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

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

NOTICE OF PROPOSED RULE MAKING

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By the Commission:

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I. INTRODUCTION AND BACKGROUND

A. Statutory Objectives and Requirements

1. In this proceeding we seek comment on proposals to implement Section 629 of the Communications Act, entitled "Competitive Availability of Navigation Devices."[1] Section 629, which was added to the Communications Act as part of the Telecommunications Act of 1996 (the "1996 Act"),[2] 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.[3]

Rules assuring commercial availability must be developed "in consultation with appropriate industry standard-setting organizations . . . ."[4] In addition, our rules "shall not . . 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."[5]

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[1] 47 U.S.C. §549. The specific language of Section 629 is contained in Appendix B.

[2] Pub. L. 104-104, 110 Stat. 56 (1996).

[3] 47 U.S.C. §549(a).

[4] *Id.*

[5] 47 U.S.C. §549(b).

2. Section 629 does not prohibit service providers from offering equipment to their subscribers. Multichannel video programming distributors ("MVPDs") 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.[6] The rules adopted under Section 629 shall cease to apply when the Commission determines that the markets involved are competitive and that elimination of the regulations would be in the public interest.[7] Finally, nothing in the section 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."[8]

3. This section requires the Commission to "assure" that "navigation devices" or customer premises equipment ("CPE"), used in conjunction with multichannel video programming distribution, are commercially available. Its purpose is to provide consumers with the benefits of competition in the manufacture and sale of such devices. These devices, such as cable television set-top boxes or direct broadcast satellite receivers, can be separated from the basic video distribution system but are necessary to the receipt, processing, or display of the underlying communications service involved. In the House Report, Congress 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."[9] Consequently, the overarching goal of this proceeding will be to assure competition in the availability of set-top boxes and other CPE.

4. At the same time, Section 629 "specifically recognizes that cable and other telecommunications system operators have a valid interest, which the Commission should continue to protect, in system or signal security and in preventing theft of service . . . and does not authorize the Commission to adopt regulations which would jeopardize the security of a telecommunications system."[10] Accordingly, we seek to adopt rules that will 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. We also recognize that in exercising the existing authority we possess to adopt rules, the 1996 Act and its legislative history indicate a preference that standards be market driven and that technical innovation not be impeded. Accordingly, in this Notice of Proposed Rulemaking ("*Notice*") we seek comment on a number of proposals that incorporate the basic policies of Section 629 and

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[6] 47 U.S.C. §549(a).

[7] 47 U.S.C. §549(e).

[8] 47 U.S.C. §549(f).

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

[10] *Id.*

that begin the process of implementing its provisions.[11]

B. Current Distribution Models

5. The multichannel video programming distribution systems that are subject to Section 629 -- including at least cable television, direct broadcast satellite, and MMDS systems -- all typically consist of a signal processing center, a transmission network from that facility to user locations, and CPE, such as a set-top box, that controls access to the network and specific communications on it, and displays or stores picture, sound, and data information. In addition, all MVPDs allow customers to interconnect their television receivers, radio receivers, and video cassette recorders to receive and to display video programming.

6. The MVPDs involved, however, typically follow different models with respect to the ownership and commercial distribution of certain types of equipment. In the cable delivery model -- which MMDS operators use as well -- equipment that controls signal security to permit only those who subscribe to receive service has been, for the most part, under the sole control of the service provider and has been available only as part of the overall service offered, generally on a lease basis. Further, home signal security control set-top boxes[12] -- commonly referred to as descramblers -- are often combined with other control equipment, such as signal tuners, and are designed to be operated by remote controls.[13] Combined, the control equipment constitutes a "converter box," that is commonly found attached to the television set in a subscriber's home. Where cable television rate regulation is in place, set-top boxes or converters provided by the system operator that are used in the receipt of basic cable service must be provided to subscribers pursuant to charges that are based on cost and are "unbundled" from cable service charges.

7. In contrast to the cable delivery model, in the DBS and satellite field more generally, retail purchase and customer ownership of CPE, including signal decoding equipment, has been

[11] The Commission's *Notice of Proposed Rulemaking in CS Docket 95-184* (the "*Inside Wiring Notice*"), 11 FCC Rcd 2747 (1995), which was issued prior to passage of the 1996 Act, also addressed issues concerning cable television customer premises equipment, as well as cable television and telephone inside wiring. To the extent that the comments submitted in the *Inside Wiring Notice* address issues that bear on a Commission determination on implementation of Section 629, these comments will be made a part of the present Docket and the proposals that overlap with our implementation of Section 629 will be resolved herein.

[12] Security control devices such as traps and interdiction taps need not be located inside the subscriber's premises. Generally, however, home set-top boxes offer the MVPD much more flexibility.

[13] Remote control devices are hand held units used by subscribers to change programming channels on their television sets.

the norm for most service providers.[14] Although customers often purchase their own DBS equipment, that equipment functions only with a single service provider and that provider may defray some of the initial cost of the equipment through a purchase price rebate. In the DBS field, the service provider itself typically has developed the basic technical design of the equipment, controls licensing of the technology, and determines who manufactures the equipment. Because there is no direct electrical connection between the customer and the service provider, no issue is present as to the equipment used harming the network. And because DBS is a relatively new entrant in the MVPD field, it has been able to incorporate more recent digital security techniques.

8. There is a third model -- not generally used by MVPDs -- for allowing consumer access to CPE: that used in the telephone industry. Indeed, it seems likely that many of its Congressional sponsors viewed Section 629 as the application of the Commission's telephone industry CPE model to cable and other MVPDs.[15] This model is one in which, by rule, CPE must be permitted to be attached to the network, may not be provided on a bundled or subsidized basis by the service provider, involves interfaces and transmission systems that are to some extent standardized so that equipment is portable from provider to provider and, because individual transmission lines and switched service is involved, does not have scrambling or conditional access circuitry built into the CPE. Entities providing telephone service at one time maintained ownership and control over both the telephone distribution network and the basic telephone instrument and other CPE. Customer CPE ownership, however, became an option beginning in the late 1960s as a consequence of decisions by the Commission and the courts.[16]

9. The telephone model had its genesis in the Commission's *Carterfone* decision.[17] Telephone companies had argued to the Commission that a device known as the Carterfone, designed to connect telephones with mobile radio systems, should be considered a prohibited interconnecting device under the companies' existing tariff. The Commission found that "the Carterfone fills a need and that it does not adversely affect the telephone system," and held that "the tariff is unreasonable in that it prohibits the use of interconnecting devices which do not

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[14] While the norm is for consumers to purchase their own equipment from retail outlets this is not invariably the case. The Primestar DBS service, that requires use of a larger antenna, is generally offered on a bundled basis with Primestar retaining ownership of the dish antenna and with both the reception equipment and specific video services taken paid for on a monthly fee basis.

