

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 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

¹⁴⁷Letter 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).

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

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

is already offering consumers the benefits that derive from competition. In the DBS environment, there are three service providers¹⁵⁰ and at least ten equipment manufacturers competing to provide programming and 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

¹⁵⁰Due 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).

¹⁵¹Hardware 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>>.

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

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

¹⁵⁴The 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.

¹⁵⁵The 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.

¹⁵⁶DBS 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.

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 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

¹⁵⁷The 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).

¹⁵⁸NCTA Comments at 29.

¹⁵⁹NCTA Reply at 19.

¹⁶⁰TW Comments at 30.

¹⁶¹NCTA Reply at 19.

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

¹⁶³Circuit 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").

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

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.

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

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

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

¹⁶⁷The 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).

¹⁶⁸See *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).

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 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

¹⁶⁹*NPRM*, 12 FCC Rcd at 5667.

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

¹⁷¹47 U.S.C. § 544a(c)(2)(D).

¹⁷²47 U.S.C. § 544a(c)(1), (2).

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 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

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

¹⁷⁴47 U.S.C. § 549(b).

¹⁷⁵GTE Comments at 8.

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

¹⁷⁷Viacom Comments at 16.

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 provide separated security equipment should 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 NCTA¹⁸⁰ regarding the time believed to be needed to complete this process:

¹⁷⁸BSA 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.

¹⁷⁹Among 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.

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

Digital Security Module Interface

Draft specification document for member review and discussion	7/1/98
Draft specification document for vendor review and discussion	7/15/98
Interim specification document for final review and approval by members and vendors	10/1/98
Recommended specification made publicly available and released to SCTE for adoption as a US standard	12/98

Digital Security Module Specification

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 Schedule¹⁸¹

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	1/1/2000
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

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

¹⁸²Letter 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).

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 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

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

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

¹⁸⁵See, 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").

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

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.

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

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).

¹⁸⁸47 U.S.C. § 549(a).

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 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

¹⁸⁹47 C.F.R. § 76.923.

¹⁹⁰47 U.S.C. § 549(a).

¹⁹¹47 U.S.C. § 549(f).

¹⁹²Several 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.

¹⁹³47 C.F.R. § 76.923(a)(2).

¹⁹⁴47 U.S.C. § 549(f).

¹⁹⁵*DIRECTV Comments* at 21.

¹⁹⁶See *TIA Comments* at 14; see also *Cellular Vision 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).

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 environment¹⁹⁷ 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 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

¹⁹⁷104 Cong. Rec. H1161 (Feb 1, 1996).

¹⁹⁸One 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.

¹⁹⁹47 U.S.C. § 543(b)(3). See also 47 C.F.R. § 76.923.

²⁰⁰47 C.F.R. § 76.923.

²⁰¹Cross-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).

²⁰²See 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).

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:

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

²⁰⁴GTE Comments at 9.

²⁰⁵47 U.S.C. § 623(a)(2); 47 C.F.R. § 76.905.

²⁰⁶142 Cong. Rec. S700 (daily ed. Feb. 1, 1996).

²⁰⁷NCTA Comments at 40.

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

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 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.

²⁰⁹Circuit City Comments at 35.

²¹⁰Tandy Comments at 15; CEMA Comments at 12.

²¹¹Tandy Comments at 15.

²¹²CERC Comments at 36; DIRECTV at 19.

²¹³DIRECTV Comments at 21; CERC Comments at 36.

²¹⁴The 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.

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 marketplace²¹⁶ 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.

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

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

²¹⁶CellularVision Comments at 11; Motorola Comments at 20.

²¹⁷Commenters 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.

²¹⁸As 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.

²¹⁹US West Comments at 17.

²²⁰47 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).

²²¹Tandy Comments at 16.

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

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

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

²²³47 U.S.C. § 549(c).

²²⁴*NPRM*, 12 FCC Rcd at 5662.

²²⁵We 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).

²²⁶47 C.F.R. § 76.7.

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 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

²²⁷See 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).

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

²²⁹Ameritech Comments at 17.

²³⁰Circuit City Comments at 36.

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

²³²Cellular 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.

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

²³⁴Circuit City Comments at 36.

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

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.

²³⁵47 U.S.C. § 549(e).

²³⁶*NPRM*, 12 FCC Rcd at 5673.

²³⁷Section 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.

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 76.1203

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.

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.

²³⁸47 U.S.C. § 549(e).

²³⁹See 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).

²⁴¹See *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).

²⁴²See *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.

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 outlets²⁴⁶ 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 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

²⁴⁴CE 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.

²⁴⁵1997 Report, 13 FCC Rcd at 1108.

²⁴⁶*Id.* at 1039.

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

²⁴⁸47 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 interoperability may continue to be necessary. CEMA Comments at 15.

²⁴⁹US West Comments at 19.

²⁵⁰GI Comments at 89.

²⁵¹CERC Reply at 56; ITI Comments at 29.

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

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

²⁵²ABC Reply at 5.

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

²⁵⁴Viacom Comments at 23-24.

²⁵⁵Starsight 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.

²⁵⁷47 U.S.C. § 549(a).

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

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

²⁵⁸This 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.

²⁵⁹We 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).

²⁶⁰The 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 Docket No. 87-268, 10 FCC Rcd 10504 at ¶ 79 (1995).

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 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

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

²⁶²See 76 C.F.R. §§ 68.100-110.

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 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

²⁶³In 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; see 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).

²⁶⁴See ¶ 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.

²⁶⁵The 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).

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 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

²⁶⁶Our 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.

²⁶⁸*Id.*

²⁶⁹CHTC 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.