

# TECHNOLOGY AGNOSTIC CORE SOFTWARE PLATFORM

## CUSTOMISATION ENABLER REQUIREMENTS

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**VERSION:** OMTP Customisation Enabler Requirements, Version 1\_0, Release 1

**STATUS:** Approved

**DATE OF LAST EDIT:** 28 March 2006

**OWNER:** OMTP Software Working Group

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# 1 INTRODUCTION

## 1.1 DOCUMENT PURPOSE

This documents aims to describe the technical requirements that a Customisation Enabler must fulfil in OMTP Application Frameworks [1].

## 1.2 INTENDED AUDIENCE

There are two main audiences for these requirements:

- Operators. These requirements should be adopted in operators' specifications.
- 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:

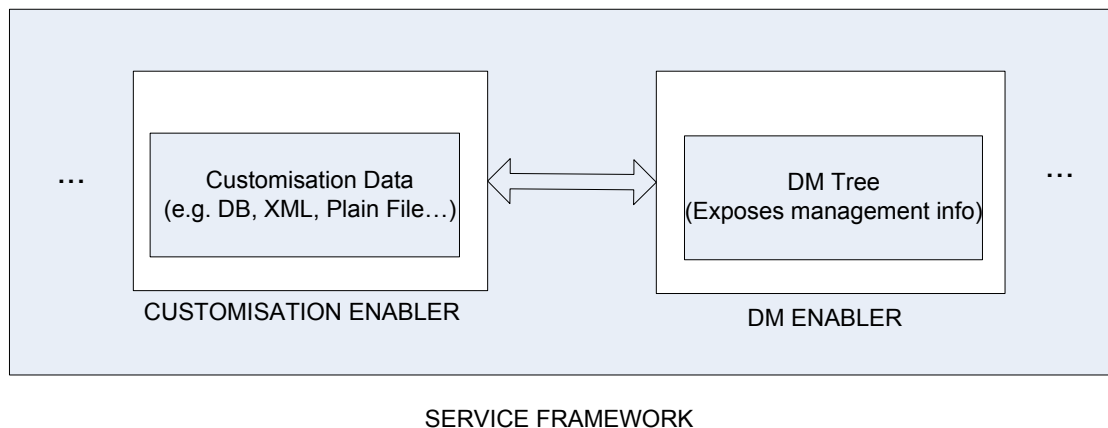
- TACE-GROUP-XX-###.###.### where
  - *GROUP* is used to group a set of requirements. Grouping of requirements is used to ease the process of managing requirements. For example TACE-LFCO-FR-### can be used as the requirement ID for requirements on Look & Feel customisation common requirements.
  - *XX* refers to the requirement type (either “FR” for a functionality requirement, “CF” for requirements for the common file format or “IF” for an interfacing requirement)
  - *###* are sequential numbers that identifies the requirement (e.g. 1.1.1). It is only mandatory to include the first number.

## 2 CUSTOMISATION ENABLER DESCRIPTION (INFORMATIVE)

This chapter describes what is a Customisation Enabler, providing an overview of what are its responsibilities, what is the target of the requirements defined in this document and what are the relevant references related with this enabler.

### 2.1 DESCRIPTION

The main responsibility of a Customisation Enabler is maintaining a set of properties that are related to look and feel customisation.



The requirements that describe the general functionality which this enabler must offer as well as the information that must be managed by it are described in chapter 3. These requirements do not specify or recommend any technology (e.g. Database, XML...) to store the customisation information.

The remote management of the customisation information (e.g. OTA) has been determined as crucial for OMTP. The solution chosen within OMTP has been the use of the Device Management (DM) enabler [4] for this purpose, as it is typically responsible for all the terminal remote management features. Each section in chapter 3 includes a table summarizing the customisation data that must be possible to be configured by the Customisation Enabler and that could be available via the DM tree. Defining requirements on the customisation information storage on the device is out of the scope of this document. Chapter 4 describes the relationship between the DM and the Customisation Enablers.

The adoption of a common data structure to transfer all the customisation information between operators and manufacturers has been identified as one of the key requirements that must guide OMTP

work in customisation. Chapter 5 describes all the aspects related with this feature.

It is important to highlight that the actual rendering of look and feel elements is conducted by other entities in the system.

Although the need for user confirmations can be configured by this enabler, these interactions will not be handled by this enabler.

## **2.2 MOTIVATION**

Customisation of the terminal is one of the key drivers in OMTP. The Customisation Enabler shall be specified in accurate enough detail to ensure that the implementations will fulfil the functional requirements as specified by the OMTP User Experience Group.

## **2.3 REFERENCES**

The functionality of the Customisation Enabler in this Release will outline the solution to the functional requirements defined in [2].



### 3 ENABLER FUNCTIONALITY

This chapter will gather all the requirements that define the different functionalities that a Customisation Enabler must offer.

The target of these requirements is identifying the customisable elements, the configuration information related with each of these elements and the functionality that the enabler can provide with respect to these elements.

The requirements linked to a specific customisation element, will only apply if the terminal supports that element (e.g. softkey customisation requirements will not apply to touch screen terminals with no softkeys).

#### 3.1 GENERAL REQUIREMENTS

REQUIREMENT ID	REQUIREMENT	REFERENCES
<b>TACE-GR-FR-1</b>	The Customisation Enabler <b>MUST</b> be able to roll back all operator customisation properties and media to default (manufacturer) values when requested by operator.	
<b>TACE-GR-FR-2</b>	All the requirements that refer to applications apply exclusively to manufacturer and operator applications except where otherwise stated.	
<b>TACE-GR-FR-3</b>	The Customisation Enabler <b>MAY</b> be able to restore customisation settings and contents to the most recent previous settings when requested by the end user.	CL4-G013 [2]
<b>TACE-GR-FR-4</b>	The Customisation Enabler <b>MUST</b> not allow the modification or distribution of operator-defined media.	CL4-G008 [2]
<b>TACE-GR-FR-6</b>	The Customisation Enabler <b>MUST</b> be able to unlock all the customisable elements using DM.	CL4-G017 [2]
<b>TACE-GR-FR-7</b>	The Customisation Enabler <b>MUST</b> be able to configure the locking status of the new customisation elements added	CL4-G018 [2]

	using DM	
<b>TACE-GR-FR-8</b>	The Customisation Enabler MAY be able to read customisation information from the Smart card.	CL4-G003 [2]
<b>TACE-GR-FR-9</b>	The Customisation Enabler MAY be able to read customisation information from a removable storage medium.	CL4-G006 [2]
<b>TACE-GR-FR-10</b>	If the Customisation Enabler supports several customisation mechanisms (OTA, Smart card, Removable Media...), it MUST be possible to prevent the Customisation Enabler from updating customisation information via one or more of these mechanisms.	CL4-G004 [2]
<b>TACE-GR-FR-12</b>	The Customisation Enabler MUST be able to provide the information for each customisation property whether a concrete setting is defined by operator ("operator-defined") or by others (e.g. "user-defined")	
<b>TACE-GR-FR-14</b>	The Customisation Enabler SHOULD be able to identify the set of operator customisation properties and media which are part of a single update step uniquely. The identifier should consist of a part which identifies the provider or vendor of the set of customisation properties and a version number.	

## **3.2 LOOK & FEEL CUSTOMISATION**

### **3.2.1 COMMON MEDIA HANDLING**

#### **Motivation**

This section defines requirements for a common and consistent handling of all types of media (e.g. still images, animations, videos, sounds, fonts, etc.). Different sections related to media like Wallpaper, Start-up and Shut-down Sequences, Ring tones, Sounds, etc. SHOULD refer to this common media section instead of defining similar requirements on their own. Defining the handling of media in a common way ensures that all media are treated consistently. It reflects the

requirement that the same media may be used for different purposes, e.g. displaying the same still image for start-up sequence and wallpaper. Furthermore it lowers the risk of incompatible requirements or conflicts in similar media related requirements and eventually multiple different realisations within a single system.

REQUIREMENT ID	REQUIREMENT	REFERENCES
<b>TACE-LFCM-FR-1</b>	The Customisation Enabler <b>MUST</b> be able to interpret media definitions provided in a common way.	
<b>TACE-LFCM-FR-3</b>	The Customisation Enabler <b>MUST</b> be able to receive and store information about the basic media type, e.g. Image, Animation, Video, Audio, etc. of each media item.	
<b>TACE-LFCM-FR-12</b>	The Customisation Enabler <b>MUST</b> accept all the valid media encoded in the formats defined in the profiles CDA0, CDV0 and CDI0 as specified in [3] except otherwise stated.	
<b>TACE-LFCM-FR-4</b>	The Customisation Enabler <b>MUST</b> be able to treat common media definitions provided by operator customisation as operator-defined media.	CL4-G008 [2]
<b>TACE-LFCM-FR-5</b>	The Customisation Enabler <b>MUST</b> be able to add new media with valid content to the device.	
<b>TACE-LFCM-FR-6</b>	The Customisation Enabler <b>MUST</b> be able to replace operator-defined media if the content is valid and the identifier of the media is known (extant media). Replacement of the media must be possible regardless of the storage location. Depending on the concrete use case of the media (e.g. wallpaper, splash screen, etc.), it might be necessary to apply user confirmation according <b>TACE-LFCM-FR-11</b> . If the user denies replacement, the Customisation Enabler <b>MUST NOT</b> replace the operator-defined media.	CL4-G008 CL4-G009 [2]

<b>TACE-LFCM-FR-10</b>	The Customisation Enabler <b>MUST NOT</b> replace or remove user-defined media via operator customisation.	
<b>TACE-LFCM-FR-7</b>	The Customisation Enabler <b>MUST</b> be able to ignore or refuse media with erroneous or corrupt content.	
<b>TACE-LFCM-FR-14</b>	The Customisation Enabler <b>MUST</b> be able to ignore media if content is empty and the identifier of the media is unknown.	
<b>TACE-LFCM-FR-11</b>	<p>The Customisation Enabler <b>MUST</b> be able to trigger user confirmation for operator-defined customisation.</p> <p>It <b>MUST</b> support both, explicit user confirmation for specific steps as well as an implicit handling based on general customisation settings. In the latter case the Customisation Enabler <b>MUST NOT</b> prompt user confirmation for single steps.</p> <p>The detailed behaviour of user confirmation needs to be defined within each of the specific sections.</p>	CL4-G015 [2]
<b>TACE-LFCM-FR-15</b>	Visual media <b>MUST NOT</b> be rendered outside of the rendering area	CL4-G023 [2]
<b>TACE-LFCM-FR-16</b>	By default the Customisation Enabler <b>MUST</b> configure visual media to maintain the original aspect ratio. This default behaviour can be overridden if specifically requested ( <b>TACE-LFCM-FR-23</b> ).	CL4-G023 [2]
<b>TACE-LFCM-FR-23</b>	If aspect ratio is requested not to be maintained, the media <b>SHOULD</b> be scaled regardless of the original aspect ratio of the media.	CL4-G023 [2]
<b>TACE-LFCM-FR-17</b>	If scaling is requested as part of the visual media definition, the media <b>SHOULD</b> be scaled to completely cover the rendering area. Scaling might	CL4-G023 [2]

	<p>require down and/or up scaling. When the aspect ratio is to be preserved (<b>TACE-LFCM-FR-16</b>) and the rendering area aspect ratio does not match the original aspect ratio the media, the scaling <b>MUST</b> be performed based on the shorter side of the media in order to fully cover the rendering area. In this case, the media must be also automatically clipped in those sides that would be scaled over the rendering area. In addition, the media <b>SHOULD</b> also be centred if requested, as defined in <b>TACE-LFCM-FR-19</b>.</p>	
<b>TACE-LFCM-FR-18</b>	<p>If top-left positioning is requested as part of the visual media definition, the media <b>SHOULD</b> be rendered in its intrinsic size in the top-left corner. The rendering might cause the right and/or bottom edges of media to be clipped in order to fit it in to the rendering area.</p>	CL4-G023 [2]
<b>TACE-LFCM-FR-19</b>	<p>If centring is requested as part of the visual media definition, the media <b>SHOULD</b> be rendered in its intrinsic size in the centre of the rendering area. The rendering might cause some or all edges of media to be clipped in order to fit it in to the rendering area.</p>	CL4-G023 [2]
<b>TACE-LFCM-FR-20</b>	<p>If tiling is requested as part of the media definition, as many copies of media in its intrinsic size as needed to completely fill the rendering area <b>SHOULD</b> be rendered vertically and horizontally. The start of tiling is by default the top-left corner as defined in <b>TACE-LFCM-FR-18</b> but can be changed to the centre as defined by <b>TACE-LFCM-FR-19</b>. Tiling might cause some of the copies of media to be clipped at the edges of the rendering area.</p>	CL4-G023 [2]

### INFORMATION UPDATABLE VIA THE DM ENABLER

The table below describes the information that should be updatable via the DM enabler for each media object. The required values column describes the minimum list of values that should be supported for each of the parameters. The exact format or structure is implementation dependant.

<b>ELEMENT</b>	<b>DESCRIPTION</b>	<b>REQUIRED VALUES</b>
<b>NAME</b>	Human readable name of the media (e.g. a string describing the content of media).	
<b>CONTENT</b>	Content of the media (e.g. audio filed binary encoded).	
<b>TYPE</b>	Media type (e.g. video, audio...).	
<b>FORMAT</b>	Format in which the media is encoded (e.g. gif, jpg....)	Formats described in CDA0, CDV0 and CDI0 as specified in [3]
<b>ORIGIN</b>	Type or origin of the media (e.g. operator-defined, user-defined)	Operator-defined: Media has been provided by the operator  User-defined: Media has been provided by the end-user
<b>RENDERING INFORMATION</b>	One or more set of rendering properties that identifies how a visual media will be displayed. (Only applies to graphical elements)	See table below

The table below describes the information that defines how a visual media must be rendered. In order to allow the use of the same media

with different rendering properties, each visual media MAY have more than one rendering configuration.

