

DRaFT Reference Manual

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1 Reference manual

This reference manual is organized around the main features of the DRaFT editing console. It explains the contents and operation of each component of the console in turn. It is intended to be used in conjunction with the DRaFT tutorial.

2 System requirements, set-up, how to start the program

2.1 System requirements

DRaFT is a Java-based program and is executable on all standard computer platforms (Windows, Mac OS, Linux, etc.) where Java (version 1.6 or later) is installed.

2.2 Installation and setup

Unzip the DRaFT package (draft.zip) into a folder in a convenient location.

Unzip the style file package (styles.zip) into a folder, preferably different from the above.

2.3 Starting the program

To open the DRaFT edit console, double click the icon “scriptorium.jar” in the program folder. For an introduction to the edit console and its components, see the DRaFT tutorial.

3 DRaFT menu bar

3.1 File menu

3.1.1 New

Abandon an active drawing and clear the edit screen. If a drawing and/or style file is not saved, a dialog box opens asking if you want to save them. If you reply “no”, all changes made to the active file will be discarded.

3.1.2 Open

Open a drawing (.xml file) that you saved before. A navigation box opens to allow you to navigate to the file you wish to open.

3.1.3 Save

Save a diagram to which you have made additional changes. DRaFT automatically suggests the same file name. A dialog box warns that the original file will be overwritten. If you wish to preserve the original edited file, change the file name.

NB: The drawing is saved as a *.xml file, but unless you explicitly indicate the .xml extension, the file name remains without extension. A *.eps file of the drawing is also created and saved.

3.1.4 Save as

Save the currently active drawing.

If the drawing is made from scratch, a dialog box opens asking the name under which to save the file.

If a background image has been set from an existing file, DRaFT suggests the same name as the image file, replacing the JPG extension by XML.

If you opened and edited an existing drawing (*.xml file), the original file is overwritten if you do not change the file name on saving.

NB: The drawing is saved as a *.xml file, but unless you explicitly indicate the XML extension, the file name remains without extension. A *.eps file of the drawing is also created and saved.

3.2 Edit menu

3.2.1 Undo

Reverses the previously taken action.

This operation is under development and is not yet valid for all user actions. Just try it.

3.2.2 Redo

Cancels undo and reinstates the previous action.

3.3 Options menu

3.3.1 Attributes

Give the drawing a caption and description.

3.3.2 Apply drawing transformation

Enlarge or reduce the size of the drawing image on the edit screen; move the drawing image along the x - y axes (the origin is defined in relation to the lower left corner of the image file); rotate the drawing image.

NB: These transformations only affect the drawing image, not the background image (section 3.4.1). If you imported a background image for editing,

it will be unaffected. To transform the background image, use the “background” tab on the menu bar (see section 3.4.3).

3.3.3 Set exportable area

DRaFT defines the size of a *.eps drawing based on the dimensions of the imported background image. If you find it necessary or desirable to change these dimensions, use this function to set the area exported to a *.eps file. This function also extends/limits the drawing area visible on the edit screen.

3.3.4 Show invisible elements

Show/hide elements (points or shapes) in the drawing which have the “invisible” attribute.

The “invisible” attribute of points can be enabled/disabled in the point data window (see section 6.3.5). In a similar way, this attribute can be set for shapes in the shapes edit window.

3.3.5 Show own shadings of shapes

DRaFT indicates partially or completely enclosed areas by shadings. This function allows you to show/suppress the shading of the shapes (such as zigzag lines and curves).¹

3.3.6 Show grid

Show/suppress the background grid lines.

3.3.7 Hide: background image/drawing/none (Short-cut: Ctrl-b)

This option toggles off the background image and the drawing. It alternates the following three modes on successive repetitions of the shortcut:

1. Both the background and the drawing are visible
2. Only the drawing is visible
3. Only the background image is visible

3.3.8 Show/hide labels (Shortcut: Ctrl-l)

This option toggles off the labels and the boxes defining their positions. (See Tutorial, section 5.5 for additional information on label insertion.) It alternates the following three modes on successive repetitions of the shortcut:

1. Both the labels and their position boxes are visible

¹To change the density of the shading, edit the parameter value in the file “scriptorium defaults”. See section 10 for more on editing default parameters.

