OMTP

USER EXPERIENCE

USER EXPERIENCE CUSTOMISATION FUNCTIONAL REQUIREMENTS:

LOOK AND FEEL, MENU CUSTOMISATION AND APPLICATION INTEGRATION

VERSION:	OMTP Customisation ('Look & Feel', menu and application integration) Version 2_0, Release 2
STATUS:	Approved
DATE OF LAST EDIT:	27 January 2006
OWNER:	OMTP User Experience Group

CONTENTS

1 INTRODUCTION

1.1 DOCUMENT PURPOSE

The intent of this document is to define the functional requirements and relevant parameters of all the user experience items involved in the customisation of a terminal relating to 'look & feel', menu structure and application integration.

This document covers the customisation requirements described in levels 4A, 4B, 4D and 4E of the OMTP Customisation Level Description, as illustrated in the following figure. Customisation levels 4C and 4F will be addressed in future OMTP documents.

4A – Add Basic Branding Elements • Brand *basic* elements of a terminal UI in a consistent manner across all terminals, OTA updates possible. • e.g. background, menu items, wallpapers, start-up/shutdown sequences, ring tones, logo, screen saver, etc.	**4D – Basic Menu Customisation** • Customise the ordering and labelling of the menu structure and define terminal shortcuts and soft keys, OTA updates possible. • e.g. emphasise and prioritise operator applications, services and terminal features, lock specific menu items, define idle screen shortcuts, etc
4B – Simple Look and Feel Customisation • Customise simple look and feel aspects of a terminal UI in a consistent manner across all terminals, OTA updates possible. • e.g. splash screens, sounds, status indicators, animations, soft key area, etc. plus level 4A elements.	**4E – Simple Application Integration** • Integrate operator-specific content and UI to the terminal, OTA possible. • e.g. publish operator content to idle screen, cache customised content for use by browser-based off-line services and operator applications, plus level 4D.
4C – Deep 'Look & Feel' Customisation • Define the look and feel of all UI components and their layout in a consistent manner across all terminals and all applications, OTA updates possible. • e.g. scroll bar, text entry boxes, buttons, list boxes, notifications, etc. plus level 4B.	**4F – Application Interworking Customisation** • Customise the structure of application interworking workflows across all terminals to define a seamless integration. OTA possible. • e.g. define application interworking workflows (AIW), plus level 4E.

Levels 4A and 4B handle requirements relating to the customisation of the 'look & feel' of UI elements. In particular, level 4A covers basic branding elements including the terminal backgrounds, menu icons and labels, wallpapers, start-up/shutdown sequences, ring tones, logos, and screen savers. Level 4B covers the customisation of the appearance and behaviour of simple elements of a terminal UI, including level 4A elements as well as animations, sounds, default fonts, splash screens, soft key area, status indicators, notification and error messages. These customisations are 'simple', in that they affect certain aspects of the presentation of the user interface but do not go

so far as to affect the appearance or behaviour of all common UI components i.e. components that appear across different applications.

Requirements at level 4D are concerned with the ordering and labelling of the main menu and application menus, the customisation of soft keys and the addition of shortcuts and menu items that link to terminal functionality, operator applications and services, and URLs.

Level 4E includes requirements that relate to the simple integration of operator services and applications, either via the customisation of the main menu structure and idle screen, or via the customisation of the structure and content of off-line operator services.

Operators need to be able to remotely update all customisable items described in this document, except where otherwise noted. The OTA methods to be adopted are beyond the scope of this document and will be addressed in a forthcoming OMTP document. The same consideration applies to the formats to be adopted for images, animations, videos, and sounds. Requirements relating to the authentication and certification of the terminal will not be considered here as they will be covered in forthcoming OTMP documents.

For each category of customisable elements, the related document section is structured as follows:

- Description.
- Functional requirements.
- Parameters associated with OTA management.
- A table of customisable elements associated with the description and functional requirements.

The availability of OMTP requirements compliant terminals is subject to commercial negotiations. The reader should understand that using the customisation functionality might result in significant additional verification effort and other costs, e.g. designing and printing new user manuals to address the customised functionality.

1.2 INTENDED AUDIENCE

There are two main audiences for these requirements:

- Other work streams inside OMTP that will take these requirements as input.
- OMTP terminal implementers, i.e. the equipment and technology vendors that will be asked to create implementations of the OMTP platform.

1.3 CONVENTIONS

The key words “MUST”, “MUST NOT”, “REQUIRED”, “SHALL”, “SHALL NOT”, “SHOULD”, “SHOULD NOT”, “RECOMMENDED”, “MAY”, and “OPTIONAL” in this document are to be interpreted as described in RFC2119 [1].

- MUST: This word, or the terms “REQUIRED” or “SHALL”, mean that the definition is an absolute requirement of the specification.
- MUST NOT: This phrase, or the phrase “SHALL NOT”, mean that the definition is an absolute prohibition of the specification.
- SHOULD: This word, or the adjective “RECOMMENDED”, mean that there may exist valid reasons in particular circumstances to ignore a particular item, but the full implications must be understood and carefully weighed before choosing a different course.
- SHOULD NOT: This phrase, or the phrase “NOT RECOMMENDED” mean that there may exist valid reasons in particular circumstances when the particular behaviour is acceptable or even useful, but the full implications should be understood and the case carefully weighed before implementing any behaviour described with this label.
- MAY: This word, or the adjective “OPTIONAL”, mean that an item is truly optional. One vendor may choose to include the item because a particular marketplace requires it or because the vendor feels that it enhances the product while another vendor may omit the same item. An implementation which does not include a particular option MUST be prepared to interoperate with another implementation which does include the option, though perhaps with reduced functionality. In the same vein an implementation which does include a particular option MUST be prepared to interoperate with another implementation which does not include the option (except, of course, for the feature the option provides).

The requirements within the document are uniquely identified using the following format:

- CL4X-Y### where:
  - X refers to the customisation level (“A”, ”B”, “D”, “E”, or blank if the requirement is general).
  - Y refers to the requirement type (either “G” for a general requirement or “F” for a functional requirement relating to operator customisation).
  - ### is a number that identifies the requirement.

2 GENERAL REQUIREMENTS

The requirements in this section apply to all customisation items contained within the document, unless stated explicitly to the contrary in the relevant sections.

All the customisation requirements should be designed so that they can be applicable both for post-paid and pre-paid subscribers.

All the customisation requirements in this document apply only to terminals that are customised by the same operator. In other words, they do not apply in cases where an operator is customising a handset that has already been customised by a different operator.

REQ. ID	REQUIREMENT
CL4-G003	The terminal SHOULD enable the customisation and updating of all elements included in Sections 3, 4, 5, and 6 via the Smart Card, according to the Smart Card's capabilities[1].
CL4-G004	The terminal MUST allow customisation to be applied by different media (such as OTA, Smart Card or Memory Card); the priority AND the scope of customisation MUST be defined by the operator.
CL4-G020	The operator MUST define the security framework[2] used if configuration via OTA, Smart Card or removable media is enabled.
CL4-G005	Whenever user confirmation is required for an OTA terminal update, operators MUST be able to define the text and icons of the confirmation message that is displayed to the user.
CL4-G006	The terminal SHOULD support the customisation and update of all elements included in Sections 3, 4, 5, and 6 via a removable storage medium.

[1] Customisation via Smart Card required H2 2007.

[2] Security frameworks to be defined by forthcoming OMTP documents.

REQ. ID	REQUIREMENT
CL4-G007	The terminal MUST support the customisation and updating at the Point of Sale (PoS) of all elements included in Section 3, 4, 5 and 6 that are agreed between operators and manufacturers. The terminal MUST support customisation and updating of the terminal at PoS using OTA services.
CL4-G008	The operator MUST be able to prevent operator-defined UI elements from being deleted from the memory, modified or distributed by users or third parties.
CL4-G009	The operator MUST be able to lock any or all of the UI elements that the operator has customised so that they cannot be personalised or changed by the user or third parties, except by using themes[3].
CL4-G024	The operator MUST be able to lock any or all elements within an operator theme so that the locked elements MUST be co-present to maintain the integrity of the theme. If the end user personalises any locked element, all other locked elements MUST be changed to default settings.
CL4-G010	Operators MUST be able to modify the visibility of operator services on a terminal at manufacture, at PoS and OTA; e.g. a service should be visible at the moment of rollout in a specific market or country.
CL4-G011	The operator MUST be able to localise language requirements to specific markets and countries. The level of the localisation should not be limited to a language but cover variations within a language to meet a market need; e.g. all variants of English might co-exist on the same terminal and be switchable on the fly.

[3] In certain specialised branding scenarios, such as for terminals intended for sale to enterprise markets as company-specific terminals, or for heavily-subsidised terminals sold to individual consumers, operators may wish to lock certain elements on the terminal to prevent user personalisation to ensure that consistent customisation is maintained. The extent of locking required on the terminal will be determined and negotiated on a case-by-case basis.

REQ. ID	REQUIREMENT
CL4-G012	The operator MUST be able to localise icon graphics to specific markets and countries (e.g. variants of icons might co-exist on the same terminal and be selectable at Point of Sale).
CL4-G013	The user MUST be able to restore customisation settings and contents in the terminal to the most recent previous settings.
CL4-G014	Whenever operators prevent personalisation, this SHOULD be reflected in the end user interface accordingly: the user should never see this as a personalisation option, not even 'disabled'.
CL4-G015	The terminal MUST request user confirmation for customisations that result in changes to a user's personalisation choices, unless stated otherwise.
CL4-G016	The terminal MUST enable customisation at manufacture for all elements included in sections 3, 4, 5 and 6 of this document.
CL4-G017	The operator MUST be able to unlock UI elements post-sale (using OTA services, via Smart Card, or via removable storage medium) to allow user personalisation of the elements and the operator MUST be able to specify whether or not user confirmation is required to unlock the elements.
CL4-G018	If new elements are added to the device post-sale, the operator MUST be able to define their locking parameters.
CL4-G019	The operator MUST be able to structure OTA updates such that user confirmation can be requested to accept or reject pre-defined subsets of the overall update and rejection of one part does not compromise other parts of the update.

REQ. ID	REQUIREMENT
CL4-G020	When requesting user confirmation for an update or part of an update that contains multiple elements, the following rules MUST apply: 1. If user confirmation is REQUIRED for any element within the update, as defined in this document, then confirmation is REQUIRED for the update. 2. If the operator is able to update each element without requesting user confirmation or providing notification, then the operator MUST be able to update the terminal without requesting user confirmation or providing notification. 3. If 1) and 2) do not apply, it MUST enable the operator to specify whether user confirmation is required for the update or not. 4. A multiple element update MUST NOT request more than one user confirmation for the update.
CL4-G021	Whenever an OTA customisation update takes place, all changes to the terminal MUST apply without having to reboot the terminal.
CL4-G022	Whenever possible, the terminal SHOULD ensure that any OTA update does not result in a serious deficit in the usability of the terminal[4].
CL4-G023	If, as a result of a customisation, an image is provided to the terminal that is larger or smaller than the display area in which the image is to be shown, it SHOULD be possible for the terminal to maintain the aspect ratio of the image and alter both the horizontal and vertical alignment of the image when handling it.

2.1 NOTES ON LOCKING

All locking requirements in this document apply only at manufacture, not post-sale, unless stated otherwise (e.g. requirement CL4D-F029). It is therefore not possible for operators to modify the locking properties of elements post-sale. However, note the following general exceptions:

[4] By "serious deficit", it is meant that the user can no longer achieve a particular task as a result of the update (e.g. if an update to the colour of a label results in the label being no longer visible). It is also the responsibility of operators to ensure that this situation does not occur, whenever possible.

- If new elements are added to the device post-sale, the operator must be able to define their locking properties, as specified in CL4-G018, but they may not be modified once they are added, except in the case of the next exception and requirement CL4D-F029.
- The operator must be able to unlock UI elements post-sale, as stated in CL4-G017.

3 LEVEL 4A – BASIC BRANDING ELEMENTS

The following sections summarise the simplest branding elements involved in the basic customisation of a terminal. The objective is to allow branding of simple aspects of a terminal UI in a consistent manner across all terminals.

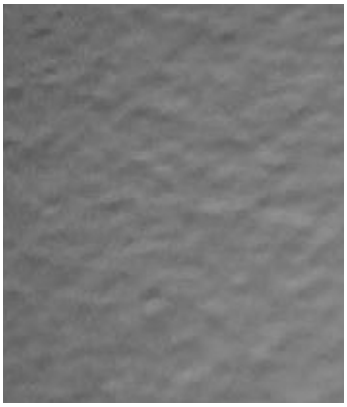
3.1 GENERAL BACKGROUND

3.1.1 DESCRIPTION

The general background is the bottom graphical layer of the entire screen of the user interface. The general background is overlapped with various display areas. The appearance of the general background can be defined using a background colour, background image or both. In addition to default definitions, the appearance of the general background can be also defined on an application basis, including the main menu and the idle screen.

The background colour of the general background defines the appearance of the general background using a solid colour. The background colour is drawn below the background image of that element. When defined, the background image is always drawn on top of the background colour causing colour to be visible when the image is missing or when it is transparent (see Figure 1). If the terminal has a secondary display that supports a general background, the requirements in this section must also apply to the general background present on the secondary display.

General Background Colour



General Background Image

General Background Colour and Image set at 50% transparency

Figure 1: illustrates appearance of the general background (bottom) composed of the general background colour (top left) and the general background image (top right) set at 50% transparency.

3.1.2 FUNCTIONAL REQUIREMENTS

REQ. ID	REQUIREMENT
CL4A-F001	If the terminal supports a background image for the general background, the operator MUST be able to define and provide a default background image.
CL4A-F002	The operator MUST be able to define a solid colour for the default general background, as supported by the terminal's colour palette.
CL4A-F058	The operator MUST be able to define and provide a background colour for each operator application and device application.

