

Before the  
Federal Communications Commission  
Washington, D.C. 20554

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In the Matter of )  
 )  
Reallocation and Service Rules for the 698-746 ) GN Docket No. 01-74 /  
MHz Spectrum Band (Television Channels 52-59) )

FILED

NOTICE OF PROPOSED RULE MAKING

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By the Commission: Commissioner Tristani approving in part, dissenting in part, and issuing a statement.

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## I. INTRODUCTION

1. By this action, we propose to reallocate the 698-746 MHz spectrum band, currently comprising television (“TV”) Channels 52-59. We are reclaiming this spectrum for new commercial services as part of our transition of TV broadcasting from analog to digital transmission systems. Digital television (“DTV”) technology is more spectrally efficient thus allowing the same amount of television service to operate in a reduced allocation, *i.e.*, TV Channels 2-51, after the transition. We propose a co-primary allocation for the fixed, mobile, and broadcasting services for this 48 megahertz band. This flexible allocation will enable service providers to select the technology they wish to use to provide new broadband services in order to make the best use of this spectrum. We also examine possible licensing, operating, and competitive bidding rules for wireless and other services in this spectrum band. We anticipate that licenses will be assigned by competitive bidding consistent with statutory requirements.<sup>1</sup> We also consider measures to protect the incumbent analog and digital broadcast television services from interference until the transition to digital television is complete. We believe these measures will enable an orderly transition for broadcasters while permitting the introduction of new services into the band.

## II. BACKGROUND

2. Section 309(j)(14) of the Communications Act of 1934, as amended (“Communications Act”) requires the Commission to assign spectrum recaptured from broadcast television as a result of the transition from analog to digital transmission systems by competitive bidding.<sup>2</sup> Section 309(j)(14)(C)(ii) states that the Commission shall assign licenses and report to the Congress the total revenues from such competitive bidding by September 30, 2002.<sup>3</sup> The statute requires that analog broadcasters cease operation on the recaptured spectrum in 2006 unless certain service penetration criteria are met.<sup>4</sup> Specifically, the statute

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<sup>1</sup> See Balanced Budget Act of 1997, Pub. L. No. 105-33, 111 Stat. 251 § 3003 (1997) (adding new Section 309(j)(14) to the Communications Act of 1934, as amended) (“BBA 97”); § 3007 (uncodified, reproduced at 47 U.S.C. § 309(j) note 3).

<sup>2</sup> See 47 U.S.C. § 309(j)(14)(C)(ii).

<sup>3</sup> *Id.*

<sup>4</sup> See *id.* § 309(j)(14)(A)-(B). The DTV transition will end December 31, 2006, but may be extended in some markets pursuant to Section 309(j)(14)(B) as follows:

The Commission shall extend the date [of the DTV transition period] for any station that requests such extension in any television market if the Commission finds that –

(i) one or more of the stations in such market that are licensed to or affiliated with one of the four largest national television networks are not broadcasting a digital television service signal, and the Commission finds that each such station has exercised due diligence and satisfies the conditions for an extension of the Commission’s applicable construction deadlines for digital television service in that market;

(ii) digital-to-analog converter technology is not generally available in such market; or

(iii) in any market in which an extension is not available under clause (i) or (ii), 15 percent or more of the television households in such market – (I) do not subscribe to a multichannel video programming distributor (as defined in section 602) that carries one of the digital television service programming channels

(continued....)

requires the Commission to extend the end of the transition on a market-by-market basis if one or more of the four largest network stations or affiliates are not broadcasting in digital, digital-to-analog converter technology is not generally available, or 15% or more television households are not receiving a digital signal.<sup>5</sup> Thus, while the end of the transition is targeted for 2006, and may extend beyond that date, the Commission must reallocate spectrum and assign commercial licenses in the encumbered television spectrum by September 30, 2002.<sup>6</sup> Therefore, auction of this spectrum for new services will occur a number of years in advance of the end of the digital transition, during which period, the incumbent broadcasters may continue to operate in the band. New licensees may operate in the band prior to the end of the transition to the extent they do not cause interference to existing analog and digital broadcasters.<sup>7</sup>

3. Under Section 309(j)(3) of the Communications Act, in developing a competitive bidding methodology and specifying the characteristics of licenses to be assigned by auction, we are required to promote a number of objectives, including the development and rapid deployment of new technologies, products, and services for the benefit of the public, the promotion of economic opportunity and competition, the recovery of a portion of the value of the spectrum made available for commercial use, and the efficient and intensive use of the spectrum, in a manner that provides adequate time for interested parties to develop their business plans.<sup>8</sup> Our regulations shall prescribe area designations and bandwidth assignments that promote (a) equitable distribution of licenses and services among geographic areas, (b) economic opportunity for a wide variety of applicants, including small businesses, rural telephone companies, and businesses owned by members of minority groups and women, and (c) investment in and rapid deployment of new technologies and services.<sup>9</sup>

4. Section 303(y)(2) of the Communications Act authorizes the Commission to allocate spectrum to provide flexibility of use if certain conditions are met.<sup>10</sup> Specifically, the Commission must make affirmative findings that such flexibility: (1) is consistent with international agreements; (2) would be in the public interest; (3) would not deter investment in communications services and systems, or technology

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of each of the television stations broadcasting such a channel in such market; and (II) do not have either – (a) at least one television receiver capable of receiving the digital television service of the television stations licensed in such market; or (b) at least one television receiver of analog television service signals equipped with digital-to-analog converter technology capable of receiving the digital television service signals of the television stations licensed in such market.

<sup>5</sup> See *id.* § 309(j)(14)(B)

<sup>6</sup> See BBA 97, *supra* note 1, §§ 3003, 3007.

<sup>7</sup> See Advanced Television Systems and Their Impact upon the Existing Television Broadcast Service, MM Docket No. 87-268, *Sixth Report and Order*, 12 FCC Rcd 14588, 14626-27, ¶ 80 (1997) (*DTV Sixth Report and Order*).

<sup>8</sup> See 47 U.S.C. § 309(j)(3)(A)-(E).

<sup>9</sup> *Id.* § 309(j)(4). We must also consider other factors, including payment schedules, performance requirements, the use of bidding preferences, and the use of a reserve price or minimum bid.

<sup>10</sup> See *id.* § 303(y)(2).

development; and (4) would not result in harmful interference among users.<sup>11</sup>

5. Pursuant to legislative mandates, the Commission is requiring that the broadcast television service convert from the existing analog television transmission system to a new digital television system that will allow broadcasters the flexibility to provide a variety of new services, including high definition television service, multicasting of multiple programs, data services and other enhancements.<sup>12</sup> Broadcasters have been provided a second channel to operate their DTV service during the transition from analog to digital service.<sup>13</sup> At the end of this transition, analog service will cease and one of each broadcaster's two channels will be recovered.<sup>14</sup> Because the DTV transmission system is more spectrally efficient than the analog system, less spectrum will be needed for broadcast television service after the transition.<sup>15</sup> A portion of the TV spectrum, *i.e.*, Channels 52-69, is therefore being recovered for new uses. Spectrum currently allocated to Channels 2-51 will remain "core" television broadcast spectrum. Analog services on all TV Channels will cease operations at the end of the transition. Digital services on out-of-core stations will be relocated into the core spectrum (Channels 2-51).

