DAISY Music Braille Project:

Q4 update 2020

Reporting on project activity October, November and December 2020

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# 1. Interactive end-user music braille tool

**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.

**Update**:

Of the proposals submitted in the summer, the Steering Group chose to support related proposals for the development of MuseScore (submitted by Peter Jonas, UK), and of Sao Mai Braille (submitted by Phúc Dang Hoai, Vietnam, from the non-profit agency Sao Mai Centre for the Blind). An announcement was circulated, together with their proposal documents and video presentations (also available on the project website). These combined developments will create an accessible and integrated experience and will be invaluable for blind musicians of any age learning to read, study or create music braille with multimedia input and output. The developers are kindly offering work-in-kind, in addition to the work paid for by the project.

Contracts and workplans were agreed ready for the January 2021 start, and Q1 activities will include:

* MuseScore: Fixing bugs in MusicXML output.
* SMB: Implementing Bar over Bar formatting; Fixing existing music translation issues; Creating SMB Braille music translation web service, for testing in Q2.

The SMB-MuseScore-DAISY project team will now be working closely together for 24 months, and we will report progress in these quarterly updates.

# 2. Professional music braille conversion tool

## 2.1 MakeBraille development at dzb lesen

**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.

**Update on Q4 activity:** Development work has proceeded at pace this quarter, allowing us to further improve the newly implemented Bar over Bar formatting, as well as implement further country-specific requirements and begin the framework for setting converted files for embosser-ready output, and for offering greater customization for viewing the output in an HMTL5 viewer. The developers are still kindly offering work-in-kind, in addition to the work paid for by the project.

Reporting on our priority activities for Q4:

1. Running a restricted trial of MakeBraille-Hodder  
To test the latest implementations in real-world settings, our trial with 21 testers from 8 agencies in 6 countries (from the project’s Steering Group and Funders) ran between September-December. Feedback from this trial has led to numerous improvements, and is also influencing development plans for 2021. As well as testing real-world files, agencies are learning how to scan and mark-up files using capella, and giving us feedback on country-specific requirements for different music types, and our support resources have been extended to cater for gaps in knowledge.

2. Implementing a ‘Setter Tool’  
To allow easy customization of the final music braille file ready for embossing, MakeBraille will soon include a behind-the-scenes ‘Setter Tool’ so that the returned file is ready for embossing with a specific page setup, page numbers etc. This will be ready to trial in Q1.

3. Testing Percussion MusicXML   
To check the import and conversions of MusicXML percussion scores we tested various percussion scores, and various symbols and the handling of percussion parts were improved. The conversion of percussion MusicXML is now well-supported.

4. Implementing a conversion progress notification system  
In order that users get feedback on the status of their conversion we added several steps to improve the chances of a successful conversion, including checks of the files to see if capella optimizers had been run, empty files, wrong file types etc. Users are now informed if their file cannot be converted and given advice of what to do next.

5. Adding further tutorial/help resources  
In order that users are well supported we added further guidance to the Support Wiki during the trial in response to tester experience and feedback. We added: documentation about using capella optimizer scripts, provided the optimizers as downloads, set up a quick-links Documentation page, added further guidance on using capella to mark up different kinds of notation, and completed all Wiki help pages in German. We made the Introductory video available outside the Wiki (which is for registered users only) at: <https://dzblesen.uber.space/tutorials/mb_video.html>

6. Making any immediate fixes needed  
Fixes were made continually during Q4, especially once real-life testing was taking place during the trial. These included for example fixes to Bar Over Bar conversion of different score types, corrections to country codes and so on.

7. Defining options for an HTML5 viewer  
In order to give users’ flexibility to view/explore different parts of the converted score, and provide customization options not possible through the automated conversion too we are building an HTML5 Viewer. This will be available in Q1 for testing, and will include features such as browser the score, select specific parts, MIDI output, customize page numbers and so on.

8. Researching further country requirements  
During the trial we were able to seek clarification on various country-specific requirements, especially on Bar over Bar formatting, country codes, and country formatting (e.g. of prefixes, front-matter etc). This work will continue throughout 2021.

