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Compiled by Klaus Ziegler

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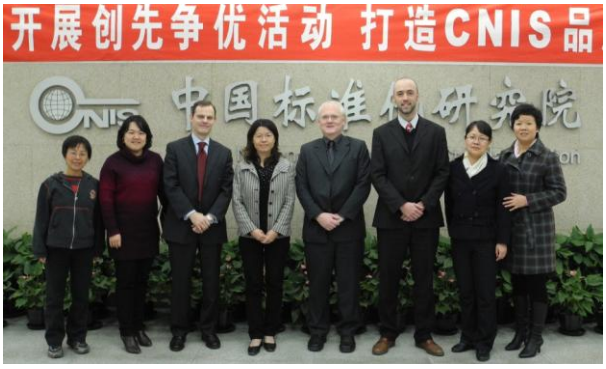


The reporting period showcased a high number of political highlights on standardization in China, including the regulatory working group on Standardization that met in Sanya on 17 and 18 of November (left picture). The visit of a delegation of stakeholders from the European Commission, EFTA and the European Standardization Organisations allowed for the opportune setup of several fruitful side meetings, such as with the National Library of Standards of the China National Institute of Standardization (right picture).

Foreword

As the year nears its end and as Chinese administrations and ministries appear increasingly active in issuing standardization-related plans or notices[1], the SESEC has focused its research on rapidly emerging standardization priorities in China, such as Smart Grid, Cloud Computing and Energy Efficiency – as well as on re-emerging topics which by their most recent developments have gained a new perspective, sometimes more likely to foster fruitful collaboration, such as for IT security and healthcare.

With a new political focus on e-health, collaboration with China in healthcare standardization is more a must than ever, even more so as a large share of medical devices face compatibility discrepancies between EU and Chinese market in the near future. As for IT security, while the indigenous approach is foreseen to prevail in the short term, new opportunities for collaboration have recently arisen, justifying a renewed outlook on a particularly complex yet key standardization area.

Energy efficiency remains one of the strategic outlooks of China; as ministries brace themselves to reach the targets set upon them, MIIT is deepening collaboration with the European Union on energy efficiency, notably relating to standards. Another road to sustainability of China's colossal economic growth is innovation; the reporting period features the release of two major plans by MIIT sets the ground for the coming work, notably standardization-wise.

The SESEC has also included in this report an update on two key dossiers in ICT standardization: smart grids and cloud computing, complemented by an extensive visual mapping of ICT standardization in China in Annex 1 and by the list of 199 foreseen ICT standards for development as published by MIIT in Annex 2.

Kind regards,

Seconded European Standardization Expert for China

Beijing, 30 November 2011
Klaus Ziegler

[1] Cf. SESEC Monthly Updates on Standardization Work

Content

Healthcare standardization in China: Matured administrations and renewed focus

With matured state standardization administrations, numerous and lively technical committees and a new political focus on e-health, collaboration with China in healthcare standardization is more a must than ever, even more so as a large share of medical devices face compatibility discrepancies between EU and Chinese market in the near future.

Four years ago, during a meeting with SESEC, a representative from the Ministry of Health expressed her belief that China's healthcare standardization development had not yet attained sufficient maturity to allow fruitful cooperation on technical issues with Europe. As China's healthcare standardization entities have developed and as China is about to step into active standardization of e-health, it appears that the time is now ripe for collaboration.

A hospital in Beijing

History

The State Food and Drug Administration[2] is responsible for formulating policies and programs on the administration of drugs, medical devices, health food, cosmetics, as well as food safety, and supervise their implementation. 2009 saw a deep structural and staff re-haul of the State Food and Drug Administration (SFDA). Previously directly under the authority of the State Council, the SFDA found itself under the direct authority of the Ministry of Health.

This restructuration introduced a new administrative body operating under the SFDA, the Centre for Medical Devices Standardization Administration (CMDSA) which has been since then very active in drafting standards relating to healthcare and medical devices. The formal responsibilities of the CMDSA include organizing and supporting Technical Committees on development and revision of medical device standards, and pursuing research on standardization for medical devices and proposing policy recommendations related to medical device standards.

CMDSA also operates the Technical Committee on nomenclature, Classification, and Coding on medical devices, on guidance for medical device standardization work in the whole country, and other technical committees as mandated by SFDA. The General Affairs Division of the CMDSA is

[2] http://www.sfda.gov.cn/WS01/CL0001/

notably responsible for the maintenance of a database and a catalogue of medical device standards, and for editing, publishing and distributing medical device standards.

There are 22 standardization TCs on medical devices in China.[3] CMDSA is in charge of approving the standard plans, supervision of the development and revision of the standards procedure, auditing them before submitting to SAC both on national standards and sector standards.

CMDSA's official policy is to encourage and foster the collaboration between national Chinese medical devices standardization and international medical devices standardization.

Implications and concerns for the industry

All medical devices must go through homologation by the SFDA in order to reach the Chinese market. Medical devices must therefore conform to requirements of GB (national) and YY (industry in the medical device sector) standards; those standards are generally aligned with IEC, ISO, and OECD standards, however they are not systematically identical; national deviations entail uncertainty and concern for the foreign industry.

Currently seven types of medical devices not only require SFDA license, but also China Compulsory Certification (CCC)[4]. In the future, Restriction of Hazardous Substances (RoHS) testing might fall into the CCC scheme; this would drastically increase both the number of medical devices which are subject to CCC and the costs for medical devices manufacturers that wish to access the Chinese market[5].

Finally the SFDA is foreseen to foster the development of safety requirements and standards in relation to software in medical devices, which would be tested by specific SFDA accredited laboratories.

The SFDA classifies medical devices into three classes, based upon the classification used in Europe; however the classification of individual products may differ between the EU and China. Depending on their class, products might need to go through clinical testing in order to obtain a license from SFDA. As no similar test performed outside mainland China can fully replace local clinical trials, the latter constitute a great source of concern for foreign medical devices manufacturers, alongside concerns relating to costs.

[3] National TCs include:
- TC10 Electrical Equipment In Medical Practice
- TC95 Medical Devices for Injections
- TC106 Medical Syringes
- TC158 Medical Cardiopulmonary Bypass Equipments
- TC221 Quality Systems and Corresponding General Aspects for Medical Devices
- TC248 Biological Evaluation on Medical Device
- TC510 Reproduction Health Products

[4] The seven categories of products are: medical diagnostic X-ray equipment, haemodialysis equipment, hollow fiber dialyzers, and extracorporeal blood circuit for blood purification equipment, artificial heart - lung machine, electrocardiographs, and implantable cardiac pacemakers.

[5] Currently RoHS in China is based on self declaration and voluntary certification. There is however a push from Chinese authorities (in particular AQSIQ) to embed RoHS into the CCC scheme.

Some specific sub sectors of the industry such as in-vitro devices (IVDs) manufacturers cry foul of excessive risk classification of their products, as IVD reagents are frequently classified in the most sensitive class of Medical Devices in China, unlike in the EU and US where they are categorized as low risk devices.

Non electro-technical medical devices manufacturers have been expressing similar concerns, mainly targeting regulations and classification of products requiring medical trials, while SFDA regularly publishes notices of revisions and updates of its lists of products and relative risk classification.[6]

Further to concerns relating to costs, clinical trials and deviations within the applicable standards from the international to the Chinese national version, one essential and overarching concern for the foreign industry is the question of compatibility between the international and the Chinese standards for medical devices.

This compatibility is currently far from being ensured as the philosophy of assessment of safety of electro-technical medical devices shows some considerable discrepancies between the international and the Chinese level.

Compatibility between Chinese and European standards for electro-technical medical devices

The global reference standard for safety of electro-technical medical devices is E*N/IEC 60601-1 medical electrical equipment – part 1: General requirements for basic safety and essential performance,* first published in 1977. In 2005, the third edition of IEC 60601-1 was published, featuring a deep overhaul of the prior second edition.

The essential change was an added focus on risk management, alongside the inclusion of the concept of essential performances. The new edition also requires further interaction between the manufacturer and the test lab.