2. Only the label positioning boxes are visible
3. Neither the labels nor label positioning boxes are visible

3.3.9 Snap to grid

When this option is selected, any newly created point is placed on the nearest intersection of grid lines (already existing points are not affected). If a point is moved by drag and drop, it is automatically snapped to grid.

(HINT: SHIFT+arrow always moves a selected point by one pixel on each stroke. This method can be used to move a point off the grid lines when “snap to grid” is on.)

3.3.10 Set grid dimension

This option allows the size of the grid cells and the frequency of the heavier lines in the grid to be altered.

3.4 Background menu

3.4.1 Set image

Import the image to be edited. A dialog window opens allowing you to navigate to the file you wish to import.

NB: The imported image file must be in *.jpg format. If the image exists in another format, import it into a utility such as Paint, then save as *.jpg file.

3.4.2 Remove image

Removes the background image from the edit screen. This action does not remove the drawing file itself or any editing you may have done to the file. To abandon the editing you have done and begin editing a new file, use the file tab on the menu bar (section 3.1.1).

3.4.3 Set image transformation

This function is analogous to the “Apply drawing transformation” of the edited image described in section 3.3.2. It allows the user to change the size of the background image on the edit screen; change its location in relation to the defined X-Y coordinates of the lower left corner of the image file; rotate the background image.

3.5 Shapes menu

This section describes the basic shapes and their keyboard shortcuts. Additional information on how to use these shapes in editing diagrams is given in sections 4.2 – 4.9 and section 5.1.2.

3.5.1 Add line (ALT+L)

Enter the line-drawing mode (draw a straight line between two selected points, or a zigzag line if the user selects three or more points).

3.5.2 Add circle (ALT+R)

Enter the circle-drawing mode (draw a circle using its center and a point on its circumference).

3.5.3 Add ellipse (ALT+F)

Enter the ellipse-drawing mode (draw an ellipse from two foci and a point on the perimeter).

3.5.4 Add arc (ALT+A)

Enter the circular-arc-drawing mode (draw a circular arc between two specified two endpoints and passing through an intermediate point on the arc).

3.5.5 Add Bézier curve (ALT+B)

Enter the cubic-Bézier-curve-drawing mode (requires specification of two endpoints and two control points).

3.5.6 Add circle using a set of points (ALT+C)

Enter the circle-drawing mode (approximate a circle by specifying three or more points on its circumference).

3.5.7 Add ellipse using a set of points (ALT+E)

Enter the ellipse-drawing mode (approximate an ellipse by selecting five points on its perimeter).

3.6 Styles menu

3.6.1 Load styles

Import a styleset file and apply it to the present drawing. DRaFT will prompt you to navigate to the desired style set.

3.6.2 Edit styles

Opens the styles dialog window and enables the adding or editing (either creating or modifying) of a style set. For additional information on editing a styleset, see section 9.2.

3.6.3 Save styles

Save the style files created or modified in the “edit styles” menu. Give the modified style file a new name or the original style file will be overwritten.

3.7 Operations menu

This menu enables batch operations that are applied to multiple drawing files. This menu can be activated only if no drawing is open. If you find this menu deactivated, save the current drawing and style file, then select “new” under the files tab of the menu bar.

3.7.1 Modify styleset

This function allows a new styleset to be applied to a range of files. For example, if you have edited diagrams of all the propositions in Book I of the *Elements* in one manuscript and now want to change the styleset applied to all the edited diagrams, this function will allow you to change all the diagrams at once, rather than change each diagram individually.

First, choose the DRaFT files (drawing files) to which you want to apply a style set. Then choose the style set file to apply.

NB: If the style set is applied to a large number of DRaFT files, the operation may take some seconds. When the operation is completed, a small window pops up reporting “operation completed”.

3.7.2 Transliterate labels

This function allows the labels of a range of files to be converted to another form according to the conversion table you have specified.

For example, you may have edited several diagrams from a Greek manuscript and you want to reuse these edited diagrams but with the labels changed to Roman characters. Using this function, first select a conversion table, then select the DRaFT files to which you wish to apply the conversion. All the original labels are replaced according to the conversion table.

WARNING: This operation will overwrite the original DRaFT files. It is best to copy the files or folders to be converted into a new folder in a different location, carry out the conversion, then copy the converted folder back into the DRaFT Data Folder.

WARNING: Selecting the DRaFT files, if you click “open” button when a folder is selected, the conversion applies to all the DRaFT files in that folder. Double-click the icon of the folder if you want to enter into it and select files (or a folder) in it.

