SDMI
SECURE DIGITAL MUSIC INITIATIVE

Guide to the SDMI Portable Device Specification
Part 1, Version 1.0

Introduction

The Secure Digital Music Initiative ("SDMI") brings together the worldwide recording, consumer electronics and information technology industries to develop open specifications for protected digital music distribution.

This document provides an overview of the SDMI Portable Device Specification Part 1,Version 1.0, its contents and benefits. The specification is the first issued by SDMI since its formation on February 26, 1999. It is a voluntary set of principles agreed upon by SDMI's 110+ member companies, encompassing broad representation from these three industries. These principles are intended to provide a positive consumer experience, while facilitating a secure environment for the digital distribution of music and related content that respects the rights of artists.

Benefits of SDMI

SDMI provides significant benefits to a variety of constituencies, including consumers, artists, commercial enterprises and organizations involved in the music, consumer electronics, and information technology industries.

The SDMI specification is a voluntary, open standard and anyone who wishes to create and distribute music using unprotected formats, including those who wish to be able to post anonymously, will not be limited by the availability of this platform.

The SDMI specification and resultant products and services will also provide for distribution of spoken audio content such as talk shows and audio books. These types of content will enjoy the same benefits as music including the ability to be distributed and consumed in either protected or unprotected forms.

Consumers

The SDMI specification is focused on enabling consumers to get convenient access to the music that they enjoy. SDMI compliant players will allow consumers to continue to play music in currently available digital formats, and also to access music that may only be available through future SDMI compliant digital distribution methods (see Figure 1).

In addition, SDMI compliant devices will offer consumers the opportunity to play and use their music collections in many flexible ways. For example, consumers can make personal copies of music for playback on their computer and on portable music devices.

The open SDMI specification will enable both business and technology innovation, leading to the development of many new opportunities for consumers to get and enjoy music.

Artists

SDMI provides artists with the opportunity to reach their fans through new technologies, while respecting and protecting their copyrights. By providing a framework for the development of a secure market for

digitally distributed music, SDMI provides artists with the possibility of expanding their base of fans to a larger audience.

A key benefit of SDMI is that artists will have an even better opportunity for Internet distribution than they have now. Local bands, school bands and church choirs will all have the option of choosing from a variety of methods in determining how they would like to distribute their music to SDMI compliant devices. These groups can choose to distribute their content in unprotected formats or SDMI protected formats.

The SDMI architecture is open to any content provider, including artists, small cyberlabels, authorized retailers, major record companies and other new businesses. This expands the opportunities for artists to distribute their music, and for others to enter this new market.

Industry

The development of a larger marketplace through the creation and adoption of an open standard for secure distribution of music and for portable music devices will benefit a variety of industries and industry groups. SDMI creates the opportunity to develop new content, products, and services by established and developing entities and industries.

Capabilities	Today (Non-SDMI Devices)	SDMI (Devices in Holiday 99)	SDMI (Future)
Download and Play current digital music tracks including MP3s	✓	✓	✓
Download and play SDMI digital music tracks		✓	✓+
Transfer personal CD collection to a PC	✓	✓	✓
Transfer current digital music tracks from PC to a portable device	✓	✓	✓
Transfer SDMI digital music tracks from PC to portable device		✓	✓
Share current digital music tracks	✓	✓	✓
Enable sharing of SDMI digital music tracks		✓	✓+
Enable independent artists, church choirs, etc. to create and distribute digital music	✓	✓	✓
Explicitly supports copyright / rights management for digital music distribution		✓	✓+

+ *More SDMI music, greater functionality and broader availability*

Figure 1: Comparison of SDMI and non-SDMI Device Capabilities

Specification Overview

The SDMI Portable Device Specification Part 1, Version 1.0 contains functional requirements for portable devices and associated applications, thereby providing a protected environment for digital audio content. As such, it provides a framework for music creators and manufacturers of applications and devices to develop new products and services for the electronic delivery of digital music to consumers. Compliance with the specification is entirely voluntary.

Specification Contents

The specification contains the definitions, implementation requirements, and illustrative reference models needed to develop and produce SDMI compliant applications and portable devices.

The specification contains implementation requirements and reference models for the following functional components:

- *Applications* that perform various tasks such as content import, music library management, playback and rights management

- *Portable Devices* ("PD(s)") and *Portable Media* ("PM") that store protected content and play it back.

- *Licensed Compliant Modules* ("LCM(s)") that act as interfaces and, optionally, as translators for communications between Applications and Portable Devices / Portable Media.

