New features in DesignaKnit 8

Main points:-

Improvements affecting more than one main area of DesignaKnit.

- 32-bit Windows functionality
- New TrueType KnitWrite DK knitting font, containing over 200 hand and machine knitting symbols.
- Thumbnail viewer – now views shapes and palettes too, with sorting and searching
- 20 levels of undo and redo in SGS, OPD, and SD.
- Many improvements to printouts, including new hand knitting formats.
- Automatic searching for magnetic switch cable links

Original Pattern Drafting

- Select and drag groups of coordinate points
- Add multiple points in a defined sequence
- Improved Mirrors
- Improved rulers and grids, including moveable rulers
- Display and integrate stitch patterns on garment pieces
- Exact Stitch Layout – full control over the piece edges
- Use the new Measured Adjustment dialogue to control and measure drags
- Extensive new Join Piece, Merge, Add, and Subtract options
- Bezier curves - at last
- The new Construct Slope dialogue for precise regular slopes
- Display a background graphic image for tracing over

Stitch Designer

- The yarn colours and stitch types palettes are now combined, with separate needle selection and transparency indicators, and preset knitting alerts.
- The improved Select Stitch Symbols into Palette dialogue, showing the new KnitWrite DK font
- Enter patterns using the keyboard
- The Stitch Symbols Text Editor – View and edit the knitting instructions for the KnitWrite DK symbols
- Extended or improved tools: Birdseye, Shuffle, brush widths, lasso types, pencil, mirror, zoom, pattern text (including different text orientations), mouse position indicators including position in garment piece, moveable rulers, better graphics tablet tracing, Bezier curves including built-in symmetrical patterning, and a palette of functions emulating the EC1 .
- Read and write stitch pattern files for the Silver Reed PC10 Pattern Controller.
- Palettes / Vary has new options offering more effective use of the random colours.
- Palettes / Yarn Colour Setup has new options for generating complementary colours and ranges of similar colours.
- Cables – place cables onto stitch patterns using the cable tool. Browse a list of the sample cables and select your own working collection. For hand and machine knitters.
- The Edit Custom Cable dialogue – add your own custom cables.
- Starting a new stitch pattern is much easier with the important choices being presented together.
- New hand knitting options, and a main stitch of knit or purl may be selected for either hand or machine knitting.

DesignaKnit Graphics Studio

- Larger images
- More image formats
- Pixel perfect conversions
- Extensive minor improvements
- The new Tidy Image dialogue has colour replacement tools for adjusting the image before converting to a stitch pattern.

(Note to translators: do not translate this document: it is only for beta testers)

Abbreviations used:
SGS = Standard Garment Styling
OPD = Original Pattern Drafting
SD = Stitch Designer
LMB = Left Mouse Button
RMB = Right Mouse Button

Improvements affecting more than one main area of DesignaKnit.

- There is a new knitting symbols font called KnitWrite DK, containing 221 stitch symbols. These symbols are mainly for hand knitting but contain some that will be useful for machine knitters. The complete font can be seen in Stitch Designer / Palettes / Stitch types palette. See the Stitch Symbols Text Editor below.

- The Roosmalen font will also be included with DesignaKnit 8.

- Long filename support throughout. (Restrictions apply to backward compatibility: if a shape has been integrated with any stitch pattern files whose names plus paths are over 55 characters in length, those integrated filenames are not visible to earlier versions of DesignaKnit, ie the integrate information is lost for that particular garment piece.)

- Standard 32-bit File Open and File Save As dialogues are used throughout (in addition to the thumbnail viewers), enabling the usual file and folder creation, deletion, etc operations to be done while the dialogue is open.

- Mousewheel support is implemented in the thumbnail viewer for vertical scrolling, and in OPD, SD, and DGS for zooming in and out.

- The Setup program registers the following extensions so that DesignaKnit 8 can be launched by selecting a file from a My Computer window: stp, pat, plt, and shp. Each of them has its own icon and there are options to registered each of them with Windows during the initial setup.

- The maximum size of a stitch pattern is now 3000 rows by 2000 stitches (instead of 1130 rows by 800 stitches). Stitch patterns that are larger than the DesignaKnit 7 limits are not backwardly compatible.

- The maximum size of a garment piece is now 3000 rows by 3000 stitches (instead of 1600 rows by 2000 stitches). Pieces that are larger than the DesignaKnit 7 limits are not backwardly compatible.

- Child windows such as Stitch Designer’s palette behave much better in DesignaKnit 8 than in DesignaKnit 7. They can be made to stay within the main DesignaKnit window, or can be detached and placed outside. The Options menus have an additional item that enables detached windows.

- Knitting machine setup has new buttons, “Add new machine” and “Copy machine”. When a user creates knitting machine records in this way, they can then set some of the Advanced properties for the new machine, including the name.

- Knitting machine setup now has a Technique button for the Passap E6000, E8000, and Duomatic. When it is clicked and the Duomatic is selected, it asks for the number of lock passes per row.

- It is possible to have multiple DesignaKnit 8 sessions open. The configuration data which remains after each session has run is the data which was saved last. When a 2nd or subsequent instance is run, there is a pop-up to tell the user that there is another instance running, and it asks the user whether they want to start another instance. If they opt not to start another instance, the first instance is made visible. If the user wants to start another instance, a warning is given that it will not be possible to save certain configuration information across sessions. "Some configuration changes made in this program instance will apply only to this session. If you need to make any long term configuration changes, use the original instance of the program." There are 2 exceptions to this: (a) Knitting machine setup and (b) the information that is stored with each stitch pattern (eg colour scheme, knitting method). This inability to save other information continues even if the original instance is closed. It will still be possible to make configuration changes, but those changes apply only to the current instance. When the instance is closed and another

is opened, the configuration will revert to what it had been before instance 2 was opened, plus any changes made from within instance 1.

- 256 and lower colour quality are not supported, neither are resolutions smaller than 800 x 600. If Windows is configured to one of these lower qualities or resolutions, there is a new message when DesignaKnit 8 starts: "DesignaKnit is intended to be used with the following minimum configuration. Control Panel / Display Properties / Settings should be set to:- Screen resolution - 800 x 600 (or better) Colour quality - 16 bit (or better)". The resolution and colour quality requirements are shown only if they are less than the current Windows setup.

- The thumbnail viewer has been extensively developed…
  - Thumbnails are now also used for shape files and palette files in addition to stitch patterns and standard graphic files.
  - Stitch pattern files and palette files can be searched by knitting method, number of rows, text embedded in notes, and a range of dates last saved. Shape files can be searched by design method (SGS, OPD, or both), by SGS styling if any exists (baby/child/adult; female/male; garment type), by the number of pattern pieces, by text embedded in the tension notes, or by a range of dates on which the files were last saved. Dates are displayed on the thumbnails provided that the cell size is not too small.
  - Stitch patterns may be selected by knitting method, rows, and text embedded in the notes and colour name table.
  - The displayed thumbnails can be sorted in different ways. In the case of stitch patterns, this is by filename, knitting method, number of rows then number of stitches, number of stitches then number of rows, or date & time last edited. In the case of graphic files, this is by filename, vertical size then horizontal size, horizontal size then vertical size, or date & time last edited. Shape files can be sorted by design method (SGS, OPD, or both), by SGS styling if any exists (baby/child/adult; female/male; garment type), by the number of pattern pieces, and a range of dates on which the files were last saved. The specified sorting can be in ascending or descending order.
  - The choice of sortable fields is determined by the type of files selected for display: if .stp, .pat, or .plt are selected, the options appropriate for stitch patterns are available. If some of the files listed are stitch patterns, and others are standard graphic files, and the sort sequence includes stitch pattern specific items (eg knitting method), the stitch patterns are ALWAYS listed first (this can happen if *.* is entered for filename). In this case, sorting by knitting method, rows, or stitches is ignored for files that haven't got the right filename suffix for stitch patterns (*.stp, *.pat, *.plt).
  - The thumbnail window can be resized (within limits), and the dimensions are remembered across sessions. If the screen resolution is 800 x 600, the thumbnail window is maximized, as otherwise not all the buttons would be visible.
  - There is now no option within the thumbnail viewer to display thumbnails or not. There is no loss of choice here, because the "not" option is covered by the additional Open items on the relevant File menus. Also, in the case of both the Fill Pattern and File Open toolbar buttons, the standard File Open dialogue is used instead of thumbnails if the Control key is held down while clicking.
  - The colour scheme for shape thumbnails....
    - The **background colour** of thumbnail shape diagrams is decided as follows. Files that contain only SGS pieces are shown as a SGS diagram in normal SGS colours. Files that contain only OPD pieces are shown as an OPD diagram in normal OPD colours. Files that contain a mixture of SGS and OPD pieces are shown as an OPD diagram with a light blue background colour - ie a mixture of the SGS and OPD background colours.
    - Legacy files that contain version 5 Exact Stitch Layout pieces are treated as follows. If they contain just SGS+stitch layout pieces, they are shown as a SGS diagram with a green background. If they contain OPD+layout or SGS+OPD+layout, they are shown as an OPD diagram with a green background.
    - The **colours of pattern pieces** in an OPD-like diagram are decided as follows. If a piece is pure SGS, it is shown as the same grey as the main fabric in the SGS diagram (looks pinkish in contrast to the blue background). If the piece is pure OPD, it is shown in the normal SGS non-highlighted blue. If it was SGS originally but modified in OPD, it is half way between the SGS grey and the OPD blue. If it was SGS or OPD but was modified by dk5's Exact Stitch Layout, it is green.

- Some large jpg images are shown as having a number of horizontal and vertical pixels which are different from the number shown by DesignaKnit 7, curiously. MGI Photosuite and PSP agree with DesignaKnit 8, not DesignaKnit 7. The pixel size is stored in the .qp? file, therefore the user should take care to remove any existing .qp? files from folders containing graphic files before starting to use DesignaKnit 8. Otherwise a thumbnail search based on image size can produce a surprising result.

- The zoom window now also shows the filename. This is in case the potentially long filename does not fit into the thumbnail cell and has to be abbreviated.

- Quick Preview (*.qp?) files are now created automatically with the Hidden attribute set. There is no option to create them – they are now always created when necessary.

- The bottom right of the thumbnail dialogue shows the number of thumbnails shown. If this is different from the total number of files (of the type selected using the drop-down list of file extensions), then the latter number is also shown in brackets, eg 150 files (200 total)

- The thumbnail viewer allows multiple file selection for the File / Delete menu options throughout the program. Multiple file selection is also available for downloading to Brother 930 / 940 / 950i / PPD. The number of files currently selected, and the total number shown, is displayed at the bottom right of the dialogue.

- If the number of thumbnails is different from the total number of files of the selected type, this is because a Search has been specified, and some files have thereby been excluded.

- There is now a View all button, which is equivalent to doing Search / Reset. The display is still restricted to the currently selected file type. For example if DGS's thumbnail viewer has jpg's selected, it does not respond to View all by showing all graphic files.

- Passap E6000 and E8000 machines: Technique numbers are now stored independently for these.

- Passap Duo Punchcard machine: When this machine is configured, tensions are entered in a similar way for the E6000 and E8000, as the number of passes per row. For this machine, the tensions dialogue contains a "Technique" button that requests the number of lock passes per row.

Printouts

- The process of specifying a printout has been greatly simplified for both stitch patterns and shapes.

- The printer's unprintable margins are now obtained from the printer driver instead of requiring the user to enter them.

- The page size and orientation may be entered in DesignaKnit's Page Setup or in the printer driver setup. It is no longer necessary to make sure that both agree.

- In the Print Stitch Patterns dialogue, there is a new format "Pattern Text". In the Print Pattern Pieces dialogue, there is a new format "Garment Text". These produce abbreviated stitch by stitch instructions in the kind of format often used in published hand knitting patterns, along with a key relating the abbreviations to full knitting instructions.

