"Tapping" New Tech

By William Lumpkins, IEEE Consumer Electronics Society Standards Chair

This has been an exciting quarter. I am pleased to answer a question submitted to *IEEE Consumer Electronics Magazine* from interested reader Bob Frankston. Bob asks, "Whatever happened to USB 3.0? I thought it was supposed to be the next big thing in connectivity."

This is an interesting question as with all new connectivity standards; for USB 3.0 (5 Gb/s signaling rate), the age-old question of "Which came first, the chicken or the egg" as it relates to the ecosystem is ever present. This question morphs into which part of the ecosystem will support USB 3.0 first: the device or the system. Intel and AMD, as in the recent past, tend to be the leaders in making this happen. AMD currently supports USB 3.0 with Intel supporting it, in its new 22nM IVY chipset, due out mid-April 2012. As for peripheral devices, besides most desktop hard drive manufactures, a few high-end digital single-lens reflex cameras like the Nikon D800 support the new USB 3.0 standard. As laptop and tablet devices roll out with USB 3.0 support, all products will start the incorporation of USB 3.0, which natively supports backward compatibility with USB 2.0 high-speed (480 Mb/s) and full-speed (12 Mb/s) devices. This inclusion of USB 3.0 will not be due to the need for increased speeds but due to the marketing push of companies to showcase that they support USB 3.0.

Application will arise to support the added bandwidth though, with the time in the near future for younger generations to wonder how past consumers of content lived with snail-passed transfer speeds of 480 Mb/s. The increase of wired connection speed will go hand in hand with the new wireless specifications being released by the IEEE Standards Association. Of note is 802.11ac, supporting 802.11n multiple input multiple output in the 8×8 (16×16 and 32×32 future expansions) configurations with over-the-air bandwidths at near 6.9 Gb/s. In short, Bob, USB 3.0 is coming but 802.11ac is right behind, and I personally see a place for both technologies. So, sorry to say we won't be losing all the cables any time soon. We at the IEEE Consumer Electronics Society hope that this is helpful and appreciate any comments/or criticism. You can send your views on this column to me at xillia@ieee.org.

UltraViolet is an attempt to remove the excuse many illegal downloaders have with downloaded content from sites such as Mininova and Pirates Bay.

INDUSTRY GROUP'S OVERVIEW

ULTRAVIOLET

UltraViolet is being touted as a "free, online personal library that gives you greater flexibility with how and where you watch the movies and TV shows that you purchase. Once a movie or TV show has been added to your UltraViolet library, you will have options to stream it over the Internet, download it for offline viewing, or play it back on a disc" [1]. UltraViolet is an attempt to remove the excuse many illegal downloaders have with downloaded content from sites such as Mininova and Pirates Bay. Most illegal downloaders believe, as do most purchasers of content, that once content is purchased in any given form, the purchaser should be able to view the content for the life of the purchaser. Although the current system is that the purchaser can only view it until the technology used to render it becomes obsolete and no longer available, then the purchaser is expected to purchase it again in another physical form.

UltraViolet is envisioned as a form of "proof of purchase" for the physical media or online content that is purchased through sites such as the Apple iTunes Store or Amazon. This allows companies participating in the UltraViolet online "cloud" digital storage locker to access the purchaser's

