economies.

CNIS will more actively take part in APEC's activities in the field of energy efficiency and conservation, support the regional coordination of technologies, standards and policies for energy saving and low carbon, share China's experience in this aspect, and help achieve the goal of reducing 45 percent of energy density in the APEC area by 2035, compared with the data in 2005.



The third plenary meeting of ISO/TC 331 held

The 3rd plenary meeting of ISO/TC 331, *Biodiversity*, was held in Paris, France on April 17-21 in hybrid forms. As the counterpart of ISO/TC 331, CNIS gathered experts to join the meeting virtually.

The meeting was attended by representatives from 29 countries including China, France, Germany, the U.K., Brazil, India, Spain, Mexico, and organizations such as the International Union for Conservation of Nature (IUCN), Environmental Coalition on Standards (ECOS), Global BioTrade Facilitation Programme of United Nations Conference on Trade and Development (UNCTAD BioTrade), etc.

During the meeting, Sylvain Boucherand, Chair of ISO/TC 331, made a keynote speech. The secretariat and each working group reported their work to the attendees, who considered the strategic business plan and roadmap of ISO/TC 331. They further discussed topics such as ecological network, nature-based solutions, guidance on biodiversity monitoring of wetland ecosystems. It was decided that the annual meetings of 2024 and 2025 will be held in Brazil and China respectively.

The Resource and Environment Sub-institute of CNIS will leverage its advantages on biodiversity, bring together experts to participate in the work of ISO/TC 331, share China's experience in this field and accelerate the project approval and development of international standards, to contribute to global biodiversity conservation and sustainable development.



Analysis of Mongolia's standardization development in 2022: Focusing on fields and quantities of standards

2022年蒙古标准化发展分析：基于标准涉及领域的统计

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Abstract: This paper makes an analysis of the standardization efforts in Mongolia in 2022, with a focus on the areas and quantity of standards development, and collects and analyzes the data from the Mongolian Agency for Standardization and Metrology (MASM) and China's Standard Information Platform Contributed by the Belt and Road Countries. The study reveals that Mongolia attaches great importance to standardization work, with the government actively promoting standardization in various fields. In 2022, MASM released 134 new national standards, with 128 standards at the enquiry stage. Mongolia's standards development mainly focuses on medical and health technology, environmental protection, health care and safety, and agriculture. The findings of this study provide technical reference for promoting the adoption and application of standards in Mongolia and fostering technical cooperation in the field of standardization.

Keywords: Mongolia, standardization, standards development, adoption and application of standards

1. Introduction

Mongolia, situated in central Asia, is in the north of the Mongolian Plateau and borders China and Russia. It is the second largest inland country in the world. China and Mongolia have established a comprehensive strategic partnership by carrying out China's Belt and Road Initiative and Mongolia's "Vision 2050" policy and the "New Rejuvenation Policy". The two countries have promoted cooperation in trade, investment, finance, mineral energy, interconnection, infrastructure, digital economy, green development and other fields.

Mongolia's standardization system, established in 1953, is currently managed by the Mongolian Agency for Standardization and Metrology (MASM). MASM is the national department responsible for standardization and metrology. Appointed by the government, the chairman of MASM reports to the Office of the Deputy Prime Minister. The Council, which is made up of 21 members from various ministries, non-governmental organizations, scientific and technological academics, and industries, is the highest decision-making body of MASM.

MASM's objective in standardization is to develop standards through mutual understanding, voluntary consultation, and consideration of consumer rights and interests among the government, industry, and commercial sectors. It continuously develops standardization projects

in line with the market system and uses standards as a tool to advance Mongolia's society, economy, industry, and trade. In 2003, Mongolia passed the *Standardization and Conformity Assessment Law*, which outlines the provisions for the preparation, application, and improvement of national standards.

MASM approves and publishes all Mongolian standards and represents Mongolia in ISO international standardization activities. It is also Mongolia's WTO/TBT Enquiry Point. Mongolia has implemented the license management for certain products, including precious animals, highly toxic chemicals, explosives, uranium ore or iron ore, and selected mines. Technical supervision and health inspection and quarantine have also reached a higher standard level. Projects that involve public interests, human health, environmental and national security, and the development of national industries must meet Mongolia's product certification standards (such as MNS ISO 9001:2001, *Quality management*, and MNS ISO 14001:1998, *Environmental management*).

