Download over WAP feature on Alcatel Mobile

Mobile Equipment / Server Protocol

	Version 5.0				
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DOCUMENT HISTORY

Version	Date	Change note
0.1	19/10/01	Creation
0.2	05/11/01	Remarks from version 0.1
0.3	29/11/01	Remarks from review: WAP push initiated download description. Suppression of Product dependant restrictions.
1.0	10/12/01	Approved version after review
1.1	14/12/01	Suppression of 2nd example method of WSP GET feature
2.0	20/12/01	Approved version after review
2.1	08/01/02	Extension replacement for EMS type objects (XXX. To XXXE)
2.2	14/01/02	Extension replacement for EMS type objects (XXX. To XXE)
3.0	17/01/02	Approved version
3.1	20/02/02	Modification of EMS objects' sizes for Download Fun
3.2	02/04/02	Differentiation between maximum size of WBMP and PIC images (see page 9)
4.0	03/04/02	Approved document
4.1	22/05/02	Support of MIDI objects
5.0	18/06/02	Change of midi objects size from 2560 to 2500 bytes

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1 Introduction

1.1 Goal

This document aims at defining the Alcatel download over WAP feature used between a mobile station and a content server for multimedia data download. This feature consists of two different protocols:
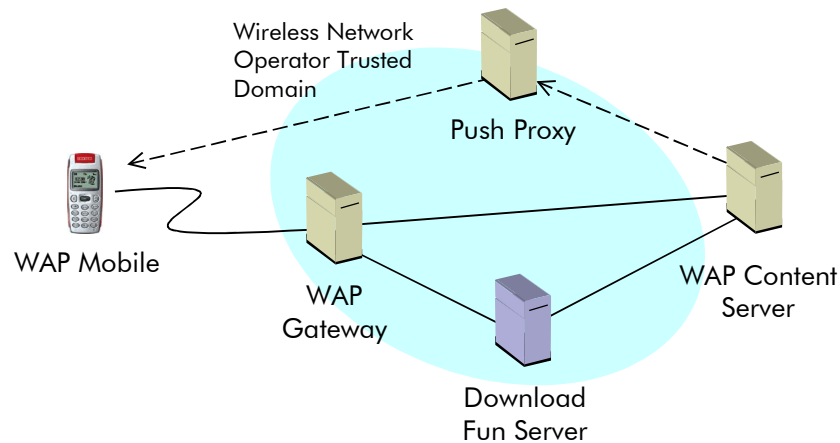
- WSP GET Download protocol and

- Download Fun protocol

1.2 Reference documents

[1]   3GPP TS 23.040 v4.4.0

[2]   3GPP TS 23.038 "Alphabets and languages", v4.3.0

[3]   Infrared Data Association, Specifications for Ir Mobile Communications (IrMC). iMelody v1.0

[4]   WAP Push Access Protocol, version 08-Nov-1999, WAP-164-PAP-19991108-a, WAP-Forum.

[5]   Push Proxy Gateway Service Specification, Version 16-August-1999, WAP-151-PPGService-19990816-a, WAP-Forum.

[6]   Service Indication, WAP-167-ServiceInd-20010926-a, WAP-Forum.

[7]   Service Loading, WAP-168-ServiceLoad-20010816-a, WAP-Forum.

[8]   Data format of Alcatel Mobile v1.0

[9]   Download Fun Protocol Specification OPWV 102, v1.0, Openwave Systems Inc. – June 2001

[10]   M-Services Guidelines PRD AA.35, v3.0

[11]   Fun Object Naming Convention, v1.1, Openwave Systems Inc. – June 2001

[12]   OT512 Download Reference Manual, Alcatel, v1.0

[13]   OT715 Download Reference Manual, Alcatel, v1.0

[14]   OT525 Download Reference Manual, Alcatel, v1.0

2 System environment

Figure 1 shows the download system environment. The user browses with his WAP mobile and downloads the permitted data in his mobile via WAP.

