



Global Handset Requirements for CDMA — Flash SMS (Non-Persistent Messaging)

CDG Document 191

Version 2.0

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Contents

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19

Global Handset Requirements for CDMA — Flash SMS (Non Persistent Messaging)	i
CDG Document 191	i
Version 2.0	i
26 January 2011	i
1. Introduction	1
1.1 Scope of Document	1
1.2 Flash SMS description	1
1.3 Organization	2
1.4 Reference Documents	3
1.5 Acronyms and Abbreviations	3
1.6 Terms and Definitions	3
1.7 Carrier Acceptance	4
1.7.1 Documentation	4
2. Flash SMS Requirements	5
2.1 Flash SMS messaging requirements	5
2.2 Flash SMS User Interface requirements	5
2.3 Flash SMS Storage requirements	7

1

Revision History

Date	Version	Description
12 July 2010	0.01	Preliminary draft.
10 January 2011	1.0	Draft for review in GHRC meeting in Mumbai
26 January 2011	2.0	Approved in GHRC Meeting January 2011, Mumbai

- 1
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1. Introduction

1.1 Scope of Document

The objective of this document is to provide requirements to support Flash SMS for CDMA handsets. This document specifies signaling requirements to support Flash SMS, handset user interface behavior, and storage requirements. Additionally, user interface for devices with touch screen UI, and jog dial are also specified.

Flash SMS is similar to a text message SMS in construct and delivery methods, but a Flash SMS is not stored in the handset. Flash SMS is similar to the terms non-persistent messaging or non-persistent SMS, and these terms are used interchangeably in the industry. For the purposes of this document, the term Flash SMS will be used to refer to the signaling methods to indicate to the handset that the SMS delivered to the handset is a Flash SMS, and the term non-persistent messaging will be used to refer to services provided. Since Flash SMS is a special case of SMS, all GHRC SMS requirements apply to Flash SMS.

1.2 Flash SMS Description

Flash SMS is a special case of SMS that has identical message structure to text message SMS, and delivery schemes to the handset. A Flash SMS has an identifier in the SMS header indicating the message to be a Flash SMS. The mobile user interface behavior for Flash SMS is different from regular SMS including notification methods, and storage methods. Flash SMS is not stored in the handset and is used mainly for flashing information to the end user.

Currently, CDMA carriers use Flash SMS for prepaid balance tracking and reporting. These messages are generated whenever there is a change in the prepaid account balance, typically after a voice call, SMS, or data session. Since Flash SMS messages are not stored in the device, it avoids unnecessary clogging of SMS storage space.

Flash SMS can also be used for interactive sessions where the incoming information need not be stored in the device. Examples of these sessions include WAP over SMS and USSD. When SMS is used for interactive sessions, the underlying bearer service provides session continuity to support necessary services. This document will only address and provide requirements on how Flash SMS should be supported in the handset, with no reference to end to end bearer service.

There are two aspects to Flash SMS messaging.

- Non-persistent: Ensure the handset is notified that a particular message is Flash SMS. This is accomplished by setting Relative Time Period Validity to 246 as

defined in IS – 636 specification, shown in text below. This field has to be set in the SMS bearer data.

Table 4.5.6-1. Coding of Relative Time Fields

Field value

(decimal)

Relative Time Period Validity

Period

Delivery

Time

0 to 143 (value + 1) × 5 minutes X X

144 to 167 12 hours + ((value – 143) × 30 minutes) X X

168 to 196 (value - 166) days X X

197 to 244 (value - 192) weeks X X

245 Indefinite X

246 Immediate (1) X

247 Valid until mobile becomes inactive/

Deliver when mobile next becomes active

X X

248 Valid until registration area changes,

discard if not registered

X

249 to 255 Reserved

(1) Indicates that the message should be discarded if not immediately deliverable.

If this value is present in a message received by a mobile station, the mobile station should discard the message after it has been displayed.

- The second part is to ensure that the handset displays the message immediately to the end user, and this is accomplished by setting set Msg_display_mode = “00”, in SMS delivery message subparameters. This overrides regular notification of SMS, and displays the message directly on the handset display. This ensures that the handset does not display notification of “New SMS”, with options for end user to open the message.

1.3 Organization

This document is organized in sections relating to major functional elements:

- Flash SMS messaging requirements
- User interface requirements
- Storage requirements

1.4 Reference Documents

3GPP2 reference documents can be found at
http://www.3gpp2.org/Public_html/specs/index.cfm.

CDG reference documents can be found at <http://www.cdg.org>.

CCF reference documents can be found at <http://www.globalccf.org>.

