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Index

Takeaways

Standards, the Key Element of the Guidelines on Building a Unified National Market

On 4 April 2022, the State Council and the Central Committee of the Communist Party of China released the *Guidelines on Building a Unified National Market* (hereinafter referred to as the Guidelines). The key goal of the Guidelines is to expand the scale of the domestic market through the removal of local protectionism rules and regional barriers, thus facilitating the market-based allocation of production factors and contributing to the implementation of the *Outline of the 14th Five-Year Pan (2021-2025) for National Economic and Social Development* and *Vision 2035*.

Notices: SAMR Carrying out Online Research on Technical Committeess

On 25 March 2022, the State Administration for Market Regulation (SAMR) issued the *Notice on Carrying out Online Research on National Professional Standardisation Technical Committees* (hereinafter referred to as the Research). In accordance with the requirements of the *Outline for the Development of National Standardisation*, the Research is aimed at collecting information regarding the work of Technical Committees (TCs), good practices, as well as opinions and comments through an online survey. The survey was closed on 8 April 2022.

First Association Standard for Reducing Carbon Emission of Road Freight Released

T/CSTE 0024-2022, Technical specification on assessment of greenhouse gas emission reductions for intelligent road freight matching system, was published by the Chinese Society of Technology Economics, an organization committed to combining technology and economy. With support from the China Classification Society, the technical specification is initiated by Full Truck Alliance, who established a smart logistics platform to realize car-to-cargo matching.

TCs for Digital and AI Metrology Established

During the commemoration meeting of the World Metrology Day on 20 May, the State Administration for Market Regulation (SAMR) announced the establishment of two national technical committees for digital metrology and artificial intelligence (AI) metrology. The two secretariats of the TCs are the National Institute of Metrology and the Beijing Institution of Aerospace Metrology and Testing Technology, respectively.

Sectoral Standard for Image and Video Stabilization of Mobile Devices Released

The Ministry of Industry and Information Technology of China (MIIT) published *YD/T 4066-2022, Technical requirements and testing methods for image and video stabilization of mobile devices*, on April 24. The sectoral standard applies to global smart phones and other mobile devices sold in China. It specifically applies to products equipped with Optical Image Stabilization (OIS), Electronic Image Stabilization (EIS), comprehensive image stabilization and other technologies.

CNCA Updates Standards for CCC of Ex Products

On April 24, 2022, Certification and Accreditation Administration of China (CNCA) updated the implementation rule for the CCC of explosion proof electric apparatus (CNCA-C23-01:2019 compulsory product certification implementation rules - explosion proof electric apparatus), which adopted eight new national standards of explosion proof electric apparatus (2021 editions) that came into effect on 1 May.

Horizontal Policy and Standardisation Cooperation

1. China-Germany Standardization Cooperation Promoted

#Standardisation Cooperation

The China-Germany Working Group on Standardization Strategic Cooperation held a virtual meeting on March 16, 2022, which was attended by Tian Shihong, Vice-Minister of SAMR and Administrator of SAC, Christoph Winterhalter, Chairman of the Executive Board of DIN, Michael Teigeler, Managing Director of DKE as well as Deniela Bronstrup, Director General for Digital and Innovation Policy at the German Federal Ministry for Economic Affairs and Climate Action (BMWK).

During the meeting, the two parties made in-depth discussions on key topics including ISO Strategy 2030, all- electric society proposed by IEC and An EU Strategy on Standardization, and exchanged their work experience in the areas such as product safety and standardization.

Tian put forward that the ISO's standardization roadmap should be promoted together with the enhanced management of technical committees. The role of Standardization Management Board and Market Strategy Board should be fully exerted and the standardization research on all-electric society should be strengthened in IEC.

He stressed that the two parties need to jointly facilitate the consensus on digital cooperation of standards to be included in the smart standards work of ISO and IEC, and further strengthen the exchange and communication in areas such as standardization strategy and standards life-circle management, which was highly affirmed by the German party.

The two parties reached a consensus on achieving more practical results through the China-Germany standardization cooperation.

Source: China Standardization Magazine, 3rd Issue, 2022

2. MOU on Standardization Signed between SAMR and MEIC

#Standardisation Cooperation

A MOU on standardization and supervision over product quality and safety was signed between the State Administration for Market Regulation (SAMR) of China and the Ministry of Economy, Industry and Commerce (MEIC) of Costa Rica on April 7, 2022.

The MOU was signed by Tang Heng, Chinese Ambassador to Costa Rica, on behalf of SAMR and Victoria Hernández, Minister of MEIC, based on the previous bilateral communication.

The MOU will help the two parties to further deepen the international cooperation on standards, enhance the mutual coordination and support in activities of international standards organizations

including ISO and IEC, and jointly establish the Standard Information Platform Contributed by the Belt and Road Countries.

The two parties will also promote the exchanges and cooperation in the supervision over product quality and safety, and improve the level of product quality and safety in bilateral trade, so as to better facilitate the economic and trade exchanges and advance the relationship between the two countries.

Keeping good bilateral communication and cooperation in market regulation, the two parties both participate in the international standardization activities as members of ISO. During the ISO Council meeting held in Costa Rica in June 2019, the Chinese delegation, led by Tian Shihong, Vice-Minister of SAMR and Administrator of SAC, and the Costa Rica's counterpart reached a consensus on signing an agreement to strengthen the cooperation on standardization and supervision over product quality and safety.

Source: China Standardization Magazine, 3rd Issue, 2022

3. Standards, the Key Element of the Guidelines on Building a Unified National Market

#Horizontal Policy

On 4 April 2022, the State Council and the Central Committee of the Communist Party of China released the *Guidelines on Building a Unified National Market* (hereinafter referred to as the Guidelines). The key goal of the Guidelines is to expand the scale of the domestic market through the removal of local protectionism rules and regional barriers, thus facilitating the market-based allocation of production factors and contributing to the implementation of the *Outline of the 14th Five-Year Pan (2021-2025) for National Economic and Social Development and Vision 2035*.

In the past, China largely relied on exports to sustain its economic growth. However, against the backdrop of uncertainties in external market and the needs for quality and stable economic growth, the country has started to attach greater importance to the growth of the domestic market through the establishment of a unified national market. Therefore, in support of this, the Guidelines outline five major actions and detailed instructions to be taken, specifically including:

- Unifying the basic systems and rules for the market;
- Strengthening the connection among facilities and platforms;
- Building unified markets for the smooth flow of various production factors (i.e. land, labour, capital, technology, data and energy) across the country;
- Promoting a unified market for goods and services;
- Facilitating the standardised market supervision, law enforcement and the corresponding capacities across the country.

