Developers' Guidelines

July 2002

Multimedia Messaging T68i, T300, P800

Sony Ericsson

Preface

The Developers' Guidelines for MMS is designed to give the reader a deeper insight of how to design applications for Multimedia Messaging Service (MMS). The Multimedia Messaging Service standard uses specifications from 3GPP and WAP Forum, to detail how rich media content can be transmitted mobile-to-mobile or network-to-mobile.

MMS is currently supported in SonyEricsson T68i, T300 and P800. **Note**: Some specific information for T68i and T300 is included in the general document, but for P800 this information is only found in the appendix.

People who can benefit from this document include:

- Application providers
- Content providers
- Content aggregators
- Operators and service providers
- Software developers
- Business decision-makers

It is assumed that the reader has a basic understanding of WAP and MMS, and also some technical familiarity with e-mail messages and mark-up languages (HTML, XML, etc). An overview of MMS and its possibilities can be found in the MMS White Paper, available on the Ericsson Mobility World. The site at http://www.ericsson.com/mobilityworld contains up-to-date information about technologies, products and tools.

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First edition (July 2002)
Publication number:EN/LZT108 5126 R3A

Contents

MMS overview

Using the Wireless Application Protocol (WAP) as bearer technology, Multimedia Messaging allows users to send and receive messages that look like PowerPoint-style presentations. When fully implemented, the messages may include any combination of text, graphics, photographic images, speech and music clips or video sequences. High-speed transmission technologies EDGE, GPRS and UMTS (W-CDMA) enable powerful messaging applications.

Note: Some specific information for T68i and T300 is included in the general document, but for P800 this information is found in the appendix.

Figure 1. An MMS messages consist of a "slide show". The sender captures and selects images, adds the texts and sounds, and sets the timing of the presentation.

SMIL (Synchronized Multimedia Integration Language)

The MMS messages use a subset of the Synchronized Multimedia Integration Language (SMIL) as the presentation language. SMIL, pronounced as "smile", is an XML protocol specified by the World Wide Web Consortium (W3C). It can be regarded as an analogy to what HTML is for the Web. SMIL can control both layout and timing of multimedia objects. The first phase of MMS uses a limited subset of SMIL elements, "MMS SMIL". The messages consist of a "slide show", i.e. a succession of one or several pages.

SMIL can be used to add text and images to a streaming video presentation to be viewed using a media player on a PC. There are SMIL tags available to specify user interactivity, timing, sound and positioning on the screen. However, the actual appearance of the presentation is dependent on the characteristics of the receiving device. A presentation created for one device, may appear differently on another. This is in

full analogy with HTML on the Web, where the appearance of a Web page depends on the type of browser, and the browser settings.

Contents and presentation

Each multimedia message will be represented by one SMIL presentation. All the slides in the presentation have the same layout. Each one contains at most two regions. One of the regions contains text and the other contains an image (it is also possible to have just an image region or just a text region). The slides are in fact frames that define the layout and refer to the content (text, images and audio), which is kept separate. The duration of each slide can be set in number of seconds. Inside each slide, the timing for both the text and image can be set individually.

Presentation adapted for a mobile terminal

A slide in a SMIL presentation contains information about how different multimedia elements should appear on a display. Due to the characteristics of todays mobile devices, such as their screen sizes, processor power and audio facilites, there are limits to how MMS messages can be reproduced on the receiving devices.

Therefore, SMIL presentations are designed to allow the receiving device to re-arrange the presentation, if necessary. For example, the relative positioning of image and text may be altered by the receiving device. Or, for example, the duration time set for each slide may be replaced by the user pressing a phone key to advance to next slide.

Of course, if the receiving terminal can fit the SMIL layout in its screen as is, no change will be necessary

Figure 2. Example: Two different receiving devices display the same presentation. The left uses "portrait" layout, the right uses "landscape" layout.

UAProf (User Agent Profile)

This feature enables the phone to inform the server about the phone's capabilites, for example:

- The maximum size of a multimedia message in bytes
- The maximum size of an image in units of pixels
- Supported contents formats
- Supported character sets
- Accepted languages
- Accepted encoding formats
- Screen size
- Processor type
- Support for Limited Distribution

With this information it is possible for the server to prepare, or select, a version of an MMS message that is optimized for the capabilities of the receving device. Sony Ericsson phones support at least the above UAProf parameters.

Encoding MMS SMIL for sending over the air

The user can compose an MMS message using the mobile phone, a PC, or any other device with the appropriate MMS software. The MMS messages can also be automatically generated by a service or content provider.

The MMS message payload consists of separate parts:

- One part containing the description of the slides, using MMS SMIL.
- One part containing the actual contents of the slides – text, images and sound, encoded and sent as attachments. Supported formats, see "Supported contents formats" on page 12.

The SMIL part is encoded text and the character set shall be UTF-8 with lower half of ISO 8859-1 character set (us-ascii set).

The SMIL mark-up is very similar to HTML mark-up. In more general uses of SMIL mark-up, more tags and attributes are available. However, in MMS messages sent to mobile devices in the first phase, it is recommended to not use more types of tags or attributes than detailed in this table.