NB: If there are many files to be transliterated, the operation may take some seconds. When completed, a message box reports “operation completed”.

To see the changes in the labels, open the converted file in DRaFT. Probably it will be necessary to edit the position of some of the new labels, especially if the new labels are significantly different (such as replacing Greek with Arabic

labels) since the new label is placed in the same label box as the original label. Save the converted file and re-edited drawing to produce the *.eps file. If you save the file with a different name, you will be able to preserve the original *.eps file (but not the *.xml data files) of the original version.

NB: In its current version, DRaFT will convert only single characters. If a character string is used for any label, DRaFT will convert only the first character in the string.

Create a conversion tables of labels

Several conversion tables are included with DRaFT. They are located in the subfolder “conversion_tables” in the program folder. Users may easily write new conversion tables to meet their needs. To create a new conversion table, open one of the existing conversion tables using an editor which can treat unicode characters. Follow the format of the existing tables to create new conversion tables.

A conversion file may also be created using Microsoft Word. Type the table in double columns like this (where A, B are the original symbols and symbol1, symbol2 are the new symbols):

from,to
A,symbol1
B,symbol2

NB: Some letters, such as the Greek sigma have alternative forms. The form of the symbol in the conversion table must be exactly the same as the form of the symbol in the existing drawing.

Save the file as plain text (*.txt). If you are using unusual symbols, such as non-Roman characters, Word will warn you that some symbols will not be saved properly. Choose Unicode (UTF-8) for the character encoding. When saved, use the explorer to locate the file. Rename the file to have the extension *.csv.

NB: If the file extensions are not visible, open “My Computer”. From the menu bar, open “Tools” and “Folder Options”. Under the “view” tab, locate and disable the feature that automatically hides known extensions.

Save the conversion table in the Conversion Tables folder with some convenient name (ending with extension .csv). Re-start DRaFT. The new conversion table is now ready to be used.

3.7.3 Export to *.eps

This function creates *.eps files for the drawing files you selected during the previous two operations.

When you have modified a styleset file (for example, changed label size, line width, etc.), the .eps files already created using the original style set are not automatically updated. If you want to apply the new styleset file to previously

completed drawing files, use this function. You only have to select the DRaFT files (drawing files) you wish updated.

This function may also be used when you have applied a different style set to DRaFT files using the “modify styleset” function in this menu.

3.8 Info menu

3.8.1 Release

The version (release) of the DRaFT program is shown.

4 Operations icons

4.1 Selection mode icon (shortcut: ESC)

Allows selection of specific objects (points or shapes). Objects selected are highlighted on the edit screen, as well as in the points window or shapes window respectively. Makes the program exit from point-creation mode (section 4.2) or shape-drawing modes (sections 4.3–4.9). If the program is already in selection mode, the icon has no effect.

4.2 Point-creation icon

To be abolished. In older versions of DRaFT, the user inserted points by clicking this icon and then left-clicking where points should be inserted in the edit screen. DRaFT now uses Ctrl+left-click and Ctrl+right-click for insertion of points. See also section 5.1.1.

4.3 Line-creation icon (shortcut: Alt-L)

Enter line-creation mode. DRaFT prompts you to select a beginning point and additional points to include in the shape. Left-click the two points you want to join by a straight line. If more than two points are clicked, a zigzag line is created.

NB: the point is selected when the mouse button is released. The mouse-pointer / cursor should not be moved between click and release.

NB: If you want to add an already existing point to the line, left-click it. If you want to create a point and add it to the line, use Ctrl-left click.

To exit from line-creation mode (to finish one line), either (1) click the selection-mode icon, or (2) press ESC key, or (3) select any function icon.

NB: you can click the line-creation icon again to begin another straight or zigzag line.

4.4 Circle-creation by center-radius icon (Alt+R)

Enter the circle-creation mode. DRaFT prompts you to select the center and a point on the circumference of the circle. After completing the circle, DRaFT automatically returns to selection mode.

NB: If you need to create a center-point or circumference-point after you have clicked the icon, use Ctrl-left click.

4.5 Ellipse-creation by foci and perimeter point (Alt+F)

Enter the ellipse-creation mode. DRaFT prompts you to select two foci, then to select a point on the perimeter of the ellipse. After completing the ellipse, DRaFT automatically returns to selection mode.

NB: If you need to create a point (whether focus or perimeter point) after you have clicked the icon, use Ctrl-left click.

