NOTE: This helpfile is best read with Acrobat 4.0.

Look on the original installation CD or go to: **http://www.adobe.com**

Installation

a. Insert the SmartScore CD into the CD-ROM drive of your computer.

NOTE: You will need to refer to the Quick Keys map when editing recognized files until shortcuts are memorized.

b. Double-click the file, **SSInstall** on the CD. This will begin the installation of SmartScore. Enter your name and location.

c. We suggest making an alias of the SmartScore directory and placing it on your desktop (highlight SmartScore folder, press *command+m* and drag to the desktop).

d. Drag the sample TIF files from Sample Files directory on the CD to the SmartScore directory. Drag the VistaScan plug-in to the Plug-Ins folder in the SmartScore folder

e. Restart you machine and double-click SmartScore icon to open.

Quick Tour

Since the original printing of the SmartScore manual, recognition has been improved. Therefore, corrections outlined in the Quick Tour have changed quite a bit. However, the sample files are still good a practice aid for learning the program. To start with recognizing a sample file,

a. Push the RECOGNITION icon in the Navigator found in the middle of your screen.

b. Drag the sample file, FANDANGO.TIF to the “Recognize Files” list. Push the **Begin Recognitio***n* button.

When the file opens, turn to page 13 of the manual and begin.

Scanning Music into SmartScore

SmartScore will drive most Macintosh scanners that include Photoshop®-type or TWAIN scanning plug-ins. We have included a number of current ones inside *Plug-Ins* which can be found in the SmartScore folder. If your scanner's plug-in is not included, do the following:

a. Locate your scanner's plug-in (in Finder: go to File > Find and look for "plug-in").

b. Make an alias of the plug-in (command + m) and drag it to the Plug-In folder of SmartScore.

NOTE: It may be necessary to reinstall your scanner's software if you cannot find the plug-in. Be certain to choose "Install Plug-In" option.

Testing your scanner

a. In SmartScore, go to File > Scan Music > and choose your plug-in.

b. Once selected, your scanner should begin to operate. After having selected your plug-in, you can always initiate scanning by pushing the **Scan** button of the Navigator or from the Main Toolbar.

Navigator Button

If your scanner does support plug-ins or your scanner fails to operate, please refer to Scanning Outside of SmartScore.

Scanner Settings

Once your scanner's interface is visible, you will want to establish certain presets to acquire the right kind of image at the correct resolution and darkness settings. All scanning software is different, so locating the following controls may take some poking around.

Find the controls for RESOLUTION (dpi) and DARKNESS.

Resolution

For most printed music, the recommended resolution is around 350 dpi. If the original music is printed in smaller type, you can increase resolution to 400-500 dpi. For miniature scores, try 600 dpi, but don't expect miracles if the music has extremely small print. It won't take you long to guess the optimum resolution for your printed music by just looking at it. Scanning at too high or too low a resolution will actually reduce recognition accuracy. It is not recommended to scan music below 300 dpi or higher than 600 dpi.

Darkness

If the original music is faded, if it is a weak copy or if it has become degraded, you may want to scan at a darker than normal setting. This will "fatten up" objects on the page; allowing SmartScore to find and recognize them easier than they would be with the default darkness setting. To begin with, it is recommended you leave Darkness to its default setting.

Scanning into SmartScore's interface

SmartScore allows you to scan many pages of a score and save them grouped into one compressed image file, a single, multi-page TIFF file. This is done automatically in SmartScore's own scanning interface.

a. Place the first page of your score face down into your scanner.

b. If your scanning software has a Preview button. Push it.

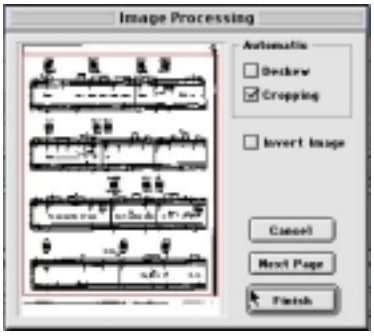
NOTE: Preview ONLY the FIRST page in your scanning program. After the first page, you will preview only in SmartScore's interface.

Notice the scanning ***region*** defined in your scanner's preview window**.** The scan region is bounded by flashing dots, marching ants or by some other obvious delineator and can be resized. The selected region identifies the boundaries of the image passed to SmartScore's interface.

c. Using your mouse, drag the edges of the scan region to the **maximum** limit allowed. It is very important to acquire a full-page image at this stage. Otherwise, subsequent scans may cut off information.

d. Press the **Scan** or **Final Scan** button in your scanning interface.

When the page is scanned, the SmartScore scanning interface, *Image Processing* window opens...



SmartScore scanning interface

The SmartScore interface has 2 automatic image-enhancement functions.

- Auto Deskew (See Correcting Skew)
- Auto Cropping

The red crop rectangle is automatically selected by SmartScore. Resize the cropping region using your mouse if necessary.

NOTE: If the preview image appears mostly black, this means your scanner is reversing image polarity. In this case, you will want to check the box, **Invert Image**, next to the Preview window.

e. When you are ready to scan the next page, push "**Next Page**".

NOTE: You must wait a few seconds after each scan before selecting "**Next Page**". This allows your scanner to reset itself. Otherwise you may get an error message that "Scanner cannot be found".

f. Continue scanning more pages as described above until the last page of the group is scanned. When done with all pages, push **Finish**

NOTE: Do not PREVIEW when continuing. Simply push SCAN.

Scanning Outside of SmartScore

If your scanner does not respond to the **Scan** command, check that your scanner plug-in is installed by going to: **FILE > Scan Music.**

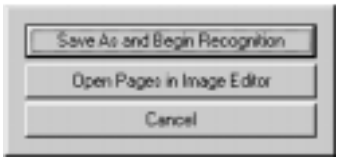
The only alternative to scanning with a plug-in is to first scan outside of SmartScore using your scanner's software or an alternative imaging software like Photoshop™ (go to File>Acquire). Then **Recognize** the saved images in SmartScore.

If you are using your scanner's scanning software, follow the following guides for scanning music:

- Place music in the scanner as squarely as possible.
- Scan in Black & White (Line Art, 1 bit or OCR) not color or gray.
- Scan between 350-400 dpi for average printed music.
- Save each scanned page as a compressed TIFF file using a unique filename for each page... e.g. Page1.tif, Page2.tif, etc.

Recognition: Saving and Selecting Image Files

After scanning the pages of your score, you will be given the choice of opening the scanned images in the Image Editor or to begin Recognition.



Post -scan navigation window

To begin recognition of the music you have just scanned,

- Push the **Save As and Begin Recognition** button

NOTE: Normally, you will not need to open scanned pages in the Image Editor. Use it for such things as rotating an image 90 degrees, Correcting Skew manually or for enhancing such things as system brackets.

Saving the Image File

a. The Save As window will open. Change the destination folder, if necessary, and type a name you want to give to the image file.

NOTE: For Macs, it is not necessary to give an extension (such as.TIF) to the saved image. Simply give it a familiar name. The SmartScore file created after Recognition will assume the same name.

NOTE: In the SmartScore scanning interface, all scanned pages are saved as a single, multiple-page TIF file. It is not necessary to scan and save each page separately.

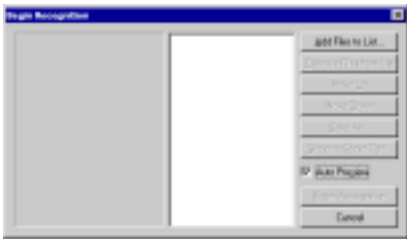
Rearranging the File List

You can rearrange the order of scanned pages. For example, if you scan more than 10 pages, may notice Page10 is listed before Page2; or if you scanned pages out of order.

a. Click on any page and hit Move Up or Move Down to reposition. Hitting Remove from List will cause that page to be skipped during Recognition.

Recognition of pre-scanned images,

a. Push the Recognize button in the Navigator or select Scan from the Main Toolbar.



Begin Recognition / File Selection window

b. Pop open a folder containing pre-scanned images and drag the image(s) you want recognized to the selected files list of the Begin Recognition window.

NOTE: You may also use Finder to locate image files by selecting **Add to List**.

c. To begin recognition of a page group, select **Begin Recognition**.

Recombining multiple scan files (Page Groups)

If one page of a scanned group is incorrectly scanned or is missing altogether from a multi-page image file (Page group), you may reselect individual pages to form a new page group.

a. Drag the original multi-page file to the selected files list of the Begin Recognition window.

b. Highlight a page to remove and push **Remove from List**.

c. To add a replacement page to the original page group, drag the page(s) to the selected files list.

d. Reorder pages as necessary and push **Save As** to save the

new page group.

NOTE: It is necessary to select Save As before selecting **Begin Recognition**. if a page group has been rearranged. Otherwise, changes to the page group will be lost.

Recognition and Recognition Accuracy

NOTE: If recognition accuracy is poorer than expected, examine the file in the Image Editor. Zoom in and determine the following:

- Refer to Scanner Settings.
- If objects lack detail, rescan with increased resolution.
- If objects such as note stems and staff lines are broken or lack thickness, rescan with increased darkness.
- If stafflines or systems are missing see Auto Cropping, Manual Crop and Scanning into SmartScore's interface.
- If the image of music appears crooked, you may correct it manually in the Image Editor. See Correcting Skew.

Editing an Image file

To open an image file (.TIF,.BMP, .PCX, etc.),

a. Choose Open (Command + O) from the File menu OR press the Open button on the Navigator.

b. Select Image files from the Files of Type pull-down menu.

c. Highlight an image file from the listed saved files. Press Open.

Zoom

To Zoom in and out click the Zoom Tool in the Main toolbar (**Command + Q**). Left-click will increase the scale of your view (Zoom In), while right-click will decrease the scale of your view (Zoom Out).

Page

To view a different page of an image file, go to the View menu and select Next Page/ Previous Page OR use the paging buttons located in the Image Toolbar.

Correcting Skew

To correct the skew of an image file, select Line Draw icon. Then select Deskew from the Edit menu.

Click, hold and drag a deskew line along a stave. Release the left mouse button and image straightens along the deskew line.

Crop

To crop an image file by trimming unwanted portions of your image from outside a marked frame, go to the Edit menu and choose the Selection option OR press the Select button in the Image Toolbar.

Click, hold and drag a box around the area to be marked off. Release the left mouse button to set the box.

To resize the marked off area, move your mouse cursor over a boundary line, Click, hold and drag the boundary to any position.

To crop the selected area, select Crop from the Edit menu OR press the Crop button in the Image Toolbar. The resulting image will be only the area inside the marked frame.

Rotate

To rotate an image file (landscaped scores), go to the Edit menu and highlight Rotate OR press one of the Rotate buttons in the Image Toolbar.

- Rotate the image 90 degrees to the **Left**
- Rotate the image 90 degrees to the **Right**
- Select **Any** degree of rotation for the image file.
- Check the **Clip Image Mode** to maintain the original page size and orientation of the image file. Part of the image may be cut off.

- **Expand Image Mode** changes the page size to include the entire image.

Transparent Background

To Cut or Copy the marked off area of an image file with a transparent background, highlight Selection Mode from the Edit menu and select Transparent.

Invert

If the image you open in SmartScore is white-on-black (instead of the normal black-on-white), then you should reverse the image output in your scanning software. SmartScore defaults to 0=white polarity.

Drawing Tools

- **Paint Brush**

To draw free hand lines in your image file, select Brush from the Edit menu OR press the Brush button in the Image Toolbar. Click, hold and drag to paint.

- **Lines**

To draw straight lines in your image file, select Line from the Edit menu OR press the Line button in the Image Toolbar. Click, hold and drag to create a straight line. Release the left mouse button to place the line.

- **Pen Options**

- Color

To choose the color used when drawing, highlight Pen Color from the Edit menu and choose Black or White.

- Width

To change the width of lines when drawing, select a new size from the Width pull-down menu in the Image Toolbar.

Cut / Copy and Paste

- **Cut**

To Cut a marked off area from the score and place them on the clipboard, left-click and drag a box with the Select Tool . Go to the Edit Menu and select Cut (**Command + X**).

- **Copy**

To Copy a marked off area to the clipboard without removing it from the score, left-click and drag a box with the Select Symbols/ Area Tool. Go to the Edit Menu and select Copy (**Command + C**).

- **Paste**

To Paste the contents of the clipboard into an image file, select Paste (**Command + V**) from the Edit menu. Click, hold and the drag the contents of the clipboard anywhere in the image file. To drop the clipboard contents into position release the left mouse button. To Paste the clipboard contents click outside the marked off area.

Quick Copy and Paste

To quickly copy and paste any section of an image file, mark off an area with the Select Tool . Click and drag the marked off area anywhere in the image file. To position the marked off area release the left mouse button. To Paste the marked off area, click anywhere outside the box.

Scanning Score Parts

SmartScore can process both kinds of score types; Ensemble and part. Ensemble scores have grouped staves representing two or more instruments (or hands) playing simultaneously. Part scores are sets of pages where each set represents a single instrument. In an orchestra, the instrumentalists read from score parts and the conductor reads from an Ensemble score. For more information on score types, see Score Formats and Scanning Score Parts on how to scan them.

NOTE: SmartScore will create part scores automatically by appending newly recognized files to any open ENF files. If you have open ENF files that you do not want to append to the newly recognized score to open ENF files, close them first.

