

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

In the Matter of	)	
	)	
Video Device Competition	)	MB Docket No. 10-91
	)	
Implementation of Section 304 of the Telecommunications Act of 1996	)	
	)	
Commercial Availability of Navigation Devices	)	CS Docket No. 97-80
	)	
Compatibility Between Cable Systems and Consumer Electronics Equipment	)	PP Docket No. 00-67

**Reply of Intel Corporation  
To Notice Of Inquiry on AllVid Gateway**

Intel Corporation is pleased to submit this Reply in support of a proposed “AllVid” adapter to enable full integration of MVPD-delivered video across the home and personal network. Intel’s Comments described how the AllVid adapter can stimulate much needed innovation in home networking and entertainment. For too long, MVPD content has been on the sidelines waiting to be integrated into consumer home networks. A simple AllVid device can open the gateway for consumers to unite all their audiovisual content with internet, data, and audio entertainment content into a seamless “menu” of content selections. The initial round of comments demonstrates the AllVid concept is highly feasible for the affected industries, and beneficial for consumers and competition.

As Intel commented, “What is key to the success of these types of products, from Intel and many other competitors, is that *the AllVid adapter must be a gateway, and not a gatekeeper.*” Intel Comments at 4. This can best be accomplished by ensuring that the

AllVid adapter uses voluntary standard protocols in common with the other devices on the network. Specifically, the AllVid adapter output should be based on Internet Protocol using the Digital Living Network Alliance (“DLNA”) guideline standards, in standard video formats. The MVPD can choose its own conditional access technology as security against theft of service or harm to the network. The adapter also will need to include digital tuner functions, and enable bidirectional communications of commands between home devices and the MVPD.

Once content leaves the AllVid adapter, DTCP-IP can manage the protected exchange of the content between the networked devices, and assure that the content will be protected thereafter consistent with the content owners’ instructions and the Commission’s encoding rules. No further MVPD control over the content is necessary.

**I. The AllVid Adapter Would Promote Innovation and Consumer Benefit.**

Consumers love their wide-screen digital televisions, but increasingly look to small screen sources for information and more entertainment. There is no technological reason why consumers cannot conveniently access on their televisions commercial and user-generated content from all sources: television, internet, physical prerecorded media, downloaded media, stored recordings, and live streaming. The AllVid adapter can play a pivotal role in breaking down today’s balkanized home video environment, and realizing that fully-integrated personal network environment. By connecting MVPD content to the rest of the home network, the Commission will spur innovation and competition to create feature-rich products and applications for business, education, and entertainment.

Intel long has been developing its processors with these goals in mind. Intel designed its powerful feature-rich system on a chip processor, the CE4100, for CE

devices such as Blu-ray Disc players, set-top boxes and digital TVs. The CE4100 offers raw CPU performance, world-class HD video and audio decode, and advanced graphics. The goal of these products is to seamlessly integrate television and all these other audiovisual sources onto the television platform, effectively turning televisions into “Smart TVs.”<sup>1</sup>

Products using these Intel system on a chip processors will greatly enhance the consumer home entertainment experience. These products will enable consumers to access disparate sources of audiovisual content through convenient and compelling search interfaces, and to bring them together on the television platform. The first generations of products, including products from Google, Sony, and Logitech, will begin to demonstrate the extensibility and power of the home network, and allow consumers to experience media and information in a fundamentally new way.

To enjoy the full potential of these game-changing products and applications, MVPD content must also be available to the home network. An IP-network based AllVid adapter, using the same standard DLNA-adopted protocols used by these other products, will help open this new, fully-connected world to the workplace, the classroom, and consumer homes. Intel therefore urges the Commission to proceed toward a rulemaking proceeding to create the regulatory infrastructure necessary to support development of the AllVid gateway.

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<sup>1</sup> An online “press kit” includes videos from Intel and the recent Google IO conference demonstrating a few of the many ways that consumers can experience their various audiovisual media content on products enabled with the Intel CE4100 chips. Intel Press Kit – Intel Smart TV Initiative, <http://www.intel.com/pressroom/kits/smarttv/video.htm>

## II. The AllVid Adapter is Technologically Feasible.

The comments submitted in this proceeding generally concur that an AllVid adapter is a feasible solution to the Commission's goals to support competitive availability of navigation devices integrated into home broadband-connected networks.<sup>2</sup> What makes the AllVid concept viable, and powerful, is its reliance on established voluntary standards such as the DLNA guidelines. These guidelines incorporate other standards, such as Universal Plug and Play for Audio Visual applications ("UPnP AV"), into a suite of protocols designed and intended to ensure network interoperability among devices sharing audiovisual content on a home network. Notably, even the comments of companies expressing a preference for the status quo describe their products' reliance on DLNA.<sup>3</sup>

Intel concurs with the comments of DLNA that the DLNA guidelines already provide the elements essential to the success of the AllVid adapter approach.<sup>4</sup> UPnP AV resolves many elements fundamental to networking, including device addressing, quality of service, and discovery of devices connected to the network. DLNA incorporates UPnP AV and other voluntary standards into a complete suite of interoperability standards, including networking and connectivity; device and service discovery and control; media

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<sup>2</sup> Ref. to CEA/CERC, Dish/Echostar, Panasonic, Sony, TiVo. Significantly, the joint comments of Dish/Echostar – an MVPD and a technology development company, respectively – proceed from the premise that the AllVid adapter is viable in concept, and indeed would be a preferred solution if adapted to meet particular needs of DBS services.

