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

In the Matter of	)	
	)	
Implementation of Section 304 of the	)	CS Docket No. 97- 80
Telecommunications Act of 1996	)	
	)	
Commercial Availability of	)	
Navigation Devices	)	

REPORT AND ORDER

Adopted: June 11, 1998 **Released: June 24, 1998**

By the Commission: Chairman Kennard and Commissioner Ness issuing separate statements; Commissioner Powell dissenting in part and issuing a statement.

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I. INTRODUCTION

1. In this *Report and Order* ("*Order*") we adopt rules to address the mandate expressed in Section 629 of the Communications Act to ensure the commercial availability of "navigation devices,"[1] the equipment used to access video programming and other services from multichannel video programming systems. The purpose of Section 629 and the rules we adopt is to expand opportunities to purchase this equipment from sources other than the service provider.[2]

2. The Telecommunications Act of 1996 ("1996 Act") established a fundamental premise for the direction of telecommunications markets.[3] The amendments reflected in Section 629 are in keeping with the 1996 Act's general goal of "accelerat[ing] rapidly private sector deployment of advanced telecommunications and information technologies and services to all Americans by opening all telecommunications markets to competition."[4] As navigation devices are the means to deliver analog and digital communications, competition in the navigation equipment market is central toward encouraging innovation in equipment and services, and toward bringing more choice to a broader range of consumers at better prices.

3. Competition in the markets involved is in an early stage of development and the enormous technological change resulting from the movement from analog to digital communications is underway. This *Order* provides incentives for market forces to operate. We find, however, that certain parameters are necessary to ensure the movement of navigation devices toward a fully competitive market. In particular, (1) a separation of conditional access or security functions from other functions must take place; (2) modular security components must be made available by July 1, 2000; (3) phase out of devices that have security and non-security functions combined must occur by January 1, 2005; (4) information sufficient to permit the manufacture, retail sale, and attachment of devices must be made available and; (5) service providers must be able to protect their operations from technical harm and theft of service. As circumstances are changing rapidly, our commitment to pursue competition means we will carry on an ongoing examination of market

[1] In this proceeding, we define "navigation devices" as converter boxes, interactive equipment, and other equipment used by consumers within their premises to receive multichannel video programming and other services offered over multichannel video programming systems. Throughout this document, we use the term navigation devices as shorthand for equipment fitting this definition.

[2] 47 U.S.C. § 549. Section 629 was adopted as part of the Telecommunications Act of 1996. Pub. L. No. 104-104, 110 Stat 56 (1996) ("1996 Act").

[3] The Conference Report to the 1996 Telecommunications Act characterized the intent of Congress as being:

> to provide for a pro-competitive, de-regulatory national policy framework designed to accelerate rapidly private sector development of advanced telecommunications and information technologies and services to all Americans by opening all telecommunications markets to competition . . . .

S. Conf. Rep. 104-230, 104th Cong. 2d Sess. at 113 (1996) (Joint explanatory statement of Committee of Conference).

[4] *Id.*

developments to determine if we are fulfilling the objectives of the 1996 Act, and Section 629 in particular.

II. BACKGROUND

4. Section 629 instructs the Commission to:

> adopt regulations to assure the commercial availability, to consumers . . . of . . . equipment used . . . to access multichannel video programming and other services offered over multichannel video programming systems, from manufacturers, retailers, and other vendors not affiliated with any multichannel video programming distributor.[5]

In addition, our rules "shall not prescribe regulations . . . which would jeopardize security of . . . services offered over multichannel video programming systems, or impede the legal rights of a provider of such services to prevent theft of service."[6]

5. Section 629 does not prohibit service providers from offering equipment to their subscribers. Multichannel video programming distributors may themselves continue to offer equipment "if the system operator's charges to consumers for such devices and equipment are separately stated and not subsidized by charges for" multichannel video programming and other services.[7] Section 629 also states that the rules adopted under Section 629 shall cease to apply when the Commission determines that the markets involved are fully competitive and that elimination of the regulations would promote competition and be in the public interest.[8] The statute also provides that nothing in Section 629 is to be construed "as expanding or limiting any authority that the Commission may have under law in effect before the date of enactment of the Telecommunications Act of 1996."[9]

6. The House Report noted that "competition in the manufacturing and distribution of consumer devices has always led to innovation, lower prices and higher quality. Clearly, consumers will benefit from having more choices among telecommunications subscription services arriving by various distribution sources."[10]

7. In the *Notice of Proposed Rule Making ("NPRM")*, we stated our belief that the overarching goal of this proceeding was to assure competition in the availability of set-top boxes and other customer premises

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[5]47 U.S.C. § 549(a).

[6]47 U.S.C. § 549(b).

[7]47 U.S.C. § 549(a).

[8]47 U.S.C. § 549(e).

[9]47 U.S.C. § 549(f).

[10]H.R. Rep. No. 104-204, 104th Cong., 1st Sess. 112 (1995).

equipment ("CPE").[11] Additionally, in the *NPRM*, we noted the interest service providers have in protecting system and signal security and in preventing theft of service, and stated our intent to adopt rules that assured adequate protection of service providers' networks from harm from any device used by consumers. Also, we stated our belief that by stimulating equipment innovation, we would maximize consumer choice and flexibility, and stated our preference for minimizing regulation in the equipment design and installation process.

III. SUMMARY

8. This *Order* adopts rules and policies implementing Section 629. The decisions made in this *Order* may be summarized as follows:

- Section 629 is broad in terms of the multichannel video programming distributors ("MVPDs") covered including cable television, direct broadcast satellite ("DBS"), multichannel multipoint distribution service ("MMDS") and satellite master antenna television ("SMATV"). We determine that open video system operators are not covered as a consequence of the specific open video system provisions of the Communications Act which exclude open video system operators from certain regulations applicable to cable operators.

- Section 629 covers not just equipment used to receive video programming, but also equipment used to access "other services offered over multichannel video programming systems." Such equipment includes televisions, VCRs, cable set-top boxes, personal computers, program guide equipment, and cable modems. The focus of Section 629, however, is on cable television set-top boxes, devices that have historically been available only on a lease basis from the service provider.

- Subscribers have the right to attach any compatible navigation device to a multichannel video programming system. We conclude that the core requirement, to make possible the commercial availability of equipment to MVPD subscribers, is similar to the *Carterfone* principle adopted by the Commission in the telephone environment. The *Carterfone* "right to attach" principle is that devices that do not adversely affect the network may be attached to the network. The *Order* also notes that commercial availability is furthered only if consumers are aware of the availability of equipment from alternative sources.

- Service providers are prohibited from taking actions which would prevent navigation devices that do not perform conditional access functions from being made available by retailers, manufacturers, or other unaffiliated vendors.

- Cable operators and other MVPDs can take the necessary steps to guarantee the security of their systems and their programming. The *Order* reaffirms the provisions in the Communications Act that prohibit the manufacture, sale and distribution of equipment designed to allow for the unauthorized reception of service.

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[11] *Implementation of Section 304 of the Telecommunications Act of 1996, Commercial Availability of Navigation Devices*, CS Docket No. 97-80, *Notice of Proposed Rule Making*, 12 FCC Rcd 5639, 5641 (1997) ("*NPRM*").

- MVPDs must separate out security functions from non-security functions by July 1, 2000. An exception is made for navigation devices that operate throughout the continental United States and are commercially available from unaffiliated sources, which includes DBS. Our rules rely heavily on the representations of the various interests involved that they will agree on relevant specifications, interfaces, and standards in a timely fashion, thus permitting the manufacture and sale of navigation devices.

- MVPDs may offer devices that have security and non-security functions integrated until January 1, 2005. As of that date, no MVPD shall provide new navigation devices for sale, lease, or use that perform both conditional access functions and other functions in a single integrated device. In the year 2000, once separate security modules are available, we will assess the state of the market to determine whether that time frame is appropriate and we will review the mechanics of the phase out of boxes that have combined security and non-security functions.

- MVPDs must provide, upon request, technical information concerning interface parameters that are needed to permit navigation devices to operate with their systems.

- Existing equipment rate rules applicable to cable systems not facing effective competition fulfill the statute's requirement prohibiting subsidies.

- The *Order* adopts rules implementing the statute's waiver and sunset provisions.

- The Commission will monitor developments with respect to the availability of information to consumers, retailers, and manufacturers necessary to the functioning of a commercial retail market for navigation equipment, as well as developments relating to standard means of attaching and using equipment with the networks of service providers.

- The Commission will also monitor developments with respect to the compatibility of set-top boxes and digital televisions, and the availability of program guides.

9. As we stated in the *NPRM*, the multichannel video programming systems subject to Section 629, including cable television, direct broadcast satellite ("DBS"), and multichannel multipoint distribution service ("MMDS") typically consist of a central signal processing or switching center, a transmission network from that facility to user locations, and customer premises equipment that controls access to the network and specific communications on it, and displays or stores picture, sound, and data information.[12] Cable television operators and other providers have not discouraged customer ownership of television receivers, radio receivers, and video cassette recorders that receive and display the communications transmitted.

10. Equipment, however, that controls the security aspects of access to programming from cable operators and some other MVPDs has generally only been available for lease so that only those who subscribe may receive service. Signal security control or descrambler units tend to be combined with other control

[12] *NPRM*, 12 FCC Rcd at 5642.

equipment such as signal tuners and remote controls.[13] In contrast, customer ownership of satellite earth stations receivers and signal decoding equipment has been the norm in the DBS field.[14] Even in DBS, however, where customer ownership of equipment is common, the service provider may control the technical design of the equipment involved by licensing the technology used.[15]

11. The competitive market for consumer equipment in the telephone context provides the model of a market we have sought to emulate in this proceeding.[16] Previously, consumers leased telephones from their service provider and no marketplace existed for those wishing to purchase their own phone. The *Carterfone* decision allowed consumers to connect CPE to the telephone network if the connections did not cause harm.[17] As a result of *Carterfone* and other Commission actions, ownership of telephones moved from the network operator to the consumer. As a result, the choice of features and functions incorporated into a telephone has increased substantially, while the cost of equipment has decreased.

12. The parallel to the telephone has limitations. When customer ownership of telephone CPE became available, the telephone network was effectively a national monopoly. Well developed technical standards existed throughout an almost ubiquitous network. CPE compatible with the telephone network was part of this environment. In contrast, cable networks do not reflect universal attributes, and have substantially different designs. Nor do satellite systems share commonality beyond the most basic elements. Additionally, as Section 629 recognizes, preventing interference to other network users and maintaining the integrity of the system signal is of greater concern for video delivery systems than for telephone systems.[18] This *Order* seeks to accommodate these differences from the telephone model.

13. The steps taken in this *Report and Order*, if implemented promptly and in good faith, should result in an evolution of the market for navigation devices so that they become generally and competitively available through commercial retail outlets. To facilitate the emergence of a competitive marketplace for navigation equipment, we adopt several rules to make navigation devices commercially available as quickly as possible. For example, we require certain MVPDs to offer separate security modules and preclude MVPDs from offering navigation devices that perform both conditional access functions and other functions in a single device after January 1, 2005.

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[13]*Id.*

[14]SBCA Comments at 4; *see also* DIRECTV Comments at 7.

[15]*Id.* at 5643.

[16]*Id.* at 5644.

[17]*See Carterfone*, 13 FCC 2d 420 (1968), *recon. denied*, 14 FCC 2d 571 (1968); *Telerent Leasing Corp. et al.*, 45 FCC 2d 204 (1974), *aff'd sub nom. North Carolina Utilities Commission v. FCC*, 537 F.2d 787 (4th Cir. 1976), *cert. denied*, 429 U.S. 1027 (1976); *Mebane Home Telephone Co.*, 53 FCC 2d 473 (1975), *aff'd sub nom. Mebane Home Telephone Co. v. FCC*, 535 F.2d 1324 (D.C. Cir. 1976).

[18]*See* H. R. Rep. No. 104-204, 104th Cong., 1st Sess. 112 (1995).

14. This *Report and Order* is premised on the assumption that commercial interests, fueled by consumer demand, will agree on specifications for digital navigation devices to be submitted to standard-setting organizations, or that common interfaces will emerge that become widely accepted. For the cable television industry, the OpenCable™ project is an initiative being managed through Cable Television Laboratories, Inc. ("CableLabs")[19] to develop key interface specifications to foster interoperability among digital navigation devices manufactured by multiple vendors.[20] According to CableLabs, it has opened its specifications to several vendors rather than designating a single proprietary solution, with the goal of introducing digital cable ready television sets and other navigation devices into retail distribution.[21] The rules we adopt in this *Order* are premised on the representation that the OpenCable initiative will continue, and that others will be undertaken. We expect that entities outside of the membership of CableLabs will be able to participate in the eventual standards setting process.

15. We do not believe, however, that our work with respect to these issues is complete. The markets involved are in the early stages of becoming competitive, and the participants in these markets are on the precipice of a change from analog to digital communications. Because of these changes, this is both a particularly opportune and a particularly perilous time for the adoption of regulations. It is opportune because new patterns are being established and no large embedded base of equipment exists that constrains change.[22] It is perilous because regulations have the potential to stifle growth, innovation, and technical developments at a time when consumer demands, business plans, and technologies remain unknown, unformed or incomplete.

16. Our objective thus is to ensure that the goals of Section 629 are met without fixing into law the current state of technology.[23] In addition to enforcing the rules we adopt in this *Order*, we intend to monitor

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[19]CableLabs is a research and development consortium of cable operators representing more than 85% of the cable subscribers in the United States, 75% of the cable subscribers in Canada, and 12% of the cable subscribers in Mexico. NCTA Comments at 32, n. 62. CableLabs acts as a clearinghouse to provide the cable industry with information on current and prospective technological developments and works with other industries to develop interoperable specifications for proposals to national and international standards bodies. *Id.*

[20]*See* NCTA Comments at 32 (stating that 85% of the industry is involved in OpenCable). We note that not all of the cable television industry is involved in the OpenCable process and no entities outside of the cable industry are currently participating. *See* OpenCable website at <http://www.cablelabs.com>. *See also* Letter from Karen B. Possner, Vice-President, Strategic Policy, BellSouth, June 2, 1998.

[21]OpenCable website at <http://www.cablelabs.com>, 5/4/98 at 3. In Spring 1998, CableLabs released service requirements and functional requirements to the vendor community for their review and comment. These requirements describe what services and technical capabilities will be required in the navigation device and reflect responses from the consumer electronics and computer industries to a request for information from CableLabs.

[22]While some service providers have placed large orders for certain devices that have attracted industry attention, these commitments appear to be flexible enough to accommodate any requirements adopted herein.

[23]The portion of the Conference Report for the 1996 Telecommunications Act discussing navigation devices states the Commission should "avoid actions which could have the effect of freezing technologies and services. . . . Thus, in implementing this section, the Commission should take cognizance of the current state of the marketplace and consider

the progress of participants in these markets to ensure that the devices continue in the direction of portability, interoperability, wider availability, and increased consumer choice. If we find that market participants are not complying with our rules or are not progressing satisfactorily towards the principles and goals of this proceeding, the Commission will revisit the decisions and take further action to ensure a competitive marketplace and consumer choice in navigation devices. In particular, we will monitor developments with respect to the availability of information to consumers, retailers, and manufacturers necessary to the functioning of a commercial retail market for navigation equipment, as well as developments relating to standard means of attaching and using equipment with the networks of service providers. Further, the broad goals of this proceeding extend beyond making navigation equipment commercially available, but in fulfilling the promise of the digital age to bring broader choices and opportunities to a wider group of consumers. If, for example, service providers retain the ability to limit substantially consumer access to content, applications, and other services, this result would not achieve the important goals of the statute. We intend to monitor developments with respect to the compatibility of set-top boxes and digital televisions, and the availability of program guides.

17. There is further risk in moving to an environment where new devices are commercially available. With the technology and market developing, it is unclear how efficiently the market will respond if consumers purchase devices that may not perform all of the functions in the manner that the consumer envisioned. The ability of the consumer to adjust to separate functions of the manufacturer, service provider, and retailer, instead of relying on the service provider alone, will also provide a challenge if the market does not respond adequately. Notably, if neither the manufacturer, retailer nor service provider appear responsible to the consumer for the device's reliability and functionality, the goals of Section 629 are undermined. We also recognize that commercial availability is furthered only if consumers are aware of the availability of equipment from alternative sources.[24]

18. Section 629's broad goals are especially important to bringing the substantial benefits of digital technology to all Americans. Section 629 may, with its broad goals, require the Commission to examine circumstances where commercial availability does not evolve and access to programming and services is encumbered. We remain committed to these goals.

IV. ANALYSIS AND DISCUSSION OF RULES AND POLICIES

A. Entities Covered by Section 629

19. *Background*. Section 629 is applicable by its terms to equipment used to access services over multichannel video programming systems. Specifically, Section 629(a) of the Act states:

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the results of private standards setting activities." *Id*. at 181.

[24]For example, in our 1983 proceeding to detariff customer premises equipment, AT&T was required to notify its customers that they had the option to purchase or continue leasing their customer premise equipment from a separate subsidiary of AT&T. *Procedures for Implementing the Detariffing of Customer Premises Equipment and Enhanced Services (Second Computer Inquiry)*, CC Docket No. 81-893, *Report and Order*, 95 FCC 2d 1276, 1415 (1983).

> The Commission shall, in consultation with appropriate industry standard-setting organizations, adopt regulations to assure the commercial availability, to consumers of multichannel video programming and other services offered over multichannel video programming systems, of converter boxes, interactive communications equipment, and other equipment used by consumers to access multichannel video programming and other services offered over multichannel video programming systems, from manufacturers, retailers, and other vendors not affiliated with any multichannel video programming distributor . . . .[25]

20. In the *NPRM*, we tentatively concluded that Section 629 appears to be jurisdictionally broad as to the multichannel video programming systems covered. We sought comment on this conclusion. We also sought comment on whether to exclude open video system operators from Section 629.

21. *Discussion.* We agree with the tentative conclusion in the *NPRM* that Section 629 is jurisdictionally broad in terms of the multichannel video programming systems to which it applies. As we noted in the *NPRM*, although the term "multichannel video programming system" is not defined in Section 629, Section 602(13) defines a multichannel video programming "distributor" as "a person such as, but not limited to, a cable operator, a multichannel multipoint distribution service, a direct broadcast satellite service, or a television receive-only satellite program distributor, who makes available for purchase, by subscribers or customers, multiple channels of video programming . . . . " To ensure the commercial availability of equipment used to access multichannel video programming and other services, the rules we adopt here will be applied to MVPDs as defined by Section 602(13).[26] As advocated by NCTA, Ameritech, and other commenters, we believe that Section 629 requires that the Commission apply the commercial availability requirements to all multichannel video programming systems.[27] Section 76.1200 of the rules defines the entities to which the rules apply.

22. We disagree with the comments of several parties that Section 629 should apply only to cable television systems.[28] There is no basis in the law, or the record of this proceeding, to support a conclusion that the statutory language does not include all multichannel video programming systems. Our reading of the law is that consumer choice in navigation devices for all multichannel video programming systems was mandated by Congress when it enacted Section 629. Our decision and rules, however, recognize the differences between various providers and, as discussed below, the rules are intended to recognize the fact that DBS reception equipment is already nationally portable and commercially available. Moreover, we believe that the waiver process can sufficiently address the concerns of developing MVPDs and reject the comments that developing MVPDs, such as local multipoint distribution systems ("LMDS"), should be excluded from the application of

[25]47 U.S.C. § 549(a).

[26]47 U.S.C. § 522(13).

[27]Ameritech Comments at 4; Circuit City Comments at 14; GTE Comments at 4; ITI Comments at 27; NCTA Comments at 15; Tandy Comments at 3; TW Comments at 23; Uniden Comments at 2; US West Comments at 9.

[28]DIRECTV Comments at 10; PrimeStar Comments at 7; SBCA Comments at 3.

Section 629.[29]

23. Section 653(c)(1) does require exclusion of open video systems operators from the requirements of Section 629. In addressing what provisions of Title VI apply to open video systems, Section 653(c)(1) states that any section of Part III of Title VI of the Communications Act that applies to cable operators shall not apply to open video system operators. Section 629 is in Part III, and applies to cable operators. Several commenters agree that Section 653 exempts open video system operators from the Section 629 requirements,[30] while others espouse that the Commission has authority to apply any rules adopted in this proceeding to open video systems.[31] Section 653 makes no distinction between rules that apply only to cable operators and rules applicable to all MVPDs. Section 653(c)(1)(C) lists those sections of Parts III and IV that apply to open video system operators and the list does not include Section 629. Had Congress intended that Section 629 apply to open video system operators, it would have been listed in Section 653(c)(1).

B. Equipment Covered

24. *Background.* In the *NPRM*, we noted that Section 629 is broad in terms of the types of equipment to which it is applicable.[32] We stated that certain equipment existing or under development might be within the scope of the statute such as cable television converters, electronic program guide equipment, modems, and network interface modules. Additionally, we sought comment on our conclusion that some equipment does not appear to require Commission action to assure that its availability fulfills the mandate of Section 629. We sought comment as to what equipment is encompassed by Section 629.

25. *Discussion*. The language of Section 629 indicates that Congress sought to have the marketplace offer consumers a choice over a broad range of equipment. Section 629(a) enumerates "converter boxes, interactive communications equipment, and other equipment used by consumers to access multichannel video programming and other services . . ."[33] We believe that the statutory language of Section 629 indicates that its reach is to be expansive and that Section 629 neither exempts nor limits any category of equipment used to access multichannel video programming or services offered over such systems from its coverage.[34] Equipment used to access video programming and other services offered over multichannel video programming systems include televisions, VCRs, cable set-top boxes, personal computers, program guide equipment and cable modems. Section 76.1200(c) of the rules defines the equipment to which the rules apply.

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[29]*See* Cellular Vision Comments at 8.

[30]BANX Comments at 5; GI Comments at 48; PacBell Comments at 5.

[31]CEMA Comments at 11; CERC Comments at 15; US West Comments at 9.

