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## A bad idea that just won't die

In just over a month, barring a last-minute change of plans by the FCC (Federal Communications Commission) or another government entity, full-power, over-the-air analog television transmissions will cease in the United States. Despite my past cynical forecasts to the contrary, broadcast-flag restrictions will not plague the ATSC (Advanced Television Systems Committee) digital transmissions that currently coexist in many parts of this country and that will fully supersede their NTSC (National Television System Committee) predecessors on Feb 17. But this news does not vanquish the bigger-picture restriction aspirations of content-rights holders, which the broadcast flag exemplifies.

The broadcast flag is control data embedded in an ATSC bit stream that informs a receiver whether the content can move from one device to another, whether you can record it, or both, as well as any restrictions on the transport and recording. Although the US courts eventually ruled that the FCC had overstated its charter in insisting on broadcast-flag requirements, the damage arguably had already been done. Many television stations had purchased broadcast-flag-supportive transmission equipment. Several generations' worth of consumer-electronics gear support broadcast-flag specifications, too, and the equipment's intentionally locked firmware prevents the removal of this no-longer-necessary support.

Consumers' uproar over the broadcast flag occurred in general because content-rights owners insisted on restricting longstanding fair-use rights in the analog era, rights that consumers naively believed had been permanently codified following the 1984

decision in the case of Sony Corp of America versus Universal City Studios Inc, commonly known as the Betamax case. In actuality, the Digital Millennium Copyright Act nullified many of the Betamax-case provisions. And any early-adopter consumer who'd bought an expensive early-generation HDTV (high-definition television) without an HDCP (high-bandwidth-digital-content-protection)-augmented digital input or, for that matter, an expensive ATSC set-top box without an encryption-enhanced digital output no longer would be able to enjoy HDTV in the broadcast-flag era.

The broadcast flag may be extinct from an ATSC standpoint, but it has re-emerged in the form of selectable output control. Today, movies and other high-value video material are released to various venues in chronological order from most to least lucrative. Hollywood, in its infinite generosity, wants to accelerate the release of its material to the public in non-physical form—that is, online, cable, satellite, and IPTV (Internet Protocol television)—but is paranoid that recipients might make and distribute perfect digital copies. Therefore, content-rights owners want to be able to

embed selectable-output-control bits in the digital streams, downscaling or completely disabling video outputs deemed unacceptable or even remotely shutting off receivers!

Although there is *some* justification to content-rights owners' concerns regarding in-the-clear digital bit streams, these concerns are overblown. Snagging an uncompressed HDMI (high-definition-multimedia-interface) or DisplayPort bit stream traversing the link between a set-top box and a TV, for example, would require both tremendous capture-hardware speed and tremendous capture-storage capacity.

The so-called analog hole is even more laughable. Analog-tethered material has to go through iterative and inevitably quality-degrading digital-to-analog and analog-to-digital conversions as part of any duplication process. And the analog-centric copying must occur at real-time speeds; go faster than that, and you end up with all sorts of aliasing artifacts. At two hours to make a single copy of a two-hour Hollywood blockbuster, the economics don't pan out for a would-be pirate.

My big concern is that, once Hollywood gains the selectable-output-control sword it's seeking, it will broadly flex its resultant content-restriction muscle far beyond the before-DVD-release window it's currently using as justification for the scheme.

All I see selectable output control doing is increasing system cost and, by also increasing consumer frustration, hampering hardware and software sales along with expansion of the overall content ecosystem. If you agree, then I urge you to let your government representatives and FCC members hear your opinions in a loud, clear, and repeated fashion. **EDN**

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