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

In the Matter of	)	
	)	
Satellite Delivery of Network Signals	)	CS Docket No. 98-201
to Unserved Households for Purposes	)	
of the Satellite Home Viewer Act	)	RM No. 9335, 9345
	)	
Part 73 Definition and Measurement of	)	
Signals of Grade B Intensity	)	

COMMENTS OF DIRECTV, INC.

In response to petitions for rulemaking filed by the National Rural Telecommunications Cooperative ("NRTC")[1] and Echostar Communications Corporation ("Echostar"),[2] the Commission has issued the above-captioned Notice of Proposed Rulemaking ("Notice") to consider (i) defining "Grade B" signal intensity for purposes of the "unserved household" definition of the Satellite Home Viewer Act ("SHVA"), codified as amended at 17 U.S.C. § 119(d)(10), and (ii) developing corresponding SHVA-specific models for predicting and measuring Grade B signal intensity. As set forth below, DIRECTV, Inc. ("DIRECTV")[3] believes that Commission action on this issue is of critical importance to millions of DBS and other direct-to-home("DTH") subscribers. DIRECTV therefore urges the Commission expeditiously to adopt a SHVA-specific definition of Grade-B signal intensity, and workable,

1 *See* Public Notice, Report No. 2290 (released Aug. 5, 1998).

2 *See* Public Notice, DA 98-1710 (released Aug. 26, 1998).

3 DIRECTV is a wholly-owned subsidiary of DIRECTV Enterprises, Inc., a DBS licensee, which is a wholly-owned subsidiary of Hughes Electronics Corporation.

commercially viable methods of predicting and measuring such intensity. The Commission should make every effort to prevent DTH satellite subscribers in unserved areas from being arbitrarily disenfranchised by historical Grade B signal strength measures and predictive methodologies developed for purposes that are *entirely unrelated* to whether a household receives a viewable television picture.

I. INTRODUCTION & SUMMARY

DIRECTV is the United States' leading provider of DBS services. DIRECTV initiated its DBS service in late 1994, and currently offers more than 185 channels of all-digital, quality entertainment, educational and informational programming to customers equipped with an 18-inch satellite dish antenna. Although the multichannel video programming distributor ("MVPD") industry in which DIRECTV competes continues to be dominated by cable operators in most local markets,[4] DBS providers have a higher combined subscribership than any other MVPD alternative to incumbent cable systems. DIRECTV itself has experienced tremendous growth since its inception, and currently serves in excess of 4.3 million subscribers nationwide.

DIRECTV strongly supports expedited action by the Commission to develop a SHVA-specific definition of "Grade B" signal intensity, and corresponding SHVA-specific predictive and measurement models. The issue of clarifying which subscribers are unable to receive a broadcast network picture of acceptable quality -- *i.e.,* that are "unserved households" for purposes of the satellite carrier compulsory copyright license codified at 17 U.S.C. § 119 -- is of tremendous importance to DIRECTV and its current and future subscribers, as well as to the

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[4] According to the National Cable Television Association, cable's share of the MVPD market continues to be a tremendous 84.49%. *See* Comments of the National Cable Television Association, CS Docket No. 98-102 (July 31, 1998), at 6.

future of the DTH satellite industry generally.

DIRECTV today offers its subscribers in areas unserved by local network affiliates access to east and west coast feeds of CBS, NBC and ABC programming, and a national feed of Fox through a contractual arrangement with PrimeTime 24, a satellite carrier and packager of satellite-delivered programming. DIRECTV also offers a national feed of PBS programming through a contractual arrangement with PBS. Unless the Commission acts quickly and decisively, potentially millions of current DIRECTV and other DTH subscribers who receive such broadcast network station signals via satellite will lose access to this critical segment of programming as a result of recently-decided and pending federal court litigation over Grade B intensity and measurement issues.[5] Of equal or greater importance, untold numbers of potential DBS subscribers who are unable to receive an acceptable off-air signal and are precluded by the court decisions from receiving a national satellite feed of network programming will be forcibly driven into (or back into) the waiting arms of incumbent cable operators -- a result that will significantly impede the Commission's efforts to promote MVPD competition.

In the discussion below, DIRECTV first shows that the Commission has the clear legal authority and policy mandate to promulgate Grade B signal strength values for SHVA purposes, and to adopt a workable, commercially viable predictive model for determining whether subscribers cannot receive an over-the-air signal of Grade B intensity.

Second, on the merits, DIRECTV urges the Commission to reject the Grade B signal strength values found in Section 73.683 of the Commission's rules, which are Grade B contour-based signal strengths keyed to a 1950's conception of suitable picture quality, as

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5 *Notice* at ¶¶ 6-8.

inappropriate for SHVA purposes. These values simply do not aid in distinguishing adequately between a served and an "unserved household" as the latter term is defined in the statute. Instead, the Commission should establish Grade B signal strength values that are appropriate for SHVA purposes.

DIRECTV strongly believes that FCC action in this matter *must* come swiftly to have an appreciable impact on the imminent problem that the satellite industry faces, given the pressing demands of a federal court deadline;[6] a debate concerning the appropriate Grade B signal definition, predictive methodology and measurement techniques under the SHVA will become a useless metaphysical exercise if the Commission does not act now. The Commission thus should promulgate immediately signal strength values crafted specifically for SHVA compliance purposes as proposed herein and by the Satellite Broadcasting and Communications Association ("SBCA"). These values are tailored to the unique context of determining whether a satellite DTH subscriber receives a signal of Grade B intensity for purposes of the SHVA. The values proposed reflect far more accurately today's complex signal propagation environment and heightened consumer expectations of what constitutes an acceptable signal.

