



**UNITED STATES DEPARTMENT OF COMMERCE**  
**The Assistant Secretary for Communications**  
**and Information**  
Washington, D.C. 20230

March 16, 2007

The Honorable John D. Dingell  
Chairman  
Committee on Energy and Commerce  
House of Representatives  
Washington, DC 20515

Dear Mr. Chairman:

As you requested, enclosed please find the answers to the pre-hearing questions you sent me on March 6, 2007. I look forward to testifying before the Committee next week

If you have any questions about the enclosed information prior to the hearing, please do not hesitate to contact me or have your staff contact Jim Wasilewski, NTIA's Acting Director of Congressional Affairs, on (202) 482-1551.

Sincerely,

A handwritten signature in black ink, appearing to read "John M. R. Kneuer", with a long horizontal flourish extending to the right.

John M. R. Kneuer

Enclosures

**Pre-Hearing Questions for the Honorable John M. R. Kneuer  
Assistant Secretary for Communications and Information  
National Telecommunications and Information Administration  
U.S. Department of Commerce**

March 16, 2007

- 1. In March 2004, President Bush established a national goal for “universal, affordable access for broadband technology by the year 2007.” Please outline the steps NTIA has taken to achieve this goal.**

The Administration has pursued a comprehensive set of fiscal, regulatory, spectrum and technology policies in pursuit of the President’s goal. Within its authority as manager of spectrum used by the Federal Government and as principal adviser to the President on telecommunications and information issues, the National Telecommunications and Information Administration (NTIA) has taken a number of actions to spur the deployment of broadband services:

- In collaboration with the Federal Communications Commission (FCC), NTIA reallocated 45 MHz of spectrum (1710 – 1755 MHz) from federal use, half of the 90 MHz the FCC auctioned in September 2006 for \$13.7 billion in net winning bids. Related to this, the Administration proposed legislation to establish a fund for relocated federal spectrum users, which was enacted as the Commercial Spectrum Enhancement Act.
- NTIA led the development of technology to allow sharing of the 5 GHz band between military radars and unlicensed mobile broadband services. In 2006, a working group under the International Telecommunication Advisory Council, which included representatives of industry, the FCC and the Department of Defense (DOD), developed and validated the dynamic frequency selection (DFS) sharing technique. DFS allows unlicensed devices to detect signals and avoid transmitting on channels being used for radars. These efforts almost doubled the amount of spectrum available for unlicensed WiFi-like devices.
- NTIA activated a Web-based registration process in the 70/80/90 GHz bands in early 2005 to make it possible for commercial users to establish high-speed, point-to-point data links within a matter of minutes in spectrum used by federal agencies. Previously, the coordination process could take months. The total spectrum in these bands is nearly thirteen GHz.
- NTIA undertook research that provided the underpinnings of the FCC’s actions on Broadband Over Power Line (BPL) -- a potential “third broadband wire into the home” -- while safeguarding existing licensed radio services against harmful interference. NTIA developed essential technical studies to address these concerns, reviewing 59,000 Federal frequency assignments in the 1.7-80 MHz frequency range.

On October 14, 2004, the FCC, incorporating NTIA's study of technical risks and potential mitigations, adopted rules to reduce the risk of BPL interference.

More generally, the Bush Administration has implemented a wide range of policies that promote competition, investment, and innovation, including new economic incentives, tax relief (e.g., research and development tax credit), less regulation, and more radio spectrum that may support commercial wireless broadband services.