ELEMENT	DESCRIPTION	REQUIRED VALUES
<b>SCALING</b>	Media scaling information (e.g. scale media vertically, horizontally...)	<p>One of the following (but not limited to):</p> <p>Maintain aspect ratio: The aspect ratio should be maintained if media is scaled to fit best (no invisible parts) into a dedicated area</p> <p>Crop media: Media should not be scaled but positioned as stated via "POSITIONING" on dedicated area and invisible parts of the media should be skipped.</p> <p>Best fit: Media should be scaled without maintaining aspect ratio to fill dedicated area completely</p> <p>Horizontal scaling: Media should be scaled to fit horizontally into a dedicated area; image must not be scaled vertically but should be cropped if it doesn't fit vertically.</p> <p>Vertical scaling: Media should be scaled to fit vertically into a dedicated area; image must not be scaled horizontally but should be cropped if it doesn't fit horizontally.</p>
<b>POSITIONING</b>	Media positioning information (e.g. left aligned, centred...)	<p>Top left aligned</p> <p>Top centred</p> <p>Top right aligned</p> <p>Middle left aligned</p> <p>Middle centred</p> <p>Middle right aligned</p> <p>Bottom left aligned</p> <p>Bottom centred</p>

		Bottom right aligned
<b>TILING</b>	Media Tiling Information (e.g. tiled / not tiled)	Tiled: If image does not fill the complete dedicated area, it should be repeated in each direction. Anchor image must be positioned according to "POSITIONING", any tile must be scaled regarding "SCALING"

### 3.2.2 BACKGROUND COLOUR

REQUIREMENT ID	REQUIREMENT	REFERENCES
<b>TACE-LFBC-FR-24</b>	The Customisation Enabler <b>MUST</b> be able to configure background colours as supported by the terminal colour palette.	CL4A-F002 [2]
<b>TACE-LFBC-FR-11</b>	The Customisation Enabler <b>MUST</b> be able to alter the default colour of the general background for each display that supports its customisation. This background colour is visible for whole general background unless overlapped by background (either colour or media) of any of the display areas or overridden by application specific general background colour.	CL4A-F002 [2]
<b>TACE-LFBC-FR-12</b>	The Customisation Enabler <b>MUST</b> be able to alter the operator application specific general background colour. This background colour overrides the default general background colour when that application is active. This background colour is visible for whole general background unless overlapped by background (either colour or media) of any of the display areas.	CL4A-F058 [2]
<b>TACE-LFBC-FR-27</b>	The Customisation Enabler <b>SHOULD</b> be able to alter the application specific general background colour. This background colour overrides the default	CL4A-F058 [2]



	<p>general background colour when that application is active. This background colour is visible for whole general background unless overlapped by background (either colour or media) of any of the display areas.</p>	
<b>TACE-LFBC-FR-13</b>	<p>The Customisation Enabler <b>MUST</b> be able to alter separately the default background colour of status area, application area, softkey area and notification area for each display that supports configuring background colours for these areas. The background colours of these display areas may overlap the colour and media defined for general background. This background colour is used unless overridden by application specific display area background colours.</p>	<p>CL4A-F007 CL4A-F008 CL4A-F009 CL4A-F065 CL4A-F086 CL4A-F090 CL4A-F094 CL4A-F098 [2]</p>
<b>TACE-LFBC-FR-14</b>	<p>The Customisation Enabler <b>SHOULD</b> be able to define separately application specific background colours for status area, application area, softkey area and notification area for each application. These background colours override the default background colours defined for display areas when that application is active. The background colours of these display areas may overlap the colour and media defined for general background.</p>	<p>CL4A-F062 CL4A-F063 CL4A-F064 CL4A-F010 [2]</p>
<b>TACE-LFBC-FR-26</b>	<p>For all the operator applications the Customisation Enabler <b>MUST</b> be able to define separately the background colour of status area, application area, softkey area and notification area. These background colours override the default background colours defined for display areas when that application is active. The background colours of these display areas may overlap the colour and media defined for general background.</p>	<p>CL4A-F062 CL4A-F063 CL4A-F064 CL4A-F010 [2]</p>

<b>TACE-LFBC-FR-15</b>	The Customisation Enabler <b>MUST</b> be able to lock the defined default general background colour. Application specific background colour can still override the locked default background.	CL4-G009 [2]
<b>TACE-LFBC-FR-16</b>	The Customisation Enabler <b>MUST</b> be able to lock the defined default background colour for one or more display areas. Application specific background colour can still override the locked default background.	CL4-G009 [2]
<b>TACE-LFBC-FR-17</b>	The Customisation Enabler <b>MUST</b> be able to lock all the defined background colours on a per application basis.	CL4-G009 [2]
<b>TACE-LFBC-FR-19</b>	The Customisation Enabler <b>MUST</b> apply user confirmation before updating the user-defined default general background colour according to <b>TACE-LFCM-FR-11</b> in post-sale customisation.	CL4-G015 [2]
<b>TACE-LFBC-FR-29</b>	The Customisation Enabler <b>MUST</b> apply remote server directives <sup>1</sup> for user confirmation before updating the operator-defined default general background colour according to <b>TACE-LFCM-FR-11</b> in post-sale customisation.	CL4A-F103 CL4A-F105 [2]

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<sup>1</sup> Directives will specify whether or not user confirmation is required. If no directive is included the device-dependant behaviour will apply.

<b>TACE-LFBC-FR-20</b>	The Customisation Enabler <b>MUST</b> apply user confirmation before updating the user-defined default display area background colours according to <b>TACE-LFCM-FR-11</b> in post-sale customisation.	CL4-G015 [2]
<b>TACE-LFBC-FR-30</b>	The Customisation Enabler <b>MUST</b> apply remote server directives <sup>2</sup> for user confirmation before updating the operator-defined default display area background colours according to <b>TACE-LFCM-FR-11</b> in post-sale customisation.	CL4A-F111 CL4A-F112 [2]
<b>TACE-LFBC-FR-21</b>	The Customisation Enabler <b>MUST</b> apply user confirmation before updating the user-defined application specific general background colour according to <b>TACE-LFCM-FR-11</b> for non-operator applications in post-sale customisation.	CL4-G015 [2]
<b>TACE-LFBC-FR-31</b>	The Customisation Enabler <b>MUST</b> apply remote server directives <sup>3</sup> for user confirmation before updating the operator-defined application specific general background colour according to <b>TACE-LFCM-FR-11</b> in post-sale customisation.	CL4A-F104 CL4A-F106 [2]

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<sup>2</sup> Directives will specify whether or not user confirmation is required. If no directive is included the device-dependant behaviour will apply.

<sup>3</sup> Directives will specify whether or not user confirmation is required. If no directive is included the device-dependant behaviour will apply.

<b>TACE-LFBC-FR-22</b>	The Customisation Enabler <b>MUST</b> apply user confirmation before updating the user-defined application specific display area background colours according to <b>TACE-LFCM-FR-11</b> for non-operator applications in post-sale customisation.	CL4-G015 [2]
<b>TACE-LFBC-FR-32</b>	The Customisation Enabler <b>MUST</b> apply remote server directives <sup>4</sup> for user confirmation before updating the operator-defined application specific display area background colours according to <b>TACE-LFCM-FR-11</b> in post-sale customisation	CL4A-F109 CL4A-F110 [2]
<b>TACE-LFBC-FR-23</b>	The Customisation Enabler <b>MUST</b> be able to set background colour as fully transparent for any display area.	CL4A-F069 [2]
<b>TACE-LFBC-FR-25</b>	The Customisation Enabler <b>SHOULD</b> be able to set up the level of transparency for all the customised background colours of display areas.	CL4A-F069 [2]
<b>TACE-LFBC-FR-28</b>	The information related to all the customisable background colours <b>MUST</b> be updatable via DM.	CL4A-F004 CL4A-F012 [2]

#### INFORMATION UPDATABLE VIA THE DM ENABLER

The table below describes the information that should be updatable via the DM enabler for each background colour. The required values column describes the minimum list of values that should be supported for each of the parameters. The exact format or structure is implementation dependant.

ELEMENT	DESCRIPTION	REQUIRED VALUES
<b>COLOUR</b>	Identifies the background colour (e.g. RGB code).	

<sup>4</sup> Directives will specify whether or not user confirmation is required. If no directive is included the device-dependant behaviour will apply.

<b>DISPLAY</b>	Identifies the display to which the colour applies (e.g. Primary Display)	Primary Display
<b>TRANSPARENCY</b>	Level of transparency (e.g. 0%, 50%, 100%...)	0%: The colour is totally opaque 100%: The colour is totally transparent
<b>DISPLAY AREA</b>	Identifies the area in which the colour is used (e.g. status area, notification area...).	Possible areas are described in Definition of Terms: Status Area Notification Area Display Area Softkeys Area Application Area
<b>APPLICATION</b>	Identifies the application to which the background colour is linked (e.g. Browser, Messaging Client).	
<b>LOCKING STATUS</b>	Indicates if the end-user can modify the background colour (e.g. locked / non-locked).	Locked: The colour configuration cannot be modified by the end user either directly or indirectly (e.g. by themes)  Locked except for themes: The configuration cannot be modified directly by the end user but it must be possible to modify it via themes.  Non-Locked: The colour configuration can be modified by the end user.

<b>ORIGIN</b>	Type or origin of the background colour (e.g. operator-defined, user-defined)	<p>Operator-defined: Colour has been defined by the operator</p> <p>User-defined: The colour has been provided by the end-user</p>
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### 3.2.3 BACKGROUND MEDIA

The background media utilizes the common media requirements as specified in 3.2.1.

REQUIREMENT ID	REQUIREMENT	REFERENCES
<b>TACE-LFBM-FR-10</b>	The Customisation Enabler <b>MUST</b> accept a still image as background media for both general background and display areas and behave according to the requirements defined in 3.2.1 - Common Media.	CL4A-F114 [2]
<b>TACE-LFBM-FR-7</b>	The Customisation Enabler <b>SHOULD</b> accept an animation or a video as background media of both general background and display areas and behave according to the requirements defined in 3.2.1 - Common Media.	CL4A-F015 [2]
<b>TACE-LFBM-FR-11</b>	The Customisation Enabler <b>MUST</b> be able to alter the default media for the general background for each display that supports its customisation. This background media is visible for whole general background unless overlapped by background (either colour or media) of any of the display areas or overridden by an application specific general background media.	CL4A-F001 [2]
<b>TACE-LFBM-FR-12</b>	The Customisation Enabler <b>SHOULD</b> be able to define separate application specific general background media for	CL4A-F058 [2]

	<p>each application. This background media overrides the default general background media when that application is active. This background media is visible for whole general background unless overlapped by background (either colour or media) of any of the display areas. Application specific general background media is typically defined for applications such as Idle screen and main menu.</p>	
<b>TACE-LFBM-FR-24</b>	<p>For all the operator applications the Customisation Enabler <b>MUST</b> be able to define separate general background media. This background media overrides the default general background media defined when that application is active. This background media is visible for the whole general background unless overlapped by background (either colour or media) of any of the display areas.</p>	CL4A-F058 [2]
<b>TACE-LFBM-FR-13</b>	<p>The Customisation Enabler <b>MUST</b> be able to alter each of the default background media of the status area, application area, softkey area and notification area for each display that supports configuring background media for these areas. The background media of these display areas may overlap the colour and media defined for general background. This background media is used unless overridden by application specific display area background media.</p>	<p>CL4A-F084 CL4A-F088 CL4A-F092 CL4A-F096 CL4A-F087 CL4A-F091 CL4A-F095 CL4A-F099 [2]</p>
<b>TACE-LFBM-FR-14</b>	<p>The Customisation Enabler <b>SHOULD</b> be able to define separate application specific background media for the status area, application area, softkey area and notification area. These background media override the default background media defined for display areas when that application is active. The background media of these display</p>	<p>CL4A-F085 CL4A-F089 CL4A-F093 CL4A-F097 [2]</p>

	areas may overlap the colour and media defined for general background.	
<b>TACE-LFBM-FR-25</b>	For all the operator applications the Customisation Enabler <b>MUST</b> be able to define separately the background media of status area, application area, softkey area and notification area for each display that supports configuring background media for these areas. These background media override the default background media defined for display areas when that application is active. The background media of these display areas may overlap the colour and media defined for general background.	CL4A-F085 CL4A-F089 CL4A-F093 CL4A-F097 [2]
<b>TACE-LFBM-FR-23</b>	The Customisation Enabler <b>MUST</b> be able to store multiple non-active Idle Screen application area (AKA Wallpaper) specific background media that can be activated by end user.	CL4A-F017 [2]
<b>TACE-LFBM-FR-15</b>	The Customisation Enabler <b>MUST</b> be able to lock the defined default general background media. Application specific background media can still override the locked default background.	CL4-G009 [2]
<b>TACE-LFBM-FR-16</b>	The Customisation Enabler <b>MUST</b> be able to lock the defined default background media for one or more display areas. Application specific background media can still override the locked default background.	CL4-G009 [2]
<b>TACE-LFBM-FR-17</b>	The Customisation Enabler <b>MUST</b> be able to lock all the defined background media on a per application basis.	CL4-G009 [2]
<b>TACE-LFBM-FR-19</b>	The Customisation Enabler <b>MUST</b> apply user confirmation before updating the user-defined default general background media according to <b>TACE-LFCM-FR-11</b> in post-sale customisation.	CL4-G015 [2]



<b>TACE-LFBM-FR-27</b>	The Customisation Enabler MUST apply remote server directives <sup>5</sup> for user confirmation before updating the operator-defined default general background media according to <b>TACE-LFCM-FR-11</b> in post-sale customisation.	CL4A-F103 [2]
<b>TACE-LFBM-FR-20</b>	The Customisation Enabler MUST apply user confirmation before updating the user-defined default display area background media according to <b>TACE-LFCM-FR-11</b> in post-sale customisation.	CL4-G015 [2]
<b>TACE-LFBM-FR-28</b>	The Customisation Enabler MUST apply remote server directives <sup>6</sup> for user confirmation before updating the operator-defined default display areas background media according to <b>TACE-LFCM-FR-11</b> in post-sale customisation.	CL4A-F111 CL4A-F112 [2]
<b>TACE-LFBM-FR-21</b>	The Customisation Enabler MUST apply user confirmation before updating the user-defined application specific general background media according to <b>TACE-LFCM-FR-11</b> for non-operator applications in post-sale customisation.	CL4-G015 [2]
<b>TACE-LFBM-FR-29</b>	The Customisation Enabler MUST apply remote server directives <sup>7</sup> for user confirmation before updating the operator-defined application specific general background media according to <b>TACE-LFCM-FR-11</b> in post-sale customisation.	CL4A-F104 CL4A-F106 [2]

<sup>5</sup> Directives will specify whether or not user confirmation is required. If no directive is included the device-dependant behaviour will apply.

<sup>6</sup> Directives will specify whether or not user confirmation is required. If no directive is included the device-dependant behaviour will apply.

<sup>7</sup> Directives will specify whether or not user confirmation is required. If no directive is included the device-dependant behaviour will apply.

