TSG-RAN Meeting #7 *RP-000036*
Madrid, Spain, 13 – 15 March 2000

Title: **Agreed CRs to TS 25.303**

Source: **TSG-RAN WG2**

Agenda item: **6.3.3**

Doc-1st-	Spec	CR	Rev	Subject	Cat	Version	Versio
R2-000565	25.303	022	4	CPCH start of message indication	B	3.2.0	3.3.0
R2-000151	25.303	023		Correction to Transport Format	F	3.2.0	3.3.0
R2-000564	25.303	025	1	CPCH Emergency Stop sequence	B	3.2.0	3.3.0
R2-000527	25.303	026	1	Variable Rate Packet Transmission for	D	3.2.0	3.3.0
R2-000432	25.303	027		Random access transmission sequence	C	3.2.0	3.3.0

3GPP TSG-RAN WG2 Meeting #10
San Diego, CA, USA 17th-21st Jan 2000

***Document* R2-000565**
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

CHANGE REQUEST

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

25.303	**CR**	**022r4**	Current Version:	3.2.0

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

For submission to: TSG-RAN #7	for approval	X	strategic		(for SMG use only)
list expected approval meeting # here ↑	for information		non-strategic		

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 [X] UTRAN / Radio [X] Core Network [ ]
(at least one should be marked with an X)

Source: TSG-RAN WG2 **Date:** 1st March .2000

Subject: CPCH start of message indication

Work item:

Category:				**Release:**	
	F	Correction		Phase 2	
	A	Corresponds to a correction in an earlier release		Release 96	
(only one category	B	Addition of feature	X	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: To incorporate CPCH start of message indication this CR modifies the CPCH transmission flow.

Clauses affected: 6.3.3

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.

6.3.3 ~~Acknowledged-mode data~~Data transmission on CPCH

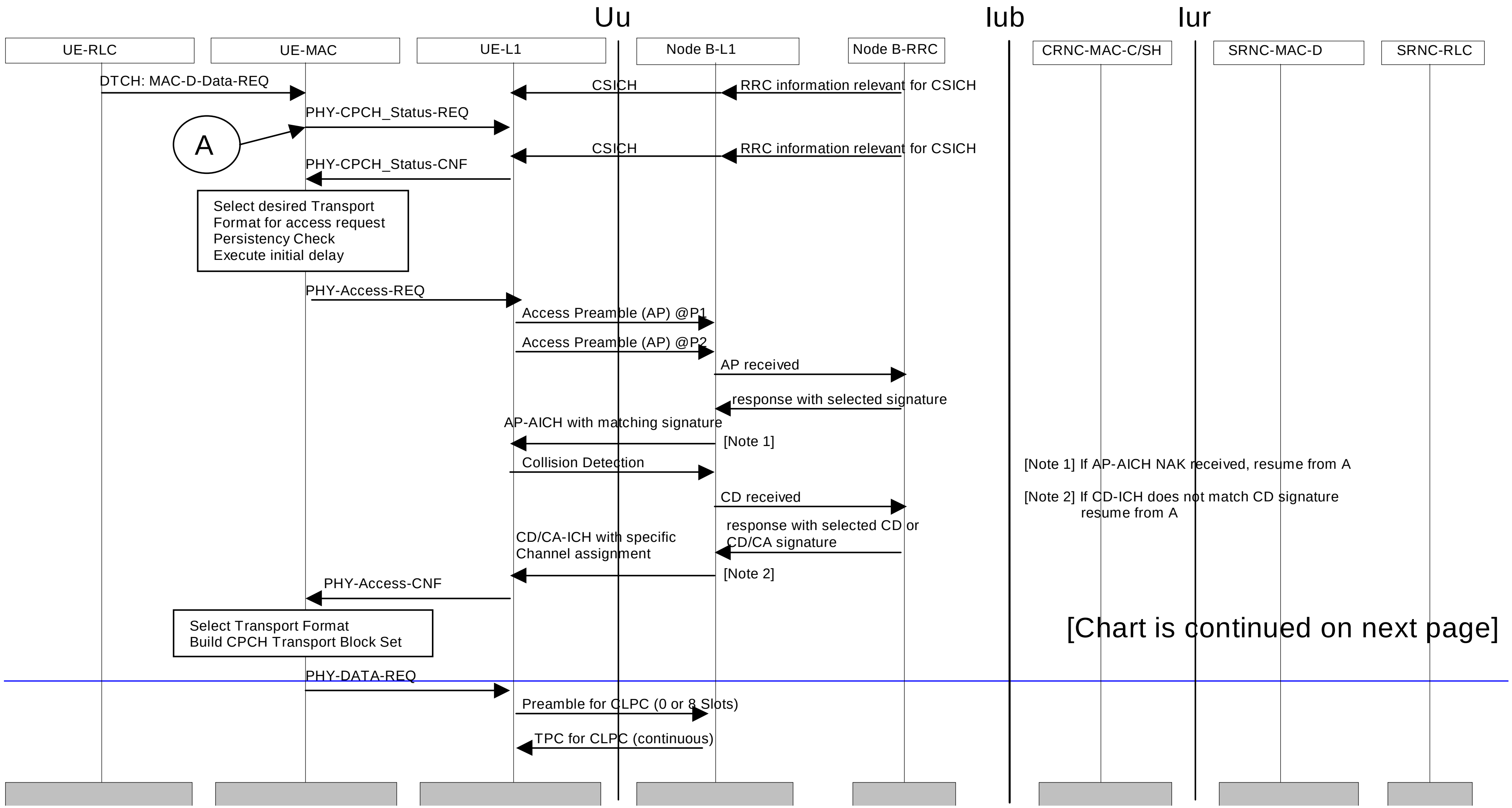
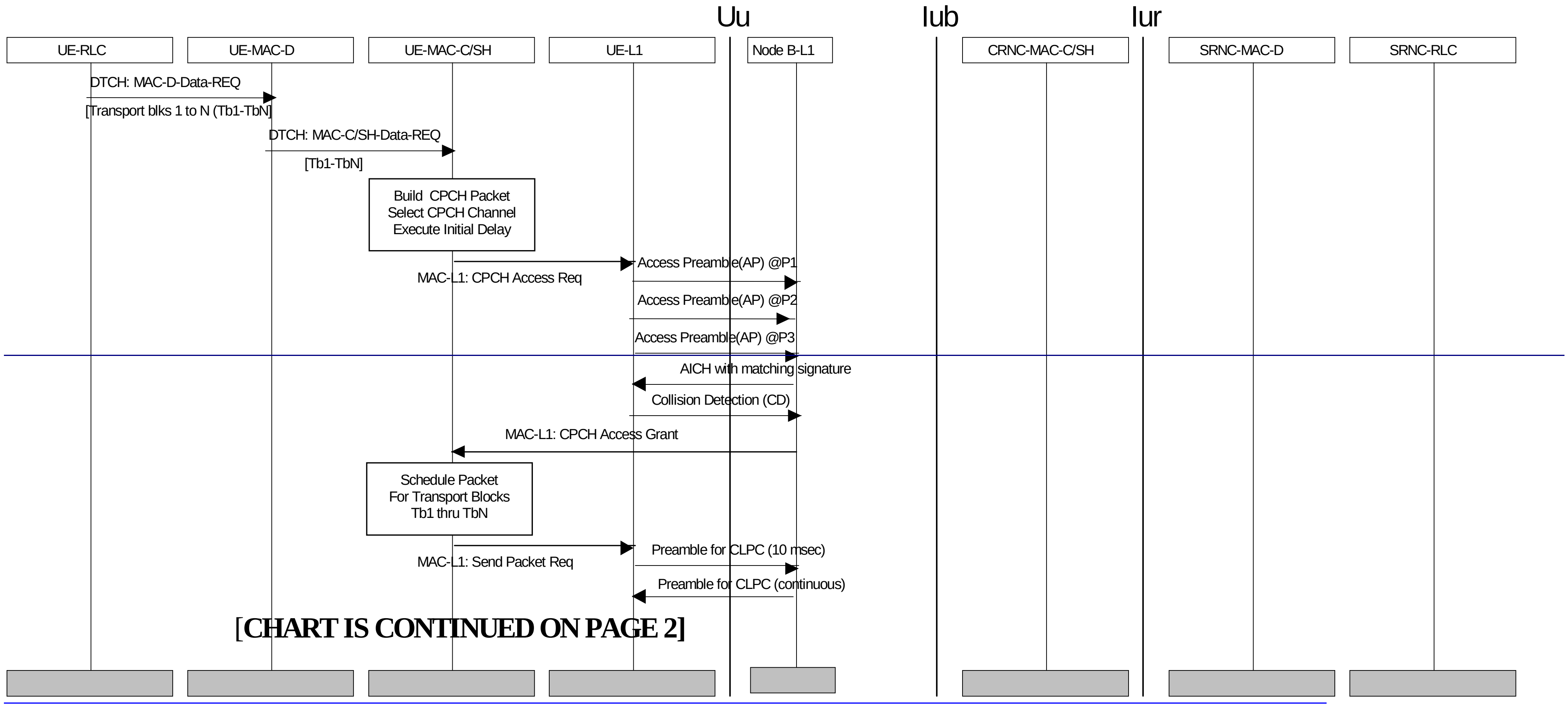


