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3RD GENERATION
PARTNERSHIP
PROJECT 2
"3GPP2"

Mobile Application Part (MAP) - BROADCAST TELESERVICE TRANSPORT CAPABILITY

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REVISION HISTORY

Revision	Date	Remarks
X.S0004-371-E v1.0	April 2008	Initial publication.

PART 371

1 Broadcast Teleservice Transport Capability

1.1 Successful Broadcast of Teleservice Messages: MSC-based Periodicity Control

This scenario describes the transfer of a message to several MSCs, and its successful delivery to MS-based SMEs via their respective Serving MSCs. Since periodicity is controlled and supported by the Serving MSCs, they shall need to store the broadcast teleservice payload and other associated attributes for the duration of the broadcast.

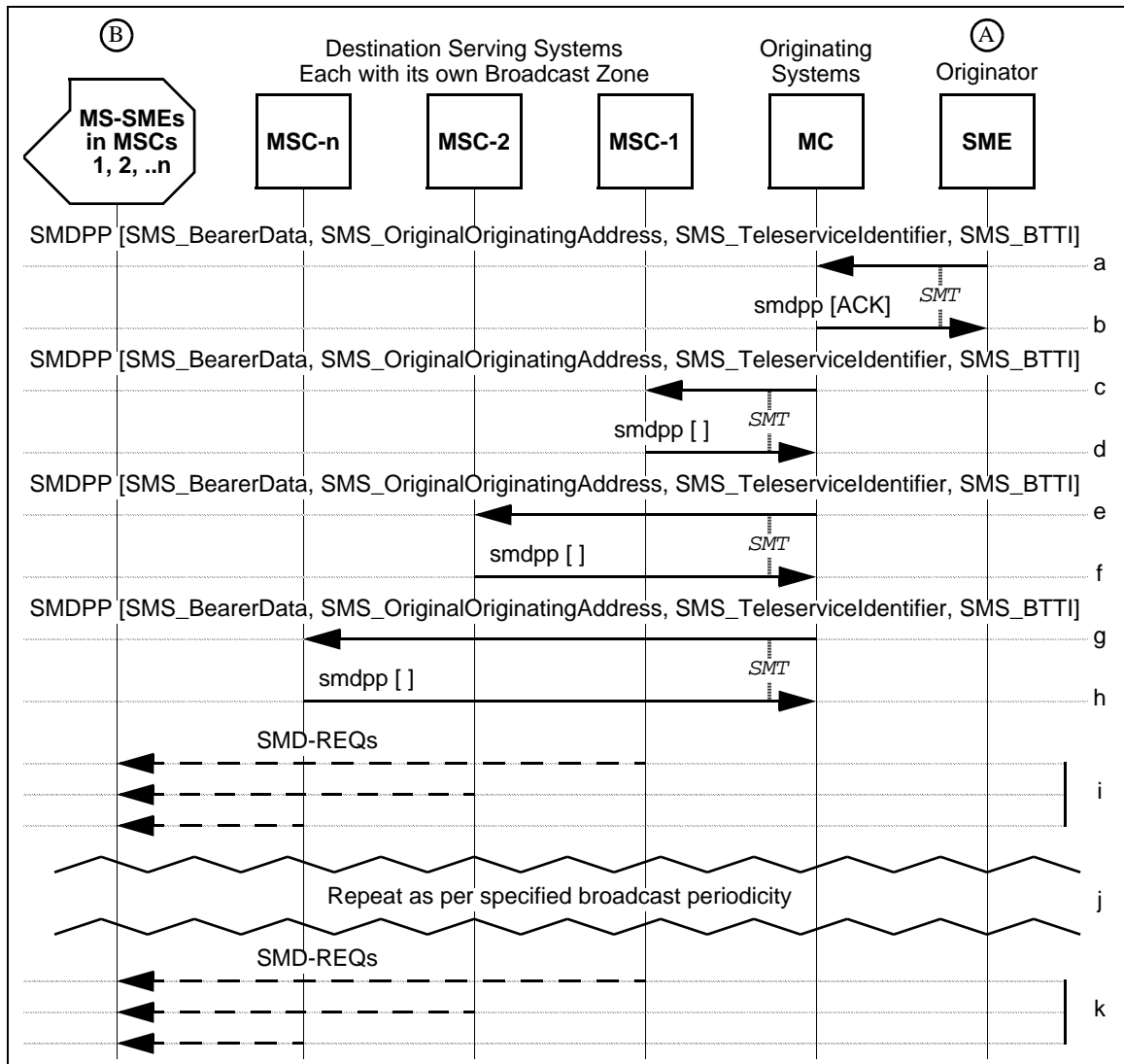


Figure 1 Successful Broadcast of Teleservice Messages: MSC-based Periodicity Control

