

Protecting today's new video delivery formats

According to experts at Inside Secure, with the arrival of Ultra High Definition and Early Window, securing premium content on all devices is critical.

Consumers increasingly expect full access to premium content on any device, anywhere, any time. The pay television industry is adapting by developing intuitive solutions that are responsive to consumer needs and making content available that can be streamed to broadband-connected TVs, tablets and mobile phones.

What has been slow to change is the date movies and television shows become available to consumers after their premiere. For example, major movies are typically released nationwide on consumer electronic devices forty-five days after their debut in theatres. The reason for the gap is that theatre owners won't screen movies otherwise, citing data that earlier availability reduces theatrical revenues.

Movie companies, on the other hand, are faced with flat global movie ticket sales and declining home entertainment revenues (down 6% in 2016 according to Variety). Given the availability of new entertainment technology that has made at-home and on-the-go viewing compelling in higher quality formats like 4K and HDR, there is, for the first time ever, the possibility that movies will become available at home, on-demand just a few weeks after their theatrical release.

In response to this new media landscape, Inside Secure has developed SAFEplayer Ultra: a multi-platform media player that provides consumers with an immersive audio-visual experience while helping broadband distributors and content owners thwart unauthorised copying and distribution.

Earlier Windows, Higher Stakes

Movies available on-demand at home shortly after their theatrical release are called 'Early Window' movies. Unauthorised copying and distribution of early release movies reduces the amount of studio revenue generated in subsequent distribution windows such as download-to-own, digital rental, kiosk rentals, packaged media, subscription services, and advertiser sponsored cable and broadcast television. In response to the potential piracy of Early Window movies that would cannibalise downstream revenue, the Hollywood studios have developed higher security requirements for both Early Window and higher resolution movies.

Higher Resolution Demands Greater Security

UHD provides picture resolution that is four times sharper than HD, offering brilliant brights, the deepest darks, lifelike colours and multi-dimensional sound. Consumers will pay for this higher quality immersive experience. Content security is a tool used by the pay television industry to help generate return on investment by making access to



premium content conditional on some form of payment or, alternatively, reduce the quality of unauthorised content.

SAFEplayer – Our Product Foundation

Inside Secure is a market leader for content protection solutions, with more than 100 active deployments distributing programming to more than 120 million individual consumers. The company currently offers a portfolio of SAFEplayer solutions for any connected device and for all broadband use cases. These SAFEplayer solutions enforce the robustness and compliance rules of several DRM systems and protect service data and analytics with security techniques such as code obfuscation, tamper hardening, integrity checking and whitebox encryption. In addition, SAFEplayer uses a secure content path in which content is safely decrypted, decoded and rendered.

When available, Inside Secure's SAFEplayer solutions are tightly integrated with Trusted Execution Environments (TEEs) as well as key ladders and security cores available in chipsets.

Currently, DRM systems that leverage the security available in hardware cores that are embedded in devices at their time of manufacturing cannot be updated once the device is in the field.

To solve this, Inside Secure pioneered the use of new software download systems to allow the repair of breached security systems with the use of a Trusted Application Manager (TAM). Inside Secure has been prototyping this solution with TAM providers such as Trustonic.

SAFEplayer Ultra – State of the Art Streaming Security

To meet the higher security requirements associated with Early Window movies as well as the improved picture resolution and audio quality of UHD, Inside Secure has leveraged its twenty-five years of best-in-class security expertise to develop SAFEplayer Ultra, the next generation of downloadable and embedded DRM client solutions.

SAFEplayer Ultra is compatible with existing SAFEplayer Pro and SAFEplayer Premium. A





single SDK covers most Android and FireOS phones, tablets and STBs for Android v2.3+, as well as iOS and tvOS. SAFEplayer Ultra protects Early Window movies and the new UHD formats through a downloadable, multi-DRM player that is not only reinforced with whitebox crypto, tamper proofing and obfuscation, but also offers (i) a software secure content path, (ii) screen recording detection, (iii) advanced rooting detection, and (iv) watermarking.

