

Regarding the first topic, *The participation of the People's Republic of China in international standards setting organizations over the previous 10 years, including leadership roles in standards drafting technical committees, and the quality or value of that participation*, some comments are listed below:

1. In the past 20 years, China's economic scale has gradually expanded, and its influence has increased. These factors have made the research on China's international standardization an important topic.
2. This is particularly evident in a number of recent developments. The first trend is that China is actively participating more and more in the activities of international standards organizations, including formal standard development organizations (SDOs) and several other standardization alliances who play an important role in the field of information and communication. At the same time, China is also reforming and increasing a variety of standardization organizations and management institutions. With the recent release of the ambitious China standard 2035 plan, China is bound to participate more actively in the international organization for standardization and strives to increase its influence in the international standard community.
3. Another important trend is the trend of China's scientific and technological development. This trend is marked by the *outline of the national medium and long-term science and technology development plan (2006-2020)* issued by China in 2006 and a series of science and technology projects in the "Eleventh Five Year Plan". The goal of the medium and long-term plan is to build China into an "innovative society" by 2020. The above and a series of subsequent plans and projects focus on "innovation" and take the technical innovation containing China's own intellectual property rights as the test standard for the success of China's standard formulation. Therefore, patent and standard applications are regarded as formal evaluation criteria for research "achievements". The intellectual property rights and standards owned by research institutions will directly affect their eligibility to enjoy policy priority treatment.

A series of plans and projects in China call for the development of independent innovation and have formulated a national strategy of innovation driven development. Independent innovation is used to measure technological sovereignty, comprehensive national strength and international influence. The "innovative China" proposed in the planning and national policy statement has obviously successfully described the dreams of many Chinese people. As China's stakeholders gradually incorporate standards into their business strategies, this enthusiasm is closely related to

standards and intellectual property rights that people are more and more interested in China's standardization.

4. China actively participates in international standard development organizations with high enthusiasm, taking more leadership seats and service roles, and submitting technical proposals for selection and adoption by international standards organizations, which reflects China's desire to seek global rule making power while its economic model is gradually expanding, although China's technological capability has not been widely recognized in the world. The quality and value judgment of China's participation in international standards can be measured from many dimensions. However, there is no doubt that how many self-owned intellectual property rights (mainly technical patents) of Chinese enterprises are included in the existing ISO standards, is the most obvious measurement angle.

5. The ISO patent policy encourages the early disclosure and confirmation of patents that may be related to standards or submissions being developed. Only in this way can standard development be more effective and avoid possible patent problems. Organizations shall not evaluate the relevance and necessity of patents related to standards or deliverables, involve licensing negotiations, or engage in the settlement of patent disputes, which, as in the past, are left to the relevant parties.

6. The international community has extensively discussed the role of patents in the process of standardization. However, the patent declaration mechanism established by ISO, IEC and ITU-T provides a clear and public basis for judging the technical strength and global technical value of every country in international standards.

7. The technical strength and position of China in international standards can be basically judged from ISO published documents. The patent declaration in the international standard is public, and ISO provides a dedicated link (<https://www.iso.org/iso-standards-and-patents.html>) and downloadable public documents (XLS format) to record the database. The database shows that there are 540 ISO standards involving 3240 standard essential patents statements submitted by 533 organizations around the world. Of course, the United States is the first, and China has 51, ranking eighth in the world.

8. This Patents database clearly shows China's progress in the past decade. Before 2010, there was no Chinese company in the database. On May 24, 2010, a Chinese company (China IWNCOMM) submitted the first patent declaration to ISO. After that, China's contribution

accelerated slowly. The second statement (from Huawei) took a year and four months; from then on, we can see the amazing changes in China's data. Now 40 institutions around the world have standard essential patents in more than 10 ISO standards, China IWNCOMM has essential patents for 12 ISO standards, ranking 24th in the global institutions.

9. Public information shows that the Chinese government has a strong desire to promote the technical patents of Chinese enterprises to become an international standard for more flexible tools to intervene in the market, including changing and reducing intellectual property barriers and costs in China (mainly the role of licensee), excluding or offsetting the market advantages of foreign products, so that foreign enterprises need to pay patent licensing fees and increase product costs, while Chinese enterprises do not need to pay patent fees. Chinese enterprises have begun to claim to hold the standard essential patents and initiate litigation, which is a new beginning. However, it is puzzling that such litigation seems to be only against large US companies and companies outside China. China has increased investment in infrastructure such as chips and operating systems, which they have generally recognized as the gap, hoping to get rid of the controlled passive situation by reducing import, it seems a kind of "defense". What is more noteworthy is that the investment in "international standards" that determine the interconnection of the world seems to represent a certain "attack".

It is obvious that more information can be obtained from the ISO standard patent declaration form, but the most obvious one is that after the Chinese government has organized and planned the implementation of the national science and technology and standards strategic plan, not only China's large enterprises, but also China's small and medium-sized enterprises and scientific research institutes, including AVIC Chengdu Aircraft Industrial (Group), Shenzhen ZTE vast sky information technology, Xidian University, dozens of institutions are working to realize China's lofty aspirations ("Chinese dream"), and Chinese society has been well organized. This trend and these institutions deserve special attention.

10. Among them, China IWNCOMM, which proposed WAPI, has a strange track record. As early as 2003, the Chinese company tried to replace Wi-Fi with China's first wireless encryption technology (WAPI) standard with standard essential patents. At that time, with the help of the U.S. Department of Commerce and the U.S. trade representative, the U.S. high-tech community made extraordinary efforts to overthrow the Chinese government's policy on WAPI standard, which was regarded as the representative of Chinese self-controlled standards. It negotiated with the Chinese government through its representatives in China, and it put pressure on Beijing by seeking political support at the cabinet level of the United States to force the Chinese

government to change its original intention. In 2004, China announced to suspend the implementation of WAPI standards indefinitely. So far, the efforts of the United States seem to have been successful.

However, 17 years later, the WAPI industry alliance supported by the Chinese government, released that more than 10 billion chips in the world have WAPI functions, which shows that China has not stopped the implementation of WAPI standards as promised in fact. Now China IWNCOMM appears in the list of enterprises in ISO public documents as the technical proposer in China who has also made the most standard essential patents declarations in the ISO standard. Moreover, it is not only about WAPI, but also involves four technical committee fields (ISO / IEC JTC 1, ISO / IEC JTC 1 / SC 6, ISO / IEC JTC 1 / SC 27 and ISO / IEC JTC 1 / SC 31). JTC 1 is responsible for the whole information technology. SC27 and SC6 are important information security encryption and communication network technologies respectively. SC 31 is responsible for developing basic technologies for automatic identification and data capturing for the Internet of things, and the Internet of things is one of the core contents of China's ambitious standard strategy "China standard 2035".

11. China has released its new five-year national development plan (*the 14th five year plan and the outline of long-term goals for 2035*), which clearly proposes to actively participate in the formulation of international rules and digital technology standards. Both this and "China standard 2035" reflect China's "ambition" to lead international standards. This national strategy, which is led by the China Development and Reform Commission, the most powerful department, will undoubtedly strengthen the effect to influence international standards and the global science and technology industry.

More than ten years ago, the US put pressure on China's standard in many aspects. It seems that it was successful at that time, but now it doesn't seem to be. How to ensure that China's ambitions and plans will not destroy the global leadership of the United States in international standards, whether to continue to directly weaken and prevent Chinese companies that dare to challenge, or to take other more strategic approaches like the transatlantic alliance, shall be studied and taken as soon as possible.