Scanning score parts will be similar to scanning Ensemble scores. The only difference will be to group pre-scanned sets of music into "Score Parts".

a. Scan each set of parts and save each with a unique filename such as "Flute Part" and "Guitar Part".

b. Highlight selected page scans by left-clicking on the saved names until all the pages belonging to the first part are highlighted.

c. Push **Group to Part**. This action groups all selected pages into one Score Part.

➢ When all score parts are grouped, press **Begin Recognition** to start processing. Each part will be compiled and identified as discrete score parts when the ENF document is created.

ENF Editing

NOTE: Refer to the Mac Quick Keys chart inserted in the SmartScore box.

Creating a New ENF Score

To create an empty ENF score using one of the 13 basic templates

a. Push the Score button on the Navigator or select New > New ENF under the File menu or (Command + "N"). The New SmartScore Document window will open.

b. Type in a **Title** for the new score.

c. Add the Composer's name for the first page score header.

d. Press the **Page Setup** button to change the basic page layout of your score. See Page Set-up for details.

- **Tempo** will set the metronome for display in ENF and for playback.

Uncheck the Insert Clef Signs to create an ENF document without clefs.

NOTE: **Settings** are only available for adjustment when creating a *Custom* Score.

Using Built-in Templates

SmartScore has 13 preset templates including basic piano, piano/vocal, several chorale formats, quartets and a 16-instrument orchestra format.

To select a preset score template:

- Go to the **Score** pull-down menu and select a preset **System Type**.

Custom Scores

To create a Custom Score:

a. Select *Custom* in the System Type in Score pull-down menu.

b. Use the **Settings** options to define your Custom score structure.

c. **Staves per System** is used to determine the number of staves that will appear in each system.

d. Set the **Number of Systems** the new ENF document will have per page.

- The **Stave Spacing** sets a uniform distance between each staff within a system.
- **System Spacing** determines the distance between the bottom of one system to the top of the next system.
- Apply a uniform **Stave Size** to each stave of your score.

Out of Scanning and Recognition

To create an ENF file from scanned images of printed sheet music,

a. Push the Recognition button on the Navigator or select Recognition under the File menu. The Begin Recognition window will open. Press the Add Files to List button. Browse through your directories and select any scanned image file(s) for Recognition.

b. Press the **Begin Recognition** button to start SmartScore's recognition process.

c. After Recognition is complete, a Save As window will open. Save your new ENF file.

NOTE: For more detailed information on the recognition process, see Out of Scanning and Recognition.

Active Staffline

In SmartScore, only one staff can be edited at a time. The active staff is the staff in which editing is allowed. The active staff can be highlighted or not. If highlighted, all other (inactive) staves will be grayed out.

To allow every staff to display in color or in black (see Color Mode),

- go to the **Options** menu and uncheck **Show Active Staff**.

TIP: Move the cursor to a different staff to make it Active. Hold down the **Control** (**Ctrl**) key to maintain the Active staff for extended score editing.

NOTE: Staff colors may be changed depending on whether the *color base* is **Voice** or **Part**. See Color Mode.

Zoom

To Zoom in and out,

- Click the Zoom Tool in the Main toolbar (**Command + Q**).
- Left-click will increase the scale of your view (Zoom In), while right-click will decrease the scale of your view (Zoom Out).

Go to…

You can quickly jump to any page, measure, or score part of your ENF file during editing.

To open the Go to… window

a. Choose the View menu and select Go to Page (Command + G).

b. Select whether you want to jump to a particular Page, Measure, or Score Part.

c. Determine which Page, Measure, or Part you want to go to.

d. Checking the **Open Target in New View** box will open a new ENF at the targeted Page, Measure, or Score Part.

Paging

To view a different page of an ENF document,

- Go to the View menu and select Next Page/ Previous Page
- OR use the paging buttons located in the Image Toolbar.

Measure Numbers

There are several options for displaying measure numbers in an ENF file. Under the **Options** menu, highlight Measure Numbers.

- Selecting **None** removes all measure numbers from the ENF file.
- Selecting **Every Staff** displays a measure number for the first measure of each system only.
- Selecting **Every Measure** displays a measure number at each Barline .

Part Names

To display the part name for each staffline,

a. Go to the Options menu and select Show Part Names.

b. Selecting Abbreviations displays Part Names in the first system

and the Part Abbreviation in subsequent systems.

NOTE: For information on setting and modifying Part Names, see Instrument Templates.

c. Selecting Show Part Names and Numbers displays Part Names in the first system and the Part Numbers in subsequent systems.

d. Selecting Do Not Show removes all Part Names and labelling from the ENF display.

Tiling

SmartScore allows for multiple ENF and MIDI windows to be open at the same time.

To display every open windows for simultaneous viewing

➢ Press the Tile button on the Navigator, the Tile button in the Main Toolbar, or go to the Window menu and select Tile.

Colors and Color Modes

SmartScore uses 2 base modes for visualizing your music as well as for controlling how MIDI data is handled. Each mode results in different characteristics of how notes are displayed and how MIDI channels are divided.

NOTE: Changing the Color Mode can be done at any time while an ENF window is open and active.

TIP: When Color Mode = Voice, a discrete MIDI channel for each voice of each staff is created as well as displaying a different color for each Voice. For simplicity, the default setting is **Part** > Black.

Each mode employs a different color display depending on whether you want the smallest subdivision of the ENF document to be Voice-based or **part**-based: Part is staff-based and more general. Voice is Voiceline-based and more detailed. Color Mode **> By Voice** assigns one of 4 colors per staff to each Voiceline. **By Pa**rt

has two different options. Color assigns one color per part (per staff) and Black displays all parts in black.

To select or change the color base for an open ENF score

➢ Go to **Options > Color Mode**

- **By Part**

Each part of your score is displayed in a separate color or in black. Color is particularly helpful in orchestral scores; for keeping "visual track" of instrumental parts. When base color = Part, each staff is assigned a discrete MIDI channel. The default colors can be changed. See **Define > Part Color** below.

- **By Voice**

In this mode, each voice is displayed in a different color, with up to 4 color voices per staff. Voice-1 = black, Voice-2 = red, Voice-3 = green, and Voice-4 = blue. Each voice can be assigned unique MIDI parameters including instrument, channel, panning, etc. Instrument Templates for more about assigning MIDI parameters and see Out of Scanning and Recognition about converting music from the ENF environment into the MIDI sequencing environment.

NOTE: Each Voiceline in a given measure *should be* completely accounted for in this way: The sum of all its note and rest durations should equal the current time signature. Very often with printed sheet music, the above rule is not followed either because of oversight or outright defiance of the rule. SmartScore requires voicelines to be properly filled in if playback is to sound correct.

TIP: If measures in the original music contain incomplete Voiceline, add rests in the appropriate places to "fill-in" voicelines until the total of note and rest durations equal the time signature.

To control other color options,

➢ Go to the **Main Menu > Options > Define > Part Colo**r

- Change the color of how each Part and associated MIDI track appear.

- **Background Color**

To change the background color of the TIFF or ENF window,

- Go to the Options menu and select **Options** > **Color** > **Define** > **Background** and choose *Image Color* or *ENF Color*.

ENF Editing Modes

You can select any editing mode from the your computer keyboard (See Quick Key Card) or from the SmartScore Toolbar.

Insert and Change Modes

Press the "C" key of your computer keyboard to toggle between the **Insert** and **Change** modes. Notice how this changes the appearance of the cursor. In the **Insert** mode, the cursor becomes the selected object. In the **Change** mode, the cursor becomes an arrow with the selected object next to it. The Change and Insert icons in the Toolbar alternate as well.

- **Insert** mode allows you to insert objects while clicking anywhere in the active staffline.
- **Change** mode allows you to change existing objects to the selected notation object.

Delete by Group/ Delete Any Modes

Press the "X" key of your computer keyboard to toggle between the **Delete by Group and Delete Any** modes.

In the **Delete by Group mode**, the cursor becomes an arrow with the selected object next to it in grey. In the **Delete Any** mode the cursor become an arrow with an "X" next to it.

- **Delete by Group** mode removes any object that is selected from this Tool Palette.
- **Delete Any** mode removes any notation object that is clicked with the mouse.

Tool Palettes

The notation objects used in SmartScore are selected from one of several Tool Palettes. The “Notes” palette is always open in SmartScore.

TIP: To quickly select any available Tool Palette, Hold the “alt” key while clicking on any open Tool Palette. A side menu will open listing all the available Tool Palettes. This works only when Palette mode is in the *Recycle* (default) mode.

- **Show All** opens all 10 SmartScore Tool Palettes.
- **Hide All** removes all Tool Palettes from view.
- **Reset** (**F1**) returns the SmartScore display to its default open palettes: Notes and Rests.
- **Recycle** Right-clicking on any open palette will open all palettes

You may also select these options from **View > Palettes** in the main menu.

Quick Keys

- **QuickSelect**

Hold the Control (**Ctrl**) key down and click on any object in the ENF window. Notice the cursor becomes that object and is active for editing.

TIP: Usually the fastest way to select any object is to QuickSelect it. **Ctrl + Click** makes the cursor inherit all of the object’s attributes.

TIP: Refer to the QuickKeys map for a graphic depiction of all SmartScore keyboard shortcut keys.

- **Tool Palettes**

Use the Function Keys (**F2-F9**) along the top of your computer keyboard to selected any of the available Tool Palettes. **F1** will reset the SmartScore display to the default open Tool Palettes (Notes and Rests).

- **Dot of Prolongation**

Hit the “D” key. This toggles between **Insert** a dot and **Delete** a dot modes. Notice how the cursor alternates between a solid insert dot and grayed-out delete dot.

- **Ties**

Hit the “V” key. This toggles you between the solid **Insert** tie and grayed-out **Delete** tie modes.

- **Beam Direction**

With any single flagged note selected, hit the “A” key. This toggles between Begin beam, Middle beam and End beam note configurations.

- **Flags and Beams**

The “F” key toggles between flagged and beamed notes for **Inserting or Changing** notes.

- **Stem Direction**

In **Insert** mode, toggle the “S” key to change the default note stem direction.

To place a note with a stem in the opposite direction of the cursor,

- Hold the “alt” key and click while in **Insert** mode. In **Change** mode, holding the “alt” key and click on a current note reverses its stem direction

TIP: Use the Select Tool select several notes at one time. Press the “S” key to quickly reverse the stem direction of every selected note.

- **Note Values**

To quickly select note duration values,

- Use the keyboard quickkeys number: **1** = whole note, **2** = half note, **3** = quarter note, etc.
- Hold down the **SHIFT** key and a number key to select an

Accidental: 1 = flat, 2 = natural, and 3 = sharp.

- Press the “R” key to automatically select a quarter rest for editing. “Shift” **+ “**R” will select an eighth rest. The “Rests” palette will open as the secondary palette.

- **Barline**

Hit the “I” key to select a standard barline for editing. The “Barlines and Repeats” palette will open as the secondary palette.

- **Dynamics**

- Press the “P” key to select *p* (piano) dynamic marking.
- Hold down “Shift” and “**,**” to select the crescendo hairpin.
- Hold down “Shift” and “**.**” to select the decrescendo hairpin.

The “Dynamics” palette will open as the secondary palette.

- **Tuplets**

The “T” key activates the Tuplet Tool. Triplets are selected as the default. Drag the mouse to box the desired notes as a tuplet. The “Rhythmic Groups” palette will open as the secondary palette.

- **Select Tool (Symbols or Area)**

Hit the “O” key (or the Select icon in the ENF Menu icon toolbar) to activate the Select Tool for Cut / Copy and Paste operations.

- **Unify Signatures / Clefs**

Press the “U” key to automatically open the Unify Signatures and Clefs window. This will unify Key and Time signatures or Clefs throughout the entire score.

- **Vertical Alignment**

Music often contains notes which are not vertically aligned, but which ought to sound simultaneously. Such notes are horizontally offset in order to better show multiple Voices in close proximity. Applying Vertical Alignment to offset notes will cause grouped notes to play simultaneously.

To Vertically Align notes in a score,

- Use the Select Tool to highlight the notes. Press the “Y” key to group the selected notes into a single vertical event.

TIP: You can quickly group and vertically align notes using a simple combination of the “O” key (Select tool) and then using the “Y” key (Apply Vertical Event). This will be particularly helpful in fixing solo guitar music which often contain such offsets.

- **Split Voice**

To separate two notes of a chord,

- Use the Select Tool to highlight the notes. Press the “H” key to separate the selected notes into two separate voices.

- **Delete Multiple Ties**

To delete all ties from a selected area,

- Use the Select Tool to highlight a section of the score. Press the “G” key to remove the unwanted ties.

- Beam Flagged Notes*

Flagged notes can be transformed into a single beamed sequence. Flagged notes do not have to be of the same rhythmic value to be grouped into a beamed group. Use the Select Tool to select the flagged notes. Press the “B” key to group the selected notes into one beamed sequence.

Editing Notes

- **Inserting, Changing and Deleting**

To insert a note anywhere in the active staffline,

a. Toggle the “C” key to activate the **Insert** mode.
b. Select any note from the “Notes” palette.
c. Click anywhere in the active staff to drop.

To change the rhythmic value of an existing note,

a. Toggle the “C” key to the **Change** mode.

b. Select any note value from the “Notes” palette.

c. Click on the notehead of any existing note to change.

TIP: Use QuickSelect (**Cntl + Click**) to quickly select any existing note. The cursor will inherit the value of the selected note.

