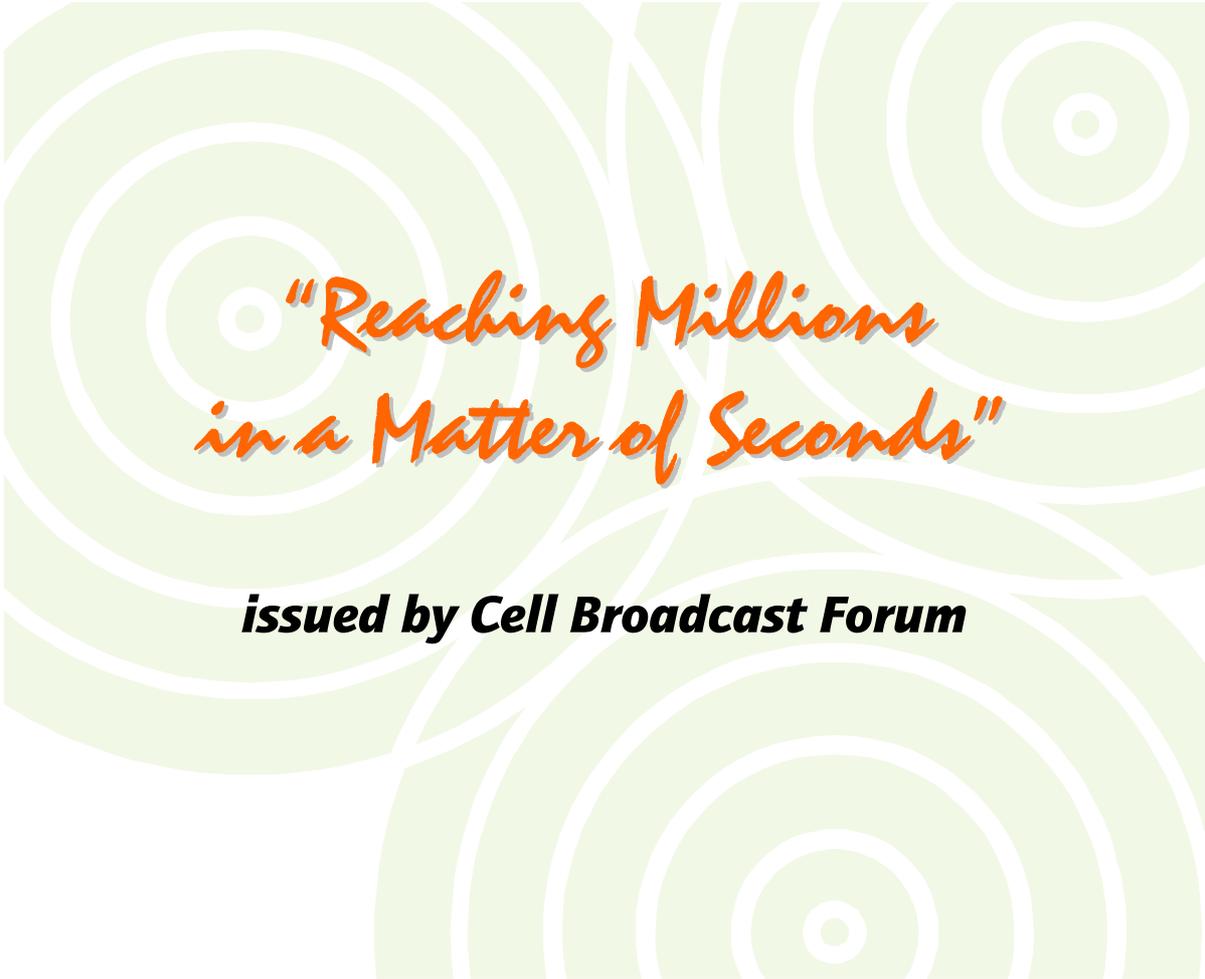


Handset Requirements Specification

February 2002



*"Reaching Millions
in a Matter of Seconds"*

issued by Cell Broadcast Forum

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About Cell Broadcast Forum

The Cell Broadcast Forum (CBF) is a non-profit Industry Association that supports the world standard for cell broadcast wireless information and telephony services on digital mobile phones and other wireless terminals. The primary goal of the Cell Broadcast Forum is to bring together companies from all segments of the wireless industry value chain to ensure product interoperability and growth of wireless market.