- a. The MC receives and accepts an SMDPP requesting broadcast of a teleservice message to MS-based SMEs. The SMDPP includes the following parameters:

Parameters	Usage	Type
SMS_BearerData	Any desired message.	R
SMS_OriginalOriginating-Address	Network address of the originating SME; e.g., {A}.	R ^a
SMS_TeleserviceIdentifier	If a value is present, it identifies the teleservice used for interpreting the bearer data.	MBC ^b
SMS_BTTI: [BroadcastCategory]	Indicates that this is a BTTC message and provides a specific subject matter of the Teleservice payload (e.g., emergency, system operator announcement, advertisement, sports) to be broadcast.	R

Parameters	Usage	Type
[BroadcastCategory-SpecificInformation]	Indicates relevant data pertaining to this broadcast message, for a specific broadcast category (e.g., Indication of preferred language).	O
[BroadcastMessage-Identifier]	Uniquely identifies the broadcast message over the network originating from a particular SME (i.e., unique on a per-SME basis).	R ^a
[BroadcastMessageStatus]	Indicates whether the broadcast message is new, or a replacement of an existing message with the same identification.	O
[BroadcastMessage-Priority]	Indicates the priority of broadcast for the Teleservice payload.	O
[BroadcastPeriodicity]	Indicates the recommended start time, duration, and repetition rate of the broadcast (e.g., start time: 0900 hours, duration: 2 hours and repetition rate: every 5 minutes).	R
[BroadcastServiceGroup]	Identifies the broadcast target mobile station audience (e.g., Target Service Group).	O
[BroadcastZoneIdentifier ^c]	Indicates the requested geographical area over which the message should be broadcast (e.g., cells, sectors or both within an MSC, or whole MSC; absence of both this parameter and BroadcastZoneIdentifierList indicates all MSCs within the broadcast domain of MC).	O
[BroadcastZone-IdentifierList ^c]	Indicates a requested list of geographical areas over which the message should be broadcast (e.g., cells, sectors or both within an MSC, or whole MSC; absence of both this parameter and BroadcastZoneIdentifier indicates all MSCs within the broadcast domain of MC).	O
[PreferredLanguage-Indicator]	Indicates the language in which the broadcast message payload is written (e.g., Français, English).	O ^d

Notes:

- a. Inclusion of both parameters ensures the uniqueness of the broadcast message.
 - b. This parameter is a TCAP mandatory parameter of SMDPP and is required for TDMA.
 - c. The parameters, BroadcastZoneIdentifier and BroadcastZoneIdentifierList, are mutually exclusive.
 - d. Applicable for CDMA. For CDMA, the MC re-encodes the PreferredLanguage-Indicator from the value specified in Part 550, Section 2.180 for the language in use to the value used by the MS for the language in use (i.e., to the value specified in TSB58).
- b. ... and responds with an `smdpp` positive acknowledgment (which may include an `SMS_BearerData` parameter if there is bearer data to return).
- c, e, g. The MC sends an SMDPP to the various MSCs (MSC-1, MSC-2, ... MSC-n), that are part of the prescribed broadcast domain. The MC includes the parameters in Step-a with the exception that the MC remaps the following parameters:

Parameters	Usage	Type
SMS_BTTI: [PreferredLanguage-Indicator]	Indication of the language in which the broadcast message payload is written (e.g., Français, English).	O ^a

Parameters	Usage	Type
[BroadcastZoneIdentifier ^b]	Indicates the MC remapped geographical areas over which the message should be broadcast (e.g., cells, sectors or both within an MSC, or whole MSC; absence of both this parameter and BroadcastZoneIdentifierList, indicates whole MSC).	O
[BroadcastZoneIdentifierList ^b]	Indicates a list of MC remapped geographical areas over which the message should be broadcast (e.g., cells, sectors or both within an MSC, or whole MSC; absence of both this parameter and BroadcastZoneIdentifier, indicates whole MSC).	O

Notes:

- a. Applicable for *CDMA*. For *CDMA*, the MC re-encodes the PreferredLanguageIndicator from the value specified in Part 550, Section 2.180 for the language in use to the value used by the MS for the language in use (i.e., to the value specified in *TSB58*).
- b. The parameters, BroadcastZoneIdentifier and BroadcastZoneIdentifierList, are mutually exclusive.
- d, f, h. Upon reception of an SMDPP, each MSC responds with an empty smdpp positive acknowledgment.
- i. The MSCs process the received BTTI parameters to determine the broadcasting characteristics (e.g., priority and zone). The MSCs (via the selected cell or sectors) broadcast the SMDREQUEST for reception by all active destination MS-based SMEs. The MSCs include the following information (as appropriate based on the air interface specification):