[15] *See* National Communication Infrastructure, Hearing Before the Subcommittee on Telecommunications and Finance, 103d Cong., 2d Sess. 353 (Feb. 1, 1994).

[16] *See, e.g., 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).

[17] *Carterfone*, 13 FCC 2d 420.

adversely affect the telephone system."[18] Following this decision, the Commission progressively adopted regulations that ensured that telephone customers could freely connect CPE equipment to the telephone network so long as the connections did not cause harm.[19]

10. Although there are technical, marketplace, and regulatory differences between the telephone facilities and MVPD facilities that preclude a literal translation of this model into the MVPD context that is governed by Section 629, we nevertheless believe it provides a useful starting point. We note, however, that there are at least three important differences that need to be taken into account. First, when a customer attaches equipment to the telephone network, there are generally few, if any, security issues relating to the intellectual property distributed.[20] Second, in the telephone context, there is little potential for interference with other network users. In contrast, attaching customer equipment to cable and other MVPD networks raises significant concerns about signal security, as well as the potential for harmful interference both to over-the-air services and to the network itself. Unlike narrowband telephone signals, MVPD broadband signals used for video service will likely span the radiofrequency ("RF") spectrum, thus creating an interference potential to over-the-air users licensed to certain frequencies. And third, at the time when customer ownership of telephone CPE became an option, the telephone network was effectively a national monopoly, which already had a well developed set of technical standards incorporated throughout the network.[21] As a result, CPE was generally compatible with the telephone network. Contrasting the telephone model and those currently used by MVPDs -- the cable and DBS models -- helps to highlight the important and difficult issues the Commission faces in attempting to craft rules to implement Section 629.

C. Overview of Proposals

11. Recognizing that a complete resolution of the task assigned to the Commission in Section 629 will require an extended consideration of a number of complex technical and

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[18] *Id.* at 423.

[19] Beginning with devices such as answering machines, toll restrictors, and data modems, then expanding to telephones, key systems, and private business exchanges, these policies were codified in Part 68 of the Commission's rules. The Commission adopted specific equipment standards relating to the physical connection of CPE to the network ("plug and jack" standards) and established a program of equipment certification. Over succeeding years, the program has been expanded to include other equipment. Part 68 has the objective of preventing degradation of the telephone network caused by certain types of defined harms. Conduct prohibited under Part 68 includes distribution or connection of unregistered equipment to the network, as well as the manufacture, distribution, or connection of non-compliant equipment.

[20] Telephone service is provided by a dedicated line (twisted pair) and controlled at the switching center, whereas MVPDs use a common medium (coaxial cable or optical fiber or over-the-air transmissions) to provide service, thus requiring that control be in the customers' homes.

[21] In contrast, beyond the ability to deliver signals capable of basic National Television System Committee (NTSC) display, MVPDs have no universal standards.

economic issues relating to the markets involved, we plan to commence the process by proposing rules in a number of major areas. We propose at the outset, as a core requirement, that there be a right to attach. We propose to adopt the basic principle that equipment that is not part of a MVPD's network distribution plant may be acquired by subscribers and attached to the network, limited only by the requirement that any such equipment attached to a MVPD's network not cause it any harm.[22] This basic principle parallels that adopted in the telephone context by the Commission's *Carterfone* and subsequent decisions[23] -- devices that do not adversely affect the network and are privately beneficial without being publicly detrimental, may be attached to the network. MVPD requirements and protections regarding harm to the network would be needed in conjunction with any attachment right. We further seek comment and information regarding portability and interoperability issues -- that is, the ability of equipment to work with networks of other similar MVPD providers in different geographic locations or to work interchangeably with networks of different types of MVPD providers -- that we may need to address or that may be the focus of subsequent phases of this proceeding. We seek comment on the definition of commercial availability and on equipment bundling and subsidy issues. Finally, we also seek comment on protection of the means and devices by which MVPDs maintain security -- that is, how MVPDs control access to the programming they distribute. We also seek information regarding separation of security from nonsecurity features of CPE both to protect security features and to facilitate the broader availability of equipment performing nonsecurity functions. Separate provisions of the Communications Act make it a criminal offense to intercept or receive or assist in intercepting or receiving any communications service offered over a cable system, unless specifically authorized to do so by a cable operator "or as may otherwise be specifically authorized by law." Similar restrictions are applicable to radio communications more generally. To protect the legitimate security interests of MVPDs, we would not interpret Section 629 or any of the rules adopted to implement it as "authorizing" equipment designed to pirate signals to be manufactured, imported, or sold. All existing legal restrictions on the use or sale of equipment intended to facilitate service theft would be maintained.

12. In seeking to develop a policy framework for the implementation of Section 629, we believe that information regarding the current state of the market for navigation devices will play a useful role. Accordingly, we seek data on the marketplace today with respect to both analog and digital CPE. We seek data about the different types of CPE devices currently used by MVPD subscribers. Also important is collection of data regarding the cost of manufacturing such equipment, its anticipated life cycle, and how such equipment is obtained by subscribers. We

[22] Technical harm to a network can be divided into two categories: (1) physical harm, that can occur when high voltage or current is injected into the system by defective or poor equipment; and (2) interference, which can result from poorly designed or incompatible equipment being attached to the network. Generally, in a cable system, interference upstream (i.e., interference to signals going back to the headend) can be controlled with filters and other equipment installed at nodal sites or amplifier housings. However, since such a broad spectrum of signals must pass through to other subscribers further downstream from the interference source, the control of downstream interference is much more difficult.

[23] *See* n. 16, *supra*.

also seek any other information about the current marketplace for CPE that will assist the Commission in carrying out the goals of Section 629. In the same vein, we seek information about what role private standard setting bodies have played, if any, in the current CPE marketplace and may play in the future. We are especially interested in whether there are any past voluntary standard setting proceedings that could be used as a model for this proceeding.