4.6 Circular-arc-creation icon (Alt+A)

Enter the circular-arc-creation mode. DRaFT prompts you to select the start point, the end point, and a point on the arc. After completing the arc, DRaFT automatically returns to selection mode.

NB: DRaFT always draws an arc clockwise from the selected starting point to the specified end point. If you invert the order of starting point and end point, the complementary arc of the circle is drawn.

NB: If you need to register a new point (either endpoint or intermediate point) after clicking the icon, use Ctrl-left click.

4.7 Bézier-curve-creation icon (Alt+B)

Enter the Bézier-curve-creation mode. DRaFT prompts you to select the start point, end point, first control point (where the tangent to the curve at start point passes), and second control point (where the tangent at the end point passes). Move the two control points by drag and drop until the curve approximates the desired shape. After completing the curve, DRaFT automatically returns to selection mode.

NB: To insert one or more of these points after you click the icon, use Ctrl-left click.

4.8 Circle-creation-from-points icon (Alt+C)

Enter the circle-creation-from-points mode (approximate a circle using points on its circumference). DRaFT prompts you to select points through which the circle is to pass.

NB: If only two points are selected, these two points are the endpoints of a diameter of the circle. If more than three points are selected, DRaFT draws an approximating circle, which may not include any of the selected points.

NB: If you need to create a point and add it to the circle after you have clicked the icon, use Ctrl-left click.

To exit from this mode (to finish the circle), either (1) press the selection-mode icon, or (2) press ESC, or (3) select another drawing function icon. (You can also press the circle-from-points icon again to create another circle).

4.9 Ellipse-creation-from-points icon (Alt+E)

Enter the ellipse-creation-from-points mode (approximate an ellipse using points on its perimeter). DRaFT prompts you to select points through which the ellipse should pass.

NB: To produce an ellipse, at least five points are required. If more than five points are selected, DRaFT draws an approximating ellipse which may not pass through any of the selected points.

NB: If you need to create a point and add it to the ellipse after clicking the icon, use Ctrl-left click.

To exit from this mode (to finish the ellipse), either (1) press selection-mode icon, or (2) press ESC, or (3) select another drawing function icon. (You can also press the ellipse-from-points icon again to create another ellipse.)

5 The edit screen

The edit screen is where the diagrams (called “shapes” in this manual) are drawn.

5.1 Selection mode and drawing mode

Selection mode allows the user to select specific registered points or created shapes for editing in various ways. Note that the most recently registered object is highlighted until another object is selected or registered.

The drawing modes allow the user to connect points to create shapes.

What happens when you click in the DRaFT edit screen or press various shortcut keys depends on the currently active mode of the program (selection mode or drawing mode) and whether an object (point or shape) is currently selected. When using the mouse, the resulting action depends on whether the right or left button is pushed and whether or not you press the Ctrl key when you click the mouse buttons.

5.1.1 Selection mode

When the program starts, it is in selection mode. To return to selection mode from drawing mode, press the Selection icon (leftmost of the icons) or ESC.

- Left-clicking while in selection mode will:

1. Select a point if you click near a registered point.²
2. Select a nearby line if there is no nearby point.³
3. Select a shape if there is no line or registered point nearby and if the clicked point is included in a shape (e.g., a circle).
4. If there is no shape containing the clicked point, nothing is selected and if there is anything already selected, that object (either point or shape) is deselected.

NB: When in selection mode, left-clicking does not create points nor does it draw a shape.

- Right-clicking while in the selection mode will:
 1. Have no effect if no shape is selected.
 2. Append a registered point to a selected shape as its last point when a shape is selected.⁴
- Ctrl-left-clicking while in selection mode:

Registers a new point, whose coordinates are recorded in the point window.
- Ctrl-right clicking while in the selection mode:

Registers a new point whose coordinates are recorded in the point window and appends it to a shape as its last point if there is a shape selected. (NB: It is possible to change the order of the points in a selected shape — see section 7.1.1.)
- Shift+arrow key When a point is selected, each stroke of the arrow key while the shift key is pressed moves the point one pixel in the direction of the arrow key.
- Ctrl+Alt+drag When a point is selected, Ctrl+Alt+drag creates a rectangular area to indicate the placement of the label of that point. (The label itself is entered in the label field of the points data window — see section 6.3.3). DRaFT places the label at the center of the defined area. The size and shape of the area have no effect on the label's appearance.⁵ See also Tutorial, section 5.5.