The Forum's mission includes

- ⊙ Promotion of simple and easy-to-use, interoperable Cell Broadcast service solutions,
- ⊙ Improving the technology and underlying standards
- ⊙ Maximizing business for the mobile and related industry

Cell Broadcast Forum members represent the global handset market, carriers that together serve more than 100 million customers, leading infrastructure providers, software developers and other organisations providing solutions to the wireless industry.

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Foreword

Intensive validation tests of GSM mobile terminals have shown that there is a wide variety of different Cell Broadcast implementations actually in the market.

This variety is the result of a missing GSM/UMTS (3GPP) Technical Specification of the series 02.xx. There are only two specifications available: GSM 03.41/3GPP 23.041 specifies e.g. how a Cell Broadcast message shall be coded and GSM 04.12/3GPP 24.012 specifies how it is to transfer over the air interface. But there is no specification that tells a mobile station how to receive, display and store Cell Broadcast messages.

With that background the freedom of Cell Broadcast service creation is strongly limited. Hence the Cell Broadcast Forum intends to reduce the variety of implementations by defining some basic requirements, aiming to a future homogeneous mobile terminal behaviour.

1 Scope

This document reflects the Cell Broadcast Forum's vision of a mobile terminal Cell Broadcast implementation.

2 References

No normative references today.

3 Definitions and Abbreviations

DCS	Data Coding Scheme
DS	Display Mode
GS	Geographical Scope
MC	Message Code
MI	Message Identifier
PP	Page Parameter
UN	Update Number

4 Requirements

4.1 General requirements

4.1.1 Mandatory requirements

1. Factory Settings: The factory setting of Cell Broadcast shall be set to "not active", i.e. no CB message shall be received, neither on MI 0 (Index) nor on MI 50 (District Information), nor on any other Message Identifier, even if the status of the Message Identifier is "selected."
2. MS Off/On: The actual setting of Cell Broadcast ("active" or "not active") should not be affected by turning the MS on / off, or if the battery is replaced.
3. Single CB menu: There shall be only one single CB (main-) menu within the SMS menu to control Cell Broadcast at the MS. There shall be no separate menus, e.g. within the phone settings, for special Message Identifiers, e.g. MI 50. All handsets shall apply a uniform naming of the Cell Broadcast menu. It shall be possible to (de-)activate Cell Broadcast by a simple and straightforward action. Cell Broadcast activation and de-activation should not interfere with Message Identifier selection and de-selection.

4. Reception tone: Reception of a Cell Broadcast message (with parameters that indicate the message is to be presented on the display with Display Mode "normal") shall be indicated with a tone. The user may have the possibility to choose between different tones, however, the ME must offer the possibility to switch off the reception tone. The reception tone for incoming point-to-point SMS and other acoustical signals must not be affected by the setting of the reception tone for SMS Cell Broadcast. Cell Broadcast messages with Display Mode "immediate" shall be received and displayed without any tone.
5. Normal Display : When receiving a Cell Broadcast message with Display Mode "normal" the user shall be offered the choices "Show", "Delete" and "Store". When selecting "Show" the message shall be displayed, when selecting "Delete" the message shall be discarded without being displayed, when selecting "Store" the message shall be stored, provided there is enough memory space left (otherwise there shall be a notification that there is not enough memory space left and only the choices "Show" and "Delete" are offered again). After having selected the option "Show" and having read the message, the user shall be presented the options "Delete" and "Store."
6. Using phone numbers: It shall be possible to dial, and send Short Messages to, telephone numbers that are contained within a Cell Broadcast message directly out of the message. If multiple numbers are present in the message, this function shall be available for each of these numbers.
7. Using URLs: It shall be possible to access URLs (referring to e.g. WAP services) that are contained within a Cell Broadcast message directly out of the message by activating the wap browser on the specified URL. If multiple URLs are present in the message, this function shall be available for each of these URL. (This feature is mandatory only for wap terminals)
8. SIM data download: The MS shall be capable of receiving CB messages in the range of MI 1000 (hex) - 10FF (hex) automatically (SIM Data Download) This mode of operation is controlled by the Elementary File CBMID (EF_{CBMID}) on SIM card. As soon as there is an activated CBMID field on SIM and there are one or more Message Identifiers stored in this field, the MS shall scan the Cell Broadcast channel (CBCH) for CB messages with that Message Identifier and receive them. Received SIM Data Download messages are to be passed directly to the SIM card.