Standard	Description
C.S0015-A	Short Message Services for Wideband Spread Spectrum Systems

1.5 Acronyms and Abbreviations

Table 1-1: Acronyms and Abbreviations

Acronym / Abbreviation	Description
USSD	Unstructured Supplementary Services Data
CDG	CDMA Development Group
CDMA	Code Division Multiple Access
Cdma2000®	TIA/EIA/IS-2000, with a 1.2288 MHz spreading rate
SMS	Short Message Service
WAP	Wireless Application Protocol

1.6 Terms and Definitions

Four categories of requirements are established:

(M) Mandatory	The handset must support that characteristic in order to achieve approval.
(HD) Highly Desirable	It is highly desirable and recommended that the handset supports this characteristic. This feature may become Mandatory in subsequent versions of the document. Supporting this characteristic will be valued in the commercial promotion of the terminal.
(O) Optional	It is left up to the manufacturer whether or not the terminal supports this characteristic. The handset may support this characteristic.
(D) Discard	The manufacturer should not support this feature or function.

1 **1.7 Carrier Acceptance**

- 2 The documentation and equipment that shall be delivered to the CDMA2000® 1x
3 Operator for technical evaluation is detailed below.

4 **1.7.1 Documentation**

Req. #	Requirement	Category	Remarks	References	PRI Configurable



2. Flash SMS Requirements

2.1 Flash SMS Messaging Requirements

The following requirements apply to parsing of Flash SMS messages.

Req. #	Requirement	Category	Remarks	References	PRI Configurable
2.1.1	The handset shall support relative time period validity	M	If relative time period validity is set to 246, the message shall not be stored in the device	IS-637	
2.1.2	The handset shall support message display mode	M	If message display mode is set to "00", the message has to be set to displayed immediately to the primary handset display screen	C.S00015-A	
2.1.3	No flash SMS during emergency call	O	If the handset is in an emergency call, the flash SMS should be withheld till the call is complete		
2.1.4	Flash SMS display only in idle mode	O	Flash SMS should only be displayed in idle mode		

2.2 Flash SMS User Interface Requirements

The requirements in the user interface section are based on typical Flash SMS use cases.

Req. #	Requirement	Category	Remarks	References	PRI Configurable
2.2.1	The handset shall display Flash SMS on full screen	M	Full screen shall be used instead of partial screen or "pop up".		
2.2.2	The handset shall use text message SMS alerts Flash SMS	M	Default text message SMS alerts shall be used, including user selected ringtones and vibrate mode		

Req. #	Requirement	Category	Remarks	References	PRI Configurable
2.2.3	Flash SMS display shall provide "Save" button	M	Selecting this button should save the message.		
2.2.4	Flash SMS display shall provide "Options" button	O	"Options" button should be accommodated with drop down menu. Fields in drop down menu and their purpose to be specified by carriers. If Options button is provided, the drop down menu shall include "Save" button		
2.2.5	Flash SMS display shall provide "Exit" button	M	"Exit" button to be accommodated in the display screen. Selecting this button should return the display to previous screen		
2.2.6	Flash SMS display shall exit if "End" key is pressed	M	The display should return to previous screen and previous application		
2.2.7	End user option to turn off Flash SMS	O	Settings menu should provide an option to turn off Flash SMS, at end users discretion		
2.2.8	Flash SMS display timer	O	Flash SMS shall disappear and return to home screen at the expiry of the timer. The timer shall be nominally 60 seconds, and to be defined by carrier.		
2.2.9	Touch screen support for bearer services based on Flash SMS	M	For interactive services that use Flash SMS, handsets capable of touch interface, shall support touch selection of entries		
2.2.10	Jog dial support for bearer services based on Flash SMS	M	For interactive services that use Flash SMS, handsets with Jog dial or similar interface, shall support selection of entries with Jog dial or similar interface		

Req. #	Requirement	Category	Remarks	References	PRI Configurable
2.2.11	Any input interface in the handset should support Flash SMS	M	Any input mechanism used in the handset should support selection of entries in interactive services that use Flash SMS		

2.3 Flash SMS Storage Requirements

Req. #	Requirement	Category	Remarks	References	PRI Configurable
2.3.1	If message type is "Flash", the message shall not be stored by the handset by default	M			
2.3.2	Flash SMS messages shall be stored in the SMS Inbox, if user manually selects "Save Message"	M	If end user selects "Save Message", the message shall be saved in SMS Inbox with time stamp, and no sender address.		
2.3.3	If Flash SMS is saved, sender address to be filled as Flash SMS service bearer	M			
2.3.4	When Flash SMS message is stored, it shall be stored as "Read" message	M			