

Digital Preservation Team	Preservation Assessment: Sibelius Preservation Assessment	Date: 31/01/2018
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## *Sibelius Preservation Assessment*

### *Document History*

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## 1. Introduction

This document provides a high level, collection specific assessment of the Sibelius music notation format with regard to preservation risks and the practicalities of preserving data in this format. This format assessment is one of a series of assessments carried out by the British Library's Digital Preservation Team.

### 1.1 Scope

This document focuses on the Sibelius software which allows the creation and editing of music scores and the format it produces for the digital representation of sheet music (.sib).

Note that this assessment considers format issues only, and does not explore other factors essential to a preservation planning exercise, such as collection specific characteristics of collections. These should always be considered before implementing preservation actions.

### 1.2 Summary

Sibelius is proprietary software designed to compose and edit music. The format it creates is in the .sib format. It represents musical notes which are created but does not contain any data related to the audio [1].

Sibelius is categorised as scorewriter<sup>1</sup> or music notation software, and it is widely used by composers, musical arrangers, performers, music publishers, teachers and students, particularly for writing classical, jazz, band, vocal, film and television music [2].

## 2. Assessment

### 2.1 Development Status

*A summary of the development history of the format and an indication of its current status*

The Sibelius software was originally developed for the Acorn Archimedes computer in 1986 by British brothers Ben and Jonathan Finn whilst they were still at school. The software wasn't released to the public until April 1993. It was first released for Windows in September 1998 and for the Apple Mackintosh a few months later. In August 2006, Sibelius Software was acquired by Avid Technology [3], a US-based software and hardware manufacturer, who have continued to develop the product [4]. The latest version (8.5.1) was released in January 2017 [5].

Almost all scorewriter software saves files in their own file formats and Sibelius is no exception, with its own proprietary format that uses the file extension: .sib.

### 2.2 Adoption and Usage

*An impression of how widely used the file format is, with reference to use in other memory organisations and their practical experiences of working with the format*

At the time of writing (2017), Sibelius is the world's best-selling music notation software and therefore by implication, the .sib format will be one of the most popular formats for digital sheet music [6]. The format will probably mainly be used to create and edit music notation (e.g. by composers) rather than as format for publishing music scores.

Specific information on the presence of Sibelius-based content in memory institutions is scarce, although several institutions have some content in their collections.

To date, the British Library has received digital sheet music in Sibelius format via donated unpublished collections (e.g., the Karel Janovicky collection) [7]. This is an anticipated area of growth for unpublished music collections. Planning for the ingest of digital sheet music as part of Non-Print Legal Deposit (NPLD) commenced in 2017, although this will be initially mainly focused on the formats used by publishers to distribute content, primarily PDF (but which may also eventually include MusicXML).

<sup>1</sup> "scorewriter, or notation software or music notation processor, is software used with a computer for creating, editing and printing sheet music" [46]

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The Library of Congress does not have the Sibelius format listed in its list of recommended digital formats though it is mentioned in relation to the MusicXML standard [8].

The University of York have some Sibelius files and it ranks in the top 10 formats in their digital archive [9]. Massey University recommends both Sibelius and Finale files as formats for digital sheet music but also request (and in fact only ingest) an additional PDF file [10]. Contemporary Music Centre Ireland has guidelines which allow Sibelius scores to be submitted to their digital archive of scores by Irish composers [11]. According to a report by the Digital Repository of Ireland, Scorch, Sibelius' web browser plugin is used for website integration by institutions in Ireland [12].

In terms of the general availability of sheet music in the Sibelius format; Score Exchange is a website which allows Sibelius users to upload and sell their scores. It therefore acts as an online retailer of sheet music available in the format and can be previewed via the Scorch web browser plugin [13]. Great Scores is a site which allows the purchase and downloading of sheet music and has previews using the Scorch plugin [14]. The Choral Public Domain Library has over 23,000 choral and vocal public domain scores available. An increasing number are available directly in MusicXML format. Many others are available in source file formats (Finale, Sibelius, capella, Myriad, etc.) that can be exported to MusicXML files [15]. Visaudio Designs provides designs for marching bands and percussion ensembles. The shows they produce include editable notation files in both MusicXML and Sibelius formats [16]. Some of the scores available on the Acadia Early Music Archive are available in the Sibelius format [17].

## 2.3 Software Support

### 2.3.1 Rendering Software Support

*An overall impression of software support for rendering the format with reference to: typical desktop software; and current support on British Library reading room PCs*

Due to its proprietary nature .sib files cannot easily be opened without the Sibelius software and cannot be played, viewed or printed without it [18].

Scorch is the web browser plugin which allows you to view or print the music score and also playback the music itself on the Internet via computer [19] [20] or an app for the iPad [21]. It can also be used on musician and music publishers' web sites [4] for previewing items.

In 2016, Scorch was replaced by Sibelius | Cloud Publishing which does not require a web browser plugin to use [22]. It allows individual users to utilise the API to create interactive, HTML5 views of the scores in PDF, SCO, SIB and Music XML formats [23]. This appears to be mainly aimed at music publishers to allow them to sell scores online. It can be seen in operation on the Sheet Music Direct website [24].

### Issues

As stated above it cannot be used without the Sibelius software and unsurprisingly therefore cannot be opened in Calibre.

### 2.3.2 Preservation Software Support

*An impression of the availability and effectiveness of software for managing and preserving instances of the file format*

#### Format identification

Sibelius files are identified by the extension .sib. Sibelius is listed on PRONOM (fmt/696) [2] and when tested is therefore identified correctly by Siegfried [25] and FIDO (Format Identification for Digital Object) [26]. TrID file identifier software correctly identifies the Sibelius format [27]. Xena [28] and Apache Tika [29] don't appear to be able to identify the files.

