3GPP TSG_CN#6   **NP-99438**

ETSI SMG3 Plenary Meeting #6,
Nice, France
13th – 15th December 1999

Agenda item: **5.3.3**

Source: **TSG_N WG3**

Title: **CRs to 3G Work Item Technical Improvements and Enhancements**

Introduction:

This document contains **"5"** CRs **on Work Item TEI** agreed by **TSG_N WG3** and forwarded to **TSG_N Plenary** meeting #6 for approval.

Tdoc	Spec	CR	Rev	CAT	Rel.	Old Ver	New Ver	Subject
N3-99415	04.22	A026	R1	A	R98	7.0.1	7.1.1	REMAP PROCEDURE IN RLP
N3-99414	04.22	A025	R1	A	R97	6.1.0	6.2.0	REMAP PROCEDURE IN RLP
N3-99409	04.22	A024	R1	F	R96	5.5.0	5.6.0	REMAP PROCEDURE IN RLP
N3-99428	24.022	002	R1	A	R99	3.1.0	3.2.0	REMAP PROCEDURE IN RLP
N3-99346	29.007	005		D	R99	3.2.0	3.3.0	Clarification of the VMSC Behaviour in case of interworking

CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

04.22 CR **A026r1**   Current Version: **7.0.1**

GSM (AA.BB) or 3G (AA.BBB) specification number ↑   ↑ *CR number as allocated by MCC support team*

For submission to: **TSG#6**   for approval **X**   strategic ☐ *(for SMG*
list expected approval meeting # here ↑   for information ☐   non-strategic **X** *use only)*

Form: CR cover sheet, version 2 for 3GPP and SMG   The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc

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Proposed change affects: (U)SIM ☐   ME ☐   UTRAN / Radio ☐   Core Network **X**
(at least one should be marked with an X)

Source: TSG-N3 / SMG3 WPD   **Date:** 1999-11-26

Subject: Correction to REMAP procedure in RLP

Work item: Technical enhancements and improvements

Category: F Correction   ☐   **Release:**   Phase 2   ☐
         A Corresponds to a correction in an earlier release **X**   Release 96   ☐
(only one category   B Addition of feature   ☐   Release 97   ☐
shall be marked   C Functional modification of feature   ☐   Release 98   **X**
with an X)   D Editorial modification   ☐   Release 99   ☐
                                                                                     Release 00   ☐

Reason for change: There is no specified exit from the REMAP procedure when the uplink DTX is activated and the mobile station has no user data to be sent to the network.

Clauses affected: 5.2.2.9

Other specs affected:
         Other 3G core specifications   ☐   → List of CRs:
         Other GSM core specifications   ☐   → List of CRs:
         MS test specifications   ☐   → List of CRs:
         BSS test specifications   ☐   → List of CRs:
         O&M specifications   ☐   → List of CRs:
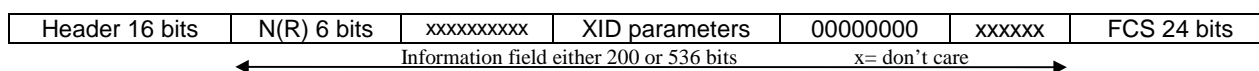
Other comments:

help.doc

<--------- double-click here for help and instructions on how to create a CR.
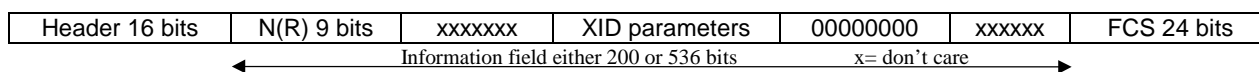
5.2.2.9   REMAP (10001)

A REMAP-exchange can only take place in ABM following a change of channel coding. REMAP frames are always used with the P/F-bit set to "0". The exchange is started by the mobile-end which sends a REMAP command U-frame in the information field of which the RLP-entity indicates the N(R) of the frame - according to the 'old' frame format - from which the network-end should resend the information mapped into a frame format corresponding to the new channel coding. The mobile-end sends a REMAP-frame on every sending opportunity until responding REMAP-frame is received from the network-end. The network-end answers by sending a REMAP U-frame with the C/R-bit set to 'Response'. In the information-field the network-end indicates the N(R)-number of the frame from which the mobile-end should remap the information into the new frame format. The network-end responds to all REMAP-commands it receives as long as it is in the REMAP synchronisation state. The network sends a numbered S frame with poll bit P=1 or an I+S frame after the first REMAP frame to the mobile station to compel it to acknowledge the end of the REMAP condition. This frame is guarded by T1. Upon reception of an I+S frame or an S frame with the final bit F=1 from the MS, the IWF exists the REMAP synchronisation state. Any REMAP-acknowledgement that may arrive at the mobile-end after one of them has been received is discarded by the mobile-end. The RLP shall supervise the synchronisation state by a timer with the value of N2*T1. If the network-end does not receive an appropriate U-frame within N2*T1, it enters ADM. If the mobile-end does not receive a response within N2×T1 measured from the transmission of the first command, it enters ADM.

