

User's Manual for IBOS MusicXmlReader version 5.0.0.0

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Basic Principles

IBOS MusicXmlReader is organised as a standard Windows program, using the well-known operating principles.

But unlike most Windows applications, IBOS MusicXmlReader is from the start designed to optimize accessibility for the blind and people with impaired vision.

IBOS MusicXmlReader uses common windows display elements like menu bar, list box, combo box and tree view. These display elements are already well-known by most blind and visually impaired computer users.

IBOS MusicXmlReader thus only requires standard PC skills.

IBOS MusicXmlReader uses the most widely used digital file format for describing music scores, namely MusicXml. MusicXml contains the same information as a regular, printed score. Music scores in MusicXml format can either be:

- Purchased (for example, via the internet).
- Downloaded from one of the many free note archives on the Internet.
- Produced with note editing software such as Sibelius or MuseScore.
- Generated from a plain printed musical score using OMR (Optical Music Recognition), for example, using the "PhotoScore" program.

However, using OMR typically requires some help from a person with normal vision (and musical skills). On the other hand, this option allows for the use of scores generated by note writing programs that cannot be exported to MusicXml - typically the formerly very popular "Musicator".

You can open the note editing programs Sibelius and MuseScore directly from IBOS MusicXmlReader to edit the current score.

The use of IBOS MusicXmlReader requires no technical knowledge of MusicXml, but interested users can find an excellent description here: <https://www.musicxml.com>

As mentioned above, IBOS MusicXmlReader is organised through four very well-known display components, which combined allow the user to open a MusicXml file and navigate in it. These display components are:

Menu Bar	Used primarily to open the MusicXml file containing the musical score. Also used to enable many additional features, such as downloading MusicXml files from external directory files on the Internet or launching regular note editing programs such as Sibelius or MuseScore.
Notes List	Shows the selected MusicXml file in text representation and Braille Music representation. If JAWS is running, the corresponding text representation is also read out loud. And if a Braille display is connected, both Braille text representation and Braille Music representation are displayed there. Finally, the musical score can be played as music through the PC's speakers
Status Bar	Displays musical information associated with the current part of the score, such as measure number, key, chord, and tempo.
Note Filter	Here the advanced user can choose which parts of the MusicXml file are to be played, read and displayed. Starting with version 3.0.0.0 these user settings are saved in a file alongside with the current MusicXml file and are not lost just because a new score is loaded, or IBOS MusicXmlReader is closed.
Detail list	Here the advanced user can split all the information, which is related to a single point of time in the music into its components: Single parts, single notes, chord symbols and status information (including measure number and position within the measure). The detail list can also show a list of the music instruments used in the score and a Music Braille representation of the score, using the current user settings.

As with any other Windows program, you can always:

- Activate the Menu Bar by pressing the ALT button.
- Switch between the main display components (in this case, the Note List and Note Filter) with the TAB button.
- Stop an ongoing operation with the ESC button.
- Close the program with ALT + F4

In addition, if JAWS is running, you can use the common JAWS commands. This includes:

- Get the status bar read out loud (without changing focus) by pressing INSERT + PAGEDOWN
- Get the title line read by pressing INSERT + T
- Have a message read out loud by pressing INSERT + B
- Switch speech on / off by pressing INSERT + SPACE BAR, followed by S

A more comprehensive list of keyboard shortcuts can be found later in this document and in the program itself under Help -> Keyboard Shortcuts.

The following is a more detailed description of the above mentioned display elements.

IBOS Music Reader display elements

The menu Bar

The menu bar contains the following items:

Submenu	Function	Keyboard shortcut
Files	Open MusicXml file	CONTROL + O
Files	Open MusicXml file most recent location	CONTROL + ALT + O
Files	Open MusicXml file using standard settings	CONTROL + SHIFT+ O
Files	Import downloads	
Files	Import today's downloads	
Files	Import latest samples	
Files	Export Music Braille to file	
Files	Print Music Braille file on embosser via Windows print-dialog	CONTROL + P
Files	Print Music Braille file on embosser via external program	CONTROL + SHIFT + P
Files	Copy Music Braille file to Braille-device using Windows Explorer	
Files	Terminate the program	ALT + F4
Edit	Start editing All Filters	
Edit	Start editing Filters	CONTROL + F
Edit	Start editing Music Playback	CONTROL + M
Edit	Start editing text view	CONTROL + T
Edit	Start editing Braille Music representation	CONTROL + B
Edit	Start editing parts	
Edit	Start editing details	
Edit	Uncheck all	CONTROL + 0
Edit	Check all	CONTROL + 1
Edit	Go to measure	CONTROL + G
Edit	Repeat measure interval	CONTROL + R
Edit	Set playback tempo (to % of Normal tempo)	CONTROL + N
Show	Instrument details	CONTROL + I