This paper analyzes the development and adoption of standards in Mongolia, highlighting the country's strengths and weaknesses in standardization. It provides technical reference for promoting the adoption and application of standards in Mongolia and fostering technical cooperation in the field of standardization.

2. Materials and methods

To collect the information on Mongolia's national standards issued and at enquiry stage in 2022 (as of January 2023), related data was searched and downloaded from the official standardization database of the Mongolian Agency for Standardization and Metrology (www.estandard.gov.mn) and China's Standard Information Platform Contributed by the Belt and Road Countries (www.ydylstandards.org.cn). Then the data matrix was imported into the R-project for Statistical Computing (r-project.org) for analysis and statistics, and visual charts were drawn through R packages such as `ggplot2`^[1], `ggsci`^[2], `ggpubr`^[3], `scales`^[4], `fmsb`^[5], `RColorBrewer`^[6], and `patchwork`^[7].

We conducted statistical analysis by loading data matrix files using the `read.csv()` function, selecting necessary columns with the `[,c(column number)]` function, and renaming columns with the `colnames()` function. We then transformed and cleaned the data matrix using the `which()` function to replace abbreviations and codes with standard equivalents. Using the functions `table()` and `order()`, we counted the number of standards published by each technical committee and organization, and sorted them in descending order. We calculated the proportion of corresponding entries using the `percent()` function from the `scales` package. We created visualizations of the results using the `ggbarplot()` and `ggpie()` functions, specifying fill color, color palette, and display of values with parameters such as `fill`, `palette`, and `label`. We combined figures using the `/` and `+` symbols from the `patchwork` package and added labels with the `plot_annotation()` function. Finally, we saved the image with the `ggsave()` function, specifying the output filename, file type, width, and height.

3. Results

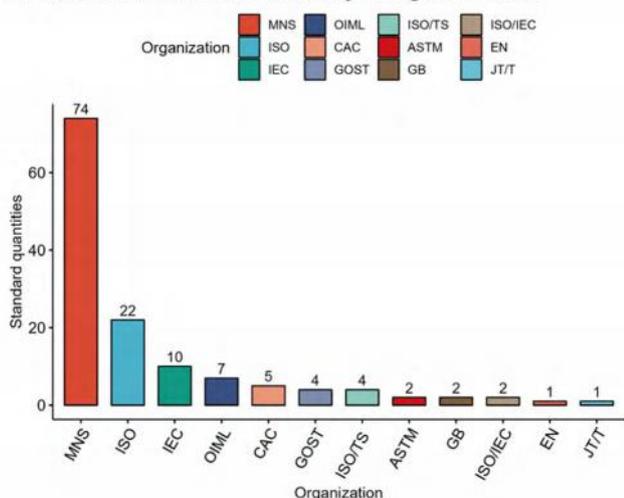
In 2022, the MASM released 134 new national standards, including 74 ones developed by itself and 60 adopted international and foreign standards, with a standard acceptance rate of 44.8% (Figure 1A). The standards covered various fields such as agriculture, food technology, building materials and buildings, medical and health technology, and electrical engineering. The national standards developed by Mongolia mainly focused on medical and health technology, environmental protection, health care and safety, and agriculture. On the other hand, the majority of other 60 adopted standards were related to food, construction, electrical technology, and electronic products.

Mongolia also solicited comments on 128 national standards throughout the year, including 63 ones developed by itself and 65 adopted standards, with a bid acceptance rate of about 50.8% (Figure 1B). The standards covered fields such as agriculture, health, environment, and services.

According to the international standard ICS classification, Mongolia developed 134 national standards in 20 fields in 2022, with the most standards issued in the fields of agriculture, integrative, medical and health technology, and natural and applied sciences (Figure 2A). However, there were fewer standards in the fields of material transportation equipment, imaging technology, electronics industry, services, social sciences, aircraft, and spacecraft engineering. Mongolia also solicited opinions on 128 national standards in 19 fields (Figure 2B), mainly related to agriculture, integrative, medical and health technology, and natural and applied sciences.

It is noteworthy that there were two Chinese national standards for agricultural and one for industrial vehicle adopted by Mongolia, involving the determination of iron and zinc atomic absorption spectroscopy in food and the Chinese sectoral standard for transportation, JT/T 1377:2021, *Automated guided vehicle for freight container*, respectively.

