

**Annex F25.**  
**(Non - Confidential version)**

*“Broadband China Strategy”* and Notification of Implementation Plan.

国务院关于印发“宽带中国”战略及

实施方案的通知

国发〔2013〕31号

The State Council' s issue of the "Broadband China" strategy and

Notification of implementation plan

State Development (2013) No. 31

<p>各省、自治区、 直辖市人民政府， 国务院各部委、各直属机构： 现将《“宽带中国”战略及实施方案》 印发给你们，请认真贯彻执行。 国务院 2013 年8月1日 (此件公开发布)</p>	<p>The people's governments of all provinces, autonomous regions and municipalities directly under the Central Government, all ministries and commissions of the State Council, and all directly affiliated institutions: The "Broadband China" Strategy and Implementation Plan is hereby issued to you, please implement it carefully.  State Council August 1, 2013 (This piece is publicly released)</p>
<p><b>“宽带中国”战略及实施方案</b></p> <p>宽带网络是新时期我国经济社会发展的战略性公共基础设施，发展宽带网络对拉动有效投资和促进信息消费、推进发展方式转变和小康社会建设具有重要支撑作用。从全球范围看，宽带网络正推动新一轮信息化发展浪潮，众多国家纷纷将发展宽带网络作为战略部署的优先行动领域，作为抢占新时期国际经济、科技和产业竞争制高点的重要举措。近年来，我国宽带网络覆盖范围不断扩大，传输和接入能力不断增强，宽带技术创新取得显著进展，</p>	<p>"Broadband China" strategy and implementation plan</p> <p>Broadband network is a <b>strategic public infrastructure</b> for my country's economic and social development in the new era. The development of broadband network plays an important supporting role in stimulating effective investment, promoting information consumption, promoting the transformation of development mode and building a well-off society. From a global perspective, broadband networks are driving a new wave of informatization development. Many countries have made the development of broadband</p>

<p>完整产业链初步形成，应用服务水平不断提升，电子商务、软件外包、云计算和物联网等新兴业态蓬勃发展，网络信息安全保障逐步加强，但我国宽带网络仍然存在公共基础设施定位不明确、区域和城乡发展不平衡、应用服务不够丰富、技术原创能力不足、发展环境不完善等问题，亟需得到解决。</p>	<p>networks a priority area of strategic deployment, as an important measure to seize the commanding heights of international economic, technological and industrial competition in the new era. In recent years, China's broadband network coverage has continued to expand, transmission and access capabilities have been continuously enhanced, broadband technology innovation has made significant progress, a complete industrial chain has been initially formed, application services have been continuously improved, e-commerce, software outsourcing, cloud computing, and the Internet of Things, etc. Emerging business types are booming, and network information security is gradually strengthened. However, China's broadband network still has problems such as unclear positioning of public infrastructure, unbalanced regional and urban-rural development, insufficient application services, insufficient technological originality, and incomplete development environment. Need to be resolved.</p>
<p>根据《2006-2020年国家信息化发展战略》、《国务院关于大力推进信息化发展和切实保障信息安全的若干意见》（国发〔2012〕23号）和《“十二五”国家战略性新兴产业发展规划》的总体要求，特制定《“宽带中国”战略及实施方案》，旨在加强战略引导和系统部署，推动我国宽带基础设施快速健康发展。</p> <p><b>一、指导思想、基本原则和发展目标</b></p> <p>（一）指导思想。</p> <p>以邓小平理论、“三个代表”重要思想、科学发展观为指导，围绕加快转变经济发展方式和全面建成小康社会的总体要求，将宽带网络作为国家战略性公共基础设施，加强顶层设计和规划引导，统筹关键核心技术研发、标准制定、信息安全和应急通信保障体系建设，促进网络建设、应用普及、服务创新和产业支撑的协同，综合利用有线、无线技术推动电信网、广播电视网和互联网融合发展，加快构建宽带、融合、安全、泛在的下一代国家信息基础设施，全面支撑经济发展和服务社会民生。</p> <p>（二）基本原则。</p>	<p>According to the "National Informatization Development Strategy 2006-2020", "Several Opinions of the State Council on Vigorously Promoting the Development of Informatization and Effectively Guaranteeing Information Security" (Guo Fa [2012] No. 23) and the "Twelfth Five-Year" National Strategic Emerging According to the overall requirements of the Industrial Development Plan, the "Broadband China" Strategy and Implementation Plan was specially formulated to strengthen strategic guidance and system deployment to promote the rapid and healthy development of my country's broadband infrastructure.</p> <p>1. Guiding ideology, basic principles and development goals</p> <p>(1) Guiding ideology.</p> <p>Guided by Deng Xiaoping Theory, the important thinking of the "Three Represents", and the scientific development concept, focusing on the overall requirements of accelerating the transformation of economic development mode and building a well-off society in an all-round way, using broadband network as a national strategic public infrastructure, strengthening top-level design and planning guidance , Coordinate key core</p>

	<p>technology research and development, standard formulation, information security and emergency communication guarantee system construction, promote the coordination of network construction, application popularization, service innovation and industrial support, and comprehensively utilize wired and wireless technologies to promote the integration of telecommunication networks, radio and television networks and the Internet Develop and accelerate the construction of a broadband, integrated, secure, and ubiquitous next-generation national information infrastructure to comprehensively support economic development and serve the society and people's livelihood.</p> <p>(2) Basic principles.</p>
<p>坚持政府引导与市场调节相结合。坚持市场配置资源的基础性作用，发挥政府战略引领作用，完善政策措施。系统研究解决网络建设、内容服务、应用创新、产业发展等环节体制机制问题，营造良好环境，促进市场公平竞争和资源有效利用。</p> <p>坚持统筹规划与分步推进相结合。从战略性、全局性和系统性出发，适度超前，明确宽带发展的总体目标、路线图和时间表。遵循客观发展规律，因地制宜，统筹城乡和区域宽带协调发展，统筹军民宽带网络融合发展。</p> <p>坚持网络建设与应用服务相结合。统筹有线、无线技术手段协同发展，协调推进宽带接入网、骨干网和国际出入口能力建设，形成适度超前的宽带网络发展格局。促进网络能力提升与应用服务创新相结合，深化宽带在各行业、各领域的集成应用，推动信息消费，培育新服务、新市场、新业态。</p>	<p><b>Adhere to the combination of government guidance and market regulation. Adhere to the basic role of the market in allocating resources, give play to the government's strategic leadership role, and improve policies and measures.</b> Systematic research to solve the system and mechanism problems of network construction, content service, application innovation, industrial development, etc., create a good environment, promote fair market competition and effective use of resources.</p> <p>Adhere to the combination of overall planning and step-by-step advancement. Proceeding from strategic, overall and systematic, moderately ahead, clarify the overall goals, roadmap and timetable for broadband development. Follow the objective development law, adapt measures to local conditions, coordinate the coordinated development of urban-rural and regional broadband, and coordinate the development of military-civilian broadband networks.</p> <p>Adhere to the combination of network construction and application services. Coordinate the coordinated development of wired and wireless technologies, coordinate and advance the capacity building of broadband access networks, backbone networks and international entrances and exits, and form a moderately advanced broadband network development pattern. Promote the combination of network capacity improvement and application service</p>

	innovation, deepen the integrated application of broadband in various industries and fields, promote information consumption, and cultivate new services, new markets, and new business formats.
<p>坚持网络升级与产业创新相结合。加强宽带网络发展与产业支撑能力建设的协同，加快建立以企业为主体、市场为导向、产学研用紧密结合的技术创新体系，促进国内外优势资源的整合利用，提升自主创新能力，实现产业链上下游协调发展，提高产业配套能力。</p> <p>坚持宽带普及与保障安全相结合。强化安全意识，同步推进网络信息安全和应急通信保障能力建设，不断增强基础网络、核心系统、关键资源的安全掌控能力以及应急服务能力，实现网络安全可控、业务安全可管、应急保障可靠。</p> <p>（三）发展目标。</p>	<p>Adhere to the combination of network upgrade and industrial innovation. Strengthen the coordination of broadband network development and industrial support capacity building, accelerate the establishment of an enterprise-based, market-oriented, and closely integrated technological innovation system with production, education, research and application, promote the integration and utilization of domestic and foreign superior resources, enhance independent innovation capabilities, and realize the industrial chain Coordinated development of upstream and downstream to improve industrial supporting capabilities.</p> <p>Adhere to the combination of broadband popularization and security. Strengthen security awareness, simultaneously promote network information security and emergency communication support capabilities, and continuously enhance the security control capabilities of basic networks, core systems, and key resources, as well as emergency service capabilities, to achieve controllable network security, business security and management, and reliable emergency protection.</p> <p>(3) Development goals.</p>
<p>到2015年，初步建成适应经济社会发展需要的下一代国家信息基础设施。基本实现城市光纤到楼入户、农村宽带进乡入村，固定宽带家庭普及率达到50%，第三代移动通信及其长期演进技术（3G/LTE）用户普及率达到32.5%，行政村通宽带（有线或无线接入方式，下同）比例达到95%，学校、图书馆、医院等公益机构基本实现宽带接入。城市和农村家庭宽带接入能力基本达到20兆比特每秒（Mbps）和4Mbps，部分发达城市达到100Mbps。宽带应用水平大幅提升，移动互联网广泛渗透。网络与信息安全保障能力明显增强。</p> <p>到2020年，我国宽带网络基础设施发展水平与发达国家之间的差距大幅缩小，国民充分享受宽带带来的经济增长、服务便利和发展机遇。宽带网络全面覆盖城乡，固定宽带家庭普及率达到70%，3G/LTE用户普及率达到85%，行</p>	<p>By 2015, the next generation of national information infrastructure that meets the needs of economic and social development will be initially completed. Basically realize urban fiber to the building into the home, rural broadband into the village into the village, the penetration rate of fixed broadband households reaches 50%, the penetration rate of third-generation mobile communications and its long-term evolution technology (3G/LTE) users reaches 32.5%, and the administrative villages are connected to broadband (Wired or wireless access methods, the same below) The proportion reaches 95%, and public welfare institutions such as schools, libraries, and hospitals have basically achieved broadband access. The broadband access capacity of urban and rural households</p>