[32]*NPRM*, 12 FCC Rcd at 5647.

[33]47 U.S.C. § 549(a).

[34]*See e.g.*, Americast Comments at 5; BANX Comments at 5; StarSight Reply at 20; Uniden Comments at 20; WCA Reply at 11.

26. The purpose of this proceeding is to make navigation devices commercially available, rather than to create a market for certain specific equipment. Just as the *Carterfone*[35] decision resulted in the availability to the consumer of an expanding series of features and functions related to the use of the telephone, we believe that Section 629 is intended to result in the widest possible variety of navigation devices being commercially available to the consumer. The expansive nature of the language of Section 629 is a recognition that the future convergence of various types of equipment and services may result in technical innovations not foreseeable at this time.[36]

27. Commenters seek exceptions from Section 629 for certain types of equipment, such as navigation devices already available in the marketplace,[37] equipment performing security or access control functions,[38] personal computers,[39] enhanced non-video services,[40] and cable modems.[41] Some commenters contend that we should exempt analog equipment.[42] As noted above, Section 629 applies to all types of equipment, including analog, hybrid analog/digital and digital equipment.[43] We note, however, that to the extent that analog, or other, equipment, presents concerns regarding security, our rules accommodate such concerns.[44] Some commenters express concern that the rules will be applied to the embedded base of current equipment.[45] While the statute requires commercial availability of equipment, we believe that this is intended to apply to equipment

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[35]*Carterfone*, 13 FCC 2d 420 (1968), *recon. denied*, 14 FCC 2d 571 (1968).

[36]GTE and Ameritech both support having the definition of equipment tied to the function of receiving services from the MVPD system. GTE Comments at 6; Ameritech Comments at 6.

[37]Ameritech Comments at 24; BSA Comments at 5; GI Comments at 43; ITI Comments at 30; PrimeStar Comments at 17; Zenith Comments at 10.

[38]GI Comments at 44; NCTA Comments at 19; SA Comments at 15; TW Comments at 21; WCA Reply at 11

[39]Zenith Comments at 11.

[40]Americast Comments at 6; TW Comments at 21; US West Comments at 10.

[41]DIRECTV Comments at 6; GTE Reply at 8; Motorola Comments at 14; NCTA Reply at 38; US West Comments at 10.

[42]Ameritech Comments at 24; Echelon Comment at 49; GI Comments at 40; GTE Comments at 6; TIA Comments at 14; SA Comments at 20; TW Comments at 34; Zenith Comments at 4.

[43]Analog equipment processes analog signals -- voice, video, data -- wherein the signal received is a continuous waveform which is analogous to the original signal. Digital equipment processes digital signals -- voice, video, data -- wherein the signal received is a waveform which carries a discrete stream of binary codes of ones and zeros. Hybrid analog/digital equipment is equipment that is capable of receiving and processing analog and digital signals. Although the hybrid equipment processes the analog and digital signals independently, the processes share some common components.

[44]*See* Section IV(F), *infra*, for a discussion of provisions in rules designed to protect system security.

[45]GTE Comments at 6; NCTA Comments at 12.

deployed and placed in service in the future and not to the embedded base of equipment.[46]

C. Right to Attach

28. *Background.* In the *NPRM*, we proposed as a core requirement that there be a "right to attach" allowing subscribers to acquire and attach to the network equipment not part of an MVPD's network distribution plant. Following the *Carterfone* principle adopted in the telephone context would allow subscribers the option of owning their own navigation devices and would facilitate the commercial availability of equipment.

29. *Discussion*. To achieve the statutory requirement of alternative sources of navigation devices, we mandate that subscribers have a right to attach any compatible navigation device to an MVPD system, regardless of its source, subject to the proviso that the attached equipment not cause harmful interference, injury to the system or compromise legitimate access control mechanisms. This rule is found in Sections 76.1201 (Right to Attach), 76.1203 (Incidence of Harm), and 76.1209 (Theft of Service). This rule makes clear to subscribers that an MVPD is not the exclusive purveyor of navigation devices for its system. We believe, as in the telephone context, that the right to attach leads to a broader market for equipment used with MVPD systems. Manufacturers will have substantial incentive to develop and distribute new products in response to consumer demands for equipment and features, provided that the MVPD system for which the equipment is designed is accessible.[47] We agree with Time Warner that the marketplace, not the MVPD, should determine the price and features of navigation devices available to subscribers.[48]

30. In addition to being directly restrained from attaching navigation equipment, consumers must also not be precluded from the possibility of obtaining equipment from commercial outlets by virtue of contractual or other restrictions on the availability of equipment that the service provider might seek to directly impose on suppliers of equipment. The rules (§76.1202) thus additionally enforce the right to attach by precluding contractual or other arrangements, other than those involving equipment performing conditional access or security functions, that prevent navigation devices from being made available to subscribers from retailers, manufacturers, or other vendors that are unaffiliated with that such service provider.

31. The right to attach is supported by numerous commenters.[49] CEMA contends that the right to attach would form a solid basis for encouraging the development of a marketplace characterized by portability and interoperability.[50] Motorola believes that allowing a subscriber a right to attach is consistent with the 1996

[46]Ameritech Comments at 24; Echelon Comments at 49; GI Comments at 40; GTE Comments at 6; TIA Comments at 14; SA Comments at 20; TW Comments at 34; Zenith Comments at 4.

[47]Motorola Comments at 10.

[48]TW Comments at 31.

[49]BSA Comments at 4; CE Comments at 2; Circuit City Comments at 22; ITI Comments at 5; Motorola Comments at 10; TIA Comments at 11.

[50]CEMA Comments at 6.

Act's major objective to promote competition and consumer choice in the market for certain types of equipment because this right gives consumers greater freedom to select among alternative products.[51]

32. We recognize commenter's concerns regarding system security, signal leakage, and other harms which may arise from equipment attachments to MVPD systems, and will prescribe limitations to a subscriber's right to attach.[52] We agree that the right to attach must be subject to the limitation that the equipment does not harm the MVPD networks. As noted by Motorola, harm could take any number of forms, including physical damage to the MVPD system, compromise of system security, or electronic interference to other users on the system.[53] The rules we adopt allow the MVPD to avoid these threats. Recognizing an MVPD's statutory right to prevent theft of service, the rule we adopt specifically states that the right to attach does not apply to any equipment which can be used to receive, or assist in the unauthorized reception of service. Commenters agree that this restriction on the right to attach is consistent with the language of Section 629 regarding security of services.[54]

D. Information on Technical Interface Specifications

33. *Background.* We asked in the *NPRM* whether it would be necessary for consumers purchasing equipment to have access to basic technical information regarding the network the equipment will be attached in order to make purchasing decisions. We proposed that if this information is not readily available we would require MVPDs to make it available.

34. *Discussion.* Several commenters urge the Commission to adopt network disclosure requirements for MVPDs similar to the requirements of Part 68 rules[55] for connection to a telephone system as a means to allow a commercial market to develop.[56] The intent of such a disclosure requirement is to allow interested parties a means to ascertain the specifications of a particular MVPD. This information is needed by manufacturers, retailers, and subscribers to determine if a particular navigation device is compatible with various MVPDs. We believe that a requirement to disclose information will assist retailers as the commercial market develops as a source for navigation devices and will aid consumers seeking to buy their own navigation devices. Accordingly, we will require that MVPDs provide to the requesting party the technical information concerning interface parameters necessary for a navigation device to operate with the services delivered by the MVPD's system. This rule is found in Section 76.1205. As discussed below, we will not replicate the more

[51]Motorola Comments at 11.

[52]Circuit City Comments at 22; ITI Comments at 25; Motorola Comments at 13; NCTA Comments at 5; TW Comments at 15; WCA Reply at 12.

[53]Motorola Comments at 13.

[54]TW Comments at 15. *See* Part IV(E), (G), *infra,* for a discussion of an MVPDs ability to prevent harmful interference and signal leakage.

[55]47 C.F.R. § 68.110(b).

[56]Circuit City Comments at 22; CEMA Comments at 51; CERC Comments at 29; ITI Comments at 7.

complete interface specification rules of the type used in Part 68 in the telephone context[57] because we think it appropriate at this phase of the regulatory process that MVPDs develop the standards necessary for equipment manufacturers to make attaching equipment.[58] We will monitor closely industry progress on development of standards for attaching equipment, as well as MVPD compliance with the network disclosure requirements.

E. Protection of Network Facilities

35. *Background.* In the *NPRM*,[59] we concluded that in implementing Section 629 we must ensure that a navigation device does not cause harm to the network to which it is attached and that the technical integrity of the network be maintained.[60] We sought comment on three possible options to protect network facilities: 1) replicating or expanding the Part 68 process;[61] 2) requiring network service providers, subject to Commission oversight, to establish and enforce their own standards; and 3) either separately or in combination with one of the above options, mandating a technical solution in terms of a network protection device.

36. *Discussion.* We will allow service providers to establish and enforce their own reasonable standards to define harm to their facilities. As in other areas addressed in this *Order*, our decision relies in part on the industry standards that have been developed or are being developed. Where protocols for a range of capabilities are established, not only can equipment be manufactured and sold by other means than through the service provider, but what will harm the network can become widely known. Notably, the process by which protocols are established includes the participation of service providers, manufacturers and others, lending a comprehension to the needs of the network. Additionally, we accept the commitment of many MVPDs to make navigation devices and other non-security equipment located on the customer's premises commercially available, as this environment enhances overall consumer benefit and will accrue benefits to the MVPDs.[62] With this commitment comes an incentive by manufacturers and service providers to ensure that equipment does not harm the network.

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[57]*See* 47 C.F.R. § 68.500.

[58] In many cases, MVPDs are already using a standard connector and thus in the cable television *Inside Wiring Proceeding*, we noted that the type of connector used had become the de facto connector for services delivered via coaxial cable and further government action in this area was unwarranted. See *Telecommunications Services Inside Wiring*, CS Docket No. 95-184, *Report and Order and Second Further Notice of Proposed Rulemaking*, FCC 97-376, 10 Communications Reg. 193 at ¶ 248 (Oct. 17, 1997) ("*Inside Wiring Order*").

[59]*NPRM*, 12 FCC Rcd at 5664.

[60]This is primarily a concern of wired service providers. Customer premises equipment is not typically directly connected to radio spectrum using MVPD networks such as MMDS or DBS systems.

[61]Part 68 of the Commission's Rules govern the terms and conditions under which CPE and customer wiring may be connected to the telephone network. Included in Part 68 regulations are technical standards, network disclosure requirements, and an equipment registration program. 47 C.F.R. Part 68.

[62]TW Reply at 2; US West Comments at 2.

37. Under our rules, MVPDs will have the ability to determine what will cause harm to the network. We are reluctant at this time to attempt to enumerate in detail what these circumstances might be. As technology and services are continually evolving, we do not think we can replicate in our rules the proper balance. Allowing MVPDs to have the ability to establish and enforce their own technical standards to prevent harm to their systems has support among several commenters.[63] GI concurs that allowing MVPDs to establish and enforce their own standards will minimize theft of service and network harm.[64]

38. Our rules will allow MVPDs to restrict the attachment or use of equipment to their systems where electronic or physical harm would be caused by the attachment or operation of such equipment. We will allow an MVPD to discontinue service if harm to the system is likely to occur. MVPDs must publish, and provide to subscribers, standards and descriptions of devices that may not be used or attached to their systems because of the potential for harm.[65] These requirements are found in Section 76.1203. These standards shall be used only to prevent attachment of navigation devices that raise reasonable and legitimate concerns of electronic or physical harm or theft of service, and not as a means to unreasonably restrict the use of navigation devices obtained from a source other than the MVPD. To the extent that there is a dispute whether an MVPD's equipment restrictions are unreasonable, the Commission's petition procedures are available.[66]

39. We do not believe that an equipment registration process similar to that found in Part 68 is feasible at this time with respect to navigation devices,[67] as some commenters suggest.[68] As a number of commenters note, the telephone networks do not provide a proper analogy to the issues in this proceeding due to the numerous differences in technology between Part 68 telephone networks and MVPD networks.[69] BSA suggests that the Commission adopt a voluntary registration system by which manufacturers are able to register equipment with the Commission by demonstrating that attaching the device to an MVPD system would not cause technical harm.[70] In view of the evolving industry standards in this area, which appears to have taken

[63]BSA Comments at 4; GI Comments at 72; SA Comments at 29; TW Comments at 62; Uniden Comments at 3.

[64]GI Comments at 73.

[65]*See* BSA Comments at 4.

[66]47 C.F.R. § 1.41. The *Carterfone* proceeding was initiated by a formal complaint challenging AT&T's prohibition against attaching the Carterfone to its facilities. *Carterfone*, 13 FCC 2d at 422. Commission rules allow any interested party to request Commission action. The request should contain the facts relied upon, the relief sought, and the statutory and/or regulatory provisions pursuant to which the request is filed and under which the relief is sought. Oppositions to the petition are to be filed within 10 days of the petition filing date. 47 C.F.R. §§ 1.41, 1.45.

[67]*See* 47 C.F.R. § 68.200.

[68]CEMA Comments at 18; Circuit City Comments at 6; ITI Comments at 15; Uniden Comments at 3.

[69]Zenith notes that the telephone is a point-to-point switched system connecting to a single user, whereas the typical cable system is point-to-multipoint broadcast system where the signal is everywhere in the system. Zenith Comments at 3. *See also* Ameritech Comments at 16; PrimeStar Reply at 10; TIA Comments at 11; SA Comments at 29.

[70]BSA Comments at 4.

account of the various interests at stake, and which seek to convey a means to determine technical attributes of the network so that equipment may be manufactured without harming the network,[71] we are reluctant to impose a registration process seeking the same purpose at this time. Our decision in this regard is premised in part on the absence of concrete suggestions as to specific rules that the parties believe would be useful. If necessary, we will consider proposals as to procedures in this area that could be considered in the future. To the extent that multichannel video programming services are to be offered over facilities that are already subject to Part 68, we expect those rules to be applied or specific exemptions from them sought.

F. Security and Theft of Service

40. *Background.* The issue of unauthorized service reception is found in Section 629(b), which states that the Commission is not to prescribe regulations that "would jeopardize security of multichannel video programming and other services offered over multichannel video programming systems, or impede the legal rights of a provider of such services to prevent theft of service."[72]

41. In the *NPRM*, we stated that service theft is a serious matter, and requires that whatever action is taken to implement Section 629 must not conflict with the maintenance of system security nor inadvertently validate the manufacture and distribution of equipment intended for the unauthorized reception of communications services.[73] We sought comment on how to accomplish the objectives of Section 629 to assure commercial availability while ensuring the security of services not be jeopardized.

42. *Discussion.* No Commission action in this proceeding should be construed to authorize or justify any use, manufacture, or importation of equipment that would violate Section 633 of the Communications Act[74] or any other provision of law precluding the unauthorized reception of MVPD service. Similarly, nothing in this proceeding should be construed as diminishing an operator's ability to seek civil damages against parties involved with navigation devices providing unauthorized reception of services. The rules we adopt protect MVPDs by allowing them to disconnect service to subscribers using a navigation device which assists in the unauthorized reception of service.[75]

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[71] CableLabs is establishing a certification process to give suppliers an opportunity to have their products tested and credited with compliance by a certification board. CableLabs *ex parte* presentation (April 16, 1998).

[72] 47 U.S.C. § 549(b).

[73] *NPRM*, 12 FCC Rcd at 5654.

[74] *See* 47 U.S.C. § 553 (The use of a converter-decoder to intercept or receive, or to assist in intercepting or receiving, cable programs without authorization from a cable system carries penalties of up to $1000 or imprisonment for up to six months. In addition, any person who employs such devices for commercial or private financial gain may be subject to a fine of $50,000 or two years imprisonment for a first offense. Greater penalties apply to subsequent offenses).

[75] This rule is found at Section 76.1209.

43. Commenters concur that piracy and theft of service are major problems for the cable industry.[76] Several cite an NCTA Office of Cable Signal Theft Study which concluded that the industry loses an estimated $5.1 billion in revenue annually (not including unauthorized reception of pay-per-view programming).[77] TW argues that piracy imposes costs on legitimate subscribers.[78] WCA contends that rampant theft of wireless cable service will occur following increased availability of wireless cable antennas and downconverters.[79] Noting that the Communications Act provides for severe punishment for service theft,[80] other commenters maintain that concerns over security should not be used to delay the development of a commercial market for all types of navigation devices.[81]

G. Signal Leakage

44. *Background*. The Commission's rules specify technical requirements for consumer electronic equipment to control radio interference. Part 15 addresses the radiation and conducted emissions limits (signal leakage) requirements for equipment that can be operated without an individual license, including cable set-top boxes.[82] Part 15 specifies an equipment authorization process to ensure that this equipment meets our technical requirements under that section.[83] Additionally, our current rules guard against harmful interference emanating from MVPD's as well as allow an operator to discontinue service to subscribers whose equipment when connected to the cable system will cause the cable system to exceed Part 76 signal leakage requirements.[84]

45. The *NPRM* tentatively concluded that existing Part 15 rules, which addresses concern over radio emissions from navigation devices available from service providers, will adequately cover the same concerns regarding navigation devices obtained from other sources.[85] We sought comment on this conclusion, with respect to attachments to cable systems and to other MVPDs, and on whether any changes in these rules are

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[76]NCTA Comments at 24; SA Comments at 23; TW Comments at 8; US West Comments at 5.

[77]NCTA Comments at 24; TW Comments at 8; US West Comments at 5; Zenith Comments at 13. *But see* CE Reply at 8, contending that the $5 billion figure for cable loss has never been adequately documented.

[78]TW Comments at 8.

[79]WCA Reply at 11.

[80]CE Comments at 5; CEMA Comments at 17.

[81]CE Comments at 5; CEMA Comments at 17; ITI Comments at 25; Tandy Comments at 12; Viacom Comments at 13.

[82]47 C.F.R. § 15.1

[83]Devices operating under Part 15 generally must meet limits on radiated and power line emissions. *See* 47 C.F.R. §§ 15.109-111.

[84]47 C.F.R. §§ 76.613 and 76.617. *See* 47 C.F.R. §§ 76.605, 76.610-76.616.

[85]*See* 47 C.F.R. § 15.101(a).

needed to address the expanded availability of such equipment.

46. *Discussion*. Commenters generally agree that the Part 15 provisions adequately address signal leakage issues that may arise with navigation devices.[86] We note, however, that the equipment authorization requirements for cable system terminal devices and other television interface devices have changed since the release of the *NPRM*.[87] We do not believe the change will affect our signal leakage requirements. GI's recommends that the Commission adopt Society of Cable Telecommunications Engineers ("SCTE") specifications for coaxial cable to prevent signal leakage from inadequately shielded cable.[88] We decline the recommendation to do so at this time. Our rules already permit cable operators to require that home wiring meets reasonable technical specifications.[89] Further, we believe that our current Part 15 provisions, which include limitations on signal leakage from electronic equipment and also specifies equipment authorization procedures applicable to equipment,[90] when combined with our Part 76 signal leakage requirements provide sufficient safeguards for signal leakage and interference concerns for retail navigation devices.

H. Rules for Equipment Providing Conditional Access

47. *Background.* As a matter of historical development, one of the principal functions of one class of the navigation devices that are the subject of Section 629, the set-top box, or converter box, has been the control of access to services so that only those who are authorized to receive service -- who have paid for the service -- can access it. Commenters in this proceeding have made reference to the existence of as many as seventeen basic analog scrambling methods.[91] As was described in the *NPRM*,[92] many of the techniques that are used to accomplish this access control are relatively unsophisticated, involving, for example, suppressing the synchronous pulse of the television signal and inversion or transposition of various parts of the video picture information so that the picture is unstable or distorted when viewed on a standard television receiver. To unscramble the signal, the descrambler box must contain the electronic circuitry to reverse the alteration

[86]Circuit City Comments at 23; CE Comments at 7; GI Comments at 74; SA Comments at 29; TIA Comments at 12; Uniden Comments at 4. Additionally, NCTA, GI and TW requested that Part 15 rules be strengthened to guard against cable piracy. We decline the request since it is beyond the scope of this proceeding.

[87]*See Amendment of Parts 2, 15, 18 and Other Parts of the Commission's Rules to Simplify and Streamline the Equipment Authorization Process for Radio Frequency Equipment*, ET Docket No. 97-94, *Report and Order*, FCC 98-58, 1998 WL 174904 at ¶ 15 (rel. Apr. 16, 1998) ("*Equipment Authorization Order*"). While technical standards for such equipment remain the same, the authorization is now accomplished by self-approval procedures.

[88]GI Comments at 74.

[89]47 C.F.R. § 76.806. In another proceeding, we have sought comment on whether to apply this rule to all MVPDs. *Telecommunications Services Inside Wiring*, CS Docket 95-184, *Report and Order and Second Further Notice of Proposed Rulemaking*, 13 FCC Rcd 3659 (1997).

[90]The equipment authorization procedures are set forth in 47 C.F.R. Part 2.

[91]Scientific-Atlanta Comments at 12, n. 5. *But see* Commercial Engineering Reply Comments at 6-7.

[92]*NPRM*, 12 FCC Rcd at 5652.

of the signal.[93] It is this descrambling circuitry that is most prone to attack by those who would obtain service without paying for it.[94] Such techniques can be relatively easily defeated by subscribers if the necessary equipment can be purchased. If decoders were readily available for purchase, many existing, particularly analog, security systems would become completely ineffective. The advent of digital technology provides additional techniques that are more difficult to defeat, but a number of digital systems have also been compromised. The equipment which enables the consumer to access the service, and protects the distributor from theft of service, is generally referred to as "conditional access" equipment.