II. STATUTORY POLICIES AND REQUIREMENTS

A. Introduction

13. The core requirement of Section 629 is that navigation equipment used in conjunction with multichannel video programming distribution be commercially available through unaffiliated outlets. Before turning to specific proposals to implement this policy, we seek comment on a variety of issues relating to the statutory language and policies incorporated in Section 629. We seek comment on the equipment and service providers that are covered, the meaning of commercial availability, the extent of affiliation between the service providers and retail outlets permitted if compliance is to be achieved, and on industry standard-setting issues. We seek comment on the restrictions on regulation to avoid jeopardizing system security. We also seek comment on the scope and requirements of the antisubsidy provision; the waiver process for the development or introduction of new services, technologies, and products; and on the regulatory "sunset" at the point where sufficient competition is present. We then, in the next section of the *Notice*, seek comment on proposals to implement these provisions.

B. Entities Covered by Section 629

14. Section 629 is applicable by its terms to equipment used to access services offered over multichannel video programming systems. Although the term "multichannel video programming system" is not defined, we note that 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 . . . ."[24] We seek comment on whether a multichannel video programming system is a system operated by an MVPD. Section 629 appears to be jurisdictionally broad in terms of the entities to which it applies. It appears to bring within its coverage equipment used to access a wide range of video distribution systems, including cable television, high and medium power DBS and satellite service (C-band, Ku band FSS, and Ku band BSS), satellite master antenna systems, wireless cable (multichannel multipoint distribution service, instructional television fixed service, and local multipoint distribution service) systems,[25]

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[24] 47 U.S.C. §522(13).

[25] Multichannel multipoint distribution service (MMDS) is a one-way video delivery system rendered on microwave frequencies from a fixed station transmitting to multiple receiving facilities. Each subscriber must obtain the microwave reception equipment in order to receive the service. Instructional television fixed service (ITFS) is

multichannel digital television broadcast stations, and, as discussed below, possibly wireline multichannel programming distributors on common carrier systems. We seek comment on this conclusion and on the discretion the Commission may have to differentiate between the various systems for providing multichannel video programming based on the technologies used, the competitiveness of the specific markets involved, and the maturity of the technology, as well as its capability to function subject to a common set of rules. To the extent a separation exists between control or ownership of the distribution facility and the entity providing the programming to the consumer, we seek comment on whether, in order to meet the requirements of Section 629, the rules should apply only to the entity that has a direct relationship with the ultimate consumer, just to the facilities' owner, or to the facilities' owner and the entity providing the programming to the consumer.

15. Section 302 of the 1996 Act adds a new Section 653 to the Communications Act, which creates a potential new category of the open video system ("OVS") operator. Section 653(c)(1), however, provides that the provisions of Part III of Title VI of the Communications Act, which includes Section 629, does not apply "to any operator of an open video system for which the Commission has approved a certification under this section."[26] It appears, therefore, that requirements found solely in Section 629 do not apply to OVS operators. We seek comment on this conclusion, and on whether a different conclusion is warranted with respect to programming distributors making use of an OVS system.

C. Scope of Equipment Covered

16. Section 629 by its terms applies to "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. . . ."[27] Thus, it appears that the coverage of Section 629 is broad in terms of the kinds of equipment to which it applies.[28] We seek comment on issues associated with the scope of the equipment covered. To what equipment should any rules apply? What does it mean to "access" programming and other services? What, if any, discretion does the Commission have in limiting the application of any rules adopted to certain types of equipment or to establish priorities as to how regulation can best be applied?

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a microwave station operated by an educational organization and used primarily for the transmission of visual and aural instructional, cultural, and other types of educational material to one or more fixed receiving locations. Local multipoint distribution service (LMDS) is a one- or two-way point-to-multipoint service capable of delivering video programming to fixed receivers.

[26] 47 U.S.C. §573(c)(1).

[27] 47 U.S.C. §549(a).

[28] We recognize that the Conference Report states that the scope of the regulations are narrowed to include only equipment used to access services provided by multichannel video programming distributors. S. Conf. Rep. 104-230, 104th Cong., 2d Sess. 181 (1996). This nevertheless appears to be broad in scope.

17. Some CPE does not appear to require Commission action to assure that its availability fulfills the mandate of Section 629. For example, for video programming viewers, the primary device to access video programming is the television receiver or display. Video cassette recorders are another common device consumers use to access video programming. Such devices have historically been available for retail purchase and the problems associated with coordinating distribution networks and reception and recording equipment (frequencies, standard channels, common modulation or transmission schemes) have been resolved without undue difficulty through a combination of private and governmental standards.[29] Computers, although not yet in common use to receive video programming, are also readily available through retail channels as are computer modems and basic telephones. Such devices tend to be both portable and interoperable.

18. In addition to the above, other devices, existing or under development, might be within the scope of the statute:

-- cable television converters
-- cable television descrambler/security boxes
-- cable television addressable converters
-- satellite integrated receiver decoders
-- MMDS/ITFS receiver/digital signal converter/tuners (down converters)
-- electronic program guides or channel navigator (e.g., *Starsight*)
-- program control and blocking devices (e.g., "v-chip" devices)
-- video game controllers used with an MVPD system
-- modems (modulators/demodulators) or digital or data signal receivers
-- DBS, MMDS, or TVBS antennas.
-- in-home wiring used with an MVPD system
-- "network interface modules," "residential gateways," or other electronic devices performing some of the same security or access control functions as devices listed above but that are physically located at the point of entry (either outside or inside) the consumer's residence

19. Within this universe of devices there is considerable variation as to the present commercial availability, the size and state of development of the potential market involved, and the difficulties of changing existing market practices to increase commercial availability. We seek specific data and information on the current commercial availability of those devices within the possible scope of Section 629. We are aware that the devices in question perform a variety of functions, including reception, transmission, display, tuning, security, storage, translation, and return transmissions. The various functions can also be packaged or bundled in different

[29] *See, e.g.*, 47 C.F.R. §15.117 (TV broadcast receivers); 47 C.F.R. §15.118 (cable ready consumer electronic equipment); 47 C.F.R. §73.603 (numerical and frequency designation of television channels); 47 C.F.R. §76.605(a)(2) and EIA IS-132, May 1994 (cable television channel identification plan).

combinations. Accordingly, we also seek comment on whether we should attempt to distinguish between reception and display devices, access control and security devices, and upstream transmission devices and first address those devices presenting the least difficult security and standardization problems. Should we address devices used in the DBS and cable television industries first because they constitute the largest market involved? Should different types of MVPDs, i.e. cable and DBS, be examined separately? Should we first address emergent markets such as cable modems, in which a significant embedded base of equipment does not yet exist?

