

RECEIVED

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

JUN 23 1997

Federal Communications Commission
Office of Secretary

In the Matter of)
)
Implementation of Section 304 of the)
Telecommunications Act of 1996)
)
Commercial Availability of)
Navigation Devices)

CS Docket No. 97-80

RECEIVED

JUN 23 1997

Federal Communications Commission
Office of Secretary

Reply Comments of Scientific-Atlanta, Inc.

Scientific-Atlanta would like to address a number of issues raised in the initial comments. Several commenters claim that the current set-top box market is not competitive. In fact, this market is competitive, with over 50 companies producing or having produced set-top boxes. The problem with the market is not competition among suppliers, but the fact that the consumer is often limited in his or her choice of boxes due to the security requirements for analog devices. Cable operators and their suppliers operated in the marketplace for many years without objections to this way of doing business. However, as applications for the cable network expand, this type of arrangement has become limiting. For this reason, the cable industry has established a set of standards for both digital set-tops and cable modems to help ensure that the consumer has more choices and so that these devices can be obtained from more than one source.

Statements were made in the initial round of comments to the effect that consumer electronics manufacturers have no role in the set-top box market. In fact, Zenith, Pioneer, and Panasonic all manufacture set-top boxes for the U.S. market. Korean manufacturers

No. of Copies rec'd 011
List ABCDE

also make set-top boxes. Matsushita manufactures set-top boxes for Scientific-Atlanta. While these foreign manufacturers do not have anywhere close to 100% share of the U.S. market for set-top boxes as they do for televisions and VCRs, it is not the intent of the commercial availability provisions to provide foreign manufacturers with 90%+ market share of the set-top box market as is the case in televisions and VCRs.

With respect to analog devices, there is little consensus for addressing the analog environment among the commenters in this proceeding. Not only does the decoder interface face potentially insurmountable legal obstacles, there is little indication of any demand for such a product. If there is a demand for such a product, particularly among cable operators, Scientific-Atlanta would be willing to produce such a product. However, given the current uncertainties and the lack of demand for devices¹ previously prescribed under the cable television and consumer electronics compatibility proceeding, such an undertaking is dubious at best.

With respect to digital devices, there is general consensus (even among those few whose comments supporting addressing analog) that the digital domain should be the focus of the Commission's deliberations. However, there is an apparent lack of awareness among a number of the original commenters about the complexity and progress in developing digital standards. It is disappointing that most of those parties that criticized the cable industry did not address the current proposed standards for cable modems, set-tops and other digital devices. The cable industry standards rely on and extend much of the work done by a wide range of standards bodies including MPEG, DAVIC and the ISO. This has been an enormously complex and difficult undertaking, requiring extensive

¹ For example, dual tuner converters and Watch & Record and Tape & View set-top boxes.

consultation among numerous manufacturers and network operators. Yet, there were few, if any, comments among those who criticized the cable industry (i.e. retailers, consumer electronics manufacturers, computer industry²) that address these standards issues. The new standards move in the direction of the portability, interoperability and openness desired by these critics. Any Commission effort to address these issues must start from the current cable industry standards. It would be unprecedented and pure folly for the Commission to impose on the industry standards that are in conflict with those already in existence. The Commission should request interested parties to address the strengths, weaknesses and inadequacies in the current standards.

This is not to suggest that the current standards are adequate or complete. Indeed, they only provide the foundation for the digital technology and services which will soon become available. Much additional work needs to be done in determining what the consumer wants and desires. Deadlines such as those suggested by some retailers and others are not likely to be met. It will take some time to determine the right mix of standards, technology and services in the digital domain. This does not mean that the Commission cannot set target dates for updates and efforts by standards organizations to develop the standards which will facilitate commercial availability. However, like the Commission's efforts to establish a standard for Advanced or High Definition Television, intervening events and rapid changes in technology may necessitate delays or require additional development of standards.

² See comments of the Consumer Electronics Manufacturers, Consumer Electronics Retailers Coalition, Business Software Alliance, Information Technology Industry Council and Computing Technology Industry Association.