<p>政村通宽带比例超过98%。城市和农村家庭宽带接入能力分别达到50Mbps和12Mbps，发达城市部分家庭用户可达1吉比特每秒（Gbps）。宽带应用深度融入生产生活，移动互联网全面普及。技术创新和产业竞争力达到国际先进水平，形成较为健全的网络与信息安全保障体系。</p>	<p>basically reaches 20 megabits per second (Mbps) and 4Mbps, and some developed cities reach 100Mbps. The level of broadband applications has greatly improved, and mobile Internet has penetrated widely. Network and information security assurance capabilities have been significantly enhanced.</p> <p>By 2020, the gap between my country's broadband network infrastructure development level and developed countries will be greatly reduced, and citizens will fully enjoy the economic growth, service convenience and development opportunities brought by broadband. Broadband networks cover both urban and rural areas. The household penetration rate of fixed broadband reaches 70%, the penetration rate of 3G/LTE users reaches 85%, and the proportion of administrative villages with broadband access exceeds 98%. The broadband access capacity of urban and rural households reaches 50Mbps and 12Mbps, respectively, and some households in developed cities can reach 1 Gigabit per second (Gbps). Broadband applications are deeply integrated into production and life, and mobile Internet is fully popularized. Technological innovation and industrial competitiveness have reached the international advanced level, forming a relatively sound network and information security guarantee system.</p>
<p><b>二、技术路线和发展时间表</b></p> <p>遵循宽带技术演进规律，充分利用现有网络基础，围绕经济社会发展总体要求和宽带发展目标，加强和完善总体布局，系统解决宽带网络接入速度、覆盖范围、应用普及等关键问题，强化产业发展和安全保障，不断提高宽带发展整体水平，全面提升支撑经济社会可持续发展的能力。</p> <p>（一）技术路线。</p> <p>统筹接入网、城域网和骨干网建设，综合利用有线技术和无线技术，结合基于互联网协议第6版（IPv6）的下一代互联网规模商用部署要求，分阶段系统推进宽带网络发展。</p> <p>按照高速接入、广泛覆盖、多种手段、因地制宜的思路，推进接入网建设。城市地区利用光纤到户、光纤到楼等技术方式进行接入网建设和改造，并结合3G/LTE与无线局域网技术，实现宽带网络无缝覆盖。农村地区因地制宜</p>	<p><b>2. Technical route and development timetable</b></p> <p>Follow the law of broadband technology evolution, make full use of the existing network foundation, focus on the overall requirements of economic and social development and broadband development goals, strengthen and improve the overall layout, and systematically solve the key issues of broadband network access speed, coverage, application popularization, and strengthen industrial development And security, continuously improve the overall level of broadband development, and comprehensively enhance the ability to support sustainable economic and social development.</p> <p>(1) Technical route.</p> <p>Coordinate the construction of access networks, metropolitan area networks and backbone networks, comprehensively utilize</p>



<p>，灵活采取有线、无线等技术方式进行接入网建设。</p>	<p>wired and wireless technologies, and combine the requirements for large-scale commercial deployment of the next-generation Internet based on Internet Protocol Version 6 (IPv6) to systematically promote broadband network development in stages.</p> <p>Promote the construction of the access network in accordance with the ideas of high-speed access, wide coverage, multiple methods, and local conditions. Urban areas use fiber-to-the-home, fiber-to-the-building and other technical methods for access network construction and transformation, and combine 3G/LTE and wireless LAN technologies to achieve seamless broadband network coverage. In rural areas, adapt measures to local conditions and flexibly adopt wired and wireless technologies to construct access networks.</p>
<p>按照高速传送、综合承载、智能感知、安全可控的思路，推进城域网建设。逐步推动高速传输、分组化传送和大容量路由交换技术在城域网应用，扩大城域网带宽，提高流量承载能力；推进网络智能化改造，提升城域网的多业务承载、感知和安全管控水平。</p> <p>按照优化架构、提升容量、智能调度、高效可靠的思路，推进骨干网建设。优化骨干网络架构，完善国际网络布局，全面推广超高速波分复用系统和集群路由器技术，提升骨干网络容量和智能调度能力，保障网络高速高效和安全可靠运行。</p> <p>（二）发展时间表。</p> <p>1. 全面提速阶段（至2013年底）。重点加强光纤网络和3G网络建设，提高宽带网络接入速率，改善和提升用户上网体验。</p>	<p>Promote the construction of metropolitan area networks in accordance with the ideas of high-speed transmission, integrated bearing, intelligent perception, and safety and control. Gradually promote the application of high-speed transmission, packetized transmission and large-capacity routing and switching technologies in metropolitan area networks, expand metropolitan area network bandwidth and improve traffic carrying capacity; promote intelligent network transformation, and improve metropolitan area network multi-service bearing, perception, and security management and control Level.</p> <p>Promote the construction of backbone networks in accordance with the ideas of optimizing architecture, increasing capacity, intelligent scheduling, and efficient and reliable. Optimize the backbone network architecture, improve the international network layout, comprehensively promote the ultra-high-speed wavelength division multiplexing system and cluster router technology, improve the backbone network capacity and intelligent scheduling capabilities, and ensure the high-speed, efficient, safe and reliable operation of the network.</p> <p>(2) Development timetable.</p> <p>1. Comprehensive acceleration stage (until the end of 2013). Focus on strengthening the construction of optical fiber networks and 3G networks, increase broadband network access</p>

	rates, and improve and enhance users' online experience.
<p>城市地区着力推进光纤化成片改造，农村地区灵活采用有线和无线方式加快行政村宽带接入网建设，提高接入速度和网络使用性价比。进一步提升城市3G网络质量，扩大农村3G网络覆盖范围，做好时分双工模式移动通信长期演进技术（TD-LTE）扩大规模试验工作。加快下一代广播电视网建设，推进“光进铜退”和网络双向化改造，促进互联互通。同步推进城域网扩容升级。以网间互联为重点优化互联网骨干网。推动网站升级改造，提高网站接入速率。</p> <p>到2013年底，固定宽带用户超过2.1亿户，城市和农村家庭固定宽带普及率分别达到55%和20%。3G/LTE用户超过3.3亿户，用户普及率达到25%。行政村通宽带比例达到90%。城市地区宽带用户中20Mbps宽带接入能力覆盖比例达到80%，农村地区宽带用户中4Mbps宽带接入能力覆盖比例达到85%。城乡无线宽带网络覆盖水平明显提升，无线局域网基本实现城市重要公共区域热点覆盖。全国有线电视网络互联互通平台覆盖有线电视网络用户比例达到60%。</p>	<p>In urban areas, efforts are being made to promote the transformation of optical fibers into pieces, and in rural areas, wired and wireless methods are used flexibly to speed up the construction of broadband access networks in administrative villages, and improve the access speed and cost-effective network use. Further improve the quality of urban 3G networks, expand the coverage of rural 3G networks, and do a good job in the scale-up test of the long-term evolution technology (TD-LTE) of mobile communications in time division duplex mode. Accelerate the construction of next-generation radio and television networks, promote "optical advancement and retreat" and two-way network transformation, and promote interconnection. Simultaneously promote the expansion and upgrade of the metropolitan area network. Optimize the Internet backbone network with the focus on interconnection between networks. Promote website upgrades and improve website access speed.</p> <p>By the end of 2013, there were more than 210 million fixed broadband users, and the fixed broadband penetration rates of urban and rural households reached 55% and 20%, respectively. There are more than 330 million 3G/LTE users, and the user penetration rate reaches 25%. 90% of the administrative villages have broadband access. The coverage ratio of 20Mbps broadband access capacity among broadband users in urban areas reached 80%, and the coverage ratio of 4Mbps broadband access capacity among broadband users in rural areas reached 85%. The coverage of urban and rural wireless broadband networks has been significantly improved, and wireless local area networks have basically achieved coverage of hot spots in important urban public areas. The national cable TV network interconnection platform covers 60% of cable TV network users.</p>
<p>2. 推广普及阶段（2014-2015年）。重点在继续推进宽带网络提速的同时，加快扩大宽带网络覆盖范围和规模，深化应用普及。</p> <p>城市地区加快扩大光纤到户网络覆盖范围和规模，农村地区积极采用无线技术加快宽带</p>	<p>2. <b>Popularization stage (2014-2015)</b>. The focus is on accelerating the expansion of broadband network coverage and scale, and deepening the popularization of broadband networks</p>