D. Commercial Availability

20. Section 629 requires that we adopt rules to assure the "commercial availability" of navigation equipment. The Conference Report accompanying the 1996 Act states that one purpose of this section is "to help ensure that consumers are not forced to purchase or lease a specific, proprietary converter box, interactive device or other equipment from the cable system or network operator."[30] We seek comment on how to define "commercial availability" and the scope of this requirement. The basic issue here is the degree of separation that Congress intended to mandate between the video service provider and the equipment manufacturers and retailers. Several different levels of separation could each conceivably meet the statutory requirement between the video service provider and the equipment manufacturers and retailers. That is, to what extent may the retail outlet involved function as a practical matter as an agent for the service provider and to what extent may the service provider retain control over or the ability to influence technology and manufacture of the products involved?

21. Several examples from current distribution models in the satellite field may help to illustrate these issues. Primestar satellite service receivers are advertised and are available through some electronic retail outlets but those stores appear to function largely as an agent for Primestar and have a contractual relationship with it. Primestar is at somewhat of a disadvantage in the satellite field because its service requires a larger receiver. Primestar has sought to overcome this disadvantage by installation service and receiver rental policies that avoid large upfront investments by consumers. Thus, where Primestar's service is sold through retail outlets, this is more a point of contact for leasing rather than off-the-shelf availability of the equipment. Nevertheless the retailer is permitted to participate in the transaction and face-to-face competition in the store between the various satellite services is facilitated. We seek comment on the extent to which this form of equipment availability satisfies the "commercial availability" standard.

22. A second example from the satellite field, involving the development and marketing of integrated receiver decoders for use in connection with larger home satellite dishes, is described in some detail in our *Report in Gen. Docket 86-336*[31] and *Second Report in Gen.*

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

[31] 2 FCC Rcd 1669 (1987).

Docket 86-336.[32] In this market, the "Videocipher II (VC II)" receiver descrambler has become a *de facto* industry standard. Although the technology is proprietary, manufacturers are licensed to produce integrated receiver decoders using decoder modules obtained from the patent holder. These devices are then sold through retail distribution outlets. As a result of this, there is competition in the manufacture and distribution of the receiver units but, within this *de facto* standard, the basic technology involved and decoder units come from a common source. Roughly the same situation appears to exist with respect to high power, small dish DBS services such as DIRECTV/USSB. Equipment for receipt of this service is readily available for consumer purchase through retail outlets. Moreover, there is abundant competition in the manufacture of the equipment.[33] The core equipment technology, however, is controlled by the MVPD and is manufactured under license from it. This control may be used, for example, to restrict the addition of other types of equipment that would facilitate reception of service from additional satellite providers.[34] We seek comment on the extent to which this form of equipment availability satisfies the "commercial availability" standard. We note that the legislative history of Section 629 does not appear to reflect any concern with this mode of operation.

23. In addition to the above, we seek comment on other questions that we must answer in order to define commercial availability. Must multichannel video programming access equipment be available through any vendor wishing to distribute the device or is it sufficient that a device be available through some but not all vendors not affiliated with an MVPD? In this regard, does commercial availability require that CPE be made available by retailers or manufactures not selected by MVPDs? If so, how do we assure that unaffiliated manufacturers are able to produce navigation devices that are compatible with a given MVPD's network? Does the provision of equipment by one manufacturer, under a license from a service provider, to one or two select retailers meet the requirements of Section 629, or must the equipment be made available to any retailer wishing to distribute the equipment? Does the use of the plural in the statutory language -- *i.e.*, "manufacturers, retailers, and other vendors" -- require that equipment must be available from at least two manufacturers? Would retail sale of CPE by means of a toll free telephone number constitute availability?

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[32] 3 FCC Rcd 1202 (1988).

[33] According to information provided by Hughes Electronics, DIRECTV has licensing or original equipment manufacturer agreements which represent 17 brands and between 40 and 50 models of product. Hughes further notes that DSS systems are available in the marketplace currently through over 26,000 retail outlets and satellite dealers.

[34] While use of the most of the functions within the unit may operate with only a single satellite or service provider, this is not to suggest that the equipment involved is not designed to provide access to other service providers. Satellite "IRDs" typically have input jacks for alternative program sources and are generally designed with A/B or input selector switches on the remote control to permit viewers to shift from satellite to other sources such as a terrestrial antenna for broadcast television reception or a cable input.

E. Practical Availability -- Portability and Interoperability

24. Section 629 indicates that the rules adopted to assure commercial availability must be developed "in consultation with appropriate industry standard-setting organizations . . . ."[35] If a retail market for navigation equipment is to develop, it may be necessary for there to be some degree of standardization so that the devices involved are either geographically portable and will work with similar types of MVPDs in different parts of the country or are interoperable and will function with different types of MVPDs in the same area or are both interoperable and portable. Is it necessary that devices simply operate with the particular MVPD's system that they are purchased for? Is it necessary that devices be operable on all MVPDs' systems in the same industry -- for example, on all cable systems, or on all MMDS systems? Is it necessary that devices work for all multichannel video programming services -- that is, must a navigation device that is operable with a cable system also be interoperable with MMDS, DBS, and other multichannel video programming services as well?

F. Definition of Affiliate

25. The 1996 Act requires that navigation devices be commercially available from manufacturers, retailers, and other vendors "not affiliated with any multichannel video programming distributor."[36] Thus, in order to implement the statute, it will be necessary to have an understanding of the meaning of "not affiliated with."

26. The 1996 Act does not specifically alter the definition of "affiliate," which remains applicable for purposes of Title VI of the Communications Act. This definition states that "the term 'affiliate,' when used in relation to any person, means another person who owns or controls, is owned or controlled by, or is under common ownership or control with, such person . . . ."[37] Although this definition remains unchanged, Section 3 of the 1996 Act sets forth a new definition of "affiliate."[38] Under its terms, affiliation is established when a person "owns or controls, is owned or controlled by, or is under common ownership or control with another person."[39] This statutory definition further provides that ownership can be established through an equity interest "or the equivalent thereof" of ten percent or more.[40] Section 3 of the 1996 Act states that "[e]xcept as otherwise provided in this Act, the terms used in this Act have the meanings provided in section 3 of the Communications Act of 1934 (47 U.S.C. 153), as amended by this

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[35] 47 U.S.C. §549(9).

