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FEDERAL COMMUNICATIONS COMMISSION
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Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Advanced Television Systems	)	
and Their Impact Upon the	)	MM Docket No. 87-268
Existing Television Broadcast	)	
Service	)	

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TO: The Commission

BROADCASTERS' COMMENTS ON THE SIXTH
NOTICE OF PROPOSED RULEMAKING

November 22, 1996

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SUMMARY

The allotment/assignment of digital television channels presents the most daunting technical challenge the Commission has ever faced. It requires both the Commission and the entire broadcast television industry to take a leap into the future of broadcasting with the continued viability of the public's free, local and universal service hanging in the balance. No DTV channel plan will be perfect and any will need adjustment. For every station that accepts a given channel assignment, another station will wish to consider an adjustment either to its facility or to its assigned channel. However, the Commission should take care to adopt the most rational, service enhancing DTV table possible. Some of the proposals outlined in the Sixth Further Notice of Proposed Rule Making (*e.g.*, pairing channels to replicate existing service areas and to reduce new interference, using terrain modeling, and accepting industry coordinated channel changes) will serve to rationalize the channel assignment process and assure continuity of the public's existing service. However, other proposals (*e.g.*, the core-channel plan) will unnecessarily disrupt the transition to DTV and deprive the public of full television service. In short, to the extent that the Notice pairs existing stations with DTV channels according to purely technical criteria, it serves the public well. To the extent that the Notice sacrifices the technical integrity of the channel plan for other goals, it threatens to make the transition to DTV more difficult for both the public and the broadcast industry.

Immediately upon the release of the Notice, representatives of the nation's local broadcast stations and networks began to hold regional meetings across the country to discuss and improve upon the Notice's channel assignment plan. These comments reflect the broad consensus arrived at by more than 660 of these stations, in addition to

five networks (ABC, CBS, FOX, NBC, PBS), and four television trade associations (MSTV, NAB, ALTV, APTS) representing virtually the entire industry. It is a consensus behind principles of channel assignment and a method of changing those assignments as stations learn more about the practicalities of building DTV stations. In short, we urge the Commission to:

- Pair NTSC and DTV channels so as to replicate NTSC service areas and maximize DTV service;
- Assign DTV channels throughout the entire broadcast band according to the technical criteria that preserve NTSC service, maximize DTV service, and provide sufficient flexibility to respond to real world demands;
- Adopt a channel assignment plan that increases the chances of accommodating LPTV and translator stations;
- Adopt state-of-the art technical planning factors;
- Assign adjacent channels within a market to the same licensee so as to promote collocation and lessen interference;
- Adopt a flexible policy toward channel and facility changes made necessary by such things as local and federal regulation, technical difficulties with the assigned channel, changed population distribution, and altered NTSC facilities;
- Use private industry coordinating committees to help coordinate and propose these changes;
- Adopt a policy providing stations with the maximum flexibility possible to select either the NTSC channel <u>or</u> the DTV channel for permanent use at the end of the transition;
- Protect DTV coverage contours as the service rolls out and new entrants are permitted opportunities to apply for licenses; and
- Adopt technical standards by way of receiving equipment, transmitting masks, and channel labelling schemes that promote service and reduce disruption to the public.

Attached to these comments is Broadcasters' Modified Table along with a list of possible changes that emerged from the stations' regional coordination process.

The Modified Table improves upon the Notice's DTV Table in a number of ways. It modifies the Notice's technical assumptions where they are unwarranted and uses channels 2-6 and 52-69 where necessary to achieve the goals of replication and service maximization. It also provides more opportunity for stations to expand their DTV service to the public and for LPTV and translator stations to attain channels in the DTV world and continue service especially in rural areas. However, the Modified Table, like the Notice's DTV table, avoids the use of channels 60-69 as much as possible to reduce the differences between the two tables.

There is every reason for the Commission to adopt the Modified Table, as adjusted by necessary changes to reflect station-specific input and other alterations. The Modified Table reduces new NTSC interference by 18% and DTV interference by 28%, even over an improved FCC table. Moreover, the Modified Table would reduce the power levels for all stations, increase replication, increase the opportunities for stations to maximize DTV service areas, reduce the displacement of low power and translator stations, and increase the amount of flexibility for making channel and station adjustments over time.