REQ. ID	REQUIREMENT
CL4A-F059	If the terminal supports a background image for the general background on a per application basis, the operator MUST be able to define and provide a background image for each operator application and device application, where supported.
CL4A-F060	The operator SHOULD be able to set the transparency level of the background image for the default general background and application-specific general backgrounds.
CL4A-F061	If a background image contains transparency information, the terminal SHOULD support this to the maximum level supported by the image format.
CL4A-F004	The operator MUST be able to update post-sale using OTA services the parameters for all general backgrounds that have been customised by the operator or that belong to operator applications (however, see section 2.1 with respect to locking parameters).
CL4A-F103	If the operator updates parameters for the default general background post-sale, the operator MUST be able to specify whether or not user confirmation is required for the update.
CL4A-F104	If the operator updates parameters for a general background associated with an operator application post-sale, the operator MUST be able to specify whether or not user confirmation is required for the update.
CL4A-F105	If the operator updates parameters for the general background of the secondary display post-sale, the operator MUST be able to specify whether or not user confirmation is required for the update.
CL4A-F106	If the operator updates parameters for a general background associated with a device application, the operator MUST request user confirmation to do so, except in the case of CL4-G017.

REQ. ID	REQUIREMENT
CL4A-F107	If an operator customises the general background of the secondary display, the operator MUST be able to lock it from personalisation using themes (i.e. so that its parameters cannot be changed as a result of a theme selection).
CL4A-F108	The operator MUST be able to lock the parameters for general backgrounds of operator applications from personalisation using themes (i.e. so that they cannot be changed as a result of a theme selection).

3.1.3 ASSOCIATED PARAMETERS

FIELD NAME	NOTES
BACKGROUND COLOUR	The solid colour background defined for the general background.
FILENAME	The name of the file of the image to be used as background.
LOCKING	The parameter defines whether: • The media used for a general background are locked from deletion, modification or distribution by users or third parties, as per CL4-G008. • The parameters for a general background are locked from direct personalisation, as per CL4-G009. • The parameters for a general background are locked from personalisation using themes (i.e. so that they cannot be changed as a result of a theme selection).

3.1.4 CUSTOMISABLE ELEMENTS

ELEMENT	PARAMETERS	OTA[5]	CONFIRM[6]	CAPABILITY[7]
GENERAL BACKGROUND IMAGE (DEFAULT)	Filename Locking	Y[8]	At operator's discretion.	The terminal must support a background image for the general background.
GENERAL BACKGROUND COLOUR (DEFAULT)	Colour Locking	Y	At operator's discretion.	
GENERAL BACKGROUND IMAGE (APPLICATION)	Filename Locking	Y	At operator's discretion for operator applications. Always otherwise.	The terminal must support a background image for the general background on a per application basis.
GENERAL BACKGROUND COLOUR (APPLICATION)	Colour Locking	Y	At operator's discretion for operator applications. Always otherwise.	
GENERAL BACKGROUND IMAGE (SECONDARY DISPLAY)	Filename Locking	Y	At operator's discretion.	The terminal must possess a secondary display that supports a general background. The terminal must support an image format for the general background of the secondary display.
GENERAL BACKGROUND COLOUR (SECONDARY DISPLAY)	Colour Locking	Y	At operator's discretion.	The terminal must possess a secondary display that supports a general background.

[5] Indicates whether customisation of parameters is required post-sale using OTA services.

[6] Indicates whether user confirmation is required when an element is updated post-sale using OTA services.

[7] Customisation of elements are only required if the capabilities listed are present on the terminal.

[8] Note: as stated in CL4-G017 and Section 2.1, operators may unlock elements post-sale, but may not modify locking properties post-sale otherwise. This applies to all customisable elements, except where otherwise stated.

3.2 DISPLAY AREAS

3.2.1 DESCRIPTION

Display areas are areas of the screen that are overlaid above the general background. Some parts of the display area can be optional or visible only in certain situations. Common display areas are the status area, application area, soft key area (see Figure 2) and notification area. Please refer to Definition of Terms for definitions of each of these areas.

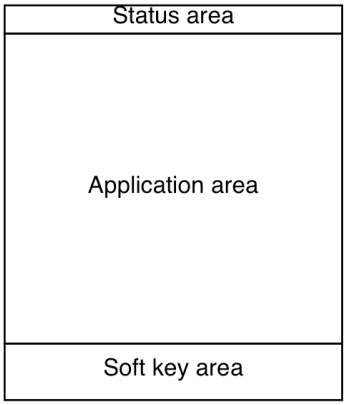


Figure 2: illustrates sample status, application and soft key area positions.

The appearance of each display area can be independently defined using a background colour, background media, or both. In addition to default definitions, the appearance of display areas can be also defined on an application basis, including the main menu and the idle screen (see Figure 3). The background media for the application area (which could include the area covered by the status or soft key area or both) of the idle screen is the terminal wallpaper.

Note: requirements for background media in this section apply only to terminals that support background media for the relevant display areas. The customisation of display areas must also apply to terminals that have a secondary display that supports them.

General Background

Status area background colour (no image)

Application area image (no background)

Soft key area background colour (no image)

Idle screen

Figure 3: illustrates appearance of Idle Screen (bottom left) composed of general background (top left), status area (middle left), wallpaper (middle centre) and soft key area (middle right).

3.2.2 FUNCTIONAL REQUIREMENTS

3.2.2.1 Status Area

REQ. ID	REQUIREMENT
CL4A-F007	The operator MUST be able to define and provide a default background colour for the status area.
CL4A-F084	If the terminal supports a background image for the default status area, the operator MUST be able to define and provide a default background image.
CL4A-F062	If the terminal supports a background colour for the status area on a per application basis, the operator MUST be able to define and provide a background colour for the status area for each operator application and device application, where supported.
CL4A-F085	If the terminal supports a background image for the status area on a per application basis, the operator MUST be able to define and provide a background image for the status area for each operator application and device application, where supported.
CL4A-F086	If the terminal supports a status area for the secondary display, the operator MUST be able to define and provide a default background colour.
CL4A-F087	If the terminal supports a background image for the status area for the secondary display, the operator MUST be able to define and provide a default background image.

3.2.2.2 Soft Key Area

REQ. ID	REQUIREMENT
CL4A-F008	If the terminal supports a background colour for the default soft key area, the operator MUST be able to define and provide a default background colour for the soft key area.
CL4A-F088	If the terminal supports a background image for the default soft key area, the operator MUST be able to define and provide a default background image.

REQ. ID	REQUIREMENT
CL4A-F063	If the terminal supports a background colour for the soft key area on a per application basis, the operator MUST be able to define and provide a background colour for the soft key area for each operator application and device application, where supported.
CL4A-F089	If the terminal supports a background image for the soft key area on a per application basis, the operator MUST be able to define and provide a background image for the soft key area for each operator application and device application, where supported.
CL4A-F090	If the terminal supports a soft key area for the secondary display, the operator MUST be able to define and provide a default background colour.
CL4A-F091	If the terminal supports a background image for the soft key area for the secondary display, the operator MUST be able to define and provide a default background image.

3.2.2.3 Notification Area

REQ. ID	REQUIREMENT
CL4A-F009	The operator MUST be able to define and provide a default background colour for the notification area.
CL4A-F092	If the terminal supports a background image for the default notification area, the operator MUST be able to define and provide a default background image.
CL4A-F064	If the terminal supports a background colour for the notification area on a per application basis, the operator MUST be able to define and provide a background colour for the notification area for each operator application and device application, where supported.
CL4A-F093	If the terminal supports a background image for the notification area on a per application basis, the operator MUST be able to define and provide a background image for the notification area for each operator application and device application, where supported.

REQ. ID	REQUIREMENT
CL4A-F094	If the terminal supports a notification area for the secondary display, the operator MUST be able to define and provide a default background colour.
CL4A-F095	If the terminal supports a background image for the notification area for the secondary display, the operator MUST be able to define and provide a default background image.

3.2.2.4 Application Area

REQ. ID	REQUIREMENT
CL4A-F065	The operator MUST be able to define and provide a default background colour for the application area.
CL4A-F096	If the terminal supports background media for the default application area, the operator MUST be able to define and provide default background media.
CL4A-F010	The operator MUST be able to define and provide a background colour for the application area for each operator application and device application.
CL4A-F097	If the terminal supports background media for the application area on a per application basis, the operator MUST be able to define and provide background media for the application area for each operator application and device application, where supported.
CL4A-F016	The operator MUST be able to define and provide default background media for the application area of the Idle Screen (i.e. wallpaper).
CL4A-F098	If the terminal supports an application area for the secondary display, the operator MUST be able to define and provide a default background colour.
CL4A-F099	If the terminal supports background image for the application area for the secondary display, the operator MUST be able to define and provide default background image.
CL4A-F017	The operator MUST be able to populate the terminal with multiple wallpapers.

REQ. ID	REQUIREMENT
CL4A-F019	Upon update of terminal wallpaper, the operator MUST be able to change the active wallpaper to the updated operator wallpaper if it is not already selected and the operator MUST be able to request user confirmation to do so. If the active wallpaper is not an operator-defined wallpaper, the operator MUST request user confirmation to change it.
CL4A-F113	If the operator updates the parameters for a terminal's wallpaper, the operator MUST be able to specify whether or not user confirmation is required for the update.
CL4A-F015	The following content types SHOULD be supported as background media: • Animations. • Videos.
CL4A-F114	The following content type MUST be supported as background media: • Images.

3.2.2.5 General

REQ. ID	REQUIREMENT
CL4A-F012	The operator MUST be able to update post-sale using OTA services the parameters for all display areas that have been customised by the operator or that belong to operator applications (however, see Section 2.1 with respect to locking parameters).
CL4A-F109	If the operator updates parameters for a display area associated with an operator application post-sale, the operator MUST be able to specify whether or not user confirmation is required for the update.
CL4A-F110	If the operator updates parameters for a display area associated with a device application post-sale, the operator MUST request user confirmation for the update, except in the case of CL4-G017.

REQ. ID	REQUIREMENT
CL4A-F111	If the operator updates parameters for a default display area post-sale, the operator MUST be able to specify whether or not user confirmation is required for the update.
CL4A-F112	If the operator updates parameters for a display area associated with the secondary display post-sale, the operator MUST be able to specify whether or not user confirmation is required for the update.
CL4A-F013	If any background is a still image, the operator SHOULD be able to set the transparency level of the background image for operator-defined display areas.
CL4A-F014	If any background image contains transparency information, the terminal SHOULD support this to the maximum level supported by the image format for operator-defined display areas.
CL4A-F069	The operator MUST be able to set the transparency level of any background colour for operator-defined display areas.
CL4A-F115	The operator MUST be able to lock the display areas of operator applications from personalisation using themes (i.e. so that their parameters cannot be changed as a result of a theme selection).
CL4A-F116	The operator MUST be able to lock all display areas on the secondary display that are customised by the operator from personalisation using themes (i.e. so that their parameters cannot be changed as a result of a theme selection).
CL4A-F117	The operator MUST be able to lock all wallpapers that are customised by the operator from personalisation using themes (i.e. so that their parameters cannot be changed as a result of a theme selection).

3.2.3 ASSOCIATED PARAMETERS

FIELD NAME	NOTES
TRANSPARENCY	Percentage of transparency of the background image or colour.
FILENAME	Name of the file of the media to be used as background.
BACKGROUND COLOUR	The colour background defined for the display area.
LOCKING	The parameter defines whether: • The media used for a display area are locked from deletion, modification or distribution by users or third parties, as per CL4-G008. • The parameters of a display area are locked from direct personalisation, as per CL4-G009. • The parameters of a display are locked from personalisation using themes (i.e. so that they cannot be changed as a result of a theme selection).

3.2.3.1 Customisable Elements

ELEMENT	PARAMETERS	OTA	CONFIRM	CAPABILITY
STATUS AREA BACKGROUND COLOUR (DEFAULT)	Colour Locking Transparency	Y	At operator's discretion.	
STATUS AREA BACKGROUND IMAGE (DEFAULT)	Transparency Filename Locking	Y	At operator's discretion.	The terminal must support background images for the status area.
STATUS AREA BACKGROUND COLOUR (APPLICATION)	Colour Locking Transparency	Y	At operator's discretion for operator applications. Always for other applications.	The terminal must support background colour for the status area on a per application basis.
STATUS AREA BACKGROUND IMAGE (APPLICATION)	Transparency Filename Locking	Y	At operator's discretion for operator applications. Always for other applications.	The terminal must support background images for the status area on a per application basis.

ELEMENT	PARAMETERS	OTA	CONFIRM	CAPABILITY
STATUS AREA BACKGROUND COLOUR (SECONDARY DISPLAY)	Colour Locking Transparency	Y	At operator's discretion.	The terminal must possess a secondary display that supports a status area.
STATUS AREA BACKGROUND IMAGE (SECONDARY DISPLAY)	Transparency Filename Locking	Y	At operator's discretion.	The terminal must possess a secondary display that supports a status area. The terminal must support an image format for the status area of the secondary display.
SOFT KEY AREA BACKGROUND COLOUR (DEFAULT)	Colour Locking Transparency	Y	At operator's discretion.	The terminal must support background colour for the soft key area.
SOFT KEY AREA BACKGROUND IMAGE (DEFAULT)	Transparency Filename Locking	Y	At operator's discretion.	The terminal must support background images for the soft key area.
SOFT KEY AREA BACKGROUND COLOUR (APPLICATION)	Colour Locking Transparency	Y	At operator's discretion for operator applications. Always for other applications.	The terminal must support background colour for the soft key area on a per application basis.
SOFT KEY AREA BACKGROUND IMAGE (APPLICATION)	Transparency Filename Locking	Y	At operator's discretion for operator applications. Always for other applications.	The terminal must support background images for the soft key area on a per application basis.
SOFT KEY AREA BACKGROUND COLOUR (SECONDARY DISPLAY)	Colour Locking Transparency	Y	At operator's discretion.	The terminal must possess a secondary display that supports a soft key area.
SOFT KEY AREA BACKGROUND IMAGE (SECONDARY DISPLAY)	Transparency Filename Locking	Y	At operator's discretion.	The terminal must possess a secondary display that supports a soft key area. The terminal must support an image format for the soft key area of the secondary display.
NOTIFICATION AREA BACKGROUND COLOUR (DEFAULT)	Colour Locking Transparency	Y	At operator's discretion.	