Part of the power of the Ultra solution is Inside Secure's ground-breaking white box crypto Core. It mathematically transforms a few lines of source code into millions of lines of code, enmeshes fragments of a secret key to multiple locations within the code such that code and data are inseparable, and uses layers of integrity checkers to monitor for any code or integrity check tampering. If code is tampered

SAFEplayer Ultra Embedded Solution

FEATURING

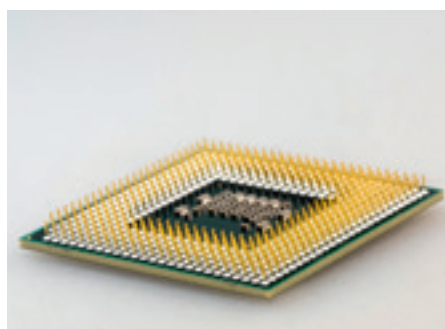
- Embedded SDK that meets the requirements of Enhanced Content Protection and PlayReady SL3000
- Supports all popular streaming protocols including MPEG-DASH, HLS, and Smooth Streaming
- Supports download and offline playback
- Immersive experience powered by advanced video and audio codecs
- Pre-integration done for all popular TEEs and SoCs (e.g. Qualcomm, Trustonic, Linaro, etc)
- Integration with hardware secure video engine (ARM Mali V550/DP 550)
- Supports hardware Secure Content Path
- Multi-DRM supporting PlayReady, Widevine, Verimatrix, SCSA (VIDITY™)
- Supports in-house HDCP 2.2 stack
- Watermarking to forensically trace the source of leaks

with, the SAFEplayer Ultra can be configured to respond in a variety of ways, by doing nothing, degrading resolution, or shutting down the player.

Inside Secure's software security has been penetration-tested and certified by independent test laboratories. In addition, Inside Secure's Core is widely used in the mobile payments industry and has been approved by VISA and MasterCard to protect consumer bank transactions. Although the requirements of the video industry are different from the requirements of the mobile payments industry, Inside Secure's software is sufficiently robust and scalable to serve both industries.

Scalability is crucial. Pay television is a mass market industry that requires the participation of millions of consumers to be economically viable. Inside Secure's software security can be downloaded to both new and legacy devices, which increases the number of devices capable of securely playing back Early Window and/or UHD content.

SAFEplayer Ultra software can also be securely integrated with a TEE or a hardware secure content path, if they are available. Inside Secure has not only integrated its software security with multiple TEEs, Inside Secure has already participated in a multi-supplier initiative to provide security for an embedded UHD set-top box containing hardware security components.



Application Protection

With SAFEplayer Ultra, the tamper-hardening and obfuscation techniques used to reinforce DRM and protect content can also be used to protect service data and viewer analytics from unauthorised third parties. This extension of security beyond the player's DRM capabilities directly benefits the distributor or operator whose branded player is used to distribute premium content to consumers.

SAFEplayer Ultra – Meeting the Challenge

Inside Secure continues to solve complex digital protection challenges and lead the secure video player market. It currently provides player security for some of the biggest media brands in the world. Now, with the advent of Early Window movies and UHD, SAFEplayer Ultra, the company's latest content protection breakthrough, has raised the bar for a new level of capabilities and standards.

Safeguard your investment in today's changing media and video streaming marketplace

Inside Secure is at the heart of security solutions for mobile and connected devices. We protect valuable content and applications that reach over 120 million consumers. Approved by all of the major Hollywood studios and deployed by some of the worlds' leading distributors and operators, Inside Secure's award-winning SAFE solution spans multiple device platforms and ensures the secure distribution of SD, HD and UHD content, including Virtual Reality. For more information, please visit www.insidesecure.com.

SAFEplayer Ultra Downloadable Solution

FEATURING

- Downloadable SDK that can be used with new and legacy mobile, TV and STB devices
- Fully featured player with wide coverage of connected devices
- Supports all popular streaming protocols including MPEG-DASH, HLS, and Smooth Streaming
- Supports download and offline playback
- Immersive experience powered by advanced video and audio codecs
- Multi-DRM supporting PlayReady, Widevine, Verimatrix
- Screen recording prevention
- Software Secure Content Path (SCP)
- WhiteBox for sensitive data
- Renewability of time-sensitive data over-the-air
- Advanced rooting and jailbreak detection
- Bank grade application protection by Core™
- Watermarking to forensically trace the source of leaks