

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)	
)	ET Docket No. 00-258
Amendment of Part 2 of the Commission's Rules)	
to Allocate Spectrum Below 3 GHz for Mobile and)	
Fixed Services to Support the Introduction of New)	
Advanced Wireless Services, including Third)	
Generation Wireless Systems)	
)	
Petition for Rulemaking of the Cellular)	RM-9920
Telecommunications Industry Association)	
Concerning Implementation of WRC-2000)	
Review of Spectrum and Regulatory Requirements)	
for IMT-2000)	
)	
Amendment for the U.S. Table of Frequency)	RM-9911
Allocations to Designate the 2500-2520/2670-)	
2690 MHz Frequency Bands for the Mobile-)	
Satellite Service)	

COMMENTS OF AT&T WIRELESS SERVICES, INC.

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COMMENTS OF AT&T WIRELESS SERVICES, INC.

Pursuant to the Commission's Notice of Proposed Rulemaking, AT&T Wireless Services, Inc. ("AT&T") hereby submits its comments in the above-captioned proceeding.^{1/}

INTRODUCTION AND SUMMARY

This Notice is an important step to help ensure that the United States remains at the forefront of the development of wireless technology and the provisioning of wireless service. There is a tremendous and ever-increasing demand for advanced wireless services in the United States, which simply cannot be met without additional spectrum allocations consistent with the decisions made at the International Telecommunication Union's ("ITU") 2000 World

^{1/} Amendment of Part 2 of the Commission's Rules to Allocate Spectrum Below 3 GHz for Mobile and Fixed Services to Support the Introduction of New Advanced Wireless Services, Including Third Generation Wireless Systems, Notice of Proposed Rulemaking, ET Docket No. 00-258 (rel. Jan. 5, 2001) ("Notice").

Radiocommunication Conference (“WRC-2000”) and international decisions governing International Mobile Telecommunications 2000 (IMT-2000) services. AT&T urges the Commission to take the actions today -- some of which are admittedly difficult -- to allocate the spectrum that will be necessary to support the continued growth of wireless third generation (“3G”) services tomorrow.

AT&T plans to deploy a wide range of 3G services -- some narrowband and some wideband -- using a variety of devices, including phones, personal digital assistants (“PDAs”), and laptop computers. While existing allocations will be used to begin to roll out 3G services, the bandwidth requirements of these services, together with growing consumer demand, will require a significant expansion in capacity. Even with the use of increasingly spectrum efficient technology, or implementation of alternative spectrum leasing options, additional allocations will be needed.

In making these allocations, it is essential that the Commission harmonize, to the extent possible, U.S. frequency bands with those used internationally. Harmonization benefits domestic consumers, providers and manufacturers by permitting consumers to roam globally, manufacturers to design equipment that will operate anywhere in the world, and providers to take advantage of economies of scale resulting from a global marketplace. Attempting to “harmonize” through technological fixes, such as software defined radios, would not provide the same benefits as consistent spectrum allocations because it would treat the symptoms of non-harmonization, rather than solve the problem itself.

While existing allocations, including the 806-960 MHz and the 1850-1910/1930-1990 MHz bands could, and likely will, be used by existing licensees to introduce 3G services, AT&T urges the Commission and the National Telecommunications and Information Administration (“NTIA”) to consider redesignation or reallocation of additional spectrum. AT&T supports the Commission’s proposals to allocate the 1710-1755 MHz band, which already has been designated for transfer to the Commission, and the 1755-1850 MHz band for commercial mobile and fixed radio services. Both bands are among the spectrum identified by WRC-2000, and

together they would provide adequate spectrum for the growth of 3G services. Because this spectrum currently is occupied by federal government users, however, the Commission and affected parties will need to address sharing and relocation issues. AT&T offers several recommendations in this proceeding and intends to participate in both the Commission's and NTIA's proceeding to address relocation and reimbursement procedures. Finally, to the extent the allocation of 1755-1850 MHz cannot be made, the Commission should reallocate some or all of the spectrum in the 2500-2690 MHz band to permit the development of advanced services.