Tags and descriptions

Tags used in MMS SMIL	Description	Support in Sony Ericsson phones
<smil></smil>	Required tags for the entire SMIL message definition.	Yes
<head></head>	Required tags for the Head section.	Yes
<meta .../>	Optional attribute tags (in head section, similar to HTML). The "title" and "author" meta attributes correspond to the "FROM" and "SUBJECT" fields of an e-mail message. All receiving clients have to be able to accept a message that contains meta fields. However, the receiving client may ignore the meta information.	Ignored
<layout></layout>	Tags for defining the layout (in head section). This section sets the recommended layout for all the slides in the presentation. All receiving clients have to be able to accept the layout section. However, the receiving client may ignore the layout information. This will normally be the case on mobile devices. It is recommended, but not required, to include the layout section.	Yes

Tags and descriptions

Tags used in MMS SMIL	Description	Support in Sony Ericsson phones
<root-layout...background-color />	Tag that specifies the entire screen area of the message (required if there is a layout section), with attributes "width" and "height" in pixels. The maximum area recommended for full interoperability is 160 x 120 pixels. An optional "background-color" attribute can be used to change the color for all slides. Values in plain text or hex, for example "white", "red", "0xFFFFFF"	Yes
<region id="image".../>	Tags for the Image region (required if there is a layout section), with attributes "size" (pixels or percent value) and position, "left" and "top". Image and Text regions must be specified so they do not overlap.	Ignored Media objects in each slide are presented in order of appearance in the SMIL presentation.
<region id="text".../>	Tags for the Text region (required if there is a layout section), with attributes "size" (pixels or percent value) and position, "left" and "top". Image and Text regions must be specified so they do not overlap.	Ignored Media objects in each slide are presented in order of appearance in the SMIL presentation.
<body></body>	Required tags for the Body section. The body section contains the descriptions of each slide.	Yes
<seq repeatcount=....> </seq>	Optional tags for specifying that one or several pages (between the tags) should be repeated. **Note** Each repetition produces a new slide in the receiving phone memory.	Yes

Tags and descriptions

Tags used in MMS SMIL	Description	Support in Sony Ericsson phones
<par dur...></par>	Required tags for each slide description (in body section). The tags must not be nested. The "par" (short for "parallel") tag indicates that all elements in the slide should be displayed simultaneuously (see margin note). In fact, this is always the case in MMS SMIL messages. In more general uses of SMIL mark-up, more complex settings are possible. The optional "dur" attribute sets the recommended duration for the slide (value in ms or s, range 1-20 seconds). However, the receiving client may ignore the duration attribute, and for example prompt the user to press a phone key to advance to the next slide.	Yes. Note: See also tag descriptions <text>, <image>, <audio>, for timing of the individual objects in the slide, using the "begin" and "end" attributes. Default duration is 2 seconds. Note: The maximum number of events in an MMS message depends on the device. For a description of what is an "event", see "Terminology and abbreviations" on page 26
<img src... alt... begin...end.. region="image"> </img>	Tags for the only image region of each slide. There can be max 1 image per slide. This tag can be left out completely if no image should be displayed in the slide. The "src" file must be a valid image of a supported format. The attribute value of "region" must be "image". The optional "alt" attribute is used for alternative text. The optional "begin" attribute sets the delay after which the object should appear in the slide (value in ms or s, relative to slide start). The optional "end" attribute sets the moment at which the object should disappear (value in ms or s, relative to slide start). If a "begin" time is set without an "end" time, the object remains for the duration of the slide. However, the receiving client may ignore the begin and end attributes, and for example prompt the user to press a phone key to present the next object.	Yes Minimum object duration is 1 second. Note: The maximum number of objects in an MMS message depends on the device.

Tags and descriptions

Tags used in MMS SMIL	Description	Support in Sony Ericsson phones
<text src... alt... begin...end.. region="text"> <param name="text-size" value... /> <param name="fore-ground-color" value... /> </text>	Tags for the only text region of each slide. There can be max 1 text per slide. This tag can be left out completely if no text should be displayed in the slide. The "src" file must be a valid text of a supported format. The attribute value of "region" must be "text". The optional "alt" attribute is used for alternative text. The optional "begin" attribute sets the delay after which the object should appear in the slide (value in ms or s, relative to slide start). The optional "end" attribute sets the moment at which the object should disappear (value in ms or s, relative to slide start). If a "begin" time is set without an "end" time, the object remains for the duration of the slide. However, the receiving client may ignore the begin and end attributes, and for example prompt the user to press a phone key to present the next object	Yes Minimum object duration is 1 second. Note: The maximum number of objects in an MMS message depends on the device. Additional (optional) "textsize" parameter can be used. Values small, normal or large. Additional (optional) "foreground-color" parameter can be used. Values in plain text or hex, for example "white", "red", "0xFFFFFF"
<audio src... alt...begin...end.. > </audio>	Optional tags for the sound played with a slide. There can be max 1 sound/melody per slide. This tag can be left out completely if no sound should be played with the slide. The "src" file must be valid audio of a supported format. The optional "alt" attribute is used for alternative text. The optional "begin" attribute sets the delay after which the object should appear in the slide (value in ms or s, relative to slide start). The optional "end" attribute sets the moment at which the object should disappear (value in ms or s, relative to slide start). If a "begin" time is set without an "end" time, the object remains for the duration of the slide. However, the receiving client may ignore the begin and end attributes, and for example prompt the user to press a phone key to present the next object	Yes Minimum object duration is 1 second. Note: The maximum number of objects in an MMS message depends on the device.