GB 9706.1-2007 is the Chinese endorsement of the second edition of EN/IEC 60601-1. GB 9706.1-2007, as such, lays the ground for registering electro-technical medical devices in China with the SFDA. Thus, all electro-technical medical devices must be built and documented according to the second edition of EN/IEC 60601-1 to be placed on the Chinese market. Product-specific standards built upon EN/IEC 60601-1 or GB 9706.1-2007 are also unavoidable references for related products to comply with in China.

However, the third edition of IEC 60601-1 has not yet been adopted in China and thus cannot be used as reference for registration purposes in China. Since the underlying concepts of the third edition of the standard are quite different from the second edition, it is generally not possible to

[6] For instance, early November 2011, SFDA has released a notice on class 2 medical products that are exempt from compulsory business licensing:
- Electronic blood pressure and pulse instruments;
- Plum blossom needles; - Needles; - Acupuncture needles;
- Ovulation test strips; - Portable oxygen generators.
http://www.sda.gov.cn/WS01/CL0845/66722.html

obtain successful registration in China with products developed and documented according to the third edition of EN/IEC 60601-1.

Whilst China embraced the concept of risk management for medical devices by adopting the standard ISO 14971 (in China YY/T 0316), this does not yet apply for the approbation process. All related product specific standards in China, which may differ considerably from the respective international standards.

Currently there is no clear timetable for the adoption of the third edition of EN/IEC 60601-1 in China – CMDSA has indicated that they were working on a translation and stakeholders trust that the implementation could take place from 2014 onwards.

Such a timeframe will entail discrepancies with the European regime as the third edition of EN/IEC 60601-1 is foreseen to be fully implemented in 2012. There will be a latency period during which the differences in requirements between the two different editions of the standard and the local requirements for electro-technical medical devices in Europe and China will hamper the movement of those products from one market to the other.

As a new amendment to IEC 60601-1 is currently being developed, notably to include medical software systems[7], China has set e-health amongst its priorities at the highest political level.

E-Health

While there is currently no standard in China targeting the safety of Medical Device's software, SFDA foresees an increasing development of such standards under their supervision. This is in line with China's 12th Five Years Plan and with the objectives announced by SAC through Mr. Ji Zhengkun's speech early 2011: to join the standardization efforts of high key technologies to the development of a renewed services sector, notably in healthcare.

The Chinese central government has also expressed its intention to lead an "energetic promotion of healthcare informatization" through its planned healthcare reform, and the Chinese government has been reported to have started to heavily invest in several e-health initiatives, such as electronic medical records, public health records and telemedicine.

The focus on E-Health is made explicit with the 2010 publication of the "3521 National Strategy for Health Informatization during the 12th Five-Years Plan". Similarly to the European Union, China aims at enabling its vast healthcare network through ICT, so as to ensure efficiency and responsiveness of communication between its regional and rural layers, as well as between urban hospitals and community healthcare centers.

China thus foresees to implement a standardized Electronic Medical Record system that shall be linked to the regional health information networks to improve efficiency and reduce costs. While

[7] The amendment includes a definition of medical software systems and associated technical requirements.

investments are numerous and considerable, they remain fragmented at local level. Standardization is in the pipeline however the work has yet to kick start.

Concerns have been expressed by the European industry on how software updates will be addressed within the safety assessment of Medical Devices software, and on whether a new application and licensing process will be required in case of minor software updates not affecting the use and capacities of the device.

Outlooks

Development of E-health standardization is China is foreseen to grow in the coming years. Healthcare has been and will continue to be a fast-moving sector in terms of regulations and standards development or revision in China, as indicated by the frequent rhythm of publication of notices by SFDA[8]. The SESEC will continue to monitor and report upon all developments in this sector and in particular on the growing e-health standardization activities.

Compiled by Rémi Orth

[8] cf SESEC monthly updates

A fresh outlook on IT Security standardization in China?

IT Security in China is at the convergence of political priorities, technological targets and industry enablement. This makes for a sensitive area in which formal collaboration in standardization has been scarce. While the indigenous approach is foreseen to prevail in the short term, new opportunities for collaboration have recently arisen, justifying a renewed outlook on a particularly complex yet key standardization area.

On October 19th, 2011, the newly established OSCCA Technical Committee on National Cryptography Industry Standards held its first formal meeting in Beijing. The Committee will cover various aspects of cryptography standardization including technology, products, systems, and management methods. The Committee will be chaired by Mr. He Liangsheng, Vice Director of the State Commercial Encryption Management Bureau (SEMB), while the Vice Chair position will be held by Mr. Fang Xiang, Vice Director of SAC.

This new TC formalises China's intention to develop national cryptography standards. Chinese authorities have been developing domestic encryption algorithms and related technologies which will now be transferable into national standards.

IT Security in China is supervised by the Ministry of Industry and Information Technology (MIIT) and by the Ministry of Public Security (MPS). The state office which is directly in charge of directing standardization initiatives in this field is the **OSCCA**, the Office of Security Commercial Code Administration, which issues regulations on cryptography certification. **OSCCA** is part of SEMB which is under direct control of State Council and Party.

Existing regulations on commercial encryption resulted so far in the lock out of foreign industry in some areas of the Chinese market. While a change in the underlying rational emphasizing national security concerns is not foreseen, the formalization of standardization in cryptography could provide some ground to build upon and address the current concerns of the European industry.

History

China's national 12th Five Year Plan stresses the need to strengthen network and information security[9] and calls for an improvement of the system of standards for information security, as well as

[9] Chapter 13, Section 3

for a strengthening of the system of certification and the relative regulations, notably through the implementation of information security protection rating. China has already a substantial regulatory ground for information security and in particular encryption technologies, and this ground has been broadly growing in scope since its debut in 1999.

On 7th October 1999, the State Council of the People's Republic of China issued the Regulation of Commercial Encryption Codes. The Regulation forbid commercial encryption codes products to be produced or sold in China without authorization, and only allowed production, commercialization and use of such products in China pending approval by Chinese authorities.

Furthermore the regulation forbid foreign commercial encryption products to be sold in China and imposed upon both foreign organizations and individuals to report and obtain approval from authorities for using commercial encryption codes products or technology. A year later, a complementary regulation indicated that the focus was only on products in which encryption was the "core function".

A number of additional regulations on commercial encryptions were released between 2006 and early 2007, setting the conditions for manufacturing commercial encryption products in China, for research and development of such products, for commercialization of such products, for foreign use and on the product type certificate. In 2010, OSCCA released detailed regulations regarding additional requirements for six categories of Information Security products which were identified as having encryption as a core function[10].

According to the industry[11], OSCCA execution guidelines effectively require security-relevant parts of the source code to be released to the SEMB Commercial Encryption Testing Center when companies apply for the "Product Type Certificate" and for the "Encryption Testing Certificate", entailing concerns for the industry of compromising critical intellectual property in the process[12].

Current state of standardization and recent developments

Until now, all national standards relating to information security in China have been developed within national SAC/TC 260 on Information Security which is embedded in the China Electronics Standardisation Institute (CESI)[13][14]. While most standards refer to ISO/IEC 15408, the "Common Criteria" on Security in Information Technology, the large majority of national standards are not referred to as endorsement of international standards but rather indigenous standards.

[10] Those products are: firewall products, isolation and exchange of information security products, secure routers, smart cards COS, secure operating system products and secure database system products.
[11] cf. European Chamber in China yearly Position Papers
[12] concern currently exist that office equipment such as printers and fax machines might be included as information security product into the CC-IS scheme in the near future.
[13] http://www.tc260.org.cn
[14] In the telecom sector TC 8 of CCSA includes similar functions, however in this case under direct control or MIIT

End July 2011, SAC/TC 260 released six draft standards on information security. These drafts include provisions on technical requirements for public procurement of information security products and basic requirements of information security for government departments; the study of these drafts can highlights some symptomatic traits of China's approach to information security[15]. While the draft standards include technical specifications and are likely to become mandatory standards, and while they appear to apply both to governmental and non-governmental users, at the time of the drafting of this report they have not been notified to the WTO/TBT Committee.