9. DRX Scheduling: The MS shall support DRX mode (Scheduling), i.e. be capable of processing both, scheduled and unscheduled schedule messages. High priority messages (Free message slot, reading advised) shall be supported.
10. Extended CBCH: The MS shall support the extended Cell Broadcast Channel.
11. Reception by Terminal Equipment: It shall be possible to select any CB message type (MI) by terminal equipment (TE) independently from CB status in ME. This is to prevent deactivating services that are configured through the terminal equipment interface. To save battery power due to the scanning of CB channels when not in use after disconnection of the terminal equipment the handsets might deactivate scanning of the configured cell broadcast channels but storing the configuration an list of message types. This would imply detection of terminal equipment by handsets.
12. EMS Support: The MS shall support EMS content over Cell broadcast in the same way as it supports EMS content over SMS. The handset shall behave the same as for SMS when displaying the EMS content of the Cell Broadcast message.

4.1.2 Optional requirements

13. CB Active: Despite of this the possibility of delivering terminals with "CB active" upon request of a network operator should be provided.
14. Special Message Identifiers: It should be possible to deliver terminals with at least five pre-configured CB channels with Message Identifiers that are to be defined by that operator at the moment of request. The individual status of each of these five preconfigured Message Identifiers can be "active" or "not active", as defined by the network operator. This pre-configuration of Message Identifiers is independent from any settings on the SIM.
15. Submenu for MI 000: A submenu item for Message Identifier 000 ("Index") within the CB (main-) menu should be provided. It must be possible to activate MIs by selecting items presented in the index.
16. WAP Push: It shall be possible to launch the WAP Browser of the WAP terminal by sending a CB message. The CB message will contain WML content. The WAP Browser will be launched locally, without establishing any connection, will interpret the WML content and displays it. When a user action is taken, and a WAP connection has to be made, the WAP browser initiate a new WAP connection. (This feature is optional only for WAP terminals, and requires standardization by appropriate bodies)

4.2 Requirements on Display Mode

This section deals with the display of Cell Broadcast messages.