MMS SMIL presentation example

The following example shows an MMS SMIL message. As shown on the <layout> line, comment tags can be used. This SMIL presentation refers to the "Content-Location" of the Images, Text and Audio. However, it is also possible to refer to the Content-ID of the media objects.

```
<smil>
        <head>
        <meta name="title" content="mms" />
        <meta name="author" content="John Smith" />
        <layout>  <! --This a "landscape" screen (2*qcif)-->
                <root-layout background-color="black" width="352" height="144"/>
                <region id="Image" width="176" height="144" left="0" top="0" />
                <region id="Text" width="176" height="144" left="176" top ="0"/>
        </layout>
        </head>

        <body>
                <par dur = "8s">
                        <img  src = "FirstImage.jpg" region="Image">
                        </img>
                        <text src = "FirstText.txt" begin="2s" region="Text">
                                <param name="textsize" value="small" />
                                <param name="foreground-color" value="white" />
                        </text>
                        <audio src = "FirstSound.amr">
                        </audio>
                </par>
                <seq repeatcount="1" >
                        <par dur = "3s" >
                                <text  src = "SecondText.txt" region="Text">
                                        <param name="foreground-color" value="white" />
                                </text>
                                <img   src = "SecondImage.jpg" region="Image">
                                </img>
                                <audio src = "SecondSound.amr">
                                </audio>
                        </par>
                </seq>
                <par dur = "4s" >
                        <img   src = "ThirdImage.jpg" region="Image">
                        </img>
                        <text  src =  "ThirdText.txt" region="Text">
                                <param name="foreground-color" value="white" />
                        </text>
                        <audio src = "ThirdSound.amr">
                        </audio>
                </par>
        </body>
</smil>
```

When the user has received the message to the Ericsson T68i/ T300 and decides to view it, the MMS message is rendered into a format that makes it possible to play the presentation without unnecessary delays.

SMIL presentation sections

Section in SMIL presentation	Appearance in Ericsson T68i/ T300
Meta	Ignored
Layout	The background color is set to black. The regions are ignored.
The first slide is displayed for 8 seconds and includes the logotype "FirstImage.jpg". Below, the company name in "FirstText.txt" appears after 2 seconds, in small size and white color. An audio file "FirstSound.amr" is played	
The second slide follows immediately, and is displayed for 3 seconds together with the next audio file. Here, the text appears before the image in the SMIL presentation code, and therefore it is located above the image. Text size is default and in white color.	
The second slide is repeated once.	
In the third slide, displayed for 4 seconds, the text appears below the image.	

- The size of this message is approximately 15 kB.
- The number of objects is 9.
- The number of events is 22 (each object represents 2 events, this gives 6 events per slide, plus 3 additional events for the three slides, plus 1 event for the repetition). A full description of what is an "event", see "Terminology and abbreviations" on page 26.

Supported contents formats

Image formats

For MMS message slides, the following image formats are supported, in the first phase. For information on P800, please see the relevant appendix.

Image formats

Image format	Support in Sony Ericsson phones
Base line JPEG with JFIF as the exchange format	Yes, 640 x 480 pixels. If an image larger than display size is received, it will be scaled down to fit. However, the scaling down does not reduce the file size. JPEG is the preferred format for encoding photographs.
GIF87a	Yes, 160 x 120 pixels. If a GIF image larger than screen size is received, it will be centered and cropped to screen size. GIF is the preferred format for drawings with lines and filled areas, and animations. *)
GIF89	
WBMP	Yes, 320 x 320 pixels. If a WBMP image larger than screen size is received, it will be centered and cropped to screen size.

*) *Note that for animated GIFs, the resulting file size has to be considered. The file size of an animated GIF during transmission is based on one start image, and in the consecutive frames only the information about changed pixels compared to the preceeding frame, are recorded. However, when the animation is received to the phone and rendered, all the individual images of the animation, are created and stored in full size. For example, it would be possible to create an MMS message with an animation of one 30 kB image, repeated 8 times without changes. In the receiving phone, this results in a series of images of total size 8x30 kB = 240 kB. Therefore, always consider each frame in the animation as a full size image.*

To ensure that an image is correctly reproduced on most receiving device types, is recommended to use images with a size of up to width 160 pixels and height 120 pixels. If larger images are used, they should be verified for optimal performance on the target device.

For color images, it is recommended to use a color palette of 256 colors, known as the browser safe palette used by Netscape or MS Internet Explorer. This ensures optimal rendering on several devices.

Text formats

For text parts in MMS message slides, the following character encodings are supported:

- us-ascii (IANA MIBEnum 3)
- utf-8 (IANA MIBenum 100)
- utf-16 (IANA MIBenum 1000) with explicit Byte Order Mark (BOM).

Audio formats

For audio in MMS messages, the supported formats are:

- AMR (Adaptive Multi Rate, a codec used for voice in GSM and 3G networks).
- iMelody for ring tones.
- MIDI (Musical Instrument Digital Interface, an audio format enabling polyphonic ring signals). For more information on the MIDI format and Polyphonic ring signals, please read the White Paper on polyphonic ring signals, found at http://www.ericsson.com/mobilityworld/. Note: The MIDI format is only available in the T300 and P800.
- AU, Wav and RMF (supported only in the P800)

MMS message format

The MMS is implemented on top of WAP 1.2.1. The recommended maximum size of an MMS message is 30 kByte, including header information and payload. In order to be able to send an MMS message over the air, all of its parts have to be packaged into a multi-part message. The methods used are based on the MIME standard, currently in use in most Internet e-mail traffic, for example. This also ensures that MMS will have a certain compatibility with e-mail.