ELEMENT	PARAMETERS	OTA	CONFIRM	CAPABILITY
NOTIFICATION AREA BACKGROUND IMAGE (DEFAULT)	Transparency Filename Locking	Y	At operator's discretion.	The terminal must support background images for the notification area.
NOTIFICATION AREA BACKGROUND COLOUR (APPLICATION)	Colour Locking Transparency	Y	At operator's discretion.	
NOTIFICATION AREA BACKGROUND IMAGE (APPLICATION)	Transparency Filename Locking	Y	At operator's discretion.	The terminal must support background images for the notification area on a per application basis.
NOTIFICATION AREA BACKGROUND COLOUR (SECONDARY DISPLAY)	Colour Locking Transparency	Y	At operator's discretion.	The terminal must possess a secondary display that supports a notification area.
NOTIFICATION AREA BACKGROUND IMAGE (SECONDARY DISPLAY)	Transparency Filename Locking	Y	At operator's discretion.	The terminal must possess a secondary display that supports a notification area. The terminal must support an image format for the notification area of the secondary display.
APPLICATION AREA BACKGROUND COLOUR (DEFAULT)	Colour Locking Transparency	Y	At operator's discretion.	
APPLICATION AREA BACKGROUND MEDIA (DEFAULT)	Transparency (only in the case of images) Filename Locking	Y	At operator's discretion.	The terminal must support relevant background media for the application area.
APPLICATION AREA BACKGROUND COLOUR (APPLICATION)	Colour Locking Transparency	Y	At operator's discretion for operator applications. Always for other applications.	

ELEMENT	PARAMETERS	OTA	CONFIRM	CAPABILITY
APPLICATION AREA BACKGROUND MEDIA (APPLICATION)	Transparency (only in the case of images) Filename Locking	Y	At operator's discretion for operator applications or for wallpaper. Always for other applications.	The terminal must support relevant background media for the application area.
APPLICATION AREA BACKGROUND COLOUR (SECONDARY DISPLAY)	Colour Locking Transparency	Y	At operator's discretion.	The terminal must possess a secondary display that supports an application area.
APPLICATION AREA BACKGROUND IMAGE (SECONDARY DISPLAY)	Transparency Filename Locking	Y	At operator's discretion.	The terminal must possess a secondary display that supports an application area. The terminal must support relevant background media for the application area of the secondary display.

3.3 SCREEN SAVERS

3.3.1 DESCRIPTION

A graphical screen saver is shown when the user has not interacted with the terminal and a specific set of system events (e.g. incoming calls) have not occurred for a defined duration. It can be one of the following:

- An image
- A set of images shown sequentially one after another in an endless loop
- A video
- An application.

The screen saver is shown until the predefined timeout duration expires or the screen saver is deactivated by an event. This is typically a user action, e.g. a key press. In the case of application screen savers, the screen saver is deactivated by a defined user action or set of user actions, as specified by the application.

The following requirements apply only to terminals that support screen savers. If the terminal has a secondary display that supports screen savers, the requirements in this section MUST also apply to screen savers for the secondary display.

3.3.2 FUNCTIONAL REQUIREMENTS

REQ. ID	REQUIREMENT
CL4A-F023	The operator MUST be able to define and provide a default screen saver.
CL4A-F025	The operator MUST be able to choose the screen saver delay (inactivity period before the screen saver is started) for its default screen saver from the range that the terminal manufacturer has defined.
CL4A-F026	The operator MUST be able to choose a maximum timeout period (the time after which the screen saver should switch off and the display will enter into power-save mode) for its default screen saver from the range that the terminal manufacturer has defined.
CL4A-F073	The operator MUST be able to update post-sale using OTA services the parameters for all screen savers that have been customised by the operator (however, see Section 2.1 with respect to locking parameters).
CL4A-F118	If the operator updates parameters for a screen saver post-sale, the operator MUST be able to specify whether or not user confirmation is required for the update.
CL4A-F027	The following screen saver types SHOULD be supported: • Video: a predefined video is shown. • Animation: a predefined animation is shown. • Application: a predefined application is used as screen saver.
CL4A-F101	The following screen saver type MUST be supported: • Image: a predefined image is shown.
CL4A-F119	The operator MUST be able to lock screen savers customised by the operator from personalisation using themes (i.e. so that their parameters cannot be changed as a result of a theme selection).

3.3.3 ASSOCIATED PARAMETERS

FIELD NAME	NOTES
NAME	The human-readable name of the screen saver.
FILENAME	The meaning of this parameter is related to the type of screen saver: • Image/Video/Animation: the names of the files to be used as the image/video/animation to be displayed. • Application: the application to be started.
SCREEN SAVER DELAY	The number of seconds of user inactivity before the screen saver is started.
TIMEOUT DURATION	The number of seconds after which the screen saver should stop.
LOCKING	This parameter defines whether: • The media used for the screen saver are locked from deletion, modification or distribution by users or third parties, as per CL4-G008. • The parameters for a screen saver (except the screen saver delay or duration) are locked from direct personalisation, as per CL4-G009. • The parameters for a screen saver (except the screen saver delay or duration) are locked from personalisation using themes (i.e. so that they cannot be changed as a result of a theme selection).

3.3.4 CUSTOMISABLE ELEMENTS

ELEMENT	PARAMETERS	OTA	CONFIRM	CAPABILITY
SCREEN SAVER (DEFAULT)	Delay Duration Filename Name Locking	Y	At operator's discretion	The terminal must support a screen saver.
SCREEN SAVER IMAGE (SECONDARY DISPLAY)	Delay Duration Filename Name Locking	Y	At operator's discretion	The terminal must possess a secondary display that supports a screen saver.

3.4 RING TONES AND AUDIO CUES

3.4.1 DESCRIPTION

Audio cues and ring tones should be used for the notification of incoming calls of any type, incoming and outgoing messages, or a request for chat.

3.4.2 FUNCTIONAL REQUIREMENTS

REQ. ID	REQUIREMENT
CL4A-F028	Depending on the terminal's capabilities, the operator MUST be able to define, provide and associate default ring tones/audio cues to the following events: • Incoming call. • Incoming video-call. • Incoming message[9]. • Outgoing message. • MMS received. • SMS received. • Email received. • Request for chat. • PTT invitation. • Instant message received.
CL4A-F075	The operator MUST be able to update post-sale using OTA services the parameters for ring tones and audio cues that have been customised by the operator (however, see Section 2.1 with respect to locking parameters).
CL4A-F120	If the operator updates parameters for a ring tone or audio cue post-sale, the operator MUST request user confirmation for the update (except in the case of CL4-G017).

[9] Note: operators must be able to specify a general incoming message ring tone and specific ring tones for different message types, as listed. In the case where an overlapping situation occurs (e.g. if ring tones are defined for both a general incoming message and for an SMS are received) the specific ring tone should be played and not the general one.

REQ. ID	REQUIREMENT
CL4A-F121	The operator MUST be able to lock all ring tones and audio cues customised by the operator from personalisation using themes (i.e. so that their parameters cannot be changed as a result of a theme selection).

3.4.3 ASSOCIATED PARAMETERS

FIELD NAME	NOTES
FILENAME	The name of the file to be used as the ring tone.
LOCKING	This parameter defines whether: • The media used for the ring tones and audio cues are locked from deletion, modification or distribution by users or third parties, as per CL4-G008. • The parameters for a ring tone or audio cue are locked from direct personalisation as per CL4-G009. • The parameters for a ring tone or audio cue are locked from personalisation using themes (i.e. so that they cannot be changed as a result of a theme selection).

3.4.4 CUSTOMISABLE ELEMENTS

ELEMENT	PARAMETERS	OTA	CONFIRM	CAPABILITY
RING TONES AND AUDIO CUES AS PER CL4A-F028	Filename Locking	Y	Always for filename. At operator's discretion for locking.	Terminal must support event associated to ring tone (e.g. terminal must support video calling for incoming video-call ring tone).

3.5 START-UP SEQUENCE 'WELCOME' MESSAGE

The start-up sequence 'welcome' message is a still image, animation, or video (optionally enriched by music and sound) that takes place as part of the start-up sequence initiated when the terminal is switched on.

The following requirements apply only to terminals that support start-up sequences.

3.5.1 FUNCTIONAL REQUIREMENTS

REQ. ID	REQUIREMENT
CL4A-F029	The operator MUST be able to define and provide a default start-up 'welcome' message, incorporating audiovisual elements, linked to the terminal start-up sequence.
CL4A-F100	It MAY be possible for the end user to bypass both operator and manufacturer welcome messages.
CL4A-F031	The operator MUST be able to set the duration for its default start-up welcome message within the range defined by the manufacturer.
CL4A-F032	If there are several welcome messages, e.g. operator and manufacturer specific, the operator MAY be able to define the order in which all the welcome messages are displayed.
CL4A-F077	If an operator customises the start-up sequence 'welcome' message, the operator MUST be able to update the parameters for the start-up sequence 'welcome' message post-sale using OTA services (however, see Section 2.1 with respect to locking parameters).
CL4A-F122	If the operator updates parameters for the 'welcome' message post-sale, the operator MUST be able to specify whether or not user confirmation is required for the update.
CL4A-F123	If an operator customises the 'welcome' message, the operator MUST be able to lock it from personalisation using themes (i.e. so that its parameters cannot be changed as a result of a theme selection).
CL4A-F034	The following contents types SHOULD be supported as start-up sequences: • Images. • Animations. • Videos.

3.5.2 ASSOCIATED PARAMETERS

FIELD NAME	NOTES
FILENAME	The name of the file to be used as start-up sequence.
DURATION	The number of seconds the welcome message is displayed belonging to the range provided by the manufacturer.
LOCKING	This parameter defines whether: • The media used for the start-up sequence welcome message are locked from deletion, modification or distribution by users or third parties, as per CL4-G008. • The parameters for a start-up sequence welcome message are locked from direct personalisation, as per CL4-G009. • The parameters for a start-up sequence welcome message are locked from personalisation using themes (i.e. so that they cannot be changed as a result of a theme selection).

3.5.3 CUSTOMISABLE ELEMENTS

ELEMENT	PARAMETERS	OTA	CONFIRM	CAPABILITY
START-UP 'WELCOME' IMAGE	Filename Duration Locking	Y	At operator's discretion.	Terminal supports start-up sequences.
START-UP 'WELCOME' ANIMATION	Filename Duration Locking	Y	At operator's discretion.	Terminal supports animation for the start-up sequence.
START-UP 'WELCOME' VIDEO	Filename Locking	Y	At operator's discretion.	Terminal supports video for the start-up sequence.

3.6 SHUTDOWN SEQUENCE 'GOODBYE' MESSAGE

The shutdown sequence 'goodbye' message is a still image, animation, or video (optionally enriched by music and sound) that takes place as part of the shutdown sequence that is initiated when the terminal is switched off.

The following requirements apply only to terminals that support shutdown sequences.

3.6.1 FUNCTIONAL REQUIREMENTS

REQ. ID	REQUIREMENT
CL4A-F035	The operator MUST be able to define and provide a default 'goodbye' message, incorporating audiovisual elements, linked to the terminal shutdown sequence.
CL4A-F037	The operator MUST be able to set the duration for its default goodbye message within the range defined by the manufacturer.
CL4A-F038	If there are several goodbye messages, e.g. operator and manufacturer specific, the operator MAY be able to define the order in which all the goodbye messages are displayed.
CL4A-F079	If an operator customises the shutdown sequence 'goodbye' message, the operator MUST be able to update the parameters for operator-defined shutdown sequences post-sale using OTA services (however, see Section 2.1 with respect to locking parameters).
CL4A-F124	If the operator updates parameters for the 'goodbye' message post-sale, the operator MUST be able to specify whether user confirmation is required for the update or not.
CL4A-F125	If an operator customises the 'goodbye' message, the operator MUST be able to lock it from personalisation using themes (i.e. so that its parameters cannot be changed as a result of a theme selection).
CL4A-F040	The following contents SHOULD be supported as shutdown sequences: • Images. • Animations. • Videos.

3.6.2 ASSOCIATED PARAMETERS

FIELD NAME	NOTES
FILENAME	The name of the file to be used as shutdown sequence.

FIELD NAME	NOTES
DURATION	The number of seconds the shutdown sequence is displayed belonging to the range provided by the manufacturer.
LOCKING	This parameter defines whether: • The media used for the shutdown sequence are locked from deletion, modification or distribution by users or third parties, as per CL4-G008. • The parameters for a shutdown sequence 'goodbye' message are locked from direct personalisation, as per CL4-G009. • The parameters for a shutdown sequence 'goodbye' message are locked from personalisation using themes (i.e. so that they cannot be changed as a result of a theme selection).

3.6.3 CUSTOMISABLE ELEMENTS

ELEMENT	PARAMETERS	OTA	CONFIRM	CAPABILITY
SHUTDOWN 'GOODBYE' IMAGE	Filename Duration Locking	Y	At operator's discretion.	Terminal supports shutdown sequences
SHUTDOWN 'GOODBYE' ANIMATION	Filename Duration Locking	Y	At operator's discretion.	Terminal supports animation for the shutdown sequence.
SHUTDOWN 'GOODBYE' VIDEO	Filename Locking	Y	At operator's discretion.	Terminal supports video for the shutdown sequence

3.7 NETWORK IDENTIFIER

3.7.1 DESCRIPTION

The network identifier is the text or the graphic logo identifying the serving network operator. It is displayed on the idle screen when a network connection is active.

For an operator, it is valuable to be able to manage its network identifier when its customers are connected to their home network (i.e. when they are not roaming).

If the terminal has a secondary display that supports a network identifier, the requirements in this section MUST apply to a network identifier present on the secondary display.