4.2.1 Mandatory requirements

17. Normal Display: For each Message Identifier, the user specifies, through the Human Machine Interface, how Cell Broadcast messages with display mode "normal" are to be handled. Two settings are supported:
 - Background: the most recently received Cell Broadcast message received for this Message Identifier is stored in the handset, without any audible or visible indication to the user.
 - Foreground: Reception of a Cell Broadcast message with Display Mode "normal" (→ Geographical Scope) shall be indicated to the user by displaying an appropriate screen (e.g. "Message received – show?"). The content of the message shall be shown only after user interaction (e.g. by pressing a softkey "yes"). The user shall have the possibility to reject the display of the message (e.g. by pressing a softkey "no"). After having read the message the user shall be offered the possibility to store or to delete the message. If the user press a key that it is neither a 'Yes' for showing the message nor a 'No' for deleting it, the CB message should not be deleted without explicit confirmation by the user (see also handling of the Message Classes).
18. Immediate Display: Cell Broadcast messages with Display Mode "immediate" (→ Geographical Scope = cell wide) shall be displayed immediately within the idle display. It must be ensured that neither the operator name nor the idle display elements (signal level, battery status, clock) will be overwritten by an "immediate message". "Immediate messages" shall be displayed permanently, i.e. they cannot be deleted by the user. The display is allowed to be changed only when the message changes, i.e. a new "immediate message" is received, or when the MS leaves the Geographical Scope of the message, i.e. reselects another serving cell (immediate display ↔ cell wide validity). The only way to remove an "immediate message" from the display is to deactivate the belonging Message Identifier or to deactivate CB reception generally.
19. Display Mode and Message Identifier: Evaluation of the Display Mode parameter shall be independent of the Message Identifier that is coded within the message, i.e. even messages with Message Identifier 50 shall be processed according to the coded Display Mode and not be displayed immediately by default. "Immediate display" shall be possible on every channel

between 000-999 and not be restricted to Message Identifier 50. "Normal display" shall also be possible on every channel, even on the channel referenced by Message Identifier 50. It is left to the operator / information provider whether to use "immediate display" or "normal display".

20. Immediate Display and Message Identifier: Regarding the Display Mode "immediate" 93 characters should be supported. A message that is short enough may be displayed permanently. A message that is too long to be permanently displayed should be scrollable, either manually or automatically. However the user should have the possibility of manual scrolling (e.g. after automatic scrolling has finished).
21. No Deactivation by Selecting Default Menu Options: On reception of a Cell Broadcast Message, selecting the default options under the soft-keys in the Human Machine Interface shall never result in deactivation of Cell Broadcast or any Cell Broadcast Message Identifiers.

4.3 Requirements on Geographical Scope

This section deals with the reception and display of Cell Broadcast messages depending on the Geographical Scope that is coded within the message.

4.3.1 Mandatory requirements

22. Boundary of Geographical Scope: For immediate display messages the following applies: if the MS crosses the boundary of the Geographical Scope of a message, the message shall be cancelled from the display.
23. New Message: The Geographical Scope is carefully to consider when deciding if a received message is new or not. E.g. a mobile station receives two absolutely identical messages in two different cells, i.e. the messages have the same parameter coding (GS, MC, UN, MI), but not necessarily the same content:
 - If the Geographical Scope is "cell wide", both messages are absolutely independent and have presumably different contents. It happened by chance that all parameters are the same. After cell reselection the MS shall discard the old message and receive the other message as "new".
 - If the Geographical Scope is "Location Area wide" and both cells belong to the same Location Area, it is the same "known" message with the same content as received before.

The MS shall discard the second message and not give any reception tone.

If the two cells belong to different Location Areas the second message is to be regarded as "new" and to be received with a tone.

- If the Geographical Scope is "PLMN wide" and both cells belong to the same PLMN, it is the same "known" message with the same content as received before. The MS shall discard the second message and not give any reception tone.

Summary: it shall be prevented that the MS receives the same message multiple times and indicates each reception with a tone!

This applies at all times: independent from the operation the user had done (show, store or delete) when the CB message was received for the first time and even if the handset has been turned off and on again after receiving the message for the first time.

24. No evaluation of Geo Scope for Class 3 messages: In case of CB messages with DCS class 3 (TE specific), the ME should not evaluate any Geographical Scope, but should pass to TE without exception.

4.3.2 Optional requirements

25. Multipage and Cell Reselection: If cell reselection occurs during reception of a multipage message the ME can decide by means of the Geographical Scope (and of course MI, MC, UN, PP, as described above) whether single received message pages belong to the same multipage message or not. It should be possible for the ME to concatenate message pages received in different cells to one valid multipage message.

4.4 Requirements on Message Code

This section deals with the parameter Message Code coded within a Cell Broadcast message with Display mode "normal".

