



Wireless/Spectrum Management Issues

Background

The Federal Communications Commission (FCC) was created in 1934 and charged with regulating interstate and international communications that have grown to include radio, telephone, television, satellite, cable and most recently, the Internet.

In order to avoid problems caused by interfering radio transmissions, spectrum is divided into wide swaths, called bands, and then subdivided and allocated to individuals or companies through a licensing process. A portion of the spectrum is also reserved for government use, such as for air traffic control or the Department of Defense. This spectrum is managed by the National Telecommunications and Information Administration (NTIA).

But not all spectrum is licensed, a small number of bands are allocated for unlicensed use for short range, low power devices such as garage door openers and baby monitors. With the adoption of the 802.11 standard (a.k.a. WiFi) in 1999, the use of unlicensed devices has grown dramatically. WiFi, a technology originally designed to allow wireless Internet access within buildings, has grown to become one of the favored solutions for extending affordable broadband access to the public.

The increasing demand for wireless applications, both licensed and unlicensed, plus the vast improvements in interference management since 1934, have made it clear that the current spectrum allocation system is outdated. As a result, both the FCC and the NTIA have initiated a series of reforms to improve the efficiency of the spectrum allocation process, taking into account new developments such as smart antennas and cognitive radios.

Instructional Television Fixed Service (ITFS)

Of particular interest to many campuses is the Instructional Television Fixed Service, or ITFS, spectrum. This is a band of twenty channels set aside by the FCC in the 1960's to be licensed to local credit granting educational institutions. Its use has evolved over the years as technology changes, but it continues to provide a high-quality, affordable means of transmitting educational programming for many schools. The most recent change has been the FCC approval to allow its use for the development of a wireless broadband service.

Significance for EDUCAUSE Members

Whether ITFS license holders or not, the availability of spectrum is of concern to every campus as they strive to provide wireless broadband access for both their campus and

surrounding communities. The availability of spectrum, both licensed and unlicensed will dictate the types of technology that a campus can deploy for its staff and students.

Current EDUCAUSE Position

EDUCAUSE supports spectrum management reform believing that the current system is outdated and inadequate to meet the growing demand. Based on the overwhelming success of the 802.11 standard, EDUCAUSE believes that the improved availability of quality unlicensed spectrum will lead to the development of more innovative and cost-effective technology. This is consistent with our goal of achieving ubiquitous and affordable broadband access for all our campuses and communities.

Leading Spectrum Reform on the Federal Level

The Federal Communications Commission (FCC) is the primary agency that manages private and commercial spectrum use. For more information go to:

<http://wireless.fcc.gov/>

The National Telecommunications and Information Agency (NTIA) is the agency with jurisdiction over federal government spectrum. For more information go to:

<http://www.ntia.doc.gov/>

Senate Committee on Science, Commerce & Transportation, Subcommittee on Communications has jurisdiction over the FCC, telecommunications law and spectrum allocation. <http://www.senate.gov/~commerce/subcommittees/communications.cfm>

House Committee on Energy & Commerce, Subcommittee on Telecommunications and the Internet has jurisdiction over Interstate and foreign telecommunications including, but not limited to all telecommunication and information transmission by broadcast, radio, wire, microwave, satellite, or other mode.

http://energycommerce.house.gov/108/subcommittees/Telecommunications_and_the_Internet.htm