

## General Instrument

General Instrument Corporation  
1111 North 17th Street, N.W.  
Washington, D.C. 20036  
Telephone: 703-466-3295  
Teletype: 703-466-3295

May 28, 1998

EX PARTE OR LATE FILED

### VIA HAND DELIVERY

Ms. Magalie Roman Salas  
Secretary  
Federal Communications Commission  
1919 M St., N.W., Room 222  
Washington, D.C. 20554

Re: Ex Parte Notice, CS Docket No. 97-80  
(Commercial Availability of MPVD Navigation Devices)

Dear Ms. Salas:

This letter provides notice that on May 28, 1998, Quincy Rodgers, Vice President, Government Affairs, GI and the undersigned met with Paul Misener, Chief of Staff and Senior Legal Advisor to Commissioner Harold Furchtgott-Roth and Rebecca McElfresh in connection with the above-captioned proceeding.

The discussion focused on the need to allow as an option the ability of cable operators to provide their customers with navigation devices ("set-top boxes") which contain integrated security, in implementing Section 304 of the 1996 Telecommunications Act. The attached documents were provided during the meeting and should be included in the record in the above-captioned proceeding.

Kindly direct any questions about this matter to the undersigned.

Thank You.

Sincerely,

  
Christine G. Crafton

cc: Above-named parties

Attachment

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May 22, 1998

VIA HAND DELIVERY

Ms. Magalie Roman Salas  
Secretary  
Federal Communications Commission  
1919 M Street, N.W., Room 222  
Washington, D.C. 20554

RECEIVED

MAY 22 1998

FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

Re: Ex Parte Notice, CS Docket No. 97-80  
(Commercial Availability of MVPD Navigation Devices)

Dear Ms. Salas:

This letter provides notice that on May 21, 1998, the following people met in connection with the above-captioned proceeding:

Quincy Rodgers, Vice President, Government  
Affairs, General Instrument Corporation ("GI")  
Chris Crafton, Director, Industry Affairs, GI  
Dave Robinson, Senior Vice President & General  
Manager, Digital Network Systems, GI  
Mark DePietro, Director Systems Engineering  
Digital Network Systems, GI  
Jeff Krauss, Consultant to GI  
The undersigned

Anita Walgren, Legal Advisor, Commissioner Ness  
Dale Hatfield, Chief, Office of Engineering and  
Technology  
Bill Johnson, Deputy Bureau Chief, Cable Services  
Bureau,  
Karen Kornbluh, Deputy Chief, Mass Media Bureau  
Michael Lance, Deputy Division Chief, Cable  
Services Bureau

Three Lafayette Centre  
1155 21st Street, NW  
Washington, DC 20036-3384  
202 328 8000

Telex: RCA 229800  
WU 89-2762  
Fax: 202 887 8979

Ms. Magalie Roman Salas  
May 22, 1998  
Page 2

Jonathan D. Levy, Senior Economist, Office of  
Plans & Policy  
Alan Stillwell, Industry Economist, Office of  
Engineering and Technology  
Stan Trost, IEEE Fellow, Office of Plans &  
Policy

Miles M. Circo, Senior Vice President and Chief  
Technical Officer, Divx  
David Goldschlag, Manager, Security Systems, Divx  
Robert Schwartz, Attorney, McDermott, Will &  
Emery

The discussion focused on the superior nature of embedded security over separate security in MVPD navigation devices. The attached document was provided to Commission staff during the meeting and should be included in the record in the above-captioned proceeding.

Kindly direct any questions about this matter to the undersigned.

Thank you.