The Commission and private industry standards organizations cannot drive the technology process by setting rigid deadlines, rather the reverse is true. For example, if Microsoft had complied with an arbitrary deadline for finalizing a basic software package and operating system for the PC and this deadline had been a couple of years ago, there would be no provision for Internet access or network computers. Bill Gates initially minimized the importance of both the Internet and network computers. In each instance, Microsoft reversed course and is now providing software solutions to the consumer. If Bill Gates can't forecast where technology is headed, how can standards organizations, the Commission and Washington-based trade associations? The Commission witnessed the futility of such deadlines in the Advanced Television proceeding. Right before the initial deadline, General Instrument proposed a digital system, which would not have been fully implemented by the original deadline. If the Commission had stuck to its deadline, thereby forcing adoption of an analog-based High Definition Television standard, where would that process be today? The Japanese tried to adhere to an arbitrary deadline and stuck with their analog or MUSE High Definition Television standard. Their High Definition Television effort is now viewed as a failure.

The comments of those who criticize the cable industry reflect an apparent naiveté or ignorance about the current standards. For example, there is praise for the MPEG set of standards, the development of which was indeed a remarkable accomplishment. Yet, while different delivery mechanisms use MPEG standards, that does not necessarily make them interoperable, because they use different transport streams. For example, DVD and cable use exactly the same MPEG-2 specification, but DVD uses a program stream, while cable uses a network stream. To date, there is no device or mechanism for converting

from one stream to another. DBS also uses MPEG-2, but has its own proprietary transport (since it was finalized before the actual standard was completed). Thus, none of these devices can currently talk to one another, despite using what is now a world standard. By some accounts and analysis, the digital domain involves as many as seventy interfaces, some of them with extremely complex and intricate issues such as the one just described.

In the initial round of comments, there were a number of comments in favor of a single universal box or some form of national portability. From the consumer's perspective, the most effective such device would be one that would allow the consumer to switch between different delivery mechanisms (i.e. cable, DBS and MMDS). This would enable most consumers to have a choice in service providers. Other efforts at so-called national portability would apply to much more limited sets of consumers, such as those that move or have more than one household. However, for cable and MMDS, there can be no guarantee of national portability, because service is not universal and technology and services are evolving rapidly and, in many instances, vary greatly from place to place. Unless these different industries adopt similar standards, the cost of such a box is likely to be prohibitive. In the initial round of commenters, DBS service providers do not indicate any willingness to provide a single box or device for the various DBS services, so any such portable device would have to accommodate multiple DBS formats, driving the costs substantially higher. Any effort to standardize devices across delivery mechanisms is likely to disadvantage new entrants. Further, for digital technologies and services, the market is not yet mature enough to determine what the consumer will eventually need.

The complexity of standards for the digital domain is daunting. However, these standards have widely available public documents and network interface specifications. For example, the systems aspects of the Generic Coding Moving Pictures and Associated Audio is available as ISO/IEC 13818-1 International Standard (1994) and is known as MPEG-2 Systems. The video aspects of the General Coding of Moving Pictures and Associated Audio is available as ISO/IEC 13818-2 International standard (1994) and is known as MPEG-2 Video. The audio aspects of the Generic Coding of Moving Pictures and Associated audio are available as ISO/IEC 11172-3 International standard (1995) and is known as MPEG-1 Audio. The DAVIC or Digital Audio Visual Council 1.1 standard runs to well over 1,000 pages and includes lower layer protocols and physical interfaces and is known as DAVIC 1.1. For identification cards - integrated circuit cards with contacts is available as ISO 7816-1 (IS) July 1987 for physical characteristics; ISO 7816-2 (IS) May 1988 for dimensions and location of the contacts; and ISO 7816-3 (IS) September 1989 for electronic signals and transmission protocols. The Data Encryption Standard or DES is available as NIST FIPS PUB 46-2 (January 1988) and DES Modes of Operation as NIST FIPS PUB 81 (December 1980). Security requirements for cryptographic modules, U.S. Department of Commerce is available as FIPS PUB 140-1 (January 1994). ATSC System Information is available as ATSC Standard A/56 (1996). ATSC Digital Audio Compression (AC-3) is available as ATSC Standard A/52 (1995). ITU QAM Modulation and Forward Error Correction is available as ITU J.83 Annex B.

