DAISY Music Braille Project:

Q4 update 2022

Reporting on project activity in Q4: Oct, Nov, Dec 2022

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# Document purpose

This document gives an overview of work conducted by the DAISY Music Braille Project in Oct, Nov and Dec 2022 towards tool development, a music braille production network, metadata for music braille, teaching and learning of music braille, publisher workflow and engraving guidelines, as well as sharing news from around the sector. With acknowledgements to our funders.

# Contents

[Executive summary 2](#_Toc116293150)

[1. Professional music braille conversion tool (MakeBraille) 4](#_Toc116293151)

[2. Interactive end-user music braille tool (SMB with Musescore) 6](#_Toc116293152)

[3. Music Braille Production Network 10](#_Toc116293153)

[4. Metadata for music braille resources 10](#_Toc116293154)

[5. Teaching and learning of music braille 11](#_Toc116293155)

[6. Publisher workflow and engraving guidelines 11](#_Toc116293156)

[7. News from around the sector 11](#_Toc116293157)

[8. With thanks to our funders 15](#_Toc116293158)

# Executive summary

Activity continues on-track across all project activity streams, summarised here, and described in detail in the body of the report.

Contact us at musicbraille@daisy.org, and [www.daisy.org/music-braille](http://www.daisy.org/music-braille)

## 1. MakeBraille (professional automated conversion tool)

dzb lesen continues to make weekly developments to MakeBraille (no longer funded by the project). They welcome enquiries from agencies about obtaining a licence, with info at <https://www.dzblesen.de/makebraille-information>.

## 2. SMB with MuseScore (interactive end-user music braille tool)

TheSao Mai development team fixed lots of reported issues in SMB to create a stable and usable translation engine, with v 22.12 released in December, and have started work on the live braille translation module for MuseScore. MuseScore 4 was also released in December, with its new engine, though blind users may want to wait for updates for the accessibility features to be fully working before using it in earnest. We’re looking for more testers for SMB and MuseScore

SMB: <https://www.saomaicenter.org/en/smsoft/smb>

MuseScore: <https://musescore.org/en>

## 3. Music Braille Production Network

The network continues to prove valuable for sharing scores and productions between agencies, and we are about to finalize guidance for producers and for end-users, so that we can widen the network to all producers and plan for its continuation.

## 4. Metadata for music braille

We updated the metadata proposals after feedback received from the consultation period, and will be agreeing them shortly with sector stakeholders, and starting to plan how to trial them in agencies and in online collections.

## 5. Teaching and learning of music braille

The collated list of resources is being prepared on pages on the DAISY Music Braille Project website but they’re not finished yet. We’ll announce when available for use.

## 6. Publisher Workflow and engraving guidelines

Still trying to find opportunities to break into the music publishing industry to promote accessible score publishing.

## 7. News from around the sector

BLENNZ New Zealand is hosting the biennial Braille Music Retreat in January 2023 for adults from Australia and New Zealand; the Sound Without Sight project is looking for content contributors to its developing online community hub for sight impaired musicians and sound engineers; news about Michael Good’s retirement (the founder of MusicXML); and introducing Merilyn Jaeski, a blind Estonian composer.

## 8. Thanks to our funders

CNIB, DAISY Strategic Development Fund, Friends of dzb lesen, MTM, NLB, Norwegian Association of the Blind, NOTA, ONCE, RNIB, SBS, Vision Australia; as well as in-kind contributions from the agencies undertaking development work: dzb lesen, MuseScore and Sao Mai Centre for the Blind.

The rest of the report describes these areas in more detail.

# 1. Professional music braille conversion tool (MakeBraille)

Lead: Matthias Leopold.

Update from: Hannes Kaden, Head of Production, dzb lesen

Contact: makebraille-support@dzblesen.de

**Aim**: At least one improved tool is available for rapid professional, accurate and automated music braille transcription which produces global formats and is linked to a production workflow. Note that this does not remove the need for skilled music braille staff.

## a) Development

dzb lesen is responsible for ongoing development and promotion of MakeBraille since the project funding ended a year ago.

Since the last report progress has been made in the continuous development of the MakeBraille service. Some points are listed below. For a complete list, please see [https://dzblesen.uber.space/projects/hodder/wiki/What's\_New\_in\_MakeBraille](https://dzblesen.uber.space/projects/hodder/wiki/What%27s_New_in_MakeBraille).

