

IN-DEPTH CONTENT PROTECTION

Coral Consortium Close to Completing Specs for Multiple DRM Framework

Microsoft Remains Outside the Fold but Is Showing Greater Willingness to Support Interoperability with Other Suppliers' DRMs and Non-Windows Devices

BY PETER LAMBERT

The latest attempt to create an interoperable framework for incompatible digital rights management systems is now closer to success than any previous effort, but it remains to be seen whether the effort will prove irresistible to market power houses Microsoft and Apple Computer.

The Coral Consortium, supported by a broad range of content, service provider, consumer electronics and information technology companies, hopes to issue draft specifications that would allow DRMs to talk to each other by mid year. But, so far, the only

glimmer of hope for support from either Microsoft or Apple rests in Microsoft's participation in the Digital Living Network Alliance, which is weighing adoption of Coral specs as part of its home networking initiative.

Clearly the winds of consumer frustration are blowing against the restrictions imposed by incompatibility, as Apple and its iTunes content partners are learning in France, where outrage over such restrictions has led to action by policymakers. At press time the parliament was weighing a law requiring that Apple make its iTunes online music and video service downloadable to devices other than Apple's iPod—an event that industry officials suggest is the tip of a consumer revolt against all incompatible Internet video and audio services and access devices.

Anticipation of such consumer frustration was a key driver in the founding of the Coral Consortium which, a little over a year ago, completed its initial Coral Interoperability Framework document. As with that original version, the March 2006 update is available for evaluation through entity-by-entity



Jack Lacy, president, Coral Consortium, SVP, standards and community initiatives, Intertrust.

agreements. Feedback from evaluators will inform the first public release by mid-2006.

Although not yet as large as the DLNA, the Coral Consortium enjoys participation

See **DRM** | 22

GRIDLOCK | from 19

any particular DRM system, since many DRMs "allow one or more link protection systems to be authorized as exports or outputs," Taylor says.

"The server re-wraps that into standardized link protection," he explains. "If content on a set-top box, for example, is protected on the way into the home, we enable that content to be streamed from that [set-top] to a display device. We think we'll meet most short-term needs of consumers.

Initially, rather than enabling device-to-device downloading or production of multiple copies of a video or song, "most link protection systems on the market today are typically simple and designed to support a defined set of use cases, primarily streaming audio and video," Taylor says. "Since streaming is the dominate case, we felt that it is the most pragmatic case to enable con-

sumers to start enjoying media across their home networks.

"For now, it's basic viewing and rendering," he adds. In time, the alliance will address "trickier issues around moving and copying and synchronization, versus the initial experience of enjoying the content across the network." For that job, DLNA may well draw from the work of the Coral Consortium.

HP in February announced an agreement with Starz Entertainment Group to co-market Starz' Vongo video download application and service with HP and Compaq consumer notebook PCs. "Now there will be a multiplicity of models and avenues for content," says Bob Greene, senior vice president, Advanced Services for Starz Entertainment Group. "Near term is PCs. The next stage will be a combination of portable devices and media extenders that take content from a PC and play it on the

TV, and I'd say those devices are 12 months away from market impact."

But while link protection represents a substantial, in-home content sharing breakthrough, it does not assure exchange of permissions and other business rules among DRMs, notes Jack Lacy, president of the Coral Consortium. "Link protection is not at all at odds with our approach," Lacy says. "Generally DTCP is used to talk between one device and a renderer. The content gets unpacked by the originating DRM and outputted into a protected DTCP channel approved by that originating DRM."

But to make DRM-to-DRM conversion universal among all servers, controllers, players and rendering displays in the home network, DTCP needs additional help from an intermediary interoperability framework, such as Coral's. This is so because

See **GRIDLOCK** | 22

ScreenPlays

A BROADBAND INFORMATION RESOURCES INC. Publication

www.screenplaysmag.com

The Magazine for the New Broadband Marketplace



- BROADBAND CONTENT
- MEDIA PLATFORMS
- IPTV
- SP STRATEGIES
- MARKET TRENDS
- ADVERTISING
- IP TELECOMMUNICATIONS
- NETWORK PLATFORMS
- HOME NETWORKING
- MANAGEMENT TOOLS
- MOBILE DIRECTIONS
- GAMING
- WOW FACTOR
- SOURCE CODE

Subscribe Now to ScreenPlays!

For your free subscription simply go to our web site at www.screenplaysmag.com and click on the current issue.