Sincerely,

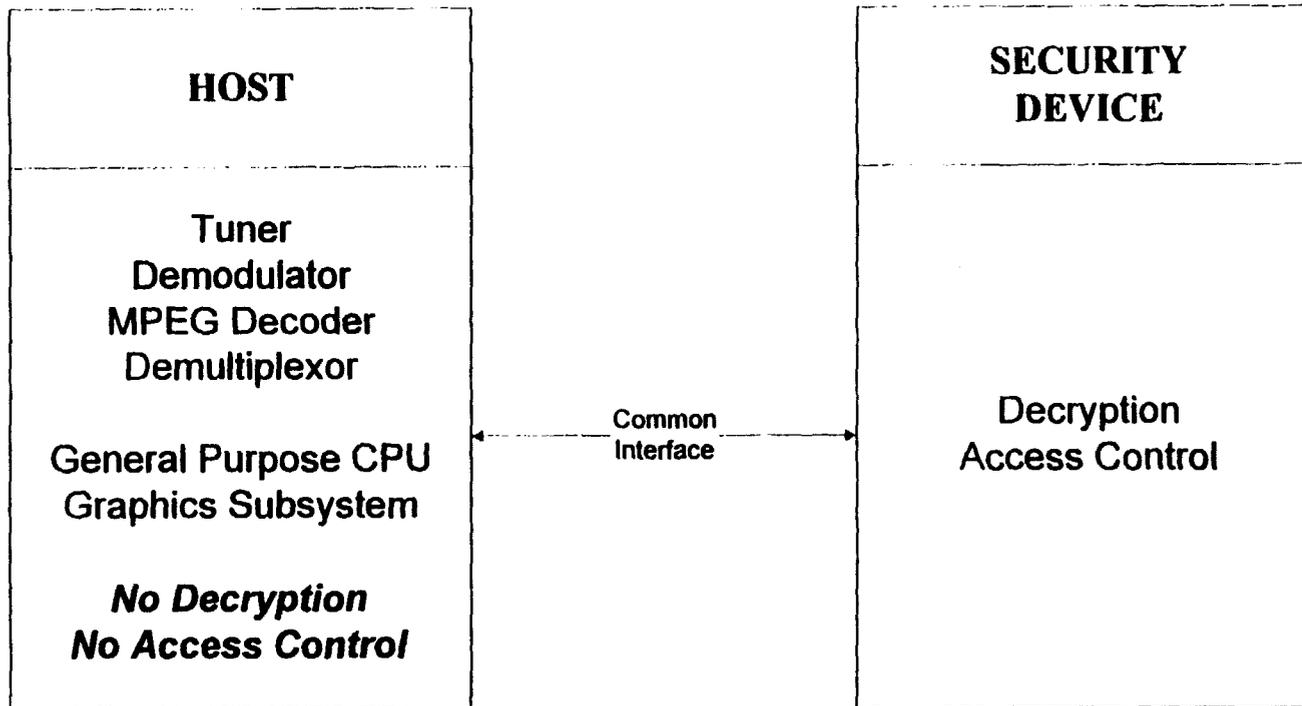


Francis M. Buono

cc: Above-named parties

Attachment

# Pure Separation Model

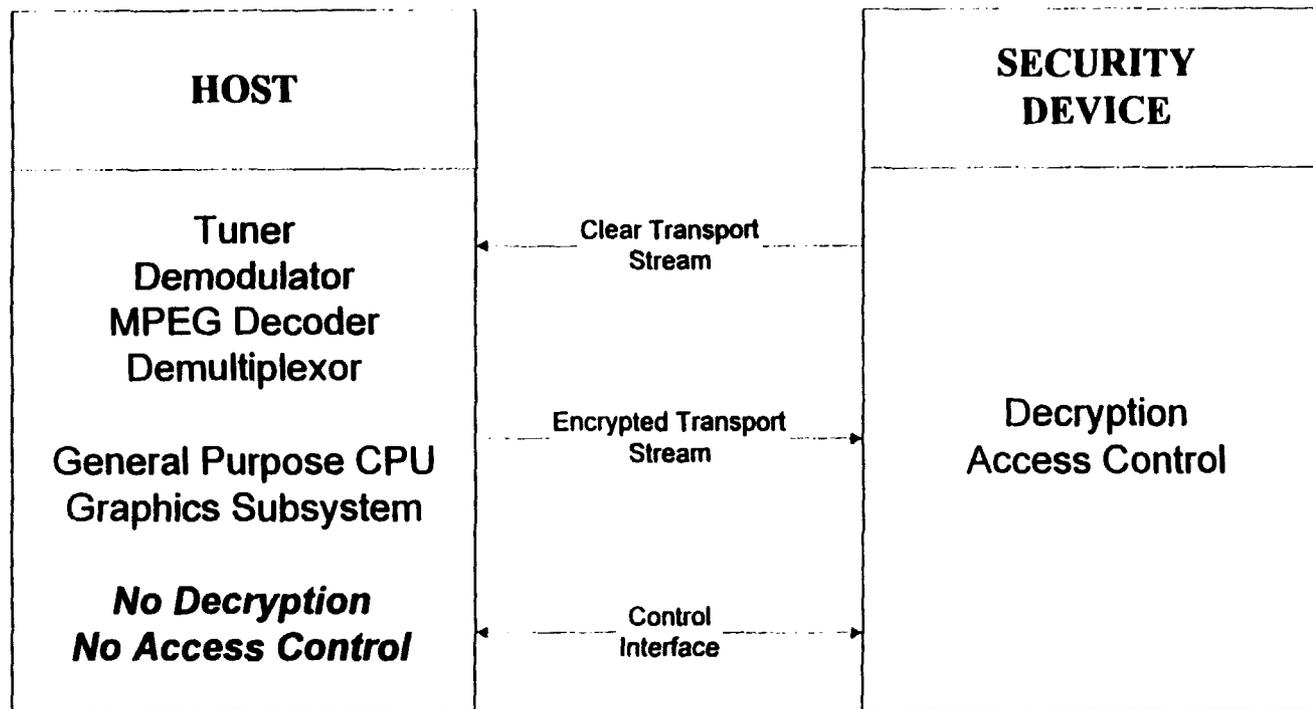


Pure Separation Model: Conceptual View

980521 01



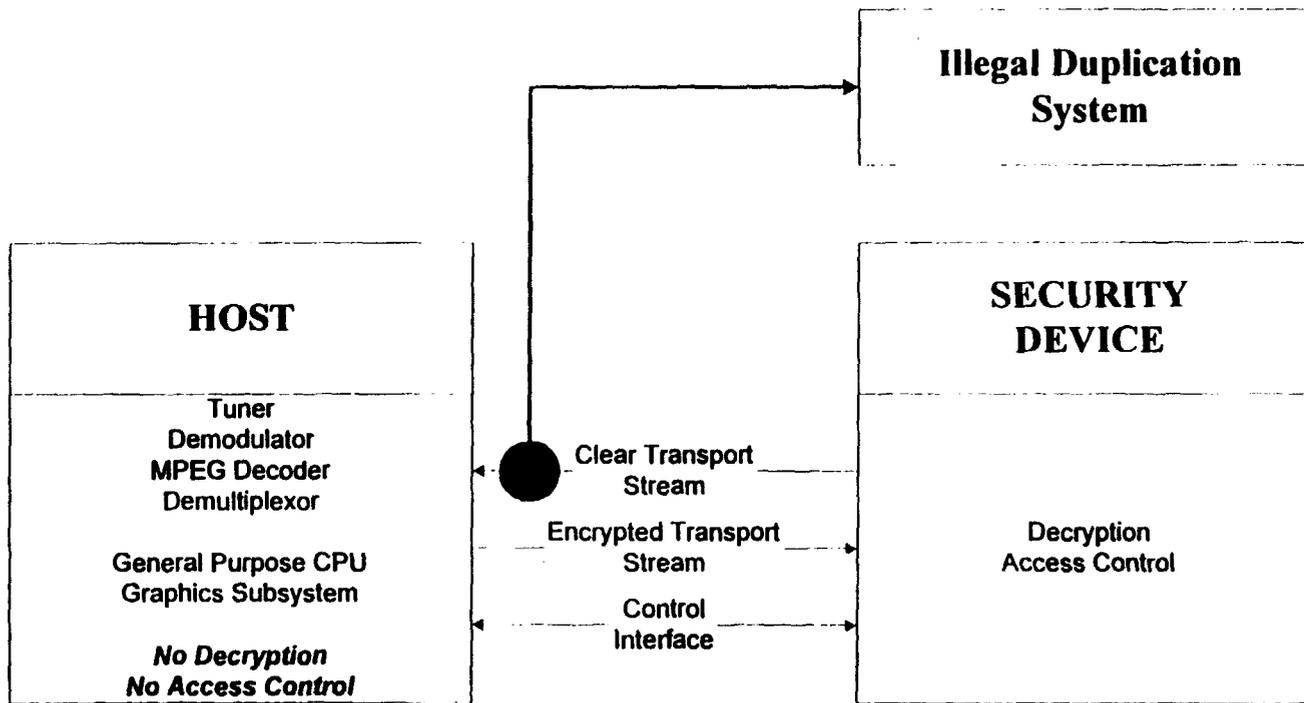