9. Explore Workflow integration  
We had hoped we would be able to work with at least one agency to explore workflow integration options (if they were ready to do so). However, during the trial it became clear that agencies needed to get familiar with the preliminary workflow of obtaining/scanning and marking up scores for conversion before the tool could be considered for technical integration into their workflow. Therefore we have been supporting users with getting files ready to convert successfully according to their requirements. The tool should be ready for technical integration into production workflow when an agency is ready to try it during 2021.

## 2.3 Detailed development update from Q4

See Appendix for Q4 ‘What’s New in MakeBraille’ reports.

## 2.4 Plans for 2021

Our goals for 2021 include implementation of the following new features in MakeBraille:

* **User Profiles,** to apply quick configuration settings for different kinds of users (e.g. learner, pupil, blind teacher)
* **Setter Tool** to allow easy customization of the final music braille file ready for embossing as a PEF file, with the option of an ink-print version as PDF
* **HTML5 Viewer** for the music braille created by MakeBraille, giving users flexibility to view/explore different parts of the converted score in braille, sound and on-screen, and providing customization options not possible through the automated tool. Possibility of transposition of a selected part.
* **MIDI output** created with the music braille, returned by email, and/or for sound-exploration in the HTML5 viewer
* **Contracted braille** for lyrics
* **Guidance on marking up MusicXML** files for effective conversion
* **Tablature conversion**, at least from MusicXML files
* **Selection of selected parts/voices** for output in braille
* **Splitting pieces** over multiple volumes
* **Server storage** of converted files
* **Line Over Line formatting** (if required)
* **Key List placement options**, to have it at the start of the whole book, or at the start of each score
* **Further customization options** (e.g. bar numbers on/off, interval directions, position of braille page number, running header, print page number, doubling, rehearsal letters, braille page numbers, chord symbols, figured bass…)
* **Short and editable instrument names**
* **Test workflow production** of music textbook containing music, with a willing agency
* **Liaison with developers of interactive music tool**, for compatibility and complimentary functionality

# 3. Conference presentations

Our project featured (or will feature) at the following conferences:

**ICEB General Assembly:** a paper and video presentation on the project was shared at the ICEB 7th International General Assembly in October 2020, as part of a dedicated music braille session, with over 85 live online participants. All papers and presentation at: <http://www.iceb.org/GA20.html>

**Tactile Reading conference:** a paper and video presentation have been accepted for the international ‘Tactile Reading’ conference, organised by Statped in Norway, in April 2021 (<https://www.statped.no/tactilereading2021>).

# 4. Related news from around the sector

## a) Tactile Reading Conference 28-30 April 2021

<https://www.statped.no/tactile-reading-2021/>

<https://www.facebook.com/TactileReading2021>

A virtual conference bringing together practitioners, developers, and innovators in the field of tactile reading, academics in various research areas, and commercial companies

The program is now available, consisting of 39 parallels, 4 plenary sessions, 2 keynote sessions and a digital exhibition with posters, stands and suppliers. Free pre-conference workshop day on 28 April – on technology and aids for the blind and visually impaired and how developers and innovators can cooperate with the user and the Braille teacher to create better products. Plenary and parallel conference presentations are on 29 and 30 April, including themes of Early intervention, Braille and literacy for children and adults, 3D, Braille and universal design, Tactile graphics, and Music Braille. Please register by 15 April at <https://kurs.statped.no/EventSignUp.aspx?EventId=4033>

## b) VIBE: an international email group on accessible music and audio technology.

From Peter Bosher, SoundLinks, UK

VIBE is a group of blind and partially sighted musicians and for anyone interested in accessible music, and audio technology.

Whether you sing or play for leisure, study or as a profession, in any genre, VIBE will put you in touch with others who can answer questions or suggest solutions, and generally help each other out. We have covered topics including performance, visual presentation, online promotion, tips for playing different instruments, and access to music and audio software and equipment.

The simplest way to join is via the Email group. We also run monthly Zoom events, and for interest, the last one on 18 December was presented by André Louis, the accomplished keyboard player and music tech trainer, who will talk about Komplete Kontrol, the accessible way to use software synthesisers, the Logic digital audio workstation (DAW), and Jamulus, which lets musicians play together online without the usual time-lag problems. To join the Email group and stay informed, send an Email to this address: [vibe-request@freelists.org](mailto:vibe-request@freelists.org) In the subject line write: subscribe.