In order to facilitate the implementation of the various tasks, the Guidelines highlight the importance of the role of standards. Consequently, the Guidelines specify a wide spectrum of areas in need of standardisation: the registration of market entities, to anti-monopoly investigation, logistics, supervision, law enforcement, technical requirements of electronic tenders, general guidance, etc.

Among those, the key areas more relevant for foreign enterprises are:

- Data factor market. To facilitate the establishment of the data factor market, the Guidelines lay down requirements for standards development, specifications and basic rules, so as to ensure data security, data ownership protection, data cross-border management, data transaction and circulation, data sharing and certification, etc. Therefore, a more comprehensive approach to the standards system for data factor market establishment is expected.
- Ecological market. The Guidelines require the establishment of harmonised sector standards for public resources transactions, such as carbon trade and water trade. In addition, the Guidelines emphasise green product labeling systems and certification of relevancy, with the aim to promote the green production and consumption.
- Consumer product. Domestically, the Guidelines support the maximised utilisation of non-governmental forces in carrying out inspection and testing, and promote cross-industry and cross-regional interoperability and mutual recognition of certification results. Regarding international cooperation, the Guidelines put forward the commitment of aligning domestic standards with the international standards in key consumer goods, and promote mutual recognition of quality certification.
- Improving standards system. The Guidelines reflect on the needs to establish effective standards system in various sectors, including the IoT, 5G, blockchain, AI, big data, energy storage, etc. In addition, several technologies for intelligent identification are required to be standardised, according to the Guidelines.
- Fair treatment in requirements for inspection of standards. The local governments are required to provide fair treatment to all enterprises (local or non-local) while certifying their qualifications and licensing business permits. Furthermore, without legal basis, enterprises shall not be required by the government to carry out any self-test or self-inspection, nor provide any certificates before government provide their due services.

4. Notices: SAMR Carrying out Online Research on Technical Committees

#Standardisation

On 25 March 2022, the State Administration for Market Regulation (SAMR) issued the *Notice on Carrying out Online Research on National Professional Standardisation Technical Committees (hereinafter referred to as the Research).* In accordance with the requirements of the *Outline for the Development of National Standardisation*, the Research is aimed at collecting information regarding the work of Technical Committees (TCs), good practices, as well as opinions and comments through an online survey. The survey was closed on 8 April 2022.

The survey contains three major subjects: (i) work on domestic standardisation, (ii) international standardisation, and (iii) capacity building/management. Each subject is entailed with various specific questions. The following is a

summary of the most relevant aspects of the survey for our stakeholders:

1. Domestic standardisation.
    - Formulation and revision of the standards. Thesurvey in this part is designed to provide to SAMR a general view of TCs' work in domestic standardisation Specifically, the survey raises questions regarding the priority arrangement of standards development, the interaction with scientific achievements, stakeholder engagement (i.e. private enterprise and foreign-funded enterprise), and the collection of standards requirement.
    - Formulation of key standards. The survey intends to map key standards formulated since 2018, especially those in support of national strategies or being referred to by policies or regulations.
    - Standards promotion. Apart from standardisation development, TCs are also responsible for the promotion of standards that they developed. Thus, as part of the survey, there are a series of questions related to TCs' work on standards promotion, including standards promotion on social media/websites, online courses, good practices and the follow-up.
2. International standardisation. The survey focuses on the TCs' participation in international standardisation. At the same time, TCs were encouraged to elaborate on the challenges they face while facilitating the integrated development of international domestic standardisation. They were also required to provide comments/advice to facilitate the development.
3. Capacity building and management. Since wider participation in standards development of stakeholders of all kinds is encouraged by the administration, the survey, therefore, included questions about the efforts of TCs in this regard. Other than that, TCs were also encouraged to report the situation in terms of the membership management, work evaluation, establishment of connection systems across various TCs, skills training, subcommittee management, and other relevant difficulties.

5. SAC Publishes the Guidelines on the Standardization Work for Implementing China's Regional Major Strategies

#Horizontal Policy

The Standardization Administration of China (SAC) recently published the *Guidelines on the Standardization Work for Implementing China's Regional Major Strategies*, which will promote the implementation of the Outline for National Standardization Development.

China has adopted the overall approach to a modernized country. Therefore, when it comes to demands for standards, we can not ignore the difference between regions. The Guidelines is developed to serve the implementation of major regional strategies, aiming to incorporate standards demands of regional development into the national standards system, make the regional plan of standardization development, and harmonize technical regulations of different regions. Eight key points are listed in the Guidelines.

The Guidelines specifies the orientation of regional standardization work. It should fit vital

regional strategies, including the coordinated development of the Yangtze River Economic Belt, the Guangdong-Hong Kong-Macao Greater Bay Area and the Yangtze River Delta, ecological conservation and high-quality development of the Yellow River Basin, etc. Apart from achieving economic growth, we should also attach great importance to fundamental construction, ecological environment, industrial innovation, and public services, which will contribute to benign interactions of elements within regions.

The Guidelines points out that we should focus on the development, implementation and assessment of standards for regional strategies. Also, we should let international standardization development of the Beijing- Tianjin-Hebei Region, the organizations, private enterprises, research institutes and relevant associations play roles in this process.

Further work will be assigned to boost standardization development. We will cultivate relevant talents, advocate investment, strengthen the assessment of work plans and goals, enhance policy support for regional standardization, and officially include standardization work into the annual work plans of local standardization departments.

Source: China Standardization Magzine, 3rd issue in 2022.

6. Standards Digitalisation is the Trend of the Times

#Standards Digitalisation

Standards digitalisation is a priority of future standardization work in China, as the National Standardization Development Outline puts forward “promoting the transformation of standardization in a digital, networked and smart way”. When delivering a report at the National Standardization Work Conference earlier this year, Tian Shinhong, Vice-Minister of State Administration for Market Regulation (SAMR) and Administrator of Standardization Administration of China (SAC), stressed to “vigorously promote the development of machine readable standards, and explore the new management mechanism of national standards in the context of digitalisation”, and “strengthen the research on standards digital technologies, seize the trend of cutting-edge technologies and enhance the fundamental theories of standardization”.

China Standardization Press had an interview with Wu Hequan, Academician of the Chinese Academy of Engineering and Chair of National Standardization Expert Advisory Committee to find out his insights into standards digitalisation and suggestions for future work.

Why standards digitalisation is so important in the digital, networked and smart era?