The body of the specification contains the requirements for each of these components in detail as well as the requirements for interaction between them.

Generally, the specification requires that any content intended for use in an SDMI PD be protected at all times after it first gets imported into an SDMI application or LCM, or recorded onto an SDMI PD. Subsequent storage, use within, or transfer between SDMI compliant applications, LCMs, or PDs must be done in a manner that protects the content. SDMI applications, LCMs, and PDs must respect any "usage rules" – which describe how the content can be used – that may come with the content in the future. The specification also contains requirements relating to authentication of implementations, secure communication among SDMI compliant components, portable media, embedded microphones, content copy methods, and screening (which is briefly described below). The reader is directed to the specification itself (rather than this summary) for detailed information on the specific implementation requirements and supporting reference models.

Screening

One of the important elements of the SDMI specification is a concept called screening, the purpose of which is to provide a mechanism to detect illegitimately distributed music. SDMI screening technology will be implemented in two phases. In Phase 1, applications must be capable of detecting a signal that indicates that a software upgrade incorporating new Phase 2 screening technology is available. Upgrading to Phase 2 technology is voluntary but only upgraded applications will be capable of importing Phase 2 content. In addition, applications that have been upgraded to the Phase 2 technology will not import, transfer or play content distributed using the Phase 2 technology which has been illegitimately distributed.

Compliance and Robustness Requirements

The specification includes information on how application or device builders may obtain a license to use the SDMI trademarks to indicate their compliance with the SDMI specification. The specification also includes a set of Robustness Requirements that describe the manner and extent to which SDMI compliant devices and applications must be resistant to attacks.

Appendices to be added

Details regarding implementation of screening technology will be added to the specification. Additional information may also be added to the specification.

Specification Scope

The specification does not mandate any particular implementation technology (such as format or compression technology) except for the screening mechanism. The specification is specifically designed to provide a great deal of flexibility to companies developing and producing SDMI compliant products and services.

The current market for online music includes competing formats and systems and at this stage, the SDMI specification does not offer across-the-board compatibility between those devices and services that are SDMI compliant. This remains an important goal for the longer term SDMI platform and even in the near term, SDMI is working to develop a reference Application Program Interface that can be used to help different systems interact.

The current specification does not mandate any particular business model. For example, the specification does not require that content providers distribute all of their content in SDMI compliant formats or that device manufacturers produce only SDMI compliant devices.

Content Rights

The SDMI portable device specification is based on the fundamental premise that the rights of those who create content should be respected, and that acceptance of those rights provides the basis for allowing consumers to access content, including music, in new ways. The specification is written with these concepts in mind and provides sufficient flexibility to allow many new products and services to be developed. Entirely new business models are a likely result. For example, future music offerings may include try-before-you-buy, listening rights for a certain period of time, subscriptions, rent-to-own, etc. In order to allow these ideas to flourish the specification includes the following features and options:

- Under this specification, consumers can continue to copy (rip) songs from their CDs onto their personal computers or portable devices, as they do today. Four copies can be made each time the CD is copied and stored in the local SDMI format and/or on portable devices or media. If more copies are needed, the original disk can simply be copied again.
- The specification also includes rules for "check in/check out" that can be used to allow a consumer to maintain libraries of protected content on a personal computer and then "check out" those copies to one or more personal devices, return them to the personal computer and then check them back out, on an ongoing basis. This optional approach could be used to enable a specific business model or type of offering.
- To allow maximum flexibility, SDMI portable devices can accept music in both protected and unprotected formats. This means that artists and others who wish to use unprotected formats for any reason, including protecting their privacy, may do so and those using SDMI compliant devices will still be able to access those files.

Future Specifications

SDMI is continuing to work towards publication of a comprehensive functional requirements document that will encompass a broader range of digital music applications (i.e. beyond portable devices and their associated applications). It is anticipated that such work will lead to a subsequent specification that will be available for public review in the second quarter of 2000.

Summary

As a result of cooperative efforts by representatives of the recording, consumer electronics, and information technology industries, SDMI has completed its Portable Devices Specification Part 1, Version 1.0 on time and according to plan. The future work and results of SDMI will extend beyond the publication of this

initial specification and will be made possible by continued collaboration among the major industry groups represented within SDMI.

The benefactors of SDMI's work are artists, consumers and industry. Even in its early stages, SDMI will result in very real and very tangible benefits from the artists who create the content all the way to the consumers who enjoy it. Consumers benefit by gaining access to the music they want, artists benefit by being able to distribute their content in new formats, and industry benefits by having a larger marketplace for music and other audio content, devices, software, and services.