

A SIM based OMA DRM v2 Platform

Managing distribution of Multimedia Contents in the Mobile world.

DRM Solution aimed at creating a widespread, standardized and high-quality DRM (Digital Rights Management) system that establishes a secure business model for mobile content and applications. Only when an appropriate DRM system is in place to protect valuable content against piracy, more turnover can be achieved by distributing and selling content.

Main focus

DRM is a technology that enables content providers to distribute, promote and sell digital contents in a secure way. This technology can be used to distribute digital media content like music, ring tones, wallpapers, and other types of digital information. All these contents must be protected from illegal copying and should offer to the content provider and to the end-user enough flexibility to sell or to buy it. Content protection could be achieved by defining different usage rights for the contents. This new way of publishing and selling content in a revenue-generating manner will encourage content providers and operators to provide attractive content, which in turn benefits users.

DRM Solution focused on the implementation of a platform, which is based on OMA DRM v2.0 standard, extended with SIM-based authentication, to include the user identity and an embedded DRM agent on high-capacity SIM card.

The project covered scenarios for protected content sharing, which were focusing on mobile P2P and digital content using watermarking techniques to identify the content.

Approach

DRM Solution focused on the implementation of the DRM architecture proposed by the last version of the Open Mobile Alliance (OMA), integrating this architecture in an open services environment, and including peer-to-peer services in the use cases. The project integrated this platform with the authentication nodes and subscriber databases of a mobile network, such as Authentication Center (AuC) and Home Location Register (HLR).

The developed system includes the following components:

• The DRM Platform enabling the controlled consumption of digital media objects by allowing content providers to define the usage rights, to prevent downloaded content from being illegally copied and forwarded to other users, and to enable super-distribution of DRM content by other functionalities.

• The DRM Agent based on SIM. This is considered as the strongest enforcement point to reach a good level of security and trust. The DRM Agent processes the content by applying the set of permissions and constraints specified in the rights associated to the content. The high level of security reached in the mobile device is due to the use of SIM cards in combination with the AuC/HLR nodes of the mobile network.

• The DRM Services module to enable sharing of DRM protected content by using Peer to Peer (P2P) technology.

• The Content Download Portal to make available DRM protected products to users by means of a wireless portal.

• The Watermarking Server to enable DRM Content protection or tracking.

 **DRM Solution**

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Partners

Bantry Technologies, Ireland

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Project web site

www.celtic-initiative.org/projects/drm-solution

The project achieved high convergences of several technologies working together for reaching one goal, the reliable protection of the contents.

Achieved results

The DRMSolution CELTIC project solved one of the main problems for the members of the multimedia content value chain in the mobile internet, the piracy, by means of advanced integrated technologies such as cryptographic and watermarking techniques.

The achieved results are:

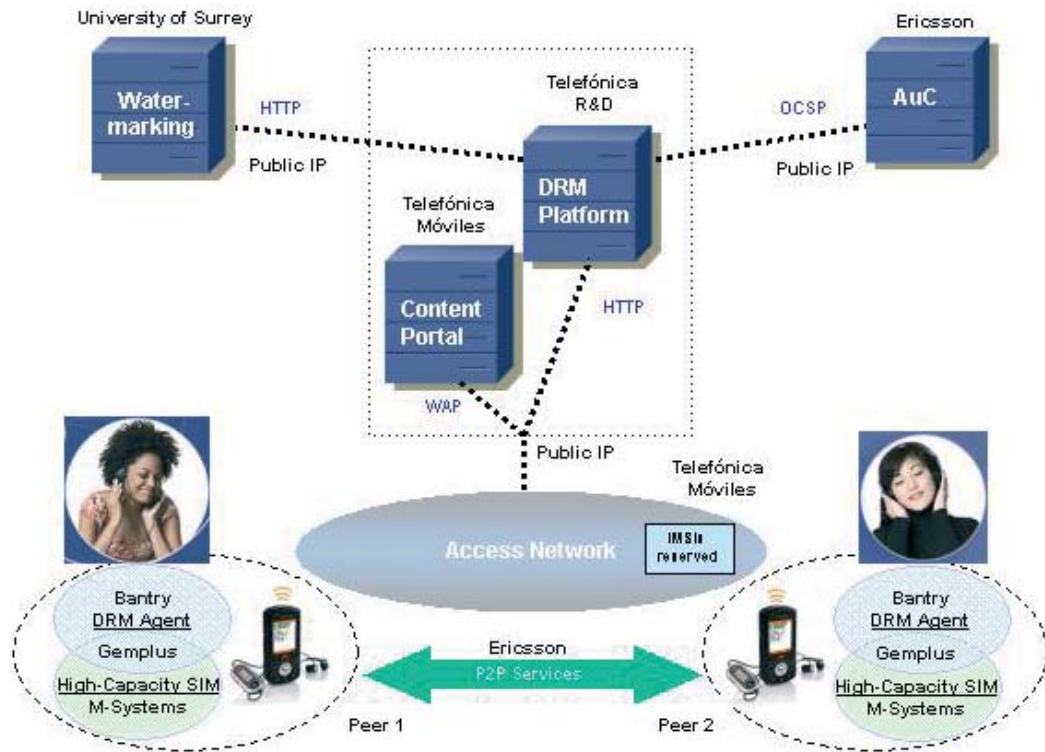
- Implementation of an OMA DRM 2.0 compliant platform additionally linked to the user identity. Security is enhanced with integration into the operator network because the validation of the user credentials is done by the HLR/AuC.

- Higher capacity and security by using High-Capacity SIM Cards.

- Some services with P2P mechanism used for legal distribution of DRM-protected contents to demonstrate the possibilities of these technologies.

- Content Download Portal to offer OMA DRM v2 protected contents to users.

A live demo was presented at the Celtic Event in February 2006. The figure shows the prototype.



Moreover, five papers related to the project have been published at different congresses, such as "Eurescom Summit 2005" or "Telecom I+D" 2004 and 2005.

The project will continue as DRM SolutionNG that will develop a DRM solution enabling new business models in

a fixed/mobile convergent environment. It will allow users of mobile environments the secure acquisition of value-added digital contents from any device, and exchange and consumption with other devices, enabling interoperation between different devices using different DRM technologies.

About CELTIC

Celtic is a European research and development programme, established as Eureka cluster, to strengthen Europe's competitiveness in telecommunications through short and medium term collaborative R&D projects. Celtic is currently the only European R&D programme fully dedicated to end-to-end telecommunication solutions. Launched in November 2003, Celtic (Cooperation for a sustained European Leadership in Telecommunications) was founded and has been supported by major European telecommunication players, both vendors and operators. Celtic fills the gap between public R&D programmes not specifically focused on telecoms and short-term R&D efforts by the telecoms industry

Timeframe: 8 years, from 2004 to 2011

Total budget: in the range of 1 billion euro, shared between governments and private participants

Participants: companies from the telecommunications industry (small, medium and large), universities, research institutes, and local authorities from all 35 Eureka countries may participate in Celtic projects.

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Impact

This project has strategic relevance in different areas:

- From a strategic point of view, the DRM solution is one of the cornerstones of the service architecture of the mobile operator due to the fact that content providers and mobile operators need to prevent piracy in the multimedia content business on the mobile Internet, with the purpose of avoiding the enormous losses of the members of the multimedia content value chain caused by piracy.

- Furthermore, by using the mobile device with the SIM as a token to use the multimedia content, a new market opportunity is opened to the operators, mobile-phone manufacturers and SIM-card manufacturers.

- An important contribution to standards is expected to be done in the Open Mobile Alliance.