3.7.2 FUNCTIONAL REQUIREMENTS

REQ. ID	REQUIREMENT
CL4A-F041	The network identifier SHOULD be displayed as an operator graphic logo when the user is in the home network or in other selected networks to be defined by the operator, and using text when roaming on other networks.
CL4A-F042	The operator MUST be able to define and provide its logo, or logo for selected networks (to be defined by the operators according to operator agreements), to replace the network identifier in the screen.
CL4A-F044	The operator MUST be able to choose and lock the position of the network identifier, within an area defined by the manufacturer.
CL4A-F047	If the logo contains transparency information, the terminal MUST support this to the maximum level supported by the image format.
CL4A-F081	If the operator customises the network identifier, the operator MUST be able to update the parameters for the network identifier post-sale using OTA services (however, see Section 2.1 with respect to locking parameters).
CL4A-F126	If the operator updates parameters for the network identifier post-sale, the operator MUST be able to specify whether or not user confirmation is required for the update.
CL4A-F127	If an operator customises the network identifier, the operator MUST be able to lock it from personalisation using themes (i.e. so that its parameters cannot be changed as a result of a theme selection).

3.7.3 ASSOCIATED PARAMETERS

FIELD NAME	NOTES
FILENAME	The name of the file to be used as logo.
TEXT	The text associated with the network identifier.

FIELD NAME	NOTES
POSITION[10]	The position of the logo within an area defined by the manufacturer.
SIZE[11]	The size of the logo.
LOCKING	This parameter defines whether: • The media used for the network identifier are locked from deletion, modification or distribution by users or third parties, as per CL4-G008. • The parameters for a network identifier are locked from direct personalisation, as per CL4-G009. • The parameters for a network identifier are locked from personalisation using themes (i.e. so that they cannot be changed as a result of a theme selection).

3.7.4 CUSTOMISABLE ELEMENTS

ELEMENT	PARAMETERS	OTA	CONFIRM	CAPABILITY
NETWORK IDENTIFIER – TEXT	Text Locking	Y	At operator's discretion	
NETWORK IDENTIFIER – GRAPHIC LOGO	Filename Size Position Locking	Y	At operator's discretion	The terminal must support an operator graphic logo as a network identifier.
NETWORK IDENTIFIER – TEXT (SECONDARY DISPLAY)	Text Locking	Y	At operator's discretion	The terminal must possess a secondary display that supports a network identifier.
NETWORK IDENTIFIER – GRAPHIC LOGO (SECONDARY DISPLAY)	Filename Size Position Locking	Y	At operator's discretion	The terminal must support an operator graphic logo as a network identifier for the secondary display.

[10] Note: in the case where a network identifier is repositioned, the arrangement of the repositioned logo with respect to other displayed graphical elements will be determined by the layering priorities of the terminal implementation.

[11] Note: in the case where a network identifier is resized, the arrangement of the resized logo with respect to other displayed graphical elements will be determined by the layering priorities of the terminal implementation.

3.8 MENU ICONS AND LABELS

3.8.1 DESCRIPTION

Menu icons and labels are the graphical (icons) and textual (labels) elements associated and representing menu items respectively.

The purpose of this section is to define and customise the appearance of menu icons and labels.

The following icon requirements only apply if the terminal supports the display of icons in the required menus.

3.8.2 FUNCTIONAL REQUIREMENTS

REQ. ID	REQUIREMENT
CL4A-F049	The operator MUST be able to define and provide menu icons for all menu items at the top level of the main menu, including bookmarks.
CL4A-F050	The operator MUST be able to define the appearance (font[12], style[13], colour) of labels for all menu items in the main menu, including bookmarks. The operator SHOULD be able to define the appearance of individual menu item labels.
CL4A-F056	If the terminal supports idle screen shortcuts, the operator MUST be able to define and provide icons for all idle screen shortcuts.
CL4A-F057	If idle screen shortcuts possess labels, the operator MUST be able to define the appearance (font[14], style, colour) of labels for all idle screen shortcuts. The operator SHOULD be able to define the appearance of individual menu item labels.
CL4A-F051	The operator MUST be able to define and provide icons for menu items (including bookmarks) at any level of the main menu hierarchy below the top level.

[12] Note: operators can select from the list of fonts made available by the terminal only.

[13] Note: should the customisation of a font style result in a menu label not fitting within the display area for the menu label, the end of label should be cropped, according to reading direction (e.g. for a left-to-right reading direction, the label should be cropped from the right).

[14] Note: operators can select from the list of fonts made available by the terminal only.

REQ. ID	REQUIREMENT
CL4A-F052	The operator MUST be able to customise any icons within the pre-defined set of icons provided by the manufacturer for menu items in application menus.
CL4A-F102	The operator MUST be able to define and provide icons for menu items added by the operator both in the main menu and application menus in those instances where menu icons are supported.
CL4A-F053	All the menu icons and labels SHOULD support a graphically distinct 'focused' status, e.g. a different icon (or the same but animated) and a different appearance (background, style, font, colour) of the label.
CL4A-F054	The operator MUST be able to use still images and animation for icons.
CL4A-F083	The operator MUST be able to update post-sale using OTA services the parameters for all menu icons and labels that have been customised by the operator (however, see Section 2.1 with respect to locking parameters).
CL4A-F128	If the operator updates parameters for a menu icon or label appearance post-sale, the operator MUST be able to specify whether user confirmation is required for the update or not.
CL4A-F129	The operator MUST be able to lock all menu icons and labels that have been customised by the operator from personalisation using themes (i.e. so that they cannot be changed as a result of a theme selection).

3.8.3 ASSOCIATED PARAMETERS

FIELD NAME	NOTES
FILENAME	The name of the file to be used as icon.
FOCUSED FILENAME	The name of the file (which can be an animation) to be used as icon when focused.
LABEL STYLE	Bold, Underlined, etc.
LABEL SIZE	Font size.

FIELD NAME	NOTES
LABEL COLOUR	The colour associated with the label.
LABEL FONT	According to the list provided by the terminal vendor.
LABEL BACKGROUND	The background colour.
FOCUSED LABEL BACKGROUND	The background colour when the label is in focus.
FOCUSED LABEL STYLE	According to the list provided by the terminal vendor.
FOCUSED LABEL SIZE	Font size.
FOCUSED LABEL COLOUR	The colour associated with the label.
LOCKING	This parameter defines whether: • The media used for the menu icons are locked from deletion, modification or distribution by users or third parties, as per CL4-G008. • The parameters for a menu icon or label are locked from direct personalisation, as per CL4-G009. • The parameters for a menu icon or label are locked from personalisation using themes (i.e. so that they cannot be changed as a result of a theme selection).

3.8.4 CUSTOMISABLE ELEMENTS

ELEMENT	PARAMETERS	OTA	CONFIRM	CAPABILITY
MAIN MENU ICON IMAGE/ ANIMATION (TOP LEVEL)	Filename Focussed filename Locking	Y	At operator's discretion.	For menus that support the display of icons.
MAIN MENU ICONS IMAGE/ ANIMATION (OTHER LEVELS)	Filename Focussed filename Locking	Y	At operator's discretion.	For menus that support the display of icons.

ELEMENT	PARAMETERS	OTA	CONFIRM	CAPABILITY
MAIN MENU LABEL (TOP LEVEL)	Style Font Colour Background colour Focussed style Focussed font Focussed colour Focussed background colour Locking	Y	At operator's discretion.	
MAIN MENU LABEL (OTHER LEVELS)	Style Font Colour Background colour Focussed style Focussed font Focussed colour Focussed background colour Locking	Y	At operator's discretion.	
IDLE SCREEN SHORT CUT ICON/ ANIMATION	Filename Focussed filename Locking	Y	At operator's discretion.	For terminals that support idle screen shortcuts.
IDLE SCREEN SHORT CUT LABEL	Style Font Colour Background colour Focussed style Focussed font Focussed colour Focussed background colour Locking	Y	At operator's discretion.	For terminal that support idle screen shortcuts.
APPLICATION MENU ICON/ ANIMATION	Filename Focussed filename Locking	Y	At operator's discretion.	For menus that support the display of icons.
BOOKMARK ICON/ ANIMATION	Filename Focussed filename Locking	Y	At operator's discretion.	For menus that support the display of icons.

ELEMENT	PARAMETERS	OTA	CONFIRM	CAPABILITY
BOOKMARK LABEL	Style Font Colour Background colour Focussed style Focussed font Focussed colour Focussed background colour Locking	Y	At operator's discretion.	

4 LEVEL 4B – SIMPLE 'LOOK & FEEL' CUSTOMISATION

The following sections summarise some other elements involved in the superficial 'Look & Feel' customisation of a terminal. The objective is to allow branding aspects of a terminal UI in a consistent manner across all terminals.

4.1 SOUNDS

4.1.1 DESCRIPTION

These are audio elements to be used for the notification of actions and events managed by the terminal.

4.1.2 FUNCTIONAL REQUIREMENTS

REQ. ID	REQUIREMENT
CL4B-F001	Depending on the terminal's capabilities, the operator MUST be able to define, provide and associate sounds to notifications, user actions and events, including the following: • Alarms for operator's applications. • Reminders/calendar for operator's applications. • Confirmation for operator's applications. • Completion for operator's applications. • Error for operator's applications. • System active/process in progress for operator's applications. • Alert for operator's applications.

REQ. ID	REQUIREMENT
CL4B-F002	Depending on the terminal's capabilities, the operator SHOULD be able to define, provide and associate sounds to notifications and to user actions and events, including at least the following: • Entering a phone number. • Establishing a connection. • Call connection failed. • Taking pictures. • Alarms. • Battery low. • Battery very low. • Battery charging initiated. • Battery fully charged. • Reminders/calendar. • Confirmation. • Completion. • Error. • System active/process in progress. • Alert. • Connecting to other hardware. • Disconnecting from other hardware. • Numeric key press. • Navigation key press. • Key press (no action).
CL4B-F029	The operator MUST be able to update the parameters for sounds defined by CL4B-F001 post-sale using OTA services (however, see Section 2.1 with respect to locking parameters).
CL4B-F053	If the operator updates parameters for a sound post-sale, the operator MUST be able to specify whether user confirmation is required for the update or not.

REQ. ID	REQUIREMENT
CL4B-F054	The operator MUST be able to lock sounds defined by CL4B-F001 from personalisation using themes (i.e. so that their parameters cannot be changed as a result of a theme selection).

4.1.3 ASSOCIATED PARAMETERS

FIELD NAME	NOTES
FILENAME	The name of the file to be used as sound.
VOLUME	The maximum volume for the sound.
DURATION	The number of seconds after which the sound is stopped.
LOCKING	This parameter defines whether: • The media used for the sounds are locked from deletion, modification or distribution by users or third parties, as per CL4-G008. • The parameters for a sound listed in CL4B-F001 and CL4B-F002 are locked from direct personalisation, as per CL4-G009. • The parameters for a sound listed in CL4B-F001 are locked from personalisation using themes (i.e. so that they cannot be changed as a result of a theme selection).

4.1.4 CUSTOMISABLE ELEMENTS

ELEMENT	PARAMETERS	OTA	CONFIRM	CAPABILITY
SOUNDS AS PER CL4B-F001	Filename Volume Duration Locking	Y	At operator's discretion	Terminal must support the listed event and also the capability to play an associated sound.
SOUNDS AS PER CL4B-F002	Filename Volume Duration Locking	N	N/A	Terminal must support the listed event and also the capability to play an associated sound.

4.2 SPLASH SCREENS

4.2.1 DESCRIPTION

Splash screens are images or graphical elements shown when starting applications and opening sections (e.g. games section) of the terminal.

Splash screens can cover the entire screen or just part of it. Typically they occupy only a rectangle near the centre.

Splash screens are typically used to notify the user that an application or service is in the process of loading.

A splash screen disappears when the process it represents has come to an end. The splash screen's duration is directly linked to the duration of the associated process.

Splash screen can be animations, still images or videos.

4.2.2 FUNCTIONAL REQUIREMENTS

REQ. ID	REQUIREMENT
CL4B-F004	The operator MUST be able to define, provide and associate splash screens with the starting of operator applications and services.
CL4B-F005	The operator SHOULD be able to define, provide and associate splash screens with the starting of device applications.
CL4B-F006	If there are splash screens associated with the opening of top-level menu folder items that lead to operator-related services, these MUST be customisable by the operator.
CL4B-F031	The operator MUST be able to update the parameters for splash screens defined by CL4B-F004 post-sale using OTA (however, see section 2.1 with respect to locking parameters) services.
CL4B-F041	If the operator updates parameters for a splash screen post-sale, the operator MUST be able to specify whether or not user confirmation is required for the update.
CL4B-F042	The operator MUST be able to lock all splash screens that have been customised by the operator from personalisation using themes (i.e. so that their parameters cannot be changed as a result of a theme selection).

REQ. ID	REQUIREMENT
CL4B-F008	The following contents types SHOULD be supported as splash screens: • Animations. • Videos.
CL4B-F039	The following contents type MUST be supported as splash screens: • Images.

4.2.3 ASSOCIATED PARAMETERS

FIELD NAME	NOTES
FILENAME	The name of the file to be used as a splash screen.
SIZE[15]	The size of the area for the splash screen.
POSITION[16]	The position of the area for the splash screen.
LOCKING	This parameter defines whether: • The media used for the splash screens are locked from deletion, modification or distribution by users or third parties, as per CL4-G008. • The parameters for a splash screen are locked from direct personalisation, as per CL4-G009. • The parameters for a splash screen are locked from personalisation using themes (i.e. so that they cannot be changed as a result of a theme selection).

[15] Note: in the case where a splash screen is resized, the arrangement of the resized splash screen with respect to other displayed graphical elements will be determined by the layering priorities of the terminal implementation.

[16] Note: in the case where a splash screen is repositioned, the arrangement of the repositioned splash screen with respect to other displayed graphical elements will be determined by the layering priorities of the terminal implementation.

4.2.4 CUSTOMISABLE ELEMENTS

ELEMENT	PARAMETERS	OTA	CONFIRM	CAPABILITY
SPLASH SCREEN AS PER CL4B-F004	Filename Size Position Locking	Y	At operator's discretion	
SPLASH SCREEN AS PER CL4B-F005 AND CL4B-F006	Filename Size Position Locking	N	N/A	

4.3 ANIMATIONS

4.3.1 DESCRIPTION

Animations can be associated with network and terminal processes and user actions.

