Developers guidelines

Themes

for Sony Ericsson phones

DEVELOPER WORLD THE FAST TRACK FROM MIND TO MARKET

Sony Ericsson

Preface

Purpose of this document

This document describes how to implement themes for Sony Ericsson mobile phones.

The document is intended for content providers who want guidelines to optimally create themes and the elements required to create an appealing theme.

People who can benefit from this document are:

- Software developers
- Operators and service providers
- Content providers

It is assumed that the reader is familiar with different graphic and sound formats.

Sony Ericsson Developer World

At www.sonyericsson.com/developer, developers find the latest technical documentation and development tools such as phone White papers, Developers guidelines for different technologies, Getting started tutorials, SDKs (Software Development Kits) and tools plugins. The Web site also features news articles, go-to-market advice, moderated discussion forums offering free technical support and a Wiki community sharing expertise and code examples.

For more information about these professional services, go to the Sony Ericsson Developer World Web site.

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Document conventions

Products

Sony Ericsson mobile phones are referred to in this document using generic names as follows:

Generic names Series	Sony Ericsson mobile phones
Aino	Aino U10i, Aino U10a
C510	C510, C510c, C510a
C702	C702, C702c, C702a
C901	C901, C901a, C901 GreenHeart™
C902	C902, C902c
C903	C903, C903a
C905	C905, C905c, C905a
G502	G502, G502c
G700	G700
G705	G705, G705u
G900	G900
J210	J210i, J220c
J220	J220i, J220c, J220a
J230	J230i, J230c, J230a
J300	J300i, J300c, J300a
K300	K300i, K300c, K300a
K310	K310i, K310c, K310a
K320	K320i, K320c
K500	K500i, K506c, K508i, K508c, F500i
K510	K510i, K510c
K530	K530i
K550	K550i, K550c
K600	K600i
K610	K610i, K610c, K610im, K618i
K630	K630i

K660	K660i
K700	K700i, K700c
K750	K750i, K750c
K770	K770i
K790	K790i, K790c, K790a
K800	K800i, K800c
K810	K810i, K818c
K850	K850i, K858c
M600	M600i, M608c
Naite	Naite J105i, Naite J105a
P1	P1i, P1c
P900	P900, P908
P910	P910a, P910i, P910c
P990	P990i, P990c
R300	R300, R300c, R300a
R306	R306, R306c, R306a
S500	S500i, S500c
S700	S700i, S700c, S710a
T68	T68i
T230	T226, T230, T238
T250	T250i, T258c, T250a
T280	T280i, T280c, T280a
T290	T290i, T290c, T290a
T300	T300, T302, T306, T308
T303	T303i, T303c, T303a
T310	T310, T312, T316
T610	T610, T616, T618
T630	T628, T630, T637
T650	T650i, T658c
T700	T700
T707	T707, T707a
T715	T715, T715a
V640	V640i

V800	V800, Vodafone 802SE
W200	W200i, W200c
W300	W300i, W300c
W350	W350i, W350c
W380	W380i, W380c
W508	W508, W508c, W508a, W518a
W550	W550i, W550c
W580	W580i, W580c
W595	W595, W595s
W600	W600i
W610	W610i, W610c
W660	W660i
W700	W700i, W700c
W705	W705, W705u
W715	W715
W710	W710i, W710c
W760	W760i, W760c
W800	W800i, W800c
W810	W810i, W810c, W810a
W830	W830i, W830c
W850	W850i, W850c
W880	W880i, W888c
W890	W890i
W900	W900i
W902	W902
W910	W910i, W908c
W950	W950i, W958c
W960	W960i
W980	W980i
W995	W995, W995a
Yari	Yari U100i, Yari U100a
Z250	Z250i, Z250c, Z250a
Z300	Z300i, Z300c, Z300a

Z310	Z310i, Z310a
Z320	Z320i, Z320c, Z320a
Z500	Z500a
Z520	Z520i, Z520c, Z520a
Z525	Z525a
Z530	Z530i, Z530c
Z550	Z550i, Z550c, Z550a
Z555	Z555i, Z555a
Z558	Z558i, Z558c
Z600	Z600, Z608
Z610	Z610i
Z710	Z710i, Z710c
Z750	Z750i
Z770	Z770i
Z780	Z780i, Z780a
Z800	Z800i
Z1010	Z1010

Typographical conventions

In this document code examples are written in Courier font:
```
<textColor id="operator" text="#000000" outline="#9CCE9C"></ textColor>
```

Terminology and abbreviations

Term	Explanation
JPEG	Joint Photographic Experts Group
MIDI	Musical Instrument Digital Interface
MIME	Multipurpose Internet Mail Extensions
SVGT 1.1	SVG (Scalable Vector Graphics) Tiny version 1.1
XML	eXtensible Markup Language

June 2009

Document history

Change history

2004-01-19	Version R1A	First Edition.
2004-03-02	Version R2A	Second edition. Added K700 information.
2004-03-27	Version R3A	Third edition. Editorial changes for K700 image size.
2004-09-20	Version R4A	Fourth edition. Added information for S700, K500 and Z500 series.
2004-10-29	Version R5A	Fifth edition. Added information for V800 and T290 series.
2005-04-11	Version R6A	Sixth edition. Added information for K300, J300, K750, Z800, and K600 series.
2005-08-01	Version R7A	Seventh edition. Added information for Z520 S600 and W600 series.
2005-08-08	Version R7B	Seventh edition. S600 series changed to W550 series.
2005-09-13	Version R7C	Minor editorial changes.
2005-09-26	Version R7D	Minor editorial changes.
2005-10-24	Version R8A	Eighth edition. Added information for W900 series.
2005-11-03	Version R8B	Minor editorial changes.
2005-11-14	Version R9A	Ninth edition. Added information for J210, Z300, J220 and J230 series.
2005-11-21	Version R9B	Minor editorial changes.
2005-12-16	Version R10A	Tenth edition. Added information for P990 series
2006-01-04	Version R11A	11th edition. Added information for W810 series
2006-02-13	Version R12A	12th edition. Added information for K610, M600 and W950 series
2006-02-28	Version R13A	13th edition. Added information for K800, K790, Z530, W300, K510 and K310 series
2006-04-04	Version R14A	14th edition. Added information for W700 and Z525 series
2006-05-23	Version R15A	15th edition. Added information for Z550, W850, Z710 and W710 series
2006-06-19	Version R16A	16th edition. Added information for the K610im

Change history

2006-08-22	Version R17A	17th edition. Added information for the K618i and Z610 series
2006-09-28	Version R18A	18th edition. Added information for W830, K320, Z550, and the Z550a and W958c models
2006-11-15	Version R18B	18th, revised edition. Added information about customised icons preview
2006-12-04	Version R19A	19th edition. Added information for Z310 series
2006-12-06	Version R19B	19th, revised edition. Editorial changes
2007-01-08	Version R20A	20th edition. Added information for W200 series
2007-02-06	Version R21A	21st edition. Added information for W880, K550, W610 and K810 series. Updated patch sizes and added comments to Appendix 8
2007-02-22	Version R21B	Minor revision
2007-03-13	Version R22A	22nd edition. Added information for W660 series
2007-05-08	Version R23A	23rd edition. Added information for S500, T650, W580 and Z750 series
2007-05-11	Version R24A	24th edition. Added information for P1 series
2007-05-30	Version R24B	24th revised edition. Added information about colour reduction and dithering in Themes Creator
2007-06-20	Version R25A	25th edition. Added information for K530, K850, T250, W910, W960, Z250 and Z320 series
2007-08-21	Version R26A	26th edition. Added information for K770 series
2007-09-18	Version R27A	27th edition. Added information for V640 series
2007-11-06	Version R28A	28th edition. Added information for K630, K660, W380 and W890 series
2008-01-24	Version R29A	29th edition. Added information for R300, R306, T280, W350, W760 and Z555 series
2008-04-04	Version R30A	30h edition. Added information for C702, C902, G700, G900, T303, W980 and Z770 series
2008-06-17	Version R31A	31st edition. Added information for G502 and Z780 series
2008-11-11	Version R32A	32nd edition. Added information for C905, G705, T700, W595, W705 and W902 series
2008-12-01	Version R33A	33rd edition. Added information about Themes version 4.8, appendix 13

Change history

2009-04-10	Version R34A	34th edition. Added information for C510, C901, C903, T707, W508, W715 and W995 series and Themes Creator ver. 4.0
2009-06-11	Version R35A	35th edition. Added information about Themes version 4.9, appendix 14. Added information for Aino, Naite and Yari series of phones. New features in Themes Creator 4.03
2009-06-25	Version R36A	36th edition. Added information for T715 series of phones.

Contents

Themes architecture

This chapter contains general information about themes in Sony Ericsson mobile phones. Specific information about theme formats and specifications for different phone models and theme versions can be found in the appendices of this document.

Themes introduction

A theme is a way to change the graphical experience for the user in just one setting.

When the user selects to use a theme, the following user interface details may be affected:

• Colours of graphical elements (backgrounds, shadows, highlights, and so on).
• Pictures used as backgrounds for graphical elements.
• Sounds used for different alerts and events.

Which elements that may be affected by themes depends on the mobile phone model. At delivery a number of themes are pre-loaded into the phone. More themes can be achieved, for example through an Internet connection, via MMS, or from a computer connected to the phone via Infrared, serial/USB cable or *Bluetooth™* wireless technology.

Theme files for Sony Ericsson phones, except for the Symbian™/UIQ™ phones (G700, G900, M600, P1, P900, P910, P990, W950 and W960 series), are TAR archives with the file extension .thm. A theme file contains at least an XML file, in which colour settings for graphical elements and optionally image file names and audio file names are defined. If the XML file specifies image or audio file names, the specified files are also included in the archive. To extract the individual files from THM theme files most standard archiving applications on the market can be used.

Sony Ericsson Symbian/UIQ phone theme files are ZIP packages with file extension .utz. A package contains an XML file specifying colour settings, images and sounds used in the theme, together with a number of image and audio files.

Compatibility between different Sony Ericsson mobile phones

Not all Sony Ericsson mobile phones support the same theme format. The main differences are the screen size and what elements are included in the theme. Another difference is the support for image and animation formats (GIF, JPEG, PNG, MBM, SWF, SVGT 1.x).

For Sony Ericsson mobile phones other than the P900/P910, standard image and animation formats, GIF, JPEG, PNG, SWF, and SVGT 1.x are used.

For the P900/P910, a Symbian specific file format called "MultiBitMap" file (MBM) is used for certain images in a theme. MBM files are native Symbian OS format. MBM files can consist of one or multiple images. The MBM format is **not** supported for the UIQ3 phones, G700, G900, M600, P1, P990, W950 and W960 series.

Several themes versions exist for Sony Ericsson mobile phones. In the table below, phone models, themes versions and screen sizes are listed. For more details and specifications for the different themes versions and phone models, refer to the appendices of this document.

Phone series/model	Theme version	Screen size (WxH) pixels	No. of colours
T68, T300, T310	ver 1.0	101x80	256 colours
T226	ver 1.0 extended	101x80	512 colours
T230, T290	ver 1.0 extended	101x80	4,096 colours
T250, T280	ver LF1.0	128x160	65,536 colours
J210, J220, J230 and Z300	subset of ver 2.0	128x128	65,536 colours
T610, T630 and Z600	ver 2.0	128x160	65,536 colours
K700 and Z1010	ver 3.0	176x220	65,536 colours
S700	ver 3.0	240x320	262,144 colours
K500 and Z500	ver 3.0	128x160 Z500 external screen: 96x64	65,536 colours 4,096 colours
P900, P910	Symbian specified theme format	Flip open: 208x320 Flip closed: 208x208	65,536 colours
V800, Z800	ver 3.1 and 3.2	176x220 External screen: 80x101	262,144 colours 65,536 colours
J300, K300	ver 3.0	128x128	65,536 colours
K600, K750, W700, W800	ver 4.0	176x220	262,144 colours
Z520, Z525	ver 4.0	128x160 External screen: 80x101	262,144 colours 65,536 colours
K310, K320, W200, Z530	ver 4.1	128x160	65,536 colours
K510, W300	ver 4.1	128x160	262,144 colours
W550, W600, W810, Z550, Z558	ver 4.1	176x220	262,144 colours
W900	ver 4.1	240x320	262,144 colours
Z250, Z310, Z320	ver 4.5	128x160	65,536 colours
K530, K550, K610, W350, W380, W610, W660, W710, Z555, Z610, Z710	ver 4.5	176x220	262,144 colours
K770, K790, K800, K810, S500, T650, W580, W830, W850, W880	ver 4.5	240x320	262,144 colours
R300, R306, T303	ver 4.6	128x160	65,536 colours
K630, V640	ver 4.6	176x220	262,144 colours

Phone series/model	Theme version	Screen size (WxH) pixels	No. of colours
G502, K660, K850, W890, W910, Z750, Z770	ver 4.6	240x320	262,144 colours
C702, C902, C905, G705, T700, W595, W760, W902, W980, Z780	ver 4.7	240x320	262,144 colours
C510, C901, C903, Naite, T707, T715, W508, W705, W715, W995	ver 4.8	240x320	262,144 colours
Yari	ver 4.9	240x320	262,144 colours
Aino	ver 4.9	240x432	16M colours (24-bit)
G700, G900, M600, P1, P990, W950, W960	Symbian 9/UIQ 3 specified theme format	240x320	262,144 colours

Theme MIME types

file extension	MIME type	
.thm	application/vnd.eri.thm	MIME type for Sony Ericsson Aino, C510, C702, C901, C902, C903, C905, G502, G705, J210, J220, J230, J300, K300, K310, K320, K500, K510, K530, K550, K600, K610, K630, K660, K700, K750, K770, K790, K800, K810, K850, Naite, R300, R306, S500, S700, T68, T230, T250, T280, T290, T300, T303, T310, T610, T630, T650, T700, T707, T715, V640, V800, W200, W300, W350, W380, W508, W550, W595, W600, W610, W660, W700, W705, W710, W715, W760, W800, W810, W830, W850, W880, W890, W900, W902, W910, W980, W995, Yari, Z250, Z300, Z310, Z320, Z500, Z520, Z525, Z530, Z550, Z555, Z558, Z600, Z610, Z710, Z770, Z780, Z800 and Z1010 themes
.utz	application/vnd.uiq.thm	MIME type for Sony Ericsson G700, G900, M600, P1, P900, P910, P990, W950 and W960 themes

Sony Ericsson Themes Creator

Sony Ericsson Themes Creator is a personal computer based application that allows users to personalise the "look and feel" of the Sony Ericsson mobile phones. The application allows you to create new themes, edit an existing theme and save a theme.

Note: In this document, Themes Creator version 4.03 is described. From version 4.0 the tool differs significantly from earlier versions. Therefore it is strongly recommended to download and install the latest version of Themes Creator, which is available at www.sonyericsson.com/developer/multimedia.

The Sony Ericsson Theme Creator application helps you to create/compose themes which are compatible with Sony Ericsson mobile phones. The application is not a graphic editing tool, but more of a "composer", that is, it enables you to create a theme based on existing components (sound files, image files, and so on.). It also allows you to change display colours for menu text, clock display, and so on.

In Themes Creator 4.0 and higher, themes can be edited using three different modes:

- Wizard mode.

- Advanced mode

- XML editor mode

Themes Creator toolbar

From Themes Creator version 4.0, a toolbar has replaced the menu items in earlier versions of the tool.

1. Reset. Reverts back to the default theme.

2. Open (CTRL+O). Opens a theme file (.thm or .utz) via a dialog.

3. Save (CTRL+S). Saves the theme file being processed.

4. Save As. Save the current theme into a new file, via a dialog.

5. Editor modes. Click the icon to toggle between Wizard ( ) and Advanced ( ) modes.

When Themes Creator is started, a dialog is opened allowing the user to select whether to start working in Wizard mode or Advanced mode:
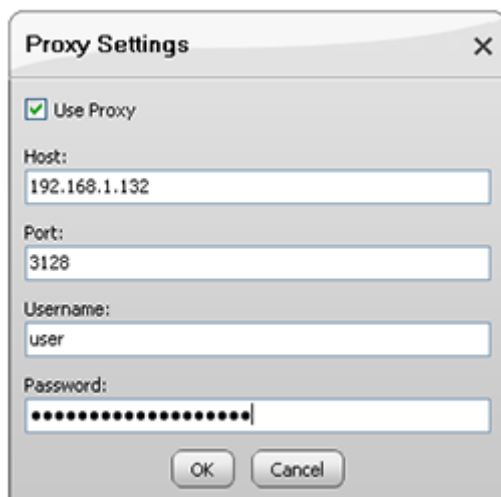
6. XML Editor mode. Click to open XML editor.

7. Tools and Settings. Dropdown menu.

8. Phone information. For more information, see "Phone information" on page 21

9. Dropdown list with phone profiles. Used to select a phone model for which to create a theme.

Tools and Settings menu

The following tools and settings can be accessed via the dropdown menu:

- *Export empty resources*
  This feature allows export of a collection of image elements to a selected directory. Each image needed for a complete theme is saved in the selected directory as a .png file with the correct element size and given the correct file name. The saved collection can be used as a "template" for easy creation of all the image files needed for a complete theme for the currently selected phone model. This feature only works with themes versions supporting PNG files.
- *Import resources*
  This feature is used for import of a collection of image files from a selected directory into the current theme. If some images are missing or are not correctly named, a dialog lists files that are missing for a complete theme to be created. This feature is primarily used for reimporting files that was exported as "empty resources" and then have been "filled" with graphics.
- *Show Adobe Flash Lite player info*
  The Flash Lite player in Sony Ericsson phones is limited to use a maximum of 2048 KB heap memory (1024 KB in phones with Themes v 4.5). By selecting *Show Adobe Flash Lite player info*, developers can verify that an imported Flash Lite animation, playing in the preview area, does not use too much memory. Using Flash Lite animation for wallpaper is supported from Themes version 4.5.
- *Enable color reduction filter*
  Toggles colour reduction and dithering of .png images on/off, for more information, see "Colour reduction and dithering features in Themes Creator" on page 30.

- *Color reduced image size info*
  Displays a list of image sizes, for more information, see "Colour reduction and dithering features in Themes Creator" on page 30.
- *Keep family properties*
  For Symbian phones, some properties are categorised as "family properties", unique for a certain phone model or for a series of phones. When a theme is loaded on a phone model not within the family, Themes Creator would normally remove all unrecognised elements when saving the theme. Enabling the "Keep family properties" options allows those elements to be kept, that is they will be saved with the theme. Exactly what properties are considered "family properties" vary from phone to phone.
- *List missing elements.*
  This feature allows the user to quickly find out if image elements/patches or sound files needed to make the current theme complete have not yet been imported to the current theme.
- *Show latest RSS news*.
  When checked, Themes Creator updates the RSS feeds at the bottom of the window when started.
- *Check for newer version*.
  Checks the Sony Ericsson Developer World web site for newer versions of Themes Creator.
- Proxy settings.
  Allows the user to specify the host and port of the proxy server used for Internet connection. Fields for username and password are also available for proxy servers requiring authentication.

Phone information

This feature displays information about the currently selected phone model:
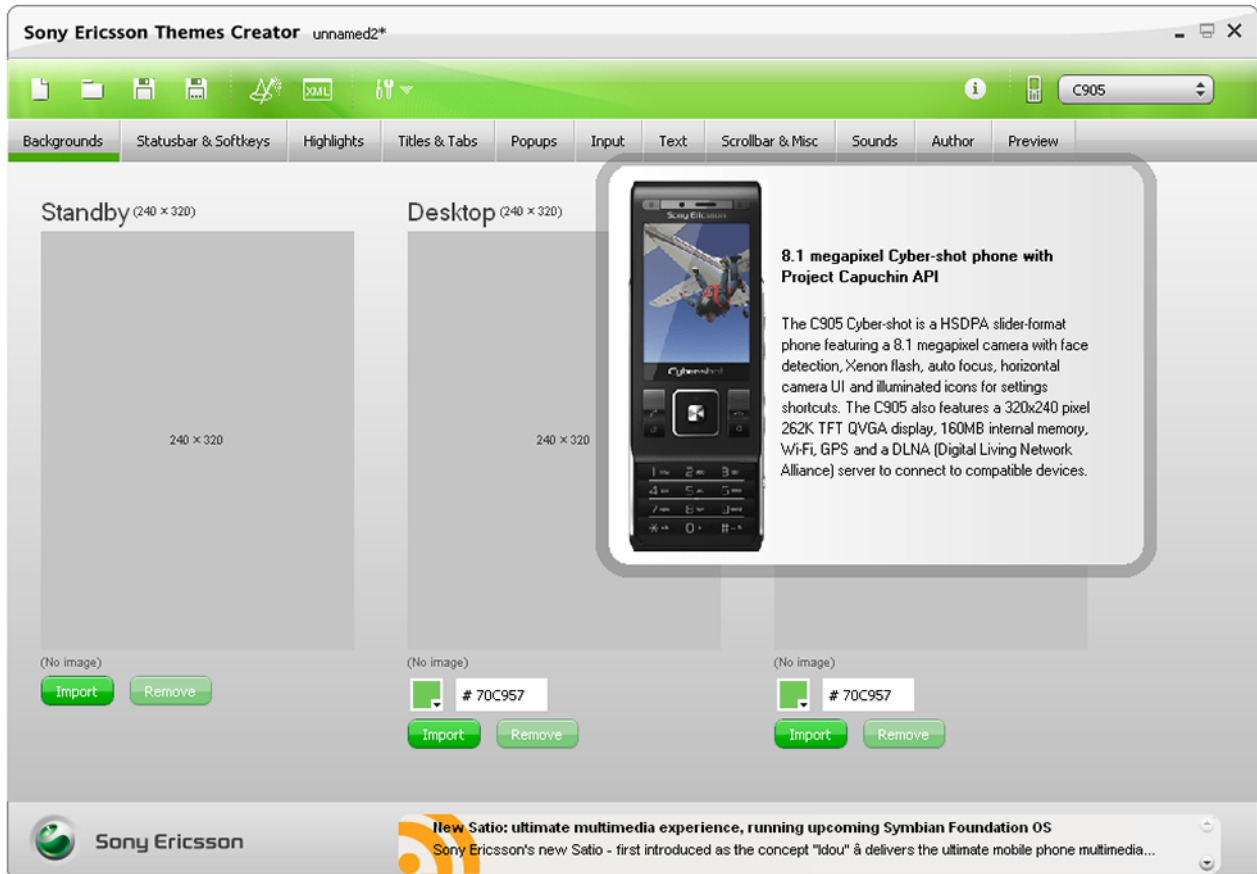
If Themes Creator fails to connect to the website where the phone information is found, an error message is shown:
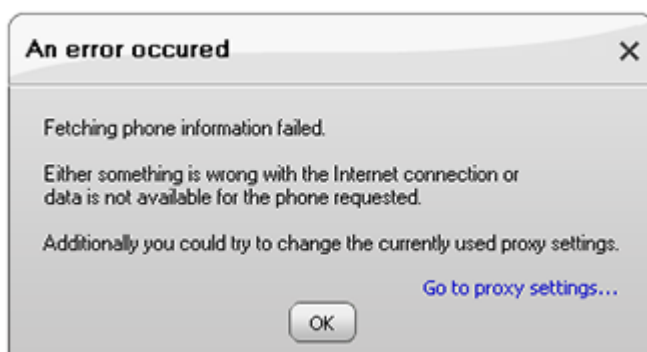
One possible reason for this error is invalid proxy settings. To change these, the user can click the link in the error message above or select *Proxy Settings* from the Tools and Settings menu. See "Tools and Settings menu" on page 19 for more information.

Wizard mode

The Wizard allows the user to create a theme in four basic steps. This mode does not work for creating Symbian phone themes, the Wizard option is hidden for Symbian phone models.