<b>TACE-LFBM-FR-22</b>	The Customisation Enabler <b>MUST</b> apply user confirmation before updating the user-defined application specific display area media according to <b>TACE-LFCM-FR-11</b> for non-operator applications in post-sale customisation.	CL4-G015 [2]
<b>TACE-LFBM-FR-30</b>	The Customisation Enabler <b>MUST</b> apply remote server directives <sup>8</sup> for user confirmation before updating the operator-defined application specific display area media according to <b>TACE-LFCM-FR-11</b> in post-sale customisation.	CL4A-F109 CL4A-F110 [2]
<b>TACE-LFBM-FR-26</b>	The information related with all the customisable background colours <b>MUST</b> be updatable via DM.	CL4A-F004 CL4A-F012 [2]

INFORMATION UPDATABLE VIA THE DM ENABLER

The table below describes the information that should be updatable via the DM enabler for each background media. The required values column describes the minimum list of values that should be supported for each of the parameters. The exact format or structure is implementation dependant.

ELEMENT	DESCRIPTION	REQUIRED VALUES
<b>MEDIA</b>	Refers to the background media.	
<b>DISPLAY</b>	Identifies the display to which the media applies (e.g. Primary Display)	Primary Display
<b>DISPLAY AREA</b>	Identifies the area in which the background is used (e.g. status area, notification area...).	Possible areas are described in Definition of Terms: Status Area

<sup>8</sup> Directives will specify whether or not user confirmation is required. If no directive is included the device-dependant behaviour will apply.

		Notification Area Display Area Softkeys Area Application Area
<b>APPLICATION</b>	Identifies the application to which the background media is linked (e.g. Browser, Messaging Client).	
<b>LOCKING STATUS</b>	Indicates if the end-user can select another background media (e.g. locked / non-locked).	Locked: The configuration cannot be modified by the end user either directly or indirectly (e.g. by themes)  Locked except for themes: The configuration cannot be modified directly by the end user but it must be possible to modify it via themes.  Non-Locked: The configuration can be modified by the end user.
<b>ACTIVE</b>	Indicates if the background media is the active one (e.g. active / non-active). Note: only useful for application area backgrounds.	Active Non-Active
<b>ORIGIN</b>	Entity that has selected the background (e.g. operator-defined, user-defined)	Operator-defined: The media has been selected by the operator  User-defined: The media has been selected by the end-user

### 3.2.4 SCREENSAVERS

REQUIREMENT ID	REQUIREMENT	REFERENCES
<b>TACE-LFSS-FR-1</b>	The Customisation Enabler MUST be able to manage the configuration information of a list of screensavers.	CL4A-F023 [2]

<b>TACE-LFSS-FR-2</b>	The Customisation Enabler <b>MUST</b> be able to identify a customisable screensaver as the default one.	CL4A-F023 [2]
<b>TACE-LFSS-FR-3</b>	The Customisation Enabler <b>MUST</b> be able to identify a customisable screensaver as active.	CL4A-F023 [2]
<b>TACE-LFSS-FR-4</b>	If no screensaver has been configured as active, the Customisation Enabler <b>MUST</b> identify the default screensaver as the active one.	CL4A-F023 [2]
<b>TACE-LFSS-FR-5</b>	The Customisation Enabler <b>MUST</b> be able to configure a screensaver as locked.	CL4A-F119 CL4-G009 [2]
<b>TACE-LFSS-FR-7</b>	The Customisation Enabler <b>MUST</b> be able to modify the screensaver delay (inactivity period before the screensaver is started). This delay applies for all the screensavers.	CL4A-F025 [2]
<b>TACE-LFSS-FR-8</b>	The Customisation Enabler <b>MUST</b> be able to modify the screensaver maximum timeout duration (period after which the screensaver should stop and change to manufacturer specific mode). This timeout applies for all the screensavers.	CL4A-F026 [2]
<b>TACE-LFSS-FR-9</b>	The Customisation Enabler <b>SHOULD</b> be able to accept visual media (list of images, animations, videos) as screensavers and behave according to the requirements defined in 3.2.1 – Common Media.	CL4A-F027 [2]
<b>TACE-LFSS-FR-13</b>	The Customisation Enabler <b>MUST</b> be able to accept one image as screensaver and behave accordingly to the requirements defined in 3.2.1 – Common Media.	CL4A-F101 [2]
<b>TACE-LFSS-FR-10</b>	The Customisation Enabler <b>MUST</b> apply user confirmation before updating the user-defined Screensaver according to <b>TACE-LFCM-FR-11</b> in post-sale customisation.	CL4-G015 [2]

<b>TACE-LFSS-FR-15</b>	The Customisation Enabler MUST apply remote server directives <sup>9</sup> for user confirmation before updating the operator-defined screensaver according to <b>TACE-LFCM-FR-11</b> in post-sale customisation.	CL4A-F118 [2]
<b>TACE-LFSS-FR-14</b>	The customisation information related with screensavers MUST be updatable via DM.	CL4A-F073 [2]

INFORMATION UPDATABLE VIA THE DM ENABLER

The table below describes the common information that should be updatable via the DM enabler for screensaver settings.

ELEMENT	DESCRIPTION
<b>DELAY</b>	Inactivity time before starting the screensaver (e.g. 10 seconds)
<b>TIMEOUT</b>	Period after which the screensaver must stop (e.g. 30 seconds)

The table below describes the information that should be updatable via the DM enabler for each screensaver. The required values column describes the minimum list of values that should be supported for each of the parameters. The exact format or structure is implementation dependant.

ELEMENT	DESCRIPTION	REQUIRED VALUES
<b>DEFAULT</b>	Indicates if the screensaver is the default one (e.g. default / non- default).	Default Non-default
<b>ACTIVE</b>	Identifies the active screensaver (e.g. active / non-active).	Active Non-active

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<sup>9</sup> Directives will specify whether or not user confirmation is required. If no directive is included the device-dependant behaviour will apply.

<b>LOCKING STATUS</b>	Indicates if the end-user can select another screensaver as the active one (e.g. locked / non-locked).	<p>Locked: No other screensaver can be selected as active either directly or indirectly (e.g. by themes)</p> <p>Locked except for themes: The configuration cannot be modified directly by the end user but it must be possible to modify it via themes.</p> <p>Non-Locked: The active screensaver can be modified by the end user.</p>
<b>ORIGIN</b>	Entity that has selected the screensaver (e.g. operator-defined, user-defined)	<p>Operator-defined: The screensaver has been selected by the operator</p> <p>User-defined: The screensaver has been selected by the end-user</p>

### 3.2.5 RING TONES AND AUDIO CUES

REQUIREMENT ID	REQUIREMENT	REFERENCES
<b>TACE-LFRT-FR-1</b>	<p>The Customisation Enabler MUST be able to link an audio media with the ringtones played upon the following events:</p> <ul style="list-style-type: none"> <li>• Incoming Call</li> <li>• Incoming Video-Call</li> <li>• Incoming Message</li> <li>• Outgoing Message</li> <li>• MMS received</li> <li>• SMS received</li> <li>• E-mail received</li> <li>• Request for chat</li> <li>• PTT invitation</li> <li>• Instant Message received</li> </ul>	CL4A-F028 [2]

<b>TACE-LFRT-FR-2</b>	The Customisation Enabler MUST be able to accept audio media as ringtones and behave according to the requirements defined in 3.2.1 – Common Media for ringtones and for the underlying media.	CL4A-F028 [2]
<b>TACE-LFRT-FR-9</b>	The Customisation Enabler MUST be able to configure a ringtone as locked.	CL4-G009 CL4A-F121 [2]
<b>TACE-LFRT-FR-10</b>	The Customisation Enabler MUST apply user confirmation before updating the ringtone associated with an event according to <b>TACE-LFCM-FR-11</b> .	CL4-G015 CL4A-F120 [2]
<b>TACE-LFRT-FR-11</b>	The customisation information related with ringtones MUST be updatable via DM.	CL4A-F075 [2]

INFORMATION UPDATABLE VIA THE DM ENABLER

The table below describes the information that should be updatable via the DM enabler for each customisable ringtone. The required values column describes the minimum list of values that should be supported for each of the parameters. The exact format or structure is implementation dependant.

ELEMENT	DESCRIPTION	REQUIRED VALUES
<b>EVENT ID</b>	Identifies the ringtone (e.g. incoming SMS)	
<b>MEDIA</b>	Refers to the audio media played as ringtone	
<b>LOCKING STATUS</b>	Indicates if the end user can associate a different audio media to this ringtone (e.g. locked / non-locked).	Locked: No other audio media can be linked to the ringtone either directly or indirectly (e.g. by themes)  Locked except for themes: The configuration cannot be modified directly by the end user but it must be possible to modify it via themes.  Non-Locked: A different audio media can be selected by the end user.
<b>ORIGIN</b>	Entity that has selected the ringtone (e.g.	Operator-defined: The ringtone has been selected by the operator

	operator-defined, user-defined)	User-defined: The ringtone has been selected by the end-user
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### 3.2.6 START-UP SEQUENCE

The different media displayed to the user when a terminal is switched on is called start-up sequence. A start-up sequence is usually composed by different welcome messages (e.g. operator welcome message and device manufacturer welcome message).

REQUIREMENT ID	REQUIREMENT	REFERENCES
<b>TACE-LFST-FR-1</b>	The Customisation enabler <b>MUST</b> be able to manage the configuration information of the welcome messages part of the start-up sequence.	CL4A-F029 [2]
<b>TACE-LFST-FR-19</b>	The Customisation Enabler <b>SHOULD</b> be able to configure a start up sequence composed by several (more than one) welcome messages.	CL4A-F032 [2]
<b>TACE-LFST-FR-17</b>	The Customisation Enabler <b>MUST</b> manage duration for each customisable welcome message part of the start-up sequence in the range supported by the terminal.	CL4A-F031 [2]
<b>TACE-LFST-FR-18</b>	The Customisation Enabler <b>MUST</b> manage the displayed visual media for each welcome message part of the start-up sequence.	CL4A-F034 [2]
<b>TACE-LFST-FR-4</b>	The Customisation Enabler <b>MUST</b> be able to identify the activity status (active, non-active) for each welcome message that compose the start-up sequence.	CL4A-F032 [2]
<b>TACE-LFST-FR-5</b>	The Customisation Enabler <b>SHOULD</b> be able to identify more than one welcome messages as active.	CL4A-F032 [2]
<b>TACE-LFST-FR-20</b>	The Customisation Enabler <b>MAY</b> be able to identify all the welcome messages as non-active.	CL4A-F100 [2]



<b>TACE-LFST-FR-6</b>	If requirement <b>TACE-LFST-FR-5</b> is fulfilled, the Customisation Enabler MAY be able to identify and modify the order in which each of the active welcome messages is displayed.	CL4A-F032 [2]
<b>TACE-LFST-FR-10</b>	The Customisation Enabler MUST be able to configure a welcome message as locked.	CL4-G009 CL4A-F123 [2]
<b>TACE-LFST-FR-14</b>	The Customisation Enabler SHOULD be able to accept visual media (e.g. still images, animations, videos) as welcome messages. The Customisation Enabler MAY behave according to the requirements defined in 3.2.1 – Common Media for welcome messages and for the underlying media.	CL4A-F034 [2]
<b>TACE-LFST-FR-15</b>	The Customisation Enabler MUST apply user confirmation before updating a user-defined start-up sequence (welcome message) according to <b>TACE-LFCM-FR-11</b> in post-sale customisation.	CL4-G015 [2]
<b>TACE-LFST-FR-22</b>	The Customisation Enabler MUST apply remote server directives <sup>10</sup> for user confirmation before updating a operator-defined start-up sequence according to <b>TACE-LFCM-FR-11</b> in post-sale customisation.	CL4A-F077 CL4A-F122 [2]
<b>TACE-LFST-FR-21</b>	The information related with customisable welcome messages MUST be updatable via DM.	CL4A-F077 [2]

INFORMATION UPDATABLE VIA THE DM ENABLER

The table below describes the information that should be updatable via the DM enabler for each customisable welcome message. The required values column describes the minimum list of values that should be supported for each of the parameters. The exact format or structure is implementation dependant.

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<sup>10</sup> Directives will specify whether or not user confirmation is required. If no directive is included the device-dependant behaviour will apply.

ELEMENT	DESCRIPTION	REQUIRED VALUES
<b>MEDIA</b>	Refers to the visual media used as welcome message	
<b>ACTIVE</b>	Indicates if the welcome message is active (e.g. active / non-active)	Active Non-active
<b>ORDER</b>	Indicates the order of the message among the list of active welcome messages (e.g. 1, 2, 3...).	
<b>DURATION</b>	Duration of the welcome message (e.g. 10 seconds)	
<b>LOCKING STATUS</b>	Determines if the end user can modify the welcome message configuration information (e.g. locked / non-locked).	Locked: No other media can be linked to the welcome message either directly or indirectly (e.g. by themes)  Locked except for themes: The configuration cannot be modified directly by the end user but it must be possible to modify it via themes.  Non-Locked: A different media can be selected by the end user.
<b>ORIGIN</b>	Entity that has selected the welcome message (e.g. operator-defined, user-defined)	Operator-defined: The welcome message has been selected by the operator  User-defined: The welcome message has been selected by the end-user

### 3.2.7 SHUTDOWN SEQUENCE

The different media displayed to the user when a terminal is switched off is called shutdown sequence. A shutdown sequence is usually composed by different goodbye messages (e.g. operator goodbye message and device manufacturer goodbye message).

REQUIREMENT ID	REQUIREMENT	REFERENCES
<b>TACE-LFSH-FR-1</b>	The Customisation enabler MUST be	CL4A-F035 [2]

	able to manage the configuration information of the goodbye messages part of the shutdown sequence.	
<b>TACE-LFSH-FR-19</b>	The Customisation Enabler SHOULD be able to configure a shutdown sequence composed by several (more than one) goodbye messages.	CL4A-F038 [2]
<b>TACE-LFSH-FR-17</b>	The Customisation Enabler MUST manage duration for each customisable goodbye message part of the shutdown sequence in the range supported by the terminal.	CL4A-F037 [2]
<b>TACE-LFSH-FR-18</b>	The Customisation Enabler MUST manage the visual media displayed for each customisable goodbye message part of shutdown sequence .	CL4A-F040 [2]
<b>TACE-LFSH-FR-4</b>	The Customisation Enabler MUST be able to identify the activity status (active, non-active) for each goodbye message that compose the shutdown sequence.	CL4A-F038 [2]
<b>TACE-LFSH-FR-5</b>	The Customisation Enabler SHOULD be able to identify more than one goodbye messages as active.	CL4A-F038 [2]
<b>TACE-LFSH-FR-6</b>	If requirement <b>TACE-LFST-FR-5</b> is fulfilled, the Customisation Enabler MAY be able to identify and modify the order in which each of the goodbye messages sequences are displayed.	CL4A-F038 [2]
<b>TACE-LFSH-FR-9</b>	The Customisation Enabler MUST be able to configure a goodbye message as locked.	CL4A-F009 CL4A-F125 [2]
<b>TACE-LFST-FR-14</b>	The Customisation Enabler SHOULD be able to accept visual media (still images, animations, videos) as goodbye messages and behave according to the requirements defined in 3.2.1 – Common Media Handling for goodbye messages and for the underlying media.	CL4A-F040 [2]
<b>TACE-LFSH-FR-15</b>	The Customisation Enabler MUST apply user confirmation before updating a user-defined shutdown sequence (goodbye message) according to <b>TACE-</b>	CL4-G015 [2]

	<b>LFCM-FR-11</b> in post-sale customisation.	
<b>TACE-LFSH-FR-21</b>	The Customisation Enabler MUST apply remote server directives <sup>11</sup> for user confirmation before updating a operator-defined shutdown sequence according to <b>TACE-LFCM-FR-11</b> in post-sale customisation	CL4A-F124 [2]
<b>TACE-LFSH-FR-20</b>	The information related with customisable goodbye messages MUST be updatable via DM.	CL4A-F079 [2]

INFORMATION UPDATABLE VIA THE DM ENABLER

The table below describes the information that should be updatable via the DM enabler for each customisable goodbye message. The required values column describes the minimum list of values that should be supported for each of the parameters. The exact format or structure is implementation dependant.

