



## SUMMARY

The FCC's proposal to forcibly displace the private fixed microwave facilities operated by the railroads on frequencies in the 2 GHz band is not in the public interest. For more than a quarter of a century, the railroads have used 2 GHz microwave systems to ensure the safety and reliability of their day-to-day operations. In fact, the FCC authorized the railroads to operate microwave systems because only private systems can meet their high reliability requirements. Now, despite the railroads' many years of using 2 GHz spectrum in the public interest, the FCC wants to make that spectrum available for unproven, undefined emerging technologies such as PCS.

Despite its admitted uncertainty about PCS, the Commission is rushing to deploy PCS in a manner that violates its established spectrum reallocation policy and compromises administrative due process. The Commission must consider whether the benefits of new services outweigh the threat to safety and enormous financial impact of displacing the railroads and other current users of the Commercial 2 GHz Band. In addition, the Commission must consider reallocating the spectrum used by all services in the 2 GHz band, including broadcast auxiliary and MDS. Moreover, if users with public safety applications are exempted from reallocation, the exemption must apply to both governmental and nongovernmental licensees.

Before disrupting established, proven users of the 2 GHz band, the Commission must guarantee that sufficiently reliable alternatives to the 2 GHz band are available and that conversion

is technically feasible. To do so, the Commission must explain its dramatic policy reversal from four years ago when it found that relocating 2 GHz fixed microwave users was technically impractical, detrimental to existing operations and prohibitively expensive. The alternatives currently proposed -- higher microwave bands, fiber optics and satellite services -- have insufficient capacity and pose reliability problems. Further, the proposal that PCS and incumbent microwave users share spectrum on a "co-primary" basis is technically infeasible unless and until the Commission identifies interference criteria for PCS.

The Commission also must guarantee that displaced microwave licensees will be fully compensated for converting to other bands or media. Specific guidelines and proposed rules for private negotiations must be made available for public comment.

The many open questions and uncertainties about PCS and the Commission's reallocation proposal make issuance of a Further Notice of Rulemaking essential before the Commission reallocates any spectrum in this proceeding. In addition, AAR strongly recommends that the Commission work with NTIA to make federal government spectrum available for emerging technologies or as a home for displaced fixed microwave users. This alternative could permit rapid deployment of emerging technologies with a minimum of disruption to existing users. The potential threat to safe and reliable operation of the nation's railroads and other vital

industries posed by the current proposal demands that the federal spectrum alternative be pursued immediately.

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a study by its Office of Engineering and Technology ("OET Report").<sup>2/</sup> The NPRM constitutes the Commission's first definitive identification of the specific frequencies it intends to reallocate for emerging technologies such as personal communication services ("PCS") and other terrestrial and satellite-based services. The private fixed microwave licensees targeted for displacement include the railroads, electric utilities, petroleum and pipeline companies and other core industries.

The railroads use microwave facilities to monitor and control more than 1.2 million freight cars on more than 215,000 miles of track. For example, microwave systems automatically transmit signals and remotely control switching of tracks necessary for safe routing of trains through busy depots and freight yards. These systems also relay critical telemetry data from trackside defect detectors located throughout the rail network. Information about damaged rails and overheated or loose train axles is automatically transmitted from these detectors to engineers, who then can act to prevent disastrous derailments. Microwave systems also are vital to coordination of operations among railroads.<sup>3/</sup>

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2/ "Creating New Technology Bands for Emerging Telecommunications Technology," FCC/OET TS92-1 (January 1992).

3/ See Attachment A, which depicts railroad use of private fixed microwave systems for safety and reliability operations.

**II. THE FCC MUST MEET A HEAVY BURDEN OF SHOWING THAT ITS REALLOCATION PLAN IS IN THE PUBLIC INTEREST.**

Before the Commission can effectuate the plan it is advancing in this proceeding -- to take away spectrum from established and proven licensees and make it available for emerging technologies -- it must meet a "heavy burden" of showing that the reallocation serves the public interest. As Commissioner Duggan stated:

[W]hen there is any danger of displacing proven communications services in favor of unproven or speculative services, a heavy burden of proof rests upon us.

