



PROJECT RESULTS

Preventing digital contents piracy

Ensuring secure distribution in home networks

Digital piracy, particularly through home copying, has grown out of control in recent years. So it is in the interest both of contents suppliers and home users to protect the sharing of multimedia content between consumer devices. The COPS project has defined, specified and implemented a novel solution based on authorised domains to secure the open distribution of protected content within digital home networks at a reasonable cost. The system is based on smart cards for proven and renewable security combined with state-of-the-art cryptography.

Digital content distribution between devices is a promising benefit from rapidly emerging domestic digital networks. However, the final user is still not yet able to watch all content anywhere in the home. For instance, valuable multimedia programming such as subscription channels or video-on-demand is distributed in a protected manner, either using conditional access

(CA) or digital rights management (DRM) technologies.

As a result, such content cannot be used everywhere within the home network because the devices are not authorised to deliver the originally protected content in the clear, without any protection. The COPS system makes it possible to extend the built-in content protection throughout the digital home network, and therefore allows users to benefit fully from the advantages of such a network while satisfying the legitimate interests of the content owners.

Realising authorised domains

COPS has brought to reality the concept of authorised domains that is being discussed in many standardisation bodies. In an authorised domain, the various devices belonging to a user – such as TV, set-top box, digital recorder or portable media player – form a trusted environment where the content protection used by the distribution network is extended and the usage rules are enforced.

COPS (ITEA 02015)

Partners

- Nagra
- Octalis
- Philips
- STMicroelectronics
- Thomson
- UCL

Countries involved

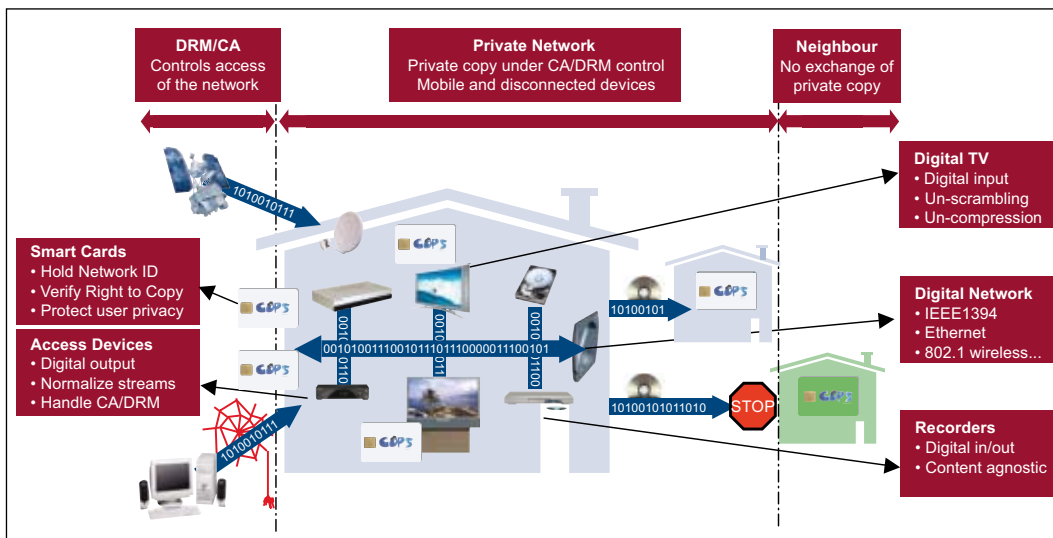
- Belgium
- France
- Germany
- The Netherlands

Start of the project

January 2003

End of the project

October 2005





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Content may be shared between these devices but not with the neighbour's devices or over the Internet.

There are several important stimuli for this topic, not least:

- Introduction of network media players that so far can only handle unprotected content;
- A DRM industry now willing to deal with home networks;
- Standardisation bodies active on this subject for several years; and
- Several market studies showing a huge market increase in the near future.

However, the most crucial driver is the media and entertainment industry for which secure distribution of content throughout the home is a major concern.

System-independent protection

The COPS project provided two main results:

1. Specification of a copy-protection system for a complete digital home network that is independent of the buses used, supports the main accepted multimedia content formats and is compatible with major CA and DRM systems; and
2. Production of a demonstrator presenting an advanced digital home network protected by COPS. This features set-top boxes, home servers and digital TVs as well as elements of a protected content distribution chain using existing CA and DRM systems. A subset of this demonstrator was exhibited

at the 2005 ITEA symposium in Helsinki and the complete version shown during the final project review.

The integrated demonstrator implementation makes possible an impressive set of scenarios. It is based on consumer electronics devices and personal computers for the home network, both with associated smart cards, and professional devices such as license and contents servers for the distribution network. It illustrates the protection of digital video broadcasting (DVB) as well as non-DVB contents over IP/Ethernet and IEEE1394 multimedia networks. This demonstrator made it possible to validate and improve the specifications according to feedback from actual implementations. And it generated valuable known-how regarding implementation to all companies involved in the project. The demonstrator is also an efficient dissemination tool.

Basis for future standards

The COPS specification has been promoted in standardisation bodies, with a main focus on the DVP Copy Protection Technologies (DVB-CPT) Group and the TV-Anytime Forum. Since the end of the project, some elements of the COPS specifications have been adopted by DVB-CPT as part of a future contents-protection standard. It has also been presented to, and discussed with, content owners that have expressed their trust in such a system.

Major project outcomes

Dissemination

Demonstrations/presentations at various events: IFA2003, RIAM2003, CES2004, RIAM2004, ITEA Symposium 2004, Cartes04, IFA2005, ITEA Symposium 2005

Exploitation

- Active participation in standardisation bodies totalling more than 50 meetings over the project duration: mainly concerning DVB-CPT and TV-Anytime but also CPTWG, DVB-CM, DVB-CP, CPAC or China DRM forum
- DVB: two contributions accepted as part of the future contents-protection standard
- TV-Anytime: the rights management and protection (RMP) information binding specification is fully derived from a proposal made by COPS consortium members

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