DAISY Music Braille Project:

Q3 update 2022

Reporting on project activity in Q3: July, Aug, Sept 2022

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# Document purpose

This document gives an overview of work conducted by the DAISY Music Braille Project in July, Aug and Sept 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.

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# Executive summary

Q3 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](mailto:musicbraille@daisy.org), and [www.daisy.org/music-braille](http://www.daisy.org/music-braille)

## 1. MakeBraille (professional automated conversion tool)

Development has continued at dzb lesen (no longer funded by the project). License fees for organizational users have been reduced after feedback received over the summer, and funders now receive a further discount for 3-years in recognition of their support during development. Information at: <https://www.dzblesen.de/makebraille-information>

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

Sao Mai Braille v22.9 was released in September, with 23 new music braille options and full mathematics editing support, and work has begun on adding braille into MuseScore. A blind user describes how she’s been successfully using SMB to access her music. The upcoming release of MuseScore 4 will include two more accessibility improvements: 1) to indicate notes outside the range of the instrument, and 2) to give audible feedback when the user selects a range of notes in the score. This new release will also fix some important accessibility regressions, including ‘Getting Started’ dialog, and the ‘Style improvements’ dialog. The Beta release of MuseScore is due imminently, and will be posted on the [Announcements Forum](https://musescore.org/en/forum/4492) on MuseScore.org.

## 3. Music Braille Production Network

The network continues to prove valuable for sharing scores and productions between agencies. Our score trial has resulted in the collaborative development of initial guidance for producing scores for international use which will be circulated during Q4.

## 4. Metadata for music braille

We received good sector feedback on our proposed Core and Recommended metadata fields to make it easier to find and retrieve appropriate music braille scores, and the proposals are currently being updated for wider circulation in Q4.

## 5. Teaching and learning of music braille

Our list of useful resources is almost ready to share more widely in Q4, when we hope that others will recommend more resources in languages other than English.

## 6. Publisher Workflow and engraving guidelines

Our ‘Round Table on Accessible Music Publishing’ generated positive interest from three music publishers who would now like our help to form a publishers’ working group on how to implement our guidelines for the creation of accessible master files.

## 7. News from around the sector

RNIB welcomes its new music librarian and music support officers, and is running the Gardner’s Trust Braille Music Literacy Awards 2022. BrailleOrch has just published their 700th free transcription of major music scores on their website.

## 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](mailto: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. The program has been constantly updated (usually one update a week), so that bugs have been fixed, existing features improved or new ones added. Some highlights:

* Established many basic concepts to be able to map the notations for RNIB, which of course could also be used by others
* Implementation of English contracted braille
* Improved test routine to avoid unintended influence of updates on other parts of the program
* Return of additional midi return files now works for all parameter constellations

A complete list of what has been added, fixed and improved in 2022 can be found at <https://dzblesen.uber.space/projects/hodder/wiki/What's_New_in_MakeBraille>.

Focus areas for the upcoming months are:

* Take care of Australian specific country requirements
* Improve German contracted braille

## b) License model/ cooperation

Over the summer dzb lesen has collected various feedback on the license model. After evaluating it, the license costs have been adjusted to make it more attractive on the one hand, but also to maintain costs for technical investment on the other hand.

The latest pricing is:

* Use by end-users and private individuals is free
* The pricing model for agencies is on an annual basis and depends on the licensee‘s country of origin and its World Bank's classification.
* The **standard annual costs** are: 1.500 € net/year
* The **costs for one-person companies** are reduced by 50%: 750 € net/year
* In order to take contributions of **agencies which funded the DAISY Music Braille Project** into account, dzb lesen offers them 66% discount for three years (i.e. 500 € per year).

Up to now there is an existing MakeBraille cooperation with SBS and Dedicon and talks with AVH (France) are ongoing.

Information on licenses is at: <https://www.dzblesen.de/makebraille-information>

# 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](mailto:support@saomaicenter.org)

### a) Latest release

On Sep 15th, we had a major release of Sao Mai Braille 22.9, which has included all of new features and improvements developed in quarter 3 2022 (July to September). Two weeks later, in Oct 1st, we released a quick update that addressed some critical reported issues and minor improvements.

