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## Short Description

*capella-scan* is designed for recognizing printed music documents, and saving the recognized music in a *capella* file.

*capella-scan* is able to scan music on any TWAIN-compatible scanner, or else process other graphic files.

The recognition is fully automatic. Afterwards, manual corrections may be made before the music is saved.

# Scanning

You may use any TWAIN-compatible scanner with *capella-scan*. If more than one TWAIN-compatible scanners are connected, click **Select Scanner...** in the **File** menu to choose the one you want to use.



The command **Scan...** in the **File** menu or [Ctrl]+[N] starts the TWAIN interface of your scanner. The interface controls the actual scanning process. For detailed instructions please refer to your scanner manual.

**Scan Mode:** *capella-scan* requires images to be in black-and-white or 256-greyscale. The black-and-white mode is often called "Line Art" or "Text"; the greyscale mode "Gray". Do not use the "Halftone" mode. It produces a black-and-white image in which grey shades are simulated by dithering; this is illegible for *capella-scan*. *capella-scan* always tries to inform the TWAIN interface which modes it can accept. However, not all TWAIN interfaces will understand this information.

**Resolution:** In the scanned image a staff should measure approximately 40 to 60 pixel in height; set the resolution accordingly. It will usually mean a resolution of 200dpi. Unlike in picture processing, a higher resolution does not necessarily lead to a better result!

**Tonal Adjustment:** Ideally, scanned staff lines measure one or two pixel in thickness and are rarely interrupted. Scanning in greyscale mode allows you to adjust the brightness (and thus influence line thickness) later on in *capella-scan* (see greyscale).

In *capella-scan* the scanned image can be rotated, swapped to its negative image, and cut to size. Many TWAIN interfaces now also offer these options.

**Documents of more than one page:** Each page is scanned, recognized, and edited individually. Save the music of the first page in a *capella* file. The music of the following page/s may then be appended to that file.

**Using a Hand Scanner:** Move the scanner horizontally, parallel to the staves, trying to capture all the staves of a system in one go. There is no need to combine the scanned batches graphically as they can be dealt with individually in *capella-scan* and then combined to a file afterwards as explained in the paragraph above. However, this is not possible if the musical systems are wider than the scanning strip. *capella-scan* does tolerate scanned staff lines that have turned out slightly sloping, crooked, or wavy.

## Opening a Bitmap



Click **Open Bitmap** from the **File** menu or press [F3] or [Ctrl]+[O] to display a dialog box with a list of previously scanned and saved music documents to choose from.

*capella-scan* can only read uncompressed Windows bitmap files (\*.bmp). In the list of documents, black-and-white bitmaps are marked with the symbol ■, greyscale bitmaps with

■. Bitmaps of other colour formats cannot be processed in *capella-scan* and will have no symbol.

Click **Save Settings** to save the sorting criteria for the list of files, the current path, and the position of the dialog box on the screen.

# Saving a Bitmap

Click **Save Bitmap As...** from the **File** menu or press [Ctrl]+[B] to display a dialog box for saving the scanned document.

In *capella-scan* documents are saved as uncompressed Windows bitmap files (\*.bmp). If you have scanned or opened a greyscale image, you may choose whether to save it in black-and-white or in greyscale by selecting the File Format. Black-and-white bitmaps are always saved in black and white.

Click **Save Settings** to save the sorting criteria for the list of files, the current path, and the position of the dialog box on the screen.

# Rotating and Swapping Colours

The scanned image may be rotated using commands from the **Image** menu:

**Rotate Left** or [Ctrl]+[F6]: 90° counterclockwise

**Rotate Right** or [Ctrl]+[F7]: 90° clockwise

**Rotate 180°** or [Ctrl]+[F8]: turn upside down

*capella-scan* requires staves running horizontally from the left to the right.

Clicking **Swap Colours** from the **Image** menu or pressing [Ctrl]+[F5] produces a negative image of the scanned document: black and white are inverted. *capella-scan* requires black notes on white ground.