The central reason that the Notice offers for tentatively rejecting the approach represented by the Modified Table is that such an approach would frustrate the early auction of channels 60-69. There are three basic flaws with this reasoning. First, the goal of auctioning channels 60-69 before the transition to DTV is inconsistent with the House Commerce Committee's signal that spectrum decisions should not be made on

the basis of revenue gain.[1] Furthermore, the early auction goal should be reevaluated in light of the evidence that such an auction would earn far less revenue than an auction of cleared spectrum after the transition. Second, our analysis shows that even if channels 60-69 were auctioned while television stations were still operating in that spectrum, the Modified Table would tie up approximately the same amount of such spectrum as would the Notice's DTV Table. Third, the Notice's DTV Table does not calculate the degree to which under-use of channels 60-69 would limit flexibility to accommodate necessary facility and channel changes and displaced LPTV and translator stations. For example, the Modified Table's approach would displace 63% fewer LPTV and translator stations than would the FCC approach and would permit far more such stations to find new channels.

One of the problems with the prospect of under-using channels 60-69, but even more with the prospect of under-using channels 2-6 and 52-59, is that these proposals have no technical justification. There is no evidence that channels 7-51 comprise the most appropriate band for DTV. The experience during the roll-out of DTV will put the Commission in a much better position to make that determination. By selecting the final home of DTV now, the Commission could make a serious misjudgment. As importantly, it would identify a class of television stations that must relocate their DTV operations when spectrum is reallocated and another class that must relinquish their NTSC channels (rather than simply one of the two channels) at the end of the transition. Singling out such stations now, before the transition has even begun, is

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[1] See Letter of Chairman Bliley and Ranking Member John Dingell to Representatives Gingrich, Gephardt, Livingston, and Obey (September 18, 1996) (urging that budgetary goals not be used to set spectrum policy). This letter conveyed what is already codified in 47 U.S.C. §309(j)(7)(A) -- the FCC may not decide to auction spectrum for the sake of Federal revenues.

both unwise and unfair, particularly given the large number of incumbent stations on channels 2-6 with a sunk investment in these channels. There is simply no need for such precipitous decisions.

The guiding lights to the development of the nation's free television service have always been more service to more communities by more stations. As the Commission assigns DTV channels and protects NTSC service, it should be guided by these same principles. It should assign DTV channels in such a way as to maximize service. All Americans should retain access to their existing free broadcast service, unimpaired by new interference, as they gain access to the unfolding digital service. To make this happen, stations should be assigned the most technically appropriate and least interfering DTV channel from the widest possible array of candidate channels. Initial channels should be assigned promptly, leaving open the possibility of change as more practical information becomes available. After the NTSC channels are switched off, the appropriate spectrum band should then be auctioned in clear blocks.

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BROADCASTERS' COMMENTS ON THE
SIXTH NOTICE OF PROPOSED RULEMAKING

These comments on the Commission's Sixth Further Notice of Proposed Rule Making (FCC 96-317, released August 14, 1996) ("Sixth NPRM" or "Notice"), are submitted on behalf of a wide cross-section of the country's broadcast television stations and networks ("Broadcasters").[1] Specifically, standing behind these comments are more than 200 signatories, representing at least 660 licensees, and including five networks (ABC, CBS, FOX, NBC, PBS), and four television trade associations (MSTV, NAB, ALTV, APTS) representing virtually the entire industry. These comments represent the consensus of the signatories on basic allotment/assignment principles, although some signatories may differ on some points and some may file separate

[1] For ease of reference, these comments refer to signatories as "Broadcasters," as have previous filings in this proceeding, even though the signatories to all these filings may not be identical. When discussing the technical planning and analysis as well as the administration of the national campaign conducted for these comments, the term "Broadcasters" refers largely to the Broadcasters Caucus. This is an ad hoc group of broadcast organizations (ABC, ALTV, APTS, CBS, Chris Craft, Fox, MSTV, NAB, NBC, PBS, and Tribune) that was formed in 1990 as a part of the Advanced Television Systems Committee to represent broadcasters on DTV issues.

comments or reply comments to address specific DTV channel assignment and other issues.[2/]

These comments are the product of nine years of work developing the best and most equitable methodology for allotting and assigning advanced digital television ("DTV") channels. Most immediately, these comments spring from three months of intensive coordination among more than 1600 broadcast television stations, coast to coast, to forge consensus on a process for upgrading the public's broadcast television service while using the spectrum most effectively (see Appendix A, for details).