²To alter the maximum distance allowance from the selected point, edit the parameter in the defaults file. See section 10 for more on editing default settings.

³To alter the maximum distance allowance from the selected line, edit the parameter in the defaults file. See section 10 for more on editing default settings.

⁴This feature is valid only for (a) shapes with an indefinite number of points — lines, circle by points, ellipse by points — or (b) still uncompleted shapes — shown in yellow highlighting in the list of shapes in the shapes window.

⁵In a future release, it is planned to develop a tool which will obtain the label dimensions in the background image using the data of this rectangle. Hence, it is recommended to draw the rectangular area so that it contains the label in the background image.

5.1.2 Shape drawing mode

DRaFT enters the Shape drawing mode by (1) clicking one of the icons in the function bar (see sections 4.3 – 4.9), or by (2) typing their shortcuts (see section 4.3 – 4.9 for the shortcuts) from the keyboard, or (3) by opening the shapes tab in the menu bar and choosing one of the options there.

- Left-click near a point appends it to the shape which is being drawn.
- Ctrl-left click registers a point at the clicked place and appends it to the shape which is being drawn.
- ESC (or selection mode icon) — quit the shape drawing mode.

5.2 Mouse operations

- left click
(selection mode) select a nearby point or shape, deselect others (deselect all if no object has been selected).
(drawing mode) append the point to the shape which is being drawn.
- right click
(selection mode) when a shape is selected, append a point to that shape.
- ctrl-left click
(selection mode) register a point
(drawing mode) register a point and append it to the shape being drawn
- ctrl-right click
(selection mode) register a point and append it to the selected shape (if some shape is selected).
(drawing mode) register a point and append it to the shape being drawn
- shift+arrow
Move the selected point by one pixel
- ctrl-alt-drag
When a point is selected, defines a rectangular area for placement of the label. See also Tutorial, section 5.5.

6 Points window and point data window

To the right of the DRaFT console there are two windows: the upper one (the points window) contains the list of registered points and their coordinates, with add, edit, and remove buttons on the right; the lower one (point data window) is for entering point data.

6.1 Points Window

6.1.1 Select a point

You can select a point by clicking its coordinates in the points window instead of clicking on (or near) the point in the edit screen.

6.1.2 Edit attributes of a point

To edit the position and appearance of a point, select the point and press the edit button to the right of the points window. A dialog window opens. To edit the position and appearance of the point and its label, change the displayed parameters in the appropriate fields. The options are described more fully in section 6.2.

6.1.3 Remove a point

To remove a point, click its coordinates in the points list, then click the remove button in the points window. If the selected point belongs to some shape, a pop-up window appears, warning that the selected point is part of a shape. If you ignore this warning, any shapes containing the deleted point will be deleted along with the point.

6.2 Point edit dialog window

When you click the edit button in the points window while a point is selected, a dialog window opens in which you can modify several attributes of the selected point. The option fields are described below:

- Identifier — identical with 6.3.1
- Subpoint — identical with 6.3.2
- X, Y
This field displays the coordinates of the point. Changing the values of the coordinates moves the point.
- Label — identical with 6.3.3
- Label rotation
The label attached to the selected point can be rotated. The value is in degrees. (Negative values are also allowed).
- Label characters rotation This field is only useful when the label consists of a string of characters. It has three options:
 1. Normal: the characters are placed as they would normally be read.
 2. Vertical: the characters are placed vertically as read from top to bottom, regardless of the angle through which the label is rotated.

3. Oblique: the characters are placed one below the other and the string of characters is placed perpendicular to the direction indicated in the “label rotation” field.

- Distance between characters

This field is active only in “oblique” mode above. It allows the distance between label characters to be adjusted as necessary.

- Lower left corner X, Y

- Upper right corner X, Y

These two fields together indicate the dimensions of the rectangle containing the label (see section 5.1.1, Ctrl-Alt-drag for additional information). The values are offsets from the coordinates of the points. If no rectangular area is set, the values are all zero.

- Style — identical to 6.3.4

- Visible check box — identical to 6.3.5

6.3 Point data window

6.3.1 Identifier

This is the id of the selected point. It is assigned by the program and cannot be changed by the user.

6.3.2 Subpoint of

This field is not used for the moment.