6. We are addressing the spectrum reclamation in two parts – Channels 60-69 ("Upper 700 MHz Band" or "746-806 MHz band") and Channels 52-59 ("Lower 700 MHz Band" or "698-746 MHz band") primarily as a result of unique statutory requirements and varying degrees of incumbency. When we adopted the DTV Table of Allotments in the *DTV Sixth Report and Order*, we differentiated between these two bands, remarking that: "[t]he Table will also provide for early recovery of 60 MHz of spectrum (Channels

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<sup>11</sup> *Id.*

<sup>12</sup> See generally *Advanced Television Systems and Their Impact upon the Existing Television Broadcast Service*, MM Docket No. 87-268, *Second Memorandum Opinion and Order on Reconsideration of the Fifth and Sixth Report and Orders*, 14 FCC Rcd 1348 (1998) (*DTV Second MO&O of the Fifth and Sixth Report and Orders*); *Advanced Television Systems and Their Impact upon the Existing Television Broadcast Service*, MM Docket No. 87-268, *Memorandum Opinion and Order on Reconsideration of the Sixth Report and Order*, 13 FCC Rcd 7418 (1998) (*DTV MO&O of the Sixth Report and Order*); *Advanced Television Systems and Their Impact upon the Existing Television Broadcast Service*, MM Docket No. 87-268, *Memorandum Opinion and Order on Reconsideration of the Fifth Report and Order*, 13 FCC Rcd 6860 (1998) (*DTV MO&O of the Fifth Report and Order*); *DTV Sixth Report and Order*, 12 FCC Rcd 14588; *Advanced Television Systems and Their Impact upon the Existing Television Broadcast Service*, MM Docket No. 87-268, *Fifth Report and Order*, 12 FCC Rcd 12809 (1997) (*DTV Fifth Report and Order*) (collectively *DTV Proceeding*).

<sup>13</sup> See, e.g., *DTV Fifth Report and Order*, 12 FCC Rcd at 12812-13, ¶ 8.

<sup>14</sup> See generally *id.* at 12848-51, ¶¶ 94-100; *DTV Sixth Report and Order*, 12 FCC Rcd at 14590-93, ¶¶ 1-7.

<sup>15</sup> The DTV transmission system is more spectrally efficient because it allows DTV stations to provide the same geographic coverage as an analog station, but with significantly less power, and because it precludes the use of the same and other channels at nearby locations to a lesser extent than for analog television transmissions. DTV-to-DTV protection requirements are limited to co-channel and first adjacent channel protection while analog-to-analog involves protection to stations operating on a number of other related channels as well. As a result, the DTV transmission system allows stations to be allotted with reduced related channel protection for UHF receivers. The UHF related channel protection requirements for analog service are set forth in Section 73.698 of the Commission's rules. See 47 C.F.R. § 73.698.

60-69) and recovery of [] additional ... spectrum at the end of the [DTV] transition period.”<sup>16</sup> The Commission’s early recovery policies for Channels 60-69 were predicated on the urgent need for additional spectrum by other services, particularly to meet the needs of public safety and other land mobile services.<sup>17</sup> Given the relatively light use for full service broadcasting and the proximity of existing land mobile communications systems to Channels 60-69, the Commission concluded that equipment economies and enhanced interoperability between future public safety services and current systems operating in the 800 MHz band supported early recovery.<sup>18</sup> The DTV Table also, *inter alia*, facilitates the early recovery of Channels 60-69 by minimizing the use of these channels for DTV purposes.<sup>19</sup> Subsequently, the BBA 97 was enacted which mandated that the Commission reallocate Channels 60-69 to new public safety and commercial services by January 1998.<sup>20</sup> In ET Docket 97-157, the Commission reallocated the 746-806 MHz (TV Channels 60-69) band for new services. As required by statute, it reallocated 24 megahertz for public safety and 36 megahertz for new commercial services.<sup>21</sup> Assignment by competitive bidding for six megahertz of this spectrum has been completed<sup>22</sup> and auction of the remaining 30 megahertz is currently planned for later this year.<sup>23</sup>

7. Recovery of additional spectrum beyond the 746-806 MHz band (TV Channels 60-69) was planned for the end of the digital transition.<sup>24</sup> Thus, early recovery of the 698-746 MHz band (TV Channels 52-59) was not contemplated in the DTV transition plan. This band is significantly more encumbered with TV operations.<sup>25</sup> Further, both the Congress and the Commission initially expected to license the Lower 700

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<sup>16</sup> *DTV Sixth Report and Order*, 12 FCC Rcd at 14590, ¶ 1. *See also id.* at 14624-25, ¶ 76 (“[W]e believe that the public interest is best served by developing a Table of DTV Allotments that meets the DTV spectrum needs of broadcasters during the transition; facilitates the early recovery of spectrum from channels 60 to 69; and also facilitates the eventual recovery of 138 MHz of spectrum currently being used for analog broadcasting.”).

<sup>17</sup> *See id.* at 14626, ¶ 79.

<sup>18</sup> *See Reallocation of Television Channels 60-69, the 746-806 MHz Band*, ET Docket No. 97-157, *Notice of Proposed Rulemaking*, 12 FCC Rcd 14141, 14142, ¶ 3 (1997) (*Upper 700 MHz Reallocation Notice*).

<sup>19</sup> *Id.*

<sup>20</sup> *See BBA 97 supra* note 1.

<sup>21</sup> *See generally Upper 700 MHz Reallocation Notice*, 12 FCC Rcd 14141.

<sup>22</sup> *See 700 MHz Guard Bands Auction Closes: Winning Bidders Announced*, *Public Notice*, DA 00-2154 (rel. Sep. 25, 2000); *700 MHz Guard Bands Auction Closes: Winning Bidders Announced*, *Public Notice*, DA 01-178 (rel. Feb. 22, 2001).

<sup>23</sup> *Auction of Licenses for the 747-762 and 777-792 MHz Bands Postponed Until September 12, 2001*, *Public Notice*, Report No. AUC-01-31-A, DA 01-266 (rel. Jan. 31, 2001).

<sup>24</sup> *See DTV Sixth Report and Order*, 12 FCC Rcd at 14590, ¶ 1.

<sup>25</sup> *See id.* at 14609, ¶ 37. The NTSC incumbents and pending applications on Channels 52-59 include 89 licenses, 12 construction permits, and applications and allotment petitions for 57 new stations. The DTV incumbents and allotment petitions on Channels 52-59 include 17 licenses, 95 construction permits, and 53 applications. The (continued....)

MHz subsequent to the auction of the Upper 700 MHz Band.<sup>26</sup> Congress did not specify in the statute the amount of spectrum the Commission must reclaim beyond Channels 60-69. The Commission determined that broadcasters could operate with digital transmission systems in Channels 2-51 and therefore Channels 52-59 could be reclaimed for new services.<sup>27</sup>

### III. DISCUSSION

8. Our framework for consideration of both allocation and service rules for the Lower 700 MHz Band is modeled on our approach in the Upper 700 MHz proceeding.<sup>28</sup> In this Notice, we address a number of issues similar to those we addressed in the Upper 700 MHz proceeding. We seek comment generally on whether the considerations that we found to be appropriate for the 746-806 MHz bands are equally applicable to the Lower 700 MHz spectrum once it has been reallocated, or whether, given the differences in the two bands, we should apply other approaches.