## Pure Separation Model : Interfaces



Pure Separation Model: Common Interface Defined

980521 02

# Attack For Pure Separation Model

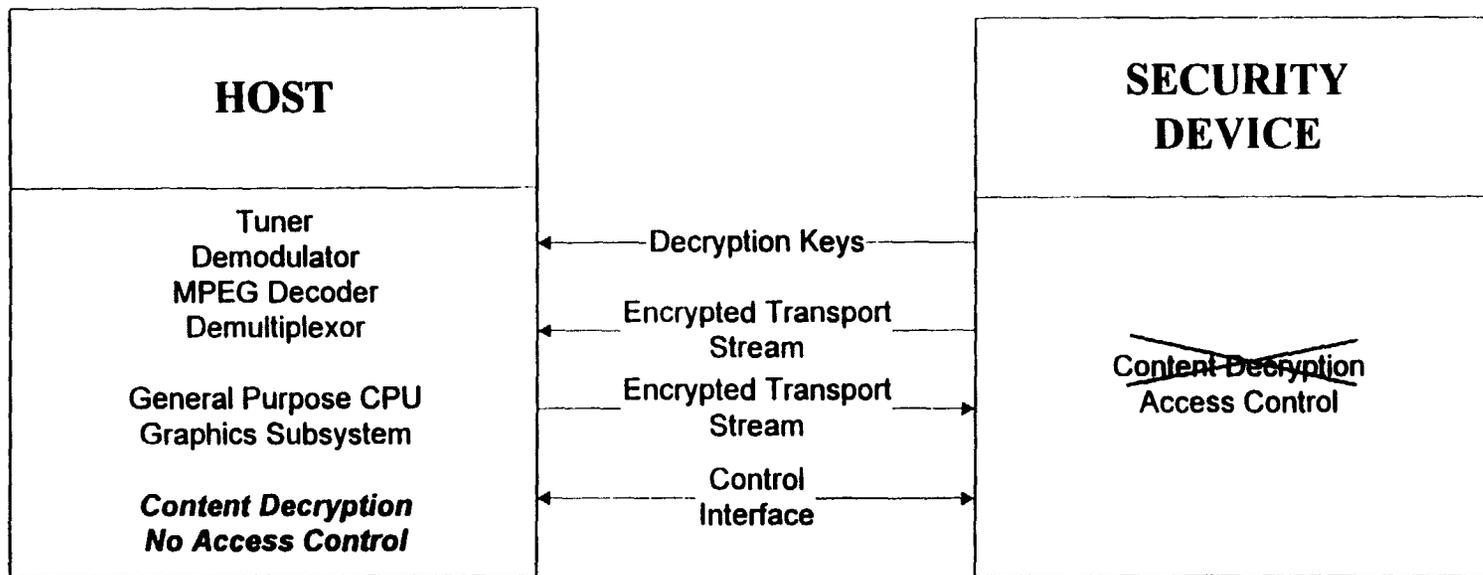


Pure Separation Model: Obvious Point of Attack

980521 03



# Modified Separation Model Makes Duplication Harder