48. Recognizing the critical importance of the security function performed by navigation devices, Section 629 does not permit the Commission to prescribe regulations that:

> would jeopardize security of multichannel video programming and other services offered over multichannel video programming systems, or impede the legal rights of a provider of such services to prevent theft of service.[95]

The problem is to determine how to achieve commercial availability without at the same time compromising the security protection priority provided for in the law. The *NPRM* suggested that a potential solution to the problem would be to require MVPDs desiring to retain control over the security equipment to provide it to consumers separated or unbundled from those portions of the devices performing non-security functions.[96]

49. *Discussion.* In general, we find that it would be most consistent with our obligations under Section 629 to require that, by July 1, 2000, a security element separated from navigation devices be available from MVPDs so that equipment may be commercially available from unaffiliated manufacturers, retailers, and other vendors. Our rule permits MVPDs to continue to provide equipment on an integrated basis until January 1, 2005, so long as modular security components are also made available. The record responding to the *NPRM* reflects strong advocacy that separating the security function will enhance portability of equipment generally.[97] This requirement will facilitate the development and commercial availability of navigation devices by permitting a larger measure of portability among them, increasing the market base and facilitating volume production and hence lower costs. We think it significant that the separation of security elements has been recognized, most prominently by cable operators, as empowering new functionality and services.[98] The separation requirement is consistent with the intention of the statute, as underscored by the Conference Report, which states that "[o]ne purpose of this section is to help ensure that consumers are not forced to purchase or lease a specific,

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[93] *NPRM*, 12 FCC Rcd at 5653.

[94] *Id.*

[95] 47 U.S.C. § 549(b).

[96] *NPRM*, 12 FCC Rcd at 5655.

[97] *See e.g.*, Circuit City *ex parte* presentation (June 5, 1998); CEMA *ex parte* presentation (June 4, 1998); Tandy Comments at 13.

[98] NCTA *ex parte* presentation (June 4, 1998).

proprietary converter box, interactive device, or other equipment from the cable systems or network operator."[99]

50. Many commenters oppose the unbundling of security functions, citing security concerns,[100] and the advantages of providing navigation devices that integrate security and other functions.[101] Other commenters advocate separating security from non-security functions.[102] These commenters note that separation of security and non-security functions allows the MVPD to be the sole party responsible for security of the system.[103] TW notes that the advantage of such a modular security system is that the entire security module can be replaced by the MVPD in the event of a security breach.[104] CEMA argues that there is no technical reason why security and non-security functions of navigation devices cannot be decoupled nor any need for the security circuitry to be integrated with the tuner capabilities.[105]

51. In the analog environment, industry efforts have been in progress for some time, in connection with the *Equipment Compatibility Proceeding*, ET Docket No. 93-7,[106] looking toward the possibility of a defined "decoder interface" that would permit the access control functions of set top boxes to be segregated from the rest of the functions and attached directly to the back of television receivers or to other devices such as video tape recorders. In the *NPRM*, we sought comment on the possible use of the ET Docket No. 93-7 "decoder interface" as a standard means of segregating access control from other functions of navigation devices.[107] We sought comment on our authority to require use of the decoder interface standard in light of the 1996 Act's amendments to Section 624A ("Consumer Electronics Equipment Compatibility") of the Communications Act. Further, we sought comment on the relationship between these two provisions and how this relationship affects any proposal that seeks to separate security from other navigation device functions.

52. Although intended for a somewhat different purpose, the interface adopted in conjunction with the *Equipment Compatibility Proceeding* is now complete. According to a joint letter of March 26, 1998, from the National Cable Television Association and the Consumer Electronics Manufacturers Association, EIA-105

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[99]S. Conf. Rep. 104-230, 104th Cong., 2nd Sess. at 181 (1996).

[100]NCTA Comments at 28; DIRECTV Reply at 17.

[101]NCTA Reply at 19; TW Comments at 30.

[102]BANX Comments at 3; CEMA Reply at 5; TW Comments at 11; Viacom Comments at 7; MSTV and NAB *ex parte* presentation (May 20, 1998).

[103]BANX Comments at 3; TW Comments at 11; Viacom Comments at 16.

[104]TW Comments at 13.

[105]CEMA Comments at 18.

[106]*See, e.g., Implementation of Section 17 of the Cable Television Consumer and Protection Act of 1992, Memorandum Opinion and Order*, ET Docket 93-7, 11 FCC Rcd 4121 (1996); *First Report and Order*, ET Docket No. 93-7, 9 FCC Rcd 1981 (1994) ("*Equipment Compatibility Proceeding*").

[107]*NPRM*, 12 FCC Rcd at 5657.

(including both EIA-105.1 and EIA 105.2), which is the decoder interface standard, has been formally approved as an Electronics Industry Association standard.[108] The Electronics Industry Association is an American National Standards Institute ("ANSI") accredited standards organization. The completion of this work appears to demonstrate the belief of the industry groups involved that it is possible to segregate analog conditional access from other functions. Alternative standards more specifically applicable to separating out conditional access functions for equipment processing digital signals are under consideration, including in particular the efforts being undertaken by the National Renewable Security Standards ("NRSS") Committee of the EIA in connection with draft standard EIA-679 and by CableLabs as part of the OpenCable project.[109]

53. There is considerable discussion in the record of this proceeding regarding both the proposed EIA-105 standard and the NRSS standards under discussion. Consistent with the Congressional directive,[110] throughout this proceeding, we have consulted with industry organizations involved in the standards setting processes.[111] Much of the discussion relating to EIA-105 is related to the question of whether the Commission is precluded from making any use of this standard by virtue of amendments to the equipment compatibility provision of Section 624A of the Communications Act. Section 624A was intended to provide for compatibility between the facilities provided by cable system operators and the advanced features of television receivers and video cassette recorders and to promote commercial availability from retail vendors not affiliated with cable systems, of compatible converter boxes and remote control devices.[112] Section 310(f) of the 1996 Act added new text to the existing Section 624A of the Communications Act, which states that the Commission must seek "to ensure that any standards or regulations developed . . . do not affect features, functions, protocols, and other product and service options . . . ."[113] The Congressional finding in Section 624A states that:

> compatibility among televisions, video cassette recorders, and cable systems can be assured with narrow technical standards that mandate a minimum degree of common design and operation, leaving all features, functions, protocols, and other product and service options for selection through open competition in the market.[114]

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[108]*See* Letter from Andy Scott, Director of Engineering, NCTA and George Hanover, Engineering Vice President, CEMA to Alan Stillwell, Economics Advisor, Office of Engineering and Technology, FCC (March 26, 1998) (*ex parte* filing in ET Docket 93-7).

[109]National Renewable Security Standard (NRSS), DRAFT EIA-679 Project PN-3639 (Jan. 1998).

[110]*See* 47 U.S.C. § 549(a) ("The Commission shall, in consultation with appropriate industry standard-setting organizations, adopt regulations . . .").

[111]*See e.g.*, Cablelabs *ex parte* presentation (Apr. 16, 1998); CEMA *ex parte* presentation (May 18, 1998). We have consulted with what we consider the appropriate industry standard setting organizations given the stage of development of the standards.

[112]47 U.S.C. §§ 544a(a), 544a(b)(1).

[113]47 U.S.C. § 544a(c)(2)(D).

[114]47 U.S.C. § 544a(a)(4).

The amended language of Section 624A by its terms applies only to rules prescribed by the Commission under Section 624A.[115] These amendments to Section 624A were intended to restrict the Commission's standard setting authority and to respond directly to issues associated with the "decoder interface standard" that is the subject of the Commission's *Equipment Compatibility Proceeding*.

54. The decoder interface standard that has been the subject of industry discussions in the *Equipment Compatibility Proceeding* would separate security from other functions performed by cable television set-top boxes in the manner suggested by many commenters in this proceeding.[116] The issue thus arises as to the scope of the Commission's authority to establish interface standards that govern the separation of access control from other CPE features in this proceeding. The text of the 1996 Amendments to Section 624A would appear, if applicable to Section 629, to direct the Commission to set only minimal standards in implementing Section 629 in both the analog and digital environments. However, the House Report states that the amendments to Section 624A were "not intended to restrict the Commission's authority to promote the competitive availability of converter boxes, interactive communications devices, and other customer premises equipment as required by [Section 629]."[117]

55. CERC believes that the amendment only clarifies the Commission's implementation of Section 624A in the Equipment Compatibility Proceeding, and should not be applied to the adoption of requirements beyond the scope of that section. CERC argues that in no way did Congress intend for the amendment to restrict the Commission's authority in implementing Section 629.[118] Additionally, CERC argues that the Commission has full authority to use any available tool in this proceeding for the purpose of complying with Section 629.[119] Viacom contends that the three amendments to Section 624A govern the narrow issue of compatibility between cable systems and consumer electronics equipment and have no applicability to the Commission's implementation of Section 629.[120]

56. Several commenters strongly urge the Commission not to use the decoder interface in this proceeding. Echelon argues that the decoder interface improperly affects home automation communications, provides the TV with an anti-competitive gateway status in the home, discriminates against computer video systems, and requires a new and incompatible physical interface necessitating the replacement of all current TVs and VCRs.[121] Ameritech contends that the decoder interface restricts differentiation by requiring

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[115]47 U.S.C. §§ 544a(c)(1), (2).

[116]CERC Comments at 22; Circuit City Comments at 33.

[117]H. R. Rep. No. 104-204, 104th Cong., 1st Sess. 111 (1995). The Conference Report does not address this issue.

[118]CERC Reply at 47.

[119]CERC Comments at 22.

[120]Viacom Comments at 16.

[121]Echelon Comments at 40.

disclosure of all functions other than those required for signal security.[122] CHTC disputes whether the interface is needed to ensure commercial availability in light of market developments such as third-party licensing of descrambling technologies by set-top box manufactures and new approaches to analog signal security that descramble without set-top boxes which make the decoder interface obsolete.[123] SA argues that there is no demand for the interface, particularly among cable operators.[124] Additionally, Americast and CHTC believe simpler, cheaper and far better alternatives already exist for separating security from non-security functions of navigation devices such as a PC card or a smart card.[125] NCTA contends that the equipment compatibility proceeding may provide some useful principles to help draw limits between security and non-security functions of CPE, but it was not intended to address the issues raised by Section 629, and will not necessarily provide a solution.[126]

57. Commenters also argue that prescribing the decoder interface would both exceed Commission's 629 authority and violate the Section 624A amendments,[127] and that adoption would lead to a dispute regarding the Commission's standard setting authority.[128] Echelon contends that the Commission cannot adopt the decoder interface standard as a navigation device standard when Section 624A specifically prohibits this standard for cable compatibility.[129] Echelon explains that the decoder interface incorporates CEBus communications protocol, a home automation standard completely unrelated to the specific equipment compatibility problems, which causes the decoder interface not to be a narrow technical standard because it affects competition in the home automation and computer markets.[130] Motorola contends that adopting the decoder interface would violate the amendments to Section 624A.[131] Other commenters maintain that the language of Section 629 requires the Commission to work closely with industry standards organizations. They further contend that the decoder interface standard is not the product of a voluntary industry standard setting process, and argue that the Commission is not authorized to adopt it as a standard over the objections of private industry groups.[132] CHTC contends that the decoder interface was developed as a closed, joint product of

[122]Ameritech Comments at 17.

[123]CHTC Comments at 10.

[124]SA Reply at 2.

[125]Americast Comments at 17; CHTC Comments at 10.

[126]NCTA Comments at 31.

[127]CHTC Comments at 18; Motorola Comments at 23; SA Comments at 26.

[128]CHTC Comments at 3; Motorola Comments at 23.

[129]Echelon Comments at 33.

[130]Echelon Comments at 55.

[131]Motorola Comments at 24.

[132]CHTC Comments at 13; Echelon Comments at 44 ; Motorola Comments at 24; SA Comments at 3.

NCTA and CEMA, and that the C3AG ad hoc unaccredited committee is not the appropriate standards setting organization with which the Commission should consult.[133]

58. A similar divergence of opinion is reflected in the comments with respect to "smart card" or NRSS standards as a mechanism for segregating conditional access from other navigation device functions in the digital context. Viacom advocates a smart-card-based conditional access system that requires the insertion of a credit-card like card into a module of the set-top box, which unlike the box itself, would not be sold at retail and its distribution would be controlled and inventoried by each MVPD for its own customer. Viacom envisions that the smart card, carrying the proprietary encryption of the MVPD, would interface with the otherwise commercially available set-top box, which contains a common scrambling algorithm. This dual-module box will be universal, such that it can be used by the subscriber to any MVPD service.[134] Viacom further notes that to connect this security device to the box's hardware will require a standardized connection and recommends the decoder interface connector.

59. Other commenting parties urge that it is important to maintain an integration of conditional access with other functions. They maintain that there may be significant piracy problems and other difficulties associated with smart card technology.[135] DIRECTV argues that it would be impossible for security breaches to be prevented solely through smart cards.[136] SA notes that smart cards or similar devices ignore the important principle of preventing piracy and theft; that at higher levels of hardware integration, security becomes harder to compromise.[137] DIRECTV notes that dividing the security function from the other functions of a navigation device prevents the hardware unification and system-level integration that allow for reductions in the complexity and manufacturing costs of set-top boxes.[138] NCTA points to the prohibitive recurring cost of replacing a smart card if the security system is breached.[139] Additionally, DIRECTV explains that security in digital broadcasts cannot be contained entirely in a smart card provided separately from the navigation devices, noting that for control mechanisms in its system to operate properly requires some interaction between its security module and the receiver into which it is inserted.[140] Motorola contends that the Act prevents removal of an operator's ability to control security in the manner best suited for its particular system or the type

[133]CHTC Comments at 10. *But see* CERC Comments at 22 (the decoder interface standard is a balloted and accepted standard).

[134]Viacom Comments at 8.

[135]DIRECTV Comments at 18; GI Comments at 59; NCTA Comments at 25; SA Comments at 25; TCI Reply at 12.

[136]DIRECTV Comments at 18.

[137]SA Comments at 25.

[138]DIRECTV Comments at 18.

[139]NCTA Comments at 25.

[140]DIRECTV Comments at 18.

of conditional access method.[141] GI maintains that Section 629(b) prevents the Commission from requiring that any particular technology solutions be used by MVPDs to achieve commercial availability that includes security technology because any government-mandated solution could impair network security.[142] Participants in the direct broadcast satellite service, for example, vigorously object to any separation requirement. Other commenters note that certain smart card security systems that have been widely used in Europe have been compromised.[143] The Commission itself has studied security failures in the C-Band satellite market and noted the importance of security for a market to develop.[144]

60. SBCA believes that bundling is a vital element of system security, as demonstrated by the successful curtailing of piracy in larger home satellite dishes. SBCA contends that the more control a satellite service provider has over the physical distribution of its video signal directly to a subscriber's television set, the greater is the provider's ability to avert, or rectify if need be, compromise of the signal in distribution.[145] TIA notes that integration allows manufacturers to take advantage of current and future advances in semiconductor and integrated circuit technology.[146]

61. The record with respect to equipment used with cable services convinces us that the separation of security will significantly enhance the commercial availability of the equipment. Separated security will allow individual cable operators to design and operate equipment reflecting their particular security needs, a circumstance providing broad discretion for each cable operator, while still facilitating portability and the development of the consumer equipment market. Any significant disparity among cable operators, however, undermines the commercial availability of equipment. Subscribers are more likely to purchase, and not lease from a provider, if they can use the navigation device when they move to an area served by a different operator. This will be more difficult if varying security elements are embedded in the equipment made available for retail. Geographic portability will enhance the commercial availability of navigation devices and, should result in wider choice and lower prices to consumers. The separation of security will also facilitate the commercial availability of navigation devices by allowing manufacturers to provide a diverse array of equipment.

62. We think it important to establish parameters and to mandate that security be separated to ensure that navigation devices become commercially available expeditiously. We reiterate the consensus of several cable operators, as well as two equipment manufacturers, that the separation of security from non-security

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[141]Motorola Comments at 28.

[142]GI Comments at 58.

[143]*See* TW Comments at Appendix A.

[144]*Inquiry into the Need for a Universal Standard for Satellite Cable Programming, Report*, GEN Docket No. 89-78, 5 FCC Rcd 2710 (1990).

[145]SBCA Comments at 10.

[146]TIA Comments at 17.

functions in the digital context is possible.[147] Throughout this proceeding, retail interests have advocated strenuously that we require the separation of security elements from the other elements of the navigation device by a specific date.[148] They assert that setting a date is necessary to enhance portability, which will create an incentive for the mass production of equipment for sale to consumers, where the various service providers, manufacturers, and retailers, can pursue consumer interests.[149] We agree that failing to separate the security elements may delay commercial availability, thereby limiting enhanced functionality and services. As of July 1, 2000, therefore, MVPDs covered by Section 629 who wish to distribute devices using integrated security may do so only if they also make available the security modules separately.

63. As discussed above, many types of navigation devices are now being, or will in the future be, attached to multichannel video programming distribution systems. A number of different entities in the communications stream and a number of types of security, access control, or data encryption systems are involved. The security separation required by the rules adopted herein is applicable to access controls directly applied by the MVPD to authenticate subscribers' identification. It would not, for example, be applicable to encrypted telephone or internet data used to protect the privacy of the communications or to digital authentication of financial transactions regardless of the use of such devices with multichannel video programming distribution systems. Access controls included in hardware for the purpose of allowing subscribers to exclude communications would not be included even though they perform a type of conditional access function. "Copy protection" systems and devices that impose a limited measure of data encryption control over the types of devices that may record (or receive) video content would not be subject to the separation requirement. "Software" based encryption should generally be separable from the hardware that runs it and thus would not have to be changed based on the rules adopted. Equipment needed for specifically addressed communications, such as for example modems for the receipt of "internet protocol" telephony could retain integrated in the hardware sufficient address information to permit them to function.

64. We believe, however, that differences in the marketplace for DBS equipment, where devices are available at retail and offer consumers a choice, as compared to equipment for other MVPD services, particularly cable operators, provide justification for not applying the rule requiring separation of security functions to DBS service. We are reluctant to implement a rule that could disrupt an evolving market that is already offering consumers the benefits that derive from competition. In the DBS environment, there are three service providers[150] and at least ten equipment manufacturers competing to provide programming and

[147]Letter from Leo Hindery, Jr., NCTA Chairman, *et al*. to Decker Anstrom, President, NCTA (June 3, 1998) (The letter was signed by the Chairman and CEO of GI and the President and CEO of SA), attachment to Letter from Neal Goldberg, General Counsel, NCTA to William Johnson, Deputy Chief, Cable Services Bureau (June 4, 1998) .

[148]Circuit City *ex parte* filing (June 5, 1998).

[149]Circuit City *ex parte* filing (June 5, 1998); CEMA *ex parte* filing (June 4, 1998).

[150]Due to the similarity of the attributes of DBS operators DIRECTV and Echostar, and fixed satellite service provider Primestar, the Commission's reports on the status of DBS providers includes Primestar. *See Implementation of Section 19 of the 1992 Cable Act (Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming)*, CS Docket 97-141, *Fourth Annual Report* (*"1997 Report"*), 13 FCC Rcd 1034, 1070 (1998).

equipment to consumers.[151] The equipment is available at retail stores. The result, over a relatively short time frame, has been lower equipment prices, enhanced options and features.[152] Requiring DBS providers to separate security would serve a limited purpose and disrupt technical and investment structures that arose in a competitive environment.

65. Additionally, DBS service providers are relatively new entrants in the MVPD service marketplace, particularly when compared to incumbent cable operators.[153] Total DBS subscribership constitutes only 8% of the MVPD market, as compared to 87% of the MVPD market for cable.[154] With DBS equipment available in retail stores, and with DBS possessing substantial incentive to pursue additional market share through additional services and improved equipment,[155] we do not think that requiring DBS service providers to separate security elements will serve the goal of enhanced competition in either the service or equipment markets. We note that in many instances, the Commission refrains from imposing regulations on new entrants.[156]

66. Further, as noted, in requiring the separation of security functions, we seek to expand the portability of equipment, thereby permitting consumers to purchase navigation devices with some assurance that the equipment can be used beyond its present location. In DBS service, due to the means of signal delivery, a particular provider's equipment is already portable as to that provider across the continental United States because DBS operators offer services nationally. This mitigates against a rule to require the separation of security for DBS equipment. In contrast, other MVPD services, such as cable, currently do not offer geographic portability. Our rule provides that when an MVPD supports navigation devices that are portable throughout the continental United States, and are available from retail outlets and other vendors, the requirement for separation of functions is not applicable. We note, however, that a device that is usable on all the systems of one particular cable multiple system operator only, for example, would not be considered

[151]Hardware manufacturers of DBS customer equipment include GE, Hitachi, Hughes Network Systems, Magnavox, Memorex, Panasonic, ProScan, Toshiba, RCA, Sony and Thomson. *See* website at <http://www.directv.com/hardware/dss/dssphone.html>.

[152]DIRECTV claims the price of equipment has been reduced from $600 to $100 over the past three years. DIRECTV Comments at 4.

[153]*See 1997 Report*, 13 FCC Rcd at 1039, 1108.

[154]The Commission has found that local markets for providing multichannel video programming remains highly concentrated and that cable systems remain the primary providers of video programming. *Id*. at 1038, 1108.

[155]The Commission has found that DBS service providers are offering specialized programming, and equipment providers are offering discounted equipment. *1997 Report*, 13 FCC Rcd at 1073.