#### A. Allocation Proceeding

##### 1. Reallocation

9. In recent years, there has been tremendous growth in new wireless services and demand for

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LPTV incumbents and pending applications on Channels 52-59 include 835 licensees, 244 construction permits, and 607 applications.

<sup>26</sup> The BBA 97 directed the Commission to reallocate certain portions of the Upper 700 MHz spectrum from broadcast use to commercial use by December 31, 1997, *see* 47 U.S.C. § 337(a) (as added by § 3004 of the BBA 97), but not to commence competitive bidding for the commercial licenses on the reallocated spectrum before January 1, 2001, (*see* 47 U.S.C. § 337(b)(2)). That deadline was subsequently accelerated. *See* Consolidated Appropriations Act, 2000, Pub. L. No. 106-113, 113 Stat. 2502, app. E, § 213; 145 Cong. Rec. H12493-94 (Nov. 17, 1999) (“Consolidated Appropriations Act”). By contrast, the statutory deadline of September 30, 2002 has remained unchanged since it was first enacted in the BBA 97. *See* 47 U.S.C. § 309(j)(14)(C)(ii); *see also* BBA 97 § 3007 (reproduced at 47 U.S.C. § 309(j) note 3).

<sup>27</sup> *See DTV MO&O of the Sixth Report and Order*, 13 FCC Rcd at 7435-36, ¶ 42.

<sup>28</sup> *See* Service Rules for the 746-764 and 776-794 MHz Bands, and Revisions to Part 27 of the Commission’s Rules, WT Docket No. 99-168, *Third Report and Order*, FCC 01-25 (rel. Jan. 23, 2001) (*Upper 700 MHz Third Report and Order*); Service Rules for the 746-764 and 776-794 MHz Bands, and Revisions to Part 27 of the Commission’s Rules, WT Docket No. 99-168, *Second Memorandum Opinion and Order*, FCC 01-2 (rel. Jan. 12, 2001) (*Upper 700 MHz Second MO&O*); Service Rules for the 746-764 and 776-794 MHz Bands, and Revisions to Part 27 of the Commission’s Rules, WT Docket No. 99-168, *Memorandum Opinion and Order and Further Notice of Proposed Rulemaking*, FCC 00-224 (rel. June 30, 2000) (*Upper 700 MHz MO&O and FNPRM*); Service Rules for the 746-764 and 776-794 MHz Bands, and Revisions to Part 27 of the Commission’s Rules, WT Docket No. 99-168, *Second Report and Order*, 15 FCC Rcd 5299 (2000) (*Upper 700 MHz Second Report and Order*); Service Rules for the 746-764 and 776-794 MHz Bands, and Revisions to Part 27 of the Commission’s Rules, WT Docket No. 99-168, *First Report and Order*, 15 FCC Rcd 476 (2000) (*Upper 700 MHz First Report and Order*); Service Rules for the 746-764 and 776-794 MHz Bands, and Revisions to Part 27 of the Commission’s Rules, WT Docket No. 99-168, *Notice of Proposed Rulemaking*, 14 FCC Rcd 11006 (1999) (collectively “Upper 700 MHz proceeding”).

spectrum.<sup>29</sup> Notwithstanding the introduction of more efficient digital technologies that increase the potential capacity of spectrum to provide communications services, continuing expectations regarding increased demand raise the concern that spectrum may be a limiting factor for new technology and services. In the United States, virtually all spectrum, particularly in the most sought after bands below 3 GHz, has been assigned to various services. Consequently, with the exception of several small bandwidth segments of only a few megahertz each that are not sufficient to support high volume operations, there is very little unencumbered spectrum available for new uses or users. In order to provide spectrum for new services, we now have to find ways for such services to share spectrum with existing services or to reallocate spectrum from existing services to new services and technologies. In the latter case, we have sometimes implemented plans that relocate incumbent operations to other, generally higher frequency bands, and other times simply reduced the amount of bandwidth available for a service.<sup>30</sup>

10. The transition to digital television and resulting spectrum reclamation is a prime example of the types of activities the Commission has undertaken to make new spectrum available. As a result of more spectrally efficient digital technology, the Commission is able to reduce the amount of spectrum currently allocated to broadcasting by 108 megahertz. This transition is a significant undertaking. In order to facilitate the transition, we must balance the desire for new services with the significant investment and planning required by the broadcasters to build new digital facilities and relocate operations.

11. As previously noted, the Commission has anticipated, given the degree of incumbency, that this band likely would remain principally a television band until the end of the digital transition. However, given the statutory requirement to auction this spectrum several years in advance of the end of the transition, we seek comment generally on our reallocation plans and service rules necessary to license the spectrum consistent with the Congressional mandate. We also seek comment on whether we should consider ways to facilitate the DTV transition and the availability of this band to auction bidders sooner. In making proposals, commenters should address consistency with the statutory requirements of Section 309(j)(14) and other relevant provisions of the Communications Act.

#### **a. Current Allocation**

12. Domestically, the 698-746 MHz band is currently allocated on a primary basis to non-government broadcasting, *i.e.*, TV Channels 52-59, each having a bandwidth of six megahertz. TV broadcast

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<sup>29</sup> See generally Principles for Reallocation of Spectrum to Encourage the Development of Telecommunications Technologies for the New Millennium, *Policy Statement*, 14 FCC Rcd 19868 (1999) (*Spectrum Reallocation Policy Statement*); Principles for Promoting the Efficient Use of Spectrum by Encouraging the Development of Secondary Markets, *Policy Statement*, FCC 00-401 (rel. Dec. 1, 2000) (*Secondary Markets Policy Statement*).

<sup>30</sup> See, e.g., Redevelopment of Spectrum to Encourage Innovation in the Use of New Telecommunications Technologies, ET Docket No. 92-9, *First Report and Order and Third Notice of Proposed Rulemaking*, 7 FCC Rcd 6886 (1992) (relocation of 2 GHz fixed microwave services to available frequencies in higher bands or alternative media); Amendment of Section 2.106 of the Commission's Rules to Allocate Spectrum at 2 GHz for Use by the Mobile-Satellite Service, ET Docket No. 95-18, *Second Report and Order and Second Memorandum Opinion and Order*, 15 FCC Rcd 12315 (2000) (reducing spectrum allocation for Broadcast Auxiliary Service from 120 megahertz to a total of 85 megahertz at 2025-2110 MHz).

services are also permitted to use TV subcarrier frequencies, and more generally the TV channel, on a secondary basis for other broadcast-related (e.g., datacasting) and non-broadcast purposes.<sup>31</sup> Further, the band is allocated to the fixed service for subscription television operations in accordance with Part 73 of our rules.<sup>32</sup> Internationally, the band is allocated worldwide on a primary basis to the broadcasting service. The band is also allocated to the fixed and mobile services in Region 2 (which includes the United States) on a secondary basis and in Region 3 on a co-primary basis.<sup>33</sup> A footnote to the International Table of Frequency Allocations elevates the allocation to the fixed and mobile services to primary status in the United States, Mexico, and several other Region 2 countries, but has not been implemented domestically.<sup>34</sup>

13. In its 1999 *Spectrum Reallocation Policy Statement*, the Commission noted that it planned to consider reallocating the 698-746 MHz band for Fixed, Mobile and new Broadcast services for commercial uses following the same approach it adopted for reallocating the 36 megahertz at 746-764 MHz and 776-794 MHz.<sup>35</sup> In the Commission's recently adopted *3G Notice on Advanced Fixed and Mobile Services*, the 698-746 MHz band was identified as a possible candidate for third-generation ("3G") mobile services.<sup>36</sup> Further, a resolution adopted at World Radiocommunication Conference ("WRC")-2000 recognized that some administrations may use the 698-746 MHz band for 3G services.<sup>37</sup> At WRC-2000, the United States proposed that the 698-746 MHz band be identified as one of several candidate bands for the terrestrial component of International Mobile Telecommunications ("IMT")-2000 (3G) and other advanced communication applications.<sup>38</sup>

#### **b. Fixed, Mobile, and Broadcast Allocation**

14. Consistent with our *Spectrum Reallocation Policy Statement*, the allocation for the 746-806 MHz band, and U.S. positions taken at WRC, we propose to reallocate the entire 48 megahertz of spectrum in the 698-746 MHz band to the fixed and mobile services, and retain the existing broadcast allocation. Consistent with this proposal, we also make editorial modifications to Footnote NG 159 to the Table of Allocations.<sup>39</sup>

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<sup>31</sup> See 47 C.F.R. § 2.106 note NG128.