- Spurred by a Presidential Executive Memorandum, a Federal interagency working group chaired by NTIA recommended reforms in April 2004 to improve rights-of-way management across federal lands, including standardizing applications, speeding agency decision making, and setting reasonable fees that will promote broadband deployment.
- To create a regulatory environment that promotes investment in new technologies such as broadband, the Administration has removed unnecessary regulatory constraints and promoted tax relief and research and development. Tax relief has given businesses powerful incentives to invest in broadband technology. The Administration:
  - Accelerated depreciation for capital-intensive equipment.
  - Supported the Internet Tax Freedom Act, which extended the Internet tax moratorium until October 31, 2007, and continues to support making the moratorium permanent.
  - Supported extension of the research and development tax credit (which had expired December 31, 2005) through the end of 2007. The extension is retroactive and offers a 20 percent credit for new activities.
- The Administration supported the FCC's Triennial Review Order freeing newly-deployed broadband infrastructure from legacy regulation.
- The Administration supported policies that will ensure that Voice over Internet Protocol (VoIP) is free from unnecessary economic regulation, while mindful of the importance of law enforcement and emergency services.
- The President's Fiscal Year 2008 Budget requests a record \$42.7 billion for federal investment in research and development.

Broadband availability has grown robustly during the tenure of this Administration. At the start of this Administration, broadband penetration was estimated at only 9.2 million (June 2001). As of June 2006, the FCC estimated broadband penetration at 64.6 million. During that period, the FCC-reported total number of such "high-speed" lines increased by 599 percent, while satellite and wireless broadband grew by 5,998 percent.

The United States is number one in the world in broadband using a variety of measures. For instance, the United Kingdom-based Point Topic released a study in December 2006

on Third Quarter 2006 worldwide broadband statistics (263.8 million lines globally). It noted that the top 5 broadband countries are: (1) the United States with 54.6 million lines; (2) China with 48.6 million lines; (3) Japan with 25.8 million lines; (4) South Korea with 13.9 million lines; and (5) Germany with 12.7 million lines. The United States also is one of the countries most suited to harness the power of broadband as shown by two global studies in which the United States ranked first in the world (GITR 2005-2006 Network Readiness Index) and second in the world (EIU 2006 Economic Readiness Index). The United States is top-ranked in total number of Wi-Fi "hotspots," with more than three times the number of the second-rated United Kingdom (50,340 versus 16,816 as of March 5, 2007 according to JiWire). In North America, nine of the top ten municipal Wi-Fi networks (including numbers one and two) are in U.S. cities (Novarum Wireless Broadband Review of 14 Cities, Third and Fourth Quarters, 2006).

- 2. As you are aware, on February 6, 2007, an attack occurred involving several of the Internet's 13 root DNS servers. The attack reportedly focused on root servers "G" (maintained by the U.S. Department of Defense), "L" (maintained by ICANN), and to a lesser extent, "M" (maintained by Japan). While the attack significantly affected traffic at the first two root servers mentioned, because the other root servers were spared the online assault, overall Internet functions were maintained. Please provide us with the steps that NTIA has taken in the last three years to safeguard the integrity of (1) the root server system and (2) Internet connectivity generally. Specifically, outline efforts taken in conjunction with the Internet Corporation for Assigned Names and Numbers (ICANN) and private sector entities.**

As restated in the September 29, 2006, Joint Project Agreement, NTIA and ICANN agree that preserving the security and stability of the Internet DNS remains a priority. NTIA continues to consult with the U.S. Government root server operators and other U. S. Government agencies with respect to operational and security matters of the root servers. NTIA is committed to the maintenance of the security and stability of the Internet and has developed a solid relationship with the root server operators in general which facilitates the sharing of information between the U.S. Government and the root server operators. For example, earlier this year NTIA received an alert concerning a possible Internet-related incident and communicated the warning to the root server operators in real-time.

In addition, NTIA participates in the development of Internet-related security standards through several private-sector led standards development bodies, such as the Internet Engineering Task Force (IETF). NTIA is also a key participant in 'lessons learned' meetings regarding alerts and/or incidents involving the Internet with root server operators and other U.S. Government agencies, such as the Department of Homeland Security (DHS) Science and Technology Directorate and National Cyber Security Division. NTIA also participates in internal Department of Commerce meetings with respect to the protection of Departmental networks and systems. With respect to the technical management of the .US and .EDU domains, NTIA through its agreements with NeuStar, Inc., and EDUCAUSE is supporting robust technical and security-related improvements, including anycasting at the registry level and DNSSEC testbeds.