Wu Hequan: The government work report of China in 2022 puts forward accelerating the integration of digital technologies and the real economy. In fact, the integration is reflected in many aspects such as how standardization integrates with digital technologies. Standards digitalisation refers to using digital technologies to empower standards and their whole life cycle, so that the rules and characteristics of standards can be read, transmitted and accessed by digital devices. It is expected that standards can be developed, applied and promoted in a better way by using the new generation of digital technologies. Standards digitalisation includes two parts: standards format and standardization methods.

China now is carrying out research on this subject, so is the international community. International Organization for Standardization (ISO) launched a SMART programme to produce Standards that are Machine Applicable, Readable, and Transferable (SMART), which is a milestone of standardization development.

The change from paper format to machine readable format becomes possible due to the development of digital technologies, which also meet the demands of social development. As standardization has penetrated into all aspects of the real economy, and machine has replaced humans in several scenarios, machine readable standards have become an irresistible trend of social development.

Take the surveillance videos in smart cities as an example. Tens of thousands of traffic surveillance cameras are connected to the traffic control center, but the scenes they took cannot be displayed simultaneously on the screen in the monitor room. It works in this way that the surveillance videos of each road are displayed on the screen for a minute. We hope that in the future the surveillance videos of all roads can be edited into a dynamic video for city traffic via artificial intelligence technologies to greatly improve the efficiency of monitoring. Another possible method is to let computer read these videos directly so that computer can understand the whole picture without human assistance. It is not only about the changes of reading methods, from people to computer, but also about the changes of some connotations, rules or indicators in standards.

We are now entering a new era of information technology; the whole society is evolving in a more digitalised, networked and smarter way. In the standardization area, it is reflected as standards digitalisation.

What changes will standards digitalisation bring?

First of all, standards format will change. In the past, standards were in paper format. If they are machine-readable in the future, standards will be searched and found by machine, then read and understood by machine, and at last applied by machine.

It is relatively easy to search standards by machine. However, it is very difficult to realize machine-readable. Why? Because standards focus on specific fields. The model and algorithm of artificial intelligence are improved through a lot of data training, which cannot cover all professional areas. Second, there is non-structural data in standards such as formula, charter and curve, which are difficult to understand by computer. Lots of work need be done to realize the visualization and readability of standards.

How to make standards machine-readable? We can start with the descriptive language of standards. Extensive Markup Language (XML) is now used to describe standards. Open-source software can also be used to describe standards, but only a limited number of standards are suitable for open-source software.

In addition to standards format, standards digitalisation also means that digitalisation runs through the whole life cycle of standardization to facilitate the development, application and promotion of standards. First of all, open-source software, such as an online collaborative platform, is used to accelerate the process of standards development and revision, encouraging more people to participate in the process and greatly reducing the development cycle. Generally speaking, standards are now revised every few years; however, open-source technology can

speed up the development and revision of standards via dynamic upgrading.

Second, it will be easier to make standards comparison and find the relevance between standards and intellectual property. Using big data and artificial intelligence, we can make a quick comparison between international standards and national, association ones. In addition, standards digitalisation helps us find the relevance between standards and intellectual property. For example, it is easy to retrieve the declaration information of stakeholders in the development process, whether the patent holder complies with the FRAND (Fair Reasonable and Non-discrimination) principles to give permission, or whether relevant intellectual property agency authorizes the patent or not, and so forth.

Third, it will support the supervision of standards application. As standards are digitalised, it is easy for regulators to check the compliance of standards implementation by examining the data.

Fourth, standards information can be retrieved quickly. When standards are machine readable, a great number of standards texts can be read and retrieved quickly by computer. Computer even can compile these standards texts into working instructions to guide standards implementation accurately. Standards digitalisation will be not only beneficial to standardization technical committees, but also helpful for regulation departments and standards users.

What challenges will standards digitalisation bring to technology and system?

Standards digitalisation, a milestone in the standardization development history since the Industrial Revolution, is a main characteristic of standardization in the digital economy era. It creates a golden opportunity for innovation, boosts the reform of standardization methods and management system, but also brings unprecedented challenges.

First, management of standardization. Previously, standards are designed for people. But different people may have different understanding of standards, so every standard clearly indicates that who is responsible for the interpretation. If standards are read by machine, how can the ambiguity of standard provisions be understood without misinterpretation? Therefore, even in a machine-readable era, standards cannot be completely handled by machine, and they still need the intervention of people. When the intervention of people is needed, how to intervene and all such issues should be specified in the management rules.

Second, artificial intelligence technologies. Things work out when standards are read and applied by machine in 99% of scenarios; but erroneous judgement could happen in the rest. So how to avoid the misjudgment of artificial intelligence? When things go wrong about the machine readable standard, it is difficult to define who is responsible, the designer of machine algorithm, machine user or owner? Even so, we should not give up the efforts of promoting standards digitalisation, as it is impossible to advance technology without attempts and application. To avoid risks, machine-readable standards can start from those standards that may not have a big impact even with erroneous judgment.

Third, cyber security. Machine readability inevitably uses computer system, and cyber system is very easy to be attacked. To realize standards digitalisation, we should attach great importance to the security of relevant information systems. More importantly, since the reading of key standards cannot solely rely on

machine, people should make the final check on the results.

What shall we do to realize standards digitalisation?

It is a long way to go, as the task is too arduous. We must have a long-term plan and implement it in an orderly way.

First of all, the top priority is to develop a standard for machine-readable standards. The standard will specify the elements of machine readability and supporting technologies. Which are the most fundamental metadata of machine-readable standards. The descriptive languages of standard should be defined, such as XML, JSON (JavaScript Object Notation) or others. If multiple languages are used, the compatibility problems need to be solved. The unified format of expression by machine should also be defined for formula, arithmetic, flow chart, circuit diagram, curve chart, etc. Now, China National Institute of Standardization is assigned by SAC to conduct research in this area.

ISO, ITU and other standardization organizations overseas are also carrying out the research on standards digitalisation. By now, there is no globally recognized machine-readable standard. But China is exploring in some areas. In 2017, the series of Chinese national standards for machine readable passport, visa and official travel documents, including GB/T 34974.1-2017, *Identification cards—Machine readable travel documents—Part 1: Machine readable passport*, were published, which adopt the ISO/IEC 7501 series. Because there is a chip embedded in passport, machine-readable passport in fact means to read the information in the chip. It is difficult to promote this method in machine-readable standards, as it is almost impossible to embed a chip in every standard.