<sup>32</sup> See *id.* § 2.106 note NG149.

<sup>33</sup> *Id.*

<sup>34</sup> *Id.* § 2.106 note S5.293.

<sup>35</sup> See *Spectrum Reallocation Policy Statement*, 14 FCC Rcd at 19879-80, ¶ 25.

<sup>36</sup> See 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, ET Docket No. 00-258, *Notice of Proposed Rulemaking*, FCC 00-455 (rel. Jan. 5, 2001) app. D (*3G Notice*).

<sup>37</sup> *Id.* at ¶ 38.

<sup>38</sup> See *International Telecommunications Union Final Acts of the World Radiocommunication Conference (WRC-2000)*, Istanbul, 2000.

<sup>39</sup> Proposed rule changes to the Table of Frequency Allocations are set forth in Appendix A to this Notice.

This allocation will support a family of services, including next generation broadband operations, and permit the maximum diversity in service offerings and the broadest licensee discretion, consistent with international allocations. This spectrum is located near spectrum now used for cellular radio telephone and other land mobile services, and it could be used to expand the capacities of these services. Other possible applications for this spectrum include wireless local loop telephone service, video and multimedia applications, and industrial communications services. Additionally, under our proposal, parties would be able to obtain licenses in this spectrum to offer broadcasting services. We request comment on whether this broad allocation is appropriate, or whether some other allocation would better serve the public interest. We also seek comment with respect to each of the findings required under Section 303(y) with respect to our proposed allocation of the 698-746 MHz band.<sup>40</sup>

### c. Special Considerations for Broadcast Allocation

15. The DTV transition plan anticipates that broadcasters will vacate this spectrum by the end of the DTV transition period. For this reason, we would distinguish between broadcasters authorized pursuant to the current allocation and service rules from new licensees who may provide broadcasting service. New licensees will be subject to the rules we will adopt for the regulation of the reallocated spectrum. Broadcasters authorized under the current rules are entitled to protection or accommodation from new licensees and will have to vacate this spectrum by the end of the transition period. We envision that new broadcast services that may find this band attractive could include two-way interactive, cellular, and mobile television broadcasting services. For example, a number of existing broadcasters and others have expressed interest in operating DTV services with a coded orthogonal frequency division multiplex (COFDM) modulation system that they believe would support mobile television services. This allocation could provide opportunities for these parties to operate such services.

16. At the end of the transition, television broadcasting will remain adjacent to the 698-746 MHz band on channel 51.<sup>41</sup> While we will consider issues such as field strength limitations in our service rules, we seek comment on whether restrictions to the allocation are necessary to protect adjacent channel broadcast television operations. For example, should we consider a guard band or a separate allocation at the lower end of the band limited to low power services? Alternatively, would the 698-746 MHz band be more useful for fixed services than mobile services in light of the high number of incumbent broadcasters that operate on the spectrum? In this regard, the comments should address whether fixed services may be more successful than mobile services in structuring their systems to avoid interference with incumbent broadcasters, and thus be able to use the spectrum more efficiently. We are also concerned about the effects of adjacent channel television broadcasting on low power mobile operations in the 698-746 MHz band, for example mobile receive antennas.<sup>42</sup> We seek comment on whether we should adjust our allocation to perhaps minimize the presence of systems with low immunity to high-powered signals.

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<sup>40</sup> See, e.g., *supra* para. 4.

<sup>41</sup> This will include both full power and Class A low power television stations. Class A is a subset of low power television defined by the Community Broadcast Protection Act of 1999.

<sup>42</sup> See, e.g., Broadcast Corporation of Georgia (WVEU-TV) Atlanta, Georgia, for Authority to Resume Full Power Operations, *Memorandum Opinion and Order*, 55 Rad. Reg. 2d (P&F) 854 (Mar. 8, 1984).

#### d. Low Power Television Service

17. The low power television ("LPTV") service currently operates on a secondary basis in the 698-746 MHz band. Thus, LPTV stations are allowed to operate to the extent they do not interfere with full power stations. In our *DTV Proceeding*, we determined that there is insufficient spectrum to preserve all existing LPTV and TV translator stations, and decided that LPTV and TV translator stations will retain their secondary allocation status.<sup>43</sup> In the 746-806 MHz proceeding, we permitted continuing operations on a secondary basis for existing low power services in that band. At the end of the transition, low power television will be required to cease operations on these frequencies. In the *DTV Proceeding*, we amended our rules to permit all LPTV stations on Channels 60 to 69 to file displacement relief applications at any time requesting a channel below Channel 60, even where there is no predicted or actual interference conflict.<sup>44</sup>

18. We subsequently extended the presumption of displacement to LPTV stations and TV translators authorized on Channels 52-59.<sup>45</sup> Because we did not anticipate recovery of the 698-746 MHz band prior to the end of the transition, we did not specifically address the status of LPTV vis-à-vis new service providers prior to the end of the transition. Nor did we address whether LPTV stations should be permitted to operate in this band after the end of the transition. Section 337(e)(2) of the Communications Act states that after allocating the 746-806 MHz band "the Commission shall seek to assure, consistent with the Commission's plan for allotments for digital television service, that each qualifying low-power television station is assigned a frequency below 746 MHz to permit the continued operation of such station."<sup>46</sup> As a result, we believe that low power television should be permitted to continue to operate on the 698-746 MHz band on a secondary basis. Accordingly, we propose that LPTV and TV translator stations not be permitted to cause harmful interference to stations of primary services, including new licensees in Channels 52-59, and cannot claim protection from harmful interference from stations of primary services, including new licensees in Channels 52-59. However, as set forth in the *DTV Sixth Report and Order*, we propose that LPTV and TV translator operations will not be required to alter or cease their operations until they actually cause interference to a DTV station or new service provider's operations in the 698-746 MHz band.<sup>47</sup> Further, as we did in the 746-806 MHz band, we propose that LPTV stations be permitted to negotiate interference agreements with new service providers.<sup>48</sup> We note that it may be possible for many low power stations operating on Channels 52-59 to co-exist with new service operations on a non-interfering basis. For example, in certain regions of the country, such as rural areas and the western mountainous states, LPTV stations and TV translators may not be affected by new service operations, at least not in the near future. Although we recognize that LPTV and TV translator stations retain this secondary status, we seek comment on these proposals and any additional

<sup>43</sup> See, e.g., *DTV Sixth Report and Order*, 12 FCC Rcd at 14595, 14627, 14652-53, ¶¶ 11, 81, 141-42.