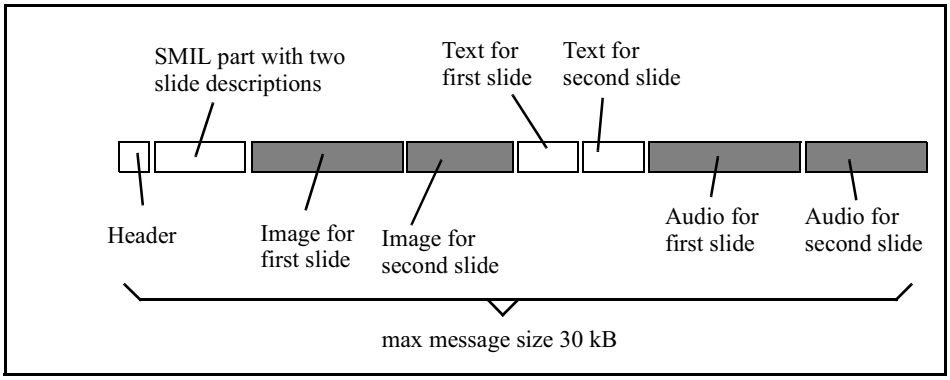

Figure 3. This example of a packaged MMS message consists of several related parts, each separated by a boundary string, which is defined in the header. The order of the parts does not matter.

For example, the message shown previously in "MMS SMIL presentation example" on page 10, would be approximately 15 kB in size, including three 100x80 images, three audio files and a text.

Note Sony Ericsson phones are able to receive, save and display messages of up to 50 kB in size, which can be useful to know for service providers. However, if the receiving phone user wants to forward or send this message, it must be reduced in size to 30kB.

Encoding and values in MMS headers

Content-Type. The MMS header includes a Content-Type parameter. The Content-Types in M-Send.req and M-Retrieve.conf are:

- application/wnd.wap.multipart.mixed when there is no presentation.
- application/wnd.wap.multipart.related when there is SMIL presentation available.

start. It is recommended to include a start parameter in the MMS header. It specifies the Content-ID of the SMIL presentation (note that the value of start is written without quote marks).
type. If the start parameter is included, the header must also include the type parameter, with value application/smil (note that the value of type is written without quote marks).

If the start (and the subsequent type) parameter is omitted, then the SMIL presentation must be the first part of the message.

Some of the MMS headers have been defined as "Encoded-string-value". The character set IANA MIBEnum value in these headers shall be encoded as Integer-value (Short-integer or Long-integer). The character set us-ascii (IANA MIBenum 3) shall be always accepted. If the character set is not specified (simple Text-string encoding) the character set is us-ascii (lower half of ISO 8859-1). When the text string cannot be represented as us-ascii, the character set shall be encoded as utf-8 (IANA MIBenum 106) which has unique byte ordering.

In the MMS headers the supported characters shall be at least those in ISO 8859-1.

The headers whose definition is Text-string (Content-Location, Message-ID, etc.) shall contain only us-ascii characters (lower half of ISO 8859-1).

Message content encoding

Content-ID. This is the unique Content-ID for each part of the message. The presentation part can refer to another Content-ID, by using a "cid:" reference. For example <img src="cid:xyzxyz">, where "<xyzxyz>" is the Content-ID for a part of the same message (note that the brackets are removed in the reference string). The Content-ID does not have to be globally unique and it does not require a legal address definition.

Content-Location. This is a unique reference for each part of the message. This format is useful to make references. Other parts of the message can refer to another Content-Location, by using a relative URL reference. For example <img src="bigimage.jpg">, where "bigimage.jpg" is the Content-Location for a part of the same message.

Content-Type: This is the type of the message part.

- application/smil; charset="US-ASCII" – this is Content-Type for the SMIL presentation part
- image/jpeg – an example of Content-Type for an image part.
- text/plain – an example of Content-Type for a text part.

WSP multipart encoding shall be used. Content types in WSP multipart headers shall be encoded using WSP binary values whenever available. If they are not available, text encoding shall be used.

The maximum size of Content-ID or Content-Location shall be 100 characters. Character encoding with WSP multipart headers (Content-ID, Content-Location, etc.) shall be us-ascii (lower half of ISO 8859-1), as there is no WSP specific definition for the character set encoding in part headers.

MMS messages in Sony Ericsson phones

Sony Ericsson Mobile Phones supporting MMS messages conform with all features of the first phase of MMS. The MMS features are integrated into the phone's applications. The possibilities for the users of Sony Ericsson mobile phones include:

- Send and receive MMS messages with attached objects of the types vCard, vCalendar, vNote, Themes etc (vNote and Themes are not supported in the P800). The attachments appear below the message as an icon. The recipient can click the icon to save the object, using a menu of alternatives. For example, a calendar event can be saved into the Calendar with just a few clicks. An image can be saved as background, a melody can be saved as ring signal.
- From the sound browser, the image browser, calendar, contacts and other applications, any melody, image or other object in the phones memory can present a menu where the user can send it as an MMS message (unless limited distribution applies).
- Connect an optional camera to the phone, where a menu and viewfinder appears in the phone. Click a snap-shot or a series of images, bring up the camera menu and immediately send as an MMS message, with just a few clicks. Or save the images in the phone (or in the camera) for later use.
- Record a voice comment or an ambient sound with the phone's built-in sound recorder, bring up the menu and send it as an MMS message with just a few clicks.

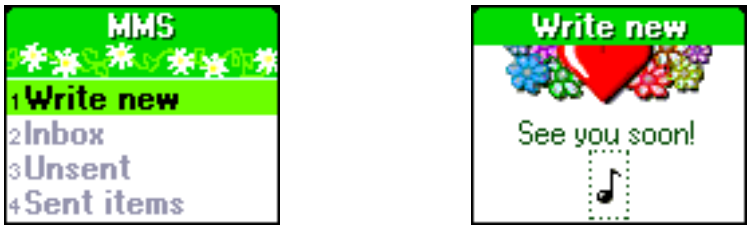

Figure 4. Colour and nice layout enhances the messaging experience.

