

# FCC Open Set Top Recommendation

Overview of Recommendation 4.12  
of FCC National Broadband Plan (March 2010)

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# Topics

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  - Key elements
- **Specifics**
  - Principles, benefits, shoulds, architecture
- **Context**
  - FCC's unsuccessful attempts to meet Section 629 goals
- **Assessment**
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# Recommendation

# FCC Open Set Top

**RECOMMENDATION 4.12:** The FCC should initiate a proceeding to ensure that all multichannel video programming distributors (MVPDs) install a gateway device or equivalent functionality in all new subscriber homes and in all homes requiring replacement set-top boxes, starting on or before Dec. 31, 2012.

"Connecting America: The National Broadband Plan"  
Federal Communications Commission, March 2010  
available at <http://www.broadband.gov/plan/>

# Key Elements of Recommendation

Gateway or equivalent	<b>“gateway device or equivalent functionality”</b>
All Networks	<b>“all multichannel video programming distributors (MVPDs)”</b>
All (New) Homes	<b>“all new subscriber homes and in all homes requiring replacement set-top boxes”</b>
YE 2012	<b>“starting on or before Dec. 31, 2012”</b>
Industry standards	<b>“The standards for the gateway device should be determined by industry standard-setting bodies, in consultation with the FCC”</b>
Up-front enforcement criteria	<b>Up-front criteria for “enforcement mechanisms”, such as:</b> <ul style="list-style-type: none"><li>- <b>“fines against non-compliant operators or denying extensions of certain CableCARD waivers”</b></li><li>- <b>“agreements with operators to provide set-top boxes for free to new customers until a gateway device is deployed”</b></li><li>- <b>“grant small operators more time to deploy gateway device”</b></li></ul>

FCC Broadband Plan, p. 51-52, Fn. 119

# Specifics

# Key Principles

## Simple Translator To Open Protocols

A gateway device should be simple and inexpensive, both for MVPDs and consumers. It should be equipped with **only those components and functionality required to perform network-specific functions and translate them into open, standard protocols**. The device should not support any other functionality or components.

## Separate User Interface

A gateway device should allow consumer electronics manufacturers to develop, sell and support network-neutral devices that access content from the network independently from MVPDs or any third parties. Specifically, **third-party manufacturers should not be limited in their ability to innovate in the user interface of their devices by MVPD requirements**. User-interface innovation is an important element for differentiating products in the consumer electronics market and for achieving the objectives of Section 629.

# Anticipated Benefits

**Choice, price, capability**

**Greater choice, lower prices and more capability in the boxes, including applications**

**Competition**

**More competition among companies offering video content (MVPDs)**

**Unlimited TV & Internet choice in integrated UI**

**Unlimited choice in the content available—whether from traditional television (TV) or the Internet—through an integrated user interface**

**More applications**

**More video and broadband applications for the TV, possibly in conjunction with other devices, such as mobile phones and personal computers (PCs)**

**Cross-device potential**

**Higher broadband usage**

**Higher broadband utilization**

FCC Broadband Plan, p. 51

# “Shoulds”

**Open standards**

Should use **open, published standards** for discovering, signaling, authenticating and communicating with retail devices.

**No device UI or functional restrictions**

Should allow retail devices to access all MVPD content and services to which a customer has subscribed and to display the content and services **without restrictions or requirements on the device’s user interface or functions and without degradation in quality** (e.g., due to transcoding).

**No quality degradation**

**No restrictive licensing (RAND)**

Should **not require restrictive licensing, disclosure or certification**. Any criterion should apply **equally to retail and operator-supplied devices**. Any intellectual property should be available to all parties at a low cost and on **reasonable and non-discriminatory terms**.

**Equal treatment**

**Pass-through copy protection flags**

Should pass video content through to retail devices with **existing copy protection flags from the MVPD**.

FCC Broadband Plan, p. 51

# Architecture

**“Relatively simple” architecture**

**Requiring that the gateway device or equivalent functionality be developed and deployed by the end of 2012 is reasonable given the importance of stimulating competition and innovation in set-top boxes, the extensive public record established in this subject area and the **relatively simple architectures proposed to date.****

**But open questions to resolve**

**We note that there are **open questions to resolve as part of the rulemaking proceeding regarding the gateway architecture.****

FCC Broadband Plan, p. 51 and n. 124

# Context

# Section 629: FCC Unsuccessful

**“Congress recognized the need for change in the set-top box market when it enacted Section 629 of the Telecommunications Act, but the FCC’s attempts to meet Congress’s objectives have been unsuccessful.”**

FCC Broadband Plan, p. 35

# Competition... “Innovation”... Crucial

“Of the three main categories of broadband devices—mobile devices, personal computing devices and set-top boxes—**set-top boxes is the category with the least competition**: two manufacturers control more than 90% of the U.S. market and have controlled comparable market shares for many years.