4.3.2 FUNCTIONAL REQUIREMENTS

REQ. ID	REQUIREMENT
CL4B-F009	Depending on the terminal's capabilities, the operator MUST be able to define, provide and associate animations with notifications, user actions and events, including the following: • Smart Card insertion. • Network search. • Sending and receiving messages. • WAP/WEB/i-mode connections. • Incoming call. • Copying contacts. • General busy states. • Smart Card lock. • Key lock. • PIN accepted. • Default deleting elements notifications. • Downloading elements. • Outgoing calls. • Incoming video call. • Outgoing video call. • PTT invitation. • IM request. • Default Error notifications. • Default Confirmation notifications. • Default Completion notifications. • Default Progress notifications.

REQ. ID	REQUIREMENT
CL4B-F010	Depending on the terminal's capabilities, the operator SHOULD be able to define, provide and associate animations with notifications, user actions and events, including at least the following[17]: • Connecting to Bluetooth. • Connecting IrDA. • Low battery. • Battery charging. • Battery charge completed.
CL4B-F033	The operator MUST be able to update post-sale using OTA services the parameters for animations that have been customised by the operator (however, see section 2.1 with respect to locking parameters).
CL4B-F043	If the operator updates parameters for an animation post-sale, the operator MUST be able to specify whether or not user confirmation is required for the update.
CL4B-F044	The operator MUST be able to lock all animations that have been customised by the operator from personalisation using themes (i.e. so that their parameters cannot be changed as a result of a theme selection).
CL4B-F012	The following content type SHOULD be supported as an animation: • Videos.
CL4B-F040	The following content type MUST be supported as an animation: • Animations.

4.3.3 ASSOCIATED PARAMETERS

FIELD NAME	NOTES
FILENAME	The name of the file to be used as an animation.

[17] Operators wish to be able to customise these elements in the case of operator-branded terminals only, where operators wish to present the operator brand consistently across a wider range of user interface elements.

FIELD NAME	NOTES
DURATION	The number of seconds the animation is displayed.
LOCKING	The operator can define whether: • The media used for the animation are locked from deletion, modification or distribution by users or third parties, as per CL4-G008. • The parameters for an animation are locked from direct personalisation, as per CL4-G009. • The parameters for an animation are locked from personalisation using themes (i.e. so that they cannot be changed as a result of a theme selection).

4.3.4 CUSTOMISABLE ELEMENTS

ELEMENT	PARAMETERS	OTA	CONFIRM	CAPABILITY
ANIMATION AS PER CL4B-F009	Filename Duration Locking	Y	At operator's discretion	Terminal must support the listed event and also the capability to display an associated animation.
ANIMATIONS AS PER CL4B-F010	Filename Duration Locking	Y	At operator's discretion	Terminal must support the listed event and also the capability to display an associated animation.

4.4 STATUS INDICATORS

4.4.1 DESCRIPTION

Status indicators are graphical elements that represent information about the status of the terminal.

They are positioned within the status area of the terminal.

If the terminal has a secondary display that supports status indicators, the requirements in this section MUST also apply to the status indicators present on the secondary display.

4.4.2 FUNCTIONAL REQUIREMENTS

REQ. ID	REQUIREMENT
CL4B-F013	Depending on the terminal's capabilities, the operator MUST be able to define, provide and associate icons with status indicators in the status area, including the following: • Signal strength. • Message status. • Voicemail status. • PDP context status. • Missed call status. • Profile status. • 3G status. • Roaming status. • Diverts. • Alarm.
CL4B-F014	Depending on the terminal's capabilities, the operator SHOULD be able to define, provide and associate icons with status indicators in the status bar, including at least the following[18]: • Battery charge status. • Bluetooth status. • GPS status. • IrDA status. • WLAN status.
CL4B-F035	The operator MUST be able to update post-sale using OTA services the parameters for status indicators that have been customised by the operator (however, see Section 2.1 with respect to locking parameters).
CL4B-F045	If the operator updates parameters for a status indicator post-sale, the operator MUST be able to specify whether or not user confirmation is required for the update.

[18] Operators wish to be able to customise these elements in the case of operator-branded terminals only, where operators wish to present the operator brand consistently across a wider range of user interface elements.

REQ. ID	REQUIREMENT
CL4B-F046	The operator MUST be able to lock all status indicators that have been customised by the operator from personalisation using themes (i.e. so that their parameters cannot be changed as a result of a theme selection).

4.4.3 ASSOCIATED PARAMETERS

FIELD NAME	NOTES
FILENAME	The name of the file to be used as the icon for the status indicator.
LOCKING	This parameter defines whether: • The media used for the status indicators are locked from deletion, modification or distribution by users or third parties, as per CL4-G008. • The parameters for a status indicator are locked from direct personalisation, as per CL4-G009. • The parameters for a status indicator are locked from personalisation using themes (i.e. so that they cannot be changed as a result of a theme selection).

4.4.4 CUSTOMISABLE ELEMENTS

ELEMENT	PARAMETERS	OTA	CONFIRM	CAPABILITY
STATUS INDICATORS AS PER CL4B-F013	Filename Locking	Y	At operator's discretion.	
STATUS INDICATORS AS PER CL4B-F014	Filename Locking	Y	At operator's discretion.	
STATUS INDICATORS AS PER CL4B-F013 (SECONDARY DISPLAY)	Filename Locking	Y	At operator's discretion.	The terminal must possess a secondary display that supports status indicators.
STATUS INDICATORS IN CL4B-F014 (SECONDARY DISPLAY)	Filename Locking	Y	At operator's discretion.	The terminal must possess a secondary display that supports status indicators.

4.5 SOFT KEY LABELS AND ICONS

4.5.1 DESCRIPTION

Soft keys are controls that can be activated using hardware keys on the terminal, usually situated beneath the screen. Typically, non-touch

screen terminals will include two or more soft keys. A soft key contains a label or image or both for the purpose of identification.

Only the appearance (style, size, font, colour) of soft key labels is within the scope of this section.

4.5.2 FUNCTIONAL REQUIREMENTS

REQ. ID	REQUIREMENT
CL4B-F016	The operator SHOULD be able to customise the appearance of all soft key components as a group (not individually per dialogue or application).
CL4B-F018	The operator MUST be able to update post-sale using OTA services the parameters for soft key components that have been customised by the operator (however, see Section 2.1 with respect to locking parameters).
CL4B-F047	If the operator updates parameters for a soft key component post-sale, the operator MUST be able to specify whether or not user confirmation is required for the update.
CL4B-F048	The operator MUST be able to lock all soft key components that have been customised by the operator from personalisation using themes (i.e. so that their parameters cannot be changed as a result of a theme selection).

4.5.3 ASSOCIATED PARAMETERS

FIELD NAME	NOTES
FILENAMES	The names of the files to be used as soft key icons.
LABEL STYLE	e.g. Bold, Underlined, etc.
LABEL SIZE[19]	Font size.
LABEL COLOUR	The colour associated with the label.
LABEL FONT[20]	As defined by terminal manufacturer

[19] Note: should the customisation of a font size result in a soft key label not fitting within the soft key area, the end of label should be cropped, according to reading direction (e.g. for a left-to-right reading direction, the label should be cropped from the right).

FIELD NAME	NOTES
LOCKING	This parameter defines whether: • The media used for the soft key icons are locked from deletion, modification or distribution by users or third parties, as per CL4-G008. • The parameters for a soft key component are locked from direct personalisation, as per CL4-G009. • The parameters for a soft key component are locked from personalisation using themes (i.e. so that they cannot be changed as a result of a theme selection).

4.5.4 CUSTOMISABLE ELEMENTS

ELEMENT	PARAMETERS	OTA	CONFIRM	CAPABILITY
SOFT KEY ICON	Filename Locking	Y	At operator's discretion.	
SOFT KEY LABEL	Style Font Colour Background colour Locking	Y	At operator's discretion.	

4.6 DEFAULT FONT

4.6.1 DESCRIPTION

The default font is the font used for textual elements when no specific font style is defined.

4.6.2 FUNCTIONAL REQUIREMENTS

REQ. ID	REQUIREMENT
CL4B-F019	The operator MUST be able to select a default font style from the fonts provided by the terminal manufacturer.
CL4B-F020	The operator MAY be able to define a default font style.
CL4B-F021	The operator MAY be able to define more than one font style.

[20] Note: operators can select from the list of fonts made available by the terminal only.

REQ. ID	REQUIREMENT
CL4B-F023	The operator MUST be able to update post-sale using OTA services the parameters for the default font (however, see Section 2.1 with respect to locking parameters).
CL4B-F049	If the operator updates parameters for the default font post-sale, the operator MUST be able to specify whether or not user confirmation is required for the update.
CL4B-F050	The operator MUST be able to lock all fonts that have been customised by the operator from personalisation using themes (i.e. so that their parameters cannot be changed as a result of a theme selection).

4.6.3 ASSOCIATED PARAMETERS

FIELD NAME	NOTES
FONT DEFINITION FILE	The file containing the definition of the font type (from list provided by manufacturer).
LOCKING	This parameter defines whether: • The media used for the font are locked from deletion, modification or distribution by users or third parties, as per CL4-G008. • The parameters for the default font are locked from direct personalisation, as per CL4-G009. • The parameters for the default font are locked from personalisation using themes (i.e. so that they cannot be changed as a result of a theme selection).

4.6.4 CUSTOMISABLE ELEMENTS

ELEMENT	PARAMETERS.	OTA	CONFIRM	CAPABILITY
FONT (DEFAULT)	Filename Locking	Y	At operator's discretion	
FONT (OTHER)	Filename Locking	N	N/A	

4.7 NOTIFICATION AND ERROR MESSAGES

4.7.1 DESCRIPTION

Notification and error messages are pop-up messages displayed when some events occur. The breakpoints where these messages are displayed are defined by manufacturers and operators.

An error/notification message contains text, one or more associated soft keys (assuming the terminal supports them), a background and an icon that indicates the type of message e.g. error, information, confirmation, etc.

4.7.2 FUNCTIONAL REQUIREMENTS

REQ. ID	REQUIREMENT
CL4B-F024	All error and notification messages for device applications SHOULD be available for review and modification by the operator at the time of manufacture.
CL4B-F026	Depending on device capabilities, the operator MUST be able to define notification messages and error messages (including message icons and soft key texts) for all operator applications and services and for operator-related events including at least the following: • Downloading elements. • Updating elements. • Service provisioning. • Change of bearer and other call-related events. • Failed operator-related actions e.g. SMS delivery, OTA provisioning, update. • Completion of operator-related actions e.g. downloads including DRM, OTA provisioning and update. • Data connection/disconnection.

REQ. ID	REQUIREMENT
CL4B-F027	Depending on device capabilities, the operator SHOULD be able to define notification messages and error messages (including message icons and soft key texts) for at least the following events[21]: • Deleting elements (contacts, SMS, images, etc.). • Copying elements. • Overwriting elements (contacts, SMS, images, etc.). • Battery status and charging of battery.
CL4B-F037	The operator MUST be able to update post-sale using OTA services, the parameters for error messages and notifications, as defined in requirements CL4B-F026 and CL4B-F027 (however, see Section 2.1 with respect to locking parameters).
CL4B-F051	The operator MUST be able to update parameters for error messages and notifications, as defined in requirements CL4B-F026 and CL4B-F027, without requesting user confirmation or providing notification to the user.
CL4B-F052	The operator MUST be able to lock all notification and error messages, as defined in requirements CL4B-F026 and CL4B-F027, from personalisation using themes (i.e. so that their parameters cannot be changed as a result of a theme selection).

4.7.3 ASSOCIATED PARAMETERS

FIELD NAME	NOTES
MESSAGE	The text displayed in the message.
SOFT KEY	The text associated to the soft key.
ICON	The name of the file to be used as icon that indicates the type of message, e.g. error, information, confirmation, etc.

[21] Operators wish to be able to customise the notification and error messages for these events in the case of operator-branded terminals only, where operators wish to present the operator brand consistently across a wider range of user interface elements.

FIELD NAME	NOTES
LOCKING	This parameter defines whether: • The media used for the message icons are locked from deletion, modification or distribution by users or third parties, as per CL4-G008. • The parameters for an error or notification message are locked from direct personalisation, as per CL4-G009. • The parameters for an error or notification message are locked from personalisation using themes (i.e. so that they cannot be changed as a result of a theme selection).

4.7.4 CUSTOMISABLE ELEMENTS

ELEMENT	PARAMETERS	OTA	CONFIRM	CAPABILITY
NOTIFICATIONS AND ERROR MESSAGES AS PER CL4B-F026:	Message Soft keys Icon Locking	Y	No	Icon customisation only applicable to notifications and error messages that possess icons. Soft key customisation only applicable to notifications and error messages that possess soft keys.
NOTIFICATIONS AND ERROR MESSAGES AS PER CL4B-F027:	Message Soft keys Icon Locking	Y	No	Icon customisation only applicable to notifications and error messages that possess icons. Soft key customisation only applicable to notifications and error messages that possess soft keys.
NOTIFICATION AND ERROR MESSAGES (OTHER)	Message Soft keys Icon	N	N/A	Icon customisation only applicable to notifications and error messages that possess icons. Soft key customisation only applicable to notifications and error messages that possess soft keys.

5 LEVEL 4D – BASIC MENU CUSTOMISATION

The customisations at this level are 'basic', in that they deal with the ordering and labelling of the main menu and application menus, the customisation of soft keys and the addition of shortcuts that link to terminal functionality, URLs and to bespoke operator services and applications. Customisations at this level meet the following operator needs:

- Operators wish to define the order and labelling of items in the main menu and application menus at all levels of the menu hierarchy.
- The customisation of soft keys would allow operators to change the function of the idle screen soft keys to provide quick access to URLs, terminal functionality, and to bespoke operator services and applications.
- The customisation of shortcuts is the ability to add links to URLs, terminal functionality, and to bespoke operator services and applications using shortcuts from the terminal idle screen.
- Operators wish to be able to add menu items to any level of the main menu or application menus to link to URLs, terminal functionality, and to bespoke operator services and applications.

5.1 IDLE SCREEN

The idle screen is the default terminal screen, which is displayed when the terminal has been turned on, the start up sequence has been shown and the option PIN query has been completed successfully.

