DOCKET FILE COPY ORIGINAL

FCC MAIL ROOM

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

2001 JAN 29 A 11: 53

In the Matter of:	)	
	)	
Carriage of Digital Television Broadcast Signals	)	CS Docket No. 98-120
	)	
Amendments to Part 76 of the Commission's Rules	)	
	)	
Implementation of the Satellite Home Viewer Improvement Act of 1999:	)	
	)	
Local Broadcast Signal Carriage Issues	)	CS Docket No. 00-96
	)	
Application of Network Non-Duplication, Syndicated Exclusivity and Sports Blackout Rules to Satellite Retransmission of Broadcast Signals	)	CS Docket No. 00-2

RECEIVED

FIRST REPORT AND ORDER AND FURTHER NOTICE OF PROPOSED RULE RULEMAKING

Adopted: January 18, 2001 **Released: January 23, 2001***

Comment Date: (45 days from the date of publication in the Federal Register)
Reply Comment Date: (90 days from the date of publication in the Federal Register)

By the Commission: Commissioner Ness approving in part, dissenting in part, and issuing a statement; Commissioner Furchtgott-Roth approving in part, dissenting in part, and issuing a statement at a later date; Commissioner Powell issuing a statement; Commissioner Tristani dissenting and issuing a statement.

TABLE OF CONTENTS

		Paragraph
I.	INTRODUCTION	1
II.	BACKGROUND	5
III.	CARRIAGE DURING THE DTV TRANSTITION	8
	A. Commercial Television Stations	13
	B. Noncommercial Educational Television Stations	17
IV.	RETRANSMISSION CONSENT ISSUES	24

* The final version of this *Report and Order and Further Notice of Proposed Rulemaking* was approved by the Commission on 1/19/01.

V.	DIGITAL BROADCAST SIGNAL CARRIAGE REQUIREMENTS	37
	A. Channel Capacity	37
	B. Signal Quality	44
	C. Content of Signals Subject to Mandatory Carriage	47
	D. Duplicative Signals	66
	E. Material Degradation	70
	F. Set Top Box Availability	77
	G. Channel Location	81
	H. Market Modifications	84
	I. Digital Signal Carriage on PEG Channels	86
	J. Complaints and Enforcement	87
VI.	CHANGES TO OTHER PART 76 REQUIREMENTS	88
	A. Open Video Systems	88
	B. Subscriber Notification	89
	C. Cable Antenna Relay Service	90
	D. Program Exclusivity Rules	91
	E. Tiers and Rates	101
VII.	FURTHER NOTICE OF PROPOSED RULEMAKING	112
	A. Digital Television Transition and Mandatory Carriage	117
	B. Channel Capacity	123
	C. Voluntary Carriage Agreements	128
	D. Tier Placement	132
	E. Per Channel Rate Adjustments	133
	F. Satellite Home Viewer Improvement Act Issues	135
VIII.	PROCEDURAL MATTERS	138

Appendix A: Comments Filed in CS Dkt. No. 98-120
Appendix B: Final Regulatory Flexibility Act Analysis
Appendix C: Initial Regulatory Flexibility Act Analysis
Appendix D: Rule Changes

I. INTRODUCTION

1. In the Notice of Proposed Rulemaking ("*Notice*") in this docket, we sought comment on a variety of issues relating to the carriage of digital television broadcast signals by cable television operators.[1] With this First Report and Order and Further Notice of Proposed Rulemaking ("*Report and Order*" / "*FNPRM*"), we resolve a number of technical and legal issues related to the carriage of digital broadcast signals under Sections 325 (retransmission consent), 336 (broadcast spectrum flexibility and ancillary and supplementary services), 614 (mandatory carriage of commercial television stations) and 615 (mandatory carriage of noncommercial educational television stations) of the Communications Act of 1934 ("Act").[2] In addition, we clarify that a digital-only television station may assert its right to carriage.

[1] *Carriage of the Transmissions of Digital Television Broadcast Stations*, Notice of Proposed Rulemaking, 13 FCC Rcd. 15092 (1998) ("DTV Must Carry Notice").

[2] We first sought and received comments addressing digital broadcast television carriage issues in 1995 in another docket. *See Advanced Television Systems and Their Impact Upon the Existing Television Broadcast Service*, Fourth Further Notice of Proposed Rulemaking and Third Notice of Inquiry, 10 FCC Rcd. 10540 (1995) ("*DTV Fourth FNPRM*"). We will refer to all Orders in Mass Media Docket No. 87-268, such as this one, as DTV Notices or Orders, depending upon the item.

(continued....)

Specifically, new television stations that transmit only digital signals, and current television stations that return their analog spectrum allocation and convert to digital operations, must be carried.

2. In this *Report and Order*, we resolve matters relating to retransmission consent, content-to-be-carried, channel capacity, channel placement, and a host of other operational issues. Our principal goal is to provide a framework for private resolution of the issues raised in the *Notice*, wherever possible, and to give guidance on technical issues relating to the carriage of digital television signals. Based on the record currently before us, we believe that the statute neither mandates nor precludes the mandatory simultaneous carriage of both a television station's digital and analog signals ("dual carriage").

3. On this point, we tentatively conclude that, based on the existing record evidence, a dual carriage requirement appears to burden cable operators' First Amendment interests substantially more than is necessary to further the government's substantial interests of preserving the benefits of free over-the-air local broadcast television; promoting the widespread dissemination of information from a multiplicity of sources; and promoting fair competition in the market for television programming.[3] However, in order to ensure that we have a sufficient body of evidence before us in which to evaluate this issue fully, so that we can ultimately resolve the issue of mandatory dual carriage, we find it necessary to issue a *Further Notice of Proposed Rulemaking* addressing several critical questions at the center of the carriage debate including, *inter alia*: (1) whether a cable operator will have the channel capacity to carry the digital television signal of a station, in addition to the analog signal of that same station, and without displacing other programming or services; (2) whether market forces, through retransmission consent, will provide cable subscribers access to digital television signals and television stations' access to carriage on cable systems; and (3) how the resolution of the carriage issues would impact the digital transition process. The responses to these and other inquiries will help determine the answer to the dual carriage issue.[4] In the *Further Notice*, we also raise questions concerning the applicability of the rules and policies we adopt herein to satellite carriers under the Satellite Home Viewer Improvement Act of 1999 ("SHVIA").[5] These and other matters will be addressed in the second phase of this proceeding.

4. At the outset, we recognize a number of statutory and public policy goals inherent in Section 614 and 615, and other parts of the Act. These include: (1) maximizing incentives for inter-

---

(...continued from previous page)
We note that matters concerning compatibility between digital cable operations and digital television reception equipment, which were once part of this docket, have been addressed by the Commission in a separate proceeding. *See Compatibility Between Cable Systems and Consumer Electronic Equipment*, Report and Order in PP Docket No. 00-67 (rel. Sept. 15, 2000).

[3]*See Turner Broadcasting System, Inc. v. U.S.*, 520 U.S. 180 (1997).

[4]We will be sending out a channel capacity and retransmission consent survey to 16 cable operators in a separately issued item ("Cable Survey")(see below for more information). The responses from the survey will be incorporated into the *Second Report and Order* in this proceeding.

[5]The Commission must apply the cable carriage rules in a comparable manner to satellite carriers. Satellite Home Viewer Improvement Act of 1999 ("SHVIA"), Pub.L. No. 106-113, 113 Stat. 1501, 1501A-526 to 1501A-545 (Nov. 29, 1999); *See also Implementation of the Satellite Home Viewer Improvement Act of 1999: Broadcast Signal Carriage Issues*, Report and Order, FCC 00-417 (rel. November 30, 2000). *See also Implementation of the Satellite Home Viewer Improvement Act of 1999: Application of Network Non-duplication, Syndicated Exclusivity and Sports Blackout Rules to Satellite Retransmission of Broadcast Signals*, Report and Order, FCC 00-388, (rel. November 2, 2000).

industry negotiation; (2) minimizing disruption to cable subscribers as well as the cable industry; (3) promoting efficiency and innovation in new technologies and services; (4) advancing multichannel video competition; (5) maximizing the introduction of digital broadcast television; and (6) maintaining the strength and competitiveness of broadcast television. Our goal is to facilitate an efficient market-oriented structure that implements the Act in a manner that, to the extent possible, permits private agreements to resolve issues. Based on the importance of cable television in the video programming marketplace, we believe that the cooperation and participation by the cable industry during the transition period would further the successful introduction of digital broadcast television.

II. BACKGROUND

5. Pursuant to Section 614 of the Act, and the implementing rules adopted by the Commission in *Implementation of the Cable Television Consumer Protection and Competition Act of 1992, Broadcast Signal Carriage Issues Report and Order ("Must Carry Order")*,[6] a commercial television broadcast station is entitled to request carriage on cable systems located within the station's market. A station's market for this purpose is its "designated market area," or DMA, as defined by Nielsen Media Research.[7] The Act states that systems with more than 12 usable activated channels must carry local commercial television stations, "up to one-third of the aggregate number of usable activated channels of such system[s]."[8] Beyond this requirement, the carriage of additional television stations is at the discretion of the cable operator. In addition, cable systems are obliged to carry local noncommercial educational television stations ("NCE stations") according to a different formula and based upon a cable system's number of usable activated channels.[9] Low power television stations, including Class A stations, may request carriage if they meet six statutory criteria.[10] A cable operator, however, cannot carry a low power television station in lieu of a full power television station.[11]

---

[6]*Broadcast Signal Carriage Issues*, 8 FCC Rcd 2965 (1993) ("*Must Carry Order*"); *See also*, *Broadcast Signal Carriage Issues*, MM Docket 92-259, 9 FCC Rcd 6723 (1994) ("*Must Carry Reconsideration*").

[7]A DMA is a geographic market designation that defines each television market exclusive of others, based on measured viewing patterns.

[8]47 U.S.C. §534(b)(1)(B); 47 C.F.R. §76.56(b)(2). A cable operator of a cable system with 12 or fewer usable activated channels shall carry the signals of at least three local commercial television stations, except that if such a system has 300 or fewer subscribers, it shall not be subject to any requirements under this section so long as such system does not delete from carriage by that system any signal of a broadcast television station. 47 U.S.C. §534(b)(1)(A); 47 C.F.R. §76.56(b)(1).

[9]Noncommercial television stations are considered qualified, and may request carriage if they: (1) are licensed to a community within fifty miles of the principal headend of the cable system; or (2) place a Grade B contour over the cable operator's principal headend. Cable systems with: (1) 12 or fewer usable activated channels are required to carry the signal of one qualified local noncommercial educational station; (2) 13-36 usable activated channels are required to carry no more than three qualified local noncommercial educational stations; and (3) more than 36 usable activated channels shall carry at least three qualified local noncommercial educational stations. *See* 47 U.S.C. §535(b) and (e); 47 C.F.R. §76.56(a).

[10]*See* 47 U.S.C. §534(h)(2); 47 C.F.R. §76.55(d).

[11]47 U.S.C. §§534(b)(1)(A) and (h)(2); 47 C.F.R. §76.56(b)(1) and (b)(4)(i).

6. Cable operators are currently required to carry local television stations on a tier of service provided to every subscriber[12] and on certain channel positions designated in the Act.[13] Cable operators are prohibited from degrading a television station's signal.[14] but are not required to carry duplicative signals[15] or video that is not considered primary.[16] Television stations may file complaints with the Commission against cable operators for non-compliance with Sections 614 and Section 615.[17] In addition, both cable operators and television stations may file petitions with the Commission to either expand or contract a commercial television station's market for broadcast signal carriage purposes.[18] These statutory requirements were implemented by the Commission in 1993,[19] and are reflected in Sections 76.56-64 of the Commission's rules.

7. In a recent Memorandum Opinion and Order regarding band-clearing of the 700 MHz spectrum ("*700 MHz Order*"), the Commission reiterated that cable carriage can play an important role as an alternative distribution channel during the transition period by providing continued service to viewers who would otherwise be deprived of broadcast service.[20] Although the Commission stated that it would be considering the scope and manner of cable carriage of digital broadcast signals in this proceeding, it discussed the cable industry's carriage obligations for future digital television signals in the *700 MHz Order*. First, the Commission clarified that cable systems are ultimately obligated to accord carriage rights to local broadcasters' digital signals.[21] Specifically, the Commission stated that existing analog stations that return their analog spectrum allocation and convert to digital are entitled to mandatory carriage for their digital signals consistent with applicable statutory and regulatory provisions.[22] The Commission also stated that to facilitate the continuing availability during the transition of the analog signal of a broadcaster who is party to a voluntary band clearing agreement with new 700 MHz licensees, such a broadcaster could, in this context and at its own expense, provide its broadcast

[12]*See* 47 U.S.C. §534(b)(7); 47 U.S.C. §535(h).

[13]*See* 47 U.S.C. §534(b)(6); 47 U.S.C. §535(g)(5).

[14]*See* 47 U.S.C. §534(b)(4)(A); 47 U.S.C. §535(g)(2).

[15]*See* 47 U.S.C. §534(b)(5); 47 U.S.C. §535(b)(3)(C).

[16]*See* 47 U.S.C. §534(b)(3)(A); 47 U.S.C. §535(g).

[17]*See* 47 U.S.C. §§534(d) and 535(j). *See also* 47 C.F.R. §76.61.

[18]*See* 47 U.S.C. §534(h)(1)(C). *See also* 47 C.F.R. §76.59.

[19]*See Must Carry Order*, 8 FCC Rcd 2965.

[20]*See Service Rules for the 746-764 and 776-794 MHz Bands, and Revisions to Part 27 of the Commission's Rules*, Memorandum Opinion and Order and Further Notice of Proposed Rulemaking, FCC 00-224 at para. 65 (released June 30, 2000)("700 MHz Order").

[21]*See 700 MHz Order* at para. 65.