The European (and American) industry has time and again raised concerns on their ability to participate in the drafting of standards relating to information security, which is considered as a very sensitive topic by Chinese authorities as indicated by the level of classified gravity that some consumer or industry products reach in the Chinese Multi-Level Protection Scheme (MLPS).

A new, more favourable context for collaboration?

The setup and official launch of the OSCCA Technical Committee on National Cryptography Industry Standards can be considered as an opportunity for more collaboration of the Chinese authorities with the national and European industry on the cryptography issues.

SEMB and SAC will jointly administer this committee, the standards developed in which will be eligible to become Chinese national voluntary or mandatory standards (GB), industry standards (such as YD), local standards (DB), or enterprise standards (Q). SAC will be able to propose standards set by this Committee as international standards in ISO, IEC, and via MIIT also in ITU-T.

The European Chamber of Commerce and its recently setup working group for the Information Security Industry are closely monitoring the upcoming this new Committee, which at the time this article is being drafted still has no number. SESEC will do so as well as the formalisation of China's technical efforts in cryptography provides new ground for much sought collaboration and harmonization.

Compiled by Rémi Orth

[15] The six draft standards are the following:
1- "information security technology-general safety requirements and testing evaluation methods for the terminal computer system"http://www.tc260.org.cn/getIndex.req?action=quary&req=modulenvpromote&id=1724&type=0&moduleId=656&sid=45
2- "information security technology- basic requirements for government's information security management"
http://www.tc260.org.cn/getIndex.req?action=quary&req=modulenvpromote&id=1723&type=0&moduleId=656&sid=45
3- " information security technology-general safety requirements and testing evaluation methods for information system safety management platform products"
http://www.tc260.org.cn/getIndex.req?action=quary&req=modulenvpromote&id=1719&type=0&moduleId=656&sid=45
4- " information technology security framework-third part-Analysis of the safeguards methods"
http://www.tc260.org.cn/getIndex.req?action=quary&req=modulenvpromote&id=1722&type=0&moduleId=656&sid=45
5- Call for Comments on national standards, " information technology security framework-second part- safeguards methods"
http://www.tc260.org.cn/getIndex.req?action=quary&req=modulenvpromote&id=1721&type=0&moduleId=656&sid=45
6- Call for Comments on national standards, "information technology security framework-first part-the overview and framework"
http://www.tc260.org.cn/getIndex.req?action=quary&req=modulenvpromote&id=1720&type=0&moduleId=656&sid=45

Energy efficiency:
New prospects for technical collaboration

Green technology is one of the strategic outlooks of China's national 12th Five-Year Plan. As ministries brace themselves to reach the targets set upon them, MIIT is deepening collaboration with the European Union on energy efficiency, notably relating to standards. This includes an opening to industry experts which could fruitfully leverage the ongoing technical discussion on green management and energy saving.

The standardization efforts of China in green management and energy saving, both nationally and internationally[16], point at a current momentum for collaboration.

While the dialogue between Chinese and EU government officials has been ongoing for some time[17], early December 2011 saw a significant opening of this dialogue to industry experts from the fields of industrial energy efficiency and GHG reduction.

The Chinese Ministry of Industry and Information Technology of the PRC MIIT has thus contacted the EU Delegation in China with a number of topics on which they hope more cooperation can be achieved. Those topics include:

- enhancing the energy saving and emission reduction performances of industrial SMEs;
- targeting key industries for prioritized pursuit of energy efficiency targets, the identified industries including steel, cement and non ferrous metals;
- construction of low-carbon industrial zones;
- furthering standards and practice in energy auditing in China;
- setting standards for energy performance contracting;
- optimizing financing schemes and incentives to promote energy saving in China;
- development of national standards for energy saving and emission reduction;
- developing energy saving service systems.

[16] Cf SESEC 2nd interim report: China is multiplying its efforts to fill the gap of a holistic energy assessment system, both nationally and internationally. At national level, China is notably active within the Technical Committee 20 – energy fundamentals and management. On July 7th, the Standards Administration of China SAC has launched a call for comments on the revised draft of the Energy Management System Implementation Guide which was drafted by SAC/TC 20 .
Meanwhile it is interesting to note that SAC has been allocated the secretariat of the newly established ISO Technical Committee 257 on "Energy savings". The first plenary meeting of this TC took place in Beijing end on May 31st; the TC aims at drafting technical rules for determination of energy savings in renovation projects, industrial enterprises, and regions.
[17] Through the medium of the Energy Efficiency Working Group

MIIT has engaged in talks with representatives of the European Commission and of the industry to discuss cooperation in such fields, through study tours, training, joint research activities, seminars & workshops.

As previously reported by the SESEC, all those topics can indeed be directly connected to one of the essential priorities (and of the strategic industry strategy) of the national 12th Five Years Plan: energy consumption and green technology. MIIT's guidelines on key common technologies for the Chinese industry to reach the 12th Five Years Plan objectives also reflect the current emphasis on green technology. While spanning through numerous substantially different sectors of the industry, considerations relating to greening the economy stand out as a significant megatrend throughout the plans, guidelines and sectors.

MOST's 12th Five Years Plan also focused on addressing societal problems such as the energy resources bottleneck through national technical solutions.[18] Standardisation-wise, the leverage provided by a broader cooperation should be considered.

While the approach of MIIT can be understood as one aiming to perfect state supervision and enablement in relation to nationally planned industrial energy efficiency targets, a furthered dialogue on technical issues involving the European industry has the potential to deliver a more inclusive technical regulatory approach to energy efficiency in China.

Compiled by Rémi Orth

[18] Cf SESEC-2 2nd Interim Report

Planned innovation, quality-oriented production, and brand valuation – reaching for the stars

As China strives to sustain its new superpower status, MIIT prepares the framework for the achievement of the innovation objectives of the national 12th Five Years Plan. The simultaneous release in November of two major plans by MIIT sets the ground for the coming work, notably standardization-wise.

29th September 2011, the unmanned spacecraft Tiangong-1 blasted off from the Jiuquan Satellite Launch Centre in the Gansu province of China. Tiangong-1 (Heavenly Palace 1) is China's first space laboratory module and is designed to support and trial space docking capacities.

The launch of Tiangong-1 on September 29th

If all goes according to the plans, China could have a fully operational space station by 2020 within the framework of the broader Tiangong space program. For now, all is proceeding smoothly, as the first Shenzhou 8 craft successfully docked upon the lab module on 2nd November and disengaged from Tiangong-1 for half an hour before re-docking with the module two weeks later.

While Chinese officials publicly admit that China has a lot of catching up to do in the field of space programs. Nevertheless focusing on the historical gap between this launch and the previous space missions decades ago would be missing the point. Tiangong-1 is a symbol of achievement of superpower status, in line with acquisition and development of new technologies such as high-speed trains, aircraft carriers, anti-satellite systems and more.

Ultimately, China's decision makers are conscious that sustaining the momentum of extraordinary economic growth means transcending the economy into a leading one through innovation – thus engaging in dire efforts to close the broad gap existing in standards with the former superpowers.

Innovation as a national priority

As identified in MOST's 12th Five Years Plan, China still faces some deep structural problems hampering its full technological potential, which is illustrated by its still relatively weak capacity to produce original innovation. MOST's document thus promotes an innovation-driven development

and considers the necessity to achieve both major breakthroughs in key technologies and their accelerated take-up[19].

While MIIT had already published its guidelines on the key common technologies which emphasized the latter as being essential for enhancing the country's innovation capacity, it also published in November 2011 a series of essential documents including two additional national plans: one focused on achieving enhanced product quality, the other on pursuing objectives of technological innovation throughout the Chinese industry. MIIT has also published a plan for the development of 199 ICT standards – the list of foreseen standards can be found in this report's annexes.

The 12th Five Year Plan of Industrial Product Quality

The 12th Five Year Plan of Industrial Product Quality was published mid-November 2011 in order to address a number of issues hampering industry products in China, such as an unbalanced and uneven development level, as well as a national standard structure deemed "irrational"[20]. Other issues identified include a poor industrial base, a lack of responsibility for quality from enterprises, an inadequate quality and safety assurance system and a weak regulatory mechanism.

