

**TSG-RAN Meeting #13
Beijing, China, 18 - 21, September, 2001**

TSGRP#13(01) 0696

Title: Agreed CRs to TS 25.415

Source: TSG-RAN WG3

Agenda item: 8.3.3/8.3.4/9.4.3

RP Tdoc	R3 Tdoc	Spec	CR_Num	Rev	Release	CR_Subject	Cat	Cur_Ver	New_Ver	Workitem
RP-010696	R3-012729	25.415	071	2	R99	Coding of no_data mode	F	3.7.0	3.8.0	TEI
RP-010696	R3-012730	25.415	072	2	Rel-4	Coding of no_data mode	A	4.1.0	4.2.0	TEI

CHANGE REQUEST

⌘ **25.415** **CR 071** ⌘ rev **2** ⌘ Current version: **3.7.0** ⌘

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Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Coding of No_Data mode		
Source:	⌘ R-WG3		
Work item code:	⌘ TEI	Date:	⌘ 30 July 2001
Category:	⌘ F	Release:	⌘ R99
	<i>Use <u>one</u> of the following categories:</i> F (essential correction) A (corresponds to a correction in an earlier release) B (Addition of feature), C (Functional modification of feature) D (Editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900.		<i>Use <u>one</u> of the following releases:</i> 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)

Reason for change:	⌘ R2: Updated Table A.1: changed Total 1 to 244 and Total 3 to 39. In RAN3#22 it was agreed that “there could be the need that the RNC send no_data all 20ms but this should be avoided to avoid service-related impacts”. Since the RNC decides on the initialised modes, it should be clearly stated that both termination points of the Iu UP shall be capable to operate without using the NO_DATA mode. The initialisation of the No_Data mode only means that it may be used by the sender and therefore means that it is of necessary support but not of mandatory use.		
Summary of change:	⌘ The use of no_data mode when initialised is clarified to be optional.		
Consequences if not approved:	⌘ Interoperability issues are foreseen due to different interpretations of the use of no_data mode. Compatibility: This CR is backwards compatible.		

Clauses affected:	⌘ 6.5.2.1		
Other specs affected:	⌘ <input checked="" type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘ TS25.415 CR072 REL-4	
Other comments:	⌘		

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- 1) Fill out the above form. The symbols above marked ☒ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://www.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

6.5.2 Initialisation procedure

6.5.2.1 Successful operation

This procedure is mandatory for RABs using the support mode for predefined SDU size. The purpose of the initialisation procedure is to configure both termination points of the Iu UP with ~~the RABs Subflow Combinations, RFCIs, FCI_s~~ and associated RAB Sub Flows SDU sizes necessary to be supported during the transfer of user data phase.

Additional parameters may also be passed, such as the Inter PDU Timing Interval (IPTI) information.

The initialisation procedure is always controlled by the entity in charge of establishing the Radio Network Layer User Plane i.e. SRNC.

The initialisation procedure is invoked whenever indicated by the Iu UP Procedure Control function e.g. as a result of a relocation of SRNS or at RAB establishment over Iu. The initialisation procedure shall not be re-invoked for the RAB without a RAB modification requested via RANAP [3].

When this procedure is invoked all other Iu UP procedures are suspended until termination of the initialisation procedure.

The RNC indicates the Iu UP Mode version it uses for the initialisation as well as the Iu UP Mode versions it supports for the related RAB. The sender should use the lowest version for the initialisation that has enough information to initialise the highest proposed protocol version.

The SRNC allocates a RAB sub-Flow Combination indicator (RFCI) to each RAB sub-Flow Combination it initialises. The association of indicators to RAB Flow Combinations is valid in the Iu UP until a new initialisation procedure is performed or the connection is terminated.

The procedure control function may also generate additional Iu UP protocol parameters necessary for the RAB service to operate properly over Iu.

To each RAB sub-Flow combination indicator is associated the size of each RAB sub-Flow SDU of that combination. The list of RAB sub-Flow Combination Indicators and their respective SDU sizes constitutes the RAB sub-Flow Combination set passed over the Iu UP in the initialisation frame i.e. into an appropriate Iu UP PDU Type.

