



UNITED STATES DEPARTMENT OF COMMERCE
National Telecommunications and
Information Administration
Washington, DC 20230

National Telecommunications and Information Administration
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2005 Annual Report

The National Telecommunications and Information Administration (NTIA) (a) serves through the Secretary of Commerce as the principal advisor to the President on domestic and international communications and information policy-making; (b) promotes access to telecommunications services for all Americans, and competition in domestic and international markets; (c) manages all federal use of the electromagnetic spectrum and promotes efficient use of spectrum; (d) conducts telecommunications technology research, including standards-setting, in partnership with business and other federal agencies; and (e) awards public telecommunications grants. The agency's expertise encompasses every aspect of telecommunications, including domestic and international policy, spectrum management, and technical telecommunications research and engineering.

NTIA's Performance Goal 1: NTIA's first goal is to ensure that the allocation of radio spectrum provides the greatest benefit to all people.

- **Frequency Assignments:** In 2005, NTIA continued to improve its client service to agencies for federal spectrum management. Through the Frequency Assignment Subcommittee (FAS), NTIA processed 81,300 assignment actions during 2005. These included 28,573 requests for new assignment, 36,820 requests to modify existing assignments, and 15,907 actions to delete existing assignments. NTIA distributed these actions to the FAS through 228 FAS Agenda Sections. This year, NTIA released Version 4.2 of the Spectrum XXI program to allow data exchange of directives for frequency assignment proposals. Spectrum XXI provides an automated mechanism for preparing, circulating, tracking and assessing frequency requests. As a result of this improved capability and changes in procedures, the average approval time required for applications has been reduced one day from that of last year.
- **Spectrum Certifications:** During 2005, NTIA's Office of Spectrum Management (OSM) approved 138 certifications of spectrum support. In support of the spectrum certification activity and with the assistance of the Interdepartment Radio Advisory Committee (IRAC) Spectrum Planning Subcommittee, OSM staff completed 102 engineering reviews of radiocommunications systems being developed and deployed by federal agencies. Results of the reviews were documented in reports providing spectrum management guidance for systems having a wide variety of functions, including voice and data communications, radiolocation and radionavigation operations, satellite communications, and experimental research. This year, NTIA released Version 4 of the EL-CID program to allow the electronic submission of requests for spectrum support. EL-CID is an automated mechanism for preparing, tracking, and assessing spectrum certification requests and for compiling an

automated database of parameters characterizing federal radiocommunications systems. This program also provides the first demonstration of the use of the NTIA Data Dictionary. The capability of electronic filing of requests, in the EL-CID format, not only ensures that applications are complete and accurate, but approved applications are transferred directly to the system review database.

- **President's Spectrum Policy Initiative:** In a 2003 Executive Memorandum, President Bush established the Spectrum Policy Initiative to promote the development and implementation of a U.S. spectrum management policy for the 21st century. This initiative will foster economic growth, ensure national and homeland security, maintain U.S. global leadership in communications technology development and services, and satisfy other vital U.S. needs such as public safety, scientific research, federal transportation infrastructure and law enforcement.

In response to the President's directive, the Secretary of Commerce established a Federal Government Spectrum Task Force and initiated a series of public meetings to address improvements in policies affecting spectrum use by the Federal Government, State, and local governments, and the private sector. Based on this information, the Department submitted to the President two reports containing 24 recommendations for improving spectrum management policies and processes. In 2004, the President issued a second Executive Memorandum directing the federal agencies to implement the recommendations in the two reports. NTIA's efforts in implementing these recommendations during 2005 are as follows:

- **Working Level Groups:** NTIA established seven interagency working level groups to obtain advice on implementing the 24 recommendations from the two reports on the President's Spectrum Policy Initiative.
- **Plans and Policy Steering Group:** NTIA established a senior level plans and policy steering group which consists of representatives of the major federal agencies that use federal spectrum to provided advice on spectrum issues to the NTIA Administrator.
- **Implementation Plan for President's Initiative on Spectrum Management Reform:** NTIA drafted the Implementation Plan which was submitted to the White House in May 2005. NTIA has defined seven projects that taken together present an implementation plan and address the recommendations of the two reports, as directed by the President. The projects aggregate related recommendations that NTIA staff will address with advice from the federal working level groups for each project.
- **Annual Report to the President on Progress in Implementing the Recommendations on Improvement to Spectrum Management:** NTIA is preparing a report, including input from OSM and federal agencies.
- **Incentives for Efficient Use of the Spectrum:** NTIA has developed Statements of Work for two contracts on incentives and supervised issuance of a contract to the

National Academy of Sciences (NAS) for conducting a workshop in February, 2006 on “Identifying and Implementing Incentives for Efficient Use of the Spectrum.” NTIA’s Office of Spectrum Management (OSM) worked collaboratively with NTIA’s Office of Policy Analysis and Development in developing the program and identifying speakers for the NAS Workshop. NTIA also developed summaries of spectrum management regimes for 12 countries for the study of incentives utilized.