Congress recognized the need for change in the set-top box market when it enacted Section 629 of the Telecommunications Act, but the **FCC’s attempts to meet Congress’s objectives have been unsuccessful.**

As video becomes an increasingly important element of broadband applications, driving usage and adoption, it is **crucial that the FCC takes steps that will foster increased innovation** in set-top boxes and video navigation devices to bring more competition and choice for consumers.”

FCC Broadband Plan, p. 35

# Section 629: Rationale

**“Congress wanted to stimulate competition and innovation in set-top boxes and other video navigation devices in 1996 when it added Section 629 to the Communications Act.**

**Section 629 directed the FCC to ensure that consumers could use commercially available navigation devices to access services from MVPDs.**

**Lawmakers pointed to innovative uses of the telephone network, related to new phones, faxes and other equipment, and said they wanted to create a similarly vigorous retail market for devices used with MVPD services.**

**‘[The provision would] help to replicate for the interactive communications equipment market the success that manufacturers of customer premises equipment (CPE) have had in creating and selling all sorts of new phones, faxes, and other equipment subsequent to the implementation of rules unbundling CPE from common carrier networks.’”**

FCC Broadband Plan, p. 50 & fn. 103

# Lack of Devices

“[B]y 2008, **two manufacturers shared 92% of the market**, up from 87% in 2006.

Only **11 set-top boxes have been certified for retail sale**, in contrast to the more than 850 unique handsets that were certified to operate on mobile networks in 2009 alone.

In addition, **97% of CableCARD-deployed set-top boxes installed between July 2007 and November 2009 were leased** from operators rather than purchased at retail..”

# Lack of Innovation

**“The lack of innovation in set-top boxes limits what consumers can do and their choices to consume video, and the emergence of new uses and applications.**

**It may also be inhibiting business models that could serve as a powerful driver of adoption and utilization of broadband, such as, models that integrate traditional television and the Internet.”**

FCC Broadband Plan, p. 18

# Broadband Modems As Analog

**Broadband Modem example**

**Broadband modems offer an example** of how to unleash competition, investment and innovation in set-top boxes and other video navigation devices for consumer benefit.

**Innovation on either side**

**Innovation can happen on either “side”** of that device without affecting the other side.

**Independent manufacturers**

**Because the interface device communicates with consumer devices through truly open, widely used and standard protocols, manufacturers can create devices independently from service providers or any related third parties** (e.g., CableLabs).

**No onerous licensing or approvals**

**PC manufacturers do not need to sign non-disclosure agreements with broadband service providers, license any intellectual property selected or favored by broadband service providers or get approval from any broadband service providers or any non-regulatory certification bodies to develop or sell their PCs at retail or enable consumers to attach them to service provider networks through the interface device.**

**Video network interface device innovation spark**

**Establishing an interface device for video networks that serves a similar purpose to modems for broadband networks could spark similar levels of competition, investment and innovation**

FCC Broadband Plan, p. 51

# Section 629 of 1996 Telco Act

(a) The Commission shall, in consultation with **appropriate industry standard-setting organizations**, adopt regulations to **assure the commercial availability**, to consumers of multichannel video programming and other services offered over multichannel video programming systems, 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, from manufacturers, retailers, and other vendors **not affiliated** with any multichannel video programming distributor.

Such regulations shall not prohibit any multichannel video programming distributor from also offering converter boxes, interactive communications equipment, and other equipment used by consumers to access multichannel video programming and other services offered over multichannel video programming systems, to consumers, if the system operator's charges to consumers for such devices and equipment are **separately stated and not subsidized** by charges for any such service.

..

(e) Sunset. 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**.

47 U.S.C. § 549 (codifying section 629 of the Telecommunications Act of 1996)

# Section 629: Rationale

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FCC Broadband Plan, p. 50 & fn. 103

# Who is Covered by Section 629?

**All MVPDs**

**Section 629 nominally applies to all MVPDs.**

**Applied only to cable**

**The FCC, however, has applied its rules only to cable operators.**

**FCC exempted satellite**

**FCC directly exempted satellite operators (e.g., DirecTV and DISH Network), since they operate throughout the United States and offer devices for retail sale through unaffiliated vendors,**