Figure 1. Download user interface via WAP

As described before, two different ways have been implemented for the downloading of media objects: WSP GET and Download Fun.
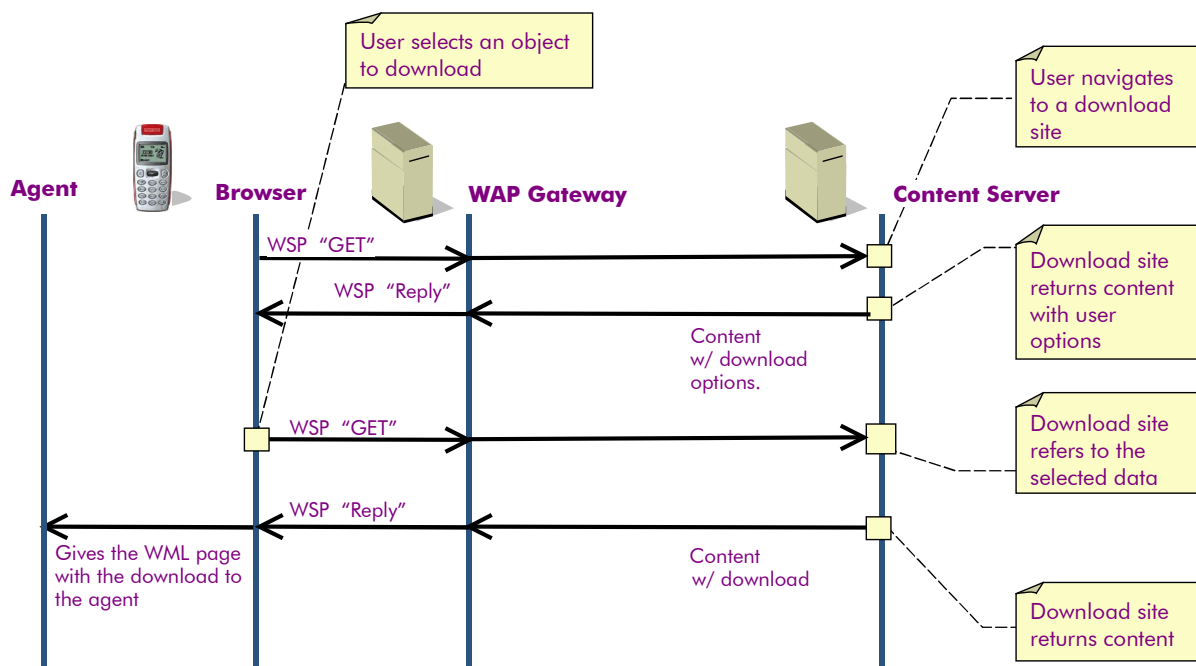
Users can download different kind of data. From standard formats (wbmp, iMelody) to Alcatel proprietary formats (see the Multimedia Converter Tool).

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3 WSP Get Download Protocol

3.1 Principle

The user browses, selects a data to download in a WAP server and receives a WML page containing the data.

Figure 2. WSP Get Overview

3.2 Content types encoding

The content types required for WSP GET are:

–	audio/iMelody	iMelody not forwardable with EMS protocol
–	application/vnd.alcatel.iMelody.EMS	iMelody melody forwardable with EMS protocol
–	application/vnd.alcatel.IAlcatel	IAlcatel melody not forwardable with EMS protocol
–	application/vnd.alcatel.IAlcatel.EMS	IAlcatel melody forwardable with EMS protocol
–	application/vnd.alcatel.SEQ	SEQ melody
–	application/vnd.alcatel.VOX	VOX melody
–	audio/midi	MIDI melody
–	application/vnd.alcatel.picture	Alcatel picture not forwardable with EMS protocol
–	application/vnd.alcatel.picture.EMS	Alcatel picture forwardable with EMS protocol
–	application/vnd.alcatel.wbmp	WBMP picture not forwardable with EMS protocol
–	application/vnd.alcatel.wbmp.EMS	WBMP picture forwardable with EMS protocol
–	application/vnd.alcatel.animation	Alcatel animation not forwardable with EMS protocol
–	application/vnd.alcatel.animation.EMS	Alcatel animation forwardable with EMS protocol

The format encoding for each of these types is described in document [8].