New:

* Transforming MusicXML files to Ink print now supports chord symbols
* Get bar over bar running standalone under Windows
* The server automatically changes the settings for "Score formatting and Slurs" when a country is selected
* Recognize Accordion rows from single note heads and letters only
* Support ink print notation from bass notes with fingerings for accordion notes
* Accordion is supported in list of keys
* Standalone creation of brf and pef
* Create 8-dot-Braille and utf8 output both
* Support for country Sweden
* Combined output of HBS and bar over bar (SBS Zurich)
* System number is displayed for bar over bar outputs in the left hand (UK)
* Bar numbers can be output over the notes (UK)
* Edition [CS] Choral score contains lyrics, edition [FS] does not (Norway))
* Underlining in the title bar (UK)

Improved:

* Placement of slurs symbols at note heads/interval signs
* Recognize ties when incomplete from source
* Recognize figured basses
* Remove false metronome marks from MusicXML sources
* Handling slurs (capx sources)
* Melting voices to chords respects articulations
* End of continuation lines are always presented for Germany, Switzerland and Norway
* MusicXML: Handling of fingering and pedal marks
* General MusicXML export
* Reading dir downwards when selected edition for conductor for Germany and Switzerland
* Splitting Events/Rests because of dispatched tempo marks etc.
* Optimizer: Indicate missing time signatures
* Shifting voices between systems
* Recognize untagged bar numbers in capella files
* Grouping and n-plets
* N-plets and simile
* Recognize embedded texts (capella)
* Recognize instruments from other information like titles etc. if no instrument names are available
* Capella: Recognize barnumbers
* Two or more instruments all assigned the same chord symbols
* Creation of 8-dot-Braille
* Do not print instrument names twice (instrument+title)
* brf when system by sytem is created
* page number for single music pieces when system by system
* BrailleVis: If texts are choral like then do not repeat them below last system to save space
* Capella: Recognize {}-commands from complex text objects
* File name was lost when creating extracts
* Metronome indications use stem signs and not notes (UK)
* accidentals are not remembered with dot 5 but written out (UK)
* No repeat procedures of the form ⠼⠃⠼⠁ etc. for bar over bar (UK)
* Repetition procedures for song lyrics take into account upper and lower case for English-speaking countries.
* Handling of successive whole bar rests in parallel with multi-bar repeat procedures (Bar over Bar)
* Instrument list takes filtering of parts into account
* Automatic copying of syllables to other vocal parts improved
* Loss of file name when working with voice excerpts
* Better sorting of files within zip files based on numbering.
* Formatting of centered titles and other texts
* Determination of instrument abbreviations
* Editions now also use these abbreviations
* English contracted text + capitalization
* Subdivision of pieces into sections based on vocals (UK/RNIB)
* Users are always assigned correct language and country, even if these are not clear from the email address
* Abbreviations of instrument names for bar over bar
* Recognize lyrics if complete without line breaks (bug in Sibelius MusicXML export)
* Detect piano or choir SATB if systems are connected by curly brackets
* Remove metronome information if error in source (Sibelius-MusicXML-Expor)
* Support zip-container with arbitrary music files
* Page-by-page output
* Uniform but country-specific processing of instrument abbreviations for MusicXML and capella
* Special abbreviation lists for instruments (UK)
* Capitalization in frontmatter (different countries)
* Recognize instrument class more reliably = wind instruments, string instruments, etc.

## b) Information on License Model

If there is interest to use MakeBraille for production purposes, please have a look at <https://www.dzblesen.de/makebraille-information> or get in contact with dzb lesen.

## c) Contact

If there any question to MakeBraille, please feel free to contact dzb lesen at makebraille-support@dzblesen.de.

# 2. Interactive end-user music braille tool (SMB with Musescore)

**Aim:** At least one improved interactive music braille user tool is available for blind musicians to independently read, write, convert and explore music in accessible ways, in education, for work and leisure.

## 2.1 SMB developments at Sao Mai Centre for the Blind

Lead: Phúc Hoai Dang
Contact: support@saomaicenter.org

TheSao Mai development team spent most of the time in quarter 4 to fix reported issues from testers in order to have the most stable and usable SM music Braille translation engine released before fully focusing on implementing Braille related features in Musescore.