[36] 47 U.S.C. §549(a).

[37] 47 U.S.C. §522(2).

[38] 47 U.S.C. §153(1).

[39] *Id.*

[40] *Id.*

section."[41]

27. We note that the Section 3 definition of "affiliate" does not strictly apply to matters under Title VI, since, as we have noted above, Title VI contains a separate definition of that term that does not set a percentage threshold as to what constitutes ownership. Nevertheless, we believe this gives us the discretion to apply the 10% ownership threshold of Section 3 for purposes of Section 629, and we note as well that both Section 629 and its legislative history do not prohibit us from so doing. We tentatively conclude, as we have done before,[42] that the Section 3 definition of affiliate should be applicable to Section 629, and seek comment on this conclusion. We also tentatively conclude that both passive and active ownership interests should be attributable and seek comment accordingly. If commenters believe that some other definition should be applicable, we seek comment on how product distribution relationships would be affected by any other definition. For example, we seek comment on the extent to which a relationship may remain between the MVPD and the equipment manufacturer or seller. If the MVPD has developed the equipment involved, has patent or other proprietary rights in the equipment or its critical components, or selects a technology that has only a single source supplier through a contractual process, questions arise as to whether these relationships raise affiliation issues. We seek comment on the above.

G. Security and Theft of Service

28. Section 629 requires that the rules we adopt "not . . . 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."[43] We seek comment on what it means in this context to "jeopardize" security and to "impede" a provider's legal rights to prevent theft of service. In addition, we seek specific data and information concerning the operation of existing security methodologies employed by the various MVPD industries.

29. Cable operators typically protect cable programming service tiers and premium services from unauthorized reception through scrambling or encryption techniques.[44] Other MVPDs such as MMDS and DBS operators use such techniques to protect all of the channels of service they offer. In these situations, the subscriber must make use of a navigation device --

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[41] Telecommunications Act of 1996, Pub. L. 104-104, §3, 110 Stat. 56 (1996).

[42] *See, e.g., Order and Notice of Proposed Rulemaking in CS Docket No. 96-85 ("Cable Act Reform")*, 11 FCC Rcd 5937, 5944 (1996).

[43] 47 U.S.C. §549(b).

[44] Basic service may not be scrambled under existing rules. 47 C.F.R. §76.630(a).

decoder or descrambler -- to receive an intelligible signal.[45] Many of the analog techniques that are used to accomplish this 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, generally located in the subscriber's premises, must contain the electronic circuitry to reverse the alteration of the analog signal.[46] It is this descrambling circuitry that is most prone to attack by those who would obtain service without paying for it. Such techniques can be relatively easily defeated by subscribers if the necessary equipment can be purchased. In addition, signal thieves may obtain a descrambler set-top box to study its circuitry and electronic response characteristics. Subsequently, they attempt to alter or to reproduce the descrambling circuitry, or to replace the descrambling component. In some instances, the signal thieves also insert circuitry that confuses, or simulates the response signals of a legitimate descrambler box back to, the video provider. Should an analog descrambling method be breached on a wide scale, the MVPD must replace both the scrambling hardware at its headend or control center and in each descrambler box in its subscribers' homes, at great expense. In order to limit the availability of descrambler boxes -- using scarcity as a component of security -- operators typically lease the box to subscribers and then recover the box on termination of service. If analog decoders were readily available for purchase, existing security methods would become completely ineffective.

30. Digital signal delivery methods, however, will increasingly be used by MVPDs to transmit programming to consumers and facilitate more sophisticated access control systems.[47] Digital and analog delivery methods can be used singularly or in combination, depending on the MVPD system design. The cable television portion of the MVPD industry primarily employs analog delivery methods and is only just starting to utilize digital methods, whereas high and medium power Ku band satellite services use digital systems. Major shifts towards the use of digital delivery systems are taking place, due mainly to digital technology's ability to increase dramatically the number of video channels or the amount of information that can be delivered in the same bandwidth. From a security standpoint, digital systems appear to be appreciably less vulnerable to security breaches due to the inherent nature of the digital signal. This is due to the general nature of digital delivery, which encodes all information into bits.[48] Because all the

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[45] *See, e.g., Inside Wiring Notice*, 11 FCC Rcd at 2778 n. 100 ("Cable operators often protect their extended basic and premium services with proprietary scrambling techniques. In these cases, the subscriber must obtain a set top box from the cable operator in order to descramble the signals.")

[46] In most cases, the security component for these systems is found in a TV set-top device which is bundled with the tuner, remote control, and other features.

[47] In this regard we recognize that there is not necessarily a sharp division between analog and digital systems. The Videocipher II system used in the satellite field uses both analog and digital encryption.

[48] A bit is the smallest unit of information or data a computer can process. The information a bit carries is represented by values of zero (a mark) or one (a space) and is the basic unit in data communications. Bit rate is the number of bits of data transmitted per second. For example, delivering an NTSC analog television picture generally

information is already encoded, more sophisticated encryption of the digital streams (bit streams) can be used to secure the signals. As a result, digital signals do not possess the same degree of susceptibility to theft as do analog signals. Further, a system's digital technology can be configured so that should security be breached on a wide scale, changing the security involves the replacement of fewer hardware components than in the analog environment. That is, the security component can be contained in a "smart card" or similar device provided by the MVPD independent of the digital box and the smart card can be replaced if a problem with security develops.

31. Service theft is a serious matter. Failure of access control or security systems will both interfere with incentives to produce programming for the market and to increase the cost of service to those who do subscribe. According to one estimate, in 1992 cable television service theft resulted in $4.7 billion in unrealized revenue annually.[49] The difficulties that exist in the development of a market for the distribution of television programming in an environment in which compensation mechanisms do not exist or have been defeated have been well documented in the history of the C band satellite home video programming distribution market.[50]

32. Congressional concern with the general question of unauthorized service reception is reflected in Section 629(b), which states that the Commission is not to prescribe regulations under Section 629(a) 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."[51] It is also reflected in Section 705 of the Communications Act, which generally prohibits theft of service, as well as in Section 633 of the Communications Act, passed as part of the Cable Communications Policy Act of 1984,[52] which is specifically directed to theft of cable service.[53] The legislative history of this latter provision reflects the Congressional view that:

> theft of cable service poses a major threat to the economic viability of cable operators and cable programmers, and creates unfair burdens on cable subscribers who are forced to subsidize the benefits that other individuals are getting by receiving cable service without paying for it.[54]

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requires 4 megabits per second (Mbps).