## Recognizing in Batches / Cutting to Size

Open the **Image** menu and select **Draw Blinds**, or press [Ctrl]+[D]. You can now narrow down the area where you want the Recognition to be performed. The mouse cursor changes and allows you to determine the upper, lower, left, and right edge of the area by clicking onto the desired positions. The orientation of the mouse cursor shows which edge you are about to change. It is always the one closest to the mouse cursor. Alternatively, hold the mouse button down and drag the edge to the desired position. Imagine a window with blinds to pull from all four sides. The 'blind' areas will appear shaded. Leave the **Draw Blinds** mode by clicking it again, or pressing [Ctrl]+[D] again, or pressing [Esc].



If your scanned document is a double page of music, use the blinds to **narrow down the area of recognition** to one page at the time. *capella-scan* requires that all staves be beneath one another, rather than in columns side by side.

Clicking **Release Blinds** or pressing [Ctrl]+[R] will expand the area of recognition to its original size, the whole document. The shading is undone.

To cut off shaded areas, click **Delete Blind Area** or press [Ctrl]+[Del]. The image is reduced to the area you have selected by drawing the blinds. This may be used to **trim** unwanted edges of the scanned image and thereby saving memory and disc space.

# Greyscale Images

To perform the music recognition, *capella-scan* requires an image in black and white. If you scan or open a greyscale image, *capella-scan* will thus create an additional image in black-and-white. By adjusting the conversion rules from greyscale to black-and-white you can virtually influence the scanning brightness with hindsight.

Open the **View** menu. By clicking **Greyscale Image** or **Black-and-White Image** respectively or with [F9] you can choose whether you want the greyscale or the black-and-white image on the screen. The symbol  or  in the status bar shows which one you are looking at at the moment. You may also click the symbol to switch to the other mode.

When a greyscale image is converted into black and white, all shades of grey darker than a certain **threshold value** are rendered black, all brighter ones white. With **Set Sensitivity...** or [Alt]+[F9] a dialog box allows you to alter this threshold value by clicking an appropriate part of the little grey scale or by using [<] and [>] either in the dialog box or on the keyboard. Moving the threshold value, notably influences the boldness of stave lines and musical symbols. You may now zoom and scroll with the dialog box open to check the results anywhere in the document. Make sure the black-and-white image is activated.

When saving the image you can choose whether the greyscale or the black-and-white image is to be saved. In the former the current threshold value is saved with it.

With **Close Greyscale Bitmap** from the **File** menu or [Ctrl]+[F4] the greyscale image may be closed to save memory. This command replaces **Close Bitmap** while the greyscale image is in use.



# View

By ticking **Show Functions Palette** in the **View** menu or pressing [Ctrl]+[F11] you will get a mouse palette of all the major menu commands for easier use with the mouse. Do the same to hide it.

When **Show Objects Palette** in the **View** menu is ticked, a mouse palette of different musical objects is displayed. [F11] also shows and hides it. You may pick objects from the palette and insert them in the score. Also, there is a button (with a cross) for deleting objects and one to undo the deletion. This palette can only be activated after the Recognition has been performed.

You may place these mouse palettes anywhere on the screen. Click inbetween the buttons and drag. Palette size and shape are changed if you click the palette edge and drag. Layout and size of the buttons is adjusted automatically.

**Show Scroll Bars** from the **View** menu or [Shift]+[F11] displays and hides the scroll bars (see scrolling).

**Show Status Bar** from the **View** menu or [Alt]+[F11] displays and hides the status bar. During the opening of a file and during the recognition process it will always be displayed.

To **Refresh** the screen press [F12] or [Ctrl]+[Alt]+[F12].

Use [F5] to switch between **full screen** and window display.

The following will be saved when *capella-scan* is closed: settings of mouse palettes, scroll bars, and status bar, as well as size, position, and full-screen/window mode of the *capella-scan* window.

For other commands in the **View** menu see zoom and colours.

# Zoom



To magnify the view of the score, the area to be blown up full screen is marked with the mouse: choose **Zoom** from the **View** menu or press [Ctrl]+[Z] or [Ctrl]+[+]. The mouse cursor changes into a magnifying glass. Place it in a corner of the area to be magnified, press down the left mouse button, drag the cursor to the opposite corner, and release the button. To leave the zoom mode without marking an area, click the command again, or press [Esc].