- The Garment Notation printout can now be printed at a specified percentage of actual size, instead of only fitting to a page as in DesignaKnit 7. In DesignaKnit 7, this format of printout occasionally suffered from notation that overlapped, making it difficult or impossible to read. DesignaKnit 7 attempted to separate notation that is on neighbouring rows (or is dangerously close for other reasons) by a combination of moving the notation and reducing its font size. If the option to fit to a page is used in DesignaKnit 8, these methods are still used to avoid overlaps. However, if the printout is being done at a specified percentage of actual size, DesignaKnit 8 assumes that the overall printout size is larger than a single page, and that there is no danger of overlapping notation. It therefore uses a single font size and places the notation text in the most obvious places without adjustment. If the notation is still not readable, the remedy is to increase the percentage of actual size (or select to fit on page).

- The Garment Notation printout now optionally includes the markers that can be attached to coordinate points in OPD. Markers are shown as pink circles. If the coordinate point they are located at has some notation associated with it, the circle is empty; otherwise it shows the row count number.

- For print formats Stitch pattern picture, Stitch pattern symbols, Garment Picture, and Garment Symbols: if the yarn colour is printed, the grid is also printed in the colour that was configured for that stitch pattern. In DesignaKnit 7, the grid colour for these formats was always black.

- In the Preview, the scrollbars do “tracking” (the image is moved while you drag the control). Previously you had to let go of the control before the image was redrawn.

- The Yarn Calculation printout now works for shapes that have different stitch patterns used for different garment pieces.

Standard Garment Styling

- If the main window is resized, the diagrams are also resized. This doesn’t happen in DesignaKnit 7 - making the window smaller means that some of the diagram may be lost. If there are sleeves, the sleeve window can be dragged out of the main window if the option for Separate Child Windows is ticked.

- At the opening dialogue a filename may be selected by a single LMB click instead of a double click being necessary. Because of this, the OK button no longer has a function so it has been removed.

- There are 20 undo and redo levels.

- Monochrome display now shows grey shades for manikin, rib and inside of garment, instead of everything in just black or white.

- The styling dialogues now have an Apply button.

- Moveable horizontal and vertical rulers can be dragged around the main window. As for OPD and SD, single clicking on the ruler’s Units buttons changes between normal units and sts and rows, while double clicking on the rulers’ Units buttons opens the Units dialogue.

- If a Raglan garment is unknittable because the sleeve raglan slopes cross over each other before reaching the neck edge, enough ease is added automatically to the upper arm to make the garment knittable.

- The skirt dart at the hem is now removed if the circumference divided by the (hip measurement) + (hip ease) is less than the arbitrarily chosen figure of 1.2.

- The red highlight circle is now drawn more frequently. If the measurement being highlighted is less than 1.5 times the radius of the red circle, the circle is now drawn. In DesignaKnit 7 it was drawn if the measurement was less than the radius.

- These explanations appear on the status bar when the relevant styling items are active:

  Eg. 3 means increase 1 stitch in 3 on the last row of rib. 0 = No blousing.
  The overall extra length is distributed evenly over the red dashed area.
  This is the width at the top edge of the sleeve head.
  This is the top width after gathering into pleats.

Original Pattern Drafting

The buttons that duplicate View menu options are now at the top border of the screen. Toolbar buttons have also been slightly reorganized in groups.

There is now a maximum number of points per piece of 1000 instead of 150. This larger number is required for Exact Stitch Layout (see below). There is also a maximum number of 15 separately knitted sections at any one row of the garment piece, instead of 10.

Selecting and dragging coordinates

A set of points can now be selected for dragging. The selection box can be used to select points, or you can simply LMB click very near to the required point. When drawing the box, if the Control key is held down before the LMB is released, the selection of points inside the box is reversed. When clicking near a point, if the Control key is held down before the LMB is released, the selection status of that one point is reversed. The Shift key can be used to select a range of points.

The selection can then be dragged using the mouse, or moved using the arrow keys.

When dragging one or more points with the big cursor on, the big cursor jumps to the nearest point to help line up the selected points with the pattern piece's other points.

When a set of points have been selected, they may be moved with exact control using the Measured Adjustment dialogue (see below).

Adding multiple points in a defined sequence

When the current piece is displayed in coordinates mode (ie stitch handles are not visible), the + tool allows the addition of new points to the piece outline.

In the normal operation of the tool, each new point is added to the existing edge line that is closest to it, independently of any points added previously.

This is not so convenient if you want to add a series of points that must be joined to each other rather than each being inserted separately into the edge line that happens to be closest. There is now a multiple points mode: if the Control and Shift keys are both held down while the tool is active, the + cursor changes to three + signs and the tool behaves differently. Any points added in multiple points mode are added to the outline in the same order in which they were clicked, regardless of proximity to existing lines. The first point of any series is still added to the closest edge, but the second point is added clockwise to the first point, ie it is inserted between the first point and the point that is clockwise from the first point. Subsequent points are always inserted clockwise to the previously inserted point.

This means it is now possible to draw an entire outline by clicking the points in sequence, for example by tracing the outline of a printed pattern using a graphics tablet. If tracing a new piece from scratch, begin with a tiny group of just 3 or 4 points close together, so that they don't get in the way of what you are doing, trace the shape, and then delete the original points.

Pressing control and Shift together returns the tool to its normal state: the next added point will then be added to the closest existing edge line as usual.

The Mirrors

The mirrors can no longer be outside a garment piece. When dragging a mirror, and the mirror tag is released, it snaps to the nearest valid position. If the vertical mirror is configured to be at a stitch intersection, it snaps to the nearest intersection, and if configured to be at a stitch centre, it snaps to the nearest stitch centre. Similar logic applies to the horizontal mirror.

When switching the vertical mirror from intersection to centre, a stitch column is inserted, being copied from the stitch column that was immediately to the left of the intersection mirror. When switching the vertical mirror from centre to intersection, the stitch column that was within the mirror lines is removed.

When setting the origin to an existing coordinate, the mirror type is set to intersection rather than stitch/row centre.

If the Control key is held down before ending the drag, the dragged mirror snaps to the nearest point to the mirror (rather than the nearest point to the cursor), while the other mirror stays where it is.

If the Control and Shift keys are both held down, the arrow keys can be used to change the position of the mirror by exactly one stitch or row.

Slope Attributes (diagonal slope type, shaping method)

There are new symbols for diagonal slope type & shaping method. Diagonal slope type tags are now displayed only for slopes that are not horizontal or vertical. Shaping method tags are now displayed only for slopes that are horizontal or gentle (ie closer to horizontal than to vertical).

When any of the slope attributes (slope type, shaping method) are displayed, a set of them can now be selected. Clicking on any one of them duplicates the change in all the selected slopes. Also, clicking on an unselected tag will also duplicate its attribute into any slopes that are selected.

When altering the diagonal slope type or shaping method, the mouse must now be clicked right on the symbol, not just near the line that the symbol refers to. This means that when in the mode for diagonal slope type or shaping method, it is now possible also to use the mouse in other ways, such as to select another garment piece. In DesignaKnit 7 it was too easy to change the slope type etc inadvertently while trying to do something else with the mouse. It also now becomes possible to alter only the intended line, when the coordinates are very close: in DesignaKnit 7 it could be difficult to select the right one.

When the diagonal slope type or shaping method are displayed, changing the currently active piece now does not turn off diagonal slope type or shaping method.

When in Exact Stitch Layout mode, the available shaping methods are C, H, and N, instead of C, c, H, h, and N.

Rulers and grids

There are 3 settings for grid lines and dots:

- No grid.
- Draw the grid over the pieces, as in DesignaKnit 7.
- Draw the grid behind the pieces.

Keep clicking the lined grid or dotted grid buttons to see the 3 states.

There are new horizontal and vertical moveable rulers that work like those in DGS and SD. The position of each moveable ruler for each pattern piece is stored in the shape file, and is therefore remembered individually for each piece across DesignaKnit 8 sessions. The point at which the horizontal ruler attaches to the shape layout is at the upper edge of the ruler at the zero point. The point at which the vertical ruler attaches to the shape layout is at the left edge of the ruler at the zero point.

Click on the buttons near the ends of the rulers to change between sts or rows and the configured units, or use RMB anywhere on the ruler.

The ends of the fixed rulers have similar buttons to those on the moveable rulers for changing between sts/rows and configured units, but for the fixed rulers it is not possible to change each ruler independently: changing one fixed ruler changes the other one automatically, because the entire garment is affected by this choice. Single RMB clicking anywhere on the ruler also changes the units.

Double clicking on the end buttons of any ruler (these buttons show “cm”, “ins”, “S”, or “R”) displays the “Specify Units” dialogue. Changing the units in this dialogue changes all OPD rulers’ units. If you want the moveable rulers to have different units from the fixed rulers (and from the drag points constraining dialogue), you have to set them individually again. Changing between normal units and sts&rows also changes the display of the active piece between points and stitch handles.

Single LMB clicking near the zero point of any ruler toggles the relevant mirror without asking whether to copy one side of the mirror to the other. Double LMB clicking on the zero point of any ruler displays the relevant mirror and asks whether to copy one side of the mirror to the other, as when using the View mirror menu options or buttons.

When changing to use sts & rows from cm/ins, this causes stitch handles at the edges of the active piece to be displayed, while changing to cm or ins causes the stitch handles to be hidden. See below for Stitch Handles.

The Measure Across tape measure tool has had 2 changes: (a) it can be quickly reattached to a different point by double clicking near the new point, and (b) the diagonal distance along the tape is now shown near the stationary end of the tape.

Displaying and integrating stitch patterns

There is a new View / Stitch pattern menu item and view button (the icon is a front piece with a colour pattern) to show the currently integrated stitch pattern on the currently selected pattern piece. If no stitch pattern has yet been allocated to this garment piece, the thumbnail dialogue is presented so that a stitch pattern may be selected. When the integrated stitch pattern is displayed, a tag with 4 arrows appears in the centre of the piece. The positioning of the stitch pattern on the piece can be adjusted by dragging with the mouse, starting from this tag.

Using the new View / Different stitch pattern, or double clicking on the View button, or double clicking on the tag brings up the stitch pattern thumbnail dialogue, regardless of whether the piece has yet been integrated, so that a different stitch pattern may be integrated.

When View / Stitch pattern is selected, the View / Stitches option is turned on automatically.

Exact Stitch Layout (ESL)

Even if the shape is being edited just by moving the coordinate points, the stitch layout will be as close to the piece outline as is possible – much closer than in DesignaKnit 7. In addition to this improvement, the user can now use ESL mode for complete control over the stitch outline.

There is a new menu item View / Stitch Handles and a corresponding button (one of the View buttons with a couple of orange blobs). If the stitches are not too small, stitch handles are displayed at the ends of every row to allow adjustment of the piece outline. You might need to zoom in to see the stitch handles individually.

One or more stitch handles can then be selected for dragging. The selection box can be used to select handles, or you can simply LMB click on the required handle. When a handle is selected it changes colour from orange to green.

If the Control key is held down before the LMB is released when drawing the selection box, the selection of handles inside the box is reversed. When clicking on a handle, if the Control key is held down before the LMB is released, the selection status of that one handle is reversed.

Selected handles can be dragged as a group using either the mouse or the left and right arrow keys. Stitch handles can be moved only to the left or right, and not up or down. If you do something odd like dragging one shoulder into another be prepared for interesting results.

On any garment piece, when a set of stitch handles is dragged to a new position for the first time, this changes an important property of the entire piece: it becomes an ESL piece. DesignaKnit 8 thereafter remembers (unless you later change it) that this piece has been shaped in this way. There are 2 consequences of this: (a) the Stitch Handles button automatically turns on when this piece is selected as the active piece, and (b) double row steps are never forced upon this piece. It is however still possible to select and alter the Shaping Method for each of its edges, in order to enable checking for correct shaping for the direction of knitting (using the Knitting Direction Indicator – see below). Once a pattern piece has made the transition to ESL mode, the available shaping methods are C, H, and N, instead of C, c, H, h, and N.