[156]DBS operators, for example, are not covered by a variety of other statutory requirements and rule provisions. *See, e.g.*, 47 U.S.C. § 532 (Leased Access); 47 U.S.C. § 534 (Must Carry); 47 U.S.C. § 543 (Rate Regulation). As is the case here, the divergences reflect the new entrant nature of the DBS industry as well as differences in the technology and market structures involved.

portable throughout the continental United States. For the same reasons, the rule will exempt providers of direct to home (DTH or larger satellite service dish providers) from the separation of security requirement.[157]

67. A further issue associated with the security separation requirement is the extent a service provider that supported separated security for purposes of the commercial retail market might at the same time itself lease integrated devices that contain both security and non-security features. NCTA argues that prohibiting MVPDs from providing integrated set-top boxes would in effect force consumers to purchase boxes with non-security functions at retail, rather than merely giving them a choice to do so, as Congress intended.[158] NCTA proposes that digital boxes without security be made available at retail, and that operators should be permitted to supply integrated boxes with both security and non-security functions. NCTA disputes claims that allowing MVPDs to offer integrated CPE after non-security functions are made commercially available would allow MVPDs to act anti-competitively.[159] TW believes that if consumers have the option to purchase or lease component devices, there is no reason they should not also have the option to obtain an integrated device from their MVPD, noting that consumer electronics manufacturers provide many forms of integrated products, *e.g.*, integrated TV/VCR devices.[160] NCTA argues that consumers will benefit from the competition created by independent providers as well as MVPDs providing their own feature-rich non-security CPE.[161]

68. Circuit City suggests that after a date certain, service providers should not be allowed to offer integrated boxes.[162] Circuit City argues that service providers for which unbundled navigation devices are available at retail outlets should not be permitted to lease their own bundled devices because this would give them an effective cost advantage.[163] CEMA contends that the continued provision of integrated boxes by MVPDs would undermine the conditions for a successful competitive commercial market for unbundled devices. CEMA argues that a rule that provides for continued provision of integrated devices by operators would amount to a permanent waiver of commercial availability, maintaining that it is highly improbable that devices with embedded security functionality could be made available from any other source than the cable operator.[164]

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[157]The Commission has previously looked in detail into the structure and functioning of the security equipment in this market. *Inquiry into the Need for a Universal Standard for Satellite Cable Programming*, Report, GEN Docket 89-78, 5 FCC Rcd 27109 (1990).

[158]NCTA Comments at 29.

[159]NCTA Reply at 19.

[160]TW Comments at 30.

[161]NCTA Reply at 19.

[162]Circuit City *ex parte* filing (June 5, 1998).

[163]Circuit City Comments at 32 ("While such integration superficially might appear efficient, in the longer term it would be grossly inefficient, as it would frustrate integration in consumer owned devices of the ability to access competing systems").

[164]CEMA *ex parte* filing (June 4, 1998).

69. We conclude that the continued ability to provide integrated equipment is likely to interfere with the statutory mandate of commercial availability and that the offering of integrated boxes should be phased out. We agree with those commenters who note that integration is an obstacle to the functioning of a fully competitive market for navigation devices by impeding consumers from switching to devices that become available through retail outlets.[165] It has been suggested that, after a date certain, service providers should not be allowed to offer integrated boxes.[166] We agree.[167] We believe that 2005 provides a sufficient period of time for a reasonable transition and, therefore, our rules prohibit MVPDs from the selling or leasing of new integrated boxes placed in service as of January 1, 2005. Allotting a phase out period will minimize the impact of this requirement on manufacturers and MVPDs, allowing manufacturers sufficient time to respond to equipment modifications.[168] We emphasize that this prohibition applies only to the sale, lease, or use of new boxes. We do not intend that equipment which has already been placed in service by the MVPD before the phase out date be rendered obsolete by the prohibition on the sale, lease, or use of new integrated boxes as of January 1, 2005. MVPDs may continue to sell or lease boxes after this date provided the boxes have a severable security component instead of integrated security. We anticipate that subscribers who obtain their boxes from their MVPD will obtain the security module at the same time, and will not notice a functional difference between integrated and non-integrated boxes. In the year 2000, once separate security modules are available, we will assess the state of the market to determine whether that time frame is appropriate and we will review the mechanics of the phase out of integrated boxes.

70. Having required that security be separated, an issue remains as to the need to promulgate particular standards. In the *NPRM*, we suggested that to facilitate the connection of the unbundled security equipment to commercially available navigation devices it might be necessary to require a standard interface, or publication of interface specifications, permitting security control apparatus obtained from the service provider to be combined with other equipment obtained by the subscriber from retail outlets.[169] The separated portions of these devices cannot realistically function together in the absence of some generally agreed on connection standards. In this regard, however, we do not need to become involved, more than the minimal

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[165]Circuit City Comments at 32; CEMA Comments at 17-18.

[166]Circuit City *ex parte* filing (June 5, 1998); CEMA *ex parte* filing (June 4, 1998).

[167]The Commission, in other contexts, has provided for the phase out of equipment. *See e.g.*, *Replacement of Part 90 by Part 88 to Revise the Private Land Mobile Radio Services and Modify the Policies Covering Them*, PR Docket No. 92-235, *Report and Order and Further Notice of Proposed Rule Making*, 10 FCC Rcd 10076 (1995) (transition to more efficient spectrum use requires switch from wideband to narrowband equipment); *Administration of the North America Numbering Plan Carrier Identification Codes*, CC Docket No. 92-237, *Second Report and Order*, 12 FCC Rcd 8024 (1997) (phase out of equipment not supporting four digit carrier identification code); *Amendment of Part 73, Subpart G, of the Commission's Rules Regarding the Emergency Broadcast System*, FO Docket No. 91-301, *Report and Order and Further Notice of Proposed Rule Making*, 10 FCC Rcd 1786 (1994) (establishment of Emergency Alert System requires transition from analog to digital equipment).

[168]*See Amendment of the Maritime Services Rules (Part 80) to Restrict the Frequency Selection Capability of VHF Transmitters to Maritime Frequencies*, PR Docket No. 88-507, *Report and Order*, 4 FCC Rcd 5680 (1989) (adoption of phase out period to avoid economic burden).

[169]*NPRM*, 12 FCC Rcd at 5667.

extent necessary, in the technical design of the interfaces involved. What is important is for the device supplied by the service provider to be designed to connect to and function with other navigation devices through the use of a commonly used interface or through an interface that conforms to appropriate technical standards promulgated by a national standards organization.[170]

71. Although not necessarily an exclusive standard, in the analog environment, the model for such a standard would be the EIA-105 decoder interface standard. This standard was specifically intended to facilitate the separation of conditional access and other functions and has been the subject of extended discussion between the consumer electronics and cable television industries. It is a standard adopted by an accredited standards organization and its terms are well known to those in both the cable television and consumer electronics industries that were involved in its development. We believe, based on the work done in connection with the decoder interface standard, that it should be possible to separate out most types of analog security. We recognize that some parties believe that use of this particular standard (EIA-105) would conflict with both the specific terms and with the spirit of the 1996 amendments to Section 624A of the Communications Act which direct the Commission, in implementing the consumer electronics equipment compatibility provisions of the law, "to ensure that any standards or regulations developed . . . do not affect features, functions, protocols, and other product and service options. . . ."[171] However, we do not believe that this provision precludes adoption of the rule discussed above.

72. First, the rule does not include any specific or detailed standards but leaves to the industry groups and the market the ability to evolve standards outside of the Commission's rules. The requirement that the conditional access equipment be designed to connect through widely accepted standards or ones agreed upon by an accredited standards organization does not constitute a Commission developed standard. This is a rather loose and flexible requirement which we believe, however, may provide the involved parties sufficient guidance to proceed while not creating barriers to the types of change and technical advance that the Section 624A amendments sought to protect. Secondly, as a more narrow legal question, we note that the amended language of Section 624A by its terms applies only to rules required or prescribed by Section 624A.[172] Further, the House Report specifically indicates that the amendments to Section 624A were "not intended to restrict the Commission's authority to promote the competitive availability of converter boxes, interactive communications devices, and other customer premises equipment as required by [Section 629]."[173]

73. While the work that has been completed with respect to the decoder interface standard (EIA-105) indicates that, even in the analog environment, it is generally possible to separate security or conditional access functions from other functions in convertors or set-top boxes, we recognize that there may still remain some situations this is not possible or would be unduly risky. Section 629(b) instructs the Commission not to prescribe regulations which would jeopardize security of multichannel video programming and other services

[170]In case of a dispute regarding whether an interface is "commonly available," the Commission will make the final determination.

[171]47 U.S.C. § 544a(c)(2)(D).

[172]47 U.S.C. § 544a(c)(1), (2).

[173]H. R. Rep. No. 104-204, 104th Cong., 1st Sess. 111 (1995). The Conference Report does not address this issue.

offered over multichannel video programming systems.[174] We have thus created an exception in the rules (Section 76.1204(d)) where such separation is not feasible. This is intended, however, to be a narrow exception to the general rules to account for unusual types of equipment. We would not anticipate, for example, that any equipment that it was contemplated might be separated out using the "decoder interface" standard approach would come within this exception.

74. With respect to interfaces in the digital environment, we believe it is also appropriate to rely on generally available standards. Commenters generally agree that the digital environment contains a number of differences from analog. First, digital communications are subject to protection through the use of advanced security algorithms that cannot easily be defeated by the manufacturing of "pirate" equipment. Second, there will nevertheless be a continuing engagement between those seeking to breach the security and those seeking to maintain it and that, since the attacks that develop will likely be based on access to computing power and software they will likely be capable of rapid distribution through the internet once means of breaching the security are found. And third, it will be highly desirable that such security as exists be upgradable or renewable over time. GTE contends that agreement has been reached on the use of existing DES encryption and MPEG-2 system layers.[175] Some parties specifically support technology using the NRSS, a joint CEMA and NCTA effort, which, as stated earlier, allows system operators to place all security-related circuitry on a module or a security card that can be inserted into a competitively supplied navigation devices.[176] Use of an interface such as NRSS would also enable a navigation device with embedded security (which could have been made available at retail) to have its security functions upgraded or replaced by means of separately supplied piece of conditional access equipment. Viacom notes that replacement of the security module is less expensive than replacing the proprietary set-top boxes.[177]

75. We believe that the NRSS (EIA-679) and the related CableLabs/OpenCable efforts, when the standards process is complete, will provide a usable standard for digital communications and our rule reflects this premise. We recognize that discussions are ongoing about the specific means by which this standard might be incorporated into navigation devices and that there is no widespread experience in the United States with the use of either "smart card" (NRSS-A) security devices or security included in larger PCMCIA (NRSS-B) cards, both of which are included in the NRSS discussions. The comments of almost all parties note the dangers of detailed governmental standard setting and urge deference to private standard setting processes.[178]

76. It is our intention that the rules in question become effective at the earliest possible date, subject only to the limitations imposed by the standards, design, and manufacturing cycles involved. We believe, after consideration of all of the circumstances, that the requirement to provided separated security equipment should

[174]47 U.S.C. § 549(b).

[175]GTE Comments at 8.

[176]Circuit City Comments at 33; CEMA Comments at 18; TW Comments at 12; Zenith Comments at 13.

[177]Viacom Comments at 16.

[178]BSA Comments at 9; BANX Comments at 4; CHTC Comments at 1; Motorola Comments at 26; NCTA Comments at 38; SA Comments at 21; TW Comments at 37.

become applicable on July 1, 2000. Although this deployment schedule is somewhat faster than the suggested schedule presented by the cable television industry that is discussed below, we believe that a more aggressive schedule is critical to having navigation devices fully introduced and available for the critical year end electronic equipment sales period in the year 2000. The completion of the design and the effective introduction of this equipment is not only important in terms of the goals of this proceeding and the introduction of digital cable television service but will be critical to the delivery and deployment of digital broadcast television more generally. In those situations where, as here, new industry standards are needed, new types of equipment must be designed and manufactured, and new distribution patterns adopted, the effective date of the requirements takes on special importance. The most important time constraint in terms of accomplishing the objectives of this proceeding appears to involve the time it will take to produce digital security modules. A process is underway at CableLabs that should lead to standardization, design, and production of these security modules and permit the design, production, and distribution of the associated navigation devices for retail sale. Although neither OpenCable nor CableLabs are accredited standards organizations, they are attempting to use existing standards to the extent possible and to submit standards for consideration by official standards bodies. A number of the core standards involved, including such critical parts as the digital video compression and transmission standards for cable television, have been approved by accredited standards organizations already.[179]

77. This effort, which involves a large number of highly complex engineering issues, appears to be proceeding towards completion of its part of the design and standardization process by the end of this year. The following information has been included in the record by the NCTA[180] regarding the time believed to be needed to complete this process:

Digital Security Module Interface

Draft specification document for member review and discussion 7/l/98
Draft specification document for vendor review and discussion 7/15/98
Interim specification document for final review and approval
by members and vendors 10/l/98
Recommended specification made publicly available and released to SCTE
for adoption as a US standard 12/98

Digital Security Module Specification

[179]Among the standards adopted or actively under review are (1) ATSC Digital Television, A/53; (2) RF Interface Specification for Television Receiving Devices and Cable Television Systems, EIA-23; (3) Cable Television Channel Identification Plan, EIA-542; (4) Digital Transmission Standard for Cable Television, SCTE DVS-093; (5) Digital Video Service Multiplex and Transport System Standard for Cable Television, SCTE DVS-093; (6) "Class A' Issues-Profiles, Levels and Formats, SCTE DVS-033; (7) Program and System Information Protocol for Terrestrial Broadcast and Cable, SCTE DVS-097; and (8) High Performance Serial Bus, IEEE 1394.

[180]Letter from Neal Goldberg, General Counsel, NCTA to William Johnson, Deputy Chief, Cable Services Bureau (June 3, 1998).

Draft digital security module specification document completed 7/30/98
Draft digital security module specification document for independent review
by Scientific Atlanta and General Instrument 8/15/98
Interim digital security module specification document for final review 10/15/98
OpenCable digital security module specification completed 12/98

Digital Security Module Post-Specification Schedule[181]

Preliminary digital security module prototype completed 6/15/99

OpenCable Interop testing completed for preliminary digital
security module prototype - Phase I 7/15/99

Final digital security module form-factor prototype completed 12/1/99

OpenCable interop testing completed for final digital security
Module form-factor prototype - Phase II 1/l/2000

OpenCable digital security module full product demonstration completed 6/2000

Digital security module available to cable operators 9/2000

78. A copy of a letter was also received in the record sent to Decker Anstrom, NCTA's President and CEO, from the Presidents and CEOs of major cable operating companies serving nearly 65% of cable subscribers.[182] The signatories include the Chairman of NCTA, the Chairman of CableLabs and the Presidents & CEOs of Tele-Communications, Inc., Time Warner Cable, Jones Intercable, U S WEST Media Group, Marcus Cable, Advance/Newhouse Communications, Cox Communications, and Comcast Corporation who all commit to place purchase orders to ensure that separate digital security modules are available from their companies by September, 2000. The letter is also signed by Edward Breen, Chairman & CEO of General Instrument Corporation and James F. McDonald, President & CEO of Scientific-Atlanta Corporation, two of the industry's major manufacturers, indicating their support of the OpenCable initiative and NCTA's and CableLabs' commitments relating to the availability of separate digital security modules by the dates specified.

79. The retail sales/consumer electronics manufacturing communities urge that more rapid deployment is possible, with separated security devices available to support the retail sales of navigation devices 12 months after the effective date of the rules in this proceeding.[183] By mid-1999, it is urged, first generation equipment

[181]Letter from Neal Goldberg, General Counsel, NCTA to William Johnson, Deputy Chief, Cable Services Bureau (June 4, 1998).

[182]Letter from Leo Hindery, Jr., NCTA Chairman, et al. to Decker Anstrom, President, NCTA (June 3, 1998), attachment to Letter from Neal Goldberg, General Counsel, NCTA to William Johnson, Deputy Chief, Cable Services Bureau (June 4, 1998).

[183]*See e.g.* CEMA *ex parte* filing of May 18, 1998 and Circuit City *ex parte* filings of May 18 and June 4, 1998.

could be available with subsequent lower cost, higher silicon integration devices being available in 2000. The fact that integrated devices are already being produced in high volumes, it is suggested, indicates that much of the development work on conditional access implementation is already complete.[184]

80. We note that an 18-24 month development and production cycle is typically cited as necessary for significant changes to be incorporated into the manufacture of television receivers and other similar consumer electronic devices.[185] With respect to the issue before us, both MVPDs (with respect to security modules) and consumer electronics manufacturers (with respect to non-security elements) are faced with somewhat similar design and manufacturing constraints. Each must move from the design specification arrived at through the standards process through to manufacturing and distribution. Based on these considerations, we conclude that it is appropriate to provide some additional leeway beyond the mid-1999 date suggested by the retail sales/manufacturing interests, but that it should be possible to accelerate somewhat the cable industry suggested date of September 1, 2000. We therefore will require that separated security devices be made available by July 1, 2000.[186]

81. As indicated above, the choice of the July 1, 2000 effective date is premised on expedition of the progress toward the statutory goals involved that is being made by the cable industry through the CableLabs/OpenCable project. If the evolution toward commercial availability is to continue, it is critical for the Commission to be aware of changing circumstances and to assure itself that the schedule is being met. Thus we are hereby requiring the eight multiple system operators that are involved in CableLabs, and who filed the representations reflected above regarding the purchase of digital security modules, to advise the Commission semiannually -- on January 7, 1999, July 7, 1999, January 7, 2000, and July 7, 2000 -- as to the progress of their efforts and the efforts of CableLabs to assure the commercial availability, to consumers of equipment used to access multichannel video programming and other services offered over multichannel video programming systems, from manufacturers, retailers, and other vendors not affiliated with any multichannel video programming distributor. The reports should detail the progress being made toward meeting the July 1, 2000 deadline. The information should advise the Commission of the status of any standards or certification process and any anticipated dates for approval. Any changes in the schedule should be reported promptly.

I. Affiliation

82. *Background.* In the *NPRM*, we evaluated the 1996 Act's requirement that navigation devices be commercially available from entities "not affiliated with" any MVPD. We tentatively concluded that both passive and active ownership interests should be attributable and sought comment accordingly. Further, we sought comment as to whether an affiliate relationship arises if the MVPD has been involved in the development of the equipment involved; has patent or other proprietary rights in the equipment or its critical components.

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[184]Circuit City *ex parte* filing (June 4, 1998).

[185]*See, e.g. In the Matter of Technical Requirements to Enable Blocking of Video Programming Based on Program Ratings*, 1998 WL 110181 at ¶ 22 (1998) ("the design cycle for a television receiver model takes approximately 18-24 months").

[186] The rules regarding conditional access equipment are found in Section 76.1204.

83. *Discussion.* Because of the nature of the rules that have been devised, this issue is now of less consequence than it appeared when the *NPRM* was issued. We believe the structure of the rules will make sure that equipment is available from sources outside of the control of the service provider. Thus, the extremely complex question of how best to define affiliation, a matter under review in other proceedings, need not be finally resolved here.[187] We have decided, for present purposes, to define affiliation based on common ownership or control as defined in the notes accompanying 47 C.F.R. § 76.501. This rule has been used in both the cable television and broadcast contexts and has the advantage of being used and understood by participants in these markets.

J. Subsidies

84. *Background.* Section 629(a) addresses whether MVPDs may recoup subsidies provided for navigation equipment through charges for other services offered over multichannel video programming systems. Section 629(a) states:

> . . . Such regulations shall not prohibit any multichannel video programming distributor from also offering converter boxes, interactive communications equipment, and other equipment used by consumers to access multichannel video programming and other services offered over multichannel video programming systems, to consumers, if the system operator's charges to consumers for such devices and equipment are separately stated and not subsidized by charges for any such service.[188]

85. In the *NPRM*, we tentatively concluded that existing equipment rate rules,[189] applicable only to noncompetitive cable television systems, address Section 629(a)'s requirement that MVPDs may offer CPE to consumers "if the system operator's charges to consumers for such devices and equipment are separately stated and not subsidized by charges for any such service."[190] We tentatively concluded that the existing equipment rate regulations are most consistent with the 1996 Act and with Section 629(f).[191] We sought comment on this conclusion and on the issue of equipment charge subsidies.

86. *Discussion.* We affirm our tentative conclusion. Existing equipment rate rules applicable to cable television systems not facing effective competition address Section 629(a)'s requirement that charges to consumers for such devices and equipment are separately stated and not subsidized by charges for any other

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[187] *In the Matter of 1998 Biennial Regulatory Review -- Review of the Commission's Broadcast Ownership Rules and Other Rules Adopted Pursuant to Section 202 of the Telecommunications Act of 1996,* MM Docket No. 98-35, *Notice of Inquiry,* FCC 98-35 (rel. March 13, 1998).

[188] 47 U.S.C. § 549(a).

[189] 47 C.F.R. § 76.923.

[190] 47 U.S.C. § 549(a).

[191] 47 U.S.C. § 549(f).

service.[192] While a cable operator subject to rate regulation may offer navigation devices necessary to receive regulated services, it may do so only within the parameters of Section 76.923. Section 76.923 sets forth the rules for determining the rates for equipment and installation used to receive the basic service tier and states that cable operators subject to rate regulation are not permitted to charge subscribers for equipment beyond actual cost.[193] This approach is consistent with Section 629(f), which states that "[n]othing in this section shall be construed as expanding or limiting any authority that the Commission may have under law in effect before the enactment of the 1996 Act."[194] The relevant rule is found in Section 76.1206.

87. We think it is important that pro-competitive pricing, similar to that of the cellular telephone industry and the DBS industry, evolves in the navigation equipment market. In the DBS market, consumers have the option of avoiding high up front expenditures for equipment by bundling service and equipment and considering charges for those components jointly. The different marketing plans, by providing expanded choice for consumers, have contributed to the growth in DBS subscribership.[195] As DBS lacks market power in the market for multichannel video programming, subsidies do not present the circumstances encountered in the non-competitive regulated market.[196] In a circumstance where a provider encounters an entrenched incumbent, as DBS does with the cable operator, there is minimal concern with below cost pricing because revenues do not emanate from monopoly profits. The subsidy provides a means to expand products and services, and the market provides a self correcting resolution of the subsidy. The direction of the 1996 Act, and that of Section 629, specifically, to move equipment and service markets to a competitive environment[197] gives ample premise against imposing parameters regarding subsidies to MVPDs lacking market power.[198]

88. The circumstances involving rate regulated cable operators not facing effective competition are different. In this environment, competitors to the regulated providers holding substantial market power could be disadvantaged. As a result, Congress, in Section 623(b)(3), made clear that equipment used to deliver

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[192]Several commenters support our conclusion. *See* Ameritech Comments at 18; Cellular Vision Comments at 12; DIRECTV Comments at 20; GI Comments at 77; GTE Comments at 9; NCTA Comments at 39; PacBell Comments at 6; PrimeStar Comments at 13; TIA Comments at 14; WCA Reply at 7.