Third, and in any event, the Commission can and should develop and adopt a workable, commercially viable predictive model for ascertaining whether subscribers do indeed receive signals of Grade B intensity (as those signal strength values are established for SHVA purposes). In this regard, the NAB's attempts to characterize such action as "shrinking [broadcast] stations to their Grade A coverage areas" are completely misplaced.[7] DIRECTV in

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6 The deadline for compliance with the Miami federal court's preliminary injunction against PrimeTime 24 is February 28, 1999. *Id.* at ¶ 7.

7 *See* NAB SHVA Sheet, Issue 2.

no way advocates changing the traditional Grade A or Grade B contours, or the methodologies used by broadcasters, for purposes of calculating interference protection or analog or digital channel allotments. But the SHVA inquiry is different. A significant number of satellite television subscribers have been arbitrarily excluded from the receipt of broadcast network signals *when they in fact cannot receive a viewable picture*. That problem in part is directly traceable to the imprecision of certain models that are being used to make Grade B predictions.[8]

DIRECTV therefore advocates that the Commission endorse the predictive approach proposed by the engineering firm of Hatfield and Dawson and supported by the SBCA in comments being filed today.[9] This model, which is based on the NTIA's Terrain Integrated Rough Earth Model ("TIREM"), (i) features a more precise, point-to-point prediction of Grade B signal strength that accounts for differing terrain and other conditions, (ii) is superior for SHVA purposes to other propagation models such as the Longley-Rice model proposed in the *Notice*, (iii) can be implemented easily using commercially available software, and (iv) most important, will increase the likelihood that subscribers that cannot receive a quality Grade B over-the-air broadcast signal are afforded the option of a satellite-delivered alternative.

Fourth, the Commission should accord presumptive legal validity to the receipt of satellite-delivered network signals by subscribers that are shown via use of the predictive model

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8 For example, the Miami federal court issued an injunction based upon propagation maps created using Longley-Rice Version 1.2.2. *See CBS, Inc. v. PrimeTime 24 Joint Venture*, Case No. 96-3650-CIV-NESBITT, Supplemental Order Granting Preliminary Injunction (July 10, 1998) (S.D. Fla.). The North Carolina federal court's injunction simply applies to all subscribers living within a 75-mile radius of the plaintiff network affiliate's transmitting tower. *See Notice* at ¶ 8.

9 *See* Hatfield and Dawson, Engineering Statement, "Technical Issues and Definitions Relative to the Satellite Home Viewer Act" (Dec. 1998) ("Hatfield and Dawson"), attached to Comments of the SBCA being filed today.

not to receive signals of Grade B intensity. There is no question that testing at individual households is an expensive and impractical process, and that, because of the "costs and delays involved," it is "desirable to minimize the need for individual testing to the extent possible."[10] The *Notice* acknowledges in this regard that "predictive models can be effective proxies for individual household measurements,"[11] and further, that establishing "an initial presumption" of SHVA compliance if a subscriber is predicted to be unserved using an FCC-approved methodology will "create certainty" and help manage SHVA compliance on a broad scale.[12] DIRECTV agrees. DIRECTV accordingly urges the Commission to adopt a rule that if a subscriber is predicted not to receive Grade B signals using the model proposed, parties challenging that determination should bear the entire cost and burden of the challenge.

Fifth, the *Notice* correctly recognizes that although an enforceable presumption is necessary for any workable SHVA compliance regime, individual testing nevertheless remains the key "safety net" for proving that a specific household is unserved and thus eligible under the law to receive satellite-delivered network stations.[13] DIRECTV accordingly urges the Commission to adopt and promote a more practical method of measuring actual signal strength at individual households.

Finally, since its inception, DIRECTV has been committed to advancing a "broadcaster friendly" service approach. DIRECTV, for example, was the first satellite carrier to offer receiving equipment capable of integrating satellite service with off-air broadcast antennas,

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10 *Notice* at ¶ 37.

11 *Id.* at ¶ 30.

12 *Id.* at ¶ 42.

13 *Id.* at ¶ 37.

offering the seamless integration of free local broadcast signals with DBS programming. DIRECTV and its retailers have promoted the concept of free, over-the-air television by specially pricing the sale and installation of off-air antennas in conjunction with the sale of DIRECTV receiving equipment. Thus, DIRECTV's only interest in this proceeding is to ensure that those subscribers who are unable to receive an acceptable over-the-air broadcast signal are able to access that critical segment of programming by subscribing to satellite-delivered network signals.

II. THE COMMISSION HAS THE LEGAL AUTHORITY TO ESTABLISH GRADE B SIGNAL INTENSITY VALUES FOR SHVA PURPOSES AND TO ADOPT A PREDICTIVE METHODOLOGY FOR PURPOSES OF ENSURING SHVA COMPLIANCE

A. Congress Did Not "Freeze" The Commission's Definition Of Grade B Signal Intensity

On the question of its legal authority to examine Grade B issues in this proceeding, the Commission has tentatively concluded that "Congress did not 'freeze' the definition of a signal of Grade B intensity for SHVA purposes in 1988."[14] That conclusion is correct.

The text of Section 119 is the "best evidence" of Congress's intent with respect to the definition of a signal of "Grade B intensity."[15] In this regard, the plain language of the "unserved household" definition specifically references an "over-the-air signal of grade B intensity (*as defined by the FCC*)."[16] It does not expressly incorporate the language of any particular FCC rule. Instead, the statute explicitly defers to the FCC's authority to "define[]"

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14 *Id.* at ¶ 20.