In addition to the N(R)-information the REMAP-frame information field can include any XID-parameters that should be renegotiated because of the change of channel coding. The procedures concerning these XID-parameters are as defined in section 5.2.2.6 (Exchange Identification) except that the mobile-end always starts the negotiation. Also the mapping of the parameters is as defined in section 5.2.2.6 (Exchange Identification) except that the first two octets in the REMAP information field are occupied by the N(R)-number (The LSB is transmitted first). The information field shall always include parameter type zero, which delimits the XID-parameter list.

After the change of channel coding, default values according to the new channel coding apply until new values have been negotiated by the REMAP or XID procedure. Default values according to the new channel coding also apply for those XID parameters that are not included in the REMAP information field. Values for XID parameters whose negotiation is only allowed in ADM remain valid after change of channel coding.

Header 16 bits	N(R) 6 bits	xxxxxxxxx	XID parameters	00000000	xxxxxx	FCS 24 bits

Information field either 200 or 536 bits   x= don't care

a.) version 0 and 1

Header 16 bits	N(R) 9 bits	xxxxxxx	XID parameters	00000000	xxxxxx	FCS 24 bits

Information field either 200 or 536 bits   x= don't care

b.) version 2

Figure 3: REMAP U-frame format

***   Next modified section   ***

5.4   Transitions between TCH/F9.6 and TCH/F14.4 channel codings

The RLP has to change the supported frame length due to transitions between different channel codings. The RLP entities have to be re-synchronised after a change of the channel coding.

Any change of the channel coding is indicated to the RLP- entity by an external event. The RLP-entity at the mobile-end enters the synchronisation state when it receives a relevant Radio Resource Management message, and it starts sending the REMAP-messages at the earliest possible time. The RLP-entity at the network-end enters the synchronisation state when the network-end detects Layer 1 synchronisation after a change of channel coding. The change of channel coding is eventually confirmed by an outband signalling message.

On entering the synchronisation state timers are halted and zeroed, and the TX- and RX-windows are frozen. When the RLP entity enters the synchronisation state it clears all SREJ or REJ conditions, discards all out-of-sequence frames received and clears all previous re-transmission requests received by any SREJ.

After this the mobile-end starts a REMAP-exchange (Section 5.2.2.9). When an RLP-entity receives a REMAP-frame, it moves the user information contained by the frames to be remapped from the TX-window to a transition buffer between the RLP- and L2R-entities. The L2R uses the information in this buffer before mapping new data into the PDUs. The network-end regards the REMAP-procedure as completed when it has received an I+S-frame, an S-frame or an SABM U-frame from the mobile-end, whereas the mobile-end leaves the synchronisation state after receiving a responding REMAP-frame or an SABM U-frame. The data in the transition buffer at the network-end must not be deleted before an I+S-, or an S-frame is received from the mobile-end.

~~No~~ Supervisory or Information transfer frames or XID U frames are <u>discarded by the receiving entity while in REMAP synchronisation state</u>~~exchanged before the REMAP-exchange is completed~~. If the RLP entity receives another U-frame, it reacts according to the defined procedures. That is, if the frame is an SABM frame it performs a reset procedure and leaves the synchronisation state. If the frame is NULL, UI or TEST frame, RLP performs the defined procedure and remains in the synchronisation state. In the case of a DISC frame RLP terminates ABM and goes into ADM.

After the REMAP-procedure is completed, the RLP-entities leave the synchronisation state and normal operation is resumed. On resuming the normal operation, the TX- and RX- windows are emptied. The N(S)-numbering resumes from the value indicated in the REMAP-message by the N(R)-number.

Abortion of the transition or another transition taking place during the REMAP-procedure restarts the REMAP-procedure in order to resume operation using the channel coding corresponding to the latest transition.

CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

04.22 CR	**A0025r1**	Current Version:	6.1.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑   *↑ CR number as allocated by MCC support team*

For submission to: TSG_N#6   for approval **X**   strategic ☐ *(for SMG*
list expected approval meeting # here ↑   for information ☐   non-strategic **X** *use only)*

Form: CR cover sheet, version 2 for 3GPP and SMG   The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc

Proposed change affects: (U)SIM ☐   ME ☐   UTRAN / Radio ☐   Core Network **X**
(at least one should be marked with an X)

Source: TSG-N3 / SMG3 WPD   **Date:**   1999-11-26

Subject: Correction to REMAP procedure in RLP

Work item: Technical enhancements and improvements

Category: F Correction   ☐   **Release:**   Phase 2   ☐
          A Corresponds to a correction in an earlier release **X**   Release 96   ☐
(only one category   B Addition of feature   ☐   Release 97   **X**
shall be marked   C Functional modification of feature   ☐   Release 98   ☐
with an X)   D Editorial modification   ☐   Release 99   ☐
                    Release 00   ☐

Reason for change: There is no specified exit from the REMAP procedure when the uplink DTX is activated and the mobile station has no user data to be sent to the network.

Clauses affected: 5.2.2.9

Other specs affected: Other 3G core specifications   ☐ → List of CRs:
          Other GSM core specifications   ☐ → List of CRs:
          MS test specifications   ☐ → List of CRs:
          BSS test specifications   ☐ → List of CRs:
          O&M specifications   ☐ → List of CRs:
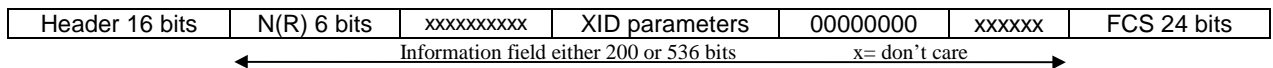
Other comments:

help.doc

<--------- double-click here for help and instructions on how to create a CR.
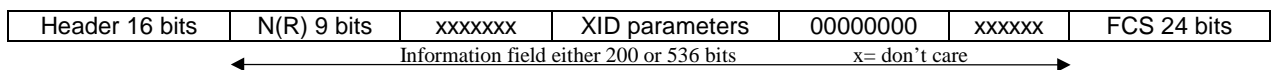
5.2.2.9   REMAP (10001)

A REMAP-exchange can only take place in ABM following a change of channel coding. REMAP frames are always used with the P/F-bit set to "0". The exchange is started by the mobile-end which sends a REMAP command U-frame in the information field of which the RLP-entity indicates the N(R) of the frame - according to the 'old' frame format - from which the network-end should resend the information mapped into a frame format corresponding to the new channel coding. The mobile-end sends a REMAP-frame on every sending opportunity until responding REMAP-frame is received from the network-end. The network-end answers by sending a REMAP U-frame with the C/R-bit set to 'Response'. In the information-field the network-end indicates the N(R)-number of the frame from which the mobile-end should remap the information into the new frame format. The network-end responds to all REMAP-commands it receives as long as it is in the REMAP synchronisation state. The network sends a numbered S frame with poll bit P=1 or an I+S frame after the first REMAP frame to the mobile station to compel it to acknowledge the end of the REMAP condition. This frame is guarded by T1. Upon reception of an I+S frame or an S frame with the final bit F=1 from the MS, the IWF exists the REMAP synchronisation state. Any REMAP-acknowledgement that may arrive at the mobile-end after one of them has been received is discarded by the mobile-end. The RLP shall supervise the synchronisation state by a timer with the value of N2*T1. If the network-end does not receive an appropriate U-frame within N2*T1, it enters ADM. If the mobile-end does not receive a response within N2×T1 measured from the transmission of the first command, it enters ADM.

In addition to the N(R)-information the REMAP-frame information field can include any XID-parameters that should be renegotiated because of the change of channel coding. The procedures concerning these XID-parameters are as defined in section 5.2.2.6 (Exchange Identification) except that the mobile-end always starts the negotiation. Also the mapping of the parameters is as defined in section 5.2.2.6 (Exchange Identification) except that the first two octets in the REMAP information field are occupied by the N(R)-number (The LSB is transmitted first). The information field shall always include parameter type zero, which delimits the XID-parameter list.

After the change of channel coding, default values according to the new channel coding apply until new values have been negotiated by the REMAP or XID procedure. Default values according to the new channel coding also apply for those XID parameters that are not included in the REMAP information field. Values for XID parameters whose negotiation is only allowed in ADM remain valid after change of channel coding.

Header 16 bits	N(R) 6 bits	xxxxxxxxxx	XID parameters	00000000	xxxxxx	FCS 24 bits

Information field either 200 or 536 bits   x= don't care

a.) version 0 and 1

Header 16 bits	N(R) 9 bits	xxxxxxx	XID parameters	00000000	xxxxxx	FCS 24 bits

Information field either 200 or 536 bits   x= don't care

b.) version 2

Figure 3: REMAP U-frame format

***   Next modified section   ***

5.4   Transitions between TCH/F9.6 and TCH/F14.4 channel codings

The RLP has to change the supported frame length due to transitions between different channel codings. The RLP entities have to be re-synchronised after a change of the channel coding.