**Last View** or [Ctrl]+[L] or [Ctrl]+[-] gets you back to the previous magnification.



**Full Width** or [Ctrl]+[W] displays the full width of the score.



**Full Height** or [Ctrl]+[H] displays the full height of the score.

The current zoom factor is displayed in the status bar. Its value can also be altered directly. When the zoom is being increased, a square will outline the prospective zoom area.

Using the mouse: To increase or decrease the zoom, click the little arrow buttons next to the zoom indication in the status bar. Clicking the right mouse button changes the value by 10.

Using the keyboard: With the [Alt] key pressed, use the [up] and [down] arrow keys to alter the zoom factor, or [Page up] and [Page down] to change it by 10. Use the cursor key block of your keyboard.

Alternatively, *type* the desired zoom factor using the keys of the numeric block. Once the zoom is set correctly, release the [Alt] key.

The zoom factor may be anything from 10% to 990%. Between 10% and 100%, any value may be chosen; above 100% the factor increases in steps of 2%, 5%, and later 10%.

# Scrolling

If your bitmap is larger than the screen, use the scroll bars or cursor keys to **scroll**.

Scrolling with cursor keys:

one step left or right: [left], [right]

one page left or right: [Ctrl]+[left], [Ctrl]+[right]

all way left or right: [Home], [End]

one step up or down: [up], [down]

one page up or down: [Page up], [Page down] or [Ctrl]+[up], [Ctrl]+[down]



all way up or down: [Ctrl]+[Page up], [Ctrl]+[Page down] or [Ctrl]+[Home], [Ctrl]+[End]

If you do not need the scroll bars, click **Show Scroll Bars** from the **View** menu or press [Shift]+ [F11] to hide them (and to show them again).





# Colours

Recognized staves and objects will be written over the scanned image on the screen. For better distinction the following colours will be used:




## Colours of Scanned Image:

|   |                           |
|---|---------------------------|
|  white | background, music "paper" |
|  black | printed music             |

## Colours of Recognized Objects:

|   |   |
|---|---|
|  light green | recognized staves and music   |
|  dark green  | invalid objects, e.g. <u>accidentals</u> which could not be assigned to any note head and which do not represent a key signature; also <u>stems</u> without a head and <u>heads</u> without a stem (except semi-breves). Invalid objects will not be saved. |
|  pink        | <u>marked</u> object/s or stave/s. In a marked stave the <i>lines</i> will be coloured.   |
|  purple      | marked invalid objects  |

## Other Colours:

|  |   |
|--|---|
|  dark red | template stave numbers (see <u>stave identification</u> )   |
|  petrol   | background, area beyond document  |
| (  grey   | object while being <u>inserted</u> or <u>moved</u> (mouse cursor object). For performance reasons this colour cannot be changed; it is determined by partial inversion of the background over which the object is dragged.) |

## Changing the Colours:

You may change the colours as you please. However, keep in mind that the colours mentioned in the manual and the help file refer to the original settings.

Open the **View** menu and choose **Colours...** or press [Alt]+[F12]. A dialog box shows the current settings. Click the colour you want to change. The usual Windows dialog box for choosing colours appears.

**Note:** Screen configurations with a low colour resolution show pure colours as well as mixed colours produced by dithering. Only pure colours can be used in *capella-scan*.

Click **Save Settings** to save your new colours. If you want to return to the above colours, click **Original Colours**.

# Recognition



The command **Recognize!**, [Alt]+[R], or [F4] starts the recognition process which cannot be influenced.

The following should be **recognized**: music systems including stave lines, brackets, and braces, treble and bass clefs, key and time signatures and changes, note heads, stems, tails, beams, simple accidentals, rests, dots, bar lines in and between the staves, repeat marks.

Depending on the print quality and the font of your document errors may occur. They can be corrected manually.

The following will not be recognized but may be **edited manually**: C-clefs, other special clefs, double-sharps and -flats, triplets and other irregular rhythmic values.