NPRM, 7 FCC Rcd at 1549 (Separate Statement of Commissioner Ervin S. Duggan). To meet this burden, the Commission must establish that its plan is based on sound public policy and that it will, in fact, work.

The NPRM's vagueness and lack of detail regarding key aspects of the reallocation and transition plan make it clear that the Commission is a long way from meeting its burden. The Commission's predetermined selection of the specific frequencies it plans to reallocate is not sufficiently justified in fact, law or policy. As proposed, the scheme to reallocate these preselected frequencies does not adequately ensure against impairment of safe and reliable operation by the railroads and other core industries that have operated fixed microwave facilities in the Commercial 2 GHz Band for more than a quarter of a century. In fact, it is not at all clear that sufficient

alternative spectrum exists to accommodate these users facing displacement.

It was only four years ago, in another spectrum reallocation proceeding, that the Commission reached conclusions that directly contradict the conclusions it now advances in the NPRM and the OET Report. When considering potential frequency bands for the deployment of advanced television ("ATV"), the Commission explicitly rejected making available private fixed microwave bands above 1 GHz. In rejecting these frequencies for ATV, the Commission stated:

In most instances propagation conditions make it impractical to relocate these [private fixed microwave] services to higher frequencies. Moreover, relocation would involve a severe detrimental impact on existing services, result in enormous expense, and could not be implemented without lengthy delays.

Tentative Decision and Further Notice of Inquiry, 3 FCC Rcd 6520, 6530 (1988) ("Second Notice"). The Commission must explain this dramatic reversal if it is to meet its burden of showing that reallocation of 2 GHz fixed microwave frequencies now serves the public interest.<sup>4/</sup>

The Commission also must explain how its proposed transition plan will work. As proposed, the plan fails to specify any details as to how 2 GHz microwave incumbents will be compensated for displacement costs. Indeed, PCS proponents -- who, according

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4/ See Atchison, Topeka & Santa Fe Railway Co. v. Wichita Board of Trade, 412 U.S. 800 (1973); Melody Music, Inc. v. FCC, 345 F.2d 730 (1965).

to the Commission's proposal, will somehow pay for incumbents' migration to other frequencies or media -- ardently proclaim that the vast majority of current users will not have to move from the Commercial 2 GHz Band at all.<sup>5/</sup> This contradiction between the Commission and PCS proponents regarding this critical aspect of the Commission's reallocation scheme underscores the fact that the entire proposal is inchoate, ill-defined and premature. Until these fundamental issues are resolved, the Commission has no basis for guaranteeing that the railroads -- and ultimately their customers -- will not bear the cost of conversion to other bands or media.

Similarly, the Commission's vague proposals to permit frequency "sharing" and to allow microwave incumbents to operate on a co-primary basis with PCS and other new services during a transition period are equally premature.<sup>6/</sup> The railroads and other incumbents, which can tolerate little, if any, interference to their systems, have no way to determine if co-primary status or sharing will be acceptable when the emerging technologies with which they will share frequencies remain undefined. The Commission has not proposed any specific interference criteria that would govern a sharing arrangement. The PCS experimental

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5/ See, e.g., American Personal Communication's ("APC") "Frequency Agile Sharing Technology Report" (July 1991); APC Supplement to Petition for Rulemaking, Gen. Docket No. 90-314 (filed May 4, 1992); APC Request for Pioneer's Preference, Gen. Docket No. 90-34 (filed July 30, 1991).

6/ NPRM at 1545-46.

license progress reports and pioneer preference applications indicate that PCS may utilize a wide range of technologies and operate on a variety of frequencies other than the Commercial 2 GHz Band.<sup>7/</sup> Indeed, in public comments made just a few weeks ago, the FCC's Chief Engineer admitted that "lots of uncertainty" remains regarding the basic technology and standards PCS will employ. "I don't think we fully understand [PCS]," he stated.<sup>8/</sup>

Despite this lack of essential information -- and in apparent disregard of its burden to show that its reallocation plan is good policy -- the Commission has put its spectrum reallocation proposal and PCS deployment on a "fast track."<sup>9/</sup> Affected industries have submitted a variety of proposals addressing issues the Commission has failed to explore.<sup>10/</sup> With its skeletal proposal and promise to reallocate spectrum this

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7/ See, e.g., AT&T Request for a Pioneer's Preference, Gen. Docket No. 90-314 (filed May 4, 1992) (6 GHz band).