Any change of the channel coding is indicated to the RLP- entity by an external event. The RLP-entity at the mobile-end enters the synchronisation state when it receives a relevant Radio Resource Management message, and it starts sending the REMAP-messages at the earliest possible time. The RLP-entity at the network-end enters the synchronisation state when the network-end detects Layer 1 synchronisation after a change of channel coding. The change of channel coding is eventually confirmed by an outband signalling message.

On entering the synchronisation state timers are halted and zeroed, and the TX- and RX-windows are frozen. When the RLP entity enters the synchronisation state it clears all SREJ or REJ conditions, discards all out-of-sequence frames received and clears all previous re-transmission requests received by any SREJ.

After this the mobile-end starts a REMAP-exchange (Section 5.2.2.9). When an RLP-entity receives a REMAP-frame, it moves the user information contained by the frames to be remapped from the TX-window to a transition buffer between the RLP- and L2R-entities. The L2R uses the information in this buffer before mapping new data into the PDUs. The network-end regards the REMAP-procedure as completed when it has received an I+S-frame, an S-frame or an SABM U-frame from the mobile-end, whereas the mobile-end leaves the synchronisation state after receiving a responding REMAP-frame or an SABM U-frame. The data in the transition buffer at the network-end must not be deleted before an I+S-, or an S-frame is received from the mobile-end.

~~No~~ Supervisory or Information transfer frames or XID U frames are <u>discarded by the receiving entity while in REMAP synchronisation state</u>~~exchanged before the REMAP-exchange is completed~~. If the RLP entity receives another U-frame, it reacts according to the defined procedures. That is, if the frame is an SABM frame it performs a reset procedure and leaves the synchronisation state. If the frame is NULL, UI or TEST frame, RLP performs the defined procedure and remains in the synchronisation state. In the case of a DISC frame RLP terminates ABM and goes into ADM.

After the REMAP-procedure is completed, the RLP-entities leave the synchronisation state and normal operation is resumed. On resuming the normal operation, the TX- and RX- windows are emptied. The N(S)-numbering resumes from the value indicated in the REMAP-message by the N(R)-number.

Abortion of the transition or another transition taking place during the REMAP-procedure restarts the REMAP-procedure in order to resume operation using the channel coding corresponding to the latest transition.

CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

04.22 CR **A024r1**	Current Version:	**5.5.0**

GSM (AA.BB) or 3G (AA.BBB) specification number ↑   *↑ CR number as allocated by MCC support team*

For submission to:	**TSG_N#6**	for approval	**X**	strategic		*(for SMG*
list expected approval meeting # here ↑		for information		non-strategic	**X**	*use only)*

Form: CR cover sheet, version 2 for 3GPP and SMG   *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc*

Proposed change affects:
(at least one should be marked with an X)

(U)SIM		ME		UTRAN / Radio		Core Network	**X**

Source:	TSG-N3 / SMG3 WPD	**Date:**	1999-11-26

Subject:	Correction to REMAP procedure in RLP

Work item:	Technical enhancements and improvements

Category:
(only one category shall be marked with an X)

				Release:		
F	Correction	**X**		Phase 2		
A	Corresponds to a correction in an earlier release			Release 96	**X**	
B	Addition of feature			Release 97		
C	Functional modification of feature			Release 98		
D	Editorial modification			Release 99		
				Release 00		

Reason for change:	There is no specified exit from the REMAP procedure when the uplink DTX is activated and the mobile station has no user data to be sent to the network.

Clauses affected:	5.2.2.9

Other specs affected:

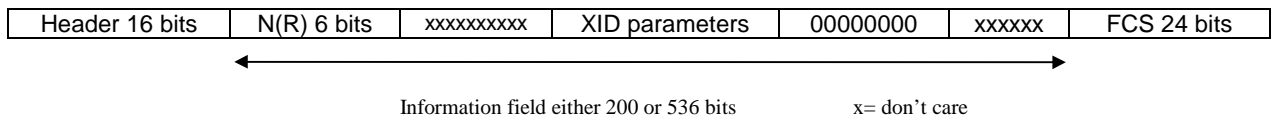| Other 3G core specifications		→ List of CRs:	
Other GSM core specifications		→ List of CRs:	
MS test specifications		→ List of CRs:	
BSS test specifications		→ List of CRs:	
O&M specifications		→ List of CRs:	