The team has also started working on the development of Musescore’s live Braille translation module since this quarter. A Musescore’s development build with this module is expected to publish for testers in the first quarter of year 2023.

On Dec 22nd, new Sao Mai Braille (SMB) version 22.12 was released with all new features and improvements developed in this quarter 4, 2022. And below are highlights of the release, divided into two heading sections: new features and improvements for SM Music Braille engine, and for SMB in general.

Download it from: <https://www.saomaicenter.org/en/smsoft/smb>

### a) SM Music Braille engine

Added option to re-arrange fingering to correct notes.

* Added “Auto” option to multiple staff repetition conditions: automatically switched to check within its own staff for measure passage repetition in section-by-section and line-over-line formats; and to all staves must have same starting repeated point and same number of repeated measures in bar-over-bar.
* Incorporated conditions of different types of repetitions (measure rest, partial, full measure, and measure passage repetitions). Old version handled each type separately so it caused some messed-up repetition issues in some cases.
* Incorporated both repetition and doubling types, especially for slur and chord interval doublings, to support when they all appear in the same repeated passage.
* Improved showing hand sign when changing staff.
* Added option to apply partial repetition when beats are not in whole.
* Added option to apply doubling when all chords have same interval patterns.
* Applied correct number of dots for dotted note.
* Metronome per-minute content is translated by LibLouis table instead of a separate music symbols Braille table. Because it might contain text written in different languages.
* Cases with hidden objects and rests with slur or tie will be not processed to apply partial in-accord, combine into one voice, or combine into larger rest. Old approach caused incorrect slur and tie matchings.
* Supported to detect two tied notes with different note steps but same pitch.
* Improved algorithm to search and match slurs with same value for number attribute.
* Improved much the performance to translate big files in terms of both large file size and musicscores with multiple parts.
* Supported to translate up to 16 different lyrics in one part; and allowed to select Braille translation table for each lyric number. Added option for lyric line alignment. Added “Lyrics” tab page in Score info dialogue to list available lyrics and assign Braille translation table for specific lyric number.
* Added show/hide rehearsal option.
* Added list of lines and function to arrange the order in the Signs/lines order page.
* Fixed: irregular groupings; text categories and their translation rules in WordsDictionary.xml; undetected slur and tie matchings; overflowed division duration value in scores with larger tuplets like tuplet of 30 notes and more; missed title page info in solo with accompaniment mode; tempo text, metronome and time/key signatures not written on same Braille line; missed hairpin stops... And many more other fixes and improvements for translation of scores with both non-standard and advanced notation.

### b) Other SMB features

* All configuration INI-based files are converted into XML-based ones. Old settings are automatically merged into new setting files when upgrading to new version.
* Options for Table of Content management: create, update and delete.
* Updated to latest LibLouis library version 3.24: added new Braille translation tables: Chichewa Malawi, Georgian, Swahili Kenya, Taiwanese bopomofo braille, and Danish. So, total number of Braille translation tables supported is 134.
* Updated user interface languages: Russian, Turkish, and Vietnamese.
* Released new SMTranslator.exe tool with quick guide for translators at: <https://saomaicenter.org/en/smsoft/localization/translate-sao-mai-braille-windows-version>
* Convert selected text in print document between Unicode and Ascii Braille.
* Added new option to always convert into ascii Braille when saving Braille document into BRF or BRL filetypes.
* Progress bar for translating, saving and converting files, especially for big files, has been improved update the status every 2 or 3 seconds; and no longer read when focus is in other window.
* In Score info dialogue: press F6 to move between Score and Part lists. In Options dialogue: F6 to move between the left and right panes.
* Styles page in Options dialogue is divided into subpages: Text, Font attributes, TOC and Data table.

### c) Coming up in Q1 2023

In quarter 1 of 2023, our work plan is to continue the development of Musescore’s live music Braille translation module. The module is based on Musescore’s existing Braille export module, add new features to handle text Braille translation by the LibLouis library, and have both print and Braille score views synchronized.

We expect to submit the module to Musescore for review in late February and available for public test in March.

For Sao Mai Braille’s other general features, we plan to complete: applying styles directly in rich-text Braille document, and new table of content settings.