Forward protection in MMS

A mechanism to limit distribution of media objects in MMS is an important requirement from content providers. A typical situation is when a user buys a background picture from a content provider. The content provider should be able to limit the possibility for the user to forward these pictures to other phones.

All MMS enabled Sony Ericsson phones, support a mechanism for limiting any object, received in an MMS, from being forwarded from the phone. The feature Forward protection makes it possible to set an indication on any object in an MMS message, sent from a provider to a phone. The phone will recognise the indication, limiting the object from being used in outgoing messages. Also, the object will not be presented to other applications in the phone that may allow sharing an object with other devices (nor applicable in the P800).

If an object with Forward protection is sent to a phone without support for this mechanism, the object will not be recognised by the phone, and therefore will not be displayed to the user.

Note Forward protection can only be used in messages sent to phones. Users cannot remove or set limited distribution on objects in outgoing messages from the phone.

Limited distribution formats

An object with limited distribution shall be part of a MIME multipart called application/vnd.sem.mms.protected. The multipart can consist of one or several objects which all will get the limited distribution protection in the terminal.

Example 1 Filename as parameter to content-type-value.

```
Content-Type: application/vnd.sem.mms.protected; boundary=42
--42
Content-Type: image/gif
        name="Boris_goes_to_Dnepropetrovsk.gif"
Content-ID:<Thu_Sep_21_09_05_12_CEST_2000_0@ericsson.se>
..GIF image .. //Comment: use the hexnumbers in the examples in the original document
--42--
```

Example 2 Filename as separate header.

```
Content-Type: application/vnd.sem.mms.protected; boundary=42
--42
Content-Type: image/gif
Content-ID:<Thu_Sep_21_09_05_12_CEST_2000_0@ericsson.se>
Content-Location:"Boris_goes_to_Dnepropetrovsk.gif"
..GIF image ..
--42--
```

Example 3 Not protected - with filename as parameter to content-type-value

---

Content-Type: image/gif

name="Boris_goes_to_Dnepropetrovsk.gif"
Content-ID:<Thu_Sep_21_09_05_12_CEST_2000_0@ericsson.se>
..GIF image ..

MMS templates

Downloadable MMS-templates

The Sony Ericsson MMS templates makes message creation easier and faster. The user can just add text and pictures to a pre-defined template, and the result will be a professionally designed slide presentation. Each template consists of:

- A SMIL document that defines the message structure and referenced files.
- One xml document (texts.xml) with the title of the template, and the texts referenced by the SMIL document.
- Zero or more images ending with extensions .gif, .jpg, .wbmp.
- Zero or more melodies ending with .imy.
- Zero or more sound ending with .amr.

Language dependant text files (texts.xml)

Each text file has an entry in the texts.xml file. Each entry except the default entry, which is last, is identified with a ISO639 [http://www1.ics.uci.edu/pub/ietf/http/related/iso639.txt] language identifier. The "texts.xml" MUST be saved as UTF8. UTF8 allows the file to contain ISO-10646 characters like Chinese, Russian, Hebrew, etc.

Example:

```
<!--Tombraider demo text files -->
<mms-text-files>
  <!-- These are the text used for swedish -->
  <message language="sv">
    <title>Titel ääö</title>
    <file filename="and.txt">och</file>
    <file filename="presents.txt">presenterar</file>
```

```
  <file filename="in.txt">i</file>
 </message>

 <!-- These are the default text used when no language specific entry is found -->
 <!-- This entry must be last! -->
 <message>
  <title>Title</title>
  <file filename="and.txt">and</file>
  <file filename="presents.txt">presents</file>
  <file filename="in.txt">in</file>
 </message>
</mms-text-files>
```

TAR

All template files are packed into an archive using TAR (Tape Archive).

The extension of the archive is .tpl.

Mime type

The mime type for MMS templates is "application/vnd.sonyericsson.mms-template".

Note: If not the templates are included in your version of T68i/ T300, the templates will be implemented in the upgrade.

User prompt in MMS

An important requirement is to be able to send a background picture or a ring melody to a phone in a user-friendly way. The feature User prompt, supported in all MMS enabled Sony Ericsson phones, makes it possible to, for example, send an operator logo and prompt the user with “New background received. Accept?”.

User prompt in MMS enables operators or service providers to indicate to the receiving phone, that an object is intended to be handled at the time of reception, for example by means of user interaction.

The User prompt does not include information about what exactly the feedback should be. It is instead up to the phone to give the user the possibilities that this phone has for that specific media type. For example, an iMelody object could be stored both as a ring melody and an alarm signal. The feedback in this example could therefore be: “New melody received. Store this as ring signal?”.

Note User prompt can only be used in messages sent to phones, from operators or service providers, etc. It cannot be included in outgoing messages from the phone. If User prompt is not supported in the mobile phone, the message will be presented as an ordinary MMS message.

User prompt format

A new MIME header has been added to indicate if the user shall be prompt after receiving a certain media object or not. The header shall be included in the MIME header for that media element.