Other comments:	

help.doc

<--------- double-click here for help and instructions on how to create a CR.
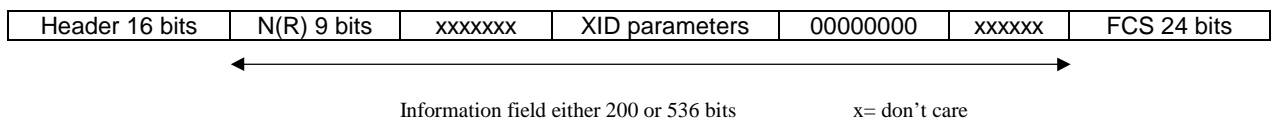
5.2.2.9 REMAP (10001)

A REMAP-exchange can only take place in ABM when the RLP-entities are in synchronisation mode following a change of channel coding. The exchange is started by the mobile-end which sends a REMAP command U-frame in the information field of which the RLP-entity indicates the N(R) of the frame - according to the 'old' frame format - from which the network-end should resend the information mapped into a frame format corresponding to the new channel coding. The mobile-end sends a REMAP-frame on every sending opportunity until responding REMAP-frame is received from the network-end. The network-end answers by sending a REMAP U-frame with the C/R-bit set to 'Response'. In the information-field the network-end indicates the N(R)-number of the frame from which the mobile-end should remap the information into the new frame format. The network-end responds to all REMAP-commands it receives as long as it is in the REMAP synchronisation state. The network sends a numbered S frame with poll bit P=1 or an I+S frame after the first REMAP frame to the mobile station to compel it to acknowledge the end of the REMAP condition. This frame is guarded by T1. Upon reception of an I+S frame or an S frame with the final bit F=1 from the MS, the IWF exists the REMAP synchronisation state. Any REMAP-acknowledgement that may arrive at the mobile-end after one of them has been received is discarded by the mobile-end. The RLP shall supervise the synchronisation state by a timer with the value of N2*T1. If the network-end does not receive an appropriate U-frame within N2*T1, it enters ADM. If the mobile-end does not receive a response within N2×T1 measured from the transmission of the first command, it enters ADM.

In addition to the N(R)-information the REMAP-frame information field can include any XID-parameters that should be renegotiated because of the change of channel coding. The procedures concerning these XID-parameters are as defined in subclause 5.2.2.6 (Exchange Identification) except that the mobile-end always starts the negotiation. Also the mapping of the parameters is as defined in subclaus 5.2.2.6 (Exchange Identification) except that the first two octets in the REMAP information field are occupied by the N(R)-number (The LSB is transmitted first). The information field shall always include parameter type zero, which delimits the XID-parameter list.

After the change of channel coding, default values according to the new channel coding apply until new values have been negotiated by the REMAP or XID procedure. Default values according to the new channel coding also apply for those XID parameters that are not included in the REMAP information field. Values for XID parameters whose negotiation is only allowed in ADM remain valid after change of channel coding.

Header 16 bits	N(R) 6 bits	xxxxxxxxx	XID parameters	00000000	xxxxxx	FCS 24 bits

Information field either 200 or 536 bits   x= don't care

a.) version 0 and 1

Header 16 bits	N(R) 9 bits	xxxxxxx	XID parameters	00000000	xxxxxx	FCS 24 bits

Information field either 200 or 536 bits   x= don't care

b.) version 2

Figure 3: REMAP U-frame format

5.4   Transitions between TCH/F9.6 and TCH/F14.4 channel codings

The RLP has to change the supported frame length due to transitions between different channel codings. The RLP entities have to be re-synchronised after a change of the channel coding.

Any change of the channel coding is indicated to the RLP- entity by an external event. The RLP-entity at the mobile-end enters the synchronisation state when it receives a relevant Radio Resource Management message, and it starts sending the REMAP-messages at the earliest possible time. The RLP-entity at the network-end enters the synchronisation state when the network-end detects Layer 1 synchronisation after a change of channel coding. The change of channel coding is eventually confirmed by an outband signalling message.

On entering the synchronisation state timers are halted and zeroed, and the TX- and RX-windows are frozen. When the RLP entity enters the synchronisation state it clears all SREJ or REJ conditions, discards all out-of-sequence frames received and clears all previous re-transmission requests received by any SREJ.

After this the mobile-end starts a REMAP-exchange (Subclause 5.2.2.9). When an RLP-entity receives a REMAP-frame, it moves the user information contained by the frames to be remapped from the TX-window to a transition buffer between the RLP- and L2R-entities. The L2R uses the information in this buffer before mapping new data into the PDUs. The network-end regards the REMAP-procedure as completed when it has received an I+S-frame, an S-frame or an SABM U-frame from the mobile-end, whereas the mobile-end leaves the synchronisation mode after receiving a responding REMAP-frame or an SABM U-frame. The data in the transition buffer at the network-end must not be deleted before an I+S-, or an S-frame is received from the mobile-end.