15 *West Va. Univ. Hosp., Inc. v. Casey*, 111 S. Ct. 1138, 1147 (1991); *Friends of the Earth v. Reilly*, 966 F.2d 690, 695 (D.C. Cir. 1992).

16 47 U.S.C. § 119(d)(10)(A) (emphasis added).

Grade B signal intensity. In such an instance, where Congress "has explicitly left a gap for an agency to fill, there is an express delegation of authority to the agency to elucidate a specific provision of the statute by regulation"[17] -- here, by defining "Grade B" signal intensity for SHVA purposes.

It also makes no difference that Congress did not expressly "ask the Commission to engage in any rulemaking about Grade B intensity" as the NAB has previously asserted.[18] The Supreme Court has noted that the "power of an administrative agency to administer a congressionally created program . . . necessarily requires the formulation of policy and the making of rules to fill any gap left, implicitly or explicitly by Congress."[19] Thus, as the D.C. Circuit has explained, when Congress "leaves gaps . . . either explicitly by authorizing the agency to adopt implementing regulations, or implicitly by enacting an ambiguously worded provision, it has explicitly or implicitly delegated to the agency the power to fill those gaps."[20] Here, Congress's direct deference to the FCC can fairly be characterized as an explicit delegation of authority to the Commission with respect to the definition of the term "signal of Grade B intensity." At a minimum, it qualifies as an implicit delegation of authority to the Commission to define that term. Furthermore, the unfortunate and disparate interpretation of the term by two federal courts highlights the problem of a court substituting its own construction of a statutory

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17 *Chevron U.S.A. v. Natural Resources Defense Council, Inc.*, 467 U.S. 837, 843-44 (1984).

18 *Preliminary Response of National Association of Broadcasters to Emergency Petition for Rulemaking Filed By the National Rural Telecommunications Cooperative* (July 17, 1998), at 21.

19 *Morton v. Ruiz*, 415 U.S. 199, 231 (1974).

20 *National Fuel Gas Supply Corp. v. FERC*, 811 F.2d 1563 (D.C. Cir.), *cert. denied*, 484 U.S. 869 (1987).

provision that in fact should be construed by reference to the authorized agency's guidance and expertise.[21]

It has been suggested by the broadcasting industry that Section 119 somehow limits the Commission to the static Grade B signal strength values and contour prediction methodology that are used for unrelated purposes in Part 73 of the Commission's rules. This suggestion is unsupported by the text of the statute or its legislative history. Even assuming that Congress intended to reference those standards, a review of the statutory language and legislative history clearly shows that the adoption of Section 119 in 1988 (and its renewal in 1994) did not freeze those standards in time.

In general, Congress references agency definitional authority -- as it has here -- for a reason: it wishes the agency to continue updating particular terms or rules relative to the market and regulatory conditions that are uniquely within the province of the agency to assess. Thus, courts have held that express language in the statute is required for Congress to freeze an agency's prior interpretation of a term contained in new legislation in a manner that prohibits the agency from revisiting it. Absent express Congressional restraint, an agency is presumed to have the power to change or modify a definition, consistent with the exercise of its discretionary powers, provided that it complies with reasoned decisionmaking requirements under the Administrative Procedure Act.

In this regard, the Commission rightly cites in support of its authority the Supreme Court's conclusion in *Lukhard v. Reed* that it simply "is not true that whenever Congress enacts legislation using a word that has a given administrative interpretation it means

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21 *See Chevron*, 467 U.S. at 844.

to freeze that administrative interpretation in place."[22] Additional decisions similarly demonstrate that the Commission has authority to change the definition of "Grade B" signal intensity for purposes of the SHVA.

For example, in *AFL/CIO v. Brock*[23] the statute at issue authorized the Attorney General to approve visas for foreign workers under certain circumstances. The Attorney General issued regulations requiring employers to provide certification that specified requirements were met before importing foreign workers. The INS adopted regulations to govern the certification process and prohibited employers from paying foreign workers below an "adverse effect wage rate." Congress subsequently enacted the Immigration Reform and Control Act ("IRCA"), which incorporated the INS's prohibition on "adverse effect wage rates." The statute did not define "adverse effect," nor did it provide any instruction as to how adverse effect should be measured. Rather, as the D.C. Circuit found, the absence of further instruction indicated that such determinations were left to the discretion of the agency.[24]

The INS issued a new methodology contemporaneously with the passage of IRCA, and parties challenged the new methodology, arguing that the agency was required to continue its former policy pursuant to the reenactment doctrine. In effect the argument was the same as the argument made by the broadcasters in this proceeding: parties argued that

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22 *Lukhard v. Reed*, 481 U.S. 368, 379 (1987); *see Helvering v. Wilshire Oil Co.*, 308 U.S. 90, 100-01 (1939) ("[It is not true that a] regulation interpreting a provision of one act becomes frozen into another act merely by reenactment of that provision, so that that administrative interpretation cannot be changed prospectively through exercise of appropriate rulemaking powers."); *Notice* at ¶ 21.

23 835 F.2d 912 (D.C. Cir. 1987).

24 *Id.* at 914 (finding that "[t]he Department is entrusted with these tasks.").

Congress's express incorporation in IRCA of the Department's prohibition on "adverse effect wage rates" had the effect of codifying the INS's interpretation of the term as it existed at the time Congress enacted IRCA. The Court of Appeals conclusively rejected this argument, stating that "to freeze an agency interpretation, Congress must give a strong affirmative indication that it wishes the present interpretation to remain in place."[25] The court held that even had there been indications that Congress knew of the Department's previous interpretation of the term, "such legislative approval of an agency's policy does not necessarily preclude the agency from subsequently changing that policy."[26] Although the court subsequently remanded the agency's decision, it did so only on the basis that the agency failed to provide adequate reasoning for the policy change.[27]

In this case, there is no "strong affirmative indication" in Section 119 that

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25 *Id.* at 916.