Figure 21: Example of ~~acknowledged-mode data~~data transmission on CPCH (page 1 of 2)



[CHART IS CONTINUED ON PAGE 2]

~~**Figure 21: Example of acknowledged-mode data transmission on CPCH (page 1 of 2)**~~

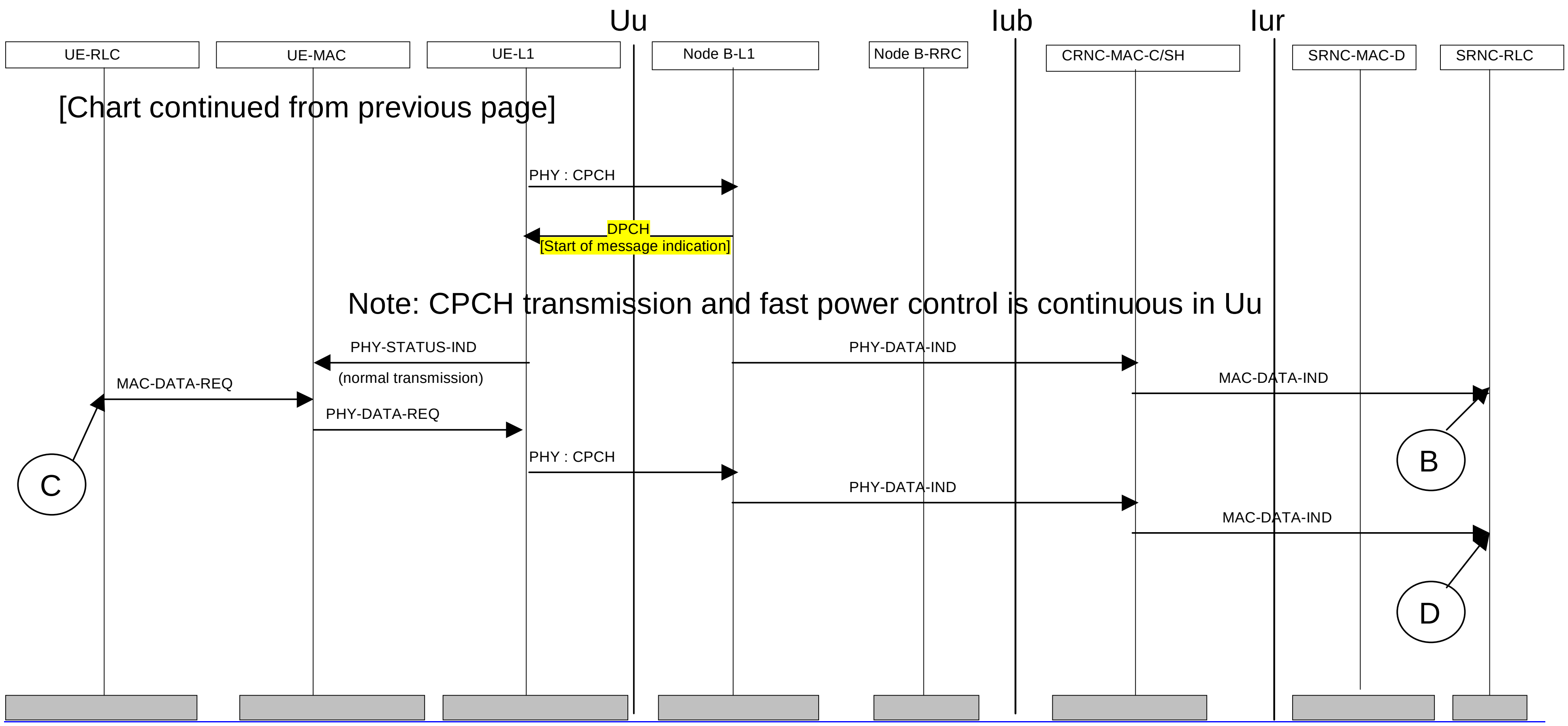
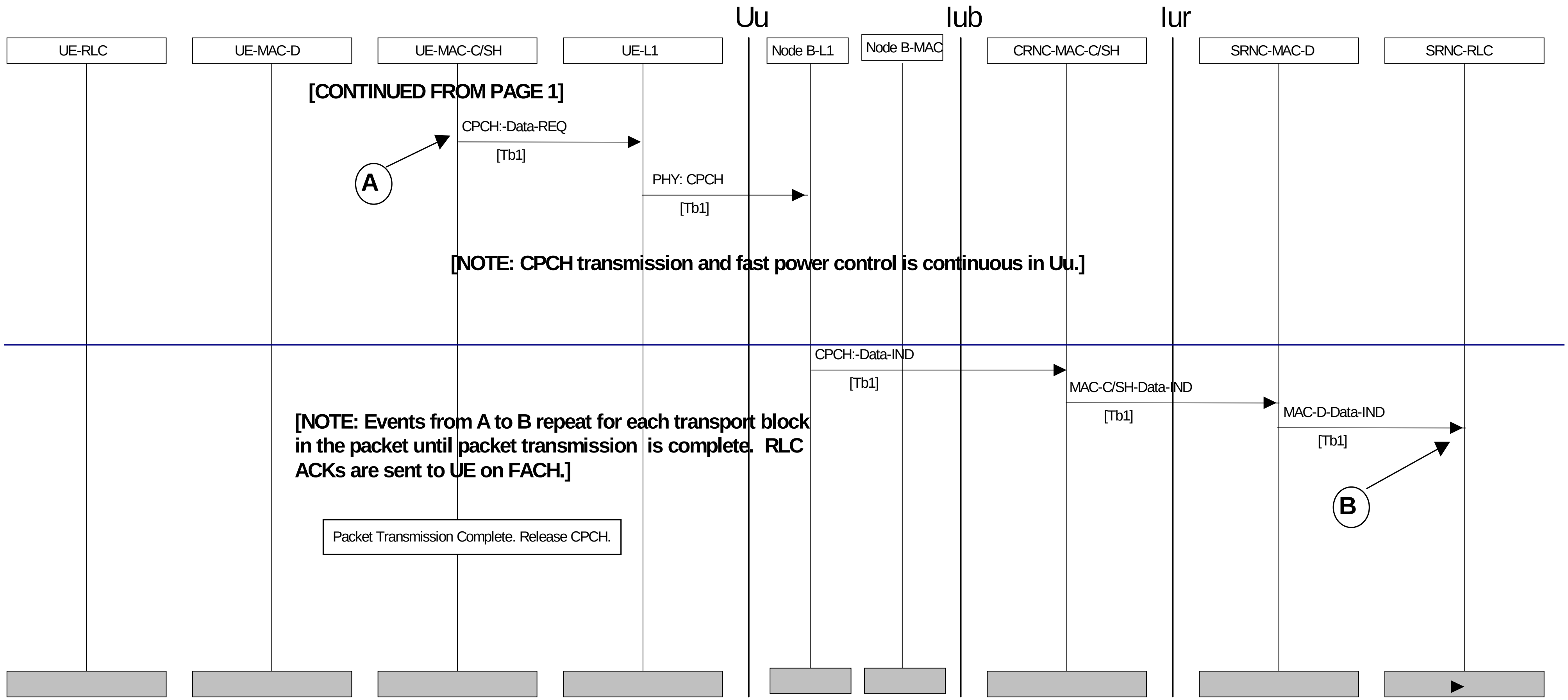


Figure 22: Example of ~~acknowledged-mode~~ data transmission on CPCH (page 2 of 2)



~~Figure 22: Example of acknowledged-mode data transmission on CPCH (page 2 of 2)~~

Figure 2 shows an example of data transmission on CPCH. It is assumed that RLC acknowledged or unacknowledged transmission modes are applied for all logical channels mapped to CPCH.

CPCH transmission is applied in the Connected mode RRC state CELL_FACH with CPCH resources assigned to the UE. The UE needs to be configured for CPCH transmission via a respective RRC procedure (e.g. with RADIO BEARER SETUP or TRANSPORT CHANNEL RECONFIGURATION messages).

Upon reception of a data transmission request from RLC, MAC first requests CPCH channel status information from the physical layer. It is assumed that CPCH channel status information is broadcast on the CSICH physical channel using the same DL channelization code as AP-AICH. The status information provides an indication of the maximum available data rate on PCPCH resources when Channel Assignment (CA) is active. When Channel Assignment is not active, then UE Channel Selection is employed. In this case the status information provides indication of the availability of each defined PCPCH. In either case, the channel status information is converted into a set of transport formats which are allowed to be employed at that given time. Whether channel assignment is active or not shall be indicated via System Information message. Current assumption is that the conversion of CPCH status information into Transport Formats is a L1 internal function.

Based on the permitted transport formats and the data available for transmission, MAC selects a desired transport format for CPCH access request. The MAC CPCH transmission control procedure is started by performing the persistency check based on persistence value received from RRC. When persistence check is passed, the physical CPCH transmission procedure is initiated by sending of a PHY-Access-REQ primitive. The PCPCH transmission procedure starts with an access preamble power ramping cycle. MAC then waits for status indication from L1 via PHY-Status-IND primitive. When acquisition of the access preamble is indicated on AP-AICH the CD preamble is sent on PCPCH. Reception of the CD preamble in Node B is indicated on CD-ICH to the UE. If Channel Assignment is active, channel assignment information is simultaneously transmitted on CD/CA-ICH. Layer 1 provides status indication to MAC indicating the CD or CD/CA information. The CA information defines in the UE on L1 the PCPCH to use for the power control preamble and the message part. Then MAC builds the CPCH transport block set to be transmitted via PHY-Data-REQ with the appropriate Transport Format which may differ from the requested transport format.

After the 0 or 8 slot period for the power control preamble, the first Transport Block Set (first TTI) of the message is transmitted.

