



## **CRS Report for Congress**

# **Spectrum Management and Special Funds**

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### **Summary**

Congress has acted to create two special funds to hold the revenue of certain spectrum auctions for specific purposes. These funds represent a departure from existing practice, which requires that auction proceeds be credited directly to the Treasury as income. The Deficit Reduction Act of 2005 (P.L. 109-171, Title III) requires the auctioning of spectrum currently used by TV broadcasters for analog transmissions. It established the Digital Television Transition and Public Safety Fund to use some of the auction proceeds for the transition to digital television, public safety communications, and other programs. The Commercial Spectrum Enhancement Act (P.L. 108-494, Title II) established a Spectrum Relocation Fund to hold the proceeds of certain spectrum auctions for the specific purpose of reimbursing federal entities for the costs of moving to new frequency assignments. The spectrum to be vacated has been sold for advanced communications uses. In addition to furthering the development of new wireless technologies, passage of the act set a precedent in national policy for spectrum management by linking spectrum auction proceeds to specific funding programs. The Communications Act of 1934, which the Commercial Spectrum Enhancement Act and the Deficit Reduction Act amend, directs that all auction proceeds be paid to the Treasury for use as general funds. The Digital Promise Coalition is advocating for the creation of a Digital Opportunity Investment Trust (DO IT) that would fund certain education programs using proceeds from the auction of spectrum licenses, and other federal sources of funds.

Legislation in the 110<sup>th</sup> Congress would establish a separate fund within the Digital Television Transition and Public Safety Fund that would be used for public safety communications grants. The Public Safety Interoperability Implementation Act (H.R. 3116, Representative Stupak) would receive the proceeds remaining from the auction required by the Deficit Reduction Act, after the payments required by the act had been made (about \$10 billion of auction proceeds of an anticipated \$12 billion to \$15 billion, or more). It would also receive up to half of the net proceeds of future auctions. Grants would go for communications critical to public safety, with a preference for programs providing broad-based interoperability.

## Background

Radio frequency spectrum allocation policy within the United States is coordinated primarily through the Federal Communications Commission (FCC) — for private use, including state and local public safety wireless communications — and the National Telecommunications and Information Administration (NTIA) — for federal use. Spectrum management goals include balancing diverse concerns such as technical quality, economic benefit, fairness, access, security, and global competitiveness. Many economic models for providing the “highest and best use” for spectrum exist and have been tried, both in the United States and worldwide. Spectrum for what is widely described as “prime” frequencies (300 MHz - 3000 MHz)<sup>1</sup> is judged by many to be the most commercially desirable and is widely sought after at auction.<sup>2</sup> The Congressional Budget Office has estimated that auction proceeds for fiscal years 2007-2011 will total \$28 billion.<sup>3</sup>

## Spectrum Management and Auction Proceeds

Current broadcast and wireless communications technology requires the assignment of specific frequencies to prevent interference among transmissions. Preventing interference while fostering spectrum policies that promote public benefits and economic growth have been key bulwarks of spectrum policy and management for the FCC since its creation. Using auctions as a market-driven approach to spectrum allocation is a fairly recent innovation. The Communications Act of 1934, as modified primarily by the Balanced Budget Act of 1997, governs spectrum allocation and auction requirements in the United States. It directs the FCC to hold auctions and to deposit the proceeds in the general fund of the Treasury. Spectrum policy that designates auction proceeds for specific uses is a departure from existing — albeit recent — practice.<sup>4</sup>

Whenever spectrum reallocation is desirable or necessary because of changes in technology, spectrum value, or other factors, some mechanism — such as a trust fund — might be considered a component of spectrum management and policy in order to compensate organizations that cannot recover costs through pricing. On the assumption that spectrum reallocation is an integral part of spectrum management, and recognizing that relocation costs can climb to billions of dollars in some sectors, the need to create reimbursement programs could be considered part of spectrum policy.

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<sup>1</sup> Spectrum is segmented into bands of radio frequencies and typically measured in cycles per second, or hertz; one million hertz = 1 megahertz (MHz); 1 billion hertz = 1 gigahertz (GHz).