Header field name: X-Mms-Ericsson-UserPrompt
Header field value: ("Yes" | "No")

Example

```
Content-Type: image/gif;
        name="Dilbert_background.gif"
X-Mms-Ericsson-UserPrompt: Yes;
Content-ID: <Thu_Sep_21_09_05_12_CEST_2000_0@ericsson.se>

567GhIGfHfYT6ghyHhHUujpfyF4f8HHGTrfvhJhjH776tbB9HG4VQbnj7
77n8HHGT9HG4VQpfyF467GhIGfHfYT6rfvbnj756tbBghyHhHUujhJhjH
HUujhJh4VQpfyF467GhIGfHfYGTrfvbnjT6jH7756tbB9H7n8HHGghyHh
6YT64V0GhIGfHfQbnj75
```

Appendix: Sony Ericsson T68i

Multimedia Messaging (MMS) related features: Multimedia Messaging with the possibility to include text, pictures ((160x120) pixels JPG, GIF and WBMP), sounds (iMelody and AMR), contacts (vCard), calendar entries (vCal) and notes (vNote) are supported.

SMIL support allowing for creation of and transmission of slide show-style presentations
Possibility to send a Multimedia Message to a mobile phone or an e-mail account
A number of pre-defined Multimedia Message templates are provided
Automatic download of Multimedia Messages

Possibility to remotely configure the MMS settings according to an Ericsson/Nokia specification

Support for User Agent Profile (UAProf)
Support for Limited Distribution
MMS templates, pre-defined: Yes, 5
MMS pictures, pre-defined: Yes, 10
Support for User prompt

Themes: With themes the user can change the appearance of the display, i.e. the text and background colours and the background picture. The phones comes with a number of pre-defined themes and new themes can be created on and downloaded from e.g. Sony Ericsson Mobile Internet. Themes will have the following functionality:

- 5 pre-defined themes
- Background picture as part of the theme definition.
- Possibility to download and exchange additional themes
- The maximum number of themes is only limited by the amount of free memory.

Sound browser: A Sound browser from which the user has access to user sounds stored in the phone, i.e. eMelodies, iMelodies and AMR sounds (recordings). Ring signals (eMelody, iMelody, vMel) can be downloaded via WAP or exchanged via EMS (only iMelodies), Infrared, Bluetooth and MMS (only iMelodies). AMR sounds (recordings) can be exchanged via Infrared, Bluetooth and MMS. From the Sound browser, all handling of sounds can be initiated, e.g. playing, editing, sending, view info, etc. The maximum number of sounds is only limited by the amount of free memory.

iMelodies and new Melody composer: iMelody support including play, compose, edit and send within the new Melody composer. The new composer has an improved graphical user interface which will simplify melody handling. All new and all edited melodies will be stored in the iMelody format.

Image browser: An Image browser from which the user has access to pictures stored in the phone, i.e. GIF- (87a and 89a including animations), JPG- and WBMP-images. Two different views, thumbnail and full

view. Images can be downloaded via WAP, exchanged via Infrared, Bluetooth, EMS and MMS and also fetched from the camera. From the Image browser, all handling of images can be initiated, e.g. viewing, editing, sending, set as background (not applicable to animation in which case only the first image will be shown), etc. The maximum number of images is only limited by the amount of free memory. The maximum size per picture has the following restrictions:

- GIF: 160x120 pixels
- JPG: 640x480 pixels
- WBMP: 320x320 pixels

Picture editor: Possibility to create new and edit existing pictures (WBMP) via the enhanced Picture editor

Camera application: A camera application is introduced with the following features:

- Viewfinder in phone (around 2 frames/second
- Browse pictures in camera
- Possibility to set different images sizes
- Send pictures residing in camera
- Save picture in phone

Customisation: Short-cut list, Pictures, Themes, Ring melodies, Screen show, MMS templates, Network names, Network logos

Display size (W x H): 101 x 80 pixels

Networks: GSM 900, GSM 1800, GSM 1900

Features (general), examples: Phone book in phone and on SIM (511 entries total), Bluetooth™ wireless technology support, Voice control, Calendar, WAP Browser, Built-in E-mail client (POP/IMAP/SMTP), Menu shortcuts, Sleeping display, Synchronization with PC, Infrared port, Built-in modem, Display light, Connected Line Identity Presentation (COLP), Games, Ring signal composition, SMS counter, SMS templates, EMS, and more

Features (operator-specific), examples: GPRS, High Speed Data (HSCSD), WAP 1.2.1, WTLS class 3 (Encoding + Server Authentication + Client Certification), Circuit Switched Data (a.k.a GSM Data), SMS Cell Broadcast, SIM Application Toolkit, Downloadable background pictures, XHTML Basic, and more

Performance
Size: 100 x 48 x 20 mm
Weight: 60 g without battery, 82 g with battery.
Talk time: up to 13 hrs
Standby time: up to 290 hrs

Appendix: Sony Ericsson T300

Multimedia Messaging (MMS) related features: Multimedia Messaging with the possibility to include text, pictures ((160x120) pixels JPG, GIF and WBMP), sounds (the polyphonic sound MIDI [Musical Instrument Digital Interface] format, iMelody and AMR), contacts (vCard), calendar entries (vCal) and notes (vNote) are supported.

SMIL support allowing for creation of and transmission of slide show-style presentations
Possibility to send a Multimedia Message to a mobile phone or an e-mail account
A number of pre-defined Multimedia Message templates are provided
Automatic download of Multimedia Messages

Possibility to remotely configure the MMS settings according to an Ericsson/Nokia specification

Support for User Agent Profile (UAProf)
Support for Limited Distribution
MMS templates, pre-defined: Yes, 3
MMS pictures, pre-defined: Yes, 10
Support for User prompt

Themes: With themes the user can change the appearance of the display, i.e. the text and background colours and the background picture. The phones comes with a number of pre-defined themes and new themes can be created on and downloaded from e.g. Sony Ericsson Mobile Internet. Themes will have the following functionality:

- 3 pre-defined themes
- Background picture as part of the theme definition.
- Possibility to download and exchange additional themes
- The maximum number of themes is only limited by the amount of free memory.