Parameters	Usage	Type
SMS_BearerData	Any desired message.	R
SMS_OriginalOriginating-Address	Network address of the originating SME; i.e., {A}.	O ^a
SMS_TeleserviceIdentifier	Identification of the teleservice; used for interpreting the bearer data.	O
SMS_BTTI		
[BroadcastCategory]	Indicates the specific subject matter of the Teleservice payload (e.g., emergency system operator announcement, advertisement, sports) to be broadcast.	R
[BroadcastCategory-SpecificInformation]	Indicates relevant data pertaining to this broadcast message, for a specific broadcast category (e.g., Indication of preferred language).	O
[BroadcastLanguage-Indicator ^b]	Indicates the language in which the broadcast message payload is written (e.g., Français, English).	O ^c
[BroadcastMessage-Identifier]	Identifies the broadcast message. Parameter may be remapped by Serving MSC.	R
[BroadcastServiceGroup]	Identifies the broadcast target mobile station audience (e.g., Target Service Group).	O

Notes:

- a. At time of publication, this was only applicable for *TDMA*.
- b. Encoding as per the received PreferredLanguageIndicator parameter.
- c. Applicable for *CDMA*.

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j-k. The MSC repeats Step-i, in accordance with the prescribed broadcast periodicity.

1.2 Successful Cancellation of Broadcast of Teleservice Messages: MSC-based Periodicity Control

This scenario describes the deletion of a previously received teleservice message by their respective Serving MSCs within the indicated geographical area.

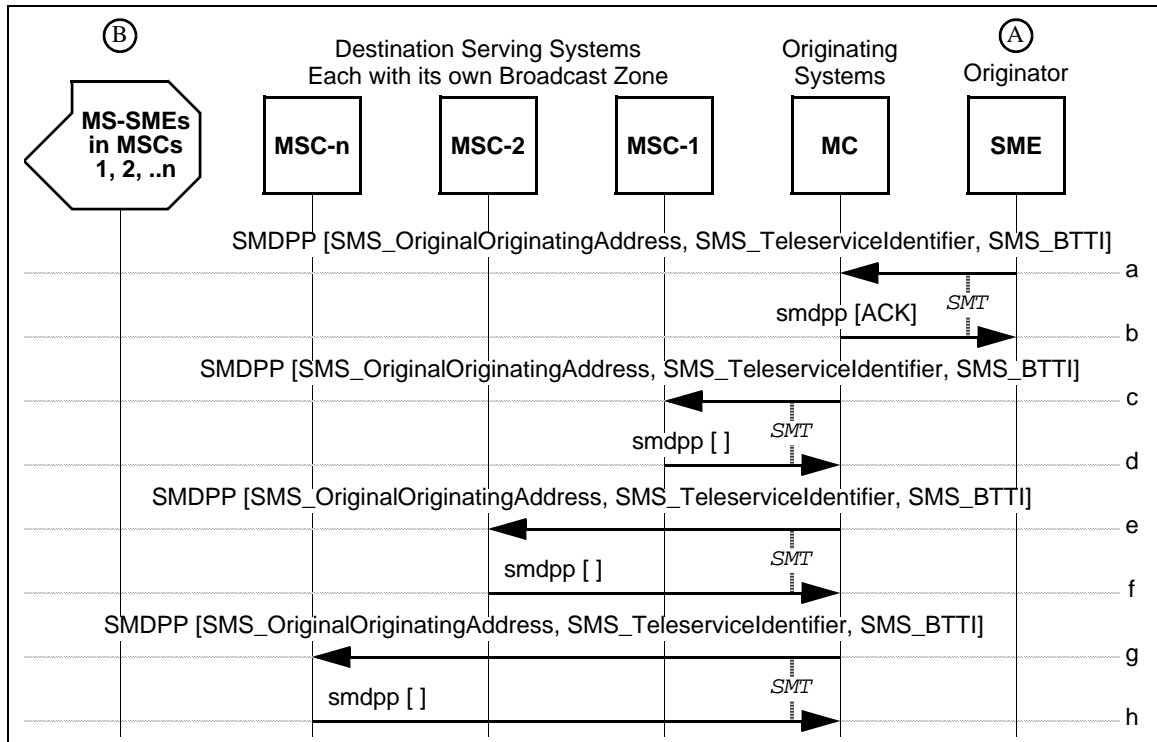


Figure 2 Successful Cancellation of Broadcast of Teleservice Messages: MSC-based Periodicity Control

- a. The MC receives and accepts an SMDPP requesting cancellation of a periodic SMS message to an MS-based SME.

