



BSI Standards Publication

Information technology — Digitally recorded media for information interchange and storage — Quality discrimination method for optical disks and operating method of storage systems for long-term data preservation

National foreword

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A list of organizations represented on this committee can be obtained on request to its committee manager.

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Foreword

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Introduction

In the digital information society, there is no secure means for storing and accumulating rapidly growing digital information safely and on a permanent basis. There is therefore a concern that the world will face a critical situation and significant problem in the near future. Within this context, optical disks are increasingly being considered as a solution for archiving storage media with high capacity because of their unique features (such as low cost, high compatibility and low energy consumption) and more specifically, their data storage capability without power consumption.

On the other hand, the data storage performance of an optical disk often depends on the initial recording quality and storage environment conditions. Therefore, when an optical disk is used for long-term data storage, it is desirable to check its estimated lifetime and initial recording quality by using a combination of a good quality optical disk and a good quality recording drive.

For this reason, this document specifies quality discrimination criteria using the initial quality of recordable optical disks as an index. It also specifies a quality judgement method for storage systems for long-term data preservation, including the consistency of the recordable optical disks and recording drives to ensure the quality of recorded digital data. In this document, recordable (write-once) optical disks are adopted as long-term storage media to ensure the security of the stored digital data when giving greater importance to evidence, because physical overwriting and deletion by erroneous or intentional operation can be prevented.

This document is also applicable to read-only optical disks such as CD-ROM, DVD-ROM and BD-ROM, specifying the quality judgement method for long-term data preservation.

This document enables users to build data storage systems that use recordable and/or read-only optical disks for long-term data preservation. Optical disks with sufficient quality can be confirmed based on the results of the initial quality test. Through the periodic quality test described in this document, the possibility of data restoration from the optical disk can be continuously monitored. Using this document, manufacturers will be able to supply recordable and read-only optical disks incorporated with suitable recording and playback drives for building data storage systems for long-term data preservation.

In the future, it will be possible to build data storage systems using optical disks for storing and accumulating important digital information safely and on a permanent basis, for consumer use and professional use. The safe and secure progress of the digital information society towards greater sophistication can be expected.