A piece in ESL mode is displayed in light cream when active and a darker shade when not - unless of course the integrated stitch pattern is shown. Pieces that have not been converted to ESL mode are pale grey when active and darker when not.

When some stitch handles are moved to redefine the shape, the outline points snap exactly around all the stitch edges including the newly moved edges. It is then possible to turn off View Stitch Handles and return to processing the shape as the new set of points if desired. In other words the changes done by dragging the stitch handles are not lost when returning to points mode, though of course **if** the tensions are then changed, there will be some resulting irregularities in the stitch layout. For this reason, you should enter ESL mode only after the tensions have been measured accurately and entered for that shape file.

If a piece that was shaped using ESL is later reshaped by dragging not the stitch handles but the ordinary points, it reverts to being a normal piece. DesignaKnit 8 then defaults to imposing double row steps on any gentle slopes that it may have, and no longer defaults to showing that piece with stitch handles.

In order to revert an ESL piece to an ordinary piece and undo all the changes made in ESL mode, select Options / Revert. The extra coordinate points that were added by ESL are removed and the piece is restored to how it was before ESL mode was entered. Use this option if it is necessary to change the tension of a piece that was shaped using ESL. After entering the new tension, ESL may be used once again to work on the stitch layout.

In order to revert an ESL piece to an ordinary piece without losing the changes made in ESL mode (for expert use only), begin by turning off View / Stitch handles. The coordinates then become available for dragging. Moving any of them causes the piece to revert. The extra coordinates that were added by ESL are retained (and it is probably a good idea to remove them using the - tool).

When a piece enters ESL mode, the user is asked: "Save a copy of this piece before converting to ESL? (If at a later point you need to change the tensions and recreate the stitch layout, you will then be able to use Options / Revert)". The safe copy of the piece is stored invisibly as part of the same shape file's data, so there is no need to enter a filename.

There are some functions for manipulating the stitch layout handles, apart from dragging them using the LMB. It is possible to do the following while stitch handles are displayed:

- Insert a single row at a particular existing row, restricting the insertion to the clicked section (eg one shoulder). This is done using the new insert row tool that is immediately below the old + tool.

- Insert a single row at a particular existing row, not restricting the insertion to the clicked section but applying it to all sections at that row (eg inserting a row in both shoulders together). This is done using the new insert row tool that is immediately below the old + tool, with the control key held down before clicking.

- Delete a single row at a particular existing row, restricting the deletion to the clicked section (eg one shoulder). This is done using the new delete row tool that is below the old - tool.

- Delete a single row at a particular existing row, not restricting the deletion to the clicked section but applying it to all sections at that row. This is done using the new delete row tool that is below the old + tool, with the control key held down before clicking.

- Add a column of fabric 2 stitches wide extending from the nearest horizontal edge of the piece, upwards or downwards to the current cursor position. This can be above, below, or within the existing rows of the piece. This is done using the old + tool, clicking on any empty space that is within the horizontal extent of the currently selected piece. The reason for the new column being 2 sts wide instead of 1 is that it is easier to drag to the required shape when the left and right edges are already distinct.

- Snip into the existing fabric to make a vertical slit, either upwards or downwards from the cursor to the nearest horizontal edge. This is done using the old + tool, clicking anywhere within the currently selected piece.

- Cut off an entire section. This is done using the old - tool, clicking anywhere within the currently selected piece. The piece will be separated into 2 parts at that row and only the larger part retained. If the Control key is held down before clicking, only the smaller part of the piece is retained.

- In order to close up an unwanted vertical cut, or shaping such as a neckline, drag one edge and drop it beyond the other edge.

While using ESL the Knitting Direction Indicator may be useful.

The ESL option also turns on View / Stitch Outline.

The Knitting Direction Indicator

There is a new View / Knitting Direction menu item and view button, that not only allows control of the knitting direction at row 1 of the active piece but also displays warning highlights of shaping errors.

There are 3 states of this option:
- Off
- On with plain background

- On with shaded rows. When zoomed in so that individual rows are visible, the background screen colour has different colour shades for alternate rows, thereby providing an instant guide to the knitting direction for each row.

When this option is turned on, a green arrow appears at one side or other of row 1 of the active piece. The starting direction of knitting can be altered by clicking on the green arrow.

Shaping errors are highlighted as follows: castoffs at the wrong side are highlighted in pink, castons in red, holds in light purple, pickups in darker purple. Slopes that have the N attribute (as opposed to C, c, H, or h) do not generate warning highlights. (If it is necessary to change these slope attributes, note that in DesignaKnit 8 it is possible to activate the Shaping Method tool, select any number of slopes using the selection box, and change them all at once.)

In order for DesignaKnit 8 to be able to locate any errors found, one of the following view options must be on: stitch outline, stitch pattern, or stitch handles. If none of them were on when the knitting direction tool was turned on, stitch outline is turned on automatically. When the knitting direction tool is turned on, the displayed units are set to stitches & rows.

When the knitting direction is changed by clicking on the green arrow (not the view menu item or button), one of the following adjustments is made to DesignaKnit's current settings:

- If the previous direction of knitting had been set using the knitting machine setup "Start with CAL" setting, that setting is toggled.

- If the previous direction of knitting had been set using the integrate table's CAL setting for that pattern piece, that setting is toggled.

- If the previous direction of knitting had been set by the colour changer being configured on, the colour changer is then configured off, and if necessary a change is also made to the appropriate knitting machine setup OR integrate table CAL setting in order that the knitting direction ends up being toggled. (However, just changing the state of the colour changer setting might suffice, in which case no further action is taken).

If the Indicator is visible while a flat hand knit stitch pattern is being dragged on a garment piece, the position of the indicator will move from side to side as the stitch pattern is moved up or down by a row. This is because the starting direction of a hand knit stitch pattern is defined for row 1 of the stitch pattern, not row 1 of the garment piece.

The Measured Adjustment Dialogue

This dialogue may be used either to produce a fixed movement of the selected coordinate points or stitch handles, or just to display the amount by which they are being moved by the mouse or the arrow keys. Constraints offer to restrict the movement to a horizontal or vertical direction.

When coordinate points are being moved, the units are cm, inches, or stits and rows, according to what has been configured elsewhere. If the mouse or arrow keys are being used to move the points, the horizontal, vertical, and diagonal distance moved are shown.

When stitch handles are being moved, the units are stitches, and only horizontal movement is enabled. If the mouse or arrow keys are being used to move the stitch handles, the number of stitches moved is shown.

If horizontal or vertical adjustments have been entered in the dialogue, the Apply button will update the selected points or stitch handles and redraw the piece.

New Join Piece options

Piece / Join is now greatly improved and offers 4 different ways of joining the 2 pieces together. After the connections have been made between 2 points on the current piece with 2 points on the other piece, both pieces remain visible, and tags appear in the centre of each piece. Clicking on the tags changes the way the pieces connect to each other. There are 2 possible options for the current piece and 2 for the other piece. Clicking LMB outside the tags completes the join.

The default join option (the first one presented) uses the maximum number of points from each piece (not necessarily the maximum area of fabric). Use of the different options allows edges to be copied from one piece to another in such a way

that the new piece can have either a complimentary (inverse) edge or an identical edge to one of the parent pieces. If both options are for the complimentary edges, this produces a piece that consists of just the area between the two parent pieces.

Both pieces can be dragged while the join options are tried out. The second piece can be rotated while the join options are tried out. The current piece can be flipped while the join options are tried out.

When Join is selected, the following options are turned off: stitch outline, knitting direction, stitch pattern, stitch handles, and point numbering.

There is also a totally new “Overlapping piece” item on the Piece menu, that leads to another menu of what can be done with overlapping pieces: Merge, Add, and Subtract. Merge combines the current piece with the overlapping piece, and removes the overlapping piece. Add adds the overlapping piece to the current piece, leaving the overlapping piece intact. Subtract cuts away the overlapping piece from the current piece, leaving the overlapping piece intact.

Curves

The Curve dialogue now has 2 extra options: Bezier asymmetric and Bezier symmetric. The latter is a curve consisting of two mirrored halves.

Each curve is controlled by a pair of attractors - green dots which can be dragged to produce the desired curve. For the symmetric curve, it is also possible to move the central square point. For the symmetric curve, the question “Insert how many points” refers to each half of the curve. The total number of points will either be twice that number plus the central point, or twice that number plus the 2 central points, depending on whether the central point is far enough from the axis of reflection for its reflection to qualify as a separate point. Ie if the central point is truly central, it will generate only one extra point, otherwise 2. The central point and its reflection are merged into a single point if they are closer than a single stitch and row.

Undo & Redo

There are 20 levels of Undo & Redo. After using either undo or redo, DK remembers the current zoom level, including the pan and ruler positions.

The name of the last undoable action is added to the Undo menu item, and the name of the last redoable action is added to the Redo menu item.

Cut and Paste

The Edit menu and the right mouse pop-up menu offer Cut, Copy, and Paste.

It is now possible to cut or copy a selected set of coordinate points and paste them into a shape file as a new piece (which could then be joined to an existing piece or used as a template to alter the outlines of other pieces – see Piece / Join and Piece / Overlapping piece).

Copied points appear in the Clipboard in the same format used by Piece / Table.

Construct Slope

On the RMB popup menu is a new function Construct Slope. This is enabled only when stitch handles are displayed.

Like other ways of entering ESL, Construct Slope should be used after setting the tensions. Changing them later is likely to introduce irregularities into the slopes.

It adds the necessary points to create the new slope as specified in the Construct Slope dialogue. These points form the rectangular steps of the new slope, using the shaping method of the previously existing slope.

By default, the lower end of the new slope begins at the lowest selected point or stitch handle, but this starting point can be redefined in the dialogue as the “Start at row”.

The new slope is added to the left or right side of the piece according to the side of the lowest selected stitch handle.

The newly constructed slope completely replaces the previous stitch outline on the selected edge of the piece for the length specified in the dialogue.

Improved Tensions dialogues now offer to show and restore the default tensions. When using File / New, if the current tensions are different from the default tensions, there is an option to retain the existing tension, revert to the default tension, or enter new figures.

Background Image

There is a new View menu option and View button: Background image. This option allows an image file to be displayed as the background to a garment piece, scaled independently of the piece, and its screen position can be adjusted in relation to the piece.

The image can then be traced. Using the graphic image as a guide, points can be added to the piece using the usual + tool. The Control key may be found to be useful here for modifying the behaviour of the + tool - see "Add multiple points in a defined sequence".

The Trace image options dialogue may be opened using the RMB menu / Background image options, Edit / Background image options, or by double clicking on the View button.

The Background Image Options comprise the following:-

Background image file: A range of common graphic file types can be opened – the same as for DesignaKnit Graphics Studio.

Select image type: The image may have to be significantly reduced in size to fit the selected part of the screen. This size reduction can be optimized for line drawings (dark lines on a light background), which require dark pixels to be favoured over light ones.

Quality: The larger the image file, the more slowly the screen will be redrawn each time you make a change to the active piece or change the view. Reducing the quality will speed up the screen drawing. The rightmost setting of the trackbar uses the full resolution of the image, while other settings reduce the size of the internal image that is subsequently copied onto the screen.

Fade: The image may be faded by moving the trackbar to the right. The purpose of this is to enable the outline of the active piece to be made easily visible against the image.

Tint: Tinting the image combines with Fade to make the piece outline easily visible against the image. The leftmost button with clear glasses shows the image untinted.

Make the active piece transparent: This is intended to make the tracing process easier.

The Apply button redraws the Original Pattern Drafting screen so that you can see the effect of any changes you have made.

The Drag image button (or double clicking the image) puts tags at the corners of the image. The image may be resized by dragging the corner tags, or the entire image may be dragged by clicking on it. Clicking the button a second time, or clicking on the work area outside the image, removes the tags. While the tags are visible, the arrow keys move the image by 1 pixel at a time.

Setting Quality to maximum, Fade to minimum, selecting the plain glasses, and setting image type to Picture, shows the unprocessed image.

