IEC TR 63020

Edition 1.0 2016-05

TECHNICAL REPORT

colour inside

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

IEC TR 63020:2016-05(en)

Documents
Document Sharing Hub

Full document details: IEC TR 63020 2016

THIS PUBLICATION IS COPYRIGHT PROTECTED
Copyright © 2016 IEC, Geneva, Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either IEC or IEC's member National Committee in the country of the requester. If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

IEC Central Office
3, rue de Varembé
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
Fax: +41 22 919 03 00
info@iec.ch
www.iec.ch

About the IEC
The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

About IEC publications
The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigenda or an amendment might have been published.

IEC Catalogue - webstore.iec.ch/catalogue
The stand-alone application for consulting the entire bibliographical information on IEC International Standards, Technical Specifications, Technical Reports and other documents. Available for PC, Mac OS, Android Tablets and iPad.

IEC publications search - www.iec.ch/searchpub
The advanced search enables to find IEC publications by a variety of criteria (reference number, text, technical committee,…). It also gives information on projects, replaced and withdrawn publications.

IEC Just Published - webstore.iec.ch/justpublished
Stay up to date on all new IEC publications. Just Published details all new publications released. Available online and also once a month by email.

Electropedia - www.electropedia.org
The world's leading online dictionary of electronic and electrical terms containing 20 000 terms and definitions in English and French, with equivalent terms in 15 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

IEC Glossary - std.iec.ch/glossary
65 000 electrotechnical terminology entries in English and French extracted from the Terms and Definitions clause of IEC publications issued since 2002. Some entries have been collected from earlier publications of IEC TC 37, 77, 86 and CISPR.

IEC Customer Service Centre - webstore.iec.ch/csc
If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: csc@iec.ch.

Documents
Document Sharing Hub

Full document details: IEC TR 63020 2016

IEC TR 63020

Edition 1.0 2016-05

TECHNICAL REPORT

colour inside

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

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 33.160.01; 37.080

ISBN 978-2-8322-3287-3

Warning! Make sure that you obtained this publication from an authorized distributor.

® Registered trademark of the International Electrotechnical Commission

Documents
Document Sharing Hub

Full document details: IEC TR 63020 2016

CONTENTS

FOREWORD ... 3
INTRODUCTION ... 5
1 Scope ... 6
2 Normative references ... 6
3 Terms and definitions ... 6
4 Overview of the sheet music market ... 6
4.1 Market relevance ... 6
4.2 Use cases for the sheet music market ... 7
4.3 Use cases for the digital sheet music market ... 8
4.4 Market structure and impact of digitization ... 9
5 Elements of digital sheet music infrastructure ... 9
5.1 General ... 9
5.2 Music notation markup language ... 10
5.2.1 General ... 10
5.2.2 Symbolic music representation (SMR) ... 10
5.2.3 Standard music description language (SMDL) ... 10
5.2.4 The music encoding initiative (MEI) ... 10
5.2.5 MusicXML ... 11
5.2.6 LilyPond ... 11
5.3 Metadata for sheet music ... 11
5.3.1 General ... 11
5.3.2 The Dublin Core metadata element set ... 11
5.3.3 Music metadata style guide ... 11
5.3.4 The music ontology ... 11
5.4 Musical font and font layout ... 12
5.4.1 General ... 12
5.4.2 Standard Music Font Layout (SMuFL) and compliant fonts ... 12
5.5 Digital rights management ... 12
5.6 Reflowable sheet music ... 12
5.7 Annotation ... 12
6 Conclusion ... 12
Bibliography ... 13

Figure 1 – Market structure and impact of digitization ... 9

Table 1 – Major use cases for sheet music ... 7
Table 2 – List of stakeholders ... 8
Table 3 – Additional use cases for digital sheet music ... 8

Documents
Document Sharing Hub

Full document details: IEC TR 63020 2016

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
6) All users should ensure that they have the latest edition of this publication.
7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

The main task of IEC technical committees is to prepare International Standards. However, a technical committee may propose the publication of a technical report when it has collected data of a different kind from that which is normally published as an International Standard, for example "state of the art".

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:

Enquiry draft	Report on voting
100/2540/DTR	100/2648/RVC

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.

Documents
Document Sharing Hub

Full document details: IEC TR 63020 2016

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.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

Documents
Document Sharing Hub

Full document details: IEC TR 63020 2016