4.4.1 Mandatory requirements

26. Number of Message Codes: The MS shall be capable of storing at least ten messages with different Message Codes on the same channel (MI).
27. Handling of Message Codes: If there are further messages to be received (except class 2 or 3 messages) before the user has quit the actually displayed message, these further messages shall be received and stored in the background. After the user has quit the actually dis-

played message the next one shall be displayed.

It must not happen that messages with the same MI and different MCs overwrite themselves mutually and are therefore not readable for the user.

It must not happen that messages with the same MI and different MCs are not received due to a message occupying the display.

28. No evaluation of Message Code For Class 3 Messages: In case of CB messages with DCS class 3 (TE specific), the ME should not evaluate any Message Code, but should pass to TE without exception.

4.5 Requirements on Update Number

This section deals with the Update Number coded within a Cell Broadcast message.

4.5.1 Mandatory requirements

29. Update Number : An update of a Cell Broadcast message is indicated by a changed Update Number. If the MS receives two Cell Broadcast messages A and B within the Geographical Scope of the messages and with exactly identical parameters $GS(A)=GS(B)$, $MC(A)=MC(B)$, $MI(A)=MI(B)$ except the Update Number $UN(A)\neq UN(B)$, the MS shall interpret message B as an update of message A, indicate reception and display the message as intended by the Display Mode.
30. Missed Messages : With respect to missed messages a message B with $UN(B) < UN(A)$ shall be regarded as a valid update of message A, just as a message B with $UN(B) > UN(A)$. That is because of the cyclic assignment of the 4 bit Update Number 0-15.
31. Equal Update Number : Messages with the same Update Number shall not be received repeatedly because it is presumably the same message, provided that the parameter conditions mentioned above are valid. In that case, if the 15 updates in between have been missed, the 16th update of an older message will not be received (but the 17th will).
32. No Evaluation of Update Number for Class 3 messages : In case of CB messages with DCS class 3 (TE specific), the ME should not evaluate any Update Number, but should pass to TE without exception.

4.6 Requirements on Message Identifier

This section deals with configuration, activation/deactivation and reception of Message Identifiers.

4.6.1 Mandatory requirements

33. Reading Access to CBMI: The ME shall read Message Identifiers stored in the CBMI field on SIM and present them to the user in the list of active Message Identifiers, i.e. Message Identifiers read from SIM are per default to be set to status "active" in the MS. When CB reception is switched on at the MS, CB messages with Message Identifiers that match the entries in the CBMI field on SIM shall be received without further action.
34. Writing Access to CBMI: Message Identifiers that are entered to the ME via the keypad shall be stored in a "MI configuration list" in the ME. If a configured Message Identifier is set to "active" it shall be stored in CBMI field on SIM, i.e. the CBMI field on SIM represents a "MI activation list".
35. Number of Configuration Message Identifiers: It shall be possible to configure at least 12 different Message Identifiers.
36. Number of Active Message Identifiers: The ME shall be capable of handling at least 5 active Message Identifiers in parallel, so that reception of 5 different channels must be guaranteed.
37. Textual Description: It shall be possible to assign a textual description to Message Identifiers. The applicable textual description shall be displayed whenever a Cell Broadcast message is brought to the display. The textual description for Message Identifiers specify in the GSM MoU SE15 v 3.2.0 should be automatically assigned.
38. Activation Status: It shall be possible to activate/deactivate Message Identifiers that are stored in the list of configured/activated Message Identifiers. The status of activation/deactivation should be graphically indicated to the user. This menu should also allow editing the textual description of the Message Identifier (unless for the descriptions specified in GSM MoU SE15..
39. MI Range: The range of configurable Message Identifiers should be limited to 000 – 999. Message Identifiers in the range of ≥ 1000 should not be configurable through the handset Human Machine Interface.

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40. MI List: For the purpose of activation/deactivation of a Message Identifier the user should be offered a list containing the textual, and optionally also the decimal, representation of the Message Identifier.