Second, a professional platform needs to be established to support machine readability. Standards cannot be directly understood by artificial intelligence. We can use big data technology to establish a knowledge spectrum based on a great amount of standards texts, so as to find the pattern of machine readability. China Electronics Standardization Institute (CESI) is conducting the fundamental research on the specifications for standards knowledge spectrum, but relevant standards are not published yet.

As standards cover various areas, common knowledge spectrum is not enough. Standards knowledge spectra for professional fields should be developed together with a batch of cloud platforms for standards machine readability, covering the areas of machinery, electronics, biology, chemical industry, metallurgy, building, etc. All of these work needs the overall planning and coordination of SAC, so that the platforms can be set up to promote the application of standards digitalisation.

Third, the training of professional standards drafters is important. Many standards drafters are well trained and experienced. They know how to draft standards, how to make the language simple and clear. But these standardization veterans may not be able to draft machine-readable standards by using XML language. On the other hand, IT experts are not familiar with the standardization rules and the expertise of a certain area. We need experts with professional background, who is familiar with both standards drafting rules and can use machine-readable technologies. However, such talents are rare, so we must put the training of these professionals on agenda as soon as possible.

Last but not least, management specifications for standards digitalisation should be developed. Standards digitalisation is a new topic, which involves the standardization life-cycle management. We must specifically modify relevant standardization rules and procedures; otherwise, the format and production mode of

machine-readable standards texts will face legal problems. To promote the standardization work at the international level, we must strengthen the international cooperation on the standards digitalisation research.

To realize standards digitalisation, we cannot rush for actions without overall planning and trials. The most effective application scenario of machine-readable standards is that production equipment automatically implement processes following the requirements of standards. Machine- readable standards can be applied in these cases. It is extremely heavy workload to change all existing standards into machine-readable ones, so we must make a long-term plan.

In a nutshell, standards digitalisation is a rare opportunity for the development of standardization, which brings new challenge for standardization research and development, application and management of standards.

Source: China Standardization Magzine, 3rd Issue, 2022

7. Views on the Digital Transformation of Standards in China

#Standards Digitalisation

To better understand the digital transformation of standards as a priority of future standardization work, China Standardization Press interviewed Yu Xinli, President of China Association for Standardization (CAS), who shared her views and thoughts about the topics such as progress and typical practices at national and international levels.

Background of digital transformation

Chinese President Xi Jinping pointed out that we should vigorously develop the digital economy in China, commercializing digital technologies and upgrading industries with digital transformation and promoting an in-depth integration of digital economy and real economy.

Developed countries and regions, such as EU, Germany, the UK, and the US, have attached great importance to the development of digital economy. They have been integrating new technologies in key national infrastructure projects and sectors including manufacturing, and promoting a new international market to enhance their competitiveness and global leadership.

It is clear that successful digital transformation of standards will not only affect the efficacy of digital transformation in all sectors, but also determine the driving forces and potentials of digital economy. It also sets the tune of China in its future cooperation with other nations, integration to the international trade system, and contribution in the world development.

Progress at national and international levels

The core of digital transformation of standards is to realize digitalised standards - to make standards machine applicable, readable, and transferable (SMART), as defined by ISO and generally accepted at home and abroad now. ISO sets five layers of SMART standards, such as paper, open digital, machine-readable, and machine-interpretable standards.

To make progress in digital transformation of standards, we shall carry out work in two aspects: one is to perform digitalised transition of existing standards only with hard copies, and promote the digital versions in use and management; the other is to directly develop the digital version of new standards and implement digitalised application and management of the standards.

Standardization organizations at national and international levels have carried out research and practices focusing on the digital transformation of standards.

- **ISO/IEC**

Applying machine-readable standard (MRS) has been taken as a strategic topic by ISO. In 2018, ISO/TMB established a strategic advisory group known as SAG MRS, which investigates the demand on MRSs and assesses potential opportunities and challenges.

As stated in its development plan of 2017, IEC continued to take actions to cope with radical changes that impact the operation of its core business, including open data projects, and new types of standards in machine readable format. In 2018, IEC set up a strategic group on digital transformation known as SG 12 under SMB.

- **CEN-CENELEC**

CEN and CENELEC launched the Strategic Plan for Digital Transformation in 2017, and carried out pilot projects in 2019. They also performed in-depth legal analysis of the content and IPR protection of digital standards.

In 2021, CEN and CENELEC issued the *CEN-CENELEC Strategy 2030* to lead their strategy direction for the decade to come, in which standards are taken as the key tool to promote the flexible, green and digital transition of EU industrial ecosystem. They were also committed to advancing the standardization work with the most state-of-the-art technologies.

- **Germany**

In 2017, Germany released *German Standardization Strategy*, proposing 6 major goals to "shape the future with standardization", pointing out the integration of open source projects and digital transition and taking advantage of open source technologies and methods in standardization.

Based on the strategy, DIN and DKE have taken machine executable standards as a vital means to realize goals and underpin the Industry 4.0 in Germany.

- **US**

ANSI has listed the SMART standards an important issue in standardization strategy in its annual report 2019-2020.

- **UK**

In 2021, the UK government launched the *Standards for the Fourth Industrial Revolution: HMG-NQI action plan*. To realize the action plan, the UK government and the NQI partners shall work in partnership to implement 6 actions to unlock the full potential of voluntary standards, support innovation and enable its swift and safe commercialization. The joint action plan will ensure the effective coordination between standards, policy making and strategic research.

The second action focuses on accelerating the digitalisation of standards, including further developing BSI's capability to deliver machine-readable standards, overhauling its digital platform to improve the accessibility of standards content and information, and facilitating feedback on existing standards and supervision of standards development process, as well as developing the frameworks, good practice guides, and skills training materials needed for digitalised standards.

- **China**

In October 2021, China has issued an outline to promote standardization development at the national level. The document has put "constantly improving the digitalisation of standards" as one of the strategic goals, and proposed the development on SMART and open source standards, so as to promote the transition of standards in a digitalised, cyberized and smart manner.

In December, the *14th Five-Year Plan for Promoting the High-Quality Development of the National Standards System* put forward stepping up efforts in building pilot projects on digitalised national standards, and trying to provide national standards in new forms, such as machine-readable, open-source and database forms. It also urged to establish information systems that support the digital transition of national standards.

In terms of organization, ISO/IEC JTC1/SC7/AHG 4 is established to focus on software development, engineering, and system construction of machine-readable standards. In January 2022, a new WG on the digitalisation and standardization of national standards started soliciting members from the public.