Should the Commission and NTIA make the reallocations and designations proposed in this proceeding, AT&T submits with these comments three alternative band plans to accommodate the deployment of advanced wireless services. These plans build on the Commission's and NTIA's proposals, but are more consistent with global allocations and pairings and would provide sufficient spectrum for 3G growth. In particular, AT&T urges the Commission to consider adoption of Option 1, as it best promotes the development of harmonized spectrum in the United States.

I. TO DEPLOY ADVANCED WIRELESS SERVICES ADDITIONAL SPECTRUM ALLOCATIONS WILL BE REQUIRED

The Commission recognizes that for the United States to maintain its leadership position in the development and deployment of advanced wireless technologies, the country's wireless industry must continue to grow.^{2/} To foster that growth, it is imperative that the Commission moves quickly to make available additional spectrum for wireless services.

A. Additional Spectrum Is Needed To Provide Advanced Services

AT&T agrees wholeheartedly with the Commission's finding that "today and historically the introduction and continued growth of advanced mobile and fixed wireless services requires that additional spectrum must be made available."^{3/} As the Commission notes, WRC-2000 recommended the allocation of 160 MHz of additional spectrum in those areas where the traffic

^{2/} Id. at ¶ 15.

^{3/} Id. at ¶ 27.

is highest to meet the projected requirements of IMT-2000.^{4/} While the Commission has previously indicated its intention to allocate 90 MHz of spectrum to advanced mobile and fixed services, that designation will not be sufficient to meet the growing consumer demand for these services. Other countries have started licensing 3G spectrum and their carriers will soon begin providing advanced mobile Internet access. To ensure that American consumers, carriers, and manufacturers are able to enjoy the full benefits of this technology, it is critical that the Commission begin addressing allocation issues today.

While 3G services cannot develop successfully without the designation of additional spectrum, AT&T is confident that existing allocations are sufficient to begin the roll out of such services.^{5/} As the Commission correctly notes, AT&T is planning to convert its PCS spectrum to 3G use^{6/} by implementing advanced services on a portion of the band, transitioning existing subscribers, and upgrading the cleared band segments.^{7/} To facilitate this evolution, AT&T will overlay a Global System for Mobile Communications (“GSM”)/General Packet Radio Service (“GPRS”) platform to its existing nationwide system. AT&T plans to deploy GSM/GPRS throughout this year, and thereafter will begin rolling out Enhanced Data Rates for Global Evolution (“EDGE”) 3G technology in its networks. GSM/GPRS/EDGE should be deployed in virtually all of the nation’s top 100 markets by the end of 2002, and AT&T’s introduction of higher performing wideband CDMA (“WCDMA”) will occur sometime in late 2002.

For its 3G implementation, AT&T intends to offer a wide range of services, some narrowband, some wideband, and some extremely bandwidth hungry, over a variety of devices, including phones, PDAs, and laptop computers. Potential 3G services include entertainment and news applications, such as MP3 downloads, games, audio/video streaming, e-books and up-to-the-minute headlines, weather, sports, and stock quotes, some of which will be provided in a

^{4/} Id. at ¶ 4.

^{5/} Id. at ¶¶ 22-23.

^{6/} Id. at n.40.

^{7/} Id. at ¶ 22.

multimedia format. In addition, 3G devices will likely permit customers to make e-transactions (e.g., paying for goods in a vending machine), as well as engage in comparison shopping and buying online. Other potential services include instant and short messaging services, on-line customer care (e.g., new service sign up, billing inquiries, and account and technical help), and personal applications such as calendars and address books. Finally, AT&T's 3G services will enhance telecommuting by providing employees with remote wireless access to their companies' e-mail systems and databases. In this regard, AT&T already has taken significant steps to prepare for the introduction of 3G services. Last year, it entered into a strategic alliance with Japan's NTT DoCoMo to develop 3G services that include functions such as graphic presentation of data, video e-mail, high quality music downloads, and streaming audio and video.^{8/}

Such services, coupled with growing consumer and business penetration, are expected to produce a significant increase in capacity demand. Although AT&T is committed to deploying the most advanced technology to meet its customers' needs, it is clear that improvements in technology and spectrum efficiency will not be sufficient to meet this rise in demand. Technology alone cannot serve as a substitute for bandwidth as the number of users and the array of products and services offered increase.^{9/} Nor will spectrum leasing, by itself, be able to keep pace with heightened customer demand.^{10/} While AT&T fully supports the Commission's secondary markets initiative and believes that 3G deployment could be enhanced through leasing,^{11/} an entire 3G service cannot be built on the possibility that enough spare capacity will