[22]*Id.*

digital signal in an analog format for carriage on cable systems.[23] Specifically, the Commission stated that, in these circumstances, nothing prohibits the cable system from providing such signals in an analog format to subscribers, in addition to or in place of the broadcast digital signal, pursuant to an agreement with the broadcaster.[24]

III. CARRIAGE DURING THE DTV TRANSITION

8. The statutory provision triggering this rulemaking is found in Section 614(b)(4)(b) of the Act. This section requires that:

> At such time as the Commission prescribes modifications of the standards for television broadcast signals, the Commission shall initiate a proceeding to establish any changes in the signal carriage requirements of cable television systems necessary to ensure cable carriage of such broadcast signals of local commercial television stations which have been changed to conform with such modified standards.[25]

9. In the *Notice*, we recognized that, as a policy matter, the most difficult carriage issues arise during the transition because there will exist, for a temporary period, approximately twice as many television broadcast signals as are now on the air.[26] We noted that toward the end of the transition period, there would be an increasing redundancy of basic content between the analog and digital signals as the Commission's simulcasting requirements are phased in.[27] We recognized that, to the extent that the Commission imposes a dual carriage requirement, cable operators could be required to carry double the amount of television signals, that will eventually carry identical content, while having to drop various and varied cable programming services where channel capacity is limited.[28] We sought comment on several carriage options that address the needs of the broadcasters and the concerns of the cable operators

---

[23] *Id.*

[24] *Id.*

[25] 47 U.S.C. §534(b)(4)(B). There is little discussion of this provision in the Act's legislative history. However, the relevant language states that "when the FCC adopts new standards for broadcast television signals, such as the authorization of broadcast high definition television (HDTV), it shall conduct a proceeding to make any changes in the signal carriage requirements of cable systems needed to ensure that cable systems will carry television signals complying with such modified standards in accordance with the objectives of this section." H.R. Rep. No. 102-862, 102d Cong., 2d Sess. at 67 (1992); *see also* H.R. Rep. No. 102-628, 102d Cong., 2d Sess. at 94 (1992) ("The Committee recognizes that the Commission may, in the future, modify the technical standards applicable to television broadcast signals. In the event of such modifications, the Commission is instructed to initiate a proceeding to establish technical standards for cable carriage of such broadcast signals which have been changed to conform to such modified signals."). The Senate Committee Report describes the provision as providing that when the FCC adopts new standards for broadcast television signals, such as the authorization of broadcast HDTV, "it shall conduct a proceeding to make any changes in the signal carriage requirements of cable systems needed to ensure that cable systems will carry television signals complying with such modified standards in accordance with the objectives of new Section 614." *See* S. Rep. No. 102-92, 102d Cong., 1st Sess. at 85 (1991) ("*S. Rep. No. 102-92*").

[26] *DTV Must Carry Notice,* 13 FCC Rcd at 15113.

[27] *Id.*

[28] *Id.*

as well as the timing of mandatory digital broadcast signal carriage rules.[29] These proposals included a range of approaches from "immediate" or dual carriage, in which cable systems would be required to carry both analog and digital commercial television signals up to the one-third capacity limit;[30] the "either-or" proposal, in which broadcasters could choose must carry for either their analog or digital signals during the transition years;[31] and the "no must carry proposal," under which digital signals would not have mandatory carriage rights during the transition period, but only when the transition is over.

10. The broadcast industry generally urges the Commission to impose a dual carriage requirement during the transition period to ensure that viewers have continued access to all available local television programming.[32] In contrast, NCTA and other cable industry participants contend that digital must carry will "dictate technological outcomes before the market is ready."[33] Time Warner argues that if cable operators were required to carry digital broadcast signals during the transition, an operator's channel line-up would consist of blank screens because most consumers will not have digital television receivers or converters allowing them to display digital signals on their analog sets.[34] Cable programmers oppose a dual carriage requirement because they fear being dropped or being unable to gain carriage due to the addition of digital television signals to a cable operators' channel line-up.[35]

11. There was support for the "either-or" proposal, particularly from the public interest community. The United Church of Christ and other consumer advocates, filing jointly ("UCC"), believe that this middle-ground proposal, as it applies to commercial television stations, is the "most market friendly and statute friendly" solution.[36] They state that as penetration of digital receivers increases, compatibility between digital television receivers and cable equipment improves, and broadcasters finalize business plans for their new digital signal, each broadcaster can decide which of its signals it

[29] *Id.*

[30] *Id.*

[31] *Id.* at 15116. The Commission posited that the mandatory carriage option would default to the digital signal when the 100 percent simulcast rule goes into effect in 2005. *Id.*

[32] *See* Granite Broadcasting Comments at 3; Retlaw Comments at 5; ALTV Comments at 22; MSTV Comments at 52-53; Morgan Murphy Comments at 13.

[33] NCTA Comments at 3 and 39-40; AHN et. al. Comments at 32.

[34] Time Warner Comments at 8.

[35] HGTV/TV Food, for example, states that they are cable programming services owned by the E.W. Scripps Company, the licensee of nine television broadcast stations. They state that while Scripps supported Congress' analog must carry requirement, fundamental changes in the video programming marketplace, now force it to oppose a digital must carry requirement. HGTV/TV Food Comments at 2.

[36] UCC Comments at 11. UCC does advocate, however, that there should be a dual carriage requirement for non-duplicative noncommercial digital broadcast signals as those particular entities truly serve the public interest. *Id.* at 13-15.

would prefer to be carried.[37] UCC believes this option will help speed the transition to digital, preserve local broadcasting, and avoid duplicative signals that reduce diversity.[38]

12. After reviewing the extensive comments on the central issue of dual carriage during the transition period, we find it is unjustified for the Commission to act at this time in light of the constitutional questions the subject presents, including the related issues of economic impact.[39] We need further information on a range of issues, including cable system channel capacity and digital retransmission consent agreements to build a substantial record upon which to develop the best policy for the various entities impacted in this area. Notwithstanding our decision to obtain further comment on these matters, it is important to clarify that broadcast stations operating only with digital signals are entitled to mandatory carriage under the Act. We find that the burden on a cable operator to carry such stations is *de minimis*, with regard to new digital-only stations, and is essentially a trade-off in the case of a station substituting its digital signal in the place of its analog signal. To implement this clarification, we amend Section 76.5, the definition of television broadcast station, and specifically include the digital television Table of Allotments found at Section 73.622 of the Commission's rules.[40]

A. Commercial Television Stations

13. Section 614(a) of the Communications Act of 1934, as amended, provides:

> Carriage Obligations. – Each cable operator shall carry, on the cable system of that operator, the signals of local commercial television stations and qualified low power stations as provided by this section. Carriage of additional broadcast television signals on such system shall be at the discretion of such operator, subject to section 325(b).[41]

This section requires carriage for local commercial stations subject to the other provisions of Section 614. This section does not distinguish between analog and digital signals and supports the argument that digital signals are entitled to mandatory carriage.[42]

---

[37] *Id.*

[38] UCC Reply Comments at 23. UCC, however, disagrees with the Commission proposal to the extent that it suggests that the carriage option should default to the digital signal in the year 2005 as digital receiver penetration will still be well below 50% at that time. UCC Comments at 11.

[39] Since the issue of dual carriage will be addressed in the next phase of this proceeding, we need not consider at this time whether we should adopt separate, specific carriage rules for small cable operators as requested by America's Cable Association (formerly known as the small cable business association or "SCBA") and others. *See* SCBA Comments at 9, 13, 14; Pellegrin Comments at 5. The findings below, therefore, shall apply with equal force to large and small cable systems.

[40] *See* Appendix D.

[41] 47 U.S.C. § 534(a). We note that we are addressing the issue of whether a digital-only television station has a right to carriage, under Section 614(a), in a companion proceeding. *See* WHDT-DT, Channel 59-Stuart, Florida, *Petition for Declaratory Ruling that Digital Broadcast Stations Have Mandatory Carriage Rights*, FCC No. 01-23, (adopted Jan. 18, 2001).

[42] A similar provision, Section 615(a), requires carriage of noncommercial stations, as discussed more fully, *infra*. *See also* 47 U.S.C. § 535(a).

14. More specific to this proceeding, Section 614(b)(4)(B) provides that the Commission "shall initiate a proceeding to establish any changes in the signal carriage requirements of cable television systems necessary to ensure cable carriage of such broadcast signals of local commercial television stations which have been changed to conform with such modified standards."[43] Commenters offer differing interpretations of this Section. NAB and other broadcasters argue that Section 614(b)(1)(B) neither distinguishes between digital and analog signals nor establishes a transition period. Therefore, they contend, both should be carried simultaneously and immediately.[44] In contrast, NCTA and others in the cable industry argue that the phrase, "which have been changed," means that cable operators should be required to carry digital signals only when analog signals have been changed to digital signals, i.e., when the broadcasters no longer have both.[45] NCTA further argues that the Commission may not order mandatory carriage of both the DTV and analog signals during the transition period because the Commission is not expressly authorized to do so in the Act, and, based on Section 624(f), the Commission's authority may not be inferred.[46] We do not accept the arguments of either those commenters who say that the statute forbids dual carriage; nor those who argue that the statute compels dual carriage.

15. With respect to carriage of digital-only signals, we do not agree with NCTA's interpretation to the extent that it is intended to suggest that this Section requires a television station to wait until the end of the transition period before seeking digital signal carriage. There is nothing in the plain language of the statute or the legislative history to require such a restrictive reading. Indeed, as we noted above, section 614(a), which imposes carriage obligations on cable systems, does not distinguish between digital and analog signals. Thus, when a television station seeks carriage, the cable system must oblige regardless of whether the signal is in an analog or digital format, and provided that the station satisfies all other provisions of the Act and the Commission's rules.

16. We also disagree with NCTA's argument that Section 624(f) of the Act prohibits us from requiring the carriage of digital television signals. This particular section forbids Federal agencies and others from requiring the content of cable services except as expressly provided for in Title VI. Given that Congress has spoken to the issue of digital broadcast signal carriage in Section 614(b)(4)(B), and given such carriage is not barred under another statutory provision, digital broadcast signal carriage fits within the express requirement of section 614(a) and thus is 'expressly authorized' within the meaning of section 624(f). As such we do not believe that the Commission is outside the scope of its authority to impose such requirements simply because the signals in question are in a digital rather than in an analog format.

B. Noncommercial Television Stations

17. The importance of ensuring that noncommercial educational stations are accessible to the viewing public is consistently emphasized in the Act itself and its legislative history. Indeed, the Act

[43] 47 U.S.C. §534(b)(4)(B).

[44] NAB Comments at 3. *See also* ALTV Comments at 7 and MSTV Comments at 17.

[45] NCTA Comments at 10-11. *See also* Time Warner Comments at 31 and BET Reply Comments at 3.

[46] NCTA Comments at 7. (The Commission's authority to enact regulations affecting cable operators is strictly limited by Section 624(f) of the Act which provides: "Any Federal agency, State or franchising authority may not impose requirements regarding the provision of or content of cable services, except as expressly provided in this title.") 47 U.S.C. §544(f)(1).

mandates that cable operators devote additional channel capacity for the carriage of noncommercial educational television stations ("NCEs").[47] Congress found "a substantial governmental and First Amendment interest in ensuring that cable subscribers have access to local noncommercial stations."[48]

18. As stated above, Section 614(b)(4)(B) requires the Commission to initiate a proceeding to establish any changes in the signal carriage requirements of cable television systems that are necessary "to ensure cable carriage of such broadcast signals of local commercial television stations. . . ." (emphasis added).[49] In the *Notice* we asked how, if at all, carriage rights for digital noncommercial educational stations are affected given that they are not explicitly discussed in this section.[50]

19. The Association of America's Public Television Stations ("AAPTS"), on behalf of public broadcasters, states that the Commission has the authority to implement carriage requirements for all public television stations under Section 615 of the Act.[51] It asserts that Congress has not prohibited the Commission from adopting digital signal carriage rules for NCE stations.[52] It believes that the failure to include a provision in Section 615 that parallels Section 614(b)(4)(B) may have been an oversight, or it may have reflected the view that such a provision was unnecessary.[53] AAPTS argues that cable operators have special incentives to deny carriage to public television stations because their programming is not aimed at mass audiences.[54]

20. NCTA asserts that Section 615 applies only to "qualified" noncommercial television stations. The Act defines those stations to mean: "Any television broadcast station which . . . under the rules and regulations of the Commission in effect on March 29, 1990, is licensed by the Commission as a noncommercial educational television broadcast station and which is owned and operated by a public agency, nonprofit foundation, corporation, or association. . . "[55] NCTA argues that the Commission's digital television rules were not in effect on March 29, 1990, and the rules lending public television stations an additional channel on which to transmit digital signals during the transition were not adopted until seven years later. Thus, according to NCTA, Congress did not intend for cable operators to carry an NCE station's digital and analog signals during the transition.[56]

---

[47] *See* 47 U.S.C. §535.

[48] H.R. Rep. No. 862, 102nd Congress, 2d Sess. at 56 (1992)

[49] 47 U.S.C. §534(b)(4)(B).

[50] *DTV Must Carry Notice*, 13 FCC Rcd at 15120.

[51] AAPTS Comments at 13-14.

[52] *Id.*

[53] *Id.*

[54] *Id.* at 18. UCC believes that the Commission has ample authority to mandate must carry of both the analog and digital signals of noncommercial stations. However, UCC contends that this must carry privilege should only be available to (1) non-duplicative, non-time shifting programming; and (2) programming that is not advertiser supported. UCC Comments at 11.

[55] *See* 47 U.S.C. §535(l)(1)(A)(ii).

[56] NCTA Reply Comments at 13.

21. We believe that the government's interest in ensuring the availability of local noncommercial educational television on cable systems is manifest.[57] Section 615(a) states that "[E]ach cable operator of a cable system shall carry the signals of qualified noncommercial educational television stations in accordance with the provisions of this section."[58] Section 615(a) does not distinguish between digital and analog signals with regard to the 'signals' that must be carried. The Act does not contain any words or provisions specifically excluding the carriage of NCE digital television signals. The legislative history of the Act is also void of any language suggesting that Congress intended to deny mandatory carriage to digital NCE station signals. In addition, there is an implication in Section 336 and its legislative history that Congress intended the Commission to address all must carry issues in the Section 614(b)(4)(B) proceeding, including those relating to noncommercial educational stations covered by Section 615. Section 336 applies only to advanced (digital) television services; it has no application in the analog context. Section 336(b)(3) specifies that ancillary and supplementary services have no mandatory carriage rights under Section 614 or 615, which necessarily contemplates some consideration of must carry under Section 615 for noncommercial educational stations.[59] The legislative history of the conference agreement for this section states: "With respect to (b)(3), the conferees do not intend this paragraph to confer must carry status on advanced [digital] television or other video services offered on designated frequencies. Under the 1992 Cable Act, that issue is to be the subject of a Commission proceeding under section 614(b)(4)(B) of the Communications Act."[60] The most logical inference is that Congress contemplated that the Commission would address the issue of must carry for digital signals in the proceeding authorized by Section 614(b)(4)(B), which would cover both local commercial and noncommercial television stations.[61]

22. We therefore find that the digital signals of NCE stations are to be treated like their commercial counterparts for cable carriage purposes. Thus, NCE stations that broadcast only in digital are entitled to immediate carriage by cable systems, subject to the parameters set forth in Section 615 of the Act and the relevant Commission orders. And, like our decision with regard to commercial television stations, we decline to address the dual carriage issue for NCE stations in this phase of the proceeding.