NTIA continues to support the private sector management of the Internet as one of the primary mechanisms for ensuring stability and security. The private sector has the ability to address connectivity issues immediately and appropriately as they arise, including re-routing traffic to ensure Internet access and connectivity during an attack. NTIA participates routinely in industry-government groups that draft plans relating to continuity of communications and information technology, and that prepare for and conduct exercises testing these plans as well as overall preparedness.

As part of the Department of Commerce's responsibility for the "economic security" component of homeland security, NTIA has a lead role in encouraging non-critical infrastructure companies in the commercial and industrial sectors to acquire diverse communications capability that will enable them to operate longer when a natural or man-made incident occurs, mitigate the impact while such incident is taking place and accelerate the restoration to full capability afterward. This complements the efforts of DHS and other agencies that work with the critical infrastructure companies. NTIA also hosts the Economic Security Working Group which meets bimonthly as part of an awareness and education effort and features presentations and discussions on a range of private sector, government and cooperative programs and initiatives relating to economic security.

- 3. Please provide a copy of any analyses or other commentary provided to NTIA by other Federal agencies, including the Department of Justice, in conjunction with NTIA's review of the dot-com domain name registry agreement between ICANN and VeriSign.**

During the course of its review of the new .com Registry Agreement between the Internet Corporation for Assigned Names and Numbers (ICANN) and VeriSign, Inc., the Department of Commerce sought the advice of the Department of Justice's Antitrust Division on competition issues raised by the new agreement. The Department also consulted with the federal agencies with equities in Internet security and stability. Per your request, NTIA is providing you with copies of the pre-decisional, attorney-client privileged communication received from the Antitrust Division on this matter as well as pre-decisional communications from the Departments of Defense and Homeland Security. NTIA asserts that these documents are covered by the deliberative process privilege and the agency does not waive its privilege by releasing these documents at the request of this Committee exercising its oversight authority. NTIA requests that the Committee refrain from releasing these documents or their contents to the public.

- 4. Please provide us with information regarding NTIA's efforts over the last three years to provide competition in domain name registration services.**

Promoting competition in the domain name market has been one of NTIA's core principles and policy objectives since it originally issued the Statement of Policy, *Management of Internet Names and Addresses*, in June 1998. The Statement of Policy

addressed the privatization of the technical management of the domain name system in a manner that would allow for the development of robust competition in the management of Internet names and addresses.

This principle was embodied in the original 1998 Memorandum of Understanding (MOU) between NTIA and ICANN, which was intended to promote the use of market mechanisms to support competition and consumer choice in the technical management of the domain names system. Competition produces lower costs, promotes innovation, and enhances user choice and satisfaction. Specifically, the MOU required ICANN to collaborate on the design, development, and testing of a plan for introduction of competition in domain name registration services, including the development of an accreditation procedure for registrars and the identification of the software, databases, know-how, intellectual property, and other equipment necessary to implement the plan for competition. As a result of these efforts, the number of registrars offering services to the public has increased from one to over 800 with prices for domain names registrations now as low as free and a wide variety of service offerings.

The MOU also required ICANN to collaborate on the design, development and testing of a plan to add new generic top level domains. In 1998, there were only three generic top level domains with open registration (.com, .net, and .org), all three of which were managed by one company and could be registered only through that company. Since that time, ICANN has approved the introduction of a significant number of new generic top level domains (e.g., .aero, biz, .cat, .coop, .info, .jobs, .mobi, .museum, .name, .pro, .tel, .travel), which may be registered through many different registrars. Moreover, the .org domain is now operated by a different registry operator and the .net domain was the subject of a competitive selection process. Thus, all domain name registrations have grown from a mere 2.3 million registrations in 1998 to over 120 million registrations in 2006.

NTIA's most recent agreement with ICANN, signed in September 2006, continues to promote competition and private-sector leadership in innovation and investment. Through this agreement, NTIA continues to encourage ICANN to develop a rational, open and transparent process for the introduction of new top level domains and to enforce its registrar agreements, which contain important competitive safeguards and consumer protections.