Step 1 – Select a colour scheme

The preview screens in this pane are immediately updated when the colour scheme has changed.
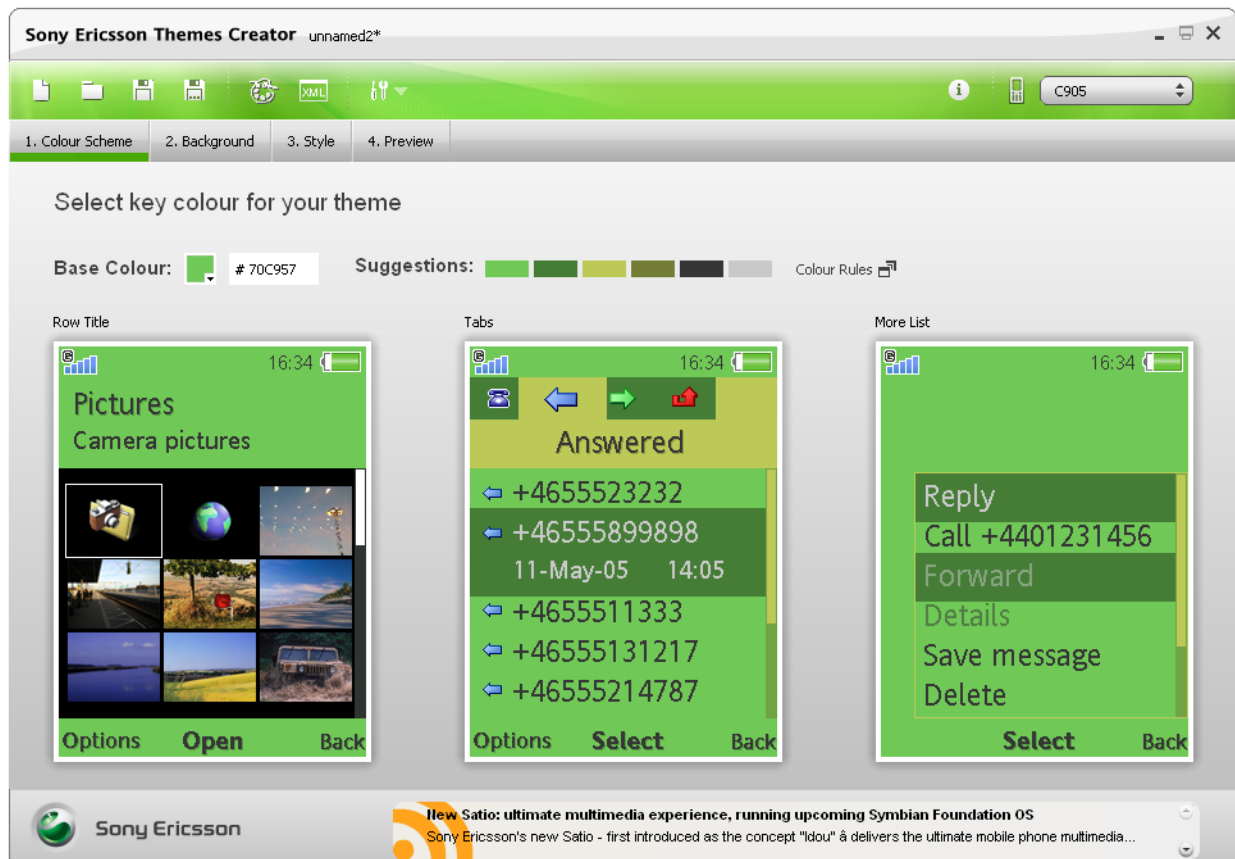
By clicking the "Base Colour" area, a colour picker opens.:
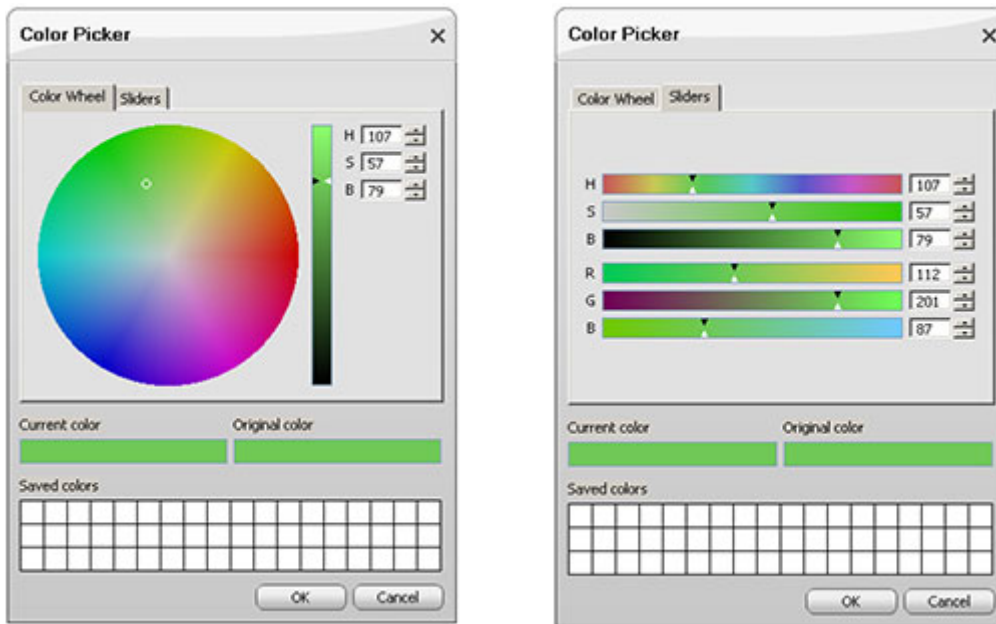
A new base colour may be selected either by clicking in the Color Wheel in the left image or by adjusting the sliders in the right image. The base colour in the Wizard is changed accordingly.

The "Suggestions" bar in the Wizard screen shows the colours of the current colour scheme with the selected base colour in the leftmost area of the bar. By clicking the ⬚ icon to the right of the "Suggestions" bar, a different set of "Colour Rules" can be selected for the scheme:
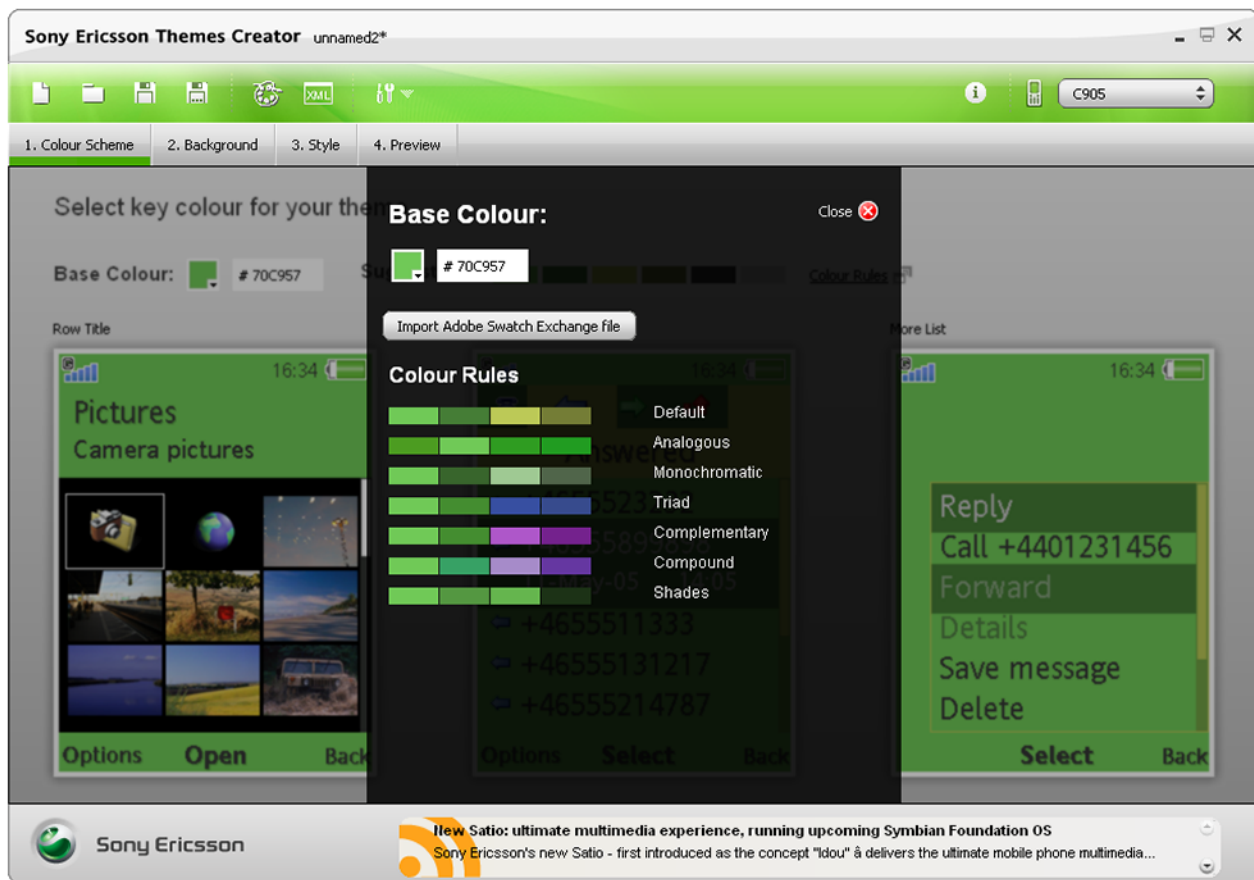
Clicking the *Import Adobe Swatch Exchange file* button allows the user to import Swatch Exchange files created with the Adobe Kuler™ system and use these swatches for colour schemes in Themes Creator.

Step 2 – Import background images

This step provides controls for importing background images for the Standby Wallpaper, Desktop and Navigation screens. Only screens supported in the theme definition of the selected phone are shown here.

Clicking the *Import* button below one of the screens or clicking in one of the screen areas, opens a dialog where the image to use for that screen can be selected.
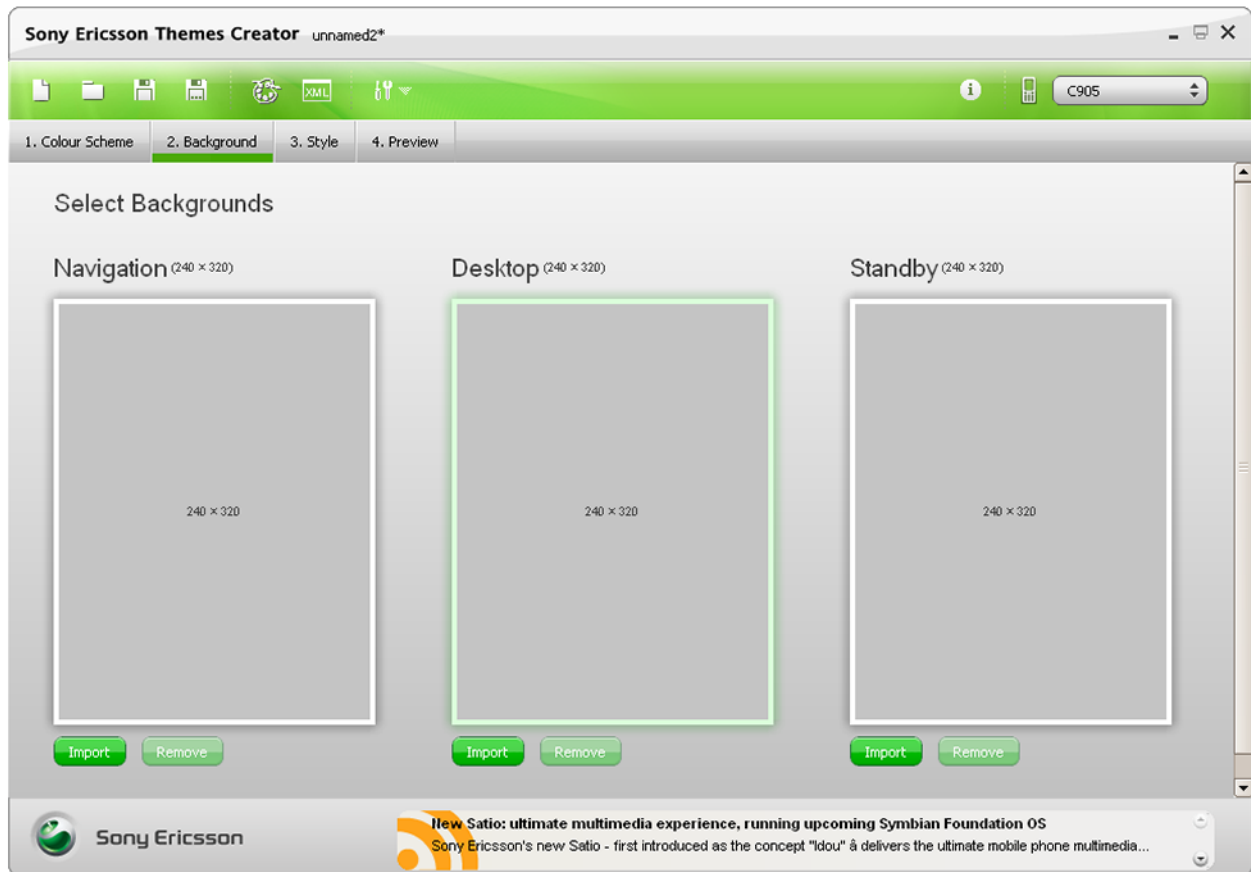
Images imported for backgrounds are not affected by the colour scheme settings in step 1.

Crop and scale an imported background image

When importing a background image and this image is not of the correct size, the "Crop and Scale" tool pops up automatically, allowing adjustments of the image to make it fit into the background area.

When the imported image is larger than the background area, the tool starts with the crop area (the white frame in the image below) centered within the original image and the image shown in its original size (zoom factor = 1). If the imported image is smaller than the background area, the imported image is zoomed to fit inside the crop area either horizontally or vertically, leaving no empty space inside.
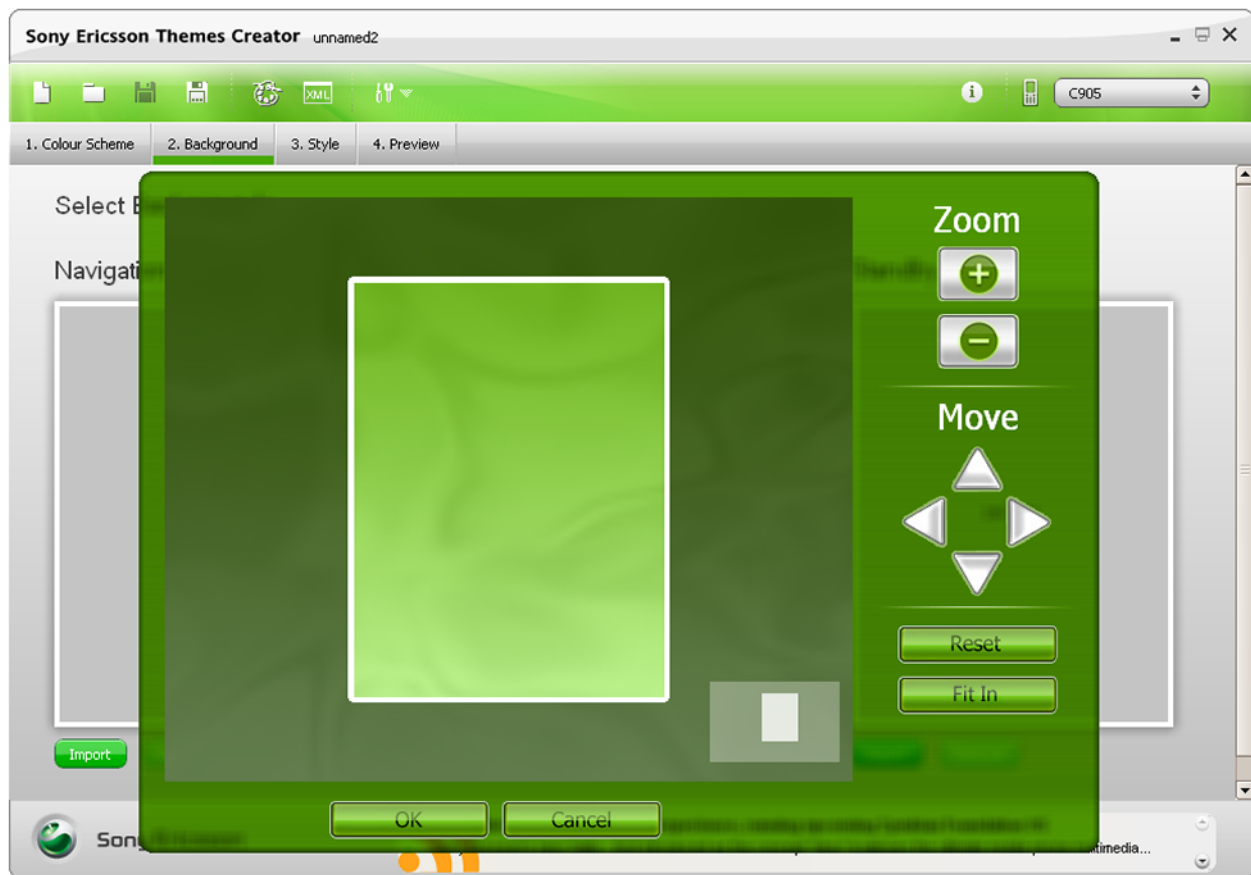
The following options are available for adapting the imported image to the background area:

- *Zooming the image*.
  The imported image can be zoomed either by using the Zoom (+) or (-) buttons or by rolling the mouse wheel. One click on a Zoom button increases/decreases the image size by 1% of its original size, and holding down the mouse button zooms the image continuously. Each "step" on the mouse wheel zooms the image by 10%.

- *Moving the image relative to the crop area.*
  The crop area can be moved over the imported image, using the "Move" arrows (up, down, left and right). The crop area can also be dragged over the image by placing the mouse pointer over the image area, pressing and holding the left mouse button and moving the mouse. The limits for moving is when an edge of the original image is aligned with one of the edges of the crop area.

- *Fitting the image in the crop area.*
  Clicking the "Fit In" button fits the original image inside the crop area so that it uses as large area of the original image as possible without leaving any empty space in the crop area.

- *Reset button.*
  Resets the imported image to the size and position that it had when first imported.

- *OK button.*
  The image is imported to the theme, sized and cropped as in the tool.

- *Cancel button*.
  Pressing the "Cancel" button or the Escape key on the keyboard disregards all crop and scale changes and imports the image to the theme in its original size.

Step 3 – Select a style

A style can be selected from one of the pre-defined styles affecting the shapes and colours of certain screen areas, for example, tab areas and highlighted list items. When a style is selected, images of the corresponding style is generated for these items given the colours selected in Step 1, and the three preview screens are updated with the new styles, as in the image below.
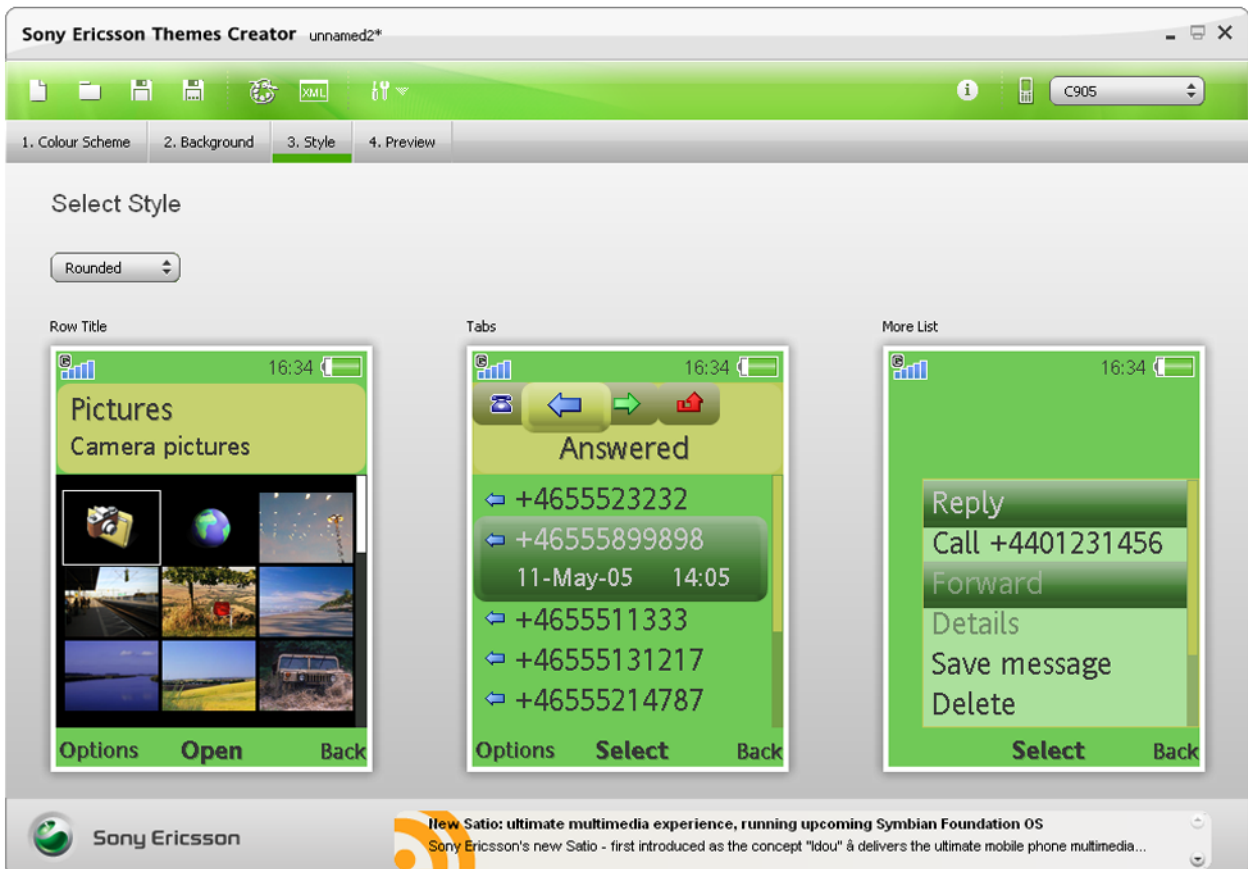
When selecting "Custom" from the dropdown list, a "File open" dialog is displayed, allowing loading of a user defined SETS (Sony Ericsson Theme Style) file from the file system. For more information about SETS files, see "Sony Ericsson Theme Style (SETS) file format" on page 34.

Step 4 – Preview

In the Preview window, the basic customisations done in steps 1 – 3 are applied to all screen layouts in the phone.

Advanced mode

The most important features of the Advanced editor are:

- The **tabs** are used to select group of theme elements to edit. In the image above, the "Backgrounds" pane is selected. The *Import* buttons are used to select images for elements. When an *Import* button is pressed, an "Open" dialog is displayed so the wanted image file can be selected and imported to the theme element.
  Cropping and scaling images imported for backgrounds works as in Wizard mode, see "Crop and scale an imported background image" on page 25.

- Colour settings for text items, outlines and backgrounds can be entered directly into the text fields or selected via a "Colour Picker" dialog, displayed when a colour box is clicked.

- Image and colour changes are immediately reflected in the preview images shown when the mouse cursor is moved over a graphic element area, as illustrated in the image above.

User defined icons (UDI) for preview in Themes Creator

With themes version 4.5 or higher, Themes Creator 4.0 includes a functionality allowing customised icons, instead of the default Sony Ericsson icons, to be displayed in previews.

Some operators may, by special business agreements, receive software variants with customised icons, affecting desktop and status bar icons. The UDI functionality is intended to make it easier to preview themes for such customised phone software – for example to adapt themes colours to icon colours.

Note: This functionality is for preview only, and does not in any way affect the themes created – there is no way to include these icons into the theme and make the phone software use them instead of standard icons. Desktop icons are fixed in phone software.

To use the UDI feature, proceed as follows:

1. From the icon source, extract the icons to be used for the preview.

2. Rename the icons:

   • Desktop icons are named "RxC.png", where "R" is the row of the icon position, and "C" is the column. For example, if the Messaging icon is placed in the middle of the second row (the SEMC standard position), the icon file should be named "2x2.png".