- **Public Safety Demonstration Program:** NTIA evaluated various approaches to sharing spectrum among commercial, federal and local public safety and critical infrastructure applications. Sharing demonstrations were evaluated on operational functionality, cost effectiveness and new versus existing programs. Based on those considerations, NTIA selected a demonstration program to comply with the recommendations of the President’s Spectrum Policy Initiative.
- **Commerce Spectrum Management Advisory Committee:** NTIA announced the formation of the Commerce Spectrum Management Advisory Committee to advise the Commerce Department on key elements of President Bush’s Spectrum Policy Initiative for improving management of the nation’s airwaves. Committee members will offer expertise and perspective on reforms to enable new technologies and services, including reforms that expedite the American public’s access to broadband services, public safety, digital television, and long-range spectrum planning. Committee nominations are currently under review and the committee membership will be announced in early 2006.
- **Strategic Spectrum Plan:** NTIA led federal agency efforts to prepare agency-specific strategic spectrum plans for preparation of the federal strategic spectrum plan. NTIA will complete the federal strategic spectrum plan in May 2006.
- **Hurricane Katrina and Rita:** NTIA provided extensive spectrum support to the White House and first responders in the Gulf area. Federal agencies involved in the preparation for and in response to Hurricane Katrina and Rita requested authorization from NTIA to operate land mobile, aeronautical, maritime, and satellite communications in advance of the hurricanes and for recovery and relief efforts. NTIA authorized 1,179 frequencies for use in the disaster area by the Federal Emergency Management Agency, the Departments of Homeland Security, Defense, Justice, Energy and Agriculture, and the Armed Services. NTIA also coordinated with the Federal Communications Commission (FCC) on six special temporary authorizations for private sector companies to assist in rescue and recovery efforts and restoration of communications in the disaster area. NTIA participated in frequent meetings of the Joint Telecommunications Resources Board to coordinate the activities of the federal agencies to restore communications in the disaster area. NTIA’s Public Telecommunications Facilities Program made an emergency award to Louisiana Educational Television for nearly \$300,000 to repair a television transmitter that was destroyed by Hurricane Katrina. The station serves over 400,000 people in southeast Louisiana and was an important source of information during and after the storm.

- **Relocating Federal Spectrum Users:** NTIA led efforts in relocating federal spectrum users displaced in order to provide the federal spectrum to the private sector for advanced wireless services. NTIA organized input from the federal agencies on technical characteristics and cost estimates of relocating systems in the 1710-1755 MHz band so that the band can be made available for auction. The total number of frequency assignments that will be relocated by 12 federal agencies is 2,240 and the cost for the relocation of Federal Government operations is estimated to be \$935,940,312. This effort is part of the 90 MHz of radio spectrum that is to be made available for the near term for advanced wireless (including third generation or “3G”) telecommunications services to meet the demand for new wireless services. To complete the 90 MHz of spectrum being made available for advanced wireless services, the additional 45 MHz of spectrum will be provided by the FCC in the 2110-2155 MHz band. The auction, scheduled to occur in June 2006, is expected to raise several billion dollars.
- **Mexico/U.S. Protocols:** NTIA completed two protocols with Mexico covering the bands 380-399.9 MHz and 406.1-420 MHz. These protocols, signed July 27, 2005 by representatives of the U.S. Department of State and the Secretaría de Comunicaciones y Transportes of the United Mexican States, provide for the equitable sharing of the bands 380-399.9 MHz and 406.1-420 MHz along the U.S./Mexican border by partitioning each band into sub-bands for primary use for each country and limited secondary use of the sub-bands designated as primary for the other country. These protocols eliminate the requirement for each country to coordinate use of the two frequency bands as well as the time needed to process and review those coordination requests. Using these two protocols, each government is able to accommodate its constituent’s requirements for spectrum use with minimum potential for harmful cross-border interference. These protocols were developed by careful consideration by both governments over a three year period and will serve as a model for the development of future instruments of agreement looking to share the use of frequency bands allocated to the fixed and mobile services along the U.S./Mexican border.
- **Canadian Coordination:** NTIA improved its capability to process frequency assignment proposals with Canada. Via the purchase and modification of a commercial frequency management tool that is compatible with NTIA and Industry Canada spectrum databases, NTIA upgraded its automated capability incorporating U.S./Canadian approved signal propagation prediction techniques, new digital terrain elevation data and equipment characteristic parameters. This new capability allows NTIA to automatically verify, in mass, Canadian assignment proposals for interference potential as well as verify U.S. proposals for data accuracy and predict interference potential before they are forwarded to Canada for coordination. This capability will also expedite the review process and provide more consistent and useful analysis outcomes. As a result, there will be a greater capability to coordinate and implement operations in the border region.
- **Spectrum Coordination:** On February 8, 2005, NTIA and the FCC launched the FREQCoord online registration site for high-speed wireless links sharing spectrum in the 70-80-90 GHz bands. This new system facilitates real-time coordination of federal and non-