[193]47 C.F.R. § 76.923(a)(2).

[194]47 U.S.C. § 549(f).

[195]DIRECTV Comments at 21.

[196]*See* TIA Comments at 14; *see also* CellularVision Comments at 12 (An emerging MVPD provider who lacks market power cannot engage in anti-competitive behavior through subsidizations and has nothing to gain from such behavior; thus, there is no need for the anti-subsidy rules to be imposed on emerging MVPDs).

[197]104 Cong. Rec. H1161 (Feb 1, 1996).

[198]One commenter contends that the Commission is without jurisdiction to extend the subsidization prohibitions to MVPDs not subject to rate regulation because in enacting the subsidy provision, Congress' intent was to preclude use of rate regulated service to subsidize equipment, and when an MVPD service is subject to effective competition, such a subsidy cannot be sustained. GI Comments at 77.

regulated services must be priced to the consumer at cost.[199] The law also addresses the manner by which costs may be allocated by the cable operator.[200]

89. Traditionally, subsidies have been of concern in regulated industries.[201] Issues of proper cost allocation pervade much of telephone common carrier regulation.[202] Regulated markets reflect a concern about subsidies and cost allocations. In the wireless common carrier context, we have noted that the lack of regulation in the cellular industry reflects the competitiveness of the industry and a decreasing concern that carriers would use untariffed cellular service to act anti-competitively in the unregulated CPE market by raising cellular service prices to subsidize low cost CPE.[203] We noted that while the lack of regulation does not in itself demonstrate that the cellular service market is competitive, it does suggest that it is not a monopoly service. We also stated that the lack of regulation and the absence of monopoly status for cellular carriers significantly reduces the motive for carriers to build unregulated CPE costs into the service rate base and cross-subsidize at the expense of the subscriber. We agree with GTE that narrowly tailoring the anti-subsidy rules permits new entrants to react quickly to a changing marketplace and provide innovative service offerings to consumers quickly and effectively.[204]

90. We specifically decline to adopt a rule prohibiting all MVPDs, including DBS providers and cable providers that are subject to effective competition, that offer navigation equipment for sale, lease or use directly by subscribers from subsidizing equipment purchases. We interpret Section 629(a) in this context as reflecting congressional intent that DBS providers and cable systems that are subject to effective competition, because they are not subject to rate regulation provisions of Section 623, were not a class of providers to which the anti-subsidy rules were directed.[205] The types of subsidies that Congress was concerned with in enacting Section 629 were not subsidies offered by DBS or other providers lacking market power. Applying the subsidy prohibition to all MVPDs would lead to distortions in the market, stifling innovation and undermining consumer choice. This conclusion is consistent with the legislative history of Section 629. The issue of limiting the application of the subsidy restriction to cable systems not subject to effective competition was recognized in a colloquy during the Senate debate on the bill:

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[199]47 U.S.C. § 543(b)(3). *See also* 47 C.F.R. § 76.923.

[200]47 C.F.R § 76.923.

[201]Cross-subsidization practices within regulated entities that operate related unregulated business segments has been a documented concern. Similarly, concern has also been acknowledged over cross-subsidization practices within regulated entities operating only regulated segments where regulatory safeguards are weak. (*See* Leland L. Johnson *Toward Competition in Cable Television*, at Chapter Five, pp 87-110).

[202]*See e.g.* 47 C.F.R. Part 61 (Tariffs); 47 C.F.R. Part 69 (Access Charges).

[203]*Bundling of Cellular Customer Premises Equipment and Cellular Service,Report and Order*, CC Docket No. 91-34, 7 FCC Rcd 4028, 4031 (1992).

[204]GTE Comments at 9.

[205]47 U.S.C. § 623(a)(2); 47 C.F.R. § 76.905.

> Mr. FAIRCLOTH. Do you also agree that the intent of this provision is that the use of rate regulated services to subsidize equipment might unfairly penalize the general rate-payer?
>
> Mr. BURNS. I agree. However, when those services are no longer rate regulated such subsidy cannot be sustained and the prohibition on bundling is no longer necessary. The bill's prohibition on bundling and subsidization no longer applies when cable rates are deregulated.[206]

This exchange suggests that in areas where competition to the incumbent cable operator exists, the subsidy rules are not required.

91. Some commenters suggest that permitting DBS providers to require long-term service contracts in return for equipment rebates may not be in the public interest because it creates disincentives for subscribers to switch MVPDs. These are choices consumers are aware of, and can evaluate. We do not believe that Congress sought to impose a regulatory structure over such practices in enacting Section 629.[207]

92. Various commenters disagree that existing equipment rate rules adequately address the issue of subsidized equipment rates.[208] These commenters argue that the Commission should apply anti-subsidy rules to all MVPDs, contending that the language of Section 629(a) expressly prevents all MVPDs from subsidizing equipment cost with service charges.[209] They view Section 629's statutory ban on subsidization as absolute, with no exceptions, even for non-cable MVPDs and cable companies that face effective competition.[210] These commenters argue that these circumstances do not necessarily indicate that there is competition in the provision of equipment at the retail level.[211] We reject these arguments. We reiterate that subsidies by entities lacking market power present little risk of consumer harm and to impose restrictions would create market distortions.

93. Some commenters favor a variation on the application of the anti-subsidy rules to all MVPDs. They contend that anti-subsidy provisions should only apply to MVPD system operators who offer navigation devices directly to consumers,[212] and should not apply to service providers who offer rebates to subscribers who purchase their equipment from an unaffiliated retailer.[213] We disagree with this proposal. Such a rule would prohibit subsidies in the direct sale or lease by the MVPD of the navigation device, but a third party, such as a retailer, would not be prohibited from offering a subsidy. The result would be different prices being charged

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[206]142 Cong. Rec. S700 (daily ed. Feb. 1, 1996).

[207]NCTA Comments at 40.

[208]Circuit City Comments at 35; CERC Reply at 52; CEMA Comments at 12; ITI Comments at 19.

[209]Circuit City Comments at 35.

[210]Tandy Comments at 15; CEMA Comments at 12.

[211]Tandy Comments at 15.

[212]CERC Comments at 36; DIRECTV at 19.

[213]DIRECTV Comments at 21; CERC Comments at 36.

by the MVPD and by the retailer for the same equipment. It would limit the pricing alternatives the provider could offer, a circumstance we think will limit consumer choice.

94. In the *NPRM*, we stated that cellular telephone providers' use of a bundling approach has significantly increased cellular phone subscribership and has not been contrary to the development of a competitive equipment market.[214] We asked whether the language of Section 629(a) prevents MVPDs from "bundling" equipment with service.

95. MVPDs may sell both services and equipment, subject to the anti-subsidy rules we adopt in this *Order*. To ensure that consumers benefit from choices in the marketplace there should be several sources for equipment, including the choice of purchasing equipment and services package from an MVPD. We believe that giving consumers the option to purchase equipment and service from the MVPD will increase rather than decrease the competitiveness of the marketplace. Our rules provide sufficient mechanisms to prevent non-competitive MVPDs from subsidizing equipment costs with revenues from regulated services.

96. We agree with commenters that there are benefits from bundling equipment purchases with service contracts in a competitive market.[215] Commenters believe that preventing bundling of service and navigation devices by MVPD operators could impede competition in the video services marketplace[216] and a prohibition on bundling of services raises consumer prices by preventing an operator from providing equipment to consumers through an efficiently priced package of equipment and service.[217]

97. Other commenters advocate prohibiting all MVPDs from bundling the purchase of a navigation device to any service agreement to ensure that MVPDs are not subsidizing navigation device costs with their video programming or other services. We decline to impose an unbundling requirement for navigation devices, except for the anti-subsidy rules of Section 76.923, because we believe that the concern about noncompetitive MVPDs is addressed by our anti-subsidy rule and that in an emerging marketplace for navigation devices, consumer choice should be as expansive as possible.

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[214]The Commission's decision in *Bundling of Cellular Customer Premises Equipment and Cellular Service*, 7 FCC Rcd 4028, noted that it had been concerned "that independent CPE vendors might be forced to compete against below-cost, tariffed CPE because part of the CPE costs would be recovered through regulated tariffed service rates." The Commission ultimately concluded, however, that there were public benefits from allowing cellular CPE and cellular service to be offered on a bundled basis.

[215]CellularVision Comments at 11; Motorola Comments at 20; TIA Comments at 14.

[216]CellularVision Comments at 11; Motorola Comments at 20.

[217]Commenters also believe the Commission should allow the joint provision of equipment and service where it is necessary to promote the deployment of a new product or technology. Cellular Vision Comments at 11; Motorola Comments at 19.

98. We agree with commenters that cable operators subject to rate regulation should be precluded from requiring subscribers to use system-provided or system-designated navigation devices.[218] We disagree with contentions that cable operators subject to rate regulation should be allowed to bundle regulated equipment with unregulated services to prevent them from being placed in a competitive disadvantage as compared to other services.[219] Present law and the Commission's regulations require that charges for regulated service and equipment be separated, with the latter limited to cost.[220] As we have noted, these policies have as a premise proper cost allocation in a regulated environment involving a provider with substantial market power. Section 629 requires, as several commenters contend, that the charges for service and equipment must be separately stated to allow customers to be able to determine exactly what they are paying for the equipment.[221]

99. Some commenters have argued that noncompetitive MVPDs that produce and sell "CPE" should be required to do so through a separately owned affiliate as was required of common carriers to ensure that improper cross-subsidization would not take place.[222] We find no basis in the record for such a requirement at this time. Unlike the parallel that is cited from the telephone context, multichannel video service providers are not significantly vertically integrated with manufacturers of CPE or navigation devices. Moreover, to impose a rule that requires consumers to take additional steps to approach a separated affiliate when seeking to lease equipment could cause significant problems, particularly for small service providers, that are seeking to improve the customer service that they provide.

K. Waivers

100. *Background.* Section 629(c) of the Act states:

> (c) Waiver.--The Commission shall waive a regulation adopted under subsection (a) for a limited time on an appropriate showing by a provider of multichannel video programming and other services offered over multichannel video programming systems, or an equipment provider, that such waiver is necessary to assist the development or introduction of a new or improved multichannel video programming or other service offered over multichannel video programming systems, technology, or products. Upon an appropriate showing, the Commission shall grant any such waiver request within 90 days of any application filed under this subsection, and such waiver shall be effective for all service providers and products in that category and for all providers of services and products.[223]

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[218] As discussed in Section IV(C), *supra*, the rules we are adopting include the right of a subscriber to attach any compatible navigation device to an MVPD system regardless of the source of the equipment.

[219] US West Comments at 17.

[220] 47 U.S.C. § 623(b)(3); 47 C.F.R. § 76.923(b); *Report and Order and Further Notice of Proposed Rulemaking* in MM Docket 92-266, 8 FCC Rcd 5631, 5810 (1993).

[221] Tandy Comments at 16.

[222] BSA Comments at 8; CEMA Comments at 16; ITI Comments at 22.

[223] 47 U.S.C. § 549(c).

101. In the *NPRM*, we tentatively concluded that statutory waiver requests should avoid unnecessary procedural obstacles to innovation.[224] In this regard, we sought comment on this conclusion and on the scope and coverage of the statutory waiver process. We also sought comment on whether there is a need for us to adopt substantive standards at this time to govern the waiver process or whether we could develop policies and standards for waiver requests on a case-by-case basis as requests are filed.[225] We noted that the statute requires the Commission to act on waiver requests within 90 days of the filing of an application for waiver. We sought comment as to what modifications, if any, to filing periods are needed.[226]

102. *Discussion*. A provider of multichannel video programming and other services offered over multichannel video programming systems, or an equipment provider, may petition the Commission for a waiver. The Commission may waive a regulation adopted under Section 629 if such service or equipment provider makes an appropriate showing that such waiver is necessary to assist the development or introduction of a new or improved multichannel video programming or other service offered over multichannel video programming systems, technology, or products. We will apply the procedural rules set forth in 47 C.F.R. § 76.7, consistent with our attempt to move toward more uniform procedural rules for Part 76.[227] The relevant rule is in Section 76.1207.

103. Some commenters favor granting waivers liberally to prevent stifling of innovation.[228] Ameritech argues MVPDs need flexibility to develop non-security, non-access functions in order to differentiate their equipment from competitor's equipment.[229] Circuit City contends that due to the statutory mandate to assure a national competitive market, requests for waivers must be analyzed critically to ensure that a waiver is necessary.[230] We think that the Commission's review process will afford adequate opportunities for any party to comment on whether a waiver is appropriate and whether the grant would be consistent with the purpose of Section 629. We noted that the Conference Report indicates that the language of Section 629 was written so that the "Commission avoid actions which could have the effect of freezing or chilling the development of new

[224]*NPRM*, 12 FCC Rcd at 5662.

[225]We note, for example, that § 76.605(b) of our rules allows for a waiver of certain technical standards on "an adequate showing . . . which establishes that the public interest is benefited." This lets cable systems of specialized design to operate, without prescribing any particular showing. 47 C.F.R. § 76.605(b).

[226]47 C.F.R. § 76.7.

[227]*See Part 76 - Cable Television Service Pleading and Complaint Rules*, CS Docket No. 98-54, *Notice of Proposed Rule Making*, FCC 98-68 (rel. April 22, 1998) (seeking comment on making Part 76 pleading and complaint process rules more uniform).

[228]GI Comments at 82; NCTA Comments at 41; PrimeStar Comments at 27; SA Comments at 28; TW Comments at 45; US West Comments at 18.

[229]Ameritech Comments at 17.

[230]Circuit City Comments at 36.

technologies and service."[231] We think it particularly important that the waiver process accommodate the need to provide, particularly to new MVPD entrants, flexibility in differentiating their equipment from competitors' equipment.

104. We agree with commenters suggestion that the Commission proceed on a case-by case basis instead of promulgating substantive waiver standards.[232] We believe that the development of the marketplace, and the innovative uses of technology make it difficult for generic approaches.

105. Several commenters support the approach in the *NPRM* that if the Commission does not act on a petition for waiver of the Section 629 requirements by the end of the 90 day review period, the petition will be deemed granted.[233] We agree with Circuit City, however, that waivers must be analyzed critically to ensure an "appropriate showing," as required by the statute,[234] and that we are obligated to make a determination, based on the pleadings, as to whether such a showing has been made. We decline, therefore, to adopt a rule stating that waivers that are not acted on will be automatically granted.

L. Sunset of Regulations

106. *Background*.. Section 629(e) provides when the regulations adopted pursuant to Section 629 shall terminate. The provision states:

> The regulations adopted under this section shall cease to apply when the Commission determines that--(1) the market for the multichannel video programming distributors is fully competitive; (2) the market for converter boxes, and interactive communications equipment, used in conjunction with that service is fully competitive; and (3) elimination of the regulations would promote competition and the public interest.[235]

107. Section 629(e) establishes the premise that when the markets for programming distributors and equipment encompassed by Section 629 are fully competitive, consistent with the public interest, the regulations implementing Section 629 are no longer needed. We stated in the *NPRM* the need to have clear definitions of the relevant service and equipment markets involved as a predicate to determining when Section 629 will terminate.[236]

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[231]S. Conf. Rep. 104-230, 104th Cong., 2d Sess. at 181 (1996).

[232]Cellular Vision argues that no review standards can be established for new services until the Commission has gained experience in administering waiver applications. Cellular Vision Comments at 13; *See also* GI Comments at 84; NCTA Comments at 41.

[233]GI Comments at 83; TW Comments at 45; US West Comments at 18.

[234]Circuit City Comments at 36.

[235]47 U.S.C. § 549(e).

[236]*NPRM*, 12 FCC Rcd at 5673.

108. We tentatively concluded that local geographic markets, akin to Arbitron's "areas of dominant influence,"[237] or Standard Metropolitan Statistical Areas, as determined by the Office of Management and Budget, would provide useful geographic market definitions, or alternatively, the market could be related to the service area of the programming distributors. Further, we thought it logical to consider whether discrete types of equipment**,** separate equipment markets, and categories of equipment should be reviewed separately for sunset purposes. Additionally, we inquired whether there are service provider markets, such as DBS, that presently are "fully competitive." We sought comment on whether the relevant market is the market for all MVPDs or if there are relevant submarkets that should be considered in determining whether to justify the sunset of Section 629.

109. *Discussion*. The regulations adopted under this section shall cease to apply when, as stated in Section 629(e), the Commission determines that (1) the market for MVPDs is fully competitive; (2) the market for converter boxes and interactive communications equipment used in conjunction with that service is fully competitive; and (3) elimination of the regulations would promote competition and the public interest.[238] An interested party may petition the Commission to determine that Section 629(e) has been satisfied.[239] The ability to have the Section 629 requirements sunset will be an incentive for MVPDs to achieve retail availability of navigation devices. This rule is found in Section 76.1208.

110. To review the existence of a competitive market, a relevant product market and a relevant geographic market must be determined and analyzed.[240] The Commission has defined a product market as those products or services that are "reasonably interchangeable by consumers for the same purposes.[241] For purposes of Section 629(e), the market for MVPD programming services is an appropriate product market because the broader market definition encompasses the full range of MVPD services available to consumers.

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[237]Section 76.55(e) of the Commission's rules provides that the areas of dominant influence ("ADIs") to be used for purposes of the mandatory carriage rules are those published in Arbitron's 1991-1992 Television Market Guide. The Commission recently concluded that it was appropriate to switch market definitions to Nielsen Media Research's designated market areas ("DMAs") for must-carry/retransmission consent elections. *See* Definition of Markets for Purposes of the Cable Television Mandatory Television Broadcast Signal Carriage Rules, Report and Order and Further Notice of Proposed Rule Making, CS Docket No. 95-178, 11 FCC Rcd 6201 (1996) ("Market Modification Report and Order"). In its Market Modification Report and Order, the Commission decided to use Arbitron's 1991-1992 Television ADI Market Guide market designations for the 1996 election and postpone the switch to Nielsen's DMAs until the next must-carry/retransmission consent cycle begins on Jan. 1, 2000. The Commission also issued a Further Notice in its Market Modification Report and Order to solicit additional information and provide parties an opportunity to further consider issues relating to the transition to market designations based on Nielsen's DMAs.

[238]47 U.S.C. § 549(e).

[239]*See* 47 C.F.R. § 76.7 (procedures for Petitions for special relief).

[240]*Annual Assessment of the Status of Competition in Markets for the Delivery of Video Programming*, CS Docket No. 97-141, *Fourth Annual Report* ("*1997 Report*"), 13 FCC Rcd 1034, 1107-1109 (1997).

[241]*See Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming*, CS Docket No. 94-48, *First Annual Report*, 9 FCC Rcd 7442 at ¶ 39 (1994) ("*1994 Report*"), *citing United States v. E.I. du Pont de Nemours & Co,* 351 U.S. 377 (1956).

111. A geographic market is an area in which all customers in that area will likely face the same competitive alternatives for a product.[242] The Commission has stated that the relevant geographic market for assessing MVPD competition is local and its extent can be defined by the overlap of the "footprints" of the various service providers.[243] We believe that local geographic markets, akin to Nielsen's "areas of dominant influence," or Standard Metropolitan Statistical Areas, as determined by the Office of Management and Budget, may be an appropriate geographic market definition. With respect to the market for equipment, we conclude that any navigation device subject to Section 629 shall constitute the appropriate equipment market for Section 629(e) purposes.

112. Several commenters suggest that DBS should not be subject to any regulation in this proceeding because DBS already complies with the commercial availability mandate of Section 629.[244] Although, as discussed above, we believe it is desirable for the rules to recognize the fact that DBS equipment is already commercially available and nationally portable, we cannot conclude that the rules in their entirety should never be applied by virtue of the "sunset" criteria. Section 629(e) requires that the MVPD market be "fully competitive" for all services before regulation is ended. The market for MVPD programming services as a whole is not fully competitive at this time.[245] DBS services have been successful in offering consumers choice in equipment, services, and retail outlets[246] and DBS is still a relatively new entrant in the MVPD market and lacks market power. Yet this is not the standard of Section 629. Congress did not exclude DBS from the reach of Section 629, even though the competitive state of DBS services was known at the time of the enactment of the 1996 Act.[247]

113. Some commenters propose elimination of regulations in any market where an MVPD system becomes subject to "effective competition" using the statutory definition of effective competition for cable systems set forth in the 1992 Cable Act.[248] Another commenter argues that effective competition exists where

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[242]*See 1997 Report*, 13 FCC Rcd at 1034; *Assessment of the Status of Competition in the Market for the Delivery of Video Programming, Third Annual Report* (*"1996 Report*"), CS Docket No. 96-133, , 12 FCC Rcd 4358(1996); *Assessment of the Status of Competition in the Market for the Delivery of Video Programming*, CS Docket No. 95-61, *Second Annual Report* ("*1995 Report*"), 11 FCC Rcd 2060 (1995); *1994 Report*, 9 FCC Rcd at 7442.

[243]*1997 Report*, 13 FCC Rcd at 1081; *1996 Report*, 12 FCC Rcd at 4418.

[244]CE Comments at 3; CERC Comments at 12; Circuit City Comments at 14; DIRECTV Comments at 10; GI Comments at 41; PrimeStar Comments at 7; SBCA Comments at 3; Tandy Comments at 5.

[245]*1997 Report*, 13 FCC Rcd at 1108.

[246]*Id*. at 1039.

[247]As discussed above, however, the rules adopted exempt DBS from the requirement to provide separated security modules. *See* Part III (H), *supra.*

[248]47 U.S.C. § 543(l)(1); 47 C.F.R. § 76.905(b); BSA Comments at 10; ITI Comments at 34; GTE Comments at 10; WCA Reply at 7. CEMA believes that once markets are subject to effective competition, detailed rules designed to promote commercial availability of CPE can be discontinued, although certain minimal requirements regarding network interconnection and interoperation may continue to be necessary. CEMA Comments at 15.