To Delete any note,

a. Toggle the “X” key to Delete Any mode

b. Click on any note.

- **Stem Direction**

Default stem direction of an inserted note is determined by its vertical position on the staff. Stem direction of inserted notes automatically changes when the cursor crosses the middle staffline.

To reverse the stem direction while inserting a note,

➢ Toggle the “S” key to change the default stem direction. Result: stems up above the middle line, stems down below the middle line.

or

➢ Inserting a note while holding the “alt” key will reverse the default stem direction:

To change the stem direction of an existing note,

a. Toggle the “C” key to activate the Change mode

b. Hold the “alt” key while clicking on any given notehead. The stem direction will change.

NOTE: Stem direction is essential for Voice separation. Voice-1 should have *stems up* and Voice-2 should have *stems down*.

To change the stem direction of several notes at once,

a. Toggle the “O” key to activate the Select Tool

b. Left-click and drag a box around any series of notes.

c. Press the “S” key to reverse the stem direction of the highlighted notes

- **Pitch**

To change the pitch of any note,

- hold down the **“**Shift**”** key, left-click and drag the note.

To change the pitch of several notes at once,

- Toggle the “O” key to activate the Select Tool
- Left-click and drag a box around any series of notes.
- Hold down the “Shift” key, left-click and drag the notes

NOTE: You will not be able to slide notes left to right. To reposition objects horizontally, you will need to delete and re-insert them.

- **Beaming Notes**

With any flagged note selected, choose one of the beam direction buttons (**A**) from the “Notes” palette. Click anywhere in the active staff to insert the beamed note. Beamed notes automatically connect to one another.

Use the End beamed note to “close” a beamed group.

- **Grace Notes**

While in **Insert** mode, select a rhythmic value and press the grace note button in the “Notes” palette. Click before any note in the active staff to insert a grace note. ENF playback will insert the grace note and truncate the duration of the following note.

- **Chords (Cluster Tool)**

To activate the Cluster Tool

a. press the Cluster Tool button (Z) in the “Notes” palette.

b. While in the **Insert** mode, click above or below an existing note to **Insert** a new note along the stem. The new note inherits the same duration of the original note.

To Delete a note from a chord,

➢ press the “**X**” key with the Cluster Tool active and click on any note to remove it from the chord.

- **Dots of Prolongation**

➢ While in the **Insert** mode, select a single (**D**) or double dot from the “Notes” palette. Click on any note head to attach a dot of prolongation.

*To **Delete** a dot of prolongation, press the “**D**” key again and click the notehead.*

Editing Voices

Voices appear in ENF as all black notes or as black, red, blue and green notes depending on which Color Mode is selected.

- **Voice Assignment**

When Note Color is displayed **By Voice,** the voice assignment of a given note can be changed. See Polyphony and Voiceline for descriptions. For more details on voice/part colors, see Color Mode.

➢ Press the **Voice Line** button located in the SmartScore Toolbar and select a voice assignment. Click on any notehead or rest to assign it to the selected voice.

- **Voice Splitting**

To separate a two note cluster to two separate voices,

a. Toggle the “O” key to activate the Select Tool

b. Left-click and drag a box around any two note cluster

c. Press the “H” key to separate the clustered notes as individual voices (stems-up and stems-down

Rests

To add a rest anywhere in the active staffline,

- Toggle the “**C**” key to the **Insert** mode
- Select any rest from the “Rests” palette.

To Insert a multi-measure rest,

- Select the “n-measures” object from the “Rests” palette.
- Select the number of empty measures
- Click anywhere in the active staffline**.**

TIP: To adjust vertical placement of a rest, hold the **SHIFT** key down, left-click and drag the rest up or down.

To Change the rhythmic value of a rest,

- Select a rest from the “Rests” palette.
- Click on an existing rest.

To Delete a rest,

- Toggle the “**X**” key to **Delete Any** mode.
- Click on the rest.

Accidentals and Articulations

While in the **Insert** mode, select any accidental or note specific articulation (staccato, accents, etc.) from the “Notes” or “Articulations” palette. Click the notehead that is to receive the marking.

A courtesy accidental is one placed inside parenthesis and acts as a “reminder” but does not change the pitch of the note.

To Insert a courtesy accidental,

- press the parenthesis button when any accidental is selected before clicking a notehead.

*To **Change** an accidental or note specific articulation,*

- select a accidental or articulation from the "Notes" or "Articulations" palette and click on the notehead.

*To **Delete** an accidental or note specific articulation,*

- press the "X" key and click on the notehead.

Barline

While in the **Insert** mode select any barline from the "Barlines & Repeats" palette. Click anyway in the active staffline to **Insert** the barline.

To Change a barline,

- select a barline from the "Barlines" palette and click on a barline.

Press the "**X**" key and click on the barline to delete it.

Repeats and Multiple Endings

- **Repeats**

While in the **Insert** mode, select any repeat from the "Barlines & Repeats" palette and click anyway in the score to place the repeat barline.

While in the **Change** mode, click on any existing barline to **Change** it to the selected repeat barline.

- **Multiple Endings**

a. To create a multiple ending, select the Start Alternate Ending button from the "Barlines & Repeats" palette. While in the Change mode, click the first ending barline. Change any barline into a repeat barline for the end of the first ending

NOTE: SmartScore will automatically switch to an End Alternate Ending barline (a repeat) for the first ending.

b. To create a second or third ending, select the Start Alternate Ending button and click the barline of the first measure of the second ending. In many cases, this is the last barline of the first

ending. **Change** a barline into an End Alternate Ending barline

c. Repeat these steps as necessary.

- **Starting at the Segno**

To begin a repeat at the Segno

a. Select *d.s.* (Dal Segno- from segno) from the “Barlines & Repeats” palette.

b. **Insert** the *d.s.* marking in any measure.

c. Select segno from the “Barlines & Repeats” palette.

d. **Insert** the segno into the measure that begins the repeated section.

- **Ending at the Segno**

To repeat from the beginning of the score and end at a segno

a. Select *d.c. al segno* (Da Capo al segno -from the beginning to the Segno) from the “Barlines & Repeats” palette.

b. **Insert** the *d.c. al segno* marking into any measure.

c. Select segno from the “Barlines & Repeats” palette.

d. **Insert** the segno into the measure that ends the repeated section.

- **Fine**

To repeat from the beginning of the score and end at a fine;

- Select *d.c. al fine* (Da Capo al fine -from the beginning to the fine) from the “Barlines & Repeats” palette.
- **Insert** *d.c. al fine* into any measure. Select *fine* from the “Barlines & Repeats” palette.
- **Insert** the *fine* into the final measure of the score.

- **From a Segno**

To repeat from a segno and end at a fine,;

- Select *d.s. al fine* (Da Segno al fine -from the segno to the fine) from the "Barlines & Repeats" palette.
- **Insert** *d.s. al fine* into any measure. Select segno and **Insert** it into any measure.
- Select *fine* and **Insert** it into the final measure of the score.

Ties

While in the **Insert** mode, Press the "V" key and click the first note of the pair to Insert a tie with a downward arc. To insert a tie with an upward arc, hold down the "alt" key while clicking. The "group-tie" (double tie) will tie noteheads of chords together.

To delete a tie, press the "V" key again and click the first note of the pair.

Slurs and Tuplets

While in the **Insert** mode, select a legato from the "Articulations" palette or a tuplet (**T**) from the "Rhythmic Groups" palette.

- Click and drag down to insert the tuplet or legato above the notes.
- Click and drag up to insert the tuplet or legato below the notes.
- Press the "X" key and click on the tuplet to delete it.

Dynamics and Tempo Markings

To Insert a Dynamic or Tempo marking:

- While in the **Insert** mode, select a dynamic or tempo marking from the "Dynamics" or "Tempo" palette. Click anywhere in the Active staff.

To change a dynamic or tempo marking,

- select a marking from the "Dynamics" or "Tempo" palette and click the existing marking.

To delete a dynamic or tempo marking,

- press the “X” key and click on the marking.

Crescendos, Decrescendos, and Trills

To create a crescendo, decrescendo or trill marking,

- Toggle the “C” key to the **Insert** mode
- Select a dynamic hairpin or trill from the “Dynamics” or “Articulations” palette.
- Click and drag a box to determine the length and height of the crescendo/decrescendo.

To delete a dynamic hairpin or trill

- Press the “X” key and click on the notation object.

To insert a trill,

- Select a trill type from the Articulations palette.
- Click and drag a box to determine the length of the trill

Clefs

While in the **Insert** mode, select a clef from the “Clefs” palette. Click anywhere in the active staff to insert the new clef.

- To change a clef, select a clef from the “Clefs” palette and click the existing clef.
- To delete a clef, press the “X” key and click on the clef.
- Select Unify Signatures and Clefs (**U**) from the Options menu. See Unify Clefs on how to update clefs throughout the remaining systems.

Time and Key Signatures

Select a time or key signature from the “Signatures” palette. In **Insert** mode, click in the region following the clef to insert a new signature.

To change an existing key to time signature to another one,

a. select the desired signature from the tool palette.

b. Hit the “C” key to toggle to the **Change** mode.

c. Click on the signature to be change.

TIP: Select Unify Key and Time (**U**) after recognition or after changing or inserting a new key signature. See Unify Signatures and Clefs for more details on this function.

To insert a new key or time signature,

➢ Click immediately following any Barline .

Changes of key and time signatures that begin on a new line MUST be indicated at the END of the previous line. This conforms to standard musical notation practices.

To Insert a new key or time signature that begins a new line,

a. Insert the new key or time signature at the *end* of the *previous* system in the topmost staff. Ensure the following conditions are met:

b. A bar line must precede the new signature.

c. There must be no bar line after the new signature.

d. The new signature must reside ENTIRELY within the 5 horizontal stafflines (at least ¼” inside the end of the line).

To change a signature,

a. Select a signature from the “Signatures” palette

b. Press the “C” key to toggle to the **Change** mode.

c. Click on an existing signature.

To delete a signature

➢ Press the “X” key and click on the signature.

Unify Signatures and Clefs

To update all signatures and clefs based on a selected staff or system,

➢ Press the **Unify** button on the Navigator, the **Unify Signatures** button in the SmartScore Toolbar or go to Options menu (**U**) and select **Unify Signatures**.

NOTE: Use Unify to update the ENF file after recognition or after a clef, key or time signatures has been **Insert**ed or **Change**d

Check the **Insert Empty Rests** box to Insert a whole rest into any empty measures.

Unify Key and Time Signatures

- **Based on Topmost staffline**

Updates all key and time signatures to that of the first staffline, starting with the first measure of the first page.

- **Based on First System**

Updates all key and time signatures based upon the first measure of each staffline start with the first system of the first page. Any changes in key or time signatures update the score as they are encountered.

Unify Clefs

- **Based on First Measure of Active System**

Updates all clefs based upon the first measure of each staff in the active system. Overwrites any change of clef found.

- **Parse Every staffline**

Updates each staffline individually. Any change of clef encountered updates that staffline until another change of clef is encountered.

Instrument Templates

Each staffline in an ENF document is assigned an Instrument Template whether created out of Recognition or from scratch. Instrument Templates contain basic MIDI parameters for playback and default Part Name assignment.

To modify an existing template or add a new template,

a. Hit (Command + T) or go to the Edit menu

b. Select Instrument Templates.

c. Use the **Name** pull-down menu to select one of twenty-three preset Instrument Templates or type in a unique name for a template.

The **Instrument** pull-down menu lists all General MIDI Instrument Assignments.

d. Assign a MIDI Channel for each Template.

e. Select MIDI **Port** A or B for a Template.

f. Set the playback **Transposition** for each Template.

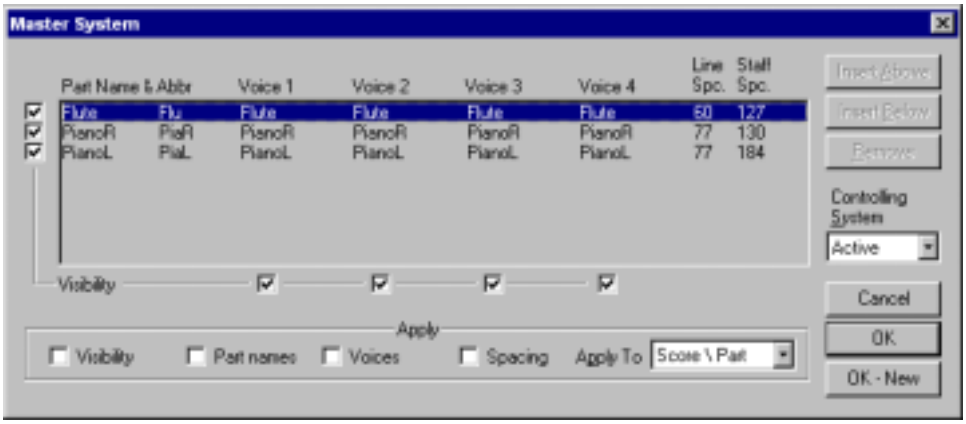
g. Push the **Add** button to create a new Instrument Template.

The Abbreviation listed will be displayed in the score when Options > Part Names > Abbreviations is selected

Master System

The Master System controls system and staffline spacing, part and voice visibility and MIDI instrument assignments. The largest system of an ENF score (the system with the most parts) is the basis for the Master System. An important component of the Master System is Logical Part Linking for reassociating systems that collapse and/or expand in the ENF display. Changes to any or all of these features can be applied to the currently active system, to all subsequent systems or to the entire score.