**"Modified Separation" Model: Content Decryption in Host  
This includes embedded security functions in Host !**

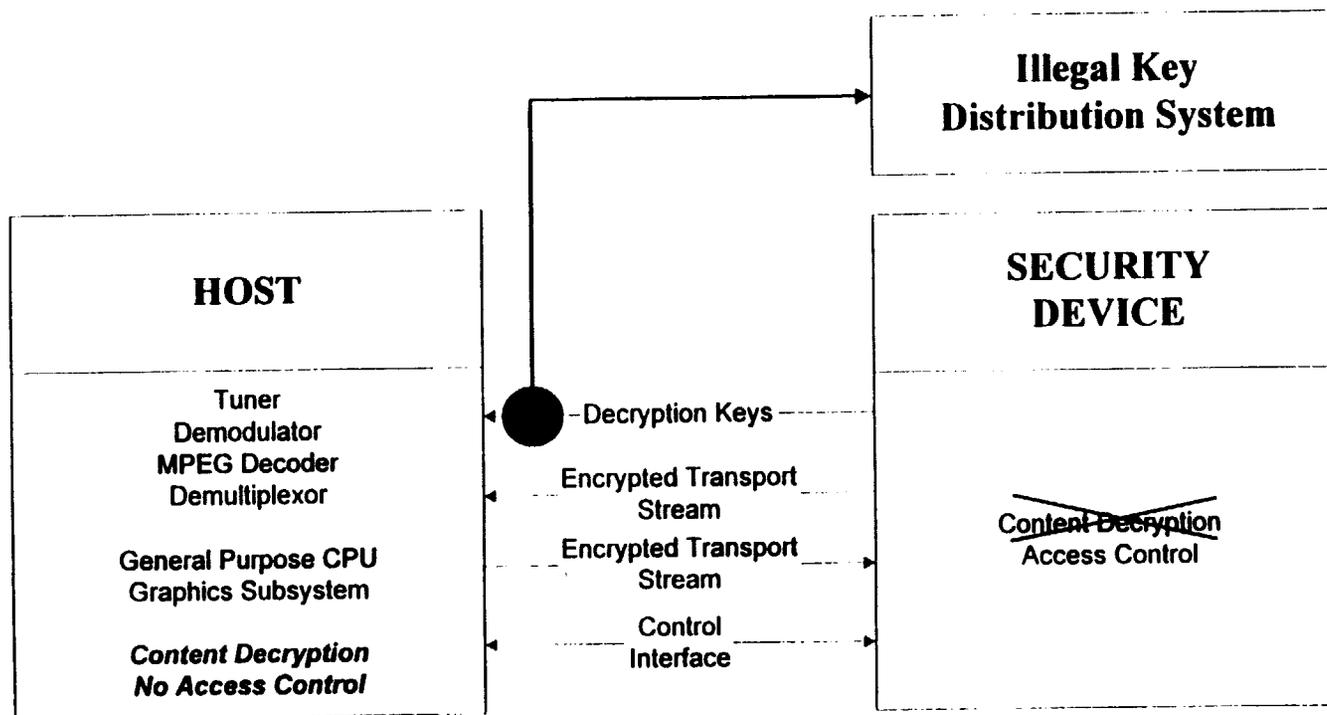
980521-04

## Immediate Conclusions

- **Pure Separation Does Not Work**
- **Some Security Functions Must Be Embedded in Host**