A shortcut is a link associated with a particular action. The action may be to launch a device application, an operator application or service, to establish a call to a specific number or to open a URL in the terminal browser. When selected, the action associated with the shortcut is triggered. Since shortcuts are only paths to a particular application or content, deleting the shortcut does not delete the application or content associated with it. Shortcuts may either be one of three types:

- Idle screen shortcuts. These are on-screen graphics elements that are present on the idle screen and activated through selection.
- Navigation key shortcuts. These are triggered by pressing a navigation key on the terminal. Navigation key shortcuts are typically available from the idle screen.
- Keyboard shortcuts. These are triggered by a long press on a key present on the terminal keypad. Keyboard shortcuts are typically available from the idle screen.

Note: the requirements in this section are dependent on terminal capabilities, e.g. requirements relating to navigation keys are not applicable to terminals that do not have them, etc.

5.1.1 FUNCTIONAL REQUIREMENTS

REQ. ID	REQUIREMENT
CL4D-F001	The operator MUST be able to define the labels and links of one soft key to provide quick access to terminal functionality[22], operator applications and services, and URLs.
CL4D-F041	The operator SHOULD be able to define the labels and links of at least two soft keys to provide quick access to terminal functionality, operator applications and services, and URLs. This requirement is only applicable to terminals with two or more soft keys.
CL4D-F002	Operators SHOULD be able to define the labels (where appropriate) and links of all idle screen shortcuts to provide quick access to terminal functionality, operator applications and services, and URLs.
CL4D-F003	The operator SHOULD be able to define the links of navigation key shortcuts to provide quick access to terminal functionality, operator applications and services, and URLs.
CL4D-F004	The operator MUST be able to define the links of some (i.e. at least one but not all) keyboard shortcuts to provide quick access to terminal functionality, operator applications and services, and URLs.
CL4D-F033	The operator MUST be able to update post-sale using OTA services the parameters for all idle screen components that have been customised by the operator (however, see Section 2.1 with respect to locking parameters).

[22] Note: 'terminal functionality' includes not only the linking to device applications (e.g. SMS client) but also to specific functionality offered by the terminal (e.g. Create a new SMS message). Note however, that it is only possible to specify links that are supported by the terminal.

REQ. ID	REQUIREMENT
CL4D-F042	If the operator updates parameters for idle screen soft keys or short cuts post-sale, the operator MUST be able to specify whether user confirmation is required for the update or not.
CL4D-F043	The operator MUST be able to lock all idle screen soft keys and shortcuts that have been customised by the operator from personalisation using themes (i.e. so that their parameters cannot be changed as a result of a theme selection).

5.1.2 ASSOCIATED PARAMETERS

5.1.2.1 Soft Keys

FIELD NAME	NOTES
LABEL	The text associated with the soft key.
LINK	The URL, terminal functionality, or operator service or application associated with the soft key.
LOCKING	This parameter defines whether: • The parameters for a soft key are locked from direct personalisation, as per CL4-G009. • The parameters for a soft key are locked from personalisation using themes (i.e. so that they cannot be changed as a result of a theme selection).

5.1.2.2 Idle Screen Shortcut

FIELD NAME	NOTES
LABEL	The text associated with the shortcut (optional).
LINK	The URL, terminal functionality, or operator service or application associated with the shortcut.

FIELD NAME	NOTES
LOCKING	This parameter defines whether: • The parameters for a shortcut are locked from direct personalisation, as per CL4-G009. • The parameters for a shortcut are locked from personalisation using themes (i.e. so that they cannot be changed as a result of a theme selection).

5.1.2.3 Navigation Key Shortcut

FIELD NAME	NOTES
LINK	The URL, terminal functionality, or operator service or application associated with the shortcut.
LOCKING	This parameter defines whether: • The parameters for a navigation key shortcut are locked from direct personalisation, as per CL4-G009. • The parameters for a navigation key shortcut are locked from personalisation using themes (i.e. so that they cannot be changed as a result of a theme selection).

5.1.2.4 Hard Key Shortcut

FIELD NAME	NOTES
LINK	The URL, terminal functionality, phone number, or operator service or application associated with the shortcut.
LOCKING	This parameter defines whether: • The parameters for a hard key shortcut are locked from direct personalisation, as per CL4-G009. • The parameters for a hard key shortcut are locked from personalisation using themes (i.e. so that they cannot be changed as a result of a theme selection).

5.1.3 CUSTOMISABLE ELEMENTS

ELEMENT	PARAMETERS	OTA	CONFIRM	CAPABILITY
IDLE SCREEN SOFT KEY	Label text Link (URL / terminal function/ operator application/ operator service) Locking	Y	At operator's discretion.	
IDLE SCREEN SHORTCUT	Label text Link (URL / terminal function / operator application / operator service) Locking	Y	At operator's discretion.	The terminal must support screen shortcuts. Label customisation only applicable if shortcuts possess labels.
NAVIGATION KEY SHORTCUT	Link (URL / terminal function / operator application / operator service) Locking	Y	At operator's discretion.	
KEYBOARD SHORTCUT	Link (URL / terminal function / phone number / operator application / operator service) Locking	Y	At operator's discretion.	

5.2 MENU CUSTOMISATION

5.2.1 MAIN MENU

The main menu is the menu from which the device applications are launched. The main menu can also link to other applications, content or URLs. The main menu can be hierarchical in structure.

The following list gives an example of part of a main menu structure:

- Multimedia
  - *Camera*
  - *Record video*
  - *Pictures*
  - *Videos*
  - *Sounds*
  - *Themes*
- Settings
  - *Connection*

    Bluetooth Link

Sync

- *Call Divert*

  Voice Calls
  Video Calls
  Cancel All
  Divert Status

- *In-Call Setup*

  In-Call Timer
  Call Cost Setup
  My Caller ID
  Answer Options
  Call Waiting
  Message Alert

- *Phone Status*

  My Tel. Numbers
  Credit Available
  Battery Meter
  Storage Devices
  AGPS Service
  Other Information

- *Headset*

  Auto Answer
  Ringer Options
  Voice Dial

- *Network*

  New Network
  Network Setup
  Available Networks
  Service Tone
  Call Drop Tone

- *Security*

  Phone Lock
  Lock Keypad
  Lock Application
  Fixed Dial
  Call Barring
  Smart Card PIN
  New Passwords

The indentation levels shown in the list above represents the different menu levels (e.g. **Settings** is level 1; **Connection** is level 2; **Bluetooth Link** is level 3). The main menu structure can be displayed in a number

of different formats e.g. in a grid format, in a list format, as a carousel, etc.

5.2.1.1 Functional Requirements

REQ. ID	REQUIREMENT
CL4D-F005	The operator MUST be able to define the ordering of items in the main menu at the top level of the menu hierarchy.
CL4D-F006	The operator SHOULD be able to define the ordering of items in the main menu at all levels below the top level of the menu hierarchy. Note: this requirement only applies if the terminal has a hierarchical menu structure.
CL4D-F007	The operator SHOULD be able to define folders at the top and second menu level, depending on device capability.
CL4D-F008	The operator SHOULD be able to move operator-defined menu items (i.e. items that have been added as per CL4D-F013 or customised by the operator as per CL4D-F005, CL4D-F006, CL4D-F007, CL4D-F009 and CL4D-F010) in the main menu between all levels of the menu hierarchy. Note: this requirement only applies if the terminal has a hierarchical menu structure.
CL4D-F009	The operator MUST be able to define the labels for menu items in the main menu at the top level of the menu hierarchy.
CL4D-F010	The operator SHOULD be able to define the labels for menu items in the main menu at all levels below the top level of the menu hierarchy. Note: this requirement only applies if the terminal has a hierarchical menu structure.
CL4D-F011	The operator MUST be able to define which menu items may not be deleted or replaced from the main menu.
CL4D-F012	The operator MUST be able to define which operator-defined menu items (i.e. items that have been added as per CL4D-F013 or customised by the operator as per CL4D-F005, CL4D-F006, CL4D-F007, CL4D-F009 and CL4D-F010) may not be moved within the main menu.

REQ. ID	REQUIREMENT
CL4D-F013	The operator MUST be able to define the labels and links of new menu items to provide quick access to terminal functionality, operator services and applications, and URLs. Such menu items MUST be able to activate existing applications with a possible URL parameter - e.g. activating the terminal browser with a starting URL. The operator MUST be able to add these items at any level of the main menu structure.
CL4D-F035	The operator MUST be able to update post-sale using OTA services the parameters for operator-defined main menu items (i.e. items that have been added as per CL4D-F013 or customised by the operator as per CL4D-F005, CL4D-F006, CL4D-F007, CL4D-F009 and CL4D-F010).
CL4D-F029	The operator MUST be able to modify the locking parameters of all menu items post-sale using OTA services.
CL4D-F044	If the operator updates the parameters for a main menu item post-sale, the operator MUST be able to specify whether or not user confirmation is required for the update.
CL4D-F045	The operator MUST be able to lock all operator-defined main menu items (i.e. items that have been added as per CL4D-F013 or customised by the operator as per CL4D-F005, CL4D-F006, CL4D-F007, CL4D-F009 and CL4D-F010) from personalisation using themes (i.e. so that their parameters cannot be changed as a result of a theme selection).

5.2.1.2 Associated Parameters

5.2.1.2.1 Menu Items

FIELD NAME	NOTES
LABEL	The label associated with the menu items.
LINK	The URL, service or application associated with the menu items added by the operator.
POSITION	The position of an item within the menu tree.

FIELD NAME	NOTES
LOCKING	This parameter defines whether: • The parameters of a main menu item are locked from direct personalisation, as per CL4-G009. • The parameters of a main menu item are locked from personalisation using themes (i.e. so that they cannot be changed as a result of a theme selection). • Main menu items positions are locked from deletion, as per CL4D-F011.

5.2.1.3 Customisable Elements

ELEMENT	PARAMETERS	OTA	CONFIRM	CAPABILITY
MAIN MENU ITEM (TOP LEVEL)	Label text Position Locking Link (URL / terminal function / operator application / operator service)	Y	At operator's discretion	Link parameter only applies to menu items added by operator.
MAIN MENU ITEM (OTHER LEVELS)	Label text Position Locking Link (URL / terminal function / operator application / operator service)	Y	At operator's discretion	Link parameter only applies to menu items added by operator.
MAIN MENU ITEM (OTHER LEVELS)	Label text Position Locking	Y	At operator's discretion	

5.2.2 APPLICATION MENUS

An application menu is a list of commands offered by an application. Application menus can be hierarchical in structure.

The following list gives an example of part of an application menu structure:

- Create Message
  - *Text message*
  - *Multimedia message*
  - *Email*
- Smart Card messages

- Cell broadcast
- Service commands
- Settings
- Help
- Exit

The indentation levels shown in the list above represent the different menu levels (e.g. **Create Message** is level 1, **Text message** is level 2).

Application menus can be presented in a variety of different formats: e.g. as a list displayed in the main application area (the area of the screen controlled by the application) or as a list within a pop-up window with cascading sub-menus.

The following requirements apply only to device applications and operator applications – not to third party applications. Please note that that until relevant configuration protocols are defined within SDOs, specific implementations of the requirements contained within this section are likely to be technology-specific.

5.2.2.1 Functional Requirements

REQ. ID	REQUIREMENT
CL4D-F014	The operator MUST be able to reposition selected items in the applications menus at the top level of the menu hierarchy.
CL4D-F015	The operator SHOULD be able to reposition selected items in the application menus at all levels below the top level of the menu hierarchy.
CL4D-F016	The operator MUST be able to define the labels for menu items in the application menus at the top level of the menu hierarchy.
CL4D-F017	The operator SHOULD be able to define the labels for menu items in the application menus at all levels below the top level of the menu hierarchy.

REQ. ID	REQUIREMENT
CL4D-F018	The operator MUST be able to define the labels and links of new menu items to provide quick access to URLs. Such menu items MUST be able to activate existing applications with a possible URL parameter, e.g. activating the terminal browser with a starting URL. The operator MUST be able to add these items at any level of the application menu structure[23].
CL4D-F037	The operator MUST be able to update post-sale using OTA services the parameters for operator-defined application menu items (i.e. items that have been added as per CL4D-F018 or customised by the operator as per CL4D-F014, CL4D-F015, CL4D-F016, CL4D-F017) (however, see Section 2.1 with respect to locking parameters).
CL4D-F046	If the operator updates the parameters for an application menu item post-sale, the operator MUST be able to specify whether or not user confirmation is required for the update.
CL4D-F047	The operator MUST be able to lock all operator-defined application menu items (i.e. items that have been added as per CL4D-F018 or customised by the operator as per CL4D-F014, CL4D-F015, CL4D-F016, CL4D-F017) from personalisation using themes (i.e. so that their parameters cannot be changed as a result of a theme selection).

5.2.2.2 Associated Parameters

5.2.2.2.1 Menu Items

FIELD NAME	NOTES
LABEL	The label associated with the menu item.
LINK	The URL or application associated with the menu items added by the operator.
POSITION	The position of an item within a menu tree.

[23] Note: in practice, the number of menu items that can be added to application menus will be limited by the space made available within the UI by the application's menu framework.

FIELD NAME	NOTES
LOCKING	This parameter defines whether: • The parameters of an application menu item are locked from direct personalisation, as per CL4-G009. • The parameters of application menu item are locked from personalisation using themes (i.e. so that they cannot be changed as a result of a theme selection).

5.2.2.3 Customisable Elements

ELEMENT	PARAMETERS	OTA	CONFIRM	CAPABILITY
APPLICATION MENU ITEM (TOP LEVEL)	Label Position Locking Link (URL)	Y	At operator's discretion.	Link parameter only applies to menu items added by operator.
APPLICATION MENU ITEM (OTHER LEVELS)	Label Position Locking Link (URL)	Y	At operator's discretion.	Link parameter only applies to menu items added by operator.