Parameters	Usage	Type
SMS_BearerData	Any desired message.	MBC ^a
SMS_OriginalOriginating-Address	Network address of the originating SME; e.g., {A}.	R ^b
SMS_TeleserviceIdentifier ^C	If a value is present, it identifies the teleservice used for interpreting the bearer data.	MBC ^a
SMS_BTTI:		
[BroadcastCategory]	Indicates that this is a BTTC message and provides a specific subject matter of the Teleservice payload (e.g., emergency, system operator announcement, advertisement, sports).	R
[BroadcastMessage-Identifier]	Uniquely identifies the broadcast message over the network originating from a particular SME (i.e., unique on a per-SME basis).	R ^b
[BroadcastMessageStatus]	Indicates deletion of an identified existing broadcast message with the same identification.	R

Parameters	Usage	Type
[BroadcastZoneIdentifier ^d]	Indicates the requested geographical area over which the message should be broadcast (e.g., cells, sectors or both within an MSC, or whole MSC; absence of both this parameter and BroadcastZoneIdentifierList indicates all MSCs within the broadcast domain of MC).	O
[BroadcastZoneIdentifierList ^d]	Indicates a requested list of geographical areas over which the message should be broadcast (e.g., cells, sectors or both within an MSC, or whole MSC; absence of both this parameter and BroadcastZoneIdentifier indicates all MSCs within the broadcast domain of MC).	O

Notes:

- a. This parameter is a TCAP mandatory parameter of SMDPPP.
 - b. Inclusion of both parameters ensures the uniqueness of the broadcast message.
 - c. This parameter is required for TDMA.
 - d. These parameters are mutually exclusive.
- b. ... and responds with an `smdppp` positive acknowledgment (which may include an `SMS_BearerData` parameter if there is bearer data to return).
- c, e, g. The MC sends SMDPPPs to the various MSCs (MSC-1, MSC-2, ... MSC-n), that are part of the prescribed broadcast domain and are taking care of the periodicity of the broadcast. The MC include the same parameters received in Step-a with the exception of the following parameters that the MC remaps in a way that is meaningful to the recipient MSC.

Parameters	Usage	Type
SMS_BTTI:		
[BroadcastZoneIdentifier ^a]	Indicates the requested MC remapped geographical areas over which the broadcast message should be ceased (e.g., cells, sectors or both within an MSC, or whole MSC; absence of both this parameter and BroadcastZoneIdentifierList, indicates whole MSC).	O
[BroadcastZoneIdentifierList ^a]	Indicates a requested list of MC remapped geographical areas over which the broadcast message should be ceased (e.g., cells, sectors or both within an MSC, or whole MSC; absence of both this parameter and BroadcastZoneIdentifier, indicates whole MSC).	O

Notes:

- a. These parameters are mutually exclusive.
- d, f, h. The MSCs process the received BTTI parameters and determine which message should be deleted (e.g., cancel broadcast transmissions within the identified geographical area). In this case, deletion is successful, thus each MSC responds with an empty `smdppp` positive acknowledgment.

1.3 Successful Broadcast of Teleservice Messages: MC-based Periodicity Control

This scenario describes the successful delivery of short messages broadcast to MS-based SMEs via their respective Serving MSCs where the periodicity is under the control of the MC. In this scenario, the Serving MSCs do not have to store the broadcast teleservice payload and other associated attributes for the duration of the broadcast (especially when the duration is large).