## c) New Zealand Braille Music Retreat

From Wendy Richards, BLENNZ: Blind and Low Vision Education Network New Zealand

Braille Music Retreat: From January 14 – 17th 2021, New Zealand will be hosting its third biennial Braille Music Retreat. First held in 2017, the retreat is a weekend escape for our adult braille music community. All participants live on site at the BLENNZ Homai Campus facilities and enjoy singing together from braille scores whilst catching up with old friends. Though unable to welcome our Australian colleagues this year, the retreat will see 19 friends come together to celebrate the joy of making music from braille.

## c) PhD on Music Braille Pedagogy Published

From Wendy Richards, BLENNZ: Blind and Low Vision Education Network New Zealand

New research on Music Braille Pedagogy: During 2020, a PhD thesis with a focus on Music Braille Pedagogy was completed in New Zealand. The thesis titled “Music Braille Pedagogy: the intersection of Blindness, Braille, Music Learning Theory and Laban” explores how the principles and practices of Gordon’s Music Learning Theory (MLT) can be applied with learners who are blind. The four part thesis establishes a philosophical and educational context and includes one research project specific to music braille and a secondary project specific to the influence of movement on musicianship. The thesis is available in PDF format from Wendy at [braillemusicwendy@gmail.com](mailto:braillemusicwendy@gmail.com)

## d) Canute 360 multiline Braille display

From: Bristol Braille Technology <enquiries@bristolbraille.co.uk>

A few months after we shipped our first Canute 360 multiline Braille e-readers to customers, the Coronavirus pandemic rendered any further production temporarily impossible. However we're happy to announce that in the next few months we expect to be restarting production of Canute 360.

UK lockdown restrictions in March 2020 effectively paused manufacturing. Supply and distribution were interrupted for many businesses and our workshop was too small for social distancing. Thanks to our engineering team's tireless work we have overcome many of these difficulties. We are now purchasing stock for assembly and planning for further manufacturing. We will get you another an update on this towards the end of January.

Bristol Braille team members have also worked closely with the Braillists Foundation to support the wider blind community over the lockdown period. The Braillists have achieved remarkable things this year, including making free Braille equipment available, and launching free online group Braille lessons, amongst other resources for Braille readers. You can read more about the Braillists work at [https://www.braillists.org/](https://bristolbraille.us16.list-manage.com/track/click?u=38e430295b68d1184a69b491e&id=e8623fb7d7&e=a540f911b9).

## e) Braille Libraries Survey – seeking resources to benefit blind and visually impaired musicians in Turkey

From: Koray SAZLI [ksazli@gmail.com](mailto:Email:%20ksazli@gmail.com), and Betul YAZAR [betulyazar00@gmail.com](mailto:betulyazar00@gmail.com)

We are Assoc. Prof. Dr. Koray SAZLI from Yildiz Technical University, Istanbul, Turkey and Master's student Betul YAZAR from Gazi University, Ankara, Turkey. Together we are working on an article about European braille music libraries and institutions whose resources might be available to visually impaired musicians living in Turkey. We have prepared a survey in order to obtain conclusive information for our research. We would greatly appreciate your participation and candid answers. Our intent is to write a leading-edge article in Turkey for Turkish visually impaired musicians. Please find the survey attached to this email for your potential participation. We extend our sincere gratitude to you for your time and contribution.

## f) Do you have music braille news to share?

I’ll happily collate other news from around the sector and send it out. Our next quarterly update is due out in early April, so please send me your news by **05 April** please. This mailing goes out to around 150 music braille experts worldwide, including transcribers, teachers, composers, end-users and developers, among others.

# 5. With thanks to our funders

We’re very grateful to the following agencies who are making our activities possible.