[49] *See* 1992 NCTA Survey on Cable Signal Theft produced by the NCTA's Office of Cable Signal Theft.

[50] *See, e.g., Notice of Inquiry in PP Docket 92-234*, 7 FCC Rcd 7276, 7277 (1992).

[51] 47 U.S.C. §549(b).

[52] Pub. L. No. 98-549, *et seq.*, 98 Stat. 2779 (1984).

[53] The relevant portions of these statutes are set forth in Appendix B.

[54] *See* House Committee on Energy and Commerce, H.R. Rep. No. 934, 98th Cong., 2d Sess. 84 (1984).

Civil actions including injunctions, damages, and attorneys' fees and criminal penalties with fines of up to $100,000 are available to enforce this section of the Communications Act.[55] Each of the above provisions allows for the adoption of coordinate state or local laws, and more than 30 states have made it illegal to own or be in possession of an unauthorized cable descrambler. The use of unauthorized cable television converter-decoders to view cable programming, as we have previously stated, violates Federal law.[56]

33. Based on the specific language and policy concerns underlying these anti-piracy provisions, it is important that whatever action is taken to implement Section 629 does 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. Thus, we seek comment on how to proceed to accomplish the underlying objectives of Section 629 to assure commercial availability while also meeting Section 629's requirement that the security of services not be jeopardized.

34. A potential solution to the problem of assuring the commercial availability of navigation equipment while permitting MVPDs to retain control over system security would be to require MVPDs desiring to retain control over the security equipment to provide it to consumers on a separated or unbundled basis. In theory, it would be possible to take a typical decoder box and divide it into two separate parts. One part would contain operational and functional components such as the tuner, the remote control circuitry, the power supply, and any other non-access control features. A second part would contain the access control features. With an interface, it would be possible to have the first part of the device available through retail outlets and the second part, containing the more sensitive access control apparatus, available only from the service supplier. To make such a separation of function practical, however, would appear 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. Such an effort to separate access control from other features and migrate the functional and operational components back to the television receiver is essentially what has been involved with the "decoder interface connector" that has been the subject of discussion in the Commission's proceeding in ET Docket 93-7.[57] We seek comment here on our authority to require such a separation as a means of accomplishing the objectives of Section 629 and in particular on our authority to provide for a standard interface

[55] *See* 47 U.S.C. §553(b)(2).

[56] *Public Notice: Modified Cable Converter-Decoders*, 9 FCC Rcd 6436 (1994). There has been considerable litigation relating to the theft of service. *See Time Warner Cable of New York City v. Freedom Electronics, Inc.*, 897 F. Supp. 1454, 1459 (S.D. Fla. 1995) (the fact that disclaimers were enclosed with shipment of descramblers which advised customers to contact their local cable television provider, and advise it of their purchase and use of the device in question, did not exculpate the distributor from otherwise illegal conduct.) *See also Time Warner Cable v. Cable Box Wholesalers, Inc.*, 920 F.Supp. 1048, 1053 (D.Az. 1996).

[57] *See, e.g., Memorandum Opinion and Order in ET Docket 93-7*, 11 FCC Rcd 4121 (1996); *First Report and Order in ET Docket 93-7*, 9 FCC Rcd 1981 (1994).

in light of the 1996 Act amendments to Section 624A ("Consumer Electronics Equipment Compatibility") of the Communications Act.

35. The Congressional interest in assuring the commercial availability of navigation equipment that is reflected in Section 629 overlaps to some extent with the cable television "equipment compatibility" provision of Section 624A, that was adopted in 1992. 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.[58] Section 301(f) of the 1996 Act adds new text to existing Section 624A of the Communications Act, stating the Congressional finding 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.[59]

This provision further states that the Commission shall consider, in prescribing implementing regulations, "the need to maximize open competition in the market for all features, functions, protocols, and other product and service options of converter boxes and other cable converters unrelated to the descrambling or decryption of cable television signals."[60] In adopting such rules as are necessary the Commission must seek "to ensure that any standards or regulations developed . . . do not affect features, functions, protocols, and other product and service options . . . ."[61] The amended language of Section 624A by its terms applies only to rules required or prescribed by Section 624A.[62]

36. These amendments to Section 624A are 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 proceeding in ET Docket 93-7.[63] The decoder interface standard that has been the subject of industry discussions in ET Docket 93-7 would separate security from other functions performed by cable television set-top boxes. The issue thus arises as to the scope of the Commission's authority to establish interface standards that govern the

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[58] 47 U.S.C. §544a(a), §544a(b)(1).

[59] 1996 Act at 301(f).

[60] 47 U.S.C. §544a(c)(1)(A).

[61] 47 U.S.C. §544a(c)(2)(D).

[62] 47 U.S.C. §544a(c)(1), (2).

[63] *See supra n.59.*

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]."[64] We seek comment, based on the foregoing, as to the scope of our authority in the context of Section 629 and the extent to which it may be limited by Section 624A. We seek comment on the relationship between these to provisions and how this relationship affects any proposal that seeks to separate security from other CPE functions.

H. Multichannel Video Programming Distribution Without Subsidies

37. According to Section 629(a), the rules adopted by the Commission:

> 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.[65]

As previously noted, however, Section 629(f) states that this section neither "expand[s] nor limit[s] any authority that the Commission may have under law in effect before the date of enactment of the [1996 Act]."[66] In light of this, we seek comment on the intended application and coverage of Section 629(a). What are the limits of our jurisdiction in this area? What types of contractual or financial arrangements relating to equipment involve subsidies and are a matter of concern? As a matter of policy, and assuming the requisite jurisdiction, should we exercise that authority over non-cable MVPDS and cable companies that face effective competition?

38. Congress was concerned that regulated MVPDs with market power in programming distribution could use that power, through equipment cost subsidization, to frustrate competition in the equipment market. The economic literature suggests that such subsidization is most likely to occur in a situation where there is a cost-of-service regulated monopolist in one market that also competes in another market.[67] Because cost-of-service regulation generally makes the rates

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

[65] 47 U.S.C. §549(a).