26 *Id.*

27 *Society of Plastics Industry, Inc. v. ICC*, 955 F.2d 722 (D.C. Cir. 1992), also is instructive. That case involved the Interstate Commerce Act's definition of "joint rate." Although the Act did not define "joint rate," the Court found that it was clear that Congress used the term in its traditional meaning, because at the time of enactment there was only one type of "joint rate." Parties challenged the Interstate Commerce Commission's construction and implementation of the term, which encompassed a new, agency-created Multiple Independent Factor Through Rate ("MIFTR"). They argued that Congressional enactment of subsequent legislation that also referred to "joint rates" with only limited change meant that Congress had ratified the term in its traditional usage, and therefore that the agency's varying interpretation of the term was incorrect. The court was not persuaded. It found that prior to the enactment of the legislation, no judicial or administrative opinion had addressed the precise question of whether an MIFTR was a permissible joint rate. Therefore, even though Congress may have contemplated only traditional joint rates when it passed the subsequent legislation, it did not follow that Congress intended for the traditional meaning of joint rate to be the exclusive meaning of joint rate. The court accordingly upheld the ICC's interpretation, stating that the agency "reasonably rejected petitioner's plea to freeze the former regulatory approach and historical practice in the industry as a legal requirement." *Id.* at 731.

Congress intended to freeze the definition of "Grade B" signal intensity. The *Notice* correctly observes that "[w]here Congress intended to incorporate regulations as they existed on a certain date, it has expressly done so."[28] Here it did not. With its use of the phrase "as defined by the Commission," Congress left it to the Commission's discretion to define "Grade B" signal intensity. This reading is consistent with the broad delegation of powers that Congress conferred upon the Commission in its authorizing statute, and with principles of deference to agency discretion.

B. The Commission Has Authority To Promulgate Different Definitions For "Grade B" Signal Intensity For Different Purposes

The *Notice* raises the more specific question of whether the Commission "has the authority to revise its Grade B rules specifically for the purposes of the SHVA" or to promulgate "special provisions that would apply only to SHVA."[29] In this context, the answer once again is yes.

The *Notice* correctly characterizes as "indisputable" the notion that the Commission has the authority to make changes to its current regulations as long as such changes are accompanied by reasoned explanation.[30] Delegated power to promulgate regulations necessarily contemplates the power to change them without prior Congressional approval. Courts consistently have upheld the Commission's authority to adapt its policies to the constant

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28 *Notice* at ¶ 20 (noting, by way of contrast, that definition of "'local service area of a primary transmitter' explicitly references Commission regulations 'in effect on April 15, 1976, or such station's television market as defined in section 76.55(e) of title 47, Code of Federal Regulations (as in effect on September 18, 1993)...'") (footnote omitted).

29 *Id.* at ¶ 22.

30 *Id.* (citing *Greater Boston Television Corp. v. FCC*, 444 F.2d 841, 850-51 (D.C. Cir. 1970)).

technological changes posed by the dynamic industry it regulates:

> According agencies the power to change their minds about their own policies, practices, and procedures rests on a sound policy basis. Agencies need some flexibility in carrying out their authority. This is particularly true of the FCC. Technological, commercial and societal aspects of the television industry are in constant flux.[31]

Such authority contemplates the Commission's ability to change past interpretations or application of its rules.[32] It also contemplates the Commission's ability to use different definitions in different contexts, as the agency's experience and expertise demands.

Indeed, the Commission frequently exercises this authority to tailor a definition of the same term for different, specific purposes. In its recent implementation of DBS public interest obligations, for example, the Commission took a different approach to implementing the term "editorial control" than it took with respect to cable leased access channels, recognizing "distinct differences" in the Congressional purposes underlying the two statutory provisions, as well as differences in the way the term was used in those provisions.[33] Closer to home, the *Notice* observes that the Commission has "tailored its rules for specific purposes in the past," *e.g.*, in determining television stations' service areas using two different (albeit related) methods, depending on the purpose.[34]

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31 *Rainbow Broadcasting Company v. FCC*, 949 F.2d 405, 409 (D.C. Cir. 1991).

32 *FCC v. Pottsville Broadcasting, Co.*, 309 U.S. 134 (1940)("Underlying the whole [Communications Act] is recognition of the rapidly fluctuating factors characteristic of the evolution of broadcasting and of the corresponding requirement that the administrative process possess sufficient flexibility to adjust itself to these factors.").

33 Implementation of Section 25 of the Cable Television Consumer Protection and Competition Act of 1992, MM Docket No. 93-25 (rel. Nov. 25, 1998), at ¶ 103.

34 *Notice* at ¶ 22; *see id.* at ¶ 34.

The Supreme Court has upheld the authority of federal agencies to employ different definitions for different purposes. Indeed, the crux of the Court's opinion in *Chevron U.S.A. v. Natural Resources Defense Council*[35] involved this very issue. For two separate sections of the same statute it sought to implement, the EPA used different definitions for the term "source." Deferring to the agency's interpretation of the statute, the Supreme Court held that:

> An initial agency interpretation is not instantly carved in stone. On the contrary, the agency, to engaged in informed rulemaking, must consider varying interpretations and the wisdom of its policy on a continuing basis. Moreover, the fact that the agency has adopted different definitions in different contexts adds force to the argument that the definition itself is flexible, particularly since Congress has never indicated disapproval of a flexible reading of the statute.[36]

In fact, it is not uncommon for an expert agency to employ different definitions for the same term, depending upon the context in which it is used. In accordance with *Chevron*, courts have upheld their authority to do so, and have deferred to the agency's expertise in the matter.[37]

In sum, there is no problem with the FCC here proceeding to implement a SHVA-specific Grade B intensity definition and associated predictive model, even if the agency uses different values or methodologies in other contexts. It is in fact part of the FCC's public interest mission to be discriminating in applying its expertise, and not to impose blindly "one-size-fits-

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35 467 U.S. 837 (1984).