For advertising information contact Trisha Jorgensen at 303.225.4246 or trisha@screenplaysmag.com.

IN-DEPTH CONTENT PROTECTION

DRM | from 20

from major players from the content and service provider communities, including the Motion Picture Association of America, America Online, Twentieth Century Fox Film Corporation, NBC Universal and Comcast New Media Development. The majority of its members, including Cisco Systems, Hewlett Packard, Intertrust Technologies, Irdeto Access, Philips Electronics, Matsushita Electric Industrial Co., LG Electronics, Motorola, Samsung Electronics, SecureMedia, Sony and Verimatrix, represent the consumer electronics, IT and security industries. Coral Consortium member overlap with DLNA includes Comcast New Media, MPAA, HP, Matsushita/Panasonic, Samsung and Sony.

In basic terms, consortium documents say the Coral Interoperability Framework leverages service-oriented architectures through which "trustworthy services communicate with one another via trusted interfaces to exchange whatever information is required to mitigate differences among different DRM systems [for the purpose of] providing transparency to end users."

Achieving this end presents an uphill battle in great part because DRM-enabled approaches to IP media delivery developed over the last half-dozen years "were designed not to be interoperable," says Jack Lacy, president of the Coral Consortium, and senior vice president, standards and community initiatives, for Intertrust.

"Initial DRM suppliers promised content providers to stuff their content into monolithic channels that won't leak into random other places," he says, adding that this approach proved sensible so long as devices were "tethered" to each DRM-enabled channel, such as iTunes or Microsoft TV-based IPTV services operated by AT&T, British Telecom or Swisscom.

Now, he says, the "tethered" era is ending. "Devices are no longer associated with one operating system. People want content to play on all their devices"—a desire thwarted by the "monolithic" platforms.

Rather than seeking to standardize a single DRM approach, the Coral Consortium set out to "standardize the interoperability itself in a way that allows all devices to share all the necessary data while also providing everyone in the value chain flexibility to do things they want to do, Lacy says. That flexibility requires that Coral define ways to enable various DRMs to exchange business rules, enabling a consumer to get content via one channel and technology and make it play in devices associated with other channels.

"We're not creating DRM," he says. "We're creating a layer that allows DRM systems to exchange information."

DLNA member and Coral co-founder Matsushita/Panasonic believes efforts like Coral are critical to avoiding consumer confusion and unworkable device costs, either of which could stall the market. "Many DRMs are already successful in the marketplace, and interoperation among them seems to be the only way to address this without having to build every DRM into every device," says Peter Fannon, vice president, technology policy, government and regulation for Panasonic Corporation of North America.

"Technology can eventually solve just about everything, but not without a cost," Fannon says. "We can find a way to enable one DRM to hand off its key or secret to another without compromising what each DRM promises to do."

Ideally, Lacy notes, wide adoption of the spec will allow consumers to locate all the content on their private home networks and use it "without getting a message that I can't play it because I don't have the right DRM.



Hemang Mehta, group product manager, Microsoft TV

If the interoperable brand mark is there, the consumer only needs to know that the devices and services with that mark will work."

High-profile names missing from Coral's rolls—such as Apple, Intel and Microsoft—represent companies "with the greatest stake in the monolithic approach," Lacy says. "Microsoft has its own approach; they are interoperable so long as you use their stuff. Apple is that way too. Rather than argue whether they should participate, our job is to get something out there in the way of an interoperability framework for them to look at."

Microsoft and its content partners may be slow to alter their early model of supplier-to-supplier interoperation deals in favor of the model Coral proposes. Microsoft already has built a large proprietary DRM ecosystem embracing IPTV set-tops, Windows Media Center PCs, portable media players and mobile devices.

"There will be set-top boxes, but also other
See **DRM** | 24

GRIDLOCK | from 20

the business rules written into the originating DRM will invariably incorporate limits on which kinds of devices, codecs and DRMs are allowed to play the content. For example, the Apple iTunes FairPlay DRM may pre-authorize unwrapping of its content into a DTCP protected link, but it may not specifically authorize re-wrapping of the content into a Windows Media or RealNetworks Helix DRM at the other end of that link.

In such scenarios, the consumer can only conclude that the content owner, service provider or device maker has arbitrarily prevented him from using what he paid for, Lacy says. "Unless the original content provider pre-authorizes a specific use, you still need to make those DRMs and devices and services interoperable in the home network."