ELEMENT	DESCRIPTION	REQUIRED VALUES
<b>MEDIA</b>	Refers to the visual media used as goodbye message	
<b>ACTIVE</b>	Indicates if the goodbye message is active (e.g. active / non-active)	Active Non-active
<b>ORDER</b>	Indicates the order of the message among the list of active goodbye messages (e.g. 1, 2, 3...).	
<b>DURATION</b>	Duration of the goodbye message (e.g. 10 seconds).	
<b>LOCKING STATUS</b>	Determines if the end user can modify the goodbye message configuration information (e.g. locked / non-	Locked: No other media can be linked to the goodbye message either directly or indirectly (e.g. by themes)  Locked except for themes: The

<sup>11</sup> Directives will specify whether or not user confirmation is required. If no directive is included the device-dependant behaviour will apply.

	locked).	configuration cannot be modified directly by the end user but it must be possible to modify it via themes.  Non-Locked: A different media can be selected by the end user.
<b>ORIGIN</b>	Entity that has selected the goodbye message (e.g. operator-defined, user-defined)	Operator-defined: The goodbye message has been selected by the operator  User-defined: The goodbye message has been selected by the end-user

### 3.2.8 NETWORK IDENTIFIER

Requirements defined in this section will only apply if the terminal supports the capability to display an operator graphic logo when the user is in the home network or in other selected networks defined by the operator.

REQUIREMENT ID	REQUIREMENT	REFERENCES
<b>TACE-LFNI-FR-1</b>	The Customisation Enabler MUST be able to manage the configuration information related with images used as network identifiers on all the displays supporting the network identifier feature.	CL4A-F042 [2]
<b>TACE-LFNI-FR-14</b>	The Customisation Enabler MUST be able to identify for each customisable network identifier the display in which it is rendered.	CL4A-F042 [2]
<b>TACE-LFNI-FR-15</b>	The Customisation Enabler MUST be able to identify for each customisable network identifier the visual media displayed.	CL4A-F042 [2]
<b>TACE-LFNI-FR-2</b>	The Customisation Enabler MUST be able to accept image media as network identifier and behave according to the requirements defined in 3.2.1 – Common Media.	CL4A-F042 [2]
<b>TACE-LFNI-FR-8</b>	The Customisation Enabler MAY be able to modify the position in which the network identifier is displayed.	CL4A-F044 [2]

<b>TACE-LFNI-FR-10</b>	If requirement <b>TACE-LFNI-FR-8</b> is fulfilled The Customisation Enabler <b>MUST</b> be able to lock the position in which the network identifier is displayed. Locked means that the position in which the network identifier is displayed cannot be modified by the user.	CL4A-F044 [2]
<b>TACE-LFNI-FR-11</b>	The Customisation Enabler <b>MUST</b> be able to configure a network identifier as locked.	CL4A-F127 CL4-G009 [2]
<b>TACE-LFNI-FR-12</b>	The Customisation Enabler <b>MUST</b> apply user confirmation before updating a user-defined network identifier according to <b>TACE-LFCM-FR-11</b> in post-sale customisation.	CL4-G015 [2]
<b>TACE-LFNI-FR-17</b>	The Customisation Enabler <b>MUST</b> apply remote server directives <sup>12</sup> for user confirmation before updating an operator-defined network identifier according to <b>TACE-LFCM-FR-11</b> in post-sale customisation	CL4A-F126 [2]
<b>TACE-LFNI-FR-16</b>	The customisation information related with network identifiers <b>MUST</b> be updatable via DM.	CL4A-F081 [2]

**INFORMATION UPDATABLE VIA THE DM ENABLER**

The table below describes the information that should be updatable via the DM enabler for network identifiers. The required values column describes the minimum list of values that should be supported for each of the parameters. The exact format or structure is implementation dependant.

<b>ELEMENT</b>	<b>DESCRIPTION</b>	<b>REQUIRED VALUES</b>
<b>MEDIA</b>	Refers to the visual media used as network identifier.	
<b>DISPLAY</b>	Display in which the network identifier is	Primary Display

<sup>12</sup> Directives will specify whether or not user confirmation is required. If no directive is included the device-dependant behaviour will apply.

	displayed (e.g. primary display...).	
<b>LOCKING STATUS</b>	Indicates if the end user can select another media as network identifier or prevent it to be displayed (e.g. locked / non-locked).	<p>Locked: No other media can be linked to the goodbye message either directly or indirectly (e.g. by themes)</p> <p>Locked except for themes: The configuration cannot be modified directly by the end user but it must be possible to modify it via themes.</p> <p>Non-Locked: A different media can be selected by the end user.</p>
<b>POSITION</b>	The position in which the network identifier is displayed (e.g. relative positions: left-aligned, absolute positions: 200,120...).	
<b>ORIGIN</b>	Entity that has selected the network identifier (e.g. operator-defined, user-defined)	<p>Operator-defined: The network identifier has been selected by the operator</p> <p>User-defined: The network identifier has been selected by the end-user</p>

**3.2.9 SOUNDS**

REQUIREMENT ID	REQUIREMENT	REFERENCES
<b>TACE-LFSO-FR-1</b>	<p>The Customisation Enabler <b>MUST</b> be able to link an audio media with the sounds played upon the following events:</p> <ul style="list-style-type: none"><li>• Alarms for operator applications</li><li>• Reminders / Calendar for operator applications</li><li>• Confirmation for operator applications</li><li>• Completion for operator applications</li><li>• Error for operator applications</li><li>• System active / process in progress for operator applications</li><li>• Alert for operator applications</li></ul>	CL4B-F001 [2]



<p><b>TACE-LFSO-FR-10</b></p>	<p>The Customisation Enabler SHOULD be able to link an audio media with the sounds played upon the following events:</p> <ul style="list-style-type: none"> <li>• Entering a phone number for operator applications</li> <li>• Sending DTMF (in call)</li> <li>• Establishing connection</li> <li>• Call connecting failed</li> <li>• Taking pictures</li> <li>• Alarms</li> <li>• Battery low</li> <li>• Battery very low</li> <li>• Battery charging initiated</li> <li>• Battery fully charged</li> <li>• Reminders / Calendar</li> <li>• Confirmation</li> <li>• Completion</li> <li>• Error</li> <li>• System active / process in progress</li> <li>• Alert</li> <li>• Connecting to other hardware</li> <li>• Disconnecting from other hardware</li> <li>• Numeric Key Press</li> <li>• Navigation key press</li> <li>• Key Press (no action)</li> </ul>	<p>CL4B-F002 [2]</p>
<p><b>TACE-LFSO-FR-11</b></p>	<p>The Customisation Enabler MUST accept audio media used as sounds as required below in this section according to 3.2.1 - Common Media.</p>	<p>CL4B-F001 [2]</p>

<b>TACE-LFSO-FR-12</b>	The Customisation Enabler MUST apply user confirmation before updating user-defined sound settings according to <b>TACE-LFCM-FR-11</b> in post-sale customisation	CL4-G015 [2]
<b>TACE-LFSO-FR-13</b>	The Customisation Enabler MUST apply remote server directives <sup>13</sup> for user confirmation before updating operator-defined sound settings according to <b>TACE-LFCM-FR-11</b> in post-sale customisation	CL4B-F053 [2]
<b>TACE-LFSO-FR-16</b>	The Customisation Enabler MUST support the following playback configuration properties for events: <ul style="list-style-type: none"> <li>• Maximal volume in range defined by the device and/or the active profile</li> <li>• Maximal duration in range defined by the device</li> <li>• Playback repeats (1 ..n, forever)</li> </ul>	CL4B-F001 [2]
<b>TACE-LFSO-FR-14</b>	The Customisation Enabler MUST be able to configure all the sounds linked to events listed in <b>TACE-LFSO-FR-1</b> as locked.	CL4B-F054 CL4-G009 [2]
<b>TACE-LFSO-FR-15</b>	The configuration information related with customisable sounds MUST be updatable via DM.	CL4B-F053 [2]

INFORMATION UPDATABLE VIA THE DM ENABLER

The table below describes the information that should be updatable via the DM enabler for each customisable sound. The required values column describes the minimum list of values that should be supported for each of the parameters. The exact format or structure is implementation dependant.

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<sup>13</sup> Directives will specify whether or not user confirmation is required. If no directive is included the device-dependant behaviour will apply.

ELEMENT	DESCRIPTION	REQUIRED VALUES
<b>EVENT ID</b>	Identifier of the event upon which the sound must be played (e.g. Low Battery, Connection failed...)	Events described in <b>TACE-LFSO-FR-1</b>
<b>MEDIA</b>	Refers to audio media containing the sound	
<b>MAXIMUM VOLUME</b>	Maximum volume of the sound (e.g. 1,2...)	
<b>MINIMUM DURATION</b>	Minimum duration of the sound (e.g. 10 seconds)	
<b>PLAYBACK REPEATS</b>	Number of times that the sound must be repeated (e.g. 1, 2...)	
<b>LOCKING STATUS</b>	Indicates if the user can link another audio media to that event (e.g. locked / non-locked).	<p>Locked: No other media can be linked to the sound either directly or indirectly (e.g. by themes)</p> <p>Locked except for themes: The configuration cannot be modified directly by the end user but it must be possible to modify it via themes.</p> <p>Non-Locked: A different media can be selected by the end user.</p>
<b>ORIGIN</b>	Entity that has selected the sound (e.g. operator-defined, user-defined)	<p>Operator-defined: The sound has been selected by the operator</p> <p>User-defined: The sound has been selected by the end-user</p>

**3.2.10 APPLICATION START-UP, SERVICE ACTIVATION AND EVENT MEDIA**

This section describes the requirements that the Customisation Enabler must fulfil to configure the visual media displayed to the user when starting applications or some events occur in the terminal.

REQUIREMENT ID	REQUIREMENT	REFERENCES
<b>TACE-LFAS-FR-1</b>	The Customisation Enabler <b>MUST</b> be able to manage all the configuration information related with the list of customisable visual media used to notify the user about a process under way or linked to a given user action or process.	CL4B-F004 CL4B-F005 CL4B-F006 CL4B-F009 CL4B-F010 [2]
<b>TACE-LFAS-FR-31</b>	The Customisation Enabler <b>MUST</b> be able to configure the media described in <b>TACE-LFAS-FR-1</b> as locked.	CL4-G009 CL4B-F042 CL4B-F044 [2]
<b>TACE-LFAS-FR-34</b>	The Customisation Enabler <b>MUST</b> apply user confirmation before updating user-defined media described in <b>TACE-LFAS-FR-1</b> according to <b>TACE-LFCM-FR-11</b> in post-sale customisation.	CL4-G015 [2]
<b>TACE-LFAS-FR-44</b>	The Customisation Enabler <b>MUST</b> apply remote server directives <sup>14</sup> for user confirmation before updating operator-defined media described in <b>TACE-LFAS-FR-1</b> according to <b>TACE-LFCM-FR-11</b> in post-sale customisation	CL4B-F043 CL4B-F041 [2]
<b>TACE-LFAS-FR-43</b>	The configuration information related with the customisable media described in <b>TACE-LFAS-FR-1</b> <b>MUST</b> be updatable via DM.	CL4B-F033 CL4B-F031 [2]

### 3.2.10.1 *Application start-up*

This section gathers all the requirements that will be applied exclusively to the configuration of media displayed when starting applications and opening sections (e.g. games section).

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<sup>14</sup> Directives will specify whether or not user confirmation is required. If no directive is included the device-dependant behaviour will apply.

REQUIREMENT ID	REQUIREMENT	REFERENCES
<b>TACE-LFAS-FR-2</b>	The Customisation Enabler <b>MUST</b> be able to configure a visual media to be displayed when starting operators' applications.	CL4B-F004 [2]
<b>TACE-LFAS-FR-3</b>	The Customisation Enabler <b>SHOULD</b> be able to configure a visual media to be displayed when starting applications, including the browser.	CL4B-F005 [2]
<b>TACE-LFAS-FR-4</b>	The Customisation Enabler <b>MAY</b> be able to configure a visual media to be displayed when opening top level menu folder items that lead to operator related services.	CL4B-F006 [2]
<b>TACE-LFAS-FR-33</b>	The Customisation Enabler <b>MUST</b> be able to accept images for the media displayed when starting applications and behave according to the requirements defined in 3.2.1 - Common Media.	CL4B-F039 [2]
<b>TACE-LFAS-FR-40</b>	The Customisation Enabler <b>SHOULD</b> be able to accept animations and videos for the media displayed when starting applications and behave according to the requirements defined in 3.2.1 - Common Media.	CL4B-F008 [2]
<b>TACE-LFAS-FR-29</b>	The Customisation Enabler <b>SHOULD</b> be able to configure the size of the area occupied by media displayed when starting applications (within the range of sizes allowed by the terminal).	
<b>TACE-LFAS-FR-30</b>	The Customisation Enabler <b>SHOULD</b> be able to modify the position in which the media displayed when starting applications are displayed.	

INFORMATION UPDATABLE VIA THE DM ENABLER

The table below describes the information that should be updatable via the DM enabler for each customisable application start-up media. The required values column describes the minimum list of values that should be supported for each of the parameters. The exact format or structure is implementation dependant.