<p>网络向行政村延伸，有条件的农村地区推进光纤到村。持续扩大3G覆盖范围和深度，推动TD-LTE规模商用。继续推进下一代广播电视网建设，进一步扩大下一代广播电视网覆盖范围，加速互联互通。全面优化国家骨干网络。加强光通信、宽带无线通信、下一代互联网、下一代广播电视网、云计算等重点领域新技术研发，在部分重点领域取得原始创新成果。</p>	<p>while continuing to promote broadband network speedups.</p> <p>Urban areas are speeding up the expansion of the coverage and scale of fiber-to-the-home networks, rural areas are actively adopting wireless technology to accelerate the extension of broadband networks to administrative villages, and rural areas where conditions permit promote fiber-to-village. Continue to expand 3G coverage and depth, and promote large-scale commercial use of TD-LTE. Continue to promote the construction of the next-generation radio and television network, further expand the coverage of the next-generation radio and television network, and accelerate interconnection. Fully optimize the national backbone network. Strengthen the research and development of new technologies in key areas such as optical communications, broadband wireless communications, next-generation Internet, next-generation broadcasting and television networks, cloud computing, and achieve original innovation results in some key areas.</p>
<p>到2015年，固定宽带用户超过2.7亿户，城市和农村家庭固定宽带普及率分别达到65%和30%。3G/LTE用户超过4.5亿户，用户普及率达到32.5%。行政村通宽带比例达到95%。城市家庭宽带接入能力基本达到20Mbps，部分发达城市达到100Mbps，农村家庭宽带接入能力达到4Mbps。3G网络基本覆盖城乡，LTE实现规模商用，无线局域网全面实现公共区域热点覆盖，服务质量全面提升。互联网网民规模达到8.5亿，应用能力和服务水平显著提高。全国有线电视网络互联互通平台覆盖有线电视网络用户比例达到80%。互联网骨干网间互通质量、互联网服务提供商接入带宽和质量满足业务发展需求。在宽带无线通信、云计算等重点领域掌握一批拥有自主知识产权的核心关键技术。宽带技术标准体系逐步完善，国际标准话语权明显提高。</p>	<p>By 2015, there will be more than 270 million fixed broadband users, and the fixed broadband penetration rates of urban and rural households will reach 65% and 30% respectively. There are more than 450 million 3G/LTE users, and the user penetration rate reaches 32.5%. The proportion of administrative villages with broadband access reached 95%. The broadband access capability of urban households basically reaches 20Mbps, some developed cities reach 100Mbps, and the broadband access capability of rural households reaches 4Mbps. The 3G network basically covers urban and rural areas, LTE has achieved large-scale commercial use, and the wireless local area network has achieved full coverage of hotspots in public areas, and the quality of service has been improved. The number of Internet users has reached 850 million, and application capabilities and service levels have been significantly improved. The national cable TV network interconnection platform covers 80% of cable TV network users. The quality of the intercommunication between the Internet backbone networks and the access bandwidth and quality of Internet service providers meet the needs of business</p>

	development. Master a number of core key technologies with independent intellectual property rights in key areas such as broadband wireless communications and cloud computing. The broadband technology standard system is gradually improved, and the right to speak in international standards has been significantly improved.
<p>3. 优化升级阶段（2016-2020年）。重点推进宽带网络优化和技术演进升级，宽带网络服务质量、应用水平和宽带产业支撑能力达到世界先进水平。</p> <p>到2020年，基本建成覆盖城乡、服务便捷、高速畅通、技术先进的宽带网络基础设施。固定宽带用户达到4亿户，家庭普及率达到70%，光纤网络覆盖城市家庭。3G/LTE用户超过12亿户，用户普及率达到85%。行政村通宽带比例超过98%，并采用多种技术方式向有条件的自然村延伸。城市和农村家庭宽带接入能力分别达到50Mbps和12Mbps，50%的城市家庭用户达到100Mbps，发达城市部分家庭用户可达1Gbps，LTE基本覆盖城乡。互联网网民规模达到11亿，宽带应用服务水平和应用能力大幅提升。全国有线电视网络互联互通平台覆盖有线电视网络用户比例超过95%。全面突破制约宽带产业发展的高端基础产业瓶颈，宽带技术研发达到国际先进水平，建成结构完善、具有国际竞争力的宽带产业链，形成一批世界领先的创新型企业。</p>	<p>3. <b>Optimization and upgrading stage (2016-2020).</b> Focus on promoting broadband network optimization and technological evolution and upgrading, and broadband network service quality, application level and broadband industry support capabilities have reached the world's advanced level.</p> <p>By 2020, a broadband network infrastructure covering urban and rural areas, convenient services, unobstructed high speed, and advanced technology will be basically completed. The number of fixed broadband users reached 400 million, the household penetration rate reached 70%, and the fiber optic network covered urban households. There are more than 1.2 billion 3G/LTE users, and the user penetration rate reaches 85%. The proportion of administrative villages with broadband access exceeds 98%, and a variety of technical methods are used to extend to natural villages with conditions. The broadband access capacity of urban and rural households reaches 50Mbps and 12Mbps respectively. 50% of urban households reach 100Mbps, and some households in developed cities reach 1Gbps. LTE basically covers urban and rural areas. The number of Internet users reached 1.1 billion, and broadband application service levels and application capabilities have been greatly improved. The national cable TV network interconnection platform covers more than 95% of cable TV network users. We will comprehensively break through the bottleneck of high-end basic industries that restrict the development of the broadband industry. Broadband technology research and development will reach the international advanced level, build a well-structured and internationally competitive broadband industry chain, and form a group of world-leading innovative enterprises.</p>
“宽带中国”发展目标与发展时间表	"Broadband China" development goals and development timetable

指标	单位	2013年	2015年	2020年	index
1. 宽带用户规模					unit
固定宽带接入用户	亿户	2.1	2.7	4.0	year 2013
其中：光纤到户（FTTH）用户	亿户	0.3	0.7	—	2015
其中：城市宽带用户	亿户	1.6	2.0	—	2020 year
农村宽带用户	亿户	0.5	0.7	—	1. Scale of broadband users
3G/LTE用户	亿户	3.3	4.5	12	Fixed broadband access users
2. 宽带普及水平					Billion households
固定宽带家庭普及率	%	40	50	70	2.1
其中：城市家庭普及率	%	55	65	—	2.7
农村家庭普及率	%	20	30	—	4.0
3G/LTE用户普及率	%	25	32.5	85	Among them: fiber to the home (FTTH) users
3. 宽带网络能力					Billion households
城市宽带接入能力	Mbps	20（80%用户）	20	50	0.3
其中：发达城市	Mbps		100（部分城市）	1000（部分用户）	0.7
农村宽带接入能力	Mbps	4（85%用户）	4	12	—
大型企事业单位接入带宽	Mbps		大于100	大于1000	Of which: urban broadband users
互联网国际出口带宽	Gbps	2500	6500	—	Billion households
FTTH覆盖家庭	亿个	1.3	2.0	3.0	1.6
3G/LTE基站规模	万个	95	120	—	2.0
行政村通宽带比例	%	90	95	>98	—
全国有线电视网络互联互通	%	60	80	>95	Rural broadband users
					Billion households
					0.5
					0.7
					—

平台覆盖有线电视网络用户比例					3G/LTE users
4. 宽带信息应用					Billion households
网民数量	亿人	7.0	8.5	11.0	3.3
其中：农村网民	亿人	1.8	2.0	—	4.5
互联网数据量（网页总字节）	太字节	7800	15000		12
电子商务交易额	万亿元	10	18	—	2. Broadband penetration level
					Fixed broadband household penetration rate
					%
					40
					50
					70
					Of which: urban household penetration rate
					%
					55
					65
					—
					Rural household penetration rate
					%
					20
					30
					—
					3G/LTE user penetration rate
					%
					25
					32.5
					85

	<p>3. Broadband network capability</p> <p>Urban broadband access capability</p> <p>Mbps</p> <p>20 (80% users)</p> <p>20</p> <p>50</p> <p>Of which: developed cities</p> <p>Mbps</p> <p>100 (some cities)</p> <p>1000 (some users)</p> <p>Rural broadband access capability</p> <p>Mbps</p> <p>4 (85% users)</p> <p>4</p> <p>12</p> <p>Access bandwidth of large enterprises and institutions</p> <p>Mbps</p> <p>Greater than 100</p> <p>Greater than 1000</p> <p>Internet international export bandwidth</p> <p>Gbps</p> <p>2500</p> <p>6500</p>
--	--