Parts run vertically along the left-hand side of the Master System window while Voices run horizontally along the top of the Master



System window.

Master System

To open the Master System window,

- Press (**Command + M**) or go to the **Edit** menu and select **Master System**.

The **Controlling System** is the system whose values are displayed in the current Master System window. The choices are

- **Master** (the **ENF** system which contains the most stafflines)
- **Active** (the **ENF** system in which the cursor is located)

TIP: To verify which system is active, turn on **Options > Show Active Staff**.

Active and Master systems may have completely different values. Be certain changes you apply are derived from the correct controlling system.

The **Apply To** selection applies changes made to Part and Voice Visibility, Part Names, Voice assignment, and Staff and Line Spacing to:

- **System** (The currently active system)
- **System+** (The currently active system and all subsequent systems)
- **Score/Part** (The entire score or Score Part)
- **Master System** (Applies changed values to the Master System)

To apply changes,

- **OK** to apply changes to the current **ENF** document
- **OK-New** to apply changes in a *new* ENF document without affecting the original document.

TIP: Select correct voice, check Voices and push **OK-New** to selectively extract Voices from a score.

Part Names

Part Names are inherited from Instrument Templates but they can be changed in the Master System.

To modify a Part Name,

a. Left-click in the name column.

b. Type a new name.

OR

c. Select New Part from the Part Name pull-down menu

d. Use the Instrument Template window to create a new template for the selected part. See Instrument Templates.

To create or remove parts,

a. Choose Master System as the Controlling System.

b. Click on to highlight a Part.

c. Press **Insert Above to** add a Part above the selected Part.

d. Press **Insert Below** adds a Part below the selected Part.

e. Press **Remove** to delete the selected Part.

Collapsing and Expanding Systems

Many scores have parts that do not play for long periods of time. Rather than string line after line of empty Measures together for each silent part, most scores “collapse” systems so they only show actively playing parts. Similarly, instruments may appear briefly or split into two or more parts themselves causing systems to “expand”.

Visibility

Parts or voices can have their visibility “removed” from an active system, subsequent systems or from the entire score by checking or unchecking the visibility boxes assigned to each.

- **Part visibility**

To change Part Visibility,

a. Check or uncheck the Visibility box next to a Part Name to remove or restore the visibility of that Part

b. Select a specific scope in the **Apply To** window).

- **Voice visibility**

To change Voice Visibility,

a. Highlight a visible part by clicking on its Part Name.

b. Check or uncheck the Visibility box below the desired voice

c. Apply to the specified scope (Apply To window).

Voice Assignments

Voice assignments are inherited from Parts Names as set in the Instrument Templates window. Each Part inherits an instrument abbreviation linked to the MIDI instrument assigned in Instrument Templates.

To change Voices,

➢ select an alternative in each of the pull-down menus.

Spacing

- **Line**

Line spacing is the distance between stafflines of the listed Part (in pixels).

To change line spacing,

➢ enter a new value and apply it to the currently active system, system+ or score.

- **Staff**

Staff Spacing is the distance between the staff of a listed Part and the Part immediately below it. To change line spacing, enter a new value and apply it to the currently active system, system+ or score.

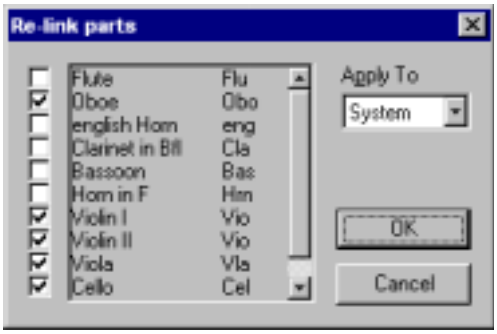
Bracketing

To add brackets to a score,

- go to the **Edit** menu and select **Bracketing.**
- Select the staves to bracket together by left-clicking and dragging in the **Part List** window.
- Choose a **Brace** (yellow)or **Grand Staff** (green)
- Use **Clear** to remove a bracket from the selected parts

Logical Part Linking

Each Part Name represents a direct link to a MIDI track. The number of Parts in the Master System will equal the number of tracks in the subsequent MIDI file.



Logical Part Re-linking

When the Controlling System = Active, the Part Visibility check boxes mark which Parts SmartScore assumes are being displayed in the active ENF system. This order may or may not be correct.

To change the part link of any active system,

a. Select Edit > Part Linking (Command + L)

b. Uncheck any incorrect Part Links

c. Check the actual Part Links

d. A New Part can be assigned from the Part Name pull-down menu

➢ Use the Instrument Template window to create a new template for the selected part. See Instrument Templates

To apply the part change,

➢ Select Apply To = System to change only the active system.

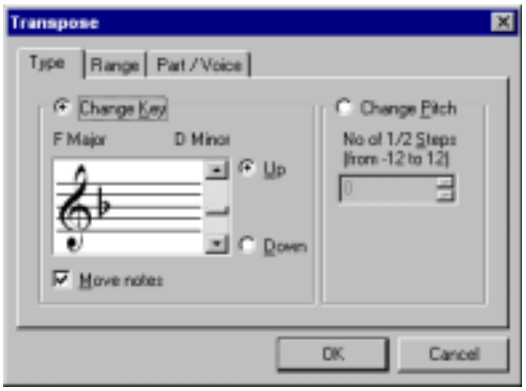
➢ Select Apply To = System+ to change the active system and all subsequent systems.

NOTE: The number of checked Part Links must be the same as the number of visible parts in the active system

Transposition

To Transpose all or part of your ENF file,

➢ press the “E” key or the Transpose button in the SmartScore Toolbar or go to the **Edit** menu and select **Transpose**.



Transpose Window

Transposition Type > Change Key

To change the key of the current ENF document,

a. Select a new key for the score using the Key Signature scroller.

b. Scroll up to select a key signature with sharps or scroll down to select a key signature with flats.

c. Choose to move the transposed notes **Up** or **Down**.

d. Uncheck the **Move Notes** box to leave the notes in their original positions.

Transposition Type > Change Pitch

Transpose the notes of your score without changing the key signature by selecting the number of half-steps to move each note. Pitches are moved by a uniform interval.

Range

Determine the scope of the transposition.

- **Entire Part**

Will transpose from Measure 1 through the entire score.

- **Selected Area (defined with the Select Tool)**

➢ **Range** of the Transposition by selecting the first and last measures to be transposed.

- **Part/ Voice**

NOTE: Transpositions are not limited to the entire score.

➢ Select **All Staves** to Transpose every part.

➢ Any Part can be individually Transposed without affecting the other Parts.

➢ Choose to Transpose every voice or an individual voice of a staff with the **Stave Voice** pull-down menu.

NOTE: Transposition accounts for any changes of key encountered in a score. For example: A duet for a flute and B-flat clarinet is written in the Concert Key of C Major. At Measure 10, the Concert Key changes to D Major. Upon Transposition of the clarinet part to the correct

written key(s), the clarinet part will display in D Major, with a change to E Major at the 10th Measure.

Cut / Copy and Paste

- **Cut**

To Cut the highlighted notes from the score and place them on the clipboard,

a. Select the Symbols / Area Tool (O) from the Toolbar.

b. Left-click and drag a box with the cursor.

c. Press **Command + X** or select **Cut** from the **Edit** menu.

- **Copy**

To Copy the highlighted notes to the clipboard without removing them from the score,

➢ left-click and drag a box with the Select Tool . Go to the Edit Menu and select Copy (**Command + C**).

- **Select Area**

To Copy an area of an ENF file for Pasting into another application (Microsoft™ Word®, Adobe™ Photoshop®, etc.),

➢ With the Select Tool , drag a box around the desired area. Select Edit > Copy (**Command + C**). The selected area is Copied to the clipboard and can be Pasted into another application.

- **Paste**

To Paste the contents of the clipboard into an ENF file,

➢ Select Paste (**Command + V**) from the Edit menu and click anywhere in the score. The contents of the clipboard will be added to the score without replacing the existing notes.

- **Paste Replace**

To Paste the contents of the clipboard into an ENF file in order in order to replace selected notes,

➢ Select Paste Replace (**Command + R**) from the Edit menu and click anywhere in the score.

TIP: Use Paste Replace to quickly correct a mis-recognized Measure that is identical to another measure in the score.

Score Header

To create or modify a Score Header for the first page of the ENF file,

a. Select Score Header from the Edit menu.

b. Type in the **Title** for the score.

c. Add the **Composer**'s name to score header.

To create a Part Name for a Part Score, see Score Formats.

Tempo Marking

To add a Metronome Marking to your score,

➢ select Tempo from the Edit menu.

Realtime Playback

To playback an ENF file,

a. Press the spacebar to Play.

b. Press again to Pause.

c. Press again to resume Play.

or go to Realtime in the Main Menu

a. Select Play.

b. Select **Stop**

c. **Rewind** resets playback to the beginning of the playback range.

Playback Console

To open the Playback Console for ENF playback control of MIDI instruments,

- Select Realtime > Console (**Command + 9**).
- **Play** button plays the active ENF file. Once playback has begun, the Play button becomes Pause. Pause will stop playback without rewinding to the beginning of the score.
- **Stop** button stops playback of the ENF file.
- **Rewind** button resets playback to the beginning of the playback range.
- **Record** button.

For details on MIDI Recording see MIDI Recording.

Adjustable Real-time Settings

- Scroll to any beat in the score using the Measure / Beat slider for playback.
- Adjust the overall or individual volume of playback with the **Volume** sliders.
- Use the **Port** pull-down menus to select the MIDI output Device.
- Adjust tempo with the **Tempo** slider.
- Change MIDI **Instrument** or **Channel** of any voice.
- the file globally or by individual voices.

NOTE: Transpose in the Playback Console is for playback only. To transpose notation, see Transpose.

- **Mute** a voice while all others continue to play or **Solo** a single voice for playback.
- Use **Pan** to create a stereo image.

Default resets all ENF parts to their original settings.

The **Close** Button will close the Playback Console.

Playback Range

To specify part of the score for playback,

a. select Playback Range from the Realtime menu.

b. Set the first Measure and last measure of the **Play Range.**

c. Mark **Play All** to play the entire score.

d. Check **Loop** to continually repeat the assigned Playback Range.

Editing Score Structures

Edit > Systems

- **Insert Above/ Below**

To Insert a new system to a score,

a. move the cursor to any system.

b. Hold down the Control (**Ctrl**) key to select this system as the active system.

c. Go to the Edit menu and choose System > Insert Above (Insert Below).

- **Delete**

To Delete a system from a score,

a. move the cursor to any system.

b. Hold down the Control (**Ctrl**) key to select this system as the active system.

c. Go to the Edit menu and choose System > Remove.

Edit > Staff

- **Insert**

To Insert a new stave to a system,

a. move the cursor to any staffline.

b. Hold down the Control (**Ctrl**) key to select this staffline as the active staffline.

c. Go to the Edit menu and choose Staff > Insert Above (Insert Below).

- **Delete**

*To **Delete** a stave from a system,*

a. move the cursor to any staffline.

b. Hold down the Control (**Ctrl**) key to select this staffline as the active staffline.

c. Go to the Edit menu and choose Staff > Remove

Edit > Parts

For a full definition of Parts, see Score Formats.

- **Insert**

To Insert a new score part to a score,

➢ go to any score part within the active ENF file. From the Edit menu choose Part > Insert Before (Insert After).

- **Delete**

To Delete a part from a score,

➢ go to any score part within the active ENF file. From the Edit menu choose Part > Remove.

File > Page Set-up

To adjust the page layout of an ENF document for printing,

- go to the File menu and select Page Set-up.

Select the **Type of Paper**: Letter (8.5 x 11 in.), European A4 (210 x 297mm) format or **Customize** the page size.

- **Orientation** of the score may be Portrait or Landscape.
- Margins may be adjusted manually.
- **Scope** pull-down menu applies Setup changes to current page, the entire score, or to the current part.

File > Printing

To Print the active ENF document,

- go to the File menu and select Print.

File > Save

- **Manual**

When you are finished editing the ENF file,

a. go to the File menu and select Save (Command + S). Your edited ENF file will now be saved.

b. Use File > Save As to save a selected file to directory other than the working directory or with a different name.

- **Auto Save**

The open ENF file is automatically saved in the directory C:\Windows\Temp as AUTOSAVE.ENF

To change the interval for Auto Save,

- go the Options menu and select Auto Save.

Automatically save the working ENF file

- **Every *n* minutes,** even if no editing takes place.
- **Every *n* actions** performed in SmartScore; i.e., Inserting, Changing, Deleting, etc.

- **What is First** the number of minutes passes or the number of actions performed.
- **Never** Auto Save the active ENF file.

MIDI Editing

Relationships between the ENF Notation Editor and the MIDI Editor

- **Parts and Voices to Channels and Tracks**

SmartScore is designed to map ENF parts and voices to selected MIDI tracks or MIDI channels depending on which Voice is selected in the ENF display. For more information on Parts and Voices, see table below.

Table 1: Parts and Voices to MIDI

Color Mode	MIDI Tracks	MIDI Channels
Part	Each Staff = One Track	Each Staff = One Channel
Voice	Each Staff = One Track	Each Voice = One Channel

- **Updating and refreshing playback and display**

SmartScore treats MIDI in two slightly different ways: 1)as *virtual playback* and 2)as *file data.* The ENF (notation) environment treats playback as *virtual* MIDI where as the MIDI editing environment treats it as *file* data. This allows for changes to be made in any MIDI view without affecting the original ENF notation representation or its playback. Using Tile, you can view associated ENF and MIDI View windows simultaneously.