ELEMENT	DESCRIPTION	REQUIRED VALUES
<b>APPLICATION</b>	Identifies the application upon which the media must be displayed (e.g. Browser)	
<b>MEDIA</b>	Refers to the media displayed during application start-up	
<b>SIZE</b>	Identifies the media size amongst the sizes supported by the terminal (e.g. Small, Medium...).	
<b>LOCKING STATUS</b>	Indicates if the media configuration can be modified by the end user (e.g. locked / non-locked).	<p>Locked: No other media can be linked to the application starting either directly or indirectly (e.g. by themes)</p> <p>Locked except for themes: The configuration cannot be modified directly by the end user but it must be possible to modify it via themes.</p> <p>Non-Locked: A different media can be selected by the end user.</p>
<b>POSITION</b>	Identifies the media position amongst the positions supported by the terminal (e.g. absolute position: 100, 200, relative-position: left-aligned...).	
<b>ORIGIN</b>	Entity that has selected the media (e.g. operator-defined, user-defined)	<p>Operator-defined: The media has been selected by the operator</p> <p>User-defined: The media has been selected by the end-user</p>

### 3.2.10.2 *Events*

This section gathers all the requirements that will be applied exclusively to the configuration of media displayed when an event occurs in the terminal.

REQUIREMENT ID	REQUIREMENT	REFERENCES
<p><b>TACE-LFAS-FR-6</b></p>	<p>The Customisation Enabler MUST be able to manage all the configuration information related with media displayed upon the following events (if events are supported by the terminal):</p> <ul style="list-style-type: none"> <li>• Smart card insertion</li> <li>• Network search</li> <li>• Sending and receiving messages</li> <li>• WAP/Web/i-mode connections</li> <li>• Incoming call</li> <li>• Copy of contacts to and from Smart Card/device</li> <li>• General busy states</li> <li>• Smart Card lock</li> <li>• Key lock</li> <li>• PIN accepted</li> <li>• Default deleting elements notifications</li> <li>• Downloading elements</li> <li>• Outgoing calls</li> <li>• Incoming video call</li> <li>• Outgoing video call</li> <li>• PTT Invitation</li> <li>• IM request</li> <li>• Default Error notifications</li> <li>• Default Confirmation notification</li> <li>• Default Completion notification</li> <li>• Default Progress notifications</li> </ul>	<p>CL4B-F009 [2]</p>

<b>TACE-LFAS-FR-22</b>	<p>The Customisation Enabler SHOULD be able to manage all the configuration information related with media displayed upon the following events (if supported by the terminal):</p> <ul style="list-style-type: none"> <li>• Connecting to Bluetooth</li> <li>• Connecting to IrDA</li> <li>• Low battery</li> <li>• Battery charging</li> <li>• Battery charge completed</li> </ul>	CL4B-F010 [2]
<b>TACE-LFAS-FR-32</b>	<p>For the events that are not linked to the completion of a network event, the Customisation Enabler MUST be able to modify the minimum number of seconds that the associated media is displayed.</p>	
<b>TACE-LFAS-FR-33</b>	<p>The Customisation Enabler MUST be able to accept animations and images for the media linked to events and behave according to the requirements defined in 3.2.1 - Common Media.</p>	CL4B-F040 [2]
<b>TACE-LFAS-FR-42</b>	<p>The Customisation Enabler SHOULD be able to accept videos for the media linked to events and behave according to the requirements defined in 3.2.1 - Common Media.</p>	CL4B-F012 [2]

INFORMATION UPDATABLE VIA THE DM ENABLER

The table below describes the information that should be updatable via the DM enabler for each customisable event media. The required values column describes the minimum list of values that should be supported for each of the parameters. The exact format or structure is implementation dependant.

ELEMENT	DESCRIPTION	REQUIRED VALUES
<b>EVENT ID</b>	Identifies the event upon which the media must be displayed (key locked, PIN accepted...)	The events listed in <b>TACE-LFAS-FR-6</b>
<b>MEDIA</b>	Refers to the media displayed upon the event	



<b>MINIMAL DURATION</b>	Minimal time that the media must be displayed (e.g. 10 seconds)	
<b>LOCKING STATUS</b>	Indicates if the media configuration can be modified by the end user (e.g. locked / non-locked).	<p>Locked: No other media can be linked to the event either directly or indirectly (e.g. by themes)</p> <p>Locked except for themes: The configuration cannot be modified directly by the end user but it must be possible to modify it via themes.</p> <p>Non-Locked: A different media can be selected by the end user.</p>
<b>ORIGIN</b>	Entity that has selected the media (e.g. operator-defined, user-defined)	<p>Operator-defined: The media has been selected by the operator</p> <p>User-defined: The media has been selected by the end-user</p>

### 3.2.11 STATUS INDICATORS

REQUIREMENT ID	REQUIREMENT	REFERENCES
<b>TACE-LFSI-FR-7</b>	The Customisation Enabler <b>MUST</b> be able to manage all the configuration information related with the status indicators defined in <b>TACE-LFSI-FR-8</b> .	CL4B-F013 [2]

<p><b>TACE-LFSI-FR-8</b></p>	<p>The Customisation Enabler MUST be able to configure the visual media displayed as status indicator for the following indicators (according to the capabilities of the terminal):</p> <ul style="list-style-type: none"> <li>• Signal strength indicator             <ul style="list-style-type: none"> <li>○ 6 RSSI levels</li> </ul> </li> <li>• Message indicator             <ul style="list-style-type: none"> <li>○ Message arrived, message pending</li> </ul> </li> <li>• Voicemail waiting indicator</li> <li>• PDP Context indicator</li> <li>• Missed Call indicator</li> <li>• Profile indicator</li> <li>• 3G status indicator             <ul style="list-style-type: none"> <li>○ Type of service, service available or attached</li> </ul> </li> <li>• Roaming indicator including national roaming</li> <li>• Call Divert indicator</li> <li>• Alarm indicator</li> <li>• Alarm set, alarm missed</li> </ul>	<p>CL4B-F013 [2]</p>
<p><b>TACE-LFSI-FR-1</b></p>	<p>The Customisation Enabler MUST be able to treat still image and animation media used as status indicators as required below in this section according to 3.2.1 - Common Media.</p>	<p>CL4B-F013 CL4B-F014 [2]</p>
<p><b>TACE-LFSI-FR-2</b></p>	<p>The Customisation Enabler MUST apply user confirmation for replacing user-defined status indicators according to <b>TACE-LFCM-FR-11</b> in post-sale customisation.</p>	<p>CL4-G015 [2]</p>

<b>TACE-LFSI-FR-10</b>	The Customisation Enabler <b>MUST</b> apply remote server directives <sup>15</sup> for user confirmation for replacing operator-defined status indicators according to <b>TACE-LFCM-FR-11</b> in post-sale customisation.	CL4B-F045 [2]
<b>TACE-LFSI-FR-4</b>	The Customisation Enabler <b>SHOULD</b> be able to configure the visual media displayed as status indicator for the following indicators (according to the capabilities of the terminal): <ul style="list-style-type: none"> <li>• Battery load / charge indicator <ul style="list-style-type: none"> <li>○ Battery empty</li> <li>○ Battery load levels</li> <li>○ Battery full</li> <li>○ Battery charging started</li> <li>○ Battery charging stopped</li> </ul> </li> <li>• Bluetooth indicator</li> <li>• GPS indicator</li> <li>• IrDA indicator</li> <li>• WLAN status</li> </ul>	CL4B-F014 [2]
<b>TACE-LFSI-FR-5</b>	The Customisation Enabler <b>MUST</b> be able to define one icon for each state for each identifiable indicator.	
<b>TACE-LFSI-FR-6</b>	The Customisation Enabler <b>MUST</b> be able to configure a status indicator as locked.	CL4-G009 CL4B-F046 [2]
<b>TACE-LFSI-FR-9</b>	The configuration information related with customisable status indicators <b>MUST</b> be updatable via DM.	CL4B-F035 [2]

INFORMATION UPDATABLE VIA THE DM ENABLER

The table below describes the information that should be updatable via the DM enabler for each customisable status indicator. The required

<sup>15</sup> Directives will specify whether or not user confirmation is required. If no directive is included the device-dependant behaviour will apply.

values column describes the minimum list of values that should be supported for each of the parameters. The exact format or structure is implementation dependant.

ELEMENT	DESCRIPTION	REQUIRED VALUES
<b>INDICATOR ID</b>	Identifies the status indicator (e.g. Signal Strength, Call Divert...)	The status indicators listed in <b>TACE-LFSI-FR-8</b>
<b>MEDIA</b>	Refers to the visual media used as status indicator.	
<b>LOCKING STATUS</b>	Indicates if the status indicator can be modified by the end user (e.g. locked / non-locked)..	
<b>STATE</b>	Indicates the state of the status indicator (e.g. Signal Strength level 1, Signal Strength level 2...)	<p>Locked: No other media can be linked to the indicator either directly or indirectly (e.g. by themes)</p> <p>Locked except for themes: The configuration cannot be modified directly by the end user but it must be possible to modify it via themes.</p> <p>Non-Locked: A different media can be selected by the end user.</p>
<b>ORIGIN</b>	Entity that has selected the status indicator (e.g. operator-defined, user-defined)	<p>Operator-defined: The media has been selected by the operator</p> <p>User-defined: The media has been selected by the end-user</p>

**3.2.12 DEFAULT FONT**

REQUIREMENT ID	REQUIREMENT	REFERENCES
<b>TACE-LFDF-FR-1</b>	Customisation Enabler <b>MUST</b> be able to select one of the fonts available in the terminal as the default font.	CL4B-F019 [2]
<b>TACE-LFDF-FR-6</b>	Customisation Enabler <b>MUST</b> be able to “lock” the default font.	CL4-G009 CL4B-F050 [2]

<b>TACE-LFDF-FR-7</b>	The Customisation Enabler MUST apply user confirmation before updating a user-defined default font according to <b>TACE-LFCM-FR-11</b> in post-sale customisation.	CL4-G015 [2]
<b>TACE-LFDF-FR-10</b>	The Customisation Enabler MUST apply remote server directives <sup>16</sup> for user confirmation before updating an operator-defined default font according to <b>TACE-LFCM-FR-11</b> in post-sale customisation.	CL4B-F049 [2]
<b>TACE-LFDF-FR-8</b>	The Customisation Enabler MAY be able to add new fonts to the list of terminal's fonts and select it as the default one.	CL4B-F020 CL4B-F021 [2]
<b>TACE-LFDF-FR-9</b>	The configuration information related with the default font MUST be updatable via DM.	CL4B-F023 [2]

INFORMATION UPDATABLE VIA THE DM ENABLER

The table below describes the information that should be updatable via the DM enabler for the default font configuration. The required values column describes the minimum list of values that should be supported for each of the parameters. The exact format or structure is implementation dependant.

ELEMENT	DESCRIPTION	REQUIRED VALUES
<b>FONT ID</b>	Identifier of the default font. Refers to one of the available fonts in the terminals (e.g. Arial, Times New Roman...).	
<b>LOCKING STATUS</b>	Indicates if the end user can select another default font (e.g. locked / non-locked).	Locked: No other font can be selected as the default one either directly or indirectly (e.g. by themes)  Locked except for themes: The configuration cannot be modified directly by the end user but it must be possible to modify it via

<sup>16</sup> Directives will specify whether or not user confirmation is required. If no directive is included the device-dependant behaviour will apply.

		themes. Non-Locked: A different font can be selected by the end user.
<b>ORIGIN</b>	Entity that has selected the font (e.g. operator-defined, user-defined)	Operator-defined: The font has been selected by the operator User-defined: The font has been selected by the end-user

### 3.2.13 NOTIFICATION AND ERROR MESSAGES

REQUIREMENT ID	REQUIREMENT	REFERENCES
<b>TACE-LFEN-FR-1</b>	<p>Customisation Enabler <b>MUST</b> be able to manage the configuration information related with the error messages and notifications related with the following list of events (when supported by device):</p> <ul style="list-style-type: none"> <li>• Downloading operator related elements including DRM</li> <li>• Updating elements</li> <li>• Service provisioning</li> <li>• Change of bearer and other call related events</li> <li>• Failed operator-related actions (e.g. SMS delivery)</li> <li>• Completion of operator-related actions</li> <li>• Data connection / disconnection</li> </ul>	CL4B-F026 [2]
<b>TACE-LFEN-FR-15</b>	The Customisation Enabler <b>MUST</b> be able to identify and modify the visual media displayed for each customisable error message.	CL4B-F026 [2]
<b>TACE-LFEN-FR-16</b>	The Customisation Enabler <b>MUST</b> be able to identify and modify the text displayed to the user for each customisable error message in all the languages supported by the terminal.	CL4B-F026 CL4-G011 [2]

<b>TACE-LFEN-FR-17</b>	The Customisation Enabler <b>MUST</b> be able to identify the event upon which an error message must be displayed for each customisable error message.	CL4B-F026 [2]
<b>TACE-LFEN-FR-18</b>	The Customisation Enabler <b>MUST</b> be able to identify and modify the text displayed for every softkey in all the languages supported by the terminal for each customisable error message.	CL4B-F026 CL4-G011 [2]
<b>TACE-LFEN-FR-10</b>	Customisation Enabler <b>SHOULD</b> be able to manage the configuration information related with the error messages and notifications related with the following list of events (when supported by the device): <ul style="list-style-type: none"> <li>• Deleting elements (contacts, SMSs...)</li> <li>• Copying elements</li> <li>• Overwriting elements (contacts, SMSs...)</li> <li>• Battery status and charging of battery</li> </ul>	CL4B-F027 [2]
<b>TACE-LFEN-FR-11</b>	Customisation Enabler <b>SHOULD</b> be able to manage the configuration information related with all the error messages and notifications.	CL4B-F024 [2]
<b>TACE-LFEN-FR-12</b>	The Customisation Enabler <b>MUST NOT</b> apply user confirmation before updating the configuration information related with an error/notification message.	CL4B-F051 [2]
<b>TACE-LFEN-FR-13</b>	The Customisation Enabler <b>MUST</b> be able to configure an error message as locked.	CL4-G009 CL4B-F052 [2]
<b>TACE-LFEN-FR-19</b>	The configuration information related with customisable error messages <b>MUST</b> be updatable via DM.	CL4B-F037 [2]

INFORMATION UPDATABLE VIA THE DM ENABLER

The table below describes the information that should be updatable via the DM enabler for each customisable error message. The required values column describes the minimum list of values that should be

supported for each of the parameters. The exact format or structure is implementation dependant.