The following **cannot be processed**: cue notes, grace notes, slurs, ties, accentuation and other marks, lyrics and other texts.

Since the recognized staves and objects take on colour, errors will be spotted easily (see colours).

# Manual Editing

After the Recognition the recognized musical symbols constitute a string of independent graphic objects. Therefore *capella-scan* still needs to do the following in order to save and convert the bitmap into the *capella* format:

- determine keys

- determine pitch of notes, based on clef, key, and position in the stave

- separate the parts of multi-part staves

- synchronize the parts of a system

- identify staves by applying the template

To avoid recognition errors causing other errors in the conversion process it is important to correct any recognition errors in *capella-scan* and not to wait until after the conversion in *capella*. A clef left unrecognized or a faulty key signature alter the pitch of the following notes; a mistakenly created note may shift the whole system out of rythm or cause a homophonic stave to split into upper and lower part.

Therefore, in *capella-scan* objects may be marked, deleted, moved, edited, and inserted.

# Marking Objects

Objects must be marked in order to delete, move, or edit them.

To mark an object, click it with the left mouse button. It will turn pink (see colours). To unmark it, click the background.

To mark a **group of objects**, hold down the [Shift] key and click the desired objects one after another. Alternatively, hold the mouse button pressed and drag the mouse cursor over the objects. To unmark single objects within a marked group, click them again while holding the [Shift] key down. Up to 100 objects may be marked at the same time.

To mark a stave, click a stave line. You may now change the stave settings, e.g. the system brackets.

## Deleting Objects



To delete the marked object/s, click **Delete** from the **Object** menu or press [Del].



The deletion of the last 100 objects may be undone one by one by clicking **Undo** from the **Object** menu or pressing [Alt]+[Backspace].



# Moving Objects

A marked object can be moved with the left mouse button pressed. An unmarked object thus requires two clicks to be moved. Only one object can be moved at a time.

Objects are linked to a certain stave and cannot be moved out of that stave's environment.

Bar lines joining several staves can be moved in whole or per stave (see bar lines).

Staves may be lengthened or shortened (see stave length).

# Editing Objects

Clicking **Edit** in the **Oject** menu, or pressing [Enter], opens a dialog box showing the editing options for the marked object. Alternatively, click the object with the right mouse button to mark it and open the dialog box.

If more than one object is marked, they may be edited as a group. Any changes in the dialog box will affect them all. If the selected objects don't have any editing properties in common, *capella-scan* will tell you so.

Objects are classified as clefs, alla breve symbols, time signatures, bar lines, rests, accidentals, note heads, or stems. An object may be turned into another one of the same category. **Keyboard short cuts** for inserting and editing objects are listed under the respective categories.

# Inserting Objects

Click an object of the object palette or press the appropriate keys (see below) to get into the insert mode. Move the mouse cursor near a stave; a grey object of true size and a valid stave position appears. Move the object to the desired position and press the left mouse button to insert it in the score.

The new object will be in the marked state (see [colours](#)); the insert mode disappears. To insert the same object again somewhere else, click the right mouse button anywhere on the background, or press [Insert], to return to the insert mode. To leave the insert mode, click the right mouse button again, or click the pressed button in the object palette to "put back" the object, or press [Esc].

Certain categories, such as time signatures or stems, contain too many different objects to give each one its own button in the mouse palette. They all share a button, displaying just one of them. Clicking this button with the right mouse button opens a dialog box to **change the object on the button**, similarly to the [Edit Object](#) dialog box. This way you can choose which object you want on the palette until you change it again or *capella-scan* is closed.

All objects are **linked to a stave**, hence the grey insert object disappears if the cursor is moved out of the stave's environment. The environment of a stave may overlap with that of the next one. In this case the object will be linked to the stave the cursor has passed over last. Depending on which way you approach the desired position, the object will belong to the upper or lower stave. An exception are [bar lines](#) over several staves.

There are **keyboard short cuts** for inserting objects as well as for editing marked objects or a pressed palette button. Look them up in the respective object categories: [clefs](#), [alla breve symbols](#), [time signatures](#), [bar lines](#), [rests](#), [accidentals](#), [note heads](#), [stems](#), [note](#).