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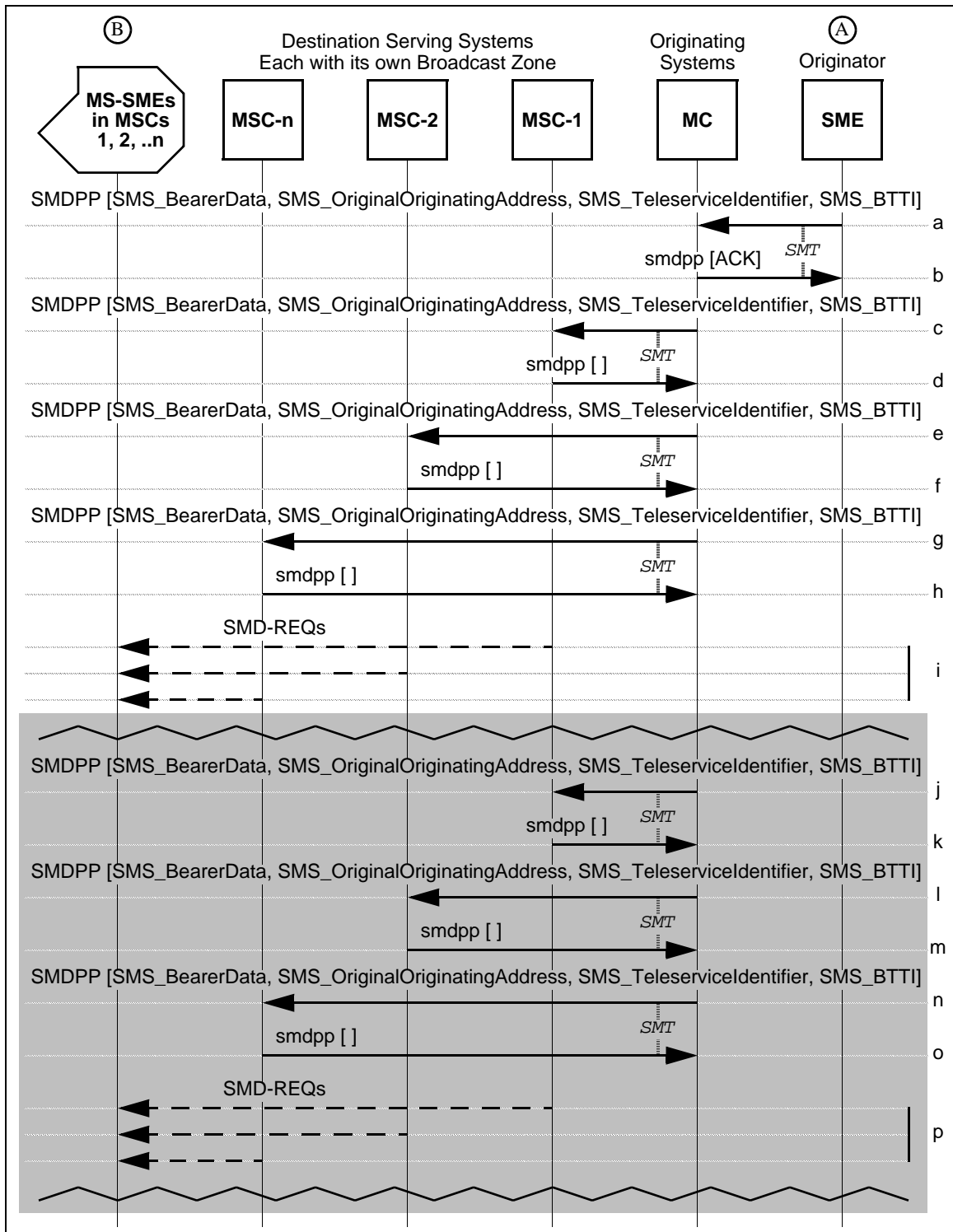


Figure 3 Successful Broadcast of Teleservice Messages: MC-based Periodicity Control

- The MC receives and accepts an SMDPP requesting delivery of an SMS message to an MS-based SME. The SMDPP includes the same parameters as in Section 1.1 Step-a.
- ... and responds with an smdpp positive acknowledgment (which may include an SMS_BearerData parameter if there is bearer data to return).

- c, e, g. At the prescribed start-time, the MC sends SMDPPs to the various MSCs (MSC-1, MSC-2, ... MSC-n), that are part of the prescribed broadcast zone.

Parameters	Usage	Type
SMS_BearerData	Any desired message.	R
SMS_OriginalOriginating-Address	Network address of the originating SME; e.g., {A}.	R ^a
SMS_TeleserviceIdentifier	If a value is present, it identifies the teleservice used for interpreting the bearer data.	MBC ^b
SMS_BTTC:		
[BroadcastCategory]	Indicates that this is a BTTC message and provides a specific subject matter of the Teleservice payload (e.g., emergency, system operator announcement, advertisement, sports) to be broadcast.	R
[BroadcastCategory-SpecificInformation]	Indicates relevant data pertaining to this broadcast message, for a specific broadcast category (e.g., Indication of preferred language).	O
[PreferredLanguage-Indicator]	Indication of the language in which the SMS Bearer Data in the message is written (e.g., Français, English).	O ^c
[BroadcastMessage-Identifier]	Uniquely identifies the broadcast message over the network originating from a particular SME (i.e., unique on a per-SME basis).	R ^a
[BroadcastMessage-Priority]	Indicates the priority of broadcast for the Teleservice payload.	O
[BroadcastMessageStatus]	Indicates whether the broadcast message is new, or a replacement of an existing message with the same identification.	O
[BroadcastServiceGroup]	Identifies the broadcast target mobile station audience (e.g., Target Service Group).	O
[BroadcastZone-Identifier ^d]	Indicates the requested MC remapped geographical areas over which the message should be broadcast (e.g., cells, sectors or both within an MSC, or whole MSC; absence of both this parameter and BroadcastZoneIdentifierList, indicates whole MSC).	O
[BroadcastZone Identifier ^d]	Indicates a requested list of MC remapped geographical areas over which the message should be broadcast (e.g., cells, sectors or both within an MSC, or whole MSC; absence of both this parameter and Broadcast-ZoneIdentifier, indicates whole MSC).	O

Notes:

- a. Inclusion of both parameters ensures the uniqueness of the broadcast message.
 - b. This parameter is a TCAP mandatory parameter of SMDPP and is required for TDMA.
 - c. Applicable for CDMA. For CDMA, the MC re-encodes the PreferredLanguageIndicator from the value specified in Part 550, Section 2.180 for the language in use to the value used by the MS for the language in use (i.e., to the value specified in TSB58).
 - d. The parameters, BroadcastZoneIdentifier and BroadcastZoneIdentifierList, are mutually exclusive.
- d, f, h. Upon reception of an SMDPP, each MSC responds with an empty smdpp positive acknowledgment.