Sound browser: A Sound browser from which the user has access to user sounds stored in the phone, i.e. MIDI files, eMelodies, iMelodies and AMR sounds (recordings). Ring signals (MIDI, eMelody, iMelody, vMel) can be downloaded via WAP or exchanged via EMS (only iMelodies), Infrared, Bluetooth and MMS (only iMelodies). AMR sounds (recordings) can be exchanged via Infrared, Bluetooth and MMS. From the Sound browser, all handling of sounds can be initiated, e.g. playing, editing, sending, view info, etc. The maximum number of sounds is only limited by the amount of free memory.

iMelodies and new Melody composer: iMelody support including play, compose, edit and send within the new Melody composer. The new composer has an improved graphical user interface which will simplify melody handling. All new and all edited melodies will be stored in the iMelody format.

Image browser: An Image browser from which the user has access to pictures stored in the phone, i.e. GIF- (87a and 89a including animations), JPG- and WBMP-images. Two different views, thumbnail and full view. Images can be downloaded via WAP, exchanged via Infrared, Bluetooth, EMS and MMS and also fetched from the camera. From the Image browser, all handling of images can be initiated, e.g. viewing, editing, sending, set as background (not applicable to animation in which case only the first image will be shown), etc. The maximum number of images is only limited by the amount of free memory. The maximum size per picture has the following restrictions:

- GIF: 160x120 pixels
- JPG: 640x480 pixels

- WBMP: 320x320 pixels

Picture editor: Possibility to create new and edit existing pictures (WBMP) via the enhanced Picture editor

Camera application: A camera application is introduced with the following features:

- Digital zoom
- Funlayers, add effects to your pictures for fun experience
- Viewfinder in phone (around 2 frames/second
- Browse pictures in camera
- Possibility to set different images sizes
- Send pictures residing in camera
- Save picture in phone

Customisation: Short-cut list, Pictures, Themes, Ring melodies, Screen show, MMS templates, Network names, Network logos

Display size (W x H): 101 x 80 pixels

Networks: GSM 900, GSM 1800, GSM 1900

Features (general), examples: Phone book in phone and on SIM (511 entries total), WAP Browser, Built-in E-mail client (POP/IMAP/SMTP), Menu shortcuts, Sleeping display, Built-in modem, Display light, Connected Line Identity Presentation (COLP), Games, Polyphonic ring signals with MIDI format, Ring signal composition, SMS counter, SMS templates, EMS, and more

Features (operator-specific), examples: GPRS, High Speed Data (HSCSD), WAP 2.0, WTLS class 3 (Encoding + Server Authentication + Client Certification), Circuit Switched Data (a.k.a GSM Data), SMS Cell Broadcast, SIM Application Toolkit, Downloadable background pictures, XHTML Basic, and more

Performance
Size: 106 x 48 x 21 mm
Weight: 101 g with battery.
Talk time: up to 7,5 hrs
Standby time: up to 350 hrs

Appendix: Sony Ericsson P800

MMS related features: P800 can support the following context in received MMS messages:
Text: As per Nokia/Ericsson conformance specification – support foreground color
Image: JPG, GIF (87a+89a), PNG, BMP, WBMP and TIFF
Size: up to 160 x 120 pixels (larger images, up to 640 x 480 pixels, are scaled down to this size).
Colour depth: 12-bit (4096 colours)
Audio: AMR, WAV, AU, General MIDI Level 1(Some level 2 support), RMF (Beatnik), iMelody, MP3
Attachments: vCard, vCal, and more

P800 can save non-copy protected messages to use as templates, as well as support foreground text colors and background SMIL color. When a non-conformant message is received, it will be displayed within the capability of the SMIL player.

Possibility to remotely configure the MMS settings according to an Ericsson/Nokia specification

Support for User Agent Profile (UAProf)
Support for Forward protection
MMS templates: a number of pre-defined templates
MMS pictures: a number of pre-defined
Support for User prompt

Picture editor: Possibility to create new and edit existing pictures (WBMP) via the enhanced Picture editor

Camera application: A camera application is introduced with the following features:

- Viewfinder in phone (around 2 frames/second
- Browse pictures in camera
- Possibility to set different images sizes
- Send pictures residing in phone
- Save picture in phone

Customization: Short-cut list, Pictures, Themes, Ring melodies, Screen show, MMS templates, Network names, Network logos

Screen:

- Type: TFT
- Size, flip closed: 208 x 144 pixels, 40 x 28 mm

- Size, flip open: 208 x 320 pixels, 40 x 61 mm
- Pixel Size:0.192 mm
- Colour depth:12-bit (4096 colours)
- Surface:Touch-sensitive, anti-reflective
- Illumination:Front-light

Networks: E-GSM 900, GSM 1800, GSM 1900

Features (general), examples: Integrated Digital Camera, Phone book in phone and on SIM, Contacts (Address Book), Calendar (Diary), Tasks ('To-Do' list), Jotter (Text and "ink" notes), Voice Memo (Dictaphone), World Clock, Calculator, (P802) English-Chinese-English Dictionary, (P802) Lunar Calendar, Bluetooth™ wireless technology version 1.1, Voice control, Java, Web/WAP Browser, Built-in E-mail client (multiple accounts and PC sync), Screen saver, PC and remote synchronisation (SyncML), Infrared port, Built-in modem, Display light, Connected Line Identity Presentation (COLP), Games, SMS, EMS, MMS, and more