   • Other icons:
   RSSI icon must be named "rssi.png". Battery icon must be named "battery.png"

3. Place the renamed icons in the directory:

   • Microsoft Windows: {USER_DIR}\Application Data\ThemesCreator\Resources\

   • Mac® OSX: {USER_DIR}/Library/ThemesCreator/Resources/

4. Start (or restart) Themes Creator.

Colour reduction and dithering features in Themes Creator

In Themes Creator, *Tools and Settings* menu, a colour reduction filter can be enabled for PNG images in version 4.5 and higher themes. When colour reduction is enabled, an extra check box appears below each image, if this is checked the image will not only be colour reduced, but also dithered to avoid contouring and other side effects of colour reduction.
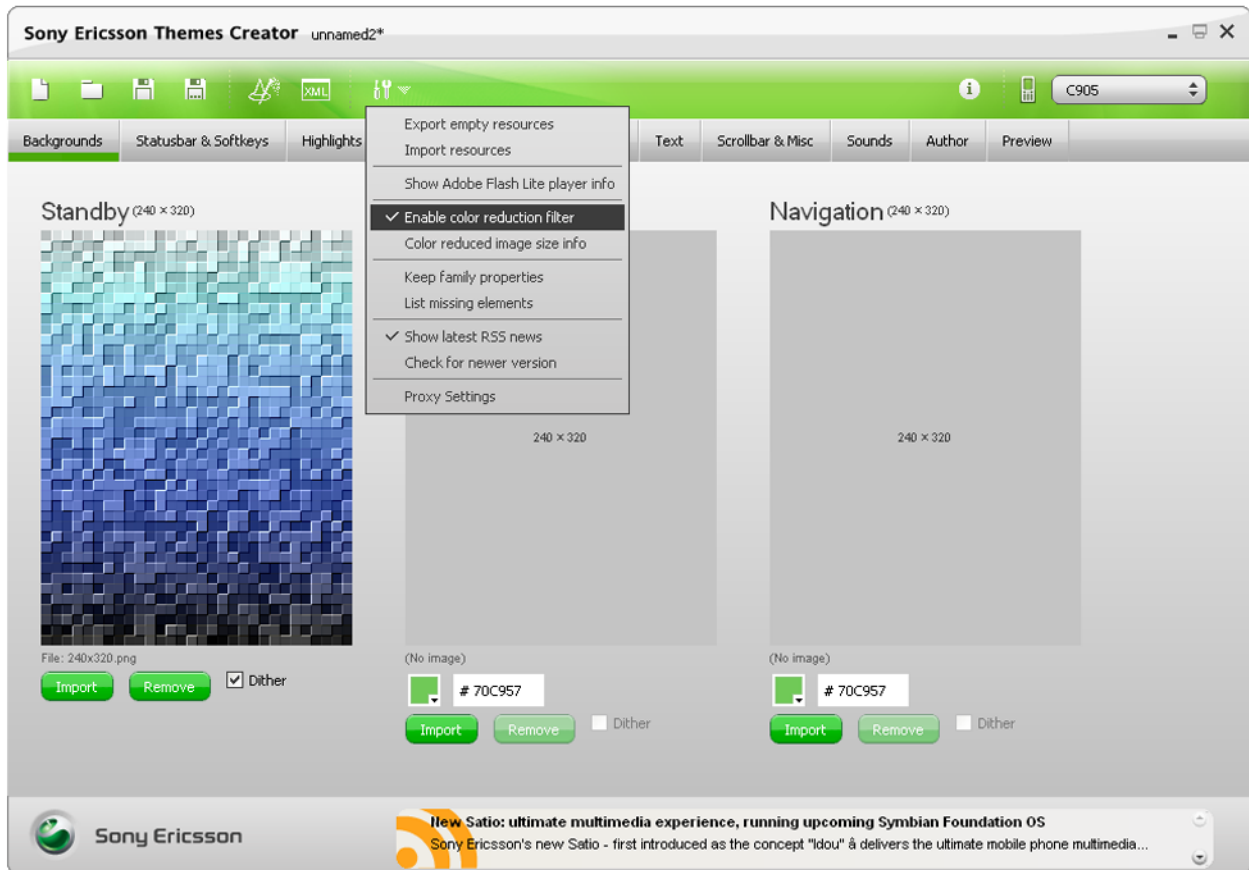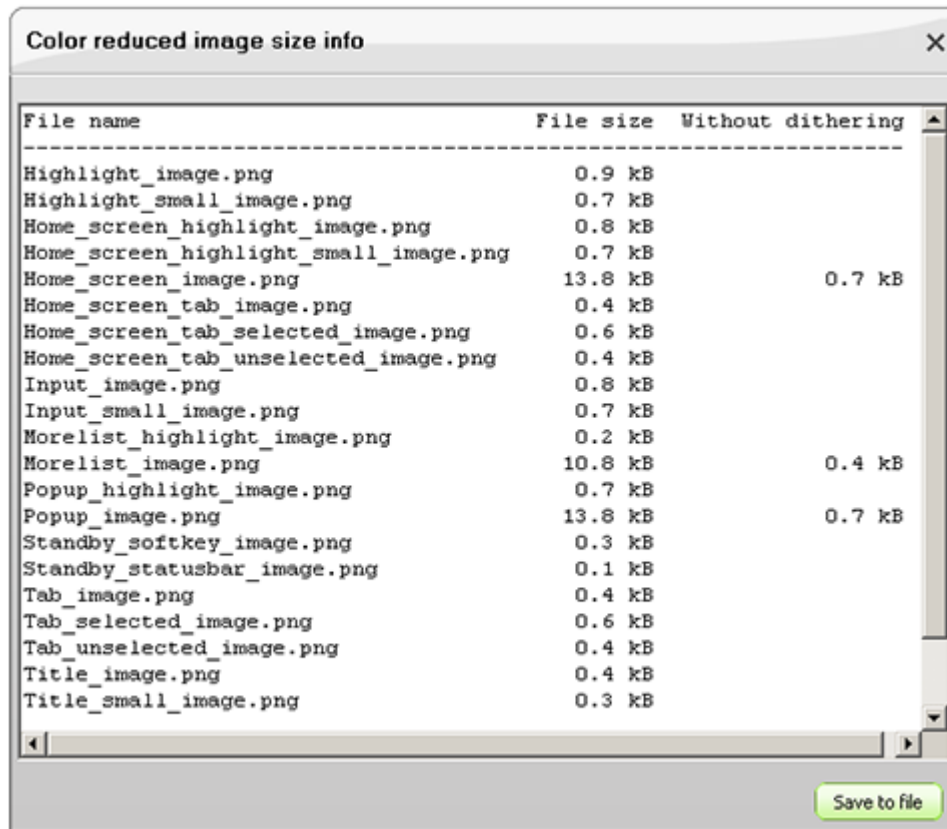
When colour reduction is enabled in the *Tools and Settings* menu, all images will be colour reduced. Images having *Dither* checked will also be dithered. Colour reduction operations are performed just before the theme is saved to disk, and can be quite time-consuming. For large themes on large displays, it can take several minutes to perform all reductions.

Note: The preview shows the original image, not the colour reduced/dithered one.

There is no indication inside the saved theme file if images have been colour reduced and/or dithered. If a theme including dithered images is saved and loaded back into Themes Creator, *Dither* is not checked for these images.

Dithered image files are often considerably larger than their non-dithered originals which also has an impact on the total size of the theme file. In Themes Creator image file sizes can be checked using the menu *Tools and Settings – Color reduced image size info*.

```
Color reduced image size info                                      ✕

File name                            File size  Without dithering  ▲
----------------------------------------------------------------------
Highlight_image.png                     0.9 kB
Highlight_small_image.png               0.7 kB
Home_screen_highlight_image.png         0.8 kB
Home_screen_highlight_small_image.png   0.7 kB
Home_screen_image.png                  13.8 kB               0.7 kB
Home_screen_tab_image.png               0.4 kB
Home_screen_tab_selected_image.png      0.6 kB
Home_screen_tab_unselected_image.png    0.4 kB
Input_image.png                         0.8 kB
Input_small_image.png                   0.7 kB
Morelist_highlight_image.png            0.2 kB
Morelist_image.png                     10.8 kB               0.4 kB
Popup_highlight_image.png               0.7 kB
Popup_image.png                        13.8 kB               0.7 kB
Standby_softkey_image.png               0.3 kB
Standby_statusbar_image.png             0.1 kB
Tab_image.png                           0.4 kB
Tab_selected_image.png                  0.6 kB
Tab_unselected_image.png                0.4 kB
Title_image.png                         0.4 kB
Title_small_image.png                   0.3 kB
                                                                   ▼

                                                        Save to file
```

The mid column gives the image size when saved to the theme, dithered or not. The right-most column, only contains a value when the image is checked to be dithered, in which case the non-dithered size is found here for comparison.

XML editor mode

This mode allows the user to edit the content of the XML file which is saved inside the theme file. This is practical, for example, when the user wants to add an element that is not supported by the currently selected phone profile but can be handled by the target phone.

```
unnamed3 - Sony Ericsson Themes Creator

<?xml version="1.0"?>
<!-- Created with Sony Ericsson Themes Creator -->
<Sony_Ericsson_theme version="4.7">
  <Background Color="0x70c957"/>
  <Calendar_weekview_markings Color="0xbcc957"/>
  <Desktop Color="0x70c957"/>
  <Desktop_title_text Color="0x363636"/>
  <Highlight_text Color="0xc9c9c9"/>
  <Highlight Color="0x457d36"/>
  <Home_screen_text Color="0x363636"/>
  <Home_screen Color="0x70c957"/>
  <Home_screen_frame Color="0xbcc957"/>
  <Home_screen_highlight_text Color="0xc9c9c9"/>
  <Home_screen_highlight Color="0x457d36"/>
  <Home_screen_scrollbar_background Color="0x747d36"/>
  <Home_screen_scrollbar_slider Color="0xbcc957"/>
  <Home_screen_tab_text Color="0x363636"/>
  <Home_screen_tab Color="0xbcc957"/>
  <Home_screen_tab_unselected Color="0x457d36"/>
  <Home_screen_tab_selected Color="0xbcc957"/>
  <Input_text Color="0x363636"/>
  <Input_marked_text Color="0x457d36"/>
  <Input_popup_text Color="0x363636"/>
  <Input_popup Color="0xbcc957"/>
  <Input_popup_frame Color="0xbcc957"/>
  <Input_popup_highlight_text Color="0xc9c9c9"/>
  <Input_popup_highlight Color="0x457d36"/>
  <Input_popup_scrollbar_background Color="0x747d36"/>
  <Input_popup_scrollbar_slider Color="0xbcc957"/>
  <Morelist_text Color="0x363636"/>
```

`Insert file name`   Ln 1, Col 1   `OK` `Apply` `Cancel`
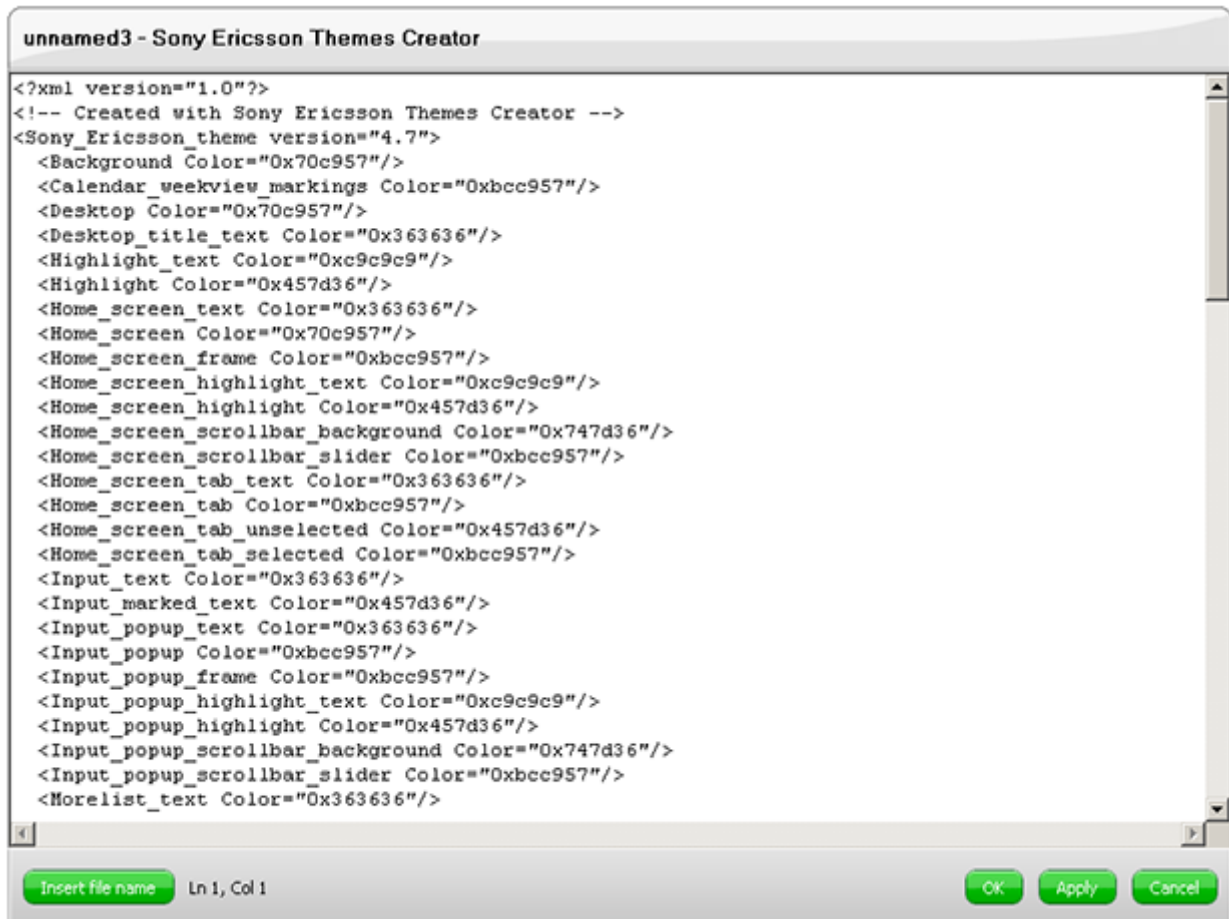
The XML editor is a basic text editor, where the XML file of the current theme is displayed when the editor is opened.

For *.thm* themes (Sony Ericsson feature phones) the user can add images and colours not supported by the currently selected phone profile. For *.utz* themes (Symbian/UIQ phones) the user can add condensedColorScheme colours, wallpapers, systemSounds and skins, skin patches and skin texts.

When the user adds an element requiring an image file or sound file to be specified, the full, absolute path of the file must be specified for Themes Creator to be able to import the image or sound into the theme file. The "Insert file name" button helps the user with this by opening a dialog where the path and file can be selected.
Note: If a file name is the same as the name of an already included file, the added file will not be imported, even if the two files reside in different directories. Instead the already included image or sound will be used with both elements.

When the user changes editor mode from XML Editor to another mode (either Advanced editor or Wizard), the XML code is reformatted and rearranged to the standard. Tags not defined in the current theme profile is always be put last in the code.

When pressing *Apply* in the XML editor, a validator checks the consistency of the XML code and all the elements in the code. If, for example, the code contains elements that do not belong to the currently selected phone model or file specifications are missing, the validator presents warnings in the list below the code window. If the user double clicks a warning in the list, the cursor moves to the line of code that the warning refers to.

If the list contains only warnings, the XML code can be saved and the XML editor be exited. If there are errors, which would make the XML file unusable, the file cannot be saved and the XML editor cannot be exited, unless the user agrees that all changes will be lost.

SWF file import for the wallpaper element

SWF files (Flash Lite animations) can be used for the Standby screen (Wallpaper) element in themes version 4.5 and higher.

When an SWF file has been imported to the Standby screen, the animation is previewed when the user moves the mouse pointer into the Standby area.

Panda animation by courtesy of Smashing ideas Inc.

By selecting *Show Adobe Flash Lite player info* from the *Tools and Settings* menu, the user can verify that an imported Flash Lite animation, playing in the preview area, does not use too much memory.

```
Adobe Flash Lite player info          ×

File name: panda.swf
Player version: 2.1
File size (ideal max.): 14 KB (256 KB)
Heap usage (max.): 64 KB (2048 KB)
```

Sony Ericsson Theme Style (SETS) file format

A Sony Ericsson Theme Style (SETS) can be used to create a theme to a number of different phone models as specified in the SETS file. The theme contains images that can be scaled to any given size and a control file that contains information on which images that should be used for which theme elements and also information on how the images should be scaled.

The SETS file is a TAR archive. There are several different tools for creating TAR files, 7zip is one option. When creating the TAR file, add all the image assets and the control XML file to the archive.

The control file can have any name as long as its extension is ".xml". The first file with the .xml extension in the TAR file is considered as the control file.

Image assets
The image assets can be of just about any single layer bitmap format. Supported are: BMP, PNG, JPEG, GIF and TIFF.

Control file
The control file is formatted as XML code. Hence it should start with the XML file header (see example below). The document element is `<sony_ericsson_theme_style>` and it may contain one or more `<image>` elements.

The `<image>` element can have the following attributes, of which only `src` is mandatory:

- `src` – the file name of the image file within the TAR archive
- `left` – the left margin in pixels when scaling the image
- `right` – the right margin in pixels when scaling the image
- `top` – the top margin in pixels when scaling the image
- `bottom` – the bottom margin in pixels when scaling the image

The margin attributes all default to "0" if omitted. Inside the `<image>` element there can be one or more `<element>`s. Each of these specifies a theme element that this image asset should be used for.

There is only one attribute for `<element>`: the `tag` attribute, which is mandatory. `tag` values are not case sensitive. The value of this attribute can be found in each theme specification.

Example:
In the example below the file name of the first image is "popup.png". When scaled it should maintain its margins of 13 pixels all around. The enclosed `<element>`s tell that this image is used for two different theme elements. "popup_image" and "home_screen_image".

```xml
<?xml version="1.0" encoding="UTF-8"?>
<sony_ericsson_theme_style>
  <image src="popup.png" left="13" right="13" top="13" bottom="13">
    <element tag="popup_image"/>
    <element tag="home_screen_image"/>
  </image>
  <image src="softkey.png" left="8" right="8" top="8" bottom="8">
    <element tag="standby_softkey_image"/>
  </image>
  <image src="statusbar.png" left="0" right="0" top="0" bottom="2">
    <element tag="standby_statusbar_image"/>
  </image>
  <image src="title.png" left="1" right="1" top="5" bottom="5">
    <element tag="title_small_image"/>
    <element tag="title_image"/>
    <element tag="tab_image"/>
    <element tag="home_screen_tab_image"/>
    <element tag="popup_title_image"/>
  </image>
  <image src="highlight.png" left="9" right="9" top="9" bottom="9">
    <element tag="highlight_small_image"/>
    <element tag="highlight_image"/>
    <element tag="popup_highlight_image"/>
    <element tag="home_screen_highlight_small_image"/>
    <element tag="home_screen_highlight_image"/>
  </image>
  <image src="selectedtab.png" left="5" right="5" top="5" bottom="5">
    <element tag="tab_selected_image"/>
    <element tag="home_screen_tab_selected_image"/>
  </image>
  <image src="deselectedtab.png" left="6" right="6" top="6" bottom="6">
    <element tag="tab_unselected_image"/>
    <element tag="home_screen_tab_unselected_image"/>
  </image>
  <image src="input.png" left="6" right="6" top="6" bottom="6">
    <element tag="input_image"/>
    <element tag="input_small_image"/>
  </image>
  <image src="morelist.png" left="0" right="0" top="0" bottom="0">
    <element tag="morelist_image"/>
  </image>
  <image src="morelist_highlight.png" left="5" right="5" top="5" bottom="5">
    <element tag="morelist_highlight_image"/>
  </image>
</sony_ericsson_theme_style>
```

Characteristics and limitations of the Themes Creator

- The application remembers the last mobile phone model that was used before closing a Themes Creator session. When a theme file (*.thm or *.utz) is opened in Microsoft® Windows® Explorer, an error might occur because the opened theme file is not compatible with the current phone model. Therefore, it is recommended to first start the Sony Ericsson Themes Creator, then choose the appropriate mobile phone model, and finally open the theme file.

- Due to resolution and colour depth differences between the computer and the phone, the preview pane of the Sony Ericsson Themes Creator can be slightly different compared to what is displayed in the mobile phone. Differences may also depend on market or operator customisations of the phone.

- The Symbian graphic format (MultiBitMap – MBM) is required for the P900/P910 theme to provide the graphical effects of the mobile phone. The application converts MBM files in opened theme files to BMP files which are displayed in the preview pane of the Sony Ericsson Themes Creator. Therefore, the appearance of the MBM skins might differ from the appearance in the actual P900/P910 devices.

  For more information about MBM files, refer to the Symbian publication "Symbian OS C++ for Mobile Phones" by Richard Harrison.

- If a P900/P910 theme (not created in the Themes Creator) is opened and an MBM file does not contain the correct number of bitmaps, these bitmaps will not be shown in the application.

- If not all bitmaps for an MBM file are present in the Themes Creator when saving the theme, a warning message is displayed. If the warning is ignored, and the theme is saved, this specific MBM file will not be included in the theme.

Theme design recommendations

- To make a theme for different Sony Ericsson mobile phones, it is advised that images for all desired elements in all these phone models are created. Please refer to the appendices of this document for information on which elements can contain images, together with image sizes and colour depths. Use the Themes Creator to import images, set colours for other elements, and save a theme file for each of the different phone models.
  However, it is not necessary to create images for all items, since colour settings can be applied for any element if preferred. When the phone model is selected, default colours are set for all theme elements.

- If images are to be used for wallpaper and desktop background, they must be of the defined size. Otherwise the images will not be displayed correctly or, in worst case, the mobile phone will not be able to install the theme.

Creating images

For creating pictures and image components, use any standard commercially available image editing application, for example Adobe™ Photoshop™.

When creating images for themes, the following must be taken into consideration:

- The colour depth of the mobile phone: 256, 512, 4K, 65K or 262K colours
- The height and width of the image.
- Images must be valid GIF/JPEG/PNG/MBM/BMP/SVGT 1.x files (depending on the themes version of the phone, see the specifications in the appendices of this document). If one file is corrupt the whole theme file will be treated as corrupt.
- When using JPEG files, make sure that the files are converted/saved to JPEG format from images with 24-bit colour depth. Otherwise, the theme will be considered invalid and can not be installed in the phone.

Note:
Images are not always required for elements that allow images. Using an image file results in a larger theme file. In many cases, a colour attribute is sufficient for making the theme look good.

Element colours

The Sony Ericsson Themes Creator starts with a default set of colours for all required theme elements. It is up to the user to change the colours he wants.

Colour selection

When selecting colours for certain elements of a theme, colours of some pairs and some triplets of elements must be chosen so that the user clearly can see the elements on the phone display. The RGB distance (see below) between elements need to be at least 20 for themes version 1 and 2, and at least 12 for higher themes versions, to allow a user to see the colour difference on the screen.

When a colour setting for an element that need to be separable from other elements is changed in the Themes Creator, the RGB distance between the colours is calculated. Small red triangles near the colour buttons indicate that the current values are invalid, that is too close in colour. The theme can still be saved after a warning message, but the theme can not be installed in a phone.

RGB distance calculation

If Themes Creator is not used for creating a theme, the RGB distance should be calculated to verify that colours are distinguishable. The following example shows how to calculate the RGB distance between two colours.

Note: For phones with 256, 512 or 4096 colour displays, element colour pairs may in rare cases become invalid even if the RGB distance is greater than 20. This is because the colours are converted into the screen palette, and two colours that are separable in RGB mode may be converted into palette colours that are not.

Example:

To calculate the RGB distance between two blue colours, RGB(0,67,140) and RGB(0,82,164):

1. Calculate the differences between Red, Green and Blue colour values separately and calculate the square of the differences.
   Red difference = *0 – 0 = 0*
   Blue difference = 82 – 67 = 15
   Green difference = 164 – 140 = 24

2. Add the squares of the three colour differences together:
   $0^2 + 15^2 + 24^2 = 0 + 225 + 576 = 801$

3. The RGB distance is calculated as the square root of the sum of squares above:

   RGB distance = $\sqrt{801}$ = 28.3

Appendix 1
Themes version 1.0

This appendix contains theme specifications for the Sony Ericsson T68, T230, T290, T300 and T310 series.

Image files in themes

The table below lists theme elements where images may be used and sizes of these images in pixels.

Element	T68 T300 T310	T230 T290	Comment
Phone specifications			
Screen size	101x80	101x80	
No. of colours	256	4,096 (**T226**: 512)	
Supported image file formats	GIF	GIF	File extension must be .GIF. JPEG is *not* supported for theme version 1.0 images, even for phones that support JPEG, for example for wallpapers.
Standby			
Background	101x80		If the image is larger than 101x80 it is cut from the bottom/right, if it is smaller, it is centered on the screen.
Desktop			
Desktop background	101x80		If the image is larger than 101x80 it is cut from the bottom/right, if it is smaller it is centered on the screen.
Navigation			
Title (small)	101x20		When an image is used for this element, two rows of text with *small* font can be displayed in the title, which gives less room for menu items. Only in menus, not in applications.
Title (medium)	101x27		When an image is used for this element, two rows of text with *medium* font can be displayed in the title, which gives less room for menu items. Only in menus, not in applications.
Title (large)	101x16		Only room for one row with *large* font in the title
Title (Asian)	101x16		Same as Title (large) for phones on the Asian market.
Highlight (small)	N/A	101x10	Background for highlighted items with *small* font.
Highlight (medium)	N/A	101x13	Background for highlighted items with *medium* font.
Highlight (large)	N/A	101x16	Background for highlighted items with *large* font.

Element	T68 T300 T310	T230 T290	Comment
Highlight (Asian)	N/A	101x16	Same as Highlight (large) for Asian phones.
Datalist Image	N/A	101x80	Background picture used in menus. This image will be obscured by Title and Highlight bar.

Note: The colour palette used for the GIF conversion has great impact on the quality of theme images. The Developers Guideline *Adapting images for Sony Ericsson phones* contains instructions how to optimise the 256 colour palette for GIF images to be viewed on phone displays. Particularly, great improvements can be achieved on images for the T226 (512 colour/9-bit) and T230/T290 series (4,096 colour/12-bit) phones. This document can be downloaded from www.sonyericsson.com/developer/multimedia.

Colour setting notes

Colour values are set in hexadecimal format, for example 34D2CC (in the XML file the "0x34D2CC" notation is used). Note that when rendered in the phone, the closest colour in the display's palette is used. Therefore the appearance of colours on the phone display can differ slightly from the appearance in the Themes Creator preview images.

Some colour settings only have effect on the display when an image is selected for the background.The following colour values are replaced by the **Text** colour setting (set in the *Navigation* tab in Themes Creator) when there is no image in the background:

• Standby operator name text
• Standby operator name outline
• Standby time text
• Standby time outline

The colour setting Desktop title shadow is only used when there is an image for the desktop background.

Appendix 2
Themes version 2.0

This appendix contains theme specifications for the Sony Ericsson J210, J220, J230, T610, T630, Z300 and Z600 series.