23. AAPTS argues that the Commission should clarify the qualifying statutory term, "Grade B Service Contour." AAPTS asserts that this provision should be read to refer to a station for which either the Grade B service contour of the station or its digital coverage contour, whichever is larger, encompasses the principal headend of the cable system on which the station seeks carriage.[62] Given that

[57] *See, e.g.*, 1992 Conference Report at 50, 53, and 56. *See also*, declaration of policy underlying establishment and public funding of the Corporation for Public Broadcasting, 47 U.S.C. §396(a) (*e.g.*, "public television and radio stations and public telecommunications services constitute valuable local community resources for utilizing electronic media to address national concerns and solve local problems through community programs. . . it is in the public interest for the Federal Government to ensure that all citizens of the United States have access to public telecommunications services [which includes noncommercial educational and cultural television programs] through all appropriate available telecommunications distribution technologies") 47 U.S.C. §§ 396(a)(8) and (9); 397(14).

[58] 47 U.S.C. §535(a).

[59] 47 U.S.C. §336(b)(3).

[60] S. Rep. No. 230, 104th Congress, 2d Sess. at 161 (1996).

[61] *See also Ancillary and Supplementary Use of Digital Television Capacity by Noncommercial Licensees*, 14 FCC Rcd 537 (1998) (stating that § 336 "does not distinguish between commercial and noncommercial DTV licensees, nor does the legislative history . . .").

[62] AAPTS Comments at 51.

this matter is tied to the dual carriage issue, we decline to address the merits of AAPTS's Grade B argument at this juncture.

IV. RETRANSMISSION CONSENT ISSUES

24. Section 325 contains the Act's retransmission consent provisions.[63] The law governing retransmission consent generally prohibits cable operators and other multichannel video programming distributors from retransmitting the signal of a commercial television station unless the station whose signal is being transmitted consents or chooses mandatory carriage.[64] Every three years, analog commercial television stations must elect to either grant retransmission consent or pursue their mandatory carriage rights.[65]

25. The *Notice* raised numerous issues related to retransmission consent that can be resolved in this *Report and Order*. The issues are as follows: (1) whether separate retransmission consent/must carry elections are permitted for the analog and digital signals of a broadcast station;[66] (2) whether the timing of the election cycle must be modified; (3) whether a broadcaster may agree to partial carriage of its digital signal;[67] (4) whether the digital replacement signals for analog superstations should be treated as new signals for purposes of the retransmission consent provisions or should have the same status as the ones they replace;[68] (5) whether to extend the prohibition on analog exclusive retransmission consent agreements to the digital context;[69] (6) whether the Commission should prohibit analog-digital signal tying arrangements; and (7) the status of NCE stations under Section 325.

26. **Separate Analog and Digital Carriage Agreements.** Prior to the *Notice* in this docket, many broadcasters commented that the retransmission consent process should apply separately to the analog and digital broadcast signals. Commenters argued that separate must carry/retransmission consent elections should be allowed.[70] In the *Notice*, we renewed this inquiry.[71] NAB argues that a television station is entitled to separate elections because of the different level of bargaining power between the broadcaster and the cable operator with regard to each signal.[72] NCTA asserts that a broadcaster's digital signal is not entitled to must carry rights during the transition: therefore, as long as a licensee is transmitting an analog signal, its digital signal can only be carried pursuant to retransmission consent. NCTA states that, in this respect, the digital signal is no different from any other signal, such as a distant

---

[63] 47 U.S.C. §325(b)(1).

[64] 47 U.S.C. §§325(b)(1)(A), (B).

[65] 47 U.S.C. §325(b)(3)(B).

[66] *DTV Must Carry Notice*, 13 FCC Rcd. at 15111.

[67] *Id.*

[68] *Id.* at 15112.

[69] *Id.*

[70] Broadcaster Comments to *Fourth FNPRM in MM Dkt. No. 87-268* at 33.

[71] *DTV Must Carry Notice*, 13 FCC Rcd at 15111.

[72] NAB Comments at 41; *see also* ALTV Comments at 16.

television signal, that has no must carry rights; for those signals, as well as the transitional digital signal, the Act simply does not provide for a choice.[73]

27. With regard to those stations that simultaneously broadcast analog and digital television signals, we conclude that a broadcaster is permitted to treat the two differently for carriage purposes. That is, a television station may choose must carry or retransmission consent for its analog signal and retransmission consent for its digital signal.[74] This policy permits the same broadcaster to negotiate a retransmission consent agreement for some or all of its digital signal, if that is what it desires. Our decision here is intended to further the digital transition because we believe cable operators would be more willing to carry certain streams of digital content or ancillary or supplementary data if it is offered by a particular television station, even if that station chose must carry for its analog signal. We believe this scenario would be precluded if we were to prohibit a station from making such a selection.

28. We also find that DTV-only stations may choose either retransmission consent or mandatory carriage like their analog counterparts. The retransmission consent rules and regulations contained in Section 76.64 would likewise apply to digital broadcast television signals.

29. **Modification of the Election Cycle** In the *Notice*, we indicated that the Act requires local commercial television stations to elect either must carry or retransmission consent on a triennial basis.[75] We noted that new television stations can make their initial election anytime between 60 days prior to commencing broadcast and 30 days after commencing broadcast with the initial election taking effect 90 days after it is made.[76] We asked whether the existing cycle should be altered to accommodate the introduction of digital television or if we should apply the current "new station" rule to digital signals.[77] Pappas submits that a station commencing digital operations during the middle of an election cycle should be treated as a new station and permitted to make its election for the DTV transmission at any time between the 60th day prior to commencement of such transmissions and the 30th day thereafter. We believe that the Commission's existing new station rules should be used in the digital carriage context. The existing requirements are non-controversial and both cable operators and broadcasters are well accustomed to their use. Thus, for television stations broadcasting only a digital signal, the current rules applicable to new analog signals would apply. Our holding here would also apply to new digital-only noncommercial television signals, even though they are not specifically covered by Section 76.64 of the Commission's rules.

---

[73]NCTA Reply Comments at 25.

[74]This policy approach is taken under Section 325(b)(1)(A) of the Act, rather than Section 325(b)(1)(B), because we do not resolve the dual carriage question as this time.

[75]*Digital Must Carry Notice*, 13 FCC Rcd. at 15111 (*citing* 47 U.S.C. §325(b)(3)(B) (". . . television stations, within one year after the date of enactment of the Cable Television Consumer Protection and Competition Act of 1992 and every three years thereafter, make an election between the right to grant retransmission consent under this section and the right to signal carriage under section 614 [47 U.S.C. §534]."); and 47 C.F.R. §§76.64(f)(1) and (2) (providing that the first election must be made by June 17, 1993 and subsequent elections at three year intervals, the second by October 1, 1996 to take effect January 1, 1997, the third by October 1, 1999 to take effect January 1, 2000, and so on)).

[76]*Id.* (*citing* 47 C.F.R. §76.64(f)(4)).

[77]*Id.*

30. **Retransmission Consent Agreements for Partial Digital Signal Carriage.** In the *Notice*, we recognized that in the analog context "any broadcast station that is eligible for must carry status, although it may be carried pursuant to a retransmission consent agreement must . . . be carried in the entirety, unless carriage of specific programming is prohibited . . . pursuant to our rules."[78] We stated, however, that it may be desirable to allow partial carriage of digital signals pursuant to the retransmission consent process if that is what the parties agree to.[79] ALTV argues that permitting cable operators to negotiate for partial carriage of DTV signals would place broadcasters in an untenable position because cherry picking of programming would harm the underlying economics of free, over-the-air television.[80] Morgan Murphy asserts that, in the event a broadcaster elects a multicasting format for its DTV signal, retransmission consent should apply to the entire digital signal not for each programming stream.[81]

31. We conclude that for purposes of promoting the transition and encouraging voluntary cable carriage of broadcast digital signals when a television station chooses retransmission consent, the broadcaster and cable operator may negotiate for partial carriage of a local digital television signal.[82] We believe that this policy, which applies to digital-only television stations and television stations with both analog and digital signals, will benefit both parties and help to accomplish the Congressional goal of transitioning to digital television. In this instance, the broadcaster gains access to cable subscribers for some part of its signal, and the cable operator can conserve channel capacity and carry that programming which it believes subscribers will want. We note that this policy is a departure from the Commission's analog carriage rules that require a cable operator to carry local television signals in their entirety.[83] In interpreting the statute in 1994, the Commission noted that the statutory language would appear to permit broadcasters to negotiate with cable operators for retransmission consent for any part of their signal.[84] The Commission found that some negotiated partial carriage was clearly permitted based upon the language in Section 325 but concluded that, as a matter of policy, the statutory provisions should be read in concert to require carriage of "must-carry qualified stations" in their entirety even in the context of retransmission consent.[85] We adopt a different approach here because the statute gives the Commission flexibility to devise new rules for digital carriage when necessary.[86] We believe that in the case of digital

[78] *Id. (citing* 47 C.F.R. §76.62(a)); *see also Must Carry Reconsideration*, 9 FCC Rcd. at 6745.

[79] *DTV Must Carry Notice*, 13 FCC Rcd. at 15111.

[80] ALTV Comments at 18.

[81] Morgan Murphy Comments at 16.

[82] "Partial" carriage may be considered in any number of ways, including hours, bits or programming streams.

[83] See 47 C.F.R. §76.62(a). In 1994, the Commission interpreted Section 325 to provide that broadcasters may bargain with cable operators for the right to carriage of any part of the broadcast signal only when such station is not eligible under the provisions of Section 614, either because it is not a local commercial broadcast signal or it does not qualify for mandatory carriage. *See Must Carry Reconsideration*, 9 FCC Rcd. at 6745.

[84] *Id.* (Comparing Section 325(b)(1) with Section 614(b)(3)(b)).

[85] *Id.*

[86] *See* 47 U.S.C. § 614(b)(4)(B) (requiring the Commission to establish changes in the signal carriage requirements to ensure cable carriage of digital broadcast signals). *See also Must Carry Reconsideration*, 9 FCC Rcd. at 6745 ("Congress recognized the interplay between [Sections 325 and 614] and gave the Commission authority to fill in the regulatory gaps.").

signal carriage, the provisions should be read to permit the parties to freely negotiate for partial carriage in the context of retransmission consent. The goal of facilitating the transition to digital signals is furthered by this interpretation because cable operators are likely to negotiate retransmission consent agreements with more stations if carriage of something less than the full complement of a broadcaster's digital signal is permitted. This outcome may accelerate the digital transition in many markets. In arriving at this determination, we considered that prohibiting partial carriage in the context of retransmission consent would not only discourage voluntary carriage of programming subject to mandatory carriage, but would also be likely to preclude the carriage of desirable programming streams or data services that are not subject to mandatory carriage. We do not find "cherry picking" to be a major concern, as ALTV believes, as long as the cable operator has the broadcaster's permission to select which programming will be carried. We conclude that permitting partial carriage in the context of retransmission consent is appropriate at least for the duration of the transition. When the transition is completed or substantially underway, we can consider whether partial carriage continues to be necessary to facilitate carriage of digital signals over the long term.

32. **Retransmission Consent Exemption for Superstations.** Section 325(b)(2)(D) exempts cable operators from the obligation to obtain retransmission consent from superstations[87] whose "signals" were available by a satellite or common carrier on May 1, 1991.[88] This provision's legislative history states that an exemption from retransmission consent was necessary "to avoid sudden disruption to established relationships" between superstations and satellite carriers.[89] United Video has explained that the exemption permits it to continue to uplink superstations signals and transmit them to cable operators and other facilities-based multichannel video providers.[90] We will treat the digital signals of superstations the same as their analog signals for retransmission consent purposes. If the analog signal was exempt from Section 325, it follows that the station's digital signal is also exempt. We believe that maintaining the status quo and tracking the Act's original intent will permit video program distributors to continue to uplink superstation signals and provide them to cable operators and their subscribers. This policy may speed the transition, and the purchase of digital television equipment, because cable operators may transmit digital superstations into markets where a full array of digital television services may be lacking.

33. **Prohibition on Exclusive Agreements.** In the *Must Carry Order*, we specifically prohibited exclusive retransmission consent agreements between television broadcast stations and cable operators.[91] Congress recently codified the Commission's exclusive retransmission consent prohibition as one of the many amendments to Section 325 under the SHVIA.[92] The Act now states that a broadcaster cannot enter into an exclusive retransmission consent arrangement with any MVPD until 2006.[93] We have

[87]A superstation is a television broadcast station other than a network station, licensed by the Commission that is secondarily transmitted by a satellite carrier. 47 C.F.R. §76.64(c)(2).

[88]47 U.S.C. §325(b)(1).

[89]*S. Rep. No. 102-92* at 27.

[90]United Video Comments to *Fourth FNPRM in MM Dkt. No. 87-268* at 5.

[91]*See Must Carry Order,* 8 FCC Rcd. at 3006. Section 76.64(m) of the Commission's rules provides that "exclusive retransmission consent agreements are prohibited. No television broadcast station shall make an agreement with one multichannel distributor for carriage, to the exclusion of other multichannel distributors." 47 C.F.R. §76.64(m).

[92]*See* 47 U.S.C. §325(b)(2)(C)(ii).

[93]*Id.*

recently implemented the statutory ban on exclusive arrangements.[94] Consistent with the new provision and rule, we apply the current prohibition on exclusive retransmission consent agreements to negotiations involving the carriage of digital television broadcast signals until January 1, 2006.

34. **Retransmission Consent Tying Arrangements.** With regard to retransmission consent and its effect on small cable operators, the *Notice* asked whether the Commission should prohibit "tying" arrangements, in which the broadcaster requires the operator to carry the broadcaster's digital signal as a precondition for carriage of the analog signal.[95] The Small Cable Business Association ("SCBA") states that unregulated analog retransmission consent demands, and tying in particular, pose a major threat to small cable's financial viability.[96] To remedy the situation, SCBA urges the Commission to prohibit broadcasters from tying analog carriage to digital carriage.[97]

35. While we acknowledge the important concerns raised by SCBA, we will not adopt rules specifically prohibiting tying arrangements at this time. In coming to this conclusion, we recognize that substantial evidence must be presented to support a claim that a tying arrangement exists and that the operator suffers harm as a result. Without proof to support the case, it is difficult for the Commission to formulate an appropriate remedy. We also note that broadcasters now must bargain in good faith with small cable operators, or any other MVPD, under recent revisions to the retransmission consent rules pursuant to amendments promulgated under the SHVIA.[98] One example of a bargaining proposal presumptively consistent with the good faith negotiation requirement is a proposal for carriage of the analog broadcast signal conditioned on carriage of any other broadcaster-owned programming stream, such as the digital signal.[99] While such arrangements are now permitted, we will continue to monitor the situation with respect to potential anticompetitive conduct by broadcasters in this context. If, in the future, cable operators can demonstrate harm to themselves or their subscribers due to tying arrangements, we will be in a better position to consider appropriate courses of action.