4.7 Requirements on Data Coding Scheme

This section deals with the Data Coding Scheme coded within a Cell Broadcast message.

4.7.1 Mandatory requirements

41. Behaviour Without Language Filter: If there is no user-configurable language filter, the MS should display all Cell Broadcast messages with Data Coding Scheme "Default Alphabet" regardless of the coded language. (Preferred languages on SIM or actual MMI language need not to be handled preferentially).
42. Behaviour With Language Filter: If there is a user-configurable language filter, the MS should display only Cell Broadcast messages with Data Coding Scheme "Default Alphabet" and the desired language and messages with language unspecified.

4.7.2 Optional requirements

43. All Languages: If there is a user-configurable language filter, the MS should offer the possibility to configure the filter to "all languages".
44. Class 0 Messages: Cell Broadcast messages with Data Coding Scheme "class0" shall be treated as if the message is a class 0 SMS message. For example, the message can be completely shown in the whole display without user interaction and then the user is offered to show, store or delete it. This allows a useful third Display Mode, specially taking into account that Display Mode "immediate" use is restrictive
45. Class 1 Messages: Cell Broadcast messages with Data Coding Scheme "class1" (0101 0101) shall be handled by the ME as specified in section 4.2.
46. UCS-2: The handset shall correctly display a Cell Broadcast message in UCS-2 format, if the Data Coding Scheme indicates UCS-2 format and the language indicated in the first two bytes of the UCS-2 message body is enabled in the handset.

4.8 Requirements on Page Parameter

This section deals with the Page Parameter coded within a Cell Broadcast message.

4.8.1 Mandatory requirements

47. Multipage Messages: The MS shall be capable of receiving multipage messages. Up to 15 message pages can be received and, after final reception of the last page, be displayed as one entire multipage message.
48. Multipage and Cell Reselection: It should be possible for the ME to concatenate message pages received in different cells to one valid multipage message.
49. Combination of Different Multipage Messages: It must not happen that pages of equally coded multipage messages received in different cells are combined, if the Geographical Scope indicates only cell wide validity.
50. Interrupted Multipage Messages: The MS shall receive multipage messages even though the transmission order is interrupted by other messages, e.g. transmission order:

message 1 page 1/3;

message 1 page 2/3;

message 2 page 1/2;

message 2 page 2/2;

message 1 page 3/3;

51. Single multipage notification: Upon reception of a multipage message, the user shall be notified only once, when the complete message is available to be presented.

4.9 Requirements on Storage of Cell Broadcast Messages

This section deals with the storage of Cell Broadcast messages within the ME.

4.9.1 Mandatory Requirements

52. Number of Pages to Store: The ME shall be able to store at least 100 Cell Broadcast message pages in volatile memory and at least 50 Cell Broadcast message pages in permanent memory.

53. Memory Allocation: The volatile and permanent memory space shall be dynamically allocated to the received messages independent of any Message Identifiers and Message Codes. There shall be no restrictions to the Message Identifier, i.e. it shall be possible to store messages with different MIs received on any active channel (at least 5 different MIs) in volatile as well as in permanent memory.

There shall be no restrictions to the Message Code, i.e. it shall be possible to store at least ten (five) messages with ten different Message Codes received on the same channel in volatile (permanent) memory.

Below an example for volatile memory:

100 pages = 5 MIs x 10 MCs x 2 pages

100 pages = 2 MIs x 5 MCs x 10 pages

100 pages = 2 MIs x 3 MCs x 5 pages + 1 MI x 10 MCs x 3 page +
2 MIs x 5 MCs x 4 pages

54. Overwriting Volatile Memory Case: Messages stored in the volatile memory shall automatically be overwritten by newly received messages, if the received message is an update of a message stored in volatile memory. Otherwise a newly received Cell Broadcast message shall not overwrite the volatile memory. A notification shall be displayed to the user, if not enough volatile memory space is available.