Submenu	Function	Keyboard shortcut
Show	Braille Music details	
Settings	General settings	ALT + S + G
Settings	Settings for notetaker profile	ALT + S + N
Settings	Settings for embosser profile	ALT + S + E
Settings	Settings for high speed embosser profile	ALT + S + H
Settings	Settings for universal Braille-device profile	ALT + S + U
Settings	Reset all settings to default	ALT + S + R
Tools	Start IBOS Music Braille Reader	ALT + T + I
Tools	Start MuseScore using current MusicXml file	ALT + T + M
Tools	Start Sibelius using current MusicXml file	ALT + T + S
Tools	Start Capella using current MusicXml file	ALT + T + C
Tools	Start Finale using current MusicXml file	ALT + T + F
Tools	Start PhotoScore	ALT + T + P
Tools	Start Music Braille Editor 2	ALT + T + E
Tools	Log file	ALT + T + L
Tools	Log file path in Windows Explorer	
Tools	MusicXml file path	
Tools	Open current MusicXml file as raw XML	ALT + T + X
Tools	Open current MusicXml file as raw XML using Google Chrome	ALT + T + G
Tools	Open JAWS settings for IBOS MusicXmlReader	ALT + T + J
Tools	Open user settings as raw XML	ALT + T + U
Music Archives	Open a Web-site and download publicly available music scores as MusicXml compressed files. The choice is enormous! https://www.musicxml.com/music-in-musicxml/ contains links to other Web-sites from where to download music scores in MusicXml. https://musescore.com/sheetmusic is a great place to start.	ALT + N
Help	About IBOS Music Reader Keyboard shortcuts Link to latest software View User Guide	ALT + H + A ALT + H + K ALT + H + S ALT + H + U

Some of the menu functions are self-explanatory, others need a comment:

Files

Here you can select and open the MusicXml file that you want to work with.

In addition, there are various options for importing MusicXml files downloaded from the Internet to IBOS MusicXml Reader.

Furthermore, it is possible to export the current score to a Braille Music file, which can later be transferred to a notetaker device or a Braille Music embosser.

This is explained in detail in the chapter "Export as Braille Music".

Edit

Most items under "Edit" start editing the note filter and hence what appears in the Note List. However, the different sub-items start editing different places in the note filter. See the section on the Note Filter!

In addition, there are options for changing playback tempo, repeating a range of measures and displaying a certain measure.

View

Allows you to display different details that are not linked to a single point of time in the music, such as the music instruments used in the score.

Settings

As mentioned in the chapter "Export of Music Braille" the user can edit and save a large number of parameters. And besides the settings for "Export of Music Braille" exists "Settings → "General settings" where the user can change the path to various utility programs.

The program also automatically maintains a number of "most recently used" values, that survive that the program is closed down and restarted. The current value of these "most recently used" values can be inspected at

"Settings" → "General Settings".

The general settings are

Name	Description
Recent MusicXml file	Is updated automatically every time the user opens a MusicXml file
Recent MusicXml path	Is updated automatically every time the user opens a MusicXml file
Recent Braille Music path	Is updated automatically every time the user exports a Braille Music file
MuseScore path	Path to .exe file for the installed version of MuseScore
Sibelius path	Path to .exe file for the installed version of Sibelius
Capella path	Path to .exe file for the installed version of Capella
Finale path	Path to .exe file for the installed version of Finale NotePad
PhotoScore path	Path to .exe file for the installed version of PhotoScore
Braille Music Editor 2	Path to .exe file for the installed version of Braille Music Editor 2

Tools

The "IBOS Music Braille Reader" item under "Tools" will start the integrated tool "IBOS Music Braille Reader". Using that tool the user can open existing NOTA Music Braille files or files, just generated and exported by "IBOS Music Xml Reader". The contents of the Music Braille file will be shown in a listbox in a textual representation.