23 new music Braille options and full mathematics editing support are the key highlights of this quarter 3 report of Sao Mai Braille (SMB).

Simultaneously, the team was also studying and preparing for the full commitment in developing Braille translation related features for Musescore from Q4 and forwards. Therefore, we will have less time to only spend on addressing critical reported issues of the current SM Music Braille translation engine.

Below is the list of new implementations in quarter 3 (Jul-Sep 2022), divided into two sections 1) SM Music Braille engine, and 2) SMB’s other important new features.

### b) SM Music Braille engine

There are total of 23 new music Braille translation options added to SMB. All those options are related to new highlighted features listed below:

* Dots 56-14 is used for slur with start and stop on same note.
* Support complicated tuplet cases with or without start/stop, and/or without both start and stop. Nested tuplet is also supported.
* Improve algorithm to correctly calculate duration, especially for tuplet cases.
* Smaller hidden rests are now combined into bigger hidden rests for both normal and in-tuplet ones.
* Option to apply partial in-accord when a whole tuplet in range. If checked, the tuplet should not be separated to apply partial in-accord.
* Translate percussion directions and unpitched note type.
* Translate figured bass in three formats (bar-over-bar, line-over-line and section-by-section) in all three transcription modes (single-part, orchestra and chamber).
* Translate Accordion and Harp diagrams.
* Handle the translation of octave shift direction in both non-facsimile and facsimile.
* Translate “+” text as stopped technique (dots 126-12) for wind/brass instrument type. Translate “+” text and stopped technique as left hand pizzicato for string instrument type. Translate PIMA text as plucked fingers. And apply clef octave change for pluck instrument type.
* Handle multiple measure rests translation.
* Support <measure-repeat> MusicXML tag an adapt to Braille rules of both adjacent measure and measure-range repetition methods.
* Support count-back and in-order numbering measure passage repetition methods.
* Apply algorithm to avoid repeat cases for partial, full measure and multiple measures when they occupied less space than applying repetitions/abbreviations.
* 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.
* Apply both doubling and repetition occurred on the same passage.
* New algorithm to process system breaks in order to manage the option whether to repeat from cross-parallel/section or not.
* All parallel breaking conditions now work correctly in conjunction with new repetition and doubling features such as print line/page breaks, key/time signature changes etc.
* Support both slur and tie with repetition at the same original and repeated passages.
* Support to all partial, one-measure and measure passage cases for notes with lyrics, chords and plucks written in the original and/or repeated passage.
* When number of measures per line or per section for line-over-line or section-by-section format is chosen as “Auto”, line-over-line will be processed as parallel of bar-over-bar but without measure alignment. While, section-by-section will base on system breaks to new section.
* State print page number and option to start numbering from specific page. And choose position to place the number.
* State line number with same position option as print page number. Different formats to state line number are supported for different transcription format and modes.
* Detect score movements and applied measure, line and page numberings for each new movement. Repetition is not allowed to apply in cross-movement for all formats in all transcription modes.
* State key signature with or without cancellation option.
* New transcription mode “Solo with Accompaniment” in three formats (bar-over-bar, line-over-line and section-by-section).
* More ways to select parts, including selecting all; “1-3” to select from part 1 to 3; “1,3,6” to select part 1, 3 and 6; or reverse the part order like “3,1” to write part 3 before 1.
* Added option to re-arrange fingering to correct notes.

### c) SMB’s other important new features

* Insert blank line(s) after header and before footer.
* Support right-to-left text direction.
* Support new style rules: keep with next, keep together and avoid widow lines.
* Save document as PDF with auto table-of-content generation.
* Mathematics: together with new SM Music Braille library, editing and reading math is the most highlight in this release, including main features:
  + Improve accessibility of math equation insert dialogue. Supported to search equations by category or by name, and favorite list of frequently-used expressions.
  + Import and export equations from/to LaTeX and MathML.
  + Mathcat library is used to convert equation into speech and Braille. Currently, it supports English and Vietnamese for speech output; and Nemeth + UEB for math Braille. Math navigation mode is also supported.
* Use latest LibLouis 3.23 library.
* Build SMB 64-bit version with new setup package, automatically detect Window OS type and install either 32-bit or 64-bit version.
* Software code is verified and signed in order to avoid security warnings.