The background image file is not stored in the shape file: only its name is stored, therefore backing up shape files does not back up the background images.

Separate image filenames and options are stored for each garment piece. Only the background image for the active piece can be displayed.

Hotkeys

The hotkeys have changed slightly.

DesignaKnit 7:

- Enter = Nothing
- Shift F5 = Zoom to view current piece
- Control F5 = Zoom to view all pieces
- Control + insert = Copy the screen to the Clipboard as a bitmap.

DesignaKnit 8:

- Enter = Toggle between zoom to the current piece and zoom to all pieces, except when using the zooming in tool, in which case it zooms in to the area around the cursor.
- Shift F5 = Toggle View stitch handles
- Control F5 = Toggle Use knit direction indicator
- Control + C = If there are any selected coordinate points, these are copied to the Clipboard as text; if there are no selected coordinates, the screen is copied to Clipboard as a bitmap.

RMB Popup menu

A right mouse click outside all pattern pieces brings up a popup menu. (It is also brought up by shift RMB click anywhere on the workspace.) The options are:

- Transparent - applies to the current piece.
- Construct Slope (same as Edit / Construct Slope)
- Measured Adjustment (same as Edit / Measured Adjustment).
- Delete selected points.
- Cut selected points (same as Edit / Cut).
- Copy selected points (same as Edit / Copy).
- Paste points (same as Edit / Paste). Points are pasted as a new piece.

Stitch Designer

The yarn colours and stitch types palette

- Both the yarn palette and the stitch type palette can be selected, in which case yarns and stitch types are shown in the same palette window. Yarn colours are shown first, and stitch types follow them, left to right then top to bottom. The RMB can be double clicked inside the palette window to toggle the visibility of yarn or stitch type entries. Using the drawing tools, one mouse button can be used to draw a yarn colour, and another can be used to draw a stitch type. A yarn colour and a stitch type can both be allocated to the same mouse button, but only one of them will be active at any one time. The active palette entry has a large mouse button indicator, and the inactive one has a small one. (This flexibility does introduce an oddity. If the LMB and RMB are yarn colours, and the MMB is a stitch type, and the MMB is simulated by LMB+RMB, the first button press paints a yarn colour before the second button press arrives.)

- For every stitch pattern, the knit and purl symbols are added to the stitch types palette (if they are not already there). They cannot be removed from the palette.

- In the stitch types palette, the knit stitch vertical line is now replaced by a glyph of a knit stitch. The purl stitch horizontal line is replaced by a glyph of a purl stitch.

- Needle-selection and transparency (or background) properties have been separated for both yarn colours and stitch types. They have different symbols in the colour palette and stitch type palette entries.

- For Fairisle patterns, yarn palette entries show whether each yarn colour selects or deselects needles, and the needle selection can be toggled by clicking on the needle. The longer needle represents needle selection; the shorter one represents deselection.

- For Fairisle, Right-facing, and Wrong-facing patterns, some of the stitch types may select or deselect needles, and the needle selection can be toggled by clicking on the needle at the bottom of the relevant palette cell. However, most of the stitch symbols can neither select nor deselect needles, and therefore have no needle shown in their palette cell. The stitch types that can select or deselect needles are shown with a pink background in the “Select Stitch Symbols into Palette” dialogue (see below).

- Stitch types that are not able to select or deselect needles are able to produce a notification during interactive knitting. The notification can be turned on or off individually for each symbol by clicking on the music glyph at the bottom of each symbol’s palette cell.

- With all knitting methods, and for all yarns and all stitch symbols, there is a Transparency indicator in each palette entry. Clicking on the indicator toggles it. The hollow rectangle means transparent, and the solid rectangle means opaque.

- There is the following backward and forward limited compatibility with dk6/DesignaKnit 7. If a palette entry is given transparent status in DesignaKnit 8, that information is not visible to dk6/DesignaKnit 7. If a palette entry is given selecting status in DesignaKnit 8, dk6/DesignaKnit 7 regards that palette entry as not only selecting but also a contrast colour or stitch type (meaning that it is never transparent). If a stitch pattern is created in dk6/DesignaKnit 7 and opened in DesignaKnit 8, the transparency and selection statuses are both derived from what dk6/DesignaKnit 7 call the Main/Background status for each palette item (until they are changed by the user).

- When the mouse is moved over each palette entry, the status bar at the bottom of the main window shows a description.

- If View / Memo or View / Yarn symbol are selected, the memo or symbol for each yarn colour are displayed in a lighter or darker shade of that yarn colour, making the palette easier on the eye.

- The palette window size and ratio of columns to rows are remembered across DesignaKnit 8 sessions.

- The palette window can be moved anywhere: over the toolbar, or (if the new option to detach the palette windows is selected) out of the Stitch Designer window altogether.

- The palette window size and position are no longer reset to the lower right corner when a new file is opened, but are instead remembered across DesignaKnit sessions.

- When moving over the edges or corners of the palette window, the cursor changes to the standard Windows resizing cursors.

- Selection of active palette entries can be made using click and the Shift key. The current LMB or RMB yarn colour or stitch type may be selected by holding down the Shift key and clicking with LMB or RMB while the cursor is over a stitch. This means that painting in many colours or stitch types becomes easier: it is no longer necessary to take the cursor to the palette in order to select a colour. Also, it provides the user with a means of selecting the correct colour for a particular row (assuming there are already some stitches in that colour) when there are similar shades in the palette. This option affects either the current stitch type or the current yarn colour, according to the same rules that determine how the tools work. This feature does not work for the MMB. It works with or without a paint tool being active.

The Select Stitch Symbols into Palette dialogue

The knit and purl symbols on either half of the dialogue can't be moved or removed. If you try to do it, a message appears: "Knit and purl cannot be moved or removed"

- Stitch types that are capable of causing needle selection or deselection for machine knitting are highlighted.

- A stitch type that is not knit or purl and which is not used in the pattern may be deleted using a new RMB menu (there are no other items on this menu other than Delete). It may also be deleted by dragging it over to the left hand side of the dialogue, or by dragging an empty cell from the right hand side onto it.

- There is a new Save As button so that the current palette can be saved as a separate file.

- There is a new Alerts button that enables a stitch symbol to generate audible alerts during Interactive Knitting. For each symbol, there is a choice of 5 standard Windows sounds (Asterisk, Exclamation, Critical Stop, Question, and Default Beep) which can be sampled using the buttons provided. These sounds can be configured in Control Panel. If any of the buttons do not produce a sound, this is because no sound file has been allocated to them in Control Panel / Sounds and Audio devices / Sounds.

- There is a new Text button which brings up the new Stitch Symbols Text Editor.

The Stitch Symbols Text Editor

The Editor enables a user to enter abbreviations and descriptions for each stitch symbol, and to manage different sets of this data.

This data can be saved as a comma separated text file under the default file name MySymbols.csv, but there are also buttons for open and save .csv files, so that the user can keep different sets of this data.

There is an option to select between hand knitting with main stitch knit, hand knitting with main stitch purl, and machine knitting – each of these has its own independent abbreviations and descriptions. The hand knitting options display 2 columns of abbreviation and 2 columns of description, to include data for the stitch being knitted on the right side and on the wrong side of the fabric.

For pattern publishers, there is a Copy to Clipboard button which produces a Clipboard image in which column 1 has the symbols character's ASCII value (Alt+number), column 2 shows the character, and the next 2 columns show the currently selected abbreviation and description (column 2 needs to be displayed using the KnitWrite DK font).

The appropriate parts of this text are stored with a stitch pattern as part of the .stp file format. The abbreviations and instructions for each of the symbols that are used in the pattern are stored in the file. When DesignaKnit 8 opens an .stp file it is therefore able to print or to knit the pattern interactively using by default the same abbreviations and instructions that it was saved with.

If in the Editor the text is altered, or another .csv file is opened, the Apply button will be enabled. This applies the text that is currently visible in the Editor to the stitch pattern that is currently open. If the stitch pattern is later saved, the changed text will be stored as part of that file.

The Revert button restores the visible text to what it was when the Editor opened, and also restores the text associated with the current stitch pattern to what it was when the Editor opened.

The Default button copies default abbreviations and instructions to both the visible text and to the current stitch pattern.

If the text has been altered and not saved on file, or it has been altered and not applied to the current stitch pattern, a reminder is presented when closing the dialogue or using the Revert or Default buttons. The user is prompted to apply the changes to the current stitch pattern or to save as a .csv file, as appropriate.

The Stitch Designer Tools

The toolbar buttons have been regrouped. The upper group (3 columns of buttons) are the tools that are common to other sections of DesignaKnit 8, while the next group of 3 across are specific to Stitch Designer. Below these (2 columns of buttons) are the drawing tools. These are generally more persistent, staying in use for longer than in DesignaKnit 7 (while it is still possible for none to be selected). Underneath the menu bar are buttons with some of the options from the View menu.

Some of the drawing tools open the Tool Modifier panel on the toolbar below the lower group of tool buttons. This enables the behaviour of the active tool to be controlled.

- Birdseye is more powerful now. If the Control key is down, only the LMB colour is painted on alternate stitches. This means that you can do birdseye in one colour over say a stripey background. Birdseye can now be used more subtly when drawing a picture. If the Control key is used with the RMB, the LMB colour or stitch type is still used, but the paint tool works on the opposite alternate stitches.

- There is a new Shuffle tool with 4 arrows on it, for shuffling in a choice of 4 directions. If the selection box is visible, clicking on the middle of this button shuffles the pattern so that the selection box is now in the centre of the pattern.

- Modify / Scale - Rescaling the contents of the selection box now works across pattern repeat boundaries without strange things happening. A similar function can be invoked (without the dialogue) by holding down the Control key while dragging a box tag – see the next point.

- If the selection box is being resized by dragging one of its tags, and the Control key is held down while the tag is being released, the contents of the box are also resized. Any stitches that were included within the previous box dimensions but are no longer within the current box, are set to the RMB yarn colour and RMB stitch symbol.

- There is a new mode of the pencil tool which works slightly differently: when used to draw quickly, it does not leave any gaps in the drawn line. It can therefore be used to draw a closed outline which can then be flood filled without leakage using the flood fill tool that does not fill across diagonal stitches. Interpolated curves (rather than straight lines) are used to fill the gaps, so the result is smooth. The mode of the pencil tool can be selected from the tool modifier panel.

- The geometric tools (line, rectangles, ellipses) cause less screen flicker while drawing.

- When using a combination of a fill pattern and a pencil, brush, eraser, or floodfill tool, the currently defined Fill Pattern is used only with the LMB. The MMB and RMB retain their usual functions of painting with a single colour or stitch type. (In DesignaKnit 7, all mouse buttons produce the same result except with the erasers.)

- When using a combination of a fill pattern and a pencil, brush, or floodfill tool, there are 6 possible paint modes:

  1. Only contrast yarn colours.

  2. All yarn colours.

  3. Only contrast stitch types.

  4. All stitch types.

  5. Only contrast yarn colours and contrast stitch types.

  6. All yarn colours and stitch types.

  The current view options control what type of data (yarn colours or stitch types or both) from the fill pattern is drawn and copied into the stitch pattern that is being worked on. For example, if stitch types are not currently displayed, they are not copied into the pattern. If both yarn colours and stitch types are displayed, both are copied from the fill pattern into the pattern being created. The spacebar or the Background tool modifier buttons can be used to toggle between including and excluding background (transparent) colours or stitch types.

  The Background buttons appear when the selection box is visible (in preparation for dragging the selection box contents), or when Paste, Fill Pattern, or one of the Import options is selected. (In DesignaKnit 7, contrast yarn colours plus contrast stitch types were always copied, regardless of what the view options were, which had the disadvantage that you could modify the pattern without knowing.)

  When using a combination of a fill pattern and a pencil, brush, or floodfill tool, the Background button can be used to include or exclude transparent colours (or stitch types) which are in the fill pattern. When the LMB is used with the Background button set to the daisy with blue & green background, the transparent and opaque colours (or stitch types) of the fill pattern are painted. (In DesignaKnit 7, when using the fill tool, main/background colours or stitch types are always transparent.)