A National standards released by Mongolia in 2022



B Mongolia's national standards at enquiry stage in 2022

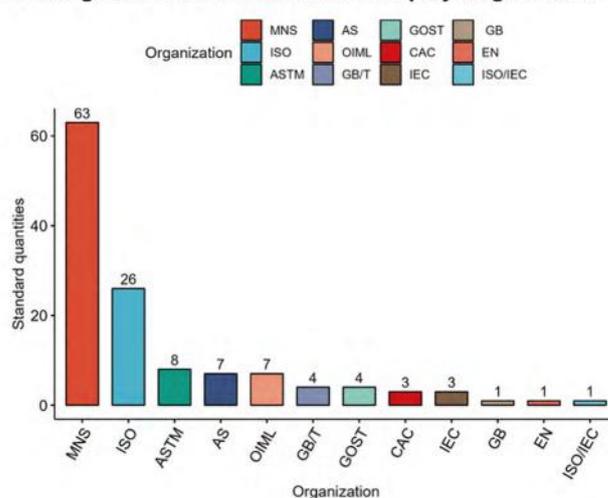


Figure 1

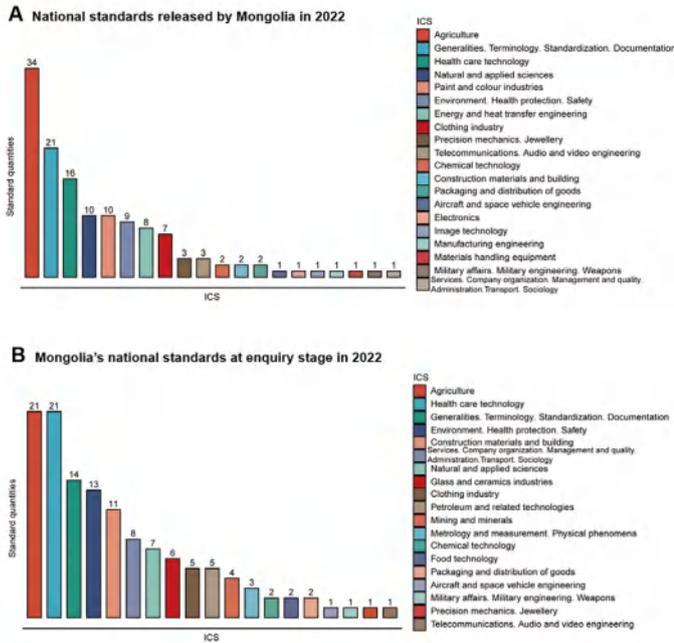


Figure 2

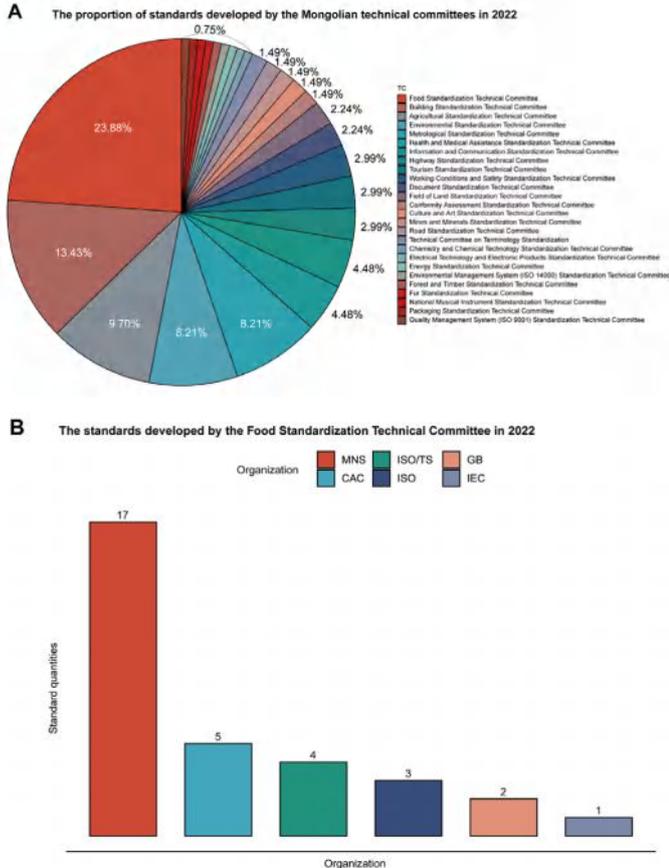


Figure 3

Mongolia's national standards released in 2022 involved 26 standardization technical committees such as food, construction, agriculture, environment, metrology, information and communications, and electronic products (Figure 3A). Most of the standards were in the fields of food, construction, agriculture, environment, and metrology, while there were relatively few standards in energy, forest and wood, plush, ethnic musical instruments, and quality management. Among the relevant standards developed by the Food Standardization Technical Committee (Figure 3B), which had the biggest number, the MNS standards were 17, followed by 5 CAC and 4 ISO/TS standards. There were 2 Chinese national standards adopted by Mongolia.

The data indicates that Mongolia releases an average of 10 standards per month, with a range of 0 to 35. Similarly, the number of standards soliciting opinions ranges from 0 to 22, with an average of 10 per month. January saw the largest number of standards released and solicited for comments, 35 and 22, respectively. The standards released in January spanned across various fields, such as agriculture, health, natural sciences, paint and pigment industry, and image engineering. On the other hand, the standards solicited for comments in January covered fields like construction, glass industry, food, minerals, environment, and comprehensive fields.

4. Summary and suggestions

The Mongolian government highly values standardization work

The Mongolian government attaches great importance to standardization work. In 2022, S. Amarsaikhan, Deputy Prime Minister of Mongolia, presided over 10 meetings related to standardization work, covering areas such as laws and regulations, natural gas, medical care, and urban appearance. The government also actively promoted standardization in various fields through signing performance plans and agreements with universities and research institutions.

The Mongolian National Institute of Metrology and Standardization actively participates in standardization work internationally and domestically. In 2022, it signed performance plans with its subordinate organizations and the heads of provincial metrology and standardization departments, focusing on performance evaluations, implementing tasks according to their respective responsibilities, and solidly promoting progress.

In addition to developing standards in the fields of food, medical care, vehicle technology, and billboards, the government also signed agreements with universities, the Mongolian Transport Association, and held meetings with the German Federal Institute of Physics and the International Electrotechnical Commission to enhance its work capabilities and efficiency.