federal operations in these frequency ranges and allows non-federal users to determine whether they have any potential conflict with federal users in minutes rather than months.

- **NTIA Website Re-launch:** After extensive content review and site re-design, NTIA launched its new and improved website in September 2005. The re-designed website utilizes user-friendly menus and graphical links, improved site navigation and better search capabilities.

NTIA's Performance Goal 2: NTIA's goal is to promote the availability and support new sources of advanced telecommunications and information services.

- **DNS Principles:** In June 2005, NTIA announced the U.S. principles on the Internet's Domain Name and Addressing System (DNS). The U.S. Government (USG) stated our intention to preserve the security and stability of DNS, while recognizing Governments' legitimate interest in management of their country code top-level domains and designated our support of the Internet Corporation for Assigned Names and Numbers' (ICANN) appropriate role as technical manager of the DNS.
- **United Nation's World Summit on the Information Society (WSIS):** NTIA, in coordination and collaboration with the Department of State, preserved the current USG/Department of Commerce's role in overseeing and preserving the stability and security of the Internet's Domain Name System (DNS), as well as the Internet's private sector management (now legitimized with global endorsement by Heads of State), during preparations and final negotiations of the WSIS.
- **Internet Corporation for Assigned Names and Numbers (ICANN) Government Advisory Committee (GAC) Participation:** NTIA worked with ICANN to ensure the completion of the date-specific milestones in the Memorandum of Understanding between the Department of Commerce and ICANN. NTIA also represented the United States at the GAC to ICANN and advanced USG policy goals regarding access to and accuracy of WHOIS data, which provides technical and administrative contacts for domain name registrants, and the introduction of new top level domains.
- **Asia Pacific Economic Cooperation (APEC) Broadband Principles:** NTIA orchestrated the development and adoption by APEC Telecom Ministers (including China, Korea, Japan, Mexico, Russia) in June, and Trade Ministers in November, of broadband principles for APEC members to implement domestic policies and regulatory frameworks to promote broadband infrastructure and innovation.
- **International Telecommunication Union - Radio Communication Sector Participation:** NTIA is a main contributor to the work of the International Telecommunication Union - Radio Communication Sector (ITU-R). NTIA's OSM chairs the ITU-R's Study Group 1 on Spectrum Management. NTIA's OSM and NTIA's Institute for Telecommunications

Sciences (ITS) chair the U.S. preparatory process for Study Groups 1 and 3 on radio propagation as well as a number of working parties and task groups. Through these technical groups, NTIA staff develop technical information to support the work of the Union and this work serves as the basis for delegation proposals from around the world prior to the Regional Radiocommunication Conferences and World Radiocommunication Conferences (WRC). OSM chairs the Radio Conference Subcommittee of the IRAC and is well on its way to preparing Executive Branch inputs to the preparation of U.S. proposals to WRC-07.