36. **NCE Stations.** Section 325 of the Act expressly states that NCE stations do not have retransmission consent rights.[100] As such, an NCE station cannot withhold its signal from being carried by any MVPD. An NCE station, however, is free to negotiate with cable systems and other MVPDs for voluntary carriage.[101] In the digital context, an NCE station may multiplex its digital signal and air several video programming streams at once. In this regard, we note that an NCE station, because it is not covered by Section 325, may enter into an exclusive digital carriage arrangement for any service it may offer or

---

[94] *See Implementation of the Satellite Home Viewer Improvement Act of 1999, Retransmission Consent Issues*, First Report and Order, 15 FCC Rcd 5445 (2000) ("Retransmission Consent Order")

[95] *DTV Must Carry Notice*, 13 FCC Rcd. at 15118.

[96] SCBA Comments at 24. SCBA is now known as American Cable Association ("ACA").

[97] *Id.*; *accord* Pellegrin Comments at 6.

[98] *See Retransmission Consent Order*, 15 FCC Rcd at 5449-5473.

[99] *Id.* at 5469.

[100] 47 U.S.C. §325(b)(2)(A) ("The provisions of this subsection shall not apply to—retransmission of the signal of a noncommercial broadcasting station.")

[101] We note that Time Warner recently reached an agreement with AAPTS with regard to the carriage if digital television signals of certain NCE stations. *See Public Television and Time Warner Cable Agree to Digital Carriage*, Press Release, September 19, 2000.

any programming stream that is not subject to a mandatory carriage requirement under Section 615 and our findings herein. Against this backdrop, we expect cable operators and other MVPDs to participate in discussions with NCE stations concerning the voluntary carriage of their digital broadcast signals.

V. DIGITAL BROADCAST SIGNAL CARRIAGE REQUIREMENTS

A. Channel Capacity

37. **Definition.** Section 614(b)(1)(B) provides that a cable operator, with more than 12 usable activated channels, shall not have to devote more than "one-third of the aggregate number of usable activated channels"[102] for the carriage of commercial television stations.[103] Despite this language, there is some dispute as to how the terms "usable activated channels" and "cable system capacity" should be defined in the digital context.[104] We requested comment on the definition of "usable activated channels" for digital television carriage purposes. We noted that many cable operators now have, or soon will have, the technical ability to fit several programming services into one 6 MHz cable channel. Thus, we asked how advances in signal compression technology should affect the definition of channel capacity.[105] We also asked whether the one-third channel capacity requirement for digital broadcast television carriage purposes means one-third of a cable operator's digital channel capacity or one-third of all 6 MHz blocks, including both the analog and digital channels.[106]

38. ALTV states that the Commission should consider the operator's total cable channel capacity for determining its carriage obligations.[107] In contrast, Paxson and Sinclair urge that for purposes of defining the term "usable activated channels," each channel should be a 6 MHz block of spectrum.[108] They also state that by defining the cable channel as a 6 MHz block and requiring such a channel to be made available to each local commercial station, the Commission will ensure the cable distribution of all DTV signals transmitted by the respective licensees. Golden Orange states that most broadcasters will likely engage in some form of multicasting and the requirement of a 6 MHz block will ensure the cable carriage of a diversity of signals.[109] On a different track, Morgan Murphy and Pappas assert that the capacity of digital cable systems should be determined based on data throughput, *i.e.*, bits per second of useful digital data.[110]

39. Under the Act, a cable operator must make available for signal carriage purposes up to one-third of its usable activated channels. Because of the development of digital signal processing and

---

[102] 47 U.S.C. §534(b)(1)(B); 47 C.F.R. §76.56(b)(1).

[103] In the *DTV Must Carry Notice*, we noted that the one-third capacity limit found in Section 614(b)(1)(B) applies in the digital context. 13 FCC Rcd. at 15117.

[104] *Id.* at 15120.

[105] *Id.*

[106] *Id.*

[107] ALTV Comments at 61.

[108] Paxson Comments at 28; Sinclair Comments at 6.

[109] Golden Orange Comments at 6.

[110] Morgan Murphy Comments at 12; Pappas Comments at 28.

signal compression technologies, the number of video services carried on a cable system is no longer a simple calculation and may change dynamically over time depending on the amount of motion in the video content, the amount of compression that takes place, and whether the service in question is carried in a standard or high definition digital format. We have taken these developments into consideration in revising the channel capacity determination.

40. The channel capacity calculation can be made by taking the total usable activated channel capacity of the system in megahertz and dividing it by three.[111] One third of this capacity, defined in megahertz, is the limit on the amount of system spectrum that a cable operator must make available for commercial broadcast signal carriage purposes. Carriage requests would then have to be accommodated to the extent of this limit in whatever format and by whatever technique is appropriate and is otherwise consistent with the rules. We believe, out of the options presented in the *Notice*, this is the easiest for the operator to calculate. While a calculation based on programming or bits may be possible, both are more difficult than the megahertz method to quantify cable capacity for purposes of the one-third statutory cap. In a digital environment, as cable operators reallocate spectrum from analog to digital, the digital programming and bit carrying capacity of the cable system changes.[112] Therefore, neither programming nor bits provide a constant that can easily be applied to determine channel capacity. In contrast, the number of megahertz employed by a cable system stays constant and does not vary as the allocation of spectrum from analog to digital progresses.

41. To determine the one-third cap for broadcast signal carriage purposes, the first step is to determine the number of "usable activated channels" on the cable system. "Activated channels" would continue to be defined by Section 76.5(nn), per Section 602(1) of the Act, as those channels engineered at the headend of a cable system for the provision of services generally available to residential subscribers of the cable system, regardless of whether such services actually are provided, including any channel designated for public, educational or governmental use.[113] "Usable activated channels," would continue to be defined by Section 76.5(oo), per Section 602(19) of the Act, as those activated channels of a cable system, except those channels whose use for the distribution of broadcast signals would conflict with technical and safety regulations.[114] Thus, this calculation includes but is not limited to the cable spectrum used for internet service, pay-per-view and video-on-demand, and telephony. Next, the number of usable activated channels is expressed in megahertz and then divided by three to determine the one third cap. For example, if a cable system's downstream operation begins at 54 MHz and continues through 550

[111]Megahertz ("MHz") is a unit of frequency denoting one million Hertz or one million cycles per second and is closely tied to bandwidth. The telecommunications bandwidth is typically measured in Hertz for analog communications. For example, an analog NTSC television channel occupies a bandwidth of 6 MHz. In digital communications, bandwidth is typically measured in bits per second identified by a specific method of encoding. For example, an HDTV channel encoded in 8 VSB, would occupy a digital bandwidth of about 19.4 megabits per second ("mbps") which, in turn, would require a 6 MHz bandwidth. In digital cable operations, where a 64 QAM encoding technique is used, that same 6 MHz bandwidth can provide up to 27 mbps of digital bandwidth. That would mean a 6 MHz bandwidth in such a cable system can carry a 19.4 mbps HDTV channel and still be able to provide other video or data services with the remaining 7.6 megabits in that same 6 MHz bandwidth. *See also Newton's Telecom Dictionary*, 11th ed., July 1996.

[112]The concept of bits and bit rates is applicable to digital programming signals, but not to analog programming signals. Thus, there is no way to express the part of a cable system's capacity attributable to analog programming in terms of bits.

[113]47 C.F.R. §76.5(nn); 47 U.S.C. §522(1).

[114]47 C.F.R. §76.5(oo); 47 U.S.C. §522(19).

MHz, but 50 MHz is unactivated, the total amount of usable channels on a system-wide basis is 446 MHz (i.e. 550 MHz-54 MHz-50 MHz). One-third of this figure, approximately 149 MHz in this example, is the maximum amount of megahertz to be used for the carriage of local commercial television signals for such a system. A cable operator must provide each local television station that is entitled to mandatory carriage with a sufficient amount of capacity to carry its primary digital video signal. The amount of capacity devoted to carriage purposes for each television station will change as an operator upgrades to a digital cable standard.[115]

42. **Carriage Priority.** In the *Notice*, we recognized that when the one-third capacity limit has been reached, Section 614(b)(2) provides that "the cable operator shall have discretion in selecting which such stations shall be carried on its cable system."[116] We tentatively concluded that this statutory directive would continue to apply in the digital context.[117] In the alternative, we asked whether it would be desirable to adopt carriage priority rules.[118] ALTV, Trinity, and Univision emphasize that if the one-third cap remains in place, a station's analog signal should not be displaced in order to accommodate a DTV signal.[119] Sinclair asserts that in those instances in which carriage of all analog and DTV stations would occupy more than one-third of such cable systems' capacity, the Commission should forbear from applying this limit and require full carriage of these broadcast signals.[120] We find that the Act provides a cable operator with discretion to choose which signals it will carry if it has met its carriage quota. Thus, a cable operator should be able to select which signals to carry above the one-third limit. Under the existing carriage structure,[121] all local commercial television signals that are carried, whether they have chosen retransmission consent or must carry, are counted as part of the one-third cap calculation. This policy of counting retransmission consent stations will continue to apply in the digital carriage context.

43. **NCE Stations.** We recognize that the carriage of NCE stations is not included in the one-third statutory cap. Instead, a cable operator's carriage obligations are based on the number of channels on a particular cable system. Generally, cable systems with 12 or fewer activated channels shall carry 1 qualified NCE;[122] cable systems with 13-36 channels shall carry up to 3 qualified NCEs; and cable systems with 36 or more activated channels shall carry 3 or more qualified NCEs.[123] We see no reason to depart from the existing rules regarding NCE carriage. As such, cable systems with the capacity to carry 36 or more channels will be required to carry 3 or more qualified NCE stations, subject to the other provisions of the Act and our rules.

---

[115]For example, a cable operator with an analog-based cable system would devote 6 MHz of bandwidth to the carriage of a high definition television signal, but a cable operator using the 64 QAM digital format may only have to devote 4 MHz to the carriage of that same high definition signal.

[116]*DTV Must Carry Notice*, 13 FCC Rcd. at 15117 (*citing* 47 U.S.C. §534(b)(2)).

[117]*Id.*

[118]*Id.*

[119]ALTV Comments at 49, n. 129; Trinity Comments at 8; and Univision Reply Comments at 10.

[120]Sinclair Comments at 7.

[121]*See Must Carry Order*, 8 FCC Rcd. at 3003.

[122]As stated earlier, a qualified NCE is one that places a Grade B contour over the principal headend of the cable system or the cable system's principal headend is within 50 miles of the NCE's city of license.

[123]47 U.S.C. §§535(b)(2), (3); 47 U.S.C. §535(e).

B. Signal Quality

44. Section 614(h) of the Act specifies that, to qualify for carriage, stations must deliver a good quality signal to the principal headend of the cable system.[124] For local commercial television stations, this is defined as a signal level of –45dBm for UHF signals and –49dBm for VHF signals.[125] The Act delegated to the Commission the authority to establish good quality signal criteria for low power television stations[126] and for qualified local noncommercial educational television stations.[127] We held that the commercial television station definition of good quality signal be applied in the same manner to noncommercial and LPTV television stations under the UHF/VHF paradigm.[128]

45. In the *Notice*, we asked whether the signal quality standards established for analog signals are relevant for digital signals or whether new parameters for good signal quality should be established.[129] No commenters addressed this issue. Absent comment for or against either alternative, we undertook our own analysis relying on the digital engineering methods and expertise developed in other proceedings.[130] We note that in adopting the digital television transmission standard, the Commission recognized the differences between analog and digital television signals. The analog NTSC transmission standard is engineered so that even when a station's signal strength slowly decreases, a television set is still able to display the video and audio components, albeit at a degraded level. On the other hand, under the DTV transmission standard, as the station's signal level decreases, the digital television set continues to display a good picture, but then may abruptly turn blue when the signal strength drops below a certain threshold.[131] Against this backdrop, we believe it is necessary to develop a new reception standard aptly suited to the new digital technology used to transmit digital television signals.

46. We conclude that the signal level necessary to provide a good quality digital television signal at a cable system's principal headend is –61 dBm. We continue to believe that the principal headend[132] should remain the location for signal quality testing purposes because that is the single location where all available signals can be uniformly measured and compared. We arrive at this minimum signal level by using the following planning factors:[133]

---

[124] 47 U.S.C. §534(h)(1)(B)(iii).

[125] *Id.*

[126] 47 U.S.C. §534(h)(2)(D).

[127] 47 U.S.C. §535(g)(4).

[128] *Must Carry Order*, 8 FCC Rcd. at 2988.

[129] *DTV Must Carry Notice*, 13 FCC Rcd. at 15119-15120.

[130] *See, e.g., DTV Sixth Report and Order*, 12 FCC Rcd. 14588.

[131] This is known as the "cliff effect." That is, if a signal is received, a good quality picture can be constructed at the television receiver; however, once the signal falls below a minimum signal level threshold, no picture can be reconstructed or displayed by the television receiver. There are, however, certain receiver implementation schemes which allow the receiver to display and hold the last picture received before the signal fell below the threshold.

[132] 47 C.F.R. §76.5(pp).

[133] *See DTV Sixth Report and Order*, 12 FCC Rcd. at Appendix A.

Thermal Noise in 6 MHz bandwidth	N_t	-106.2 dBm
Receiver Noise Figure	N_f	10.0 dB
Required Carrier to Noise Ratio	C/N	15.2 dB
Propagation and implementation margin	M	20.0 dB
Receiver input	$= (N_t+N_f+C/N+M)=$	-61 dBm

We believe that providing for a 20 dB propagation variability and signal impairment margin ("margin") above the minimum signal-to-noise ratio is sufficient to handle most over the air transmission disturbances encountered by a DTV signal at a cable system headend. These disturbances will likely include signal impairments such as multipath, impulsive (manmade)[134] noise, and co-channel and adjacent channel interference. The video and audio quality of a digital television signal remain good as long as the signal-to-noise ratio is in excess of the minimum signal-to-noise ratio applicable to the transmission system after consideration of the summation of all noise factors (such as channel and manmade noise, noise generated by multipath cancellation, receiver noise, and co-channel interference). The tradeoff table in Section 73.623(c)(3)(ii) is an example of the relationship of signal margin to one type of interference: analog signals on the same frequency.[135] The table shows that, as the margin increases, the strength of the desired signal can be much less when compared to the strength of the interfering signal, and still produce good quality video and audio. The primary source of erosion of the signal margin will be propagation variations of the received signal level with time. These variations result in what is generally called signal fading. However, we believe that these variations of the received signal level and the amount of signal impairments cumulatively, should be significantly less than the allowed 20 dB margin. We believe that when a signal level of -61 dBm is delivered to the cable system headend, the signal will be of sufficient strength that the cable operator can deliver a good quality picture to its subscribers. A television station that does not agree to be responsible for the costs of delivering to the cable system a signal of good quality, under the revised standard, is not eligible for carriage.[136]

C. Content of Signals Subject to Mandatory Carriage

47. We now address the specific content of a digital television signal that is subject to the mandatory carriage obligation. We note that analog broadcast stations generally have one video broadcast product. That is, only a single program is broadcast at a time and that program is the main feature of the broadcast. Only a relatively minor amount of communications capacity is available apart from that program transmission. Some capacity is available in the vertical blanking interval ("VBI") for the transmission of communications that are separate from, but related to, the principal video output or are unrelated to that content. The related content is typically closed captioning and program rating information. The unrelated content would be typified by videotext or data-type communications.