The first RAB sub-Flow Combination proposed in the list of RAB sub-Flow Combination indicates the initial RAB sub-Flow Combination i.e. the first RAB sub-Flow Combination to be used when starting the communication phase i.e. the transfer of user data procedure. The RAB sub-Flow Combination “NO_DATA” (defined by the length of all subflows set to zero) shall not be used as the first RFC in the proposed list of RAB sub-Flow Combinations.

Any RAB Sub-Flow Combination of the set that is initialised shall be supported by the two Iu UP termination points and may optionally be used by the sender (except for the first in the list that shall be used when starting). In particular, the use by the sender of the RFC “NO_DATA” is optional even when it is included in the initialisation procedure.

Conversely, any RAB Sub-Flow Combination that is not part of the initialised set shall not be used even if supported. In particular, the two Iu UP termination points shall be capable of operating without the use of the RFC NO_DATA.

The complete set of information is framed by the Iu UP Frame Handler function and transferred in an Iu UP initialisation frame. If needed, the initialisation frame CRC is calculated and set accordingly in the respective frame field.

A supervision timer T_{INT} is started after sending the Iu UP initialisation frame. This timer supervises the reception of the initialisation acknowledgement frame.

Upon reception of a frame indicating that an initialisation control procedure is active in the peer Iu UP entity, the Iu UP protocol layer forwards to the upper layers the RAB sub-Flow Combination set to be used by the Control procedure function. It also stores the RAB sub-Flow Combination set in order to control during the transfer of user data, that the Iu UP payload is correctly formatted (e.g. RFCI matches the expected Iu UP frame payload total length). The CN entity receiving the initialisation message shall choose a version that it supports and for which it has enough initialisation information.

If the initialisation frame is correctly formatted and treated by the receiving Iu UP protocol layer, this latter sends an initialisation acknowledgement frame using the version of the Iu UP Mode that is chosen.

Upon reception of an initialisation acknowledgement frame, the Iu UP protocol layer in the SRNC stops the supervision timer T_{INIT} .

If the initialisation procedure requires that several frames are to be sent, each frame shall be acknowledged individually (i.e. any frame to be sent shall wait for the acknowledgement of the previous sent frame to be received before being sent). The supervision timer shall be used individually for each frame being sent.

The successful operation of the initialisation procedure may require that one or several chained frames are positively acknowledged. The number of initialisation frames in such a chain shall not exceed 4. Each chained frame shall be positively acknowledged before the one with the next frame number can be sent.

The frame number of an initialisation frame shall always be set to zero when the chain has only one frame. When several initialisation frames are used in a chain the frame number shall be set to zero for the first one and incremented by one in the sending direction for each new frame in the chain. The positive acknowledgement or negative acknowledgement shall carry the frame number of the frame being acknowledged.

Upon reception of an initialisation negative acknowledgement frame, an erroneous acknowledgement or at timer T_{INIT} expiry, the Iu UP protocol layer in the SRNC shall reset and restart the T_{INIT} supervision timer and repeat one initialisation frame with the same frame number. The repetition shall be performed up to N_{INIT} times, N_{INIT} being chosen by the operator (default $N_{INIT} = 3$). The N_{INIT} (maximum number of allowed repetitions) is the aggregate count for each frame in the chain and is restart each time a frame is positively acknowledged.

Consequently, when in the communication phase (as indicated by internal functions in the Radio Network layer), the frame transmission starts in downlink in the initial RFCI.

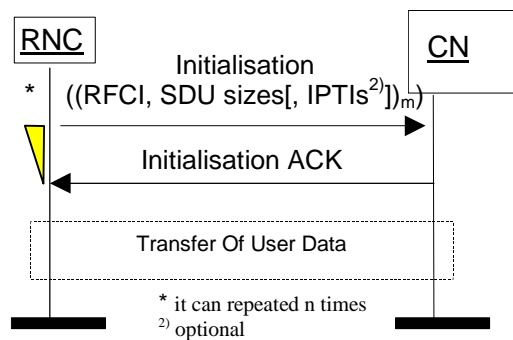


Figure 9: Successful Initialisation of Iu UP for m RFCIs

6.5.2.2 Unsuccessful operation

If the initialisation frame is incorrectly formatted and cannot be correctly treated by the receiving Iu UP protocol layer, this latter sends an initialisation negative acknowledgement frame.

If the receiver does not support the Iu UP Mode version for the initialisation procedure, it shall send a negative acknowledgement using the highest version it supports among the versions proposed by the sender. If none of the proposed versions are supported, the receiver shall respond with a negative acknowledgement using the highest version it supports.