Changes made in ENF will automatically update the MIDI view, but changes made in any MIDI window will NOT update ENF notation *display* until and unless “New ENF” is selected. Similarly, any changes made in MIDI View will NOT be applied to ENF *playback* unless **Refresh MIDI Playback** is activated. Please refer to the following table to clarify the relationship between ENF and MIDI views.

Table 2: ENF and MIDI View Relationships

ENF to MIDI	MIDI to ENF	In ENF View	In MIDI View
DISPLAY		PLAYBACK	
MIDI View is automatically updated	ENF View is NOT automatically updated	Directly from ENF	Directly from MIDI
TO REFRESH			
In ENF View: View > New MIDI View	In MIDI View: View > New ENF View	ENF Playback: View > New MIDI View	In MIDI View: Push "Refresh" icon (speaker)

Updating ENF display from a modified MIDI view (**View > New ENF View**) will recreate a new ENF document based ONLY on MIDI data; all notation information will be lost.

Opening the MIDI Editor

- **From an ENF document**

To create a MIDI file display from any open ENF document,

a. Press the MIDI View button of the Navigator
or the alternative is to go to
View > New MIDI View (Command + I) in the Main Menu

The New MIDI View Window will open.

b. Select the type of MIDI view desired, Track Overview, Piano Roll or Event List.

- **From an existing MIDI file**

a. In the File menu, select Open.

b. Select *MIDI* in the **Files of Type** pull-down menu.

c. Browse and select an existing MIDI file.

d. Press **OK**

NOTE: SmartScore accepts any Standard MIDI file (type 0 or 1).

- **By creating an Empty MIDI file**

To create an empty MIDI display go to the File menu,

➢ select New, and choose New MIDI.

MIDI Set-up

- **MIDI Devices**

To set the MIDI input and output devices;

a. Select MIDI Devices from the Options menu. The MIDI Devices window will open

b. Click on the **MIDI Input** device you will use for MIDI Recording new MIDI data.

c. Click on the **MIDI Output** device you wish to use for MIDI playback. The MIDI device window will display all installed MIDI device drivers.

d. Press **OK** to set the selected MIDI devices as the current SmartScore MIDI sources.

NOTE: If the desired device is not listed in the MIDI Devices window make sure the Device driver has been properly installed under Windows.

To change the MIDI settings for any MIDI instrument;

Select Instrument Settings under the Options menu. This will open the Instrument Settings window

The Instrument Settings window allows the user to change settings for any MIDI instrument.

b. Select the **MIDI Port** of the MIDI instrument you will be adjusting with the MIDI Port pull-down menu.

You can choose a specific Bank or all Banks from the selected MIDI Port.

c. Use the **Instrument** pull-down menu to select the type of MIDI Instrument (MT32, Roland GS, Yamaha XG, or Numeric).

d. Use the **Drum** pull-down menu to select the type of MIDI Instrument (No Drums, Roland GS Drums, Yamaha XG Drums, or Numeric).

Playback

- **Keyboard control**

a. The spacebar on your computer keyboard will toggle between *play* and *pause*.

b. Press the Spacebar again to pause playback.

c. Select Rewind (,) from the Realtime menu to return playback to the beginning of the MIDI file.

- **RealTime Menu > Play**

To begin playback from the beginning of the current MIDI file;

a. Select Play from the RealTime menu.

NOTE: Existing MIDI channels, instruments, voices, and transpositions of the original ENF or imported MIDI file will be maintained.

b. Select Stop from the Realtime menu to halt playback and automatically reset playback to the beginning of the MIDI file.

c. Select Rewind (,) from the Realtime menu to return playback to

the beginning of the MIDI file.

Playback Console

Selecting **Playback Console** (**Command + 9**) from the RealTime menu will open the Playback Console in any window. The Playback Console allows for playback and real-time editing of the active MIDI file.

Playback Console

- *Play* button initiates/ resumes playback of the active MIDI file. Once playback has begun, the Play button becomes Pause. Pause will stop playback without rewinding to the beginning of the score.
- *Stop* button stops playback/ recording of the MIDI file.
- *Rewind* button resets playback to the beginning of the playback range.
- Record Button activates the Record mode. Press Play to begin recording.

NOTE: Adjusting Playback Console Settings

- **General**
- Adjust global playback volume using the **Volume** slider.
- Adjust Channel volumes using individual **Volume** sliders.
- Use **Pan** to adjust stereo balance for each channel.
- **Default** resets all MIDI tracks to their original settings.
- The **Close** Button will close the Playback Console.

- **Mute** any voice while all others continue to play or **Solo** a single voice for playback.
- Change the MIDI **Instrument** or **Channel** of any voice.

To playback at a given point in the file;

- Use the **Measure / Beat** slider and scroll to the desired measure and beat in the score.

To select the MIDI output Device;

- Use the **Port** pull-down selector.

To transpose playback globally;

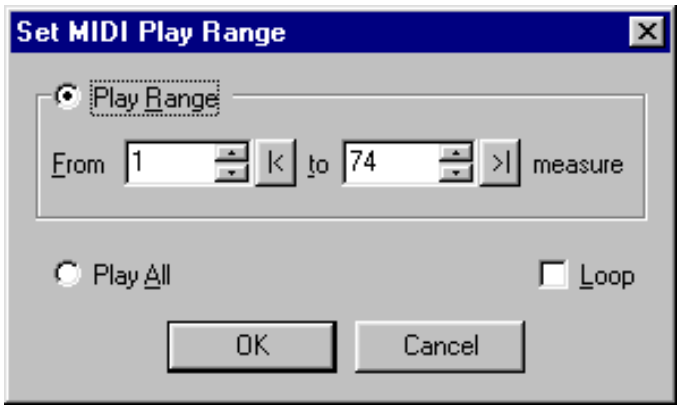
- Use the **General Transposition** pull-down selector

To transpose an individual track/ voice

- Use the Transposition pull-down selector in any track/ voice

Playback Range

To specify part of the score for playback, select Playback Range from the Realtime menu.



Set MIDI Play Range

- Set the first Measure and last measure of the **Play Range.**
- Mark **Play All** to play the entire score.
- Check **Loop** to continually repeat the assigned Playback Range

Display Controls

- **Time**

To choose whether the timing of MIDI note events is displayed by Measure: Beat: Tick or by Tick Number;

- Go to the **Options** menu and select **Time Format**.
- Choose by Measure: Beat: Tick or by Tick Number

- **Velocity**

To choose whether the velocity of MIDI Event is displayed with absolute numbers (0-127) or as percentages

- Go to **Velocity Format** under the **Options** menu.
- Choose by Value (0-127) or Percent

MIDI Views

a. Press the MIDI View (**Command + I**) button of the Navigator

b. The New MIDI View Window will allow you to select the type of MIDI view desired, Track Overview, Piano Roll or Event List.

Track Overview

Overview gives a large-scale view of all MIDI tracks with general editing functions.

To adjust the horizontal zoom of tracks in Overview.

- Drag a barline horizontally.

To adjust the vertical zoom of tracks in the Overview,

- Drag a track name boundary vertically.

To insert, delete or duplicate tracks:

- Hold the “alt” key while clicking on any track in the **Track Name** column (in Piano Roll, select **Options > Track** in main menu). The Track Properties window will open.

The Track Properties window allows for editing of the Track Name and its Transposition. Use the Piano Roll or Event List buttons to open a New MIDI View of the selected track.

NOTE: The Transpose selection window will actually move each MIDI Event of the selected track by the selected number of half steps.

- New Track will create an empty new track.
- Selecting Duplicate Track will create an exact copy of the active track at the bottom of the score.
- Delete Track will erase the current MIDI track complete

Piano Roll

Piano Roll displays the selected track in a grid format. Vertical axis is pitch. Horizontal axis is note timing and duration.

To display the Piano Roll view from New MIDI View:

a. Select Piano Roll from the New MIDI View Window

b. Select the MIDI track you wish to display and press OK.

To display the Piano Roll view from Track Overview:

a. Double click or right-click on the Track Name in the Overview.

b. Choose Piano Roll from the Type pull-down menu and select a track to view and press OK.

To adjust the horizontal zoom of tracks in Piano Roll.

- Drag a bar division in the track header horizontally.

To adjust the vertical zoom of tracks in the Piano Roll,

- Drag any edge of a key in the margin vertically.

NOTE: To scroll a Piano Roll or MIDI Event List to another track, without opening a second window, click the paging buttons located in the Image Toolbar.

- **Shuttle Tool**

The shuttle tool allows you to sound MIDI events forward or backwards by dragging the mouse over the a range of events Go to the **Options** menu and select **Shuttle On**. Click anywhere in an Overview or Piano Roll and drag the blue Shuttle Tool to the right to play the MIDI file at your own tempo. Drag the Shuttle Tool to the left to rewind and hear the MIDI file simultaneously.

- **MIDI Note Selection**

Under the **Edit** menu choosing **Select** opens the Select Window.

Select All or an individual track to display. Choose Full track to display the full length of the MIDI file or designate a portion of the file to display by entering the measure, beat, and tick into the From and To fields

NOTE: **Edit > Select All** is only available from a Piano Roll or Event List view.

Selecting MIDI notes using the mouse drag can be done from any view. Mouse functions work the same in all views.

To select a note or group of notes:

- Click on the individual note or click and drag to Group Select many notes.

To add note(s) to the Group:

- Hold down the Control key and click on the unselected note(s).

To add/ select all notes within a given time:

- Hold down the Shift key, click and drag the region.

NOTE: In Overview, left-clicking in the Track Name box will select the entire track if no notes have been selected.

- **Changing selected MIDI note characteristics**

Insert screen shots here

To change the start time selected note event(s):

- Click and drag the left edge of the note(s) to the position you want.

To change the duration of selected note event(s):

- Click and drag the right edge of a note changes the note's duration.

To change the velocity (note attack) of selected note event(s):

- Top and bottom edges of a note adjust the note's velocity.

To change the pitch or position of selected note event(s):

- Click and drag the center of the note to change pitch (vertical drag) or note placement (horizontal drag).

NOTE: The arrow keys on your computer keyboard can also be used to adjust the pitch and start time of the selected notes.

NOTE: To designate the increment at which MIDI notes can be positioned, go to Options > Snap to and select a rhythmic value.

To delete selected note event(s):

- Hit the **Delete** key to remove any highlighted notes.

- **Note Event Window**

Double Clicking on any note event will open the Note Event Window

The Note Event window allows access and adjustment of an individual note's parameters.

- Raise or lower the **Pitch** of the Note Event
- **Start Time** changes when the Note Event begins
- The **Duration** of the Note Event can be shortened or lengthened
- Increase or decrease the **Velocity** of the Note Event

➢ Select a new **Voice** for the Note Event

- **Velocity and Duration of selected Note(s)**

To change the velocity and/or the duration of selected note(s):

a. Select the Velocity/ Duration option from the Edit menu. The Velocity and Duration window will open.

b. Use the sliders to increase or decrease the velocity and duration of the selected note(s) by a percentage. Example: You wish to double the duration of a group of selected notes. In the Velocity/ Duration window move the Duration slider to 200%.

c. Press **OK**.

- **Voices and Polyphony in a MIDI track**

SmartScore supports reassigning MIDI events to individual voices. Once assigned to separate voices, events in the same MIDI track can retain individual properties such as separate MIDI channels and separate instruments.

To change the voice assignment of selected note event(s):

➢ Use the Voice Selection pull-down menu located above the piano keyboard. The current voice will be displayed.

- **Change MIDI Instrument Assignment**

To change the MIDI instrument (Program Change) for any given voice:

a. In a Piano Roll view, click where you want the change of instrument to take place.

b. In the main menu, select **Edit > Program Change.** The Change Instrument window will open.

c. Select a **New Instrument** from the pull-down menu and the **Voice** to which the change applies.

NOTE: SmartScore will support multiple voices, with individual MIDI instruments, within one staff line or track.

- **Cut / Copy and Paste**

Drag the mouse or use **Edit > Select** to select a region of music you would like to cut, copy or paste.

- **Cut** removes the highlighted notes from the score and places them in the clipboard
- **Copy** the selected notes to the clipboard without removing them from the score.

Click where you want to insert the music back into the score.

- **Paste** will insert the contents of the clipboard back into the score without deleting the existing notes.
- **Paste Special** will open the Paste Special window.

The Paste Special window offers several options for pasting the contents of the clipboard back into the music.

- **Add to existing events** will add the contents of the clipboard to the selected area without erasing the existing notes.
- **Replace existing events** will replace the existing music with the contents of the clipboard.
- **Move to make room** will push the existing music backward and then insert the contents of the clipboard.
- Use **Repetitions** to determine the number of times the contents of the clipboard will be inserted.
- **Start from time** designates where the inserted music will begin by choosing the measure, beat, and tick.
- Select **Start from track** to paste to a selected track number.
- **All to track** will insert the contents of the clipboard, no matter how many tracks were original selected, into one track.

- **Inserting / Deleting Measures**

NOTE: Measures can be inserted or deleted from either an Overview or a Piano Roll.

