Chapter 44
Copyright Protection of Audio Using Biometrics

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ABSTRACT

In our global community, the Internet, the issue of copyright is increasing. The International Maritime Bureau (IMB) reported over thousands of incidents this year compared to three hundred only ten years ago. Although laws and other ways have been intended to protect the rights of content developers and describe restrictions that can be placed on copying materials, pirate users always find a way to breach the protection. Base on this fact, a new method has been implemented using biometrics as it is described in the following chapters. This paper was developed taking into consideration one of the most widely used biometrics which is the fingerprint. Precisely, the aim of the system includes embedding the fingerprint into an audio file which can only be read using the fingerprint of the registered user.

INTRODUCTION

In today's information technology era, a pirate user is offered a plethora of opportunities to make illegal copyrights with the use of digital techniques in the creation, editing and distribution of multimedia data. Furthermore, the widespread usage of Internet is providing additional channels for a pirate to quickly and easily distribute the copyrighted digital content without the fear of being tracked. As a result, the protection of multimedia content is now receiving a substantial amount of attention. In recent years solutions such as steganography and encryption were found, but due to some problems, pirate users have been able bypass the security provided by these techniques.

Biometrics is an alternative solution to eliminate copyright problem. The field of biometrics has been able to prove effective in various fields such as protection of sensitive data at the Federal Bureau of Investigation and the Central Intelligence Agency and also in biometric passports to authenticate the identity of travellers.

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The ability to relate biometric to multimedia can enhance the trustworthiness of a system. In this paper, biometrics will be combined with existing protection technique such as steganography to alleviate the problem of copyright.

Biometrics Overview

The word biometrics is derived from the Greek words bios (meaning life) and metron (meaning measurement), so biometrics is in essence, the measure of life (Lim Dong, 2010). As the level of security breaches and fraud increases, the need for highly secure identification and personal verification technologies is becoming apparent

Figure 1. Biometrics Architecture (Jain et al, 2009)
Source: Jain et al. 2009