	<p>— —</p> <p>FTTH coverage family</p> <p>Billion</p> <p>1.3</p> <p>2.0</p> <p>3.0</p> <p>3G/LTE base station scale</p> <p>Ten thousand</p> <p>95</p> <p>120</p> <p>— —</p> <p>Percentage of broadband access in administrative villages</p> <p>%</p> <p>90</p> <p>95</p> <p>&gt;98</p> <p>The proportion of cable TV network users covered by the national cable TV network interconnection platform</p> <p>%</p> <p>60</p> <p>80</p> <p>&gt;95</p> <p>4. Broadband information applications</p> <p>Number of Internet users</p> <p>Billion people</p>
--	---



	<p>7.0</p> <p>8.5</p> <p>11.0</p> <p>Of which: rural netizens</p> <p>Billion people</p> <p>1.8</p> <p>2.0</p> <p>—</p> <p>Internet data volume (total bytes of web pages)</p> <p>Terabyte</p> <p>7800</p> <p>15000</p> <p>E-commerce transaction volume</p> <p>Trillion</p> <p>10</p> <p>18</p> <p>—</p>
<p><b>三、重点任务</b></p> <p>（一）推进区域宽带网络协调发展。</p> <p>东部地区。支持东部地区先行先试开展网络升级和应用创新。积极利用光纤和新一代移动通信技术、下一代广播电视网技术，全面提升宽带网络速度与性能，着力缩小与发达国家差距；加快部署基于IPv6的下一代互联网；鼓励东部地区结合本地经济社会发展需要，积极开展区域试点示范，创新宽带应用服务，培育发展新业务、新业态。</p> <p>中西部地区。给予政策倾斜，支持中西部地区宽带网络建设，增加光缆路由，提升骨干网络容量，扩大接入网络覆盖范围，与东部地区同步部署应用新一代移动通信技术、下一代</p>	<p><b>3. Key tasks</b></p> <p>(1) Promote the coordinated development of regional broadband networks.</p> <p>East area. Support the eastern region to carry out network upgrades and application innovations. Actively use optical fiber, next-generation mobile communication technology, and next-generation radio and television network technology to comprehensively improve the speed and performance of broadband networks, and strive to narrow the gap with developed countries; accelerate the deployment of IPv6-based next-generation Internet; encourage the eastern region to integrate local economic and social</p>

<p>广播电视网技术和下一代互联网。加快中西部地区信息内容和网站的建设，推进具有民族特色的信息资源开发和宽带应用服务。创造有利环境，引导大型云计算数据中心落户中西部条件适宜的地区。</p>	<p>development needs , Actively carry out regional pilot demonstrations, innovate broadband application services, and cultivate and develop new businesses and new formats.</p> <p>Midwestern region. Give policy preference, support the construction of broadband networks in the central and western regions, increase optical cable routing, increase backbone network capacity, expand access network coverage, and deploy and apply new-generation mobile communication technologies, next-generation radio and television network technologies, and next-generation Internet simultaneously with the eastern region . Speed up the construction of information content and websites in the central and western regions, and promote the development of information resources and broadband application services with national characteristics. Create a favorable environment and guide large-scale cloud computing data centers to settle in areas with suitable conditions in the Midwest.</p>
<p>农村地区。将宽带纳入电信普遍服务范围，重点解决宽带村村通问题。因地制宜采用光纤、铜线、同轴电缆、3G/LTE、微波、卫星等多种技术手段加快宽带网络从乡镇向行政村、自然村延伸。在人口较为密集的农村地区，积极推动光纤等有线方式到村。在人口较为稀少、分散的农村地区，灵活采用各类无线技术实现宽带网络覆盖。加快研发和推广适合农民需求的低成本智能终端。加强各类涉农信息资源的深度开发，完善农村信息化业务平台和服务中心，提高综合网络信息服务水平。</p>	<p>rural area. Bring broadband into the scope of universal telecommunications services, and focus on solving the problem of broadband connections between villages. Various technical means such as optical fiber, copper wire, coaxial cable, 3G/LTE, microwave, satellite, etc. shall be adopted in accordance with local conditions to accelerate the extension of broadband networks from towns to administrative villages and natural villages. In densely populated rural areas, actively promote optical fiber and other wired methods to reach the village. In sparsely populated and scattered rural areas, various wireless technologies are used flexibly to achieve broadband network coverage. Accelerate the development and promotion of low-cost smart terminals suitable for farmers' needs. Strengthen the in-depth development of various agriculture-related information resources, improve the rural informatization business platform and service center, and improve the comprehensive network information service level.</p>
<p><b>专栏1 “宽带乡村”工程</b></p>	<p>Box 1 "Broadband Village" Project</p>
<p>根据农村经济发展水平和地理自然条件，灵活选择接入技术，分类分阶段推进宽带网络向行政村和有条件的自然村延伸。较发达地区在完成行政村通宽带的基础上推进光纤到行政村、宽带到自然村；欠</p>	<p>According to the level of rural economic development and geographical and natural conditions, flexible selection of access</p>

<p>发达地区重点解决行政村宽带覆盖。对建设成本过高的边远地区、山区以及海岛等，可以采用移动、卫星等无线宽带技术解决信息孤岛问题；对幅员宽广、居住分散的牧区，推进无线宽带覆盖；对新规划建设的成片新农村、农牧民安居工程，积极推进光纤到楼和光纤到户建设。</p>	<p>technologies, classification and phased promotion of broadband network extension to administrative villages and natural villages with conditions. In more developed areas, on the basis of completing broadband access to administrative villages, promote fiber to administrative villages and broadband to natural villages; underdeveloped areas focus on solving the broadband coverage of administrative villages. For remote areas, mountainous areas and islands where construction costs are too high, wireless broadband technologies such as mobile and satellite can be used to solve the problem of information islands; for pastoral areas with a wide area and scattered residences, wireless broadband coverage will be promoted; new plans for new construction The housing project for rural areas, farmers and herdsmen, actively promote the construction of fiber to the building and fiber to the home.</p>
<p>二) 加快宽带网络优化升级。</p> <p>骨干网。加快互联网骨干节点升级，推进下一代广播电视网宽带骨干网建设，提升网络流量疏通能力，全面支持IPv6。优化互联网骨干网间互联架构，扩容网间带宽，保障连接性能。增加国际海陆缆通达方向，完善国际业务节点布局，提升国际互联带宽和流量转接能力。升级国家骨干传输网，提升业务承载能力，增强网络安全可靠性。</p> <p>接入网和城域网。积极利用各类社会资本，统筹有线、无线技术加快宽带接入网建设。以多种方式推进光纤向用户端延伸，加快下一代广播电视网宽带接入网络的建设，逐步建成以光纤为主、同轴电缆和双绞线等接入资源有效利用的固定宽带接入网络。加大无线宽带网络建设力度，扩大3G网络覆盖范围，提高覆盖质量，协调推进TD-LTE商用发展，加快无线局域网重要公共区域热点覆盖，加快推进地面广播电视数字化进程。推进城域网优化和扩容。加快接入网、城域网IPv6升级改造。规划用地红线内的通信管道等通信设施与住宅区、住宅建筑同步建设，并预先铺设入户光纤，预留设备间，所需投资纳入相应建设项目概算。探索宽带基础设施共建共享的合作新模式。</p> <p>应用基础设施。统筹互联网数据中心建设，利用云计算和绿色节能技术进行升级改造，提高能效和集约化水平。扩大内容分发网络容量和覆盖范围，提升服务能力和安全管理水平。增加网站接入带宽，优化空间布局，实现互</p>	<p>Two) Speed up the optimization and upgrading of broadband networks.</p> <p>Backbone network. Speed up the upgrade of Internet backbone nodes, promote the construction of the next-generation broadcast and television network broadband backbone network, improve network traffic dredging capabilities, and fully support IPv6. Optimize the interconnection architecture between the Internet backbone networks, expand the bandwidth between the networks, and ensure connection performance. Increase the direction of international sea and land cable access, improve the layout of international business nodes, and improve international interconnection bandwidth and traffic transfer capabilities. Upgrade the national backbone transmission network, improve service carrying capacity, and enhance network security and reliability.</p> <p>Access network and metropolitan area network. Actively utilize various types of social capital to coordinate wired and wireless technologies to accelerate the construction of broadband access networks. Promote the extension of optical fiber to the user side in a variety of ways, accelerate the construction of the broadband access network of the next-generation broadcast and television network, and gradually build a fixed broadband access network based on optical fiber and effective</p>