### d) Coming up in Q4

We expect to have another major release of SMB in this late October. And, live Braille translation module for Musescore will also be introduced to the public. DAISY-funded development work will continue until June 2023.

### e) Case study – New possibilities using SMB

By Solveig Oma

During my music studies, it was always a challenge to plan chamber music projects, as I had to order the braille music scores very early. Also with solo repertoire and in music history this was problematic. This week I used Sao Mai’s new conversion program to convert a Schubert piano piece to learn. These last two months I’ve also converted several pieces and church chorals using SMB.

This program translates from music xml within seconds, showing both music and even Norwegian lyrics correctly (at least when the xml-file is not very bad!).

I like that I can choose between unicode and brf, and make both bar-over-bar and section-by-section scores. There are a lot of settings which gives the possibility to make scores for different use.

As this program is still developing, there are naturally some small problems to be fixed, but the program is already working well.

As music xml is widely used as format for music scores, it’s easy to find repertoire on the web, especially older music. If I had this program in my study time, I could just find a partiture on the web and quickly convert it to check the chord in one bar, or look at a piece just to see if I liked it. This was not previously possible for me. Quick translation and access to scores will make the work with chamber music, analysis and composing a lot easier!

The tools Sao Mai is developing in cooperation with Musescore will be great for learning music notation whether it’s braille or print. This may open possibilities for online courses in music notation for visually impaired, as well as new works from visually impaired composers. As these programs are free, it means that we are getting much closer to equal access to music notation.

## MuseScore developments

Lead: Peter Jonas

### a) Project-funded improvements

In the seventh project quarter (i.e. the third quarter of 2022), two tasks were completed for the interactive user tool project. Contrary to our expectations in the previous report, we were able to get these included in the upcoming MuseScore 4 release so users will not have to wait until MuseScore 4.1 to take advantage of them. A third task was postponed to the following quarter and the MuseScore 4.1 release.

* 1) Indicate notes outside the range of the instrument
* 2a) Music not read when making range selection
* 2b) postponed - Music not played when making range selection – coming in Q4.

Items 2a and 2b cover audible feedback when the user selects a range (or sequence) of notes in the score. We have implemented feedback in the form of screen reader output (item 2a) to announce the name of each note as it is selected. This enables blind users to use range selections effectively. Item 2b is a quality of life improvement that would enable blind users to hear the sound of the selected notes being rendered by virtual instruments, which we plan to implement in the next quarter.

### b) Additional accessibility improvements funded by MuseScore

MuseScore’s internal development team has continued to make improvements in preparation for the release of MuseScore 4. The focus has been on achieving stability rather than on adding new features, but several important accessibility regressions have been fixed, including to the “Getting started” dialog that appears when the program is launched for the first time, and the “Style improvements” dialog that appears when the user opens a score created in an older version of the program.

### c) Next steps, and upcoming release of MuseScore 4

The plan for the final quarter is to continue improving contextual cues for range selections (item 2b) and to do the same for various other operations, including text editing. Currently when editing lyrics, the screen reader announces the lyric text but it doesn’t say which note the lyric belongs to. We will make use of MuseScore’s virtual instruments to render the sound of the note as the lyric is edited, thereby enabling blind users to keep track of where they are in the score. We will also seek to improve the screen reader output for musical symbols that occur in blocks of text, such as the mixed dynamic “*sempre* ***p***” (piano symbol), or the instrument name “Clarinet in B♭” (flat sign).

We expect the beta release of MuseScore 4 to take place in the coming days. It will be posted on the [Announcements Forum](https://musescore.org/en/forum/4492) on MuseScore.org when it is ready.

