

IRDETO TRACEMARK™

A SECURE, SCALABLE AND EFFICIENT SESSION-BASED WATERMARKING SOLUTION AGAINST CONTENT RE-DISTRIBUTION PIRACY

PROTECTING VIDEO ON DEMAND, LINEAR TV AND LIVE STREAMING ON BROADBAND AND BROADCAST NETWORKS

As broadband availability grows worldwide, content re-distribution is emerging as one of the top piracy threats for content owners and providers. Pirates can obtain content legally from a set-top box, a video on demand (VOD) service or an Internet live streaming service, and illegally re-distribute it via the Internet to a massive number of consumers around the world. This type of piracy not only steals from the content owner's and distributor's potential revenue for existing services, but also threatens the content distributor's ability to obtain premium content from Hollywood studios and other sources in the future, such as early release home videos or live sports events. The piracy also robs consumers of the opportunity to enjoy premium content that they would otherwise have if content owners and distributors could be assured of content security once distributed.

To fight against content-redistribution piracy, content owners, such as Hollywood studios, increasingly demand session-based watermarking capabilities from pay-TV operators and other content distributors before granting early release content to them. This trend is currently happening in the U.S. and is likely to become a global requirement soon. Session-based watermarking is a way of embedding invisible data in the audio and/or video, on a per viewer basis, that can be used to trace back to specific individuals who illegally re-distributed the content. Once the pirated session is identified, it can be shut down and further actions can be taken against the pirate.

Irdeto offers content owners and distributors an innovative, unique solution for session-based watermarking: Irdeto TraceMark. Its patented design addresses the top challenges of implementing session-based watermarking: how to make it efficient for live content as well as video on demand, how to make it scalable to support a large consumer base, how to keep it secure, and how to support any consumer device on any network without changes. With Irdeto TraceMark, content owners and distributors can quickly identify an individual responsible for illegal distribution of their live and on demand content, regardless of how and from where the pirate obtained the legal copy. Only with this level of security and ease of management can premium services and content be conveniently and widely offered to consumers on a variety of devices and networks.

KEY BENEFITS

Easy and Scalable Deployment

Irdeto TraceMark is the only fully server-based solution on the market today, enabling watermarks to be centrally inserted from the Irdeto TraceMark system for both live and on demand content. This design significantly reduces the load on other devices such as video on demand servers, head-end equipment and set-top boxes, and enables ease of watermark management. Unlike other solutions on the market, Irdeto TraceMark can even insert watermarks into encrypted content without having to first decrypt and re-encrypt the content for every session, which is extremely resource intensive. This patented technology enables very efficient and scalable watermarking deployment.

Fast Time to Market on Deployed Devices

Irdeto TraceMark is compatible by design with legacy and new set-top boxes and broadband-connected devices, without requiring any change to the devices or smart cards. This patented capability is especially important for pay-TV operators who have a large subscriber base on broadcast and multicast services to protect. Irdeto TraceMark has been awarded three patents from the United States Patent and Trademark Office for set-top box support, making it officially the only interoperable, backward-compatible watermarking solution available on the U.S. market.

Renewable Security and Comprehensive Services

Irdeto's solution allows operators to quickly and centrally renew watermarks from the Irdeto TraceMark system at the head-end when a breach is suspected. It keeps the network secure at all times without ever having to update consumer devices or other head-end devices such as VOD servers. Irdeto also offers Irdeto Conditional Access (CA) Security Lifecycle Services (SLS), a suite of dynamic services to guard against piracy by protecting every phase of the security lifecycle. Combining Irdeto's best-in-class technology, operational best practices and extensive network of security experts, Irdeto CA SLS is proactive and highly responsive to address the operator's unique needs.

HOW IT WORKS

Irdeto TraceMark™ has a patented design that sets it apart from other watermarking solutions on the market. It works in the following way:

STEP 1: CREATE TWO WATERMARKED COPIES (WITHOUT DUPLICATING CONTENT)

Content such as live TV or video on demand is sent to the Irdeto TraceMark system. Two watermarked copies are made – namely copy A and copy B – using a special section in the copy, without duplicating the content to save storage space. Irdeto can support any audio and video watermark technology selected by the content owner or distributor.

STEP 2: INTERLEAVE TWO WATERMARKED COPIES TO CREATE MILLIONS OF UNIQUE VERSIONS

Chunks of copy A and B are then interleaved to form a unique version for a session. This combination enables the content owner or distributor to trace illegally re-distributed content to a specific individual in order to shut down the session and prosecute the pirate. For video on demand services, interleaving is performed on the VOD server. For live TV, interleaving is performed by the smart card in the set-top box.

STEP 3: TRACE PIRATED CONTENT TO INDIVIDUALS BY SESSION-BASED WATERMARKS

When illegal content re-distribution is suspected, the operator obtains a copy of the content and uses the Irdeto TraceMark detector to decipher the unique watermark from the interleaved content. Once a specific session is identified as the source of the illegal content re-distribution, the operator can disable the smart card or the session and pursue other legal actions.

STEP 4: RENEW SECURITY BY CENTRALLY UPDATING WATERMARKS

If a watermark is ever compromised, the operator can update the watermarks centrally on the Irdeto TraceMark system to immediately renew security, without changing any other device or smart card on the network.