<sup>44</sup> See *DTV MO&O of the Sixth Report and Order*, 13 FCC Rcd at 7465-66, ¶ 116.

<sup>45</sup> See *Establishment of a Class A Television Service*, MM Docket No. 00-10, *Report and Order*, 15 FCC Rcd 6355, 6395-96, ¶ 100 (2000).

<sup>46</sup> 47 U.S.C. § 337(e)(2).

<sup>47</sup> See *DTV Sixth Report and Order*, 12 FCC Rcd at 14652-53, ¶ 142.

<sup>48</sup> See *Reallocation of Television Channels 60-69, The 746-806 MHz Band*, ET Docket No. 97-157, *Report and Order*, 12 FCC Rcd 22953, 22966, ¶ 27 (1998) (*Upper 700 MHz Reallocation Order*).

considerations that might mitigate the impact on low power operations on Channels 52-59 during the transition period.

### e. Satellite Services

19. While we are not making a specific proposal at this time concerning an allocation in this band for satellite services, we also seek comment on this issue. The 698-746 MHz band could possibly be used for satellite uplink transmissions.<sup>49</sup> While there may be significant constraints on such uses because of the existing high-powered transmitters in this band, several satellite systems utilize technologies that may make satellite operations possible. We seek comment on whether satellite operations, including satellite feeder link operations, which typically involve a limited number of earth station locations, are technically feasible in this band. In addition, while the BBA 97 requires that we assign spectrum reclaimed from broadcasters as a result of the digital transition by competitive bidding,<sup>50</sup> subsequently-enacted legislation restricts the use of competitive bidding to license spectrum used for the provision of certain international satellite services.<sup>51</sup> We seek comment on whether these statutory provisions would affect our ability to allocate spectrum for flexible uses that would include the ability to deploy satellite services' subject to appropriate interference and other technical limitations.<sup>52</sup>

## 2. Transition Issues

### a. Incumbent Broadcasters

20. As noted above, incumbent broadcasters may remain on the 698-746 MHz band until the end of the digital transition targeted for 2006. The target date of 2006 may be extended for several years depending

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<sup>49</sup> The International Telecommunication Union ("ITU") is currently studying whether additional spectrum can be made available for use by systems in the mobile satellite service, and this matter is on the agenda for the WRC in 2003. See ITU Resolution 214 (Rev. WRC-2000), "Sharing studies relating to consideration of the allocation of bands below 1 GHz to the non-geostationary mobile-satellite service" (urging studies on sharing between non-geostationary mobile satellite and other services in frequencies below 1 GHz); ITU Resolution 800 (WRC-2000), "Agenda for the 2003 World Radiocommunication Conference," *resolves* 1.20; *cf.* ITU Resolution 728 (Rev. WRC-2000), "Studies relating to consideration of allocations in the band 470-862 MHz to non-geostationary mobile-satellite services." See also ITU Radio Regulations S5.311.

<sup>50</sup> 47 U.S.C. § 309(j)(14)(C).

<sup>51</sup> See *Open-Market Reorganization for the Betterment of International Telecommunications Act*, Pub. L. No. 106-180, 114 Stat. 48 (2000) ("ORBIT Act"). Specifically, Section 647 of the ORBIT Act provides:

Notwithstanding any other provision of law, the Commission shall not have the authority to assign by competitive bidding orbital locations or spectrum used for the provision of international or global satellite communications services. The President shall oppose in the International Telecommunication Union and in other bilateral and multilateral fora any assignment by competitive bidding of orbital locations and or spectrum used for provision of such services.

<sup>52</sup> *Cf.* Amendment of the Commission's Rules with Regard to the 3650-3700 MHz Government Transfer Band, ET Docket No. 98-237, *First Report and Order and Second Notice of Proposed Rulemaking*, FCC 00-363 (rel. Oct. 24, 2000) (*3650-3700 MHz First Report and Order*).

on DTV consumer penetration levels.<sup>53</sup> Upon completion of the transition, analog service will cease and the digital incumbents will be relocated into the "core" spectrum (Channels 2-51). The significant degree of incumbency will pose considerable challenges to the provision of viable new commercial services prior to the end of the transition.<sup>54</sup> We seek comment generally on how we can further the viability of auction of this spectrum consistent with our statutory obligations and sound principles of spectrum management.

**(i) Analog Stations**

21. Currently, there are 89 licensed full service NTSC analog stations and 12 approved analog construction permits on the 698-746 MHz band. For the 746-806 MHz band, we concluded that stations for which a construction permit has been granted are sufficiently far enough along the licensing process that they should be treated the same as operating TV stations and receive protection from new service providers during the DTV transition period.<sup>55</sup> The Commission has established a three-year construction requirement to ensure that holders of construction permits, both for new facilities and modification of existing facilities, progress in construction.<sup>56</sup> We propose to treat construction permits in the 698-746 MHz band in the same manner we adopted in the 746-806 MHz band and seek comment on this proposal.

22. In the *DTV Sixth Further Notice*, in order to accommodate parties who were in the process of preparing applications, we established a final opportunity for the filing of new applications for analog stations for vacant allotments.<sup>57</sup> This filing period closed on September 20, 1996. Subsequently, the Commission established a second filing period to allow persons with certain pending requests for new analog stations to modify their requests, if possible, to eliminate technical conflicts with DTV stations and to move from Channels 60-69.<sup>58</sup> This second filing period opened on November 22, 1999 and closed on July 17, 2000.<sup>59</sup> Applications could be submitted during this filing window for (1) amendments (other than channel

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<sup>53</sup> See *supra* para. 2.

<sup>54</sup> Maps showing the Grade B contours of all co-channel and adjacent channel TV stations on Channels 52-59 in the United States are set forth in Appendix B to this Notice.

<sup>55</sup> See *Upper 700 MHz Reallocation Order*, 12 FCC Rcd at 22969, ¶ 35.

<sup>56</sup> 47 C.F.R. § 73.3598.

<sup>57</sup> See *Advanced Television Systems and Their Impact upon the Existing Television Broadcast Service*, MM Docket No. 87-268, *Sixth Further Notice of Proposed Rule Making*, 11 FCC Rcd 10968 (1996) (*DTV Sixth Further Notice*). The adoption date of this Notice (July 25, 1996) was the last opportunity to file petitions to add analog channels to the TV Table of Allotments. The application filing deadline (September 20, 1996) was established as 30 days after publication of the Notice in the Federal Register. Regarding these applications, we decided to continue our "cut-off" process for accepting competing applications. We also decided to continue the policy of considering requests for waiver of the 1987 freeze Order on a case-by-case basis. See *Order*, RM 5811, Mimeo No. 4074 (rel. July 17, 1987).

<sup>58</sup> See *Mass Media Bureau Announces Window Filing Opportunity for Certain Pending Applications and Allotment Petitions for New Analog TV Stations*, *Public Notice*, 14 FCC Rcd 19559 (1999) (*Analog TV Filing PN*).