The "MuseScore", "Sibelius", "Capella", "Finale", "PhotoScore" and "Braille MusicEditor 2" items under "Tools" start external programs with the MusicXml file currently open in IBOS MusicXmlReader. This is an advantage in situations where the user has the help of a person with normal vision who can view the graphical score. Of course, this function requires that the relevant applications are installed on the PC.

The "JAWS Settings" shows a number of JAWS settings that only apply to IBOS MusicXmlReader. This feature may be helpful in installing and upgrading JAWS and IBOS MusicXmlReader as well as in connection with the installation of new Braille displays.

The other items under "Tools" are used primarily in connection with application development and error reporting.

Music Archives

The items under "Music Archives" contain links to selected MusicXml note archives on the Internet.

At the top there is a link to the updated list of such note archives:

<https://www.musicxml.com/music-in-musicxml/>

Then a large number of direct links to websites that contain note archives. These links are an excellent way to get hold of MusicXml-based music, typically for free. In this way, the user of IBOS MusicXmlReader gets access to huge amounts of MusicXml files (though often of highly varying quality).

However, please note that the contents of these links is NOT under the control of IBOS and that the use of these websites assumes that the user is able to navigate a website.

Help

Contains version information, a list of keyboard shortcuts, link to the newest software and a user manual.

The Note List

The Note List shows the selected MusicXml file in both Braille Music representation and text representation.

You can manually navigate back and forth in time within the score with the left arrow, right arrow, home key and end key. When navigating back and forth in the score, the selected line appears on the Braille display, while the corresponding note or chord is played over the PC speakers. If musical notations such as dynamics or tempo changes are associated with that particular note or chord, these are also displayed.

For many learning purposes, it may be useful to play the music in tempo. Music playback in tempo is started and stopped by pressing spacebar. Note that in most cases JAWS speech synthesis cannot keep up when the music is playing in tempo. But a connected Braille display typically can. In this situation, JAWS speech synthesis can be turned on and off with the JAWS default command:

INSERT + SPACE, followed by S.

Automatic music playback can be controlled with the following key sequences:

Press	Meaning	Example:
CONTROL+T n ENTER	Playback in the tempo given by n	"CONTROL+T75 ENTER": Playback at 75% of normal tempo
CONTROL+Rn1,n2 ENTER	Repeat tact from n1 to n2	"CONTROL+R10,20 ENTER": Repeat measure 10 to 20
CONTROL+PAGEUP	Increase playback tempo	
CONTROL+PAGEDOWN	Slow down playback tempo	
SPACE	Stop/stop playback	

Manual navigation and music playback can also be controlled by the following key commands:

Command	Meaning	Example:
CONTROL+Gn ENTER	Go to tact n	"CONTROL+G10 ENTER": Go to measure 10

Each line in the Note List represents everything that happens to the music at a certain time - and can thus contain more than one single part.

If the selected MusicXml file contains many parts, such as a four-part SATB choral piece or a major orchestral work, then everything that happens simultaneously in all parts will appear on the same line in the Note List!

When a line is displayed in the Note List, you can navigate among the individual parts using CONTROL + ARROW-UP and CONTROL + ARROW-DOWN respectively.

And when a single part is displayed, you can navigate among the individual notes within that part with the ARROW-UP and ARROW-DOWN. This is especially useful if each part contains many simultaneous single notes, as is typically the case with piano, guitar and accordion parts.

In addition, if the line in question contains a chord symbol, you can read the name of the chord and its single notes using CONTROL + SHIFT + ARROW UP and CONTROL + SHIFT + DOWN-ARROW. For each note, the function of the note in the chord and the name of the tone are shown

In summary, the use of the arrow keys in the note list is as follows:

- RIGHT and LEFT navigate in time.
- CONTROL+ARROW-UP and CONTROL+ARROW-DOWN navigate in single parts at fixed time.
- ARROW-UP and ARROW-DOWN navigate in single notes at fixed time
- CONTROL+SHIFT+ARROW-UP and CONTROL+SHIFT+ARROW DOWN navigate in chord symbols

But even with this opportunity to navigate in time, single part and single note, it's quickly becoming quite complicated to handle a large score - just like a large orchestra score becomes very unmanageable.

Fortunately, IBOS MusicXmlReader provides an opportunity to select in detail the exact notes to be displayed in the note list and degree of detail.

This is the purpose of the third main component: The Note Filter.

The Note filter

The note filter allows the advanced user to select within the vast amount of musical information typically available in a MusicXml file.