- 5. Please provide us with information regarding work conducted at NTIA's Institute for Telecommunication Sciences (ITS) Boulder, Colorado, on telecommunications research to assist public safety and homeland security entities on interoperable emergency communications. Please include in your response any research conducted by ITS under cooperative research agreements with or on behalf of other Federal agencies or private sector entities.**

NTIA, via its research arm, ITS, has been actively involved in the standards-setting, testing, and research and development processes for public safety communications for the

last 10 years. During this time, ITS has received over \$32 million in funding from other federal agencies and programs, including the National Institute of Standards and Technology's Office of Law Enforcement Standards (OLES) (in support of the DHS's Office of Interoperability and Compatibility (OIC)/SAFECOM programs), DHS's Federal Partnership for Interoperable Communications; DHS's Chief Information Officer's Wireless Management Office; DHS's National Communication System (NCS), and the Department of Justice's Office of Community Oriented Policing Services and the CommTech Program.

NTIA/ITS, on behalf of its federal agency sponsors, is working daily with prominent members of the public safety community, including representatives of the International Association of Chiefs of Police, International Association of Fire Chiefs, the Association of Public Safety Communication Officials, International Inc., the National Association of State Emergency Medical Services Directors, and the National Public Safety Telecommunications Council. Research activities are centered on developing a long-term standardized approach for nationwide communications interoperability and information sharing among local, State, Federal, and tribal public safety agencies, and short-term solutions to facilitate interoperable communications.

The long-term approach is based on an accelerated, yet structured, process that includes the public safety practitioner community to produce a comprehensive qualitative and quantitative statement of requirements for public safety interoperable communications, an architecture framework that provides a structured approach in achieving goals such as system to system compatibility analysis, agency to agency interoperability analysis, and a system restoration analysis, among other capabilities. Short-term, interim solution work is focused on testing and evaluating products and services offered currently to the public safety community to determine if they can enable higher degrees of immediate interoperability effectively and economically. All segments of the NTIA/ITS public safety program, on behalf of NIST/OLES and DHS, begin and end with practitioner input and acceptance. NTIA/ITS and its federal partners continue to work alongside practitioners to complete the remaining interface standards for Project 25, the digital narrowband solution that federal agencies such as the Departments of Homeland Security, Justice and Defense, and many State and local entities have adopted.

Current research and development activities at ITS include:

- **Public Safety Statement of Requirements:** This document (available at [http://www.safecomprogram.gov/SAFECOM/library/technology/1258\\_statementof.htm](http://www.safecomprogram.gov/SAFECOM/library/technology/1258_statementof.htm)) was created on behalf of NIST/OLES and DHS/OIC and in conjunction with Public Safety practitioners, and details the qualitative and quantitative communication requirements for first responders.
- **Public Safety Architecture Framework:** Using enterprise architecture methodology, ITS, in conjunction with NIST/OLES, has developed this framework to assist public safety practitioners in their structured analysis of the communication capabilities as it applies to interoperability. (See Public Safety Architecture Framework, Vol. I,

available at [http://www.safecomprogram.gov/SAFECOM/library/technology/1251\\_publicsafety.htm](http://www.safecomprogram.gov/SAFECOM/library/technology/1251_publicsafety.htm), Vol II, available at [http://www.safecomprogram.gov/SAFECOM/library/technology/1252\\_publicsafety.htm](http://www.safecomprogram.gov/SAFECOM/library/technology/1252_publicsafety.htm).) ITS, NIST/OLES, and DHS/OIC, recently completed a trial implementation in Atlanta, Georgia using this framework methodology. (See Public Safety Architecture Framework Trial Report – Atlanta, Ga., available at [http://www.safecomprogram.gov/SAFECOM/library/technology/1305\\_publicsafety.htm](http://www.safecomprogram.gov/SAFECOM/library/technology/1305_publicsafety.htm).)