After N_{INIT} successive negative acknowledgment, erroneous acknowledgment or timer T_{INIT} expiry for initialisation frames having the same frame number, the initialisation procedure is unsuccessfully terminated. The Iu UP protocol layers (sending and receiving) take appropriate local actions.

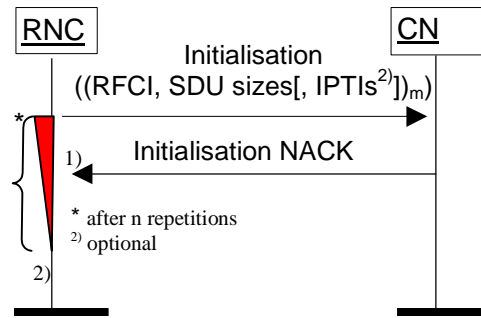


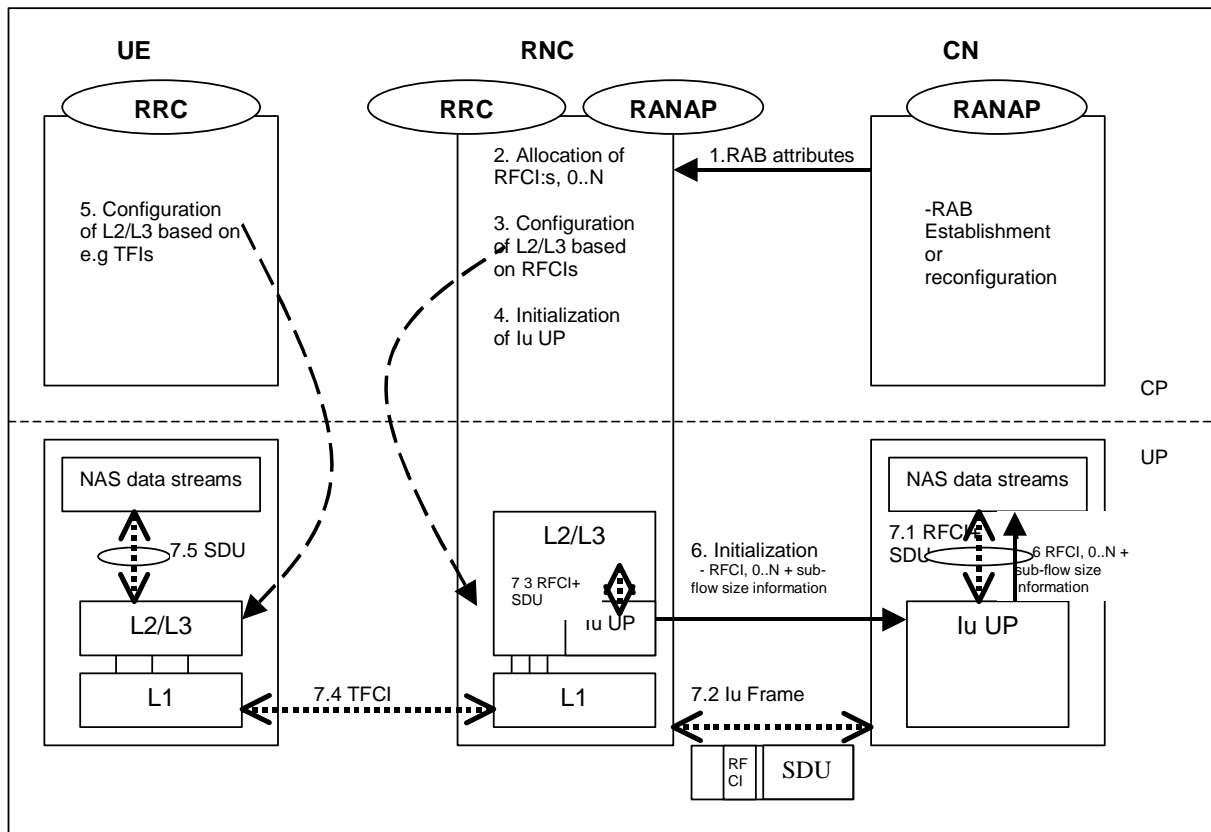
Figure 10: Unsuccessful initialisation of lu UP: 1) N_{INIT} negative acknowledgement or 2) N_{INIT} timer expires

Next Modified Section

Annex A (informative): Illustration of usage of RFCI for AMR speech RAB

This annex contains information related to usage of RFCIs in the context of AMR speech RAB.