<sup>59</sup> See *Window Filing Opportunity for Certain Pending Applications and Allotment Petitions for New Analog TV Stations Extended to July 15, 2000*, *Public Notice*, 15 FCC Rcd 4974 (2000).

changes) to pending applications for new full-service NTSC television stations on Channel 2-59, (2) petitions for rule making seeking a new channel below Channel 60 for those applicants with pending applications for new full-service NTSC television stations on Channels 60-69, (3) petitions for rule making seeking a new channel below channel 60 for those applicants with pending applications for new full-service NTSC television stations on Channels 2-59 at locations inside of the "TV Freeze Areas" and (4) amendments to pending rule making petitions to amend the TV Table of Allotments to add NTSC television allotments.<sup>60</sup>

23. There are pending requests for approximately 57 new NTSC stations in this band, either with applications or allotment petitions originally filed during the filing windows established by the Commission. Some of the requests have been pending on these channels since they were filed, while others were amended to specify a channel in this band under procedures announced in Public Notice DA 99-2605. Previously, those new station proposals had been for stations on Channels 2 through 59 at locations where they would have conflicted with one or more DTV allotments or for use of TV Channels 60 through 69. The Commission recognized that those persons with pending applications and/or petitions for new full-service NTSC television stations on those channels had already invested time, money and effort into their applications and petitions.<sup>61</sup> Therefore, the Commission stated that it would not summarily terminate the pending applications and petitions, and it would, at a later date, provide applicants and petitioners an opportunity to amend their applications and petitions, if possible, to a channel below Channel 60.<sup>62</sup>

24. We recognize that continuing to process these applications could result in greater incumbency on the 698-746 MHz band, which may make new service operations more difficult. This band was originally intended to remain principally a television band until the end of the transition and we recognize that it may be inequitable not to process these applications, or a subset of them.<sup>63</sup> In addition, given the significant number of analog and DTV incumbents that already exist on this band, the impact on the provision of new services may be marginal. Therefore, while we do not direct the Mass Media Bureau to suspend processing of applications (with the exception of stations on Channel 59) for new analog stations, we seek comment on our ultimate treatment of the remaining pending applications. For example, we seek comment on whether there are stronger equities for continuing to process any particular subcategory of these pending applications.<sup>64</sup> In addition, if such applications are granted, we seek comment on whether we could require

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<sup>60</sup> See *Analog TV Filing PN*, 14 FCC Rcd 19559.

<sup>61</sup> *Id.*; *DTV Second MO&O of the Fifth and Sixth Report and Orders*, 14 FCC Rcd at 1367-68, 1369, ¶¶ 40-42, 45; *Upper 700 MHz Reallocation Order*, 12 FCC Rcd at 22971-72, ¶ 40.

<sup>62</sup> See *Analog TV Filing PN*, 14 FCC Rcd 19559; *DTV Second MO&O of the Fifth and Sixth Report and Orders*, 14 FCC Rcd at 1367-68, 1369, ¶¶ 40-42, 45; *Upper 700 MHz Reallocation Order*, 12 FCC Rcd at 22971-72, ¶ 40.

<sup>63</sup> *DTV Sixth Report and Order*, 12 FCC Rcd at 14590, ¶ 1.

<sup>64</sup> If granted, a new station would be grandfathered under the existing broadcast allocation and service rules and would be afforded the same protection as existing NTSC stations, *i.e.*, new services would have to protect the TV broadcast station until the end of the transition. Any of the pending applications granted would have no paired allotment for a DTV channel and would be required to cease analog operations at the end of the DTV transition period. These NTSC stations could also initially operate as digital stations or convert to DTV service during the transition. In either case, the Commission would need to identify in-core relocation channels for their continued operation with DTV (continued....)

these stations to transition to available frequencies below 698 MHz by a date certain, *i.e.*, 2006, to ensure that these stations do not encumber the provision of new services. We particularly seek comment on whether such a requirement would be consistent with our statutory requirements in Section 309(j)(14) of the Communications Act.<sup>65</sup> We also seek comment on whether these applicants (or a particular subset thereof) should be allowed to amend their pending applications through a channel allotment rule making petition to specify a new digital channel in the core that may become available later. With regard to applications pending for stations on Channel 59, we believe that granting more analog station licenses could impact the licensing of new services in the Upper 700 MHz Band due to adjacent channel interference problems.<sup>66</sup> Therefore, for the pendency of this rulemaking proceeding, we direct the Mass Media Bureau to suspend processing of applications and channel allotment petitions for new analog stations on Channel 59, but to allow limited amendments to specify another channel, if available.

### (ii) Digital Stations

25. Because the Commission was unable to accommodate a second digital channel for all broadcasters within the "core" broadcast spectrum, there are a substantial number of digital channels on Channels 52-59 as well. While the planning for the DTV Table of Allotments sought to minimize use of out-of-core channels, it was necessary to make allotments outside this range, particularly in the most congested areas of the country. Thus, there are 165 DTV assignments on Channels 52-59 (includes licenses, construction permits, and pending applications). Also pending, are four DTV allotment petitions filed by entities that originally proposed NTSC operations.

26. While there are roughly the same number of analog stations on Channels 52-59 as there are on Channels 60-69, there are significantly more digital television incumbents. In particular, there are only 20 digital assignments<sup>67</sup> on Channels 60-69 compared to the 165 assignments on Channels 52-59 and this number may increase. As a result, it will be far more difficult for new services to operate on this band, particularly in major metropolitan markets, prior to the end of the transition. In the recently adopted *DTV Periodic Review Order* in the first DTV periodic review, the Commission took steps to try and facilitate the transition so that these incumbents can be relocated.<sup>68</sup> Specifically, the Commission adopted a requirement for broadcasters with both their analog and digital assignments within the "core" to declare the channels they plan to ultimately use after the transition.<sup>69</sup> This will more readily enable the Commission to identify in-core

(Continued from previous page) \_\_\_\_\_  
service after the transition. See *DTV MO&O of the Fifth Report and Order*, 13 FCC Rcd at 6864-66, ¶¶ 10-16. Any grant made during the pendency of this proceeding will, however, be conditioned on the outcome of this proceeding.

<sup>65</sup> 47 U.S.C. § 309(j)(14).

<sup>66</sup> See *Upper 700 MHz First Report and Order*, 15 FCC Rcd at 532-33, ¶ 141; see also *Upper 700 MHz MO&O and FNPRM* at ¶ 57 n.111.

<sup>67</sup> Fourteen stations are located in the continental United States and six stations are located in Puerto Rico.

<sup>68</sup> See *Review of the Commission's Rules and Policies Affecting the Conversion to Digital Television*, MM Docket No. 00-39, *Report and Order and Further Notice of Proposed Rulemaking*, FCC 01-24 (rel. Jan. 19, 2001) (establishing election date of December 31, 2004 for commercial stations and December 31, 2005 for non-commercial stations) (*DTV Periodic Review Order*).

<sup>69</sup> *Id.*

channels for the out-of-core digital assignments currently in Channels 52-69 so that the Commission can clear this spectrum.