The extensions associated to the types are:

- Imelody format   name.IMY
- Imelody format for EMS   name.IME
- Ialcatel format   name.IAL
- Ialcatel format for EMS   name.IAE
- SEQ format   name.SEQ
- Sampled format   name.VOX
- Midi format   name.MID
- Alcatel picture   name.PIC
- Alcatel picture for EMS   name.PIE
- WBMP picture   name.WBM
- WBMP picture for EMS   name.WBE
- Alcatel animation   name.ANI
- Alcatel animation for EMS   name.ANE

Example: The name of the data is image2 and the type is Alcatel picture.

```
WML card:
    Content-Type: application/vnd.alcatel.picture;name=image2

.... DATA CONTENT .....
```

It is necessary to declare the content type and its extension inside the HTTP server (mime types generally under etc/mime-types directory).

It is also important to utilize the HTTP_USER_AGENT variable to identify the browser's version (device layer + UP.Browser Client) and the WAP Gateway's version.

Example :

```
HTTP_USER_AGENT=Alcatel-BF5/1.0 UP.Browser/5.0.2.1.100 UP.Link/4.2.2.1
```

For character sets not supported, the phone will store the content with a default name based on the date and the time of the download.

3.3   Restrictions

The multi-part download with several downloaded data in the same WML card will not be supported.

The SAR (Segmentation And Re-assembly) is not supported.

The check of the WSP header that the downloaded object will fit in the mobile's memory is not supported.

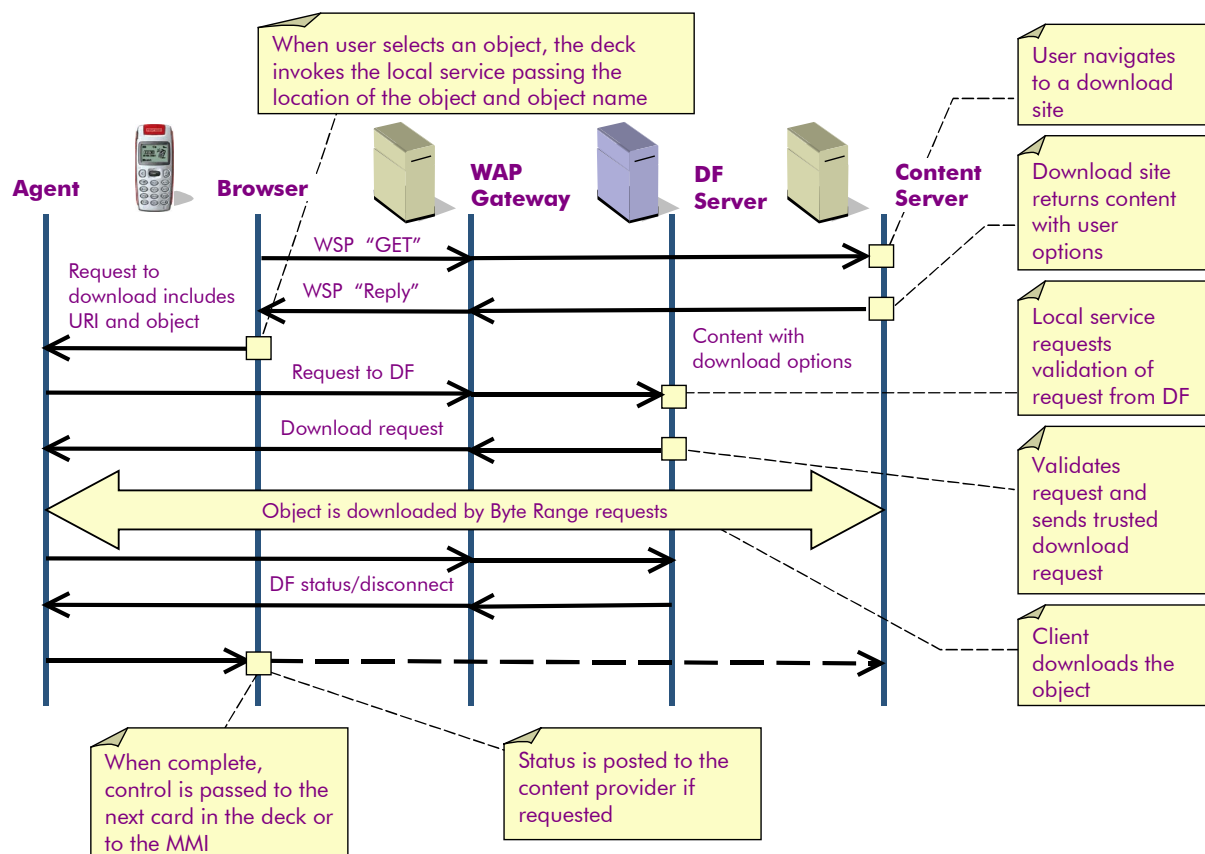|	Version 5.0				
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4 Download Fun Protocol

Download Fun is a service architecture developed by Openwave. It allows users to download images, sounds, animations, and other data objects to their phones in order to personalize it with custom several types of objects. Users can get these media objects using the browser on their phone, then download the objects by simply clicking in WML decks.