The following figure illustrates the RFCI allocation and flow throughout the UTRAN.



1. **RAB Attributes:** at RAB establishment or reconfiguration, the SDU format information parameter is passed to UTRAN. The SDU information is organised per BER i.e. RAB sub Flow. For instance, 12,2 kbits/s AMR codec is passed as RAB sub flow 1 SDU size: 81 bits –class A bits-, as RAB sub flow 2 SDU size: 103 bits –class B bits-, as RAB sub flow 3 SDU size: 60 bits –class C-, which makes one RAB sub Flow Combination. This is done for all source rates (i.e. all codec modes, DTX also if included). So using the RAB subflows combination set from Table A.1, the SDU Formation Information Parameters for RAB subflow 1 is [0,3981,39,39,084], for RAB subflow 2 is [1030,0,56,0,0403], and for RAB subflow 3 is [0,0,0,60,0,0,0]. The Iu UP is used in support mode for predefined SDU size.
2. **Allocation of RFCIs:** the RNC dynamically allocates an identification (RFCI) to each permitted/possible combinations it can offer. E.g. for 0 kbits/s, the RNC allocates RFCI 0, for the SID, the RNC allocates RFCI 34, for 4,75 kbits/s, the RNC allocates RFCI 2, and for 12,2. kbits/s, the RNC allocates RFCI 13 (according to the example table A.1).
3. **Configuration of L2/L3 based on RFCIs:** RFCIs are used to configure the L2/L3. RLC is used in transparent mode. MAC configures its co-ordinated DCHs with the RFCIs and associates one RFCI to one TFI.
4. **Initialisation of Iu UP:** the RNC reports the permitted combinations it can offer to the transcoder using an inband Iu initialisation frame containing the RFCIs and associated RAB sub Flow sizes.
5. **Configuration of L2/L3 based on e.g. TFI:** idem as 3. L2/L3 may use e.g. TFI to communicate with the Codec about the RAB sub-Flow structure of the SDU received or to be sent.
6. **RFCIs+ SDU size information:** the RFCIs and associated RAB sub Flow sizes received within the Iu initialisation frame are passed to the Codec for configuration.
7. **Example of DL frame transfer:**
 - 7.1. The Codec encodes a 12,2 kbits/s frame. It sends down to the Iu UP an SDU with an associated RFCI equals to 13 (in this example).
 - 7.2. The Iu UP packs a frame with a header containing an RFCI set to value 13, and the payload made of the SDU received from the Codec.
 - 7.3. The Iu UP passes to L2/L3, the Iu frame payload (the Codec SDU) and the RFCI. The L2/L3 uses this RFCI to break the Iu frame onto the co-ordinated DCHs corresponding to the different bits protection classes. The corresponding TFI is selected.
 - 7.4. The radio frame is sent with the TFI chosen by MAC.
 - 7.5. The L2/L3 receives the SDUs on the co-ordinated DCHs, combines them back and uses e.g. the TFI to indicate to the codec the structure of the received frame.

Figure A.1

For information on RAB subflow combinations used for AMR speech see reference [12].

SRNC allocates one or more possible/available RAB sub-flow combination(s) and generates RAB sub-flow combination set. RAB sub-flow combination number is dynamically generated by SRNC. This RAB sub-flow combination set is signalled towards CN with user plane signalling as described in [1]. The signalling towards UE is to be defined by TSG-RAN WG2.

RAB sub-flow combination set:

A RAB sub-flow combination indicator, RFCI, indicates which RAB sub flow combination will be used for the Iu user frames. In the communication phase the RFCI is included in the user frame, and the RFCI state the structure of the user frame.

Table A.1 exemplifies the allocation of 4 different RAB sub-flows combinations for 3 sub-flows and generating of RAB sub-flows combination set.

Table A.1: Example of Allocation of RAB sub-flows combination indicator

	RFCI (RAB sub- Flow Combination Indicator)	RAB sub- Flow 1	RAB sub- flow 2	RAB sub- flow 3	Total	Source rate
RAB sub- flows combina tion set	0	0	0	0	0	Source rate 1
	1	8139	1030	600	3924 4	Source rate 12
	2	39	56	0	95	Source rate 23
	3	3984	403	60	2443 9	Source rate 34
	0	0	0	0	0	Source rate 4
NOTE:	In the table above the greyed area shows the part that is sent in the initialisation procedure in Iu UP. This is what constitutes the RAB subflow combination set.					