The note filter is a common Windows "checked tree view" which uses the following key combinations

Press	Function
SPACE BAR	Check/ uncheck the selected checkbox
ARROW-UP	Go up a line
ARROW - DOWN	Go down a line
RIGHT	Maximize the tree view
LEFT	Restore the tree view
CONTROL+0	Uncheck the selected checkbox Copy the new value to all checkboxes with the med same name
CONTROL+1	Check the selected checkbox Copy the new value to all checkboxes all with the same name

Note that the exact same mechanism is used by JAWS to handle the many different JAWS settings! Therefore, the mechanism is already well-known to most JAWS users.

By navigating in the Note Filter and turning the individual settings on and off, you can decide in detail what appears in the Note List.

The note filter has 3 inputs on the upper level:

Name	Function
Music playback	Here the user selects which parts of the MusicXml file to play as music over the PC speakers.
Text display	Here the user selects which parts of the MusicXml file to appear as text on the PC screen and thus read and shown in Braille (as plain text) on the connected Braille display.
Braille Music	Here the user selects which parts of the MusicXml file to be displayed in Braille Music on the PC screen and printed in Braille Music on the connected Braille display.

Each of the 3 top-level items has the same structure. First two sub-items: "Sounds" and "Details".

The content under "Sounds" is the same, a list of the voices contained in the MusicXml file. For a four-dimensional "SATB" choir, there are, for example, "SOPRANO", "ALTO", "TENOR" and "BASS".

Here is the possibility of controlling which parts are respectively played, read, displayed as point and displayed as Music Braille.

The content under "Details" also allows you to select which details are displayed for the selected parts (certain items under "Details" such as "Measure numbers", "Chords" and "Notations" are not, however, associated with the individual voices, but applies overall).

For example, under "Text View", you can select and disable the following details:

Detail	Meaning and example
Measure number	Measure number (shown by the measure's first note): "Measure 1"
Chords symbols	Chord symbols, if given: "Gm" or "F7"
Notes	Note name including the sign: "C", "C#" or "Db"
Octave	Note's octave number. For example, here "4" stands for the octave number 4, that starts with "Keyhole-C" on a piano, above 262 Hertz.
Note values	Note duration: "eighth" or "dotted quarter"
Notices	Musical notations: "ppp" or "legato"
Text	The text, attached to the note (lyrics) if any
Meta information	All other information

Under "Music Playback" and "Music Braille", the range of details is less. The need to select and deselect details is mostly under "Text View", as it takes much more time to describe a musical detail in (synthetically generated) speech than music playback or the relevant note's notation.

Navigation in the Note Filter is as mentioned using the arrow keys - in exactly the same way as in JAWS settings. Each setting is switched on and off by pressing the spacebar.

In addition, as mentioned above, you can turn the same part on or off in all 3 branches of the note filter using the CONTROL + 1, or CONTROL + 0 keys. This is an extension to the standard WINDOWS functionality.

By default, all parts and almost all details are checked when a MusicXml file has just been downloaded.

The Status Bar

A large part of the information in a graphical representation of a music score is displayed only once in each line, but still applies to all subsequent measures. This applies, for example, to "Key" (in the form of a number of accidentals), "Time Signature" and "Tempo". This information can, in principle, also be changed in the middle of a graphical score.

The status bar at any time contains the current values of this information. Since the Status bar graphically is located at the bottom, it can be read at any time with JAWS the default command INSERT + PAGEDOWN. Note that this command leaves the focus unchanged.

The Detail list

Each line in the note list contains information about everything that happens at a specific point of time. For multi-part scores, for example for a SATB chorus or an orchestra even a single line in the note list become very complicated.

For this reason it is possible to resolve a single line in the note list into details, making it possible to analyse the parts and chord symbols one at a time.

The following keyboard shortcuts are used in the detail list:

1. ARROW-UP or ARROW-DOWN (alone) to browse within the current details.
2. ARROW-UP and ARROW-DOWN combined with CONTROL to resolve into details.
3. ESC to return to the previous view

Each time a detail is selected it will be announced by text and played as sound.

This gives rich possibilities for example while rehearsing chord symbols.

Whenever a detail view can be selected either by ARROW-UP or ARROW-DOWN (possibly in combination with one or more control-keys) identical details will always be shown, independently of the usage of ARROW-Up or ARROW-DOWN.