Mongolia focuses on key technical standards

Most of the Mongolian national standards released in 2022 are related to pharmaceutical and health technologies, environmental protection, health and safety, and agriculture. Since the new government of Mongolia was established in 2020, it has actively implemented the “One Billion Trees Program” to prevent and control desertification and dust storms, and has also developed standards related to environment, water quality, and soil.

Mongolia adopts international and foreign key standards in priority areas

Sixty international and foreign standards adopted by Mongolia are 10 IEC standards, 22 ISO standards, 7 OIML standards, 5 CAC standards, 4 ISO/TS standards, 4 GOST standards, 2 China’s national standards, 2 ISO/IEC standards, 2 ASTM standards, 1 JT/T and 1 EN standard. These standards mainly focus on food, construction, electrical technology, and electronic products.

The 10 IEC standards adopted by Mongolia are mainly in the fields of food and construction; 22 ISO standards are related to environment, tourism, food, and safety; 2 China’s national standards are related to the determination of iron and

zinc atomic absorption spectrometry in food. In the industrial vehicle field, Mongolia adopted the Chinese sectoral standard for transportation JT/T 1377:2021 for the first time, which pertains to automatic guided vehicles for container transportation.

Suggestions for enhancing the cooperation between China and Mongolia

Standardization Administration of China (SAC) has signed numerous bilateral and multilateral cooperation agreements on standardization. With the help of the cooperation agreement, the boundaries of bilateral responsibilities can be clarified and working mechanisms streamlined. By leveraging regional centers, China can promote efficient standardization cooperation with Mongolia in various fields and share standards practices with each other. A smooth communication platform can be established to enhance the bilateral work progress with the MASM.

More Chinese standards in key areas should be translated into foreign language versions, including Mongolian version. This will further promote economic and technological exchanges, cooperation, and international trade, contributing to building a new pattern of openness in wider fields. 

Acknowledgement

The authors would like to acknowledge the Research Center of Mongolian Standardization (Inner Mongolia) for completing the integration and translation of all data into an English data matrix. We also express our gratitude to the Big Data Storage and Analysis Center of the Standard Verification Laboratory at the Institute of Quality and Standardization of Inner Mongolia for their support in data analysis.

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