Typical practices

So far, explorations and experiments have been carried out at various levels.

1. ISO/IEC Online Standards Development Platform (OSD)

ISO and IEC have created this online platform for thousands of experts in standardization area around the world. The platform now is open for trial run.

The platform is designed to provide better:

- Collaboration – experts work collaboratively on a standard in real-time from the preparatory stage
- Accuracy
  and quality – it takes care of the structure and quality of the document, so experts can truly focus on content
- Straightforwardness – online commenting and comment resolution
- Integration – the platform is accessible via existing ISO and IEC standards development tools
- NISO STS (NISO Standards Tag Suite) – a content development system based on standards
- Harmonization – IEC/ISO standards development and processes

The core of the platform is Fonto Editor, a tool developed by Fonto company compatible with NISO STS schema which allows for semantic enrichment. Fonto Editor is an XML-based tool that allows stnadards authors, editors and reviewers to exxchange comments on standards contents and use metadata. It has proved to be useful in the whole workflow of drafting a standard, supporting expert with its easy-to-use configuration, high compatibility, supportive online coordination and revision control.

IEC and ISO are now using NISO STS, so are CEN-CENELEC and its members.

2. ISO/TC 37, *Terminology and other language and content resources*

As one of earliest TCs of ISO, ISO/ TC 37 has formulated series standards concerning structured contents, including management on terminology resource and language resources. Over 20 standards have provided important reference for the process and treatment of digitalised standards in terms of text, standards analysis, tagging and processing.

3. Practices of the AVIC China Aero-Polytechnology Establishment

China Aero-Polytechnology Establishment has drawn upon past experiences, and developed man agement tools, such as the standards structural processing system and standardization man agement system, to meet the service demands. It is able to provide series of services b y tools including fragment processing of standards, structured tagging on contents, data management, process management, and intelligent services.

4. Practices of the AVIC China Aero-Polytechnology Establishment

China Aero-Polytechnology Establishment has drawn upon past experiences, and developed man agement tools, such as the standards structural processing system and standardization man agement system, to meet the service demands. It is able to provide series of services b y tools including fragment processing of standards, structured tagging on contents, data management, process management, and intelligent services.

Future challenges

All parties involved have reached a consensus on the importance of digital transformation of standards, but differed from each other over features, mechanism, technologies, forms, and models in detail. There are still challenges needing in-depth study.

On policies and planning, we will pursue and follow related policies by setting up a sound system that ensures progress on the digital transformation of standards with solid steps, facilitates the integration of digitalised standards in all sectors, and promote the digital transformation program.

In the era of digitalisation for all, we should put the top-level planning in place through a detailed implementation plan and ensure the participation of all stakeholders, including specialists in standardization, technologies and industries and common users.

We will seize the opportunity of the digital transformation of standards and strive to lead the standardization in relevant fields in the world by strengthening cooperation with ISO and IEC.

On mechanism, we must consider the mechanism and main contribution of digitalised standards on supporting the digital economy, to facilitate the interaction between digitalised standards and major factors of NQI.

We need to explore how digitalised standards promote the restructuring of industries and social governance, since it is important to stimulate technical innovation and promote in-depth integration between digital transformation of standards and industries. We should also consider its effect on the value chain of companies.

On implementation, we should dig out the demands on digital transformation of standards in all sectors, including the models and commonalities of the services they require, and well coordinate the study on

general technologies and the research on sector-specific application to avoid repeated research and unnecessary investment.

Digital transformation of standards will bring changes to forms, life cycles, research procedures, management patterns, and service modes of standards. The pain points in the process need to be resolved by technical and management means.

There are discrepancies in the use of terminologies and indicators in existing standards. We need to take actions to make sure future digital management, application and services will not be affected.

Source: China Standardization Magzine, 3rd issue, 2022.

Green Transition

8. Hydrogen Plan Released to Boost Green Transition

#Hydrogen

On March 23, 2022, the National Development and Reform Commission (NDRC) and National Energy Administration (NEA) jointly issued the *Hydrogen Energy Industry Medium and Long-term Development Plan (2021-35)* (hereinafter referred to as "the Plan").

The development objectives that specified in the Plan include:

By 2025

- establishing a hydrogen energy supply system with hydrogen produced by: industrial by-products; nearby utilization of hydrogen produced from renewable energy sources
- the number of fuel cell vehicles to reach about 50,000
- building a number of hydrogenation stations
- hydrogen production from renewable energy to reach 100,000-200,000 tons per year: becoming an important part of the increase in hydrogen energy consumption
- achieving CO2 emission reduction of 1-2 million tons per year

By 2030

- building a relatively complete technological innovation system for the hydrogen industry
- building a clean energy hydrogen production and supply system

By 2035

- building a hydrogen energy industrial system
- building a diversified hydrogen energy application ecosystem covering: transport, energy storage, industry, other fields

Establishing an innovation system to support the high-quality development of the hydrogen energy industry

- advancing proton exchange membrane fuel cell tech innovation
- improving the reliability of fuel cells and conversion efficiency of hydrogen production from renewable energy

Advancing hydrogen infrastructure construction

- launching demonstrations of hydrogen production from renewable energy in areas rich in following resources: wind, solar. hydropower
- supporting the exploration and practice of various storage and transport methods
- improving the efficiency of high-pressure gas storage and transport: speeding up the reduction of storage and transport costs

Promoting diversified demo applications of hydrogen energy

- focusing on the application of hydrogen fuel cells in medium and heavy vehicles
- gradually expanding the application space of hydrogen fuel cells in other new energy passenger and cargo vehicles

Improving hydrogen development policy and guarantee mechanism

- standardizing the construction and management procedures for: hydrogen energy preparation, storage, transport, refueling
- implementing safety supervision responsibilities
- strengthening research on safety management systems and standards for hydrogen energy
- establishing and improving safety standards and norms for the whole hydrogen energy industry

9. The 58th Meeting of APEC Expert Group on Energy Efficiency & Conservation

#Energy Efficiency

The 58th meeting of the APEC Expert Group on Energy Efficiency and Conservation (EGEEC) was held virtually by the Resource and Environment Sub-Institute of CNIS from March 30 to April 1.

More than 40 participants attended the meeting, consisting of experts from APEC economies and representatives from international organizations such as Asia-Pacific Energy Research Center (APERC) and APEC Sustainable Energy Center (APSEC).