After ARROW-DOWN the first detail is shown, after ARROW-UP the last detail is shown.

After that you can browse the remaining details by ARROW-UP and ARROW-DOWN alone – or return by ESC

Status details

ALT + ARROW-DOWN show status details, starting by measure number.

ALT + ARROW-UP show status details, starting by time signature.

After that you can browse the remaining details by ARROW-UP and ARROW-DOWN alone – or return by ESC

Chord Symbols

CONTROL + SHIFT + ARROW-DOWN split a chord symbol into separate tone, starting by the upper tone.

CONTROL + SHIFT + ARROW-UP split a chord symbol into separate tone, starting by the chord symbol.

After that you can browse the remaining details by ARROW-UP and ARROW-DOWN alone – or return by ESC

For each of the tones within the chord symbol tone and function are shown: For instance as "Fifth C".

Single notes for all parts

ARROW-DOWN splits a line in the note list into single notes, starting by the note with the highest pitch.

ARROW-UP splits a line in the note list into single notes, starting by the note with the lowest pitch.

After that you can browse the remaining notes by ARROW-UP and ARROW-DOWN alone – or return by ESC.

For each single tone is also shown the name of the related part.

Single Parts

CONTROL + ARROW-DOWN splits the line i the note list i single parts, starting by the first part..

CONTROL + ARROW-UP stlits the line in the note list in single parts, starting by the last part.

The user can then continue browsing in the notes by ARROW-UP and ARROW-DOWN or return by ESC.

Single notes for a selected part

If a selected part (for instance a piano part or an organ part) contains several notes you can browse these notes:

CONTROL + ARROW-DOWN splits the part into single notes, starting with the note with the highest pitch.

CONTROL + ARROW-UP splits the part into single notes, starting with the lowest pitch.

After that you can browse the remaining notes by ARROW-UP and ARROW-DOWN alone – or return by ESC.

Importing scores from the Internet

As mentioned earlier, you can find large amounts of free MusicXml music on the internet. Unfortunately, there is no standardization of the websites in question, and unfortunately these are typically made available to the blind and partially sighted to very little extent. In addition, the scores are often not distributed in the regular MusicXml (.xml) format, but in a compressed (.mxl) format.

To remedy this, IBOS MusicXmlReader, as of version 2.0.0.0, contains the features "Import Transfers" and "Import Today's Transfers", both under the menu item "Files."

These features can be used to facilitate the import of MusicXml files from the Internet.

The procedure varies depending on which note archive you use, but it is in the main:

1. Select Menu bar, "Note Archives".
2. Select a note file from the list, such as <https://musescore.com/sheetmusic>
3. Download one or more MusicXml files from the directory archive, and make sure to save the files with "Save" (Not "Save As"!))
4. Select "Menu Bar", "File", "Import Today's Downloads"
5. The downloaded notes have now been transferred to the "Downloads" folder under "IBOS MusicXmlReader", where they can be accessed in the usual way. IBOS MusicXmlReader has handled any conversion from compressed MusicXml format (.mxl) to standard MusicXml format (.xml).

Note that there is an option for "Import Today's Transfers", namely "Import Transfers", which allows choosing in detail which files to import.

Export as Braille Music

IBOS MusicXmlReader has for a long time supported showing the contents of each line in the note list in Braille Music representation.

Starting with version 4.0 it is also possible to export the Braille Music representation to a file, which can again be used in a note taker device or a Braille embosser.

By selecting (or deselecting) parts and details the user can control exactly which parts and details that are exported as Braille Music.

Export as Braille Music can be done in a large number of various ways, dependent of the user's needs. The export is controlled by the parameters

"Layout", "File format", "Braille device type" and "Physical dimensions".

These parameters are described in the following text:

Braille Music export concepts

Layout

The layout describes the overall rules for the logic contents of the exported file:

Version 4.0 supports the following layouts:

"IBOS MusicXmlReader Layout"	Reflects the layout of the IBOS MusicXmlReader NoteList by showing one line of Music Braille for each beat in the music
"BANA 2015 layout"	Follows the rules in "Music Braille Code 2015" from "Braille Authority of North America" and implements interval notation and In-Accord notation.

If the need arises IBOS MusicXmlReader can relatively easy be enhanced by implementing other layouts, for instance a mix of Music Braille and lyrics.