The plan aims not only to improve the quality of products in traditional sectors, but also to further improve the development of strategic new industries in the domestic market, to broadly implement quality management systems, to strengthen law relating to product safety, and to improve China's own brands of industrial products. The plan considers the following strategic sectors: raw materials, equipment industry, consumer products and ICT.

The Plan sets to improve the quality of industrial products, by furthering the implementation of sector and industry standards, tightening the management of market access and giving responsibility to local governments for quality control. The creation of a "culture of integrity" is also part of the plan to strengthen quality systems, alongside the development of self-declaration systems; MIIT also plans to use technological progress to drive product development and quality improvement. The plan also foresees promotion of domestic brands and increased support to SMEs. Finally MIIT also aims for improved information exchange with international experts.

The 12th Five Year Plan for Industrial Technological Innovation

Mid November 2011, MIIT published its 12th Five Years Plan for Industrial Technological Innovation. This document sets the development goals for MIIT until 2015: MIIT plans to achieve a significant enhancement of the technological innovation of enterprises, as well as the technology levels in key sectors and the level of innovation in general.

[19] Cf SESEC-2 2nd Interim Report
[20] http://www.miit.gov.cn/n11293472/n11293832/n11293907/n11368223/14319094.html

The main objectives listed include improving innovation capacity building, establishing technology innovation service systems, developing key technology and common technology, transferring achievement on research to implementation and developing strategic new industries.

The key sector considered in the plan are raw materials, including steel, non-ferrous metals, petrochemical and chemical , construction materials and new materials; equipment manufacturing, including mechanical, aerospace, rail transport, shipping and energy conservation and new energy vehicles; consumer products, including light industry, textiles and pharmaceutical , medical device ; the ICT sector, including electronics and information industry, software and communication technology.

SESEC will report in the coming months on the implementation of those plans and on the concrete repercussions on standards.

Compiled by Yao Xiaojing and Rémi Orth

Updates on key IT standardization dossiers in China: China's fast-moving national grid strategy

China is pursuing its colossal efforts in establishing its national grid. In areas where the standardization work is in the early stages in European and / or international standardization, China's globally leading level of investment is likely to allow their deliverables to become international.

In May 2009, State Grid sponsored the International Conference on Ultra High Voltage Power Transmission and used the event to announce that China would invest 600 Billion RMB in UHV until 2020. Later that year was published the Renewable Energy Law[21] and a few months later, 2010's Government Work Report provided the opportunity for Premier Wen to emphasize the strategic nature of the development of smart power grids. In 2011 the publication of the national 12th Five-Year Plan confirmed China's strong focus on smart grids as a key instrument in substantially lowering energy consumption and carbon dioxide emissions[22].

State Grid has layered his strategy into three phases. While the first one, from 2009 to 2010, focused on planning and on formulating a preliminary standards framework, the current phase which is set to last until 2015 aims at achieving the construction of the grid, incorporating thermal energy, nuclear, renewable energy, electrical vehicles batteries, and of providing standards wherever needed. The proportion of clean energy generated is expected to rise from 6.8% in 2005 to 11.1% in 2015.

The third and final phase (2016 – 2020) unambiguously aims at establishing the Chinese grid standards as the internationally recognized references.

Many different standard development bodies are involved in the development of Smart Grid standards in China. Whilst the leading role is undoubtedly with the SGCC and its affiliated organizations, numerous other players are involved. In order to coordinate their efforts, the National Energy Administration of China (NEA)[23] announced in October 2010 the creation of the "*National Smart Grid Standardization Overall Promotion Working Group*", hosted by the China Electric Power Institute CEPRI[24]. This initiative includes three sub-working groups on standardization, grid equipment, and international cooperation. Other major Chinese players involved in the smart grids standardization efforts include the China Electronic Standardization Institute CESI[25], the

[21] Article 14 of which states that "Power grid enterprises shall (…) develop and apply smart power grid and energy storage technologies"
[22] China intends to increase the proportion of non-fossil fuels in total energy use from 9% in 2009 to 15% by 2020. It also aims at cutting down carbon intensity pr unit of GDP by 40-45% by 2020. By making huge investments in energy industry, China aims at increasing its industry's competitiveness in order to make China a leading exporter of green technologies and products.
[23] http://en.ndrc.gov.cn/mfod/t20081218_252224.htm
[24] http://www.epri.sgcc.com.cn
[25] http://www.en.cesi.cn/

Instrumentation Technology and Economy Institute of China ITEI, and the China Communication Standards Association CCSA[26].

SESEC was present at the 2nd World Smart Grid China Focus 2011 and presented the state of the art for Smart Grid standardization and initiatives in Europe and ongoing collaboration with China. According to the State Grid representatives also present at the event, the development of the Grid in China currently faces the following challenges:

- Technical standards: standards are identified amongst the top challenges to address by SGCC, which hopes to achieve as soon as possible cross-industry unified standards;
- Financial challenges: SGCC considers that the funding of smart grid construction through traditional channels fail meet the demand, and is calling for additional support;
- Electricity tariffs: more flexibility in the pricing mechanism is deemed necessary by SGCC;
- Stimulating measures and public incentives: despite the current number of pilot projects SGCC is pushing for a bigger number of high-scale projects.

Investment plans for the UHV-based National Grid leave little space for deviation from the pre-defined targets. Strain and pressure on Chinese resources to make this standardization work happen could certainly have an impact on the quality of the work, as well as on the willingness of Chinese experts to compromise. Yet whilst China insists time and again that international and global coordination and harmonization of standards has top priority in their standardization work, we witness here the physical limitations of such cooperation: there is very limited time left for major international cooperation efforts.

In areas where international standards exist, or where major standardization work is ongoing in Europe and with other trading partners, it is very likely that China will adopt such standards. However, in areas where the standardization work is in the early stages, China will most likely move ahead and develops its own standards, which have much chance to become international thanks to China's globally leading level of investment.

Compiled by Rémi Orth

[26] http://www.ccsa.org.cn

Updates on key IT standardization dossiers in China: Cloud computing - dedicated 12th Five Years Plan due soon, burgeoning industry

As China has set cloud computing atop its standardization priorities, both industry and ministries have been multiplying initiatives and support to this new and highly scrutinized sector.

MIIT is reportedly working on a dedicated 12th Five Years Plan on Cloud Computing and on another one on Internet of Things; the drafts have already been finalized and the definitive text is expected to be published shortly[27].

Additionally, the MIIT, NDRC and Ministry of Finance have agreed upon a special funding scheme for cloud computing fund which should scale up to 1.5 billion RMB for 12 projects in 5 pilots, including Beijing, Shanghai, Shenzhen, Hangzhou, and Wuxi. The objectives of this financing scheme are:

- to implement cloud computing services for smart city, smart transport, healthcare and SMEs,
- to build up ten enterprises which should become leading national cloud computing companies, scaled with 10 million users each, and
- to reach an output value of 200 billion RMB.

CESI is foreseen to lead the drafting work of standards on terminology, basic reference models and specifications on cloud data management interface. China Mobile will lead the drafting of standards on cloud storage interface and elastic cloud computing services interface, while Tencent will have the lead on drafting standards on specification on cloud computing "program as a service" platform interface.

China's first cloud computing technology and application conference was held on 6th September 2011 in Nanjing, focusing on cloud computing core technologies and applications; the meeting brought together the Ministry of Industry and Information Technology, the Ministry of Science and Technology, as well as the General Administration of Press and Publication of China and the Jiangsu provincial government[28]. In November, the 13th China Hi-tech Fair was held in Shenzhen[29] to showcase China's achievement on new products and technologies in new strategic industries. Additionally to industry representatives such as Lenovo, Baidu, Foxconn and Skyworth, several ministries also had their own booths presenting their achievements in Internet of things.