8/ Comments of Thomas Stanley, Chief Engineer, Office of Engineering and Technology, at FCC "Brown Bag Luncheon on PCS" (May 22, 1992).

9/ Id. In remarks before the Cellular Telecommunications Industry Association on February 11, 1992, Chairman Sikes said that the Commission "will complete work in the next twelve months on providing new opportunities in PCS."

10/ See, e.g., Association of American Railroads, Large Public Power Council and American Petroleum Institute Petition to Suspend Proceeding (filed April 10, 1992) ("Petition to Suspend"); Alcatel Network Systems, Inc. Petition for Rulemaking (filed May 22, 1992) ("Alcatel Petition"); UTC Petition for Issuance of Further Notice of Proposed Rulemaking (filed May 1, 1992) ("UTC Petition").

year,<sup>11/</sup> the Commission has, in effect, shifted the burden to the industries most harmed by its plan to propose procedures for implementing the plan the agency initiated. This burden properly rests with the Commission, the expert agency charged with ensuring that spectrum is utilized in the public interest.

The U.S. Court of Appeals has admonished the Commission that, "in its zeal to promote [a] new technology, the FCC [should not give] short shrift to certain of its statutory obligations." National Ass'n of Broadcasters v. FCC, 740 F.2d 1190, 1195 (D.C. 1984). No spectrum should be reallocated in this proceeding until the Commission shows that the public interest will be served. To make this showing, the Commission must solicit further comment and address the many problems with its current plan raised in this initial round of comments.<sup>12/</sup>

**III. THE COMMISSION'S PRESELECTION OF 2 GHZ SPECTRUM FOR REALLOCATION VIOLATES THE COMMISSION'S SPECTRUM REALLOCATION POLICY AND IS NOT JUSTIFIED.**

The NPRM purportedly sets forth nothing more than a "proposal" to reallocate spectrum in the Commercial 2 GHz Band for emerging technologies. In fact, however, the NPRM conclusively states that 2 GHz frequencies currently used by

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<sup>11/</sup> Comments of Stanley, supra, note 8.

<sup>12/</sup> The Commission cannot attempt to justify its proposal by discussing in a final order issues first raised in comments or reply comments when the Commission itself has not first proposed the specific issue for public comment. See UTC Petition at 7-8.

private and common carrier fixed microwave services will be reallocated for use by emerging technologies. Relying on the OET Report, conducted without the benefit of prior public comment, the Commission has declared in the NPRM that the frequencies between 1850-1990 MHz, 2110-2150 MHz and 2160-2200 MHz are the ideal location for an emerging technologies spectrum reserve. With that conclusion as its premise, the Commission has sought comment on the means to facilitate displacement of the current users of these bands without ever having requested comment on whether displacement was necessary or desirable in the first instance.

Railroads and other fixed microwave users suddenly find themselves facing the fait accompli of displacement without sufficient opportunity to comment on whether they should be displaced at all.<sup>13/</sup> Thus, before commenting on the procedure the Commission has proposed to effectuate its reallocation

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<sup>13/</sup> While fixed microwave users of the Commercial 2 GHz Band did have an opportunity to participate in the Commission's WARC and PCS proceedings, neither of those dockets definitively proposed reallocating specific 2 GHz frequencies. The WARC proceeding involved formulation of the U.S. position on numerous spectrum reallocation matters. See, infra, notes 47-49 and accompanying text. The PCS proceeding focused primarily on defining the functional and operational characteristics of PCS, issues still largely unresolved. Policy Statement and Order, 6 FCC Rcd 6601 (1991). In any event, the degree to which the Commission considered 2 GHz fixed microwave users to have meaningful input in these proceedings was demonstrated by the fact that, among more than 20 witnesses testifying at the FCC's en banc hearing on PCS in December 1991, only one represented incumbent commercial fixed microwave users.

decision, AAR will address the policy and legal errors the Commission made in reaching that decision. Procedures by which the Commission can rectify these errors, and still accomplish the laudable objective of rapidly deploying emerging telecommunications technologies, are recommended.