<sup>2</sup> Federal Communications Commission, Office of Plans and Policy, OPP Working Paper Series No. 38, “A Proposal for a Rapid Transition to Market Allocation of Spectrum,” November 2002 [[http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/DOC-228552A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-228552A1.pdf)]. Viewed August 6, 2007.

<sup>3</sup> Congressional Budget Office, *The Budget and Economic Outlook: Fiscal Years 2008-2017*, p. 82, January 2007.

<sup>4</sup> In supporting the creation of the Spectrum Relocation Fund for federal users, Rep. Tauzin, House Energy and Commerce Committee chairman, noted that it “does not reflect normal Congressional process,” in that it encroaches on the authority of the Appropriations Committees, as reported by *Communications Daily*, April 10, 2003.

## Spectrum Relocation Fund

The purpose of the Spectrum Relocation Fund is to create a mechanism whereby federal agencies can recover the costs of moving from one spectrum band to another. The interest in relocating federal users — and accelerating the process by assuring reimbursement for the costs of moving — centers on valuable spectrum (relative to auction prices for comparable spectrum in the United States and other countries) now used by federal agencies, especially the Department of Defense. In particular, spectrum in bands within the 1710-1850 MHz range is sought by wireless telecommunications companies to facilitate the implementation of next-generation wireless technologies, including high-speed mobile services (3G). After much study, the NTIA and the FCC, aided by an Intra-Government 3G Planning Group, announced plans that would transfer spectrum in the 1710-1755 MHz range from federal agencies and make it available to the private sector through spectrum auctions conducted by the FCC. As part of the effort, the need was identified for new legislation that would permit affected federal agencies to recover costs directly from these auction proceeds. To meet this need, in mid-2002 the Department of Commerce proposed the creation of a Spectrum Relocation Fund. This fund could provide a means to make it possible for federal agencies to recover relocation costs directly from auction proceeds when they are required to vacate spectrum slated for commercial auction. In effect, successful commercial bidders cover the costs of relocation. To accomplish the NTIA and FCC goals required modification of the Communications Act of 1934, to permit the agencies direct access to auction funds. This was accomplished with the passage of the Commercial Spectrum Enhancement Act, Title II of P.L. 108-494, in 2004.

Among key provisions of the act were requirements that the auctions must recoup at least 110% of the projected costs,<sup>5</sup> and that unused funds would revert to the Treasury after eight years.<sup>6</sup> Specific frequencies mentioned included not only the 1710-1755 MHz band but also other federally used frequencies scheduled for reallocation and possible auction.<sup>7</sup> The Communications Act of 1934 was therefore amended to create a Spectrum Relocation Fund within the Treasury to hold auction proceeds as designated.<sup>8</sup> The fund is administered by the Office of Management and Budget.<sup>9</sup> Proceeds from auctions of designated spectrum are to go into the fund.<sup>10</sup> Following procedures required by the act, the FCC scheduled an auction for Advanced Wireless Services (AWS), designated Auction 66, which was completed on September 18, 2006.<sup>11</sup> The AWS auction attracted nearly \$13.9 billion in completed bids, substantially above the cost established by the

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<sup>5</sup> P.L. 108-494, Title II, Sec. 203 (a) (3) and (b).

<sup>6</sup> P.L. 108-494, Title II, Sec. 204, ‘Sec. 118 ‘(d) ‘(3).

<sup>7</sup> P.L. 108-494, Title II, Sec. 202 ‘(2).

<sup>8</sup> P.L. 108-494, Title II, Sec. 204, ‘Sec. 118.

<sup>9</sup> P.L. 108-494, Title II, Sec. 204, ‘Sec. 118 ‘(a).

<sup>10</sup> P.L. 108-494, Title II, Sec. 203, (c).

<sup>11</sup> “FCC’s Advanced Wireless Services (AWS) Spectrum Auction Concludes,” FCC News, September 18, 2006.