<p>联网信息源高速接入。同步推动政府、学校、企事业单位外网网站系统及商业网站系统的IPv6升级改造。</p>	<p>use of access resources such as coaxial cables and twisted pairs . Intensify the construction of wireless broadband networks, expand 3G network coverage, improve coverage quality, and coordinate the promotion of TD-LTE commercial development, Accelerate the coverage of hotspots in important public areas of wireless local area networks, and accelerate the digitization of terrestrial broadcast and television. Promote the optimization and expansion of the metropolitan area network. Speed up the IPv6 upgrade and transformation of access networks and metropolitan area networks. The communication facilities such as the communication pipelines in the red line of the planned land will be constructed synchronously with residential areas and residential buildings, and the home fiber will be laid in advance, and the equipment room will be reserved. The required investment is included in the corresponding construction project budget. Explore a new cooperation model for the joint construction and sharing of broadband infrastructure.</p> <p>Application infrastructure. Coordinate the construction of Internet data centers, use cloud computing and green energy-saving technologies to upgrade and transform, and improve energy efficiency and intensification. Expand the capacity and coverage of content distribution networks, and improve service capabilities and security management levels. Increase website access bandwidth, optimize space layout, and achieve high-speed access to Internet information sources. Simultaneously promote the IPv6 upgrade and transformation of the extranet website system of the government, schools, enterprises and institutions and the commercial website system.</p>
<p><b>专栏2 宽带网络优化提速</b></p>	<p><b>Box 2 Broadband network optimization and speed</b></p>
<p>工程光纤城市建设。支持城市新建区域以光纤到户方式为主部署宽带网络，已建区域采用多种方式加快“光进铜退”改造，推进政府、学校、医疗卫生、科技园区、商务楼宇、宾馆酒店等单位的光纤宽带接入部署，提高接入速率。</p> <p>无线宽带网络建设。支持城市地区以3G/LTE网络为主，辅以无线局域网建设无线宽带城市，持续扩大农村地区无线宽带网络的覆盖范围，加大高速公路、高速铁路的无线网络优化力度。</p>	<p>Engineering optical fiber city construction. Support the deployment of broadband networks in newly-built urban areas based on fiber-to-the-home mode, and use multiple methods to accelerate the transformation of "light in and copper out" in established areas, and promote the development of government, schools, medical and health care,</p>

下一代广播电视宽带网建设。采用超高速智能光纤和同轴光缆传输技术建设下一代广播电视宽带网,通过光纤到小区、光纤到自然村、光纤到楼等方式,结合同轴电缆入户,充分利用广播电视网海量下行带宽、室内多信息点分布的优势,满足不同用户对弹性接入带宽的需要,加快实现宽带网络优化提速,促进宽带普及。互联网骨干网优化。推进网络结构扁平化,扩展骨干链路带宽,提升承载能力。优化骨干网间直联点布局,探索交换中心发展模式,加强对网间互联质量和交换中心的监测,保障骨干网间互联质量,提高互联网服务提供商的接入速度。

骨干传输网优化。适度超前建设超高速大容量光传输系统,持续提升骨干传输网络容量。适时引入和推广智能光传输网技术,提高资源调度的智能化水平。增加西部地区光缆路由密度,推进光缆网向格状网演进,提高国家干线网络安全性能。

science and technology parks, commercial buildings, hotels and other units The deployment of optical fiber broadband access improves the access rate.

Wireless broadband network construction. Support urban areas to focus on 3G/LTE networks, supplemented by wireless local area networks to build wireless broadband cities, continue to expand the coverage of wireless broadband networks in rural areas, and increase wireless network optimization efforts for highways and high-speed railways.

The next generation of broadcasting and television broadband network construction. Use ultra-high-speed intelligent optical fiber and coaxial optical cable transmission technology to build the next-generation broadcast and television broadband network. Through optical fiber to the community, optical fiber to natural village, optical fiber to the building, etc., combined with coaxial cable to the home, make full use of the massive downlink bandwidth of the broadcast The advantages of indoor multi-information point distribution meet the needs of different users for flexible access bandwidth, accelerate the realization of broadband network optimization and speed, and promote the popularization of broadband. Internet backbone network optimization. Promote the flattening of the network structure, expand the bandwidth of the backbone link, and improve the carrying capacity. Optimize the layout of direct connection points between backbone networks, explore the development model of switching centers, strengthen the monitoring of interconnection quality and switching centers between networks, ensure the quality of interconnection between backbone networks, and increase the access speed of Internet service providers.

The backbone transmission network is optimized. Moderately advance the construction of ultra-high-speed and large-capacity optical transmission systems, and continue to increase the capacity of the backbone transmission network. Introduce and promote the intelligent optical transmission network technology at the right time to improve the intelligent level of resource scheduling. Increase the optical cable routing density in the western region,

	promote the evolution of the optical cable network to a grid network, and improve the security performance of the national trunk network.
<p>三) 提高宽带网络应用水平。</p> <p>经济发展。不断拓展和深化宽带在生产经营中的应用, 加快企业宽带联网和基于网络的流程再造与业务创新, 利用信息技术改造提升传统产业, 实现网络化、智能化、集约化、绿色化发展, 促进产业优化升级。不断创新宽带应用模式, 培育新市场新业态, 加快电子商务、现代物流、网络金融等现代服务业发展, 壮大云计算、物联网、移动互联网、智能终端等新一代信息技术产业。行业专用通信要充分利用公众网络资源, 满足宽带化发展需求, 逐步减少专用通信网数量。</p> <p>社会民生。着力深化宽带网络在教育、医疗、就业、社保等民生领域的应用。加快学校宽带网络覆盖, 积极发展在线教育, 实现优质教育资源共享。推动医疗卫生机构宽带联网, 加速发展远程医疗和网络化医疗应用, 促进医疗服务均等化。加快就业和社会保障信息服务体系建设, 实现管理服务的全覆盖, 推进社会保障卡应用, 加快跨区域就业和社会保障信息互联互通。加强对信息化基础薄弱地区和特殊群体的宽带网络覆盖和服务支撑。</p>	<p>Three) Improve the level of broadband network application.</p> <p>economic development. Continuously expand and deepen the application of broadband in production and operation, accelerate enterprise broadband networking and network-based process reengineering and business innovation, use information technology to transform and upgrade traditional industries, realize networked, intelligent, intensive, and green development, and promote the industry Optimize and upgrade. Continuously innovate broadband application models, cultivate new markets and new formats, accelerate the development of modern service industries such as e-commerce, modern logistics, and online finance, and strengthen the new generation of information technology industries such as cloud computing, Internet of Things, mobile Internet, and smart terminals. Industry-specific communications must make full use of public network resources to meet the needs of broadband development, and gradually reduce the number of private communications networks.</p> <p>Social people's livelihood. Efforts will be made to deepen the application of broadband networks in the fields of education, medical care, employment, and social security. Speed up school broadband network coverage, actively develop online education, and realize the sharing of high-quality educational resources. Promote broadband networking of medical and health institutions, accelerate the development of telemedicine and networked medical applications, and promote the equalization of medical services. Accelerate the construction of employment and social security information service systems, achieve full coverage of management services, promote the application of social security cards, and accelerate cross-regional employment and social security information interconnection. Strengthen broadband network coverage and service support for areas and special groups with a weak foundation for informatization.</p>



<p>文化建设。加快文化馆（站）、图书馆、博物馆等公益性文化机构和重大文化工程的宽带联网，优化公共文化信息服务体系，大力发展公共数字文化。提升宽带网络对文化事业和文化创意产业的支撑能力，促进宽带网络和文化发展融合，发展数字文化产业等新型文化业态，增强文化传播能力，提高公共文化服务效能和文化产业规模化、集约化水平，推动文化大发展大繁荣。</p> <p>国防建设。依托公众网络增强军用网络设施的安全可靠、应急响应和动态恢复能力。利用关键技术研发成果，提升军用网络的技术水平和能力。为军队遂行日常战备、训练演习和非战争军事行动适当预置接入和信道资源。完善公众网络和军用网络资源共享共用、应急组织调度的领导机制和联动工作机制。</p>	<p>Cultural Construction. Speed up the broadband networking of cultural centers (stations), libraries, museums and other non-profit cultural institutions and major cultural projects, optimize the public cultural information service system, and vigorously develop public digital culture. Enhance the support capacity of broadband networks for cultural undertakings and cultural and creative industries, promote the integration of broadband networks and cultural development, develop digital cultural industries and other new cultural formats, enhance cultural communication capabilities, improve the efficiency of public cultural services and the level of scale and intensification of cultural industries , To promote cultural development and prosperity.</p> <p>Defence Construction. Relying on the public network to enhance the security, reliability, emergency response and dynamic recovery capabilities of military network facilities. Use key technology research and development results to improve the technical level and capabilities of military networks. Properly preset access and channel resources for the army's daily combat readiness, training exercises, and non-war military operations. Improve the leadership mechanism and linkage working mechanism of public network and military network resource sharing, emergency organization and scheduling.</p>
<p>应用普及。大力推进信息技术在教育教学中的应用，推进优质教育资源普遍共享，加强网络文明与网络安全教育，引导学生形成良好的上网习惯和正确的网络世界观。设立农村公共宽带互联网服务中心，开展宽带上网及应用技能培训。面向中小企业开展宽带应用技能培训及电子商务、网上营销等指导，鼓励企业利用宽带开展业务和商业模式创新。研发推广特殊人群专用信息终端和应用工具。</p>	<p>Popularity of applications. Vigorously promote the application of information technology in education and teaching, promote the universal sharing of high-quality educational resources, strengthen network civilization and network security education, and guide students to form good Internet habits and a correct Internet world view. Establish rural public broadband Internet service centers to carry out broadband Internet access and application skills training. Carry out broadband application skills training and e-commerce, online marketing and other guidance for small and medium-sized enterprises, and encourage enterprises to use broadband to carry out business and business model innovation. Development and promotion of information terminals and application tools for special populations.</p>

