

Source WP4

RECOMMENDATION: GSM 03.41

TITLE Technical Realisation of the Short Message Service
- Cell Broadcast

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Note:

(i) This version (1.2.1) is identical to version 1.1.1, except for the inclusion of the possibility of alternative alphabets and coding schemes, as agreed by WP4.

(ii) The following are outside the scope of this Recommendation:

(a) How the messages are generated, sorted and assembled in the PLMN for transmission to the BSS. (This is for the PLMN operator to define).

(b) The Human Machine Interface (HMI) at the MS. (This is for the MS manufacturer to define.)

(c) How, if at all, the service is charged for.

1. Scope

This recommendation describes the Short Message Service - Cell Broadcast (SMS-Cell Broadcast). It defines the message formats over the BSS-MS interface for the Teleservice 23 as specified in GSM Rec 02.03.

2. General Description

SMS-Cell Broadcast is a service in which short messages may be broadcast from a PLMN to MS's. SMS-Cell Broadcast messages come from different sources (e.g. traffic reports, weather reports). The source and subject of the message is identified by a 3 octet message identifier in the SMS-Cell Broadcast header. A sequence number in the SMS-Cell Broadcast header enables the MS to determine when a new message of a given source is available. An MS can read the header and then decide whether or not to read the rest of the message.

SMS-Cell Broadcast messages of up to [74] characters are sent [in plain text (not enciphered)], and are not acknowledged by the MS. Reception of SMS-Cell Broadcast by the MS is only possible in idle mode, and the service is designed so as to minimise the adverse impact on the operation of DRX in the MS. The geographical area over which each SMS-Cell Broadcast message is transmitted is selected by the PLMN operator, by agreement with the provider of the information.

The timing of the messages is defined in GSM Rec 05.02. The specification allows up to about 30 SMS-Cell Broadcast messages to be sent every minute.

3. Message Format on BTS-MS Interface

3.1 General Description

Each SMS-Cell Broadcast message is a fixed block of 4 x 23 octets and is sent on the channel allocated as CBCH by GSM 05.02. Each 23 octet block contains 3 octets for layer 2 and layer 3 headers, and 20 octets of SMS-Cell Broadcast information. The 4 x 20 octets of SMS-Cell Broadcast information consists of a 6 octet header and 74 user octets.

3.2 Message Content

The first 23 octet block is coded as follows (using the general coding rules defined in GSM 04 series Recs):

Bit No	8	7	6	5	4	3	2	1
Octet No 1	Length Indicator							
2	Transaction ID				Protocol Discr			
3	Message Type							
4-5	Sequence Number							
6-8	Message Identifier							
9	Alphabet Identifier							
10-23	Characters 1 to 14 of Message							

The other three 23 octet blocks are coded similarly except that octets 4-23 contain user octets N to N+19 of the message where N = 15, 35, 55 for the second, third and fourth blocks respectively.

The fields are used as follows:

- (i) Length Indicator is coded as in GSM Rec 04.06
- (ii) Transaction Identifier is coded in GSM Rec 04.12
- (iii) Protocol Discriminator is coded in GSM Rec 04.08
- (iv) Message Type is coded in GSM 04.12 (4 Blocks)
- (v) Sequence Number is a 16 bit integer which is incremented every time the message with a given message identifier is changed.
- (vi) Message Identifier identifies the source and type of message. Its coding requires Further Study.
- (vii) Alphabet Identifier identifies the alphabet and coding employed for user characters.

Default value = 0 (IA5)
Other values reserved.

The default alphabet is IA5 and the message then consists of 74 user characters. The IA5 character set is defined in CCITT recommendation T50 (CCITT Red Book, Volume VII, Fascicle VII.3, October 1984). The International Reference Version (IRV) shall be used. Each IA5 character consists of seven bits b1, b2, b7. A parity bit, b8, shall be added to give overall [even] parity (ie. an [even] number of ones and zeros in the eight bits.). b1 is the least significant bit and b8 the most significant bit.

A table showing the IA5 alphabet is given in the Annex. The precise method of display of messages by an MS is for the operator to specify. However any non printable characters (ie. characters with b6 = b7 = 0, and "DEL") should be replaced by a space in the display, except for Back Space, which shall permit overwriting of characters.

Alternative alphabets and coding schemes, which may allow more efficient or accurate use of the service, are reserved.

4. Infrastructure Interfaces

The nature and the detailed specification of the interfaces within the infrastructure require Further Study.