5.3 BOOKMARKS

5.3.1 FUNCTIONAL REQUIREMENTS

REQ. ID	REQUIREMENT
CL4D-F019	The operator MUST be able to define and provide a minimum of five bookmarks in the terminal bookmark list.
CL4D-F020	The operator MUST be able to add bookmarks to the terminal bookmark list OTA.
CL4D-F021	The operator MUST be able to delete operator-defined bookmarks (i.e. bookmarks defined as per CL4D-F019 or added as per CL4D-F020) from the terminal bookmark list OTA.
CL4D-F022	The operator MUST be able to update post-sale using OTA services the parameters for operator-defined bookmarks (i.e. bookmarks defined as per CL4D-F019 or added as per CL4D-F020) (however, see Section 2.1 with respect to locking parameters).

REQ. ID	REQUIREMENT
CL4D-F048	If the operator updates the parameters for an operator-defined bookmark (i.e. a bookmark defined as per CL4D-F019 or added as per CL4D-F020) post-sale, the operator MUST be able to specify whether or not user confirmation is required for the update.
CL4D-F049	The operator MUST be able to lock the parameters of all operator-defined bookmarks (i.e. bookmarks defined as per CL4D-F019 or added as per CL4D-F020) from personalisation using themes (i.e. so that their parameters cannot be changed as a result of a theme selection).
CL4D-F023	The operator MUST be able to define operator-defined bookmarks (i.e. bookmarks defined as per CL4D-F019 or added as per CL4D-F020) as non-deletable.
CL4D-F024	The operator MUST be able to lock the position of one or more operator-defined bookmarks (i.e. bookmarks defined as per CL4D-F019 or added as per CL4D-F020) at the top of the terminal bookmark list.
CL4D-F025	The operator MUST be able to define a home page for the browser.
CL4D-F026	The operator MUST be able to lock the home page from personalisation using themes (i.e. so that its parameters cannot be changed as a result of a theme selection).
CL4D-F040	The operator MUST be able to update post-sale using OTA services the parameters for the browser home page (however, see Section 2.1 with respect to locking parameters).
CL4D-F050	If the operator updates the parameters for the browser home page post-sale, the operator MUST be able to specify whether or not user confirmation is required for the update.

5.3.2 ASSOCIATED PARAMETERS

FIELD NAME	NOTES
POSITION	Bookmarks MUST have an 'order' property which states the relative order of that bookmark within the list of all bookmarks it belongs to. This property is used for the purposes of presentation and user interaction. The values of the order property of all the bookmarks may not be sequential but MUST maintain a transitive 'greater than' relationship between them. Bookmarks MUST have a 'logical order' property, which states a logical positioning of that bookmark within the list of all bookmarks it belongs to. For example, it might be assigned a value of 'bottom of the list'. This property precedes the 'order' property. So if a bookmark has a value of 'bottom of the list' for the logical order property, it will always be positioned at the bottom of the list of bookmarks, regardless of the value of its order attribute.
LOCKING	This parameter defines whether: • The parameters for a bookmark are locked from direct personalisation, as per CL4-G009 (note however, position can only locked as per CL4D-F024). • The parameters for a bookmark are locked from personalisation using themes (i.e. so that they cannot be changed as a result of a theme selection). • A bookmark is locked from deletion, as per CL4D-F023. • The parameters for the Home page are locked from direct personalisation, as per CL4-G009 • The parameters for the Home page are locked from personalisation using themes (i.e. so that they cannot be changed as a result of a theme selection).
HOMEPAGE	The URL of the homepage for the browser.
NAME	The bookmark name.
URL	The URL associated with the bookmark.
APN	The APN associated with bookmark.

5.3.3 CUSTOMISABLE ELEMENTS

ELEMENT	PARAMETERS	OTA	CONFIRM	CAPABILITY
BOOKMARK	Name URL Position Locking APN	Y	At operator's discretion.	
HOMEPAGE	URL Locking	Y	At operator's discretion.	

6 LEVEL 4E – SIMPLE APPLICATION INTEGRATION

The customisations at this level include those of level 4D plus the ability for operators to integrate operator-specific UIs to the terminal. This should be possible across all terminals in a consistent way. Customisations at this level meet the following operator needs:

- Operators wish to be able to remove items from the main menu to prioritise features of the terminal.
- Operators' applications resident on the terminal need to be able to use part of the idle screen to publish operator-specific content on the idle mode display.
- Operators wish to be able to fully configure and update the cache for a browser-based or a custom off-line operator menu.

6.1 IDLE SCREEN

6.1.1 FUNCTIONAL REQUIREMENTS

REQ. ID	REQUIREMENT
CL4E-F001	Operator applications installed and running on the terminal SHALL be able to control part of the idle mode display so that the application can push operator-specific content onto the idle screen display e.g. to provide ticker bars or graphical banners alerting users to new services or content.
CL4E-F002	The user SHALL be able to interact with the operator-specific content or service directly from the idle screen e.g. users shall be able to link from a graphical banner to a specific browser page or operator-specific application.

6.2 MENU CUSTOMISATION

6.2.1 MAIN MENUS

6.2.1.1 Functional Requirements

REQ. ID	REQUIREMENT
CL4E-F008	It MUST be possible for an operator to hide items from the main menu (i.e. the items are not permanently deleted), subject to application interworking dependencies[24].

6.3 OPERATOR APPLICATION AND SERVICE INTEGRATION

The operator services may be implemented either on-line or off-line. On-line services are typically implemented via a web, WAP or i-mode portal and off-line services are typically implemented via an operator application resident on the terminal or via a web browser using locally stored operator content. See the Definition of Terms section for more details.

An Operator Menu is a specific off-line menu used by the operator to provide the user with access to operator applications and services and to locally stored operator content. An operator menu is typically implemented either via an operator application resident on the terminal or via a web browser using locally stored operator content.

6.3.1 BROWSER-BASED OFF-LINE SERVICES

These requirements relate to off-line operator services implemented via the terminal browser, including Operator Menus implemented via a web browser. These requirements are only applicable to terminals that have the capability to cache locally stored operator content.

[24] Certain core device applications may have interworking dependencies with other device applications. For example, clicking a URL within a message within the messaging application may cause the terminal browser to be launched. The requirement does not apply to those cases where it is not possible to remove these dependencies from the application.

6.3.1.1 Functional Requirements

REQ. ID	REQUIREMENT
CL4E-F011	The operator MUST be able to cache customised content for browser-based off-line services to be implemented. The terminal MUST store the cached content either locally, or via a Smart Card or on a removable storage medium (depending on the support of the device for the different storage media).
CL4E-F012	The operator MUST be able to update post-sale using OTA services the parameters for customised content for access by browser-based operator off-line services (however, see Section 2.1 with respect to locking parameters).
CL4E-F023	The operator MUST be able to update parameters for the customised content post-sale without requesting user confirmation or providing notification to the user.
CL4E-F013	The operator MUST be able to define an expiry time per file for customised content accessed by browser-based operator off-line services. A request to access the content will trigger the content to be updated OTA when this time is exceeded.

6.3.1.2 Associated Parameters

FIELD NAME	NOTES
FILENAME	The names of the files containing the content to be used to implement off-line services.
EXPIRY TIME	The expiry time for cached content. If the content is requested beyond this time, it will trigger the updating of the content OTA.
LOCKING	This parameter defines whether: • The customised operator content is locked from deletion, modification or distribution by users or third parties, as per CL4-G008.

6.3.1.3 Customisable Elements

ELEMENT	PARAMETERS	OTA	CONFIRM	CAPABILITY
CACHED CONTENT	Filename Expiry time Locking	Y	No	Terminals that have the capability to cache locally stored operator content

6.3.2 OPERATOR APPLICATIONS

These requirements relate to off-line operator services implemented via an operator application, including Operator Menus implemented via a specific off-line operator application. The requirements in this section are only applicable to terminals that have the capability to cache locally stored operator content.

6.3.2.1 Functional Requirements

REQ. ID	REQUIREMENT
CL4E-F015	The operator MUST be able to cache customised content for utilisation by operator applications. The terminal MUST enable the storage of the cached content either locally, or via a Smart Card or via a removable storage medium (depending on the support of the device for the different storage media).
CL4E-F016	The operator MUST be able to update post-sale using OTA services the parameters for customised content for utilisation by operator applications (however, see Section 2.1 with respect to locking parameters).
CL4E-F024	The operator MUST be able to update parameters for the customised content post-sale without requesting user confirmation or providing notification to the user.
CL4E-F017	The operator MUST be able to define an expiry time per file for customised content accessed by operator off-line operator applications. When this time is exceeded, a request to access the content will trigger the content to be updated OTA.
CL4E-F020	The terminal SHOULD enable display the status indicators defined in requirement CL4B-F013 in an off-line operator application.

6.3.2.2 Associated Parameters

FIELD NAME	NOTES
FILENAME	The names of the files containing the content to be used to implement off-line services e.g. a browser based service or operator application.
EXPIRY TIME	The expiry time for cached content. If the content is requested beyond this time, it will trigger the updating of the content OTA.
LOCKING	This parameter defines whether: • The customised operator content is locked from deletion, modification or distribution by users or third parties, as per CL4-G008.

6.3.2.3 Customisable Elements

ELEMENT	PARAMETERS	OTA	CONFIRM	CAPABILITY
CACHED CONTENT	Filename Expiry time Locking	Y	No	Terminals that have the capability to cache locally stored operator content.

6.3.3 OPERATOR MENUS

These requirements relate specifically to Operator Menus, regardless of whether the Operator Menu is implemented via an operator application resident on the terminal or via a web browser.

REQ. ID	REQUIREMENT
CL4E-F014	The operator MUST be able to install an Operator Menu either during manufacture or at PoS.

REQ. ID	REQUIREMENT
CL4E-F018	The Operator Menu MUST be able to do at least the following: • Launch the terminal or custom browser and display both on-line and off-line content. • Launch an operator application. • Establish a voice or video call. • Send an SMS/MMS. • Send USSD codes. If the events listed do not incur a charge to the user, then the operator MUST be able to do the above without requesting user confirmation.
CL4E-F019	The terminal SHOULD enable back-stepping to an off-line Operator Menu from on-line pages (hence return from on-line to a designated off-line anchor).

7 DEFINITION OF TERMS

TERM	DESCRIPTION
THIRD PARTY APPLICATION	An application that is specified by neither an operator nor the manufacturer. Third party applications are typically installed by the user.
ANIMATION	A moving image composed of a series of frames displayed sequentially.
APPLICATION AREA	Area of the screen where main application specific content of applications such as Idle Screen and Main Menu is displayed. It generally covers the middle part of the screen.
APPLICATION MENU	A list of commands offered by an application. Application menus can be presented in a variety of different formats e.g. as a list that is displayed in the main application area (the area of the screen controlled by the application), or as a list within a pop-up window. Application menus can be hierarchical in structure.
BOOKMARK	A URL that is stored by any browser on the terminal.
BRANDING	Graphic elements, an interaction style, language style and tone of voice that characterise the operator, manufacturer or service provider. Typically, operator-branding elements on a terminal include a screen saver, wake up graphics, wallpaper, colour palette, ring tone and logo.
BROWSER	This term has come from the PC world, where it typically refers to an application, such as Netscape or Internet Explorer, which can access and display web pages. It has become more generic and is now often used to refer to any application that allows a user to browse through information and services.
CUSTOMISATION	This allows operators to define settings, graphics and appearance so that the terminal may comply with brand visuals, tone of voice and values.

TERM	DESCRIPTION
DEFAULT	Default is defined to mean both of the following: • A particular setting for a customisation element that is used by the terminal unless overridden by the operator or user. • The setting for a customisation element that a terminal shall select if the user performs a master reset.
DEVICE	An alternative term for handset or terminal.
DEVICE APPLICATION	An application specified and provided by the terminal manufacturer. It is installed on the terminal during manufacture.
DISPLAY AREA	Areas of the screen overlaid on top of the general background. Some of the display area can be optional or visible only in certain situations. Common display areas are status area, application area, soft key area and notification area. The appearance of each display area can be independently defined using a background colour, a background image, or both. In addition to default definitions the appearance of display areas can be also defined on application basis.
GENERAL BACKGROUND	The bottom graphical layer of the entire screen of the user interface. General background is overlapped with various display areas. The appearance of general background can be defined using background colour, background image, or both. In addition to default definitions the appearance of general background can be also defined on application basis.
GENERAL BUSY STATE	The state where the system is busy and cannot respond to user input. In this case, if there is no specific notification to display, a general notification in the form of a splash screen can be shown.
HANDSET	Used as an alternative term for a cellular telephone or terminal.
IDLE SCREEN	The default terminal screen, which is displayed when the terminal has been turned on, the start up sequence has been shown and the option PIN query has been completed successfully.

TERM	DESCRIPTION
LOGO	A combination of characters and/or graphics creating a unique design used to identify a company. (In this specific context, a Mobile Operator.)
LOOK & FEEL	The appearance (look) and interactive style (feel) of software whose uniqueness to a particular platform or application defines the aesthetics and values of that application and how users subjectively respond to it. The 'look &feel' is considered the front end of the software, whereas the abstract functionality is the back end. The 'look & feel' is often considered to incorporate the copyrightable aspects of the user interface, i.e. those aspects not entirely determined by the functional requirements.
MAIN MENU	The menu from which the device applications are launched. The main menu can also link to other applications, content or URLs. The main menu can be hierarchical in structure.
MARKUP LANGUAGE	A language used to create web-based content. Internet pages are created using a markup language that includes not only the content but also formatting and behaviour commands. Several markup languages are in use today e.g. WDML (Wireless Device Markup Language) and HDML (Handheld Device Markup Language).
NAVIGATION KEY	Navigation keys are hardware keys used to control the focus on the screen. For example, up and down navigation keys move the focus through items in list views and menus. Navigation keys can trigger other actions, depending on context e.g. control volume, cycle through options in controls, etc.
NOTIFICATION AREA	The area of the screen where notifications and errors are shown. Because the notification area is typically visible only when there is any content to show, it is typically implemented as a modal pop-up dialogue.
OPERATOR APPLICATION	An application that has been signed by an operator.