**A. The Commission's Preselection of 2 GHz Frequencies Violates the Commission's Spectrum Reallocation Policy.**

The Commission has acted most unusually in this proceeding by announcing, in an initial rulemaking notice, specific frequencies that it intends to reallocate. By doing so without the benefit of comments in response to a prior Notice of Inquiry tentatively selecting potential frequencies, the Commission has departed markedly from its traditional spectrum allocation procedure.<sup>14/</sup>

The Communications Act of 1934, as amended (the "Communications Act") directs the Commission to allocate spectrum in the public interest.<sup>15/</sup> In interpreting this mandate in the

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<sup>14/</sup> Nowhere in the NPRM does the Commission use the word "tentative" -- the hallmark of an initial rulemaking notice -- to describe its decision to reallocate frequencies in the Commercial 2 GHz Band. Significantly, AAR is not alone in this characterization of the NPRM. As others have observed, the NPRM does not even specifically request comment on the Commission's underlying choice of frequencies for a spectrum reserve but merely seeks comment on how to facilitate migration of the current occupants from the targeted bands. See UTC Petition at 6-8.

<sup>15/</sup> 47 U.S.C. § 303.

past, the Commission has articulated specific factors it must consider to ensure that an allocation decision serves the public interest. For example, in the Commission's initial Notice of Inquiry tentatively proposing spectrum to be allocated for ATV, the Commission articulated its "traditional spectrum allocation decision making framework," which it explicitly stated was part of its public interest evaluation.<sup>16/</sup> To arrive at an allocation decision in the public interest, the Commission said it requires information about the following factors:

1. Public Need and Benefit:

- (a) dependence of the service on radio rather than wire lines;
- (b) probable number of people who will receive benefits from the service;
- (c) relative social and economic importance of the service, including safety of life and protection of property factors;
- (d) the probability of practical establishment of the service and the degree of public support which it is likely to receive;
- (e) the degree to which the service should be made available to the public, whether on a limited scale or on an extended competitive scale; and
- (f) when it is proposed to shift a service from its present location in the spectrum, data showing the feasibility and cost of the shift, particularly with respect to the technical, economic and other considerations involved,

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16/ Notice of Inquiry, 2 FCC Rcd 5125, 5144 (1987) citing FCC's Office of Plans and Policy Working Paper No. 15, J.O. Robinson, "Spectrum Management Policy in the United States: An Historical Account" (April 1985) ("Spectrum Policy Paper").

and the length of time and manner for completing the shift.

2. Technical:

- (a) the frequency bands required for a given service, the exact position thereof in the radio frequency spectrum, and the width of communication bands within each portion required for station frequency assignments;
- (b) suitability and necessity for particular portions of the spectrum for the service involved, including propagation characteristics and reliable range data;
- (c) field intensity required for reliable service;
- (d) the number of stations required for reliable service;
- (e) the distance over which communications must be maintained;
- (f) the relative amount of radio and other electrical interference likely to be encountered;
- (g) the relative amount of noise which may be tolerated in the rendering of service; and
- (h) apparatus limitations, both transmitter and receiver.

Spectrum Policy Paper, Appendix A (emphasis added).