(iii) **Low Power Stations**

27. There are currently 835 licenses and 244 construction permits for low power television operations on Channels 52-59. In addition, there are 607 applications pending for new low power stations. Many of these pending applications involve requests for replacement channels by low power stations displaced by DTV stations or seeking to vacate the use of TV Channels 60-69 (746-806 MHz). Section 3004 of the BBA 97 states that anyone holding a television broadcast license in the 746-806 MHz band “may not operate at that frequency after the date on which the digital television transition period terminates, as determined by the Commission.”<sup>70</sup> The Conference Report confirms the plain language of the statute: “The conferees recognize that in clearing this band, the Commission will displace not only full-power licensees but also secondary broadcast services, including low-power licensees and television translator licensees.”<sup>71</sup> In our reallocation proceeding for Channels 60-69, we found that this provision leaves us no latitude in clearing LPTV and TV translator stations from the band at the end of the DTV transition period.<sup>72</sup> Section 3004 of the BBA 97 requires the Commission to “seek to assure” that qualifying LPTV stations are assigned a frequency below 746 MHz (TV Channel 60) to permit their continued operation.<sup>73</sup>

28. Throughout the DTV and related proceedings, we have recognized that the DTV transition and the reallocation of spectrum to other services will have a significant impact on LPTV and TV translators. Further, we have recognized that LPTV operators offer important services to specialized and minority audiences, foreign language communities, and rural areas. In this regard, we adopted a number of rule changes in the *DTV Proceeding* to mitigate the impact on these stations.<sup>74</sup> These rule changes included allowing LPTV stations displaced by new DTV stations to apply for suitable replacement channels; considering such applications on a first-come, first-served basis without subjecting them to competing applications; and technical rule changes to provide additional operating flexibility for low power stations.<sup>75</sup> We also stated that any industry negotiation and coordination efforts must be open to all parties, including LPTV stations.<sup>76</sup> While we are committed in this proceeding to take reasonable additional steps to reduce the impact on such operations, we are obligated to facilitate the DTV transition and to reallocate this spectrum as directed under the BBA 97. We seek comment on whether there are additional measures we should consider for LPTV in the 698-746 MHz band.

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<sup>70</sup> See BBA 97 § 3004 (adding new § 337(e)(1) of the Communications Act).

<sup>71</sup> See H.R. Conf. Rep. No. 105-217, 105<sup>th</sup> Cong., 1<sup>st</sup> Sess. at 580; 143 Cong. Rec. H6029 (daily ed. July 29, 1997).

<sup>72</sup> See *Upper 700 MHz Reallocation Order*, 12 FCC Rcd at 22967, ¶ 29.

<sup>73</sup> See BBA 97 § 3004 (adding new § 337(e)(2) to the Communications Act).

<sup>74</sup> See *DTV Sixth Report and Order*, 12 FCC Rcd at 14652-57, ¶¶ 141-47.

<sup>75</sup> *Id.*

<sup>76</sup> *Id.* at 14671, ¶ 182.

Summary of Channels 52-59 Incumbents					
	Licenses	Construction Permits	Applications & Allotment Petitions	Total	New <sup>77</sup>
NTSC	89	12	57	158	Not Permitted
DTV	17	95	53	165	Not Permitted
LPTV	835	244	607	1,686	Permitted

### b. Interference Protection for Television Services

29. In the *DTV Proceeding*, we stated that all existing analog TV and new DTV stations in the 698-746 MHz band would be fully protected during the DTV transition period.<sup>78</sup> Thus, it will be necessary for licensees in the reallocated spectrum to protect both analog TV and DTV stations in the 698-746 MHz band from interference. If any additional NTSC licenses or construction permits or DTV full service allotments are made as a result of pending petitions, they would be afforded full protection during the DTV transition period.

#### (i) Protection of Analog Stations

30. For the 746-806 MHz (Channels 60-69) band, we adopted a methodology that specifies minimum separation distances based on the various heights and powers of land mobile stations to prevent harmful interference to incumbent analog television operations from new service providers. This methodology has been successfully used in existing land mobile-broadcasting sharing arrangements in the 470-512 MHz band. We used a 40 dB desired-to-undesired (D/U) signal ratio for calculating the co-channel geographic separation requirements.<sup>79</sup> We found this to be a reasonable value that will provide sufficient protection for TV stations, as prescribed by the BBA 97.<sup>80</sup> Co-channel land mobile base station transmitters will be limited to a maximum signal strength at the assumed TV Grade B contour that is 40 dB below the 64

<sup>77</sup> The Commission ended filing opportunities for new NTSC stations effective September 20, 1996. See *supra* para. 22. Amendments to certain of these applications and allotment petitions to change channels, filed prior to the freeze were accepted until July 15, 2000. All requests for new DTV allotments must be filed for in-core channels. However, initially eligible DTV broadcasters are permitted to seek modified allotments, including Channels 52-59. See 47 C.F.R. § 73.622(a). Not included in the counts above are four petitions for NTSC assignments, which have requested to convert their station proposals.

<sup>78</sup> See *DTV Sixth Report and Order*, 12 FCC Rcd at 14626-27, ¶ 80.

<sup>79</sup> See *Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State, and Local Public Safety Agency Communications Requirements through the Year 2010*, WT Docket No. 96-86, *First Report and Order and Third Notice of Proposed Rulemaking*, 14 FCC Rcd 152, 221, ¶ 152 (1998) (*Public Safety Service Rule Order*).

<sup>80</sup> *Id.*

dBu Grade B contour signal strength value, or 24 dBu.<sup>81</sup> We adopted a 0 dB D/U signal ratio for adjacent channel operations.<sup>82</sup> Adjacent channel land mobile transmitters are thus limited to a maximum signal which can equal the TV Grade B signal of 64 dBu at the TV station assumed Grade B contour of 88.5 km (55 miles). A typical TV receiver's adjacent channel rejection is at least 10-20 dB, which will further safeguard TV from land mobile interference. The analog TV protections adopted in the 746-806 MHz reallocation proceeding were based on the need to balance protection for existing broadcasting services, while making this spectrum viable for new services, including public safety. We seek comment on whether we should employ the same method for protecting analog TV stations in the 698-746 MHz band.

### (ii) Protection of Digital Stations

31. In our public safety proceeding, we determined that the same signal strength limits for land mobile operation criteria used for protection of analog stations, *i.e.*, 24 dB $\mu$  co-channel and 64 dB $\mu$  adjacent channel, should also apply for digital stations.<sup>83</sup> These field strength values correspond to co-channel and adjacent channel protection ratios for a DTV station at its 41 dB $\mu$  field strength service contour of 17 dB and - 23 dB, respectively.<sup>84</sup> We note that these determinations are consistent with the *DTV Sixth Report and Order*.<sup>85</sup> There, the Commission specified a minimum geographic separation of 250 km (155 miles) for co-channel operations between DTV stations and the city-center in the areas where there are existing land mobile operations.<sup>86</sup> Section 90.305(a) of our rules provides that full power land mobile base stations can be located up to 80.5 km (50 miles) from the city-center of one of the specified cities.<sup>87</sup> Consequently, under the geographic separation standards adopted in the *DTV Sixth Report and Order*, a land mobile base station could choose to locate its station as close as 169.5 km (250 km - 80.5 km), or 105 miles to a neighboring DTV station. At this distance, a typical land mobile base station would produce an interfering signal at the DTV station's 88.5 km (55 miles) equivalent Grade B contour corresponding to the 17 dB D/U protection ratio specified in the *Public Safety Service Rule Order* to a DTV receiver. Thus, our decision to require land mobile systems to provide signal ratios for DTV stations which will afford approximately the same separation distance as we did for analog TV stations, was considered to represent a reasonable balance between the needs of both DTV stations and new services.

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<sup>81</sup> In terms of miles, if everything else is the same, a 40 dB D/U ratio rather than a 50 dB D/U ratio allows base stations to be located approximately 48.3 km (30 miles) closer to a co-channel TV station. See 47 C.F.R. § 90.309 tbls. A & B.