While the first transport block is being sent, Node B layer 1 sends the start of message indicator whereby upon the reception of this start of message indicator UE can know if it uses correct CPCH channel or not. If UE does not receive the start of message indicator within certain period, it stops its message transmission immediately. Otherwise, UE continues the transmission.

Data transmission on CPCH is continued until all available data has been sent or until the maximum frame length [NF_max] is reached. The acknowledgements from RLC entities in SRNC are routed by the NW MAC to the UE RLC entities using the FACH DL transport channel.

In Figure 21, the events between points A and B define the CPCH transmission procedure for the first TTI. In figure 22, events from point C to D describe the CPCH transmission procedure for each subsequent TTI.

On request from RRC at the network side, for example, for reacting on temporary overload conditions, an emergency stop of CPCH transmission can take place. The emergency stop is indicated by the PHY-STATUS-IND primitive.

Note also that in the case of transmit power restrictions which are also indicated via PHY-STATUS-IND primitive, restrictions on Transport Format selections may apply at any time during CPCH transmission.

~~Figure 21 shows an example of acknowledged-mode data transmission on CPCH while in the RRC Connected state, the CELL_FACH state with CPCH resources assigned to UE. An RB setup has allocated CPCH resources to the logical channel sourcing the data to be transmitted. First RLC in UE requests data transmission locally from MAC-d. MAC-d routes the request to MAC-c/sh, where CPCH packet building is done. When the packet size (bytes in PHY for TFI chosen by MAC-c/sh) is known, MAC-c/sh selects one of the available CPCH channels from the CPCH set it has been assigned to use for this logical channel. Priority access procedure is performed to execute an initial access delay. Then the CPCH access procedure is performed between UE and NB to request and obtain the CPCH for transmission. The CPCH access procedure includes an AP, AICH-ack, CD, and ASSIGN premable messages. When the CPCH channel has been assigned, MAC-c/sh schedules the packet for transmission by L1.~~

~~After the 10msec period to close the TPC loops on both the CPCH UL and CPCCH DL, transport blocks are transmitted, frame by frame, unitl all the packet data is sent. SRNC RLC uses the DCCH to send RLC ACKs to the UE RLC using the FACH DL channel.~~

3GPP TSG-RAN Meeting #7
Madrid, Spain, 13 - 15 March 2000

Document ***R2-000151***
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

CHANGE REQUEST

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

25.303 **CR** **023** Current Version: 3.2.0

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

For submission to:	TSG-RAN #7	for approval	X	strategic	(for SMG use only)
list expected approval meeting # here ↑		for information		non-strategic	

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 [X] UTRAN / Radio [X] Core Network [ ]
(at least one should be marked with an X)

Source: TSG-RAN WG2 **Date:** 2000-01-13

Subject: Correction to Transport Formation Combination Control procedure

Work item:

Category:	F	Correction	X	**Release:**	Phase 2	
	A	Corresponds to a correction in an earlier release			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: The Transport Format Combination Control message can be sent also in transparent mode

Clauses affected: 6.2.4.1

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.

6.2.4 Transport Format Combination Control

6.2.4.1 Transport Format Combination Limitation

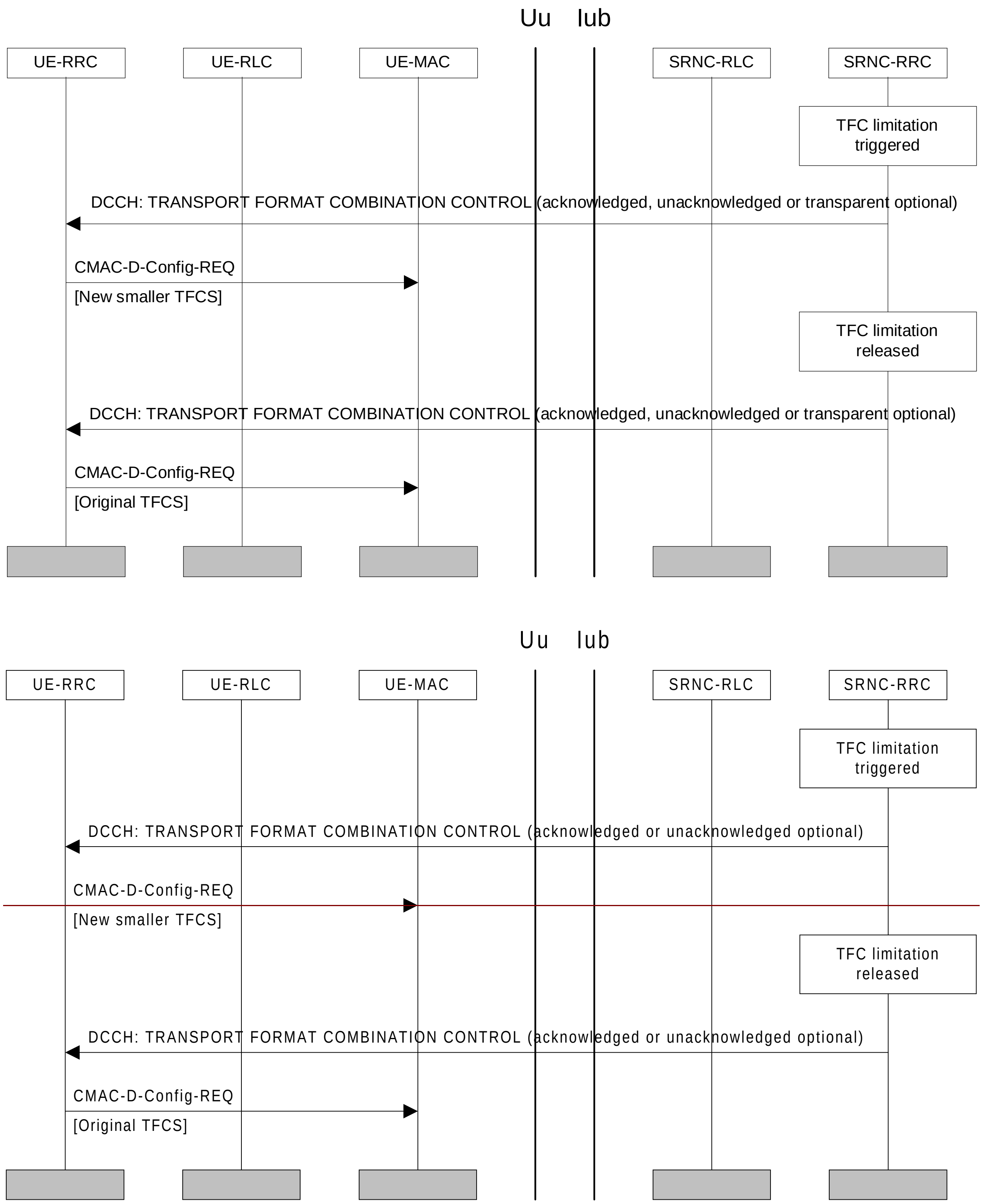


Figure 17: Transport Format Combination Limitation

Figure 17 illustrates an example of a Transport Format Combination Control procedure. A congestion situation occurs and allowed transport format combinations are restricted temporarily. When the congestion is resolved the restriction is removed.