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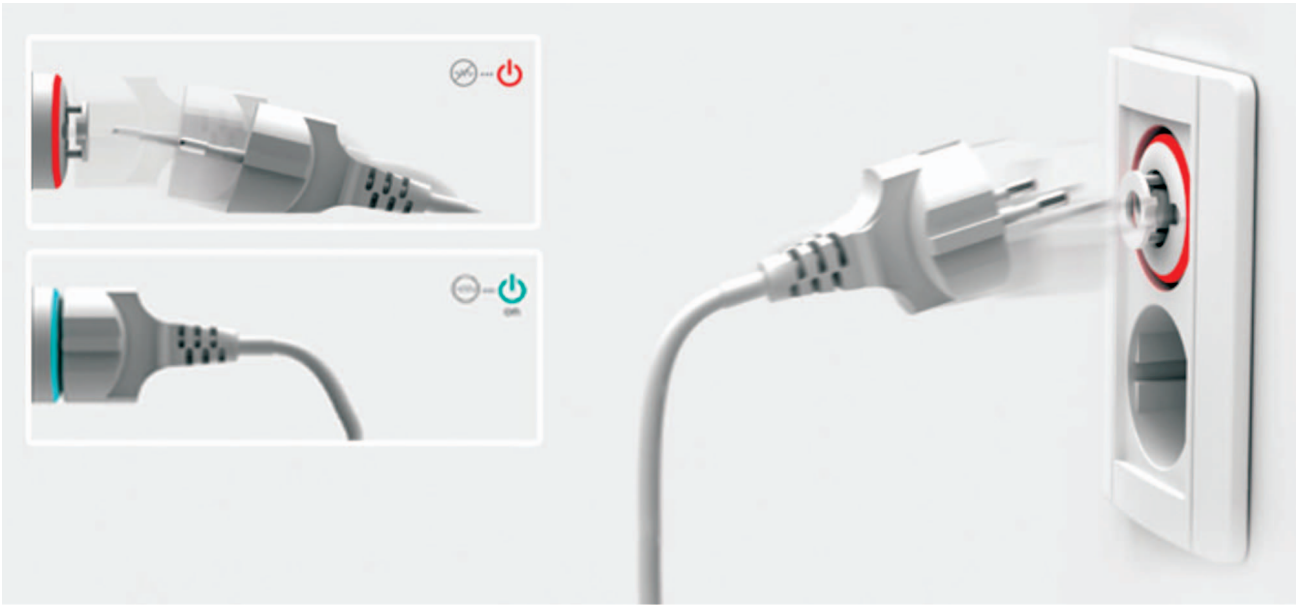

FIGURE 1. PumPing Tap concept. (Photo courtesy of RedDot Design Awards.)

content with a username and password, thus allowing legal reuse of the content on multiple devices. By keeping the licenses in the cloud (hoping the cloud servers do not die or become defunct) permits, in theory, a lifelong use of the digital content in any form that it may become. With the advent of newer technologies, this is a must have for this scheme to work. With the cloud-based license system, "back-up" copies exist for any device render with which you have an account. For example, along with your Play Station 3, your Microsoft XBOX 360 could have a copy of *John Carter* from Disney without the extra cost of purchasing the same content twice.

How does one create a new UltraViolet account? You can open your free UltraViolet account at http://www.uvvu.com or, when you purchase an UltraViolet-enabled movie or TV show online (or in-app), you can setup your new account as part of your purchase process [1].

INTERESTING NEW PRODUCT CONCEPT

During my many restless nights of searching the World Wide Web for interesting topics, and putting off writing my quarterly article, I came across an interesting product (Figure 1). I suppose it could be classified as a "green" consumer product, as its purpose is to reduce energy consumption of appliances. Named "PumPing Tap," it is a spring-loaded socket that ejects a plug if an appliance has been switched off. This prevents the wasting of power in standby mode [2].

PumPing Tap is a spring-loaded socket that ejects a plug if the associated appliance is not in use.

Most power switches are designed past the main power supply section to allow features like wake up on event; such as pushing the remote control on button. This means that power is still flowing in the appliance—even when the appliance power switch is in the off position. This means that our TVs, Blu-ray players, and computers are all drawing power when we are on vacation, even though we all assume that the power is off (when at home or at work, while recharging devices such as smart phones or electric razors). With no one to constantly watch for visual indicators on the recharging device, to tell us that the device is at 100% percent charge, the devices continues to try to charge batteries that are already charged, wasting power. It is estimated that 10% of the product's total annual current consumption is wasted due to this case.

"PumPing Tap is a spring-loaded socket that ejects a plug if the associated appliance is not in use. When the user turns off the power, a ring of light appears on the socket and surrounds the plug. If the plug has not been pulled out after 10 min, the socket automatically ejects it—like toast popping up from a toaster" [2].

REFERENCES

[1] UltraViolet. (2012). [Online]. Available: http://www.uvvu.com/faqs.php#question-1

[2] red dot. (2012). [Online]. Available: http://red-dot.sg/concept/porfolio/o_e/DA/R061.htm