36 *Id.* at 863-64.

37 *See, e.g., Mobile Oil Corporation v. EPA*, 871 F.2d 149 (D.C. Cir. 1989) ("If the agency believes that the legislative purposes will best be satisfied by construing the term to mean different things in different contexts, then it may act upon that premise."); *United Technologies Corporation v. EPA*, 821 F.2d 714 (D.C. Cir. 1987) (upholding agency's divergent definitions of "facility").

all" regulation in vastly different circumstances.

C. The Commission's Authority To Define "Grade B" Signal Intensity Includes Authority To Adopt Methods For Predicting and Measuring Signal Intensity

The Commission's final questions as to its legal authority relate to its ability to "develop a model for predicting whether an individual household can receive a signal of Grade B intensity for purposes of the SHVA," and whether the Commission's authority to define a signal of Grade B intensity "reasonably includes the authority to adopt a method of measuring signal intensity at an individual household."[38] In DIRECTV's view, there are few matters that are more clearly within the FCC's ability to address.

In general, subject to APA standards of reasoned decisionmaking, an agency receives great deference with respect to its determinations on methodological or technical matters.[39] In this case, the SHVA's reference to "Grade B" signal intensity necessarily requires some method of predicting and measuring the intensity of over-the-air signals. By only referencing the FCC's authority to "define[]" signals of Grade B intensity, Congress plainly left to the Commission the ancillary selection of predictive and measurement methodologies associated with that definition.

Indeed, there is little question that the issues attending the definition, prediction

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38 *Notice* at ¶¶ 24-25.

39 *See, e.g., Inland Empire Public Lands Council v. Schultz,* 992 F.2d 997 (9th Cir. 1993)("We defer to agency expertise on questions of methodology unless the agency has completely failed to address some [essential] factor."); *Lockhart v. Kenops*, 927 F.2d 1028 (8th Cir. 1991) ("Our deference to the agency is greatest when reviewing technical matters within its area of expertise, particularly its choice of scientific data and statistical methodology . . . Where, as here, the agency presents scientifically respectable conclusions . . . we will not displace the administrative choice.") (quoting *Louisiana ex rel. Guste v. Verity*, 853 F.2d 322, 329 (5th Cir. 1988)).

and measurement of Grade B signals are technical matters that are uniquely within the FCC's expertise. As the Copyright Office has recognized, the unserved area restriction is essentially a "communications regulation" that "appropriately belongs" in the province of the FCC.[40] Unlike the Copyright Office, the FCC has the "considerable experience and expertise," and the "continuing jurisdiction and regulatory mechanisms to make adjustments to its regulations on a case by case basis should any difficulties arise."[41] The FCC also has the "engineering expertise" to explore what measurement standards should be utilized to ascertain whether a subscriber is truly "unserved."[42]

Section 73.683(c), by its own terms, limits the application of the Commission's field strength contour methodology.[43] While Part 73's measurement and prediction techniques constitute one set of tools relating to signal propagation and reception that can be used in a variety of contexts, the Commission correctly recognizes that its rules "do not typically focus on signal availability measurement techniques relating to service to a single discrete location or household."[44] Given the Commission's acknowledged "history of using different tools in different contexts depending on the degree of precision desired, the expense of the process used, and the economic and technical tradeoffs involved in any specific issue,"[45] the Commission has

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40 U.S. Copyright Office, *A Review of the Copyright Licensing Regimes Covering Retransmission of Broadcast Signals* (August 1, 1997), at 125-26.

41 *Id.*

42 *Id.* at 126.

43 47 C.F.R. § 73.683(c) ("The field strength contours will be considered for the following purposes *only*. . .") (emphasis added).

44 *Notice* at ¶ 26.

45 *Id.*

the authority to and should create a new set of tools here.

III. THE COMMISSION SHOULD DEFINE GRADE B SIGNAL INTENSITY MORE ACCURATELY FOR SHVA PURPOSES AND DEVELOP AN SHVA-SPECIFIC GRADE B PREDICTIVE MODEL THE RESULTS OF WHICH PRESUMPTIVELY MEETS THAT DEFINITION

A. The Commission Should Immediately Revise Its Grade B Signal Strength Values To Reflect The Receipt Of An Acceptable Quality Picture In Today's Digital Multichannel Video Environment

The Commission's rules presently calculate Grade B "field strength contours" as follows:

	Grade A (dBu)	Grade B (dBu)
Channels 2-6	68	47
Channels 7-13	71	56
Channels 14-69	74	64

47 C.F.R. § 73.683(a). The rules acknowledge on their face that these contours and signal strengths are "considered" in the context of "the authorization of TV stations,"[46] and are to be used "only" for certain purposes,[47] such as interference mitigation. SHVA compliance is *not* one of the enumerated purposes. Nor is there any indication that the Commission ever contemplated using these contours for purposes of SHVA compliance. Certainly the Commission has never verified by testing that these contours are appropriate in the SHVA context. Thus, the *Notice* properly recognizes that "[a] signal of Grade B intensity is an objective standard that, *as currently defined in Section 73.683*, may not distinguish adequately between served and unserved households."[48]

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46 47 C.F.R. § 73.683(a).