The Commission's policy recognizes the reality that spectrum allocation is a zero-sum proposition and that not all legitimate demands for spectrum can be accommodated.<sup>17/</sup> Therefore, the Commission must carefully weigh specific costs incurred and benefits derived from competing uses of spectrum and determine

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<sup>17/</sup> "Every time we allocate spectrum, there are legitimate conflicting demands. We can rarely accommodate all of them." Tentative Decision and Further Notice of Inquiry, 3 FCC Rcd 6520, 6550 (1988) (Separate Statement of Commissioner Patricia Diaz Dennis).

which is the "optimum" use. In the ATV docket, the Commission framed its cost-benefit analysis as follows:

[T]he overarching question we must address in this proceeding is how to provide for the optimum mix of advanced television (in terms of quality and quantity) and other communication uses. Answering this question will require an understanding of the value of employing a particular portion of spectrum for advanced television use relative to other purposes. Would consumers be better served, for example, by employing vacant UHF frequencies for improved television, new TV outlets using present day standards, additional land mobile radio services, or some combination of these? Accurate judgments on this question require, among other things, information on the cost and performance tradeoffs involved in using different amounts and regions of spectrum for various purposes, and in the discussion above we have asked commenters to provide us with this information.

Notice of Inquiry, 2 FCC Rcd at 5136 (emphasis added).

The Commission has admitted that it must be especially meticulous in its cost-benefit analysis when deciding among services competing for the same portion of the spectrum when one of the services already occupies the desired frequencies. Spectrum Policy Paper, Appendix A at 5. In this regard, a general principle to be followed is

that not all radio services should be evaluated alike. Radio services which are necessary for safety of life and property obviously deserve more consideration than those services which are more in the nature of conveniences or luxuries.

Id. at 4 (emphasis added).

The Commission has carefully followed these principles when allocating spectrum for other new services. For example, in the

direct broadcast satellite ("DBS") proceeding, it found, based on an extensive record after several rounds of public comment, that

the benefits of authorization of DBS service will outweigh the costs, and that DBS service could constitute a valuable use of the 12 GHz band. Therefore, we believe that authorization of DBS systems in the 12.2-12.7 GHz band would serve the public interest.

DBS Order, 90 FCC 2d 676, 678-79 (1982), aff'd in relevant part, Nat'l Ass'n of Broadcasters v. FCC, 740 F.2d 1190, 1213 (D.C. Cir. 1984) ("the FCC clearly decided that the public interest warranted preferring DBS to [fixed service] even if significant costs were thereby imposed on [fixed service] Users").

In this proceeding, by contrast, the Commission has failed to make a tentative public interest finding, and has failed to solicit specific information necessary to justify its selection among competing uses of scarce spectrum. It has not engaged in the requisite cost-benefit analysis comparing the economic and social value of PCS, for example, with the railroads' remote control of switches and signals.<sup>18/</sup> Further, it has not given

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<sup>18/</sup> This cost-benefit analysis is consistent with that required by the President's moratorium on agency promulgation of new regulations that impose unnecessary burdens on business and consumers. See Memorandum from President Bush, dated January 28, 1992, regarding "Reducing the Burden of Government Regulations." Although the FCC, an independent agency, is not bound by the moratorium, the FCC's Office of General Counsel has indicated that it will voluntarily comply with the President's directive. Accordingly, the Commission must determine whether the benefits to be derived from deployment of emerging technologies outweigh the costs associated with displacement of the users of each potential band targeted for reallocation.

'any special consideration to the fact that fixed microwave users already occupy the targeted band, nor to the fact that the current use of the band involves significant applications "necessary for safety of life and property."<sup>19/</sup>

Rather than following -- or even mentioning -- this traditional spectrum reallocation framework, the Commission claimed in the NPRM that its reallocation scheme is justified by sections of the Communications Act that direct it to encourage the provision of new telecommunications technologies and radio-based services. NPRM, 7 FCC Rcd at 1543, citing 47 U.S.C. §§ 157, 303(g). While this directive is important,<sup>20/</sup> it does not justify the Commission's abandonment of its fundamental statutory obligation to ensure that all spectrum is used consistent with the public interest. As the Commission has found in other contexts, allocation decisions cannot be driven simply by what best suits a new technology. In the ATV proceeding, for example, the Commission declined to allocate the spectrum most technologically desirable for ATV because of competing spectrum demands. The Commission noted:

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<sup>19/</sup> Spectrum Policy Paper, Appendix A at 4. As discussed in Section III, C, infra, the public safety exemption announced in the NPRM is arbitrary because it does not apply to railroads and other nongovernment users that employ microwave service for safety applications.