48. Digital television stations will operate on a much more flexible basis. The system described in the ATSC DTV Standard includes discrete subsystem descriptions, or "layers," for video source coding and compression, audio source coding and compression, service multiplex and transport, and RF/transmission.[137] In addition to being able to broadcast one, and under some circumstances two,

[134]Manmade noise includes all radio noise generated by noise sources located in the vicinity of the receiver, such as electrical transmission lines, automobile ignitions, and electrical motors.

[135]47 C.F.R. §73.623(c)(3)(ii).

[136]*See* 47 U.S.C. §534(h)(1)(B)(iii) (stating the same for analog signals).

[137]*See* ATSC Digital Television Standard, Doc. A/53.

high definition digital television programs, the standard allows for multiple streams, or "multicasting," of standard definition digital television programming at a visual quality better than the current NTSC analog standard. Multiple programming streams may be broadcast at the same time or with a variety of data streams accompanying the main video content. These data streams may be either associated with the video content in some manner or completely separate from it.[138]

49. A critical component of digital broadcast television is the program and system information protocol ("PSIP").[139] This is the standard protocol for transmission of the relevant data tables, describing system information and event descriptions, contained within digital packets carried in the digital broadcast transport stream multiplex. System information allows navigation of, and access to, each of the channels within the transport stream, whereas event descriptions give the user content information for browsing and selection. PSIP is composed of four main tables: (1) system time table; (2) ratings region table; (3) master guide table; and (4) virtual channel table.[140] The latter table is of particular importance in the carriage context because it contains a list of all the channels that are or will be on-line, plus their attributes. Among the attributes are the channel name, navigation identifiers, and stream components and types. PSIP allows the broadcaster to customize information to guide viewers to channel numbers they are familiar with.

50. **Primary Video.** In the analog context it is clear that a cable operator subject to a mandatory carriage obligation is not required to carry all of the communications output of a television broadcast station. Three provisions of the Act provide the main focus of the arguments regarding this question in the context of digital broadcast signal carriage. First, Section 614(b)(3) of the Act entitled "Content to be Carried," states that a cable operator shall carry in its entirety the "primary video" of the station.[141] Second, it requires carriage of the "accompanying audio" and "line 21 closed caption transmission" of each station.[142] Third, the operator must carry "to the extent technically feasible, program-related material carried in the vertical blanking interval or on subcarriers."[143] The statute is specific that "Retransmission of other material in the vertical blanking interval or other nonprogram-related material (including teletext and other subscription and advertiser-supported information services) shall be at the discretion of the cable operator."[144] Section 614 is applicable to the carriage of commercial stations. Largely parallel provisions are contained in Section 615 relating to the carriage of noncommercial stations.[145] In addition to the provisions that are not specific to digital television broadcasting, Section 336(b)(3) of the Act which has specific applicability to "advanced television

[138]Geocast, Iblast, and Dtcast are some of the companies planning to use a certain amount of digital television spectrum to provide high speed data broadcast services to personal computers. *See, e.g.*, T. Butts, *Disney, GE invest in Dotcast*, www.digitalbroadcasting.com, November 8, 2000.

[139]PSIP is a requirement for broadcasters using the ATSC standard, however, it is not required by the Commission.

[140]For a more complete description of PSIP, *see* J. Whitaker and B. Benson, *The Standard Handbook of Video and Television Engineering*, 3rd Ed., McGraw Hill.

[141]47 U.S.C. §534(b)(3).

[142]*Id.*

[143]*Id.*

[144]*Id.*

[145]47 U.S.C. §535(g)(1).

services" provides that "no ancillary or supplementary service shall have any right to carriage under section 614 or 615."[146]

51. In the *Notice*, we asked how we should define "primary video" if a broadcaster chooses to broadcast multiple standard definition digital television streams, or a mixture of high definition and standard definition digital television streams, as is permitted under the rules.[147] We sought input on which video programming services provided by a licensee should be considered primary and should be entitled to carriage if the primary video includes less than all of the streams of programming broadcast.[148] We asked whether the definition should be flexible, allowing the broadcaster to choose which transmissions it considers being primary.[149]

52. Many commenters argue for an expansive approach to the classification of primary video during the transition that would include much of a broadcaster's digital programming. ALTV argues that if a licensee broadcasts several channels of free over-the-air standard definition programs, all of these channels should be considered to be the primary video transmission of the station. NAB states that there can be no primary or main program since carriage of a full broadcast signal, including multiplexed program streams, will enable a viewer to switch between channels within a given program.[150] AAPTS asserts that all "mission-related" programming streams transmitted by a public television station should be regarded as primary and subject to mandatory carriage.[151] Ameritech argues to the contrary, that the statutory language limiting must carry to a broadcaster's primary video indicates that Congress did not intend to require cable operators to carry all the material a station transmits. Time Warner argues that a station's analog signal is the primary video during the transition and only when a broadcaster surrenders its analog frequency and engages exclusively in digital transmissions will its digital signal become the "primary video" transmission and thus eligible for any post-transition must carry requirements adopted by the Commission.[152]

53. We recognize that the terms 'primary video' as used in sections 614(b)(3) and 615(g)(1) are susceptible to different interpretations. Because the terms are not expressly defined in the Act, to determine the meaning, we analyze the terms 'primary video' within their statutory context, consider the legislative history, and examine the technological developments at the time the must carry provisions were enacted.

54. The term primary video, as found in Sections 614 and 615 of the Act, suggests that there is some video that is primary and some that is not.[153] In this instance, we rely on the canon of statutory

[146] 47 U.S.C. §336(b)(3). Section 336(a)(2) provides that the Commission shall allow the holders of licenses for advanced television service stations "to offer such ancillary or supplementary services . . . as may be consistent with the public interest, convenience, and necessity."

[147] *See, e.g., DTV Fifth Report and Order*, 12 FCC Rcd at 12826.

[148] *DTV Must Carry Notice*, 13 FCC Rcd at 15125.

[149] *Id.*

[150] NAB Comments at 38.

[151] AAPTS Comments at 36.

[152] Time Warner Comments at 51; *see also* NCTA Comments at 14-15.

[153] 47 U.S.C. §§534(b)(3) and 535(g)(1).

construction that effect must be given to every word of a statute and that no part of a provision will be read as superfluous.[154] Here, we must give effect to the word "primary." The dictionary definitions of "primary" are "First or highest in rank, quality, or importance" and "Being or standing first in a list, series, or sequence."[155] Based on the plain words of the Act, we conclude that, to the extent a television station is broadcasting more than a single video stream at a time, only one of such streams of each television station is considered "primary." The choice as to which, among several possible video programming streams, should be considered primary is a decision left to the broadcaster.

55. The legislative history does not definitively resolve the ambiguity regarding the intended application of the term 'primary video' as used in this context. The legislative history does indicate, however, that the must carry provisions were not intended to cover all uses of a signal. Specifically, the legislative history provides that '[c]arriage of other program-related material in the vertical blanking interval and on subcarriers or other enhancements of the primary video and the audio signal (such as teletext and other subscription and advertiser-supported information) is left to the discretion of the cable operator.'[156] The legislative history further states that the 'Committee does not intend that this [must carry] provision be used to require carriage of secondary uses of the broadcast transmission, including the lease or sale of time on subcarriers or the vertical blanking interval for the creation or distribution of material by persons or entities other than the broadcast licensee.'[157]

56. We note that the incorporation of the primary video construct into the Act in 1992 was reasonably contemporaneous with the gradual change in common understanding of the new television service from ATV (advanced television) and HDTV (high definition television)—which focused on improving the technical quality of traditional analog NTSC television—to DTV (digital television) with the ability to broadcast high definition television, SDTV (standard definition television) with multicasting possibilities, as well as the broadcast of non-video services.[158] Although silent on the issue of

[154] *See* Sutherland, Statutory Construction, Vol. 2A, at Section 46.06 ("Each word given effect").

[155] *See* The American Heritage Dictionary of the English Language, Third Edition (1996); and Black's Law Dictionary (1983 edition) (Primary is defined as: "First; principal; chief; leading. First in order of time, or development, or in intention."). We note that Time Warner also states that "primary" means "first in rank or importance" according to Webster's Third New International Dictionary. Time Warner Comments at 29. In response to some broadcasters' suggestions that two signals can simultaneously be "first in rank or importance, " Time Warner argues that such a stance is contemptuous of the clear text of the statute. *Id.*

[156] H.R.Rep.No. 102-628, 102nd Cong., 2nd Sess. 1992.

[157] *Id.*

[158] *See e.g., FCC Puts U.S. on Schedule For HDTV Broadcasting By 2000*, Video Technology News, Sept. 28, 1992, Vol. 5, No. 20 (quoting then FCC Commissioner Sherrie Marshall, 'I am becoming increasingly convinced that the real key to broadcasters' continued competitiveness lies not so much in ATV as a crisp picture, but in its potential for spectrum-efficient multiplexing'); *FCC and Broadcasters Battle Toward Flexible HDTV Conversion*, Broadcasting & Cable, Oct. 5, 1992 (according to then FCC Chairman Alfred Sikes, the drive toward digital TV is not based on 'just better pictures and improved sound.' Such a 'flexible digital system ... will mean innovative video. For instance, the signal could carry multiple scenes and camera angles or multiple programs. Smart receivers would allow viewers to decide which to select'); *Do Not Be Weak-Kneed, Sikes Tells Broadcasters At Conference On HDTV*, HDTV Report, Oct. 14, 1992, Vol. 2, No. 21 (Fox Inc.'s Executive Vice President noted during a panel discussion that his network views digital broadcasting as a 'real potential avenue for opportunities. Once you are able to transmit a digital signal ... and perform simulcast requirements, you can do pretty much whatever else you wish to do with that channel ... including additional programs'); *Pay TV Grows Up After Two Decades, HBO is Still Pushing the Envelope on Cable TV*, Boston Herald, Dec. 20, 1992 ('One idea HBO hopes will help it to compete is something called multiplexing. Instead of receiving just one HBO channel, multiplex subscribers can find the (continued....)

multiplexing, the legislative history indicates that Congress understood that HDTV was "not limited to improved resolution clarity, and color parity in a television image, or large television sets." Rather, Congress recognized that "[t]his advanced technology has the potential to open new and expanded markets for the components of advanced television systems (such as semiconductors, fiber optics, and flat screen displays), and to enhance the integration of the television and computer industries."[159]

57. Based on the record currently before us,, we conclude that "primary video" means a single programming stream and other program-related content. With the advent of digital television, broadcast stations now have the opportunity to include in their video service a panoply of program-related content. Indeed, far more video content is possible broadcasting a digital signal than broadcasting in an analog format. For example, a digital television broadcast of a sporting event could include multiple camera angles from which the viewer may select. The statute contemplates and our rules require that cable operators provide mandatory carriage for this program-related content. In contrast, if a digital broadcaster elects to divide its digital spectrum into several separate, independent and unrelated programming streams, only one of these streams is considered primary and entitled to mandatory carriage. The broadcaster must elect which programming stream is its primary video, and the cable operator is required to provide mandatory carriage to only such designated stream. While we do not believe that Congress specifically contemplated programming of the type described above (i.e., data or video that is separate from but associated with the primary video) in drafting Section 614(b)(3), the policies underlying this Section are consistent with our conclusion here in the context of digital signal carriage. Based on the language in 614(b)(3), Congress was concerned that mandatory carriage be limited to the broadcaster's primary program stream but also include related content as described here.[160] In the FNPRM we seek comment on the appropriate parameters for "program-related" in the digital context.

58. **Ancillary and Supplementary Services.** Section 336 of the Act provides that "no ancillary or supplementary service shall have any right to carriage under section 614 or 615."[161] Neither the Act nor the legislative history define the terms 'ancillary or supplementary.' Section 614(b)(3) of the Act requires cable operators to carry "to the extent technically feasible, program-related material carried in the vertical blanking interval or on subcarriers" but states that "[r]etransmission of other material in the vertical blanking interval or other nonprogram-related material (including teletext and other subscription and advertiser-supported information services) shall be at the discretion of the cable operator."[162] We sought comment on possible ancillary and supplementary definitions that were consistent with the language of Section 614(b)(3). Paxson states that the Commission should limit the definition of ancillary or supplementary services to those for which viewers pay subscription fees or for which the broadcaster receives compensation from non-advertising third parties, thereby establishing mandatory carriage for

---

(...continued from previous page)
network's programming on additional channels - HBO2 and HBO3. The movies and specials are all the same, but the viewer has three different program options at once, much like a multiscreen theater').

[159] H.R.Rep. 101-1026, 101st Cong., 2nd Sess. 1990 at 133-134.

[160] *See* revisions to Section 76.62 in Appendix D.

[161] 47 U.S.C. §336(b)(3). Section 336(a)(2) provides that the Commission shall allow the holders of licenses for advanced television service station "to offer such ancillary or supplementary services . . . as may be consistent with the public interest, convenience, and necessity."

[162] *See* 47 U.S.C. §534(b)(3).

free over-the-air local multicasting.[163] On the other hand, Time Warner argues that all digital video programming, other than the "main" signal which the Commission requires the broadcaster to transmit, are ancillary and supplementary.

59. With respect to the definition of ancillary and supplementary services, the Commission's *DTV Fifth Report and Order* states that ancillary and supplementary services include "any service provided on the digital channel other than free, over-the-air services."[164] Section 73.624(c) of the Commission's rules specifies that "any video broadcast signal provided at no direct charge to viewers shall not be considered ancillary or supplementary."[165] While not defining the class exhaustively, Section 73.624(c) indicates that ancillary and supplementary services include, but are not limited to, "computer software distribution, data transmissions, teletext, interactive materials, aural messages, paging services, audio signals, [and] subscription video [video programming for which the broadcaster charges a fee]. . . ."[166] Section 73.646 of the Commission's rules states that telecommunications services provided on the vertical blanking interval ("VBI") or in the visual signal, in either analog or digital mode, are ancillary.[167] Based on the foregoing, we find that the services specified in Sections 73.624(c) and 73.646 are ancillary or supplementary in the context of digital cable carriage and are not entitled to mandatory carriage.