The result is the attached Broadcasters' Modified Table -- an allotment/assignment table submitted in response to the Commission's invitation to submit alternative channel plans (discussed in Part IV below and attached at Appendix E). See Notice, at 15-17. In fact, the Modified Table is not so much an alternative table as a table that builds on the Commission's plan ("FCC DTV Table"), making technical corrections and changes to ensure better DTV service during the transition period and inviting facility and other adjustments contemplated by individual stations. Never before has the broadcast industry, nor any other communications industry, brought together so many disparate interests in the service of a common goal. But never before has there been a goal that required such meticulous planning as does doubling the mnumber of television stations in the existing broadcast spectrum, without unduly

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[2/] For example, APTS and PBS (as well as those public stations whose names appear separately) endorse the policy arguments in these Joint Comments, but do not endorse adoption of the Modified Table. They believe that adjustments beyond individual channel and facility changes to that Modified Table are necessary to protect public television stations' interests, particularly the incorporation of minimum power levels. Fox takes exception to these Joint Comments on certain issues. It supports fewer low VHF DTV assignments during the transition, the use of a 10dB noise figure exclusively, relaxation of the exact collocation requirement for adjacent channel assignments in special cases, and certain channel changes to the Modified Table. Fox has filed separate comments on these points.

disrupting the public's television service. This extraordinary task called for extraordinary means. We believe the process behind these comments answered that call. It built on the sturdy foundation represented by the FCC DTV Table and provides a solid basis for moving forward as more adjustments become necessary.

I. INTRODUCTION

Having considered DTV licensing and service issues[3] and the adoption of a DTV transmission standard[4], the Commission has arrived at one of the final steps in implementing DTV. Like the preceding steps, the allotment and assignment of DTV channels pose technical questions that must be resolved with reference to the goal of this proceeding. As the Notice states, the "primary goal of this proceeding is to ensure that the implementation of the DTV service is accomplished in a manner that serves the public interest." Notice, at 10.[5] The secondary goal identified in the Notice is "the recovery of the channels temporarily assigned for the transition." Id. Broadcasters support both of these goals.[6]

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[3] See Fourth Further Notice of Proposed Rule Making and Third Notice of Inquiry, 10 FCC 10541 (1995) ("Fourth NPRM").

[4] See Fifth Further Notice of Proposed Rule Making, MM Docket No. 87-268 (May 20, 1996) ("Fifth NPRM").

[5] In the Fourth NPRM, the Commission identified four goals: preserving a free, universal broadcasting service; fostering an expeditious and orderly transition to digital technology; managing the spectrum to permit the recovery of contiguous blocks of spectrum; and ensuring that the spectrum will be used in a manner that best serves the public interest. See Fourth NPRM, at 4.

[6] Broadcasters have clearly acquiesced in the post-transition repacking of the television spectrum and the reclamation of the unused frequencies. See, e.g., Joint Broadcaster Comments, MM Docket 87-268 (November 20, 1995) ("Joint Comments VI"), at 29. Furthermore, such repacking is required by the Telecommunications Act of 1996. See Section 201, Pub.L.No. 104-104, 110 Stat. 56, 108 (adding 47 U.S.C. § 336(c), which directs the FCC to "require that either the [advanced television] license or the original license . . . be surrendered"); see also Joint Explanatory Statement of the Committee of Conference, H. CONF. REP. NO. 458, 104th Cong., 2d Sess. 161, reprinted in 1996 U.S.C.C.A.N. 124, 173-4.

Steps to Achieving the Commission's Goals

There are at least three key components to achieving these goals and to ensuring a stable DTV channel assignment process.

Minimize Disruption. The transition to DTV is meant first to preserve, and second to enhance, the public's free over-the-air television service. As Chairman Hundt recently remarked, the HDTV centerpiece of the DTV service is the public's Central Park -- a unique and freely accessible public good.[7] Just as the public continues to enjoy nearly full access to Central Park as it is renovated, so with DTV, the public should experience very little inconvenience and loss of service as the transition progresses.