6.3.3 Point label

In the label field of the point data window, you can type a label to be attached to a selected point (A, B, C, for example). Any unicode character or string of characters can be used for the label. Clicking the small icon to the left of this field activates a window that gives the Unicode value to the symbol used as a label.

NB: This function will identify each symbol in a string by its appropriate unicode value.

HINT: If you are not able to type some characters (for example, Arabic or Chinese characters) directly from the keyboard, open any wordprocessing software and using any font that includes the desired characters type them into this document. Then copy and paste the character or character string into the label field. The paste command in DRaFT is Ctrl-V.

6.3.4 Point style

You can change the size, font and color of each point by using different style sets. To do this, you must edit the styleset files. (For details of how to edit a style file, see section 9.2.)

6.3.5 Visible checkbox

If this function is disabled, the point becomes invisible in the final drawing. This action means that the point and its attached label do not appear in the drawing screen (any shapes containing the point and defined by means of the point remain visible). The “invisible” point and its label are only visible when the point is selected and are highlighted in gold rather than red color.

HINT: To show all the invisible elements, use “show invisible elements” under the options tab of the menu bar. Enable the visibility function to restore the point to visible status.

7 Shapes window

The shapes window lies below the DRaFT edit screen. In it are listed the registered shapes (lines, circles, etc.) created during the editing process. Each shape is defined by a list of the identifiers of its points, together with their labels (if any). When a shape is selected, its list of identifiers is highlighted in blue (the shape itself is highlighted on the edit screen in red). A shape without enough points for definition is highlighted in yellow.

7.1 Shapes edit

When a shape is selected in the shapes window, the edit button in the shapes window is enabled. If you press the edit button, the shapes edit dialog window opens. Here you can attach a label to the shape, specify label position and rotation, specify the rotation of label symbols, define a style set for the shape, set the shape to be visible / invisible, reorder the shape’s points.

7.1.1 Shape label position and rotation

At the moment, the label is applied directly on the straight line. If you wish the label to be off-set from the line, attach the label to a line parallel to the desired line and set this line to be invisible.

NB: At present the label can only be applied to a rectilinear segment. In the case of an arc, for example, the label will be placed on the midpoint of a line connecting the start and end points, not on the curve of the arc itself.

7.1.2 Label Characters Rotation and Style

These functions are identical to those described in section 6.2.

7.1.3 Reordering points

This field allows the reordering of points that make up the selected shape. Click the number of the point whose place in the shape you wish to change. Use the up or down arrows at the left of the window to reposition the point in the ordering. This action does not change the position of any points on the edit screen - it only changes the way that the shape is constructed. To change the position of the point on the edit screen, use the point edit dialog window (section 6.3).

7.1.4 Computed values

For any shape, DRaFT computes basic geometrical features associated with the shape, such as the direction and length of line segments, the angle between two conjoined line segments, and the ratio of the lengths of two conjoined line segments, major and minor axes of ellipses, radii of circles, etc. These computed values are displayed in the field at the bottom of the shapes edit dialog window.

8 Groups window

This function is under development. The idea is that you can take more than one object (points and/or shapes), define this set of selected objects as a “group”, and assign it a name and keyword(s). For example, you can define a “group” of four lines to constitute a parallelogram, and attach the keyword “parallelogram” to it. Or you take a quadrilateral which looks like a square (but is not necessarily a square according to the text of the proposition), and attach the keyword “parallelogram”. These keywords / names will in future enable users to search databases of diagrams for those having specific features as defined by the categories and keywords.

The basic operation is:

1. Select one or more shapes and points. To do so, hold down the shift key while right clicking each object in the drawing window.
2. Click the add button in the groups window. The groups dialog window opens.
3. DRaFT inserts the name “new group”. You can replace the name “new group” with whatever term you prefer.
4. To attach a keyword, click “add” in the keywords section of the dialog window, select one of the categories of keywords, then one of the keywords. Repeat this operation to attach multiple keywords to a single group.

The keywords and their categories are defined in the file “keywords.owl”. A tool for editing the categories and list of keywords will be provided in future versions.

9 Stylesets

How a line looks — its color, weight, label font, etc. — is defined in a style file which determines these parameters. A collection of style files is called a styleset.

It is often necessary or desirable to use more than one type of line. For example, when a part of the diagram is lost or rendered invisible by damage, it is natural to complete the lost or invisible parts using dotted lines. Or one may want to use different color(s) for certain lines in the diagram in a presentation, then change them to dotted or dashed lines when one publishes an article. For such situations, DRaFT allows the user to create customized style files.