# Modified Separation Model Attack Scenario 1

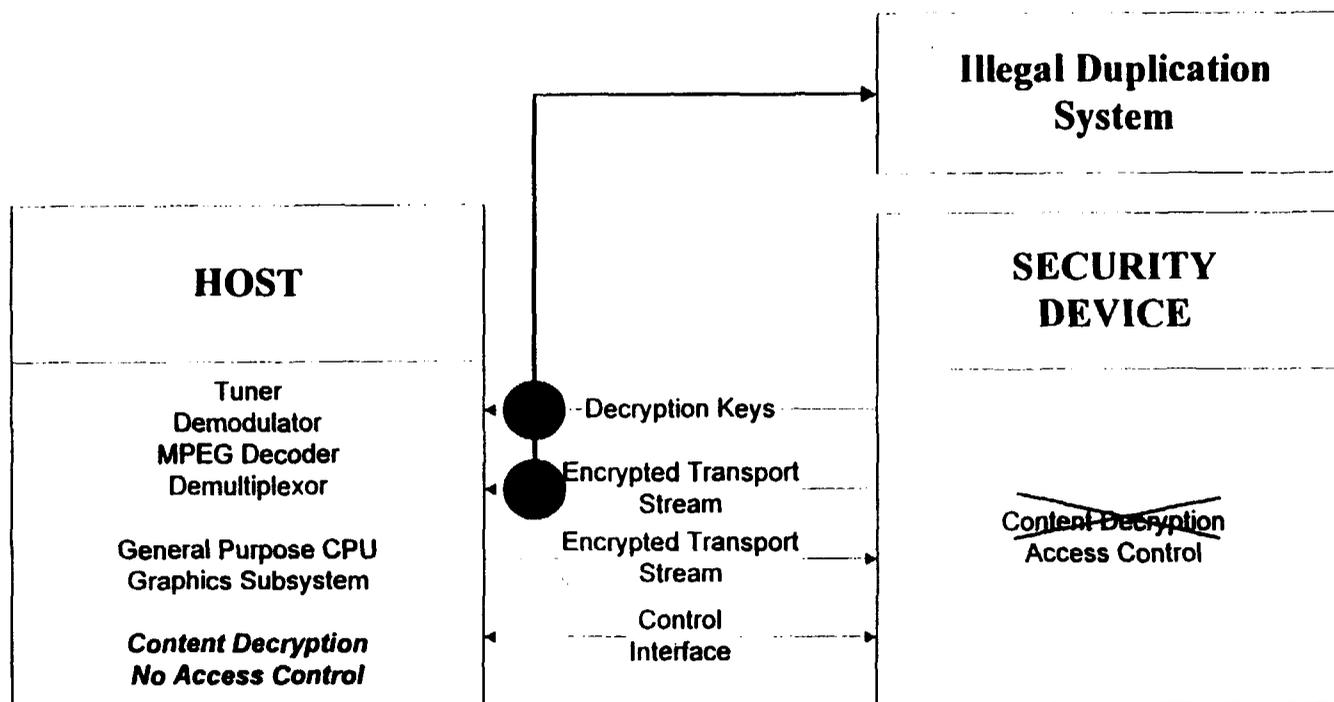


"Modified Separation Model": One Possible Attack

980521-05



## Modified Separation Model Attack Scenario 2

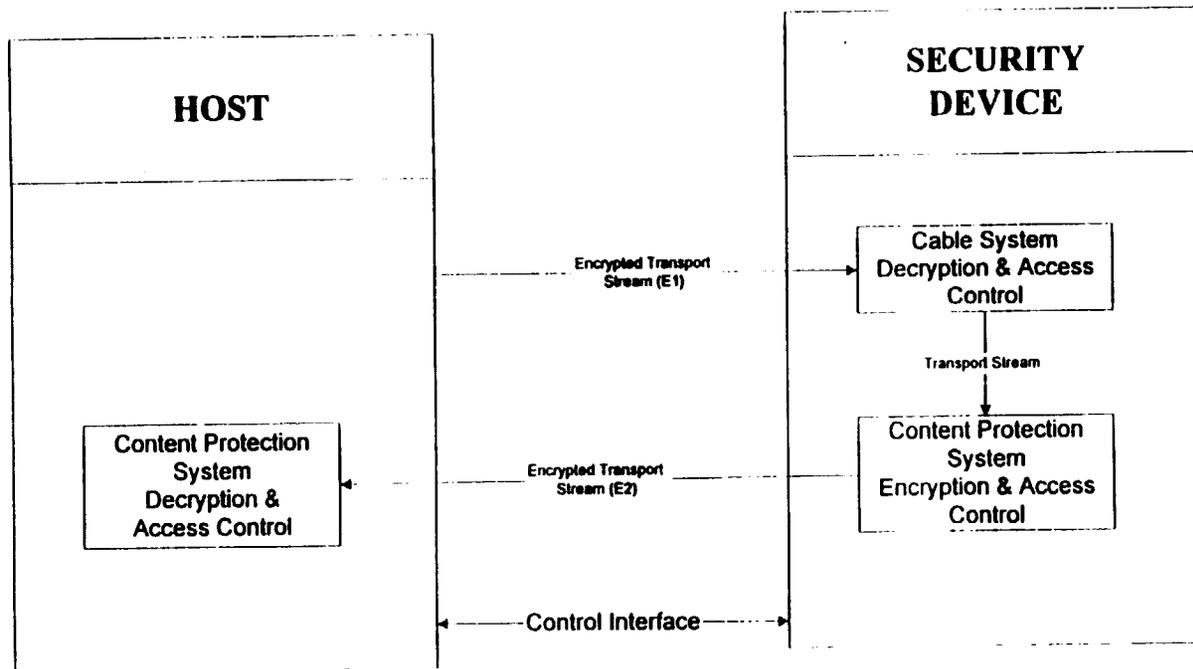


"Modified Separation Model": Another Possible Attack

980521-00



# Final Separation Model



**"Final Separation Model" : Two Encryption / Access Control Systems  
Consistent With POD Model  
Requires Embedded Security in Host &  
Two Security Systems in Security Device**

98021-07



## Integration : More Is Better

- Trend: Continuously Increase Level of Integration
  - Lowers Cost for Manufacturer
  - Lowers Price for Ultimate Consumer



## Conclusion For Final Separation Model

- Embedded Security is Needed in the Host
- Since it is needed
  - It can be used for the initial cable system security function
  - Use the security system standard interface to facilitate upgrades



## Conclusions

- Any Adopted Rule Should Not:
  - Hurt MSO's ability to innovate & provide consistent quality of service
  - Make User-Experience Based Service Differentiation More Difficult
  - Outlaw Architecture Adopted by Opencable POD Initiative