This goal of non-disruption underlies the Commission's plan to accommodate all eligible broadcasters with DTV channels and has been the foundation of the Broadcasters' filings since 1987. See Notice, at 6.[8] The Commission should pursue this goal through all aspects of the channel assignment process, not just in the determination of eligibility. Thus, its channel assignment plan should seek to replicate and reduce interference to NTSC service to the maximum degree possible so as to avoid

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[7] See Chairman Reed Hundt's speech to the International Radio and Television Society (New York, October 18, 1996).

[8] See also Joint Broadcaster Comments, MM Docket 87-268 (November 30, 1988) ("Joint Comments I"), at 16; Joint Broadcaster Comments, MM Docket No. 87-268 (December 20, 1991) ("Joint Comments II"), at 24-28; Joint Broadcaster Comments, MM Docket No. 87-268 (July 17, 1992) ("Joint Comments III"), at 4-10; Joint Broadcaster Comments, MM Docket No. 87-268 (November 16, 1992) ("Joint Comments IV"), at 4-7, 11-16; Broadcasters' Proposed ATV Allotment/Assignment Approach, MM Docket No. 87-268 (January 13, 1995) ("Broadcasters Allotment/Assignment Approach"), at 8-10, 19-21; Joint Comments VI, at 4; Joint Broadcaster Reply Comments, MM Docket No. 87-268 (January 22, 1996) ("Joint Comments VII"), at 5-8; Joint Broadcaster Comments, MM Docket No. 268 (July 11, 1996) ("Joint Comments VIII"), at 15-20.

disenfranchising viewers. In addition, it should adopt a channel labeling protocol that makes it easy for viewers to find the paired broadcast channels.

Maximize Service. In 1992, the Commission proposed a channel plan that would have "equalized" DTV coverage areas, thereby disenfranchising viewers of larger NTSC stations and shrinking the total amount of DTV coverage.[9] Although the Notice continues to request comment on this proposal, it appears to recognize the deficiencies of such a plan. See Notice, at 8. We believe that the Commission should make replication a first priority, with equalization (what Broadcasters have termed "maximization") a second goal. This ordering of priorities is the most efficient and equitable way of achieving a seamless transition that best fulfills viewer expectations while duly recognizing broadcasters' sunk investment in their core business.

The approach described in our comments would replicate most service areas but also permit as many as 50% of stations (especially smaller ones) to expand their DTV service areas. According to our maximization principle, we urge that smaller stations have the opportunity to expand their DTV coverage areas up to the largest station in the market so long as they don't create new interference to neighboring stations. To preserve service in the future, as stations gradually ramp up to maximum DTV facilities, the Commission should protect DTV service contours from erosion and adopt policies to accommodate as many low power television stations ("LPTVs") and translators as possible. It should also permit stations whose assigned DTV channels would replicate service areas but fail to replicate population to explore alternative channel assignments.

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[9] See Second Further Notice of Proposed Rule Making, 7 FCC Rcd. 5376, 5378-9 (1992) ("Second Further Notice").

Maximize Flexibility. Both Congress and the Commission have recognized the importance of flexibility in the roll-out of new technologies.[10] In the context of the DTV channel allotment/assignment proceeding, the concept of spectrum flexibility should be employed to improve the public's free, over-the-air television service. The depth of our knowledge of DTV operation justifies confidence in our allotment/assignment approach; the limits of that knowledge justify every effort to preserve flexibility. What we now know about DTV comes primarily from exhaustive laboratory testing of the Grand Alliance System at the Advanced Television Test Center according to the Advisory Committee on Advanced Television Systems ("ACATS") testing plans. But field tests -- the most reliable predictors of performance -- were conducted in Charlotte, NC effectively but over a relatively brief period of time and with limited power so as not to interfere with operating NTSC stations. The broadcasting industry, in conjunction with the equipment manufacturing industry, is now attempting to gather more information through the Model HDTV Station Project (WHD-TV, Washington D.C.)[11] and through other trial DTV station projects throughout the

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[10] See Telecommunications Act of 1996, at Section 201 (addressing broadcasters' flexibility to use the DTV channel as the market demands); see also Fifth NPRM, at 8 (addressing the desirable flexibility built into the ATSC DTV Standard).