This procedure is initiated with a Transport Format Combination Control message from the network to the UE (acknowledged , ~~or~~ unacknowledged or transparent transmission optional to the NW). This message contains a subset of the ordinary Transport Format Combination Set. The UE then continues with a reconfiguration of MAC. MAC sees the TFC subset as a completely new set.

Further, after a while when the congestion is resolved a new Transport Format Combination Control message is sent to the UE from the RRC layer in the network. This message contains a subset that is the entire original set. Again, the UE reconfigures the MAC

3GPP TSG-RAN Meeting #7
Madrid, Spain, 13 - 15 March 2000

Document R2-000564
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

CHANGE REQUEST

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

25.303 CR 025r1 Current Version: 3.2.0

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

For submission to:	TSG-RAN #7	for approval	X	strategic	(for SMG use only)
list expected approval meeting # here ↑		for information		non-strategic	

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 [X] UTRAN / Radio [X] Core Network [ ]
(at least one should be marked with an X)

Source: TSG-RAN WG2 **Date:** 2nd Feb 2000

Subject: CPCH Emergency Stop sequence

Work item:

Category:
(only one category Shall be marked With an X)

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

Reason for change: Addition of RRC transmission sequence for CPCH emergency stop.

Clauses affected: 6.7

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.

6.7.4 CPCH Emergency Stop sequence

Figure 42 illustrates the CPCH emergency stop procedure. This procedure is invoked by a request from Node B RRC, when Node B detects emergency stop conditions such as temporary overload situation in the cell. CPCH emergency stop is initiated by CPHY-CPCH-Estop-REQ primitive issued from Node B RRC to Node B L1. Upon the reception of this primitive, Node B L1 sends CPCH emergency stop command to UE L1.

Upon the reception of emergency stop command, UE L1 sends CPHY-CPCH-Estop-IND primitive to UE RRC indicating the reception of CPCH emergency stop command. Then, UE RRC replies with CPHY-CPCH-Estop-Resp primitive to command UE L1 to execute CPCH emergency stop. After UE L1 stops on-going CPCH transmission, it sends PHY-Status-IND primitive to UE MAC indicating the completion of CPCH Emergency stop. Meanwhile, when Node B L1 detects CPCH link loss, it sends CPHY-CPCH-Estop-CNF primitive to Node B RRC. This completes CPCH emergency stop procedure.

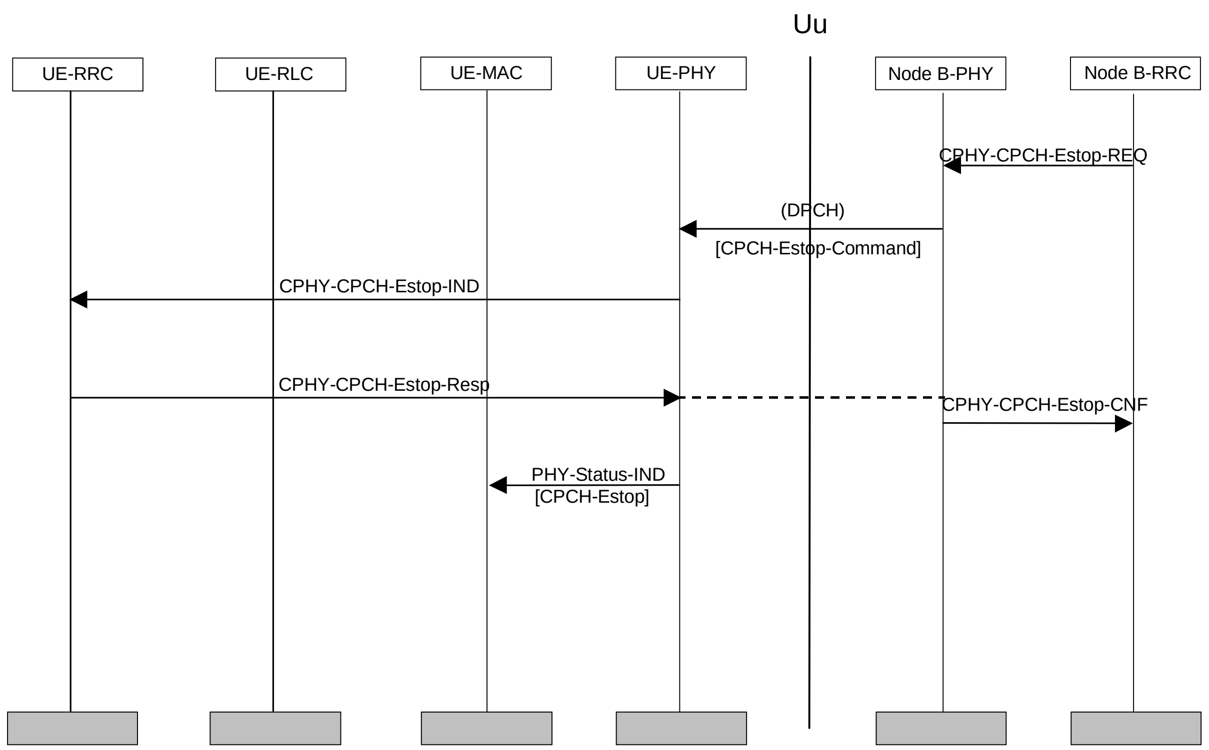


Figure 42: CPCH Emergency Stop Sequence

3GPP SMG Meeting #11
Turin, Italy, 28 Feb - 3 March 2000

Document (R2-000527)
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

CHANGE REQUEST

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

25.303	**CR**	**026r1**	Current Version:	3.2.0	

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

For submission to:	TSG-RAN#7	for approval	**X**	strategic		(for SMG use only)
list expected approval meeting # here ↑		for information		non-strategic		

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 [**X**] UTRAN / Radio [**X**] Core Network [ ]
(at least one should be marked with an X)

Source: TSG-RAN WG2 **Date:** 29.02.2000

Subject: Variable Rate Packet Transmission for uplink DCHs

Work item:

Category:				**Release:**		
	F	Correction			Phase 2	
	A	Corresponds to a correction in an earlier release			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	**X**		Release 99	**X**
					Release 00	

Reason for change: Variable Rate Packet Transmission has been described in RRM 25.922 and primitives are existing in the other specification, but no example has been given so far in 25.303.