60. In addition, we believe there may be certain services associated with broadcast digital video programming, while not ancillary or supplementary, would still not entitled to mandatory carriage because they are not program related. Currently, in addition to a broadcaster's primary analog video programming, Section 614(b)(3) requires cable operators to carry "to the extent technically feasible, program-related material carried in the vertical blanking interval or on subcarriers . . ."[168] However, "[r]etransmission of other material in the vertical blanking interval or other nonprogram-related material (including teletext and other subscription and advertiser-supported information services) shall be at the discretion of the cable operator." In the analog context, we have specified certain factors for determining what material carried in the VBI is sufficiently program-related as to qualify for must carry rights.[169] Due to the technical differences between digital and analog transmission, *e.g.*, there is no VBI in a digital signal, the foregoing concepts cannot transfer directly into a digital environment. What is anticipated is that a television station will provide internet-based services, such as e-commerce applications, to the public. While this type of business plan promises to enhance a television station's digital presence, the carriage of internet offerings by a cable operator likely would not be required under the must carry provisions unless the broadcaster can demonstrate that such material should be considered program-related.

---

[163]Paxson Comments at 27.

[164]*DTV Fifth Report and Order*, 12 FCC Rcd at 12821 (establishing the DTV transition schedule and related requirements); *on reconsideration* 14 FCC Rcd 19931 (1999).

[165]47 C.F.R. §73.624(c).

[166]*Id.*

[167]47 C.F.R. §73.646; *see also DTV Fifth Report and Order*, 12 FCC Rcd at 12821, n. 54.

[168]47 C.F.R. §76.62(f).

[169]*Must Carry Reconsideration*, 9 FCC Rcd. at 6734 (adopting in part factors set forth in *WGN Continental Broadcasting, Co. v. United Video, Inc.*, 693 F.2d 622 (7th Cir. 1982)) ("WGN").

61. In this vein, we note that there are certain over-the-air digital services sufficiently related to the broadcaster's primary digital video programming that are entitled to carriage. These include, but are not limited to, closed captioning information, program ratings data for use in conjunction with the V-chip functions of receivers, Source Identification Codes ("SID Codes") used by Nielsen Media Research in the preparation of program ratings, and the channel mapping and tuning protocols that are part of PSIP. These services provide useful information to viewers, broadcasters, and/or cable operators, and are intended for use in direct conjunction with the programming.[170] In general, we will continue to use the same factors enumerated in *WGN*, that are used in the analog context to determine what material is considered program-related.[171] The *WGN* court set out a three-part test for making a determination. First, the broadcaster must intend for the information in the VBI to be seen by the same viewers who are watching the video signal. Second, the VBI information must be available during the same interval of time as the video signal. Third, the VBI information must be an integral part of the program. The court in *WGN* held that if the information in the VBI is intended to be seen by the viewers who are watching the video signal, during the same interval of time as the video signal, and as an integral part of the program on the video signal, then the VBI and the video signal must both be carried if one is to be carried.[172]

62. As noted, digital signals do not contain a VBI. The Commission's rule in Section 76.56(e) describes what cable systems may carry in the VBI. This subsection is revised to revise the reference to VBI to take account of digital technology.[173]

63. **Program Guides**. We sought comment on the status of advanced programming retrieval systems and other digital channel selection devices that filter and prioritize video programs for viewers.[174] To prevent anticompetitive conduct by cable operators, Gemstar urges the Commission to require the undisturbed pass-through of electronic program guide ("EPG") related information as part of the broadcaster's digital transmission.[175] NCTA claims that Gemstar provides no evidence that Congress intended to force cable operators to deliver any non-programming information that might be transmitted along with a broadcaster's digital signal.[176] Ameritech and BellSouth state that there is no legal basis for

[170]We note that independent of the "program related" and "ancillary or supplementary" concepts, cable operators are required to pass through closed captioning data contained in analog and digital video programming. 47 C.F.R. §§76.606, 79.1(c). We further note that while the Commission has refrained from promulgating regulations requiring delivery of the codes necessary for operation of the "V-chip," it has done so based upon the voluntary assumption of this responsibility by video program distributors. *In the Matter of Technical Requirements to Enable Blocking of Video Programming based on Program Ratings, Report and Order*, 13 FCC Rcd 11248, 11259 (1998).

[171]693 F.2d at 624-25. The Commission declined to further define "program-related," apart from the WGN analysis, noting that carriage of information in the VBI was rapidly evolving. *Must Carry Order*, 8 FCC Rcd at 2986.

[172]*Id.*

[173] *See* revised Section 76.56(e) in Appendix D.

[174]*DTV Must Carry Notice*, 13 FCC Rcd at 15129.

[175]Gemstar Comments at 10-14. The Broadcast Group agrees with Gemstar, but states that the Commission should impose a rule that (1) prohibits cable systems from excluding any local broadcast station from, or from otherwise discriminating against any local broadcast station in, any EPG or navigation device provided by the system; and (2) requires cable systems to provide an EPG that contains a non-discriminatory listing of all programming services available on the system. Broadcast Group Comments at 22.

[176]NCTA Reply Comments at 22. *See also* Time Warner Reply Comments at 34 (stating that the Act flatly precludes must carry rights for broadcasters' EPGs because they are not program related.)

the Commission to give program guides any greater carriage rights than any other ancillary or supplementary service that must obtain carriage through private negotiations with individual cable operators.

64. We find that the carriage of program guide information is a matter to be addressed under Sections 614(b)(3) and 615(g)(1) of the Act. As stated earlier, all program-related broadcast material found in the analog signal's VBI must be carried, unless it is technically infeasible for the operator to do so.[177] In the digital television context, there is no VBI for EPG information to be carried on, rather, the EPG data would be part of the PSIP.[178] In this circumstance, we find that program guide data that are not specifically linked to the video content of the digital signal being shown cannot be considered program-related, and, therefore, are not subject to a carriage requirement.

65. **Program Access.** Section 336 of the Act states that "no ancillary or supplementary service shall . . . .be deemed a multichannel video programming distributor for purposes of section 628." Section 628 contains the program access requirements pursuant to which multichannel video programming distributors are entitled to purchase on nondiscriminatory rates, terms, and conditions satellite-delivered cable programming in which a cable operator has an attributable interest.[179] In the *Notice*, we sought comment on the meaning of this language.[180] We find that this provision was intended to prevent a digital broadcaster from asserting rights under the program access provisions contained in Section 628. This provision affords certain rights to MVPDs, which are defined as entities who make "available for purchase, by subscribers or customers, multiple channels of video programming."[181] We hold that Section 336 precludes a digital television station offering video services for a fee from asserting MVPD status under our rules and claiming program access rights pursuant to Section 628.

D. Duplicative Signals

66. Section 614(b)(5) of the Communications Act provides that "a cable operator shall not be required to carry the signal of any local commercial television station that substantially duplicates the signal of another local television station which is carried on the cable system, or to carry the signals of more than one local commercial television station affiliated with a particular broadcast network . . ."[182] A parallel rule applies to the carriage of NCE station signals.[183] Congress enacted these provisions to

[177] *Must Carry Order*, 8 FCC Rcd at 2986.

[178] We note that in the analog carriage context, Gemstar has requested a ruling from the Commission that its electronic program guide is program-related and must be carried by cable operators. *See* Gemstar Int'l Group. Ltd. and Gemstar Development Corp., *Petition for Special Relief Seeking Commission Order to Discontinue Stripping Information from Broadcast VBI*, Public Notice, DA 00-670 (rel. March 24, 2000).

[179] 47 U.S.C. §548(a); 47 C.F.R. §§76.1000-1004.

[180] *DTV Must Carry Notice*, 13 FCC Rcd at 15125.

[181] 47 C.F.R. §76.1000(e).

[182] 47 U.S.C. §534(b)(5).

[183] *See* 47 U.S.C. §535(b)(3)(C) and (e).

preserve a cable operator's editorial discretion while ensuring that the public has access to a diversity of local television signals.[184]

67. In the *Notice*, we recognized the import of the duplication provisions and sought comment on what approach the Commission should take with regard to this matter.[185] In response, NCTA argues that in Section 614(b)(5), Congress intended that a cable operator not be compelled to carry duplicative signals.[186] NCTA also notes that Section 614 defines a local station as a "television broadcast station. . . . licensed and operating on *a channel* regularly assigned to its community. . . ."[187] Because the digital transmission takes place on a channel separate from the analog channel, NCTA asserts that two stations, not one, are in operation during the transition and that Section 614(b)(5) should apply to programming duplicated by a broadcaster on its digital signal. UCC, emphasizes that Congress enacted Section 614(b)(5) in order to "preserve the cable operator's discretion while ensuring access by the public to diverse local signals."[188] UCC asserts that when a broadcaster's digital programming merely duplicates its analog programming, mandatory carriage of the duplicative digital programming reduces the diversity of local signals by forcing the cable operator to drop cable programming in order to free capacity, thereby undermining Congress' goals.[189] The Broadcast Group, however, argues that identical program content transmitted in an analog and digital format constitutes two distinct program forms targeted at different audiences and that the Commission should not treat it as duplicative programming.[190] Pappas maintains that the Commission should not construe the limitation on duplicative signals to refer to the content of a program transmitted by a signal, but rather to refer to the signal itself.

68. We recognize that reaching a conclusion on this matter is complicated by our requirements for the digital transition. The Commission established a staged implementation schedule for the introduction of digital television in the rules governing the transition. In the early stages of the transition, broadcasters have flexibility in selecting the digital programming they offer. The Commission refrained from imposing simulcasting requirements during this phase in order to afford broadcasters the freedom to experiment with program and service offerings.[191] Thus, for example, a broadcaster's initial digital programming may be entirely original, it may simply duplicate a certain amount of its analog programming, or it may combine original digital content with analog content. Beginning April 1, 2003, the rules mandate an increasing level of duplication of program content between the analog and digital signals, eventually reaching a 100% simulcasting requirement which continues until a broadcaster's analog channel is terminated and returned to the Commission.[192]

---

[184] S. Rep. No. 92, 102d Cong., 1st Sess. at 85 (1991).

[185] *DTV Must Carry Notice*, 13 FCC Rcd at 15123.

[186] NCTA Comments at 12-13.

[187] NCTA Reply Comments at 19 (quoting 47 U.S.C. § 534(h)(1)(A)).

[188] UCC Comments at 8 (citation omitted).

[189] *Id.*; *see also* NCTA Reply Comments at 16.

[190] Broadcast Group Comments at 10.

[191] *DTV Fifth Report and Order*, 12 FCC Rcd at 12832.

[192] *Id.* These simulcasting requirements are intended to minimize viewer disruption as the content of the analog signal is slowly replicated on the digital signal.

69. We will not revise the duplication definitions and requirements at this time. More information is needed on the digital programming currently made available by broadcasters before we act in this regard. Such information, which is solicited in the *FNPRM*, will enable us to determine the appropriate duplication definitions to apply during the transition period, when two signals of the same station are available over-the-air, and afterwards. In the meantime, we will continue to administer the duplication requirements set forth in the Act and the Commission's rules.[193] That is, two commercial television stations will be considered to substantially duplicate each other "if they simultaneously broadcast identical programming for more than 50 percent of the broadcast week."[194] For purposes of this definition, identical programming means the identical episode of the same program series.[195] With regard to noncommercial television broadcasters, an NCE station does not substantially duplicate the programming of another NCE station if at least 50 percent of its typical weekly programming is distinct from programming on the other station either during prime time or during hours other than prime time.[196] This rule is applicable to digital-only and analog noncommercial stations during the transition period as well.

E. Material Degradation

70. Section 614(b)(4)(A) of the Act discusses the cable operator's treatment and processing of analog broadcast station signals and provides that the signals of local commercial television stations shall be carried without material degradation.[197] The *Notice* asked to what extent this provision precludes cable operators from altering the digital format of digital broadcast television signals when the transmission is processed at the system headend or in customer premises equipment.[198] Under the Act, the Commission's carriage standards must ensure that, "to the extent technically feasible, the quality of signal processing and carriage provided by a cable system for the carriage of local commercial television stations will be no less than that provided by the system for carriage of any other type of signal."[199] To address this provision, the *Notice* sought comment on whether the Act requires an operator to carry all local commercial television stations that broadcast in a 1080I high definition format if it carries a cable programming service such as HBO in the 1080I HDTV format.[200]

---

[193]We note that duplication in this context may encompass the following situations: (1) DTV-only station v. DTV-only station; (2) DTV-only station v. analog station; or (3) analog station v. analog station.

[194]*Must Carry Order*, 8 FCC Rcd at 2981.

[195]*Id.* at 2970.

[196]47 C.F.R. §76.56(a)(1)(iii). *See also*, *Must Carry Order*, 8 FCC Rcd at 2970. In the cable carriage context, the Commission treated the duplication provisions of Sections 615(b)(2) and Section 614(b)(5) separately. The Commission noted that the two provisions were intended to accommodate different situations and are addressed separately in the statute and its legislative history. *Id.* at 2980.

[197]47 U.S.C. §534(b)(4)(A). *See also* 47 U.S.C. §535(g)(2) ("A cable operator shall provide each qualified local noncommercial educational station whose signal is carried in accordance with this section with bandwidth and technical capacity equivalent to that provided to commercial television stations carried on the cable system and shall carry the signal of each qualified local noncommercial educational television station without material degradation"); 47 C.F.R. §76.62(b)-(d).

[198]*DTV Must Carry Notice*, 13 FCC Rcd at 15122.

[199]*See* 47 U.S.C. §534(b)(4)(A). *See also* 47 U.S.C. §535(g)(2).

[200]*DTV Must Carry Notice*, 13 FCC Rcd at 15123.

71. We note that the Advanced Television Systems Committee ("ATSC") DTV Standard adopted by the Commission was recommended by the Advisory Committee on Advanced Television Service ("ACATS") and developed by the Grand Alliance.[201] It provides for 19.4 megabits per second ("mbps") for each 6 MHz channel over-the-air.[202] The Commission neither adopted a single standard for high definition television nor imposed a HDTV requirement on broadcasters.[203] Rather, the Commission drew the distinction between standard definition ("SDTV") and high definition ("HDTV") in the digital context. The electronics industry and ATSC define high definition television as having a vertical display resolution of 720p, 1080I, or higher; an aspect ratio capable of displaying a 16:9 image at the minimum resolution level; and receiving and reproducing Dolby digital audio.[204] In contrast, standard definition digital displays resolution lower than high definition, requires no specific ratio, and produces "usable" audio and picture.[205]

72. NAB argues that a digital signal would be materially degraded if it were not transmitted to the viewer in the format that the broadcaster intended.[206] MSTV states that cable systems should not be permitted to block or delete any of the bits comprising the free over the air broadcast material.[207] Granite adds that if cable operators are not required to pass through the entire digital signal, the ability of viewers to receive and experience higher quality television programming formats will be reduced.[208] We believe that these arguments do not address the fundamental concern of the prohibition against material

[201] *DTV Fourth Report and Order*, 11 FCC Rcd at 17772-4. The Grand Alliance was consortia of equipment manufacturers, including AT&T and General Instruments, working together to develop DTV standards.

[202] *Id.* at 17789.

[203] *See DTV Fifth Report and Order*, 12 FCC Rcd at 12809, 12826-27.