  A side effect of these changes is that when using a fill pattern, the fill pattern's used palette entries are all added to the current pattern, regardless of whether or not they have transparent status. If the current pattern's palette already happens to contain the fill pattern's entries, the transparent/opaque status of each relevant palette entry is changed to reflect the status of the fill pattern's corresponding palette entry.

- The paintbrushes and erasers are much faster than in DesignaKnit 7, especially when zoomed out so that a large number of stitches are visible.

- The mirrors button works properly now when the selection box straddles different repeats, and also when the colour or stitch type currently being painted over does not exist in the reflected part of the stitch pattern. These functions were not fully working in DesignaKnit 7.

- There is an additional mirror mode, giving 4-way spiral symmetry.

- The sequence of mirror modes that appear by clicking on the mirror button is reversed if the Control key is held down during the click.

- If the cable tool or lace tool is active, only the horizontal mirror is available.

- The dropper tool displays a dropper symbol in the relevant cell in the palette window. This should make it easier to work out which pattern colours (or stitch types) correspond with which palette colours (or stitch types). When both yarn colours and stitch types are displayed in the palette, the dropper refers to whichever data type (yarn colours or stitch types) has the active indicator for that mouse button. The Shift key reverses the active indicators so that if yarn colours were active, stitch types become active, and vice versa.

  When the dropper is switched to stitch types, the status bar shows the abbreviation and knitting instruction for the relevant stitch type, which in the case of hand knitting may be different on odd and even rows.

- When the dropper tool is clicked on the displayed stitch pattern, the spacebar or Control key can be used to set the transparency of the yarn or stitch type, and the palette indicator shows the change.

- When drawing with the geometric tools (straight line, rectangles, ellipses), the stitches comprising the item being drawn are shown complete with texture, not just coloured rectangles as in DesignaKnit 7.

- If no tool is selected, a RMB click anywhere in the pattern area toggles between tagged, untagged, and no selection box, while a LMB click turns on the selection box drawing tool and starts drawing a box. If the LMB is released while the selection box is 2 rows x 2 sts or smaller, DesignaKnit 8 assumes this was a mistake and reverts to the previous dimensions of the selection box.

- If the selection box is the same size as the total pattern repeats, the cursor does not change to flat hand, as it isn't possible to drag the box contents anywhere.

- The selection box can usually be resized while a paint tool is in use: it is still possible to toggle the state of the box by right clicking on a tag (or where a tag would be).

- In DesignaKnit 7, when dragging the selection box contents, the entire area where the selection box used to be is set to the current background regardless of whether the yarn colours or stitch types inside the box have main/background status. In DesignaKnit 8, the Main/Background yarn colours or stitch types are set to the current background only if the Background button is set to both Transparent+Opaque.

- The selection box contents may be resized using the Control key while dragging a tag.

- There are new toolbar buttons for zoom options. In DesignaKnit 7 there are 2 buttons: zoom in to the selection box, and zoom out to all repeats. There are now 2 additional buttons: zoom in and zoom out. (Confusingly, the new zoom in button looks like the old zoom to selection box button, and the zoom out button looks like the old zoom to all repeats button).

- When zooming in to the selection box, the selection box (a) no longer disappears and (b) there is a small margin left around the selection box.

- When using the Abc (pattern text) button...

  The text changes visibly while the box is being dragged or resized.

  It is possible to select a font size from the Pattern Text dialogue. This enables the user to ensure that one bit of text matches another in font size. In earlier versions, there was no easy way to do this (except by choosing small, medium, or large), because the font size always adjusted itself to the dimensions of the selection box.

  The chosen selections (fit to box height, fit to box width, and font size) continue to apply even if the selection box is resized. In earlier versions, resizing the selection box changed the selections so that the text became fitted to

both height and width of the selection box. In DesignaKnit 8, this change means that it is now easy to place the text in the middle of any desired pattern area. This is done by stretching the selection box to the desired area, while the text retains the selected size.

When text is fitted to the selection box, leadings are not removed, so there is usually a blank margin around the text.

You can now select the text orientation – a choice of 4 directions.

There is now an Apply button in the Abc dialogue.

- A new mouse status viewer shows the allocations of yarn colours or stitch types to mouse buttons, the mouse position in stitches & rows, and the mouse position as the repeat number of the stitch pattern. For example

  3: L3 R21
  4: Row 15

  means that the mouse pointer is at stitch 3 from the left and 21 from the right in horizontal repeat 3, and row 15 in vertical repeat 4 of the stitch pattern.

  If the LMB is allocated to a yarn colour (rather than a stitch type), clicking on one of the Viewer's mouse buttons with the LMB allows editing of RGB values; clicking with RMB changes the type of palette item allocated to it (toggles between yarn colour and stitch type) and also adjusts the displayed palette according to the new allocation of palette items to LMB, MMM and RMB). The position and size of the viewer is remembered across DesignaKnit 8 sessions. The viewer should be turned off (or moved off the main Stitch Designer window) for faster drawing with paint tools when a large number of stitches are displayed (whether the stitches are repeats or not doesn't make any difference).

- A second new mouse viewer is available when one or more garment pieces are displayed. It shows the mouse position within the currently selected piece. The bottom line shows eg R100,LN5 meaning row 100 left needle 5 (allowance is made for the reversal of stitch patterns according to machine and knitting method.) If the knitting method is Hand, only the row number is shown. The top 2 figures show the position of the current stitch within the current row from the left edge and right edge. The next 2 figures show the position from the left and right extreme edges of the current piece. The bottom figure shows the position of the current row from the bottom of the piece. If the selection box is dragged, or LMB is clicked on a tag, the display switches to showing the position of the selection box within the piece. The checkbox at bottom right of this viewer can be used to switch from stitches & rows to the configured units. The position and size of the viewer is remembered across DesignaKnit 8 sessions. The viewer should be turned off for faster drawing with paint tools when a large number of stitches are displayed (whether the stitches are repeats or not doesn't make any difference).

- A third viewer window shows the position of the box within the stitch pattern. Stitch & row numbers are displayed for left, top, right, and bottom corners. The dimensions of the box are shown at the right and bottom. The units are stitches & rows or configured units according to the state of the checkbox at the bottom right corner.

- There are new view buttons and options on the view menu for horizontal and vertical rulers. Click on the buttons near the ends to change between stitches or rows and the configured units, or use RMB anywhere on the ruler. The positions of the rulers for each stitch pattern are stored in the stitch pattern file (this applies to .stp format only) and are therefore remembered across DesignaKnit 8 sessions. The point at which the horizontal ruler attaches to the stitch pattern is at the upper edge of the ruler at the zero point. The point at which the vertical ruler attaches to the stitch pattern is at the left edge of the ruler at the zero point.

- The Trace tool for use with graphics tablet has had some changes:

  Cosmetic changes:

  The buttons that were called "Trace" and "Normal" are now "Start tracing" and "Cancel". DesignaKnit 7's cryptic "Select area" buttons are now "Indicate position on tablet" and "Set selection box dimensions".

  When the user is defining the pattern area, the following new message appears, superimposed on the normal Stitch Designer screen: "Adjust the selection box to where you want the traced image to appear. Then click on the Trace tool again, and select Start tracing."

Functional changes:

The drop-down list of tablet dimensions was incomplete and did not include the dimensions for some tablets. The dimensions were not actually easy to measure and for proper accuracy required the user to find the limits of the tablet that mapped to the limits of the pattern area. Instead of this, accuracy is achieved independently of tablet dimensions by allowing the user to enter the size of the motif on the tablet in cm or inches. This does not have to be done every time: after the "Indicate position on tablet" button has been used, the motif size is updated automatically. It will need entering when a DesignaKnit 8 installation is used for the first time, and it will need correcting if DesignaKnit 8 is used with a new tablet. It might need fine tuning if the motif is much larger than the previously measured motif and there is an opportunity to enter a more exact figure. The accuracy is much better than in DesignaKnit 7, and is now limited only by the accuracy of the device and the measuring skill of the user, so that using Trace can now be the easiest way to convert a stitch pattern grid on paper into a stitch pattern file, provided that each cell size is not too small.

When clicking on the tablet to indicate the motif position, there is a beep so you don't have to keep looking at the screen to know that the click has been accepted. Also, it is no longer possible to click rapidly twice at the same edge by mistake (DesignaKnit 7 could get confused by that).

- When sizing the selection box to indicate the on-screen pattern area that will receive the motif, the Selection Box Constraints panel in the tool modifier window shows different choices:

  Freehand
  Stits = Rows
  Xcm = Ycm (or Xins = Yins).

  Freehand is selected by default, and it means that the selection box's aspect ratio will be constrained so that for example a circular motif will come out properly circular on the knitted fabric. If “Stits = Rows” is selected, the aspect ratio of the selection box is constrained so that the box dimensions in number of stitches and rows match the motif dimensions in absolute units (I don't know what this could be used for). If freehand is selected, the box is unconstrained (this could be the best choice for use with a printed pattern grid). Whatever the choice, the motif is mapped exactly to the box. It is now ok to change tension & zoom level during the tracing process.

- There is a new Curve Tool, using cubic Bezier curves. The end points of the curve can be dragged by the square tags, and the curve attractors can be dragged by their circular tags. The blue attractor "belongs" to the blue end point, and the green attractor to the green end point. If the attractors are near their proper end points, the resulting curve is smoother (less bouncy) than when they are nearer to the other end points.

  The curve tool has the following properties:-

  A choice of brush shapes, as for the brush tool.

  A choice of brush sizes. These operate differently from the brush tool. Instead of the number of stitches painted being dependent on the zoom level, the line thickness is 1, 3, 5, or 7 stitches, according to the selected brush, but also depending on the brush shape.

  The drawn curve can consist of a fill pattern, defined in the usual way, with or without Transparent colours or stitch types.

  The drawn curve can spread across multiple pattern repeats. Try about 10 x 10 repeats of say a 100 x 100 blank stitch pattern with one of the flower motifs, stretch it over a few repeats, and play with the curve handles. The interference between motif repeats creates additional layers of pattern. Design an ancient temple ceiling in no time! (It's necessary to use more repeats than you'll knit, in order to have enough room to stretch the box).

  The drawing of a curve can be cancelled by Esc or by clicking again on the curve button. It can be completed by Enter or by clicking on the stitch pattern (missing the curve tags).

  When dragging a tag, holding down the Alt key while the mouse button is released causes the tag to snap to the middle of a stitch. When this is used with the square tags, it enables 2 curves to be joined together smoothly because each curve is then starting at exactly the same point. Curves always start with the end points snapped to the middle of a stitch.

The tags don't have to be over the stitch pattern area, but can be to the right or below. They cannot be above or to the left, because then it wouldn't be possible to move them again subsequently (as they would be off the edge of the pattern area and not visible).

The selection box can be resized, removed, or shown at any time while the curve is being adjusted: the entire curve is then rescaled.

While the curve is being adjusted, the Tab key reflects vertically, and the Control key left to right (same as for importing, pasting, etc).

If, when choosing the type of curve, the mouse is moved outside the curve selection window, the window closes after 3 seconds and the curve button is turned off.

Preset curve types include:

(a) Simple asymmetric & simple symmetric. The mirror tool is not used for either of these.

(b) Heart, oval, drop. The mirror tool (on the vertical mirror setting) is used in conjunction with the curve tool.

(c) Various patterns involving the mirror tool with 4 axes of symmetry (8 reflections).

For (a) and (b), changing the selection box aspect ratio changes that of the motif. However, the (c) type motifs involve 8-way symmetry: these are NOT distorted by changing the aspect ratio of the selection box, because they look best when roughly circular.

When the curve is either cancelled or completed, the mirror tool is returned to its previous condition. The brush shapes don't always have the expected effect when used in conjunction with the mirror. This is because the brush shape is applied to the first (unreflected) curve, which is then faithfully mirrored so that the brush shape is also mirrored. Turn the mirror off, then back on: you'll see what I mean.