^{8/} "AT&T And NTT DoCoMo Announce Strategic Wireless Alliance", AT&T News Release (Nov. 30, 2000) ("[AT&T/DoCoMo Press Release](#)"). The Commission incorrectly notes that an AT&T and NTT DoCoMo subsidiary will "deploy a network based on ... (UMTS) 3G standard." [Notice](#) at n.40. That enterprise, which will be a wholly-owned subsidiary of AT&T, will not be the entity to develop and offer 3G services. Rather, it will develop multimedia applications for current and future AT&T networks. [See AT&T/DoCoMo Press Release](#).

^{9/} AT&T is implementing GSM/GPRS to allow it to upgrade to EDGE and UMTS, and it has also adopted a number of other technical enhancements to increase capacity.

^{10/} [Notice](#) at ¶ 33.

^{11/} [See In the Matter of Promoting Efficient Use of Spectrum Through Elimination of Barriers to the Development of Secondary Markets](#), Notice of Proposed Rulemaking, WT Docket No. 00-

exist, and negotiations with the myriad of Commission licensees will be successful, to accommodate carriers' needs.

B. A Flexible Policy Approach Will Assist in the Roll-Out of Advanced Wireless Services.

AT&T supports the Commission's desire to remain flexible in defining 3G or advanced services.^{12/} Although AT&T provided examples above of the services it anticipates providing in a 3G environment, rapidly evolving wireless technology and consumer demand will likely expand that list as 3G deployment occurs. It is therefore essential that the Commission not attempt to dictate the course of the market. Establishing arbitrary definitions today would require carriers to try to squeeze their offerings into a particular regulatory construct rather than letting consumers decide what services they desire.^{13/}

A critical aspect of this flexibility is the ability of providers to choose the radio interface standard that best suits their particular situations. The five ITU standards are sufficient to introduce 3G services, and because the ITU has recently agreed on a procedure for updating the standards to account for both minor updates and the introduction of new technologies, they are flexible enough to accommodate continued 3G growth.^{14/} For example, while the data rates provided by the standards are adequate now, the ever increasing user demand and the bandwidth-hungry nature of new services (e.g., video streaming), may require adjustments to the standards.

In seeking comment on the merits of frequency division duplex ("FDD") and time division duplex ("TDD"), the Commission acknowledges that the spectrum requirements of individual carriers will vary depending on preferred technology.^{15/} AT&T has evaluated TDD 230 (rel. Nov. 27, 2000); Comments of AT&T Wireless Services, Inc. to FCC Notice of Proposed Rulemaking, WT Docket No. 00-230 (Feb. 9, 2001).

^{12/} Id. at ¶ 21 (noting that the FCC "traditionally has taken a flexible approach to standards and generally does not mandate a particular type of technology, leaving such an outcome to the marketplace").

^{13/} Id. at ¶ 33. AT&T also agrees with the Commission's conclusion that 3G services can be introduced without designating spectrum exclusively for advanced services. Id.

^{14/} See Detailed Specifications of the Radio Interfaces of IMT-2000, Recommendation ITU-R M.1457 (2000).

^{15/} Notice at ¶ 29.

and found that its detriments far outweigh any advantages it might offer. In particular, TDD systems can cause significant interference to existing FDD systems, resulting in a noticeable deterioration in the FDD systems' operating range. To overcome these problems, a fairly wide guard band would be required. Accordingly, AT&T recommends that allocations or identifications for TDD not be made at this time.

The Commission also asks what size spectrum blocks would be appropriate for implementation of advanced wireless systems.^{16/} As a general guideline, to provide high quality 3G services, carriers will need paired spectrum blocks of at least 20 MHz (10 MHz uplink and 10 MHz downlink). Smaller blocks would be unlikely to provide adequate bandwidth for many of the types of services carriers intend to offer.