~~No~~ Supervisory or Information transfer frames or XID U frames are <u>discarded by the receiving entity while in REMAP synchronisation state</u>~~exchanged before the REMAP-exchange is completed~~. If the RLP entity receives another U-frame, it reacts according to the defined procedures. That is, if the frame is an SABM frame it performs a reset procedure and leaves the synchronisation state. If the frame is a NULL, UI or TEST frame, RLP performs the defined procedure and remains in the synchronisation state. In the case of a DISC frame RLP terminates ABM and goes into ADM.

After the REMAP-procedure is completed, the RLP-entities leave the synchronisation mode and normal operation is resumed. On resuming the normal operation, the TX- and RX- windows are emptied. The N(S)-numbering resumes from the value indicated in the REMAP-message by the N(R)-number.

Abortion of the transition or another transition taking place during the REMAP-procedure restarts the REMAP-procedure in order to resume operation using the channel coding corresponding to the latest transition.

CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

24.022 CR **002r1**   Current Version: **3.1.0**

GSM (AA.BB) or 3G (AA.BBB) specification number ↑   *↑ CR number as allocated by MCC support team*

For submission to: **TSG_N#6**   for approval **X**   strategic ☐   *(for SMG*
list expected approval meeting # here ↑   for information ☐   non-strategic ☐   *use only)*

Form: CR cover sheet, version 2 for 3GPP and SMG   The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc

Proposed change affects: (U)SIM ☐   ME ☐   UTRAN / Radio ☐   Core Network **X**
(at least one should be marked with an X)

Source: TSG-N3   **Date:** 1999-11-26

Subject: Correction to REMAP procedure in RLP

Work item: Technical enhancements and improvements

Category: F   Correction   **Release:** Phase 2 ☐
               A   Corresponds to a correction in an earlier release **X**   Release 96 ☐
(only one category   B   Addition of feature   Release 97 ☐
shall be marked   C   Functional modification of feature   Release 98 ☐
with an X)   D   Editorial modification   Release 99 **X**
                       Release 00 ☐

Reason for change: There is no specified exit from the REMAP procedure when the uplink DTX is activated and the mobile station has no user data to be sent to the network.

Clauses affected: 5.2.2.9

Other specs affected:
Other 3G core specifications ☐ → List of CRs:
Other GSM core specifications ☐ → List of CRs:
MS test specifications ☐ → List of CRs:
BSS test specifications ☐ → List of CRs:
O&M specifications ☐ → List of CRs:
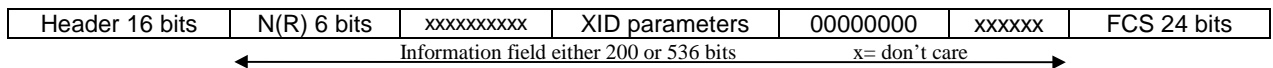
Other comments:

help.doc

<--------- double-click here for help and instructions on how to create a CR.
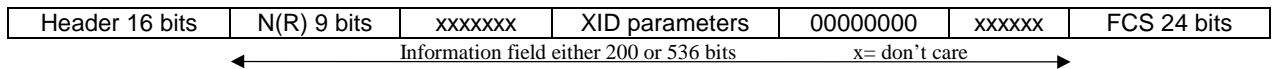
5.2.2.9 REMAP (10001)

A REMAP-exchange can only take place in ABM following a change of channel coding. REMAP frames are always used with the P/F-bit set to "0". The exchange is started by the mobile-end which sends a REMAP command U-frame in the information field of which the RLP-entity indicates the N(R) of the frame - according to the 'old' frame format - from which the network-end should resend the information mapped into a frame format corresponding to the new channel coding. The mobile-end sends a REMAP-frame on every sending opportunity until responding REMAP-frame is received from the network-end. The network-end answers by sending a REMAP U-frame with the C/R-bit set to 'Response'. In the information-field the network-end indicates the N(R)-number of the frame from which the mobile-end should remap the information into the new frame format. The network-end responds to all REMAP-commands it receives as long as it is in the REMAP synchronisation state. The network sends a numbered S frame with poll bit P=1 or an I+S frame after the first REMAP frame to the mobile station to compel it to acknowledge the end of the REMAP condition. This frame is guarded by T1. Upon reception of an I+S frame or an S frame with the final bit F=1 from the MS, the IWF exists the REMAP synchronisation state. Any REMAP-acknowledgement that may arrive at the mobile-end after one of them has been received is discarded by the mobile-end. The RLP shall supervise the synchronisation state by a timer with the value of N2*T1. If the network-end does not receive an appropriate U-frame within N2*T1, it enters ADM. If the mobile-end does not receive a response within N2×T1 measured from the transmission of the first command, it enters ADM.