- Lace texture is now displayed properly while drawing with the lace tool.
- The lasso has become more useful:
  - It is more persistent now, remaining in use after each drag & drop.
  - When it is selected, new tool modifier buttons appear, offering control over how the lasso works. The upper two modifier buttons prepare the lasso to drag yarn colours, and the lower two prepare it to drag stitch types. The upper two are enabled only if there is a pattern of yarn colours, and the lower two are enabled only it there is a pattern of stitch types.
  - The left two are for motifs of a single yarn colour or stitch type, while the right two are for motifs of more than one opaque colour or stitch type surrounded by transparent colours or stitch types.
  - If the pattern contains both a colour pattern and a stitch type pattern, the modifier button that is down by default depends on which type of palette entry is selected. For example, if the LMB is allocated to a yarn colour, and the last selected lasso type was for a motif of more than one colour (or stitch type), the upper right button will be down when the lasso button is clicked.
  - It can be used to lasso a motif which straddles pattern repeats without odd things happening.
  - There are 4 new error messages that explain why the tool sometimes does not produce the result intended by the user:

    The entire pattern repeat has been selected, and therefore cannot be moved.
    The motif must be surrounded by Transparent colours or stitch types.
    The motif lasso cannot grab Transparent colours or stitch types.
    The lasso can be used only with patterns that have motifs.

Entering patterns from the keyboard

The pencil tool has a new function when used in conjunction with the keyboard: an entire stitch pattern may be entered from the keyboard. The numeric and alphabetic keys behave differently…

- Keys 1 to 9 (from the main keyboard block, not the keypad) select a colour or stitch symbol from the first 9 entries in the palette, the appropriate colour or stitch symbol is drawn on the stitch pattern, and the pencil cursor then moves to the next stitch. It doesn't matter if the first 9 palette entries consist of both yarn colours and stitch types - the key produces the appropriate action in each case. If the palette is not displayed, it becomes displayed with both yarn colours and stitch types.

- The alphabetic keys select a stitch symbol directly from the KnitWrite DK font according to the normal keyboard allocation. In addition, the spacebar or the keypad's Ins key select a knit stitch and the keypad's decimal point selects purl. The Shift and Caps Lock keys have their normal function and cause the selection of different stitch symbols.

- When an alphabetic key is pressed, and View Stitch Symbols is not currently on, it becomes turned on. If the stitch symbol palette is not already displayed, it is turned on. If the symbol is not already in the palette, it gets inserted. The symbol is then placed in the pattern at the current cursor position.

- For both groups of keys (numeric and alphabetic), the direction in which the cursor advances is the same and depends on a number of factors.

  If the mouse is used to place the cursor at the leftmost stitch of the pattern repeat, and a numeric or alphabetic key is pressed, the cursor moves to the right. If the mouse is used to place the cursor at the rightmost stitch of the pattern repeat, and a key is pressed, the cursor moves to the left. If the mouse is used to place the cursor anywhere else within the pattern repeat, and a key is pressed, the cursor then moves in the same direction as the mouse's last movement.

  Similar logic applies to the vertical direction of movement of the pencil cursor when the end of a row is reached. If the current row is the bottom row, the direction is upwards, while if the current row is the top row, the direction is downwards. If at any row in between the bottom and top, the next direction is in the same direction as the mouse's last movement.

  The arrow keys may also be used to control the subsequent direction of the pencil cursor.

  If the 0 (zero) key from the main group of keys (ie not the keypad) is pressed, the pencil cursor is advanced, but no change is made to the yarn colour or stitch symbol.

  (If the direction of cursor movement is unexpected, this could be because the mouse has been moved inadvertently.)

- If the memo or yarn symbol are displayed, the relevant keyboard numbers and letters can be used to select yarn colours or stitch types when the brush tools are active. The keyboard arrow keys can also be used in conjunction with the brush tools to paint yarn colours or stitch types.

- The Del key clears both yarn colours and stitch types.

There is a palette of functions emulating the EC1 buttons, available on the Modify menu. These are:

- Invert pattern colours or stitch types. This does not necessarily change needle selection. This function is for patterns that have no more than 2 colours or stitch symbols per row. If only stitch symbols are displayed in the palette, the stitch symbols in the pattern will be exchanged, otherwise the yarn colours will be exchanged. If any row has only one yarn colour or stitch type present, DesignaKnit will guess at the best colour or stitch symbol to invert to by examining neighbouring rows.

- Invert pattern from left to right.

- Double height.

- Double width.

- Mirror without removing any stitch columns.
- Mirror and then remove a central stitch column (“Chevron” effect).
- Jacquard. This brings up the Select Knitting Method dialogue.

PC10 files.

There is a new option to read and write stitch pattern files for the Silver Reed PC10 Pattern Controller. This can be switched on when machine knitting is selected in the Select Knitting Method dialogue. When this option is switched on, PC10 .dat files can be viewed in the thumbnail viewer and the File Open and Save As dialogue boxes. A pattern may be saved as a PC10 file by simply changing the file type while using Save As. Alternatively, the menu options Transfer / Download and Transfer / Integrated download can be used with the PC10 selected as the knitting machine.

- PC10 .dat files may be created either directly onto a memory card that has already been formatted by the PC10, or onto the PC hard disk or memory stick. Do not use Windows to format the memory card, because the PC10 cannot then read any files that DesignaKnit later creates on it.
- When DesignaKnit creates a PC10 .dat file, it informs the user of the file’s pattern number. The pattern number must be entered on the PC10 in order to load and knit a given pattern. The first file to be created in a folder always has the pattern number 1, and its filename is SR00000.dat. The second file to be created is pattern number 2 and has the filename SR00001.dat. And so on: the pattern number is one more than the number embedded in the filename – this is how Silver Reed designed it and is not a feature of DesignaKnit. The thumbnail viewer shows both the filenames and the pattern numbers.
- The PC10 creates and expects to find its pattern .dat files in a folder called D000 that is within a folder called SRDS. When selecting a destination folder for DesignaKnit to create a new PC10 file in, the parent SRDS folder can be selected, or the D000 folder. Alternatively, an existing .dat file can be selected and overwritten.
- When saving onto the PC hard disk, if the SRDS and D000 folders are not already present, DesignaKnit will create them in the currently selected folder. For example the Stitch patterns folder may be used to store PC10 .dat files. When the Stitch patterns folder is selected as a destination for the first PC10 file to be saved, DesignaKnit creates a SRDS folder in it, and within that a D000 folder, and within that the PC10 .dat file. Any subsequent PC10 files will also find their way to that folder when the Stitch patterns folder is selected as a destination. This means that if the SRDS folder is dragged from the Stitch Patterns folder onto a formatted memory card using My Computer windows, the memory card will be ready to use.
- The menu option File / Delete can be used to tidy up a collection of PC10 .dat files. The PC10 itself can delete only the most recently added .dat file, but DesignaKnit can delete any group of selected files from the folder. When a file that is not the most recent addition is deleted, the .dat files with higher numbers are renamed and renumbered so that no gap in the numbering system remains.
- A maximum of 16384 .dat files can be stored in the same folder, whether the folder is on a memory card or hard disk.
- DesignaKnit stitch patterns with the following methods may be saved as PC10 files: Fairisle, Right facing, Wrong facing, and up to 6-colour Jacquard. Patterns containing lace do not create useful PC10 files. Jacquard PC10 .dat files are displayed colour-separated on the PC10 screen but unseparated in DesignaKnit.
- The PC10 .dat files do not contain any information about the actual yarn colours that the pattern is designed for. When a PC10 .dat file is opened in DesignaKnit, default colours are allocated.
- When DesignaKnit displays a PC10 pattern, it is (like .stp and .pat files) always viewed from the finished (outer) side of the fabric, whether in Stitch Designer, Original Pattern Drafting, or as a thumbnail. When a Fairisle, Wrong side facing, or Jacquard pattern is saved as a PC10 file, it appears on the PC10 inverted from left to right and therefore ready to knit. A stitch pattern that has the Right facing method is not inverted by DesignaKnit.
- If a Right facing pattern is saved as a PC10 file, and it is then edited and saved using the PC10 itself, the information that it is Right facing is lost at that point. Afterwards, DesignaKnit will not be able to detect that its method should be Right facing, and will open it as a Fairisle pattern, which also means inverting it from left to right. It will then be the mirror image of the pattern as it was designed. This possible confusion can be avoided by not saving patterns using the PC10.

- When moving over the tags of the tagged selection box, the cursor changes to the standard Windows resizing cursors. When dragging the box or a part of it, the tags disappear. When inside the selection box and with no tool in use, the cursor changes to flat hand, indicating that the box contents can be moved around.

- Dragging a scrollbar control produces continuous panning through the pattern.

- The default pattern is always shown on entering Stitch Designer.

- The screen title has more information, including the name of any currently open shape file and active garment piece, and if the method of knitting is not Hand knitting, the currently selected knitting machine.

- When piece outlines are displayed, and no tool is selected, clicking inside a shape will select the Move Piece tool.

- When any of the shape tool buttons are selected, and a shape file is not currently open, the shape thumbnail dialogue is presented. After a shape file has been selected, the number of repeats and the zoom level is automatically adjusted so that all the pieces are visible.

- Stitch Texture has been improved. Any stitch type that does not have texture is shown as a symbol.

- When stitch symbols are being viewed, and the zoom level is such that each stitch is less than 6 x 6 pixels, each stitch is too small to show stitch symbols properly, and the pattern is instead drawn showing certain stitch types as single pixel dots. (Only some of the stitch types are drawn because the stitch pattern would not be visible if every stitch showed the same dot). For R and W patterns the dots represent selecting stitch types; for other knitting methods the dots represent opaque stitch types. The same rule applies for thumbnails.

- Palettes / Vary has some new options:

    - There is a choice between Pattern colours and Entire palette.

        - Pattern colours: Only the colours that are already used in the pattern are involved in colour variations.

        - Entire palette: All yarn colours are varied.

    - When viewing a new combination, there is a choice between Rotate and New:

    - Rotate: no new colours are generated: the same colours are juggled about.

    - New: new random colours are invented.

    - Any colour can be dragged onto any other colour, and this causes them to be swapped. This means that if there is a colour which is not used in the pattern, but now exists in the palette, it can be grabbed and swapped with a less desirable pattern colour.

    - The locked colours can now be unlocked at any time. This allows the user to cruise back and forth through lots of variations, grabbing, dragging, and locking selected colours. Locking does NOT protect a colour from having another colour dropped onto it.

    - Selecting Rotate or New always adds a new colour variation at the high end of the list, even if the Previous arrow had been used to go back to an earlier variation. A maximum of 200 variations is allowed.

    - Colours that are used in the pattern are shown with a solid outline: others have a fuzzy outline.

- Palettes / Yarn Colour Setup (was Woolbox). There are some cosmetic improvements plus these new options: Duplicate, Negative, Narrow range, Wide range, and Save As.

    - Duplicate: A new yarn, the same colour as the current colour, is added at the first available empty position.

    - Negative: A new yarn, the complementary colour of the current colour, is added at the first available empty position. Complementary in this sense means having the same saturation and luminance, but a hue that is opposite (different by 120).