Image files in themes

The table below lists theme elements where images may be used and sizes of these images in pixels.

Element	T610, T630, Z600	J210, J220, J230, Z300	Comment
Phone specifications			
Screen size	128x160	128x128	
No. of colours	65,536	65,536	
Supported image file formats	GIF, JPEG	GIF, JPEG	image files must be valid GIF or JPEG files. If one file is corrupt, the whole theme will be treated as corrupt.
Standby			
Statusbar background	128x14	No support	
Softkeys background	128x19	No support	
Wallpaper	128x127	128x128	If the image is larger than specified, it is cropped, if it is smaller it is centered on the screen.
Desktop			
Desktop background	128x127	128x128	If the image is larger than specified, it is cropped, if it is smaller it is centered on the screen.
Navigation			
General background	128x104	128x105	
Title	128x23	128x23	When an image is used for this element, its height is about two rows, instead of one when the colour setting is used, which gives less room for menu items. The image is shown only in menus, not in applications.
Highlight	123x16	123x16	
Popup			
Popup title	118x23	118x23	
Popup highlight	113x16	113x16	

Note: In general JPEG files are smaller than GIF files with the same image size. The image format used therefore affects the final size of the theme file. A general recommendation is to use GIF files for coloured line art graphics ("cartoon-like images"), and JPEG files for photographic pictures.

Colour setting notes

Colour values are set in hexadecimal format, for example 34D2CC (in the XML file the "0x34D2CC" notation is used). Note that when rendered in the phone, the closest value within the 65,536 colour depth will be used. Therefore the appearance of colours on the phone display can differ slightly from the appearance in the Themes Creator preview images.

Some colour settings only have effect on the display when an image is selected for the background.The following colour values are replaced by the **Text** colour setting (set in the *Navigation* tab in Themes Creator) when there is no image in the background:

- Standby operator name text
- Standby operator name outline
- Standby time text
- Standby time outline

The colour setting Desktop title shadow is only used when there is an image for the desktop background.

Ringtones

Note: Ringtones can only be included in ver 2.0 themes for the J210, Z300, J220 and J230 series.

In the Themes Creator a ringtone can be imported into the theme. Select the Ring signal tab to import the audio file you want. However, not all ringtone formats are suited for all phones. Please refer to the *Ringtones* Developers Guideline, available for download at www.sonyericsson.com/developer/multimedia.

Appendix 3
Themes version 3.0

This appendix contains theme specifications for the Sony Ericsson J300, K300, K500, K700, S700, Z500, and Z1010 series.

Image files in themes version 3.0

If no image is used for an element, colour settings will be used instead, see the *Colour setting notes* section below.

The image file format used affects the total size of the theme file. In general GIF files are smaller than JPEG files with the same image size. PNG files always contains full 24-bit colour representation and does not approximate pixel areas as the JPEG format does, which in some cases leads to large files. The PNG format allows semi transparency through alpha channels.

Animations are only supported in GIF format.

A general recommendation is to use GIF files for coloured line art graphics ("cartoon-like images") and animations, JPEG or PNG files for photographic pictures. In many cases it is worth the effort to save an image in different formats and select the smallest file. PNG must be used for images with transparent or semi-transparent areas.

The table below lists theme elements where images may be used and sizes of these images in pixels. In the "Comment" column is noted which images are allowed to be animations and for which elements image transparency is supported.

Element	Z1010	K700	S700	K500 Z500	J300 K300	Comments
Phone specifications						
Screen size	176x220	176x220	240x320	128x160	128x128	**Z500** external display: 96x64
No. of colours	65,536		262,144	65,536	65,536	**Z500** external display: 4,096
Supported image file formats	GIF, JPEG, PNG					If one image file is corrupt, the whole theme will be treated as corrupt.
Standby						
Standby (wallpaper)	176x182	176x176	240x266	128x128	128x96	Animation allowed. If the image is larger than the specification, it is cropped, if it is smaller it is centered in the area
Standby softkey	176x22	176x26	240x30	128x18	128x18	
Standby statusbar	176x16	176x18	240x24	128x14	128x14	
Desktop						

Element	Z1010	K700	S700	K500 Z500	J300 K300	Comments
Desktop	176x182	176x176	240x266	128x128	128x110	If the image is larger than the specification, it is cropped, if it is smaller it is centered in the area
Softkeys	176x22	176x26	240x30	128x18	128x18	The images or colour settings for these elements are used in all other screens too, except for the standby screen.
Statusbar	176x16	176x18	240x24	128x14	N/A	
Navigation – Single Title						
Title small	176x19	176x29	240x40	128x20	128x20	
Background	N/A	176x147	240x226	128x108	128x89	The same background image is used for all navigation screens.
Highlight	N/A	169x55	233x72	123x39	123x36	Transparency (alpha channel) allowed. Placed on top of the background image.
Navigation – Double Title						
Background	176x42	N/A	N/A	N/A	N/A	The same background image is used for all navigation screens.
Title	176x40	176x52	240x70	128x37	128x37	
Highlight	170x51	N/A	N/A	N/A	N/A	Transparency (alpha channel) allowed. Placed on top of the background image.
Navigation – Tab Title						
Tab	176x40	176x52	240x70	128x37	128x37	
Tab selected	31x20	35x27	48x39	25x20	25x20	Transparency (alpha channel) allowed. Placed on top of the Tab (title) image.
Tab unselected	31x20	35x23	48x33	25x17	25x17	Transparency (alpha channel) allowed. Placed on top of the Tab (title) image. Repeated as many times as there are menu items (max 5).

Element	Z1010	K700	S700	K500 Z500	J300 K300	Comments
Highlight small	170x28	169x32	233x42	123x20	123x20	Transparency (alpha channel) allowed. Placed on top of the background image.
Popup (and More menu)						
Popup title	150x32	163x29	209x40	118x20	118x20	Transparency (alpha channel) allowed. Placed on top of the popup image.
Popup highlight	144x28	156x30	202x42	113x20	113x20	Transparency (alpha channel) allowed. Placed on top of the popup image.
Popup (background)	150x150	163x152	209x232	118x109	118x101	The size of the area where this image is displayed depends on if there is a title and (for More menus) the number of items in the list. The image is cropped if the area is smaller than the image size.
External display – Z500 only						
External	N/A	N/A	N/A	96x64	N/A	

Colour setting notes

Colour values are set in hexadecimal format, for example 34D2CC (in the XML file the "0x34D2CC" notation is used). Note that when rendered in the phone, the closest value within the phones colour depth will be used. Therefore the appearance of colours on the phone display can differ slightly from the appearance in the Themes Creator preview images.

June 2009

Alpha blended colours

In themes version 3.0 a number of colours are automatically rendered using alpha blending, either as a percentage of the colour setting or as a percentage of black or white.

The following colours are rendered using automatic alpha blending:

Element	Alpha blending	Comments
Standby		
Operator name outline	50% of set colour	
Time outline	50% of set colour	
Secondary statusbar background	70% of White (FFFFFF)	Not in XML file. Z500 only.
Softkeys		
Softkeys text shadow	20% of Black (000000)	Not in XML file
Softkeys disabled text	50% of *Softkeys Text*	Not in XML file
Desktop		
Desktop title text shadow	20% of Black (000000)	Not in XML file
General		
Title text shadow	20% of Black (000000)	Not in XML file
Disabled text	50% of *Text*	Not in XML file
Highlight disabled text	50% of *Highlight text*	Not in XML file
Scrollbar background	50% of set colour	
Popup/More list		
Popup title text shadow	20% of Black (000000)	Not in XML file
Popup disabled text	50% of text in More lists	Not in XML file
Popup highlight disabled text	50% of highlighted text in More lists	Not in XML file
Popup frame shadow	40% of Black (000000)	Not in XML file
Popup scrollbar background	50% of set colour	
Tabs		
Tab text shadow	20% of Black (000000)	Not in XML file
Notes		
Notes	70% of White (FFFFFF)	Not in XML file
Notes text	No blending, always = "000000"	Not in XML file

Ringtones

In the Themes Creator a ringtone can be imported into the theme. Select the Ring signal tab to import the audio file you want. However, not all ringtone formats are suited for all phones. Please refer to the *Ringtones* Developers Guideline, available for download at www.sonyericsson.com/developer/multimedia.

Appendix 4
P900/P910 themes

A P900/P910 theme package is a standard zip file with the file extension .utz, containing several files. Some of the files must match the definition given in a XML file in the theme package, while others must match the rules specific to the P900/P910 theme extensions.

Theme package contents

A theme package contains the following files:

Mandatory
- One (1) Theme XML definition in a file with extension .xml.
  This must be present in the package. The format will be explained below.

Optional
- Two (2) wallpaper images (typically JPEGs, but can be any image format handled by the P900/P910 media server – GIF, JPEG or PNG). One of the wallpaper images is for the Flip Open AppLauncher, and one is for the Flip Close standby screen of telephony. The names of these two files are specified in the XML definition file.

- 16 sound files (any audio format supported by the media server – MP3, MIDI or RMF).
  A theme package can contain any combination of these files or none of them. File names are specified in the XML definition file.

- Eight (8) MBM skin files for
  - appicker graphics
  - dialog title bar
  - flip closed title bar
  - appLauncher graphics
  - list box highlight
  - menu bar
  - menu pane
  - status bar

  The name and format of these skin files are **static**, and cannot be defined in the XML definition file. A theme package can contain any combination of the skin bitmap files. The Themes Creator automatically gives the skin files correct names when a theme is saved.

- Three (3) PNGs image files for
  - standby shortcut
  - selected shortcut
  - shortcut's halo.

  A theme package can contain all or none of them. The name of the files are **static**. The Themes Creator automatically names the file correctly when a theme is saved.

- One (1) screensaver image file (**must be a GIF)**. File name is **static**. The Themes Creator automatically names the file correctly when a theme is saved.

The XML file

The Theme definition XML file defines the use of the files present in the theme packages and defines the colour scheme to use.

Note:
Elements in the XML file that does not have any PCDATA or sub elements, but only attributes can be written in an abbreviated format. So instead of writing

```
<darkColor background="#003399" text="#FFFFFF"></darkColor>
```

you can write

```
<darkColor background="#003399" text="#FFFFFF"/>
```

The XML file can contain the following elements (example of xml file provided below):

```
<?xml version="1.0"?>
```
(Mandatory element)

```
<!DOCTYPE theme SYSTEM "theme.dtd">
```
(Mandatory element)

```
<theme>…</theme>
```
(Mandatory element)

The <theme> element has the following mandatory attributes:

title: title of the theme (for example `title="my theme"`. Should be the same as the file name of the theme.)
author: author of the theme (for example `author="John Doe"`)
copyright: copyright information (for example `copyright="Sony Ericsson"`)
screenWidth: the screen width of the device for which this theme is intended ("`208`")
screenHeight: the screen height of the device for which this theme is intended ("`320`")

```
<wallpaper> filename </wallpaper>
```
Optional element. Defines the wallpaper(s) to use.

The <wallpaper> element has the following mandatory attribute:
id: ID of the wallpaper, identifying which wallpaper the specified file should be used for.

Supported IDs are:
Launcher wallpaper for AppLauncher (`id="Launcher"`).
FcStandby_208x189 wallpaper for standby screen in flip closed.

The suggested sizes for the wallpapers' images are:
Launcher: 208x256 pixels
FcStandby_208x189: 208x189 pixels

PCDATA
filename: name of the file to use for the specified wallpaper (for example wallpaperforest.jpg). The file name can contain a relative path within the theme zip file. The image file can be of any type supported by the media server. If the file is an animation (for example GIF) then only the first frame in the animation will be used as wallpaper.

```
<condensedColorScheme>...</condensedColorScheme>
```
Mandatory element used to define a colour scheme. The condendedColorSheme element has no attributes or PCDATA, but must have the following three sub elements:

```
<darkColor></darkColor>
<midColor></midColor>
<lightColor></lightColor>
```

These 3 elements each have the following mandatory attributes:

- ***background***: a string defining a RGB colour (standard HTML hex format), for example `"#316331"`
- ***text***: a string defining a RGB colour (standard HTML hex format), for example `"#FFFFFF"`

```
systemSound>filename</systemSound>
```
Optional element
If present, it must contain the following mandatory attribute:
id: id to identify the system sound that should use the specified file.

The supported IDs are (ID + corresponding UI string):

XML ID	UI String
DefaultRing	Ring (voice)
DefaultRingVoice2	Ring (voice) Line 2
DefaultRingData	Ring (data)
MessageNewSMS	New SMS
MessageNewMMS	New MMS
MessageNewEmail	New Email
MessageNewVoiceMessage	New voice message
MessageNewAreaInfo	New area info message
MessageNewAutoSetup	New auto setup
DefaultAlarm	Default alarm
Reminder	Reminder

Note:
If your theme will use MP3 files, make sure they contain an ID3V2 tag in the beginning of the file. If the ID3V2 tag is missing from the beginning of the file, it will not be possible to pre-listen to the sound. Sound files should not be bigger than 500 Kb. Bigger files can not be pre-listened to.

filename: name of the file to associate with the specified system sound. The sound file can be of any format supported by the media server, and the file name can include a relative path within the theme file.

```
<colors>…</colors>
```
Optional element used to specify some specific text colours that override the colour scheme specified. Only the colour of the text in the standby screen in flip close (FC) can be customised by a theme.

This element has one mandatory attribute:
id: `id="FcStandby"`

```
<textColor>…</ textColor >
```
sub element
When the <colors> element is present it must contain one or more instances of the <textColor> element as sub elements. All attributes for the <textColor> element are mandatory and must be specified:

id: ID to identify the text colour that should use the colour specification.
text: RGB colour value in standard HTML hex format. Specifies the colour to be used on text.
outline: RGB colour value on standard HTML hex format. Specifies the colour to be used on the text outline.

The textColor IDs supported for the "FcStandby" id of the <colors> element are (all lowercase):

- operator
- softkeys
- clock
- alarm
- other

Examples:

```
<textColor id="operator" text="#000000" outline="#9CCE9C"></ textColor>
<textColor id="softkeys" text="#000000" outline="#9CCE9C"></ textColor>
<textColor id="clock" text="#000000" outline="#9CCE9C"></ textColor>
<textColor id="alarm" text="#000000" outline="#9CCE9C"></ textColor>
<textColor id="other" text="#000000" outline="#9CCE9C"></ textColor>
```

Skins and screen saver

Some graphical elements of the theme are not defined in the XML file but just image files added to the zip file.

Those images must have a specific file name, a specific file format and a specific size.

System/ScreenSaver.gif
Standard GIF image file (static or animated), if present in the theme package it will be used as screensaver for the device (suggested size: 208x320). The "Screensaver.gif" file must be place in a subfolder of the zip file called "System"

Skins – MBM
A theme package can contain any of the following MBM files with **exactly** the given names:

- AppickerSkin.mbm
- DialogSkin.mbm
- FcTitleBarSkin.mbm
- LauncherSkin.mbm
- ListBoxSkin.mbm
- MenuSkin.mbm
- MenuExtraSkin.mbm
- StatusBarSkin.mbm

Each MBM contains one or more bitmaps with compatible sizes and in the correct predefined order inside the MBM. In the Themes Creator, bitmap files are imported and the MBM files are created and named correctly when the theme is saved.

The bitmaps in the MBM files will be used to draw skins on associated UI control. If the bitmap is smaller than its associated UI control, it will be applied using one of three methods:

- **Normal**: the bitmap is applied to the upper left corner of the control, no stretching or shrinking to match the size of the control is done (the bitmap should already have the correct size).
- **Stretch**: the bitmap will be stretched to match the size of the control (details below).
- **Tile**: the bitmap will be tiled across the control (details below).

Each bitmap **that is stretched or tiled** when applied has a predefined margin associated with it (see image below). When applied, the corner pieces (yellow) are copied as they are to the corners of the control. The side parts (blue) are stretched or tiled (depending on the method used) across the sides of the control, and finally, the centre piece is stretched or tiled across the centre of the control.
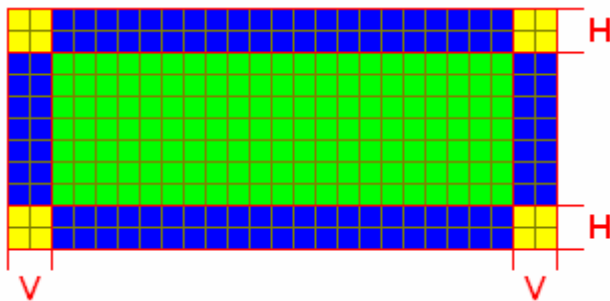
H = horizontal top and bottom margins, in pixels
V = vertical left and right margins, in pixels

Unless sizes of the bitmaps is mentioned below, the exact size does not matter much, since the bitmap will be stretched or tiled to fit the control. However, in the case if tiling, the smaller the bitmap is, the more times each piece needs to be tiled, which might affect drawing performance.

Typically, the colour depth of skin bitmaps shall be 12- or 16-bit colour, and the colour depth of masks shall be 1-bit black and white, or 8-bit greyscale for alpha channel.

MenuSkin.mbm
This MBM contains the bitmaps that will be used for the menu bar, and some of the bitmaps for the menu pane.

1 bitmap for menu bar background
1 bitmap for menu title highlight
1 bitmap for menu title highlight mask
1 bitmap for menu item highlight
1 bitmap for menu item highlight activated

 menu bar background:

Draw method: Tile
left & right margins: 6
top & bottom margins: 6

 menu title highlight

 menu title highlight mask
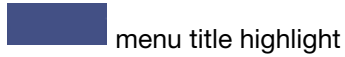
Draw method: Tile
left & right margins: 6
top & bottom margins: 6

Draw method: Tile
left & right margins: 6
top & bottom margins: 6

 menu item highlight

 menu item highlight selected
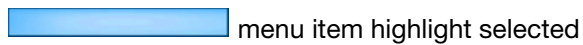
Draw method: Stretch
left & right margins: 1
top & bottom margins: 1

Draw method: Stretch
left & right margins: 1
top & bottom margins: 1

MenuExtraSkin.mbm

1 bitmap for menu pane background
1 bitmap for menu pane separator
1 bitmap with 16 elements for menu item adornments
1 bitmap with 16 elements for menu item adornment masks

 menu pane background
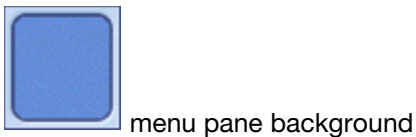
Draw method: Tile
left & right margins: 12
top & bottom margins: 12

_____ menu pane separator
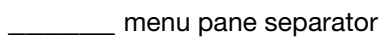
Draw method: Tile
left & right margins: 4
top & bottom margins: 4

 menu pane adornments

16 elements (2 rows, 8 columns), each one of them 14x14 pixels

Draw method: Normal
left & right margins: 0
top & bottom margins: 0

The elements are (from top left to bottom right):

MenuPaneOptionButtonClear
MenuPaneOptionButtonSet
MenuPaneOptionButtonClearHighlighted
MenuPaneOptionButtonSetHighlighted
MenuPaneOptionButtonClearDimmed
MenuPaneOptionButtonSetDimmed
MenuPaneOptionButtonClearDimmedHighlighte d
MenuPaneOptionButtonSetDimmedHighlighted
MenuPaneTick
MenuPaneTickHighlighted
MenuPaneTickDimmed
MenuPaneTickDimmedHighlighted
MenuPaneCascadeArrow
MenuPaneCascadeArrowHighlighted
MenuPaneCascadeArrowDimmed
MenuPaneCascadeArrowDimmedHighlighted

 menu pane adornments mask

16 elements (2 rows, 8 columns), each one of them 14x14 pixels

Draw method: Normal
left & right margins: 0
top & bottom margins: 0

DialogSkin.mbm

This MBM contains the bitmaps that will be used for the dialogs:

1 bitmap for un-pressed dialog title
1 bitmap for pressed dialog title

 Un-pressed dialog title

Draw method: Stretch
left & right margins: 0
top & bottom margins: 0

 Pressed dialog title

Draw method: Stretch
left & right margins: 0
top & bottom margins: 0

ListBoxSkin.mbm

This MBM contains the bitmap that will be used for the listboxes highlight:

1 bitmap for listbox highligh

Draw method: Stretch
left & right margins: 20
top & bottom margins: 1

StatusBarSkin.mbm

This MBM contains the bitmap that will be used for the status bar.

1 bitmap with 2 elements for StatusBar Background (each element 208x18 pixels)

Draw method: Stretch
left & right margins: Stretch
top & bottom margins: Stretch

Note:
Depending on the status bar implementation, the second element used for the background when emphasised might not be used.

FcTitleBarSkin.mbm

This MBM contains the bitmap that will be used for title bar in flip closed mode:

1bitmap for title bar background

Draw method: Stretch
left & right margins: 0
top & bottom margins: 0

AppickerSkin.mbm

1 bitmap for appicker's background
1 bitmap with 6 elements (6 rows, 1 column) for appicker's hoops
1 bitmap with 6 elements (6 rows, 1 column) for appicker's hoop masks
Appicker background (size 208x25 pixels)

Draw method: Normal
left & right margins: 0
top & bottom margins: 0

Appicker Hoops (each 40x25)
Draw method: Normal
top & bottom margins: 0
left & right margins: 0
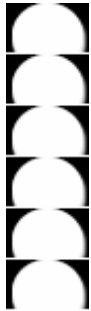
Appicker Hoops mask (each 40x25)
Draw method: Normal
top & bottom margins: 0
left & right margins: 0

LauncherSkin.mbm

This MBM contains the bitmap that will be used for the AppLauncher

1 bitmap with 5 elements (5 rows, 1 column) for AppLauncher disks & disks animation
(from 30x30 to 44x44)
1 bitmap with 5 elements (5 rows, 1 column) for mask to the disks (from 30x30 to 44x44)

Draw method: Normal
left & right margins: 0
top & bottom margins: 0

Draw method: Normal
left & right margins: 0
top & bottom margins: 0

Standby PNG files

The following files will be used in Flip Close telephony standby screen. They must placed in a subfolder of the zip file called "Standby" (for example "Standby/ ShortCutUnselectedBall.png)

ShortCutUnselectedBall.png

 42x42 pixels

ShortCutSelectedBall.png

 42x42 pixels

ShortCutBallHalo.png

 42x42 pixels

Example of a valid XML file

```
<?xml version="1.0"?>

<!DOCTYPE theme SYSTEM "theme.dtd">

<theme title="Theme_example" author="John Doe "
```

```
copyright="UIQ Technology AB (C) 2003"
      screenWidth="208" screenHeight="320">

      <wallpaper id="Launcher">wp_launch.jpg</wallpaper>
      <wallpaper id="FcStandby_208x189">wp_standby.jpg</wallpaper>

      <condensedColorScheme>
            <darkColor background="#316331" text="#FFFFFF"></darkColor>
            <midColor background="#9CCE9C" text="#000000"></midColor>
            <lightColor background="#D5EAD5" text="#000000"></lightColor>
      </condensedColorScheme>

      <systemSound id="DefaultRing">ring.wav</systemSound>
      <systemSound id="MessageNewSms">new_sms.wav</systemSound>
      <systemSound id="MessageNewMms">new_mms.wav</systemSound>
      <systemSound id="MessageNewEmail">email.wav</systemSound>
      <systemSound id="MessageNewEmail">email.wav</systemSound>

      <colors id="FcStandby">
            <textColor id="operator" text="#000000" outline="#9CCE9C"/>
            <textColor id="softkeys" text="#000000" outline="#9CCE9C"/>
            <textColor id="clock" text="#000000" outline="#9CCE9C"/>
            <textColor id="alarm" text="#000000" outline="#9CCE9C"/>
            <textColor id="other" text="#000000" outline="#9CCE9C"/>
      </colors>
</theme>
```

P900/P910 theme creation

In this section some practical issues in P900/P910 themes creation are illustrated.

Colour scheme

A theme xml must contain the definition of a colour scheme. It is often tricky to find a good combination of colours that is readable and nice.

For instance, the following ColorScheme:

```
<condensedColorScheme>
<darkColor background="#B2C1D3" text="#000000"></darkColor>
<midColor background="#3B74B9" text="#FFFFFF"></midColor>
<lightColor background="#FFFFFF" text="#000000"></lightColor>
</condensedColorScheme>
```

can be graphically visualised with the following image:
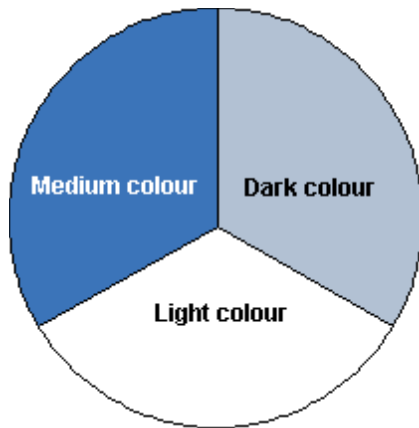
Where each sector's background colour corresponds to a background colour in the xml, and the text written into each sector uses the colour defined by text in the same xml tag.

In Applauncher, to improve readability when a bitmap is used to highlight items, the text colour will be dark with a light outline if the current colour scheme's highlight text colour is dark, and light with a dark outline if the current colour scheme's highlight text colour is light.