# Clefs

*capella-scan* is familiar with treble (G) clef, alto/tenor (C) clef, and bass (F) clef. You may change the settings concerning octave marks and size of clef. (It is not essential to specify the clef size as it is corrected automatically in *capella*.) The position in the staff is established when the clef is inserted or moved with the mouse.

## Short cuts for Inserting:

|   |             |
|---|-------------|
| insert G (treble) clef:                     | [G] or [&]  |
| insert C (alto/viola and tenor/cello) clef: | [C] or [[]] |
| insert F (bass) clef:                       | [F] or [[]] |

## Short cuts for Editing:

|                |          |
|----------------|----------|
| transpose up   | [U]      |
| pitch          | [0]      |
| transpose down | [D]      |
| change size    | [+], [-] |

# Alla Breve and Common Time

## Short cuts for Inserting:

|                                   |        |
|-----------------------------------|--------|
| insert c symbol (common time)     | [A]    |
| insert $\phi$ symbol (alla breve) | [A][A] |

## Short cuts for Editing:

|                             |          |
|-----------------------------|----------|
| switch between c and $\phi$ | [+], [-] |
|-----------------------------|----------|

# Time Signature and Time Changes

## Short cuts for Inserting:

insert time signature / time change [T]

## Short cuts for Editing:

change upper figure [+], [-]

set lower figure to 1, 2, 4, 8, 16, 32, 64 [1], [2], [4], [8], [6], [3], [9]

# Bar Lines

Bar lines always stretch over all the staves of a system. However, they can be set to *appear* interrupted (see [stave settings](#)). Only the first line will *always* be solid to combine the staves to a system.

Double bars are treated as two individual bar lines. In the conversion into *capella* format they will be combined to one object.

If the document has been scanned at a slight angle, you might find bar lines deviating from the vertical. To straighten them, **move the bar line in just one stave**: click and drag the little grey squares that appear in every stave once the bar line is marked. You may drag as far as the next bar line or the end of the stave. If the bar line you are dragging is exactly at the end of the stave, then the end of the stave is moved with it and the stave is lengthened or shortened (see [stave length](#)).

To **move the whole bar line**, click it outside the little squares, and drag. If one or both of the neighbouring bar lines are at an angle, the angle of the one being edited will adjust itself accordingly. This also applies if you are **inserting** a bar line. A bar line being inserted may be positioned anywhere in the stave.

## Short cuts for Inserting:

insert bar line                      [I]

## Short cuts for Editing:

set repeat marks on the left/right      [L], [R]  
switch bold mode on/off                      [O]

# Rests

## Short cuts for Inserting:

insert rest [Space]

## Short cuts for Editing:

|                                  |                    |                                 |
|----------------------------------|--------------------|---------------------------------|
| change value to                  | semi-breve         | [1]                             |
|                                  | minim              | [2]                             |
|                                  | crotchet           | [4]                             |
|                                  | quaver             | [8]                             |
|                                  | semiquaver         | [6]                             |
|                                  | demisemiquaver     | [3]                             |
|                                  | hemidemisemiquaver | [9]                             |
| triplet, duplet, straight rhythm |                    | [Alt]+[3], [Alt]+[2], [Alt]+[1] |
| dot, double dot, no dot          |                    | [.], [:], [0]                   |

See also irregular rhythmic groupings.



# Accidentals

*capella-scan* recognizes whether an accidental belongs to a note, or indicates a key change. Accidentals of no apparent meaning will be pictured dark green (see [colours](#)).

## Short cuts for Inserting:

|                            |             |
|----------------------------|-------------|
| insert sharp, double sharp | [#], [X]    |
| insert natural             | [=]         |
| insert flat, double flat   | [B], [B][B] |

## Short cuts for Editing:

|                               |          |
|-------------------------------|----------|
| increase, decrease accidental | [+], [-] |
|-------------------------------|----------|

# Note Heads

Since a stem may connect several heads or a head may have two stems, heads and stems are treated as independent objects (although simple notes may be inserted ready-made).