- Narrow Range and Wide Range:
- If either Range option is checked and a non-adjacent cell is clicked, this establishes the current colour as one fixed colour and the newly clicked colour as another fixed colour. These 2 fixed colours then form the basis of making a colour range. An adjustment is made to the colours of the cells that are between the current item and the newly clicked item. The colours of the intervening cells are graded according to proximity to each of the fixed colours, and they are redefined regardless of whether they previously contained colour or were blank.
- The Range options are enabled only when the currently active cell is not blank.
- After a range of colours has been produced, the Range options become unchecked. If a Range option is checked and the user clicks on a blank cell, the option becomes unchecked, the currently selected cell becomes the blank cell, and the option therefore becomes disabled. If the option is checked and the user clicks on a coloured cell which is adjacent to the currently selected cell, or clicks on the currently selected cell itself, this error message is given: "There must be at least one cell between the currently active cell and the clicked cell"
- The Range option can be used to make a range between any combination of different hues, saturation and luminance.
- Hue is circular: red exists at both ends of the spectrum. This means that there are 2 possible ways to produce a range between 2 colours. Narrow Range provides the shorter path through the part of the spectrum, staying as close as possible to the fixed colours, while Wide Range provides the alternative longer path, with the range of colours extending far from the fixed ones. Eg ranging from purple to scarlet can either provide a shorter range of hues that goes through crimson, or a longer range that goes through orange, yellow, green, and blue.
- When making a range from a colour and its negative colour, the narrow and wide ranges are of equal length, but provide very different results: For example, obtaining a range between blue & yellow can go via green or via red.
- The full hue spectrum may be obtained by using Wide Range on two cells that contain identical colours.
- Making a range of shades between colours of different saturation or luminance can encompass 100% of the available ranges of saturation and luminance. These ranges are not circular.
- Narrow Range of any colour with an empty cell to the left or above produces ranges of lower luminosity of the same hue.
- Narrow Range of any colour with an empty cell to the right or below produces ranges of higher luminosity of the same hue.
- Narrow Range of any colour with white or black is another way to produce ranges of different luminance levels.
- Narrow Range of any colour with grey of the same luminosity produces ranges of different saturation levels.
- The Negative and Range options produce a result that is correct mathematically but is not always correct visually, because of the inability of the computer screen or printer to show some colours accurately.
- There is a new Save As button in this dialogue, so that the current palette can be saved as a separate .plt file.

- Some changes have been made to View Yarn numbers & feeders…
  - When the cursor is below the colour columns, the LMB can be used to drag the entire column, in the same way that a double click of LMB does. There is a new type of cursor when the cursor is in that part of the screen.
  - When the cursor is over a plain filled colour column, there is a new cursor shape, a horizontal 2 headed arrow, inviting the user to drag the column sideways.
  - When knitting Jacquard, yarns that are unused in the pattern at certain rows may be suppressed, ie not knitted, in order to reduce the fabric thickness. When the cursor is over a column belonging to an unused and unsuppressed yarn, there is a new cursor shape, a vertical thread with a cross over it, inviting the user to suppress this colour.
  - When the cursor is over an empty Jacquard column belonging to an unused yarn that has been suppressed, there is a new cursor shape, a vertical thread, inviting the user to reinstate the suppressed yarn.

- The flood fill and pencil tools can be used in the yarn numbers and feeders columns, but no other tools. When Yarn numbers & feeders are displayed, the flood fill and pencil tools cannot be used in the normal stitch pattern work area.

- Changes can be undone like most of the other Stitch Designer actions.

- Undo & Redo

  - 20 levels of undo and redo are available.

  - After using either undo or redo, DK remembers the current zoom level, including the pan position, and the selection box appearance and position.

  - The name of the latest undoable action is added to the Undo menu item. The name of the latest redoable action is added to the Redo menu item.

- Check Pattern

  - The DesignaKnit 7 check menu has been replaced by a new dialogue that offers all the check options together, with a more intuitive way of turning them off. At the top of this dialogue is a count of the total number of yarn colours, stitch types, and types of cables used in the pattern.

  - Check / Changes etc now also warns of any adjacent tuck stitches.

  - There is a new View Check button at the rightmost end of the View panel.

- There is a new Cables Tool button, next to the Lace Tool. This displays the Cables Palette dialogue, which enables cables to be selected from the current Cables Palette. The selected cable may be placed onto the current stitch pattern using the Place button. It will appear initially at the top left of the visible working area but may then be dragged to its desired location. The cable may then be embedded into the stitch pattern by left clicking on a different area of the stitch pattern, or by using the Place button a second time. Cables can be placed only on right side rows, so when a cable is dragged it moves in two row steps. The Edit Collection button offers a + button shortcut to the Cables Collection dialogue, where the Cables Collection can be set up.

- The Cables Collection dialogue.

  There is a new option on the Palettes menu: Cables. This produces a new dialogue, entitled “Cables Collection”. At the left of this dialogue there is a list of supplied cables, to which the user may add their own custom cables. Up to 2000 sample and custom cables may be stored in this list.

  168 Cables are supplied for use with DesignaKnit Professional and HandKnit. Of these, a smaller number are suitable for machine knitting and can be used with DesignaKnit Machine Standard and Machine Plus.

  In this list, custom cables are coloured orange, and sample cables pale yellow. Crossings that have been selected for the Cables Collection (see below) are indicated by a small red square at the left margin, and cables that are in the current pattern have a blue square.

  Searching and selecting controls

  At the right of this dialogue there are controls for searching and editing cables. These controls enable you to search through your Cable Collection for a particular type of cable.

  The first 3 items (Source, Total crossing width, and Number of knit sts crossing in front) are by default mutually exclusive: clicking on one of them inactivates the others. However, if you want to combine two or all of these, you can do so by holding down the Control key while clicking the mouse button. For example, you can use the second and third options to view all the cables that have a particular total width and a particular number of sts crossing in front.

- If your collection of cables includes custom cables from a variety of sources, it may be useful to search for all the cables from a particular source. Tick the Source checkbox and enter all or part of the Source that you require.

- Tick “Total cable width” and enter the required width in the edit control. This restricts the list so that only cables with the specified width are shown.

- The same applies to the “Number of knit sts crossing in front”.

- The list may be further reduced by limiting it to supplied cables, custom cables, cables that are already selected for the palette, and those already used in the currently open stitch pattern. More than one of these categories can be selected.

- The sloping stitches control may be used to further restrict the list to the selected direction of slope of the front crossing. Both left sloping and right sloping options may be selected.

- One or more “Crossing type” options may be selected in order to restrict the list according to how the cable is constructed. A “Complex cross” consists of one or more knit sts crossing over one or more knit stitches sloping the other way, but with some sts knitted or purled in between the two groups at the row of the cable.

The group of controls for “This cable”.

- The knitting instruction for the currently selected cable is displayed in the large window.

- When designing a stitch pattern, it is first necessary to add the desired cables to the Cable Palette. The Palette is available to select from when the Cable Tool is active. The Cable Palette is managed by using the Add to Palette and Remove from Palette buttons. The Remove button is enabled only when the currently highlighted one is already selected for the Palette, and the Add button is enabled only when it is not. Both supplied and custom cables can be added to the Cable Palette.

- Cables can be assigned an Alert (a standard Windows sound), in the same way that stitch symbols can. The button marked with a music icon brings up the Audible Alerts dialogue. When interactively knitting a swatch or garment piece, the selected Alert sounds at each row that contains the relevant cable. This applies to both hand and machine knitting. By default all cables have the first of the available beeps assigned.

Sorting

- The list at the left of the dialogue may be sorted in 2 different ways. The Default sort lists all the supplied cables first, followed by all the custom cables. If sorting by total cable width etc, the sort key is made up of the total cable width, followed by the front crossing width, followed by the back crossing width (if any), and the crossing type.

Adding and deleting cables

- Custom cables may be added using the New Custom Cable button. The default values for the new cable are copied from whichever cable is currently highlighted in the list, but they can be changed in the Edit Custom Cable dialogue.

- Existing custom cables may be edited using either the Edit Cable button or by double clicking on the listed cable. Supplied cables may not be edited.

- Unwanted custom cables (but not the supplied cables) can be deleted using the Delete Cable button.

Other buttons

- The Import Cables button enables custom cables in the currently open stitch pattern to be added to your Cables Collection. The button is enabled only when a new cable are present in the pattern, or when there is a custom cable that has the same Description as one in your Collection but different details.

  Selecting the button shows another dialogue in which you can view the details of each new cable and choose whether to add it.

  If the Description of any of these new cables exactly matches the Description of an existing cable in your Collection, but the knitting instruction or other details differ, a message is shown as follows: “This pattern

contains a version of this cable that is different from the copy in your Collection. Update your Collection copy?" Selecting No retains the original cable and also adds the new cable to the Collection. In this case, the newly added entry in the Collection has a duplicate number appended to its Description in order to make it unique.

- The View All button sets the search / select options so that the entire Collection is listed.

- The Empty Palette button leaves the Cables Collection intact but clears the Cables Palette.

The Edit Custom Cable Dialogue

This is displayed when the New Custom Cable button or Edit Cable button have been clicked. In addition to altering one's own custom cables, it is possible to alter cables that were originated by a different user on a different DesignaKnit 8 installation.

Custom cables must be uniquely identified by a description. Prefixing the description with the author's initials and a serial number can help to ensure uniqueness. Entering the cable's Source (eg a company name) will also be a helpful reminder for others who may use that cable.

When adding or editing a custom cable, a texture bitmap may be selected to represent the cable when the stitch pattern representation is fabric texture mode. Bitmaps may be selected from among those used for sample cables *that have the same total cable width*. If the total cable width of the custom cable is more than 12 stitches, no bitmaps are available, in which case the custom cable cannot be shown in fabric texture mode in Stitch Designer or printouts, and the diagram will be shown instead.

When entering the knitting instruction, an indicator shows the number of remaining characters. A total of 500 characters is allowed.

At the bottom of the dialogue is a button marked with a music icon. This brings up the Audible Alerts dialogue. When interactively knitting a swatch or garment piece, the selected Alert sounds at each row that contains the relevant cable. This applies to both hand and machine knitting. By default all cables have the first of the available beeps assigned.

- When using cables in the main Stitch Designer screen, note the following points :-

  - If the dropper is the active tool, the cable that the dropper is over will be identified in the status bar at the bottom of the screen without clicking the mouse, provided that the stitch types palette is visible. (If the yarn colour palette is also visible, the active LMB item must be a stitch type – otherwise the dropper will refer to a yarn colour.)

  - If the Cables Palette is visible, clicking with the dropper can be used to set the currently selected cable from one that is already part of the stitch pattern. First make sure that stitch symbols are displayed in the palette, otherwise the dropper might pick up yarn colour. Use the LMB to select the cable that is under the dropper. The Cables Palette dialogue will show the newly selected cable.

  - The yarn colour that is shown for cabled stitches is roughly the yarn colour that would exist if the stitches were not being cabled. The yarn colours travel along with the travelling stitches. When a different yarn colour is drawn over an existing cable, there may be a slight delay before the cable is redrawn.

  - When fabric texture is shown for cables, it is not only shown for the row that the cable is on, but also the lower half of the sts that are immediately above the cable, as well as the upper half of the sts immediately below the cable. This is so that the distortion of the vertically adjacent sts in neighbouring rows can be illustrated, creating the appearance of stitches crossing over each other.

  - The pencil tool may be used while positioning cables with the Cables Collection dialogue open. This is so that the stitches immediately below and above the cable can be adjusted at the same time. When the pencil is used with the Cables Collection dialogue open, the choice of pencil modes does not apply.

  - When a travelling cable is being positioned, with fabric texture on, the assumption is made that the background is purl. It might happen that the travelling stitch is placed above a knit row, in which case, when the operation is completed, the fabric texture of the adjacent sts in the previous row is corrected to show knit sts. If the adjacent

sts in the previous row consist of a mixture of knit and purl, no attempt is made to show the texture of the previous row distorting to join the travelling sts.

- The texture that is shown for the rows preceding and following a cable is only an approximation, and does not necessarily accurately represent the fabric appearance or the precise sequence of stitches.

- While one of the sample cables is being positioned, it can be quickly flipped to its mirror image using the Control key. This can also be done with custom cables, provided that there is a suitable match. The cable must match the total overall width, the width of the front crossing, the width of the back crossing (if any), the K or P sts that are associated with this cable on the following rows, and the front crossing must slope in the opposite direction. If the mirror image cable is not already in the palette, it will be added when the Control key is used.

- Modify / Flip / Horizontal replaces each cable with its mirror image. In the case of custom cables, a suitable mirror image match might not be found, in which case the original cable is retained.