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- i. The MSCs process the received BTTI parameters to determine the broadcasting characteristics (e.g., priority and zone). The MSCs (via the selected cell or sectors) broadcasts the SMD-REQUEST for reception by all active destination MS-based SMEs. The MSCs include the following information (as appropriate based on the air interface specification):

Parameters	Usage	Type
SMS_BearerData	Any desired message.	R
SMS_OriginalOriginating-Address	Network address of the originating SME; i.e., {A}.	O ^a
SMS_TeleserviceNameIdentifier	Identification of the teleservice; used for interpreting the bearer data.	O
SMS_BTTI		
[BroadcastCategory]	Indicates the specific subject matter of the Teleservice payload (e.g., emergency system operator announcement, advertisement, sports) to be broadcast.	R
[BroadcastCategory-SpecificInformation]	Indicates relevant data pertaining to this broadcast message, for a specific broadcast category (e.g., Indication of preferred language).	O
[BroadcastLanguage-Indicator ^b]	Indicates the language in which the broadcast message payload is written (e.g., Français, English).	O ^c
[BroadcastMessage-Identifier]	Identifies the broadcast message. Parameter may be remapped by Serving MSC.	R
[BroadcastServiceGroup]	Identifies the broadcast target mobile station audience (e.g., Target Service Group).	O

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- a. At time of publication, this was only applicable for *TDMA*.
 - b. Encoding as per the received PreferredLanguageIndicator parameter.
 - c. Applicable for *CDMA*.
- j-p. Steps c-i are repeated when the broadcast needs to be made again at a later point in time, as originally prescribed from Step-a (e.g., duration and repetition rate).

1.4 Unsuccessful Broadcast of Teleservice Messages: MC-based Periodicity Control

This scenario describes an unsuccessful broadcast of teleservice messages where the periodicity is under the control of the MC. In this scenario, one or more of the Serving MSCs may have some condition that prevents the broadcast from being performed. The MSC(s) return a negative acknowledgment indicating the reason for denying the broadcast request to the MC. The MC may retry sending to the negative acknowledgment responding Serving MSC(s) at a later time based on internal algorithms.