II. THE COMMISSION SHOULD ALLOCATE SPECTRUM FOR 3G SERVICES CONSISTENT WITH DECISIONS MADE INTERNATIONALLY.

As the Commission develops its policy to foster the growth of next generation wireless services, it has a unique opportunity to ensure that the United States keeps pace with the rest of the world. For the domestic wireless industry to compete in the global economy, its consumers must be able to roam from country to country and continent to continent, not just from state to state, and manufacturers must be able to design equipment that will operate anywhere in the world. By harmonizing U.S. frequency bands with those used internationally, the Commission could help accomplish these objectives.^{17/} It is imperative that the Commission not isolate American businesses and consumers by creating a purely domestic 3G solution.

AT&T agrees with the Commission that global roaming could be facilitated by the adoption of a limited number of common frequency bands.^{18/} While the use of one spectrum band worldwide for advanced services obviously would be the best way to promote efficiency

^{16/} Id. at ¶ 28.

^{17/} See AT&T Comments in RM-9920 at 4-6; Motorola Comments in RM-9920 at 7 (stating that "harmonized allocations will allow for the marketing of a true 'world phone' providing a wider array of compatible wireless services"); BellSouth Reply Comments in RM-9920 at 3.

^{18/} Notice at ¶ 24.

and reduce costs, it is clear that complete harmonization of this sort is not a near-term possibility. Many countries, including the United States, Canada, and Mexico, did not adopt the initial 3G band plans identified in WARC-92. Moreover, even WRC-2000 identified three frequency bands for advanced services (IMT-2000), not just one. Nevertheless, the use of at least some of the same bands domestically and internationally for second and third generation services would permit subscribers to use a single handset regardless of whether they are in the United States or overseas. In the absence of harmonization, by contrast, U.S. subscribers would be forced to roam globally as they do today -- by carrying multiple wireless handsets, or one bulky, expensive, and complex phone, from location to location.

In addition, manufacturers increasingly will concentrate their efforts on developing equipment for those areas of the world that operate on the same bands (i.e., Europe and Asia) in order to realize the production economies associated with larger markets. If the United States uses frequencies not identified by WRC-2000 for IMT-2000, equipment for the domestic market could be produced later or not at all, depriving consumers of the newest and most advanced features and services. Other benefits of harmonization include open access to foreign equipment markets (increasing competition and available markets for U.S. manufacturers and thereby lowering the cost of 3G equipment for consumers), expedited standards development due to reduced variables and country-specific requirements, and increased spectrum value.^{19/} Without harmonization -- or worse, with further fragmentation of the bands available for 3G use across multiple countries -- the United States risks cutting its consumers and industry participants off from the rest of the world.

In exploring the potential use of several frequency bands for 3G services, the Commission raises alternatives to harmonization, such as software defined radios (“SDRs”).^{20/}

^{19/} See Motorola Comments in RM-9920 at 7; See Mary Greczyn, “Military, Industry Not In Lockstep on 3G Spectrum Issues”, Communications Daily, 1-2 (Feb. 16, 2001) (reporting that in a Senate Committee bulletin, the Congressional Budget Office “dramatically” raised its estimate of spectrum auction receipts by \$10 billion due to “market enthusiasm” for 3G).

^{20/} Notice at ¶ 30.

Although phones that permit users to hop from band to band and that use multiple standards ultimately will be built, according to various manufacturers, their development is still years away.^{21/} More importantly, attempts to “harmonize” via technology instead of through consistent spectrum allocations merely treats the symptoms of non-harmonization rather than solving the problem itself. SDRs are likely to provide increased flexibility, but they may raise serious issues, including interference and fraud, that are not easily resolved.^{22/} In addition, true harmonization undoubtedly would give manufacturers the opportunity to develop products and services that have not even been contemplated at this point. Use of a technological band-aid after the fact plainly is no substitute for effective spectrum planning today.

III. SEVERAL OF THE SPECTRUM BANDS IDENTIFIED BY THE COMMISSION ARE PRIME CANDIDATES FOR 3G USE.

AT&T concurs with the Commission’s proposal to allocate the 1710-1755 MHz band, which already has been identified by NTIA for transfer to the Commission, for mobile and fixed services. Similarly, the 2110-2150 MHz and 2160-2165 MHz bands should be designated for emerging technologies. With regard to additional spectrum needed by potential 3G providers, AT&T believes that spectrum in the 1755-1850 MHz bands should be made available for commercial use, and it urges the Commission and NTIA to work together to establish reasonable relocation and reimbursement procedures for government incumbents currently occupying that spectrum. Finally, to the extent the reallocation of 1755-1850 MHz cannot be made, the Commission should reallocate some or all of the spectrum in the 2500-2690 MHz band.