The meeting focused on the cooperation of APEC economies in the field of energy efficiency and conservation. Attendees shared their progresses in relevant technologies, policies and standards, and discussed key issues including digitization, energy efficiency and progress in energy intensity reduction. Declared in the 19th APEC Leaders' Subordinated to APEC's Energy Working Group (EWG), EGEEC offers technical suggestions on the cooperation between APEC economies. CNIS has become the counterpart of EGEEC in China since 2017, and has been elected the Vice-Chair of the working group.

Meeting in 2011, the goal is to realize a 45% decrease of the energy intensity in the APEC region, taking the number in 2005 as the baseline.

Experts reached an agreement on enhancing the cooperation in technologies of energy efficiency and conservation and increasing the communication with international organizations and other expert groups specialized in the analysis of APEC energy data, new energy resources, renewable energy resources, etc. Further effort will be put into tracking the descending trend of energy intensity, promoting cooperation to combine energy efficiency enhancement with relevant technologies, and managing to meet the goal of energy intensity decrease.

Lei Xiang, Deputy Director from the International Cooperation Department of the National Energy Administration, made a closing speech on behalf of the organizer.

Source: China Standardization Magazine, 3rd Issue, 2022

10. First Association Standard for Reducing Carbon Emission of Road Freight Released

#Carbon Emission

Logistics lays the foundation of modern economy, and road freight is an essential part of logistics. Given that people are seeking solutions to global warming, cutting down carbon emissions of road freight can be something we can embark on.

Transportation industry accounts for 12% of China's annual greenhouse gas emission, with road freight taking a great share of over 48% of carbon emissions. When it comes to road freight, it often comes up with a huge problem: empty-loaded rate. Freight trucks often run without cargoes before loading and after unloading, which is an inevitable waste of resources. Moreover, renewable resources are not sophisticated enough for medium-sized and heavy lorries, which means we must find methods to reduce carbon emissions of road freight. Therefore, if we keep this waste to the minimum, the rewards would be great.

To solve this dilemma, T/CSTE 0024-2022, *Technical specification on assessment of greenhouse gas emission reductions for intelligent road freight matching system*, was published by the Chinese Society of Technology Economics, an organization committed to combining technology and economy. With support from the China Classification Society, the technical specification is initiated by Full Truck Alliance, who established a smart logistics platform to realize car-to-cargo matching. Based on big data technology, the platform helps allocate orders and notably reduces the empty-loaded rate. Also, the specification offers a method to calculate carbon emission reduction of the platform. In 2021, thousands of drivers have reduced 14 grams of carbon emission per ton-kilometer on average by using the platform.

The technical specification is expected to make road freight cleaner and more efficient.

Source: China Standardization Magazine, 3rd Issue, 2022

Digital Transition

11. Ten Cybersecurity Standards Released

#Cybersecurity

On 15 April 2022, SAMR/SAC released 10 cybersecuity national standards, as below.

No.	Code and number	Name of the standards	Standards being replaced	Effective time
1	GB/T 41387-2022	Information security technology—Smart home general security specification		Applicable from 1 Nov 2022
2	GB/T 41388-2022	Information security technology—Trusted execution environment—Basic security specification		Applicable from 1 Nov 2022
3	GB/T 41389-2022	Information security technology—SM9 cryptographic algorithm application specification		Applicable from 1 Nov 2022
4	GB/T 41391-2022	Information security technology—Basic requirements for collecting personal information in mobile internet applications		Applicable from 1 Nov 2022
5	GB/T 41400-2022	Information security technology—Information security protection capability maturity model of industrial control systems		Applicable from 1 Nov 2022
6	GB/T 41479-2022	Information security technology—Network data processing security requirements		Applicable from 1 Nov 2022

7	GB/T 20984-2022	Information security technology—Risk assessment method for information security	GB/T 20984-2007	Applicable from 1 Nov 2022
8	GB/T 29829-2022	Information security technology—Functionality and interface specification of cryptographic support platform for trusted computing	GB/T 29829-2013	Applicable from 1 Nov 2022
9	GB/T 30283-2022	Information security technology—Information security service—Classification and code	GB/T 30283-2013	Applicable from 1 Nov 2022
10	GB/T 31506-2022	Information security technology—Security guidelines for website system of government affairs	GB/T 31506-2015	Applicable from 1 Nov 2022

12. Notice of the Convening of the Meeting on the Development of National Standards for Privacy Computing and Federated Learning

#Privacy Computing #Federated Learning

To implementation the *Guidelines for the Construction of China's New Generation of AI Standard System* requires, SC42 (for AI) is required to facilitate AI standardisation as soon as possible and strengthen the role of standardisation in industrial development. In line with the requirement, SC42 called upon industry-college-institute cooperation among diversified organisations to participate in the meeting for drafting national standards of privacy computing and federated learning on 29 June 2022.

The following is the agenda of the meeting:

AI - Technical Requirements for Privacy Protection Machine Learning System
AI - Technical Specification for Trusted Federated Learning

13. MoU Signed between the 6G-IA and the IMT-2030 (6G) on 6G Cooperation

#6G

On 2 June 2022, the 6G Smart Networks and Services Industry Association (6G-IA) and the IMT-2030 (6G) Promotion Group signed a Memorandum of Understanding (MoU) on 6G, with the aim to further promote cooperation on 6G.

The 6G Smart Networks and Services Industry Association (6G-IA) is the voice of research for the European industry and its next generation networks and services. Its primary objective is to contribute to Europe's leadership beyond 5G and 6G research and to full 5G deployment according to the 5G Action Plan. The 6G-IA carries out a wide range of activities in strategic areas including standardization, frequency spectrum, R&D projects, technology skills, collaboration with key vertical industry sectors, notably for the development of trials, and international cooperation.

The IMT-2030 (6G) Promotion Group is the flagship platform in China for the promotion of 6G R&D and international cooperation. It also drives cutting-edge research on 6G technology and its industry in China. Its primary objective is to gather China's industry-university-research forces to promote 6G research in a wide range of areas, including vision and requirements, wireless and network technologies, standardization, trials, study of social and economic impact, and international collaborations.

The MoU exhibits areas of cooperation between the two sides, as follows.

- Exchange information in the field of 6G communication systems and networks.
- Collaborate in the following aspects.
- Vision of 6G communication systems and networks.
- Requirements on 6G communication systems and networks.
- Discussions on basic system concepts.
- Frequency spectrum in order to support the global regulatory process.
- Preparation of future global standards by identification of common interest and consensus building.
- Collaboration on the development of a single global standard to ensure one global ecosystem for 6G.
- Encouraging collaborative 6G research projects.