ELEMENT		DESCRIPTION	REQUIRED VALUES
<b>MESSAGE ID</b>		Identifier of the error message (e.g. Failed SMS delivery)	Events described in <b>TACE-LFEN-FR-1</b>
<b>LABEL</b>	<b>TEXT</b>	Text displayed to the user when the error happens (e.g. "SMS delivery failed")	
	<b>LANGUAGE ID</b>	Identifier of the language in which the text string has been described (e.g. UK English, French, German...).	
<b>MEDIA</b>		Refers to the media used as an error message icon	
<b>SOFTKEYS</b>	<b>SOFTKEY ID</b>		Identifier of each customisable softkey (e.g. softkey 1, left softkey...)
	<b>LABEL</b>	<b>TEXT</b>	Text displayed in the softkey (e.g. "Yes", "Accept" ...)
		<b>LANGUAGE ID</b>	Identifier of the language in which the softkey has been described (e.g. UK English, French, German...).
<b>LOCKING STATUS</b>		Indicates if the error message configuration can be modified by the end user (e.g. locked / non-locked).	<p>Locked: The message configuration cannot be modified by the end user either directly or indirectly (e.g. by themes)</p> <p>Locked except for themes: The configuration cannot be</p>



		<p>modified directly by the end user but it must be possible to modify it via themes.</p> <p>Non-Locked: The message configuration can be modified by the end user..</p>
<b>ORIGIN</b>	Entity that has selected the error message configuration (e.g. operator-defined, user-defined)	<p>Operator-defined: The message configuration has been selected by the operator</p> <p>User-defined: The message configuration has been selected by the end-user</p>

### 3.3 MENU AND APPLICATION INTERWORKING CUSTOMISATION

#### 3.3.1 IDLE SCREEN

REQUIREMENT ID	REQUIREMENT	REFERENCES
<b>TACE-MAIS-FR-41</b>	The Customisation Enabler <b>MUST</b> apply user confirmation before updating the user-defined configuration of softkeys and shortcuts according to <b>TACE-LFCM-FR-11</b> in post-sale customisation.	CL4-G015 [2]

<b>TACE-MAIS-FR-44</b>	The Customisation Enabler <b>MUST</b> apply remote server directives <sup>17</sup> for user confirmation before updating the operator-defined configuration of softkeys and shortcuts according to <b>TACE-LFCM-FR-11</b> in post-sale customisation.	CL4B-F047 CL4D-F042 [2]
<b>TACE-MAIS-FR-42</b>	The configuration information related with customisable softkeys and shortcuts <b>MUST</b> be updatable via DM.	CL4D-F033 CL4B-F018 [2]
<b>TACE-MAIS-FR-43</b>	The Customisation Enabler <b>MUST</b> be able to lock each customisable softkey and shortcut.	CL4-G009 CL4D-F043 CL4D-F048 [2]

### 3.3.1.1 Softkeys

REQUIREMENT ID	REQUIREMENT	REFERENCES
<b>TACE-MAIS-FR-44</b>	If the terminal supports softkeys the Customisation Enabler <b>MUST</b> be able to manage the configuration information related with at least one softkey.	CL4D-F001 [2]
<b>TACE-MAIS-FR-1</b>	The Customisation Enabler <b>SHOULD</b> be able to manage the configuration parameters related with at least two softkeys (This requirement is only applicable to devices with two or more softkeys).	CL4D-F041 [2]
<b>TACE-MAIS-FR-18</b>	The Customisation Enabler <b>SHOULD</b> be able to identify and modify the icon displayed for each customisable softkey.	CL4B-F016 [2]
<b>TACE-MAIS-FR-19</b>	The Customisation Enabler <b>MUST</b> be able to identify each customisable softkey.	CL4D-F001 [2]

<sup>17</sup> Directives will specify whether or not user confirmation is required. If no directive is included the device-dependant behaviour will apply.

<b>TACE-MAIS-FR-20</b>	The Customisation Enabler <b>MUST</b> be able to identify and modify the text displayed in each customisable softkey for all the languages supported by the terminal.	CL4D-F001 CL4-G011 [2]
<b>TACE-MAIS-FR-22</b>	The Customisation Enabler <b>MUST</b> be able to identify and modify the link pointed by each customisable softkey.	CL4D-F001 [2]
<b>TACE-MAIS-FR-9</b>	If requirement <b>TACE-MAIS-FR-18</b> is supported, the Customisation Enabler <b>MUST</b> be able to treat still image media used as softkey icons according to section 3.2.1 - Common Media.	CL4B-F016 [2]
<b>TACE-MAIS-FR-10</b>	The Customisation Enabler <b>SHOULD</b> be able to identify and modify the appearance for label text for all customisable softkeys. The following properties for appearance <b>SHOULD</b> be supported: <ul style="list-style-type: none"> <li>• Font colour</li> <li>• Font style</li> </ul>	CL4B-F016 [2]

INFORMATION UPDATABLE VIA THE DM ENABLER

The table below describes the information that should be updatable via the DM enabler for each customisable softkey. . The required values column describes the minimum list of values that should be supported for each of the parameters. The exact format or structure is implementation dependant.

ELEMENT		DESCRIPTION	REQUIRED VALUES
<b>SOFTKEY ID</b>		Identifier of the customisable softkey (e.g. softkey 1, left-softkey...)	
<b>LABELS</b>	<b>TEXT</b>	Text displayed to the user in the softkey (e.g. “Recent Calls”, “Camera”...)	
	<b>LANGUAGE ID</b>	Identifier of the language in which the text string has been described (e.g. UK English, French, German...).	

<b>LINK</b>	Link which the selection of the softkey leads to (e.g. <a href="http://www.omtp.org">http://www.omtp.org</a> , camera application...).	
<b>LOCKING STATUS</b>	Indicates if the softkey configuration can be modified by the end user (e.g. locked / non-locked).	<p>Locked: The softkey configuration cannot be modified by the end user either directly or indirectly (e.g. by themes)</p> <p>Locked except for themes: The configuration cannot be modified directly by the end user but it must be possible to modify it via themes.</p> <p>Non-Locked: The softkey configuration can be modified by the end user..</p>
<b>ORIGIN</b>	Entity that has selected the softkey properties (e.g. operator-defined, user-defined)	<p>Operator-defined: The softkey configuration has been selected by the operator</p> <p>User-defined: The softkey configuration has been selected by the end-user</p>

### 3.3.1.2 Navigation Keys

REQUIREMENT ID	REQUIREMENT	REFERENCES
<b>TACE-MAIS-FR-4</b>	The Customisation Enabler SHOULD be able to customize the links of all navigation key shortcuts.	CL4D-F003 [2]
<b>TACE-MAIS-FR-23</b>	If requirement <b>TACE-MAIS-FR-4</b> is supported, the Customisation Enabler MUST be able identify the navigation key for each navigation key shortcut.	CL4D-F003 [2]

<b>TACE-MAIS-FR-24</b>	If requirement <b>TACE-MAIS-FR-4</b> is supported, the Customisation Enabler <b>MUST</b> be able to identify and modify the link pointed by a navigation key shortcut.	CL4D-F003 [2]
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INFORMATION UPDATABLE VIA THE DM ENABLER

The table below describes the information that should be updatable via the DM enabler for each customisable navigation key shortcut. The required values column describes the minimum list of values that should be supported for each of the parameters. The exact format or structure is implementation dependant.

ELEMENT	DESCRIPTION	REQUIRED VALUES
<b>NAVIGATION KEY ID</b>	Identifier of the navigation key used to launch the shortcut (e.g. navigation key 1, up navigation key...).	
<b>LINK</b>	Link which the selection of the navigation key leads to (e.g. <a href="http://www.omtp.org">http://www.omtp.org</a> , camera application...).	
<b>LOCKING STATUS</b>	Indicates if the end user can link another application to this navigation key (e.g. locked / non-locked).	<p>Locked: The shortcut configuration cannot be modified by the end user either directly or indirectly (e.g. by themes)</p> <p>Locked except for themes: The configuration cannot be modified directly by the end user but it must be possible to modify it via themes.</p> <p>Non-Locked: The shortcut configuration can be modified by the end user.</p>
<b>ORIGIN</b>	Entity that has selected the navigation key shortcut properties (e.g. operator-defined, user-defined)	<p>Operator-defined: The shortcut configuration has been selected by the operator</p> <p>User-defined: The shortcut configuration has been selected by the end-user</p>

**3.3.1.3 Keyboard shortcuts**

REQUIREMENT ID	REQUIREMENT	REFERENCES
<b>TACE-MAIS-FR-6</b>	The Customisation Enabler MUST be able to customize the links of one or more keyboard shortcuts	CL4D-F004 [2]
<b>TACE-MAIS-FR-25</b>	The Customisation Enabler MUST be able to identify the hardkey for each customisable hardkey shortcut.	CL4D-F004 [2]
<b>TACE-MAIS-FR-26</b>	The Customisation Enabler MUST be able to identify and modify the link pointed by each customisable hardkey shortcut	CL4D-F004 [2]

INFORMATION UPDATABLE VIA THE DM ENABLER

The table below describes the information that should be updatable via the DM enabler for each customisable hardkey shortcut. The required values column describes the minimum list of values that should be supported for each of the parameters. The exact format or structure is implementation dependant.

ELEMENT	DESCRIPTION	REQUIRED VALUES
<b>HARDKEY ID</b>	Identifier of the hardkey used to launch the shortcut (e.g. hardkey 1, hardkey *...).	
<b>LINK</b>	Link which the selection of the hardkey leads to (e.g. <a href="http://www.omtp.org">http://www.omtp.org</a> , camera application...).	
<b>LOCKING STATUS</b>	Indicates if the end user can link another application to the hardkey (e.g. locked / non-locked)..	<p>Locked: The shortcut configuration cannot be modified by the end user either directly or indirectly (e.g. by themes)</p> <p>Locked except for themes: The configuration cannot be modified directly by the end user but it must be possible to modify it via themes.</p> <p>Non-Locked: The shortcut configuration can be modified by the end user.</p>

<b>ORIGIN</b>	Entity that has selected the hardkey shortcut properties (e.g. operator-defined, user-defined)	<p>Operator-defined: The shortcut configuration has been selected by the operator</p> <p>User-defined: The shortcut configuration has been selected by the end-user</p>
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**3.3.1.4 Idle Screen shortcuts**

REQUIREMENT ID	REQUIREMENT	REFERENCES
<b>TACE-MAIS-FR-32</b>	The Customisation Enabler SHOULD be able to manage the configuration information related with all the idle screen shortcuts	CL4D-F002 [2]
<b>TACE-MAIS-FR-27</b>	The Customisation Enabler SHOULD be able to identify uniquely each customisable idle screen shortcut.	CL4D-F002 [2]
<b>TACE-MAIS-FR-28</b>	The Customisation Enabler SHOULD be able to identify and modify the link pointed by each customisable idle screen shortcut.	CL4D-F002 [2]
<b>TACE-MAIS-FR-29</b>	The Customisation Enabler SHOULD be able to identify and modify the icon displayed for each customisable idle screen shortcut.	CL4A-F056 [2]
<b>TACE-MAIS-FR-31</b>	If idle screen shortcuts possess labels, the Customisation Enabler SHOULD be able identify and modify the text displayed for each customisable idle screen shortcut in all the languages supported by the terminal.	CL4D-F002 CL4-G011 [2]
<b>TACE-MAIS-FR-36</b>	The Customisation Enabler SHOULD be able to treat still image media used as idle screen shortcut icons according to section 3.2.1 - Common Media.	CL4A-F056 [2]

<b>TACE-MAIS-FR-37</b>	<p>If idle screen shortcuts possess labels, the Customisation Enabler SHOULD be able to identify and modify the appearance for label text for all customisable idle shortcut icons individually. The following properties for appearance SHOULD be supported:</p> <ul style="list-style-type: none"> <li>• Font Type (from the set of fonts supported by the device)</li> <li>• Font colour</li> <li>• Font Style</li> </ul>	CL4A-F057 [2]
<b>TACE-MAIS-FR-40</b>	<p>If idle screen shortcuts possess labels, the Customisation Enabler SHOULD be able to identify and modify the general appearance (font type from the set of fonts supported by the device, style and colour) that must be applied to all the idle screen shortcuts except if menu item has specific configuration settings.</p>	CL4A-F057 [2]

INFORMATION UPDATABLE VIA THE DM ENABLER

The table below describes the information that should be updatable via the DM enabler for each customisable idle screen shortcut. The required values column describes the minimum list of values that should be supported for each of the parameters. The exact format or structure is implementation dependant.

ELEMENT		DESCRIPTION	REQUIRED VALUES
<b>IDLE SCREEN SHORTCUT ID</b>		Identifier of the idle screen shortcut (e.g. shortcut 1, left shortcut...)	
<b>LABELS</b>	<b>TEXT</b>	Text displayed to the user in the shortcut (e.g. "Camera", "Calendar"...)	
	<b>LANGUAGE ID</b>	Identifier of the language in which the text string has been described (e.g. UK English, French, German...).	
<b>LINK</b>		Link which the selection of the shortcut leads to (e.g. <a href="http://www.omtp.org">http://www.omtp.org</a> , Camera	



	Application...).	
<b>MEDIA</b>	Refers to the media used as shortcut icon	
<b>LOCKING STATUS</b>	Indicates if the shortcut configuration can be modified by the end user (e.g. locked / non-locked).	<p>Locked: The shortcut configuration cannot be modified by the end user either directly or indirectly (e.g. by themes)</p> <p>Locked except for themes: The configuration cannot be modified directly by the end user but it must be possible to modify it via themes.</p> <p>Non-Locked: The shortcut configuration can be modified by the end user.</p>
<b>ORIGIN</b>	Entity that has selected the idle screen shortcut properties (e.g. operator-defined, user-defined)	<p>Operator-defined: The shortcut configuration has been selected by the operator</p> <p>User-defined: The shortcut configuration has been selected by the end-user</p>

The table below describes the information that should be updatable via the DM enabler for the default appearance of customisable idle screen shortcuts.

ELEMENT		DESCRIPTION
<b>DEFAULT APPEARANCE</b>	<b>FONT ID</b>	Font used in the shortcut label (e.g. Arial, Times New Roman...)
	<b>FONT STYLE</b>	Font style used in the shortcut label (e.g. Bold, Italics...)
	<b>FONT COLOUR</b>	Font colour used in the shortcut label (e.g. red, RGB code...)

**3.3.2 MENU CUSTOMISATION**

**3.3.2.1 Customisable Menu Item**

This chapter describes the configuration information with regards to menu items that must be configured by the Customisation Enabler.