[11] WHD-TV is funded by more than 260 television stations and more than 15 individual equipment manufacturing companies and sponsored by founding members the Association for Maximum Service Television, Inc., and the Consumer Electronics Manufacturers Association, a sector of the Electronic Industries Association. The Model Station went on air with HDTV on July 30, 1996, from the tower of its host station WRC-TV. It was dedicated on August 6, 1996, by Commissioner Ness as "a working laboratory through which broadcasters and equipment manufacturers will hasten the transition of free, community-based television to the robust digital era of multiple benefits to the American public."

country,[12] including WETA-TV (Washington D.C.) and WRAL-HD (Raleigh, NC), as well as the Advanced Television Technology Center ("ATTC"). Accordingly, these operations will help, but experience in the DTV roll-out will inevitably spotlight various idiosyncratic and generic practical problems over a substantial period. Until we know more, the Commission should preserve as many options as possible, particularly since the spectrum constraints are already formidable.

The two types of flexibility that are most important to sustain are the ability to make channel and facility changes with relative ease and the ability to determine through experience the optimal spectrum band for DTV. For these reasons: (i) stations should be able to change DTV facilities and channels easily and quickly, so long as they don't interfere with other stations and (ii) the Commission should refrain from reducing service and inhibiting change during the transition on the basis of potentially misguided and certainly premature assumptions about the broadcast spectrum most appropriate for DTV operations. A channel plan that uses the entire band will provide for more flexibility over the next few years as licensees change facilities, change channel assignments, relocate translators and low power stations to new channels, and maximize smaller station coverage areas. Experience will identify the optimal DTV spectrum band into which DTV stations may be repacked, thereby vacating valuable contiguous spectrums for auction.

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[12] KCTS (Seattle, WA), Oregon Public Broadcasting and WMVS/WMVT (Milwaukee, WI) have received experimental DTV licenses. WCBS-TV (New York, NY), WGBH-TV (Boston, MA) and KTLA(TV) (Los Angeles, CA) have sought experimental DTV licenses and KOMO-TV (Seattle, WA) has recently announced that they will seek such licenses from the FCC. See The Seattle Times, E1 (October 24, 1996).

Time is of the Essence

Broadcasters have exerted themselves in a very few weeks to analyze the FCC's proposal and develop consensus positions on initial DTV channel assignments as well as a mechanism to change channels and facilities as necessary. The unprecedented efforts in this area reflect an understanding that a quickly changing telecommunications landscape requires the broadcast industry to convert to DTV soon or become a second-rate video delivery service.[13/]

Broadcasters' competitors are already going digital. DBS penetration is increasing dramatically. It is estimated that the cable industry will be supplying 300,000 - 400,000 digital set-top boxes next year and has begun to convert cable headends to digital in various communities.[14/] Wireless cable is poised for a similar transition.[15/]

Given this reality, we urge in the words of the Congressional leadership, "that the Commission should move forward as expeditiously as possible on its current plan to award a second license to television broadcasters for the transition to advanced

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[13/] See Testimony of Mike Burgess, KOB-TV, Albuquerque and Howard Shrier, Nebraska Broadcasters Association before the Senate Budget Committee (March 14, 1996); Testimony of Alfred C. Sikes, Hearst News Media and Technology; Warren P. Williamson, WKBN Broadcasting Corporation; Kevin O'Brien, KTVU-TV, San Francisco; Ray Rodriguez, Univision Television Network; David Griffin, KWTV, Oklahoma City; Patrick Scott, Fisher Broadcasting Inc; Robert Allen, KRCG-TV and Iowa Broadcasters Association, Cedar Rapids; and Elizabeth Murphy Burns, Morgan-Murphy Stations before the House Commerce Committee, Telecommunications Subcommittee (March 21, 1996); and Testimony of Ray Rodriguez, Univision; Robert C. Wright, National Broadcasting Company; James M. Keelor, Cosmos Broadcasting Corp.; and William Sullivan, CPAX-TV, Missoula before the Senate Commerce, Science and Transportation Committee (June 20, 1996).