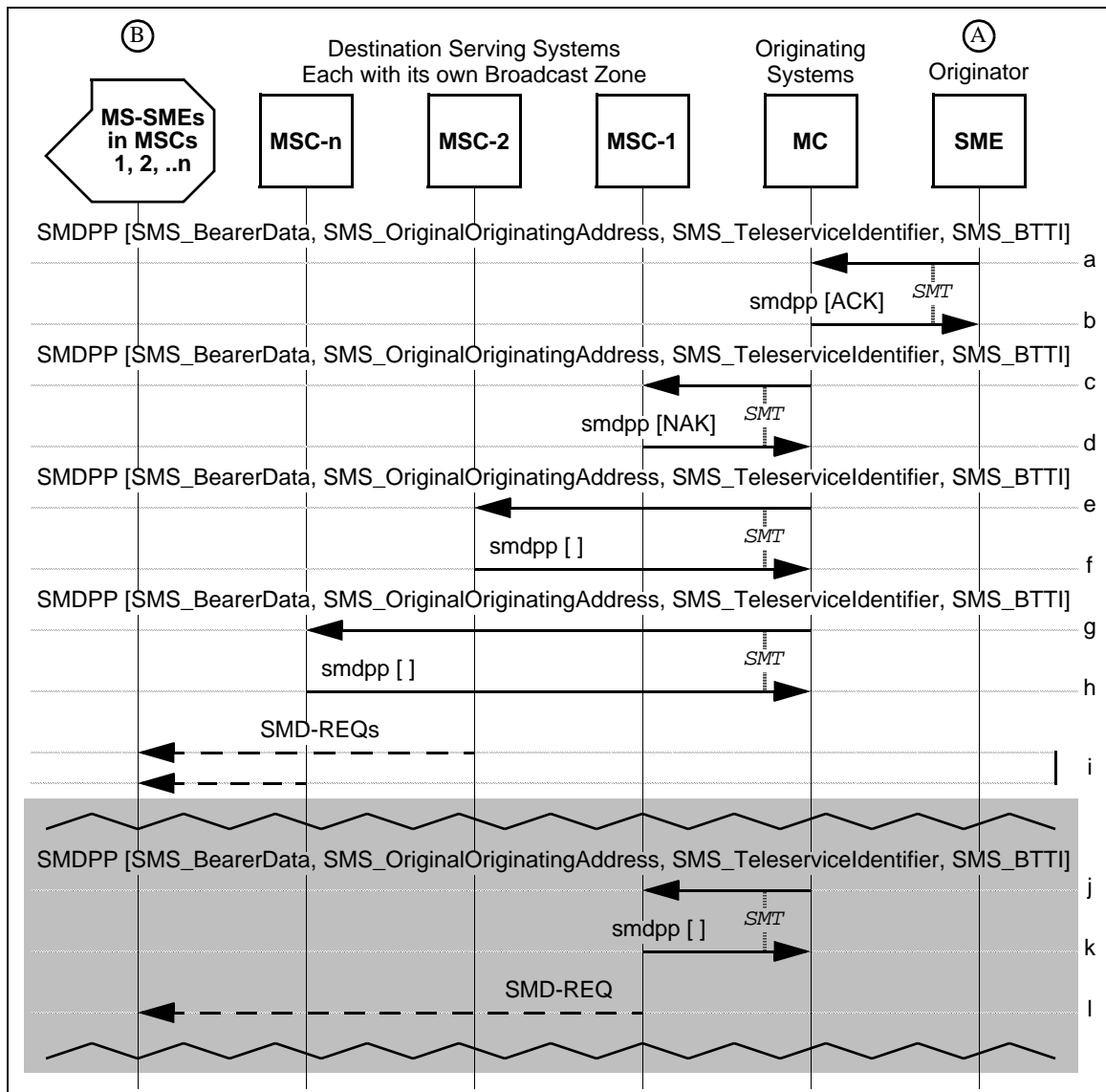


Figure 4 Unsuccessful Broadcast of Teleservice Messages: MC-based Periodicity Control

- The MC receives and accepts an SMDPP requesting delivery of an SMS message to an MS-based SME. The SMDPP includes the same parameter as in Section 1.1 Step-a.
- ... and responds with an `smdpp` positive acknowledgment (which may include an `SMS_BearerData` parameter if there is bearer data to return).

- 1 c, e, g. At the prescribed start-time, the MC sends SMDPPs to the various MSCs (MSC-1, MSC-2, ...
 2 MSC-n), that are part of the prescribed broadcast zone. The SMDPPs carry the same parameters
 3 as in Section 1.3 Steps-c, e, and g.
- 4 d, f, h. Upon reception of the SMDPP, each MSC responds with an empty smdpp positive acknowl-
 5 edgment ...
 6 ... except MSC-1 in Step-d, which responds with an smdpp with a negative acknowledgment.
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Parameters	Usage	Type
NAK: [SMS_CauseCode]	Negative acknowledgment signal: Indicates the reason for not delivering the SMS broadcast message (e.g., radio interface resource shortage, missing mandatory parameter).	R

- 15 i. With the exception of MSC-1, the MSCs process the received BTTI parameters to determine
 16 the broadcasting characteristics (e.g., priority and zone). The MSC (via the selected cells or
 17 sectors) broadcasts the SMD-REQUEST for reception by all active destination MS-based
 18 SMEs. Include the following information (as appropriate based on the air interface specifi-
 19 cation):
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Parameters	Usage	Type
SMS_BearerData	Any desired message.	R
SMS_OriginalOriginating-Address	Network address of the originating SME; i.e., {A}.	O ^a
SMS_TeleserviceIdentifier	Identification of the teleservice; used for interpreting the bearer data.	O
SMS_BTTI		
[BroadcastCategory]	Indicates the specific subject matter of the Teleservice payload (e.g., emergency system operator announcement, advertisement, sports) to be broadcast.	R
[BroadcastCategory-SpecificInformation]	Indicates relevant data pertaining to this broadcast message, for a specific broadcast category (e.g., Indication of preferred language).	O
[BroadcastLanguage-Indicator ^b]	Indicates the language in which the broadcast message payload is written (e.g., Français, English).	O ^C
[BroadcastMessage-Identifier]	Identifies the broadcast message. Parameter may be remapped by Serving MSC.	R
[BroadcastServiceGroup]	Identifies the broadcast target mobile station audience (e.g., Target Service Group).	O

Notes:

- 46 a. At time of publication, this was only applicable for *TDMA*.
 47 b. Encoding as per the received PreferredLanguageIndicator parameter.
 48 c. Applicable for *CDMA*.
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- 50 j-1. Based on internal algorithms, the MC re-tries the broadcast attempt with MSC-1 again at a later
 51 time, and this time it is successful.
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1.5 Successful Deletion of a Teleservice Message Previously Broadcast with a Specific Broadcast Category: MSC-based Periodicity Control

This scenario describes the deletion by an MC relying on MSC-based periodicity control of all previously sent teleservice messages, originated by a particular SME and broadcast with a specific Broadcast Category.