In addition to the N(R)-information the REMAP-frame information field can include any XID-parameters that should be renegotiated because of the change of channel coding. The procedures concerning these XID-parameters are as defined in section 5.2.2.6 (Exchange Identification) except that the mobile-end always starts the negotiation. Also the mapping of the parameters is as defined in section 5.2.2.6 (Exchange Identification) except that the first two octets in the REMAP information field are occupied by the N(R)-number (The LSB is transmitted first). The information field shall always include parameter type zero, which delimits the XID-parameter list.

After the change of channel coding, default values according to the new channel coding apply until new values have been negotiated by the REMAP or XID procedure. Default values according to the new channel coding also apply for those XID parameters that are not included in the REMAP information field. Values for XID parameters whose negotiation is only allowed in ADM remain valid after change of channel coding.

Header 16 bits	N(R) 6 bits	xxxxxxxxx	XID parameters	00000000	xxxxxx	FCS 24 bits

Information field either 200 or 536 bits   x= don't care

a.) version 0 and 1

Header 16 bits	N(R) 9 bits	xxxxxxx	XID parameters	00000000	xxxxxx	FCS 24 bits

Information field either 200 or 536 bits   x= don't care

b.) version 2

Figure 3: REMAP U-frame format

***   Next modified section   ***

5.4 Transitions between 240 bit and 576 bit frame lengths

The RLP has to change the supported frame length due to transitions between different channel codings. The RLP entities have to be re-synchronised after a change of the channel coding.

Any change of the channel coding is indicated to the RLP- entity by an external event. The RLP-entity at the mobile-end enters the synchronisation state when it receives a relevant Radio Resource Management message, and it starts sending the REMAP-messages at the earliest possible time. The RLP-entity at the network-end enters the synchronisation state when the network-end detects Layer 1 synchronisation after a change of channel coding. The change of channel coding is eventually confirmed by an outband signalling message.

On entering the synchronisation state timers are halted and zeroed, and the TX- and RX-windows are frozen. When the RLP entity enters the synchronisation state it clears all SREJ or REJ conditions, discards all out-of-sequence frames received and clears all previous re-transmission requests received by any SREJ.

After this the mobile-end starts a REMAP-exchange (Section 5.2.2.9). When an RLP-entity receives a REMAP-frame, it moves the user information contained by the frames to be remapped from the TX-window to a transition buffer between the RLP- and L2R-entities. The L2R uses the information in this buffer before mapping new data into the PDUs. The network-end regards the REMAP-procedure as completed when it has received an I+S-frame, an S-frame or an SABM U-frame from the mobile-end, whereas the mobile-end leaves the synchronisation state after receiving a responding REMAP-frame or an SABM U-frame. The data in the transition buffer at the network-end must not be deleted before an I+S-, or an S-frame is received from the mobile-end.

No Supervisory or Information transfer frames or XID U frames are ~~exchanged before the REMAP exchange is completed~~discarded by the receiving entity while in REMAP synchronisation state. If the RLP entity receives another U-frame, it reacts according to the defined procedures. That is, if the frame is an SABM frame it performs a reset procedure and leaves the synchronisation state. If the frame is NULL, UI or TEST frame, RLP performs the defined procedure and remains in the synchronisation state. In the case of a DISC frame RLP terminates ABM and goes into ADM.

After the REMAP-procedure is completed, the RLP-entities leave the synchronisation state and normal operation is resumed. On resuming the normal operation, the TX- and RX- windows are emptied. The N(S)-numbering resumes from the value indicated in the REMAP-message by the N(R)-number.

Abortion of the transition or another transition taking place during the REMAP-procedure restarts the REMAP-procedure in order to resume operation using the channel coding corresponding to the latest transition.

3G CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

29.007 CR **005** Current Version: 3.2.0

3G specification number ↑   *↑ CR number as allocated by 3G support team*

For submission to TSG   CN#6   for approval   X   *(only one box should*
list TSG meeting no. here ↑   for information   *be marked with an X)*

Form: 3G CR cover sheet, version 1.0   The latest version of this form is available from: ftp://ftp.3gpp.org/Information/3GCRF-xx.rtf

Proposed change affects: USIM ☐   ME ☐   UTRAN ☐   Core Network **X**
(at least one should be marked with an X)

Source: N3   **Date:** 20/10/99

Subject: Clarification of the VMSC Behaviour in case of interworking

3G Work item: Technical Enhancements and Improvements

Category: F   Correction   ☐
            A   Corresponds to a correction in a 2G specification   ☐
(only one category   B   Addition of feature   ☐
shall be marked   C   Functional modification of feature   ☐
with an X)   D   Editorial modification   **X**