[14/] See, e.g., *Digital Settop Era Finally at Hand as Vendors Target Second-Tier Operators*, Interactive Video News, Aug. 19, 1996, at 60.

[15/] See, e.g., In re Request for Declaratory Ruling on the Use of Digital Modulation by Multipoint Distribution Service and Instructional Television Fixed Service Stations, Declaratory Ruling and Order, DA Docket No. 95-1854 (released July 10, 1996).

television services... . Thus, we recommend that the Commission complete all actions necessary to prescribe rules to permit the deployment of over-the-air digital broadcasting no later than April 1, 1997."[16]

II. THE FCC PROPOSAL REPRESENTS GREAT PROGRESS

For the past four years, Broadcasters and the Commission have engaged in exhaustive research and unprecedented joint efforts to devise a DTV allotment/assignment approach that reflects the results of the ACATS testing, that best serves the public, and that ensures a successful transition into the digital era. As a result of this extensive investigation and consideration of industry input, there is much in the Notice Broadcasters can support.

A. SINCE 1987, BROADCASTERS HAVE CONSISTENTLY CALLED FOR AN ENGINEERED DTV ALLOTMENT/ASSIGNMENT APPROACH THAT MINIMIZES VIEWER DISRUPTION AND MAXIMIZES DTV SERVICE

Broadcasters have filed at least eight comments which address on some level the process of allotting and assigning DTV channels.[17] The Broadcasters Caucus has also sent four letters to FCC Chairmen discussing allotment/assignment principles.[18] In all, Broadcasters have emphasized that the allotting and assigning of DTV channels should be based on objective scientifically based criteria so as to inconvenience viewers as little as possible and to ensure the best DTV service possible.

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[16] See Letter from Representatives Gingrich, Bliley, and Dingell and Senators Lott and Hollings to Chairman Hundt (June 19, 1996). As we noted in 1995, the DTV channel plan depends on the ATSC DTV Standard and the Commission should adopt a channel plan based on its adoption of the ATSC DTV Standard. See Broadcasters Allotment/Assignment Approach, at 2.

[17] See, e.g., Joint Comments I-VIII; Broadcasters Allotment/Assignment Approach.

[18] See Letters from the Broadcasters Caucus to the FCC Chairman of June 1991, March 1992, September 1992, and April 1993.

To realize those goals, we have long advocated a DTV allotment and assignment process that:

- pairs NTSC channels with DTV channels on the basis of sound engineering principles;
- accommodates all existing stations with DTV channels;
- replicates NTSC service areas and permits stations to maximize DTV coverage where possible;
- minimizes interference to NTSC channels during the transition; and
- uses the entire broadcast spectrum.[19]

In January 1995, Broadcasters submitted to the Commission a preliminary allotment/assignment plan which employed all of the key principles described above.[20] It paired NTSC channels with DTV channels according to sound engineering principles and without regard to the type of licensee (*e.g.*, large or small market, UHF or VHF, affiliate or independent, public or commercial) to maximize replication and DTV coverage. The model assumed that the DTV channel would operate from the exact site of the paired NTSC station, under certain power and height parameters. The proposal also attempted to pair adjacent NTSC and DTV channels where appropriate because exact collocation is necessary to avoid adjacent channel interference and common ownership of collocated stations makes the most practical sense.

The 1995 proposal also recognized, however, that the transition to DTV must be a dynamic and flexible process. As a result, Broadcasters advocated the use of

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[19] See, e.g., Joint Comments VIII, at 2-3, 18, 33; Joint Comments VII, at 23-29; Joint Comments VI, at 4, 7-9, 30; Broadcasters Allotment/Assignment Approach, at 1-34; Joint Comments IV, at 4-26; Joint Comments III, at 2-15; Joint Comments II, at 3-13; Joint Comments I at 5-10, 16.

[20] Broadcasters Allotment/Assignment Approach, at 1-34.

intra-industry committees to facilitate the incorporation of necessary channel and facility changes following the adoption of a DTV table.[21]

B. THE NOTICE APPROPRIATELY MOVES BEYOND THE ALL-UHF, RANDOM ASSIGNMENT METHODOLOGY AND INCORPORATES MANY PRINCIPLES LONG-CHAMPIONED BY BROADCASTERS

The Notice constitutes a substantial improvement on the Commission's plans for allotting and assigning DTV channels. There is much in the Notice with which Broadcasters entirely or partially agree.