TERM	DESCRIPTION
OPERATOR MENU	An operator menu is a specific off-line menu used by the operator to provide the user with access to operator applications and services and to locally stored operator content. An operator menu is typically implemented via an operator application resident on the terminal or via a web browser using locally stored operator content.
OPERATOR SERVICE	A selection from the portfolio of offerings made available by the operator, which the user may subscribe to and be optionally charged for. The operator services may be implemented either on-line or offline. On-line services are typically implemented via a web, WAP or i-mode portal and off-line services are typically implemented via an operator application resident on the terminal or via a web browser using locally stored operator content.
POINT OF SALE (POS)	The location where the user buys his mobile terminal. In this case, the customisation can be applied both OTA or relying upon other media e.g. through external removable support, Personal Computer, etc.
REMOVABLE STORAGE MEDIA	This refers to any module or terminal that can be used to store digital data and remove it from the terminal. Such products include compact flash, USB flash discs, MM and SD cards etc. Many different standards and form factors are available, driven by the Laptop and Digital Camera market.
SECONDARY DISPLAY	A secondary display can be present in the external part of some clamshell terminals. It is generally smaller in size than the main display.

TERM	DESCRIPTION
SHORTCUTS	A shortcut is a link that is associated with a particular action. The action may be to launch a device application, an operator application or a service, or to establish a call to a specific number or to open a URL in the terminal browser. When selected, the action associated with the shortcut is triggered. Since shortcuts are only paths to a particular application or content, deleting the shortcut does not delete the application or the content associated with it. Shortcuts may be one of three types: • Idle screen shortcuts. These are on-screen graphics elements that are present on the idle screen and activated through selection. • Navigation key shortcuts. These shortcuts are triggered by pressing a navigation key on the terminal. Navigation key shortcuts are typically available from the idle screen. • Keyboard shortcuts. These shortcuts are triggered by a long press on a key present on the terminal keypad. Keyboard shortcuts are typically available from the idle screen.
SKIN	A skin is an implementation or instantiation of the customisable components of an application. Skins can apply to any or all of the UI elements that are defined as customisable by the application. Skins customise the 'look & feel' of UI elements within a specific application and do not control elements from other applications. Changing a skin customises the 'look & feel' of the interface but does not affect a terminal's functionality.

TERM	DESCRIPTION
SMART CARD	The User Equipment incorporates a Smart Card being the trusted-by-operator module. The Smart Card contains a trusted-by-operator execution environment and a trusted-by-operator memory. The Smart Card is a tamper-resistant device. The Smart Card communicates with the User Equipment through its interface. The Smart Card is issued by the operator as: • Operator security module • User Identification module The Smart Card could be a SIM (GSM), R-UIM (CDMA) or an application as the USIM (UMTS).
SOFT KEY	A key control whose function is signified by an associated area of the terminal display.
SOFT KEY AREA	The area of the screen that signifies the function of the terminal soft keys. This is normally the lower part of the screen.
STATUS AREA	The area of the screen where graphical elements representing information about the status of the terminal are displayed. This is normally the upper part of the screen.
TERMINAL	Used as an alternative term for a cellular telephone or handset.

TERM	DESCRIPTION
THEME	A theme is an implementation or instantiation of the customisable elements of a UI. Themes can apply to any or all of the UI elements that are defined as customisable by the UI platform. Themes customise the 'look & feel' of UI elements across all applications. Themes can customise UI elements to a greater or lesser degree of depth. A shallow degree of customisation may simply involve setting the values for visual and audio attributes of the customisable elements of the UI. Visual attributes that can apply to a UI element might include background images, wallpaper, logos, ring tones, screen savers, start-up and shutdown sequences, fonts, sounds, animations, splash screens, icons and status indicators. A deeper degree of customisation could affect other aspects of the UI, such as the structuring of menu trees and the modification of the behaviour of UI widgets. Changing a UI theme customises the 'look & feel' of the interface but does not affect a terminal's functionality.
TRANSPARENCY	Transparency is a property of a graphical element that allows the viewer to discern the layer directly beneath the transparent graphical element. It can be an intrinsic property of the element (i.e. image format) or a parameter of the graphical element (i.e. background image).
USER CONFIRMATION	A user interaction where the user get information about possible options (e.g. accept, delay) and the possibility to deny a process affecting the device, e.g. update of certain 'look & feel' elements.
WALLPAPER	Background media (image, animation or video) associated to the application area of the idle screen. Note that the application area of the idle screen could include the areas covered by the status area or the soft key area or both.

7.1 DEFINITION OF EVENT INDICATORS

Note that the following definitions are mutually exclusive. Events in one category do not include events from a more general category e.g. 'Battery fully charged' is not included within 'Completion' as it is a specific sound distinct from the general 'Completion' sound.

7.1.1 SOUNDS

EVENT	DESCRIPTION
ALARM	Acoustic feedback of an event that is activated at a specific time for the purpose of notifying the end user.
REMINDER/ CALENDAR	Acoustic feedback of an event that is associated with a calendar event for the purpose of notifying the user.
CONFIRMATION	Acoustic feedback of the appearance of a notification that requests user confirmation.
COMPLETION	Acoustic feedback of the completion of a process (e.g. send and receive e-mail) or the appearance of a notification that informs the user of the completion of a process.
ERROR	Acoustic feedback of an erroneous user action or the appearance of an error message.
SYSTEM ACTIVE / PROCESS IN PROGRESS	Acoustic feedback that notifies the user that the system is in the process of completing an action if the user attempts an action while the system is busy and is incapable of performing new user action.
ALERT	Acoustic feedback of the appearance of an alert that informs the user of a system state.
ESTABLISHING A CONNECTION	Acoustic feedback of establishing a data connection, typically a GPRS/UMTS data connection.
CALL CONNECTION FAILED	Acoustic feedback of failure on attempt to establish a call using circuit-switched networks.
TAKING PICTURES	Acoustic feedback of capturing an image using a device camera.
BATTERY LOW	Acoustic feedback of the appearance of an alert to inform the user that the battery has reached a low charge.
BATTERY VERY LOW	Acoustic feedback of the appearance of an alert to inform the user that the battery has reached a very low charge.

EVENT	DESCRIPTION
BATTERY CHARGING INITIATED	Acoustic feedback of the appearance of an alert to inform the user that a charge source is first applied to the device battery.
BATTERY FULLY CHARGED	Acoustic feedback of the appearance of an alert to inform the user that the device battery is fully charged during a battery charge process.
CONNECTING TO OTHER HW	Acoustic feedback of the appearance of a notification to inform the user that the device has established a connection with other hardware via a local wireless connection.
DISCONNECTING TO OTHER HW	Acoustic feedback of the appearance of a notification to inform the user that the device connection with other hardware has been terminated.
NUMERIC KEY PRESS	Key tone for numeric key press.
NAVIGATION KEY PRESS	Key tone for navigation key press.
KEY PRESS (NO ACTION)	Key tone for key press that does not result in a system action.

7.1.2 ERRORS AND NOTIFICATIONS

EVENT	DESCRIPTION
DOWNLOADING ELEMENTS	Pop-up messages triggered by events associated to downloading of operator-related elements including DRM (e.g. confirmation messages, informing user of location of download, etc.). These elements are defined as follows: • 'Look & feel' customisation elements: all customisable elements, as defined within Sections 3, 4, 5 and 6 of this document. • Rich media content: content that is terminal independent and that can be stored and 'viewed/played' using applications available on the terminal. • Applications: applications are a particular type of content that can be downloaded to improve the terminal features, like gaming. Applications may either be terminal vendor-specific, or they may run in terminals of multiple vendors.
UPDATING ELEMENTS	Pop-up messages triggered by events associated to the update of customisable elements (starting OTA update, starting SIM update, confirmations, ending the update, etc). These elements are defined as follows: • 'Look & feel' customisation elements: all customisable elements, as defined within Sections 3, 4, 5 and 6 of this document.
SERVICE PROVISIONING	Pop-up messages triggered by events associated with the provisioning of operator services (e.g. provisioning process finished, connection to OTA server).
CHANGE OF BEARER	Pop-up messages triggered by events associated with a change between wireless data bearer technologies.
CALL-RELATED	Pop-up messages triggered by events associated to call services using circuit-switched networks (incoming call, incoming video-call, diverts, outgoing call, etc).
FAILED OPERATOR-RELATED ACTIONS	Pop-up messages triggered by events associated to failures on operator services (use of network) and operator applications (OTA provisioning and update, unsuccessful calls, SMS delivery, etc.).

EVENT	DESCRIPTION
COMPLETION OF OPERATOR-RELATED ACTIONS	Pop-up messages triggered by events associated to successful completion of operator applications and services (OTA provisioning and update, finish calls, SMS delivery, etc.).
DATA CONNECTION	Includes the following distinct categories: • Application connection: pop-up messages triggered by events associated with the process of an application establishing and terminating a data connection. • IrDA connection / disconnection: pop-up messages triggered by events associated with the process of establishing and terminating an IrDA connection. • Bluetooth connection / disconnection: pop-up messages triggered by events associated with the process of establishing and terminating a Bluetooth connection.
DELETING ELEMENTS	Pop-up messages triggered by events associated with the deletion of data.
COPYING ELEMENTS	Pop-up messages triggered by events associated with the copying of data to the device clipboard.
DOWNLOADING ELEMENTS	Pop-up messages triggered by events associated with downloading of all downloadable elements (e.g. confirmation messages, informing user of location of download, etc.).
OVERWRITING ELEMENTS	Pop-up messages triggered by events associated with the replacement of a file when saving a file to memory.
MOVING ELEMENTS	Pop-up messages triggered by events associated with the moving of items between folders and the cutting and pasting of data, such as text, between and within files.
BATTERY STATUS	Pop-up messages triggered by events associated with the charge status of the battery.
CHARGING OF BATTERY	Pop-up messages triggered by events associated with the battery charging process.

7.1.3 ANIMATIONS

EVENT	DESCRIPTION
SIM INSERTION	Animation that prompts the insertion of SIM card.
NETWORK SEARCH	Animation that gives visual feedback of the process of searching for or attaching to the network.
SENDING AND RECEIVING MESSAGES	Animations that give visual feedback of sending outgoing messages and receiving incoming messages.
WAP/WEB/I-MODE CONNECTIONS	Animations that give visual feedback of establishing a data connection for browsing.
INCOMING CALL	Animation that gives visual feedback of that an incoming call using circuit-switched networks has been received but not yet accepted.
COPYING CONTACTS	Animation that gives visual feedback of the process of copying contact data, including the copying of contacts to and from the Smart card.
GENERAL BUSY STATES	Animation that gives visual feedback that the system is busy and cannot respond to user input
SIM LOCK	Animation that gives visual feedback that the SIM card is locked from use.
KEY LOCK	Animation that gives visual feedback that the keypad is locked from user input.
PIN ACCEPTED	Animation that gives visual feedback that a PIN has been successfully verified.
DEFAULT DELETING ELEMENTS NOTIFICATIONS	Animations associated with default deleting elements notifications that give visual feedback of the user-initiated deletion of data.
DOWNLOADING ELEMENTS	Animation that gives visual feedback of the process downloading data.
OUTGOING CALLS	Animation that gives visual feedback that an outgoing voice call using circuit-switched networks is being sent and has not yet been accepted or terminated.

EVENT	DESCRIPTION
INCOMING VIDEO CALL	Animation that gives visual feedback that an incoming video call using circuit-switched networks has been received but not yet accepted.
OUTGOING VIDEO CALL	Animation that gives visual feedback that an outgoing video call using circuit-switched networks has been initiated and has not yet been accepted or terminated.
PTT INVITATION	Animation that gives visual feedback that a PTT invitation has been sent to the device.
IM REQUEST	Animation that gives visual feedback that an IM request has been received by the device.
CONNECTING TO BLUETOOTH	Animation that gives visual feedback of the process of establishing a Bluetooth connection
CONNECTING TO IRDA	Animation that gives visual feedback of the process of establishing an IrDA connection
LOW BATTERY	Animation that gives visual feedback that the device battery has reached a low charge.
BATTERY CHARGING	Animation that gives visual feedback that the battery is in the process of being charged.
BATTERY CHARGE COMPLETED	Animation that gives visual feedback that the battery has been charged to a fully charged state.
DEFAULT ERROR NOTIFICATIONS	Animations associated with default error notifications.
DEFAULT CONFIRMATION NOTIFICATIONS	Animations associated with default notifications that request user confirmation.
DEFAULT COMPLETION NOTIFICATIONS	Animations associated with default notifications that inform the user of the completion of a process.
DEFAULT PROGRESS NOTIFICATIONS	Animations associated with default notifications that inform the user that the system is in the process of completing an action.

8 ABBREVIATIONS

ABBREVIATION	DESCRIPTION
APN	Access Point Number.
DRM	Digital Right Management.
DTMF	Dual Tone Multi-Frequency.
GPS	Global Positioning System.
IM	Instant Messaging.
LAF	Look And Feel.
MMS	Multimedia Messaging Service.
OTA	Over The Air. Normally used in conjunction with the concept of updating the *terminal* as in OTA updates and OTA downloads. This is similar to the process used today on PCs, where new applications and updates are downloaded over the network. However, a *terminal* is connected via its existing cellular connection.
PoS	Point of Sale.
RGB	Red Green Blue.
R-UIM	Removable User Identity Module.
SC	Smart Card.
SDO	Standards Development Organisation.
SIM	Subscriber Identification Module or Subscriber Identity Module.
SMS	Short Messaging Service.
TPC	Terminal Platform Committee.
URI	Uniform Resource Identifier.
USIM	Universal Subscriber Identity Module or User Services Identity Module.

ABBREVIATION	DESCRIPTION
URL	Universal Resource Locator. This is the official name for a web address and consists of two parts. The first part describes the type of access (e.g. http, ftp) and the second part contains the global address of the documents and resources to be accessed (e.g. www.omtp.org).
USSD	Unstructured Supplementary Service Data. This is a GSM technology that allows data to be transmitted over the signalling channels instead of the data channels that *SMS* uses.
WAP	Wireless Application Protocol.

9 REFERENCED DOCUMENTS

NO.	DOCUMENT	AUTHOR	DATE
1	RFC2119 (http://rfc.net/rfc2119.html)	RFC	March 1997