Global environment of Download Fun feature consists of a Content Server providing media objects, a Download Fun Server managing the download process and the Mobile Equipment hosting the WAP Browser and supporting storage and execution of downloaded objects. This module has been introduced by Openwave in order to allow segmentation and reassembly feature.

4.1   Principle

Download Fun protocol adds a DF Server that manages the download process. When the user selects an object, there is a local service that interacts with the DF Server in order to verify mobile storage capacity and object type compatibility. If these verifications have positive results, the download process begins by byte ranges defined by the capacity of the mobile. When this process terminates, the mobile sends notification and allows user to execute the downloaded content.

Figure 3. Download Fun overview

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4.2   Content types encoding

The content types required for the Download Fun feature are:

– audio/iMelody	iMelody not forwardable with EMS protocol
– application/vnd.alcatel.iMelody.EMS	iMelody melody forwardable with EMS protocol
– application/vnd.alcatel.IAlcatel	IAlcatel melody not forwardable with EMS protocol
– application/vnd.alcatel.IAlcatel.EMS	IAlcatel melody forwardable with EMS protocol
– application/vnd.alcatel.SEQ	SEQ melody
– application/vnd.alcatel.VOX	VOX melody
– audio/midi	MIDI melody
– image/vnd.wap.wbmp	WBMP picture not forwardable with EMS protocol
– application/vnd.alcatel.wbmp.EMS	WBMP picture forwardable with EMS protocol
– application/vnd.alcatel.picture	Alcatel picture not forwardable with EMS protocol
– application/vnd.alcatel.picture.EMS	Alcatel picture forwardable with EMS protocol
– application/vnd.alcatel.animation	Alcatel animation not forwardable with EMS protocol
– application/vnd.alcatel.animation.EMS	Alcatel animation forwardable with EMS protocol

The format encoding for each of these types is described in document [11]. The DF MIME descriptors of Download Fun are :

Ringing tones

– application/x-mmc.ringtone;content-type=audio/iMelody; size=13312
– application/x-mmc.ringtone;content-type=application/vnd.alcatel.iMelody.EMS; size=128
– application/x-mmc.ringtone;content-type=application/vnd.alcatel.IAlcatel; size=13312
– application/x-mmc.ringtone;content-type=application/vnd.alcatel.IAlcatel.EMS; size=128
– application/x-mmc.ringtone;content-type=application/vnd.alcatel.SEQ; size=13312
– application/x-mmc.ringtone;content-type=application/vnd.alcatel.VOX; size=13312
– application/x-mmc.ringtone;content-type=audio/midi; size=2500

Audios

– application/x-mmc.audio;content-type=audio/iMelody; size=13312

Wallpapers

– application/x-mmc.wallpaper;content-type=image/vnd.wap.wbmp; size=MaxWBMPImgSize;h=MaxHeight;w=MaxWidth
– application/x-mmc.wallpaper;content-type=application/vnd.alcatel.wbmp.EMS; size=132; h=MaxHeight; w=MaxWidth
– application/x-mmc.wallpaper;content-type=application/vnd.alcatel.picture; size=MaxPICImgSize; h=MaxHeight; w=MaxWidth
– application/x-mmc.wallpaper;content-type=application/vnd.alcatel.picture.EMS; size=130; h=MaxHeight; w=MaxWidth

Pictures

– application/x-mmc.picture;content-type=image/vnd.wap.wbmp; size=MaxWBMPImgSize ; h=MaxHeight ;w=MaxWidth

Animations

– application/x-mmc.animation;content-type=application/vnd.alcatel.animation;size=13312
– application/x-mmc.animation;content-type=application/vnd.alcatel.animation.EMS;size=148

Titles

– application/x-mmc.title; charset=SpecificProductCharSet; size= SpecificProductTitleSize

MaxWBMPImgSize, MaxPICImgSize, MaxHeight and MaxWidth mean maximum WBMP image size, maximum PIC image size, maximum image height and maximum image width. SpecificProductCharSet

and SpecificProductTitleSize represent the charset supported by the terminal for the object titles and the maximum title size in bytes. These parameters are product dependant (see documents [12], [13] and [14]).