47 47 C.F.R. § 73.683(c).

48 *Notice* at ¶ 27 (emphasis added).

As the *Notice* explains, the Grade B signal strengths specified in the current rules "were designed to enable reception of a television picture that is acceptable to the median observer, 'assuming a receiving installation (antenna, transmission line, and receiver) considered to be typical of outlying or near-fringe areas.'"[49] Although defined in terms of discrete values measured in dBu's, the Commission acknowledges that the intensity of broadcast signals at particular locations and at particular times cannot be precisely determined by predictive methods.[50] The Commission's propagation curves predict the occurrence of median signal strengths (signal strengths expected to be exceeded at 50% of the locations in a particular area at least 50% of the time), and under this approach, "location" and "time" variability factors are added to the signal level for an acceptable picture so that the desired statistical reliability is achieved.[51] Thus, the values chosen in the Commission's rules for Grade B signal intensity account for this variability, and predict that the best 50% of the locations along the Grade B contour will receive an acceptable picture 90% of the time.[52]

The Commission's current Grade B signal strength values are based upon planning standards and signal propagation assumptions that are clearly outdated, and the validity of the assumptions that underlie them have been questioned for decades. Thus, Hatfield and Dawson observe that "[t]he values selected for the planning factors have been carried through to the present time from the early 1950's, the days of black and white television and limited national service, despite substantial evidence that these values are outmoded and in need of

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49 *Id.* (citation omitted).

50 *Id.* at ¶ 32.

51 *Id.*

52 *Id.*

modification."[53]

Furthermore, the Commission is correct to query whether "the concept of the quality of service that viewers consider acceptable [has] changed since the Commission adopted Grade B signal strength levels in the 1950s."[54] With respect to consumer expectations, the Commission itself noted more than five years ago the following:

> [W]e recognize that the American household's typical television equipment has changed markedly since . . . the early 1970's [when] most television households had a single television set, usually black and, and VCRs were non-existent . . . . Today, however, some two decades later, close to 70% of television households have VCRs, and the average number of television sets in a household is two. In addition, a significant number of television sets in use are now 26 inches or larger diagonally, and black and white sets are uncommon. Notably, signal degradation is more noticeable . . . on larger and on color sets.[55]

Consumers today quite simply live in a world of markedly better picture quality relative to the time when the Commission's original Grade B signal intensity values were promulgated. Cable television passes more than 97% of the homes in the country, with must carry requirements that result in good quality broadcast station signals being delivered to tens of millions of consumers. Television sets themselves -- even today's low end models -- feature picture quality that far exceeds that of the era in which the Commission's original Grade B signal strengths were promulgated. And of course, the millions of subscribers served by DBS operators and digital wireless cable systems generally receive all digital pictures, which has further heightened the

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53 Hatfield and Dawson at 4.

54 *Notice* at ¶ 27.

55 Cable Television Technical and Operational Standards, Report and Order, 7 FCC Rcd 2021 (1992), at ¶ 25.

expectations of television consumers in the 1990's. Indeed, broadcasters themselves are beginning to offer digital television signals.

There simply is no turning back. The FCC should adopt rules for SHVA purposes that specify Grade B signal strengths for each set of channels that are designed to more accurately reflect the receipt of an acceptable picture in today's multichannel video environment. DIRECTV recommends that the Commission adopt Grade B signal strength values of **70.75** dBu for low-band VHF stations, **76.5** dBu for high-band VHF stations and **92.75** dBu for UHF stations. These values are set forth and justified in the Hatfield and Dawson statement submitted by the SBCA, based upon an effort to adapt the Commission's original planning factors to achieve a meaningful measure of Grade B signal strength for SHVA purposes.[56] These signal strength numbers more accurately reflect the current signal propagation environment and consumer expectations. Although these values are conservative, they provide meaningful relief for DTH subscribers that cannot receive acceptable over-the-air signals.

B. The Commission Should Adopt For Purposes Of The SHVA A Methodology Designed To Accurately Predict Whether A Household Can Receive A Signal Of Grade B Intensity

DIRECTV believes that a meaningful predictive model for determining whether subscribers are receiving signals of Grade B intensity is essential to any workable administration of SHVA requirements. The *Notice* correctly recognizes the impracticalities of requiring satellite operators to take actual measurements at each and every home, which would be cost prohibitive, and the corresponding benefits of a "Commission-endorsed model" that could be relied upon by both broadcast and satellite operators alike "when deciding whether individual consumers are

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56 Hatfield and Dawson at Appendix 2, "Recommended Planning Factors."

presumed to be eligible to receive satellite-delivered signals."[57]

The FCC can and should adopt a methodology that accurately predicts signal strength to the home. In this regard, the *Notice* acknowledges that the Commission's traditional Grade B predictive methodology is "insufficient for predicting signal strength at individual households."[58] It does not accurately reflect topographical differences in a station's transmission area, nor does it account for interference from other signals.

A predictive methodology intended for purposes of ensuring interference protection is quite different from one that should be developed to ensure that households designated as "served" are receiving signals of a strength that ensures a good, viewable picture for SHVA purposes. DIRECTV believes that the solution to the Grade B compliance problem rests in large part upon the development of a point-to-point model that provides better predictive capability, uses more realistic parameters, and can be applied easily in the commercial marketplace. As set forth below, the SBCA has proposed such a model. It should be adopted.