^{21/} See Comments of AT&T Wireless Services, Inc. in RM-9920 (Aug. 28, 2000). The Commission cites AT&T for the proposition that SDR development is at least ten years away. Notice at ¶ 30, n.55. AT&T, however, has conducted no independent studies on SDRs and had simply referred to the comments of other parties (including BellSouth and Nokia) regarding the timing issue.

^{22/} Reply Comments of AT&T Wireless Services, Inc., Inquiry Regarding Software Defined Radios, ET Docket No. 00-47 at 2 (July 14, 2000).

A. Currently Allocated Spectrum May Be Used by Individual Licensees To Launch 3G Service but Cannot Be the Foundation of a National 3G Implementation Plan.

AT&T agrees with the Commission's assessment that allocation of additional spectrum for advanced wireless services in the 806-960 MHz band is not appropriate.^{23/} This band is heavily occupied by cellular and SMR operators, and is, as a general matter, used efficiently today. In addition, individual licensees in this spectrum are likely to explore use of their existing allocations to introduce 3G services. Indeed, AT&T expects to transition its cellular services to 3G technologies based on the dictates of the market. Similarly, the existing PCS bands will evolve to provide 3G services. Incumbent operators will build out 3G systems in this band as described above, and AT&T agrees with the Commission that winners of the recent C and F block auctions are likely to use this spectrum to provide 3G services. Given the incumbents' current use of the cellular, SMR, and PCS bands and their ability to evolve existing operations, no regulatory actions are needed at this time -- other than removal of the Commission's CMRS spectrum cap and cellular analog rules -- to assist in the 3G roll out.^{24/}

Because auction of licenses in the 747-762 MHz and 777-792 MHz bands (TV Channels 60-69) is forthcoming, new entrants could presumably use this spectrum for 3G services. There are a number of significant shortcomings, however, with this spectrum. Most importantly, the 700 MHz bands will not be harmonized worldwide anytime in the near future. Therefore, if used for 3G, it would be for domestic use only. Moreover, potential bidders for these bands are legitimately concerned that the spectrum will be encumbered by incumbent broadcast licensees

^{23/} Notice at ¶ 36.

^{24/} 47 C.F.R. §§ 20.6, 22.901. Application of the spectrum cap, which generally limits any individual carrier from accumulating more than 45 MHz of wireless spectrum in urban and suburban areas and 55 MHz in rural areas, will not only hinder AT&T and other carriers in rolling out 3G applications domestically, it may prevent the U.S. from taking the lead in the international wireless industry. Foreign carriers, because they are not generally subject to such caps, are able to develop advanced services more quickly and efficiently than their domestic counterparts. The cellular analog rule, which requires cellular providers to continue to offer analog service detracts from carriers' ability to use spectrum flexibly and efficiently.

and unusable by wireless providers for many years. In fact, television licensees do not have to vacate Channels 60-69 until 2006 at the earliest, and there is every indication that they will still be present for a significant period thereafter.^{25/} Accordingly, the utility of the 700 MHz spectrum for 3G roll out is questionable.

B. Other Candidate Spectrum Should Be Reallocated To Permit the Development of 3G Services.

AT&T supports the Commission's proposal to allocate the 1710-1755 MHz band for mobile and fixed services on a co-primary basis.^{26/} Such an allocation makes sense from a harmonization standpoint because the band has been identified by WRC-2000 for IMT-2000. However, because the federal government -- primarily the Department of Defense ("DoD") -- currently uses the band, carriers and incumbents must address difficult sharing and relocation issues before advanced wireless services can be deployed. To the extent the frequencies in this band can be used compatibly by all parties, AT&T strongly supports sharing between federal users and new licensees. This would reduce the impact on DoD systems and significantly lower carriers' and regulators' costs. If, however, sharing is not technically possible, reasonable procedures for relocation and reimbursement must be developed. AT&T intends to participate in both the Commission's and NTIA's proceedings to help establish such a process.^{27/}

The 1755-1850 MHz band also would be logical to use for advanced wireless services since it is also among the spectrum identified by WRC-2000. Combining spectrum from this band with spectrum from the 1710-1755 MHz band would provide adequate spectrum for the growth of 3G services, while also providing the harmonization potential envisioned by the ITU

^{25/} See 47 U.S.C. § 309(j)(14).

