Chapter V

Digital Rights Management for Mobile Multimedia

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ABSTRACT

In the future, intellectual property protection will be a need for distributed media in mobile multimedia. With the constraints of mobile commerce and mobile technologies such as limited bandwidth and computing capability, new schemes of rights management emerge. Digital rights management (DRM) operations in these schemes differ from those in existing DRM solutions for electronic commerce. This chapter presents a general DRM framework for mobile multimedia based on current DRM, mobile network, mobile device, and payment technologies. The framework is partially referenced to the NTT DoCoMo i-mode model, which centralizes payment and maintains user information within the service center. This chapter also presents the basic operations of the general framework and illustrates how rights insertion, rights enforcement, and music sharing are realized under the framework.
INTRODUCTION

Mobile multimedia has been predicted to be a key service and application in mobile e-commerce (m-commerce) by many mobile operators and mobile service providers. At present, mobile multimedia is still in its infancy, accessed by relatively low-end mobile devices with limited bandwidth and resources. Several mobile service providers have already launched low-grade multimedia services with relatively low-end technologies to test the market, for example, a radio broadcast service from Orange in Hong Kong in 2000 (Orange). The owners, publishers and distributors of the distributed media pay very little attention to the issue of intellectual property protection since the market and business models are not actually there. With advances in mobile networks and technologies, the demand for mobile multimedia services will be much higher in terms of quality and convenience. Intellectual property protection, rights control and management of distributed media become concerns, similar to what happened in the market for distributed digital music.

Mobile multimedia services are different from multimedia services in electronic commerce due to the nature and properties of their client devices and communication networks. However, copyright protection and rights management are needed for the content distributed by these multimedia services over the wired Internet. Rights management technology makes various online payment schemes possible, such as pay-per-view, pay-per-download, pay-per-game, and so on. But until now, there has been no specific digital rights management (DRM) solution designed for mobile multimedia. This chapter will present a general DRM framework for mobile multimedia based on current DRM, mobile network, mobile device, and payment technologies.

BACKGROUND

What is Digital Rights Management?

The Australasian Performing Right Association Limited (APRA) classifies different types of rights that music copyright owners possess and defines some common rights in music. These rights are listed below.

- The rights to reproduce their work, that is, record their music onto a CD, into a film soundtrack or onto a computer disk or reproduce their lyrics as sheet music or photocopy them. In the music industry the right to record a song onto record, cassette or CD is known as the mechanical right; the right to include music with visuals (i.e., on the soundtrack of a film or video) is known as the synchronisation right.
- The rights to publish their work; this means making their work available to the public for the first time.
- The rights to perform their work in public, for instance, performing their work live in pubs, clubs or at festivals or by playing a recording of their work or...
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