The industry has been re-organising itself under the "encouraging supervision" of the ministries. Local governments including those of Shenzhen, Wuhan, Shenyang, Shandong, Fujian and Harbin have launched local cloud computing alliances. Those essential industry associations were also created in recent years:

[27] http://news.xinhuanet.com/fortune/2011-10/21/c_122182606.htm
[28] http://www.chinacloud.cn/show.aspx?id=7862&cid=9
[29] http://www.chtf.com/gjhdzyzx/xwzx/mtbd/201111/t20111120_14312.html

- **The China Cloud Computing Technology and Industry Alliance**, CCCTIA was created in January 2010. This Alliance was initiated by Chinese Institute of Electronics. It's constituency now revolves around 40 members (not all of which are Chinese), including China mobile, China Telecom, China Unicom, Lenovo, Huawei, ZTE (Nanjing), IBM, Microsoft, Intel R&D Centre, EMC , Skycloud Technology, Kingdee software, AsiaInfo technology, 21 Vianet Group, Inspur Group, Yoyo systems, Digital China, Neusoft Group, UFIDA Software, VanceInfo Technology, Novel SuperTV company, HP, DELL, VMware, Cisco and Westone.

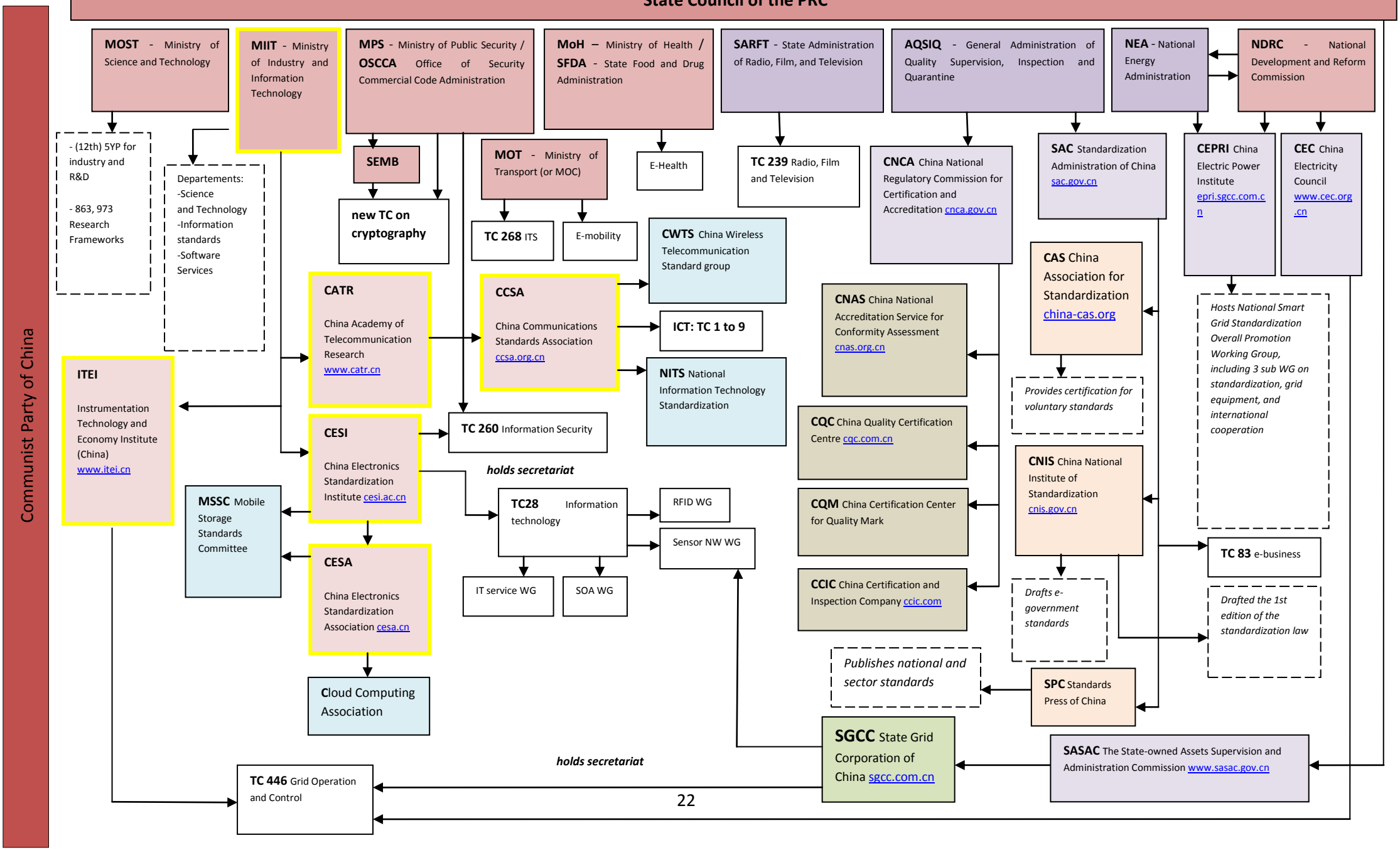
- **The China Cloud Computing Base Centre Alliance** was created in Beijing in August 2011. The alliance was initiated by the Cloud Computing Committee of China Computer Industry Association joint with the China Centre for information Industry Development (CCID), the Zhongguancun Hi-Tech Park, the Pudong Hi-Tech Park, the Suzhou Industrial Park, the Nanchang Hi-Tech Park, and the Chengdu Hi-Tech Park. The objective of this alliance is to promote pilot applications and projects.

- **The Zhongguancun Cloud Computing Industrial Alliance** was created in July 2010. This alliance was supported by the Beijing local government and was initiated by Lenovo, China Mobile, Baidu, Kingsoft, Digital China, Cernet, the Qinghua University and the Beijing University.

Compiled by Yao Xiaojing and Rémi Orth

Annex 1: mapping of ICT standardization in China

Compiled by Rémi Orth


Communist Party of China
State Council of the PRC
MOST - Ministry of Science and Technology
MIIT - Ministry of Industry and Information Technology
MPS - Ministry of Public Security / OSCCA Office of Security Commercial Code Administration
MoH – Ministry of Health / SFDA - State Food and Drug Administration
SARFT - State Administration of Radio, Film, and Television
AQSIQ - General Administration of Quality Supervision, Inspection and Quarantine
NEA - National Energy Administration
NDRC - National Development and Reform Commission
- (12th) 5YP for industry and R&D
- 863, 973 Research Frameworks
Departements:
-Science and Technology
-Information standards
-Software Services
SEMB
new TC on cryptography
MOT - Ministry of Transport (or MOC)
TC 268 ITS
E-mobility
E-Health
TC 239 Radio, Film and Television
CNCA China National Regulatory Commission for Certification and Accreditation cnca.gov.cn
SAC Standardization Administration of China sac.gov.cn
CEPRI China Electric Power Institute epri.sgcc.com.cn
CEC China Electricity Council www.cec.org.cn
CWTS China Wireless Telecommunication Standard group
CATR
China Academy of Telecommunication Research
www.catr.cn
CCSA
China Communications Standards Association
ccsa.org.cn
ICT: TC 1 to 9
NITS National Information Technology Standardization
CNAS China National Accreditation Service for Conformity Assessment cnas.org.cn
CAS China Association for Standardization china-cas.org
Hosts National Smart Grid Standardization Overall Promotion Working Group, including 3 sub WG on standardization, grid equipment, and international cooperation
ITEI
Instrumentation Technology and Economy Institute (China)
www.itei.cn
CESI
China Electronics Standardization Institute cesi.ac.cn
TC 260 Information Security
holds secretariat
Provides certification for voluntary standards
CQC China Quality Certification Centre cqc.com.cn
CNIS China National Institute of Standardization cnis.gov.cn
MSSC Mobile Storage Standards Committee
TC28 Information technology
RFID WG
Sensor NW WG
IT service WG
SOA WG
CQM China Certification Center for Quality Mark
TC 83 e-business
CCIC China Certification and Inspection Company ccic.com
Drafts e-government standards
Drafted the 1st edition of the standardization law
CESA
China Electronics Standardization Association cesa.cn
Cloud Computing Association
Publishes national and sector standards
SPC Standards Press of China
SGCC State Grid Corporation of China sgcc.com.cn
SASAC The State-owned Assets Supervision and Administration Commission www.sasac.gov.cn
holds secretariat
TC 446 Grid Operation and Control