^{26/} Notice at ¶ 41.

^{27/} See id. at ¶ 43; In the Matter of Reallocation of the 216-220 MHz, 1390-1395 MHz, 1427-1429 MHz, 1429-1432 MHz, 1432-1435 MHz, 1670-1675 MHz, and 2385-2390 MHz Government Transfer Bands, Federal Communications Commission, Notice of Proposed Rulemaking, ET Docket No. 00-221, RM-9267, RM-9692, RM-9797, RM-9854 (rel. Nov. 20, 2000); Mandatory Rules for Frequency Band or Geographic Relocation of Federal Spectrum-Dependent Systems, Department of Commerce, National Telecommunications and Information Association, Notice of Proposed Rulemaking, Docket No. 001206341-0341-01, RIN 0660-AA14 (Jan. 18, 2001).

at WRC-2000. AT&T therefore strongly believes that a decision should be made to reallocate this spectrum from government to commercial use. Nevertheless, as with the 1710-1755 MHz frequencies, before 3G deployment could move forward, it would be necessary for all affected parties to determine the best way to accommodate incumbents.

AT&T also supports the use of the 2110-2150 MHz and 2160-2165 MHz bands for advanced wireless services, and urges the Commission not to carve out the 2110-2120 MHz segment from the allocation because of its use by NASA's Deep Space Network ("DSN") in Goldstone, California.^{28/} Rather, the Commission should consider sharing options, since prohibiting the use of these frequencies would negatively affect both consumers, who would not receive advanced services in the interference region, and commercial operators that want to establish national or regional footprints.

In addition, AT&T proposes that the Commission designate 2150-2155 MHz for fixed and mobile wireless services and redesignate the 2155-2165 MHz segment for MDS licensees currently operating in the 2150-2160 MHz band. Such a redesignation would provide a contiguous 45 MHz spectrum band for 3G purposes, 2110-2155 MHz, while still leaving MDS and ITFS operations with a 10 MHz block. Because a guard band would have to be established in only one place to accommodate adjacent MDS/ITFS providers, this approach would permit far more efficient use of the spectrum and would lower both 3G and MDS/ITFS operators' costs.^{29/}

Finally, AT&T believes that the 2500-2690 MHz band could be used for advanced wireless services. This spectrum is well suited for 3G purposes, primarily because it contains a large amount of contiguous spectrum that could be paired internally. In addition, this band has been identified by WRC-2000 for 3G services, and Europe appears poised to launch such

^{28/} Notice at ¶ 53.

^{29/} The Commission's question about whether it should auction the 2110-2155 MHz and 2160-2165 MHz bands simultaneously highlights the inefficiencies of the current band plan. Notice at ¶ 57. Of course, it does not make sense to hold a separate auction for 5 MHz of spectrum. Nor does it make sense, however, to split up this block as proposed.

services in this band in the 2008-2010 time frame. Availability in the United States of the 2500-2690 MHz band for advanced wireless services therefore would enhance global roaming.

Although there are MDS and ITFS users currently occupying the 2500-2690 MHz band, the Commission should not dismiss the idea of reallocation of at least some of the spectrum for advanced mobile and fixed services. Because the spectrum needs of MDS and ITFS operators have never been documented, it is not known how much bandwidth actually is needed to support the services they propose to offer. Given the flexibility in the Commission's technical and service rules, however, it should not be difficult for MDS/ITFS providers to operate with reduced bandwidth.^{30/} The Commission's role as spectrum manager requires it to ensure the highest and best use of this scarce resource. It is not clear to AT&T that devotion of almost 200 MHz of spectrum to what has been until very recently primarily wireless cable operations is the best way to encourage efficient spectrum usage.