[66] 47 U.S.C. §549(f).

[67] *See* W. J. Baumol and G. Sidak, Toward Competition in Local Telephony at p. 85 (1994).

of regulated firms dependent on their accounting costs, it encourages regulated firms to shift costs from competitive to non-competitive markets through "creative accounting". This enables regulated firms to raise rates and earn higher profits in the regulated market. Therefore, a cost-of-service regulated MVPD may attempt to subsidize its equipment business by raising rates for regulated video programming. However, if the MVPD is an unregulated monopolist serving both competitive and non-competitive markets with no limits on its profits, there is no incentive for it to "cross-subsidize" costs, since such action would reduce the MVPD's monopoly profit.

39. Section 623 of the Communications Act sets forth the general structure and process for cable television rate regulation. In general, where "effective competition" is absent, basic subscriber rates are subject to regulation by local franchise authorities and cable programming service tier rates are, until March of 1999, subject to Commission regulation on a complaint basis. The majority of equipment rate regulation is undertaken locally. Section 623(b)(3) specifies that Commission rules regarding cable equipment:

> shall include standards to establish, on the basis of actual cost, the price or rate for
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> (A) installation and lease of the equipment used by subscribers to receive the basic service tier, including a converter box and remote control unit and, if requested by the subscriber, such addressable converter box or other equipment as is required to access programming described in paragraph (8); and
> (B) installation and monthly use of connection for additional television receivers.

In adopting rules to implement this "at cost" equipment regulation, the Commission indicated its belief that the rate rules and associated rules requiring the "unbundling" of equipment charges from programming charges were "consistent with the development of a competitive market for equipment and installation."[68]

40. Under the Communications Act, only the rates of cable systems not subject to effective competition may be regulated.[69] The applicability of this policy in relation to Section 629 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?
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> 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

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[68] *Report and Order and Further Notice of Proposed Rulemaking in MM Docket 92-266*, 8 FCC Rcd 5631, 5810 (1993)(footnote omitted)

[69] 47 U.S.C. §623(a)(2); 47 C.F.R. §76.905.

applies when cable rates are deregulated.[70]

Thus, in areas where competition to cable exists, this suggests that anti-subsidy rules, beyond a possible separate itemization requirement, are not contemplated.

41. Those offering multichannel video service on a wireline common carrier basis or over the facilities of local exchange carriers tend not to have had rate regulations or policies specifically applicable to their offering of video "navigation" equipment in connection with a video communications service offering, but there is a long history of regulation applicable to the provision of CPE by or in connection with such service. Section 629(d), which is entitled "Avoidance of Redundant Regulations," appears to be a recognition of some of that history. It provides:

> (1) Commercial availability determinations.--Determinations made or regulations prescribed by the Commission with respect to commercial availability to consumers 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, before the date of enactment of the Telecommunications Act of 1996 shall fulfill the requirements of this section.
>
> (2) Regulations.--Nothing in this section affects section 64.702(e) of the Commission's regulations (47 C.F.R. § 64.702(e)) or other Commission regulations governing interconnection and competitive provision of customer premises equipment used in connection with basic common carrier communications services.

Section 64.702(e) of the Commission's rules, which is referenced in the above statutory language, states the following:

> (e) Except as otherwise ordered by the Commission, after March 1, 1982, the carrier provision of customer-premises equipment used in conjunction with the interstate telecommunications network shall be separate and distinct from provision of common carrier communications services and not offered on a tariffed basis.

42. Equipment that is sold or rented by other MVPDs has not been subject to rate or anti-subsidy regulation. As is permitted under existing rules, DBS service providers are currently offering sizable rebates on system receivers and satellite dishes.[71] Such arrangements would appear likely to be highly effective as a competitive tool. Whether they ought in some sense to be considered "subsidies" within the meaning of the above referenced provisions of Section 629

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[70] 142 Cong. Rec. S700 (daily ed. Feb. 1, 1996).

[71] For example, *The New York Times* (August 30, 1996 at page A15) contains an advertisement for a DSS system "for as low as $97." This is the price after subtracting $200 "cash-back from DIRECTV" for those purchasing and prepaying a non-refundable one-year subscription to a DIRECTV programming package.

that might conflict with its requirements, is a matter on which we seek comment. Assuming that such arrangements are not properly the subject of regulatory concern, the specific analysis that would lead to that conclusion is nevertheless of interest in order that any rules adopted not bias the market toward or against one particular kind of competitor. In this regard, the markets in which DBS operators participate appear to be highly competitive both because there are a number of DBS providers that are competitive with each other and because DBS faces competition from cable service. Thus, it appears that DBS providers are in the same category as cable systems facing effective competition and that there is thus no Congressional grant of authority for antisubsidy rules with respect to DBS providers.

43. Some assistance in understanding how to address this issue might be derived from the cellular telephone experience and the fact that cellular telephone providers' use of a bundling approach has significantly increased cellular phone subscribership. Cellular phones are often provided as part of a package bundled with a monthly rate for service, as well as with charges for usage of the network. This model appears to have mitigated the marketing impediment of customers paying large up-front costs for cellular phones and, although subject to some regulatory scrutiny, has not been found to be contrary to the development of a competitive equipment market.[72]

44. In light of the above, we therefore generally seek comment on the intended application of this Congressional directive. In those situation where anti-subsidy rules are applicable, how should the term "subsidy" be defined? Does the language of Section 629(a) preclude MVPDs from selling navigation devices below cost? Does the language prevent MVPDs from "bundling" equipment with service? Should bundling, instead of representing prohibited subsidization, be more properly viewed as a gradual capture of the equipment's cost through increased programming or service revenue that the MVPD would not otherwise receive? Over what period would an MVPD need to demonstrate recoupment of equipment cost? As a procedural matter, when an allegation of subsidization is made, how should the burden of proof be allocated?