Wallpaper

- A theme may contain wallpaper for Flip Open (FO), Flip Close (FC) , or both. The suggestion is to use **JPEG** files for the images to limit the size of the final package.
- If an **animated GIF** is used, the first frame will be used as image for the wallpaper.
- Optimal size for Flip Close wallpaper is 208x190, and 208x256 for Flip Open wallpaper.
- If an image is too wide for the container area, the image will be cropped from the right.
- If an image is too high, the bottom part will be cropped.
- If a theme package does not contain any wallpaper, no image will be displayed and the light colour from the colour scheme will be used instead.

Fixed elements

Bitmaps and colour scheme

It is important to find a good combination between the colours of the graphical elements (MBM) and the colour scheme. For example when an element is highlighted in a list box it will use the bitmap provided by listboxskin.mbm but the text colour will be taken from the colour scheme.

The same can be applied to most of all other graphical elements. A trade-off must be done between readability and bitmap colours.

Bitmap size and borders

In the previous chapter we saw that some bitmaps will use pre-defined borders when drawn on the screen, the size of those bitmaps cannot be smaller than the sum of their borders.

Bitmap size and drawing performance

Some of the fixed graphical elements are scaled or tiled when drawn to the screen. The closer the size of a bitmap is to the size of the area where it is displayed, the faster it will be drawn. Larger bitmaps lead to a bigger theme package. MBM files does not seem to have so much impact on the theme size as sound files and wallpaper images.

For some elements the size on screen never changes. If their bitmap has the same size as the final drawing area, performance will be optimal. Some on-screen sizes:

- DialogSkin.mbm bitmaps: 208x25
- Menu bar background bitmap (menuskin.mbm): 208x21
- FcTitleBarSkin.mbm bitmap: 208x23

The optimal size for elements like bitmap in listboxskin.mbm, menu pane background (in menuextra.mbm), and all the bitmaps other than menu bar background in menuskin.mbm is much more complex to define. These bitmaps are used for elements with largely variable size and only a good balanced trade-off can give the best results.

A simple suggestion is not to make those bitmaps too small, especially the ones that will be tiled (the more times a bitmap must be tiled, the slower it will be).

Launcherskin.mbm

There is no fixed size for the bitmaps in this MBM, but every element of each bitmap must have the same size. The shape of the elements must not necessarily be a square.

If the size of the bitmap is too wide or too high, it will not be used. For example, if the bitmap for the disk icons is larger than 44 pixels, the default bitmap will be used instead.

If LauncherSkin.mbm is not included in the theme package, the default bitmap will be used, and its colours will be remapped to the colour scheme.

Example:

With a "green" scheme
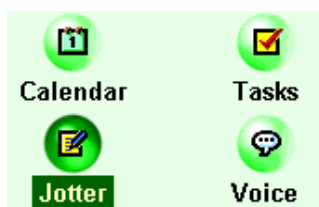
With a "blue" scheme

AppickerSkin.mbm

All the bitmaps of this MBM have a fixed size.

If this MBM is missing in the theme package, the default bitmap is used and its colours are remapped to the colour scheme.

StatusBarSkin.mbm

The bitmap has a fixed size.

If this MBM is missing in the theme package, the default bitmap is used, and its colours are remapped to the colour scheme.

Bitmap masks

Many of the bitmaps require masks.

A bitmap mask for an MBM file is a standard BMP file where white (#FFFFFF) identifies 100% opacity and black 0% opacity (fully transparent). All shades of grey between white and black identify different levels of opacity (alpha blending).

To be sure that the resulting mask in the final MBM give the expected result, we suggest converting the original mask-bitmap to an 8bit grey-scale bitmap.

System Sounds FAQ

Q: What happens in the xml contained by a theme if I define a system sound that is not in the list (for example MessageNewBeamedObject) ?
A: Nothing, the line will be ignored, both by the system and the UI.

Q: Every time I create a theme, must I define all system sounds in the given order?
A: No, you can define any of the sounds in any order that suits you best

Q: Does the order I define my sounds in xml influence their order in the UI?
A: No, the order in the UI is always the same.

Q: What happens if I don't set a specific system sound (for example MessageNewSms)?
A: It will not appear in the UI, it will not be set, and its major sound (default message in this example) will be used instead.

Q: Are XML tag attributes case sensitive?
A: Yes

Appendix 5
Themes versions 3.1 and 3.2

This appendix contains theme specifications for the Sony Ericsson V800 and Z800 series. Version 3.1 applies to themes without organic settings, and version 3.2 to themes with organic settings.

Organic elements

In themes version 3.2 organic theme elements have been introduced. In an organic theme, one background and one foreground colour are specified for the organic elements. Animated patterns are generated automatically in these elements. Organic settings apply to wallpapers and list items on the first menu level.

For example, in the V800, the preinstalled organic theme displays moving circles with varying opacity of the organic foreground colour, overlayed on the organic background colour. In the preinstalled theme red circles moves over a black background.

In the Themes Creator, organic themes are created by selecting "V800/Z800 Organic" in the *Change Phone Model* dialog. The Organic Foreground and Organic Background colours are set in the *Desktop* tab.

When organic colour settings are used for an element, no image can be used for that element.

One of the main benefits using organic themes instead of graphic animations or images is that the theme files will be smaller.

Image files in themes version 3.1 and 3.2

If no image is used for an element, colour settings will be used instead, see the *Colour setting notes* section below.

The image file format used affects the total size of the theme file. In general JPEG files are smaller than GIF files with the same image size. PNG files always contain full 24-bit colour representation and do not approximate pixel areas as the JPEG format does, which in some cases leads to large files. The PNG format allows semi transparency through alpha channels.

Animations are only supported in GIF format.

A general recommendation is to use GIF files for coloured line art graphics ("cartoon-like images") and animations, JPEG or PNG files for photographic pictures. In many cases it is worth the effort to save an image in different formats and select the smallest file. PNG must be used for images with transparent or semi-transparent areas.

The table below lists theme elements where images may be used and their corresponding sizes in pixels. The "Comment" column describes which images are allowed to be animated and which elements support image transparency.

Element	V800, Z800	Comments
Phone specifications		
Primary display, screen size	176x220	
Primary display, no. of colours	262,144	

Element	V800, Z800	Comments
Secondary (external) display, screen size	80x101	
Secondary (external) display, no. of colours	65,536	
Supported image file formats	GIF, JPEG, PNG	If one image file is corrupt, the whole theme will be treated as corrupt.
Standby		
Standby (wallpaper)	176x182	N/A in organic themes Animation allowed. If the image is larger than the specification, it is cropped, if it is smaller it is centered in the area
Standby softkey	176x22	N/A in organic themes
Standby statusbar	176x16	N/A in organic themes
Desktop		
Desktop	176x182	N/A in organic themes If the image is larger than the specification, it is cropped, if it is smaller it is centered in the area
Softkeys	176x22	N/A in organic themes The image or colour setting for Softkeys is used in all other screens too, except for the standby screen.
Statusbar	176x16	N/A in organic themes The image or colour setting for Statusbar is used in all other screens too, except for the standby screen.
Navigation – Single Title		
Title small	176x19	N/A in organic themes
Background	176x142	N/A in organic themes The same background image is used for all navigation screens.
Highlight	170x50	N/A in organic themes Transparency (alpha channel) allowed. Placed on top of the background image.
Navigation – Double Title		
Title	176x40	N/A in organic themes
Navigation – Tab Title		
Tab	176x40	

Element	V800, Z800	Comments
Tab selected	31x22	Transparency (alpha channel) allowed. Placed on top of the tab (title) image.
Tab unselected	31x20	Transparency (alpha channel) allowed. Placed on top of the tab (title) image. Repeated as many times as there are menu items (max 5).
Highlight small	170x28	N/A in organic themes Transparency (alpha channel) allowed. Placed on top of the background image.
Popup (and More menu)		
Popup title	150x32	Transparency (alpha channel) allowed. Placed on top of the popup image.
Popup highlight	144x28	Transparency (alpha channel) allowed. Placed on top of the popup image.
Popup (background)	150x150	The size of the area where this image is displayed depends on if there is a title and (for More menus) the number of items in the list. The image is cropped if the area is smaller than the image size.
Secondary display		
Secondary image	80x101	N/A in organic themes

Colour setting notes

Colour values are set in hexadecimal format, for example 34D2CC (in the XML file the "0x34D2CC" notation is used). Note that when rendered in the phone, the closest value within the phones colour depth will be used. Therefore the appearance of colours on the phone display can differ slightly from the appearance in the Themes Creator preview images.

Alpha blended colours

In themes version 3.1 (Not organic) and 3.2 (Organic), a number of colours are automatically rendered using alpha blending, either as a percentage of the colour setting, a percentage of another element's colour setting, or as a percentage of black or white.

The following colours are rendered using automatic alpha blending:

Element	Alpha blending	Comments
Standby		
Operator name outline	50% of set colour	
Time outline	50% of set colour	
Secondary statusbar background	70% of White (FFFFFF)	Not in XML file.
Softkeys		
Softkeys text shadow	20% of Black (000000)	Not in XML file
Softkeys disabled text	50% of *Softkeys Text*	Not in XML file
Desktop		
Desktop title text	Ver 3:2: *Title Text*	
Desktop title text shadow	20% of Black (000000)	Not in XML file
General		
Title text shadow	20% of Black (000000)	Not in XML file
Disabled text	50% of *Text*	Not in XML file
Highlight disabled text	50% of *Highlight text*	Not in XML file
Scrollbar background	50% of set colour	
Popup/More list		
Popup title text shadow	20% of Black (000000)	Not in XML file
Popup disabled text	50% of Popup text	Not in XML file
Popup highlight disabled text	50% of Popup highlight text	Not in XML file
Popup frame shadow	40% of Black (000000)	Not in XML file
Popup scrollbar background	50% of set colour	
Tabs		
Tab text shadow	20% of Black (000000)	Not in XML file
Notes		
Notes	70% of White (FFFFFF)	Not in XML file
Notes text	No blending, always = "000000"	Not in XML file
Secondary display		
Operator text outline	50% of set colour	
Time text outline	50% of set colour	

Element	Alpha blending	Comments
Organic, **Ver 3.2 only**		
Highlight	40% of *Organic foreground*	
Desktop	= *Organic background*	
Background	= *Organic background*	

Ringtones

In the Themes Creator a ringtone can be imported into the theme. Select the Ring signal tab to import the audio file you want. However, not all ringtone formats are suited for all phones. Please refer to the *Ringtones* Developers Guideline, available for download at www.sonyericsson.com/developer/multimedia.

Appendix 6
Themes version 4.0

This appendix contains theme specifications for the Sony Ericsson K600, K750, W700, W800, Z520 and Z525 series.

Image files in themes version 4.0

If no image is used for an element, in most cases a colour settings will be used instead, see the *Colour setting notes* section below. However, for the Input, Input Small and Desktop Highlight images, default theme images are stored in the phone. If one of these images is missing in a theme, the corresponding default image will be shown, instead of filling the image area with a colour.

The image file format used affects the total size of the theme file. In general JPEG files are smaller than GIF files with the same image size. PNG files always contain full 24-bit colour representation and do not approximate pixel areas as the JPEG format does, which in some cases leads to large files. The PNG format allows semi transparency through alpha channels.

A general recommendation is to use GIF or SVGT files for coloured line art graphics ("cartoon-like images") and animations, JPEG or PNG files for photographic pictures. In many cases it is worth the effort to save an image in different formats and select the smallest file. PNG must be used for images with transparent or semi-transparent areas.

Animations are supported in the GIF and SVGT formats. The GIF animation format support a 1 bit alpha channel, but this will not be shown in the phone. If a GIF animation includes transparency, these areas will be filled with a colour from the phone.

SVGT 1.1 content can be used for the Standby element (wallpaper in the Standby screen).

Themes version 4.0 support dynamic image sizes for a number of elements. Making images smaller than the layout areas in the table below is always possible, but the look of the theme normally suffers from it. Some images are allowed to be larger than the designated layout area. For these elements, max values are given in the table below.

Highlight images can be made a little higher than the area they are supposed to highlight. Thus a Highlight image may cover part of the text rows above and below the highlighted row. To avoid that a Highlight image obscures the text above and below, one of the following actions can be taken:

- An image with less height than the maximum allowed can be used.
- For PNG images, an alpha channel can be used to make the upper and lower parts of the image, or the whole image, transparent.

The table below lists theme elements where images may be used and their corresponding sizes in pixels. The "Comments" column describes which images are allowed to be animated and which elements support image transparency.

Element	K600, K750, W700, W800	Z520, Z525	Image alignment (vert., horiz.)	Comments
Phone specifications				
Primary display, screen size	176x220	128x160		
Primary display, no. of colours	262,144	262,144		
Secondary display, screen size	N/A	80x101		

Element	K600, K750, W700, W800	Z520, Z525	Image alignment (vert., horiz.)	Comments
Secondary display, no. of colours	N/A	65,536		
Supported image file formats	GIF, JPEG, PNG	GIF, JPEG, PNG		If one image file is corrupt, the whole theme will be treated as corrupt.
Supported animation formats	GIF, SVGT	GIF, SVGT		SVGT animations only in Standby (wallpaper).
Supported wallpaper file formats	GIF, JPEG, PNG, SVGT 1.1	GIF, JPEG, PNG, SVGT 1.1		If one image file is corrupt, the whole theme will be treated as corrupt.
Standby				
Standby (wallpaper)	176x220	128x160		Animation (GIF or SVGT) allowed. If the image is larger than the specification, it is cropped, if it is smaller it is centered verticallly between the Standby Statusbar and Softkey images. When an image is used as wallpaper, the Standby background color is set to Black (0x000000). **Note:** SVGT 1.1 is supported.
Standby Statusbar	176x18	128x14	Top, center	Transparency (alpha channel) allowed. Covers the upper part of the Standby wallpaper image.
Standby Softkey	176x26	128x18	Bottom, center	Transparency (alpha channel) allowed.
Softkey Left Pressed	176x26	128x18	Bottom, left	Transparency (alpha channel) allowed.
Softkey Right Pressed	176x26	128x18	Bottom, right	Transparency (alpha channel) allowed.
Desktop				
Desktop	176x220	128x160	Center, center	Note that the Statusbar and Softkeys areas are parts of the image.
Desktop highlight	83x62	60x43	Center, center	
Secondary display				

Element	K600, K750, W700, W800	Z520, Z525	Image alignment (vert., horiz.)	Comments
Secondary image	N/A	80x101	Center, center	
Navigation - One row title				
Background	176x220	128x160	Center, center	The same background image is used for all navigation screens.
Title Small	176x29 Max 176x34	128x20	Top, center	Transparency (alpha channel) allowed.
Highlight Small	169x32	123x20	Center, center	Transparency (alpha channel) allowed. Animation allowed
Navigation - Two row Title				
Title	176x52 Max 176x57	128x37	Top, center	Transparency (alpha channel) allowed.
Navigation - Tabs				
Tab	176x52	128x37	Top, center	
Tab selected	51x27	35x20	Center, center	Transparency (alpha channel) allowed. Placed on top of the tab image.
Tab unselected	35x23	25x17	Center, center	Transparency (alpha channel) allowed. Placed on top of the tab image. Repeated as many times as there are menu items (max 5).
Highlight	169x55	123x39	Center, center	Transparency (alpha channel) allowed. Animation allowed.
Popup				
Popup	168x152 Dynamic	118x109 Dynamic	Center, center	Transparency (alpha channel) allowed.
Popup title	168x29 Max 168x34	118x20 Max 168x34	Top, center of the Popup image	Transparency (alpha channel) allowed.
Popup highlight	161x30	113x20	Center	Transparency (alpha channel) allowed. Animation allowed
More List				
Morelist	168x145 Dynamic	118x108	Bottom, right	Transparency (alpha channel) allowed.

Element	K600, K750, W700, W800	Z520, Z525	Image alignment (vert., horiz.)	Comments
Morelist Highlight	161x30	113x20	Center	Transparency (alpha channel) allowed. Animation allowed.
Input				
Input	176x147 Dynamic	128x108	Center, center	Transparency (alpha channel) allowed.
Input Small	176x147 Dynamic	128x108	Center, center	Transparency (alpha channel) allowed.
Activity menu				
Home Screen	168x152 Dynamic	118x109 Dynamic	Center, center	Transparency (alpha channel) allowed.
Home Screen Tab	168x52 Max 168x57	118x37	Center, center	Transparency (alpha channel) allowed.
Home Screen Tab Selected	60x27	37x20	Center, center	Transparency (alpha channel) allowed.
Home Screen Tab Unselected	40x23	27x17	Center, center	Transparency (alpha channel) allowed.
Home Screen Highlight	161x53	113x37	Center, center	Transparency (alpha channel) allowed. Animation allowed.
Home Screen Highlight Small	161x30	113x20	Center, center	Transparency (alpha channel) allowed. Animation allowed.

Images order of placement

Images are displayed in the following order of placement, from back to front:

1. Background image

2. Title image / Softkey image / Statusbar image

3. Inactive tabs

4. Active tab

5. Pressed softkeys

6. Highlight

7. Popup background / More list background

8. Popup title

9. Popup highlight / More list highlight

Colour setting notes

Colour values are set in hexadecimal format, for example 34D2CC (in the XML file the "0x34D2CC" notation is used). Note that when rendered in the phone, the closest value within the phones colour depth will be used. Therefore the appearance of colours on the phone display can differ slightly from the appearance in the Themes Creator preview images.

Alpha blended colours

In themes version 4.0, a number of colours are automatically rendered using alpha blending, either as a percentage of the colour setting or as a percentage of black or white.

The following colours are rendered using automatic alpha blending:

Element	Alpha blending	Comments
Standby		
Operator name outline	50% of set colour	
Time outline	50% of set colour	
Softkeys		
Softkey Left text shadow	20% of Black (000000)	Not in XML file
Softkey Right text shadow	20% of Black (000000)	Not in XML file
Softkey Left disabled text	50% of *Softkey Left Text*	Not in XML file
Softkey Right disabled text	50% of *Softkey Right Text*	Not in XML file
Softkey Left disabled text shadow	20% of Black (000000)	Not in XML file
Softkey Right disabled text shadow	20% of Black (000000)	Not in XML file
Desktop		
Desktop title text shadow	20% of Black (000000)	Not in XML file
General		
Title text shadow	20% of Black (000000)	Not in XML file
Disabled text	50% of *Text*	Not in XML file
Highlight disabled text	50% of *Highlight text*	Not in XML file

Element	Alpha blending	Comments
Scrollbar background	50% of set colour	
Popup		
Popup title text shadow	20% of Black (000000)	Not in XML file
Popup disabled text	50% of *Popup text*	Not in XML file
Popup highlight disabled text	50% of *Popup highlight text*	Not in XML file
Popup frame shadow	40% of Black (000000)	Not in XML file
Popup scrollbar background	50% of set colour	
More List		
Morelist disabled text	50% of *Morelist text*	Not in XML file
Morelist highlight disabled text	50% of *Morelist highlight text*	Not in XML file
Popup frame shadow	40% of Black (000000)	Not in XML file
Popup scrollbar background	50% of set colour	
Tabs		
Tab text shadow	20% of Black (000000)	Not in XML file
Activity menu		
Homescreen tab text shadow	20% of Black (000000)	Not in XML file
Homescreen disabled text	50% of *Homescreen text*	Not in XML file
Homescreen highlight disabled text	50% of *Homescreen highlight text*	Not in XML file
Homescreen frame shadow	40% of Black (000000)	Not in XML file
Homescreen scrollbar background	50% of set colour	
Notes		
Notes	70% of White (FFFFFF)	

Ringtones

In the Themes Creator a ringtone can be imported into the theme. Select the Ring signal tab to import the audio file you want. However, not all ringtone formats are suited for all phones. Please refer to the *Ringtones* Developers Guideline, available for download at www.sonyericsson.com/developer/multimedia.

Appendix 7
Themes version 4.1

This appendix contains theme specifications for the Sony Ericsson K310, K320, K510, W200, W300, W550, W600, W810, W900, Z530, Z550 and Z558 series.

Image files in themes version 4.1

If no image is used for an element, in most cases a colour settings will be used instead, see the *Colour setting notes* section below. However, for the Input, Input Small and Desktop Highlight images, default theme images are stored in the phone. If one of these images is missing in a theme, the corresponding default image will be shown, instead of filling the image area with a colour.

The image file format used affects the total size of the theme file. In general JPEG files are smaller than GIF files with the same image size. PNG files always contain full 24-bit colour representation and do not approximate pixel areas as the JPEG format does, which in some cases leads to large files. The PNG format allows semi transparency through alpha channels.

A general recommendation is to use GIF files for coloured line art graphics ("cartoon-like images") and animations, JPEG or PNG files for photographic pictures. In many cases it is worth the effort to save an image in different formats and select the smallest file. PNG must be used for images with transparent or semi-transparent areas.

Animations are supported in the GIF format. The GIF animation format support a 1 bit alpha channel, but this will not be shown in the phone. If a GIF animation includes transparency, these areas will be filled with a colour from the phone.

SVGT 1.1 content (static or animated) can be used for the Standby element (wallpaper in the Standby screen), except in K310 and K320 series.

Themes version 4.1 support dynamic image sizes for a number of elements. Making images smaller than the layout areas in the table below is always possible, but the look of the theme normally suffers from it. Some images are allowed to be larger than the designated layout area. For these elements, max values are given in the table below.

Highlight images can be made a little higher than the area they are supposed to highlight. Thus a Highlight image may cover part of the text rows above and below the highlighted row. To avoid that a Highlight image obscures the text above and below, one of the following actions can be taken:

- An image with less height than the maximum allowed can be used.
- For PNG images, an alpha channel can be used to make the upper and lower parts of the image, or the whole image, transparent.

The table below lists theme elements where images may be used and their corresponding sizes in pixels. The "Comments" column describes which images are allowed to be animated and which elements support image transparency.

Element	K310, K320, K510, W200, W300, Z530	W550, W600, W810, Z550, Z558	W900	Image alignment (vert., horiz.)	Comments
Phone specifications					
Primary display, screen size	128x160	176x220	240x320		

Element	K310, K320, K510, W200, W300, Z530	W550, W600, W810, Z550, Z558	W900	Image alignment (vert., horiz.)	Comments
Primary display, no. of colours	W300, K510: 262,144 Z530, K310, K320, W200: 65,536	262,144	262,144		
Supported image file formats	GIF, JPEG, PNG	GIF, JPEG, PNG	GIF, JPEG, PNG		If one image file is corrupt, the whole theme will be treated as corrupt.
Supported animation formats	GIF, SVGT	GIF, SVGT	GIF, SVGT		SVGT animations only in Standby (wallpaper). **Note**: SVGT 1.1 is **not** supported in K310 and K320.
Supported wallpaper file formats	GIF, JPEG, PNG, SVG	GIF, JPEG, PNG. SVG	GIF, JPEG, PNG, SVG		If one image file is corrupt, the whole theme will be treated as corrupt. **Note**: SVGT 1.1 is **not** supported in K310 and K320.
Standby					
Standby (wallpaper)	128x160	176x220	240x320		Animation (GIF or SVGT) allowed. If the image is larger than the specification, it is cropped, if it is smaller it is centered verticallly between the Standby Statusbar and Softkey images.
Standby Statusbar	128x14	176x18	240x24	Top, center	Transparency (alpha channel) allowed. Covers the upper part of the Standby wallpaper image.
Standby Softkey	128x18	176x26	240x30	Bottom, center	Transparency (alpha channel) allowed.
Softkey Left Pressed	128x18	176x26	240x30	Bottom, left	Transparency (alpha channel) allowed.
Softkey Right Pressed	128x18	176x26	240x30	Bottom, right	Transparency (alpha channel) allowed.

Element	K310, K320, K510, W200, W300, Z530	W550, W600, W810, Z550, Z558	W900	Image alignment (vert., horiz.)	Comments
Desktop					
Desktop	128x160	176x220	240x320	Center, center	Note that the Statusbar and Softkeys areas are parts of the image.
Desktop Highlight	60x43	83x62	91x69	Center, center	Transparency (alpha channel) allowed. If no image is present in the theme, a default image, stored in the phone, is used instead.
Navigation - One row title					
Background	128x160	176x220	240x320	Center, center	The same background image is used for all navigation screens.
Title Small	128x20	176x29 Max 176x34	240x40	Top, center	Transparency (alpha channel) allowed.
Highlight Small	123x20	169x32	233x42	Center, center	Transparency (alpha channel) allowed. Animation allowed
Navigation - Two row Title					
Title	128x37	176x52 Max 176x57	240x70	Top, center	Transparency (alpha channel) allowed.
Navigation - Tabs					
Tab	128x37	176x52	240x70	Top, center	
Tab selected	35x20	51x27	69x39	Center, center	Transparency (alpha channel) allowed. Placed on top of the tab image.
Tab unselected	25x17	35x23	48x33	Center, center	Transparency (alpha channel) allowed. Placed on top of the tab image. Repeated as many times as there are menu items (max 5).
Highlight	123x39	169x55	233x56	Center, center	Transparency (alpha channel) allowed. Animation allowed.