1. Advantages of a point-to-point approach

There has been much confusion regarding the difference between a Grade B *contour* that is primarily featured in the Commission's rules, and a "signal of Grade B intensity" as referenced in the SHVA. Only the latter is relevant to Section 119's "unserved household" definition. That is the measurement that determines whether a particular household is eligible to receive a satellite-delivered distant network signal. It is also a point that has been thoroughly obscured in recent litigation over the Grade B standard.

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57 *Notice* at ¶ 24.

58 *Id.* at ¶ 33.

As the *Notice* explains, a "Grade B" signal represents the field strength of a signal "that is strong enough, in the absence of man-made noise or interference from other stations, to provide a television picture that the median observer would classify as acceptable using a receiving installation . . . typical of outlying or fringe areas."[59] By contrast, the Grade B contour is :the set of points along which "the best 50% of the locations should get an acceptable puncture at least 90% of the time."[60] The Commission's rules utilize a contour-based approach, and "do not typically focus on signal availability measurement techniques relating to service to a single discrete location or household."[61] The Commission's current rules therefore set forth an "imperfect methodology for predicting whether an individual household can receive an adequate signal."[62]

A point-to-point approach, as the *Notice* recognizes, better comports with the focus of the SHVA, and accommodates a more precise analysis of signal reception at individual households. Furthermore, a point-to-point approach can be easily implemented, as Hatfield and Dawson explain:

> The use of specific point-to-point software implementations to screen consumer eligibility is not a difficult or expensive task for service providers. The street address of any household in the U.S. can be used to determine a set of geographic coordinates to the nearest second, using ubiquitous and inexpensive commercially available software. Software can be developed by users from Federal government sources for several versions of TIREM and Longley-Rice. The FCC's television station database can be used to obtain data on the transmitting facilities of all television stations

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59 *Notice* at ¶ 4.

60 *Id.* at ¶ 32.

61 *Id.* at ¶ 26.

62 *Id.* at ¶ 33.

> licensed by the FCC. Land use and land cover data, and topography data are available from the U.S. Geological Survey, and from other Federal sources. Given that there will be a modest number of potential customers for efficient and easy to use software, it is likely that commercial software vendors will package suitable offerings for that user community.[63]

The *Notice* in fact proposes a point-to-point predictive approach based on the Longley-Rice propagation model adopted for DTV purposes. DIRECTV believes, however, that the SBCA-proposed TIREM-based approach is superior, as explained below.

3. SBCA's TIREM-based model is superior to Longley-Rice and should be adopted as the FCC-approved methodology for determining whether subscribers reside in "unserved" areas

The predictive methodology adopted by the Commission for SHVA compliance purposes should provide the most accurate prediction possible as to whether an individual household can receive an acceptable network affiliate signal. While the *Notice* cites the advantages of Longley-Rice as a point-to-point methodology in describing "actual areas of coverage" more precisely relative to the Grade B contour methodology contained in existing Commission rules, DIRECTV believes that there is an even better point-to-point approach that should be adopted for SHVA purposes.

As Hatfield and Dawson explain, Longley-Rice has proven to be a good choice for purposes of allotting digital television channels. However, the circumstances here "are very different":

> In the DTV proceeding, the Commission was concerned with the general replication of service over wide areas. In the SHVA situation the Commission is compelled by the statutory language to provide a method which is valid for computation of service at individual household locations. Because it is manifestly just at

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63 Hatfield and Dawson at 10-11.

> those locations where propagation path impairments may result in input parameter variations which cannot properly be calculated by Longley-Rice 1.2.2, its use for SHVA compliance testing is unsupportable.[64]

Because of the computational shortcomings of Longley-Rice, DIRECTV urges the Commission to endorse the modified predictive approach based on TIREM, as proposed by Hatfield and Dawson in connection with SBCA's comments. Like Longley-Rice, TIREM was developed by a federal agency, the NTIA (in support of the DoD), is well understood, and is publicly available.[65] Like Longley-Rice 1.2.2, TIREM accounts for terrain roughness. As Hatfield and Dawson explain, however, while Longley-Rice may be a superior model for predicting wide area Grade B coverage, TIREM's "conservative assumptions . . . make it . . . a very useful program for testing specific paths, especially those with complex geometry."[66] In particular, as Hatfield and Dawson explain, TIREM has significant advantages over the Longley-Rice 1.2.2. methodology proposed in the *Notice*, which include:

- TIREM calculates losses due to terrain obstructions (*i.e.*, diffractive losses) using a much more sophisticated technique which involves up to 8 different modes that are automatically selected by the program to suit the exact conditions along the propagation path.
- TIREM includes techniques to minimize or eliminate the abrupt discontinuities, common in Longley-Rice calculations, in calculated loss along a path.
- Unlike Longley-Rice, TIREM can handle receiving sites that are close to obstructions without returning error messages.

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64 *Id.* at 7.

65 The TIREM program is described in detail and compared to Longley-Rice in *IEEE Transactions on Vehicular Technology*, Vol. 37, No. 1 (Feb. 1988) at 36-40.

66 Hatfield and Dawson at 8.

- TIREM continues to be refined by the NTIA and others.[67]

The Corporation for Public Broadcasting utilized TIREM for studies conducted for PBS television stations in the late 1970's, and found TIREM uniquely able to show "islands" of poor coverage and other topographically specific coverage anomalies well within the predicted Grade B contours of television stations.[68] DIRECTV agrees with Hatfield and Dawson that this "is precisely the sort of propagation path which is likely to be the case" for potential unserved subscribers "that cannot obtain good service from local television stations, despite location within the Grade B, or even the Principal community coverage contour."[69] In addition, DIRECTV supports the use of the TIREM computer program in conjunction with the United States Geological Survey's Land Use and Land Clutter ("LULC") database to determine additional losses due to foliage and other land use conditions that exist in the vicinity of the receiving location.[70]

Adoption of the proposed modified TIREM program as the FCC-endorsed method of determining whether subscribers are "unserved" for section 119 purposes would be an immensely useful step in helping to increase the likelihood that subscribers that cannot receive a quality Grade B over-the-air broadcast signal are afforded a satellite-delivered alternative. The Commission should adopt this model as the exclusive predictive methodology for SHVA purposes.