Clauses affected: 4, 6.2

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.

4 General Description of Connected Mode

The connected mode is entered when the RRC connection is established. The UE is assigned a radio network temporary identity (RNTI) to be used as UE identity on common transport channels. Two types of RNTI exist. The Serving RNC allocates an s-RNTI for all UEs having an RRC connection. The combination of s-RNTI and an RNC-ID is unique within a PLMN. c-RNTI is allocated by each Controlling RNC through which UE is able to communicate on DCCH. c-RNTI is always allocated by UTRAN when a new UE context is created to an RNC, but the UE needs its c-RNTI only for communicating on common transport channels.

The UE leaves the connected mode and returns to idle mode when the RRC connection is released or at RRC connection failure.

Within connected mode the level of UE connection to UTRAN is determined by the quality of service requirements of the active radio bearers and the characteristics of the traffic on those bearers.

The UE-UTRAN interface is designed to support a large number of UE:s using packet data services by providing flexible means to utilize statistical multiplexing. Due to limitations, such as air interface capacity, UE power consumption and network h/w availability, the dedicated resources cannot be allocated to all of the packet service users at all times. Variable rate packet transmission provides the means that for packet service user the data rate is reduced when the maximum allowable output power is reached.

The UE state in the connected mode defines the level of activity associated to the UE. The key parameters of each state are the required activity and resources within the state and the required signalling prior to the data transmission. The state of the UE shall at least be dependent on the application requirement and the period of inactivity.

Common Packet Channel (CPCH) uplink resources are available to UE’s with an access protocol similar to the RACH. The CPCH resources support uplink packet communication for numerous UEs with a set of shared, contention-based CPCH channels allocated to the cell.

Packet Services can be supported also using the FAUSCH, by means of which a dedicated transport channel can be allocated for data transmission.

The different levels of UE connection to UTRAN are listed below:

- No signalling connection exists
  The UE is in idle mode and has no relation to UTRAN, only to CN. For data transfer, a signalling connection has to be established.

- Signalling connection exists
  When at least one signalling connection exists, the UE is in connected mode and there is normally an RRC connection between UE and UTRAN. The UE position can be known on different levels:

  - UTRAN Registration Area (URA) level
    The UE position is known on URA level. The URA is a set of cells

  - Cell level
    The UE position is known on cell level. Different transport channel types can be used for data transfer:

  - Common transport channels (RACH / FACH, DSCH, CPCH)

  - Dedicated transport channels (DCH) (FAUSCH can be used to allocate a dedicated transport channel for data transmission.)

Assuming that there exists an RRC connection, there are two basic families of RRC connection mobility procedures, URA updating and handover. Different families of RRC connection mobility procedures are used in different levels of UE connection (cell level and URA level):

- URA updating is a family of procedures that updates the UTRAN registration area of a UE when an RRC connection exists and the position of the UE is known on URA level in the UTRAN.

- Handover is a family of procedures that adds or removes one or several radio links between one UE and UTRAN when an RRC connection exists and the position of the UE is known on cell level in the UTRAN.