**FCC exempted some IPTV**

**[FCC also exempted] certain Internet Protocol TV (IPTV) providers, primarily small telephone cooperatives.**

**ATT (IPTV) undecided**

**AT&T (an IPTV provider) has neither requested nor received a waiver for its U-Verse service.**

**Verizon FiOS = 629 cable**

**Verizon FiOS is considered a cable service for regulatory purposes and is not exempted from Section 629.**

FCC Broadband Plan, p. 50 & fn. 105

# Section 629 Time Line

- 1996** Telco Act of 1996
- 1998** FCC First Report and Order to implement Section 629  
“separate the system that customers use to gain access to video programming, called the conditional element, from the device customers use to navigate the programming”
- Aug 2004** First 3rd-party devices with CableCARDS hit the retail market
- July 2007** Cable operators begin using CableCARDS in leased set tops
- Mar 2010** CableCARDS in **only 1% of set tops, only 2 vendors sell at retail**

FCC Broadband Plan, p. 50, 51

# Assessment

# Early Comments

**“When it comes to the Plan’s discussions regarding set-top boxes, I caution the Commission to tread gingerly. Technological mandates by the government almost never result in robust innovation.”**

*FCC Commissioner Robert McDowell*

**"We get our set-top box proceeding, with actual deadlines to get this stuff done."**

*Harold Feld, Public Knowledge*

**“[W]e are very pleased that the Plan is so clear that the only way a retail video device marketplace can fully work for consumers is if all MVPDs participate.**

**[A] gateway approach is certainly one of several approaches that should be thought through, and we are pleased that the Broadband Plan acknowledges that “functional equivalents” should also be reviewed.**

**But ... we still firmly believe that technology mandates should be a last resort.”**

*Kyle McStarow, NCTA*

# A Third “Capture-Ready” Initiative?

- **1 ATSC (FCC-mandated terrestrial DTV)**
  - Exited global stage, uncompetitive with DVB and ISDB
  - Patent lawsuits continue (even antitrust conspiracy)
- **2 Section 629 (competitive navigation devices):**
  - “FCC’s attempts to meet Congress’s objectives have been unsuccessful”

## What is different this time?

- Similar assumptions & strategy as prior efforts
- Similar reliance on easily captured “RAND” industry groups
- Similar (unsuccessful) playing-off of industry segments
- Similar get-tough enforcement threats
- Similar blur between devices & interfaces

# How to Tell if It is On-Track?

- **Is it specified in an uncaptured venue?**
- **Does it use unencumbered technologies?**
- **Is “it” a network interface?**
- **Does it work for the Web?**

# Is it specified in an uncaptured venue?

- **Why a Problem ...**

- An “All MPVD” US standards group doesn't (currently) exist
- FCC deference to narrow-interest standardization part of problem
- ANSI consensus philosophy questioned in several quarters
- “Everyone has an agenda”, but failure to manage is naïve at best

- **On Right Track If ...**

- Broader-based groups like ITU, ISO, IETF, W3C or like fully engaged
- On-going role for NIST, academia or other such less-vested parties

# Does it use unencumbered technologies?

- **Why a Problem ...**

- Gateway-related technologies are nearing patent expiration
- Patent portfolio life extension, EOL trolling are to be expected
- Encumbrances are closely linked to capture/control gambits

- **On Track If ...**

- FCC learns its lesson on patent hold-up (see ATSC...)!
- FCC follows European Broadcasting Union Recommendation 338 and resolves IPR issues *prior* to adoption
- Voluntary patent search & preference for royalty free

# Is “it” a network interface?

- **Why a Problem ...**

- A capturable linguistic blur
- Same blur at heart of past gridlocks

- **On Track If ...**

- “It” is a specification, not a device
- “It” can be & is implemented in the network
- Both operator & retail devices (must) plug into the interface

## **"a gateway device or equivalent functionality"**

device, standard, interface, point, function, architecture, entrance or functionality?

*“Gateway device*—A network device that acts as an **entrance** to another network and often is used to connect two otherwise incompatible networks.”

*“Internet gateway*—The closest peering **point** between a broadband provider and the public Internet for a given consumer connection.”

"a gateway **device or equivalent** functionality"

"**standards** for the gateway device"

"the gateway **architecture**"

"until **the gateway device** is widely deployed"

"until **a gateway device** is deployed"

"deploying gateway **device functionality**"

"the gateway device ... **[i]ts sole function**"

"would give a gateway device **a standard interface**"

"the **open** gateway device"

# Does it work for the Web?

- **Why a Problem ...**

- RAND, captured video standards highly problematic for Web
- Net effect would be to add control points on Web browsers

- **On Track If ...**

- Addresses need for royalty-free, video standards in Web browsers



# Thank You!

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