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Federal Communications Commission
Washington, D.C. 20554

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

COMMENTS OF BELL ATLANTIC¹ AND NYNEX²

The Telecommunications Act of 1996 (the Act) directs the Commission to adopt regulations “to assure the commercial availability . . . of converter boxes, interactive communications equipment, and other equipment used by consumers to access multichannel video programming . . . from manufacturers, retailers, and other vendors not affiliated with any multichannel video programming distributor.” 47 U.S.C. §549(a). In enacting this language, Congress wanted to “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.”³ To achieve Congress’ goal, and to allow consumers to benefit from “innovation, lower prices and higher quality,”⁴ the Commission’s rules must establish two fundamental principles. First, consumers must have the right to use navigation devices of their

¹ The Bell Atlantic companies (“Bell Atlantic”) are Bell Atlantic-Delaware, Inc., Bell Atlantic-Maryland, Inc., Bell Atlantic-New Jersey, Inc., Bell Atlantic-Pennsylvania, Inc., Bell Atlantic-Virginia, Inc., Bell Atlantic-Washington, D.C., Inc., Bell Atlantic-West Virginia, Inc., and Bell Atlantic Video Services Company.

² The NYNEX Telephone Companies (“NYNEX”) are New York Telephone Company and New England Telephone and Telegraph Company.

³ H.R. Conf. Rep. No. 104-458, 104th Cong., 2d Sess. 181 (1996) (“Conference Report”).

⁴ H.R. Rep. No. 104-204, 104th Cong., 2d Sess. 112 (1995) (“House Report”).

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choosing -- the “right to attach.”⁵ Second, those navigation devices must work with systems in different parts of the country and with different types of systems -- “portability” and “interoperability.”⁶

These principles will lay the groundwork for manufacturers to develop equipment of varying prices and capabilities in accordance with their view of business opportunities in the market. Similarly, multichannel video program distributors (MVPDs) will develop a variety of service offerings requiring equipment of different capabilities to meet the interests and desires of various types of consumers. As a result, market forces will determine the choices of features, services, and price that are made available to consumers of video programming.

Implementing the Fundamental Requirements

Today, video programming is delivered to consumers over a wide variety of distribution systems, including traditional analog cable systems, hybrid fiber-coax (HFC) systems, direct broadcast satellite, and MMDS systems. There is no universal set-top unit or navigation device that works with all delivery technologies. In the case of terrestrial distribution systems, for example, a set-top box designed to work with a twelve-channel analog cable system cannot be plugged into a 750 MHz HFC system or a switched digital system. Similarly, methods for implementing security or anti-theft capabilities vary among different system types. Given the great variety of system designs that exist today, and the important security issues recognized by Congress and the Commission,⁷ separating the functions that are specific to the type of network being used (and therefore likely to change if the user moves or changes service providers) from

⁵ NPRM at ¶ 56.

⁶ NPRM at ¶ 24.

⁷ 47 U.S.C. §549(b); Conference Report at 181; NPRM at ¶¶ 28-33, 71-75.

the main “navigation” function (which is more likely to remain stable for some years) may be the most cost effective way of achieving the fundamental principles.⁸

To accomplish such a separation, the “set-top box,” TV, VCR or other consumer equipment would contain at least two components: a Network Interface Module (NIM) providing network-specific functions such as tuning, demodulation, demultiplexing, and security, which would be provided by the MVPD or system operator to its end user customers; and a Digital Entertainment Terminal (DET)⁹ which would provide network-independent functions such as digital video and audio decoding and applications such as electronic program guides, VCR control, etc. De-coupling the network dependent functions from the equipment’s navigation device functions would allow consumers to use their electronic equipment in different parts of the country and on a variety of video distribution systems. It would also allow MVPDs to retain control over system security and to upgrade their system or service in response to new technology and market demands.

The Notice states that such separation is possible “[i]n theory.”¹⁰ In fact, a number of industry groups are developing standards for the required interface between the two components. For example, Bell Atlantic is active in the Digital Audio Visual Council (DAVIC) which recently published the A0 connector and protocol standard for such an interface. The A0 interface supports a wide range of MVPD network types including digital broadcast (DBS, MMDS, LMDS), analog and digital cable systems (e.g., HFC), switched digital video and switched digital

⁸ See NPRM at ¶¶ 34, 65, 72.

⁹ The network-independent component is also called a Set-top Unit (STU). To avoid confusion between this component and the “set-top box” used today in cable systems, it will be referred to in these comments as a DET.

¹⁰ NPRM at ¶ 34.

subscriber line (xDSL) networks. DAVIC's membership, which includes nearly 200 companies representing the consumer electronics, network equipment, network provider, computer, content provider, and data server industries, unanimously approved the DAVIC 1.2 specifications published in 1996.