Note heads are always either semi-breves, minims, or crotchets. The rhythmic value of a note is linked to the stem. Dots and irregular values such as triplets are thus edited with the stem, except of course those of a semi-breve.

If the head is next to a stem, they are automatically connected. If it is between two stems, it will be connected to both, and, if necessary, slightly squashed or stretched to meet them. If one of the stems doesn't belong to the head, it can be separated manually.

## Short cuts for Inserting:

insert head [H]

## Short cuts for Editing:

|                           |            |          |
|---------------------------|------------|----------|
| change head to            | semi-breve | [1]      |
|                           | minim      | [2]      |
|                           | crotchet   | [4]      |
| separate left, right stem |            | [L], [R] |

# Stems

Since a stem may connect several heads or a head may have two stems, heads and stems are treated as independent objects (although simple notes may be inserted ready-made).

A stem can take on any rhythmic value from a minim to a hemidemisemiquaver, and point either up or down. Stems may carry beams facing left and/or right, or tails. If a stem with a beam is inserted or moved, the beam will not be established anew but only be indicated by a symbolic stump. A mistakenly recognized beam can be marked and deleted.

To lengthen or shorten a stem, click the end and drag it to the required position.

See also irregular rhythmic groupings.

## Short cuts for Inserting:

insert stem [S]

## Short cuts for Editing:

|                                  |                    |                                 |
|----------------------------------|--------------------|---------------------------------|
| change value to                  | minim              | [2]                             |
|                                  | crotchet           | [4]                             |
|                                  | quaver             | [8]                             |
|                                  | semiquaver         | [6]                             |
|                                  | demisemiquaver     | [3]                             |
|                                  | hemidemisemiquaver | [9]                             |
| triplet, duplet, straight rhythm |                    | [Alt]+[3], [Alt]+[2], [Alt]+[1] |
| dot, double dot, no dot          |                    | [.], [:], [0]                   |
| set beam facing left/right       |                    | [L], [R]                        |
| turn stem up/down                |                    | [U], [D]                        |

# Notes

Simple notes consisting of a head and a stem only may be inserted in one, ready-made. After insertion however they, too, disintegrate into head and stem.

## Short cuts for Inserting:

insert note [N]

## Short cuts for Editing:

|                                  |                    |                                 |
|----------------------------------|--------------------|---------------------------------|
| change value to                  | minim              | [2]                             |
|                                  | crotchet           | [4]                             |
|                                  | quaver             | [8]                             |
|                                  | semiquaver         | [6]                             |
|                                  | demisemiquaver     | [3]                             |
|                                  | hemidemisemiquaver | [9]                             |
| triplet, duplet, straight rhythm |                    | [Alt]+[3], [Alt]+[2], [Alt]+[1] |
| dot, double dot, no dot          |                    | [.] , [:] , [0]                 |
| set beam facing left/right       |                    | [L], [R]                        |
| turn stem up/down                |                    | [U], [D]                        |

# Irregular Rhythmic Groupings

Triplets, duplets and the like will not be recognized automatically but need to be declared in the "Edit Object" dialog box. The available groupings are the same as in *capella*. For triplets and duplets, keyboard short cuts are [Alt]+[3] and [Alt]+[2]; [Alt]+[1] is to render them back to the straight value of the notes.

Remember that objects may be marked and edited as a group. Make sure to mark only objects of rhythmic value, i.e. stems, rests, semi-breves; otherwise irregular divisions cannot be carried out. Marked heads, tails, and beams will be tolerated, but not so clefs, bar lines etc.

## Stave Length

To lengthen or shorten a stave, mark it by clicking the space to the left of the stave or a stave line. You will now find little squares at both ends of the stave. Click them to drag the stave end. If there is a bar line at the very end of the stave, it will be moved with it. Stave extensions beyond the recognized stave will be horizontal, even if the scanned stave is at a slight angle.

# Stave Settings

To edit a stave, mark it by clicking the space to the left of the stave or a stave line, and press [Enter]. Alternatively, click the stave with the right mouse button to mark it. A dialog box will show the stave's settings.