As their next step, the two organizations plan to organize joint activities, including but not limited to workshops, seminars, webinars, trials, and joint publications.

14. TCs for Digital and AI Metrology Established

#Digital and AI Metrology

During the commemoration meeting of the World Metrology Day on 20 May, the State Administration for Market Regulation (SAMR) announced the establishment of two national technical committees for digital metrology and artificial intelligence (AI) metrology. The two secretariats of the TCs are the National Institute of Metrology and the Beijing Institution of Aerospace Metrology and Testing Technology, respectively.

In the backdrop of digital transition, digital technologies have been widely applied in various economic and social sectors including metrology. The International Bureau of Weights and Measures (BIPM) and the International Organization of Legal Metrology (OIML) have determined the theme of this year's World Metrology Day as "Metrology in the Digital Era". Practitioners in this sector are developing and verifying advanced measuring technologies to support the rapid development of the digital economy.

Metrology's digital transition generally consists of two fronts: the digitalisation of traditional measuring technology, method and management; and the development of appropriate measuring methods for digitalised industries.

The two technical committees will support the innovation and development of China's data and AI industry. They will promote the creation and application of digital measuring tools and intelligent measuring tools to set up reference data and cognitive standards. They will gather experts to carry out research on metrology issues, draft technical specifications and improve their quality. Through standardizing the specification of data and AI and unifying digital measuring units, the TCs will contribute to the reliability and consistency of intelligent assessment methods.

Metrology depicts the world in quantity and is thus fundamental to the future development of economy and society. A complete theoretical and technological system of digital measuring and AI measuring to be developed by the TCs will promote a better understanding of the world, as well as improve the sound development of the digital economy.

15. Sectoral Standard for Image and Video Stabilization of Mobile Devices Released

#Mobile Device

Nowadays, people are heavily relying on smart phones for daily activities. When we purchase smart phones, we often care about the cameras, considering if they can take good- looking selfies and record our lives.

Producers of mobile phones are fiercely competing in this lane by inventing various cameras with diversified functions. To better regulate these products, the Ministry of Industry and Information Technology of China (MIIT) published YD/T 4066-2022, *Technical requirements and testing methods for image and video stabilization of mobile devices*, on April 24. The standard is a joint achievement of China Academy of Information and Communications, AP Photonics Co., Ltd. and smart phone producers

including Huawei, OPPO, vivo, SAMSUNG, etc. The sectoral standard applies to global smart phones and other mobile devices sold in China. It specifically applies to products equipped with Optical Image Stabilization (OIS), Electronic Image Stabilization (EIS), comprehensive image stabilization and other technologies.

With the development of 5G technology, the phone inner space becomes extremely crowded, as the number of inner antennas and cameras inside the phone increase. Also, significant disturbance from antennas greatly affect camera modules. Thanks to the development of OIS technology, this problem is solved.

According to Hong Hangqing, CEO of AP Photonics, OIS and fast autofocus technology can greatly improve image quality and release AI software from excessive burden. Moreover, Chinese enterprises have been leading the development of liquid lens technology, which enables consumers to have better experience using variable macro lenses and telephoto lenses.

Source: China Standardization Magazine, 3rd Issue, 2022

16. CESI to Develop International Standards for Brain-computer Interfaces

#International Standards

On 7 June 2022, SAC issued a call for comments on approving the application of the China Electronics Standardization Institute (CESI) for the mirror committee of ISO/IEC JTC1/SC43 (Brain-computer Interfaces) in China.

ISO/IEC JTC1/SC43 is developing information technology to enable communication and interaction between brain and computers that are applicable across application areas. The committee serves as the focus and proponent for JTC 1's standardization program on Brain-computer Interfaces, including the development of foundational standards; provide guidance on Brain-computer Interfaces to JTC 1, IEC, ISO, and other entities developing applications of BCI.

ISO/IEC JTC1/SC43 was established in late 2021, with China holding its Chair, committee manager, and secretariat. Now the committee has three P members from China, the UK, and Belgium, respectively, and two O members of Argentina and Slovakia. In 2021, a Chinese proposal was approved as its first standard project, namely, *Information Technology-Brain-computer Interface-Vocabulary*.

Certification and Accreditation

17. CNCA Updates Standards for CCC of Ex Products

#CCC

On April 24, 2022, Certification and Accreditation Administration of China (CNCA) updated the implementation rules for the CCC of explosion proof electric apparatus (*CNCA-C23-01:2019 compulsory product certification implementation rules - explosion proof electric apparatus*), which adopted eight new national standards of explosion proof electric apparatus (2021 editions) that came into effect on 1 May.

The eight new standards include:

No.	Standards adopted by the updated implementation rules		Applicable type of explosion proof
	Standard for general use	Standards for special use	
1	GB/T 3836.1-2021 Explosive atmospheres—Part 1：Equipment—General requirements	GB/T 3836.2-2021 Explosive atmospheres—Part 2：Equipment protection by flameproof enclosures “d”	flameproof enclosure “d”
2		GB/T 3836.3-2021 Explosive atmospheres—Part 3：Equipment protection by increased safety “e”	increased safety “e”
3		GB/T 3836.4-2021 Explosive atmospheres—Part 4：Equipment protection by intrinsic safety “i”	Intrinsic safety “i”
4		GB/T 3836.5-2021 Explosive atmospheres—Part 5：Equipment protection by pressurized enclosure “p”	pressurized enclosure “p”
5		GB/T 3836.6-2017 Explosive	liquid immersion “o”

		atmospheres—Part 6：Equipment protection by liquid immersion “o”	
6		GB/T 3836.7-2017 Explosive atmospheres—Part 7: Equipment protection by powder filling “q”	Powder filling “q”
7		GB/T 3836.8-2021 Explosive atmospheres—Part 8：Equipment protection by type of protection “n”	Type of protection “n”
8		GB/T 3836.9-2021 Explosive atmospheres—Part 9：Equipment protection by encapsulation “m”	Encapsulation “m”
9		GB/T 3836.31-2021 Explosive atmospheres—Part 31: Equipment dust ignition protection by enclosure “t”	Enclosure “t”

These standards are the results of the revision and integration of 12 previous standards on explosion proof electric apparatus, including the GB 12476 serials which were adopted by the previous implementation rules.

The update won’t incur changes in the scope of CCC on explosion proof electric apparatuses. Manufacturers shall follow the new standards listed above when applying CCC certification for their explosion proof electric apparatus products, while those who have went through CCC certification shall apply for to update their certificates according to the implementation scheme published by the certification bodies.