- Crossings are deleted when any of the following happens: (a) any stitch symbol is drawn over any part of a cable; (b) a new cable is placed overlapping an existing cable; (c) a new cable is placed one row immediately above or below an existing cable and the stitch columns of the two cables overlap.

- When printing out, cables may be shown in symbol form for print formats SS and GS, and may be shown in fabric texture form for formats SP and GP, depending on the setup for the print format. Crossings may overlap stitch pattern repeat boundaries, and the SP and SS format printouts can show them overlapping the boundaries. However, any cables that overlap the boundaries of a pattern piece are removed from GP and GS format printouts.

- **How cables are stored…**

  Each stitch pattern that contains cables can only be saved as an .stp file (and not a .pat file). The cables that are contained in the pattern are stored in full in the stitch pattern file, complete with the description and knitting instructions.

  When a stitch pattern containing cables is open, and either the Cable Tool is selected or Palettes / Cables is selected, DesignaKnit checks to see whether the stitch pattern's cables are already in the Cable Palette. If the pattern contains cables that are in your Collection but are not already selected for the Palette, DesignaKnit asks whether they should be selected. Having them in the palette may make editing the stitch pattern easier.

  If the pattern contains new custom cables that are not in your current Collection, it will be necessary to add them to the Collection (using the import button in the Collections dialogue) before they can be added to the Palette.

  If the pattern contains a custom cable that has the same Description as one in the Collection but different knitting instructions or other details, DesignaKnit will by default use the version of it that is embedded in the open pattern. In this situation the Collection Dialogue's Import button will be enabled.

  A user can make a safe copy of all of their custom cables by saving a stitch pattern containing at least one of each custom cable. When this file is opened from a DesignaKnit 8 installation that does not have those cables in its Collection, all the custom cables may be imported into the list using the Collections dialogue's Import button. It is therefore unnecessary for the user to know that the cables are contained in the text file dk8.cbl, which is stored in the user's own application data folder, but technical users might like to know about it.

- **Starting a new stitch pattern**

  As well as having the option to set the starting size from a number of sts and rows, or from a garment piece, there are the following new options :-

  Alter the knitting method properties.
  Set up the palette from defaults for the selected knitting method, or from a specified file.
  Set up the KnitWrite DK symbol definitions from a stored file.
  Store the result as the new default pattern.
  Choose whether to have the default template appear each time you enter Stitch Designer. The alternative is to have the most recently opened or saved stitch pattern displayed.

The Tensions dialogue is then shown.

- **Improved Tensions** dialogues now offer to show and restore the default tensions. When opening a shape file that has different tensions, there is an option to use the shape file tension, the current tension, the default tension, or enter new figures.

- The option **Edit / Redefine** now behaves differently if a garment piece outline is displayed but the selection box is not visible. In this case, the stitch pattern is cropped around the active piece, becoming larger if necessary.

- METHOD OF KNITTING and KNITTING MACHINE SELECTION are now combined.

  - There are now separate dialogues for hand knitting and machine knitting options.

  - If machine knitting is selected, the list of knitting machines is available, as is the list of knitting methods. Those lists are greyed out if hand knitting is selected. On the DesignaKnit 8 toolbar, the interactive knitting mode button glyph changes to a knitting machine.

  - If hand knitting is selected as one of the main choices, the current pattern is automatically assigned the hand knitting method without any choice from a list of methods. On the main DesignaKnit 8 screens, the interactive knitting mode button glyph changes from a knitting machine to knitting needles.

  - For hand knitting it is possible to select (in a following dialogue) flat or circular, whether knitting starts at the left edge of row 1, whether row 1 is wrong side, and a main stitch type of knit or purl. This last choice determines whether the expected stitch type is knit or purl. When View / Stitch types is ticked so that stitch symbols are displayed, the expected stitch type is shown on the Stitch Designer screen and on printouts as an empty stitch with no symbol. When the main stitch is knit, dots represent purl stitches, and empty stitches with no symbol represent knit. And vice versa if the main stitch is purl. This main stitch is used as a default background for the following purposes:
    - New stitch pattern.
    - Edit / Clear stitch types.
    - Defining what's left behind when you drag the selection box contents or use the stitch symbols lasso.
    - Erasing lace or cables.

- CABLE LINKS

  - Serial port numbers up to 99 can be entered in knitting machine setup.

  - In knitting machine setup there is an automatic search for cable links that have a magnetic switch. These are:-

    Serial Brotherlink 2 & 5 for 965i, 970. With or without a USB converter.
    Serial Brotherlink 4. With or without a USB converter.
    Serial E6000 link 2. With or without a USB converter.
    Serial ScreenLink. With or without a USB converter.
    USB Brotherlink 1, 3, 5.
    USB E6000 link 1 or 2.
    USB ScreenLink.

  - When uploading, downloading, or interactively knitting for the first time, a message appears briefly saying "Calibrating...". After being shown just once, the message will not reappear unless DesignaKnit 8 is reinstalled (not just refreshed).

  - As an aid to troubleshooting, the user can check that the PC is able to time events accurately by pressing the 5 key while the "Transfer Patterns" dialogue is displayed (this shows a countdown in seconds). Or pressing the c key will perform calibration of the timing.

  - Slightly different messages are given during uploading & downloading. For example, dk8 gives instructions how to select a page number with the Extras cartridge.

- Extracting patterns from .bro files produces more expected results.
- The patterns uploaded from the Extras cartridge now have the correct solid colours instead of alternate row stripes.
- When uploading from the KH965i, it is no longer necessary to press the knitting machine buttons quickly in order to avoid a timeout.

Interactive Knitting

- New window (mainly) for hand knitting instructions.
- Choice of 5 tiling arrangements, or floating windows.
- Cosmetic improvements to window drawings and text.
- There is a new Bookmark menu item and tool button for hand knitting. It allows the storing of bookmarks for up to 20 swatches or garment pieces. The oldest bookmark is replaced when a new one is added. For machine knitting, the same system applies as for DesignaKnit 7; the Stop button enters the bookmark for the currently selected knitting machine. Each knitting machine has only one bookmark - as in DesignaKnit 7.
- If a lace or Jacquard swatch is being knitted, the Countdown + Shaping instructions window now shows the number of knitted rows done under the heading “PIECE”. The figure under RC shows the carriage pass number, and the figure under ST.PAT shows the fabric row number within the repeating pattern unit. In DesignaKnit 7, there was no easy way of seeing how many rows of a repeating lace or Jacquard pattern you had knitted so far.
- If a lace or Jacquard garment piece or swatch is being knitted, the Countdown + Shaping instructions window now has some additional information. The “ST.PAT” column is wider and shows two numbers separated by a colon. As in DesignaKnit 7, the first number is the fabric row number within the repeating pattern unit. The new second number is the carriage pass number within the repeating pattern unit. The carriage pass number enables patterning to resume correctly at a later time even after other work has been done on the knitting machine. When resuming knitting on a Brother electronic machine, this second number provides the electronic row count number to resume knitting from; when resuming knitting on any punchcard machine, this second number provides the punchcard row number to resume knitting from.
- There are 2 new alert types, and the beeps that DesignaKnit 7 was not able to do under Vista have been restored in DesignaKnit 8. There is new Bell alert, which consists of a ding-dong without the voice instruction. The Symbol alert is described in Stitch Designer - see “The Select Stitch Symbols into Palette dialogue”.

DesignaKnit Graphics Studio

- Can display & convert larger images than in DesignaKnit 7.
- Pixel perfect conversions at last! If a graphic image is being converted to the same number of stitches and rows as its pixel dimensions, each stitch in the resulting pattern corresponds accurately to the appropriate pixel in the image.
- Can additionally open WMF, TGA, PBM, PPM, PGM. Can save TGA, PBM, PPM, PGM.
- If the scrollbars are in use, dragging a scrollbar thumb control produces continuous panning through the image.
- There is a new option on the Image menu: Rotate. This leads to another menu with 2 options: Simple and High quality. The High quality option involves anti-aliasing and can introduce new colours to smoothen edges. When an image is rotated, it also increases in size, in order to accommodate the now-projecting corners. Generally, the simple option is more suited to diagrams, while the high quality option is better suited to photographic images.
- The image colour to yarn colour assignations are stored in dgs.cgn (in the user’s own program settings folder) for each image, along with the other setup options (including birdseye preference, grid options, etc) and the yarn colour palette. It is now easy to get back exactly to the point at which you were working in a previous session, provided you

took the option to save the settings. You just open the same graphic file and the same palette appears, with the same assignments of image colours to yarn colours, and the same grid settings, etc.

- There are new buttons in the palette window for Open Palette, Save Palette, and Undo. (A palette file is, as in DesignaKnit 7, just a stitch pattern file that has a different suffix in order to indicate it is primarily used for the yarn colours and stitch symbols that it contains rather than the pattern.) When the Save Palette button is selected, a standard File Save As dialogue is presented. If the palette is saved, the current grid dimensions, conversion options, and image colour to yarn colour assignations are always stored too (but in dgs.cgn, not in the .plt palette file). If some colour assignments have been made, and then a new palette file is opened, the colour assignments that have been made so far are lost, while the grid & conversion settings remain unchanged.

- It is now possible to add another yarn colour to the palette by double clicking on a blank palette item. This brings up the Colour Adjustment dialogue.

- There is now a Tensions button in the Grid Settings dialogue.

- In DesignaKnit 7, using the option Image / Modify image colours could produce the following message:- "The colours of the image itself can be changed only if the image file is High Colour or True Colour. Hint: Save the image file with extension JPG and re-open it." This message does not appear because the image is now automatically converted to 24-bit if this option is used.

- **The Tidy Image dialogue.** A new button and menu item Image / Tidy Image colours displays the Tidy Image dialogue, which allows the image colours to be modified. This editing does not involve converting the image to the palette colours (which is still available through Image / Modify image colours), but replaces any one colour or a set of image colours with a single colour that is specified in the Tidy Image dialogue. The area of the image which is affected by the colour replacement may be the entire gridded area, or for complete control of replacements over smaller areas the pencil or paintbrush tools may be used. If the gridded area is not rectangular when this option starts, it is made rectangular. Any stitch conversion or grid lines are removed also.

  o Use the dropper button that is in the Tidy Image dialogue to pick up the image colour or colours that are to be replaced. These image colours will appear as squares in the “Replace image colours” box. Click on any of these colour squares to remove them from the box.

  o Adjust the number of colours that the box can contain by moving the slider underneath the box.

  o Use the “Include similar colours” and “Include in-between colours” options to extend the range of image colours that are to be replaced.

  o The colour that the image colours are to be replaced with is white by default but may be redefined in two ways:-

    1. Click RMB on the image over a colour that you want to select. (The most recently added colours go to the top left of the “Replace image colours” box.)
    2. Left click in the “With colour” box and define any colour as its RGB / HSL values.

  o The pencil and brush turn into plain paintbrushes when used with the RMB. They paint the colour defined in the “With colour” box over the image.

  o The Tidy Image dialogue has an Undo button that undoes the most recent colour change operation.

- The cursor now changes shape when passing over a grid corner.

- New options on the Edit menu. Instead of just Copy, there is Copy at original zoom and Copy at current zoom. In DesignaKnit 7, just the latter exists.

- Both Edit / Copy options copy only the area contained within the grid. It is now possible to zoom in closely, place the selection box exactly where required, and select Copy at original zoom, in order to capture exactly the required part of the original image at the 1:1 zoom level.

- The File Open & Save dlgs now append the currently selected file type suffix to any filename that doesn't already have a suffix.

- There are now Open & Save buttons on the toolbar. The Open button normally opens the thumbnail dialogue, but if the Control key is held down during the mouse click, a standard File Open dialogue appears instead.

- It is now possible to open any kind of image and zoom out, and without the image breaking up and introducing new colours. In DesignaKnit 7, with some screen drivers, some photographic images cannot be zoomed out without strange effects appearing.

- The option “Grid corners move independently” can be temporarily overridden by using the Control key. The key temporarily toggles the current setting.