To Insert blank measures into every track:

- In an Overview, click on a measure number and drag to the right. The selected measure and all subsequent measures will move.

To Insert blank measures into an individual track:

- In a Piano Roll view, click on a measure number and drag to the right. The selected measure and all subsequent measures will move.

To Delete measures into every track:

- In an Overview, click on a measure number and drag to the left. The selected measure and all subsequent measures will move, overwriting the existing measures.

To Delete measures in an individual track:

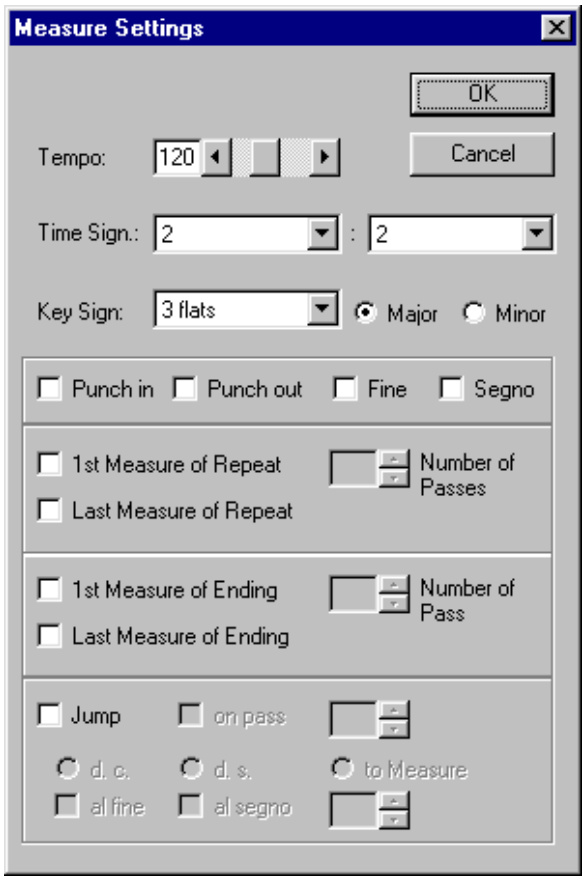
- In a Piano Roll view, click on a measure number and drag to the left. The selected measure and all subsequent measures will move, overwriting the existing measures.

- **Measure Settings**

The Measure Settings window allows for inserting changes of tempo, time signature and Key Signature at the start of any given measure.

To open the Measure setting Window:

- Double click on the measure number where you wish to insert a change in key, time, or tempo.



Measure Settings

To insert a change of Tempo:

- Adjust tempo with the **Tempo** slider.

To insert a change of Time:

- Use the **Time** pull-down menus to select the number of beats per measure and the base measure unit (2=Half note, 4=Quarter note, 8=Eighth note, etc.).

To change insert a change of Key Signature :

- Select the number of Accidentals in the new **Key Signature** with the pull-down menu. Mark the key as major or minor with the check boxes next to the pull down menu.

Press **OK** to update the changes through to the end of the active MIDI file.

- **Setting Repeats and Multiple Endings**

Repeats and multiple endings are also created by using the Measure Attributes window.

Double click any measure to open the Measure Attributes window of that measure.

- **Simple Repeats**

Check the **1st Measure of Repeat** box to select a measure as the beginning of the repeated section.

Use the **# of Passes** scroller to determine the total number of times this section will be played. For example: If you want the section to play through and repeat one time, set the **# of Passes** to 2 (the default).

Check the **Last Measure of Repeat** box to set a measure as the final measure of the repeated section. During playback, once the preset number of passes has been met, playback of the remainder of the score will continue after this measure has finished.

- **Multiple Endings**

- Use the **1st Measure of Repeat** box to select a measure as the beginning of the repeated section.
- Use the **Number of Passes** scroller to determine the total number of times this section will be played.
- The **1st Measure of Ending** box designates a measure as the beginning of an ending.
- The **Number of Pass** scroller is used to the number this ending, i.e, 1 = 1st Ending, 2 = 2nd Ending.
- Use the **Last Measure of Ending** check box to define the total length of the ending. After this measure is played, MIDI playback will jump to the 1st Measure of Repeat and continue on with the next pass.

NOTE: This measure is also the Last Measure of Repeat. Check the Last Measure of Repeat box to continue playback with the First Measure of Repeat.

- **Segnos**

A Segno is a musical notation symbol used to denote the beginning or the end of a repeated section.

Starting from a Segno

Checking the **Segno** box will place a Segno in a measure.

Activate the **Jump to** check box and select **d.s.** or Dal Segno (from Segno). After this measure is played, MIDI playback will jump to the Segno measure and continue playback.

Ending at a Segno

Check the **Jump to** box and select **d.c**. or Da Capo (from the beginning) and **al segno** (to the Segno).

Checking the **Segno** box will place a Segno in a measure. Playback will stop with this measure.

- **Fine**

Fine means final or end. It denotes the last measure of a score when repeats are used.

d.c. al fine

Check the **Jump to** box and select **d.c.** or Da Capo (from the beginning) and **al fine** (to the end). After this measure is played, MIDI playback will jump to the beginning of the score and continue playback

Use the **Fine** check box to insert a fine into a measure. MIDI playback will stop at the end of this measure.

d.s. al fine

A Fine can be inserted after a Segno when the Segno is used to mark the beginning of the repeated section.

Checking the **Segno** box will place a Segno in a measure.

Activate the **Jump to** check box and select **d.s**. or Dal Segno (from Segno) and **al fine** (to the end). After this measure is played, MIDI playback will jump to the Segno measure.

Check the **Fine** box to insert a fine in a measure. MIDI playback will play through the score, return to the Segno measure, and stop after the Fine measure is played.

- **Jump to**

Jump to can be used to “send” MIDI playback to a certain measure.

Select **to Measure** in order to jump to a chosen measure during playback.

On Pass will send MIDI playback to the selected measure on the designated pass.

NOTE: Check **On Pass** if the **d.s., d.c,** or the **Jump to** measure falls within a repeated section and define on which pass playback will jump.

Event List

The Event list is a detailed list of all MIDI events and meta events in a scrolling columnar format. It is as detailed a picture of each MIDI event you can get. All events, parameters and controllers can be edited in this environment.

To view and edit detailed MIDI events, meta events, note events, controllers, program changes, key and time signatures, etc. and in a selected track,

a. Press the MIDI View button of the Navigator or in the menu, select View > New MIDI View.

b. Choose Event List from the Type pull-down menu

c. Select a track to view.

The Event List displays every MIDI event of the selected track:

- Select what events types are displayed in the Event List by checking or unchecking the Event Type boxes along the top of the Event List.

- **Changing Parameters of Selected Notes**

To change parameters of a group of selected notes:

- Click in any of the columns to change the parameters of an existing MIDI event or double click in the Type column of a Note Event to open the Note On window.

The Note On window, like the Note Event window, allows for adjustment of an individual note's parameters. Channel, Time, Duration, Pitch, and Velocity of a selected note.

- **Editing Key, Time and Tempo**

Click in any column to make changes to any existing MIDI events. To insert a new tempo, key, or time signature click the event you want the new event to follow. Press the New button. The Create New Event window will open.

Use the scroll bar to select Meta Event. A Meta Event is a MIDI file instruction. Scroll through the Event Subtype window to choose

Tempo, Time Signature, or Key Signature . Press **OK**. Use the Other column to select the new tempo, time signature, or key signature OR double click in the Type column to open an event specific window. You may type in a new value.

- **Inserting Note Events**

To insert new events in the Event List View

a. Click the Event you want the Note to follow. Select New from the upper left hand corner of the Event List. The Create New Event window will open.

b. Scroll to **Note On** in the Event Type menu

c. Press **OK.**

d. A Note On event will be inserted into the Event List.

e. Enter the Voice, Time, Duration, and Pitch of the new event by clicking in the corresponding columns or double click in the **Type** column to open the Note On window.

- **Inserting Non-Note Events**

Any MIDI event that is not note-on or note-off event is a *non-note event*. This includes MIDI Control Changes, Program Changes, Channel Pressure, Pitch Bend Information, and Meta Events.

To insert a non-note event in the Event List View:

a. Select the event you want the Non-note event to follow

b. Press the **New** button.

The **New Event** window will open.

c. Use the Event Type menu to select the event to be added.

NOTE: Some events, such as Control Change and Meta Event, have Subtype event listings.

d. Press **OK**

- **Program Change**

Program Change inserts a MIDI event that changes the Instrument Assignment playback of a given voice / channel. See Voice Assignments and Channel.

To insert a Program Change of the voice / channel in Create New Event

a. Program Change is the default New Event, so simply press OK.

The selected Program Change will be inserted into the Event List.

b. Use the **Voice** pull-down menu to designate the voice to which the Program Change applies

c. Use the **Other.** pull-down menu in the Other column to select a new Instrument Assignment.

- **Control Changes**

Control Changes send adjustable parameters to your selected MIDI Device i.e., vibrato, hold, volume, pan, effects, etc. You can add specific changes to these controls from within SmartScore's Event List. To find out more about what each control change will do, refer to the user's manual of your MIDI device.

- **Meta Events**

Meta Events are MIDI file instructions written to the MIDI file. They information such as file and track headers, SMPTE, tempo, key and time signatures, etc. can be added to any MIDI file using SmartScore's Event List.

MIDI Recording

Recording Options

To activate the Record mode and adjust the recording options choose Record from the Realtime menu.

- **Synchro Start**

Recording is synchronized to start with the first MIDI note played. To unsynchronize the start of recording with the first played MIDI note uncheck **Synchro Start** from the **Realtime** menu OR choose the **Metronome Settings** listed under the **Options** menu and uncheck Synchro On.

- **Thru**

Sends new MIDI events to the selected MIDI output Device. The Active Piano Roll determines the parameters of the MIDI Thru sound. If no Piano Roll is open, MIDI Channel 1 is used.

- **Metronome**

The Metronome is active while recording. To make the Metronome inactive during recording, uncheck **Metronome** from the **Realtime** menu OR choose the **Metronome Settings** listed under the **Options** menu and uncheck Metronome On.

To make changes to SmartScore's metronome;

a. Choose Metronome Settings from the Options menu. The Metronome Settings window will open.

The Metronome Settings window allows the user to adjust the parameters of SmartScore's metronome.

NOTE: The **Metronome On** check box must be selected for the metronome to sound during recording. To record without a metronome uncheck the Metronome On box.

With **Synchro On**, SmartScore will synchronize the start of recording with the first played MIDI note.

b. Select which **MIDI Port** the metronome will play through.

c. Choose the metronome's MIDI Channel.

NOTE: MIDI Channel 10 is the default, as with all MIDI applications, for drums.

d. Determine the number of **Lead-in Measures** that will play prior

to the start of recording.

The **Primary Beat** (down beat) will sound when the **On** check box is selected. The **Pitch** pull-down menu displays all General MIDI drum sounds. Use the **Volume** scroll box to increase or decrease the volume of the Primary Beat. The default accents the primary beat.

The **Secondary Beat** will sound when the **On** check box is selected. The **Pitch** pull-down menu displays all General MIDI drum sounds. Use the **Volume** scroll box to increase or decrease the volume of the Secondary Beat(s).

- **Snap to**

MIDI is very strict. Any fluctuation in timing or speed may result in incorrect notation. To prevent this, you can apply quantization to your performance. Select **Snap to** from the **Options** menu. Choose the smallest rhythmic value that you want your notes represented at.

The resulting MIDI events will be justified, spelled to the nearest selected rhythmic value.

NOTE: **Snap to** also determines the increment at which selected MIDI events can be moved, when using the mouse or arrow keys.

- **Punch In and Out**

To set Punch In and Punch Out points for recording, double click any measure number in an Overview or Piano Roll. The Measure Attributes window will open.

- Check **Punch In** to start recording at the beginning of this measure.
- Check **Punch Out** to set this measure as the last measure for recording.

The Punch In and Out Measures are marked with red triangles in the Overview and Piano Roll.

- **External Timer**

To run SmartScore's MIDI recording from an external timer, select **External Timer** from the **Realtime** menu.

- **Recording New Tracks / Voices**

To Record a new track to a MIDI file,

a. select Record from the Realtime menu OR press the Record button in the Playback Console. The New View window will open if any MIDI data already exists.

b. Select an existing track to record a new voice within the same track.

The new MIDI data will be added to the existing track without overwriting any material.

c. Select **New Track** to record a brand new MIDI track for recording.

NOTE: A Piano Roll will open for the selected track. A Piano Roll must be open to record in SmartScore. A new voice and MIDI Channel will automatically be created when recording into any track.

d. Use the Playback Console to assign the MIDI parameters for the new track/ voice.

e. Select **Play** from the **Realtime** menu OR press the Play button in the Playback Console to start recording at measure 1, unless a Punch In point has been set (see Punch).

While recording:

- **Pause** will temporarily halt recording. Press the **Play** button again to resume recording the same track/ voice
- **Stop** will end the current recording session. SmartScore will return to the standard MIDI editing environment.

MIDI to ENF

To create and ENF document from a MIDI file:

- Select **New ENF View** from the **View** menu. The MIDI to ENF window will open.

Staff Voicing:

- Select **As Multiple Voices** to create an ENF document in Color Mode > Voice. For more information on color modes, see Color Mode. Each MIDI tracks will be convert to a single ENF stave with separate voice lines.

TIP: Use this option when converting MIDI files that contain Polyphony (contrapuntal Voices).