In 2020:

* CNIB
* DAISY Strategic Development Fund
* MTM
* NLB
* Norwegian Association of the Blind
* Nota
* ONCE
* RNIB
* SBS
* Vision Australia

In 2021 (so far):

* CNIB
* NLB
* Norwegian Association of the Blind
* ONCE
* RNIB

# Appendix: Q4 ‘What’s New in MakeBraille’

## 2020/12/25 & 2021/01/08: Fixes, Improvements and Additions

Fixed:

* Some missing figured basses
* Bar numbering corrected when rhythmical mistakes found in capella files
* System numbering and page numbering in system by system
* MusicXML import: combination of standard and other-dynamics
* Bar over Bar had wrong symbol after instrument name in some cases
* Sometimes empty left-hand piano part had been removed
* Parallel movements respect multiple rests, measure repeats and measure references when counting
* Loss of ties in system by system
* Support Asian languages (normal encoding replaced by dots 26, utf-8 presents the texts in utf-8)
* Check bar numbering by source: repeat bar numbering at endings, or continuous bar numbering at endings
* Slurs after multi-measure repeats are shifted to beginning of next measure
* Mistakes with title etc presentation splitting up large capx pieces (title:Title => Title)
* Do not repeat titles, creators at begin of each piece (MusicXML)

Improved:

* Convert c slurs to phrase slurs when spanning any rest (before only if slurs had been ending after a rest)

Added:

* Configuration options can now be saved in filename
* Extended support for figured basses, and fill omitted figured bass columns with dot 3
* Automatically set Hand symbols
* New commands are supported in MusicXML files if you wish to set reading order and hand symbols manually: {RH} =right hand, {LH}, {RHI} = right hand reading direction (I)nverted, {LHI}.
* On/off: lyrics, harmony symbols, figured basses

## 2020/12/18: Fixes and Additions

Fixed:

* Each measure has an octave sign for Bar Over Bar when country is USA.
* Within the new Beginners' profile (for those new to music Braille), each new measure has an octave sign.
* Within the Teaching profile (for a blind teacher with sighted students), all clefs will be presented to match the ink print.
* Parallel shifts get always an octave sign for Bar Over Bar.
* Additional false dot 5 marked rests within some Braille files produced from MusicXML sources.
* Move pedals to left hand if possible.
* Word: letters "mm" have been wrongly printed in Bar Over Bar.
* Output for SBS encoding (for the Swiss Library for the Blind).
* Split up pieces by section and measure marks indicating start of a new piece.

Added:

* A new 'User Profile' section on the Configuration page, to choose to use your own Configuration settings, or to create a simple Beginners' score, or a detailed score for a Blind Teacher.
* Link to 'What's New' added at top of Main Page.
* Country encoding tag can be be inserted into start of capella file using {INCODING:countrycode} so you can enter pure braille notation and your country encoding will be correctly handled. Country codes are: us, es, it, da, nl, no. Used for commands which expect braille input like {VARIANT:braille} or {RHYTHM:braille}. Guidance has been added where relevant on the capella help page.

## 2020/12/11: Fixes and Improvements

Fixed:

* Corrected page and bar numbers when converting capella files to system by system.
* MusicXML import fixes.
* Instrument name position for Part by Part output.
* Too many measures in parallel shifts for Bar over Bar output.
* Handling of capella control colors.
* Loss of measure/s when converting to Bar over Bar.

Improved:

* Splitting capx files into separate pieces for conversion.
* Splitting MusicXML files into separate pieces for conversion.
* Added two empty lines between pieces when collating pieces after conversion.

## 2020/12/04: Fixes and Improvements

Fixed:

* Ongoing fixes to enable conversion of all bars/parts from MusicXML files.
* Missing parts for some MusicXML files (where staff numbers didn't match number of staffs).
* MusicXML file conversions containing bar numbers marked as x# instead of just #.
* Bar Over Bar handling of lyrics contain dashes.
* Bar Over Bar handling of changes to time signature and key signature.
* Bar Over Bar removed additional full rests which sometimes have been produced by mistake
* No ending after repeat backward for USA+Spain+UK
* No dot five accidentals after incoming ties for USA+Spain+UK
* Handling of some more tuplets in capella files

Improved:

* Bar Over Bar recognition of music parts.