REQUIREMENT ID	REQUIREMENT	REFERENCES
<b>TACE-MAMC-FR-46</b>	The Customisation Enabler <b>MUST</b> be able to identify and modify the configuration information of a list of customisable menu items.	CL4D-F009 CL4D-F013 [2]
<b>TACE-MAMC-FR-8</b>	The Customisation Enabler <b>MUST</b> be able to identify and modify the string label that is presented to the user for each customisable Menu Item in all the languages supported by the terminal.	CL4D-F009 CL4D-F010 CL4-G011 [2]
<b>TACE-MAMC-FR-9</b>	The Customisation Enabler <b>MUST</b> be able to identify what activity should be taken in case that a customisable Menu Item is chosen. E.g., start an application.	CL4D-F013 [2]
<b>TACE-MAMC-FR-44</b>	The Customisation Enabler <b>MUST</b> be able to identify and modify the icon displayed for each customisable menu item that has a displayable icon.	CL4A-F049 CL4A-F051 [2]
<b>TACE-MAMC-FR-19</b>	The Customisation Enabler <b>SHOULD</b> be able to configure the menu item label appearance. The following properties <b>SHOULD</b> be supported: <ul style="list-style-type: none"> <li>• Font type (from the set of fonts supported by the device)</li> <li>• Font style</li> <li>• Font colour</li> </ul>	CL4A-F050 [2]
<b>TACE-MAMC-FR-49</b>	The Customisation Enabler <b>SHOULD</b> be able to configure for each customisable menu item different appearance configuration (icon and font information) for different possible status (e.g. focused, non-focused...)	CL4A-F053 [2]

<b>TACE-MAMC-FR-59</b>	The Customisation Enabler <b>MUST</b> be able to configure a customisable menu item as undeletable	CL4D-F011 [2]
<b>TACE-MAMC-FR-60</b>	The Customisation Enabler <b>MUST</b> be able to configure a customisable menu item as non-repositionable	CL4D-F012 [2]
<b>TACE-MAMC-FR-53</b>	The Customisation Enabler <b>MUST</b> apply user confirmation before customising user-defined menu item settings according to <b>TACE-LFCM-FR-11</b> in post-sale customisation.	CL4-G015 [2]
<b>TACE-MAMC-FR-61</b>	The Customisation Enabler <b>MUST</b> apply remote server directives <sup>18</sup> for user confirmation before customising operator-defined menu item settings according to <b>TACE-LFCM-FR-11</b> in post-sale customisation	CL4A-F128 CL4D-F044 [2]
<b>TACE-MAMC-FR-22</b>	The Customisation Enabler <b>MUST</b> be able to lock a customisable menu item.	CL4A-F129 CL4D-F045 CL4-G009 [2]
<b>TACE-MAMC-FR-50</b>	The customisation information related with customisable menu items (including locking status) <b>MUST</b> be updatable via DM.	CL4A-F083 CL4D-F029 CL4D-F035 [2]
<b>TACE-MAMC-FR-61</b>	The Customisation Enabler <b>MUST</b> be able to treat still image media used as menu icons according to section 3.2.1 - Common Media.	CL4A-F054

INFORMATION UPDATABLE VIA THE DM ENABLER

The table below describes the information that should be updatable via the DM enabler for each customisable menu item.

ELEMENT	DESCRIPTION
<b>MENU ITEM ID</b>	Identifier of the menu item (e.g. "Agenda Menu Item")

<sup>18</sup> Directives will specify whether or not user confirmation is required. If no directive is included the device-dependant behaviour will apply.

<b>LABELS</b>	<b>TEXT</b>	Text displayed to the user in the menu item (e.g. “Agenda”)
	<b>LANGUAGE ID</b>	Identifier of the language in which the text string has been described (e.g. UK English, French, German...).
<b>LABEL APPEARANCE</b>	<b>FONT ID</b>	Font used in the menu label (e.g. Arial, Times New Roman...)
	<b>FONT STYLE</b>	Font style used in the menu label (e.g. Bold, Italics...)
	<b>FONT COLOUR</b>	Font colour used in the menu label (e.g. red, RGB code...)
	<b>STATUS</b>	Status to which this appearance must apply (e.g. focused)
<b>LINK</b>		Link which the selection of the menu item leads to (e.g. <a href="http://www.omtp.org">http://www.omtp.org</a> , Camera Application...).
<b>ICON</b>	<b>MEDIA</b>	Refers to the media used as menu icon
	<b>STATUS</b>	Status to which this media must apply (e.g. focused)
<b>LOCKING STATUS</b>		Indicates if the menu item can be modified by the end user (e.g. locked / non-locked).
<b>REMOVAL ALLOWED</b>		Identifies if the menu item can be removed (e.g. removable, non-removable)
<b>REORDER ALLOWED</b>		Identifies if the menu item can be repositioned within the menu structure (e.g. repositioning allowed / repositioning not allowed).
<b>ORIGIN</b>		Entity that has selected the menu item properties (e.g. operator-defined, user-defined)

### 3.3.2.2 Main Menu Structure

This chapter describes the functionality offered by the Customisation Enabler in order to configure the terminal main menu structure.

REQUIREMENT ID	REQUIREMENT	REFERENCES
<b>TACE-MAMC-FR-52</b>	The Customisation Enabler <b>MUST</b> identify the general appearance (font type from the set of fonts supported by the device, style and colour) that must	CL4A-F050 [2]

	be applied to all the menu items in the main menu except if menu item has specific configuration settings.	
<b>TACE-MAMC-FR-23</b>	The Customisation Enabler <b>MUST</b> be able to configure a menu item as non-visible.	CL4E-F008 [2]
<b>TACE-MAMC-FR-25</b>	The Customisation Enabler <b>SHOULD</b> be able to move menu items between all the levels of the menu hierarchy.	CL4D-F008 [2]
<b>TACE-MAMC-FR-26</b>	The Customisation Enabler <b>MUST</b> be able to add new Menu Items to any menu of the main menu hierarchy to give access to operator applications, services and phone numbers.	CL4D-F013 [2]
<b>TACE-MAMC-FR-55</b>	The Customisation Enabler <b>MUST</b> be able to configure the top level of the main menu using customisable menu items.	CL4D-F009 [2]
<b>TACE-MAMC-FR-56</b>	The Customisation Enabler <b>MUST</b> be able to identify and modify for each menu item in the top level its relative order within the Menu it belongs to. This data is used for the purposes of presentation and user interaction. The values of the Order information of all the Customisable Menu Items which are part of a given Menu may not be sequential but <b>MUST</b> maintain a transitive "greater than" relation between them.	CL4D-F005 [2]
<b>TACE-MAMC-FR-57</b>	The Customisation Enabler <b>SHOULD</b> configure all the levels of the main menu using only customisable menu items.	CL4D-F010 [2]
<b>TACE-MAMC-FR-58</b>	The Customisation Enabler <b>SHOULD</b> be able to identify and modify for each menu item in the main menu its relative order within the Menu it belongs to. This data is used for the purposes of presentation and user interaction. The values of the Order information of all the Customisable Menu Items which are part of a given Menu may not be	CL4D-F006 [2]

	sequential but <b>MUST</b> maintain a transitive "greater than" relation between them.	
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INFORMATION UPDATABLE VIA THE DM ENABLER

The table below describes the information that should be updatable via the DM enabler for each customisable menu.

ELEMENT		DESCRIPTION
<b>MENU ID</b>		Identifier of the menu (e.g. "Main Menu", "Menu1", "1-2-1"...)
<b>MENU ITEMS</b>	<b>MENU ITEM ID</b>	Identifier of each menu item (e.g. "Messaging Menu Item", "Agenda Menu Item"...)
	<b>POSITION</b>	Position in which the menu item is displayed (e.g. 1, 2, 3...).
<b>SUB MENUS</b>	<b>MENU ID</b>	Identifier of the submenu (e.g. "Menu1", "1-2-1"...).
	<b>POSITION</b>	Position in which the submenu is displayed (e.g. 1, 2, 3...).

The table below describes the information that should be updatable via the DM enabler for the default appearance of menu items.

ELEMENT		DESCRIPTION
<b>DEFAULT APPEARANCE</b>	<b>FONT ID</b>	Font used in the menu item label (e.g. Arial, Times New Roman...)
	<b>FONT STYLE</b>	Font style used in the menu item label (e.g. Bold, Italics...)
	<b>FONT COLOUR</b>	Font colour used in the menu item label (e.g. red, RGB code...)

**3.3.2.3 Application Menu - General**

This chapter describes the functionality offered by the Customisation Enabler in order to configure the application menu.

REQUIREMENT ID	REQUIREMENT	REFERENCES
<b>TACE-MAMC-FR-</b>	The Customisation Enabler <b>MUST</b> be	CL4A-F052 [2]

<b>36</b>	able to modify the icon displayed for all the application menu items within the pre-defined set of icons provided by the manufacturer at all the levels of the application menu hierarchy.	
<b>TACE-MAMC-FR-62</b>	The Customisation Enabler <b>MUST</b> be able to treat still image media used as menu icons according to section 3.2.1 - Common Media.	CL4A-F054 [2]
<b>TACE-MAMC-FR-37</b>	The Customisation Enabler <b>SHOULD</b> be able to add new Menu Items associated to URLs to application menu.	CL4D-F018 [2]
<b>TACE-MAMC-FR-64</b>	The Customisation Enabler <b>MUST</b> be able to add new Menu Items associated to URLs to operator applications menu.	CL4D-F018 [2]
<b>TACE-MAMC-FR-38</b>	The Customisation Enabler <b>MUST</b> be able to lock all application menu item customised at manufacture.	CL4-G009 [2]
<b>TACE-MAMC-FR-48</b>	The Customisation Enabler <b>MUST</b> apply user confirmation before configuring any user defined application menu setting according to TACE-LFCM-FR-11 in post-sale customisation.	CL4-G015 [2]
<b>TACE-MAMC-FR-64</b>	The Customisation Enabler <b>MUST</b> apply remote server directives <sup>19</sup> for user confirmation before configuring any operator-defined application menu setting according to <b>TACE-LFCM-FR-11</b> in post-sale customisation.	CL4A-F083 CL4D-F037 [2]
<b>TACE-MAMC-FR-41</b>	The Customisation Enabler <b>SHOULD</b> be able to modify the order in which all the application menu items are displayed at all the levels of the application menu hierarchy.	CL4D-F015 [2]
<b>TACE-MAMC-FR-42</b>	The Customisation Enabler <b>SHOULD</b> be able to modify the text label for all	CL4D-F017 [2]

<sup>19</sup> Directives will specify whether or not user confirmation is required. If no directive is included the device-dependant behaviour will apply.

	the application menu items displayed at all the levels of the application menu hierarchy.	
<b>TACE-MAMC-FR-39</b>	The Customisation Enabler <b>MUST</b> be able to modify the order in which all the application menu items are displayed at the top level of the application menu hierarchy.	CL4D-F014 [2]
<b>TACE-MAMC-FR-40</b>	The Customisation Enabler <b>MUST</b> be able to modify the text label for all the application menu items displayed at the top level of the application menu hierarchy in all the languages supported by the terminal.	CL4D-F016 CL4-G011 [2]
<b>TACE-MAMC-FR-63</b>	The customisation information related with application menu items customised at manufacture (including locking status) <b>MUST</b> be updatable via DM.	CL4A-F083 CL4D-F029 CL4D-F035 [2]

INFORMATION UPDATABLE VIA THE DM ENABLER

The table below describes the information that should be updatable via the DM enabler for each customisable application menu.

ELEMENT		DESCRIPTION	
<b>MENU ID</b>		Identifier of the menu (e.g. "Main Menu", "Menu1", "1-2-1"...).	
<b>MENU ITEMS</b>	<b>MENU ITEM ID</b>	Identifier of each menu item (e.g. customisable menu item URI, menu item information...).	
	<b>POSITION</b>	Position in which the menu item is displayed (e.g. 1, 2...).	
	<b>LABEL</b>	<b>TEXT</b>	Text displayed to the user in the menu item (e.g. "Agenda").
		<b>LANGUAGE ID</b>	Identifier of the language in which the text string has been described (e.g. UK English, French, German...).
	<b>ICON</b>	Refers to the media used as menu icon.	
<b>LOCKING STATUS</b>	Indicates if the menu item can be modified by the end user (e.g. locked / non-locked).		



	<b>ORIGIN</b>	Entity that has selected the menu item properties (e.g. operator-defined, user-defined).
<b>SUB MENUS</b>	<b>MENU ID</b>	Identifier of the submenu (e.g. "Menu1", "1-2-1"...).
	<b>POSITION</b>	Position in which the submenu is displayed (e.g. 1, 2...).

### 3.3.3 BOOKMARKS

REQUIREMENT ID	REQUIREMENT	REFERENCES
<b>TACE-MABM-FR-1</b>	The Customisation Enabler <b>MUST</b> be able to identify, refer, and change configuration information of Bookmarks.	CL4D-F019 [2]
<b>TACE-MABM-FR-2</b>	The Customisation Enabler <b>MUST</b> be able to identify, refer, and change configuration information of the Homepage.	CL4D-F025 [2]
<b>TACE-MABM-FR-16</b>	The Customisation Enabler <b>MUST</b> identify the general appearance (font type from the set of fonts supported by the device, style and colour) that must be applied to all the bookmarks.	CL4A-F050 [2]
<b>TACE-MABM-FR-3</b>	Bookmark <b>MUST</b> identify the string label that is presented to the user in order to identify that Bookmark in all the languages supported.	CL4D-F019 CL4-G011 [2]
<b>TACE-MABM-FR-4</b>	Bookmark <b>MUST</b> identify the URL that the Bookmark points to.	CL4D-F019 [2]
<b>TACE-MABM-FR-8</b>	Homepage <b>MUST</b> identify the URL that homepage points to.	CL4D-F025 [2]
<b>TACE-MABM-FR-5</b>	Bookmark <b>MUST</b> identify the relative order for each bookmark within the list of all bookmarks. This data is used for the purposes of presentation and user interaction. The values of the order information of all the Bookmarks may not be sequential but <b>MUST</b> maintain a transitive "greater than" relation between them. In case of other sorting	CL4D-F019 [2]

	methods (e.g. alphabetic) this data can be ignored by the implementation.	
<b>TACE-MABM-FR-6</b>	Bookmark MUST identify if the bookmark must be displayed on the first position of the bookmarks list. If more than one bookmark must be displayed on the first position, they will be ordered accordingly to the relative order information ( <b>TACE-MABM-FR-5</b> ).	CL4D-F024 [2]
<b>TACE-MABM-FR-7</b>	Bookmark MUST identify if a Bookmark can be deleted by the end user.	CL4D-F023 [2]
<b>TACE-MABM-FR-9</b>	Customisation enabler MUST be able to lock a bookmark.	CL4D-F049 CL4-G009 [2]
<b>TACE-MABM-FR-10</b>	Customisation enabler MUST be able to add new bookmarks to the bookmark list.	CL4D-F020 [2]
<b>TACE-MABM-FR-11</b>	Customisation enabler MUST be able to modify the configuration information of the extant bookmarks.	CL4D-F022 [2]
<b>TACE-MABM-FR-12</b>	Customisation enabler MUST be able to lock the homepage.	CL4D-F026 CL4-G009 [2]
<b>TACE-MABM-FR-13</b>	Customisation enabler MUST be able to delete the configuration information of the existing operator-defined bookmarks.	CL4D-F021 [2]
<b>TACE-MABM-FR-14</b>	The Customisation Enabler MUST apply remote server directives <sup>20</sup> for user confirmation before customising an operator-defined bookmark according to <b>TACE-LFCM-FR-11</b> in post-sale customisation.	CL4D-F048 CL4-G015 [2]
<b>TACE-MABM-FR-15</b>	The Customisation Enabler MUST apply remote server directives <sup>21</sup> for user confirmation before customising an operator-defined homepage	CL4D-F050 CL4-G015 [2]

<sup>20</sup> Directives will specify whether or not user confirmation is required. If no directive is included the device-dependant behaviour will apply

<sup>21</sup> Directives will specify whether or not user confirmation is required. If no directive is included the device-dependant behaviour will apply

	according to <b>TACE-LFCM-FR-11</b> in post-sale customisation.	
<b>TACE-MABM-FR-17</b>	The customisation information related with bookmarks <b>MUST</b> be updatable via DM.	CL4D-F040 [2]

**INFORMATION UPDATABLE VIA THE DM ENABLER**

The table below describes the information that should be updatable via the DM enabler for each bookmark.