18. SAMR Sets Access Conditions for Import and Export Commodity Inspection Bodies

#Commodity Inspection

On 19 May 2022, SAMR issued the *Special Conditions for the Accreditation and Market Access of Import and Export Commodity Inspection Bodies*. This regulation lays down the basic requirements for import and export commodity inspection bodies operating in the Chinese market.

These requirements cover various fronts, including the impartiality of the body, its emergency plan, organizational structure, scale, personnel management system, workplace, measures and procedures to ensure the safety of personnel and facilities, procedures of sample management, procedures to guarantee the effectiveness of monitoring results, objectiveness, accuracy, clearness, completion, traceability of inspection reports, its recording and archiving systems, etc.

Although this document covers almost all management dimensions of an inspection and testing body, there are still ambiguities for inspection and testing bodies when it comes to fulfilling requirements. For example, there is no clear definition of the " inspection body", so it is not clear whether testing bodies involvded are covered. This document also doesn't indicate if and how international qualifications, such as ISO17020, are accepted and recognized in China to carry out import and export inspection business. Therefore, further elaboration on regulations or detailed implementation documents appear necessary and are expected to dispel the confusion of inspection and testing bodies at home and abroad.

Others

19. Mandatory National Standard for Electronic Cigarette Released

#Electronic Cigarette # Mandatory Standard

Electronic cigarettes become more and more popular due to its convenience and faint smell of smoke. Initially, electronic cigarettes serve as a substitute for cigarette, as they are believed to reduce passive smoking. However, with dazzling flavors, electronic cigarettes turn out to lure non-smokers, especially young people or even teenagers, to start smoking. To regulate this product, the Standardization Administration of China (SAC) officially published the mandatory national standard for electronic cigarette on April 8.

GB 41700-2022, *Electronic cigarette*, defines a white list of 101 additives, which is thoroughly assessed and confirmed by experiments. The standard redefines a electronic cigarette as a electronic conveyor system that generates aerosol for smoking. In this case, those nicotine-free electronic cigarettes must obey the requirements of GB 41700-2022. The standard stipulates that selling nicotine-free electronic cigarettes is prohibited on the market and only tobacco flavor is permitted to be sold, which is aimed at protecting juveniles from being attracted by sweet-flavored and nicotine-free electronic cigarettes.

Furthermore, GB 41700-2022 stipulates several security requirements on electronic cigarettes, including childproof and leakage- proof design of both cartridges and cigarette sets, and explosion proof in case of falling. Cartridges and cigarette sets should be sealed to avoid refilling. Also, if electronic cigarettes fall off, fire or explosion should not be allowed.

The standard will officially take effect on October 1, giving producers time to adjust their products.

Source: China Standardization Magazine, 3rd Issue, 2022

Annex

See the Annex-Standards System Construction under the Requirements of the “Dual Carbon” Goal

Introduction of SESEC Project

The Seconded European Standardization Expert in China (SESEC) is a visibility project co-financed by the European Commission (EC), the European Free Trade Association (EFTA) secretariat and the three European Standardization Organizations (CEN, CENELEC and ETSI).
Since 2006, there has been three SESEC projects in China, SESEC I (2006-2009). SESEC II (2009- 2012) and SESEC III (2014-2017). In April 2018, SESEC IV was officially launched in Beijing, China. Dr. Betty XU was nominated as the SESEC expert and will spend the next 36 months on promoting EU-China standardization information exchange and EU-China standardization cooperation.

The SESEC project supports the strategic objectives of the European Union, EFTA and the European Standardization Organizations (ESOs). The purpose of SESEC project is to:

- **Promote European and international standards in China;**
- **Improve contacts with different levels of the Chinese administration, industry and standardization bodies;**
- **Improve the visibility and understanding of the European Standardization System (ESS) in China;**
- **Gather regulatory and standardization intelligence.**

The following areas have been identified as sectorial project priorities by the SESEC project partners: Internet of Things (IoT) & Machine-to-Machine(M2M) communication, communication networks & services, cybersecurity & digital identity, Smart Cities (including transport, power grids & metering), electrical & electronic products, general product safety, medical devices, cosmetics, energy management & environmental protection (including eco-design & labelling, as well as environmental performance of buildings).

SESEC IV China Standardization and Technical Regulation Newsletter

SESEC IV China Standardization and Technical Regulation Newsletter is the gathering of China regulatory and standardization intelligence. Most information of the Monthly Newsletter was summarized from China news media or websites. Some of them were the first-hand information from TC meetings, forums/workshops, or meetings/dialogues with China government authorities in certain areas.

In this Newsletter

In this Newsletter, some news articles were abstracted from Chinese government organizations. All new published standards, implementation or management regulations and notice are summarized; original document and English version are available.

Abbreviations

SAMR	State Administration for Market Regulation	国家市场监管总局
CAS	China Association	中国标准化协会
CCC	China Compulsory Certification	中国强制认证
CCSA	China Communication Standardization Association	中国通信标准化协会
CEC	China Electricity Council	中国电力企业联合会
CEEIA	China Electrical Equipment Industrial Association	中国电器工业协会
CELC	China Energy Labeling Center	中国能效标识中心
CESI	China Electronic Standardization Institute	中国电子标准化研究所
CMDSA	Center for Medical Device Standardization Administration	医疗器械标准管理中心
CNCA	Certification and Accreditation Administration of China	中国国家认证认可监督 管理委员会
CNIS	China National Institute of Standardization	中国国家标准化研究院
CNREC	China National Renewable Energy Center	中国国家可再生能源中 心
EPPEI	Electric Power Planning and Engineering Institute	电力规划设计总院
IEC	International Electrotechnical Commission	国际电工委员会
ITEI	Instrumentation Technology and Economy Institute	机械工业仪器仪表综合技术与经济研究所
MEE	Ministry of Ecology and Environment	中国生态环境部
MIIT	Ministry of Industry and Information Technology of People's Republic of China	中国工业和信息化部
MoH	Ministry of Health	卫生部
MoHURD	Ministry of Housing and Urban-Rural Development	住房与建设部
MOT	Ministry of Transport	中国交通运输部
MOST	Ministry of Science and Technology	中国科学技术部
NDRC	National development and reform commission People's Republic of China	中国国家发改委
NIFDC	National Institute of Food and Drug Control	中国食品药品检定研究 院
SAC	Standardization Administration of China	国家标准化管理委员
SGCC	State Grid Corporation of China	国家电网
TC	Technical Committee for Standard Development	标准化技术委员会