CHANGE REQUEST

⌘ **25.415** **CR 072** ⌘ rev **2** ⌘ Current version: **4.1.0** ⌘

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Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Coding of No_Data mode		
Source:	⌘ R-WG3		
Work item code:	⌘ TEI	Date:	⌘ 30 July 2001
Category:	⌘ A	Release:	⌘ REL-4
<p>Use <u>one</u> of the following categories:</p> <p>F (essential correction) A (corresponds to a correction in an earlier release) B (Addition of feature), C (Functional modification of feature) D (Editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p>		<p>Use <u>one</u> of the following releases:</p> <p>2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)</p>	

Reason for change:	⌘ R2: Updated Table A.1: changed Total 1 to 244 and Total 3 to 39.		
	<p>In RAN3#22 it was agreed that “there could be the need that the RNC send no_data all 20ms but this should be avoided to avoid service-related impacts”.</p> <p>Since the RNC decides on the initialised modes, it should be clearly stated that both termination points of the Iu UP shall be capable to operate without using the NO_DATA mode. The initialisation of the No_Data mode only means that it may be used by the sender and therefore means that it is of necessary support but not of mandatory use.</p>		
Summary of change:	⌘ The use of no_data mode when initialised is clarified to be optional.		
Consequences if not approved:	⌘ Interoperability issues are foreseen due to different interpretations of the use of no_data mode. Compatibility: This CR is backwards compatible.		

Clauses affected:	⌘ 6.5.2.1		
Other specs affected:	<input checked="" type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘ TS25.415 CR071 R99	
Other comments:	⌘		

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- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

6.5.2 Initialisation procedure

6.5.2.1 Successful operation

This procedure is mandatory for RABs using the support mode for predefined SDU size. The purpose of the initialisation procedure is to configure both termination points of the Iu UP with ~~the~~ RABs Subflows Combinations, RFCIs, FCI_s and associated RAB Sub Flows SDU sizes necessary to be supported during the transfer of user data phase. Additional parameters may also be passed, such as the Inter PDU Timing Interval (IPTI) information.

The initialisation procedure may be controlled at both end of the Iu access point, i.e. the CN and UTRAN.

The initialisation procedure is invoked whenever indicated by the Iu UP Procedure Control function e.g. as a result of a relocation of SRNS or at RAB establishment over Iu or if the CN decides to resolve RFCI mismatch in case of TrFO (see [13]). The initialisation procedure shall not be re-invoked by the SRNC for the RAB without a RAB modification requested via RANAP [3].

When this procedure is invoked all other Iu UP procedures are suspended until termination of the initialisation procedure.

The Iu UP protocol entity invoking this procedure indicates the Iu UP Mode version it uses for the initialisation as well as the Iu UP Mode versions it supports for the related RAB. The sender should use the lowest version for the initialisation that has enough information to initialise the highest proposed protocol version.

The invoking entity allocates a RAB sub-Flow Combination indicator (RFCI) to each RAB sub-Flow Combination it initialises. The association of indicators to RAB Flow Combinations is valid for both the uplink and downlink direction in the Iu UP until a new initialisation procedure is performed or the connection is terminated.

The procedure control function may also generate additional Iu UP protocol parameters necessary for the RAB service to operate properly over Iu.

To each RAB sub-Flow combination indicator is associated the size of each RAB sub-Flow SDU of that combination. The list of RAB sub-Flow Combination Indicators and their respective SDU sizes constitutes the RAB sub-Flow Combination set passed over the Iu UP in the initialisation frame i.e. into an appropriate Iu UP PDU Type.

The first RAB sub-Flow Combination proposed in the list of RAB sub-Flow Combination indicates the initial RAB sub-Flow Combination i.e. the first RAB sub-Flow Combination to be used when starting the communication phase i.e. the transfer of user data procedure. The RAB sub-Flow Combination “NO DATA” (defined by the length of all subflows set to zero) shall not be used as the first RFC in the proposed list of RAB sub-Flow Combinations.