<sup>82</sup> See Development of Operational, Technical and Spectrum Requirements For Meeting Federal, State, and Local Public Safety Agency Communications Requirements through the Year 2010, WT Docket No. 96-86, *Second Notice of Proposed Rulemaking*, 12 FCC Rcd 17706, 17801-805, ¶¶ 230-40.

<sup>83</sup> See *Public Safety Service Rule Order*, 14 FCC Rcd 152.

<sup>84</sup> See *id.* at 222-23, ¶ 155.

<sup>85</sup> See *DTV Sixth Report and Order*, 12 FCC Rcd at 14663-65, ¶¶ 163-65.

<sup>86</sup> See *id.*; see also 47 C.F.R. § 90.303(a) (for the areas where TV/land mobile sharing is currently permitted).

<sup>87</sup> See 47 C.F.R. § 90.305(a).

32. With regard to this new allocation of the 698-746 MHz band, we seek comment on whether we should adopt the same criteria for protection of DTV stations as we use for protection of analog stations. We are particularly interested in comments addressing the provisions for transmissions that may have the characteristics of a wide band-noise like emission. As demonstrated by the table in Section 73.623(c)(3)(ii), DTV receivers treat co-channel DTV signals as an increase in the noise floor of the desired signal. This increase in noise floor is proportional to the power received from the undesired station. Therefore, in order to maintain the minimum necessary signal-to-noise (S/N) ratio of 15.19 dB, the desired signal level must be increased. Section 73.623(c)(2) of the rules sets forth a value of 15 dB for co-channel interference for DTV into DTV which are only valid at receiving locations where the S/N ratio for the desired DTV signal is 28 dB or greater.<sup>88</sup> At the edge of the DTV noise-limited service area, where the S/N ratio is 16 dB, the value of D/U is 23 dB for interference protection from another DTV station. New land mobile systems operating in this band employing wide band noise like signals may need to provide DTV stations the same increases in protection as indicated in Section 73.623(c)(3)(ii) of the rules.<sup>89</sup>

33. Since we do not know the characteristics (bandwidth and power spectrum shape) of the co-channel threat to DTV in the re-allocated Channels 52-59, we seek comment on whether digital, wide-band emissions from these services in this band could cause interference to possible co-channel DTV operations, and may require the imposition of more restrictive criteria than those provided for under Section 90.545 of the Commission's rules. In particular, we seek comment on the adequacy of 17 dB for co-channel protection of DTV from wide band transmissions or whether we should consider more conservative protection levels.

### c. Coordination with Canada and Mexico

34. The United States has bilateral agreements with both Canada and Mexico setting forth allotment and assignment plans for TV broadcast stations covering the 698-746 MHz band (Channels 52-59). While the U.S. has identified this band for reallocation to new services, neither Canada nor Mexico has done so to date.<sup>90</sup> Pursuant to these agreements, the U.S. must protect the signals of Canadian and Mexican TV broadcast stations located in the border areas, and such operations will therefore affect U.S. non-broadcast use and services in this band. Accordingly, we tentatively conclude that licenses issued for this band will be subject to whatever future agreements the United States develops with these two countries. We further tentatively conclude that, until such time as existing agreements are replaced or modified to reflect the new uses, licenses in this band will be subject to existing agreements and the condition that harmful interference not be caused to, and must be accepted from, TV operations originating in Canada and Mexico. We seek comment on our tentative conclusions.

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<sup>88</sup> See *id.* § 73.623(c)(2).

<sup>89</sup> See *id.* § 73.623(c)(3)(iii).

<sup>90</sup> A recently-signed Letter of Understanding ("LOU") with Canada recognizes U.S. plans to use this band for other than broadcasting services, and notes that Canada is independently considering a reduction of the spectrum in this band allocated to television. This LOU also specifically provides for non-broadcast allocations and services in the 746-806 MHz bands (Channels 60-69) by establishing criteria to protect DTV stations and analog TV stations established in accordance with the existing TV Agreement (Nov. 3, 1993 – Jan. 5, 1994).

## B. Service Rules

35. One of our primary goals in this proceeding is to establish service rules that will promote innovative services and encourage the flexible and efficient use of this spectrum.<sup>91</sup> In recent years the Commission has implemented our statutory directives under Section 309(j) of the Communications Act by addressing the growing complexities of spectrum management using approaches consistent with general market-based principles. For example, in the Upper 700 MHz proceeding, we were guided by our conclusion in our *Spectrum Reallocation Policy Statement* that a flexible, market-based approach is the most appropriate method for establishing service rules for this band.<sup>92</sup> Similarly, in our recent *Secondary Markets Policy Statement*, we stated that for competition to bring consumers the highest valued services in the most efficient manner, competing users of spectrum need flexibility to respond to market forces and demand.<sup>93</sup> Consistent with the principles underlying the *Spectrum Reallocation Policy Statement* and the *Secondary Markets Policy Statement*, we tentatively conclude that our service rules for this band should implement flexible use for the full range of proposed allocated services, consistent with necessary interference requirements.

36. In seeking to achieve the above objectives, we recognize that our service rules must also take into account the presence of incumbent broadcasters on the Lower 700 MHz Band and the processes we have established in our *DTV proceeding* for relocating incumbent broadcasters into the DTV core spectrum. The 698-746 MHz band is currently used as Channels 52-59 by a significant number of existing full service analog stations, LPTV stations, TV translator and booster stations, and by new DTV stations. These incumbent broadcasters, both analog and digital, may continue to operate on channel allotments in this band until at least December 31, 2006,<sup>94</sup> or the relevant statutory conditions are met that allow incumbents to be relocated to channels in the DTV core spectrum of Channels 2-51.<sup>95</sup> Therefore, the service rules for any new services on the Lower 700 MHz Band must provide for the protection of incumbent television stations during the DTV transition period.<sup>96</sup>

37. We also seek to establish rules that will facilitate, rather than hinder, the clearing of incumbent broadcasters from this spectrum in a manner consistent with our policy goal of locating all television channels in the DTV core spectrum, thus making the band available for a wide range of advanced services. In the Upper 700 MHz proceeding, we considered the use of several voluntary "band clearing" mechanisms, such as the use of secondary auctions to determine the price that would be paid by Upper 700 MHz licensees

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<sup>91</sup> See, e.g., 47 U.S.C. § 309(j)(3)(D) (Commission to promote efficient and intensive use of the electromagnetic spectrum).

<sup>92</sup> See *Upper 700 MHz Third Report and Order* at ¶ 3 (citing *Spectrum Reallocation Policy Statement*, 14 FCC Rcd 19868).

<sup>93</sup> See *Secondary Markets Policy Statement* at ¶ 8.

<sup>94</sup> See 47 U.S.C. § 309(j)(14)(A).

<sup>95</sup> See *Spectrum Reallocation Policy Statement*, 14 FCC Rcd at 19879-80, ¶ 25; see also *DTV MO&O of the Fifth Report and Order*, 13 FCC Rcd at 6887-88, ¶ 79; *DTV MO&O of the Sixth Report and Order*, 13 FCC Rcd at 7435-37, ¶¶ 42-45.

<sup>96</sup> See *Spectrum Reallocation Policy Statement*, 14 FCC Rcd at 19879-80, ¶ 25.