Element	K310, K320, K510, W200, W300, Z530	W550, W600, W810, Z550, Z558	W900	Image alignment (vert., horiz.)	Comments
Popup					
Popup	118x109 Dynamic	168x152 Dynamic	212x232 Max 240x266	Center, center	Transparency (alpha channel) allowed.
Popup title	118x20	168x29 Max 168x34	212x40	Top, center of the Popup image	Transparency (alpha channel) allowed.
Popup highlight	113x20	161x30	205x42	Center	Transparency (alpha channel) allowed. Animation allowed
More List					
Morelist	118x90	168x145 Dynamic	212x192 Dynamic	Bottom, right	Transparency (alpha channel) allowed.
Morelist Highlight	113x20	161x30	205x42	Center	Transparency (alpha channel) allowed. Animation allowed.
Input					
Input	128x108	176x176	240x266	Center, center	Transparency (alpha channel) allowed.
Input Small	128x108	176x147 Dynamic	240x226	Center, center	Transparency (alpha channel) allowed.
Activity menu					
Home Screen	118x109 Dynamic	168x152 Dynamic	212x232 Max 240x266	Center, center	Transparency (alpha channel) allowed.
Home Screen Tab	118x37	168x52 Max 168x57	1212x70	Center, center	Transparency (alpha channel) allowed.
Home Screen Tab Selected	37x20	60x27	79x39	Center, center	Transparency (alpha channel) allowed.
Home Screen Tab Unselected	27x17	40x23	54x33	Center, center	Transparency (alpha channel) allowed.
Home Screen Highlight	113x39	161x53	205x56	Center, center	Transparency (alpha channel) allowed. Animation allowed.
Home Screen Highlight Small	113x20	161x30	205x42	Center, center	Transparency (alpha channel) allowed. Animation allowed.

Images order of placement

Images are displayed in the following order of placement, from back to front:

1. Background image

2. Title image / Softkey image / Statusbar image

3. Inactive tabs

4. Active tab

5. Pressed softkeys

6. Highlight

7. Popup background / More list background

8. Popup title

9. Popup highlight / More list highlight

Colour setting notes

Colour values are set in hexadecimal format, for example 34D2CC (in the XML file the "0x34D2CC" notation is used). Note that when rendered in the phone, the closest value within the phones colour depth will be used. Therefore the appearance of colours on the phone display can differ slightly from the appearance in the Themes Creator preview images.

Alpha blended colours

In themes version 4.1, a number of colours are automatically rendered using alpha blending, either as a percentage of the colour setting or as a percentage of black or white.

The following colours are rendered using automatic alpha blending:

Element	Alpha blending	Comments
Standby		
Operator name outline	50% of set colour	
Time outline	50% of set colour	
Softkeys		
Softkey Left text shadow	20% of Black (000000)	Not in XML file

Element	Alpha blending	Comments
Softkey Right text shadow	20% of Black (000000)	Not in XML file
Softkey Left disabled text	50% of *Softkey Left Text*	Not in XML file
Softkey Right disabled text	50% of *Softkey Right Text*	Not in XML file
Softkey Left disabled text shadow	20% of Black (000000)	Not in XML file
Softkey Right disabled text shadow	20% of Black (000000)	Not in XML file
Desktop		
Desktop title text shadow	20% of Black (000000)	Not in XML file
General		
Title text shadow	20% of Black (000000)	Not in XML file
Disabled text	50% of *Text*	Not in XML file
Highlight disabled text	50% of *Highlight text*	Not in XML file
Scrollbar background	50% of set colour	
Popup		
Popup title text shadow	20% of Black (000000)	Not in XML file
Popup disabled text	50% of *Popup text*	Not in XML file
Popup highlight disabled text	50% of *Popup highlight text*	Not in XML file
Popup frame shadow	40% of Black (000000)	Not in XML file
Popup scrollbar background	50% of set colour	
Popup dim	40% of set colour	
More List		
Morelist disabled text	50% of *Morelist text*	Not in XML file
Morelist highlight disabled text	50% of *Morelist highlight text*	Not in XML file
Popup frame shadow	40% of Black (000000)	Not in XML file
Popup scrollbar background	50% of set colour	
Tabs		
Tab text shadow	20% of Black (000000)	Not in XML file
Activity menu		
Homescreen tab text shadow	20% of Black (000000)	Not in XML file
Homescreen disabled text	50% of *Homescreen text*	Not in XML file
Homescreen highlight disabled text	50% of *Homescreen highlight text*	Not in XML file
Homescreen frame shadow	40% of Black (000000)	Not in XML file

Element	Alpha blending	Comments
Homescreen scrollbar background	50% of set colour	
Notes		
Notes	70% of White (FFFFFF)	

Sounds

In the Themes Creator a ringtone and Message alert signal can be imported into the theme. Select the Sounds tab to import the audio files you want. However, not all ringtone formats are suited for all phones. Please refer to the *Ringtones* Developers Guideline, available for download at www.sonyericsson.com/developer/multimedia.

Appendix 8
Symbian 9/UIQ3 themes

Theme packages for Sony Ericsson UIQ3 phones are standard zip files with the file extension .utz, containing several files. Image and sound files must match the definitions given in a XML file in the theme package.

Symbian9/UIQ3 theme package contents

A theme package contains the following files:

- One (1) Theme XML definition in a file named theme.xml.
  This must be present in the package and specifies the theme colour scheme, image files, sound files, and so on.

- Image and sound files as specified in the XML file. Files included in the package, but not referenced in the XML file, will be ignored. If the XML file refers to files not present in the .utz package the theme will not be possible to install.

It is strongly recommended to use the Sony Ericsson Themes Creator for creating theme packages to avoid errors due to wrong file references or other XML file errors.

Skins, skintexts and patches

In the Symbian 9/UIQ3 themes XML file and in the Themes Creator interface, the basic elements defined for themes are:

- A *skin* represents one screen layout, for example the application background display. Each skin has one or more patches and skintext elements.

- *Skintext* elements define the different text styles that are used in a skin.

- *Patches* are graphic elements for the controls in a skin. In the themes.xml and in the Themes Creator, patches are defined by specifying image files to be displayed in the different screen areas of a skin.

Colour schemes

A theme XML file must contain the definition of a colour scheme. The colour scheme settings are applied on controls for which no image has been specified.

In the Themes Creator, the colour scheme settings are entered as in the picture below.

A colour scheme defines three pairs of background and text colour settings, called "Light", "Medium" ("Mid") and "Dark". Most patches and skintexts are assigned a default colour scheme setting before the phone is delivered.

Image files

The image file format used affects the total size of the theme file. In general JPEG files are smaller than GIF files with the same image size. PNG files always contain full 24-bit colour representation and do not approximate pixel areas as the JPEG format does, which in some cases leads to large files. The PNG format allows semi transparency through alpha channels.

A general recommendation is to use GIF files for coloured line art graphics ("cartoon-like images") and animations, JPEG or PNG files for photographic pictures. In many cases it is worth the effort to save an image in different formats and select the smallest file for the theme. PNG must be used for images with transparent or semi-transparent areas. The recommended and simplest solution is to use PNG files for all images in the theme.

Animations are supported in the GIF format. The GIF animation format support a 1 bit alpha channel, but this will not be shown in the phone. If a GIF animation includes transparency, these areas will be filled with a colour from the phone.

Image drawstyles

If an image is smaller than its associated UI control, it will be applied using one of four methods:

- **Normal:**
  The image is applied to the upper left corner of the control, no stretching or shrinking to match the size of the control is done (the image should already have the correct size).
- **Center:**
  The image is applied centered in the control area.
- **Stretch:**
  The bitmap will be stretched to match the size of the control (see below).
- **Tile**:
  The bitmap will be tiled across the control.

In Themes Creator, the drawstyle for each image is selected from a dropdown list.

In the case of tiling, the smaller the image is, the more times each piece needs to be tiled, which might affect drawing performance.

For images **that are to be stretched** when applied, four margin values (top, left, right and bottom, see image below) are set in the Themes Creator. When applied, the corner pieces (yellow) are copied as they are to the corners of the control. The side parts (blue) are stretched across the sides of the control, and finally, the centre piece is stretched across the centre of the control.
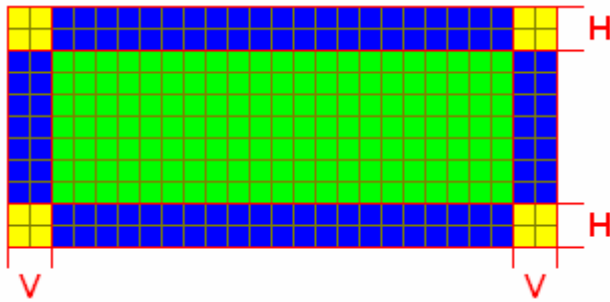
H = horizontal top and bottom margins, in pixels
V = vertical left and right margins, in pixels

Text colours and styles

Primarily there is a text colour setting for each skintext element.

For each skintext element, one of the following text styles can be selected via a dropdown list:

- Normal
- Shadow
- Outline
- ShadowOutline

Depending on which style is selected, colours can be set for shadow, outline or both.

Sounds

Several different file formats are supported for the sounds included in a theme, the most commonly used are WAV, MP3 and MIDI.

The Preview screen

A feature in UIQ3 phones is that when a theme has been selected for use in the phone, a preview of the theme is displayed. The preview consists of one image and one text. It is recommended to define the preview elements in all themes to avoid the default preview, showing only an empty image area with a red X.

The preview image and text are defined in the *Author* tab in Themes Creator.

Theme elements

In the table below, all skins with their contained patches and skintext elements, are listed.
Note: Many elements are used for different purposes, noted in the "Comments" column of the table.

Skin			
Element (patch/skintext)	**Image size (WxH), pixels**	**Default Colour scheme**	**Comments**
Wallpapers			
FCStandbyScreen	240x209	n/a	Also used for Homescreen Flip Closed Wallpaper. If no wallpaper is selected, one of the preinstalled wallpapers is used instead. **P990** only.
StandbyScreen	240x301	n/a	Also used for Homescreen Flip Open Wallpaper. Wallpaper for G700, G900, M600, P1, W950, W960 and for P990 Flip Open mode. If no wallpaper is selected, one of the preinstalled wallpapers is used instead.
Screensaver			
Screensaver	240x320	n/a	Animated GIF or executable (.exe) can be used as screensaver
Homescreen			
Activity Menu Context Container	217x99	Light	**P990** only
Standby Panel Music Highlight	233x28	Light	
Listbox Highlight	230x27	Light	
Panel Container	229x244	Light	**P990** only

Skin			
Element (patch/skintext)	**Image size (WxH), pixels**	**Default Colour scheme**	**Comments**
Panel Container Selected Tab	53x41	Light	**P990** only
Panel Container Unse-lected Tab	53x41	Light	**P990** only
Today View Activity Bar	221x27	Light	Also used for Standby View Activity Bar. **P990** only
Date		Light	
Music Text		Light	
Operator Name		Light	
Text		Light	
Time		Light	
Highlight Text		Light	
SIM AT		Light	
Softkeys			
Horizontal Backgrounds	240x112	Medium	
Horizontal Backgrounds	240x84	Medium	Frames. **G700, G900, M600, P1, W950** and **W960** only
Normal text		Dark	
Pressed text		Dark	
Dimmed text		Derived	
Center Clear text		Dark	
Center Pressed text		Dark	
Control standin			
Empty background	174x22	Medium	
Application background			
Background	240x320	Medium	
Normal Text		Light	
Dimmed Text		Medium	
Highlight Text Clear		Light	**G700, G900, P1** and **W960** only
Highlight Text Dimmed		Medium	**G700, G900, P1** and **W960** only

Skin			
Element (patch/skintext)	**Image size (WxH), pixels**	**Default Colour scheme**	**Comments**
Menu Pane			
Adornments	90x30	Medium	6x2 bitmaps, each 15x15 px
Highlight Pressed	230x27	Medium	Also used for building block Highlight Pressed and Menu Highlight Pressed
Background	240x240	Medium	Also used for Classic, Cascade menus and Statusbar Extended
Separator	90x2	Medium	Also used for Listbox Separator
Highlighted Pressed		Dark	Also used for building block Pressed Text
Normal Text		Light	
Dimmed Text		Medium	
Tabs			
Background	50x23	Medium	
Selected Tab	50x23	Medium	
Selected Tab Text		Light	
Normal Text		Light	
Dimmed Text		Medium	
Arrows	16x12	Medium	
Title Bar			
Background	240x53	Medium	
Category Folder	23x40	Dark	**P990** only
Back Button	86x24	Dark	**G700, G900, M600, P1, W950** and **W960** only
Context Clear Text		Light	
Normal Text		Medium	
Pressed Text		Medium	
Drop Down Cue	20x24	Dark	
Dialog			
Background	240x320	Medium	Also used for Container Popout, Colour Selector, Status Bar Extended, Time Editor Background and Calendar Background

Skin			
Element (patch/skintext)	**Image size (WxH), pixels**	**Default Colour scheme**	**Comments**
Highlight	240x30	Medium	Also used for Container Popout and Dialog Title Pressed
Item Background	20x20	Medium	
Title	230x27	Medium	
Normal Text		Light	Also used for Time Editor Text
Clear Title Text		Medium	Also used for container Popout Title Text
Pressed Title Text		Medium	
Tab Background	240x26	Medium	
Title Back Button	40x21	Dark	**G700, G900, M600, P1** , **W950** and **W960** only
Dimmed Text		Medium	Also used for Time Editor Dimmed Text
Horizontal Scrollbar			
Arrows	26x126	Medium	
Shafts	222x42	Medium	
Thumbs	29x42	Medium	
Vertical Scrollbar			
Arrows	42x78	Medium	
Shafts	42x222	Medium	
Thumbs	42x29	Medium	
Option Button			
Backgrounds	45x30	Medium	3x2 bitmaps, each 15x15 px
Highlight	230x27	Medium	Also used for IP Highlight and Digit Highlight
Editor			
Backgrounds	60x54	Medium	
Highlight	60x27	Medium	
Highlight Text		Light	Also used for IP Editor Highlight Text and Time Editor Highlight Text
Normal Text		Light	

Skin			
Element (patch/skintext)	**Image size (WxH), pixels**	**Default Colour scheme**	**Comments**
Dimmed Text		Medium	Also Used for IP Editor Text, Time Editor Digit Text and IP Editor Dimmed Text
Info Print			
Background	90x50	Light	
Normal Text		Medium	
Status Bar			
FC Background	240x19	Medium	**P990** only
Background	240x19	Medium	Also used for Status Bar Landscape Background
Button			
Backgrounds	78x24	Medium	
Normal Text		Light	
Dimmed Text		Medium	
Pressed Text		Light	
Button Bar			
Background	240x28	Medium	Also used for Toolbar
ListBox			
Grid Highlight	75x73	Dark	
Arrows	28x16	Medium	
Checkbox	144x18	Medium	
Row Highlight	230x27	Dark	Also used for building block Highlight, Options Highlight, Menu Highlight and Dialog Highlight
Highlighted Text		Dark	Also used for building block Text, Choice List Highlight Text, Dialog Highlight Text, Menu Pane Highlight Text and Option Button Highlight Text
Highlighted Dimmed Text		Medium	Also used for building block Dimmed Text, Choice List Highlight Dimmed Text, Dialog Highlight Dimmed Text, Menu Pane Highlight Dimmed Text and Option Button Highlight Dimmed Text

Skin			
Element (patch/skintext)	**Image size (WxH), pixels**	**Default Colour scheme**	**Comments**
Normal Text		Light	
Dimmed Text		Medium	
Popout Text Clear		Medium	
Calendar			
Arrows	16x14		
Date Current Month	26x17	Medium	
Date Header	26x17	Medium	Also used for Label
Date Highlight	26x17	Medium	Also used for Calendar
Date Not Current	26x17	Medium	
Date Today	26x17	Medium	
Date Not Current Month		Medium	
Date Today			
Highlighted Text		Light	
Normal Text		Light	
Dimmed Text		Medium	
Number Editor			
Arrows	28x16		
CheckBox			
Backgrounds	45x45	Medium	
ChoiceList			
Arrows	20x40	Medium	
Normal Text		Light	
Dimmed Text		Medium	
Color Selector			
Highlight	20x20	Medium	
Label			
Full Emphasis	26x17	Dark	
Progress Bar			
Backgrounds	206x32	Medium	
Indicators	202x28	Medium	

Skin			
Element (patch/skintext)	**Image size (WxH), pixels**	**Default Colour scheme**	**Comments**
Indicator Splits	10x16	Medium	
Normal Text		Light	
Overlapped Text		Dark	
Slider			
Horizontal Arrows	32x26	Medium	
Horizontal Backgrounds	205x104	Medium	
Horizontal Marks	4x26	Medium	
Vertical Arrows	26x32	Medium	
Vertical Backgrounds	104x205	Medium	
Vertical Marks	26x4	Medium	
Time Editor			
Digit Background	25x31	Medium	Also used for Meridian Background and IP Editors
Preview			
Theme Preview	120x160		

Appendix 9
Themes version 4.5

This appendix contains theme specifications for the Sony Ericsson K530, K550, K610, K770, K790, K800, K810, S500, T650, W350, W380, W580, W610, W660, W710, W830, W850, W880, Z250, Z310, Z320, Z555, Z610 and Z710 series.

Image files in themes version 4.5

If no image is used for an element, in most cases a colour settings will be used instead, see the *Colour setting notes* section below. However, for the Input, Input Small and Desktop Highlight images, default theme images are stored in the phone. If one of these images is missing in a theme, the corresponding default image will be shown, instead of filling the image area with a colour.

The image file format used affects the total size of the theme file. In general JPEG files are smaller than GIF files with the same image size. PNG files always contain full 24-bit colour representation and do not approximate pixel areas as the JPEG format does, which in some cases leads to large files. The PNG format allows semi transparency through alpha channels.

A general recommendation is to use GIF files for coloured line art graphics ("cartoon-like images") and animations, JPEG or PNG files for photographic pictures. In many cases it is worth the effort to save an image in different formats and select the smallest file. PNG must be used for images with transparent or semi-transparent areas.

Animations are supported in the GIF format. The GIF animation format support a 1 bit alpha channel, but this will not be shown in the phone. If a GIF animation includes transparency, these areas will be filled with a colour from the phone.

SVGT 1.1 content (static or animated) can be used for the Standby element (wallpaper) in the Standby screen, **except** in the W350, W380, Z310 and Z555 series.

Flash Lite animations can be used for the Standby element (wallpaper) in the Standby screen, **except** in the K550, K610, K790, K800, K810, W350, W380, Z250, Z310, Z320, Z610 and Z710 series.

Themes version 4.5 support dynamic image sizes for a number of elements. Making images smaller than the layout areas in the table below is always possible, but the look of the theme normally suffers from it. Some images are allowed to be larger than the designated layout area. For these elements, max values are given in the table below.

Highlight images can be made a little higher than the area they are supposed to highlight. Thus a Highlight image may cover part of the text rows above and below the highlighted row. To avoid that a Highlight image obscures the text above and below, one of the following actions can be taken:

- An image with less height than the maximum allowed can be used.
- For PNG images, an alpha channel can be used to make the upper and lower parts of the image, or the whole image, transparent.

The table below lists theme elements where images may be used and their corresponding sizes in pixels. The "Comments" column describes which images are allowed to be animated and which elements support image transparency.

Element	Z250, Z310, Z320	K550, K610, Z610, Z710, W350, W380, W610, W660, W710, Z555	K790, K800, K810, S500, W580, W830, W850	T650, K770, W880	Image alignment (vert., horiz.)	Comments
Phone specifications						
Primary display, screen size	128x160	176x220	240x320	240x320		
Primary display, no. of colours	65,536	262,144	262,144	262,144		
Supported image file formats	GIF, JPEG, PNG	GIF, JPEG, PNG	GIF, JPEG, PNG	GIF, JPEG, PNG		If one image file is corrupt, the whole theme will be treated as corrupt.
Supported animation formats	GIF	GIF, SVG, SWF, MNG	GIF, SVG, SWF, MNG	GIF, SVG, SWF, MNG		SVG and SWF animations only in Standby (wallpaper). MNG only for desktop highlights and list highlights. SVG and SWF formats are **not** supported **all** phones.
Supported wallpaper file formats	GIF, JPEG, PNG	GIF, JPEG, PNG, SVGT 1.1, SWF	GIF, JPEG, PNG, SVGT 1.1, SWF	GIF, JPEG, PNG, SVGT 1.1, SWF		If one image file is corrupt, the whole theme will be treated as corrupt. SVGT and SWF formats are **not** supported in **all** phones.
Standby						
Standby (wallpaper)	128x160	176x220	240x320	240x320		Animation (GIF, SVGT or SWF) allowed. If the image is larger than the specification, it is cropped, if it is smaller it is centered verticallly between the Standby Statusbar and Softkey images.

Element	Z250, Z310, Z320	K550, K610, Z610, Z710, W350, W380, W610, W660, W710, Z555	K790, K800, K810, S500, W580, W830, W850	T650, K770, W880	Image alignment (vert., horiz.)	Comments
Standby Statusbar	128x14	176x18	240x24	240x28	Top, center	Transparency (alpha channel) allowed. Covers the upper part of the Standby wallpaper image.
Standby Softkey	128x18	176x26	240x30	240x30	Bottom, center	Transparency (alpha channel) allowed.
Softkey Left Pressed	128x18	176x26	240x30	240x30	Bottom, left	Transparency (alpha channel) allowed.
Softkey Right Pressed	128x18	176x26	240x30	240x30	Bottom, right	Transparency (alpha channel) allowed.
Desktop						
Desktop	128x160	176x220	240x320	240x320	Center, center	Note that the Statusbar and Softkeys areas are parts of the image.
Desktop Highlight	60x43	83x62	91x69	91x67	Center, center	Transparency (alpha channel) allowed. If no image is present in the theme, a default image, stored in the phone, is used instead.
Navigation - One row title						
Background	128x160	176x220	240x320	240x320	Center, center	The same background image is used for all navigation screens.
Title Small	128x20	176x29 Max 176x34	240x40	240x36	Top, center	Transparency (alpha channel) allowed.
Highlight Small	123x20	169x32	231x38	231x33	Center, center	Transparency (alpha channel) allowed. Animation allowed
Navigation - Two row Title						
Title	128x37	176x52 Max 176x57	240x71	240x68	Top, center	Transparency (alpha channel) allowed.

Element	Z250, Z310, Z320	K550, K610, Z610, Z710, W350, W380, W610, W660, W710, Z555	K790, K800, K810, S500, W580, W830, W850	T650, K770, W880	Image align- ment (vert., horiz.)	Comments
Navigation - Tabs						
Tab	128x37	176x52	240x71	240x68	Top, center	
Tab selected	35x20	51x27	69x39	69x39	Center, center	Transparency (alpha channel) allowed. Placed on top of the tab image.
Tab unselected	25x17	35x23	48x33	48x33	Center, center	Transparency (alpha channel) allowed. Placed on top of the tab image. Repeated as many times as there are menu items (max 5).
Popup						
Popup	118x109 Dynamic	168x152 Dynamic	214x234 Max 240x266	206x227 Max 240x262	Center, center	Transparency (alpha channel) allowed.
Popup title	118x20	168x29 Max 168x34	212x39	206x36	Top, center of the Popup image	Transparency (alpha channel) allowed.
Popup highlight	113x20	161x30	203x38	197x33	Center	Transparency (alpha channel) allowed. Ani- mation allowed
More List						
Morelist	118x90	168x145 Dynamic	212x193 Dynamic	212x193 Dynamic	Bottom, right	Transparency (alpha channel) allowed.
Morelist Highlight	113x20	161x30	203x38	203x33	Center	Transparency (alpha channel) allowed. Ani- mation allowed.
Input						
Input 1	128x128	176x176	240x266	240x262	Center, center	Transparency (alpha channel) allowed.
Input Small	128x108	176x147 Dynamic	240x226	240x226	Center, center	Transparency (alpha channel) allowed.

Element	Z250, Z310, Z320	K550, K610, Z610, Z710, W350, W380, W610, W660, W710, Z555	K790, K800, K810, S500, W580, W830, W850	T650, K770, W880	Image align- ment (vert., horiz.)	Comments
Activity menu						
Activity Menu	118x109 Dynamic	168x152 Dynamic	212x232 Max 240x266	206x228 Max 240x262	Center, center	Transparency (alpha channel) allowed.
Activity Menu Tab	118x37	168x52 Max 168x57	212x70	206x68	Center, center	Transparency (alpha channel) allowed.
Menu Tab Selected	37x20	60x27	79x39	69x39	Center, center	Transparency (alpha channel) allowed.
Menu Tab Unse- lected	27x17	40x23	54x33	48x33	Center, center	Transparency (alpha channel) allowed.
Menu Highlight	113x39	161x53	205x56	197x58	Center, center	Transparency (alpha channel) allowed. Ani- mation allowed.
Highlight Small	113x20	161x30	205x42	197x33	Center, center	Transparency (alpha channel) allowed. Ani- mation allowed.