<b>专栏3 中小企业宽带应用示范工程</b>	<b>Box 3 Demonstration Project of SME Broadband Application</b>
支持中小企业宽带上网，推动企业将互联网融入其生产经营流程。支持建设面向中小企业的第三方电子商务平台，鼓励开展在线销售、采购、客户关系管理等活动。	Support small and medium-sized enterprises to surf the Internet through broadband, and promote enterprises to integrate the Internet into their production and operation processes. Support the construction of a third-party e-commerce platform for small and medium-sized enterprises, and encourage the development of online sales, procurement, customer relationship management and other activities.
<b>专栏4 贫困学校和特殊教育机构宽带应用示范工程</b>	<b>Box 4 Demonstration project of broadband application in poor schools and special education institutions</b>
支持灵活选用不同宽带接入技术，因地制宜为农村地区（尤其是贫困地区和少数民族地区）中小学和残疾人特殊教育机构建设宽带网络设施，开发简便易用的上网终端，丰富特色应用，加大信息助教、助残和扶贫力度，缩小数字鸿沟。	Support flexible selection of different broadband access technologies, build broadband network facilities for primary and secondary schools in rural areas (especially poverty-stricken areas and ethnic minority areas) and special education institutions for the disabled, develop easy-to-use Internet terminals, enrich special applications, and increase Information assistance, assistance to the disabled and poverty alleviation efforts to narrow the digital divide.
<b>专栏5 数字文化宽带应用示范工程</b>	<b>Box 5 Digital Cultural Broadband Application Demonstration Project</b>
建设可智能适配不同宽带接入网络和终端的广播影视、文化馆、图书馆、博物馆等数字文化内容平台，提高数字文化内容平台的宽带联网和互联互通水平，结合宽带网络能力提升创新数字文化服务业态，丰富各类数字文化应用，开发数字文化应用智能终端，开展各类数字文化宽带应用示范，促进宽带网络和文化发展融合，增强文化传播能力。	Build digital cultural content platforms such as radio, film and television, cultural centers, libraries, and museums that can intelligently adapt to different broadband access networks and terminals, improve the level of broadband networking and interconnection of digital cultural content platforms, and combine broadband network capabilities to enhance innovative digital cultural services Business formats, enrich various digital cultural applications, develop digital cultural application smart terminals, carry out various digital cultural broadband application demonstrations, promote the integration of broadband networks and cultural development, and enhance cultural communication capabilities.
（四）促进宽带网络产业链不断完善。 关键技术研发。推进实施新一代宽带无线移动通信网、下一代互联网等专项和863计划	<b>(4) Promote continuous improvement of the broadband network industry chain.</b> Key technology research and development. Promote the implementation of special

<p>、科技支撑计划等。加强更高速光纤宽带接入、超高速大容量光传输、超大容量路由交换、数字家庭、大规模资源管理调度和数据处理、新一代万维网（Web）、新型人机交互、绿色节能、量子通信等领域关键技术研发，着力突破宽带网络关键核心技术，加速形成自主知识产权。进一步完善宽带网络标准体系，积极参与相关国际标准和规范的研究制定。</p> <p>重大产品产业化。在光通信、新一代移动通信、下一代互联网、下一代广播电视网、移动互联网、云计算、数字家庭等重点领域，加大对关键设备核心芯片、高端光电子器件、操作系统等高端产品研发及产业化的支持力度。支持宽带网络核心设备研制、产业化及示范应用，着力突破产业瓶颈，提升自主发展能力。鼓励组建重点领域技术产业联盟，完善产业链上下游协作，推动产业协同创新。</p>	<p>projects such as the new generation of broadband wireless mobile communication networks and the next generation of Internet, the 863 plan, and the science and technology support plan. Strengthen higher-speed optical fiber broadband access, ultra-high-speed and large-capacity optical transmission, ultra-large-capacity routing and switching, digital home, large-scale resource management and scheduling and data processing, the new generation of World Wide Web (Web), new human-computer interaction, green energy saving, quantum communication, etc. Research and development of key technologies in the field, focus on breakthroughs in key core technologies of broadband networks, and accelerate the formation of independent intellectual property rights. Further improve the broadband network standard system, and actively participate in the research and formulation of relevant international standards and specifications.</p> <p>Industrialization of major products. In key areas such as optical communications, next-generation mobile communications, next-generation Internet, next-generation broadcasting and television networks, mobile Internet, cloud computing, and digital homes, increase the research and development of high-end products such as core chips for key equipment, high-end optoelectronic devices, and operating systems. Support for industrialization. Support the development, industrialization, and demonstration applications of core broadband network equipment, focus on breaking through industrial bottlenecks, and enhance independent development capabilities. Encourage the formation of technological industry alliances in key areas, improve the upstream and downstream collaboration of the industrial chain, and promote industrial collaborative innovation.</p>
<p>智能终端研制。充分发挥无线和有线宽带网络能力，面向教育、医疗卫生、交通、家居、节能环保、公共安全等重点领域，积极发展物美价廉的移动终端、互联网电视、平板电脑等多种形态的上网终端产品。推动移动互联网操作系统、核心芯片、关键器件等的研发创新。加快3G、TD-LTE及其他技术制式的多模智能终</p>	<p>Intelligent terminal development. Give full play to wireless and wired broadband network capabilities, and actively develop high-quality and inexpensive mobile terminals, Internet TVs, tablets and other Internet terminal products for key areas such as education, medical and health, transportation, home furnishing, energy conservation and</p>

<p>端研发与推广应用。</p> <p>支撑平台建设。充分整合现有资源，在宽带网络相关技术领域，推动国家工程中心、实验室等产业创新能力平台建设。研究制定宽带网络发展评测指标体系，构建覆盖全国的宽带网络信息测试与采集系统，实现宽带网络性能常态化监测。</p>	<p>environmental protection, and public safety. . Promote the R&amp;D and innovation of mobile Internet operating systems, core chips, and key devices. Accelerate the development, promotion and application of multi-mode smart terminals of 3G, TD-LTE and other technical standards.</p> <p>Support platform construction. Fully integrate existing resources and promote the construction of industrial innovation capability platforms such as national engineering centers and laboratories in the technical fields related to broadband networks. Research and formulate a broadband network development evaluation index system, build a nationwide broadband network information testing and collection system, and realize normalized monitoring of broadband network performance.</p>
<p><b>专栏6 宽带核心设备研制产业化工程</b></p>	<p><b>Box 6 Development and Industrialization Project of Broadband Core Equipment</b></p>
<p>光纤宽带接入核心设备研制与示范。突破大容量、高带宽、长距离的新一代光纤接入网关键技术，研制光接入网设备核心器件芯片，推动智能光分配网络和海量数据管理系统的成熟与产业化，开发测试平台，开展示范应用。</p> <p>骨干光传输和路由交换设备研制和试点。研制下一代光网络体系架构、超高速波分复用传输和智能组网、分组光传送网、高精度时间同步、超大容量路由交换等核心设备，突破相关核心芯片和高端光电器件技术，实现产业化。完善相关国际国内标准，开展技术试验和试点应用。</p> <p>宽带接入智能终端研发和产业化。面向智能手机、智能电视、智能机顶盒、平板电脑等多类型终端和数字家庭网关，组织开展自主操作系统和配套应用的规模商用。突破智能终端处理器芯片、新一代Web、多模态人机交互、多模智能终端和多屏智能切换等关键技术。</p>	<p>Development and demonstration of core equipment for optical fiber broadband access. Break through the key technologies of the new generation of optical fiber access network with large capacity, high bandwidth and long distance, develop the core device chip of optical access network equipment, promote the maturity and industrialization of intelligent optical distribution network and mass data management system, develop test platform, and develop Demonstration application.</p> <p>Development and pilot of backbone optical transmission and routing switching equipment. Develop next-generation optical network architecture, ultra-high-speed wavelength division multiplexing transmission and intelligent networking, packet optical transmission network, high-precision time synchronization, ultra-large-capacity routing and switching and other core equipment, breakthrough related core chips and high-end optoelectronic device technology, and realize the industry化. Improve relevant international and domestic standards, and carry out technical tests and pilot applications.</p> <p>R&amp;D and industrialization of broadband access smart terminals. For smart phones, smart TVs, smart set-top boxes, tablet computers and other multiple types of terminals and digital home gateways, organize</p>