Note: Sao Mai Center has two weeks off from Jan 16th to 26th for traditional Tet holiday.

## MuseScore developments

Lead: Peter Jonas

MuseScore 4 was released on the 14th of December. This latest version contains several groundbreaking new accessibility features, including:

* A scalable UI with custom colours and high contrast themes for low vision users.
* Improved speech output with many screen readers. VoiceOver on macOS and Narrator on Windows are now supported for the very first time.
* Export of Music Braille according to the North American Music Braille Code 2015 (bar-over-bar format, no text or lyrics at this stage).
* Improved MusicXML export for use with 3rd party software, including Braille programs like SMB for more advanced Braille conversion needs.

This is the first time that native Music Braille export has been included in a mainstream music notation program. The exported Braille is rudimentary at present, but improvements will arrive in future MuseScore updates towards the middle of 2023, along with the live Braille features planned as part of the interactive user tool project undertaken in partnership with DAISY and SMB.

As always, MuseScore is free to download from [MuseScore.org](https://musescore.org/en), but please visit [MuseScore's Accessibility page](https://musescore.org/en/accessibility) for some important instructions specific to blind users. The accessibility page will be updated with new information and links to accessibility tutorials as they become available. In the meantime, you can learn about other new features in the [Release Video](https://www.youtube.com/watch?v=Nc08RhOQDR4), or via other tutorial videos available within the application itself (visit the Learn page from the app's Home screen).

*Peter further commented that:*

MuseScore 4 was a huge release for us; the biggest that MuseScore has ever done and probably will ever do. Most of the code was rewritten from the ground up, including the playback engine and the entire user interface for sighted and accessibility users (there's a video about it [here](https://www.youtube.com/watch?v=Qct6LKbneKQ) if you want to learn more about what we did and why it was necessary).

It was inevitable that there would be some things missing that used to work in MuseScore 3, but the good news is that we're in a much better position to make improvements now that we were before. In particular, we're able to fix issues for accessibility users without breaking things for sighted users, which wasn't possible in MuseScore 3.

In the short term, I think it's fair to say that people should have both MuseScore 3 and MuseScore 4 installed and use whichever one works best for them depending on their current project and particular needs. I mentioned this on the [accessibility page](https://musescore.org/en/accessibility) already, but it applies to sighted users as well as blind users.

Watch out for further updates during 2023 for more accessibility and braille features, and continue to submit feedback for MuseScore to consider.

# 3. Music Braille Production Network

<https://daisy.org/activities/projects/music-braille/production-network/>

Scores are being found and shared between agencies very efficiently, and we are now in a position to begin to widen the membership of the network to all producers, not just those who took part in the score trial. There are standard protocols to follow to make life easier for everyone.

We have a meeting scheduled for 31 January for the producers involved in the score trial where will be discussing: the network and its value; our good practice guidance for producing scores for international use; guidance needed for end-users; pricing; online collections and metadata developments; and the future of the network.

We will share notes of the meeting, along with the invitation to join the Network. We will also be transitioning to a DAISY email list this year.

# 4. Metadata for music braille resources

Our sector research clearly highlighted a need to improve the search and retrieval of music braille scores from agency libraries and online collections.

Based on feedback received during the review process of the first proposals for harmonized metadata, the working group has updated the proposals to suit the majority feedback. Thanks in particular to Lindsay Conway (NLS) for her terrific work on this.

We have a meeting scheduled for 1 February (all welcome) to present the updated proposals, and to plan how they could be trialled in agencies, and what changes would be needed in online collections to accommodate this new metadata.

Who should attend? Producers of music braille, cataloguers, librarians, production managers, managers of online collections. You should have already received the meeting invite and documents, but if not please email musicbraille@daisy.org

# 5. Teaching and learning of music braille

Our list of resources for end-users and teachers is now pretty complete, organized by user need, rather than by resource type (i.e. I’m a blind braille reader who needs to learn music braille / I’m a sighted teaching assistant and need to know just the basics of music braille).

The final resources are being prepared for the DAISY music braille site (but the pages are not yet complete).

When the pages are ready we will let you all know so you can begin to use them and promote them to your patrons.