Annex 2: 199 ICT industry standards

Disclaimer: the standards name were translated with Google translate

Standards:

1 YDCPZT3582-2011 Virtual Private LAN Services (VPLS) based on Border Gateway Protocol (BGP) to connect the technical requirements of multi-owned

2 YDCPZT3583-2011 supports multi-service IP bearer network of technical requirements

3 YDCPZT3584-2011 bio-disaster prevention and early warning system network in general technical requirements

4 YDCPZT3585-2011 bio-disaster prevention and early warning information release system technical requirements for network interface

5 YDCPZT3586-2011 bio-disaster prevention and early warning system network interface technology, information collection requirements

6 YDCPZT3587-2011 bio-disaster prevention and early warning system network terminals technical requirements

7 YDCPZT3588-2011 structured video content indexing and search technology requirements

8 YDCPZT3589-2011 intelligent image recognition algorithm testing requirements

9 YDCPZT3590-2011 communication with the multi-purpose audio codec (Phase II)

10 YDCPZT3591-2011 Hypertext Transfer Protocol (HTTP) adaptive streaming

11 YDCPZT3592-2011 can be managed virtual desktop operating systems in general technical requirements

12 YDCPZT3593-2011 can operate to manage the technical requirements of virtual desktop terminal

13 YDCPZT3594-2011 can operate to manage the technical requirements of virtual desktop platform

14 YDCPZT3595-2011 supports cluster services SCDMA air interface broadband wireless access system test method

15 YDCPZT3596-2011 Mobile Internet Terms

16 YDCPZT3597-2011 communication with the optical fiber preform technology - Part 1: wavelengths expansion of non-dispersion shifted single-mode optical fiber perform

17 YDCPXT3598-2011 access network with a bending loss insensitive single mode optical fiber characteristics

18 YDCPZT3599-2011 chassis for mobile communications repeater

19 YDCPZT3600-2011 2GHz TD-SCDMA/WCDMA digital cellular mobile communication network femtocell network management technology - Part 1: Information Model

20 YDCPZT3601-2011 2GHz TD-SCDMA/WCDMA digital cellular mobile communication network femtocell network management requirements Part 2: CORBA-based technology information model design

21 YDCPZT3602-2011 TD-SCDMA/WCDMA enhanced high-speed packet access (HSPA +) network operation and management indicators

22 YDCPZT3603-2011 passive optical network (PON) network management technology - Part 1: Basic Principles

23 YDCPZT3604-2011 passive optical network (PON) network management requirements Part 2: EMS system functions

24 YDCPZT3605-2011 passive optical network (PON) network management requirements Part 3: Network Management System (NMS) system function

25 YDCPZT3606-2011 passive optical network (PON) network management requirements Part 4: EMS-NMS interface functions

26 YDCPZT3607-2011 passive optical network (PON) network management requirements Part 5: EMS-NMS Interface Common Information Model

27 YDCPZT3608-2011 passive optical network (PON) network management requirements of Part 6: TL1-based technology EMS-NMS Interface Information Model

28 YDCPZT3609-2011 Internet Business Call Testing technical requirements

29 YDCPZT3610-2011 wide-area network communication based on the intelligent application of the general agricultural technical requirements for remote monitoring and control

30 YDCPZT3611-2011 2GHz TD-SCDMA-based digital cellular mobile communication network of intelligent urban management systems in general technical requirements

31 YDCPZT3613-2011 call center service quality and operational management practices

32 YDCPXT3614-2011 No.7 signaling adaptation layer technology to IP interworking requirements of Message Transfer Part (MTP) second-level peer adaptation layer (M2PA)

33 YDCPXT3615-2011 No.7 signaling adaptation layer and IP interoperability testing methods Message Transfer Part (MTP) second-level peer adaptation layer (M2PA)

34 YDCPXT3616-2011 No.7 signaling adaptation layer technology to IP interworking requirements of Message Transfer Part (MTP) III User Adaptation Layer (M3UA)

35 YDCPXT3617-2011 No.7 signaling adaptation layer and IP interoperability testing methods Message Transfer Part (MTP) III User Adaptation Layer (M3UA)

36 YDCPXT3618-2011 transmission equipment with power distribution box

37 YDCPXT3619-2011 single-channel erbium-doped fiber amplifier with performance requirements and test methods

38 YDCPXT3620-2011 single-mode fiber polarization mode dispersion test method

39 YDCPXT3621-2011 features a non-zero dispersion shifted single-mode fiber

40 YDCPXT3622-2011 LSZH cable jacket material properties with

41 YDCPXT3623-2011 optical communication components of high-speed optical detector preamplifier technical requirements and test methods

42 YDCPXT3624-2011 Fiber Optic Connector pin body of technical requirements

43 YDCPXT3625-2011 fiber optic analog transmission conditions of light emission component technology

44 YDCPXT3626-2011 fiber optic analog transmission light receiving components and technical conditions

45 YDCPXT3627-2011 Indoor Cable Series Part 1: General

46 YDCPXT3628-2011 digital communications with polyolefin insulation horizontal twisted pair cable

47 YDCPXT3629-2011 wireless communications cables insulated with foam polyethylene woven 50Ω RF coaxial cable outer conductor

48 YDCPXT3630-2011 wireless communications with a communication cable 50Ω copper foam polyethylene insulation wrinkles RF coaxial cable outer conductor

49 YDCPXT3631-2011 base station with the physical communication cables super soft foam polyethylene insulated RF coaxial cable

50 YDCPXT3632-2011 fiber optic communication cable filled and coated with a compound Part 2: Heat applied filling compounds

51 YDCPXT3633-2011 fiber optic communication cable filled and coated with a compound Part 3: Cold-applied filling compounds

52 YDCPXT3634-2011 fiber optic communication cable filled and coated with a compound Part 4: coating compound

53 YDCPXT3635-2011-halogen flame retardant cable

Other Standardization Deliverables:

1 YDCPZT3636-2011 IPv6 source address validation technology, test methods

2 YDCPZT3637-2011 carrier-class network address translation (NAT) technology requires NAT44

3 YDCPZT3638-2011 dual-stack server technology requires broadband access

4 YDCPZT3639-2011 carrier-class network address translation (NAT) backup technical requirements

5 YDCPZT3640-2011 Internet Data Center (IDC) Virtual Resource Management Architecture

6 YDCPZT3641-2011 IPTV media delivery optimization

7 YDCPZT3642-2011 CDMA digital cellular mobile communication network based on IOS-based femtocell system overall technical

8 YDCPZT3643-2011 CDMA digital cellular mobile communication network based on IOS-based femtocell gateway technical requirements

9 YDCPZT3644-2011 CDMA digital cellular mobile communication network architecture of the home base station based IOS gateway device test methods

10 YDCPZT3645-2011 CDMA digital cellular mobile communication network based on IOS-based femtocell access point equipment technical requirements

11 YDCPZT3646-2011 CDMA digital cellular mobile communication network based on IOS-based femtocell access point equipment, test methods

12 YDCPZT3647-2011 CDMA digital cellular mobile communication network architecture of the home base station based on IOS devices and interface management system, technical requirements

13 YDCPZT3648-2011 CDMA digital cellular mobile communication network architecture of the home base station based on IOS devices and interface management system, test methods

14 YDCPZT3649-2011 CDMA digital cellular mobile communication network based on IOS-based femtocell systems interoperable interface technology requirements and test methods

15 YDCPZT3650-2011 LTE digital cellular mobile communication network in general technical requirements for wireless access network

16 YDCPZT3651-2011 TD-LTE base stations, digital cellular mobile communication network equipment, technical requirements (Phase II)

17 YDCPZT3652-2011 TD-LTE base station digital cellular mobile communication network equipment, test methods (second stage)

18 YDCPZT3653-2011 LTE FDD digital cellular mobile communication network base station equipment technical requirements (Phase II)

19 YDCPZT3654-2011 LTE FDD digital cellular mobile communication network base station equipment, test methods (second stage)