55. Permanent Storage While MS off/on: Messages stored in permanent memory shall not be deleted when power on/off the MS.

56. Message Handling for Message Class 0 and Class 1: Besides above statements a detailed description how to handle the CB memory can be found in annex A.

4.9.2 Optional requirements

57. Handling of Stored Messages in Volatile Memory: A newly received Cell Broadcast message shall not overwrite the currently shown CB message in the MS display. Instead the newly received CB message shall be stored in volatile memory and displayed as soon as the other message is acknowledged by the user.

58. Handling of Stored Messages in Permanent Memory: Messages stored in the permanent memory shall not be overwritten by newly received messages. It shall be left to the user to organise the permanent memory. As described above, a notification shall be displayed to the user, if not enough permanent memory space is available.

59. Stored Messages Grouped by MI: Stored Messages shall be grouped by Message Identifier.

5 Revision History

This Document is a joint effort of various individuals active in a Cell Broadcast Forum Working Group. Every Full Member of the Cell Broadcast Forum can delegate participants to the Working Group and is welcome to contribute. See the Cell Broadcast Forum Web Site <http://www.cellbroadcastforum.org> for details of membership and its benefits.

Revision	Date	Author	Comment
Draft 1.0	21/01/2000	Mathias Burger	First revision
Draft 1.1	08/02/2000	Mathias Burger	Comments from Walter Kokert, Head of CBC project
Version 1.0	08/02/2000	Mathias Burger	Requirements from Reimund Meierl, Head of CBS project; Requirements from Klaus Daffner, Head of Department "Product Marketing Mobile Terminals"
Version 1.1	13/07/2000	Mathias Burger	Time schedule and priorities adapted
Version 1.2	17/07/2000	Mathias Burger	Minor completions made in sections 4.1.6, 4.7.6, 4.7.7, 4.7.8
Version 1.3	21/07/2000	Mathias Burger	Changes made in sections 4.1.9, 4.6
Version 1.4	18/09/2000	Mathias Burger	Editorial changes
Version 1.5	29/12/2000	Tom Veldman	Added comments resulting from discussion in Cell Broadcast Forum Main changes apply to sections: 1, 4.1.3, 4.1.5, 4.1.10, 4.2.1, 4.2.5, 4.3.4, 4.3.5, 4.4.3, 4.5.4, 4.6.5, 4.7.5, 4.7.9

Revision	Date	Author	Comment
			Editorial changes
Version 1.6	20/02/2001	Tom Veldman	Changes based on ad-hoc expert group meeting on 13 February. Main changes apply to: 4.1.6, 4.1.7, 4.1.8, 4.3.5, 4.4.2
Version 1.7	02/05/2001	Tom Veldman	Enhanced requirements on handling of messages directed at TE (section 4.1.14) and on storage requirements (section 4.9), dependent on Message Class (Annex A).
Version 1.8	03/10/2001	Chehwan Pierre	Editorial changes and presentation EMS support (section 4.1.15)
Version 1.9	03/10/2001	Chehwan Pierre	Using phone numbers in mandatory requirements (section 4.1) Using URLs in mandatory requirements (section 4.1) Replacement of "Time schedule and priorities" by only priorities (Mandatory, Optional)
Version 2.0	18/12/2001	Heinz Ochsner	Final layouting and proof reading
Version 2.1	06/02/2002	Heinz Ochsner	Resolving Inconsistencies

Annex A: Message Handling for Message Class 0 and 1

All possible combinations of Geographical Scope (GS), "Type" of message (foreground and background) and Data Coding Scheme (DCS) are shown, e.g. first half of the table shows GS immediate display. This section is divided into two parts which are "type" foreground (first half of section immediate display) and "type" background (second half of section immediate display). Each type is divided again into the different DCS (language, class 0-3)!

