

# Content Protection & Copy Management **DVB**<sup>®</sup> **CPCM**

## Managing Content in a Multi-device Networked Environment

### What is DVB-CPCM?

DVB-CPCM is a system for Content Protection and Copy Management of commercial digital content delivered to consumer products. CPCM manages content usage from acquisition into the CPCM system until final consumption, or export from the CPCM system, in accordance with the particular usage rules of that content. Possible sources for commercial digital content include broadcast (e.g., cable, satellite, and terrestrial), internet-based services, packaged media, and mobile services, amongst others. CPCM is intended for use in protecting all types of commercial content - audio, video and associated applications and data. CPCM provides specifications to facilitate interoperability of such content by networked consumer devices for both home networking and remote access.

Ten elements (including the eight normative elements) of DVB-CPCM, approved by the DVB Steering Board in February and June 2008, were published by ETSI as parts of a multi-part standard (TS 102 825). One additional informative element was approved by the Steering Board in October 2008 and published as DVB BlueBook A129. Two further informative documents and one normative, optional element are due for publication later in 2009.

### Background

Current mechanisms for protecting content within the home environment do not reflect the desires of consumers, the content creators or distributors in that these mechanisms are too simplistic for today's multi-device, networked homes. Recognising this, the DVB Commercial Module set up a sub-group in 1999 to devise a set of Commercial Requirements that would satisfy the needs of all constituencies. These requirements were sufficiently well formed in 2003 for the DVB Technical Module to launch a subgroup to write a specification to fulfil them. The Commercial Requirements were fully completed in April 2005.

### How does it work?

CPCM is only concerned with content after it has been acquired; it does not concern itself with the CA (Conditional Access) or DRM (Digital Rights Management) system that protected the content on its way to the consumer. The fundamental boundaries of control within CPCM are the local environment, and the Authorised Domain (AD). The AD is defined as a distinguishable set of DVB-CPCM compliant devices, which are owned, rented or otherwise controlled by members of a single household. Content is bound to its Usage State Information (USI), which describes how it can be consumed, copied or exported relative to this Authorised Domain and the local environment. This concept is fundamentally different to today's CA and DRM techniques, which normally operate on a single device basis. The diagram below shows the scope of CPCM, and how this relates to the Authorised Domain.

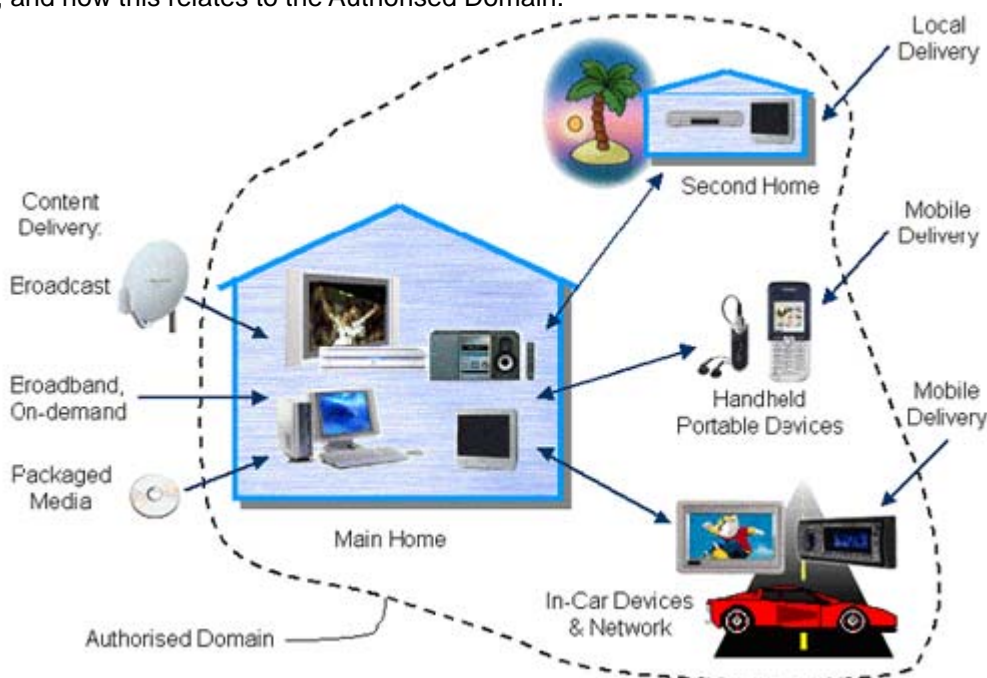


Figure 1. The DVB-CPCM Authorised Domain

[continued: How does it work?]

The key elements of DVB-CPCM are as follows:

**Reference Model** - CPCM Reference Model provides a technical and architectural framework for the DVB Content Protection and Copy Management System.

**Usage State Information** – USI provides a very rich set of CPCM Content metadata that signals the Authorised Usage for each Content Item. USI defines the usage rules for copying and consuming content both within the Domain and within particular geographic areas as well as rules for its export from the domain.

**Authorised Domain Management** – ADM is the mechanism that allows CPCM Devices belonging to a household to establish and join a DVB-CPCM Authorised Domain. It also provides an interoperable means of managing that AD.

**Security toolbox** – This describes the cryptographic algorithms and protocols that are to be used to ensure interoperability between different implementations of CPCM.

**System specification** – This describes the overall system behaviour, the messages and protocols, and how content is to be managed.

**Definitions & Terms** - This contains the Abbreviations, Definitions and Terms used for DVB-CPCM.

**Implementation Guidelines** – These will describe how CPCM can be deployed in a number of scenarios, e.g. in a FTA (free-to-air) environment or a CA (conditional access) environment.

**Compliance and Robustness (C&R)** – The CPCM specification does not describe the mechanism for enforcing C&R since this is likely to be the function of a body other than DVB. However guidelines for such a body or bodies will be provided.

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## Market Deployment

With the specifications almost finalised, thoughts move to implementation. CPCM is flexible enough to allow implementation in a variety of scenarios, from vertical markets to country-wide free-to-air digital television systems. Manufacturers have already started implementing the CPCM specifications and the first demonstrations took place in September 2007.

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## Next Steps for DVB-CPCM

The normative, mandatory elements of DVB-CPCM were approved by the DVB Steering Board in February 2008 and published as a formal standard by ETSI in June 2008 (TS 102 825 is a multi-part document including the eight normative, mandatory elements and two informative elements of the CPCM specification). One additional informative element, the Compliance Framework, was fully approved by the DVB Steering Board in October 2008 and published as DVB BlueBook A129. Work continues within the DVB Project on the final elements of the specification, namely Content Management Scenarios (informative), Implementation Guidelines (informative) and CPCM Extensions (normative, optional). In the meantime the establishment of one or more Compliance and Robustness Regimes will be required to administer and police implementations of DVB-CPCM.

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## Links

- [www.etsi.org](http://www.etsi.org) – DVB standards are available for download directly from the ETSI website
- [www.dvb.org](http://www.dvb.org) – the main website of the DVB Project.