Any RAB Sub-Flow Combination of the set that is initialised shall be supported by the two Iu UP termination points and may optionally be used by the sender (except for the first in the list that shall be used when starting). In particular, the use by the sender of the RFC “NO DATA” is optional even when it is included in the initialisation procedure.

Conversely, any RAB Sub-Flow Combination that is not part of the initialised set shall not be used even if supported. In particular, the two Iu UP termination points shall be capable of operating without the use of the RFC NO DATA.

The complete set of information is framed by the Iu UP Frame Handler function and transferred in an Iu UP initialisation frame. If needed, the initialisation frame CRC is calculated and set accordingly in the respective frame field.

A supervision timer T_{INT} is started after sending the Iu UP initialisation frame. This timer supervises the reception of the initialisation acknowledgement frame.

Upon reception of a frame indicating that an initialisation control procedure is active in the peer Iu UP entity, the Iu UP protocol layer forwards the whole protocol information contained in the initialisation frame to the upper layers. It also stores the RAB sub-Flow Combination set (and thus replaces a possible previous set) in order to control during the transfer of user data, that the Iu UP payload is correctly formatted (e.g. RFCI matches the expected Iu UP frame payload total length). The peer Iu UP entity receiving the initialisation message shall choose a version that it supports and for which it has enough initialisation information.

If the initialisation frame is correctly formatted and treated by the receiving Iu UP protocol layer, this latter sends an initialisation acknowledgement frame using the version of the Iu UP Mode that is chosen.

Upon reception of an initialisation acknowledgement frame, the Iu UP protocol layer in the SRNC stops the supervision timer T_{INIT} .

If the initialisation procedure requires that several frames are to be sent, each frame shall be acknowledged individually (i.e. any frame to be sent shall wait for the acknowledgement of the previous sent frame to be received before being sent. The supervision timer shall be used individually for each frame being sent.

The successful operation of the initialisation procedure may require that one or several chained frames are positively acknowledged. The number of initialisation frames in such a chain shall not exceed 4. Each chained frame shall be positively acknowledged before the one with the next frame number can be sent.

The frame number of an initialisation frame shall always be set to zero when the chain has only one frame. When several initialisation frames are used in a chain the frame number shall be set to zero for the first one and incremented by one in the sending direction for each new frame in the chain. The positive acknowledgement or negative acknowledgement shall carry the frame number of the frame being acknowledged.

Upon reception of an initialisation negative acknowledgement frame, an erroneous acknowledgement or at timer T_{INIT} expiry, the Iu UP protocol entity controlling the initialisation procedure shall reset and restart the T_{INIT} supervision timer and repeat one initialisation frame with the same frame number. The repetition shall be performed up to N_{INIT} times, N_{INIT} being chosen by the operator (default $N_{INIT} = 3$). The N_{INIT} (maximum number of allowed repetition) is the aggregate count for each frame in the chain and is restart each time a frame is positively acknowledged.

Consequently, when in the communication phase (as indicated by internal functions in the Radio Network layer), the frame transmission starts in downlink in the initial RFCI.

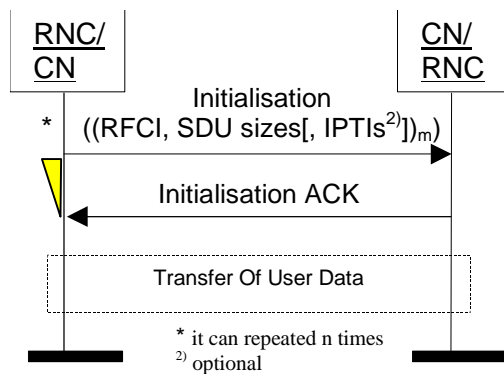


Figure 9: Successful Initialisation of Iu UP for m RFCIs

6.5.2.2 Unsuccessful operation

If the initialisation frame is incorrectly formatted and cannot be correctly treated by the receiving Iu UP protocol layer, this latter sends an initialisation negative acknowledgement frame.

If the receiver does not support the Iu UP Mode version for the initialisation procedure, it shall send a negative acknowledgement using the highest version it supports among the versions proposed by the sender. If none of the proposed versions are supported, the receiver shall respond with a negative acknowledgement using the highest version it supports.

After N_{INIT} successive negative acknowledgment, erroneous acknowledgment or T_{INIT} expiry for initialisation frames having the same frame number, the initialisation procedure is unsuccessfully terminated and the Iu UP protocol layers in RNC take appropriate local actions.