File format

The file format represents the internal representation of each Braille character

Version 4.0 supports "ASCII", "OctoBraille 1252", "PEF" and "Unicode"

Braille device type

Version 4.0 supports "Embosser", "Notetaker", "Braillo 650 SF" and "Universal Braille device"

The user can change the names of the devices, for instance to the name of the user's own, specific embosser.

Physical Dimensions

Version 4.0 supports page width and page height.

Profiles

To assist the user in controlling these many parameters, IBOS MusicXmlReader defines 3 "Profile" which are all initialized to default values.

The 3 profiles are:

Embosser	Typical parameters for an embosser
Notetaker	Typical parameters for a notetaker
High speed embosser	Typical parameters for a high speed embosser. The name "Braille 650 SF" is the name of the high speed embosser used by the NOTA institute in Denmark
Universal Braille device	Can be used for special devices or device settings. Can also be used if the user owns 2 different embossers or 2 different notetakers.

Typically the default parameter values for embosser or notetaker will cover the needs of the user. Otherwise these parameters can be changed from the "Settings menu".

During the actual Braille Music Export operation the user can specify the path of the Braille Music files generated by a standard Windows "Save as" dialogue.

As default the Braille Music files are saved in subdirectories besides the MusicXml file, but it is also possible to save the files directly on a USB memory stick which can be directly inserted into a notetaker device.

IBOS MusicXmlReader layout

As mentioned IBOS MusicXmlReader layout reflects the layout in the IBOS MusicXmlReader NoteList: One line of Music Braille is generated for each beat, containing notes from all parts. Each line in the Braille Music file thus represents a single point of time in the score, for instance the second beat of measure 17. Neither interval notation nor In-Accord notation is used, so this layout is only suited for rather simple scores,

BANA 2015 Layout

This layout makes use of interval notation and In-Accord notation.

Basically, one Braille Music file generated for each part in the score. Also a "TUTTI" file is generated, containing a representation of all files in the score.

For "SATB" (Soprano, Alto, Tenor, Bas) choir-scores the following files are also generated:

1. An "SATB" file containing Soprano, Alto, Tenor, Bas represented from top.
2. An "SA" file containing Soprano and Alto represented from top
3. A "BT" file containing Tenor and Bas represented from bottom.

A typical SATB score will thus generate 8 Braille Music files:

S, A, T, B, SA, BT and TUTTI

These files are generated (within a few seconds) in a directory besides the MusicXml file.

The user can then emboss the files wanted on an embosser, using

"Files" → "Print Music Braille file on embosser"

or copy them to his notetaker device by

"Files" → "Copy Music Braille file to Braille device..."

The user can select the path and name of the Braille Music file generated through use of a standard Windows Forms "Save as" dialogue.

As default the Braille Music file will be saved alongside with the MusicXml file, but it will often be convenient to save the file directly on a USB memory stick which can be moved to an notetaker or be used by a program capable of printing a Braille Music file on a Braille embosser.

Starting with version 5.0.0.0 the user can also browse the contents of the Music Braille files generated by opening them one at a time by "IBOS Music Braille Reader"

Printing Braille Music files on an embosser

This is done from “Files” → “Print Music Braille file on embosser” which again contains 2 subitems:

Via Windows print-dialogue	Here the user first selects which of the newly generated Braille Music files to emboss, using a standard Windows “Open-dialogue”. The an embosser is selected via a standard Windows Print-dialogue. This is by far the most user friendly mechanism, but it can only be used if the embosser is registered by Windows as a standard Windows printer.
Via external program	Here the user first starts a printer control program, delivered by the supplier of the embosser. The user must then select the file or files to be embossed, using the mechanism supported by the printer control program. The path to the printer control program can be set up in Settings → Settings for Embosser profile → Embosser program path This path is as default set up to the default path to the “IbPrint” printer controller program from “Index Braille”

Copying of Music Braille files to notetaker device

This is done from

“Files” → “Copy Braille Music file to Braille Device using Windows Explorer”

Windows Explorer will open in the path where the most recently generated Music Braille files were placed. The user can then specify the further actions.

Keyboard shortcuts

Note: The list of keyboard shortcuts will likely change while the project proceeds but is shown here for version 2.0.0.0.