	large-scale commercial use of independent operating systems and supporting applications. Breakthrough key technologies such as smart terminal processor chips, a new generation of Web, multi-modal human-computer interaction, multi-mode smart terminals and multi-screen smart switching.
专栏7 “宽带中国”地图建设工程	Box 7 "Broadband China" map construction project
建立宽带发展监测体系和评价指标体系，建设覆盖全国的宽带发展测评系统，实现对网络覆盖、接入带宽、用户规模、主要网站接入速率等信息的动态监测，建立宽带发展状况报告和宽带地图发布机制。	Establish a broadband development monitoring system and evaluation index system, build a nationwide broadband development evaluation system, realize dynamic monitoring of information such as network coverage, access bandwidth, user scale, and access rate of major websites, and establish broadband development status reports and broadband maps Release mechanism.
<p>五) 增强宽带网络安全保障能力。</p> <p>技术支撑能力。加强宽带网络信息安全与应急通信关键技术研究，提高基础软硬件产品、专用安全产品、应急通信装备的可控水平，支持技术产品研发，完善相关产业链，提高宽带网络信息安全与应急通信技术支撑能力。</p> <p>安全防护体系。加快形成与宽带网络发展相适应的安全保障能力，构建下一代网络信息安全防护体系，提高对网络和信息安全事件的监测、发现、预警、研判和应急处置能力，完善网络和重要信息系统的安全风险评估评测机制和手段，提升网络基础设施攻击防范、应急响应和灾难备份恢复能力。</p>	<p>5) Enhance the ability of broadband network security assurance.</p> <p>Technical support capabilities. Strengthen the research on key technologies of broadband network information security and emergency communications, improve the controllability of basic software and hardware products, special security products, and emergency communications equipment, support the research and development of technical products, improve related industrial chains, and improve broadband network information security and emergency communications technology support ability.</p> <p>Safety protection system. Accelerate the formation of security assurance capabilities that are compatible with the development of broadband networks, build a next-generation network information security protection system, improve the monitoring, discovery, early warning, research and judgment, and emergency response capabilities of network and information security incidents, and improve the security of networks and important information systems Risk assessment mechanisms and methods to improve network infrastructure attack prevention, emergency response, and disaster backup and recovery capabilities.</p>
应急通信系统。提高宽带网络基础设施的可靠性和抗毁性，逐步实现宽带网络的应急优先服务，提升宽带网络的应急通信保障能	Emergency communication system. Improve the reliability and survivability of broadband network infrastructure, gradually realize

<p>力。加强基于宽带技术的应急通信装备配备，加快应急通信系统的宽带化改造。</p> <p>安全管理机制。引导和规范新技术、新应用安全发展，构建安全评测评估体系，提高主动安全管理能力。加强信息保护体系建设，制定和完善个人隐私信息保护、打击网络犯罪等方面法律法规，推动行业自律和公众监督，加强用户安全宣传教育，构建全方位的社会化治理体系，着力打造安全、健康、诚信的网络环境。</p>	<p>emergency priority services for broadband networks, and improve the emergency communication guarantee capabilities of broadband networks. Strengthen the provision of emergency communication equipment based on broadband technology and accelerate the broadband transformation of emergency communication systems.</p> <p>Security management mechanism. Guide and standardize the safe development of new technologies and new applications, build a safety evaluation system, and improve active safety management capabilities. Strengthen the construction of an information protection system, formulate and improve laws and regulations on personal privacy information protection, combat cyber crimes, promote industry self-discipline and public supervision, strengthen user safety publicity and education, build a comprehensive social governance system, and strive to create safety, health, An honest network environment.</p>
<p><b>四、政策措施</b></p> <p>(一) 加强组织领导。</p> <p>建立“宽带中国”战略实施部际协调机制，加强统筹和配合，协调解决重大问题，务实推进战略的贯彻实施。各部门要充分整合、有效利用现有资源和政策，抓紧制定出台配套政策，确保各项任务措施落到实处。地方各级人民政府要将宽带发展纳入地区经济社会和城镇化发展规划，加强组织领导，结合实际适度超前部署，加大资金投入和政策支持力度，避免重复建设，推进本地区宽带快速健康发展。</p>	<p>4. Policy measures</p> <p>(1) Strengthen organization and leadership.</p> <p>Establish an inter-ministerial coordination mechanism for the implementation of the "Broadband China" strategy, strengthen overall planning and coordination, coordinate the resolution of major issues, and pragmatically promote the implementation of the strategy. All departments must fully integrate and effectively use existing resources and policies, and promptly formulate supporting policies to ensure that various tasks and measures are implemented. Local people's governments at all levels should incorporate broadband development into the regional economic and social and urbanization development plans, and strengthen organizational leadership, appropriately advance deployment based on actual conditions, increase capital investment and policy support, avoid duplication of construction, and promote the rapid and healthy development of broadband in the region.</p>
<p>(二) 完善制度环境。</p> <p>完善法律法规。加快推动出台相关法律法规，明确宽带网络作为国家公共基础设施的法律地位，强化宽带网络设施保护。依法保护个</p>	<p>(2) Improve the institutional environment.</p> <p>Improve laws and regulations. Accelerate the introduction of relevant laws and regulations, clarify the legal status of</p>



<p>人信息，营造安全可信的网络环境，促进宽带应用发展。</p> <p>健全监管体系。全面推进三网融合，加快电信和广电业务双向进入，建立和完善适应三网融合需要的网络信息安全和文化安全监管机制。健全宽带网络监管制度，加强监管能力建设，推进监管队伍向地市延伸。</p> <p>推动开放竞争。逐步开放宽带接入网业务，鼓励民间资本参与宽带网络设施建设和业务运营，推动形成多种主体相互竞争、优势互补、共同发展的市场格局。规范宽带市场竞争行为，保障住宅小区及机场、高速公路、地铁等公共服务区域的公平进入。加强国家骨干网网间通信质量监管，建立网间互联带宽扩容长效机制，完善骨干网网间结算办法，保障网间互联高效畅通和骨干网公平竞争。通过产业联盟、行业协会等各种渠道，引导宽带网络设备制造和信息服务企业加强行业自律，建立竞争机制，共同维护竞争秩序。</p>	<p><b>broadband networks as national public infrastructure, and strengthen the protection of broadband network facilities.</b> Protect personal information in accordance with the law, create a safe and reliable network environment, and promote the development of broadband applications.</p> <p>Improve the supervision system. Comprehensively promote the integration of the three networks, accelerate the two-way entry of telecommunications and radio and television services, and establish and improve network information security and cultural safety supervision mechanisms that meet the needs of the integration of the three networks. Improve the broadband network supervision system, strengthen supervision capacity building, and promote the extension of supervision teams to prefectures and cities.</p> <p><b>Promote open competition. Gradually open up broadband access network services, encourage private capital to participate in the construction of broadband network facilities and business operations, and promote the formation of a market structure in which multiple entities compete with each other, complement each other's advantages, and develop together. Standardize broadband market competition and ensure fair access to residential communities and public service areas such as airports, highways, and subways.</b> Strengthen the national backbone network communication quality supervision, establish a long-term mechanism for interconnection bandwidth expansion, improve backbone network settlement methods, and ensure the efficient and smooth interconnection between networks and the fair competition of backbone networks. Through various channels such as industry alliances and industry associations, we will guide broadband network equipment manufacturing and information service companies to strengthen industry self-discipline, establish a competition mechanism, and jointly maintain the order of competition.</p>
<p>深化应用创新。构建和完善宏观调控、社会管理和公共服务等基础信息资源体系，加快建立公益性信息资源开发应用长效机制，推进农业、科技、教育、文化、卫生、人口、就业和社会保障、国土资源等领域信息资源的公益性利用，建立跨地区、跨部门、跨层级的开放共享</p>	<p>Deepen application innovation. Construct and improve basic information resource systems such as macro-control, social management and public services, accelerate the establishment of a long-term mechanism for the development and application of public welfare information resources, and promote</p>

<p>机制。</p> <p>(三) 规范建设秩序。</p> <p>严格落实宽带网络建设规划和规范。按照城乡规划法、土地管理法和城市通信工程规划规范等法律法规和规范规定，将宽带网络建设纳入各地城乡规划、土地利用总体规划。切实执行住宅小区和住宅建筑宽带网络设施的工程设计、施工及验收规范。做好宽带网络与高速公路、铁路、机场等交通设施规划和建设的衔接。</p> <p>保障宽带网络设施建设与通行。政府机关、企事业单位和公共机构等所属公共设施，市政设施、公路、铁路、机场、地铁等公共设施应向宽带网络设施建设开放，并提供通行便利。对因征地拆迁、城乡建设等造成的光缆、管道、基站、机房等宽带网络设施迁移和毁损，严格按照有关标准予以补偿。</p>	<p>agriculture, science and technology, education, culture, health, population, employment and social security, land resources, etc. Use of information resources in the field for public welfare, and establish a cross-regional, cross-departmental and cross-level open sharing mechanism.</p> <p>(3) Standardize the construction order. Strictly implement broadband network construction planning and specifications. In accordance with the Urban and Rural Planning Law, the Land Management Law, and the Urban Communication Project Planning Regulations and other laws, regulations and norms, broadband network construction is included in the overall urban and rural planning and land use planning of various regions. Effectively implement the engineering design, construction and acceptance specifications of residential quarters and residential building broadband network facilities. Do a good job in connecting broadband networks with the planning and construction of transportation facilities such as highways, railways, and airports.</p> <p>Guarantee the construction and traffic of broadband network facilities. Public facilities such as government agencies, enterprises, institutions and public institutions, municipal facilities, highways, railways, airports, subways and other public facilities should be opened to the construction of broadband network facilities and provide access convenience. The relocation and damage of broadband network facilities such as optical cables, pipelines, base stations, and computer rooms caused by land acquisition and demolition, urban and rural construction, etc. shall be compensated in strict accordance with relevant standards.</p>
<p>深化网络设施共建共享。在城市地下管线规划、控制性详细规划中，统筹安排通信工程综合管道网和相关设施，加强宽带网络设施与城市其他通信管线、居住区、公共建筑等管线的协调。深化光缆、管道、基站等电信基础设施的共建共享，创新合作模式，探索应用新技术，促进资源节约。</p> <p>(四) 加大财税扶持。</p> <p>加大财政资金支持。完善电信普遍服务补偿机制，形成支持农村和中西部地区宽带发展的长效机制。充分利用中央各类专项资金，引导地方相关资金投向宽带网络研发及产业化，</p>	<p>Deepen the co-construction and sharing of network facilities. In the urban underground pipeline planning and regulatory detailed planning, the integrated pipeline network and related facilities of communication projects shall be coordinated to strengthen the coordination of broadband network facilities with other urban communication pipelines, residential areas, public buildings and other pipelines. Deepen the co-construction and sharing of telecommunications infrastructure such as optical cables, pipelines, and base stations, innovate cooperation models,</p>