Reason for change: Due to the fact, that some national specifications on ISUP interworking require a special behaviour, following happens quite often:
In case of a mobile terminated international FAX/Data Call, at the VMSC incoming IAM with the MSRN, contains a complete "Speech" ISDN BC, which differs from the one stored in the VLR, received with the MAP Beg " Provide Roaming Number" message. The recommendation does not define clearly, which BC shall apply in this case, although we believe there is a common understanding, that the VLR BC shall be used in general, with some exceptions. Thus, some implementations exist, which prefer in this case the IAM/ISDN BC than the GSM/ISDN BC from the VLR. This fact leads to unsuccessful calls. The CR adds an addition to Chapter 10.2.2.4 stating clearly the behaviour of the VMSC in the above mentioned case.

Clauses affected: 10.2.2.4 Functions in VMSC

Other specs affected: Other 3G core specifications   ☐ → List of CRs:
                    Other 2G core specifications   ☐ → List of CRs:
                    MS test specifications   ☐ → List of CRs:
                    BSS test specifications   ☐ → List of CRs:
                    O&M specifications   ☐ → List of CRs:

Other comments:

At the VMSC, when the incoming call arrives, the LLC/HLC and the GSM or ISDN BC associated with the MSRN is retrieved from the VLR. Generally the GSM BC, LLC and HLC received from the VLR are sent ~~with the GSM BC in general~~ to the MS at call set-up.

~~In particular, however~~However, the following rules apply:

1) If the Initial Address Message (IAM) contains no ISDN BC and there is no GSM or ISDN BC/LLC/HLC retrieved from the VLR, the call is handled as subclause 9.2.2 case b.

~~2) If there is no ISDN BC in the IAM but a GSM or ISDN BC/LLC/HLC was signalled in the "provide roaming number" message, the retrieved GSM or ISDN BC/LLC/HLC applies.~~

2~~3~~) If there is an ISDN BC in the IAM with the ITC field set to "3,1 kHz audio" but without any associated modem type or indication of facsimile group 3 in the HLC, the GSM or ISDN BC/LLC/HLC retrieved from the VLR is considered as applicable when it exists. If no GSM or ISDN BC is retrieved from the VLR, the call is handled as in subclause 9.2.2 case b.

3~~4~~) If the ISDN BC received in the IAM has the ITC field set to the value "unrestricted digital information" and the fields for the applicable "user layer 1 protocol" and "user rate" are available (either in the ISDN BC or ISDN LLC), or if 3,1 kHz audio and a modem type is indicated, this ISDN BC is applicable regardless of what has been retrieved from the VLR. In this case the ISDN BC has to be mapped to an appropriate GSM BC (refer to table 7B).

4~~5~~) If the ISDN BC received in the IAM has the ITC field set to the value "3,1kHz audio" and a HLC "facsimile group 3" is indicated, the GSM BC retrieved from the VLR is applicable when it exists. If a GSM BC-IE with the parameter "information transfer capability" set to "alternate speech/facsimile group 3, starting with speech" (stating TS61) is retrieved from the VLR, this shall be mapped to two GSM BC-IE preceded by a repeat indicator, one representing speech, the other representing facsimile group 3.

When no GSM BC is retrieved from the VLR, either two GSM BCs preceded by a repeat indicator (stating teleservice 61), or a single GSM BC-IE (stating TS 62), are sent in the setup message, depending whether TS 61 or TS 62 is subscribed (see also subclause 10.3.1.3).

In case of TS 61, the order in which the two GSM BC-IEs are sent towards the MS, in the setup message, is a network option.

6) If the ISDN BC received in the IAM has a ITC value "unrestricted digital information" but without applicable "user layer 1 protocol" and "user rate", etc. fields, neither in the ISDN BC nor ISDN LLC, then the GSM or ISDN BC/LLC retrieved from the VLR is applicable, if available otherwise subclause 9.2.2 case b applies.

In case of an ISDN BC/LLC/HLC was attached to the MSRN this has to be mapped to an appropriate GSM BC (refer to table 7B). However in both cases (GSM or ISDN BC attached) the PLMN specific parameters of the GSM BC-IEs may be added/modified in line with procedures identified in subclause 9.2.2.

In all cases when no GSM or ISDN BC is retrieved from the VLR and no ISDN Compatibility information allowing deduction of a GSM Bearer Service is available, then no GSM BC is inserted by the VMSC and subclause 9.2.2 case b applies.
The mapping between GSM and ISDN BCs is shown in table 7.