One example:

A message which is sent with GS=immediate display and DCS=spanish (language, no message class) and where the user sets the "type" of this message id to background the handling in the handset shall be as described in row 7: The message shall be permanently displayed (GS immediate display overrules the user setting background). Furthermore the storage is only volatile, because the message is displayed all the time anyway, that means after the mobile is switched off/on and the message has been received again it will immediately be displayed again.

Explanations:

Volatile memory means the message is lost after power off/on!

Permanent memory means the message is still available after power off/on!

		Storage:	Comments:	
GS immediate display	"Type": foreground (default setting)	DCS: language	permanent in display; storage: volatile	
		DCS: class 0 (shown without user interaction, option store and delete)	permanent in display; storage: volatile	This combination shall be avoided by operator, if combination occurs GS immediate display shall overrule DCS class 0; no option store or delete shall be presented to the user!
		DCS: class 1	permanent in display; storage: volatile	
		DCS: class 2 (SIM)	storage: volatile	Volatile storage needed for evaluation of header information (to avoid permanent reception of same message).
		DCS: class 3 (TE)	storage: non	All messages of activated MIs with DCS class 3 shall be sent to TE. The TE is responsible for the evaluation of the header information.
	"Type": background	DCS: language	permanent in display; storage: volatile	Immediate display overrules "type" background!
		DCS: class 0 (shown without user interaction, option store and delete)	permanent in display; storage: volatile	Immediate display overrules "type" background! The combination GS immediate display with DCS class 0 shall be avoided by operator, if combination occurs GS immediate display shall overrule DCS class 0; no option store or delete shall be presented to the user!
		DCS: class 1	permanent in display; storage: volatile	Immediate display overrules "type" background!
		DCS: class 2 (SIM)	storage: volatile	Immediate display overrules "type" background! Volatile storage needed for evaluation of header information (to avoid permanent reception of same message).
		DCS: class 3 (TE)	storage: non	Immediate display overrules "type" background! All messages of activated MIs with DCS class 3 shall be sent to TE. The TE is responsible for the evaluation of the header information!

		Storage:	Comments:	
GS normal	"Type": foreground (default setting)	DCS: language	until user selection, storage: volatile if user selects store, storage: permanent if user selects delete, storage: volatile	After deletion the volatile storage is needed for evaluation of header information (to avoid permanent reception of same message)
		DCS: class 0 (shown without user interaction, option store and delete)	until user selection, storage: volatile if user selects store, storage: permanent if user selects delete, storage: volatile	After deletion the volatile storage is needed for evaluation of header information (to avoid permanent reception of same message)
		DCS: class 1	until user selection, storage: volatile if user selects store, storage: permanent if user selects delete, storage: volatile	After deletion the volatile storage is needed for evaluation of header information (to avoid permanent reception of same message)
		DCS: class 2 (SIM)	storage: volatile	Volatile storage needed for evaluation of header information (to avoid permanent reception of same message)!
		DCS: class 3 (TE)	storage: non	All messages of activated MIs with DCS class 3 shall be sent to TE. The TE is responsible for the evaluation of the header information!
	"Type": background	DCS: language	until user selection, storage: volatile if user selects store, storage: permanent if user selects delete, storage: volatile	After deletion the volatile storage is needed for evaluation of header information (to avoid permanent reception of same message)
		DCS: class 0 (shown without user interaction, option store and delete)	until user selection, storage: volatile if user selects store, storage: permanent if user selects delete, storage: volatile	After deletion the volatile storage is needed for evaluation of header information (to avoid permanent reception of same message)
		DCS: class 1	until user selection, storage: volatile if user selects store, storage: permanent if user selects delete, storage: volatile	After deletion the volatile storage is needed for evaluation of header information (to avoid permanent reception of same message)
		DCS: class 2 (SIM)	storage: volatile	Volatile storage needed for evaluation of header information (to avoid permanent reception of same message)!
		DCS: class 3 (TE)	storage: non	All messages of activated MIs with DCS class 3 shall be sent to TE. The TE is responsible for the evaluation of the header information!