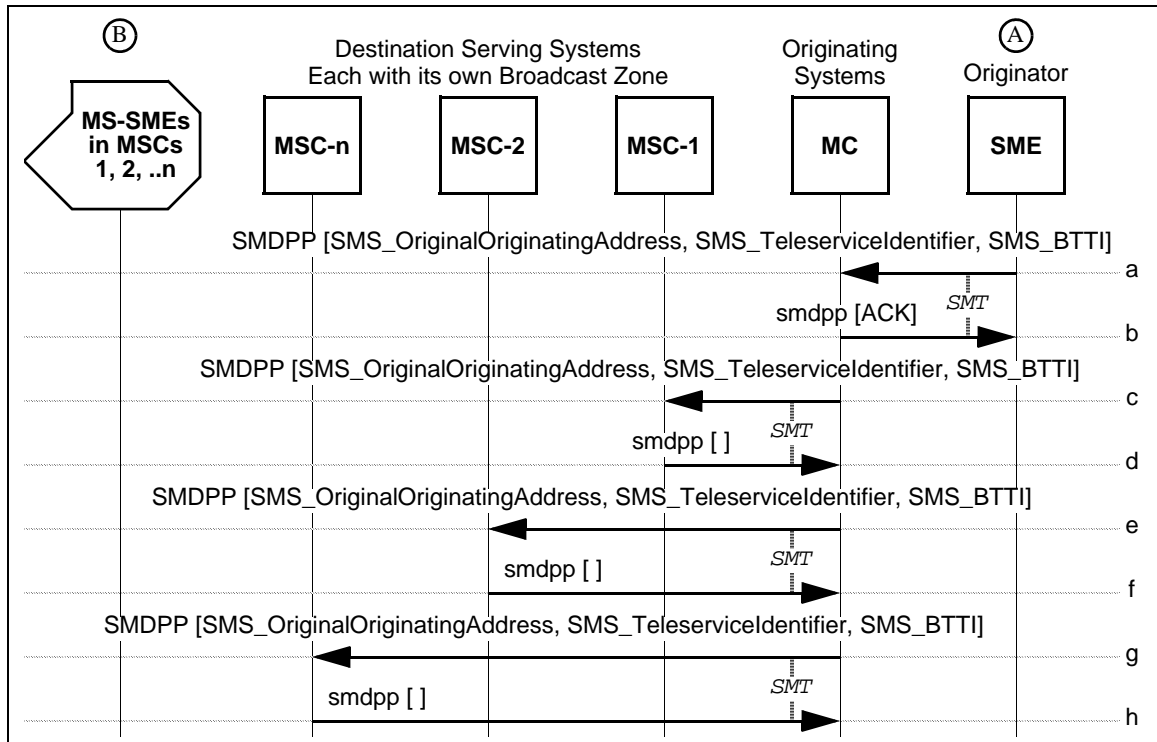


Figure 5 Successful Deletion of a Teleservice Message Previously Broadcast with a Specific Broadcast Category: MSC-based Periodicity Control

- a. The MC receives and accepts an SMDPP requesting deletion of SMS messages previously broadcast.

Parameters	Usage	Type
SMS_BearerData	Any desired message.	MBC ^a
SMS_OriginalOriginating-Address	Network address of the originating SME; e.g., {A}.	R
SMS_TeleserviceIdentifier ^b	If a value is present, it identifies the teleservice used for interpreting the bearer data.	MBC ^a
SMS_BTTI:		
[BroadcastCategory]	Indicates that this is a BTTC message and provides a specific subject matter of the Teleservice payload (e.g., emergency, system operator announcement, advertisement, sports).	R
[BroadcastMessageStatus]	Indicates deletion of an identified existing broadcast message with the same identification.	R

Parameters	Usage	Type
[BroadcastZoneIdentifier ^C]	Indicates the requested geographical area over which the message should be broadcast (e.g., cells, sectors or both within an MSC, or whole MSC; absence of both this parameter and BroadcastZoneIdentifierList indicates all MSCs within the broadcast domain of MC).	O
[BroadcastZone-IdentifierList ^C]	Indicates a requested list of geographical areas over which the message should be broadcast (e.g., cells, sectors or both within an MSC, or whole MSC; absence of both this parameter and BroadcastZoneIdentifier indicates all MSCs within the broadcast domain of MC).	O

Notes:

- a. This parameter is a TCAP mandatory parameter of SMDPP.
 - b. This parameter is required for TDMA.
 - c. These parameters are mutually exclusive.
- b. ... and responds with an `smdpp` positive acknowledgment (which may include an `SMS_BearerData` parameter if there is bearer data to return).
- c, e, g. The MC sends SMDPPs to the various MSCs (MSC-1, MSC-2, ... MSC-n), that are part of the prescribed broadcast domain. Parameters are as in Step-a.
- d, f, h. Each MSC processes the received BTTI parameters and determine which message(s) should be deleted.
- Since deletion is successful, each MSC responds with an empty `smdpp` positive acknowledgment.