Features (operator-specific), examples: GPRS, High Speed Data (HSCSD), WAP 2.0, WTLS class 3 (Encoding + Server Authentication + Client Certification), Circuit Switched Data (a.k.a GSM Data), M-Services: Compliant with M-Services specification, phase 1), MeT (Mobile Electronic Transactions): Compliant with MeT specification, version 1.0, SMS Cell Broadcast, SIM Application Toolkit, Downloadable background pictures, HTML 3.2, WML 1.2.1, WBXML, xHTML Basic, xHTML Mobile Profile, cHTML, and more

Performance
Size: 117 x 59 x 27 mm
Weight: 158g with flip
Talk time: Up to 13 hours
Standby time: Up to 400 hours

Terminology and abbreviations

Term	Explanation
3GPP	3rd Generation Partnership Project
AMR	Adaptive Multi Rate, a sound codec developed by Ericsson
eMelody	This melody format is also known as Ericsson Extended Melody Composer format
EMS	Enhanced Messaging Service, an enhancement of the SMS standard. This makes it possible to include pictures, melodies, sounds and animations in messages, and also to receive and edit new pictures and melodies on the phone
ETSI	European Telecommunications Standards Institute
Event	The MMS message generates a number of events in the phone. The number of events can be counted by observing the SMIL code as follows: Each new slide generates one event "new page". Each object in each slide generates minimum two events "place object" and "show object". If the object has a duration time which ends before the slide duration ends (object parameters "begin" and "end" are set) this generates one more event for the object. (Note that if only the parameter "begin" is set for th eobject, this does not generate an event; it is the same event as "show object") If repetition is used, each repetition generates one event.
GSM	Global System for Mobile Communications. GSM is the world's most widely-used digital mobile phone system, now operating in over 100 countries around the world, particularly in Europe and Asia-Pacific.
iMelody	The iMelody format, specified by IrDA, is a minimal set of tones that can be used in EMS applications to transfer melodies, such as ring tones, between devices.
ID	Identifier
MIDI	(Musical Instrument Digital Interface)
MM	Multimedia Message
MMS	Multimedia Messaging Service. A system application by which a WAP client is able to provide a messaging operation with a variety of media types.
MMS Client	The MMS service endpoint located on the WAP client device.
MMS Proxy-Relay	A server which provides access to various messaging systems. If the MMS Proxy-Relay operates as a WAP origin server it may be able to utilise features of the WAP system.
MMS Server	A server that provides storage and operational support for the MMS service.

Term	Explanation
MIME	Multipurpose Internet Mail Extensions
Object	Media contents in an MMS message are objects of the types texts, images and sounds.
Service Provider	A company that provides services, for example subscriptions to mobile phone users.
SM	Short Message.
SMIL	Synchronized Multimedia Integration Language
SMS	Short Message Service. Allows messages of up to 160 characters to be sent and received via the network operator's message centre to your mobile phone. Messages are stored if the phone is off or out of reach ensuring that they reach you. To use this service, it must be supported by your network.
TP	Transfer Protocol.
Transaction	One or more message exchanges that collectively are considered logically separate from other message exchanges.
UAProf	User Agent Profile, a feature that enables the phone to respond to a request from the server, to inform of the phone's capabilites.
vCard	vCard automates the exchange of personal information typically found on a traditional business card.
vMelody	vMelody automates the exchange of ring signals and melodies.
WAP	Wireless Application Protocol.Handheld devices, low bandwidth, binary coded, a deck/card metaphor to specify a service. A card is typi-cally a unit of interaction with the user, that is, either presentation of information or request for information from the user. A collection of cards is called a deck, which usually constitutes a service.
XML	eXtensible Markup Language

Related information

Documents

- MMS White Paper EN/LZT 1084963
- Composing MMS Messages, Rev A (Ericsson Mobility World)
- MMS Conformance Document (Ericsson and Nokia)
- SMTP Interface Description For Content Providers (Ericsson)
- WAP-205: MMS architecture overview (WAPForum)
- WAP-206: MMS client transactions (WAPForum)

- WAP-209-MMS, MMS Encapsulation proposed SCD (WAPForum)
- WAP-203-WSP, Wireless Session Protocol (WAPForum)
- WAP-201-WTP Wireless Transport Protocol (WAPForum)
- World Wide Web Consortium (W3C): Synchronized Multimedia Integration Language (SMIL 2.0) Specification: W3C Working Draft 21 September 2000, at http://www.w3.org/TR/2000/WD-smil20-20000921/ (Note: This document is still work in progress.)
- The MIME Multipart/related content type", Levinson E., August 1998.
- MIME Encapsulation of Aggregate Documents, such as HTML (MHTML), Palme J., Hopmann A., Shelness N., March 1999.
- 8-bit single byte coded graphic character sets, Part 1: Latin Alphabet No. 1., ISO/IEC 8859-1:1998(E).
- The Unicode Standard Version 3.0, The Unicode Consortium, Addison-Wesley, Reading (MA), January 2000. ISBN 0-201-61633-5.

Links

- http://wap.sonyericssonmobile.com - a site for the mobile phone user
- http://www.ericsson.com/mobilityworld - information, developer tools, documentation and software updates on mobility products and technologies; check frequently!
- http://www.wapforum.org - home of the WAP Forum
- http://www.gprsworld.com - home of the Mobile Applications Initiative created by Ericsson
- http://www.3gpp.org - home of the 3rd Generation Partnership Project
- http://www.irda.com - home of the Infrared Data Association
- http://www.w3c.org - home of the World Wide Web consortium.
- http://www.etsi.org - home of the European Telecommunications Standards Institute

Trademarks and acknowledgements

Index