In an appendix to its filing, General Instrument cited most of these standards and a number of other standards which it is utilizing in its products, including QPSK Modulation

and Forward Error Correction (ITU-R Draft Recommendation [11/38] system C); and various DVB standards.

Given the widespread availability of these materials and standards, it is difficult to understand what is meant by statements such as “no competitive market in CPE will be possible unless CPE manufacturers are granted sufficient access to specifications and standards necessary to ensure the interconnection and interoperation of commercially available navigation devices with MVPD networks. The Commission must ensure that multichannel video services providers publicly disclose information about the physical and logical interfaces of their systems in a way that allows ‘plug and play’ of CPE, if a competitive market for such video CPE is to be realized.”³ What is it that the consumer electronics manufacturers want that is not already available?

Similarly, Circuit City states that “disclosure requirements are needed to assure that manufacturers have timely access to standards and technical specifications for CPE interconnection”.⁴ What does Circuit City propose be made available to manufacturers? The computer industry, in the comments of the Information Technology Industry Council and Computing Technology Industry Association states that “the Commission should require MVPDs to disclose technical information necessary for competitors to produce, and consumers to attach, CPE, but it should protect the disclosing parties’ intellectual property rights...required disclosures must be sufficiently broad in scope and defined in detail to permit CPE manufacturers to design equipment that will be completely

³ See comments of the Consumer Electronics Manufacturers Association.

⁴ See comments of Circuit City Stores, Inc., p. 21.

compatible with MVPDs' transmission systems."⁵ This statement is somewhat hypocritical. The telecommunications industry has a far higher level of disclosure than the computer industry. If the Commission adopts such a disclosure requirement, it should apply it to the computer industry as well, particularly since that industry is advocating a right to attach. For all practical purposes, there is no distinction between computers and digital set-top boxes.

Even more remarkable is the statement from the Business Software Alliance that "in order to facilitate a competitive market for MVPD CPE, the Commission should require any MVPD system that is not subject to effective competition to disclose information necessary to allow non-affiliated manufacturers to develop products that can be used in conjunction with the system."⁶ This statement is more than just hypocritical, it is disingenuous. The software industry, known for its proprietary technology, is demanding disclosure from the telecommunications industry, which is known for its open standards. Any such requirement should be applied first to the software industry, particularly since it is asking for a right to attach its equipment and intellectual property to MVPDs. There is a greater need for disclosure and open interfaces in the software industry than in the telecommunications industry.

Cable modems are one area where there is widespread agreement that the Commission can help facilitate commercial availability. The Commission should attempt to assure that these devices meet the statutory requirements for commercial availability.

⁵ See comments of Information Technology Industry Council and the Computing Technology Industry Association, p. 10.

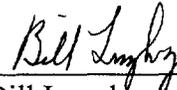
⁶ See comments of Business Software Alliance, p. 8.

Based on the comments filed in this proceeding, the "right to attach" concept is another area where the Commission might be able to obtain general agreement.

In conclusion, Scientific-Atlanta believes that the cable industry has made major progress in developing digital standards that should help ensure interoperability and portability. Any Commission action on commercial availability should take cognizance of these efforts. Scientific-Atlanta believes that retail availability is desirable and will be forthcoming through the voluntary industry standards setting process.

Respectfully submitted,

SCIENTIFIC-ATLANTA, INC.



Bill Loughrey

Director of Government Affairs
Corporate Communications Department
Scientific-Atlanta, Inc.
One Technology Parkway, South
Norcross, GA 30092-2967
(770) 903-4629

June 16, 1997