20 YDCPZT3655-2011 TD-LTE Uu digital cellular mobile communication network interface physical layer specification (Phase II) - Part 1: Overview

21 YDCPZT3656-2011 TD-LTE Uu digital cellular mobile communication network interface physical layer specification (Phase II) Part 2: Physical channels and modulation

22 YDCPZT3657-2011 TD-LTE Uu digital cellular mobile communication network interface physical layer specification (Phase II) Part 3: Physical layer multiplexing and channel coding

23 YDCPZT3658-2011 TD-LTE Uu digital cellular mobile communication network interface physical layer specification (Phase II) Part 4: Physical layer process

24 YDCPZT3659-2011 TD-LTE Uu digital cellular mobile communication network interface physical layer specification (Phase II) Part 5: Physical layer measurements

25 YDCPZT3660-2011 TD-LTE Uu digital cellular mobile communication network interface layer two technical requirements (Phase II) Part 1: MAC protocol

26 YDCPZT3661-2011 TD-LTE Uu digital cellular mobile communication network interface layer two technical requirements (Phase II) Part 2: RLC protocol

27 YDCPZT3662-2011 TD-LTE Uu digital cellular mobile communication network interface layer two technical requirements (Phase II) Part 3: PDCP protocol

28 YDCPZT3663-2011 TD-LTE Uu digital cellular mobile communication network interface layer three technical requirements (Phase II) Part 1: RRC protocol

29 YDCPZT3664-2011 TD-LTE Uu digital cellular mobile communication network interface layer three technical requirements (Phase II) Part 2: the process of the UE in idle mode

30 YDCPZT3665-2011 LTE FDD digital cellular mobile communication network Uu interface physical layer specification (Phase II) - Part 1: Overview

31 YDCPZT3666-2011 LTE FDD digital cellular mobile communication network Uu interface physical layer specification (Phase II) Part 2: Physical channels and modulation

32 YDCPZT3667-2011 LTE FDD digital cellular mobile communication network Uu interface physical layer specification (Phase II) Part 3: Physical layer multiplexing and channel coding

33 YDCPZT3668-2011 LTE FDD digital cellular mobile communication network Uu interface physical layer specification (Phase II) Part 4: Physical layer process

34 YDCPZT3669-2011 LTE FDD digital cellular mobile communication network Uu interface physical layer specification (Phase II) Part 5: Physical layer measurements

35 YDCPZT3670-2011 LTE FDD digital cellular mobile communication network Uu interface layer two technical requirements (Phase II) Part 1: MAC protocol

36 YDCPZT3671-2011 LTE FDD digital cellular mobile communication network Uu interface layer two technical requirements (Phase II) Part 2: RLC protocol

37 YDCPZT3672-2011 LTE FDD digital cellular mobile communication network Uu interface layer two technical requirements (Phase II) Part 3: PDCP protocol

38 YDCPZT3673-2011 LTE FDD digital cellular mobile communication network Uu interface layer three technical requirements (Phase II) Part 1: RRC protocol

39 YDCPZT3674-2011 LTE FDD digital cellular mobile communication network Uu interface layer three technical requirements (Phase II) Part 2: the process of the UE in idle mode

40 YDCPZT3675-2011 LTE S1 digital cellular mobile communication network interface technology requirements (Phase II) - Part 1: Overview

41 YDCPZT3676-2011 LTE S1 digital cellular mobile communication network interface technology requirements (Phase II) Part 2: level one

42 YDCPZT3677-2011 LTE S1 digital cellular mobile communication network interface technology requirements (Phase II) Part 3: Signaling Transfer

43 YDCPZT3678-2011 LTE S1 digital cellular mobile communication network interface technology requirements (Phase II) Part 4: Application Protocol

44 YDCPZT3679-2011 LTE S1 digital cellular mobile communication network interface technology requirements (Phase II) Part 5: Data Transfer

45 YDCPZT3680-2011 LTE S1 digital cellular mobile communication network interface test method (phase II)

46 YDCPZT3681-2011 LTE X2 digital cellular mobile communication network interface technology requirements (Phase II) - Part 1: Overview

47 YDCPZT3682-2011 LTE X2 digital cellular mobile communication network interface technology requirements (Phase II) Part 2: level one

48 YDCPZT3683-2011 LTE X2 digital cellular mobile communication network interface technology requirements (Phase II) Part 3: Signaling Transfer

49 YDCPZT3684-2011 LTE X2 digital cellular mobile communication network interface technology requirements (Phase II) Part 4: Application Protocol

50 YDCPZT3685-2011 LTE X2 digital cellular mobile communication network interface technology requirements (Phase II) Part 5: Data Transfer

51 YDCPZT3686-2011 LTE X2 digital cellular mobile communication network interface test method (phase II)

52 YDCPZT3687-2011 TD-LTE base stations, cellular mobile communication network of distributed technical requirements Ir interface

53 YDCPZT3688-2011 TD-LTE base stations, cellular mobile communication network distributed Ir interface test methods

54 YDCPZT3689-2011 TD-LTE/TD-SCDMA dual-mode cellular mobile communication network interface to the technical requirements of distributed base stations Ir

55 YDCPZT3690-2011 2GHz TD-SCDMA digital cellular mobile communication network interface to a distributed base station technical requirements of the Ir

56 YDCPZT3691-2011 2GHz TD-SCDMA digital cellular mobile communication network of multi-carrier high speed packet access technology Uu interface physical layer requirements - Part 1: Overview

57 YDCPZT3692-2011 2GHz TD-SCDMA digital cellular mobile communication network of multi-carrier high speed packet access technology Uu interface physical layer requirements - Part 2: physical channels and transport channels to physical channel mapping

58 YDCPZT3693-2011 2GHz TD-SCDMA digital cellular mobile communication network of multi-carrier high speed packet access technology Uu interface physical layer requirements Part 3: Multiplexing and channel coding

59 YDCPZT3694-2011 2GHz TD-SCDMA digital cellular mobile communication network of multi-carrier high speed packet access technology Uu interface physical layer requirements of Part 4: spread spectrum and modulation

60 YDCPZT3695-2011 2GHz TD-SCDMA digital cellular mobile communication network of multi-carrier high speed packet access technology Uu interface physical layer requirements of Part 5: Physical layer process

61 YDCPZT3696-2011 2GHz TD-SCDMA digital cellular mobile communication network of multi-carrier high speed packet access technology Uu interface physical layer requirements of Part 6: measurement of the physical layer

62 YDCPZT3697-2011 2GHz TD-SCDMA digital cellular mobile communication network of multi-carrier high speed packet access Uu interface layer 2 technology - Part 1: MAC protocol

63 YDCPZT3698-2011 2GHz TD-SCDMA digital cellular mobile communication network of multi-carrier high speed packet access Uu Interface Layer 2 technical requirements - Part 2: RLC protocol

64 YDCPZT3699-2011 2GHz TD-SCDMA digital cellular mobile communication network of multi-carrier high speed packet access Uu Interface Layer 2 technical requirements Part 3: PDCP protocol

65 YDCPZT3700-2011 2GHz TD-SCDMA digital cellular mobile communication network of multi-carrier high speed packet access RRC layer specification Uu Interface

66 YDCPZT3701-2011 2GHz TD-SCDMA digital cellular mobile communication network of multi-carrier high speed packet access Iub interface technology - Part 1: Overview

67 YDCPZT3702-2011 2GHz TD-SCDMA digital cellular mobile communication network of multi-carrier high speed packet access Iub interface technology requirements - Part 2: level 1

68 YDCPZT3703-2011 2GHz TD-SCDMA digital cellular mobile communication network of multi-carrier high speed packet access Iub interface technology requirements Part 3: Signaling Transfer

69 YDCPZT3704-2011 2GHz TD-SCDMA digital cellular mobile communication network of multi-carrier high speed packet access Iub interface technology requirements Part 4: NBAP signalling

70 YDCPZT3705-2011 2GHz TD-SCDMA digital cellular mobile communication network of multi-carrier high speed packet access Iub interface technology requirements Part 5: Common Transport Channel data streams and transmission of data transmission signalling