# 3. Music Braille Production Network

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

Agencies continue to use the Network to source scores and productions between each other. Our score trial is complete, with agencies receiving a full report of reviewers’ feedback on all the transcriptions, as well as sharing each other’s transcriptions and pricing for comparison.

We have started to collate good practice for producing scores for international use, and we will soon share our guidance, which will include issues such as file naming convention, page size, braille encoding, transcriber’s notes, and what to include on the Title/contents page. A DAISY discussion list has been prepared ready to continue network communications beyond this project, and will start to be used during Q4.

# 4. Metadata for music braille resources

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

Our working group with ABC, NLS, Bookshare and ONCE continues to work on the proposal to harmonize metadata for music braille in online collections to make it easier for agencies/end users to retrieve the score they need.

We are currently updating our first proposals in light of feedback we’ve received from the Q2 sector consultation, and will share the latest proposal during Q4.

We anticipate that libraries would be able to adopt the proposals for new productions and uploads from 2023, and online collections will be able to display resources more effectively as a result. This activity may continue into 2023.

# 5. Teaching and learning of music braille



Our list of resources for end-users and teachers is growing, and we are organizing them 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 current list of resources will be shared with everyone during Q4 for comments/additions.

We are keen to include non-English resources especially if they would be valuable to other countries if they were translated, so we look forward to hearing your additional suggestions. This activity may continue into 2023.

# 6. Publisher workflow and engraving guidelines

We ran a Round Table on Accessible Music Publishing in July, giving music publishers and engravers an opportunity to hear our expert panel describe why well-structured master files created using our guidelines are so important for transcription purposes and to end-users reading them in accessible music notation tools.

There was positivity amongst the participating publishers to implement what we’re asking, and they have asked for our help in forming an industry working group to agree the practicalities. This work is likely to continue into 2023.

If you have any named contacts at publishing houses who might be interested in this working group please let me know: [music-braille@daisy.org](mailto:music-braille@daisy.org). This activity may continue into 2023.

# 7. News from around the sector

## a) RNIB increases its music capacity

RNIB has recently appointed a new music librarian and new music support officers who will provide advice and guidance on all musical enquiries.

## b) RNIB is running the Gardner’s Trust Braille Music Literacy Awards 2022

In 1992, the Gardner’s Trust for the Blind established an annual competition, designed to encourage the use of Braille music amongst students up to the age of 19 in the UK. 30 years on, the tests have been revised and are now open to people of all ages.

RNIB administers the awards which test reading, understanding and performing from memory. There are five levels of Braille Music Literacy Award. All candidates receive a report and a certificate of entry and the best entrant reaching the required standard at each level is given a prize ranging from £10 to £50.

The tests offer music Braillists a chance to have their efforts rewarded, a chance to have their specialist skills assessed and a chance to show their musical independence.

Tests are to be held from October 2022 to February 2023 at a location to suit the candidate. Online tests are also possible.

Specimen tests, general regulations and requirements in Braille and print are available from the Music Advisory Service.

For further details or to request the information pack and application form, please contact [mas@rnib.org.uk](mailto:mas@rnib.org.uk).

## c) Braille Orch makes their 700th free transcribed score available

<https://www.brailleorch.org/en/library/>

Haipeng Hu just finished his 700th item for his Open Braille Music project. During this quarter, he transcribed lots of symphonies and concertos in braille, among which the most important ones are 3 Mahler symphonies, all worked in around 10-12 days (which has the most page amount among Mahler's symphonies). In September, he also transcribed the complete incidental music of Grieg's Peer Gynt Op. 23, dedicating this great transcription of the greatest Norwegian work to Norwegian Library For The Blind, to thank them for giving him the chance to take part in the DAISY Music Braille Project, and contributing to the development of braille music transcription software. Other important works transcribed include Richard Strauss' Horn concerto no. 2 and Oboe concerto, Bartok's piano concerto no. 1, and Dukas' Symphony in C Major.

## d) 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 October 2022, so please send me your news by **end of December 2022.**

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](mailto: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.