6 Examples of procedures

6.2 Radio Bearer Procedures

6.2.5 Dynamic Resource Allocation Control of Uplink DCH:s

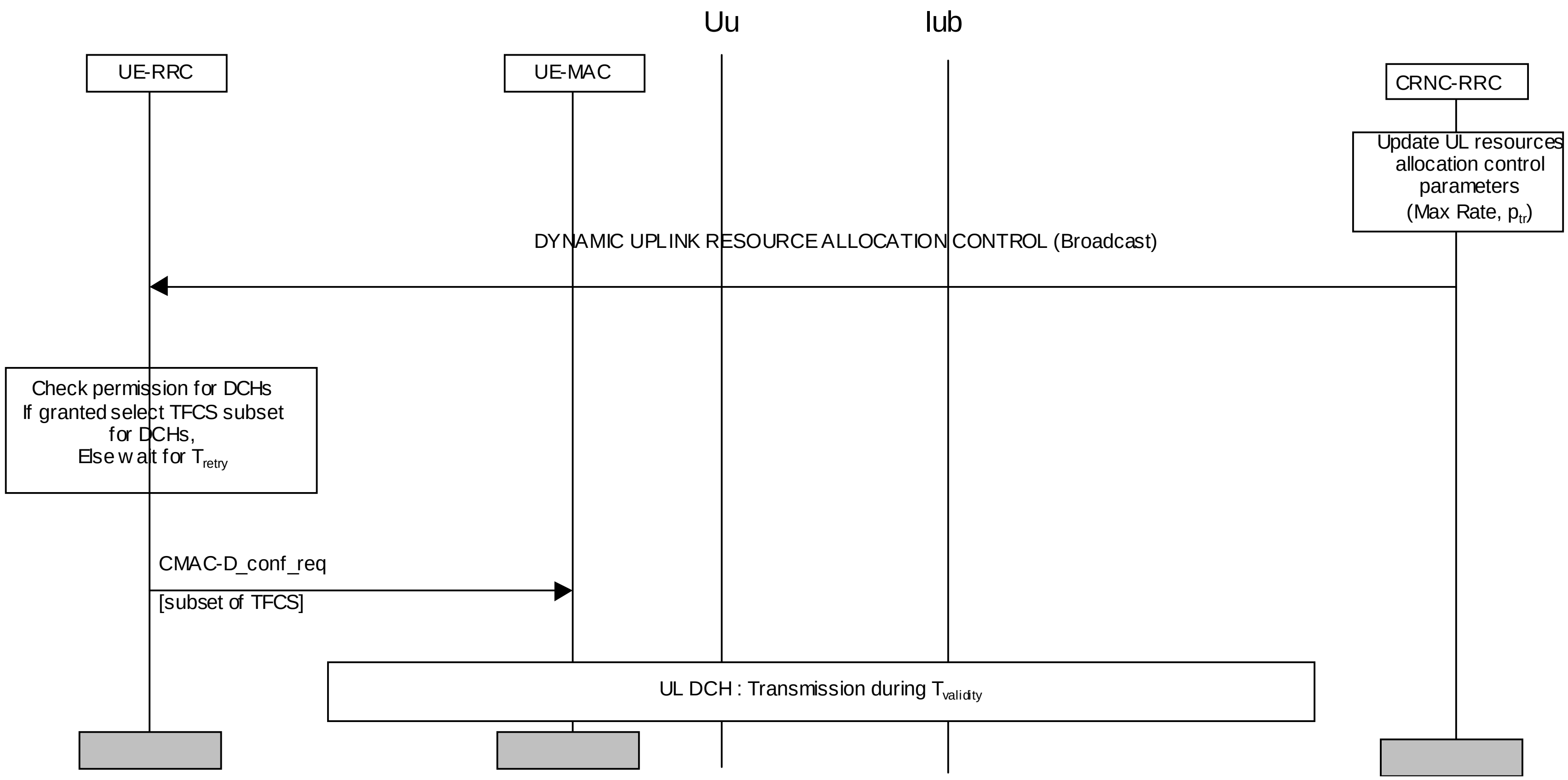


Figure 18: Dynamic Resource Allocation Control of Uplink DCHs

Figure 18 illustrates an example of a Dynamic Resource Allocation Control procedure of uplink DCHs. The CRNC regularly broadcasts the following parameters:

- Transmission probability ptr, which indicates the probability for a UE to be allowed to transmit on its DCHs, which are under control by this procedure, during the next period $T_{validity}$
- Maximum total bit rate allowed to be used by the UE on its DCH which are under controlled by this procedure, during the next allowed period $T_{validity}$

Besides these parameters, the RNC has allocated the following parameters to the UE:

- Transmission time validity, $T_{validity}$, which indicates the time duration for which an access for transmission is granted.
- Reaccess time T_{retry}, which indicates the time duration before retrying to access the resources, in case transmission has not been granted.