NTIA of almost \$936 million for the move.<sup>12</sup> Auction winners wishing to put acquired licenses to immediate use will in most cases be able to share with current federal users under guidance from the FCC.<sup>13</sup>

## Digital Television Transition and Public Safety Fund

To facilitate the clearing of spectrum for revenue-generating auctions, Congress included measures in the budget reconciliation process to create a fund to hold spectrum license auction proceeds. The Deficit Reduction Act of 2005 (P.L. 109-171) created a single fund, the Digital Television Transition and Public Safety Fund, to hold all auction proceeds and make disbursements to several programs. \$7,363 million from the auction of spectrum licenses at 700 MHz is slated to go to reduce the budget deficit as specified in H.Con.Res. 95. Other disbursements from the fund include a program that would expend up to \$1,500 million on coupons for households toward the purchase of TV set top boxes that can convert digital broadcast signals for display on analog sets; a grant program of up to \$1,000 million to improve communications capabilities for public safety agencies; payments of up to \$30 million toward the cost of temporary digital transmission equipment for broadcasters serving the Metropolitan New York area; payments of up to \$10 million to help low-power television stations purchase equipment that will convert full-power broadcast signals from digital to analog; a program funded up to \$65 million to reimburse low-power television stations in rural areas for upgrading equipment from analog to digital technology; up to \$106 million to implement a unified national alert system and \$50 million for a tsunami warning and coastal vulnerability program; contributions totaling no more than \$43.5 million for a national 911 improvement program established by the ENHANCE 911 Act of 2004; and up to \$30 million in support of the Essential Air Service Program. The fund and disbursements are administered by the NTIA. The NTIA was authorized to borrow some of the authorized funds from the Treasury, secured by the expected proceeds of the auction required by the law. These funds can be used to implement transition programs for digital television and for some public safety projects.

## Spectrum Policy in the 110<sup>th</sup> Congress

The 110<sup>th</sup> Congress could decide to examine broader policy changes in spectrum management, auction policies, the use of trust funds, and the application of revenues generated by spectrum licensing. For example, Congress could consider the issue of whether the goal of the federal government to manage spectrum for the benefit of all is at odds with other federal goals to maximize general funds to the Treasury. Spectrum is categorized by most as a natural resource.<sup>14</sup> Most access to spectrum resources is through ten-year licenses, which can be revoked, although this is a rare occurrence.

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<sup>12</sup> See [<http://www.ntia.doc.gov/osmhome/reports/specrelo/index.htm>]. Viewed July 2, 2007.

<sup>13</sup> “Coordination Procedures in the 1710-1755 MHz Band,” FCC Public Notice, FCC 06-50, April 20, 2006 (WTB Docket No. 02-353).

<sup>14</sup> The Code of Federal Regulations defines natural resources as “land, fish, wildlife, biota, air, water, ground water, drinking water supplies and other such resources belonging to, managed by, held in trust by, appertaining to, or otherwise controlled by the United States....” (15 C.F.R. 990, Section 990.30.)

The Digital Promise Coalition is advocating for the creation of a Digital Opportunity Investment Trust (DO IT) that would fund programs using proceeds from the auction of spectrum licenses, and other federal sources of funds.<sup>15</sup> DO IT's goals include the improvement of learning through the use of advanced information technologies. Legislation to create the trust was introduced in the 109<sup>th</sup> Congress as S. 1023 (Senator Dodd) and H.R. 2512 (Representative Regula).

The Public Safety Interoperability Implementation Act (H.R. 3116, Representative Stupak) would establish a separate fund within the Digital Television Transition and Public Safety Fund that would be used for public safety communications grants. This separate fund would receive the proceeds remaining from the auction required by the Deficit Reduction Act, after the payments required by the act had been made. It would also receive up to half of the net proceeds of future auctions, although this share could be reduced. In addition a total of \$1.5 billion is authorized for appropriations over three years, beginning with FY2008. The grant program would be administered by the NTIA with a board created for that purpose, with five members appointed by the Secretary of Commerce. Grants would go for communications critical to public safety, with a preference for programs providing broad-based interoperability.

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<sup>15</sup> See [<http://www.digitalpromise.org/newsite/index.html>]. Viewed July 2, 2007.