- **Video Quality Testing:** Utilizing its world-class video quality expertise, ITS is conducting subjective viewing experiments with Public Safety practitioners to define performance parameters relative to video quality that will satisfy the operational needs of public safety. Public safety practitioners participate on-site in Boulder in evaluating video parameters in support of this development. This will be used as input to the Statement of Requirements, Volume II, referenced above.
- **P25 Compliance Assessment Program:** ITS, in partnership with NIST/OLES and DHS/OIC, is developing an independent compliance assessment program for Project 25 land mobile radio equipment. This will help ensure that products marketed as P25 compliant have been tested to comply with the published standards. International conformity assessment standards are being used to ensure a high level of user confidence in the program.
- **DHS/OIC Pilot Program:** ITS is providing technical support for a DHS/OIC Pilot program to test candidate technologies in the 700 MHz and 4.9 GHz public safety spectrum bands. The testing is tied directly to public safety user requirements for a given set of use cases and will provide feedback as to the technology's ability to meet those requirements.
- **Interoperability Standards Development:** ITS is providing technical support for the acceleration of the TIA Project 25 standards deemed critical to expanding the interoperability capabilities of existing P25 Land Mobile Radio systems. The key interfaces involved in the accelerated effort are the Inter-RF Subsystem Interface (ISSI), the Console Sub-System Interface (CSSI), and the Fixed Sub-System Interface (FSSI). ITS also is actively involved in the Encryption standards development within P25 on behalf of the Federal public safety community. (See Project 25 Document Suite Reference available at <http://www.its.blrdoc.gov/resources/p25/P25DocSelection.pdf>.)
- **Emergency Telecommunications Service Standardization:** ITS, on behalf of DHS/NCS, is actively participating in International Telecommunications Union (ITU)-T Study Group 9, the Alliance for Telecommunication Industry Solutions (ATIS) Network Performance, Reliability, and Quality of Service Committee (PRQC), and the Internet Engineering Task Force (IETF) to accelerate development of standards for security and priority in Next Generation Networks such as broadband cable networks and IMS-based packet networks in relation to Emergency Telecommunication Services.



- Land Mobile Radio Performance Measurements: ITS has developed automated test software that performs a suite of tests for the evaluation of P25 land mobile radio performance.
  - Voice over IP (VoIP): ITS is actively involved on behalf of NIST/OLES and DHS/OIC in the VoIP Roundtable discussions with VoIP industry participants to collectively define with Public Safety the requirements needed for VoIP technology. (See VoIP Roundtable Report available at [http://www.safecomprogram.gov/SAFECOM/library/technology/1293\\_roundtableon.htm](http://www.safecomprogram.gov/SAFECOM/library/technology/1293_roundtableon.htm).)
  - Interim Interoperability Device Testing: ITS is working with a community of public safety practitioners to identify specific devices and categories of devices that can assist in helping public safety objectively evaluate interoperability devices, such as gateways and crossband repeaters, that can be used in the interim until standardized solutions are available.
6. **Congress enacted the “Dot Kids Implementation and Efficiency Act that led to the creation of a child-friendly, online “safe zone” at [www.kids.us](http://www.kids.us). That Act required NTIA to “carry out a program to publicize the availability of the new domain and to educate parents of minors regarding the process for utilizing the new domain in combination and coordination with hardware and software technologies that provide for filtering or blocking.” Please provide us with information about the actions taken by NTIA to publicize the domain and to educate parents.**

Since the enactment of the Dot Kids Act, the Bush Administration has supported the kids.us domain as a means to protect children from inadvertently accessing inappropriate content while they are exploring the Internet. Pursuant to the Act, NTIA amended its contract with the current .us administrator, NeuStar, to establish and to manage the day-to-day operations of the kids.us domain. NeuStar is also responsible for monitoring the content of kids.us sites.

