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TECHNICAL REPORT



Digital sheet music – Market, use cases, and related technologies

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

DIGITAL SHEET MUSIC – MARKET, USE CASES, AND RELATED TECHNOLOGIES

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IEC TR 63020, which is a technical report, has been prepared by technical area 10: Multimedia e-publishing and e-book technologies, of IEC technical committee 100: Audio, video and multimedia systems and equipment.

The text of this technical report is based on the following documents:

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Full information on the voting for the approval of this technical report can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

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INTRODUCTION

Music notation was invented more than 3 000 years ago. As it was with books, the first and biggest technological change was introduced by the invention of the letterpress in the 14th century. Since then, sheet music technology has changed only insofar as the information age and the rise of digital media have changed all media. Specific applications of technology to sheet music are still in the very early stages. Various technologies and standards exist or have been proposed as standards. Some technology, such as MusicXML [3]¹, succeeded in introducing the concept of interoperability and data compatibility to the industry, but most technologies provided little consideration for interoperability, compatibility with data and processes, or standardization for quality. In this context, the sheet music industry hasn't yet been able to offer mature digital sheet music to the market.

This Technical Report starts by reviewing the current industry and the use cases around sheet music. It then catalogues the technologies currently available in the area of digital sheet music. Finally, the report combines these two aspects to illustrate the huge potential to improve digital sheet music technology as well as the added value that standardization offers.

¹ Numbers in square brackets refer to the Bibliography.

DIGITAL SHEET MUSIC – MARKET, USE CASES, AND RELATED TECHNOLOGIES

1 Scope

This Technical Report (TR) provides information related to digital sheet music. It starts with a brief overview of the sheet music market and then explains the use cases for traditional sheet music as well as additional use cases for digitized sheet music (digital sheet music). Finally, it shows examples of each area of technology areas.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 10744:1997, *Information technology – Hypermedia/Time-based Structuring Language (HyTime)*

ISO/IEC 14496-23:2008, *Information technology – Coding of audio-visual objects – Part 23: Symbolic Music Representation*

ISO 8879:1986, *Information processing – Text and office systems – Standard Generalized Markup Language (SGML)*

ISO 15836:2009, *Information and documentation – The Dublin Core metadata element set*