Either each content provider and DRM supplier must make one-off agreements with every other viable content

and DRM supplier, he adds, or the industries must agree on a common framework and specifications for localized, home-network exchange of DRM information. Headway on both fronts is being made. Microsoft, for example, has reached such agreements with other major DRM suppliers including RealNetworks and Open Mobile Alliance (OMA). At the same time, the Coral Consortium added 11 new members to its interoperability effort in February. ■

Why do companies choose TMNG Global?

Network-based content delivery is evolving dynamically, creating a rapidly changing marketplace. TMNG Global is a professional services company and thought leader in the content field who understands the challenges and opportunities you face. From strategy to marketing to operations, we have the expertise to get you where you need to be.



Contact us at contentstudy@tmng.com to request a copy of our comprehensive study *Changing Channels – Content Delivery at the Intersection of Telecom and Media*.



www.tmng.com

IN-DEPTH CONTENT PROTECTION



The chain of connectivity in Digital Transmission Content Protection.

DRM | from 22

devices," says Hemang Mehta, group product manager, Microsoft TV division. "The way the content moves is based on governance applied" through rules integral to an IPTV provider's Microsoft TV platform, he says.

"If you have rules that say content may move to other devices, only then is it made available," Mehta explains. "If you assume a rule for that, how does the other device decode and decrypt for play? At that stage, it's a matter of ensuring that the device has been validated at some level in terms of its security capability. Microsoft DRM is moving toward specific device and specific user. Once you have that, you can enforce those rules."

Microsoft's IPTV system appeals particularly to content owners because it provides a content custody chain that runs all the way to specific end users, thanks to multiple layers of security, including usage-permission governance, persistent protection via encryption and authentication of specific users, Mehta says. "Classic DRM addresses governance and persistent protection, but with IPTV you add the authentication—this is Kathy and she has one set-top and one mobile device."

With that foundation, it becomes possible to extend the three layers to over-the-top Internet content, he adds. "It's easier to step down from IPTV than it is to step up from over-the-top. In IPTV, broadband providers are going after the triple play, so clearly there is a channel that sits alongside the IPTV delivery engine that allows data to be sent to other devices in the house. The service providers are grappling with how many devices they're going to support."

Lacy suggests that the Coral Consortium's specifications will address the authentication issue. Coral conceptual demonstrations contemplate scenarios in which "one device says to another device, 'I want to play this

content,' and the manager goes out and negotiates either locally or out on the network to gain authentication," he says.

Such processes must remain transparent to the consumer, he adds, describing another scenario: a consumer comes home with new content on her cell phone, which she lays on a table. While she makes dinner, the home network interoperability system discovers the device and its new content, recognizes that other devices in the network support different DRMs and negotiates among those DRMs, "so by the time the consumer comes back, it's ready to play."

Microsoft's roadmap to opening DRM beyond closed IPTV systems to embrace a larger ecosystem of networked devices is based on a deal-at-a-time process well underway at MSTV's sister division, Windows Digital Media. There the company is pursuing a combination of both proprietary deals and "some layer of abstraction that's supposed to reconcile these systems," says Marcus Matthias, product manager, Windows Digital Media division.

"We've tried to lay the groundwork for a lot of that happening outside of a standards body today," Matthias says. "That's not to sell industry consortia and standards bodies short. We're part of many of those and contribute wherever we can add value, though we're not a part of Coral. The thought that abstracting everything will produce interoperability—time and the market will tell whether that's workable."

With or without a completed framework like Coral's, he insists that "interoperability gets to market faster when you have partners committed to getting content and devices to market. It's the process of building that ecosystem. There are a lot of both technical and business level details."

The strategy has paid off. "We have

a huge ecosystem of content, hardware and other partners," Matthias notes. "The number of devices that support our DRM shows that having technology that's accessible and more than affordable really does make a difference."

Toward that end, Microsoft has integrated with Macrovision, one of the most widely employed DRM systems for streaming video over the open Internet. "Windows DRM can respect that Macrovision bit," Matthias says. Additionally, through its court settlement with RealNetworks last October, Microsoft and Real agreed to work together to enhance interoperability between Windows Media and Real's Helix DRM systems. Microsoft will also enable Real to facilitate the playback of content on non-Windows portable devices and personal computers.