In this regard, AT&T urges the Commission not to add a mobile application to this band.^{31/} Such action would provide incumbent MDS and ITFS operators with an unwarranted windfall and would deprive all other potential competitors of the chance to bid on licenses they will need to provide 3G services. Moreover, under the current use of the band, which employs a complicated channel plan and extensive leasing of ITFS frequencies, it is not apparent that the existing fixed and proposed IMT-2000 services would be able to share frequencies. In fact, a recent industry group meeting pursuant to President Clinton's Executive Memorandum on 3G services concluded that co-channel sharing was not possible.^{32/} Similarly, the fractured licensing scheme that exists in these services makes it unlikely that one incumbent, much less multiple incumbents, could cobble together enough "harmonized" spectrum to provide 3G services. MDS

^{30/} 47 C.F.R. § 21.931 (permitting partitioning of MDS licenses); 47 C.F.R. § 74.990 (permitting wireless cable use of ITFS frequencies).

^{31/} See Notice at ¶ 64.

^{32/} See 2500-2690 MHz Working Group, Presentation at the Third Generation Wireless Government-Industry Outreach Meeting Hosted by the National Telecommunications and Information Administration in Cooperation with the Federal Communications Commission and Other Federal Agencies (Feb. 15, 2001).

licenses initially were granted on a site-by-site basis and hundreds of providers received authorizations through the lottery process on a variety of channel blocks spread across the United States. Subsequently, the Commission auctioned MDS licenses on geographic basis overlaying the site-based regime already in place. Accordingly, even though several large providers purchased many of the existing authorizations and participated in the auction, they do not have consistent spectrum blocks from market to market. Without a large well-defined market, it is unclear whether there would be any manufacturers willing to develop equipment for the band. If the Commission's aim is to encourage 3G deployment and efficient use of the spectrum, it should reallocate all or a portion of the 2500-2690 MHz band and hold an open auction.

IV. THE COMMISSION SHOULD CONSIDER AT&T'S PROPOSED BAND PLANS

Should the Commission and NTIA make the reallocations and designations proposed above, AT&T urges the Commission to consider adoption of AT&T's attached band plan options. In particular, the Commission should review carefully Option 1, as it provides the best vehicle to develop competitive 3G services in the United States that are harmonized with the rest of the world. AT&T appreciates the effort the Commission and NTIA have put into developing various band pairing schemes and, in fact, it used those plans as a basis for its own. AT&T's proposals, however, are more consistent with global allocations and pairings and would provide sufficient spectrum to permit domestic carriers to compete fairly in the world market.

A. AT&T's Option 1

Although AT&T has prepared three potential band plan alternatives, it strongly proposes that the Commission adopt Option 1. This option would give 3G carriers enough spectrum to provide the services customers are starting to demand, and it offers the level of world harmonization necessary for roaming and economies of scale.

Option 1 builds on NTIA's first proposed option by pairing 25 MHz in the 1710-1755 MHz band with 25 MHz in the 1755-1850 MHz band. A second larger allocation of spectrum, 45 MHz in the 1710-1850 MHz band, however, would be paired with 45 MHz somewhere

between 2110-2155 MHz, depending on whether the Commission redesignates 2155-2165 MHz for MDS/ITFS use. This proposal would provide a total of 140 MHz of spectrum to develop advanced wireless services, which is roughly consistent with the ITU's calculation that 160 MHz of additional spectrum is needed for such purposes. NTIA's plan, in contrast, would not allocate enough spectrum for comprehensive 3G deployment after taking into account the need for guard bands and other technical issues. In this regard, AT&T's proposal is consistent with the PCS band plan because it provides sufficient guard band protection between base transmit frequencies in the upper part of the 1755-1850 MHz band and the PCS mobile transmit band.

Although the spectrum allocated under this option could be auctioned all at once, a phased approach would likely provide a more orderly accommodation of government users by spreading out their relocation -- to the extent such relocation is necessary -- over a number of years. In addition, at the end of the transition period, the government would continue to maintain access to 45 MHz of spectrum (1780-1805 paired with 1830-1850 MHz).

AT&T's Option 1 is consistent with the proposals of the majority of manufacturers and service providers that have indicated a preference on 3G plans. In addition, Canada has submitted a similar proposal to ITU-R Working Party 8F. This option also has the potential advantage of permitting harmonization with Europe in the short term. While interference issues with government users at the band edges would have to be worked out, AT&T believes that this option best balances the needs of government users with the commercial demand for spectrum for advanced wireless services.