- **Organisation for Economic Co-operation and Development (OECD) Participation:** NTIA helped to launch several new, influential OECD studies supporting deregulatory treatment of new technologies and services, such as: Next-Generation Networks, Radio Frequency Identification (RFID), unlicensed wireless technologies (*e.g.*, Wi-Fi, WiMAX), IP television, and digital Intellectual Property Rights.
- **Measurement of Dynamic Frequency Selection (DFS) Devices:** NTIA examined the potential for sharing bands of the spectrum occupied by government radars with wireless Local Area Network (wLAN) devices. In order for wLAN's devices to share frequencies used by government radars, the wLAN device must correctly identify the radar signal, then quickly move to another channel. NTIA's ITS developed repeatable, accurate methods for observing and quantifying the ability of the wLAN's to dynamically select a non-interfering frequency. This work directly supported the development of federal spectrum policy and benefits both this emerging wLAN industry as well as domestic and international standards development.
- **Interference Potential of Ultrawideband (UWB) Signals:** ITS developed the measurement methods and procedures for characterizing the newest UWB signals in a way that enabled the accurate determination of the interference they could cause to digital satellite television systems. This work was of value to many beneficiaries including standards development organizations, the FCC, the UWB industry, and the satellite television industry and service providers. ITS's efforts in this area are also being used by many other countries.
- **Public Safety Coordination:** NTIA co-chaired the Federal Wireless Users Forum and hosted a two and a half day workshop where Federal Government users of wireless products and services were educated on current and emerging wireless technologies and were provided an opportunity to convey their requirements to telecom vendors. NTIA also participated in and contributed to the Network Reliability and Interoperability Council (NRIC) VII to develop recommendations for the final four reports from each focus group. NRIC provides recommendations to the FCC and industry to assure optimal reliability and interoperability of wireless, wireline, satellite, cable, and public data networks. NRIC VII held its final meeting on December 16, 2005 and each of the focus groups submitted its recommendations to the FCC.
- **Public Safety Statement of Requirements (SOR) for Wireless Communications and Interoperability:** In close coordination with public safety practitioners, ITS developed

Version 1.1 of the Public Safety SOR during FY 2005 and began work on Version 2.0. Version 1.1 built upon the original SOR developed in FY 2004, which was released by the Department of Homeland Security after being vetted by the public safety community. It added additional qualitative requirements to the original SOR. With a great deal of laboratory testing using practitioners, Version 2.0 will be the first SOR with quantitative performance parameters for public safety voice, video and data applications.

- **PCS Interference Technical Service Bulletin:** As a member of the Telecommunication Industry Association Committee TR46.2, Mobile & Personal Communications 1800-Network Interfaces, ITS helped develop the Technical Service Bulletin "Licensed Band PCS Interference", a first step in characterizing the interfering environment caused by large numbers of active users and competing technologies. ITS continues to support this work as part of the Alliance for Telecommunications Industry Solutions sub-committee WTSC/G3GRE (Wireless/Mobile Standards - Radio Aspects of GSM/3G and Beyond).
- **ENUM:** NTIA successfully negotiated with the other 18 countries in the Country Code 1 region to support a private sector trial of Electronic Numbering (ENUM), or mapping of telephone numbers to Internet Protocol addresses, a primary enabler for convergence of the Public-Switched Telecom Network and the Internet. The ENUM protocol will allow users to communicate through email, fax, instant messaging or voice calls by using a single telephone number for all transmissions.
- **Implementation of the National Strategy to Secure Cyberspace:** NTIA's Critical Infrastructure Protection office (CIP) played a key role in the Department's implementation of The National Strategy to Secure Cyberspace and the Homeland Security Presidential Directive (HSPD)-7. This included drafting and review support for the National Response Plan and the National Incident Protection Plan. CIP also represented the Department of Commerce in planning for and conducting cyber security scenarios and exercises, *e.g.*, Bronze Current, TOPOFF3, and Cyberstorm, providing Departmental coordination through the Office of the Secretary to support Cyberstorm.
- **Economic Security Component of Critical Infrastructure Protection (CIP):** In support of the Department of Commerce's mission to implement the economic security component of critical infrastructure protection, CIP planned and conducted five Economic Security Working Group meetings from January to September 2005.
- **International CIP Outreach:** CIP continued to represent the Department's interests in economic security and provide support to the Department of State in bilateral discussions on physical and cyber security issues in meetings with Hungary, Italy, India, Japan, and Egypt.
- **Public Forum on Wireless Security Issues:** NTIA hosted a public meeting on wireless security entitled, "Pharmers and Spimmers, Hackers and Bluejackers: Combating Wireless Security Threats," to inform policymakers and industry on issues that may affect the use of

spectrum and the growth of wireless industries, while raising public awareness of vulnerabilities.

- **NTIA's Public Telecommunications Facilities Program (PTFP):** During FY 2005, PTFP awarded a total of \$21.4 million to 123 projects. Eighteen radio projects will extend new public broadcasting service to approximately 400,000 people and provide additional service to almost 700,000 people. Nine projects assist in the digital conversion of public radio stations in nine states. Thirty-three digital television conversion grants were awarded to recipients in 22 states and two U.S. territories.

For more information on NTIA programs and issues, visit <http://www.ntia.doc.gov/>.