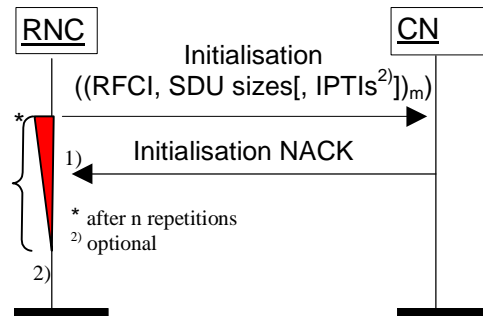
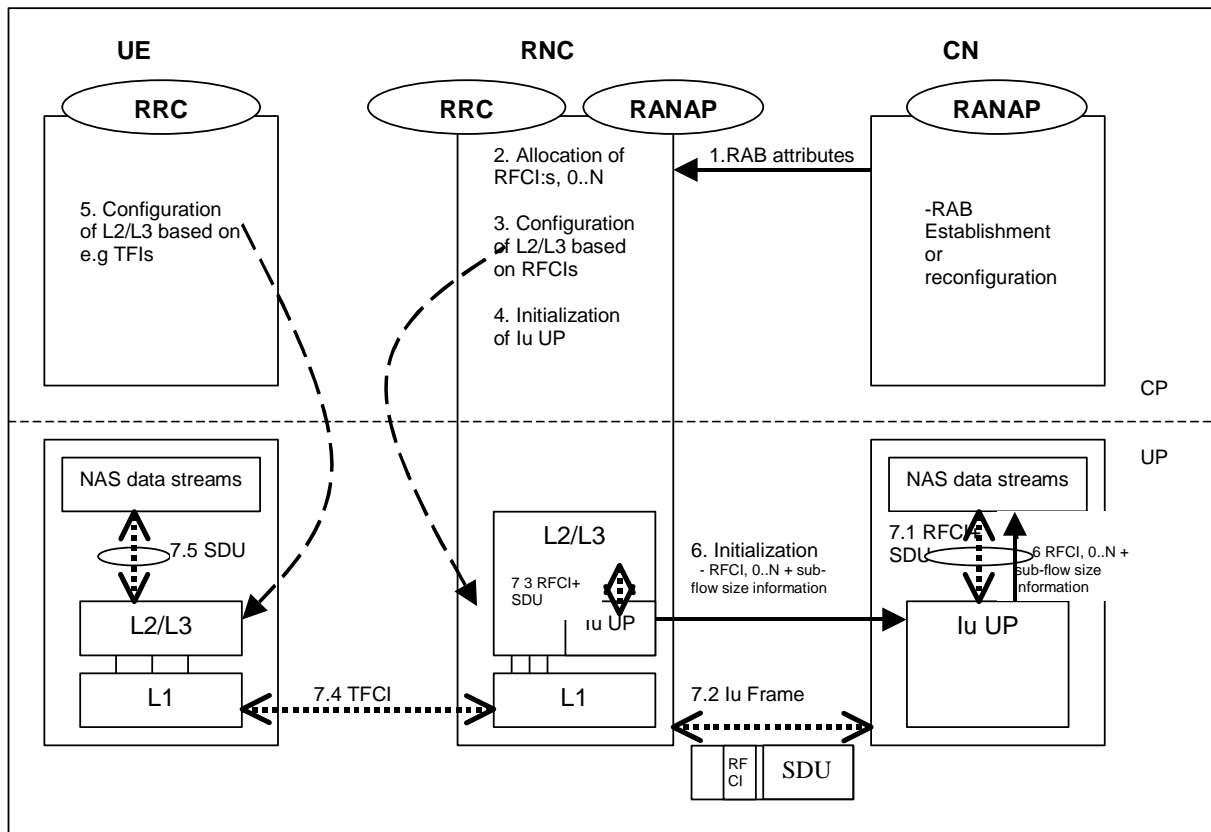


Figure 10: Unsuccessful initialisation of Iu UP: 1) N_{INIT} negative acknowledgement or 2) N_{INIT} timer expires

Annex A (informative): Illustration of usage of RFCI for AMR speech RAB

This annex contains information related to usage of RFCIs in the context of AMR speech RAB.

The following figure illustrates the RFCI allocation and flow throughout the UTRAN.