1. Areas of Agreement

With the publication of the Notice, it is clear that the Commission and Broadcasters agree on three of the most central elements necessary to assign DTV channels in a manner that best preserves and improves free over-the-air television service:

- Pairing of DTV and NTSC channels on the basis of coverage and interference characteristics, with no attempt to enlarge DTV coverage areas at the expense of NTSC service, see Notice, at 17-19, 35-36;

- Full accommodation for eligible existing broadcasters, as defined by the Commission in the Notice, at 6; and

- Replication of service areas using terrain modeling (Longley-Rice methodology) and without distinction among types of stations. See Notice, at 7-8.

As described above, Broadcasters have long emphasized that an assignment methodology based on full accommodation, replication of service areas, and sound engineering principles provides the greatest opportunity for an orderly and

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[21] Id. at 26-32.

successful transition to the digital environment.[22] Full accommodation ensures that "full service broadcasters are able to provide the new digital TV service" (Notice, at 7) and so preserve and improve the nation's broadcast service. As the Notice states, replication of existing service areas "offers important benefits for both viewers and stations." Notice, at 8. Replication, in short, maintains viewer continuity during and after the transition.

Not surprisingly, therefore, Broadcasters commend the Commission for rejecting the previously contemplated all-UHF DTV service.[23] Such an approach is neither technologically feasible nor desirable. Squeezing over 1600 DTV channel assignments into such limited spectrum obviously means that DTV stations would be spaced more closely to NTSC stations. This undoubtedly would lead to increased interference, thereby reducing both DTV and NTSC coverage. Moreover, packing all DTV channels in the UHF spectrum at this early stage would eradicate much of the flexibility needed to make channel and facility changes as the transition proceeds.[24]

While moving away from its all-UHF proposal and proposing to employ the principle of replication, the Commission also has sought comment on whether it should return to its earlier proposal to allot DTV channels using an approach that "maximizes" service areas of all DTV stations. Such an approach would attempt to equalize the coverage area of all stations within a given market. The Notice also seeks input on whether such an approach would provide more incentives for a swift transition

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[22] See, e.g., Joint Comments, at IV at 14-26; Joint Comments III, at 4-14; Broadcasters Allotment/Assignment Approach, at 8-24.

[23] See Second Further Notice, at 5379-80.

[24] See, e.g., Joint Comments IV, at 19-25.

to DTV than other approaches. See Notice, at 8. But such an approach would disenfranchise significant numbers of viewers of the larger NTSC stations. Moreover, as demonstrated by Broadcasters in prior comments, such an approach actually has the effect of *reducing* the service ares of a majority of the nation's stations.[25] As a result, the Commission's former "maximizing approach" would appear to be a *disincentive* rather than an *incentive* for broadcasters to roll out DTV service as quickly as possible. By contrast, an approach that, at a minimum replicates service areas, but permits stations to expand their DTV service areas -- as proposed by the Broadcasters' maximization principle - should encourage stations large and small to make the move to DTV as soon as possible.

2. Areas of Partial Agreement

The Notice seeks comment on other proposals with which Broadcasters agree, subject to some refinements. First, Broadcasters have long advocated the use of existing transmitter sites for assigning DTV channels.[26] This strategy facilitates replication of NTSC service areas and encourages collocation. Although the Notice likewise proposes such an approach, it also proposes to permit a broadcaster to locate its DTV facility at any site within a three-mile radius of the actual transmitter site without prior FCC approval, as long as the broadcaster continues to serve its community of license. See Notice, at 23. The Notice specifically seeks comment on whether the three-mile radius is an appropriate range for permitting transmitter relocations.

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[25] See Joint Comments IV, at 17-18.

[26] See, e.g., Broadcasters Allotment/Assignment Approach, at Appendix A.