The following standard Windows keyboard shortcuts can be used generally:

Press	Function
CTRL + O	Start File opening dialogue window
CONTROL + P	Print Music Braille file on embosser via Windows Print-dialog
ALT + F4	Close the program
ALT	Select the Menu bar
TAB	Toggle between Note List og Note Filter
ESC	Stop the ongoing activity.
CONTROL + HOME	Go to the topline
CONTROL + END	Go to the bottom line
WINDOWS + ARROW-UP	Open program in maximized size
WINDOWS + ARROW-DOWN	Open the program in normal size

The following standard JAWS keyboard shortcuts can be used generally:

Press	Function
INSERT + SPACE followed by s.	Toggles JAWS speech on and off
INSERT + PAGEDOWN	Read the Status Bar (but keep the focus)
INSERT + T	Read the Title bar (but keep the focus) The Title bar includes the name of the program, the name of the MusicXml-file and other relevant information about the current music piece.
INSERT + B	Read the current message box.

The following special keyboard shortcuts and commands can be used in connection with the Note Score:

Press	Function
LEFT	Select the previous note
RIGHT	Select the next note
CONTROL+ LEFT	Select the previous measure
CONTROL+ RIGHT	Select the next measure
ARROW-DOWN	Select the next tone in a single part or chord.
ARROW-UP	Select the previous tone in a single part or chord.
CONTROL+ ARROW-DOWN	Select the first single part.
CONTROL + ARROW-UP	Select the last single part.
CONTROL+SHIFT+ARROW-DOWN	Show chord-symbol starting with upper tone
CONTROL+SHIFT+ARROW-UP	Show chord-symbol starting with chord symbol name
ALT+ARROW-DOWN	Show status details starting with full measure information
ALT+ARROW-UP	Show status information starting with time signature
CONTROL + I	Show the instrument list.
CTRL + P	Start playback
CTRL + SHIFT + P	Stop playback
SPACE	Toggle between Start and Stop playback
Tn ENTER	Set the tempo for the playback to the n% of the tempo given in the score
Rn,m ENTER	Repeat from beat n till beat m inclusive
CONTROL+Gn ENTER	Go to measure n
ESC	Stop playback
CONTROL+PAGEUP	Increase playback tempo
CONTROL+PAGEDOWN	Decrease down the playback tempo

The following special keyboard shortcuts can be used when editing the note filter:

Press	Function
(No shortcut)	Edit the note filter after expanding
CONTROL + F	Edit the note filter
CONTROL + M	Edit the playback settings
CONTROL + T	Edit the text representation
CONTROL + B	Edit the representation of the Braille Music
(No shortcut)	Edit Parts
(No shortcut)	Edit Details
SPACE	Change between value on and off
CONTROL + 0	Unmark the marked voice or detail everywhere
CONTROL + 1	Turn on the marked voice or detail

Localization

Note that "IBOS MusicXmlReader" from the start has been designed for extensive "location". That is, the application's user interface changes language depending on which language the current WINDOWS user uses.

This is done in recognition that the Danish-speaking audience for certain parts of functionality, especially the Music Braille view, is very limited. The same functionality can be made available by localization to a much larger English speaking audience.

The program file itself is always distributed and installed under the English name:

"IBOS MusicXmlReader.exe"

However, all texts displayed in the user interface, including the program's name, are localized so that they appear in Danish to a user using Danish as default language and in English for a user using English as default language.

Starting at version 4.0 IBOS MusicXmlReader has also been localized to Dutch!

The localization to English and Dutch is not yet thoroughly tested!

It will be a manageable effort to locate in other languages, such as Swedish, Norwegian, German or French.

Using a Perkins keyboard

Starting with version 2.0.0.0, IBOS MusicXml Reader is optimized to be able to be controlled only with the help of a reading list with a Perkins keyboard.

Obviously, it is impossible to test IBOS MusicXmlReader together with all existing products, but so far, good results have been achieved with FOCUS 14, Braillant and BrailleNote Touch.

On longer terms, this new facility will allow IBOS MusicXmlReader to run completely without the use of a PC, for example, on ElBraille 14, BrailleNote Touch and similar devices.

Optimizing cooperation with JAWS

As mentioned, IBOS MusicXmlReader is designed from the start for blind and weekly sighted users. The program therefor supplies the user with all relevant information. For that reason, a part of the more general information, which JAWS adds and reads out, may after some time use of IBOS MusicXmlReader become redundant and even annoying. This especially goes for information of the type:

"Listbox"

"Line 7 of 45"

Fortunately, it is possible to configure JAWS not to read this information. This is described in detail in the Installation Guide for IBOS MusicXmlReader.