I

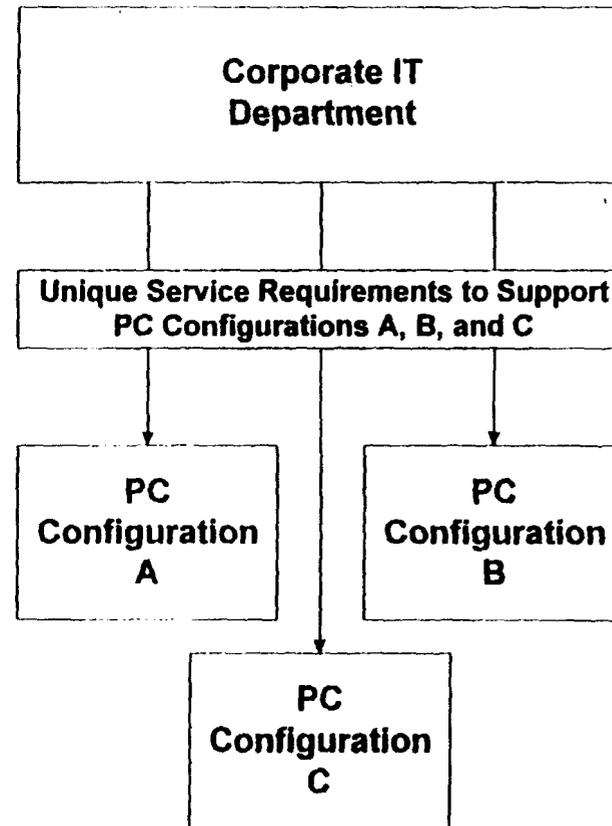
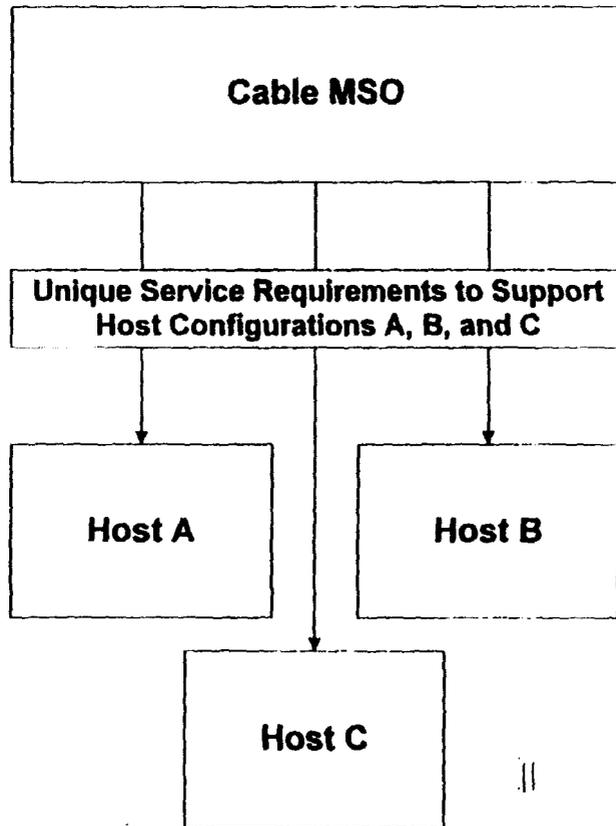
"

5/21/98

General Instrument



# MSO's Job : Comparable to a Corporate IT Department



980521-08



# MSO Desire to Differentiate Based on the Entire User Experience

- User Experience
  - Look and Feel of Menus
  - Ease of Navigation
  - Features Supported in Program Guide & Native Application
- Translates into need to specify
  - Processor Horsepower
  - Graphics System Capabilities
  - Resident Application Capabilities



## Authentication : Necessary But Insufficient

- For Copy Protection
  - Communicants Must Be Able To Authenticate Each other AND
  - Communication Must Be Able to Be Validated with Respect to Access Control List
- Access Control List
  - Defines Universe of Legal Communicants
  - Is Adminstered Outside of the Set Top domain

## Typical Uses of OOB Channel

- Code Downloads
- EPG Data & Code Feeds
- VCR IR Code Database Downloads
- Cable System Channel Maps
- Control System Poll Requests
- Personal Text Messages
- Emergency Alert Messages
- Entitlement Management Messages
- Media Access Control
- Interactive Data Services
- System Time Delivery



## OOB Channel Notes

- **OOB Is Not Only Mechanism to Deliver Services**
- **Inband Systems Are Also Possible**
  - **Popular with Wireless Operators**
- **Tradeoff Between Inband & OOB System Design Based On**
  - **Existence of Analog Channels**
    - **OOB Design More Convenient Here**
  - **Number of Digital Channels**
    - **With Large Number, Aggregate Bandwidth of OOB Becomes More Economical**



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Robert S. Schwartz  
Attorney at Law  
[rhesbm@access.digex.net](mailto:rhesbm@access.digex.net)  
202-756-8081

**MCDERMOTT, WILL & EMERY**

May 18, 1998

**VIA MESSENGER**

Ms. Magalie R. Salas  
Federal Communications Commission  
Office of the Secretary  
1919 M Street, N.W.  
May 15, 1998 Room 222  
Washington, DC 20554

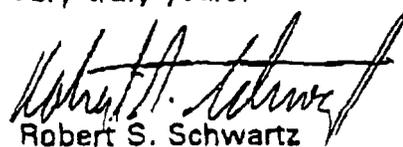
**Re: Notice of Oral Ex Parte Presentation; Docket 97-80**

Dear Ms. Salas :

This is to notify the Office of the Secretary that on May 15 , 1998, Robert S. Schwartz, an attorney with the law firm of McDermott, Will & Emery, on behalf of its client, Circuit City, provided an ex parte document to William Johnson, Deputy Chief of the Cable Services Bureau.