#### Validation and Detecting Preservation Risks

The Sibelius software has an XML validator and will indicate the kind of error (invalid XML, syntax errors) [30]. JHOVE offers no validation for Sibelius files.

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### **Metadata Extraction**

Many fields can be entered for scores within the Score Info functionality within Sibelius software (title, subtitle, composer, arranger, artist, copyright, partname, instrument changes, lyricist, copyist, publisher, dedication, opus number, composer dates, year of composition, etc.) but as mentioned before this is part of the proprietary nature of the program and can only be extracted if migrated to another format (and then may not complete all fields [31]).

### **Migration**

The software also allows the import of other file types (Finale, Allegro & PrintMusic, MusicXML, SCORE, Midi files, PhotoScore .opt and ASCII tablature files) [32] and also allows export to a variety of formats (MusicXML, PDF, Midi, PNG, EPS and SVG) [33]. It allowed export to MusicXML from version 7 [4] and included the ability to export scores in MP3 format from version 8.2 [34]. Sibelius comes pre-installed with a program called PhotoScore Lite to import PDF files [35].

You can migrate Sibelius to Finale by converting to XML [36]. If converted to MIDI format, the file will lose any of the formatting, text lyrics or any other musical expressions or articulations that were in the Sibelius score [37]. Plugins for Sibelius have been developed [38] to allow conversion to the Lilypond file format for music engraving to produce high quality sheet music [39].

The license agreement for the software forbids user to reverse engineer or convert the format [23].

## **2.4 Documentation and Guidance**

*An indication of the availability of practical documentation or guidance with specific reference to the facilitation of any recommended actions*

No documentation of the .sib file structure exists [23].

## **2.5 Complexity**

*An impression of the complexity of the format with respect to the impact this is likely to have on the British Library managing or working with content in this format. What level of expertise in the format is required to have confidence in management and preservation?*

As stated above a lot of the data and structure for the Sibelius format comes from the software itself.

To quote Joe Pearson, a product designer for Sibelius:

“If we were to provide the Sibelius file format to anyone, it wouldn't suddenly be possible to draw a score. You need the intelligence and institutional knowledge of music notation that is the Sibelius codebase in order to make sense of it. In other words - .sib isn't like a .jpg file, which can be thought of as a static representation of an image (sort of!). A lot of the "metadata" that one may want from a score isn't stored in the .sib directly; it's all calculated by Sibelius itself [23]”

## **2.6 Embedded or Attached Content**

*The potential for embedding or attaching files of similar or different formats, and the likely implications of this*

As outlined above, associated content such as the audio content is available but this is part of the Sibelius software rather than being embedded in the format itself.

## **2.7 External Dependencies**

*An indication of the possibility of content external to an instance of the file format that is complimentary or even essential to the intellectual content of the instance*

None known other than the availability of the software or versions of the software itself.

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## 2.8 Legal Issues

*Legal impediments to the use, management or preservation of instances of the file format*

Being a proprietary format, there is a license agreement. This agreement expressly forbids user to reverse engineer or convert the format [23].

## 2.9 Technical Protection Mechanisms

*Encryption, Digital Rights Management and any other technical mechanisms that might restrict usage, management or preservation of instances of the file format*

Sibelius is a heavily proprietary format. Other similar scorewriter or sheet music products are not legally allowed to ingest or manipulate .sib files. Users are completely dependent on having a version of the Sibelius software available to render the files.

## 2.10 Other Preservation Risks

*Other evidence based preservation risks, noting that many known preservation risks are format specific and do not easily fit under any of the sustainability factors above*

None known.

## 2.11 Preservation Risk Summary

*A summary of preservation risks and recommended actions (where possible).*

The evidence discussed throughout this report highlights the proprietary and highly dependent nature of the Sibelius format.

The main issues include:

- Software dependence
  - Complete dependence on Sibelius software
  - Proprietary product and format
  - Licensing prevents migration
- Market status
  - UK office closed in 2012, but still has a large user base and is regularly updated
  - Currently viewed as the market leader but no clear guidance from other memory institutions on collection and policy
- Documentation
  - No documentation available
- Validation
  - Lack of tools available to validate or check conformance
  - Preservation risks unclear due to lack of standards to benchmark against
- Migration
  - Software allows migration to other formats but this is dependent on the availability of the software itself

## 3. Recommendations for Action

*Recommended actions in usage and handling of the format. Recommend actions in the support or development of software applications that provide, or have the potential to provide, significant risk mitigation for the format. Note that these recommendations do not take into account other requirements such as those driven by specific British Library collections, or non-preservation issues such as resourcing.*

The main recommendations that could be made will be dependent on whether (at least for the short term) the Sibelius software would be made available for accessing any deposited Sibelius content.

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### **Handling Recommendations**

Submission of Sibelius files for ingest would suggest that this would could act as the Master Archival copy with additional Delivery files for access (perhaps in PDF and MP3) unless making the software available is an option for accessing the material.

MusicXML is the universal standard for music and can be used by Sibelius software and should be considered as an alternative [40]. Having the files in MusicXML would maintain a platform independent file and increasing the chances of the file being accessible in future notation software applications [41].

### **Software Recommendations**

Investigation of the feasibility of making the Sibelius software available should be considered.

### **Monitoring Recommendations**

As outlined earlier, the closure of the UK office raised concerns about the long term future of the product and format which seem so far to be unfounded and regular updates have allayed these fears. An annual review of how Sibelius sits in the marketplace would still be recommended.

In terms of alternate products availability, the closure of the UK office has led to the former developers releasing their own product Dorico in October 2016 [42]. Sibelius also has other rivals such as Finale and others [6] including free programs such as MuseScore [43] and LilyPond [39].

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