Broadcasters strongly disagree with this proposal. We applaud the Notice's recognition that many stations will need flexibility in establishing permanent DTV transmitter sites. See Notice, at 23. As noted numerous times, Broadcasters believe flexibility to make facility changes, like transmitter relocations, is critical to the roll-out of DTV.[27] However, decisions to move transmitters 30 miles, three miles, or even one mile from existing transmitter sites may significantly affect other stations. Relocation, therefore, must be considered on a case-by-case basis. This is precisely the type of issue that the proposed industry committees can and should consider using the same objective, highly sophisticated methodology that will underlie the table ultimately adopted by the Commission. See below at Part V. Requests for transmitter relocations after adoption of the DTV table should be granted freely, assuming such changes do not cause unacceptable interference to other stations. For purposes of allotting and assigning DTV channels, Broadcasters urge the Commission to base its decisions on the use of exact transmitter locations.

Second, the Notice requests comment on the methods that should be employed for determining the permanent DTV channel for broadcasters. See Notice, at 16. The Notice proposes providing stations with NTSC and DTV channels within the core spectrum the opportunity to choose their permanent DTV channel. Id. Broadcasters believe that to the greatest extent possible stations should be given the opportunity to select which of their two channels will serve as their permanent DTV assignment.

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[27] See, e.g., Broadcasters Allotment/Assignment Approach, at 26-28.

Indeed, Congress recognizes such a choice in the Telecommunications Act of 1996, which requires the return of one of *either* of a station's two channels.[28]

Furthermore, stations should not be required to select their channel until more is learned about the realities of transitioning to DTV (or until spectrum is recovered). Given the inherent uncertainties associated with the transition to this new technology, stations should not be forced to rush this critical decision before the complete range of DTV intricacies is better understood. Creating an artificial deadline by which stations must select their permanent channel destroys the opportunity to understand fully coverage characteristics, interference issues, and public reaction. Without more knowledge of these features, a premature push towards channel selection will exact a toll on television service and could reduce the spectrum revenue that could be gained later by clearing the spectrum least appropriate for broadcasting and most valuable for other services. In short, therefore, the opportunity to choose between the NTSC and DTV channel as a final home for the DTV service should be preserved until the transition nears completion.

Moreover, we are gratified that the Notice looks with favor on a requirement that new entrants compensate broadcasters for the cost of relocating due to spectrum recovery. The Notice anticipates that compensation would be provided to broadcasters forced to move from channels 60-69 and, later, 52-59 and 2-6. See Notice, at 13. The transition to DTV will impose significant financial burdens on broadcasters,

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[28] See Telecommunications Act of 1996, at Section 201; 47 U.S.C. § 336(c).

and compensation for relocation minimizes the additional burden spectrum recovery plans will have on stations, particularly small stations.[29]

III. THE FCC PROPOSAL NEEDS IMPROVEMENT

Broadcasters have undertaken an extensive analysis of the FCC DTV Table. The first step in this process was to validate the FCC's approach using industry software.[30] The results thus obtained are within 1% of the results published in the Notice, a difference which is statistically insignificant and can be explained by different interpolation techniques. Having successfully validated the FCC DTV Table methodology, Broadcasters went on to analyze the extent to which that plan maximized DTV coverage, replicated NTSC service, minimized interference, and preserved opportunities for LPTV and translator stations. In contrast to the positive aspects of the FCC DTV Table, discussed above, we found two distinct areas in need of improvement. The first area concerns unrealistic assumptions or planning errors *not* related to the

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[29] See Joint Comments VI, at 29-30.

[30] Validation was accomplished by running the FCC DTV Table using a subset of the Broadcasters Caucus software to compute the coverage and interference areas of all stations in the FCC DTV Table, using the Grand Alliance system parameters and other FCC technical planning factors. The output of this Caucus run was then compared to the results of the coverage and interference data published in the FCC DTV Table. The software used to produce this data is a modified version of the software first proposed by the ACATS Specialist Group 11 of PS/WP3 and implemented by the broadcast industry to be used in the 1993 comparison of the performance of proponent systems and again in the 1994 Grand Alliance "Bake-Off", which ultimately resulted in the selection of the 8 VSB transmission subsystem used by the Grand Alliance. The same software was used to produce the Broadcasters' Preliminary Allotment/Assignment Plan and was shared with the FCC. The purpose of this first validation step was to ensure that the subsequent steps in Broadcasters' analysis would be consistent with the methodologies underlying the FCC DTV Table.