CPE is commercially advertised for sale or lease because CPE sales frequently occur through electronic and home improvement magazines.[249] GI suggests that the Commission sunset Section 629 with respect to an individual cable system that becomes subject to effective competition and with respect to all cable systems nationwide if DBS attains a national penetration of 10%.[250] Commenters contend that Section 629(e) requires that the market for both MVPDs and converter boxes be fully competitive; the fact a single cable system may be subject to effective competition is not sufficient, in itself, to satisfy the first or the second prongs of the sunset test.[251] While each of these commenters' positions encompass elements of what Section 629(e) requires, Section 629(e) provides for the sunset of these regulations only when three conditions are met: (1) the multichannel video distribution market is fully competitive; (2) the market for navigation devices is fully competitive; and (3) elimination of the regulations promotes competition and the public interest. Only when all three elements are present can the Commission determine that the regulations should terminate.

M. Digital Television Compatibility

114. In the context of this and other proceedings, the issue of transmitting digital television signals to consumers has been raised. Several parties advocate that the Commission impose obligations on distributors, manufacturers and others to adhere to specific standards in transmitting digital television signals. For example, ABC expresses concern that set-top boxes could cause unnecessary and anti-competitive bottlenecks in the distribution of DTV programming if they act as "gatekeepers," capable of delivering only certain digital protocols.[252] MSTV and NAB maintain that cable operators should not be able to deploy set-top boxes that cannot pass through all DTV signals in an undegraded form.[253] Viacom advocates that navigation devices which contain DTV converters be open such that all navigation devices are capable of receiving and passing through all programming that is unencrypted.[254]

115. We recognize the importance of this issue and its relevance to a number of Commission proceedings. Since the record on this issue in our implementation of section 629 is extremely limited, and the matter may more appropriately be addressed in another proceeding, we will defer consideration here. We intend to monitor developments with respect to the compatibility of set-top boxes and digital televisions.

N. Electronic Program Guides

[249]US West Comments at 19.

[250]GI Comments at 89.

[251]CERC Reply at 56; ITI Comments at 29.

[252]ABC Reply at 5.

[253]MSTV and NAB *ex parte* filing (May 20, 1998).

[254]Viacom Comments at 23-24.

116. An issue was raised in reply comments in this proceeding,[255] and emphasized in *ex parte* filings late in the process, regarding whether electronic program guide equipment and guide services are covered by the requirements of Section 629.[256] Based on the plain language of Section 629, it appears clear that the equipment used to access such electronic program guides is "equipment used by consumers to access . . . services offered over multichannel video programming systems"[257] and hence falls within the requirements of Section 629. While we are committed to encouraging the development of the market for the provision of electronic program guide services as part of our broader goal of promoting consumer choice, the record in this proceeding is limited on this issue.[258] Therefore, we cannot adequately address at this time the extent of any obligation of multichannel video programming systems to make such services available pursuant to Section 629 or otherwise. We will monitor developments with respect to the availability of electronic program guides to determine whether any action is appropriate in the future.[259]

O. Additional Action Steps and Regulatory Concerns

117. In addition to mandating several significant requirements, we have emphasized our reliance on market forces to bring innovation, choice and better prices to consumers. It is the work of private entities and the economic incentives motivating the participants in the OpenCable process that provide the most immediate opportunity for a degree of standardization that will both create scale economies reducing the cost of equipment and developing interfaces allowing the equipment to be readily sold through retail outlets. The considerable degree of overlap between the standards issues that are specific to digital cable television set top boxes and those that have to do with "cable ready" television receivers supports this reliance.[260]

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[255]Starsight Reply at 18.

[256]*E.g.*, June 3, 1998 *ex parte* filing on behalf of Gemstar International Group Limited and StarSight Telecast, Inc.; May 18, 1998 *ex parte* filing on behalf of StarSight Telecasting, Inc.; *See also* May 28, 1998 ex parte filing on behalf of Cablevision System Corporation and May 28, 1998 ex parte filing on behalf of the National Cable Television Association.

[257]47 U.S.C. § 549(a).

[258]This is particularly the case as the issue relates to the change over to digital services and digital equipment that is taking place across MVPD systems.

[259]We note that a related issue was previously raised by StarSight in *ex parte* filings in MM Docket 92-259 regarding the carriage of program scheduling information in the vertical blanking interval of television broadcast stations and cable carriage under Sections 614 and 615 (broadcast station "must-carry" provisions) of the Communications Act of 1934, as amended. *Memorandum Opinion and Order* in Docket 92-259, 9 FCC Rcd 6723 at ¶ 47, n.145 (1994).

[260]The Commission has a separate proceeding in progress in which issues relating to cable ready receivers have been discussed and in which the possibility of initiating a separate proceeding on these issues was raised. *Implementation of Section 17 of the Cable Television Consumer and Protection Act of 1992*, ET Docket No. 93-7, *First Report and Order*, 9 FCC Rcd 1981 at ¶¶ 136-144 (1994). Thus, these issues have not been the focus of this navigation devices proceeding. Important issues relating to the matter are also relevant to the mandatory carriage by cable television systems of the signals of digital television broadcast stations. Fourth Further Notice of Proposed Rule Making in MM

118. We are realistic, however, in comprehending that the present environment where incumbent cable operators dominate the MVPD market, and where consumers may not have ready access to information regarding equipment alternatives, may not easily evolve to a competitive market. We think it important to convey those circumstances that we believe will indicate where competition is faltering, and cause us to reexamine our decisions. Additionally, we also address our concern that, having refrained from promulgating specific technical standards, market driven efforts may not bring tangible choice to consumers, thereby requiring additional need to reexamine the direction we have taken.

119. Interface Information and Standards - Functioning of the Consumer Market. Our decision commits to MVPDs the development of standards necessary for equipment manufacturers to make attaching equipment. We require MVPDs to provide technical information concerning the interface parameters of their systems to allow equipment to be developed that can operate with their systems.[261] A central element of ensuring that consumers have more equipment choices with wider capabilities is that interface information be available in a meaningful way so manufacturers and retailers can provide compatible equipment. The lack of a meaningful information flow will undermine the goal of commercial availability and cause us to consider more particular requirements regarding the availability of interface specifications, including what those specifications should be.

120. Even more fundamental than providing information about interface parameters is that standards actually be developed. Without these standards, the commercial availability of equipment is illusory. Such a failure will cause a reexamination of the reliance that market forces are evolving and that restraint in pursuing mandates is appropriate.

121. Our decisions herein, such as relying on the service provider to allow reasonable attachments, protecting the network from harm, relying upon the market to educate consumers as to the availability and utility of equipment that may be purchased, as well as those relating to changes in network facilities and the consequences of these changes for subscribers and equipment providers, were issues addressed in the parallel telephone equipment attachment area. These concerns are addressed through the Commission's Part 68 rules.[262] The issues that led to the adoption of the Part 68 also rules warrant consideration in the context of multichannel video programming services.

122. There are many differences between the two situations. Telephone communications perform critical safety and business functions that are different from the functions of video service providers. Moreover, the telephone network functions as a national and international system that requires a high degree of stability, coordination, and planning. The architectures of the telephone and cable networks are fundamentally different. Telephone subscribers are typically served by individual copper loops in a star architecture. The individual copper loops are not shared with other subscribers. In contrast, cable subscribers are typically served by a coaxial cable network that is arranged in a tree and branch or bus architecture. In this arrangement, the subscribers share the capacity of the coaxial cable infrastructure potentially making it

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Docket No. 87-268, 10 FCC Rcd 10504 at ¶ 79 (1995).

[261] *See* discussion at Section IV (D), *supra*, and § 76.1205 at Appendix B.

[262] *See* 76 C.F.R. §§ 68.100-110.

more vulnerable to interference or other forms of degradation caused by the actions of individual subscribers' equipment.

123. Evidence from the history of the telephone market illustrates several possible problems with an environment where the service provider retains the initial right to determine what attachment may cause harm. The service provider may, if it is motivated to do so, adopt a variety of standards or "protective coupler" requirements to protect itself that will make equipment provided by others prohibitively costly, difficult to deploy, or restricted in functionality. It seems entirely possible, however, that manufacturers and retailers of equipment may not be motivated to produce and sell equipment that maximizes the functioning of the network itself or to protect that network from harm. This would particularly be the case where the device in question aids the individual purchaser at the expense of other subscribers or users of the network. For example, a "modem" type of device might actually perform better for an individual user if it operated at a higher than acceptable power level or bit rate. To the extent the network is a shared resource, such a device would be useful for the individual but damaging to the collective and the market would not tend toward an optimized solution.[263] Problems of another type may result when network technology is upgraded. In the past, the MVPD, from whom the devices in question were leased, could effectively recall those devices that would not perform, or would not perform well, with the changed service parameters. The devices could be reused elsewhere and new ones provided. The retail purchase model is much different; with a different set of tradeoffs and difficulties involved.

124. The record before us provides limited insight into which of the issues addressed by Part 68 can or need to be addressed with parallel rules for MVPDs and MVPDs' navigation devices. The rules adopted here will work if service providers, equipment manufacturers and retailers strive together to maximize service to consumers and provide consumers with information regarding the functioning of the equipment involved. If this proves not to be the case, it will be necessary to consider additional rules to prohibit the marketing of equipment that causes harm, to more specifically and clearly identify devices that can confidently be purchased and attached without dispute, to deal with changes in network facilities or interfaces, and to provide consumers with necessary information as to the functioning and capabilities of the equipment involved. Experience should assist in providing a tangible indication as to the need for action in this area. We specifically invite parties with concerns in this area to file petitions for rulemaking suggesting specific rules.

125. Reliance on Voluntary Standards Development. We have noted that much of our view that market forces are evolving stems from the work of CableLabs and its OpenCable project which is underwritten by several cable operators. We have recognized that not all of the cable industry is participating in this process.[264] There are also limited, but significant, digital video distribution undertakings by entities outside the cable

[263]In the *Hush-a-Phone* decisions, the court ruled that subscribers should be able to attach equipment to the network in ways that were privately beneficial but not publicly harmful. *Hush-A-Phone Corp. v. U.S.*, 238 F. 2d 266 (D.C. Cir. 1956; s*ee also Public Utility Comm'n of Texas* v. FCC, 886 F. 2d 1325 (D.C. Cir. 1989) (noting long established FCC policy that carriers and non-carriers alike have a federal right to interconnect to the public telephone network in ways that are privately beneficial if they are not publicly detrimental).

[264]*See* ¶ 13, *supra*, (discussion of OpenCable project). Member companies of CableLabs represent more than 85% of the cable subscribers in the United States, 70% of the subscribers in Canada, and 10% of the subscribers in Mexico. NCTA Comments at 32.

industry that currently are not participating. We are concerned that any process encompassing the goals of section 629, as OpenCable appears to,[265] must provide opportunity for a range of interests to participate. To the degree that the process excludes the participation of particular interests, we may be required to reevaluate our reliance on these private processes.

126. Movement Towards Standardization - Portability and Interoperability. A significant example of our reliance on market forces to establish specific standards is shown in that we have not adopted specific rules to mandate portability or interoperability. The circumstances surrounding portability and interoperability indicate the risk and benefits of not pursuing technical standards. As noted, portability refers to being able to move a device from one geographic area to another and have it able to function with the same type of service provider, e.g. equipment could be used with different cable operators in different parts of the country. Interoperability refers to the ability to operate across different multichannel video programming services interchangeably, e.g. equipment could be used with both a cable operator and a DBS provider. Both portability and interoperability would increase the likelihood of subscribers obtaining navigation equipment through purchase and ownership rather than through temporary leasing in association with a specific service provider. One reason that most DBS subscribers own their navigation and reception equipment is undoubtedly that the equipment is portable.[266] In the cable setting, subscriber interest in purchasing rather than leasing a navigation device will clearly be greater if the device is portable. As we monitor the development of the market for navigation devices and the related industry standards activities, we shall pay particular attention to the development of interfaces and other features that would promote portability.

127. There are essentially two means by which portability and interoperability might be accomplished. First, navigation devices could be designed and manufactured with built-in capacities to function with a variety of types of different systems with disparate characteristics. Under the rules adopted, there are no restrictions on the development of equipment that works with different systems that consumers might choose to purchase. Indeed, service providers may not preclude manufacturers of commercially available navigation devices from including additional features or functions so long as they are not designed or intended to defeat conditional access controls. This provision facilitates interoperability and may encourage portability as well. Navigation devices with additional features and functions would cost more than less complex devices, but individual consumers could choose among alternative devices, depending on their willingness to pay and on the degree of portability or interoperability demanded.

128. The second option would be to standardize the transmission facilities and functions of the service providers involved. With respect to service provider technology standardization, we noted in the *NPRM* that, in contrast to the telephone industry, MVPDs in general have little standardization either among different types of MVPDs or among MVPDs using the same distribution technology.[267] We noted that this lack of

[265]The goals of the OpenCable project are retail availability of set-top boxes, a competitive marketplace, and new services. OpenCable *ex parte* filing (April 16, 1998).

[266]Our decisions regarding the separation of the security element from the other functions in the devices are also intended to facilitate portability. *See* discussion *supra* at Section IV(H).

[267]*NPRM*, 12 FCC Rcd at 5667.

standardization creates a potential obstacle to the ability of manufacturers to produce and retailers to sell equipment that can be widely used.[268]

129. Many parties in this proceeding are concerned that government imposed technical standards could have a stifling effect on technological and marketplace developments.[269] CHTC believes that America's high-technology industries would be especially hard hit by a mandated technical standard which limits the industry's choice of technologies.[270] NCTA maintains that government-mandated standards mean a loss of variety and consumer choices as well as technological competition because equipment manufacturers will not be able to offer differentiated products using different technologies.[271] BSA believes the market should drive the development of technical standards because government-imposed standards frequently increase costs to consumers, foreclose innovation, and impede competition.[272] ITI believes that a government mandated standard is often not the product of the technological and economic considerations that would otherwise drive sound business decisions in a free market.[273] CHTC and Echelon argue that adoption of compulsory government standards is inconsistent with Congress's clear intent that the FCC should defer to private standards-setting organizations.[274] GI argues that the statute does not authorize the Commission to involve itself in questions regarding the manufacture of navigation devices, but only seeks to ensure competition in the retail distribution of navigation devices to consumers, so that consumers have an alternative distribution source from which to obtain equipment.[275] Many commenters, agree that instead of the Commission mandating standards, it should encourage the development and adoption of industry-wide standards.[276]

130. There are other commenters who argue that mandated standardization of some aspects of navigation devices is required to ensure national portability. CEMA believes that within a single medium, there is no persuasive reason why a single set of interface standards cannot be agreed upon to promote portability

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[268]*Id.*

[269]CHTC Comments at 4; Echelon Comments at 23; ITI Comments at 15; Motorola Comments at 9; NCTA Comments at 38; SA Comments at 21; TW Comments at 37.

[270]CHTC Comments at 8.

[271]NCTA Comments at 38.

[272]BSA Comments at 9.

[273]ITI Comments at 15.

[274]CHTC Comments at 3; Echelon Comments at 29.

[275]GI Reply at 4; Additionally, Motorola contends that "technological neutrality" by the Commission benefits consumers by promoting competition and retaining the incentive for manufacturers to continue to invest in developing new products that deliver innovative solutions and features. Motorola Comments at 26; WCA contends that the Commission has fostered technical innovation by refusing to impose technical standards. WCA Reply at 10.

[276]Ameritech Comments at 80; CEMA Comments at 9; GTE Reply at 2; ITI Comments at 14; TW Comments at 33; Zenith Comments at 5.

of equipment[277] and contends that portability and interoperability on a national scale require standard interfaces between video CPE and the MVP networks to which these devices connect.[278] CE advocates an active Commission role in setting standards, contending that the process involving the decoder interface connector demonstrates the impracticability of leaving the matter of creating a standard interface specification to competing industry elements.[279] Some commenters prefer private-sector standards setting, but believe the Commission should set standards if the industry cannot reach a consensus.[280] Additionally, CERC and Viacom contend that the Commission should require implementation and support of the technical standards by clear dates certain.[281] Circuit City supports the adoption of fundamental standards developed by the private sector with respect to security and transmission at a level which will support compatibility of a CPE across a given system, while leaving specific MVP services and product functions and features to the marketplace.[282]

131. Commenters proposing mandated standardization vary on which aspects of MVP services should be standardized. CERC argues that navigational devices must have a common transmission standard and suggests that analog transmissions are already NTSC and broadcaster compatible, and the majority of digital MVPDs are going to implement a transport layer based on MPEG.[283] Ameritech proposes a four-part hierarchy of services based on the standards in the computer industry, with the hardware services layer and hardware communications services layer standardized and subject to commercial availability, and the applications services layer and the applications support services layer without specific regulations to allow for innovation and product differentiation.[284] MSTV and NAB argue standardization is necessary to develop cable ready television sets.[285]

132. Appreciating the tension reflected in the comments and without any current proposal for specific standards before us, we believe the best course of action at this time is to establish general parameters and to evaluate how the efforts to comply with these mandates progresses. We have made clear that the requirements we do adopt are necessary to commence the evolution to commercial availability of navigation equipment. We are relying on the relevant industries to make progress towards achieving portability and interoperability, and in other areas. If they do not, or if the effort is unduly delayed, it will be necessary for the Commission to consider whether further action is necessary.

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[277]CEMA Comments at 9.

[278]CEMA Reply at 11.

[279]CE Comments at 7.

[280]CERC Reply at 19; Circuit City Reply at 2; Viacom Reply at 11.

[281]CERC Comments at 19; Circuit City Comments at 27. Viacom Reply at 11.

[282]Circuit City Comments at 27.

[283]CERC Comments at 25.

[284]Ameritech Comments at 15.

[285]MSTV and NAB *ex parte* filing (May 20, 1998).

V. PROCEDURAL MATTERS

133. Effective Date. Upon approval by the Office of Management and Budget ("OMB"), the rules adopted in this *Order* shall become effective, with the exception of Section 76.1203, Availability of Equipment Performing Conditional Access or Security Functions.[286] Section 76.1203 shall become effective on July 1, 2000 after approval by OMB.

134. Paperwork Reduction Act of 1995 Analysis. The requirements adopted in this Rulemaking have been analyzed with respect to the Paperwork Reduction Act of 1995 (the "1995 Act") and found to impose new or modified information collection requirements on the public. The Commission, as part of its continuing effort to reduce paperwork burdens, invites the general public to take this opportunity to comment on the information collection requirements contained in this Rulemaking, as required by the 1995 Act. Public comments are due 60 days from date of publication of this Rulemaking in the Federal Register. Comments should address: (a) whether the proposed collection of information is necessary for the proper performance of the functions of the Commission, including whether the information shall have practical utility; (b) the accuracy of the Commission's burden estimates; (c) ways to enhance the quality, utility, and clarity of the information collected; and (d) ways to minimize the burden of the collection of information on the respondents, including the use of automated collection techniques or other forms of information technology.

135. Written comments by the public on the new or modified information collection requirements are due 60 days from date of publication of this Rulemaking in the Federal Register. Comments on the information collections contained herein should be submitted to Judy Boley, Federal Communications Commission, Room 234, 1919 M Street, N.W., Washington, DC 20554, or via the Internet to jboley@fcc.gov. For additional information on the information collection requirements, contact Judy Boley at 202-418-0214 or via the Internet at the above address.

136. Final Regulatory Flexibility Analysis. The Final Regulatory Flexibility Analysis, required by Section 603 of the Regulatory Flexibility Act, as amended by the Contract with America Advancement Act of 1996, Pub. L. No. 104-121, 110 Stat. 847 (1996), is contained in Appendix C.

VI. ORDERING CLAUSE

137. IT IS ORDERED that, pursuant to authority found in Sections 4(i), 303(r), and 629 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154(i), 303(r), and 549, the Commission's rules ARE HEREBY AMENDED as set forth in Appendix A.

138. IT IS FURTHER ORDERED that the rules as amended in Appendix A shall become effective upon approval by the Office of Management and Budget, except for 47 C.F.R. § 76.1203, which shall become effective on July 1, 2000 after approval by the Office of Management and Budget.

[286]Because the rules impose new or modified information collection requirements, they cannot become effective until they are approved by OMB pursuant to the Paperwork Reduction Act of 1995, 5 C.F.R. §§ 1320.1-18.

139. IT IS FURTHER ORDERED that Tele-Communications, Inc., Time Warner Cable, Jones Intercable, U S WEST Media Group, Marcus Cable, Advance/Newhouse Communications, Cox Communications, and Comcast Corporation SHALL FILE REPORTS on January 7, 1999, July 7, 1999, January 7, 2000, and July 7, 2000 detailing the progress of their efforts and the efforts of CableLabs to assure the commercial availability, to consumers of equipment used to access multichannel video programming and other services offered over multichannel video programming systems, from manufacturers, retailers, and other vendors not affiliated with any multichannel video programming distributor.

140. IT IS FURTHER ORDERED that the Commission's Office of Public Affairs, Reference Operations Division, shall send a copy of this *Report and Order*, including the Final Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration in accordance with paragraph 603(a) of the Regulatory Flexibility Act, Pub.L. No. 96-354, 94 Stat. 1164, 5 U.S.C. §§ 601 *et seq.* (1981).

FEDERAL COMMUNICATIONS COMMISSION

Magalie Roman Salas
Secretary

APPENDIX A

Part 76 of Title 47 of the Code of Federal Regulations is amended as follows:

PART 76 -- MULTICHANNEL VIDEO AND CABLE TELEVISION SERVICE

1. The authority citation for Part 76 is amended to read as follows:

AUTHORITY: 47 U.S.C. 151, 152, 153, 154, 301, 302, 303, 303a, 307, 308, 309, 312, 315, 317, 325, 503, 521, 522, 531, 532, 533, 534, 535, 536, 537, 543, 544, 544a, 545, 548, 549, 552, 554, 556, 558, 560, 561, 571, 572, 573.