45. The above discussion suggests three broad directions that we might take in this area. First, we could continue with the existing forms of regulations which govern only some of the entities involved but which are in a broad sense intended to constrain the subsidization of equipment prices from regulated service revenues. Second, we could seek to exercise some general control to make sure that equipment rates are unbundled from service rates and that equipment charges are not so low as to frustrate the functioning of a competitive equipment market. And third, we could seek to apply some controls over all of the entities involved except in markets where there is effective supplier competition. Tentatively, we conclude that the first course of action is most consistent with the 1996 Act as a whole and with the limitations on our

[72] The Commission's decision in *Bundling of Cellular Customer Premises Equipment and Cellular Service*, 7 FCC Rcd 4028 (1992), 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.

authority set forth in Section 629(f). We seek comment on this conclusion and on other alternative means of addressing the problems involved in defining and controlling possible equipment charge subsidies. We specifically note that, under this option, MVPDs that are in direct competition could fall under different regulatory regimes in terms of equipment bundling and subsidization. For example, a DBS provider could market bundled equipment and service or could provide equipment rebates whereas regulated cable system in the same geographic area could not. This situation would persist until "effective competition" to cable, as defined in Section 623 of the Communications Act was in place. We seek comment on whether this difference in treatment is appropriate in light of the differences between the MVPDs in question or whether it weighs in favor of a different -- more parallel -- outcome.

I. Developmental Waivers

46. Section 629(c) provides that the Commission shall waive any regulation adopted under subsection (a) 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 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.[73]

47. The provision appears intended to address problems that are likely to arise in coordinating product and service design, manufacture, and marketing during the initial stages of product and service development. Thus, for example, considerable experimentation and testing may be necessary before a service/equipment package is ready for marketing. "Beta testing" of new products is an extremely important element of the process but it must necessarily take place with a controlled group of users. It may be difficult to find retail vendors to sell equipment needed to receive or to navigate through a new service before the service proves itself in the market. Necessary standardization to provide for interoperability or portability or to protect against network harm may take an extended period of time to develop. The risks and rewards associated with new product or service introduction may be difficult to allocate without actual knowledge from market trials. Given the economies of scale associated with electronic products and communications services, some mechanism may be needed to assure that the initial product run is large enough to capture these efficiencies. The waiver process appears to provide the statutory mechanism for recognizing these problems and for achieving the basic goals of Section 629 without creating obstacles to the introduction of new services and equipment.

[73] 47 U.S.C. §549(c)

48. Given the very high value placed on technical and service innovation, we believe that situations where there is a need for a waiver (as contrasted with a complete exemption) should be minimized and that when waivers are required and requested, it is consistent with the objectives of Section 629 that they should be looked on sympathetically and expansively to avoid unnecessary procedural obstacles to innovation. In this regard, Section 7 of the Communications Act is clear that it is the policy of the Act to "encourage the provision of new technologies and services to the public" and that those who oppose "a new technology or service proposed . . . shall have the burden to demonstrate that such proposal is inconsistent with the public interest."[74] Section 629 references both technologies and services, suggesting that concern ought be given to both technology and marketing issues in the waiver process. We seek comment on this analysis and on the scope and coverage of the statutory waiver process.

J. Sunset of Regulations

49. Section 629(e) provides that 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."[75]

50. Section 629(e) is written in a conjunctive rather than a disjunctive manner so that each of the three conditions must be met before the implementing regulations adopted by this Commission shall cease to apply. In order to carry out this instruction it is particularly necessary to have clear definitions of the relevant service and equipment markets involved. In particular, how should the markets involved be defined in geographic terms and should the product and service markets be defined broadly or addressed as a series of separate markets for particular types of service and equipment? Our tentative view is that local geographic markets, akin to Nielsen's "designated market areas," or Standard Metropolitan Statistical Areas, as determined by the Office of Management and Budget, might provide a useful geographic market definition. Alternatively, the market could be more closely tied to the service area of the programming distributors. This would suggest the possibility, for example, of a national evaluation for satellite firms, a more regional analysis for "wireless cable" providers, and a franchise area analysis for cable systems.

51. In addition to conducting a "sunset" analysis with discrete geographic markets, it

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[74] 47 U.S.C. §157.

[75] 47 U.S.C. §549(e).

would seem logical to consider discrete types of equipment in terms of separate equipment markets and discrete MVPD markets or submarkets in terms of their competitiveness and availability for rule "sunset." For example, it seems likely that the markets for certain types of equipment will develop in a fully competitive fashion from the outset, or that the regulation adopted will set a path that builds in enduring incentives for commercial availability of a particular type of equipment. Other equipment, including in particular, equipment that embodies security or conditional access features, may develop along a different path. Thus, we seek comment on categories of equipment that might be reviewed separately for sunset purposes. In addition, it may be that there are service provider markets, such as for example the DBS market, where intra-DBS competition is robust and might meet the "fully competitive" test. Thus, we seek comment on whether in understanding this subsection the relevant market is the market for all MVPDs or if there are relevant submarkets that should be considered. For example, can we look at intra-DBS competition to justify relaxing or forbearing from regulation? Although Section 629(e) speaks of ceasing to apply existing regulations, it would also appear to be broad enough, in appropriate circumstances, to suggest that regulations for certain type of equipment need not be adopted in the first instance. We seek comment on this and suggestions as to what equipment types might fit within this category.

52. The public interest component of the sunset provision invites a broader analysis as to the circumstances in which regulatory involvement might terminate. In particular, there may be situations where service and product markets are competitive but rely on certain regulatory controls to remain competitive. An obvious example might be a "harm to the network" (Part 68) kind of rule, that functions in the presence of service supply and equipment competition to protect a communications network and those who use it from equipment whose functioning is incompatible with the "rules of the road" of network operation. Consumer labeling or disclosure of network standards requirements might similarly assist the functioning of fully competitive markets. Assuming that some forms of regulation may need to be retained longer than others, we also seek comment regarding how the various types of regulations involved should be categorized for purposes of a "public interest" sunset analysis.

53. Finally, notwithstanding the requirement that the equipment markets involved be fully competitive before regulation is eliminated, Section 629(e) may still contemplate that regulation should end if situations develop in which integrated service and equipment suppliers compete vigorously even if the "commercial availability" of equipment were thereby eliminated. If a market developed in which numerous service suppliers compete based on programming, rates, and technology; proprietary equipment designs and single source supply might emerge restricting alternative commercial sources of equipment. In such a circumstance, program service and equipment in combination could be a highly competitive market, justifying the Commission's forbearance to apply regulations. The DBS market might be considered to fit in such a category. In any event, it appears to us that there are potentially significant benefits to consumers in a flexible approach with respect to the sunset of particular regulations over time and we seek comment on the scope of our authority in this regard and what specific criteria should be used to trigger an end to the application of specific rules.