**Connection to other staves of system:** If the stave is part of a system of staves, tick whether the other stave/s is/are above, below, or both. This setting will affect the bar line at the very beginning of the stave.

**Braces, Bar Lines:** These settings concern the brace and bracket in front of the system as well as the bar lines. You may tick whether you want them to extend up to those of the stave above and/or below, or confine them to this very stave. You may use these settings to help *capella-scan* identify the staves.

**Maximal Number of Parts:** This limits the number of parts written in this stave. The "standard" setting refers to the global limitation set in the Options menu. If you want a different number of parts in *this stave only*, change it here (see multi-part staves).

# Storing Recognized Information

With **Store Recognized Objects** from the **File** menu, or pressing [Ctrl]+[T], all recognized or manually inserted objects are saved. Any previously stored information will be overwritten, since it is always saved in the same storage file (objects.csc in the *capella-scan* folder). If the scanned image has not been saved before, this is done as well (in scanned.bmp).

This facility allows you to interrupt your work with *capella scan* and later take it up where you left it with **Retrieve Storage** or [Ctrl]+[E].

*capella-scan* can also regularly update the current state of recognition to mitigate the loss in case of a system failure. In **Automatic Storing...** you can determine how frequently this is done by setting the time interval.



# Options



Clicking **Options...** opens a dialog box with settings concerning the Recognition and the saving. Click **Save Settings** to remember them the next time.

**Stave Identification Criteria**

**Maximal Number of Parts per Stave**

**Synchronize Staves of System**

**Save Beaming**

**Semi-breve Rest = Centred Whole-Bar Rest**

**Fill Rhythmic Gaps With**

**Save Distances**

# Stave Identification

Staves of a system have to be identified in order to relate them to their corresponding staves in the next system. Identification criteria may be braces/brackets, joined bar lines, key signatures, and/or clefs. Tick the criteria to be applied in the Options dialog box. If none are ticked, the order of staves within a system will be solely relevant. The dark red **number** in front of the stave indicates its current identification with the *capella* **template system** (see colours).

These criteria are also consulted when new staves are appended to an existing *capella* file. The result can only be seen in *capella*; if it is not satisfactory, choose undo append, change the criteria, and append again.

Key signatures may be a criterion for identifying the staves of transposing instruments. The setting in the *capella* template system, "Instrument transposes by", still requires manual adjusting; however, it only concerns the playback pitch, not the typesetting.

In case of a clef or key change in the middle of a stave, *capella-scan* knows to use the last clef or key signature in use when searching for the corresponding stave in the next system.

## Multi-part Staves



When a file is converted to *capella* format, *capella-scan* analyses how many parts there are in one staff. A staff is split into upper and lower part as soon as two notes (with different stems) or a note and a rest occur simultaneously. Depending whether the stem is pointing up or down, notes will belong to the upper or lower part. If in addition there is a semi-breve at the same place, a third part will be created.

You can prevent the splitting into upper and lower or three parts by determining the **Maximal Number of Parts per Staff** under Options. If you want this number to be different in certain staves, you can alter it in their respective staff settings.



If you allow up to **3** parts per staff, three parts will be saved where necessary. *capella* can process no more than two parts in one staff; therefore the third part will be saved in a separate staff of no vertical distance to the first. Optically the three parts will still appear in one staff.



If you limit the number of parts to **2** per staff, only the upper and lower parts will be saved. Any notes of a third part will be ignored.



If you choose to have only **1** part per staff, only the uppermost part will be passed on to *capella*. This may prevent, for example, the erroneous splitting into two parts due to a mistakenly recognized rest. If your document however contains multi-part staves, this setting will lead to wrong results, as seen in the picture.

## Synchronize Staves of System

If this Option is ticked, the music of the various staves of the system will be synchronized, i.e. all notes written underneath one other in the document will be on the same beat in *capella*. If a staff contains several parts, they will *always* be synchronized with one another. Without synchronization, a missing or unrecognized note might cause all following notes to be out of rhythm.

## Save Beaming

If this Option is ticked, the scanned or edited beams of your document will be passed on to *capella*. Otherwise *capella* will perform its automatic beaming.