This procedure is initiated with a Dynamic Uplink Resource Allocation Control message regularly broadcast by the CRNC. It applies to all UEs having DCHs that can be controlled dynamically. The UEs have to listen to this message prior to transmission on these DCHs. The UE RRC checks whether transmission is allowed, and then reconfigures MAC with a new subset of TFCS derived from the maximum total bit rate parameter. This TFCS subset shall control only the DCHs which are under control by this procedure. The UE RRC procedure shall be mandatory for all UEs supporting high bit rate NRT services.

In case of soft handover on the uplink DCH, The UE is requested either to listen to broadcast information from its primary cell (the one with the lowest pathloss), or from all cells involved in its Active Set, depending on its class. In the latter case, the UE is expected to react according to the stricter control information.

6.2.6 Variable Rate Packet Transmission of Uplink DCH's

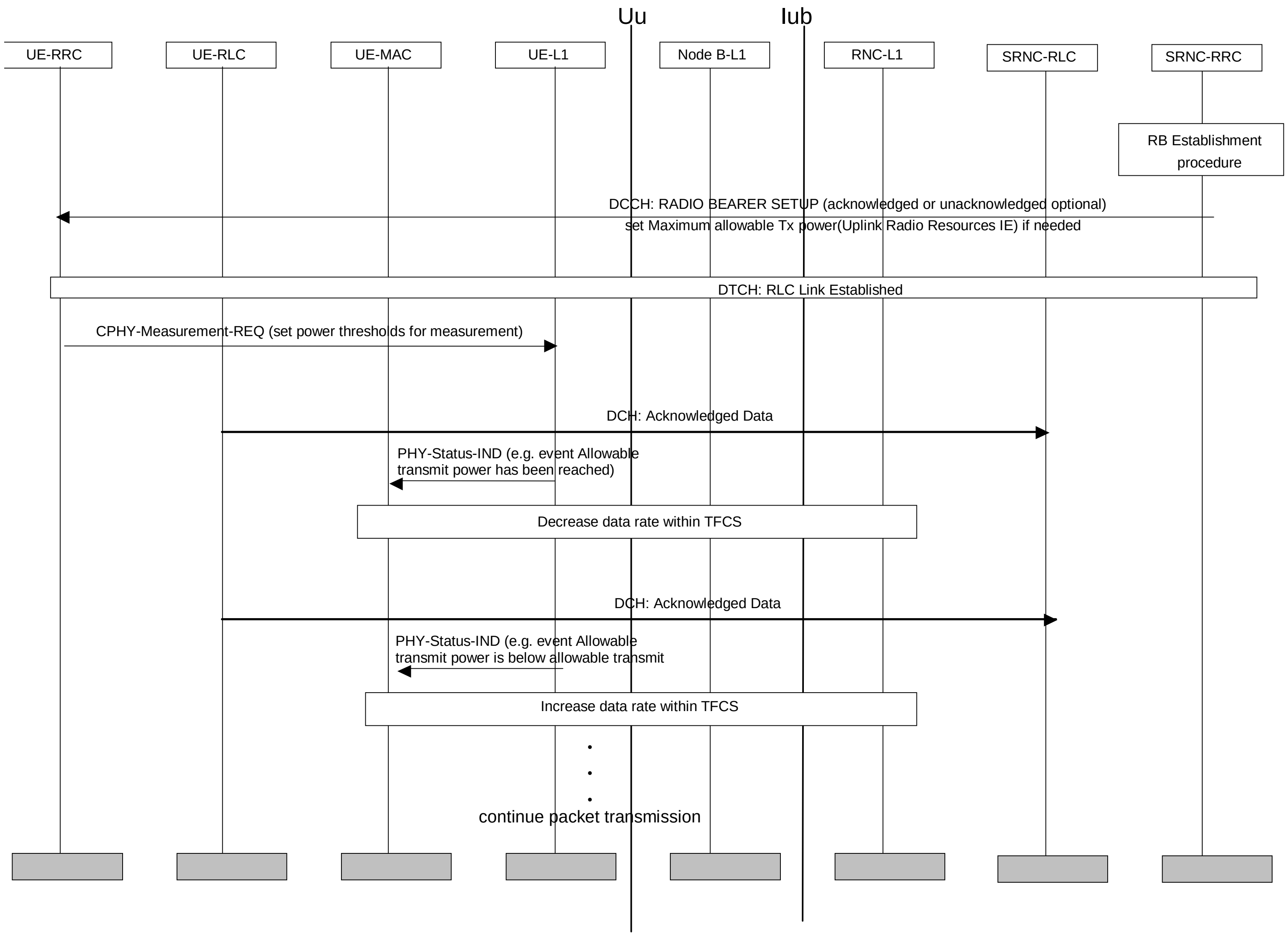


Figure 18: Dynamic Resource Allocation Control of Uplink DCHs

Figure 19 illustrates an example of the Variable Rate Packet Transmission procedure of uplink DCHs. With this procedure the QoS of high rate NRT service user can be maintained and unnecessarily interference can be avoided by a temporarily reduction of the data rate within the TFCS.