The Commission should not dictate any particular standard; instead, it should leave the development and adoption of standards to industry groups and the marketplace.¹¹ For this reason the Commission should not "approve" the EIA IS-105 standard for the "decoder interface connector."¹² That standard only addresses the analog cable environment, and performs poorly for any type of digital video delivery such as DBS or MMDS. In particular, use of the "decoder interface connector" in a digital system requires the duplication of several expensive high speed digital processes. As a result, requiring use of that interface would add significant unnecessary cost to consumer devices, which could impede the transition to digital video delivery.

Use of standard interfaces addresses manufacturers' needs for advance notice of system specifications. If an MVPD's service operates with equipment that meets an existing standard, there should be no additional requirement for MVPDs or the system operator to publish network specifications.¹³ As the Commission notes, consumers will need certain basic technical information in order to ensure that equipment they purchase will support the service they want to receive.¹⁴

¹¹ See NPRM at ¶ 66.

¹² NPRM at ¶ 36.

¹³ After a reasonable transition period, however, the Commission may need to require that MVPDs using proprietary systems provide advance notice of their system specifications to interested manufacturers.

¹⁴ NPRM at ¶ 56.

Entities and Equipment Covered

OVS operators are expressly exempted from the requirements of section 629 (and the Commission's regulations thereunder). 47 U.S.C. §573(c)(1)(C). Where an OVS operator decides to allow video programming providers to supply their own navigational devices,¹⁵ however, video programming providers who qualify as MVPDs (including the operator's programming affiliate) should be subject to the rules implementing section 629, as long as such rules do not prevent the operator's affiliate from creating its own electronic programming guide pursuant to 47 C.F.R. §76.1512(b)(7).

The Commission's rules should apply to equipment designed to interact with an MVPD's system to select particular channels, programs, or services. If a manufacturer decides to include DET functionality in a television set or a VCR, for example, then the set or VCR would need to accommodate a NIM, as well. If, however, the set or VCR is not intended to perform the DET functions, but to be used in conjunction with a separate "cable box" as is common today, then only the cable box -- not the television set or VCR -- would have to comply with the Commission's rules. Similarly, if a computer manufacturer intends its equipment to be used as a television set to view video programming and includes the DET functionality, the computer would also need to include the NIM interface. On the other hand, if the computer does not include the DET functionality, such rules would not apply. The Commission's rules should not apply to any application software.

¹⁵ 47 C.F.R. §76.1512(b).

Security

Different network architectures pose different security risks for the MVPD. For example, broadcast or passband systems -- whether traditional analog cable systems or digital systems like DBS -- typically carry all of the channels -- standard, premium, and pay-per-view -- to any device attached to the delivery system. The MVPD must encrypt or scramble valuable content to prevent unauthorized users from viewing the program stream. An MVPD's security in such a system could face substantial risks if scrambling techniques were ubiquitous and standardized. Separating the NIM and DET functions addresses this concern. For example, the DAVIC standard allows the use of smart cards, which enables the MVPD to control encryption of programming on the system, without requiring that the entire set-top be provided exclusively by the MVPD.

In contrast to broadcast systems, switch-based distribution systems such as switched digital video networks use a star architecture, in which each customer has a dedicated connection to a switching function within the network. In such an arrangement, the network has complete control over which signals are delivered to each customer's home, ensuring that only authorized users have access to specific program streams. As a result, a switched system needs no encryption or scrambling on the customer's premises to maintain signal security and therefore does not need to include a smart card on its network-specific NIM. The Commission's rules should not require scrambling where the MVPD has invested in a switch-based networks and does not require scrambling to deliver content securely.

Signal Ingress

Separating the navigation device into a consumer owned network-independent component and service provider owned network-dependent module also addresses potential threats to video distribution networks from consumer owned devices. “Ingress Noise” generated on customers’ premises which interferes with the upstream signaling channel is a serious problem on two-way cable systems today. The DAVIC A0 specifications provide standards for voltage/current levels, management information bases, thermal emission requirements, and grounding. In addition, the NIM generates the network-specific upstream signal in response to inputs received from the DET across the A0 interface. As a result, the network-dependent module can provide the necessary noise ingress protection to prevent rogue consumer equipment from damaging network resources or interfering with the service of other consumers on the network.

Commercial Availability

The Commission should not mandate that equipment must be available from any particular number of retailers in order to qualify as “commercially available.” Instead, the Commission’s rules should establish the fundamental requirements discussed above, and let the market determine whether manufacturers and retailers find an attractive business in providing any particular type of equipment.

Similarly, the Commission should not prohibit MVPDs or retailers from offering service and equipment “packages,” as is currently done in the cellular industry. Consumers may find such packages convenient or attractive and should have the choice to buy such packages or to shop for equipment and service separately.

CONCLUSION

The Commission's rules should ensure that consumers have a right to choose their own navigation equipment, and have the ability to purchase equipment that will work on a variety of video distribution systems. Beyond these fundamental principles, the Commission should allow the marketplace to determine the features, services and prices from which consumers can choose.

Respectfully submitted,

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