2. Subpart P is added to read as follows:

Subpart P -- Competitive Availability of Navigation Devices

§ 76.1200 Definitions.

As used in this subpart:

(a) *Multichannel video programming system*. A distribution system that makes available for purchase, by customers or subscribers, multiple channels of video programming other than an open video system as defined by §76.1500(a). Such systems include, but are not limited to, cable television systems, multichannel multipoint distribution systems, direct broadcast satellite systems, other systems for providing direct-to-home multichannel video programming via satellite, and satellite master antenna systems.

(b) *Multichannel Video Programming Distributor*. A person such as, but not limited to, a cable operator, a multichannel multipoint distribution service, a direct broadcast satellite service, or a television receive-only satellite program distributor, who owns or operates a multichannel video programming system.

(c) *Navigation Devices*. Devices such as converter boxes, interactive communications equipment, and other equipment used by consumers to access multichannel video programming and other services offered over multichannel video programming systems.

(d) *Affiliate*. A person or entity that (directly or indirectly) owns or controls, is owned or controlled by, or is under common ownership or control with, another person, as defined in the notes accompanying §76.501.

(e) *Conditional Access.* The mechanisms that provide for selective access and denial of specific services and make use of signal security that can prevent a signal from being received except by authorized users.

§ 76.1201 Rights of Subscribers to Use or Attach Navigation Devices.

No multichannel video programming distributor shall prevent the connection or use of navigation devices to or with its multichannel video programming system, except in those circumstances where electronic or physical harm would be caused by the attachment or operation of such devices or such devices may be used to assist or are intended or designed to assist in the unauthorized receipt of service.

§ 76.1202 Availability of Navigation Devices.

No multichannel video programming distributor shall by contract, agreement, patent right, intellectual property right or otherwise prevent navigation devices that do not perform conditional access or security functions from being made available to subscribers from retailers, manufacturers, or other vendors that are unaffiliated with such owner or operator, subject to §76.1209.

§ 76.1203 Incidence of Harm.

A multichannel video programming distributor may restrict the attachment or use of navigation devices with its system in those circumstances where electronic or physical harm would be caused by the attachment or operation of such devices or such devices that assist or are intended or designed to assist in the unauthorized receipt of service. Such restrictions may be accomplished by publishing and providing to subscribers standards and descriptions of devices that may not be used with or attached to its system. Such standards shall foreclose the attachment or use only of such devices as raise reasonable and legitimate concerns of electronic or physical harm or theft of service. In any situation where theft of service or harm occurs or is likely to occur, service may be discontinued.

§ 76.1204 Availability of equipment performing conditional access or security functions.

(a)(1) A multichannel video programming distributor that utilizes navigation devices to perform conditional access functions shall make available equipment that incorporates only the conditional access functions of such devices. Commencing on January 1, 2005, no multichannel video programming distributor subject to this section shall place in service new navigation devices for sale, lease, or use that perform both conditional access and other functions in a single integrated device.

(2) The foregoing requirement shall not apply to a multichannel video programming distributor that supports the active use by subscribers of navigation devices that: (A) operate throughout the continental United States, and (B) are available from retail outlets and other vendors throughout the United States that are not affiliated with the owner or operator of the multichannel video programming system.

(b) Conditional access function equipment made available pursuant to subsection (a)(1) of this section shall be designed to connect to and function with other navigation devices available through the use of a commonly used interface or an interface that conforms to appropriate technical standards promulgated by a national standards organization.

(c) No multichannel video programming distributor shall by contract, agreement, patent, intellectual property right or otherwise preclude the addition of features or functions to the equipment made available pursuant to this section that are not designed, intended or function to defeat the conditional access controls of such devices or to provide unauthorized access to service.

(d) Notwithstanding the foregoing, navigation devices need not be made available pursuant to this section where:

(1) It is not reasonably feasible to prevent such devices from being used for the unauthorized reception of service; or

(2) It is not reasonably feasible to separate conditional access from other functions without jeopardizing security.

(e) The requirements of this section shall become applicable on July 1, 2000.

§ 76.1205 Availability of Interface Information.

Technical Information concerning interface parameters that are needed to permit navigation devices to operate with multichannel video programming systems shall be provided by the system operator upon request in a timely manner.

§ 76.1206 Equipment Sale or Lease Charge Subsidy Prohibition.

Multichannel video programming distributors offering navigation devices subject to the provisions of §76.923 for sale or lease directly to subscribers, shall adhere to the standards reflected therein relating to rates for equipment and installation and shall separately state the charges to consumers for such services and equipment.

§ 76.1207 Waivers.

The Commission may waive a regulation adopted under this subpart for a limited time, upon an appropriate showing by a provider of multichannel video programming and other services offered over multichannel video programming systems, or an equipment provider that such a waiver is necessary to assist the development or introduction of a new or improved multichannel video programming or other service offered over multichannel video programming systems, technology, or products. Such waiver requests should be made pursuant to §76.7. Such a waiver shall be effective for all service providers and products in the category in which the waiver is granted.

§ 76.1208 Sunset of Regulations.

The regulations adopted under this subpart shall cease to apply when the Commission determines that (1) the market for multichannel video distributors is fully competitive; (2) the market for converter boxes, and interactive communications equipment, used in conjunction with that service is fully competitive; and (3) elimination of the regulations would promote competition and the public interest. Any interested party may petition the Commission for such a determination.

§ 76.1209 Theft of Service.

Nothing in this subpart shall be construed to authorize or justify any use, manufacture, or importation of equipment that would violate 47 U.S.C. § 553 or any other provision of law intended to preclude the unauthorized reception of multichannel video programming service.

§ 76.1210 Effect on Other Rules.

Nothing in this subpart affects §64.702(d) of the Commission's regulations or other Commission regulations governing interconnection and competitive provision of customer premises equipment used in connection with basic common carrier communications services.

APPENDIX B

Note: If no abbreviation appears in parentheses following the full name, the full name is used in the *Report and Order*.

LIST OF COMMENTERS

1. AD HOC Computer & High-Technology Coalition (CHTC)
2. Ameritech New Media Inc. (Ameritech)
3. Richard A. Arsinow
4. Bell Atlantic & NYNEX (BANX)
5. Business Software Alliance (BSA)
6. Cellular Vision USA, Inc. (Cellular Vision)
7. Circuit City Stores, Inc. (Circuit City)
8. Commercial Engineering (CE)
9. Consumer Electronics Manufacturers Association (CEMA)
10. Consumer Electronics Retailers Coalition (CERC)
11. Corporate Media Partners d/b/a/ Americast (Americast)
12. DIRECTV, Inc. & Hughes Network Systems Inc.(DIRECTV)
13. Echelon Corporation (Echelon)
14. Gateway 2000, Inc. (Gateway)
15. General Instruments Corporation (GI)
16. GTE Services Corporation (GTE)
17. Information Technology Industry Counsel & Computing Technology Industry Association (ITI)
18. Motorola Inc. (Motorola)
19. National Cable Television Association (NCTA)
20. National Retail Federation (NRF)
21. Pacific Bell Video Services (PacBell)
22. PrimeStar Partners L.P. (PrimeStar)
23. Satellite Broadcasting & Communications Association Of America
24. Scientific Atlanta, Inc.(SA)
25. Tandy Corporation (Tandy)
26. Telecommunication Industry Association (TIA)
27. Time Warner Entertainment Company L.P. (Time Warner)
28. Uniden American Corporation (Uniden)
29. United States Satellite Broadcasting Company, Inc. (USSB)
30. U S WEST, Inc. (US West)
31. Viacom Inc. (Viacom)
32. Zenith Electronics Corporation (Zenith)

REPLY COMMENTERS

1. ABC, Inc.(ABC)
2. Ameritech New Media, Inc. (Ameritech)
3. Bell Atlantic & NYNEX (BANX)
4. BellSouth Corporation (BellSouth)
5. Business Software Alliance (BSA)
6. Circuit City Stores, Inc. (Circuit City)
7. Commercial Engineering (CE)
8. Consumer Electronics Manufactures Association (CEMA)
9. Consumer Electronics Retailers Coalition (CERC)
10. DIRECTV, Inc.and Hughes Network Systems, Inc.(DIRECTV)
11. Echelon Corporation (Echelon)
12. ESPN, Inc. (ESPN)
13. General Instruments Corporation (GI)
14. GTE Services Corporation
15. Information Technology Industry Counsel & Computing Technology Industry Association (ITI)
16. Motorola Inc. (Motorola)
17. National Cable Television Association (NCTA)
18. Navigation Device Competition Coalition (NDCC)
19. Pacific Bell Video Services (PacBell)
20. PrimeStar Partners L.P. (PrimeStar)
21. Scientific Atlanta, Inc.(SA)
22. Starsight Telecast Inc. (Starsight)
23. Tandy Corporation (Tandy)
24. Tele-Communications, Inc. (TCI)
25. Telecommunication Industry Association (TIA)
26. Time Warner Entertainment Company, L.P (Time Warner)
27. Viacom Inc. (Viacom)
28. Wireless Cable Association International, Inc. (WCA)

APPENDIX C
FINAL REGULATORY FLEXIBILITY ANALYSIS

A. Background

As required by the Regulatory Flexibility Act (RFA),[1] an Initial Regulatory Flexibility Analysis ("IRFA") was incorporated into the Notice of Proposed Rule Making ("*NPRM*") in this proceeding.[2] The Commission sought written public comment on the possible impact of the proposed policies and rules on small entities in the *NPRM*, including comments on the IRFA. This Final Regulatory Flexibility Analysis ("FRFA") in this *Report and Order* conforms to the RFA.[3]

B. Need for Action and Objectives of the Rules

The 1996 Act added a new Section 629 to the Communications Act of 1934, as amended, that requires the Commission to develop rules to assure competitive availability of navigation devices used in conjunction with multichannel video programming distributors ("MVPD").[4] The Commission is promulgating these rules in order to implement this provision of Section 629. The statutory objective of Section 629 is assure that navigation devices used by consumers to access a particular MVPD's programming are available to consumers from manufactures, retailers and other vendors not affiliated with that MVPD.

C. Summary of Significant Issues Raised by the Public Comments in Response to the IRFA

No comments were filed specifically in response to the IRFA. We have, however, considered the economic impact on small entities through consideration of comments that pertain to issues of concern to MVPDs. Commenters cautioned that rules enacted to implement the requirements of Section 629 must not jeopardize the system and signal security of MVPDs and should not mandate technical standards that would interfere with innovation of navigation devices or development of new technologies. In the *Report and Order*, we note our concern with system security and allow MVPDs to restrict the attachment or use of navigation equipment to their systems where electronic or physical harm would be caused by the attachment or operation of such equipment. As for signal security, the rules allow MVPDs to disconnect service to subscribers using a navigation device that assists in the unauthorized reception of service. The rules promulgated also note our concern for inhibiting innovation or development of new technologies. We do not mandate particular standards

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[1] *See* 5 U.S.C. § 603. The RFA, *see* 5 U.S.C. § 601 *et seq*,. has been amended by the Contract With America Advancement Act of 1996, Pub. L. No. 104-121, 110 Stat. 847 (1996) ("CWAAA"). Title II of the CWAAA is the Small Business Regulatory Enforcement Fairness Act of 1996 ("SBREFA").

[2] *Implementation of Section 304 of the Telecommunications Act of 1996 - Commercial Availability of Navigation Devices*, CS Docket No. 97-80, *Notice of Proposed Rule Making*, 12 FCC Rcd 5639, Appendix A (1997) ("*NPRM*").

[3] *See* 5 U.S.C. § 604. .

[4] 47 U.S.C. § 549.

or require specific action, but seek to recognize accepted industry standards that have evolved or are evolving.

D. Description and Estimate of the Number of Small Entities to Which the Rules Will Apply

The RFA directs the Commission to provide a description of and, where feasible, an estimate of the number of small entities that might be affected by the rules here adopted. The RFA defines the term "small entity" as having the same meaning as the terms "small business," "small organization," and "small governmental jurisdiction."[5] In addition, the term "small business" has the same meaning as the term "small business concern" under the Small Business Act.[6] Under the Small Business Act, a small business concern is one which: (a) is independently owned and operated; (b) is not dominant in its field of operation; and (c) satisfies any additional criteria established by the SBA.[7] The rules we adopt in this Report and Order will affect cable systems, multipoint multichannel distribution systems, direct broadcast satellites, home satellite dish manufacturers, satellite master antenna television, local multipoint distribution systems, small manufacturers, electronic equipment manufacturers, computer manufacturers, and small retailers.

Small Multichannel Video Programming Distributors ("MVPD"): The SBA has developed a definition of small entities for cable and other pay television services, which includes all such companies generating $11 million or less in annual receipts.[8] This definition includes cable system operators, closed circuit television services, direct broadcast satellite services, multipoint distribution systems, satellite master antenna systems and subscription television services. According to the Bureau of the Census, there are approximately 1,758 total cable and other pay television services and 1,423 had less than $11 million in revenue.[9] We address below each service individually to provide a more precise estimate of small entities.

Cable Systems: The Commission has developed, with SBA's approval, our own definition of a small cable system operator for the purposes of rate regulation. Under the Commission's rules, a "small cable company" is one serving no more than 400,000 subscribers nationwide.[10] Based on recent information, we

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[5] 5 U.S.C. § 601(6).

[6] 5 U.S.C. § 601(3) (1980) (incorporating by reference the definition of "small business concern" in 15 U.S.C. § 632). Pursuant to 5 U.S.C. § 601(3), the statutory definition of small business applies "unless an agency after consultation with the Office of Advocacy of the Small Business Administration and after an opportunity for public comment, establishes one or more definitions of such term which are appropriate to the activities of the agency and publishes such definitions in the Federal Register."

[7] *Small Business Act*, 15 U.S.C. § 632; *see also* Appendix C, n.6, *supra.*

[8] 13 C.F.R. § 121.201 (SIC 4841).

[9] U.S. Department of Commerce, Bureau of the Census, Industry and Enterprise Receipts Size Report, Table 2D, SIC 4841 (Bureau of the Census data under contract to the Office of Advocacy of the SBA).

[10] 47 C.F.R. § 76.901(e). The Commission developed this definition based on its determinations that a small cable system operator is one with annual revenues of $100 million or less. *Implementation of Sections of the 1992 Cable Act: Rate Regulation, Sixth Report and Order and Eleventh Order on Reconsideration*, 10 FCC Rcd 7393 (1995).

estimate that there were 1439 cable operators that qualified as small cable companies at the end of 1995.[11] Since then, some of those companies may have grown to serve over 400,000 subscribers, and others may have been involved in transactions that caused them to be combined with other cable operators. Consequently, we estimate that there are fewer than 1439 small entity cable system operators that may be affected by the decisions and rules we are adopting. We conclude that only a small percentage of these entities currently provide qualifying "telecommunications services" as required by the Communications Act and, therefore, estimate that the number of such entities are significantly fewer than noted.

The Communications Act also contains a definition of a small cable system operator, which is "a cable operator that, directly or through an affiliate, serves in the aggregate fewer than 1% of all subscribers in the United States and is not affiliated with any entity or entities whose gross annual revenues in the aggregate exceed $250,000,000."[12] The Commission has determined that there are 61,700,000 cable subscribers in the United States. Therefore, we found that an operator serving fewer than 617,000 subscribers shall be deemed a small operator, if its annual revenues, when combined with the total annual revenues of all of its affiliates, do not exceed $250 million in the aggregate.[13] Based on available data, we find that the number of cable operators serving 617,000 subscribers or less totals 1450.[14] Although it seems certain that some of these cable system operators are affiliated with entities whose gross annual revenues exceed $250,000,000, we are unable at this time to estimate with greater precision the number of cable system operators that would qualify as small cable operators under the definition in the Communications Act.

Multipoint Multichannel Distribution Systems ("MMDS"): The Commission refined its definition of "small entity" for the auction of MMDS as an entity that together with its affiliates has average gross annual revenues that are not more than $40 million for the preceding three calendar years.[15] This definition of a small entity in the context of MMDS auctions has been approved by the SBA.[16]

The Commission completed its MMDS auction in March 1996 for authorizations in 493 basic trading areas ("BTAs"). Of 67 winning bidders, 61 qualified as small entities. Five bidders indicated that they were minority-owned and four winners indicated that they were women-owned businesses. MMDS is an especially competitive service, with approximately 1573 previously authorized and proposed MMDS facilities. Information available to us indicates that no MMDS facility generates revenue in excess of $11 million

[11]Paul Kagan Associates, Inc., *Cable TV Investor*, Feb. 29, 1996 (based on figures for Dec. 30, 1995).

[12]47 U.S.C. § 543(m)(2).

[13]47 C.F.R. § 76.1403(b) (SIC 4833).

[14]Paul Kagan Associates, Inc., *Cable TV Investor*, Feb. 29, 1996 (based on figures for Dec. 30, 1995).

[15]47 C.F.R. § 21.961(b)(1).

[16]*See Amendment of Parts 21 and 74 of the Commission's Rules With Regard to Filing Procedures in the Multipoint Distribution Service and in the Instructional Television Fixed Service and Implementation of Section 309(j) of the Communications Act - Competitive Bidding*, MM Docket No. 94-31 and PP Docket No. 93-253, *Report and Order*, 10 FCC Rcd 9589 (1995).

annually. We conclude that, for purposes of this FRFA, there are approximately 1634 small MMDS providers as defined by the SBA and the Commission's auction rules.

ITFS: There are presently 2032 ITFS licensees. All but 100 of these licenses are held by educational institutions. Educational institutions are included in the definition of a small business.[17] However, we do not collect annual revenue data for ITFS licensees and are not able to ascertain how many of the 100 non-educational licensees would be categorized as small under the SBA definition. No commenters address these non-educational licensees. Accordingly, we conclude that at least 1932 licensees are small businesses.

Direct Broadcast Satellite ("DBS"): Because DBS provides subscription services, DBS falls within the SBA definition of cable and other pay television services (SIC 4841). As of December 1996, there were eight DBS licensees. However, the Commission does not collect annual revenue data for DBS and, therefore, is unable to ascertain the number of small DBS licensees that could be affected by these proposed rules. Although DBS service requires a great investment of capital for operation, in the *NPRM*, we acknowledged that there are several new entrants in this field that may not yet have generated $11 million in annual receipts, and therefore may be categorized as a small business, if independently owned and operated. Since the publication of the *NPRM*, however, more information has become available. In light of the 1997 gross revenue figures for the various DBS operators, we conclude that no DBS operator qualifies as a small entity.

Home Satellite Dish ("HSD"): The market for HSD service is difficult to quantify. Indeed, the service itself bears little resemblance to other MVPDs. HSD owners have access to more than 500 channels of programming placed on C-band satellites by programmers for receipt and distribution by MVPDs, of which 350 channels are scrambled and approximately 150 are unscrambled.[18] HSD owners can watch unscrambled channels without paying a subscription fee. To receive scrambled channels, however, an HSD owner must purchase an integrated receiver-decoder from an equipment dealer and pay a subscription fee to an HSD programming packager. Thus, HSD users include: (1) viewers who subscribe to a packaged programming service, which affords them access to most of the same programming provided to subscribers of other MVPDs; (2) viewers who receive only nonsubscription programming; and (3) viewers who receive satellite programming services illegally without subscribing.[19]

According to the most recently available information, there are approximately 20 to 25 program packagers nationwide offering packages of scrambled programming to retail consumers.[20] These program

[17]SBREFA also applies to nonprofit organizations and governmental organizations such as cities, counties, towns, townships, villages, school districts, or special districts, with populations of less than 50,000. 5 U.S.C. § 601(5). *See* Appendix C (D) *supra.*

[18]*Annual Assessment of the Status of Competition in Markets for the Delivery of Video Programming*, CS Docket No. 97-141, *Fourth Annual Report* (*"1997 Report"),* 13 FCC Rcd 1034 at ¶ 68 (1997).

[19]*Id.* at ¶ 69.

[20]*Id.* at ¶ 68.

packagers provide subscriptions to approximately 2,184,470 subscribers nationwide.[21] This is an average of about 77,163 subscribers per program packager. This is substantially smaller than the 400,000 subscribers used in the Commission's definition of a small multiple system operator ("MSO").

Satellite Master Antenna Television ("SMATVs"): Industry sources estimate that approximately 5200 SMATV operators were providing service as of December 1995.[22] Other estimates indicate that SMATV operators serve approximately 1.162 million residential subscribers as of June 30, 1997.[23] The ten largest SMATV operators together pass 848,450 units.[24] If we assume that these SMATV operators serve 50% of the units passed, the ten largest SMATV operators serve approximately 40% of the total number of SMATV subscribers. Because these operators are not rate regulated, they are not required to file financial data with the Commission. Furthermore, we are not aware of any privately published financial information regarding these operators. Based on the estimated number of operators and the estimated number of units served by the largest ten SMATVs, we conclude that a substantial number of SMATV operators qualify as small entities.

Local Multipoint Distribution System ("LMDS"): Unlike the above pay television services, LMDS technology and spectrum allocation will allow licensees to provide wireless telephony, data, and/or video services. A LMDS provider is not limited in the number of potential applications that will be available for this service. Therefore, the definition of a small LMDS entity may be applicable to both cable and other pay television (SIC 4841) and/or radiotelephone communications companies (SIC 4812). The SBA approved definition for cable and other pay services that qualify as a small business is defined in paragraphs 5-6, *supra*. A small radiotelephone entity is one with 1500 employees or fewer.[25] However, for the purposes of this *Report and Order* on navigation devices, we include only an estimate of LMDS video service providers.

An auction for licenses to operate LMDS systems was recently completed by the Commission. The vast majority of the LMDS license auction winners were small businesses under the SBA's definition of cable and pay television (SIC 4841).[26] In the *Second R&O*,[27] we adopted a small business definition for entities bidding for LMDS licenses as an entity that, together with affiliates and controlling principles, has average gross

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[21] *Id.* at ¶ 69.