## 2020/11/27: Fixes and Improvements

Fixed:

* For the UK: ending bar lines are not added after repeat backward, now shown as 126 23 (not 126 23 126 13).
* For the UK: removed dot 5 before accidentals, only in the cases of an incoming tie (except for the score output for blind teachers).
* Recognize interrupted measures and add dot 5 at end to show this.
* Various MusicXML import fixes, including ending fifths, measures split by barlines etc.
* Missing bars in Bar over Bar (another cause fixed).
* For UK: use simple basso continuo (for other countries, basso continuo is split into two parts: one containing everything, the other only containing the bass line).
* Added dot 3 to bar number if measure is incomplete for Bar Over Bar.
* Recognize markup commands like {S} section marks from MusicXML directives.
* Adapted rules when presenting music prefixes and clefs for piano (Always show prefixes, show clefs only when changed).
* Always add dot 3 after music prefixes for bar over bar.
* Respect doubling of three symbols if continued on next line for Bar over Bar.
* New ink system now always starts a new Bar over Bar system.

Improved:

* Detect and correct measure numbering if errors in ink print measure numbering.

## 2020/11/20: Additions, Fixes and Improvements

Added:

* Uppercase output for USA and UK.
* Do not duplicate basso continuo / figured basses to two systems (first containing notes only, second containing notes and figures) for USA and UK.
* Formatting routines added to set front matter (e.g. composer, title etc).

Fixed:

* Repeats now respected when splitting capx files into pieces.
* Dot 3 is now set after all prefixes if any prefix as dot 3, and after all clefs if any clef has a dot 3 for Bar over Bar transformations.
* Missing bars in Bar Over Bar conversions.

Improved:

* No more clef repeat at the begin of new lines.
* List of symbols is now ordered by Krolick sign symbol order (New International Manual), rather than ordered by appearance in score.
* Added line breaks to list of symbols according to paper width.
* Slur signs are now assigned to intervals for UK and USA.
* Support colours for voices when using capella [as described in the [Voices section](https://dzblesen.uber.space/projects/hodder/wiki/Capella-help-en#Voices) of our capella help pages]
* Clefs in list of symbols improved.
* Auto recognition of piano from parts is improved.
* Bar numbers are now placed before the notes for:   
  - keyboard (right hand and left hand prefix) ,  
  - accordion (right hand prefix and accordion basses prefix), and  
   - organ (right hand prefix, left hand prefix, organ pedals prefix).
* For figured basses: bar numbers are now placed above the notes.

## 2020/11/13: Fixes and Improvements

Fixed:

* Fixed problem preventing files being sent to double-dot email addresses (e.g.emailaddress.co.uk)
* Remove end of doubled tuplets at end of line if continued in next line.
* Fixed a bug which added empty lines when last line of notes is completely filled (for Section by Section).
* Removed incoming ties at beginning of line in Bar over Bar.

Improved:

* capella files are now checked for rhythmical mistakes and feedback is now sent to the user to fix errors before conversion (these files were crashing the server).
* The converted file will now be sent to the user's registered email address if the email address field is empty on the Configuration page, and the file cannot be converted quickly enough to display on-screen (to prevent converted files not being returned).

## 2020/11/06: Fixes and Improvements

Fixed:

* Dot 3 in notes instead of dots 256 (fix to dot 3 in text is coming soon).
* Fixed server crashes when old config files have not been compatible to current server.
* Add dot 3 after clefs and prefixes if any set.
* Replace prefixes by clefs if clefs exist.
* Norwegian encoding now fully supported.
* Removed end of doublings at line endings when the doubling continues or ends on the first note of the next line (except for tuplets, fix coming soon).
* Spanish encoding fixes for Sol semi and Si semi.

Improved:

* Added lots of slur and tie symbols to improve measure alignment in Bar Over Bar formatting.
* There is an extra warning mail sent if a capx file contains rhythmical mistakes.

## 2020/10/30: Fixes and New Features

Fixed:

* dir:allegro. 'Dir' no longer appears before the first tempo text marking.
* Corrupt order of texts and dynamics with respect to ink print.

Added:

* If capella file is uploaded for conversion which has not been through the capella optimizers to fix/add mark-up after scanning, user is notified by email and advised to run them to allow the file to be successfully converted.

## 2020/10/23: Fixes and New Features

Fixed:

* Two corrections to Spanish Braille table: an octave sign and a trill mark.
* Fixed bug in MusicXML to Braille converter that could have crashed the server if words have been empty.
* Set encoding to non UTF-8 when HBS output.
* Set encoding to UTF-8 when PEF output.