As Single Voice:

This option converts each MIDI track into a single ENF stave.

- Select **By MIDI Channel** to convert each MIDI channel as a separate ENF stave.

TIP: Use this option when converting MIDI files type 0.

Density:

- **Measures per System** determines the number of evenly spaced measures per system.
- **Systems per Page** determines the number of evenly spaced systems per page.
- Quantization

SmartScore can quantize the MIDI file that will be converted. Quantization is similar to the **Snap to** feature available when recording MIDI data in SmartScore. Each note event will “snap to” the nearest beat boundary eliminating fluctuations in the timing of a MIDI performance.

- Check **None** to prevent the application of quantization.

- Use **Note On/ Note Off** to determine the smallest rhythmic values used to when spelling note start times (**Note On**) and end times (**Note Off**) in the ENF document.
- Use **Note On/ Note Duration** to determine the smallest rhythmic values used to when spelling note start times (**Note On**) and the minimum length of each note (**Note Duration**) in the ENF document.
    - **Shorten each note to the last Note Duration value.**
    - Lengthen **each note to the next** Note Duration **value**
    - **Justify each note to the nearest Note Duration value.**
- Check the **Interpret Tuplets** box to allow tuplet spelling in the ENF document.

Glossary

Score Formats

- **Score**

A musical piece compiled as a document. A score usually contains more than one part with all the parts to be played together. In SmartScore, it is a single computer file; an ENF file. A hand-written score is called a manuscript.

- **Part**

A part is represented by a staff line either alone (solo part) or grouped into a system with other instruments (Ensemble part). A part is usually an single instrument, but in the case of two-handed instruments (piano, organ, xylophone, etc.), it may represent one hand's part.

- **Voice**

Derived from choral music but applied to instrumental music as well, a *polyphonic* voice (sometimes referred to as Counterpoint) is a unique melodic entity distinguished from other voices by both its timbre and harmonic expression inside an arrangement. Voices are often distinguished between one another by stem direction and sometimes by offsetting the horizontal position of notes.

- **Score Part**

Scores that are printed in sets for each individual instrument. Players read from their own unique set of pages. For example, a duet for guitar and flute would be printed in two separate sets: one for the flute player and one for the guitar. Staves of part scores flow like a book where each staff line appends to the one above it.

- **Ensemble**

Scores that have multiple staff lines connected by a vertical bar or "bracket" (usually along the left-hand edge of the music). When

joined in this way, each staff line represents a different part or instrument. All parts are played “ensemble”. Piano music, (with left-hand and right-hand staves) are joined into one system, is regarded as “ensemble”. SmartScore assigns each stave to separate MIDI tracks.

- **Landscape**

Some scores are wider than they are high. These “landscape” layouts need to be rotated prior to processing.

- **Folio**

Large sized and conductor scores may need to be scaled down during scanning or reduced on a copy machine before scanning. If the score must be reduced more than 50% in order to fit the imaging area of your scanner, you may consider scanning each full-sized page twice and treat each scan as one “image-page”.

Score components

- **System**

A grouping of multiple staff lines linked together by a solid line or bracket along the left margin is called a “system”. All staves belonging to a system are played simultaneously. In ensemble scores, each system appends to the one before it. A single page of a symphony conductor’s score, containing 10 or 20 staff lines per system, may represent only a few seconds of music!

- **Staff (Staves)**

The field on which notes are represented is called a staff. “Staves” is normally used when referring to more than one staff. Each successive line and space are equivalent to a full step in note pitch. The higher the note appears on the stave, the higher its pitch. Every staff line normally begins with a Clef sign and a key signature.

- **Staffline**

A staffline is one of 5 horizontal line which makes up a staff

- **Voiceline**

An individual melodic line formed by a voice within one measure. When a staff contains more than one voiceline in any given measure, note stems of each voiceline usually point in the opposite directions. The sum of all note and rest values of each voiceline in any given measure *should be* accounted for, but sometimes are not. Refer to Voiceline for more on dealing with this rule in SmartScore.

- **Clef**

The clef sign at the beginning of each stave identifies which pitch "class" that stave belongs to. The lowest instruments are written in the bass clef, intermediate instruments and voices often use one of three "C" clef classes while higher-pitched instruments, in addition to the right-hand part of a piano score, are scored in the treble clef. The clef sign always appears at the beginning of every staff line and in the first measure if a *change of clef* occurs. Change of clef signs are smaller than normal clefs.

- **Key Signature**

The key signature, along with the clef sign, appears at the beginning of every line; it is also found in the measure where a *change of key* occurs. The key signature defines the "tonal center" of the piece. The number of sharps or flats in the key signature determines the key tone (or tonic).

- **Time Signature**

Time signatures usually appear only once: at the beginning of the stave in the first measure of the piece. They will also appear when a *change of time* signature occurs. Time signatures indicate both the number of beats per measure (numerator) as well as which note value is given the fundamental beat (denominator). The sum

of note duration values in a given measure must equal the value of the current time signature.

- **Note**

A note is the fundamental unit of tone. The duration of a note is determined by its note value (normally between 1 and 128 divisions). The note's vertical position on a given staff (with clef) determines its pitch.

- **Rest**

Rests are equivalent to notes insofar as their durations; but represent silence. They act as "place-holders" used to keep the rhythmic structure of the measure intact.

- **Measure**

Measures segment systems into discrete chunks of time. Each measure has a strictly defined "pulse" determined by the active time signature. While note rhythms within each measure are forever changing, the over-riding pulse of the measure remains constant, even as tempo speeds and slows.

- **Barline**

Barlines are the vertical lines that define the beginning and ending of measures

- **Accidental**

Note pitches often range outside of the tonal center defined by the key signature. An accidental shifts its associated note up (sharp) or down (flat) by ½ step. Accidentals may also be doubled. An accidental remains effective only for the remainder of the measure in which it appears. A natural "cancels" a note's current accidental.

- **Dot of Prolongation**

Notes and rests that are dotted have the value of their duration lengthened by ½. For example, a dotted quarter note is equal in

duration to three eighth notes. Double-dotted notes increase the note's duration by ¾ of the original.

- **Tuplet**

Some notes belong to a special readmit class called "tuplets". These include triplets, quintuplets and sextuplets. A tuplet is a group of notes, usually marked with a bracket, that are subdivided within a single beat, equal in duration to the note's next higher value. For example, a triplet of three eighth notes is equal in total duration to one quarter note

- **Ties**

A tie links two pairs of notes of the same pitch whose durations are combined so that both notes are played as if one note. Ties are often used to sustain the sound of a note across more than one measure.

NOTE: Ties and slurs (legatos) often look alike, but they are as different as lightning and a lighting bug. Ties connect two notes of the same pitch and combine their durations into one note event and slurs connect two or more notes over a range of pitches forming a *legato* that when performed, creates a slight overlapping of the notes. The arc of a slur can vary from flat to angular. The arc of a tie is always flat.

- **Articulations**

Articulations are performance markings that provide instructions for playback of the marked notes. For example, a staccato, a dot placed above/ below a notehead, means the note should be short, sounding for only a moment.

- **Dynamics**

Dynamic markings are used to denote the general volume and intensity of music. For example, "f" or forte means loud and "p" or piano means soft.

Other Notational Terms

- **Polyphony**

The dynamic harmony which evolves as Voicelines move horizontally against one another in time. Polyphony evolved from the simpler *homophony* of middle ages where vocal harmony was more chordal, vertical and static. Polyphony usually refers to the harmonic relationships between voices but also applies to instruments and parts. Polyphonic voiceline threading is fundamental to SmartScore's design. Refer to Voice Line Threading for more details.

- **Counterpoint**

Similar to Polyphony but more formalized by the theoretical, rule-based conventions of music composition. Counterpoint usually refers to the melodic *and* rhythmic relationship between parts or voices.

MIDI Terms

- **MIDI**

Musical Instrument Digital Interface. Originally a hardware Device that allowed a computer and a synthesizer to communicate, now a generally accepted term for hardware or software that operate according to General MIDI standards.

- **Device**

A MIDI driven tone generator. Sound cards, synthesizers, and MIDI modules all fall under this category.

- **MIDI Event**

Each piece of information contained within a MIDI file is an event. This includes Notes (attack and release), Control Changes, System Exclusive, Meta Events, Program Changes, etc.

- **Velocity**

The speed at which a note was struck… it's percussive quality… a combination of volume and attack. Measured with a number from 0-127.

- **Channel**

A MIDI device sends and receives MIDI information along separate and distinct Channels. Each channel contains note and non-note event data. Most MIDI devices can support up to 16 MIDI Channels at one time.

- **Patch**

Every MIDI channel is assigned a Patch. A Patch is the Instrument Assignment sound your MIDI device will use when playing back on a particular channel.

- **Bank**

MIDI devices divide patches (Instrument Assignments) into groups of 128. One Bank of patches from a MIDI device can be accessed at a time by a MIDI computer program or another MIDI device.

- **Port**

A computer can run several MIDI devices at a time with the proper hardware. Each device is connected to a unique Port.

SmartScore Terms

- **ENF**

Extended Notation Format. This is SmartScore's proprietary file format. It is created after scanning, when creating a new score or when converting an imported MIDI file into ENF (MIDI-to-ENF).

- **Navigator**

A floating window comprised of buttons designed to "navigate" through SmartScore's main features and editing environments.

- **Master System**

The Master System is a sort of “virtual system” which allows for manipulating any or all voices, instruments, parts, staves and systems in the score. Generally, it is a list of all the parts and voices that make up the LARGEST system in the score. The Master System is the basis of many editing features including Visibility, Voices, Spacing, and Part Names.

- **Voice Line Threading**

SmartScore will differentiate multiple Voices by displaying in different colors (Voice 1-black, 2-red, 3-green, and 4-blue) while creating an independent MIDI channel for each voice. The individual voice lines will “threaded” from the TIFF file, through Recognition, to the ENF file, from the ENF file to the MIDI file, and from the MIDI file back to the ENF file.

- **Part Linking**

In SmartScore, each staff in a system usually represents an instrumental part. Some scores do not have a consistent number of staves in all systems (collapsing and expanding systems). This may result in the wrong instrument suddenly playing back. Part Linking (Command + “L”) allows the user to reassign parts in a collapsed or expanded system and apply the change to the single system, to all following systems or to the entire score.

ENF Menu Items

ENF Edit Menu Icons

- **Zoom**

Activates the Zoom Tool. Left-click to Zoom In; Right-click to Zoom out. **Command + Q**

- **Select**

Activates the Select Symbols or Area Tool. Left-click and drag to Select Symbols (note editing); Right-click and drag to Select Area. “O”

- **Insert**

Inserts selected notational object into ENF document. “C”

- **Change**

Change existing object in the ENF document to that of the selected notational object. “C”

- **Delete by Group**

Deletes only object of the select notational object. Notes will not Delete when a Rest is the selected notational object. “X”

- **Delete Any**

Deletes any notational object. “X”

- **Transpose**

Opens the Transpose window. Performs transpositions globally or to specified regions, staves, or Voices.

- **Special**

- **Beam Notes**

Beams all selected notes together. “B”

- **Flip Stems**

Reverses the default stem direction of Inserted notes. “S”

- **Vertical Alignment**

Vertically aligns notes that may be horizontally offset for correct playback. “Y”

- **Split Voices**

Separates two note clusters into individual voice lines. “H”

- **Stems**

Switches the default stem direction when Inserting notes. Changes stem direction of all selected notes. “S”

- **Delete Ties**

Deletes all ties from the selected area. “G”

File

- **New**

Select between a new ENF (**Command+N**) or a new MIDI (**Crtl+M**). Choosing New ENF will open the New SmartScore Document window. Select a Template or use Custom to create a unique score. Choosing New MIDI will open a blank MIDI Overview and PianoRoll for MIDI input.

- **Open**

Opens File Selection dialog box and lists saved files. A selected file will be loaded into memory and will display on the screen. **Command+O**

- **Save**

Writes currently displayed file to the hard disk. If ENF and Image are displayed, the ENF file is saved. **Command+S**

- **Save As**

Opens Windows File Selection dialog box and saves modified ENF files to hard disk following Recognition and ENF Editing procedures.

Saves selected files to directory other than the working directory.

- **Scan Music**

Select

Selects scanner plug -in.

Acquire

Initiates scanning.

- **Recognition**

Initiates Recognition to begin processing saved image file(s).

- **Page Setup**

Allows adjustments in the page size and orientation of the current ENF file.

- **Print**

Initiates Windows Print Monitor. Current ENF file is output to default printer from selected printer port. Command+P

- **Recent 1,2,3, or 4**

Automatically loads one of the last four files accessed by SmartScore.

- **Exit**

Exit SmartScore. Save current file. Go to Windows main desktop

Edit

- **Undo**

Reverses the last action you performed. SmartScore has ninety-nine layers of Undo. **Command + Z**

- **Redo**

Reapplies the last action that has been Undone. **Command + Y**

- **Cut**

Removes the highlighted notes from the score and places them on the clipboard **Command + X**

- **Copy**

Places selected notes on the clipboard without removing them from the score. **Command + C**

- **Paste**

Insert the contents of the clipboard back into the score without deleting the existing notes **Command + V**

- **Paste Replace**

Replace the existing music with the contents of the clipboard. **Command + R**

- **Delete**

Deletes all selected notational objects from the ENF document. **Del**

- **Select All**

Selects all MIDI events in every track. **Command + A**

- **Bracketing**

Opens the Bracketing Options window for creating score brackets.