Microsoft also reached an agreement last year with Nokia for plug-ins to Windows Media to convert from Open Mobile Alliance (OMA) DRM to Windows DRM, "so the consumer doesn't have to think about it," Matthias says. "From our perspective, mobile is very important. The growth in handsets and content is astronomical. We anticipate a lot of great scenarios between handset and PC that we want to enable."

The Windows Media 10 player client released in 2004 included for the first time support for a handset to directly acquire mobile content. "Evangelizing that with handset makers and service providers has led to success on both sides—not only Nokia, but also Motorola and Verizon, who is using our codec and DRM for download, subscription and various other models," he says. RealNetworks also is committed to supporting OMA standards within the Helix DRM platform.

Similarly, Microsoft has developed methods for converting encrypted cable digital

See **DRM** | 25

Hollywood's Security Jones Overreaching or Justifiably Prudent?

*Manufacturers, Others
Fear Added Costs and
Complexities Are too
High a Price to Pay to
Assuage Studio Jitters*

BY PETER LAMBERT

Even as content protection initiatives make headway on the interoperability front the ultimate goal of encouraging greater consumer freedom remains in limbo as Hollywood studios ratchet up demands for ever higher levels of protection.

The toughest point of collision over content protection issues "is defining what is reasonable, and how much is enough or adequate," says Peter M. Fannon, vice president, technology policy, government and regulation for Panasonic Corporation of North America. "Everyone agrees that reasonable protection needs to be offered owners of content, but common sense solutions

will serve everyone best."

Compromises on such common sense solutions have grown more problematic in recent months. On one end of the spectrum, some content owners push for implementation of multiple layers of protection technology, while device makers push to minimize technology costs to maximize market acceptance and returns. This tension has increased with the accelerated availability of both closed IPTV operator services and 'over-the-top' Internet multimedia services offered directly to broadband Internet surfers.

That issue is "right at the center of everything going on," Fannon says. In IPTV video service systems, a tightly integrated end-to-end, middleware-to-settop DRM system like Microsoft's MSTV solution has proved preferable to some major operators, including British Telecom, AT&T, Bell Canada and Swisscom. The approach has proved largely acceptable to traditional TV programmers and VOD content owners now supplying those IPTV services. However, industry officials expect consumers also will avail themselves of direct broadband access



Peter Fannon, VP, technology policy, government and regulation, Panasonic

to Internet video services delivered outside such closed systems.

The danger that open Internet content moving around the home, as well as content

See **SECURITY** | 26

DRM | from 24

services directly to Windows DRM. With the upcoming Windows Vista operating system, consumers will be able to use Windows Media Center to "take in digital cable content, directly from the wall to the PC—HD, premium channels, the whole nine yards—without a set-top box, analog conversion or [infrared] blaster. So there are a lot of exciting scenarios," Matthias says. "The DRM piece of that involves conversion of the cable content from the operator's conditional access system—which is designed to protect the service, but doesn't have rules like DRM—to Windows DRM and the ability to manage the content via Windows Media."

Matthias emphasizes that Microsoft's DRM is not for Windows devices only. "We offer source code for non-Windows devices as well," he says. "In an environment where there may be another operating system on a handset, for example, the device is not pre-

cluded from using our codecs or DRM which have a huge content base, which means handset makers do not have to build their own."

To unify such interoperability deals, Microsoft developed its PlayForSure program. "At a retail store you'll see this blue guitar pick PlayForSure logo, and DRM is an important part of it," Matthias says. "With Apple, people can understand you can get content from a source. Ours is different, covering up to thousands of sources and devices. Our partners can test and certify, and consumers seeing the PlayForSure logo can know that the device they're buying will work with not just other devices but all these sources of content."

Despite all these considerations, as a founding member of DLNA, Microsoft could well sign off later this year on DRM guidelines, part of which may originate with the Coral Consortium. But, in any case, Matthias says, "Ecosystem building is the

sustainable model going forward."

For now, the technological specificity of Coral's framework remains a mystery to all but select evaluators. Lacy says the consortium is determined to keep the framework "loose" enough to ensure information exchange without picking winners and losers among competing technologies. This approach would align with the requirements of device manufacturers and DRM suppliers who note that standards can sometimes stifle innovation.

"Elements of Coral make sense to us," says Stephen Balogh, director of content protection entities for Intel. "It doesn't make sense to pick triple DES or AES encryption, for example, because you then create a single point of failure. If you lock things into hardware, you lose flexibility. But we all have to define things like what 'copy once' means, because right now it can mean different things. Having that kind of convergence around those terms makes sense." ■