Images order of placement

Images are displayed in the following order of placement, from back to front:

1. Background image

2. Title image / Softkey image / Statusbar image

3. Inactive tabs

4. Active tab

5. Pressed softkeys

6. Highlight

7. Popup background / More list background

8. Popup title

9. Popup highlight / More list highlight

Colour setting notes

Colour values are set in hexadecimal format, for example 34D2CC (in the XML file the "0x34D2CC" notation is used). Note that when rendered in the phone, the closest value within the phones colour depth will be used. Therefore the appearance of colours on the phone display can differ slightly from the appearance in the Themes Creator preview images.

Alpha blended colours

In themes version 4.5, a number of colours are automatically rendered using alpha blending, either as a percentage of the colour setting or as a percentage of black or white.

The following colours are rendered using automatic alpha blending:

Element	Alpha blending	Comments
Standby		
Operator name outline	50% of set colour	
Time outline	50% of set colour	
Softkeys		
Softkey Left text shadow	20% of Black (000000)	Not in XML file

Element	Alpha blending	Comments
Softkey Right text shadow	20% of Black (000000)	Not in XML file
Softkey Left disabled text	50% of *Softkey Left Text*	Not in XML file
Softkey Right disabled text	50% of *Softkey Right Text*	Not in XML file
Softkey Left disabled text shadow	20% of Black (000000)	Not in XML file
Softkey Right disabled text shadow	20% of Black (000000)	Not in XML file
Desktop		
Desktop title text shadow	20% of Black (000000)	Not in XML file
General		
Title text shadow	20% of Black (000000)	Not in XML file
Disabled text	50% of *Text*	Not in XML file
Highlight disabled text	50% of *Highlight text*	Not in XML file
Scrollbar background	50% of set colour	
Popup		
Popup title text shadow	20% of Black (000000)	Not in XML file
Popup disabled text	50% of *Popup text*	Not in XML file
Popup highlight disabled text	50% of *Popup highlight text*	Not in XML file
Popup frame shadow	40% of Black (000000)	Not in XML file
Popup scrollbar background	50% of set colour	
Popup dim	40% of set colour	
More List		
Morelist disabled text	50% of *Morelist text*	Not in XML file
Morelist highlight disabled text	50% of *Morelist highlight text*	Not in XML file
Morelist frame shadow	40% of Black (000000)	Not in XML file
Morelist scrollbar background	50% of set colour	
Tabs		
Tab text shadow	20% of Black (000000)	Not in XML file
Activity menu		
Homescreen tab text shadow	20% of Black (000000)	Not in XML file
Homescreen disabled text	50% of *Homescreen text*	Not in XML file
Homescreen highlight disabled text	50% of *Homescreen highlight text*	Not in XML file
Homescreen frame shadow	40% of Black (000000)	Not in XML file

Element	Alpha blending	Comments
Homescreen scrollbar background	50% of set colour	
Notes		
Notes	70% of White (FFFFFF)	

Sounds

In the Themes Creator a ringtone and Message alert signal can be imported into the theme. Select the Sounds tab to import the audio files you want. However, not all ringtone formats are suited for all phones. Please refer to the *Ringtones* Developers Guideline, available for download at www.sonyericsson.com/developer/multimedia.

Illumination

Note: Not all Sony Ericsson phones have this feature.

Illumination is a coloured, flashing light behind the keypad and on the sides of the phone. The colour of the light can be set to match the colour of images and other theme elements. To set the colour, select the Illumination tab and use the colour picker or enter a hexadecimal RGB colour value.

Note: Illumination colour values set in the Themes Creator range from 0 to 255 (0x00 to 0xff) for each colour component (R,G and B). However, in the themes XML file, colour component values for illumination has a narrower range, 0 to 100 (0x00 to 0x64). When a theme created in Themes Creator is saved, illumination colour component values are transformed using the formula: Colour(XML) = (Colour(TC) * 100 + 127) / 255. Conversely, when a theme file is loaded into Themes Creator, colour component values are transformed in the other direction, using the formula: Colour(TC) = Colour(XML) * 255 / 100. During these transformation, decimal values have to be converted into integers, which may lead to slight (normally not noticeable) illumination colour differences when a theme is saved into a theme file and then reopened in Themes Creator.

Appendix 10
Themes version 4.6

This appendix contains theme specifications for the Sony Ericsson G502, K630, K660, K850, R300, R306, T303, V640, W760, W890, W910, Z750 and Z770 series.

Image files in themes version 4.6

If no image is used for an element, in most cases a colour settings will be used instead, see the *Colour setting notes* section below. However, for the Input, Input Small and Desktop Highlight images, default theme images are stored in the phone. If one of these images is missing in a theme, the corresponding default image will be shown, instead of filling the image area with a colour.

The image file format used affects the total size of the theme file. In general JPEG files are smaller than GIF files with the same image size. PNG files always contain full 24-bit colour representation and do not approximate pixel areas as the JPEG format does, which in some cases leads to large files. The PNG format allows semi transparency through alpha channels.

A general recommendation is to use GIF files for coloured line art graphics ("cartoon-like images") and animations, JPEG or PNG files for photographic pictures. In many cases it is worth the effort to save an image in different formats and select the smallest file. PNG must be used for images with transparent or semi-transparent areas.

Animations are supported in the GIF format. The GIF animation format support a 1 bit alpha channel, but this will not be shown in the phone. If a GIF animation includes transparency, these areas will be filled with a colour from the phone.

SVGT content (static or animated) can be used for the Standby element (wallpaper) in the Standby screen.

Flash Lite animations can be used for the Standby element (wallpaper) in the Standby screen, **except** in the R300, R306 and T303 series.

Themes version 4.6 support dynamic image sizes for a number of elements. Making images smaller than the layout areas in the table below is always possible, but the look of the theme normally suffers from it. Some images are allowed to be larger than the designated layout area. For these elements, max values are given in the table below.

Highlight images can be made a little higher than the area they are supposed to highlight. Thus a Highlight image may cover part of the text rows above and below the highlighted row. To avoid that a Highlight image obscures the text above and below, one of the following actions can be taken:

- An image with less height than the maximum allowed can be used.
- For PNG images, an alpha channel can be used to make the upper and lower parts of the image, or the whole image, transparent.

The table below lists theme elements where images may be used and their corresponding sizes in pixels. The "Comments" column describes which images are allowed to be animated and which elements support image transparency.

Element	R300, R306, T303	K630, V640	G502, K660, K850, W760, W890, W910, Z750, Z770	Image alignment (vert., horiz.)	Comments
Phone specifications					
Primary display, screen size	128x160	176x220	240x320		
Primary display, no. of colours	65,536	262,144	262,144		
Supported image file formats	GIF, JPEG, PNG	GIF, JPEG, PNG	GIF, JPEG, PNG		If one image file is corrupt, the whole theme will be treated as corrupt.
Supported animation formats	GIF, SVG, MNG	GIF, SVG, SWF, MNG	GIF, SVG, SWF, MNG		SVG and SWF animations only in Standby (wallpaper). MNG only for desktop highlights and list highlights
Supported wallpaper file formats	GIF, JPEG, PNG, SVGT 1.2	GIF, JPEG, PNG, SVGT 1.2, SWF	GIF, JPEG, PNG, SVGT 1.2, SWF		If one image file is corrupt, the whole theme will be treated as corrupt.
Standby					
Standby (wallpaper)	128x160	176x220	240x320		Animation (GIF, SVGT or SWF) allowed. If the image is larger than the specification, it is cropped, if it is smaller it is centered verticallly between the Standby Statusbar and Softkey images.
Standby Statusbar	128x14	176x18	240x24	Top, center	Transparency (alpha channel) allowed. Covers the upper part of the Standby wallpaper image.
Standby Softkey	128x18	176x26	240x30	Bottom, center	Transparency (alpha channel) allowed.
Softkey Left Pressed	128x18	176x26	240x30	Bottom, left	Transparency (alpha channel) allowed.
Softkey Right Pressed	128x18	176x26	240x30	Bottom, right	Transparency (alpha channel) allowed.

Element	R300, R306, T303	K630, V640	G502, K660, K850, W760, W890, W910, Z750, Z770	Image alignment (vert., horiz.)	Comments
Softkey Middle Pressed	128x18	176x26	240x30	Bottom, center	Transparency (alpha channel) allowed.
Desktop					
Desktop	128x160	176x220	240x320	Center, center	Note that the Statusbar and Softkeys areas are parts of the image.
Desktop Highlight	60x43	83x62	91x69	Center, center	Transparency (alpha channel) allowed. If no image is present in the theme, a default image, stored in the phone, is used instead.
Navigation - One row title					
Background	128x160	176x220	240x320	Center, center	The same background image is used for all navigation screens.
Title Small	128x20	176x29 Max 176x34	240x40	Top, center	Transparency (alpha channel) allowed.
Highlight Small	123x20	169x32	231x38	Center, center	Transparency (alpha channel) allowed. Animation allowed
Navigation - Two row Title					
Title	128x37	176x52 Max 176x57	240x71	Top, center	Transparency (alpha channel) allowed.
Navigation - Tabs					
Tab	128x37	176x52 Max 176x57	240x71	Top, center	
Highlight	123x39	169x55	231x69	Center, center	Transparency (alpha channel) allowed. Animation allowed
Tab selected	35x20	51x27	69x39	Center, center	Transparency (alpha channel) allowed. Placed on top of the tab image.

Element	R300, R306, T303	K630, V640	G502, K660, K850, W760, W890, W910, Z750, Z770	Image alignment (vert., horiz.)	Comments
Tab unselected	25x17	35x23	48x33	Center, center	Transparency (alpha channel) allowed. Placed on top of the tab image. Repeated as many times as there are menu items (max 5).
Popup					
Popup	118x109 Max 128x128	168x152 Dynamic	214x234 Max 240x266	Center, center	Transparency (alpha channel) allowed.
Popup title	118x20	168x29 Max 168x34	212x39	Top, center of the Popup image	Transparency (alpha channel) allowed.
Popup highlight	113x20	161x30	203x38	Center	Transparency (alpha channel) allowed. Animation allowed
More List					
Morelist	118x90	168x145 Dynamic	212x193 Dynamic	Bottom, right	Transparency (alpha channel) allowed.
Morelist Highlight	113x20	161x30	203x38	Center	Transparency (alpha channel) allowed. Animation allowed.
Input					
Input	128x128	176x176	240x266	Center, center	Transparency (alpha channel) allowed.
Input Small	128x108	176x147	240x226	Center, center	Transparency (alpha channel) allowed.
Activity menu					
Activity Menu	118x109 Max 128x128	168x152 Dynamic	214x234 Max 240x266	Center, center	Transparency (alpha channel) allowed.
Activity Menu Tab	118x37	168x52 Max 168x57	212x71	Center, center	Transparency (alpha channel) allowed.
Activity Menu Tab Selected	37x20	60x27	79x39	Center, center	Transparency (alpha channel) allowed.

Element	R300, R306, T303	K630, V640	G502, K660, K850, W760, W890, W910, Z750, Z770	Image alignment (vert., horiz.)	Comments
Activity Menu Tab Unselected	27x17	35x23	53x33	Center, center	Transparency (alpha channel) allowed.
Activity Menu Highlight	113x39	161x53	203x69	Center, center	Transparency (alpha channel) allowed. Animation allowed.
Activity Menu Highlight Small	113x20	161x30	203x38	Center, center	Transparency (alpha channel) allowed. Animation allowed.
Media application					
Media Portrait Background	128x160	176x220	240x320	Center, center	
Media Landscape Background	160x128	220x176	320x240	Center, center	

Images order of placement

Images are displayed in the following order of placement, from back to front:

1. Background image

2. Title image / Softkey image / Statusbar image

3. Inactive tabs

4. Active tab

5. Pressed softkeys

6. Highlight

7. Popup background / More list background

8. Popup title

9. Popup highlight / More list highlight

Colour setting notes

Colour values are set in hexadecimal format, for example 34D2CC (in the XML file the "0x34D2CC" notation is used). Note that when rendered in the phone, the closest value within the phones colour depth will be used. Therefore the appearance of colours on the phone display can differ slightly from the appearance in the Themes Creator preview images.

Alpha blended colours

In themes version 4.6, a number of colours are automatically rendered using alpha blending, either as a percentage of the colour setting or as a percentage of black or white.

The following colours are rendered using automatic alpha blending:

Element	Alpha blending	Comments
Standby		
Operator name outline	50% of set colour	
Time outline	50% of set colour	
Softkeys		
Softkey Left text shadow	20% of Black (000000)	Not in XML file
Softkey Right text shadow	20% of Black (000000)	Not in XML file
Softkey Middle text shadow	20% of Black (000000)	Not in XML file
Softkey Left disabled text	50% of *Softkey Left Text*	Not in XML file
Softkey Right disabled text	50% of *Softkey Right Text*	Not in XML file
Softkey Middle disabled text	50% of *Softkey Middle Text*	Not in XML file
Softkey Left disabled text shadow	20% of Black (000000)	Not in XML file
Softkey Right disabled text shadow	20% of Black (000000)	Not in XML file
Softkey Middle disabled text shadow	20% of Black (000000)	Not in XML file
Desktop		
Desktop title text shadow	20% of Black (000000)	Not in XML file
General		
Title text shadow	20% of Black (000000)	Not in XML file
Disabled text	50% of *Text*	Not in XML file
Highlight disabled text	50% of *Highlight text*	Not in XML file
Scrollbar background	50% of set colour	
Popup		

Element	Alpha blending	Comments
Popup title text shadow	20% of Black (000000)	Not in XML file
Popup disabled text	70% of *Popup text*	Not in XML file
Popup highlight disabled text	50% of *Popup highlight text*	Not in XML file
Popup frame shadow	40% of Black (000000)	Not in XML file
Popup scrollbar background	50% of set colour	
Popup dim	40% of set colour	
More List		
Morelist disabled text	50% of *Morelist text*	Not in XML file
Morelist highlight disabled text	50% of *Morelist highlight text*	Not in XML file
Morelist frame shadow	40% of Black (000000)	Not in XML file
Morelist scrollbar background	50% of set colour	
Tabs		
Tab text shadow	20% of Black (000000)	Not in XML file
Activity menu		
Homescreen tab text shadow	20% of Black (000000)	Not in XML file
Homescreen disabled text	50% of *Homescreen text*	Not in XML file
Homescreen highlight disabled text	50% of *Homescreen highlight text*	Not in XML file
Homescreen frame shadow	40% of Black (000000)	Not in XML file
Homescreen scrollbar background	50% of set colour	
Notes		
Notes	70% of White (FFFFFF)	

Sounds

In the Themes Creator a ringtone and Message alert signal can be imported into the theme. Select the Sounds tab to import the audio files you want. However, not all ringtone formats are suited for all phones. Please refer to the *Ringtones* Developers Guideline, available for download at www.sonyericsson.com/developer/multimedia.

Illumination

Note: Not all Sony Ericsson phones have this feature.

Illumination is a coloured, flashing light behind the keypad and on the sides of the phone. The colour of the light can be set to match the colour of images and other theme elements. To set the colour, select the Illumination tab and use the colour picker or enter a hexadecimal RGB colour value.

Note: Illumination colour values set in the Themes Creator range from 0 to 255 (0x00 to 0xff) for each colour component (R,G and B). However, in the themes XML file, colour component values for illumination has a narrower range, 0 to 100 (0x00 to 0x64). When a theme created in Themes Creator is saved, illumination colour component values are transformed using the formula: Colour(XML) = (Colour(TC) * 100 + 127) / 255. Conversely, when a theme file is loaded into Themes Creator, colour component values are transformed in the other direction using the formula: Colour(TC) = Colour(XML) * 255 / 100. During these transformations, decimal values have to be converted into integers, which may lead to slight (normally not noticeable) illumination colour differences when a theme is saved into a theme file and then reopened in Themes Creator.

Appendix 11
Themes version LF1.0

This appendix contains theme specifications for the Sony Ericsson T250 and T280 series.

Image files in themes version LF1.0

The image file format used affects the total size of the theme file. In general JPEG files are smaller than GIF files with the same image size. PNG files always contain full 24-bit colour representation and do not approximate pixel areas as the JPEG format does, which in some cases leads to large files.

A general recommendation is to use GIF files for coloured line art graphics ("cartoon-like images") and animations, JPEG or PNG files for photographic pictures. In many cases it is worth the effort to save an image in different formats and select the smallest file.

Note: Alpha channel transparency is not supported. Transparent areas in images are rendered black.

Animations are supported in the GIF format. A maximum of 10 frames is allowed for GIF animations for LF1.0 themes. The GIF animation format support a 1 bit alpha channel, but this will not be shown in the phone. If a GIF animation includes transparency, these areas are filled with black.

Restrictions on LF1.0 themes:

• All images in themes version LF1.0 must have the sizes specified in the table below. Themes Creator does not allow importing of images that are not correctly sized.

• All image elements must have an image file assigned.

• One image file cannot be used for more than one image element.

Themes Creator does not allow image files of the wrong size to be imported for an element. Furthermore, one specific image file cannot be imported into more than one image element of the theme. If not all images are set when saving a theme, Themes Creator displays a warning, but saves the theme so that the user may continue to work with it at another time.

The table below lists theme elements where images may be used and their corresponding sizes in pixels.

Element	T250, T280	Image alignment (vert., horiz.)	Comments
Phone specifications			
Primary display, screen size	128x160		
Primary display, no. of colours	65,536		
Supported image file formats	GIF, JPEG, PNG, BMP		If one image file is corrupt, the whole theme will be treated as corrupt.
Supported animation formats	GIF		Only on Standby (wallpaper). Maximum 10 frames
Standby			
Standby (wallpaper)	128x160		GIF Animation allowed (maximum 10 frames).

Element	T250, T280	Image alignment (vert., horiz.)	Comments
Desktop			
Softkey	128x18	Top, left	
Title	128x20	Top, left	
Navigation			
Background	128x160	Top, left	
Highlight	128x18	Top, left	
Popup			
Popup	122x98		

Images order of placement

Images are displayed in the following order of placement, from back to front:

1. Background image

2. Title image / Softkey image

3. Highlight image

4. Popup image

Colour setting notes

Colour values are set in hexadecimal format, for example 34D2CC (in the XML file the "0x34D2CC" notation is used). Note that when rendered in the phone, the closest value within the phones colour depth will be used. Therefore the appearance of colours on the phone display can differ slightly from the appearance in the Themes Creator preview images.

Appendix 12
Themes version 4.7

This appendix contains theme specifications for the Sony Ericsson C702, C902, C905, G705, T700, W595, W760, W902, W980 and Z780 series.

Image files in themes version 4.7

If no image is used for an element, in most cases a colour settings will be used instead, see the *Colour setting notes* section below. However, for the Input, Input Small and Desktop Highlight images, default theme images are stored in the phone. If one of these images is missing in a theme, the corresponding default image will be shown, instead of filling the image area with a colour.

The image file format used affects the total size of the theme file. In general JPEG files are smaller than GIF files with the same image size. PNG files always contain full 24-bit colour representation and do not approximate pixel areas as the JPEG format does, which in some cases leads to large files. The PNG format allows semi transparency through alpha channels.

A general recommendation is to use GIF files for coloured line art graphics ("cartoon-like images") and animations, JPEG or PNG files for photographic pictures. In many cases it is worth the effort to save an image in different formats and select the smallest file. PNG must be used for images with transparent or semi-transparent areas.

Animations are supported in the GIF format. The GIF animation format support a 1 bit alpha channel, but this will not be shown in the phone. If a GIF animation includes transparency, these areas will be filled with a colour from the phone.

SVGT content (static or animated) and Flash Lite animations can be used for the Standby element (wallpaper) in the Standby screen.

Themes version 4.7 support dynamic image sizes for a number of elements. Making images smaller than the layout areas in the table below is always possible, but the look of the theme normally suffers from it. Some images are allowed to be larger than the designated layout area. For these elements, max values are given in the table below.

Highlight images can be made a little higher than the area they are supposed to highlight. Thus a Highlight image may cover part of the text rows above and below the highlighted row. To avoid that a Highlight image obscures the text above and below, one of the following actions can be taken:

- An image with less height than the maximum allowed can be used.
- For PNG images, an alpha channel can be used to make the upper and lower parts of the image, or the whole image, transparent.

The table below lists theme elements where images may be used and their corresponding sizes in pixels. The "Comments" column describes which images are allowed to be animated and which elements support image transparency.

Element		C702, C902, C905, G705, T700, W595, W760, W902, W980, Z780	Image alignment (vert., horiz.)	Comments
Phone specifications				
Primary display, screen size	176x220	240x320		
Primary display, no. of colours	262,144	262,144		
Supported image file formats	GIF, JPEG, PNG	GIF, JPEG, PNG		If one image file is corrupt, the whole theme will be treated as corrupt.
Supported anima-tion formats	GIF, SVG, SWF, MNG	GIF, SVG, SWF, MNG		SVG and SWF animations only in Standby (wallpaper). MNG only for desktop high-lights and list highlights
Supported wallpa-per file formats	GIF, JPEG, PNG, SWF, SVGT 1.2	GIF, JPEG, PNG, SWF, SVGT 1.2		If one image file is corrupt, the whole theme will be treated as corrupt.
Standby				
Standby (wallpaper)	176x220	240x320		Animation (GIF, SVGT or SWF) allowed. If the image is larger than the specification, it is cropped, if it is smaller it is centered verticallly between the Standby Statusbar and Softkey images.
Standby Statusbar	176x18	240x24	Top, center	Transparency (alpha chan-nel) allowed. Covers the upper part of the Standby wallpaper image.
Standby Softkey	176x26	240x30	Bottom, center	Transparency (alpha chan-nel) allowed.
Softkey Left Pressed	176x26	240x30	Bottom, left	Transparency (alpha chan-nel) allowed.
Softkey Right Pressed	176x26	240x30	Bottom, right	Transparency (alpha chan-nel) allowed.
Softkey Middle Pressed	176x26	240x30	Bottom, center	Transparency (alpha chan-nel) allowed.

Element		C702, C902, C905, G705, T700, W595, W760, W902, W980, Z780	Image alignment (vert., horiz.)	Comments
Desktop				
Desktop	176x220	240x320	Center, center	Note that the Statusbar and Softkeys areas are parts of the image.
Navigation - One row title				
Background	176x220	240x320	Center, center	The same background image is used for all navigation screens.
Title Small	176x29 Max 176x34	240x40	Top, center	Transparency (alpha channel) allowed.
Highlight Small	169x32	231x38	Center, center	Transparency (alpha channel) allowed. Animation allowed
Navigation - Two row Title				
Title	176x52 Max 176x57	240x71	Top, center	Transparency (alpha channel) allowed.
Navigation - Tabs				
Tab	176x52 Max 176x57	240x71	Top, center	
Highlight	169x55	231x69	Center, center	Transparency (alpha channel) allowed. Animation allowed
Tab selected	51x27	69x39	Center, center	Transparency (alpha channel) allowed. Placed on top of the tab image.
Tab unselected	35x23	48x33	Center, center	Transparency (alpha channel) allowed. Placed on top of the tab image. Repeated as many times as there are menu items (max 5).
Popup				
Popup	168x152 Dynamic	214x234 Max 240x266	Center, center	Transparency (alpha channel) allowed.
Popup title	168x29 Max 168x34	212x39	Top, center of the Popup image	Transparency (alpha channel) allowed.

Element		C702, C902, C905, G705, T700, W595, W760, W902, W980, Z780	Image alignment (vert., horiz.)	Comments
Popup highlight	161x30	203x38	Center	Transparency (alpha channel) allowed. Animation allowed
More List				
Morelist	168x145 Dynamic	212x193 Dynamic	Bottom, right	Transparency (alpha channel) allowed.
Morelist Highlight	161x30	203x38	Center	Transparency (alpha channel) allowed. Animation allowed.
Input				
Input	176x176	240x266	Center, center	Transparency (alpha channel) allowed.
Input Small	176x147	240x226	Center, center	Transparency (alpha channel) allowed.
Activity menu				
Activity Menu	168x152 Dynamic	214x234 Max 240x266	Center, center	Transparency (alpha channel) allowed.
Activity Menu Tab	168x52 Max 168x57	212x71	Center, center	Transparency (alpha channel) allowed.
Activity Menu Tab Selected	60x27	79x39	Center, center	Transparency (alpha channel) allowed.
Activity Menu Tab Unselected	35x23	53x33	Center, center	Transparency (alpha channel) allowed.
Activity Menu Highlight	161x53	203x69	Center, center	Transparency (alpha channel) allowed. Animation allowed.
Activity Menu Highlight Small	161x30	203x38	Center, center	Transparency (alpha channel) allowed. Animation allowed.
Media application				
Media Portrait Background	176x220	240x320	Center, center	
Media Landscape Background	220x176	320x240	Center, center	

Images order of placement

Images are displayed in the following order of placement, from back to front:

1. Background image

2. Title image / Softkey image / Statusbar image

3. Inactive tabs

4. Active tab

5. Pressed softkeys

6. Highlight

7. Popup background / More list background

8. Popup title

9. Popup highlight / More list highlight

Colour setting notes

Colour values are set in hexadecimal format, for example 34D2CC (in the XML file the "0x34D2CC" notation is used). Note that when rendered in the phone, the closest value within the phones colour depth will be used. Therefore the appearance of colours on the phone display can differ slightly from the appearance in the Themes Creator preview images.