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67 *Id.* at 11.

68 *Id.* at 8.

69 *Id.*

70 *Id.* at 11-12.

C. Compliance With A Predictive Model Should Be Accorded Presumptive Weight

DIRECTV believes that it is essential that any methodology adopted in this proceeding intended to predict a household's inability to receive an acceptable television picture must be given *presumptive weight* by decisionmakers for SHVA enforcement purposes. The *Notice* correctly acknowledges that while "a predictive model need not replace actual measurement," it "could serve as a presumption of service or lack of service for purposes of the SHVA."[71] One of the most difficult aspects of SHVA administration has been the expense involved in actual testing. A presumption based upon a prediction that a subscriber is "served" or "unserved" utilizing a Commission-endorsed model would indeed make administration of the SHVA unserved household restriction much more workable and cost-effective for the broadcast and satellite industries, and most important, for consumers.[72]

DIRECTV proposes that the presumption of compliance based upon the predictive model be made rebuttable. Challengers of this rebuttable presumption, however, would bear the burden of proof. Moreover, any testing would be undertaken at the challenger's expense. This burden of proceeding will appropriately recognize the integrity of the more precise predictive methodology and provide an appropriate disincentive for parties to indiscriminately undertake actual household measurements, and yet will still accommodate the rare scenarios where even the more precise model's prediction may be called into question.

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71 *Notice at* ¶ 24.

72 *Id.*

D. The Commission's Present Method Of Measuring The Field-Strength Of Over-The-Air Signals Is Unworkable For SHVA Purposes

Finally, because individual testing at the home is indeed the "safety net" for proving that a specific household is "unserved" under the SHVA, DIRECTV agrees that there is a need for the Commission to approve a "low cost, accurate, and reproducible methodology for measuring the presence of a Grade B signal intensity signal in a household."[73] Furthermore, as Echostar has explained, the Commission's present methodology for measuring signal strength does not account for various real-life factors that prevent many of those who might be "measured" as receiving such signals under the Commission's current methodology from actually doing so.[74] The *Notice* itself acknowledges that the Commission's testing methodology is riddled with "assumptions [that] may not hold in individual situations."[75]

For example, the Commission's current method of conducting field strength measurements within a television station's service area assumes the presence of a 30-foot antenna. Yet, this is an inherently unrealistic assumption for assessing SHVA "unserved households,"[76] and indeed, affirmatively conflicts with the SHVA's requirement that a signal of Grade B intensity be received using a "conventional outdoor rooftop antenna."[77] No "conventional" rooftop antenna -- certainly no antenna for a single story home --has a height of 30 feet. Nor will consumer antennas be oriented toward each television station's broadcast

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73 *Notice* at ¶ 37.

74 Echostar Petition at 27-29.

75 *Notice* at ¶ 39.

76 *Id.*

77 17 U.S.C. § 119(d)(10)(A).

tower, as the Commission's current methodology presupposes.[78] And the Commission's requirements of clusters of tests and a 100-foot mobile run simply "ignore[] the fact that homes are stationary and that reception may vary considerably over a mobile run on a nearby street."[79]

In line with the other changes that DIRECTV and others in the DTH industry have advocated, DIRECTV also urges the Commission to adopt a method of actually measuring signal strength that features the following characteristics proposed by the SBCA:

- Measurements should be taken in an accessible location, as close as possible to the residence, at actual roof height.
- Signal strength readings should be taken approximately every thirty seconds for a period of five minutes.
- Each of these readings should subsequently be adjusted for signal strength loss due to the actual length of the antenna line and the actual number of splitters per household.[80]

If more than one of the ten signal strength values computed under this method (*i.e.*, greater than 10%) is less than the Grade B signal strength values proposed above by DIRECTV and the SBCA, then that subscriber should be deemed an "unserved household" under the SHVA, and consequently should be eligible to receive satellite-delivered network signals.

IV. CONCLUSION

The need for Commission action is dire. As the scope of the "Grade B" definition continues to be litigated in the federal courts without definitive guidance from the FCC -- the expert agency that can take into account the public policy interests of and consequences for *both*

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78 *Notice* at ¶ 39.

79 *Id.*

80 Comments of the SBCA at 22.

the satellite and broadcast industries -- consumer confusion and anger will only continue to grow, as hundreds of thousands of subscribers living in areas that are not adequately served by off-air broadcast signals are nonetheless precluded from receiving network signals via satellite. The Commission has the legal and policy mandate to step into the fray and minimize public confusion by providing a definitive statement on the Grade B signal intensity standard. To the extent that subscribers are driven into the arms of cable monopolists by virtue of unfortunate and unnecessary interpretations of the "unserved household" definition, the public interest result will be an extremely negative one for both competition and consumers.

As described above, the Commission's rules should be modified to include: (i) Grade B signal strength values specifically crafted for use in determining which households are "unserved" under the SHVA; (ii) endorsement of a TIREM-based methodology, in conjunction with additional adjustments for losses due to foliage and other land use conditions (among other factors), that can be used to predict such whether households are "unserved," and the results of which will be given a presumptive legal effect in disputes regarding SHVA compliance; and (iii) a more practical and accurate method of measuring signal strength actually received at the home.

Respectfully submitted,

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