<sup>20/</sup> As users of telecommunications services, the railroads -- and the public at large -- are among the intended beneficiaries of new services and do not intend in any way to delay their deployment.

Most parties agree that the technical quality of broadcast signals increases with bandwidth, but the quality desired by the public and the "optimum" quality, given the complex tradeoffs, are far from certain.

Second Notice, 3 FCC Rcd at 6526.

The Commission must engage in a similar analysis in this proceeding and consider the "complex tradeoffs" involved in taking spectrum away from the railroads and other industries that use it for vital safety and reliability functions. In other proceedings where the Commission has reallocated spectrum for a new technology or service, it has issued Notices of Inquiry proposing several possible band locations and seeking comment on the costs and benefits of making each available, typically followed by a Further Notice, Further Inquiry, or First Order. Such an approach should be followed here.<sup>21/</sup>

**B. The Commission Did Not Consider All Alternatives When It Selected 2 GHz Spectrum For Reallocation.**

The Commission's preselection of frequencies in the Commercial 2 GHz Band and its failure to adequately consider other potential bands for emerging technologies violates

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<sup>21/</sup> Parties who wish to see PCS rapidly deployed at any cost may argue that the Commission can make the requisite public interest findings in an initial Order. But the failure to specifically solicit comment on these issues, and the failure to provide enough detail of crucial aspects of the proposal for commenters to address these concerns on their own, make it necessary that the Commission issue a Further Notice.

applicable standards of procedure.<sup>22/</sup> The Commission has not adequately scrutinized all reasonable alternatives for deployment of emerging technologies, particularly use of federal government spectrum<sup>23/</sup>. Moreover, the Commission has arbitrarily eliminated certain categories of 2 GHz frequencies from reallocation without adequate explanation.<sup>24/</sup>

**1. The Commission Should Consider Using Federal Government Spectrum for Emerging Technologies.**

The Commission stated in the NPRM that it did not consider federal government spectrum for its emerging technologies spectrum reserve because (1) federal government spectrum is under the jurisdiction of the National Telecommunications and Information Administration ("NTIA"), and (2) it is uncertain when federal government spectrum will be made available pursuant to the "Emerging Telecommunications Technologies Act" ("Technologies Act"), a federal spectrum reallocation bill pending in Congress.

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<sup>22/</sup> The Administrative Procedure Act ("APA") directs that agency action shall be deemed unlawful if it is "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A).

<sup>23/</sup> A court will "look carefully at the Commission's reasoning to ensure that all relevant factors and available alternatives were given adequate consideration in the course of the rulemaking proceedings." Office of Communication of United Church of Christ v. FCC, 707 F.2d 1413, 1426 (D.C. Cir. 1983).

<sup>24/</sup> American Mining Congress v. EPA, 907 F.2d 1179, 1187 (D.C. Cir. 1990) (agency must provide reasoned explanation, with factual basis for choices made, when adopting new rules).

NPRM, 7 FCC Rcd at 1543-44, n.11.<sup>25/</sup> Neither of these reasons justify the Commission's failure to consider making federal spectrum available for emerging technologies, especially in light of this alternative's great potential to accomplish the aims of this proceeding -- making spectrum available for emerging technologies while minimizing the impact on existing licensees. NPRM, 7 FCC Rcd at 1543, 1546.

The Technologies Act would require NTIA and the FCC to identify up to 200 MHz of federal government spectrum located below 5 GHz that can be made available to commercial users for new technologies such as PCS. The House bill -- H.R. 531, introduced by Congressman Dingell, Chairman of the Energy and Commerce Committee -- passed the full House in July 1991. The Senate bill -- S. 218, introduced by Senator Inouye, Chairman of the Subcommittee on Communications of the Committee on Commerce, Science and Transportation -- is expected to reach the Senate floor this summer.<sup>26/</sup>

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<sup>25/</sup> Although it dismissed the possibility of using federal government spectrum for emerging technologies, the Commission specifically invited comment on the potential use of federal government spectrum as a relocation band for fixed microwave users displaced from the Commercial 2 GHz Band. NPRM, 7 FCC Rcd at 1545, 1546. See Section V., infra.