[22] *Annual Assessment of the Status of Competition in Markets for the Delivery of Video Programming*, CS Docket No. 96-133, *Third Annual Report* (*"1996 Report"*), 12 FCC Rcd 4358 at ¶ 81 (1996).

[23] *1997 Report*, 13 FCC Rcd at ¶ 84.

[24] *Id.* at Appendix D, Table D-1.

[25] 13 C.F.R. § 121.201.

[26] *See* Appendix C (D), *supra*, for an estimate of the number of entities under SIC 4841.

[27] *In the Matter of Rulemaking to Amend Parts 1, 2, 21, and 25 of the Commission's Rules to Redesignate the 27.5-29.5 GHz Frequency Band, to Reallocate the 29.5-30.0 GHz Frequency Band, to Establish Rules and Policies for Local Multipoint Distribution Service*, CC Docket No. 92-297, *Second Report and Order, Order on Reconsideration, and Fifth Notice of Proposed Rule Making*, 62 FR 23148 (1997) ("*Second R&O*").

revenues not exceeding $40 million for each of the three preceding years. We have not yet received approval by the SBA for this definition.

There is only one company, CellularVision, that is currently providing LMDS video services. In the *IRFA*, we assumed that CellularVision was a small business under both the SBA definition and our auction rules. No commenters addressed the tentative conclusions we reached in the *NPRM*. Accordingly, we affirm our tentative conclusion that a majority of the potential LMDS licensees will be small entities, as that term is defined by the SBA.

Small Manufacturers: The SBA has developed definitions of small entity for manufacturers of household audio and video equipment (SIC 3651) and for radio and television broadcasting and communications equipment (SIC 3663). In each case, the definition includes all such companies employing 750 or fewer employees.

Electronic Equipment Manufacturers: The Commission has not developed a definition of small entities applicable to manufacturers of electronic equipment. Therefore, we will use the SBA definition of manufacturers of Radio and Television Broadcasting and Communications Equipment.[28] According to the SBA's regulations, a TV equipment manufacturer must have 750 or fewer employees in order to qualify as a small business concern.[29] Census Bureau data indicates that there are 858 U.S. firms that manufacture radio and television broadcasting and communications equipment, and that 778 of these firms have fewer than 750 employees and would be classified as small entities.[30] The Census Bureau category is very broad, and specific figures are not available as to how many of these firms are exclusive manufacturers of television equipment or how many are independently owned and operated. We conclude that there are approximately 778 small manufacturers of radio and television equipment.

Electronic Household/Consumer Equipment: The Commission has not developed a definition of small entities applicable to manufacturers of electronic equipment used by consumers, as compared to industrial use by television licensees and related businesses. Therefore, we will utilize the SBA definition applicable to manufacturers of Household Audio and Visual Equipment. According to the SBA's regulations, a household audio and visual equipment manufacturer must have 750 or fewer employees in order to qualify as a small business concern.[31] Census Bureau data indicates that there are 410 U.S. firms that manufacture radio and television broadcasting and communications equipment, and that 386 of these firms have fewer than 500

[28]This category excludes establishments primarily engaged in the manufacturing of household audio and visual equipment which is categorized as SIC 3651. *See infra*, for SIC 3651 data.

[29]13 C.F.R. §121.201, (SIC) Code 3663.

[30]U.S. Dept. of Commerce, 1992 Census of Transportation, Communications and Utilities, Table D, (issued May 1995), SIC category 3663.

[31]13 C.F.R. §121.201, (SIC) Code 3651.

employees and would be classified as small entities.[32] The remaining 24 firms have 500 or more employees; however, we are unable to determine how many of those have fewer than 750 employees and therefore, also qualify as small entities under the SBA definition. Furthermore, the Census Bureau category is very broad, and specific figures are not available as to how many of these firms are exclusive manufacturers of television equipment for consumers or how many are independently owned and operated. We conclude that there are approximately 386 small manufacturers of television equipment for consumer/household use.

Computer Manufacturers: The Commission has not developed a definition of small entities applicable to computer manufacturers. Therefore, we will use the SBA definition of Electronic Computers. According to SBA regulations, a computer manufacturer must have 1,000 or fewer employees in order to qualify as a small entity.[33] Census Bureau data indicates that there are 716 firms that manufacture computers and of those, 659 have fewer than 500 employees and qualify as small entities.[34] The remaining 57 firms have 500 or more employees; however, we are unable to determine how many of those have fewer than 1,000 employees and therefore also qualify as small entities under the SBA definition. We conclude that there are approximately 659 small computer manufacturers.

Small Retailers: The Commission has not developed a definition of small entities applicable to navigation retail devices. Therefore, we will utilize the SBA definition. The 1992 Bureau of the Census data indicates: there were 9,663 U.S. firms classified as Radio, TV & electronic stores (SIC 5731), and that 9,385 of these firms had $4.999 million or less in annual receipts and 9,473 of these firms had $7.499 million or less in annual receipts.[35] Consequently, we conclude that there are approximately 9,663 small entities that produce and distribute radio, television, and electronic equipment that may be affected by the decisions in the *Report and Order*.

E. Description of Reporting, Recordkeeping and Other Compliance Requirements

This analysis examines the costs and administrative burdens associated with our rules and requirements. The rules we adopt require MVPDs to make available upon request technical information concerning interface

[32]U.S. Small Business Administration 1995 Economic Census Industry and Enterprise Report, Table 3, SIC Code 3651, (Bureau of the Census data adapted by the Office of Advocacy of the U.S. Small Business Administration).

[33]13 C.F.R. §121.201, (SIC) Code 3571.

[34]U.S. Small Business Administration 1995 Economic Census Industry and Enterprise Report, Table 3, SIC Code 3571, (Bureau of the Census data adapted by the Office of Advocacy of the U.S. Small Business Administration).

[35]U.S. Small Business Administration 1992 Economic Census Industry and Enterprise Report, Table 2D, SIC 7812, (Bureau of the Census data adapted by the Office of Advocacy of the U.S. Small Business Administration)(SBA 1992 Census Report). The Census data does not include a category for $6.5 million therefore, we have reported the closest increment below and above the $6.5 million threshold. There is a difference of 88 firms between the $4.999 and $7.499 million annual receipt categories. It is possible that these 88 firms could have annual receipts of $6.5 million or less and therefore, would be classified as small businesses.

parameters. The Commission believes, however, that this requirement would not necessitate any additional professional, engineering, or customer service skills beyond those already utilized in the ordinary course of business by MVPDs.

F. Steps Taken to Minimize Significant Economic Impact On Small Entities and Significant Alternatives Considered

We believe that our rules, implemented to assure commercial availability of navigation devices, will have the positive result of opening up to small retailers the market to sell or lease navigation devices to MVPD subscribers. Section 629 includes provisions which may lessen compliance impact on small entities affected by the rules adopted in this *Report and Order*. Section 629(c) specifies that the Commission shall waive the regulations developed to implement Section 629 when necessary for an MVPD to develop new or improved services offered over its system. Second, Section 629(e) requires the Commission to sunset the rules adopted in the *Report and Order* once a determination is made that (1) the market for MVPDs is fully competitive; (2) the market for convertor boxes and interactive communications equipment used in conjunction with that service is fully competitive; and (3) elimination of the regulations would promote competition and the public interest. Our rules also consider situations and offer relief where the commercial availability of navigation devices performing conditional access functions could adversely impact an MVPD. An MVPD is not subject to the rules requiring the commercial availability of navigation devices if: (1) it is not reasonably feasible to separate conditional access functions from other functions; or (2) it is not reasonably feasible to prevent the unauthorized reception of service by subscribers using navigation devices obtained from other sources.

In the *NPRM*, the Commission asked for comment as to other means for achieving a competitive market for navigation devices. Commenters suggest means which would lead to more governmental involvement in the equipment design process and the retail marketplace. For instance, some commenters advocate that the Commission require MVPDs to license proprietary design specifications to manufacturers of navigation devices. The Commission has determined that allowing for technical innovation and flexible design standards would be the best means of meeting Section 629's statutory mandate of maximizing consumer choice in consumer electronics equipment. The Commission noted the ongoing activities of several industry organizations to develop open equipment standards. Accordingly, the Commission has adopted a regulatory regime to implement Section 629's requirements that causes minimum intrusion into the commercial marketplace.

G. Report to Congress

The Commission will send a copy of the *Report and Order*, including this FRFA, in a report to Congress pursuant to the Small Business Regulatory Enforcement Fairness Act of 1996, 5 U.S.C. § 801(a)(1)(A). A copy of the *Report and Order* and this FRFA (or a copy thereof) will also be published in the Federal Register, *see* 5 U.S.C. § 604(b), and will be sent to the Chief Counsel for Advocacy of the Small Business Administration.

Statement from FCC Chairman William E. Kennard on
TV Set Top Boxes and Navigation Devices

The Commission's action today ensures that consumers will be able to purchase their television set top boxes and other equipment from retail stores starting in July 2000. This will create a huge market for the manufacture, distribution and sale of these devices. It will enhance innovation and bring consumers better prices. Our decision today is another key part of the larger goal of creating competition across the spectrum of telecommunications services.

Congress had the foresight to make it the Commission's statutory obligation to ensure that set top boxes and other navigation devices be made commercially available. By requiring that cable operators separate security functions from non-security functions for cable set top boxes by July 1, 2000, we have ensured that consumers will be able to purchase these cable boxes from their local retailers by that date.

I appreciate the commitment of more than half a dozen of the largest multiple system operators and General Instruments and Scientific Atlanta to make security modules available by September 2000. Although the Commission has pursued a slightly more aggressive deadline, I have every confidence that this deadline will be met. Indeed, our decision today is premised on the commitments that the multiple system operators and manufacturers have made. While some may argue that the Commission should have chosen a more aggressive effective date, I am persuaded that July 2000 is the most feasible and realistic timeframe within which to make our rules effective. We will examine carefully the progress reports to be filed with the Commission every six months to track progress towards the July 1, 2000 deadline.

I support the decision to establish a prohibition on the provision of integrated cable boxes as of January 1, 2005. While I appreciate the concerns raised by the cable industry and the manufacturers that such a prohibition is unnecessary, ultimately, I believe that a sunset is appropriate to ensure that the Commission satisfies the statutory mandate that cable boxes be commercially available and I believe that the January 1, 2005 date will provide for a reasonable transition period.

We must recognize that this item is the beginning of a long process. There are many questions and issues that will arise during the development of new set top boxes and other navigation devices that the Commission may need to address. Many of these issues were raised late in this proceeding and are better addressed with the benefit of a full record, but that fact does not diminish their importance. For example, I am very concerned that a variety of electronic programming guides be made available to the consumer. While it is at least clear that the equipment used by these electronic programming guides is covered by Section 629, I believe that there may be additional questions under Section 629 about the availability of these services to the ultimate consumer. As the transition evolves, I will be watching this issue carefully and I invite further discussion on the need for Commission action.

Lastly, another issue that is important to me is that any new navigation devices be able to interact with digital televisions and that these devices not impede the development of digital television in any way. The introduction of digital television is one of the most important initiatives for the Commission and I am monitoring the transition closely to ensure that American consumers receive the full benefits of the digital transition.

Separate Statement
of
Commissioner Susan Ness

Re: Commercial Availability of Navigation Devices

Today we implement Section 629, one of the most pro-consumer, pro-competitive provisions of the Telecom Act. I believe development of a retail market for the devices covered by the provision may significantly improve the competitiveness and accessibility of broadband networks.

The "set-top device" that traditionally has consisted of a cable decoder and tuner is rapidly becoming a network computer with far greater capability and flexibility. Section 629 is far-sighted and requires the Commission to ensure that a range of consumer equipment -- including new types of set-top devices -- will be available in retail stores and through distributors other than program service providers. The legislative history makes clear that the Congress recognized consumer benefits that flowed from deregulation of telephone customer premises equipment (CPE) and enacted this provision to achieve the same ends with devices that connect to cable systems and other multichannel video programming services.

I support the item fully. I write separately to underscore some of the practical concerns that may affect the degree to which a robust market for devices covered by the statute will develop, and to caution that we may need to take further action if retail markets do not begin to emerge as envisioned by the statute.

No one disputes that separation of the security element from these devices is the centerpiece of effective implementation of Section 629. I am sensitive to the need for cable operators and other multichannel video program distributors to ensure that only authorized users have access to their services. The commenters have fully discussed whether security can be maintained if the security element is separate, and we have determined that it can be.

The second issue regarding security is the time frame in which new modular security "Point of Deployment" elements ("PODs") will be available. We are requiring cable operators to meet a July 1, 2000 deadline for POD availability. To some, this date may seem unduly far off, but we believe it is as aggressive as we can reasonably make it, bearing in mind that the POD development process is in its very early stages. We have also targeted 2005 to phase out distribution of any device that contains embedded security, while scheduling an assessment of that target when PODs become available.

We have, in other contexts, provided a phase out of equipment. For example, in the spectrum refarming decision (Report and Order and Further Notice of Proposed Rulemaking, 10 FCC Rcd 10076 (1995)), in order to make a more efficient use of the spectrum, we ruled that only equipment operating with new specifications would be permitted after a transition period. And again, when the Part 15 regulations were changed in 1989 (First Report and Order, 4 FCC Rcd 3493, corrected, 4 FCC Rcd 5404 (1989)), we adopted several transitional rules for various types of equipment, to provide clear guidance to manufacturers and users of the eventual changeover to new equipment. This is also the standard practice in Part 68 rule changes.

Let me be clear. The phase-out of integrated devices does not mean that cable operators will be unable to lease or sell devices to their subscribers. As the statute provides, they may continue to make available such devices

-- but those devices simply will have PODs in lieu of integrated security. Cable operators will be full and fair competitors in the new marketplace for set-top devices.

I believe we should also consider whether and to what extent these devices will work with new DTV receivers. I have been closely following the announcements by certain cable operators that they had placed orders for devices that would pass through only certain of the ATSC formats. I have also become concerned about the delay in the adoption of an industry-generated standard for the IEEE 1394 "firewire" which will connect DTV receivers to an array of digital peripheral devices. Development of the retail market for set-top devices would be bolstered by consumer confidence that there are available a variety of devices capable of decoding the ATSC formats compatible with their TVs and more fundamentally, that consumers are confident that the digital devices they buy will connect and distribute digital information between them. The record on this issue, however, is not fully developed in this proceeding, so we have stopped short of requiring compatibility.

It may not be sufficient to rely on the open-ended time frame for adoption of the 1394 "firewire" standard and it may not be sufficient to hope that the devices will work with all ATSC formats. If it becomes apparent that the goals of Section 629 are not being fulfilled because of consumer confusion over DTV compatibility, I would hope and expect the Commission would revisit the matter.

Achieving the goals of Section 629 will mean that consumers will have more choices and more reasonable prices. Unbundling of our telephone networks has reaped benefits for consumers. Entrepreneurs with new ideas and new products have found a way to enter and bring these products to market.

Standards for navigation devices have been developed or are being developed in the marketplace. The industries involved have assured us they are committed to making sure that navigation devices will be available for consumers at retail from unaffiliated manufacturers, retailers and other vendors. We have decided to fashion our rules so as to allow the industries to continue their work. We are giving the market the opportunity to fulfill the goals of Section 629 with minimal government regulation.

However, we fully intend to monitor the market. We fully intend to monitor the status reports provided by the industries. If the goals of the statute are not being realized -- if navigation devices are not commercially available -- I expect the Commission to revisit our rules and make the appropriate changes.

This item is based on trust. We are trusting the cable industry to move ahead on POD availability according to the schedule they have provided. We are trusting that retailers will provide sufficient information to consumers about new choices as they become available and that consumers will not face obstacles in the process of selecting new devices to work with their multichannel video programming services. We are trusting that open cable standards will be suitable or adaptable to the needs of other digital service providers outside of the cable arena. Most of all, we are trusting that the industries will all continue to work expeditiously and effectively to adopt voluntary standards to ensure that all of the devices contemplated by the statute will work together. Given the steps we have taken today, I am confident that our trust is well placed and I look forward to the opening of new markets and the introduction of new products and services, for the benefit of consumers.

STATEMENT OF
COMMISSIONER MICHAEL K. POWELL
DISSENTING IN PART

Re: Commercial Availability of Navigation Devices, CS Docket No. 97-80

In this *Report and Order*, the Commission adopts rules to implement section 629 of the Communications Act. By and large, these rules are directly on target with the purpose of section 629, to "assure the commercial availability" of converter boxes and other equipment used to obtain multichannel video services from providers other than the programming distributor. For this reason, I support those portions of the decision that require operators to make technical interface information available and to make available a separated security device that will allow consumers to use commercially available equipment while still allowing the operator to protect itself against the theft of its services.

I respectfully dissent, however, from the portion of the Commission's decision that, to my mind, veers off target. Specifically, I disagree with my colleagues' decision to prevent multichannel video providers from offering set-top boxes that integrate security within the box (as opposed to a separable "point of deployment" or "POD" element) after the year 2005. I see nothing in the statute that requires this result and no persuasive policy reason to interfere with the market in this way.

First, let me address the statutory point. Section 629 clearly requires the Commission to "assure the commercial availability" of set-top boxes.[1] It does not mandate in any way, shape or form that we guarantee that retail distribution win out over operator supplied alternatives or that we tip the balance in their favor. Indeed, the statute squarely commands that "[s]uch regulations shall not prohibit any multichannel video programming distributor from also offering converter boxes."[2]

The real purpose of section 629 was to ensure that consumers are not hostages to their cable operators and can go elsewhere, if they choose, to obtain set-top equipment. As set forth in the conference report, "[o]ne purpose of this section is to help ensure that consumers are not forced to purchase or lease a specific, proprietary converter box…from the cable system or network operator."[3] We accomplish that objective by mandating that separate security pods are available. This allows commercial manufacturers to produce boxes without being inhibited by security specifications. And, it does so in a way that comports with the other provision of section 629 requiring the Commission to design rules that do not jeopardize the security of the multichannel system. It gives the operator control of the vital security component that they must have and that the statute mandates.[4] Both retailers and cable companies agreed on this reasonable compromise.

The Commission, however, has not stopped there. It has gone beyond the target established in the statute and adopted a regulation that interferes with market choices for equipment design. I fear that this decision may in fact contradict another goal of section 629, to spur innovation and competition. The legislative history of section 629

[1] 47 U.S.C. § 549(a). Section 629 was adopted as part of the Telecommunications Act of 1996. Pub. L. No. 104-104, 110 Stat. 56 (1996).

[2] 47 U.S.C. § 549(a).

[3] Joint Explanatory Statement of the Committee of Conference, S. Conf. Rep. 104-230, 104th Cong., 2d Sess. at 181 (1996) (Conference Report).

[4] 47 U.S.C. § 549(b) ("The Commission shall not prescribe regulations…which would jeopardize security of…services offered over multichannel video programming systems, or impede the legal rights of a provider of such services to prevent theft of service.").

specifically states that "[t]he conferees intend that the Commission avoid actions which could have the effect of freezing or chilling the development of new technologies and services."[5] The record developed in this case includes evidence that potential competitors to incumbent cable providers are developing integrated set-top boxes with unique functionalities as a way to enter the market.[6] The decision of the majority today may well inhibit that development.

The question we must ask is why? The decision to ban eventually the availability of integrated boxes rests on the very speculative conclusion that integrated boxes are an "obstacle to the functioning of a fully competitive market for navigation devices by impeding consumers from switching to devices that become available through retail outlets."[7] We have not been asked to ensure that consumers switch to devices that become available through retail, only that they have that choice.

Quite apart from my statutory concern, I am further perplexed by the majority's divergence, without explanation, from our own instructive prior precedent. In the *Equipment Compatibility Reconsideration Order*, we stated with respect to the decoder interface standard: "we see no need to preclude cable operators from also incorporating signal access control functions in multi-function component devices…Our decision ensures that subscribers will have several competitive alternatives in selecting component descrambler equipment."[8]

The decision today sways from this judgment, without full explanation. It is too flip to suggest that this is just a different proceeding and a different provision. At bottom, the point of that prior decision was that ensuring customers have choice and then letting those choices govern the market is the sound way to go. It was there, it is here.

As Senator Burns noted in a letter to this Commission, our conclusion should allow "consumers to have the benefit of choice and of any lower prices that cost efficiencies of integrated equipment would generate."[9] I fear that the majority decision today denies a cost effective choice for consumers. It is quite plausible to me that the "impediment" to switching to retail may in fact be a consumer preference for distributor-supplied integrated boxes! I see no reason to attempt to control consumer preferences.

Many consumers may not elect to purchase boxes from their local retailer. They may find it inconvenient to have to hike out, plunk down hundreds of dollars for a box, and then get a security pod from their operator. Others may conclude that it is more prudent to lease a box from their provider rather than make an investment in a box, because of rapidly changing technology. These consumers should not be forced by regulation to lease a multi-component box (probably with other features such as VCR and DVD capability) at a higher price, simply because we, in our wisdom, decided "availability" should mean nudging consumers into stores and, at the outset, categorizing their possible preference for integration an "impediment" to retail availability. The market should be allowed to play this out.

In my opinion, fears that cable companies will obstruct or slow roll separate security devices into retail outlets is well addressed without banning integrated boxes. The rules preclude service providers from contractually or otherwise limiting the addition of features or functions to devices made available to retail outlets. And, the statute itself prevents cross-subsidization.

I believe these measures more than adequately address "anticompetitive fears." We talk so glowingly about letting consumers make choices in free markets, but, time and again, we cannot quite bring ourselves to trust either those consumers or the market. Because I am willing to trust the marketplace, I must respectfully dissent.

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[5] Conference Report, supra note 3, at 181.

[6] See Ameritech ex parte statement (June 4, 1998).

[7] ¶ 69

[8] Equipment Compatibility Reconsideration Order, FCC Rcd. 4121, 4127 ¶ 38 (1996).

[9] Letter from Senator Conrad Burns, Chairman, Subcommittee on Communications, Senate Committee on Commerce, Science and Transportation, to William E. Kennard, Chairman, Federal Communications Commission (June 4, 1998).