1. **RAB Attributes:** at RAB establishment or reconfiguration, the SDU format information parameter is passed to UTRAN. The SDU information is organised per BER i.e. RAB sub Flow. For instance, 12,2 kbits/s AMR codec is passed as RAB sub flow 1 SDU size: 81 bits –class A bits-, as RAB sub flow 2 SDU size: 103 bits –class B bits-, as RAB sub flow 3 SDU size: 60 bits –class C-, which makes one RAB sub Flow Combination. This is done for all source rates (i.e. all codec modes, DTX also if included). So using the RAB subflows combination set from Table A.1, the SDU Formation Information Parameters for RAB subflow 1 is [810,39,39,840], for RAB subflow 2 is [1030,560,056,403], and for RAB subflow 3 is [60,0,0,60]. The lu UP is used in support mode for predefined SDU size.
2. **Allocation of RFCIs:** the RNC dynamically allocates an identification (RFCI) to each permitted/possible combinations it can offer. E.g. for 0 kbits/s, the RNC allocates RFCI 0, for the SID, the RNC allocates RFCI 13, for 4,75 kbits/s, the RNC allocates RFCI 2, and for 12,2. kbits/s, the RNC allocates RFCI 31 (according to the example table A.1).
3. **Configuration of L2/L3 based on RFCIs:** RFCIs are used to configure the L2/L3. RLC is used in transparent mode. MAC configures its co-ordinated DCHs with the RFCIs and associates one RFCI to one TFI.
4. **Initialisation of lu UP:** the RNC reports the permitted combinations it can offer to the transcoder using an inband lu initialisation frame containing the RFCIs and associated RAB sub Flow sizes.
5. **Configuration of L2/L3 based on e.g. TFIs:** idem as 3. L2/L3 may use e.g. TFI to communicate with the Codec about the RAB sub-Flow structure of the SDU received or to be sent.
6. **RFCIs+ SDU size information:** the RFCIs and associated RAB sub Flow sizes received within the lu initialisation frame are passed to the Codec for configuration.
7. **Example of DL frame transfer:**
 - 7.1. The Codec encodes a 12,2 kbits/s frame. It sends down to the lu UP an SDU with an associated RFCI equals to 13 (in this example).
 - 7.2. The lu UP packs a frame with a header containing an RFCI set to value 13, and the payload made of the SDU received from the Codec.
 - 7.3. The lu UP passes to L2/L3, the lu frame payload (the Codec SDU) and the RFCI. The L2/L3 uses this RFCI to break the lu frame onto the co-ordinated DCHs corresponding to the different bits protection classes. The corresponding TFI is selected.
 - 7.4. The radio frame is sent with the TFCI chosen by MAC.
 - 7.5. The L2/L3 receives the SDUs on the co-ordinated DCHs, combines them back and uses e.g. the TFI to indicate to the codec the structure of the received frame.

Figure A.1

For information on RAB subflow combinations used for AMR speech see reference [12].

SRNC allocates one or more possible/available RAB sub-flow combination(s) and generates RAB sub-flow combination set. RAB sub-flow combination number is dynamically generated by SRNC. This RAB sub-flow combination set is signalled towards CN with user plane signalling as described in [1]. The signalling towards UE is to be defined by TSG-RAN WG2.

RAB sub-flow combination set:

A RAB sub-flow combination indicator, RFCI, indicates which RAB sub flow combination will be used for the Iu user frames. In the communication phase the RFCI is included in the user frame, and the RFCI state the structure of the user frame.

Table A.1 exemplifies the allocation of 4 different RAB sub-flows combinations for 3 sub-flows and generating of RAB sub-flows combination set.

Table A.1: Example of Allocation of RAB sub-flows combination indicator

	RFCI (RAB sub- Flow Combination Indicator)	RAB sub- Flow 1	RAB sub- flow 2	RAB sub- flow 3	Total	Source rate
RAB sub- flows combina tion set	0	0	0	0	0	Source rate 1
	1	8139	103	60	3924 4	Source rate 12
	2	39	56	0	95	Source rate 23
	3	3984	403	60	2443 9	Source rate 34
	0	0	0	0	0	Source rate 4
NOTE: In the table above the greyed area shows the part that is sent in the initialisation procedure in Iu UP. This is what constitutes the RAB subflow combination set.						