Under NTIA’s direction, NeuStar established the kids.us domain in September 2003. Nineteen organizations – including the Smithsonian, the Library of Congress, Disney, PBS, and Nickelodeon – currently provide educational and entertaining content on the kids.us website. NTIA has promoted the kids.us domain by educating parents and teachers about the domain and by encouraging providers of children’s content to build kids.us websites. In 2004, NTIA conducted a letter writing campaign promoting kids.us with federal agencies and companies that host children’s content on their existing websites. On July 14, 2004, NTIA also hosted a half-day forum that brought together industry, teachers, and the non-profit community to examine the current state and future content for the space. Additionally, NTIA’s webpage prominently displays a link to the kids.us registry website through the kids.us logo.

Finally, NTIA has worked closely with NeuStar to develop informational brochures that explain the benefits of the domain and to provide to content providers step-by-step instructions on how to establish a kids.us domain. Between NTIA and NeuStar, over 10,000 kids.us informational brochures have been distributed at nationally recognized, child-focused events and conferences.

Despite these efforts, NTIA recognizes that the kids.us domain is far from the robust domain that Congress envisioned for children to enjoy as a safe and friendly place online. NTIA has learned that some individuals and organizations may be reluctant to register sites in the domain, because they find the content requirements too burdensome and costly. Further, some organizations consider the limits on hyperlinks too confining to support robust content needed to attract tech-savvy children to their sites. Others express concerns about the costs of obtaining a domain name and establishing a web site, particularly for smaller registrants.

NTIA recognizes that these factors represent a significant barrier to the success of the kids.us domain and that they merit consideration. To address some of these concerns, NTIA has approved a proposal from NeuStar to reduce the annual wholesale price to registrars for all kids.us names from \$65 to \$6 in keeping with most other usTLD pricing, as well as to halve the \$250 annual content management subscription. The lower subscription fee will encourage content providers to establish and maintain kids.us sites. NeuStar also proposed a \$6 per name rebate program for the first 2500 kids.us names that registrars enroll during a three-month period and a \$125 content review fee rebate for the first 200 content providers that activate kids.us sites during a three-month period. In addition, NeuStar will implement a "Show Your School Spirit" promotion to provide a free one-year content management subscription for the first 200 K-12 public schools that purchase kids.us registrations during the six-month term of the promotion.

NTIA will continue its efforts to publicize the kids.us domain to potential content providers, parents, educators, and kids. We appreciate the support of Congress and look forward to working with you to build the kids.us domain into a robust and exciting place for children to play and learn online.

**7. Please outline any steps NTIA has taken in the last three years to enhance minority participation in telecommunications and minority ownership of telecommunications licenses or entities.**

In the past 3 years, the Minority Telecommunications Development Program (MTDP) assisted approximately 65 minority entrepreneurs by providing information about: access to capital; technical assistance; telecommunications industry (including broadcast) data; and Department of Commerce procurement opportunities for telecommunications products and services. It also responded to inquiries from academic and market researchers with historical information about minority participation in the broadcast industry.

MTDP updates monthly an on-line resource library for minority entrepreneurs seeking to enter the telecommunications industry or expand their operations. These resources are available on NTIA's website at <http://www.ntia.doc.gov/opadhome/mtdpweb/resources.htm>. For example, the resource library's small business planning web page at <http://www.ntia.doc.gov/opadhome/mtdpweb/busplano.htm> is consistently among NTIA's top 25 most visited web pages.

Although NTIA published its last minority media ownership report in 2000, it coordinated with the FCC in December 2006 to assist with minority media ownership reports the FCC intends to prepare as part of its current media ownership proceedings. MTDP shared with the FCC a list of minority broadcast owners that MTDP used to develop a universe of potential respondents to the minority broadcast survey for the 2000 report. Using NTIA's data as a baseline, the FCC intends to examine the current state of minority media ownership. NTIA believes this collaboration between the two agencies is the most productive and efficient manner to approach this issue.

Finally, MTDP leverages relationships with other Commerce Department agencies, such as the Minority Business Development Agency, the Office of Small and Disadvantaged Business Utilization, and the International Trade Administration, as well as with the U. S. Small Business Administration, to help identify resources for minority entrepreneurs.