# 6. Publisher workflow and engraving guidelines

We established in Q4 that there is no network to discuss accessible music publishing (unlike the existing active accessible book publishing networks). We have been exploring ways to try to ‘break in to’ this new sector through various publisher groups.

We would like to increase the reach of our 2022 discussions with UK music publishers and engravers to the wider music publishing world, and will continue trying to find opportunities to do this.

If more publishers would use our publishing guidelines when creating their master scores, more scores would be accessible more immediately through sound, speech and braille.

If you have any named contacts at publishing houses who might be interested in this working group please let me know: musicbraille@daisy.org

# 7. News from around the sector

## 7.1 New Zealand Braille Music Retreat January 2023

From Wendy Richards, Blennz school

New Zealand will once again be hosting 22 adults (From NZ and Australia) for our biennial Braille Music Retreat in January 2023. Braille music retreat is a four-day event in celebration of Braille music. The retreat is for adult musicians (both professional and amateur) who come together to enjoy music making through Braille. It is planned and facilitated by Braille music readers … for Braille music readers. The retreat is held every two years at BLENNZ Homai Campus and has a strong focus on choral music.

**Mission Statement and Values:**

Braille music retreat celebrates active community participation through the practical use of Braille music. We support and strengthen our Braille music community while refreshing our souls through music making and companionship. Braille music retreat embodies the following values:

* **Community**: our Braille music community is strengthened through active collaboration in a positive and supportive environment.
* **Identity**: we celebrate our unique identity as blind musicians who use Braille music.
* **Musical Mastery**: we challenge ourselves to further refine individual music skills and abilities through collective music making experiences.

## 7.2 Sound Without Sight

From Jay Pocknell, Music Support Officer RNIB, and Founder of Sound Without Sight

<https://soundwithoutsight.org/>

Can you help? Sound Without Sight is a new online community hub to support blind and partially sighted musicians and audio engineers. The project team are in the process of collating external resources for its knowledge hub ahead of launch.

Although we are excited to see the content that our community members will contribute post-launch, we also want to ensure there is a decent list of resources available to users when we go live.

The knowledge hub will cover topics such as: audio production, accessible notation, performance, inclusive design, access to the industry and its culture, etc.

Any of the following would be useful:

* Existing articles, websites, or communities that Sound Without Sight can signpost to
* Information and resources that people have created but didn't know where to share them usefully
* Ideas for useful content that doesn't exist yet

Any suggestions for content would be most welcome at:

content@soundwithoutsight.org

## 7.3 News about MusicXML

From: Haipeng Hu, Technical Consultant, DAISY Music Braille Project, and founder of BrailleOrch

Michael Good, the creator of the MusicXML standard, has officially retired after 44 years as a software engineer, having spent over half of his career working in music notation software. He has also stepped down as co-chair of the W3C Music Notation Community ((<https://www.w3.org/community/music-notation/>).

The future of MusicXML will continue to be managed by the W3C Music Notation Community (a group that aims to serve a broad range of users engaging in music-related activities involving notation). Although Michael will be stepping down as co-chair of the W3C, he will continue to contribute to the group’s activities as a member of the community in his retirement. Michael Cuthbert from MIT has replaced him as a co-chair.

Michael Good has also made Dolet for Sibelius open source on GitHub, under the MIT license, which will be maintained and improved by volunteer developers.

Haipeng continues to contribute to the W3C Music Notation Community, promoting our requirements for MusicXML related to music braille, and contributes issues to the Dolet for Sibelius GitHub page.

## 7.4 Introducing Merilyn Jaeski, a blind Estonian composer

*Continuing our feature of highlighting a blind musician in each report, we asked Merilyn to tell us about her work as a blind composer and how she studies and composes without access to music braille and notation tools.*

Hello everyone! I am Merilyn Jaeski. I currently pursue a bachelors degree in composition as a blind student in the Estonian Academy of music and theatre. This is my first post to the list, so I thought it would be best to introduce myself.

My musical education began with piano lessons at the age of four in Belgium. After returning to Estonia, I continued my piano studies at a local music school, from where I graduated in 2018. I also lived in the Netherlands for a few years as a child, where I received my musical training under the guidance of a private teacher. I have also completed a degree in musicology at the Estonian Academy of music and theatre as well as a qualification in composition at a local vocational education and training institution.