<sup>3</sup> Ref to Cisco, Motorola, Verizon.

<sup>4</sup> See, e.g., DLNA Comments at 3, 6, 9-10.

format and transport; media management distribution and control; content protection; and manageability.<sup>5</sup>

DLNA's strengths derive from its integration of existing standards and proven technologies into a unified suite of protocols and tools. It was developed by an inter-industry process including companies from the information technology, consumer electronics, motion picture, and cable and satellite industries. Although the DLNA guidelines for handling protected content were released less than four years ago, DLNA already is integrated into thousands of certified products and services offered to consumers, including DVRs, audiovisual systems, personal computers, and digital media adapters. As noted above, major MVPD operators are working to incorporate DLNA interoperability into their services. Therefore, specifying use of DLNA including UPnP AV will assure that consumers seamlessly can integrate audiovisual content from the AllVid adapter into their home networks.

If, as some comments suggest, DLNA does not currently accommodate *all* the functionality an AllVid adapter may need, DLNA provides the most appropriate forum to adopt or develop additional modules into the guidelines. Virtually all major MVPD, manufacturer, and motion picture commenters are promoter or contributor members to DLNA.<sup>6</sup> Extending the guidelines to meet any additional AllVid requirements would follow a natural progression for DLNA. And, if required to do so by Commission deadlines, Intel has confidence the DLNA process can meet them.

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<sup>5</sup> See Intel Comments at 6; DLNA, Key Technology Components, [http://www.dlna.org/industry/why\\_dlna/key\\_components/](http://www.dlna.org/industry/why_dlna/key_components/)

<sup>6</sup> [http://www.dlna.org/about\\_us/roster/](http://www.dlna.org/about_us/roster/)

### **III. DTCP-IP Can Provide Appropriate Content Protection Capability for the AllVid Adapter.**

Intel actively participates as a founder, contributor, or member of many entities that develop content protection technologies for audiovisual content, including systems for transmission protection, storage, and domain-based systems. Content protection for the AllVid adapter must balance several requirements of the various stakeholders: technological robustness; low-cost implementation; high degree of interoperability among devices, protocols, and formats; flexibility to accommodate new business models; flexibility for future product development; and, accommodation of consumers' reasonable and customary expectations for the use of content they have lawfully acquired. Of the available technologies, in Intel's view DTCP-IP is best suited to fulfill the responsibilities for content protection from the AllVid adapter to the home network.

Intel believes the most sensible content protection solution for the AllVid adapter is to deploy a single technology that can secure content in transit to the networked devices, and pass along the content in protected form along with the required content protection rules to the other networked devices. At the point of reception, the various networked devices respond to and follow the specified protection rules. The devices that receive content from the AllVid adapter likely are also receiving content from other sources as well. Therefore, it should be up to the manufacturer of those devices to select whatever protection technologies would be most appropriate to achieve the various protection obligations for each device's applications.<sup>7</sup> So long as those protection technologies are sufficiently robust, and respect and pass on the content protection rules

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<sup>7</sup> For example, a hard disk drive-based digital A/V recorder may use its own robust encryption method; Blu-ray recorders use AACs; Windows-based PCs may use WMDRM; etc.

to other devices that thereafter may receive the content, the entire chain of technologies together comprise a complete, effective, end-to-end system.

This is the precise role that DTCP is designed to facilitate. DTCP-IP uses industry standard AES 128 encryption and authentication techniques to protect content en route within a network. DTCP passes content only to DTCP-enabled devices that, by license, are required to provide robust technological and legal protections at least as strong as those of DTCP. DTCP is licensed on fair, reasonable and nondiscriminatory terms, and is inexpensive to build into products.

Intel also believes that DTCP has sufficient flexibility to work compatibly with current and future DRM systems. Over the more than 10 years that DTCP has been licensed, DTCP has continued to expand with greater interoperability, stronger protection, and accommodation of newer DRM systems and content delivery business models. In response to requests from content owners, DTCP Adopter licensees, or the Commission, as well as through the DLNA process, DTCP can continue that development to meet the needs of MVPDs and content owners for content that flows through an AllVid adapter.

### **Conclusion**

The Comments clearly demonstrate that the concept of an AllVid adapter to integrate MVPD content into the home network is based on sound policies that will benefit technological progress, competition and consumer welfare. The Comments further show that an AllVid adapter that uses common protocols and standards is technologically feasible, and can be realized within a few years' time. Intel urges the

Commission to proceed with a Notice of Proposed Rulemaking, and looks forward to working with the Commission to create a better user home networking experience.

Respectfully submitted,

/s/

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