[204] **ATSC Restates Definitions for HDTV and SDTV Transmission Standards**, Press Release (Feb. 20, 1998) at http://www.atsc.org/Presshtml/PR_Def.html ("The Executive Committee of the Advanced Television Systems Committee has approved for release the following statement regarding the identification of the HDTV and SDTV transmission formats within the ATSC Digital Television Standard: "There are six video formats in the ATSC DTV standard which are High Definition. They are the 1080 line by 1920 pixel formats at all picture rates (24, 30 and 60 pictures per second), and the 720 line by 1280 pixel formats at these same picture rates. All of these formats have a 16:9 aspect ratio.";*DTV Fifth Further Notice of Proposed Rule Making*, 11 FCC Rcd. 6235, 6237 (1996) ("DTV Fifth FNPRM") (Noting that 720-line and 1080-line formats represent high resolution video). Both high-resolution formats use a picture aspect ratio of 16 units horizontally by 9 units vertically. The choices of 1280 pixels per line for the 720-line format and 1920 pixels per line for the 1080-line format result in square pixels for both formats, based on the 16:9 aspect ratio. "I" designates "interlaced" scanning and "P" designates "progressive" scanning. Progressive scanning lines are presented in succession from the top of the picture to the bottom, with a complete image sent in each frame as is commonly found in computer displays today. For interlaced scanning, which also is used in NTSC (analog) television, odd and even numbered lines of the picture are sent consecutively, as two separate fields. These two fields are superimposed to create one frame, or complete picture, at the receiver. The interlace picture rates can be 24, 30 or 60 fields per second. *Id.* at 11 FCC Rcd at 6237-38. *See also* CEA Expands Definitions for DTV Products, www.digitalbroadcasting.com, September 6, 2000 (Definitions, which now allow for DTV to be defined in the 4:3 aspect ratio standard, are expected to be incorporated into new products in time for holiday buying season)

[205] http://www.dtvweb.org; and *DTV Fifth FNPRM*, at 11 FCC Rcd at 6237.

[206] NAB Comments at 40.

[207] MSTV Comments at 30.

[208] Granite Broadcasting at 9.

degradation. From our perspective, the issue of material degradation is about the picture quality the consumer receives and is capable of perceiving and not about the number of bits transmitted by the broadcaster if the difference is not really perceptible to the viewer. Such an interpretation is consistent with the language of the Act, which applies to *material* degradation, not merely technical changes in the signals.[209] Moreover, as discussed above, the Act prohibits mandatory carriage for ancillary or supplementary services[210] and our rules provide that material that is not program-related is not subject to the mandatory carriage requirement.[211] If such bitstream material that is not subject to mandatory carriage is subtracted from the entire 6 MHz over-the-air digital signal, by necessity there will be fewer than 19.4 mbps to be carried on the cable system. Moreover, whenever a digital signal is remodulated for carriage on a cable system, fewer bits are needed than to transmit the signal over the air.[212] Thus, it is inappropriate to use 19.4 mbps, or any specific number of bits, to denote what constitutes a degraded signal. The number of bits appropriate for mandatory carriage will vary based on the programming and service choices of each broadcaster.

73. With regard to defining picture quality for digital carriage purposes, Microsoft advocates that the Commission should require only that cable operators not carry non-broadcast signals at a higher quality than broadcast signals.[213] Pappas argues, however, that a subscriber watching a HDTV digital program on cable should see the same quality picture as a consumer watching a HDTV digital program over-the-air.[214] Adelphia argues that as long as high definition broadcast signals are retransmitted in either the 1080I or 720p format, the alteration of the digital television signal's format does not constitute material degradation.[215] We agree with Microsoft and find that language of the Act provides the answer to the material degradation question. Section 614(b)(4)(A) requires that cable operators shall provide the same "quality of signal processing and carriage" for broadcasters' signals as they provide for any other type of signal. Consequently, in the context of mandatory carriage of digital broadcast signals, a cable operator may not provide a digital broadcast signal in a lesser format or lower resolution than that afforded to any digital programmer (e.g., non-broadcast cable programming, other broadcast digital program, etc.) carried on the cable system, provided, however, that a broadcast signal delivered in HDTV must be carried in HDTV.[216] This result also protects the interests of cable subscribers by focussing on

[209] 47 U.S.C. §534(b)(4)(A). This interpretation is also consistent with the Act's general mandate of ensuring that cable operators do not favor their own cable programming video services over those video services provided by broadcasters.

[210] 47 U.S.C. §336(b)(3).

[211] *See* 47 C.F.R. §76.62(e).

[212] A broadcaster's over-the-air HDTV signal, for example, requires 19.4 mbps, which accounts for both the programming or data, as well as an overhead data stream that includes error correction. When a cable system carries this HDTV signal using QAM modulation, it removes the broadcaster's overhead data stream and replaces it with the overheada stream appropriate for the specific cable system. Generally the resulting bit rate is somewhat less than 19.4. This reduction in bit rate does not affect picture quality and is not considered material degradation.

[213] Microsoft Comments at 24.

[214] Pappas Comments at 19-20.

[215] Adelphia et. al. Comments at 31.

[216] We recognize that it may be especially burdensome for small systems with limited channel capacity (such as systems with fewer than 330 MHz) to carry a HDTV signal if they are not otherwise providing any HDTV programming. In this regard, we note that mandatory carriage is limited to one-third of the cable system's capacity, as defined *infra*. We also recognize that carriage of a HDTV signal using 8 VSB pass-through may require the (continued....)

the comparable resolution of the picture, as visible to a consumer, rather than the number of lines or bits transmitted, which may not make a viewable difference on a consumer's equipment.

74. We also find that for purposes of supporting the ultimate conversion to digital signals and facilitating the return of the analog spectrum, a television station may demand that one of its HDTV or SDTV television signals be carried on the cable system for delivery to subscribers in an analog format. We do not believe the conversion of a digital signal to an analog format under these specific and temporary circumstances is precluded by the nondegradation requirement in sections 614(b)(4)(A) and 615(g)(2). Many cable subscribers do not yet have television sets capable of receiving or displaying digital signals in their fully advanced format. Thus, if we were to mandate digital-to-digital transmission at this stage of the transition period, cable subscribers would be unable to properly receive the signals. Obviously this was not the intended goal of the nondegradation requirement in sections 614(b)(4)(A) and 615(g)(2). Allowing digital-to-analog conversion for a limited time during a critical stage of the transition period will further the digital transition because a television station would be more willing to return its analog spectrum to the government, and convert to digital service, knowing that cable subscribers without digital equipment may still be able to view the relevant programming. We recognize, that permitting digital-to-analog conversion will not provide an impetus for cable subscribers to purchase digital television sets, but will allow new digital stations and stations that return their analog spectrum to continue to reach cable subscribers who have only analog receivers while commencing over-the-air service to attract and reach non-cable viewers who purchase digital television sets. With these points in mind, we will allow a television station to provide one of its digital signals to cable systems in an analog format only during the early stages of the transition period. We will revisit this policy after 2003 to ensure that this policy is fostering the conversion to digital television service and to determine when equipment is available so that broadcast signals can be delivered and carried in digital format.[217] As the transition moves forward, television broadcast stations will be required to deliver their signals in digital format and cable operators will be required to carry them in digital format, as discussed above.

75. **Measurement.** The *Notice* asked what standards and measurement tools were available to address disputes relating to the quality of the digital broadcast television signal.[218] We also asked how, and where, degradation should be measured. To determine if an operator is materially degrading a digital signal, the signal should be tested at the input terminal of either the television set or set-top box if the subscriber owns that piece of equipment. The signal should be tested at the output point of the set top box if the subscriber rents that equipment from the cable operator. We believe that this location, rather than the headend, will best capture the signal's strength and characteristics after being processed by the cable

---

(...continued from previous page)
allocation of more than 6 MHz of bandwidth due to the difference in channel alignments between broadcast over-the-air transmission and cable carriage. An 8-VSB pass-through of a broadcast station may straddle two cable channels and result in the loss of additional channels in the system (i.e., the cable operator is not able to use these additional channels to carry other programming). Therefore, if a small system, which is not otherwise carrying any HDTV signals, is required to carry a broadcast signal in HDTV such that it straddles two channels in this way, it may include all of its lost spectrum when calculating its one-third capacity.

[217] We understand that for some time the technology has been available to manufacture cable boxes that can either deliver a digital signal to the subscriber's digital equipment or downconvert the signal to be displayed on analog equipment. *See, e.g.,* AT&T *ex parte* of October, 1999. Apparently there is not as yet sufficient demand to produce these boxes for retail purchase or for rental from the cable operator. We will monitor the market's progress to ensure that our permission for analog conversion at the headend does not interfere with the marketplace availability of such boxes.

[218] *DTV Must Carry Notice*, 13 FCC Rcd at 15122.

plant. Broadcasters and cable operators may use commercially available devices to detect signal degradation. We do not endorse any particular model, but stress that such equipment must meet sound engineering practices and good equipment specifications.

76. **Digital Modulation Techniques.** We are mindful that digital television signals are transmitted in the 8 VSB[219] digital broadcast modulation technique while operators will use either 64 or 256 QAM[220] as the cable digital modulation technique. Both 64 and 256 QAM likely will provide cable operators with a greater degree of operating efficiency than does 8 VSB, and also permits the carriage of a higher data rate, with less bits devoted to error correction, when compared with the digital broadcast system. Therefore, we will permit cable operators to remodulate digital broadcast signals from 8 VSB to 64 or 256 QAM.[221] We will not require cable operators to pass through 8 VSB. Notwithstanding this conclusion, we believe that cable pass-through of a digital broadcast signal without alteration is an option for allowing the first purchasers of digital television sets to receive digital signals from their cable systems. Under this scenario, the 8 VSB signal could pass through the cable system and the cable set- top box without change and connect to the digital television set, or the cable could bypass the set-top box and be connected to a cable coaxial connection on the digital television receiver. We believe that pass-through is an option for operators of certain cable systems[222] that wish to offer subscribers digital broadcast channels, but recognize in the long term, that pass-through is not an effective solution for the majority of cable systems.

F. Set Top Box Availability

77. In the *Notice*, we observed that the Act mandates that all commercial television signals shall be provided to every subscriber of a cable system and be viewable on all television receivers of subscribers that are connected by the cable operator or for which the cable operator provides a

[219]VSB is a form of amplitude modulation in which one sideband of the main modulated signal and a small part of the other sideband of the same signal are transmitted. The 8 VSB standard has been optimized for terrestrial broadcast television delivery where transmission errors and data loss are likely. The current analog television standard also uses VSB.

[220]Quadrature amplitude modulation, or QAM, is a complex modulation technique, using variations in both signal phase and amplitude. We note that 256 QAM has a 38 Mpbs data rate while 64 QAM has a 27 Mbps data rate.

[221]The ATSC standards on which the 8 VSB digital television broadcasting system is based, involved the participation of the cable industry. It was anticipated in the ATSC process that non-broadcast digital video program providers would be using a 16 VSB modulation system. Although cable operators are now using QAM, rather than VSB, it was clearly contemplated throughout the process that the cable industry and the broadcasting industry would not be using the same modulation technique. On this point MediaOne (now part of AT&T Broadband) states that the conversion from VSB to QAM causes no degradation of broadcast digital video quality; rather the same quality signal the station delivers to the headend will be received by cable subscribers with digital television receivers. MediaOne Comments at 12. *See also* Mitsubishi Reply Comments at 10-11 (stating that the remodulation from VSB to QAM should be allowed). For purposes of Section 76.630 of our rules, we clarify that we do not consider the utilization of QAM modulation by a cable operator in the provision of digital cable television service to involve scrambling, encryption or similar technologies of the type referenced therein. *See* 47 C.F.R. § 76.630.

[222]This may be applicable to cable systems that will not be providing any digital cable programming or systems not wanting to incur the additional expense of 8 VSB to either 64 or 256 QAM conversion at the headend or in the set-top box.

connection.[223] In general, most cable subscribers are able to view analog broadcast stations on analog cable-ready television sets.[224] In the case of the new digital television service, the Commission has recently adopted labeling requirements for digital television receivers. Based on an industry agreement on technical standards, any receiver labeled as "Digital Cable Ready" will be "capable of receiving analog basic, digital basic, and digital premium cable television programming by direct connection to a cable system providing digital programming. . . . A security card (or POD) provided by the cable operator is required to view encrypted programming." [225] The digital cable ready receivers will include QAM demodulation capability. In the case of digital television receivers that do not meet the digital cable ready criteria, a subscriber may need a set top box to view broadcast digital signals delivered via cable.

78. In the *Notice*, we asked if the Act requires cable operators to offer set top boxes to every subscriber if digital television signals cannot be received without some device facilitating reception.[226] We also asked about viewing digital television signals on analog equipment. MediaOne states that Congress did not intend for all cable subscribers to incur substantial additional costs in order to ensure that all digital broadcast programming is viewable on their televisions, especially when most of the digital programming would be duplicative of the broadcaster's analog feed.[227] ALTV, on the other hand, believes that Section 614(b)(7) should be applied to digital signals in the same manner as it is applied to analog signals.[228]

79. We will not require a cable operator to provide subscribers with a set top box capable of processing digital signals for display on analog sets. We recognize that if we were to impose such a requirement, all subscribers would be forced to pay for equipment that converts digital programming that may be identical in content to the analog programming to which they already have access without a set top box. The result would be that subscribers without the capability of viewing digital signals and who will receive duplicate analog programming when the Commission's simulcasting requirements commence in 2003,[229] would be required to pay for a converter box to receive duplicate digital signals.[230] We do not believe that this result is what Congress intended in enacting section 614(b)(7).

---

[223]*See DTV Must Carry Notice*, 13 FCC Rcd at 15126 *citing* 47 U.S.C. §534(b)(7). Section 615(h) provides that noncommercial educational stations, that are entitled to carriage, shall be "available to every subscriber as part of the cable system's lowest price service tier that includes the retransmission of local commercial television broadcast signals." 47 U.S.C. §535(h).

[224]Some cable subscribers have older televisions that are not capable of receiving all broadcast stations due to on-channel placement at a channel number beyond the range of the receiver. These subscribers rent a set-top box from the cable system for which the system may charge a monthly fee pursuant to 47 U.S.C. §543(b)(3)(A). *See also* 47 C.F.R. §76.923. *See also, Complaint of WLIG*, CSR 3903-M (Cab. Serv.Bur. rel. Nov. 10, 1993)(requiring the cable operator to provide boxes to subscribers so that they are able to view a local television broadcast signal).

[225]*See Compatibility Between Cable Systems and Consumer Electronics Equipment*, at ¶ 36. In this proceeding, the cable and consumer electronics industries are required to report on their progress concerning pending technical standards issues, including such standards for direct connection of DTV receivers to digital cable systems.

