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SERIES J: CABLE NETWORKS AND TRANSMISSION
OF TELEVISION, SOUND PROGRAMME AND OTHER
MULTIMEDIA SIGNALS

Conditional access and protection – Exchangeable
embedded conditional access and digital rights
management solutions

Embedded common interface for exchangeable CA/DRM solutions; Use cases and requirements

Recommendation ITU-T J.1010

ITU-T

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Embedded common interface for exchangeable CA/DRM solutions; Use cases and requirements

Summary

Recommendation ITU-T J.1010 specifies use cases and requirements for exchangeable, embedded conditional access/digital rights management (CA/DRM) solutions, enabling customer premises equipment (CPE), which are capable of receiving broadcast and broadband content, to download CA/DRM clients under a trusted environment. By utilizing downloadable multi-CA/DRM service, entitled consumers can consume broadcast and broadband content, which is controlled by DRM and/or conditional access (CA) systems, even though a CPE does not have a required content-related CA/DRM client available by downloading it from a trusted source into various types of CPEs including set-top-boxes (STBs), smart TVs, PCs, smart phones and/or smart tablets.

History

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CA/DRM, exchangeable embedded common interface, retail CPE.

* To access the Recommendation, type the URL <http://handle.itu.int/> in the address field of your web browser, followed by the Recommendation's unique ID. For example, <http://handle.itu.int/11.1002/1000/11830-en>.

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Introduction

Service and content protection realized by conditional access (CA) and digital rights management (DRM) are essential in the rapidly developing area of digital broadcast and broadband, including content, services, networks and customer premises equipment (CPE), to protect business models of content owners, network operators and PayTV operators. While conceptually CA focuses on mechanisms to access protected content distributed by a service provider over a network, DRM originally describes type and extent of the usage rights, according to the subscriber's contract.

PayTV operators have established digital TV platforms, which implement standards for basic functions, extended with proprietary elements. Most CA and DRM systems used for classical digital broadcasting, IPTV or new OTT (over-the-top) services capture consumer premises equipment by binding it with proprietary security related elements. As a result, consumer premises equipment configured for use in network or platform A cannot be used in network or platform B or vice versa. Thus, the consumer electronics (CE) market for digital TV is still fragmented, as specifications differ not only per country, but also per platform. Detachable CA/DRM modules only offer a partial solution: the modules are again proprietary to the CA/DRM system, they are not cheap either, and they are used primarily for cable or satellite TV and are not usable in modern-type equipment such as tablets due to lack of appropriate physical interfaces.

Currently implemented solutions, whether embedded or as detachable hardware, result in "Lock-in" effects. This seriously restricts the freedom of many players in digital multimedia content markets. Due to technological advances, innovative, software-based CA/DRM solutions become feasible. Maximizing interoperability while maintaining a high level of security, they promise to meet upcoming demands in the market, allow for new businesses, and broaden consumer choice.

It is in consumers' interest that they are able to continue using the CPEs they bought e.g., after a move or a change of network provider or even utilize devices for services of different commercial video portals. This can only be achieved by interoperability of CPEs regarding CA and DRM, based on an appropriate security architecture. Further fragmentation of the market for CPEs can only be prevented and competition encouraged by ensuring a consumer-friendly and context-sensitive exchangeability of CA and DRM systems.