4.3   Restriction

The multi-part download with several downloaded data in the same WML page will not be supported.

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5 WAP Push initiated Download

The Push Access Protocol allows communication between a Push Service Provider and the Push Gateway of the wireless network (see documents [4] and [5]). Push data is sent to the device without a request from the browser.
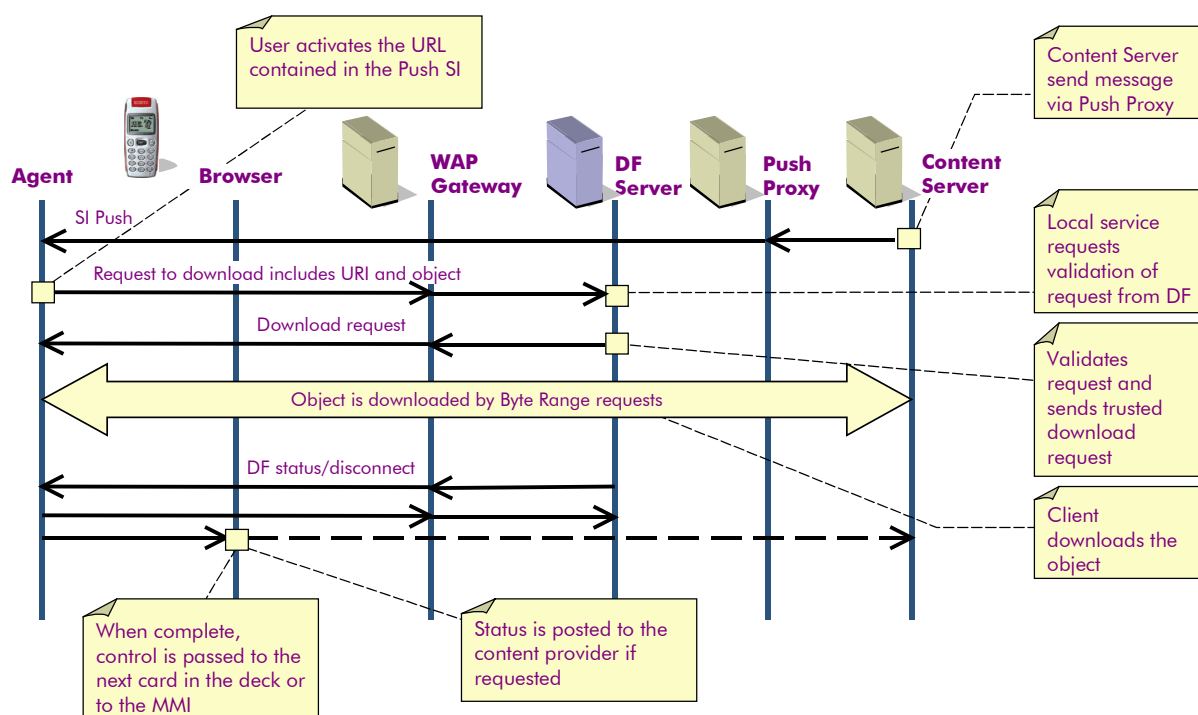
Push services are mainly the Service Indication (SI) and the Service Loading (SL) (see documents [6] and [7]). SI allows to signal events (like "new ringing tone available") with a message and an URL to a WML page. SL transmits only the URL from where the browser can load the content.

5.1   Principle

The following steps describe the beginning of a WAP Push initiated download (Figure 4):

1. The Content Server sends a WAP Push SI content to the Push Proxy. This proxy sends the Push message using the WAP PAP protocol. The Push Proxy resolves the mobile address, performing some access control checks if required, and delivers the Push SI.
2. When the user reads the message, he can trigger the browser with the URL included in the Push (this URL indicates the DF server HTTP address if Download Fun, the Content Server otherwise). A connection is established with the server.
3. The rest of the download takes place as described before on section 4.1

Figure 4. WAP Push initiated download

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