## Semi-breve Rest = Centred Whole-Bar Rest

If this Option is ticked, the duration of a semi-breve rest equals one measure. Its position within the bar is then irrelevant. Otherwise, it will last as long as four crotchets, counting from the beat where the rest is positioned, just like semi-breve notes.

## Filling Rhythmic Gaps

Rhythmic gaps, as they may be created in the synchronization process, will be filled with rests. In the Options dialog box you can choose whether you want them visible in the score or not.

## Save Distances

If this Option is ticked, all the distances between the staves and any indents will be passed on to *capella*.



## Saving as a *capella* File



To save the recognized music for *capella*, click **Save As capella File** in the **File** menu, or press [F2] or [Ctrl]+[S].

You can base the new *capella* file on a **capella template** (\*.cav). The template supplies information such as printer configurations, page layout, and sound parameters, as well as a **template system**. The staves in the new file will be grouped like the staves of the template system, under consideration of the stave identification criteria. The template system will be extended if necessary. If no template is selected, *capella-scan* will use the file capscan.cap in the *capella-scan* folder as a base to create a new template system.

See also Appending to a *capella* File.

Click **Save Settings** to save the sorting criteria for the list of files, the path used for *capella* files, the template file and path, and the position of the dialog box on the screen.

## Appending to a *capella* File



To add more recognized music to an existing *capella* file, click **Append To *capella* File** in the **File** menu, or press [Alt]+[F2] or [Ctrl]+[A].

This facility has been designed to save the scanned music of several pages in one file, or to combine the various hand scanned batches to a page.

Before appending, a safety copy (back-up file) with the extension .bak will be made of the *capella* file. See [Undo Append](#).

The new staves will be appended to the existing score according to the [stave identification criteria](#). The template system will be extended if necessary.

See also [Saving as a \*capella\* File](#).

Click **Save Settings** to save the sorting criteria for the list of files, the path used for *capella* files, and the position of the dialog box on the screen.

# Undo Append



If you have appended music to an existing *capella* file and don't like the result in *capella*, you may want to restore the old *capella* file. In *capella-scan* you can then edit the music some more, or reset some Options, and then append it again. For the purpose of restoring the old *capella* file, *capella-scan* has made a safety copy (extension *.bak*), which can now be re-made a *capella* (extension *.cap*) file.

Click **Undo Append** in the **File** menu, or press [Ctrl]+[F2] or [Ctrl]+[U]. A dialog box now lets you choose the *\*.bak* file to be renamed *\*.cap*.

Click **Save Settings** to save the sorting criteria for the list of files, the path used for the *capella* and back-up files, and the position of the dialog box on the screen.

## No music to work with!

Scan the music to be Recognized, or open a bitmap of previously scanned and saved music.

# Recognition accomplished!

Before saving, you may now delete objects, move objects, edit objects, insert objects, set braces and brackets, or choose different Options.

## Object is marked.

The object you have marked may now be deleted, moved, or edited.

Keyboard short cuts for inserting objects have the same effect as clicking the respective button in the object palette. See example to illustrate this.

Keyboard short cuts for editing objects affect either marked objects, or, if you are in insert mode, the mouse cursor object and with it the button on the object palette. See example to illustrate this.



# Example for the Use of Keyboard Short Cuts

Task: Insert a dotted crotchet rest.

Press [Space] for rest. The rest button on the mouse palette is pushed. The mouse cursor carries a rest.

Press [4] for crotchet. If the pressed button was a different rest, the crotchet rest button will now appear on the palette. The mouse cursor will also carry a crotchet rest.

Click the left mouse button to insert the object. The inserted object will be marked.

Press [.] for dot. The new, marked rest will be dotted.

Inserting several dotted crotchet rests in a row:

Press [Space] for rest.

Press [4] for crotchet.

Press [.] for dot. The rest on the pushed button and the mouse cursor rest will both be dotted.

Click the left mouse button to insert the object.

Press [Space] or click the background with the right mouse button to return to the insert mode.

Click the left mouse button to insert another dotted rest.