- **Part Linking**

Opens the Re-link Parts window for Logical Part Linking.

- **Master System**

Opens the Master System window. Make changes on a system or score level to Voices, spacing, Part Names, and visibility. **Command + M**

- **System**

Insert Above

Inserts a new system above the active system

Insert Below

Inserts a new system below the active system

Remove

Deletes the active system from the page

- **Staff**

Insert Above

Inserts a new staff line above the active staff line

Insert Below

Inserts a new staff line below the active staff line

Remove

Deletes the active staff line from this system

- **Score-Part**

Insert Before

Appends a new Score Part before the current ENF Score Part

Insert After

Appends a new Score Part after the current ENF Score Part

Remove

Deletes the current ENF Score Part

- **Default Voice**

Resets selected notes to original Voice Assignments. **Command + U**

- **Instrument Templates**

Opens the Instrument Templates window. Determine the name,

MIDI Instrument Assignment, channel, port, and transposition for each Voice in the active ENF file. **Command + T**

- **Score Header**

Opens the First Page Header window. Type in the Title, Composer, and Part Name for the active ENF file.

- **Tempo**

Opens the Tempo window. Set or remove a metronome marking for the ENF document.

View

- **Navigator**

Opens and closes the SmartScore Navigator.

- **Main Toolbar**

Opens and closes Main Toolbar

- **SmartScore Toolbar**

Opens and closes SmartScore Toolbar

- **Image Toolbar**

Opens and closes Image Editing Toolbar

- **Status Bar**

Opens and closes Status Bar at the bottom of main SmartScore Window. Displays current page, cursor position, image size, and zoom percentage.

- **Palettes**

Opens and closes tool palettes for ENF document editing.

- **Image Information**

Provides information on the structure and type of the currently displayed image file.

- **Next Page**

Displays next page of ENF document

- **Previous Page**

Displays previous page of ENF document

- **Go to Page**

Presents a dialog box to select a page number to jump to. Use scroller to select desired page and click OK. **Command+G**

- **Zoom**

Lists available view percentages. Changing zoom will affect both the image and the ENF file simultaneously.

- **New MIDI View**

Opens New MIDI View dialog box. **Command + I** Select type of view.

- **Overview**

Displays all staves as MIDI tracks

- **Piano Roll**

Displays selected stave as MIDI track

- **Event List**

Displays MIDI events of selected stave

Options

- **Unify Signatures and Clefs**

Open the Unify Score window. Unify Clefs, key and time signatures throughout the entire score. “U”

- **Measure Numbers**

Determines whether measure numbers are displayed in the ENF document at each measure, each staff line, or not at all.

- **Color Mode**

By Voice

Each voice of a staff line will display in a different color.

By Part

Each staff line will display in a different color or all staves in black.

- • **Define**

Part Color

Define the colors used while Color > By Part is selected

Background

Define the background color for the ENF document or Image file.

- **Show Active Staff**

When selected all staves except the Active Staff will be grayed-out.

- **Auto Save**

Opens Auto Save Options dialog box. Determines when SmartScore will automatically update saved ENF file with current working file.

  - **Every “n” minutes**
  - **Every “n” actions**

- **Which come first- “n” minutes or “n” actions**
- **Never**

Window

- **New Window**

Opens a second copy of the current ENF document.

- **Cascade**

Layers all open windows within main SmartScore window. Active window is stacked on top.

- **Tile**

Arranges all open windows to fit within main SmartScore window. Windows are arranged from left to right, top to bottom starting with the active window.

- **Split**

Cursor moves to ENF window for vertical resizing of ENF and TIFF display. Cursor automatically controls sizing pane, left-click to release.

Realtime

- **Set Playback Range**

Opens Set MIDI Play Range dialog window.

- **Play/ Pause**

Begins/ pauses/ resumes playback of current ENF file. “Spacebar”

- **Stop**

Stops playback of current ENF. Resets ENF playback

- **Rewind**

Rewinds to beginning of Set Playback Range. “,” comma

- **Thru**

Allows MIDI input to sound

- **Console**

Opens the Playback Console

- **Refresh MIDI**

Updates MIDI playback based upon current ENF document.

- **Internal Playback**

Plays back ENF / MIDI data through QuickTime Musical Instruments extension when installed.

Help

- **About SmartScore**

Opens the About SmartScore window displaying general information about this copy of SmartScore.

- **Open Help**

Opens SmartScore Helpfile (Acrobat PDF).

MIDI Menu Items

File

- **New**

Select between a new ENF (**Command+N**) or a new MIDI (**Crtl+M**). Choosing New ENF will open the New SmartScore Document window. Select a Template or use Custom to create a unique score. Choosing New MIDI will open a blank MIDI Overview and PianoRoll for MIDI input.

- **Open**

Opens File Selection dialog box and lists saved files. A selected file will be loaded into memory and will display on the screen. **Command+O**

- **Close**

Closes all MIDI views. If any changes were made to the MIDI file, option to Save MIDI file. Return to main SmartScore window.

- **Save**

Writes currently displayed file to the hard disk. **Command+S**

- **Save As**

Opens Windows File Selection dialog box

Save processed or modified MIDI files to hard disk following MIDI Recording or Editing procedures.

Use to save selected files to directory other than the working directory

- **Recent 1,2,3, or 4**

Automatically loads one of the last four files accessed by SmartScore.

- **Exit**

Exit SmartScore. Save current file. Go to Windows main desktop

Edit

- **Undo**

Reverses the last action you performed. SmartScore has ninety-nine layers of Undo. **Command + Z**

- **Redo**

Reapplies the last action that has been Undone. **Command + Y**

- **Select**

Opens the Select window for defined note selection.

- **Select All**

Selects all MIDI events in every track. **Command + A**

- **Cut**

Removes the highlighted notes from the score and places them in the clipboard. **Command + X**

- **Copy**

Places selected notes on the clipboard without removing them from the score. **Command + C**

- **Paste**

Insert the contents of the clipboard back into the score without deleting the existing notes. **Command + V**

- **Paste Special**

Opens the Paste Special window. The Paste Special window offers several options for pasting the contents of the clipboard back into the music.

- **Delete**

Deletes the selected section from the MIDI file. **Del**

- **Program Change (Piano Roll only)**

Opens the Change Instrument window. Insert a change to a new MIDI Instrument Assignment.

- **Velocity / Duration**

Opens the Velocity and Duration window. Adjust the Velocity and/ or Duration of the selected MIDI events.

View

- **Navigator**

Opens and closes the SmartScore Navigator.

- **Main Toolbar**

Opens and closes Main Toolbar

- **SmartScore Toolbar**

Opens and closes SmartScore Toolbar

- **Image Toolbar**

Opens and closes Image Editing Toolbar

- **Status Bar**

Opens and closes Status Bar at the bottom of main SmartScore Window. Displays current page, cursor position, image size, and zoom percentage

- **New MIDI View**

Opens New MIDI View dialog box. Select type of view.

- Overview- Displays all staves as MIDI tracks
- Piano Roll- Displays selected stave as MIDI track
- Event List - Displays MIDI events of selected stave

- **Show Track 0 (only in Overview)**

Displays MIDI channel 0 in MIDI Overview

- **Synchronize**

Synchronizes measure sizes in all MIDI views to that of current MIDI view. Further horizontal resizing synchronized between all MIDI views.

- **New ENF View**

Opens the MIDI-to-ENF window for converting the active MIDI file into and ENF document.

Options

- **Snap to**

Snaps selected recorded MIDI events to the nearest specified rhythmic value. Selects the smallest increment selected MIDI events move when the arrow keys are used.

- **Time Format**

Select whether start time of note events is displayed with Measure: Beat: Tick numbers or solely with Tick numbers.

- **Velocity Format**

Select whether Velocity of note events is displayed with absolute numbers or as percentages.

- **Track (not in Overview)**

Opens Track Properties dialog box. Select a different track view, delete, duplicate, rename, or transpose the selected track.

- **MIDI Device**

Opens MIDI device dialog box. Select MIDI input and output sources.

- **Instrument Settings**

Opens Instrument Settings dialog box. Allows for selection of Port, Bank, and MIDI channel assignment for Instrument and Drum sources.

- **Metronome Settings**

Opens Metronome Settings dialog box. Allows for selection of Port, MIDI Channel, number of lead in measures, MIDI sound and volume for Primary and Secondary beats.

- **Shuttle On**

Activate/ deactivate SmartScore's shuttle tool.

- **Restore Default Settings**

Realtime

- **Set Playback Range**

Opens Set MIDI Play Range dialog window.

- **Play / Pause**

Begins/ pauses/ resumes playback of current MIDI file. In Record Mode will start and pause MIDI recording. "Spacebar"

- **Stop**

Stops playback or recording of current MIDI file.

- **Rewind**

Rewinds to beginning of Set Playback Range. "," comma

- **Solo (not in Overview)**

Solos the active track during playback.

- **Record**

Check to activate MIDI Record mode

- **External Timer**

Set recording to begin from an external signal.

- **Synchro Start**

Active only in Record Mode, check to synchronize start of MIDI recording with first note played on MIDI keyboard.

- **Thru**

Allows MIDI input to sound

- **Metronome**

Activates/ deactivates Metronome in recording

- **Playback Console**

Opens the Playback Console.

- **Internal Playback**

Plays back ENF / MIDI data through QuickTime Musical Instruments extension when installed.

Window

- **New Window**

Opens a second copy of the current MIDI view.

- **Cascade**

Layers all open windows within main SmartScore window. Active window is stacked on top.

- **Tile**

Arranges all open windows to fit within main SmartScore window. Windows are arranged from left to right, top to bottom starting with the active window.

Help

- **About SmartScore**

Opens the About SmartScore window displaying general information about this copy of SmartScore.

- **Open Help**

Opens SmartScore Helpfile (Acrobat PDF).

Image Menu Items

File

- **New**

Select between a new ENF (**Command+N**) or a new MIDI (**Crtl+M**). Choosing New ENF will open the New SmartScore Document window. Select a Template or use Custom to create a unique score. Choosing New MIDI will open a blank MIDI Overview and PianoRoll for MIDI input.

- **Open**

Opens File Selection dialog box and lists saved files. A selected file will be loaded into memory and will display on the screen. **Command+O**

- **Save**

Writes currently displayed file to the hard disk. **Command+S**

- **Save As**

Opens Windows File Selection dialog box

Save processed or modified Image files to hard disk following Scanning and Editing. Use to save selected files to directory other than the working directory.

- **Scan Music**

Selects scanner or initiates scanner to acquire image.

- **Recognition**

Initiates Recognition to begin processing saved image file(s).

- **Print**

Initiates Windows Print Monitor. Current Image file is output to default printer from selected printer port. **Command+P**

- **Recent 1,2,3, or 4**

Automatically loads one of the last four files accessed by SmartScore.

- **Exit**

Exit SmartScore. Save current file. Go to Windows main desktop

Edit

- **Undo**

Reverses the last action you performed. SmartScore has ninety-nine layers of Undo. **Command + Z**

- **Redo**

Reapplies the last action that has been Undone. **Command + Y**

- **Cut**

Removes the selected section from the image file and places it on the clipboard **Command + X**

- **Copy**

Places selected section on the clipboard without removing it from the image file. **Command + C**

- **Paste**

Insert the contents of the clipboard back into the image file
Command + V

- **Delete**

Deletes the selected section from the image file. **Del**

- **Crop**

Trims the image file down to the selected region

- **Invert**

Switches the colors of the image file.

- **Rotate**

Left

Rotates the image file counter-clockwise

Right

Rotates the image file clockwise

Any

Opens the Rotate window for rotation by defines degrees.

- **Selection**

Activates the Area Selection tool.

- **Line**

Activates the Line drawing tool.

- **Brush**

Activates the Brush tool.

- **Deskew**

Activates the Deskew tool for straightening “crooked” scans. See Correcting Skew

- **Selection Mode**

Opaque

When a selected area is moved to the clipboard the background will be included

Transparent

When a selected area is moved to the clipboard only the black portion of the selected area with be moved.

- **Pen Color**

Select the color used by the Brush and Line drawing tools.

View

- **Navigator**

Opens and closes the SmartScore Navigator.

- **Main Toolbar**

Opens and closes Main Toolbar

- **SmartScore Toolbar**

Opens and closes SmartScore Toolbar

- **Image Toolbar**

Opens and closes Image Editing Toolbar

- **Status Bar**

Opens and closes Status Bar at the bottom of main SmartScore Window. Displays current page, cursor position, image size, and zoom percentage.

- **Palettes**

Opens and closes tool palettes for ENF document editing.

- **Image Information**

Provides information on the structure and type of the currently displayed image file.

- **Next Page**

Displays next page of ENF document

- **Previous Page**

Displays previous page of ENF document

- **Go to Page**

Presents a dialog box to select a page number to jump to. Use scroller to select desired page and click OK. **Command+G**

- **Zoom**

Lists available view percentages. Changing zoom will affect both the image and the ENF file simultaneously.

Windows

- **New Window**

Opens a second copy of the current ENF document.

- **Cascade**

Layers all open windows within main SmartScore window. Active window is stacked on top.

Help

- **About SmartScore**

Opens the About SmartScore window displaying general information about this copy of SmartScore.

- **Open Help**

Opens SmartScore Helpfile (Acrobat PDF).