



FACT SHEET: Freeing up Spectrum for Wireless Broadband

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Americans are using more and more wireless devices for work, social networking, entertainment, and other purposes, with global mobile data volumes more than doubling every year for the past four years. This has resulted in a growing demand for access to regions of the wireless spectrum now held by government agencies or private entities for other purposes.

Responding to this demand is important. Access to mobile information through wireless smartphones, tablets, and other devices is increasingly essential to daily life, and commercial wireless applications for healthcare, energy, homes, and transportation are a major driver of economic growth. At the same time, U.S. Federal spectrum needs are rising for a range of activities including maritime mobile satellite and radio navigation, space and satellite communications, missile detection and surveillance radar, and Forest Service communication for law enforcement and wildfire tracking.

In a new report, the President's Council of Advisors on Science and Technology (PCAST)—an independent council of experts from industry and academia—concludes that the traditional practice of clearing and reallocating portions of the spectrum used by Federal agencies is not a sustainable model for spectrum policy. PCAST finds instead that the best way to increase capacity is to leverage new technologies that enable larger blocks of spectrum to be shared. One advantage of sharing is that it does not require licensed businesses and government entities to fully clear certain wavelengths already in use—a process that can be time consuming and expensive.

“The norm for spectrum use should be sharing, not exclusivity,” the new PCAST report concludes, noting that a new spectrum architecture and a corresponding shift in practices could multiply the effective capacity of the spectrum by a factor of 1,000. “Spectrum should be managed not by fragmenting it into ever more finely divided exclusive frequency assignments, but by specifying large frequency bands that can accommodate a wide variety of compatible uses.”

The PCAST report notes that existing approaches to spectrum sharing can be augmented by a variety of means, including dynamic redirecting of devices to available frequencies and better prevention of interference among signals in close proximity to one another. Several such approaches are in development and a number are ready for real-world testing.

Among its major recommendations are that the Federal Government should share underutilized Federal spectrum to the maximum extent possible and identify 1,000 MHz of Federal spectrum as part of an effort to create “the first shared-use spectrum superhighways”; authorize and implement, in collaboration with industry partners, a Federal Spectrum Access System (SAS) to serve as an information and control clearinghouse for the band-by-band registrations and conditions of use that will apply to all users with access to each shared Federal band under its jurisdiction; establish methodologies for spectrum management that consider both transmitter and receiver characteristics to enable flexible sharing of spectrum; and take steps to implement a mechanism that will give Federal agencies incentives to share spectrum.

Administration Focus on Supporting Wireless Growth to Boost the Economy

The Administration is already taking a number of steps to increase availability of spectrum for new and innovative applications. Indeed, more than two years ago the President directed Federal agencies to make more spectrum available for wireless broadband use, and significant progress has already been made toward this end. Some highlights:

- June 2010: A Presidential Memorandum directed NTIA to identify 500 MHz of Federal and commercial spectrum that could be repurposed to wireless broadband within 10 years on either an exclusive or shared basis. NTIA convened the Policy and Plans Steering Group (PPSG), a high-level interagency group representing Federal spectrum users, to address the challenge. NTIA also sought support from the Commerce Spectrum Management Advisory Committee (CSMAC), a Federal advisory committee of non-government spectrum experts.
- November 2010: Based on the focused efforts of the PPSG over just a few months, NTIA identified 115 MHz of spectrum that can be shared with commercial providers of wireless broadband within five years (1695 – 1710 MHz and 3550 – 3650 MHz). In a separate report, NTIA described its methodology for reviewing additional Federally-held spectrum bands to reach the 500 MHz goal within 10 years.
- April 2012: Following further analysis in consultation with the PPSG, NTIA identified an additional 95 MHz of “beachfront” spectrum in the 1755 band (1755 – 1850 MHz) that can be made available in stages, on a shared basis, starting in five years. NTIA also commenced review of an additional 195 MHz of spectrum in the 5 GHz range.
- May 2012: Under NTIA and CSMAC oversight, Federal agencies and the commercial wireless providers established five working groups to share information and analyses regarding Federal systems in the 1755 band and proposed commercial uses so as to expedite commercial entry.

The pursuit of the 500 MHz goal is part of a broader array of Federal efforts to spur wireless innovation:

In February, the President signed legislation that: (1) expands the FCC’s authority to make more spectrum available via incentive auctions; (2) protects the FCC’s discretion to make spectrum available for innovative unlicensed uses, like wifi; (3) gives Federal agencies greater incentives to make spectrum available for commercial use by allowing them to use auction proceeds to invest in upgraded wireless capabilities; (4) will establish a wireless public safety network that will include excess spectrum capacity available for commercial use; (5) and will raise auction revenues for deficit reduction.

In addition to designing the upcoming incentive auctions, the FCC is pioneering the use of “White Spaces” spectrum sharing technology, removing regulatory barriers to the use of spectrum for broadband in several bands, and modernizing the rules for wireless backhaul by freeing up more spectrum to connect mobile networks to the Internet. The FCC also is reforming the universal service fund, including with the establishment of a mobility fund that will target support to wireless broadband.