Added:

* New feature: MIDI file returned with Braille file (if it can be created from the source).
* New feature: File content checked prior to conversion and user notified of corrupt or incompatible files (e.g. in the case a MXL file does not containing MusicXML content; or a zip or capx file do not contain those contents).
* New feature: 'Show Lyrics' checkbox on Configuration page so user can have a score without lyrics if required.

## 2020/10/16: Fixes, Improvements and Changes

Fixed:

* Server downtime this week to fix a critical problem where the server got stuck repeatedly trying to convert files which failed:  
  e.g where some Configuration options were not compatible; some accented symbols in filenames; .MXL files which didn't actually contain MusicXML; and fix some bugs. The server now removes 'stuck' files from the queue, and the user and developer are both notified of the problem; and files will now be checked prior to conversion and users prevented from uploading incompatible or corrupt files for conversion which would block the server.

Improved:

* Added some cases of staccato signs recognized from capella scan.
* Improved the way in which the server works with capella files to meet the needs of new capella users.
* When trying to convert capella files, users now advised to first run capella Optimizers now supplied by dzb lesen available on the Support Area (updated on 19.10.2020): <https://dzblesen.uber.space/projects/hodder/wiki/Capella_Optimizers>

Changed:

* The Configuration file needed by the developer to check problem file conversions are now available to the developer directly, so will not be sent to the user. However, ways of confirming the Configuration settings of a converted file for the user are being considered.

## 2020/10/09: Fixes

(BOB = Bar Over Bar)

* Alignment of measure in BOB  
    - When there are dot-five-rests.  
    - when there are 10 or more compressed rests.  
    - when repeat, rests etc. end with words (fine etc.).  
    - measure references of form “play measures x till y”.  
    - pedal marks.  
    - horizontal brackets above/below system.  
    - lower case marked letters/words.
* Back-end notification to alert Matthias if the server is blocked so action can be taken.
* Improved cleanup of server.
* Support 256th rests, remove dot 5 256th rests if only used as fillers in a  bar for rounding note/rest durations.
* Nuances marked as 'other dynamics' now supported.
* Confirmation of Configuration setting now returned by email with the converted file.
* There have been mails getting lost under some circumstances when sent from server. These mails will now be attempted several times. Please advise if mails still don't reach you.
* Ornament marks (e.g trill marks) should be on the first note instead of on the interval.

## 2020/10/02: Fixes & Known Issues

Fixed:

* 'Creator' information appears correctly above the notes.
* Mails containing converted files no longer being blocked due to missing date.
* Stabilization of MusicXML files that contain mistakes.
* Recognising multiple words before multiple rests (in Bar Over Bar).
* Bar Over Bar can handle if single lines contain only rests (no notes)
* Improved separation of music pieces by bar numbers, variations and bar lines.
* Recognition of beginning of each measure when bars contain only rests.
* Recognition of variation numbers within a score to separate them appropriately.
* Bug showing 'Dir' instead of tempo marking.
* Bug showing composer name within music text.

Known issues (reported and open to be resolved):

* Detect and mark-up missing or incorrectly coded MusicXML attributes in incomplete source files.
* Alignment of left and right hands.
* Ornament marks (e.g trill marks) should be on the first note instead of on the interval.
* A few remaining instrument names are not being recognised from MusicXML file when creating Bar over Bar.
* The position of long 'Creator' text (e.g. composer, lyricist, dates, copyright etc) to be under user-control in the Setter Tool.
* Nested tuplets.
* 256th rests.
* Improve music line recognition for Bar Over Bar.
* Any commands (capella tags) in the imported score not relevant for Bar Over Bar will be ignored to prevent crashing.
* Print line indications and print page numbers will be available in the Setter Tool.
* Investigations into use of the use of dot 3 after certain symbols.
* Incoming ties.
* Slurs and long slurs.
* Nuances such as dim, cresc tagged as "other-dynamics" not appearing.
* Doubling where continues onto next line.
* Language contractions (other than German).
* Handling lyrics in long sections.
* Confirmation of Configuration settings will be sent with each converted file.
* C-Clef implementation
* Decrescendo and end of decrescendo markings not needed in same bar.