<sup>26/</sup> See H.R. 531, 102d Cong., 1st Sess. (passed July 9, 1991, by the House of Representatives) (137 Cong. Rec. H 5272 (1991)) and S. 218, 102d Cong., 1st Sess. (reported May 14, 1991, by Senate Committee on Commerce, Science and Transportation and awaiting consideration by the full Senate), S. Rep. No. 93, 102d Cong., 1st Sess. (1991).

The fact that federal government spectrum is primarily under the jurisdiction of NTIA does not justify the Commission's failure to consider its use in this proceeding. The Communications Act and NTIA's spectrum management policies authorize NTIA to release federal government spectrum for the FCC to assign to commercial users when necessary to meet spectrum demands.<sup>27/</sup> In the late 1960s, for example, the federal government voluntarily released underutilized frequencies to the FCC for inclusion in a spectrum reserve for land mobile service.<sup>28/</sup>

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27/ The Act explicitly authorizes the FCC to allocate, assign and regulate the use of all radio frequencies except those specifically reserved for federal government use, which are under the authority of the President. See 47 U.S.C. §§ 151, 301, 303, 305. NTIA, the office within the Department of Commerce with authority over federal government spectrum, has interpreted its mandate as requiring it to "develop policies in the overall national interest, rather than limiting its scope to the interests of only the federal government agencies." "U.S. Spectrum Management Policy: Agenda for the Future," NTIA Special Publication 91-23 (Feb. 1991) ("Spectrum Report") at 17, n. 10. According to NTIA's spectrum management policy, the federal government is required to "make effective, efficient, and prudent use of the radio spectrum in the best interest of the Nation." Manual of Regulations and Procedures for Federal Radio Frequency Management, ch. 4 (May 1989 ed., rev. through May 1990) ("NTIA Manual") at § 2-1, n.11 (emphasis added). See NTIA Spectrum Report at 17-19. In accordance with this policy, NTIA and the FCC are required to engage in cooperative spectrum management and to allocate spectrum between federal and nonfederal users in a manner that serves the public interest. See Petition to Suspend at 13-16.

28/ "Use of Certain Frequency Band and Operations in Land Mobile Service," Notice of Inquiry and Notice of Proposed Rule Making, 33 Fed. Reg. 10807, para. 2 (1968).

The Commission states that the availability of federal government spectrum was "raised in a preliminary fashion with NTIA."<sup>29/</sup> Thus, the Commission obviously recognized that federal spectrum is both suitable for deployment of emerging technologies<sup>30/</sup> and potentially available because of its underutilization by government users. Indeed, FCC Chairman Sikes has testified repeatedly in favor of making federal government spectrum available for emerging technologies.<sup>31/</sup> In addition, former NTIA Administrator Obuchowski has testified that

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29/ NPRM, 7 FCC Rcd at 1548, n. 18. It is unclear whether this preliminary contact was made by the Chairman or by staff. In any event, it became clear at a March 26, 1992, ex parte meeting attended by current occupants of the Commercial 2 GHz Band and senior Commission staff, that the Commission had made no formal, concerted, high-level effort to discuss with NTIA the availability of federal government spectrum. See Letter from Terry L. Haines, Chief of Staff, Office of the Chairman, dated March 26, 1992, filed with the Secretary of the FCC.

30/ The 1710-1850 MHz federal government band, for example, is allocated for primary use by mobile services in the International Table of Frequency Allocations, 47 C.F.R. § 2.106, which means that it is suitable for emerging technologies such as PCS and other mobile services.

31/ See, e.g., "Emerging Telecommunications Technologies Act," 1991: Hearings on H.R. 531 Before the Subcomm. on Telecommunications and Finance of the House Comm. on Energy and Commerce, 102d Cong., 1st Sess., Feb. 21, 1991 (Statement of Alfred C. Sikes, FCC Chairman); Hearings on S. 218 Before the Subcomm. on Communications of the Senate Comm. on Commerce, Science and Transportation, 102d Cong., 1st Sess., April 11, 1991 (Statement of Alfred C. Sikes, FCC Chairman).