Alpha blended colours

In themes version 4.7, a number of colours are automatically rendered using alpha blending, either as a percentage of the colour setting or as a percentage of black or white.

The following colours are rendered using automatic alpha blending:

Element	Alpha blending	Comments
Standby		
Operator name outline	50% of set colour	
Time outline	50% of set colour	
Softkeys		
Softkey Left text shadow	20% of Black (000000)	Not in XML file

Element	Alpha blending	Comments
Softkey Right text shadow	20% of Black (000000)	Not in XML file
Softkey Middle text shadow	20% of Black (000000)	Not in XML file
Softkey Left disabled text	50% of *Softkey Left Text*	Not in XML file
Softkey Right disabled text	50% of *Softkey Right Text*	Not in XML file
Softkey Middle disabled text	50% of *Softkey Middle Text*	Not in XML file
Softkey Left disabled text shadow	20% of Black (000000)	Not in XML file
Softkey Right disabled text shadow	20% of Black (000000)	Not in XML file
Softkey Middle disabled text shadow	20% of Black (000000)	Not in XML file
Desktop		
Desktop title text shadow	20% of Black (000000)	Not in XML file
General		
Title text shadow	20% of Black (000000)	Not in XML file
Disabled text	50% of *Text*	Not in XML file
Highlight disabled text	50% of *Highlight text*	Not in XML file
Scrollbar background	50% of set colour	
Popup		
Popup title text shadow	20% of Black (000000)	Not in XML file
Popup disabled text	70% of *Popup text*	Not in XML file
Popup highlight disabled text	50% of *Popup highlight text*	Not in XML file
Popup frame shadow	40% of Black (000000)	Not in XML file
Popup scrollbar background	50% of set colour	
Popup dim	40% of set colour	
More List		
Morelist disabled text	50% of *Morelist text*	Not in XML file
Morelist highlight disabled text	50% of *Morelist highlight text*	Not in XML file
Morelist frame shadow	40% of Black (000000)	Not in XML file
Morelist scrollbar background	50% of set colour	
Tabs		
Tab text shadow	20% of Black (000000)	Not in XML file
Activity menu		
Homescreen tab text shadow	20% of Black (000000)	Not in XML file
Homescreen disabled text	50% of *Homescreen text*	Not in XML file

Element	Alpha blending	Comments
Homescreen highlight disabled text	50% of *Homescreen highlight text*	Not in XML file
Homescreen frame shadow	40% of Black (000000)	Not in XML file
Homescreen scrollbar background	50% of set colour	
Notes		
Notes	70% of White (FFFFFF)	

Sounds

In the Themes Creator a ringtone and Message alert signal can be imported into the theme. Select the Sounds tab to import the audio files you want. However, not all ringtone formats are suited for all phones. Please refer to the *Ringtones* Developers Guideline, available for download at www.sonyericsson.com/developer/multimedia.

Illumination

Note: Not all Sony Ericsson phones have this feature.

Illumination is a coloured, flashing light behind the keypad and on the sides of the phone. The colour of the light can be set to match the colour of images and other theme elements. To set the colour, select the Illumination tab and use the colour picker or enter a hexadecimal RGB colour value.

Note: Illumination colour values set in the Themes Creator range from 0 to 255 (0x00 to 0xff) for each colour component (R,G and B). However, in the themes XML file, colour component values for illumination has a narrower range, 0 to 100 (0x00 to 0x64). When a theme created in Themes Creator is saved, illumination colour component values are transformed using the formula: Colour(XML) = (Colour(TC) * 100 + 127) / 255. Conversely, when a theme file is loaded into Themes Creator, colour component values are transformed in the other direction using the formula: Colour(TC) = Colour(XML) * 255 / 100. During these transformations, decimal values have to be converted into integers, which may lead to slight (normally not noticeable) illumination colour differences when a theme is saved into a theme file and then reopened in Themes Creator.

Appendix 13
Themes version 4.8

This appendix contains theme specifications for Sony Ericsson C510, C901, C903, Naite, T707, T715, W508, W705, W715 and W995 series.

Image files in themes version 4.8

If no image is used for an element, in most cases a colour settings will be used instead, see the *Colour setting notes* section below. However, for the Input, Input Small and Desktop Highlight images, default theme images are stored in the phone. If one of these images is missing in a theme, the corresponding default image will be shown, instead of filling the image area with a colour.

The image file format used affects the total size of the theme file. In general JPEG files are smaller than GIF files with the same image size. PNG files always contain full 24-bit colour representation and do not approximate pixel areas as the JPEG format does, which in some cases leads to large files. The PNG format allows semi transparency through alpha channels.

A general recommendation is to use GIF files for coloured line art graphics ("cartoon-like images") and animations, JPEG or PNG files for photographic pictures. In many cases it is worth the effort to save an image in different formats and select the smallest file. PNG must be used for images with transparent or semi-transparent areas.

Animations are supported in the GIF format. The GIF animation format support a 1 bit alpha channel, but this will not be shown in the phone. If a GIF animation includes transparency, these areas will be filled with a colour from the phone.

SVGT content (static or animated) and Flash Lite animations can be used for the Standby element (wallpaper) in the Standby screen.

Themes version 4.8 support dynamic image sizes for a number of elements. Making images smaller than the layout areas in the table below is always possible, but the look of the theme normally suffers from it. Some images are allowed to be larger than the designated layout area. For these elements, max values are given in the table below.

Highlight images can be made a little higher than the area they are supposed to highlight. Thus a Highlight image may cover part of the text rows above and below the highlighted row. To avoid that a Highlight image obscures the text above and below, one of the following actions can be taken:

- An image with less height than the maximum allowed can be used.
- For PNG images, an alpha channel can be used to make the upper and lower parts of the image, or the whole image, transparent.

The table below lists theme elements where images may be used and their corresponding sizes in pixels. The "Comments" column describes which images are allowed to be animated and which elements support image transparency.

Element	C510, C901, C903, Naite, T707, T715, W508, W705, W715, W995	Image alignment (vert., horiz.)	Comments
Phone specifications			
Primary display, screen size	240x320		
Primary display, no. of colours	262,144		
Supported image file formats	GIF, JPEG, PNG		If one image file is corrupt, the whole theme will be treated as corrupt.
Supported animation formats	GIF, SVG, SWF, MNG		SVG and SWF animations only in Standby (wallpaper). MNG only for desktop highlights and list highlights
Supported wallpaper file formats	GIF, JPEG, PNG, SWF, SVGT 1.2		If one image file is corrupt, the whole theme will be treated as corrupt.
Standby			
Standby (wallpaper)	240x320		Animation (GIF, SVGT or SWF) allowed. If the image is larger than the specification, it is cropped, if it is smaller it is centered verticallly between the Standby Statusbar and Softkey images.
Standby Statusbar	240x24	Top, center	Transparency (alpha channel) allowed. Covers the upper part of the Standby wallpaper image.
Standby Softkey	240x30	Bottom, center	Transparency (alpha channel) allowed.
Softkey Left Pressed	240x30	Bottom, left	Transparency (alpha channel) allowed.
Softkey Right Pressed	240x30	Bottom, right	Transparency (alpha channel) allowed.
Softkey Middle Pressed	240x30	Bottom, center	Transparency (alpha channel) allowed.
Desktop			
Desktop	240x320	Center, center	Note that the Statusbar and Softkeys areas are parts of the image.

Element	C510, C901, C903, Naite, T707, T715, W508, W705, W715, W995	Image alignment (vert., horiz.)	Comments
Navigation - One row title			
Background	240x320	Center, center	The same background image is used for all navigation screens.
Title Small	240x40	Top, center	Transparency (alpha channel) allowed.
Highlight Small	231x38	Center, center	Transparency (alpha channel) allowed. Animation allowed
Navigation - Two row Title			
Title	240x71	Top, center	Transparency (alpha channel) allowed.
Navigation - Tabs			
Tab	240x71	Top, center	
Highlight	231x69	Center, center	Transparency (alpha channel) allowed. Animation allowed
Tab selected	69x39	Center, center	Transparency (alpha channel) allowed. Placed on top of the tab image.
Tab unselected	48x33	Center, center	Transparency (alpha channel) allowed. Placed on top of the tab image. Repeated as many times as there are menu items (max 5).
Popup			
Popup	214x234 Max 240x266	Center, center	Transparency (alpha channel) allowed.
Popup title	212x39	Top, center of the Popup image	Transparency (alpha channel) allowed.
Popup highlight	203x38	Center	Transparency (alpha channel) allowed. Animation allowed
More List			
Morelist	212x193 Dynamic	Bottom, right	Transparency (alpha channel) allowed.
Morelist Highlight	203x38	Center	Transparency (alpha channel) allowed. Animation allowed.

Element	C510, C901, C903, Naite, T707, T715, W508, W705, W715, W995	Image alignment (vert., horiz.)	Comments
Input			
Input	240x266	Center, center	Transparency (alpha channel) allowed.
Input Small	240x226	Center, center	Transparency (alpha channel) allowed.
Activity menu			
Activity Menu	214x234 Max 240x266	Center, center	Transparency (alpha channel) allowed.
Activity Menu Tab	212x71	Center, center	Transparency (alpha channel) allowed.
Activity Menu Tab Selected	79x39	Center, center	Transparency (alpha channel) allowed.
Activity Menu Tab Unselected	53x33	Center, center	Transparency (alpha channel) allowed.
Activity Menu Highlight	203x69	Center, center	Transparency (alpha channel) allowed. Animation allowed.
Activity Menu Highlight Small	203x38	Center, center	Transparency (alpha channel) allowed. Animation allowed.

Images order of placement

Images are displayed in the following order of placement, from back to front:

1. Background image

2. Title image / Softkey image / Statusbar image

3. Inactive tabs

4. Active tab

5. Pressed softkeys

6. Highlight

7. Popup background / More list background

8. Popup title

9. Popup highlight / More list highlight

Colour setting notes

Colour values are set in hexadecimal format, for example 34D2CC (in the XML file the "0x34D2CC" notation is used). Note that when rendered in the phone, the closest value within the phones colour depth will be used. Therefore the appearance of colours on the phone display can differ slightly from the appearance in the Themes Creator preview images.

Alpha blended colours

In themes version 4.8, a number of colours are automatically rendered using alpha blending, either as a percentage of the colour setting or as a percentage of black or white.

The following colours are rendered using automatic alpha blending:

Element	Alpha blending	Comments
Standby		
Operator name outline	50% of set colour	
Time outline	50% of set colour	
Softkeys		
Softkey Left text shadow	20% of Black (000000)	Not in XML file
Softkey Right text shadow	20% of Black (000000)	Not in XML file
Softkey Middle text shadow	20% of Black (000000)	Not in XML file
Softkey Left disabled text	50% of *Softkey Left Text*	Not in XML file
Softkey Right disabled text	50% of *Softkey Right Text*	Not in XML file
Softkey Middle disabled text	50% of *Softkey Middle Text*	Not in XML file
Softkey Left disabled text shadow	20% of Black (000000)	Not in XML file
Softkey Right disabled text shadow	20% of Black (000000)	Not in XML file
Softkey Middle disabled text shadow	20% of Black (000000)	Not in XML file
Desktop		
Desktop title text shadow	20% of Black (000000)	Not in XML file

Element	Alpha blending	Comments
General		
Title text shadow	20% of Black (000000)	Not in XML file
Disabled text	50% of *Text*	Not in XML file
Highlight disabled text	50% of *Highlight text*	Not in XML file
Scrollbar background	50% of set colour	
Popup		
Popup title text shadow	20% of Black (000000)	Not in XML file
Popup disabled text	70% of *Popup text*	Not in XML file
Popup highlight disabled text	50% of *Popup highlight text*	Not in XML file
Popup frame shadow	40% of Black (000000)	Not in XML file
Popup scrollbar background	50% of set colour	
Popup dim	40% of set colour	
More List		
Morelist disabled text	50% of *Morelist text*	Not in XML file
Morelist highlight disabled text	50% of *Morelist highlight text*	Not in XML file
Morelist frame shadow	40% of Black (000000)	Not in XML file
Morelist scrollbar background	50% of set colour	
Tabs		
Tab text shadow	20% of Black (000000)	Not in XML file
Activity menu		
Homescreen tab text shadow	20% of Black (000000)	Not in XML file
Homescreen disabled text	50% of *Homescreen text*	Not in XML file
Homescreen highlight disabled text	50% of *Homescreen highlight text*	Not in XML file
Homescreen frame shadow	40% of Black (000000)	Not in XML file
Homescreen scrollbar background	50% of set colour	
Notes		
Notes	70% of White (FFFFFF)	

Sounds

In the Themes Creator a ringtone and Message alert signal can be imported into the theme. Select the Sounds tab to import the audio files you want. However, not all ringtone formats are suited for all phones. Please refer to the *Ringtones* Developers Guideline, available for download at www.sonyericsson.com/ developer/multimedia.

Illumination

Note: Not all Sony Ericsson phones have this feature.

Illumination is a coloured, flashing light behind the keypad and on the sides of the phone. The colour of the light can be set to match the colour of images and other theme elements. To set the colour, select the Illumination tab and use the colour picker or enter a hexadecimal RGB colour value.

Note: Illumination colour values set in the Themes Creator range from 0 to 255 (0x00 to 0xff) for each colour component (R,G and B). However, in the themes XML file, colour component values for illumination has a narrower range, 0 to 100 (0x00 to 0x64). When a theme created in Themes Creator is saved, illumination colour component values are transformed using the formula: Colour(XML) = (Colour(TC) * 100 + 127) / 255. Conversely, when a theme file is loaded into Themes Creator, colour component values are transformed in the other direction using the formula: Colour(TC) = Colour(XML) * 255 / 100. During these transformations, decimal values have to be converted into integers, which may lead to slight (normally not noticeable) illumination colour differences when a theme is saved into a theme file and then reopened in Themes Creator.

Appendix 14
Themes version 4.9

This appendix contains theme specifications for Sony Ericsson Aino and Yari series.

Image files in themes version 4.9

If no image is used for an element, in most cases a colour settings will be used instead, see the *Colour setting notes* section below. However, for the Input, Input Small and Desktop Highlight images, default theme images are stored in the phone. If one of these images is missing in a theme, the corresponding default image will be shown, instead of filling the image area with a colour.

The image file format used affects the total size of the theme file. In general JPEG files are smaller than GIF files with the same image size. PNG files always contain full 24-bit colour representation and do not approximate pixel areas as the JPEG format does, which in some cases leads to large files. The PNG format allows semi transparency through alpha channels.

A general recommendation is to use GIF files for coloured line art graphics ("cartoon-like images") and animations, JPEG or PNG files for photographic pictures. In many cases it is worth the effort to save an image in different formats and select the smallest file. PNG must be used for images with transparent or semi-transparent areas.

Animations are supported in the GIF format. The GIF animation format support a 1 bit alpha channel, but this will not be shown in the phone. If a GIF animation includes transparency, these areas will be filled with a colour from the phone.

SVGT content (static or animated) and Flash Lite animations can be used for the Standby element (wallpaper) in the Standby screen.

Themes version 4.9 support dynamic image sizes for a number of elements. Making images smaller than the layout areas in the table below is always possible, but the look of the theme normally suffers from it. Some images are allowed to be larger than the designated layout area. For these elements, max values are given in the table below.

Highlight images can be made a little higher than the area they are supposed to highlight. Thus a Highlight image may cover part of the text rows above and below the highlighted row. To avoid that a Highlight image obscures the text above and below, one of the following actions can be taken:

- An image with less height than the maximum allowed can be used.
- For PNG images, an alpha channel can be used to make the upper and lower parts of the image, or the whole image, transparent.

The table below lists theme elements where images may be used and their corresponding sizes in pixels. The "Comments" column describes which images are allowed to be animated and which elements support image transparency.

Element	QVGA medium (2.0”-2.4”) Yari	QVGA large (2.4”-3.0”)	WQVGA (3.0”) Aino	Image alignment (vert., horiz.)	Comments
Phone specifications					
Primary display, screen size	240x320	240x320	240x432		
Primary display, no. of colours	262,144	262,144	16 M		
Supported image file formats	GIF, JPEG, PNG				If one image file is corrupt, the whole theme will be treated as corrupt.
Supported anima-tion formats	GIF, SVG, SWF, MNG				SVG and SWF animations only in Standby (wallpaper). MNG only for desktop high-lights and list highlights
Supported wallpa-per file formats	GIF, JPEG, PNG, SWF, SVGT 1.2				If one image file is corrupt, the whole theme will be treated as corrupt.
Standby					
Standby (wallpaper)	240x320	240x320	240x432		Animation (GIF, SVGT or SWF) allowed. If the image is larger than the specification, it is cropped, if it is smaller it is centered verticallly between the Standby Statusbar and Softkey images.
Standby Statusbar	240x24	240x20	240x24	Top, center	Transparency (alpha chan-nel) allowed. Covers the upper part of the Standby wallpaper image.
Standby Softkey	240x30	240x27	240x30	Bottom, center	Transparency (alpha chan-nel) allowed.
Softkey Left Pressed	240x30	240x27	240x30	Bottom, left	Transparency (alpha chan-nel) allowed.
Softkey Right Pressed	240x30	240x27	240x30	Bottom, right	Transparency (alpha chan-nel) allowed.
Softkey Middle Pressed	240x30	240x27	240x30	Bottom, center	Transparency (alpha chan-nel) allowed.

Element	QVGA medium (2.0"-2.4") Yari	QVGA large (2.4"-3.0")	WQVGA (3.0") Aino	Image alignment (vert., horiz.)	Comments
Desktop					
Desktop	240x320	240x320	240x432	Center, center	Note that the Statusbar and Softkeys areas are parts of the image.
Navigation - One row title					
Background	240x320	240x320	240x432s	Center, center	The same background image is used for all navigation screens.
Title Small	240x40	240x34	240x40	Top, center	Transparency (alpha channel) allowed.
Highlight Small	231x38	231x36	231x38	Center, center	Transparency (alpha channel) allowed. Animation allowed
Navigation - Two row Title					
Title	240x71	240x64	240x71	Top, center	Transparency (alpha channel) allowed.
Navigation - Tabs					
Tab	240x71	240x64	240x71	Top, center	
Highlight	231x69	231x64	231x69	Center, center	Transparency (alpha channel) allowed. Animation allowed
Tab selected	69x39	68x36	69x39	Center, center	Transparency (alpha channel) allowed. Placed on top of the tab image.
Tab unselected	48x33	48x29	48x33	Center, center	Transparency (alpha channel) allowed. Placed on top of the tab image. Repeated as many times as there are menu items (max 5).
Popup					
Popup	214x234 Max 240x266	214x234 Max 240x273	214x234 Max 240x266	Center, center	Transparency (alpha channel) allowed.
Popup title	212x39	212x33	212x39	Top, center of the Popup image	Transparency (alpha channel) allowed.

Element	QVGA medium (2.0"-2.4") Yari	QVGA large (2.4"-3.0")	WQVGA (3.0") Aino	Image alignment (vert., horiz.)	Comments
Popup highlight	203x38	203x34	203x38	Center	Transparency (alpha channel) allowed. Animation allowed
More List					
Morelist	212x193	212x177	212x193	Bottom, right	Transparency (alpha channel) allowed.
Morelist Highlight	203x38	203x37	203x38	Center	Transparency (alpha channel) allowed. Animation allowed.
Input					
Input	240x266	240x273	240x378	Center, center	Transparency (alpha channel) allowed.
Input Small	240x226	240x239	240x338	Center, center	Transparency (alpha channel) allowed.
Activity menu					
Activity Menu	214x234	214x234	214x234	Center, center	Transparency (alpha channel) allowed.
Activity Menu Tab	212x71	212x64	212x71	Center, center	Transparency (alpha channel) allowed.
Activity Menu Tab Selected	79x39	73x38	79x39	Center, center	Transparency (alpha channel) allowed.
Activity Menu Tab Unselected	53x33	53x31	53x33	Center, center	Transparency (alpha channel) allowed.
Activity Menu Small	203x38	203x34	203x38	Center, center	Transparency (alpha channel) allowed.
Activity Menu Large	203x69	203x61	203x69	Center, center	Transparency (alpha channel) allowed.
Application					
Application Background	240x320	240x320	240x432	Center, center	Transparency (alpha channel) allowed.
Events					

Element	QVGA medium (2.0"-2.4") Yari	QVGA large (2.4"-3.0")	WQVGA (3.0") Aino	Image alignment (vert., horiz.)	Comments
Events Portrait Background	240x320	240x320	240x432	Center, center	Transparency (alpha channel) allowed.
Events Landscape Background	320x240	320x240	432x240	Center, center	Transparency (alpha channel) allowed.

Images order of placement

Images are displayed in the following order of placement, from back to front:

1. Background image

2. Title image / Softkey image / Statusbar image

3. Inactive tabs

4. Active tab

5. Pressed softkeys

6. Highlight

7. Popup background / More list background

8. Popup title

9. Popup highlight / More list highlight

Colour setting notes

Colour values are set in hexadecimal format, for example 34D2CC (in the XML file the "0x34D2CC" notation is used). Note that when rendered in the phone, the closest value within the phones colour depth will be used. Therefore the appearance of colours on the phone display can differ slightly from the appearance in the Themes Creator preview images.

Alpha blended colours

In themes version 4.9, a number of colours are automatically rendered using alpha blending, either as a percentage of the colour setting or as a percentage of black or white.

The following colours are rendered using automatic alpha blending:

Element	Alpha blending	Comments
Standby		
Operator name outline	50% of set colour	
Time outline	50% of set colour	
Softkeys		
Softkey Left text shadow	20% of Black (000000)	Not in XML file
Softkey Right text shadow	20% of Black (000000)	Not in XML file
Softkey Middle text shadow	20% of Black (000000)	Not in XML file
Softkey Left disabled text	50% of *Softkey Left Text*	Not in XML file
Softkey Right disabled text	50% of *Softkey Right Text*	Not in XML file
Softkey Middle disabled text	50% of *Softkey Middle Text*	Not in XML file
Softkey Left disabled text shadow	20% of Black (000000)	Not in XML file
Softkey Right disabled text shadow	20% of Black (000000)	Not in XML file
Softkey Middle disabled text shadow	20% of Black (000000)	Not in XML file
Desktop		
Desktop title text shadow	20% of Black (000000)	Not in XML file
General		
Title text shadow	20% of Black (000000)	Not in XML file
Disabled text	50% of *Text*	Not in XML file
Highlight disabled text	50% of *Highlight text*	Not in XML file
Scrollbar background	50% of set colour	
Popup		
Popup title text shadow	20% of Black (000000)	Not in XML file
Popup disabled text	70% of *Popup text*	Not in XML file
Popup highlight disabled text	50% of *Popup highlight text*	Not in XML file
Popup frame shadow	40% of Black (000000)	Not in XML file
Popup scrollbar background	50% of set colour	
Popup dim	40% of set colour	

Element	Alpha blending	Comments
More List		
Morelist disabled text	50% of *Morelist text*	Not in XML file
Morelist highlight disabled text	50% of *Morelist highlight text*	Not in XML file
Morelist frame shadow	40% of Black (000000)	Not in XML file
Morelist scrollbar background	50% of set colour	
Tabs		
Tab text shadow	20% of Black (000000)	Not in XML file
Activity menu		
Homescreen tab text shadow	20% of Black (000000)	Not in XML file
Homescreen disabled text	50% of *Homescreen text*	Not in XML file
Homescreen highlight disabled text	50% of *Homescreen highlight text*	Not in XML file
Homescreen frame shadow	40% of Black (000000)	Not in XML file
Homescreen scrollbar background	50% of set colour	
Notes		
Notes	70% of White (FFFFFF)	
Applications		
MMS header arrow disabled	50% of *Application toolbar highlight*	
Input		
Input panel background	80% of *Input panel background*	

Sounds

In the Themes Creator a ringtone and Message alert signal can be imported into the theme. Select the Sounds tab to import the audio files you want. However, not all ringtone formats are suited for all phones. Please refer to the *Ringtones* Developers Guideline, available for download at www.sonyericsson.com/developer/multimedia.

Illumination

Note: Not all Sony Ericsson phones have this feature.

Illumination is a coloured, flashing light behind the keypad and on the sides of the phone. The colour of the light can be set to match the colour of images and other theme elements. To set the colour, select the Illumination tab and use the colour picker or enter a hexadecimal RGB colour value.

Note: Illumination colour values set in the Themes Creator range from 0 to 255 (0x00 to 0xff) for each colour component (R,G and B). However, in the themes XML file, colour component values for illumination has a narrower range, 0 to 100 (0x00 to 0x64). When a theme created in Themes Creator is saved, illumination colour component values are transformed using the formula: Colour(XML) = (Colour(TC) * 100 + 127) / 255. Conversely, when a theme file is loaded into Themes Creator, colour component values are transformed in the other direction using the formula: Colour(TC) = Colour(XML) * 255 / 100. During these transformations, decimal values have to be converted into integers, which may lead to slight (normally not noticeable) illumination colour differences when a theme is saved into a theme file and then reopened in Themes Creator.