<p>以及农村和老少边穷地区的宽带网络发展。对西部地区符合条件的国家级开发区宽带建设项目贷款予以贴息支持。</p> <p>加强税收优惠扶持。将西部地区宽带网络建设和运营纳入《西部地区鼓励类产业目录》，扶持西部地区宽带发展。结合电信行业特点，在营业税改增值税改革中，制定增值税相关政策与征管制度，完善电信业增值税抵扣机制，支持宽带网络建设。</p>	<p>explore and apply new technologies, and promote resource conservation.</p> <p>(4) Increase fiscal and taxation support. Increase financial support. Improve the universal service compensation mechanism of telecommunications, and form a long-term mechanism to support the development of broadband in rural and central and western regions. Make full use of various types of special funds from the central government to guide local related funds to invest in broadband network research and development and industrialization, as well as the development of broadband networks in rural areas, old, young and poor areas. Provide discount support to eligible national-level development zone broadband construction projects in the western region.</p> <p>Strengthen tax preferential support. Include the construction and operation of broadband networks in the western region into the "Catalogue of Encouraged Industries in the Western Region" to support broadband development in the western region.</p> <p>Combining the characteristics of the telecommunications industry, in the reform of business tax reform and value-added tax reform, formulate relevant policies and collection and management systems for value-added tax, improve the value-added tax deduction mechanism of the telecommunications industry, and support the construction of broadband networks.</p>
<p>完善投融资政策。将宽带业务纳入《中西部地区外商投资优势产业目录》。推进专利等知识产权质押融资工作，加大对宽带应用服务企业的融资支持力度，积极支持符合条件的宽带应用服务企业在海内外资本市场直接融资。完善基础电信企业经营业绩考核机制，进一步优化基础电信企业经济增加值考核指标，引导宽带网络投资更多地投向西部和农村地区。</p> <p>(五) 优化频谱规划。</p> <p>明确国家无线频谱路线图。尽快研究确定国家宽带无线发展各阶段的频谱需求，梳理无线频谱分布和利用状况。加快研究频谱规划方案，制定频谱中长期规划，明确无线频谱综合利用的时间表和路线图。</p> <p>促进频谱资源高效利用。支持动态频谱分配等高效利用频谱资源新技术的开发运用，支持消除干扰技术和设备的研发和利用，促进不</p>	<p>Improve investment and financing policies. Include broadband services in the "Catalogue of Advantageous Industries for Foreign Investment in the Central and Western Regions". Promote patent and other intellectual property pledge financing, increase financing support for broadband application service companies, and actively support qualified broadband application service companies to directly raise capital in domestic and overseas capital markets.</p> <p>Improve the operating performance evaluation mechanism of basic telecommunications companies, further optimize the evaluation indicators for economic value added of basic telecommunications companies, and guide more broadband network investment to the western and rural areas.</p>

<p>同无线业务类型频率的共用共享，提高频率资源整体利用率。</p>	<p>(5) Optimize spectrum planning. Clarify the national wireless spectrum roadmap. As soon as possible, study and determine the spectrum requirements of various stages of national broadband wireless development, and sort out the distribution and utilization of wireless spectrum. Accelerate the study of spectrum planning plans, formulate mid- and long-term spectrum planning, and clarify the timetable and roadmap for the comprehensive utilization of wireless spectrum.</p> <p>Promote efficient use of spectrum resources. Support the development and application of new technologies for efficient utilization of spectrum resources such as dynamic spectrum allocation, support the development and utilization of interference elimination technologies and equipment, promote the sharing of frequencies of different wireless service types, and improve the overall utilization of frequency resources.</p>
<p>加强公共频段上无线设备的监管。统筹无线局域网等无线通信网络的部署，鼓励无线设备共建共享，避免频率干扰，提高频谱资源使用效益。加强无线电发射设备研制、生产、进口、销售、使用等环节的监管，维护空中电波秩序。</p> <p>(六) 加强人才培养。</p> <p>优先保障人才发展投入。争取国家重大人才工程加大对宽带人才队伍建设的支持力度，加强宽带领域专业技术人才继续教育。依托重大科研、工程、产业攻关等项目开展人才培养工作，重视发挥企业作用，在实践中聚集和培养人才。</p> <p>加大高层次人才引进和培养。加强宽带重点领域创新型人才引进，将所需人才纳入国家海外高层次人才引进计划，大力吸引海外高层次人才在华创新创业。鼓励采用合作办学、定向培养、继续教育等多种形式，创新宽带相关专业人才培养模式，建立科研机构、高校创新人才向企业流动的机制。</p>	<p>Strengthen the supervision of wireless devices on public frequency bands. Coordinate the deployment of wireless communication networks such as wireless local area networks, encourage the joint construction and sharing of wireless equipment, avoid frequency interference, and improve the efficiency of spectrum resource use. Strengthen the supervision of the development, production, import, sales, and use of radio transmission equipment to maintain the order of air waves.</p> <p>(6) Strengthen personnel training.</p> <p>Prioritize investment in talent development. Strive for major national talent projects to increase support for the construction of broadband talent teams, and strengthen continuing education of professional and technical talents in the broadband field. Relying on major scientific research, engineering, industrial research and other projects to carry out talent training work, attach importance to the role of enterprises, and gather and train talents in practice.</p> <p>Increase the introduction and training of high-level talents. Strengthen the introduction of innovative talents in key broadband fields, incorporate the required talents into the national overseas high-level talent introduction plan, and vigorously attract overseas high-level talents to innovate and</p>

	<p>start businesses in China. Encourage the use of various forms such as cooperative education, targeted training, and continuing education, innovate the training model of broadband-related professional talents, and establish a mechanism for the flow of innovative talents from scientific research institutions and universities to enterprises.</p>
<p>七) 深化国际合作。</p> <p>加强网络基础资源国际合作。探索建立适应互联网域名、网址和网际协议地址 (IP地址) 资源全球化发展要求的地区和国家间的协调与合作机制。加强无线频谱、卫星轨道等资源分配使用的国际协作。借鉴国外先进经验, 推动开展资源技术联合研究, 提高资源利用效率。加强互联网骨干网的国际互联合作, 进一步提升我国互联网骨干网企业的国际地位。</p> <p>深化网络空间国际合作。加强国际交流, 推动双边、多边协调和对话, 建立多层次的沟通交流平台, 提升参与网络空间国际治理和规则制定的话语权。加强网络空间规则、资源、安全等国际合作, 积极参与国际社会互联网公共政策与规则的制定, 推动国际互联网健康发展。</p>	<p>7) Deepen international cooperation.</p> <p>Strengthen international cooperation in basic network resources. Explore the establishment of coordination and cooperation mechanisms between regions and countries that meet the requirements of the globalization of Internet domain names, web addresses and Internet Protocol addresses (IP addresses). Strengthen international cooperation in the allocation and use of resources such as wireless spectrum and satellite orbits. Learn from foreign advanced experience, promote joint research on resource technology, and improve resource utilization efficiency. Strengthen the international interconnection cooperation of the Internet backbone network, and further enhance the international status of my country's Internet backbone network enterprises.</p> <p>Deepen international cooperation in cyberspace. Strengthen international exchanges, promote bilateral and multilateral coordination and dialogue, establish a multi-level communication platform, and enhance the right to speak in the international governance and rulemaking of cyberspace. Strengthen international cooperation in cyberspace rules, resources, and security, actively participate in the formulation of public Internet policies and rules in the international community, and promote the healthy development of the Internet.</p>
<p>加大知识产权国际合作。完善知识产权保护制度, 强化数字内容和互联网应用的知识产权保护, 加强打击互联网领域侵权盗版行为的国际合作。加强宽带相关技术和产品的专利布局、专利预警、海外维权和争端解决, 提升企业依法应对知识产权纠纷的能力。</p>	<p>Increase international cooperation on intellectual property rights. Improve the intellectual property protection system, strengthen the intellectual property protection of digital content and Internet applications, and strengthen international</p>

	cooperation in combating infringement and piracy in the Internet field. Strengthen the patent layout, patent early warning, overseas rights protection and dispute settlement of broadband-related technologies and products, and enhance the ability of enterprises to deal with intellectual property disputes in accordance with the law.