I am not quite sure where did the notion come from to try and compose music in the first place. All I know is that at some point I started having musical ideas of my own. I really liked the thought of filling a space of time with chords and notes. In other words, creating a musical picture. I also have synaesthesia. For me, every note has its own colour which is radiant as if glowing from inside. For example, D is as white as chalk, but A is a lighter shade of blue. When I hear something being played in, for example, A major or A minor, the colour of A is always dominant, although the colours of different harmonies and notes of the melody are also in the mix. I see the major as having a brighter tone, but the minor  posesses a darker hue of that same colour. This happens with every key.

Days of the week, letters of the alphabet and numbers also have different colours for me. Through further exploration, I found out that composing my own pieces is something I'd like to pursue even more. As time went on, I started to use my synaesthetic colours in my music on purpose, creating a series of paintings consisting of sound and light. When I write music, it is like being on a journey that leads me inside my own mind. This inner space is a whole other world and I always want to go back there from time to time to really connect with myself. Being a blind composer, I feel that the way I imagine and create music can be somewhat different from how my sighted colleagues do it. I was only vaguely familiar with the system of traditional notation. I was taught the basics only a few years ago, which means the concept is still quite new to me.

Sadly, I am still not acquainted with braille music, because there aren't enough materials available in Estonia to learn from, but I think that musical literacy would be a great help in every aspect of my work. So far I have learned the piano by ear. I have notated my musical compositions using Lilypond and the help of a sighted assistant. Some of my pieces have also been written down as text scores, but I hope to find a more accessible method regarding notation.

When I write my pieces, I don't think of music as being divided into beats and measures, which gives it a different sense of motion. My composition teachers have told me that it enables me to think out of the box. This can be a good thing, but it could also be restrictive. When I have composed a new piece and it's time to notate it, the process can be very difficult with regards to how should my ideas be put on paper so that others also could understand what I mean. More often than not, I have to ask for help from more experienced musicians.

I am inspired by peculiar places in nature. Many of my pieces include themes of water and light. I have almost never been in the places I write about, but this is where the musicologist in me comes to the rescue, gathering necessary background information and conducting thorough research before I start thinking of the picture of sound.

When the general theme of a piece is set, I start to improvise on the piano. I preserve those improvisations using a recording device. From there, I choose which musical ideas do I want to explore further. I might pick out just a single tiny motive, a short rythmic structure or a passage of not more than two chords or intervals. That is to say the ideas have to be as straightforward as possible. When I have made my selection, I try to build the rest of the piece upon one or several of these, in the meantime recording each part of the process. When I am sure the composition is finished and I have chosen the instruments that should perform it, the next phase will begin. This is the part where it's time to figure out how to notate the piece. When the notation too is done with the joined effort of me and a sighted assistant, the score is complete. It's time to find the performers. Usually, they are either current students of my school or have studied there before. Most of the time, the concerts are organised also by the institution, but there have been instances where composition students have had to arrange the performances by themselves as a practical exercise. It is also very beneficial for starting composers to gain experience outside of school and to keep all their options open regarding compositional styles, choices of instruments, electronic music as well as performance opportunities and to not limit themselves to only one way of thinking or doing things. In my opinion, every piece is like a mindscape. I can't wait to find out where my compositional journey takes me next.

To hear an example of two of Merilyn’s pieces visit <https://www.dropbox.com/sh/lcpi4gzcedte54w/AADtEuiGbXoPfjJCqYajJIVEa?dl=0>

## 7.5) Do you have music braille news to share next time?

I’ll happily collate other news from around the sector and send it out. Our next quarterly update will go out in May 2023, so please send me your news by **end of April 2023.**

This mailing goes out to around 150 music braille experts worldwide, including transcribers, teachers, composers, end-users and developers, among others. Please send your updates to musicbraille@daisy.org

# 8. With thanks to our funders

We’d like to express our huge thanks to all our funders for supporting the project. We are most grateful for your support and belief in the work we’re doing:

* CNIB
* DAISY Strategic Development Fund
* Friends of dzb lesen
* MTM
* NLB
* Norwegian Association of the Blind
* NOTA
* ONCE
* RNIB
* SBS
* Vision Australia

As well as in-kind contributions from the agencies undertaking development work:

* dzb lesen
* MuseScore and
* Sao Mai Centre for the Blind.