B. AT&T's Option 2

AT&T's second proposal is similar to NTIA's option 2 in that it would pair the two bands the Commission now has available to it (1710-1755 MHz and 2110-2150/ 2160-2165 MHz). Subsequently, some or all of the 1755-1850 MHz band would be paired with an equivalent amount of spectrum in the 2500-2690 MHz band. Under this plan there would be a minimum of spectrum available from the 2500-2690 MHz band, reducing the impact to MDS/ITFS

incumbents. This plan, however, is considerably less desirable than AT&T's Option 1 because harmonization with Europe would be impossible. In addition, although several Latin American countries have proposed a plan like AT&T's Option 2, it is unclear if such a plan ultimately will be adopted. As a result, adoption of this scheme would risk setting up a U.S.-only band plan, which plainly would not serve the best interests of domestic consumers, operators, and manufacturers.

Although Congress directed the Commission to auction both the 1710-1755 MHz and 2110-2150 MHz bands by 2002, it did not specify that the two bands be auctioned together. In addition, the decisions made subsequently at WRC-2000 have significantly changed the landscape. Indeed, these decisions have provided the Commission with more flexibility to adopt band plans that maximize the benefits for manufacturers, operators, and consumers. Congress gave the Commission the option to substitute another band for 2110-2150 MHz if it could identify spectrum that meets or exceeds the value and technical attributes of the allocated band.^{33/} AT&T therefore urges the Commission to consider pairing 1710-1755 MHz with the upper portion of 1755-1850 MHz if and when the latter is designated for commercial use.

C. AT&T's Option 3

As a final option, AT&T might support, with certain changes, the third proposal offered by the Commission in its Interim Report. Under this option, spectrum between 2500-2690 MHz would be internally paired, which AT&T understands to be the leading alternative in Europe for its next stage of 3G development.

There are a number of serious disadvantages associated with Option 3, however, first and foremost of which is that it would not permit harmonization with existing European systems in the DCS 1800 band plan. Nor is it likely to be consistent with the plans that might be adopted by

^{33/} Balanced Budget Act of 1997, Pub. L. No. 105-33, § 3002 (c)(3), 111 Stat. 259, 261-62 (1997). Although the statutory period for substitution has passed, Congress clearly contemplated that spectrum other than 2110-2150 MHz might be better to auction. Given the changes brought about by WRC-2000, and the possibility of true harmonization with Europe and Asia, the Commission should seriously consider whether pairing 1710-1755 MHz with 2110-2150, 2160-2165 MHz still makes sense.

other countries in North and South America. In addition, propagation at this range is diminished compared to spectrum below 1850 MHz, which would necessitate the construction of additional sites to cover the same geographic area, thereby increasing 3G build-out costs. Moreover, this option would be inconsistent with most manufacturers' plans, and potentially would require the development of complex handsets if pairing with other bands were permitted. Option 3 is also undesirable because it does not use bands currently available to the Commission for redesignation.

If the Commission were to adopt this band plan, AT&T urges it to make the following changes. First, significantly more than the 90 MHz of spectrum provided for under the option will be required to permit full deployment of advanced wireless services. In this regard, AT&T notes that adoption of this proposal would not be mutually exclusive with AT&T's preferred Option 1. Specifically, the Commission could reallocate all or a portion of the 2520-2670 MHz band to mobile and fixed wireless providers and, at the same time, make use of spectrum in 1755-1850 MHz that has been, or might be, designated for transfer from government to commercial uses. Second, the Commission should note the identification of 2500-2520 MHz and 2670-2690 MHz for the satellite component of IMT-2000. Terrestrial use is only envisioned by the ITU to take place "in the longer term."^{34/} Thus, any pairings established by the Commission would have to be adjusted accordingly.

^{34/} Additional Frequency Bands Identified for IMT-2000, WRC-2000, Resolution 223.

CONCLUSION

For the foregoing reasons, AT&T support the designation of additional spectrum for 3G use, which should be, to the extent possible, harmonized with spectrum use globally.

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