In accordance with the Section 1.1206 of the Federal Communications Commission rules, this original and one copy are provided to your office. A copy of this notice has been hand-delivered to Mr. Johnson.

Very truly yours,

  
Robert S. Schwartz

Enclosure

cc: Office of the Secretary (6 copies)  
Mr. William Johnson

## Part 76, Subpart T

## COMMERCIAL AVAILABILITY OF CABLE NAVIGATION DEVICES

## 76.1600 Definitions

- (a) *Cable Navigation Devices*: equipment that is used in direct connection with services provided over a cable system and that does not provide cable system security functionality such as that provided by cable security equipment.
- (b) *Cable Security Equipment*: equipment installed on or with respect to a cable television subscriber's premises that uses scrambling, encryption and other techniques to prevent the unauthorized reception of multichannel video programming and other services provided over cable systems.
- (c) *Cable System Terminal Devices*: equipment installed on a cable television subscriber's premises by a cable system operator providing the functionalities of cable navigation devices and cable security equipment on an unseparated basis.

## 76.1601 Provision of Equipment

- (a) *Cable Security Equipment*. Cable security equipment may only be provided by a cable system operator. Such equipment (1) may only be used by the cable system operator to control access to multichannel video programming and other services provided over a cable system, subject to the requirements of Section 76.630 of this part, and (2) may not provide subscribers with any non-security-related functionality provided by cable navigation devices and other consumer electronics equipment available from retailers, manufacturers and other vendors on a commercial basis.
- (b) *Cable Navigation Devices*. (1) A cable system operator may offer cable navigation devices to its subscribers for lease or purchase, provided that the charges for such devices are separately stated and are not subsidized by the cable system operator's service offerings. (2) Retailers, manufacturers and other entities not affiliated with cable system operators may provide cable navigation devices to cable subscribers on a commercial basis.
- (c) *Cable System Terminal Devices*. As of the date twelve months from the effective date of the order creating this section, cable systems operators will cease the installation of cable system terminal devices, except for equipment deployed subject to a waiver granted under Section 76.1605 of this part.

**76.1602 Introduction of Interoperable Cable Security Equipment**

(a) *New Equipment.* As of the date twelve months from the effective date of the order creating this section, a cable system operator shall provide all new subscribers to any cable service with cable security equipment that complies with the definitional and interoperability provisions of this subpart, and will enable the use of cable navigation devices that are commercially available from manufacturers, retailers, and other vendors not affiliated with the cable system operator. The rates charged for the installation of cable security equipment shall be subject to the requirements of Section 76.923.

(b) *Replacement of Equipment by the Cable System Operator.* As of the date twelve months from the effective date of the order creating this section, cable system operators that make such changes to a cable subscriber's service so as to necessitate the replacement of the cable system terminal device located on the cable subscriber's premises shall replace any cable system terminal device with cable security equipment that complies with the definitional and interoperability provisions of this subpart, and will enable the use of cable navigation devices that are commercially available from manufacturers, retailers, and other vendors not affiliated with the cable system operator. The rates charged for the installation and lease of cable security equipment shall be subject to the requirements of Section 76.923 of this part.

(c) *Replacement of Equipment at Subscriber's Request.*

(1) As of the date six months from the effective date of the order creating this section and upon the request of a subscriber, a cable system operator must replace previously installed cable system termination devices with cable security equipment that complies with the definitional and interoperability provisions of this subpart, and will enable the use of cable navigation devices that are commercially available from manufacturers, retailers, and other vendors not affiliated with the cable system operator.

(2) The rate charged by the cable operator for replacing previously installed customer premises equipment with cable security equipment pursuant to paragraph (1) of this subsection shall be subject to the requirements of Section 76.923.

**76.1603 Interoperability**

(a) Cable security equipment will comply Section 15.115 of this chapter, and with the technical standards and consumer electronics compatibility requirements of subpart K of this part, but in any event the provision of security functionality by such equipment will conform to appropriate technical standards promulgated by a national standards organization accredited by the American National Standards Institute, such as the analog decoder interface standard (EIA/IS-105.1, 105.2), the digital National Renewable Security Standard ("NRSS") (EIA/IS-679), or other cable industry specifications suitable for ultimate adoption as an EIA/IS standard, insofar as such standards address the security

functionalities required by the cable system operator. Security-related features, functions, techniques or protocols not encompassed in such standards may be utilized by cable system operators subject to the technical information disclosure requirements of this section.