[226]*Digital Must Carry Notice*, 13 FCC Rcd at 15126.

[227]MediaOne Comments at 35.

[228]ALTV Comments at 71.

[229]*See* 47 C.F.R. §624(f)(1).

80. Furthermore, we believe that requiring cable operators to make available set top boxes capable of processing digital signals for display on analog sets might be inconsistent with section 629 of the Act. Section 629 was enacted to ensure the commercial availability of navigation devices, the equipment used to access video programming and other services from multichannel video programming systems.[231] Pursuant to our statutory mandate, we adopted rules to expand opportunities to purchase such equipment from sources other than the service provider.[232] Thus, to now require cable operators to make such equipment available to subscribers would impede the overarching goal of the Navigation Devices proceeding, that is to assure competition in the availability of set-top boxes and other customer premises equipment.[233] Moreover, we believe that as the digital television transition moves forward, subscribers will have the ability to purchase or lease a converter to permit the digital signal to be displayed on their analog televisions. We also expect that a conversion function is one which manufacturers may consider adding to digital set-top boxes. We note that the Commission's navigation devices rules allow manufacturers the ability to incorporate additional features and functions in set-top boxes, and to sell those boxes at retail.[234] As such, subscribers will be able to view both the analog and digital signals as the competitive market develops. Further, our decision ensures that the option to pay for a converter or digital set-top box with that function remains at the discretion of the cable subscriber and is not mandated through government regulation.

G. Channel Location

81. Section 614(b)(6) generally provides that commercial television stations carried pursuant to the mandatory carriage provision are entitled to be carried on a cable system on the same channel number on which the station broadcasts over-the-air.[235] Under Section 615(g)(5) noncommercial television stations generally have the same right.[236] The Act also permits commercial and noncommercial

---

(...continued from previous page)

[230]On this point, NCTA comments that a strict interpretation of Section 614(b)(7) by the Commission would impose $53 billion to $93 billion ($400-$700 per sub.) in set top equipment costs on subscribers. NCTA Comments at 49

[231] 47 U.S.C. § 629.

[232]*Navigation Devices Report and Order*, 13 FCC Rcd. 14,775 (para 1) (1998).

[233] *Id.* at para 7.

[234]*See Commercial Availability of Navigation Devices*, Report and Order, 13 FCC Rcd 14775 at para. 49 (1998) ("Navigation Devices") (promulgating rules to facilitate the development and commercial availability of navigation equipment). *See also* 47 U.S.C. §544(a); 47 C.F.R. §§1200 et. seq.

[235]47 U.S.C. §534(b)(6); 47 C.F.R. §76.57(a). There are three channel positioning options for commercial television stations but only the on-channel option is relevant to the new digital signals. The other two options applicable to existing analog stations are the channel on which the station was carried on July 19, 1985 and the channel on which it was carried on January 1, 1992. These latter two channel positioning requirements are not suitable in the era of digital television. They are grounded in dates applicable only to analog broadcasters that were designed to ensure that subscribers would be able to find broadcast programming on familiar channel positions. Since digital signals are generally new products, there is no analogous supporting rationale for requiring digital channel positioning on any cable channel other than on a station's over-the-air channel. Moreover, each television station now has a different digital channel assignment under the Commission's new table of digital allotments. *See Sixth Report and Order*, 12 FCC Rcd. at 14699.

[236]47 U.S.C. §535(g)(5); 47 C.F.R. §76.57(b).

television stations to negotiate a mutually beneficial channel position with the cable operator.[237] In seeking comment on the applicability of these types of requirements in the digital context, we noted that station licensees received new digital broadcast frequency assignments and channel numbers that are different from their analog channel numbers.[238] We pointed out that the advent of advanced programming retrieval systems and other channel selection devices may alleviate the need for specific channel positioning requirements.[239] In this regard, the ATSC established channel identification protocols, or PSIPs,[240] that link the digital channel number with that assigned to the analog channel.[241] Given these developments, we asked whether the Commission should refrain from promulgating digital channel positioning requirements and allow technology to resolve the matter.[242]

82. Entravision and Granite submit that the analog channel positioning requirements should apply to DTV signals.[243] ALTV proposes that a cable operator should carry DTV signals on contiguous channels.[244] MSTV and NAB ask the Commission to rely on the ATSC PSIP standard.[245] NBC states that PSIP information or other DTV navigation instructions must be carried by cable operators for a channel mapping system to work.[246] Matsushita agrees and adds that should the Commission permit out-of-band methods to provide navigational information, the Commission should (1) require that cable systems transmit to the DTV set any and all the PSIP data contained in the digital broadcast signal without altering or limiting the effectiveness of that PSIP information and (2) mandate that PSIP be provided in an

[237] 47 U.S.C. §534(b)(6), §535(g)(5).

[238] Thus, a television station could be assigned channel 4 as its analog over-the-air channel number, but channel 24 as its digital over-the-air channel number. A television station may switch back to channel 4 after the transition and "core" consolidation of broadcast signals to channels 2-51.

[239] *DTV Must Carry Notice*, 13 FCC Rcd. at 15128.

[240] *See Program and System Information Protocol for Terrestrial Broadcast and Cable*, ATSC Document A/65 (Dec. 23, 1997) ("For broadcasters with existing NTSC licenses, the major channel number for the existing NTSC channels, as well as the Digital TV channels, controlled by the broadcaster, shall be set to the current NTSC RF channel number. [ ] Assume a broadcaster who has an NTSC broadcast license for RF channel 13 is assigned RF channel 39 for Digital ATSC broadcast. That broadcaster will use major channel number 13 for identification of the analog NTSC channel on RF channel 13, as well as the digital channels it is controlling on RF channel 39.")

[241] *Id.*

[242] *DTV Must Carry Notice*, 13 FCC Rcd. at 15129. We also suggested that another policy alternative would be to allow operators to place digital television signals on any cable channel of their choice, subject to certain conditions, such as: (1) that the digital channel identification or PSIP information be clearly available for use by the subscriber's receiver; (2) that all analog and digital channel placement decisions must comply with tier placement requirements; and (3) once a station has been assigned a channel position, the cable operator may not move it from that position for at least three years except where a move is authorized by the broadcaster. *Id*

[243] Entravision Comments at 10; Granite Broadcasting at 11.

[244] ALTV Comments at 73.

[245] MSTV Comments at 32; NAB Comments at 41. *See ATSC Program and System Information Protocol for Terrestrial Broadcast and Cable*, Table 6.4 "Bit Stream Syntax for the Terrestrial Virtual Channel Table," at p. 20, and Table 6.8 Bit Stream Syntax for the Cable Virtual Channel Table," at p. 26 (12/23/97).

[246] NBC Comments at 6.

unscrambled, unencrypted form. In addition, the Commission should urge industry to adopt a single standard for out-of-band PSIP and other channel navigation information.[247]

83. In the digital environment it is generally anticipated that broadcast signals will be identified and tuned to through the PSIP information process rather than by identification with the specific frequency on which the station is broadcasting. Given the new digital table of allotments, we find that there is no need to implement channel positioning requirements for digital television signals of the same type currently applicable to analog signals. Rather, as the majority of commenters have suggested, we find that the channel mapping protocols contained in the PSIP identification stream adequately address location issues consistent with Congress's concerns about nondiscriminatory treatment of television stations by cable operators. We believe this technology-based solution will resolve broadcaster concerns. PSIP assures that cable subscribers are able to locate a desired digital broadcast signal and ensures that digital television stations are able to fairly compete with cable programming services in the digital environment. Therefore, as stated in the content-to-be-carried section above, a cable operator will be required to pass-through channel mapping PSIP information as it is considered to be program-related to the primary digital video signal.[248] We point out that questions related to the technical aspects of PSIP are being dealt with by the cable and consumer electronics industry as they proceed with establishing digital cable-consumer equipment compatibility standards. We note again that the Commission has asked for PSIP progress reports as part of the digital cable compatibility proceeding.[249]

H. Market Modifications

84. Commercial television stations have carriage rights throughout the market to which they are assigned by Nielsen Media Research.[250] Pursuant to Section 614(h)(1)(c) of the Act, at the request of either a broadcaster or a cable operator, the Commission may, with respect to a particular television broadcast station, include additional communities within its television market or exclude communities from such station's television market to better effectuate the purposes of the Act's must carry provisions.[251] In considering such market modification requests, the Act provides that the Commission shall afford particular attention "to the value of localism" by taking into account such factors as (1) whether the station, or other stations located in the same area, have been historically carried on the cable system or systems within such community; (2) whether the television station provides coverage or other local service to such community; (3) whether any other television station that is eligible to be carried by a cable system in such community in fulfillment of the requirements of this section provides news coverage of issues of concern to such community or provides carriage or coverage of sporting and other events of interest to the community; and (4) evidence of viewing patterns in cable and noncable households within the areas served by the cable system or systems in such community.[252] The inclusion of additional communities within a station's market imposes new must carry requirements on cable operators subject to the modification request while the grant to exclude communities from a station's market removes a cable operator's obligation to carry a certain station's signal on the relevant system. We sought comment on

[247] *Id.*

[248] *See* revisions to Section 76.57, Channel Positioning, in Appendix D.

[249] *See Compatibility Between Cable Systems and Consumer Electronics Equipment*, 15 FCC Rcd 8776.

[250] Nielsen has divided the United States into 210 designated market areas.

[251] 47 U.S.C. §534(h)(1)(C).

[252] 47 U.S.C. §534(h)(1)(C); 47 C.F.R. §76.59.

whether any change to the market modification process was warranted to accommodate the difference between analog and digital broadcasting.[253]

85. We find that our current reliance on Nielsen's market designations, publications, and assignments for analog signal carriage issues should continue for digital signal carriage issues. The presumption, therefore, is that the market of the station's digital signal is coterminous with the station's market area for its analog signal during the transition period.[254] In addition, we find that the statutory factors in Section 614(h), the current process for requesting market modifications, and the evidence needed to support such petitions, will be applicable to digital television cases during the transition period. We realize, of course, that the technical coverage area of a digital television signal may not exactly replicate the technical coverage area of the analog television signal. Therefore, in deciding DTV market modification cases, we will take into consideration changes in signal strength and Grade B contour coverage because of new digital television channel assignments and power limits. All other matters concerning the modification process for digital television signals will be decided on a case-by-case basis.

I. Digital Signal Carriage on PEG Channels

86. The Act provides that a cable operator required to add the signals of qualified local noncommercial educational stations and qualified low power television stations, respectively, may do so by placing such additional stations on unused public, educational or governmental ("PEG") channels not in use for their designated purposes, subject to the approval of local franchising authorities.[255] Pursuant to Section 611 of the Act, the local franchising authority, in discussions with a cable operator, determines how much channel capacity, if any, will be set aside for PEG use.[256] The Commission, when implementing the analog must carry rules, declined to adopt stringent requirements regarding the use of PEG channels for must carry purposes because it believed that these matters were more appropriately resolved by local franchising authorities.[257] We sought comment on whether DTV signals of NCE stations and LPTV stations should be allowed on PEG channels under the same framework accorded analog television signals.[258] We agree with comments submitted by CBA and Pappas that the carriage of digital LPTV and NCE stations on unused PEG channels should be permitted.[259] We find that this approach will likely advance the digital transition by allowing another way for cable subscribers to access digital NCE signals. We also find that continuing this policy will promote program diversity by enabling LPTV analog signals and NCE analog and digital signals, that otherwise may not be afforded carriage, to

[253] *DTV Must Carry Notice* at 15130.

[254] We note that in adopting technical rules for the digital transmission of broadcast signals, the Commission attempted to insure that a station's digital over-the-air coverage area would replicate as closely as possible its current over-the-air analog coverage area. *Sixth DTV Report and Order*, 12 FCC Rcd 14588, 14605 (1997).

[255] *See* 47 U.S.C. §535(d) (noncommercial educational television stations), §534(c)(2) (low power television stations); *see also* 47 C.F.R. §76.56(c).

[256] *See* 47 U.S.C. §531(d) ("In the case of any franchise under which channel capacity is designated [for PEG channels], the franchising authority shall prescribe (1) rules and procedures under which the cable operator is permitted to use such channel capacity for the provision of other services if such channel capacity is not being used for the purposes designated, and (2) rules and procedures under which such permitted use shall cease.")

[257] *Must Carry Order*, 8 FCC Rcd. at 2972, 2984.

[258] *DTV Must Carry Notice*, 13 FCC Rcd. at 15126.

[259] CBA Comments at 5; Pappas Comments at 32.

reach their intended audience. To this end, we encourage local franchising authorities to engage digital public broadcasters and low power broadcasters in discussions concerning the carriage of their respective broadcast signals.

J. Complaints and Enforcement

87. Under our current rules, whenever a television station believes that a cable operator has failed to meet its must carry obligations, the station may file a complaint with the Commission.[260] Section 614(d)(3) requires the Commission to adjudicate a must carry complaint within 120 days from the date it is filed.[261] The Commission may grant the complaint and order the cable operator to carry the station or it may dismiss the complaint if it is determined that the cable operator has fully met its must carry obligations with regard to that station.[262] We sought comment on whether the current procedures should apply to DTV must carry complaints.[263] We agree with AAPTS that the current scheme is working and see no need to depart from it.[264] Therefore, we will continue to use the existing must carry complaint process for digital television carriage disputes.

VI. CHANGES TO OTHER PART 76 REQUIREMENTS

A. Open Video Systems

88. Section 653(c)(1) of the Act provides that any provision that applies to cable operators under Sections 614, 615 and 325, shall apply to open video system operators certified by the Commission.[265] Section 653(c)(2)(A) provides that, in applying these provisions to open video system operators, the Commission "shall, to the extent possible, impose obligations that are no greater or lesser" than the obligations imposed on cable operators.[266] The Commission, in implementing the statutory language, held that there are no public policy reasons to justify treating an open video system operator differently from a cable operator in the same local market for purposes of broadcast signal carriage.[267] Thus, OVS operators generally have the same requirements for the carriage of local television stations as do cable operators except that these entities are under no obligation to place television stations on a basic service tier.[268] OVS operators are also obligated to abide by Section 325 and the Commission's rules

[260] 47 C.F.R. §§ 76.7 and 76.61.

[261] 47 U.S.C. §534(d)(3).

[262] *DTV Must Carry Notice*, 13 FCC Rcd at 15131.

[263] *Id.*

[264] *See* AAPTS Comments at 54.

[265] 47 U.S.C. §573(c)(1).

[266] 47 U.S.C. §573(c)(2)(A).

[267] *See Implementation of Section 302 of the Telecommunications Act of 1996, Second Report and Order*, 11 FCC Rcd 18223, 18307-08 (1996).

[268] *Id.* at 18308-09, n.371. We note, however, that an OVS operator must make qualified local commercial and noncommercial educational television stations available to every subscriber. *See* 47 C.F.R. §76.1506(e).