<b>ELEMENT</b>		<b>DESCRIPTION</b>
<b>LABEL</b>	<b>TEXT</b>	Displayable label of the bookmark (e.g. "OMTP Homepage"...).
	<b>LANGUAGE ID</b>	Identifier of the language in which the text string has been described (e.g. UK English, French, German...).
<b>DISPLAY ON TOP</b>		Identifies if the bookmark must be displayed always on top of the list (e.g. always on top...).
<b>POSITION</b>		Contains the position of the bookmark within the bookmark list (e.g. 1, 2, 3 ...).
<b>LOCKING STATUS</b>		Indicates if the end-user can modify the bookmark (e.g. locked / non-locked).
<b>URL</b>		URL pointed by the bookmark (e.g. <a href="http://www.omtp.org">http://www.omtp.org</a> ...).
<b>ORIGIN</b>		Entity that has provided the bookmark configuration (e.g. operator-defined, user-defined).

The table below describes the information that should be updatable via the DM enabler for defining the default appearance of bookmarks.

<b>ELEMENT</b>		<b>DESCRIPTION</b>
<b>DEFAULT APPEARANCE</b>	<b>FONT ID</b>	Font used in the bookmark label (e.g. Arial, Times New Roman...).
	<b>FONT STYLE</b>	Font style used in the bookmark label (e.g. Bold, Italics...).
	<b>FONT COLOUR</b>	Font colour used in the bookmark label (e.g. red, RGB code...).

## 4 RELATIONSHIPS WITH OTHER ENABLERS

This chapter will gather all the requirements for the relationships that the Customisation Enabler must offer.

### 4.1 GENERAL

The solution is based on the assumption that the Customisation Enabler is managing a part of the information exposed in the DM tree on behalf of the DM enabler [4]. The Customisation Enabler owns the storage mechanism (e.g. database or file system) that is updated both from the user and the DM server.

Part of the tree can consist of all individual customisable elements. These will be updated from individual element updates as well as a result from processing a customisation file using the standard mechanisms defined in OMA DM (e.g. TND5) as defined in [4].

Although the definition of this part of the DM tree (customisation management objects) is out of the OMTP scope for each of the customisable elements included in chapter 3 a table with the information that should be updatable via the DM enabler has been added.

### 4.2 RELATIONSHIP WITH THE DM ENabler (OTA PROVISIONING)

REQUIREMENT ID	REQUIREMENT	REFERENCES
TACE-IF-1	There shall be a relationship with the DM enabler in order for the Customisation Enabler to take responsibility to manage the information that can be updated via the DM enabler associated with customisation.	TACE-GR-FR-5

## 5 CUSTOMISATION SCENARIOS

Although several customisation scenarios have been identified within OMTP, the use of a common structure to express all the customisation elements and parameters in all the customisation scenarios has been identified as one of the main customisation priorities. The adoption of such a format is only intended for transport purposes (e.g. transfer customisation configuration from operators to manufacturers or OTA customisation) but it is not intended to be adopted internally by the terminals.

As the customisation information will be available via the DM enabler, the adoption of a serialised form of the DM tree as been identified has the easier way to translate the customisation information into a format useful in all the scenarios. The DM tree serialisation will be done using the TNDIS mechanism defined in the OMA DM standard.

### 5.1 CUSTOMISATION AT MANUFACTURE

Although the use of a common data structure for customising terminals at manufacture does not imply directly any requirements on the Customisation Enabler, this section gathers a set of requirements to define the way in which the customisation configuration is transferred from operators to manufacturers.

REQUIREMENT ID	REQUIREMENT	REFERENCES
<b>TACE-CF-1</b>	Format used for transferring the customisation information <b>MUST</b> be a serialised form (using TNDIS) of the Management Objects with the customisation information.	CL4-G016 [2]
<b>TACE-CF-2</b>	Media objects used for customisation <b>MAY</b> be embedded in the customisation file.	
<b>TACE-CF-3</b>	Media objects used for customisation <b>SHOULD</b> be located outside the file and referred properly (e.g. using URI).	
<b>TACE-CF-4</b>	All the media referred or included in the customisation file (e.g. images, sounds...) <b>MUST</b> be considered as operator-defined media.	

## **5.2 CUSTOMISATION POST-MANUFACTURE**

Customisation post-manufacture can be performed in different scenarios (e.g. OTA, at point of sales...) In all these cases the DM mechanisms defined in sections 3 and 4 **MUST** be used.

## 6 DEFINITION OF TERMS

The table below contains the definition of terms used in this document.

TERM	DESCRIPTION
<b>APPLICATION AREA</b>	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.
<b>APPLICATION MENU</b>	An application menu is a list of commands offered by an application. Application menus can be presented in a variety of different formats: for example, 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.
<b>BACKGROUND COLOUR</b>	Defines appearance of general background or display area using a solid colour. Background colour is drawn below the background media of that element. Background colour of display areas can also be defined as transparent. If the background colour of a display area is transparent and the background media is not defined, the general background be visible.
<b>BACKGROUND MEDIA</b>	Defines appearance of general background or display area using media content such as an image. When defined, background media is always drawn on top of background colour causing colour to be visible when media is missing or when it is transparent.
<b>BOOKMARK</b>	URL pointer to a content page that can be rendered by the Browser application. The URL can be to content that is stored locally or on the network.
<b>BRANDING</b>	Graphic elements, an interaction style, language style and tone of voice that characterize the operator, manufacturer or service provider. Typically operator branding elements on a terminal include a screensaver, wake up graphics, wallpaper, colour palette, ringtone and logo.
<b>CUSTOMISABLE MENU ITEM</b>	Menu Item that can be identified, and referred to by the Customisation Enabler. Such Menu Item may have associated properties with unique values.

TERM	DESCRIPTION
<b>CUSTOMISATION</b>	Allows operators to define settings, graphics and appearance so that the device may comply with brand visuals, tone of voice and values.
<b>DEFAULT FONT</b>	Font used in all the textual elements when no other specific font is defined or selected.
<b>DEVICE APPLICATION</b>	A device application is an application specified and provided by the device manufacturer and is installed on the device during manufacture.
<b>DISPLAY AREA</b>	Areas of the screen overlaid on top of general background. Some of the Display area can be optional or visible only in certain situations. Common display areas are Status area, Application area, Softkey area and Notification area. The appearance of each display area can be independently defined using background colour, background image or both. In addition to default definitions the appearance of display areas can be also defined on a per application basis.
<b>GENERAL BACKGROUND</b>	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 a per application basis.
<b>GENERAL BUSY STATE</b>	State where the system is busy and could not respond to the user input. In these cases, if there is no specific notification to show, a general notification in the form of a splash screen can be shown.
<b>GOODBYE MESSAGE</b>	Each of the media displayed to the user when the terminal is switched off.
<b>HOMEPAGE</b>	URL pointer to a content page that can be rendered by the Browser application. The URL can be to content that is stored locally or on the network. The URL will be shown when the browser is started.
<b>ICON</b>	A small graphical representation of a thing. Things can be links, states, indications, applications, etc.



TERM	DESCRIPTION
<b>IDLE SCREEN</b>	Default screen that is visible while device is idle and no notification or other application related screen is displayed. Idle Screens are available on all device displays.
<b>INTRINSIC SIZE</b>	The width and height as defined by the element itself, not imposed by the surroundings. Image size is defined explicitly in some visual media encoding formats (e.g. GIF). Encoding formats that do not mandate the visual media size (e.g. SVG) might not have an intrinsic size.
<b>LOCKED</b>	A customisable element is locked when no media or customisation information other than the configured one can be selected to be used by the end user.
<b>Logo</b>	A combination of characters and/or graphics creating a unique design used to identify a company (in this specific context, a Mobile Operator).
<b>LOOK AND FEEL</b>	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-and-feel is considered the front end of the software, whereas the abstract functionality is the back end. The look-and-feel is often considered to incorporate the copyrightable aspects of the user interface -- those aspects not entirely determined by the functional requirements.
<b>MAIN MENU</b>	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.
<b>MANUFACTURER APPLICATION</b>	Application that is specified by the manufacturer, and is provided by the manufacturer. Manufacturer applications may be installed during manufacture, via the Smart card or other removable storage medium or after manufacture using OTA services.

TERM	DESCRIPTION
<b>MENU</b>	<p>Used to get input from the User when there is a decision to be made relating to the next step of the application.</p> <p>Each option which is part of the Menu is represented by a Menu Item.</p>
<b>MENU ITEM</b>	A single option in a Menu that may potentially be selected by the user.
<b>NOTIFICATION AREA</b>	Area of the screen where notifications and errors are shown. Because notification area is typically visible only when there is any content to show, it is typically implemented as a modal pop-up dialog.
<b>OPERATOR APPLICATION</b>	An operator application is an application that is specified by an operator, and is provided either by the operator or the manufacturer. Operator applications may be installed during manufacture, via the Smart card or other removable storage medium or after manufacture using OTA services.
<b>OPERATOR-DEFINED MEDIA</b>	Media that are provided by operators and used for operator customisation, regardless of the customisation method or time.
<b>OPERATOR-DEFINED CUSTOMISATION PROPERTY/ELEMENT</b>	Customisation property or element that has been selected or defined by the operator.
<b>OPERATOR SERVICE</b>	A selection from the portfolio of offerings made available by the operator, which the user may subscribe to and be optionally charged for.
<b>RENDERING AREA</b>	The area of the screen that is reserved for the rendering colour and/or media for a particular purpose such as idle screen wallpaper, operator logo, or notification animation. The rendering area could be for example the whole general background, any of the display areas, or some part of them.

TERM	DESCRIPTION
<b>SHORTCUTS</b>	<p>A shortcut is a link that is associated with a particular action. The action may either be to launch a device application, an operator application or service, or open a URL in the device 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 be one of four kinds:</p> <ul style="list-style-type: none"> <li>• Idle screen shortcuts: these are on-screen graphics elements that are present on the idle screen and activated through selection.</li> <li>• Navigation key shortcuts: These shortcuts are triggered by pressing a navigation key on the device. Navigation key shortcuts are typically available from the idle screen. Terminals usually support either idle screen shortcuts or navigation key shortcuts as the keys used are the same.</li> <li>• Idle screen keyboard shortcuts: These are triggered by a long press on a key present on the terminal keypad.</li> <li>• Menu shortcuts: These shortcuts are items that are present within the device's main menu or application menus.</li> </ul>
<b>SHUTDOWN SEQUENCE</b>	Set of media displayed to the user when a terminal is switched off. A shutdown sequence is usually composed by different goodbye messages.

TERM	DESCRIPTION
<b>SMART CARD</b>	<p>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.</p> <p>The Smart Card communicate with the UE through its interface. The Smart Card is issued by the operator as:</p> <ul style="list-style-type: none"> <li>• Operator security module.</li> <li>• User Identification module.</li> </ul> <p>The Smart Card could be a Smart Card (GSM), R-UIM (CDMA) or an application as the USIM (UMTS).</p>
<b>SOFTKEY</b>	<p>A virtual key displayed on the screen within the Softkey Area which offers context specific functionality and can be triggered by a dedicated hardware key related to this Softkey.</p>
<b>SOFTKEYS AREA</b>	<p>Area of the screen where softkeys are displayed. It generally covers the lower part of the screen.</p>
<b>SOFTKEY ITEM</b>	<p>Graphical representation of the functionality to be executed with the Softkey. It is displayed on the Softkey.</p>
<b>STARTUP SEQUENCE</b>	<p>Set of media displayed to the user when a terminal is switched on. A start-up sequence is usually composed by different welcome messages.</p>
<b>STATUS AREA</b>	<p>Area of the screen where graphical elements representing information about the status of the terminal are displayed. It generally covers the upper part of the screen.</p>
<b>STATUS INDICATOR</b>	<p>A status indicator reflects a dedicated state of the terminal. States can reflect the availability or existence of services (such as roaming), the level of quantity or quality of a service (such as signal strength), events (such as incoming messages), etc.</p>
<b>USER CONFIRMATION</b>	<p>A user interaction where the user get information about possible options and the possibility to deny/stop a process affecting the device, e.g. update of certain look &amp; feel elements.</p>

<b>TERM</b>	<b>DESCRIPTION</b>
<b>USER-DEFINED MEDIA</b>	User-defined media are media (still images, videos, sounds, etc.) that are provided by the user, regardless of the way they are available on the device (e.g. created on the device (camera), received via OTA service, uploaded via PC Tool).
<b>USER-DEFINED CUSTOMISATION PROPERTY/ELEMENT</b>	Customisation property or element that has been selected or defined by the end user.
<b>WALLPAPER</b>	Background media attached to application area of Idle Screen.
<b>WELCOME MESSAGE</b>	Each of the media displayed to the user when the terminal is switched on.

## 7 ABBREVIATIONS

ABBREVIATION	DESCRIPTION
<b>DM</b>	Device Management
<b>DRM</b>	Digital Rights Management
<b>DTMF</b>	Dual Tone Multifrequency
<b>GPS</b>	Global Positioning System
<b>IRDA</b>	Infrared Data Association
<b>IM</b>	Instant Messaging
<b>OMA</b>	Open Mobile Alliance
<b>OMTP</b>	Open Mobile Terminal Platform
<b>OTA</b>	Over the Air
<b>RSSI</b>	Radio Signal Strength Indication
<b>PIN</b>	Personal Identification Number
<b>PTT</b>	Push to Talk
<b>SIM</b>	Subscriber Identity Module
<b>SMS</b>	Short Messaging Service
<b>TNDS</b>	Tree and Description Serialization
<b>URI</b>	Uniform Resource Identifier
<b>WAP</b>	Wireless Application Protocol
<b>XML</b>	Extensible Markup Language