71 YDCPZT3706-2011 2GHz TD-SCDMA digital cellular mobile communication network of multi-carrier high speed packet access Iub interface, the technical requirements of Part 6: Public Transport Channel data streams of user plane protocol

72 YDCPZT3707-2011 2GHz TD-SCDMA digital cellular mobile communication network of multi-carrier high speed packet access Iub interface technology requirements - Part 7: Dedicated Transport Channel data streams and transmission of data transmission signalling

73 YDCPZT3708-2011 2GHz TD-SCDMA digital cellular mobile communication network of multi-carrier high speed packet access Iub interface technology requirements - Part 8: dedicated transmission channel of user plane protocol data stream

74 YDCPZT3709-2011 2GHz TD-SCDMA digital cellular mobile communication network of multi-carrier high speed packet access Iub interface technology requirements - Part 9: channel to perform a specific operation and maintenance of the establishment and maintenance of

75 YDCPZT3710-2011 Wireless LAN and General Packet Radio System (GPRS) service interworking between the technical requirements

76 YDCPZT3711-2011 mobile communication system antenna test methods

77 YDCPZT3712-2011 technical requirements of mobile network point-push push business

78 YDCPZT3713-2011 mobile device management object gateway management functions

79 YDCPZT3714-2011 integration of individual technical requirements for network services

80 YDCPZT3715-2011 mobile application store of information security technology requirements

81 YDCPZT3716-2011 technical requirements of mobile application store platform

82 YDCPZT3717-2011 mobile application store client technical requirements

83 YDCPZT3718-2011 based on Representational State Transfer (REST) technology, the operational capacity of open application program interface (API) Location Services

84 YDCPZT3719-2011 based on Representational State Transfer (REST) technology, the operational capacity of open application program interface (API) payment service

85 YDCPZT3720-2011 based on Representational State Transfer (REST) technology, the operational capacity of open application program interface (API) address list management

86 YDCPZT3721-2011 based on Representational State Transfer (REST) technology, the operational capacity of open application program interface (API) terminal state

87 YDCPZT3722-2011 intelligent technical requirements of the fixed terminal

88 YDCPZT3723-2011 flat-type mobile communication terminal technical requirements and test methods

89 YDCPZT3724-2011 intelligent terminal information security design guidelines

90 YDCPZT3725-2011 intelligent terminal capability information security technical requirements of mobile terminal security

91 YDCPZT3726-2011 intelligent mobile terminal end security capabilities of information security testing methods

92 YDCPZT3727-2011 access network equipment, test methods 10Gbit / s Ethernet Passive Optical Network (10G EPON)

93 YDCPZT3728-2011 technical requirements of PON access network systems support IPv6

94 YDCPZT3729-2011 access network equipment, test methods PON system supports IPv6

95 YDCPXT3730-2011 wireless communications equipment electromagnetic compatibility requirements and methods of measurement Part 1: General requirements

96 YDCPZT3731-2011 cellular mobile communication equipment electromagnetic compatibility requirements and methods of measurement Part 2: the user equipment and auxiliary equipment General requirements

97 YDCPZT3732-2011 cellular mobile communication equipment electromagnetic compatibility requirements and methods of measurement Part 3: multi-system base stations and ancillary equipment

98 YDCPZT3733-2011 cellular mobile communication equipment electromagnetic compatibility requirements and methods of measurement - Part 4: multi-mode terminal and auxiliary equipment

99 YDCPZT3735-2011 system based on international multi-lingual domain names form the Chinese character domain name registration technical requirements

100 YDCPXT3736-2011 450MHz FDMA wireless access system technical requirements and methods of measurement

101 YDCPXT3737-2011 900/1800MHz TDMA digital cellular mobile communication network SIM-ME interface technology - Part 1: SIM Application

102 YDCPXT3738-2011 900/1800MHz TDMA digital cellular mobile communication network SIM-ME interface technology requirements Part 2: SIM application toolkit

103 YDCPXT3739-2011 900/1800MHz TDMA digital cellular mobile communication network SIM-ME interface test methods - Part 3: SIM card

104 YDCPXT3740-2011 900/1800MHz TDMA digital cellular mobile communication system electromagnetic compatibility limits and measurement methods - Part 1: Mobile Station and Ancillary Equipment

105 YDCPXT3741-2011 IP-based multicast architecture and protocol

106 YDCPXT3742-2011 SDH transmission on the test method IP-LAPS

107 YDCPXT3743-2011 series transmission performance indicators

108 YDCPXT3744-2011 Coarse WDM (CWDM) system technical requirements

109 YDCPXT3745-2011 wavelength division multiplexing (WDM) systems in general technical requirements

110 YDCPXT3746-2011 wavelength division multiplexing (WDM) system test method

111 YDCPXT3747-2011 IP Network-based Virtual Private Network (IP-VPN) framework

112 YDCPXT3748-2011 access network technology requires asymmetric digital subscriber line (ADSL) CPE remote management

113 YDCPXT3749-2011 access network technology requires access network element management functions

114 YDCPXT3750-2011 access network terminology

115 YDCPXT3751-2011 access network transmission performance indicators in the allocation of

116 YDCPXT3752-2011 Ethernet switch with routing capability technical requirements

117 YDCPXT3753-2011 Ethernet switch with routing capability test method

118 YDCPXT3754-2011 method of routing protocols, Border Gateway Protocol Conformance Test (BGP4)

119 YDCPXT3755-2011 routing protocol conformance test methods Open Shortest Path First (OSPF)

120 YDCPXT3756-2011 routing protocol conformance test methods Intermediate System to Intermediate System Routing Exchange Protocol (IS-IS)

121 YDCPXT3757-2011 telephone communication system over-voltage over-current protection principles and technical requirements

122 YDCPXT3758-2011 digital cellular mobile communications terminology

123 YDCPXT3759-2011 to provide public telecommunications services of CPN technical requirements and test methods

124 YDCPXT3760-2011 Communications Authority (station) power supply, air conditioning and environmental centralized monitoring and management system - Part 1: System technical requirements

125 YDCPXT3761-2011 Communications Authority (station) power supply, air conditioning and environmental management system for centralized monitoring Part 2: Internet Protocol

126 YDCPXT3762-2011 Communications Authority (station) power supply, air conditioning and environmental management system for centralized monitoring Part 3: intelligent front-end protocol

127 YDCPXT3763-2011 Communications Authority (station) power supply, air conditioning and environmental management system for centralized monitoring Part 4: Test methods

128 YDCPXT3764-2011 Synchronous Digital Hierarchy (SDH) equipment functional requirements

129 YDCPXT3765-2011 Synchronous Digital Hierarchy (SDH) network jitter and wander performance technical requirements

130 YDCPXT3766-2011 Synchronous Digital Hierarchy (SDH) network element management protocol stack verification and testing

131 YDCPXT3767-2011 Network Access Server (NAS) test method of broadband network access server

132 YDCPXT3768-2011 satellite communication VSAT earth station measurement of electromagnetic interference

133 YDCPXT3769-2011 cordless phone electromagnetic compatibility requirements and test methods

134 YDCPXT3770-2011 mobile handset lithium battery and charger safety requirements and test methods

135 YDCPXT3771-2011 mobile handset and charger with a lithium-ion power - Part 1: Lithium-ion power

136 YDCPXT3772-2011 mobile handset and charger with a lithium-ion power supply Part 2: Chargers

137 YDCPXT3773-2011 Ethernet switch technology requirements

Other Technical Specifications:

1 describes the format of the mobile Internet malware

2 for the opinion analysis data collection and exchange of web2.0 description format

3 IP bearer network security requirements

4 IP bearer network security testing requirement

5 Internet data center technical requirements for information security management system

6 Internet Data Center Information Security Management System Interface Technical Requirements

7 Internet data center information security management system and interface test methods

8 YDCPZT3612-2011 aerial strand cable and self-supporting cable security products like anti-matter

9 YDCPZT3734-2011 public telecommunications facilities, method of calculating damages

Source: http://kjs.miit.gov.cn/n11293472/n11295040/n11298073/n14324433.files/n14324431.doc