

Highlights of [GAO-12-1018T](#), a testimony before the Subcommittee on Communications and Technology, Committee on Energy and Commerce, House of Representatives

Why GAO Did This Study

Demand for spectrum is increasing rapidly with the widespread use of wireless broadband devices and services. However, nearly all usable spectrum has been allocated either by NTIA for federal use or by the Federal Communications Commission (FCC) for commercial and nonfederal use. Federal initiatives are under way to identify federal spectrum that could be repurposed or possibly shared by federal users or wireless broadband providers and other nonfederal users. This statement discusses how NTIA manages spectrum to address governmentwide spectrum needs and the steps NTIA has taken to repurpose spectrum for broadband. As part of an ongoing review, the statement also discusses preliminary information on the factors that prevent spectrum sharing and actions that can encourage sharing and efficient spectrum use. This testimony is based on GAO's prior work on federal spectrum management and ongoing work on spectrum sharing. GAO analyzed NTIA processes, policies and procedures, and interviewed relevant government officials, experts, and industry stakeholders.

What GAO Recommends

In April 2011, GAO recommended that NTIA (1) evaluate its current approach for validating agency-reported data and (2) establish internal controls for its data management systems. NTIA concurred with the recommendations and has proposed approaches to implement new measures to better ensure the accuracy of agency-reported data, and is taking steps to implement internal controls in a cost-efficient manner. GAO provided a draft of this statement to FCC and NTIA.

View [GAO-12-1018T](#). For more information, contact Mark L. Goldstein at (202) 512-2834 or goldsteim@gao.gov.

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SPECTRUM MANAGEMENT

Federal Government's Use of Spectrum and Preliminary Information on Spectrum Sharing

What GAO Found

The National Telecommunications and Information Administration (NTIA) is responsible for governmentwide federal spectrum management, but GAO reported in 2011 that NTIA's efforts in this area had been limited. In 2003, the President directed NTIA to develop plans identifying federal and nonfederal spectrum needs, and in 2008, NTIA issued the federal plan. GAO found it did not identify governmentwide spectrum needs and did not contain key elements and conform to best practices for strategic planning. Furthermore, NTIA's primary spectrum management operations do not focus on governmentwide needs. Instead, NTIA depends on agency self-evaluation of spectrum needs and focuses on mitigating interference among spectrum users, with limited emphasis on overall spectrum management. Additionally, NTIA's data management system is antiquated and lacks internal controls to ensure the accuracy of agency-reported data, making it unclear if reliable data inform decisions about federal spectrum use. NTIA is developing a new data management system, but implementation is years away.

Despite these limitations, NTIA has taken steps to identify spectrum that could potentially be made available for broadband use. For example, in 2010 NTIA evaluated various spectrum bands and identified 115 megahertz of spectrum that could be repurposed within the next 5 years. In doing so, NTIA worked with a special steering group consisting of the Assistant Secretaries with spectrum management oversight in agencies that were the major stakeholders in the spectrum bands under consideration. For each of the identified bands, NTIA reviewed the number of federal frequency assignments within the band, the types of federal operations and functions that the assignments support, and the geographic location of federal use.

In addition to efforts to repurpose spectrum, industry stakeholders have also suggested that sharing spectrum between federal and nonfederal users be considered to help make spectrum available for broadband. Our ongoing work has identified several barriers that limit sharing. Primarily, many users may lack incentives to share assigned spectrum. Typically, paying the market price for a good or service helps to inform users of the value of the good and provides an incentive for efficient use. But federal agencies pay only a small fee to NTIA for spectrum assignments, and may, in some contexts, have little incentive to conserve or share it. Federal agencies may also have limited budgets to upgrade to more spectrally-efficient equipment that would better enable sharing. Nonfederal users are also reluctant to share spectrum. For instance, license holders may be reluctant because of concerns that spectrum sharing could encourage competition. A lack of information on federal spectrum use may limit users' ability to easily identify spectrum suitable for sharing.

GAO's ongoing work suggests that some actions might provide greater incentives and opportunities for more efficient spectrum use and sharing. These actions could include assessing spectrum usage fees to provide economic incentive for more efficient use and sharing, expanding the availability of unlicensed spectrum, and increasing the federal focus on research and development of technologies that can enable spectrum sharing and improve spectral efficiency. However, all of these actions also involve challenges and may require further study.