You can assign a different style, for example: “default”, “lost”, “border”, etc., to each point or shape by selecting the desired style in the style field of the point edit dialog window or the shapes edit dialog window. Or you can load a styleset file to the drawing so that the appearance of all the points, shapes and labels in a diagram change to reflect the new style.

The relationship between a drawing file (DRaFT file, an .xml file) and a style file (which is also an .xml file) is similar to that between a LaTeX source file (.tex) and a style file (.sty), or that between an html file (.htm or .html) and a style sheet (.css).

9.1 Load styles

To change a style, use the styles tab on the menu bar (section 3.6.1) to load a styleset containing the desired style. A dialog window opens allowing you to navigate to the style file you wish to load. When a styleset is loaded, its name appears at the top of the DRaFT console (above the menu bar), in parenthesis.

The first style in the styleset file is automatically assigned when:

1. no style is assigned to a point or a shape
2. a style assigned to a point or a shape cannot be found in the newly loaded styleset file.

To load a style file to multiple files at once, use the operations tab on the menu bar and select “modify styleset” (section 3.7.1). This operation allows you to change all the colored drawings you prepared for a presentation, for example, to black and white images suitable for printing.

9.2 Edit styles

A “style” consists of the following attributes:

- name of the style (the user can assign any desired or descriptive name)
- element color (point or shape)
- line width

- line dash (solid, dashed, etc.)
- point size (default is 8)
- label color
- font size of a label (default is 24)
- font name (default is Times New Roman)

You may create a new styleset or modify the attributes of the current styleset. Click the add or edit button as appropriate. A dialog window opens. Select or insert the desired attributes for each field.

NB: For added stylesets, DRaFT suggests a font size = 12. If you want an added styleset to match existing stylesets, assign the font size to be the same as the other stylesets in the style file. For the basic style files, DRaFT suggests a font size = 24.

WARNING: Give the new style a different name or you will overwrite the existing style file when saving. After you have saved the style, an asterisk appears following the name of the styleset indicating that the original styleset has been modified and saved.

9.3 Save styles

If you have edited a styleset, you have to save it to be able to use it later. If you do not save the style when you close the drawing file, the modification of the styleset is lost. You can either overwrite the existing style file, or save a modified style under a different name.

HINT: You may just want a different color for lines, without changing any other attributes. Even in this case, you have to add a new style to the styleset you use (see the tutorial for an example). This new style must contain color, size and font of labels.

NB: If you leave the font field blank, you can't save the styleset or close the style edit window.

10 Editing Default Settings

Many parameters are pre-defined in “scriptorium.defaults” file in the DRaFT program folder. The defaults file is written in .xml code and is editable. In this section, we provide several examples to illustrate the editing process.

- Example: A point appears in blue in the drawing window when it is not selected, red when it is selected, and black when a shape containing it is selected or being defined because these are the default colors defined for these classes of lines. These default parameters can be edited by changing the numerical values in the following statements in the .xml defaults file.

Open the defaults file using a text editor such as Wordpad and look for the statement:⁶

```
<entry key="points_unselected_color">0:0:255</entry>
<entry key="points_selected_color">255:0:0</entry>
<entry key="points_reference_selected_color">00:00:00</entry>
```

Similarly, one can change the default colors of unselected, selected, and reference lines.

- Example: The density of the internal shading of shapes can be modified by changing the default value in the statement:⁷

```
<entry key="shadows">0.1</entry>
```

- Example: The maximum distance allowance from a selected point—in pixels—may be altered by changing the value of the following parameter in the defaults folder:⁸

```
<entry key="point_selection_distance">16</entry>
```

- Example: The maximum distance allowance from a selected line—in pixels—may be altered by changing the value of the following parameter in the defaults folder:⁹

```
<entry key="line_selection_distance">16</entry>
```

Other parameters may be edited in a similar fashion.

HINT: You should always save a backup file of the DRaFT defaults before you begin to edit the default file. Then you will always be able to restore the original defaults should you make a mistake while editing.

⁶The numerical values represent Red-Green-Blue intensity values respectively. These values can range between 0 and 255. 0:0:0 is black and 255:255:255 is white.

⁷The default value is 0.1.

⁸The default value is 16.

⁹The default value is 16.