(b) Cable navigation devices shall comply with the requirements for TV interface devices and cable-ready consumer electronics equipment found in Sections 15.115 and 15.118 of this chapter, but in any event the interface of such equipment with cable security equipment will conform to appropriate technical standards promulgated by a national standards organization accredited by the American National Standards Institute, such as the analog decoder interface standard (EIA/IS-105.1), the digital National Renewable Security Standard ("NRSS") (EIA/IS-679), or other cable industry specifications suitable for ultimate adoption as an SCTE standard.

(c) Cable system operators will ensure that the delivery of digital cable television services offered as of the date twelve months from the effective date of the order creating this section will conform to appropriate technical standards promulgated by national standards organizations accredited by the American National Standards Institute covering all technical characteristics affecting the interoperability of cable navigation devices, such as, but not limited to:

- (1) ATSC Digital Television, A/53;
  - (2) RF Interface Specification for Television Receiving Devices and Cable Television Systems, EIA-23;
  - (1) Cable Television Channel Identification Plan, EIA-542;
  - (2) Digital Transmission Standard for Cable Television, SCTE DVS-031
  - (3) Digital Video Service Multiplex and Transport System Standard for Cable Television, SCTE DVS-093;
  - (4) "Class A" Issues-Profiles, Levels and Formats, SCTE DVS-033;
  - (5) Program and System Information Protocol for Terrestrial Broadcast and Cable, SCTE DVS-097;
  - (6) High Performance Serial Bus, IEEE 1394;
  - (7) Standards equivalent to those listed above.
- (d) The cable system operator may make changes to the cable system, services, facilities, operations or procedures, where such action is not inconsistent with the rules and regulations in this part. If such changes can reasonably be expected to render any subscriber's cable navigation devices no longer interoperable with the services

delivered by the cable system, or require modification or alteration of such cable navigation device, or otherwise materially affect its use or performance, the cable system operator shall provide the subscriber with adequate notice in writing, to allow the subscriber to maintain uninterrupted service.

- (e) As of the date six months from the effective date of the order creating this section and within thirty days of the receipt of a request from a manufacturer, retailer, and other vendor that is not affiliated with the cable system operator, the cable system operator shall provide to the requesting party the technical information necessary to design cable navigation devices that will be interoperable with services delivered by the cable system, or shall provide reasonable terms for nondisclosure agreements under which such information may be obtained.
- (f) Upon the decision by the cable system operator to make changes to the cable system, services, facilities, operations or procedures that can reasonably be expected to render any subscriber's cable navigation devices no longer interoperable with the services delivered by the cable system, or require modification or alteration of such cable navigation device, or otherwise materially affect its use or performance, and in event no later than six months before such changes in the cable system are effected, the cable system operator shall make reasonable efforts to notify manufacturers, retailers, and other vendors of cable navigation devices commercially available to subscribers of services delivered by the cable system of such changes. Such notification will also provide the technical information necessary for manufacturers of commercially available cable navigation devices to design such devices that will be interoperable with services delivered by the cable system after the changes to the cable system have been effected, or will provide reasonable terms for nondisclosure agreements under which such information may be obtained.

**76.1605 Waiver**

Cable system operators may request waivers of any or all of the requirements of this subpart. Such a request shall, at a minimum, include:

- (a) A showing by the cable system operator that such waiver is necessary to assist the development or introduction of a new or improved multichannel video programming or other service offered over the cable system;
- (b) A showing by the cable system operator that the delivery of such new or improved multichannel video programming or other service offered over the cable system is not possible through the use of currently commercially available cable navigation devices;
- (c) A showing by the cable system operator that any changes to the cable system that can reasonably be expected to render any subscriber's cable navigation devices no longer interoperable with the services delivered by the cable system, or require modification

or alteration of such cable navigation device, or otherwise materially affect its use or performance, are directly related to the delivery of such new or improved multichannel video programming or other service offered over the cable system, and that subscribers' cable navigation devices will remain interoperable with the services delivered by the cable system that are unaffected by the delivery of such new or improved multichannel video programming or other service offered over the cable system;

- (d) The technical information necessary for manufacturers of commercially available cable navigation devices to design such devices that will be interoperable with such new or improved multichannel video programming or other service offered over the cable system, or the reasonable terms for nondisclosure agreements under which such information may be obtained;
- (e) An estimation of the date the waiver should be terminated based on the expected date of commercial availability of cable navigation devices that will be interoperable with such new or improved multichannel video programming or other service offered over the cable system.

**76-1606 Sunset**

The provisions of this section, except for those concerning interoperability, shall sunset when the Commission determines that: (1) the market for cable services is fully competitive; (2) the market for cable navigation devices and other consumer electronics equipment used in connection with cable services is fully competitive; and (3) the elimination of regulation would promote competition and the public interest.

**76-1607 Declaration of Conformity for Cable System Terminal Devices**

Compliance with the Declaration of Conformity provisions set forth in 47 CFR Parts 2 & 15 requires that, as of the date twelve months from the effective date of the order creating this section, manufacturers and importers of Cable System Terminal Devices may no longer make, market or import cable system security functionality such as that provided by Cable Security Equipment, except for equipment subject to a waiver granted under Section 76.1605 of this part.

**Amendment to Part 76.617**

- (b) If a cable system operator determines that a subscriber's cable navigation device is responsible for signal leakage that is causing interference outside of the subscriber's