When a connection for a packet service is established the RRC assigns the TFCS to MAC. At the radio bearer set-up procedure the maximum allowable Tx power can also be set for each packet user if it shall be different from the UE capability class.

With the CPHY-Measurement-REQ the power thresholds will be set to the UE. If during a packet transmission the allowable transmit power is above the set threshold the event will be signalled to the MAC that will decrease the data rate within the set TFCS at the next transmission time interval.

When channel conditions improve and the averaged transmission power falls below the allowable transmission power the physical layer indicates this event to the MAC. The MAC in response increases the data rate by increasing the number of transport blocks delivered to L1 and the physical layer increases the total transmission power to the UE by the predefined amount. This allows the data that was buffered during bad channel conditions to be delivered to the UTRAN.

3GPP RAN WG2#11 | ***Document*** ***R2-000432***

e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

Turin, Italy, Feb. 28 – March 3, 2000

CHANGE REQUEST

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

25.303 CR 027 Current Version: 3.2.0

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

For submission to: TSG-RAN #7	for approval	X	strategic		*(for SMG use only)*
list expected approval meeting # here ↑	for information		non-strategic		

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 [X] UTRAN / Radio [X] Core Network [ ]
(at least one should be marked with an X)

Source: TSG-RAN WG2 **Date:** 2000-02-26

Subject: Random access transmission sequence

Work item:

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

Reason for change: The model of RACH transmission control on the MAC sublayer has been revised by introducing new primitives for access control, PHY-ACCESS-REQ and PHY-ACCESS-CNF. The proposed changes were implied by the revision of the CPCH transmission control procedure (see CR 032 to 25.302) and allow for a more harmonised modelling of RACH and CPCH access procedures. The proposed changes impact only the modelling of RACH transmission control. There is no impact on implementation expected.

Clauses affected: 6.7.2, 6.7.3

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.

6.7.2 Random access transmission sequence (FDD)

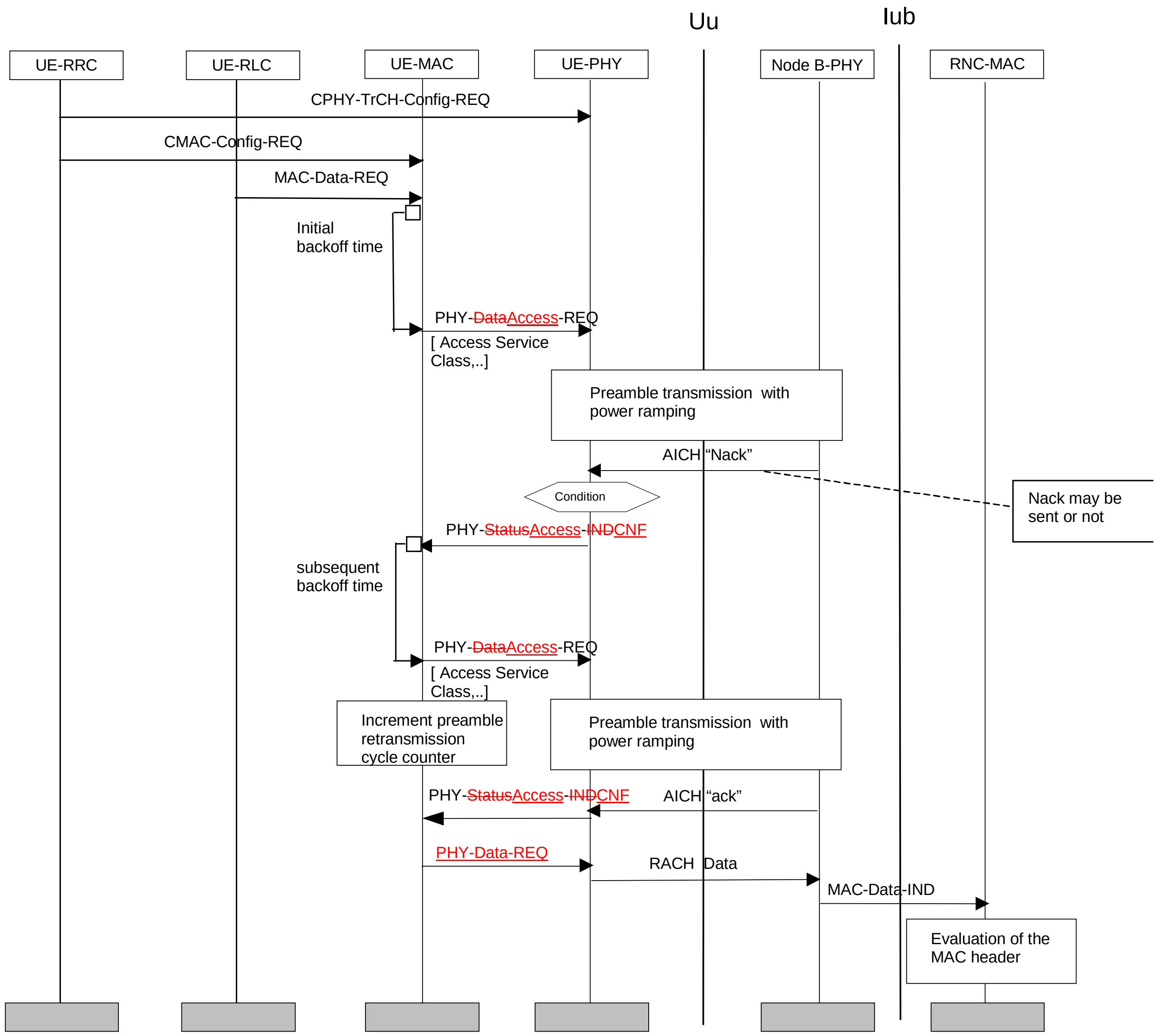


Figure 40: Random access transmission sequence (FDD)

The RACH and AICH are configured once via a CPHY-TrCH-Config-REQ primitive. This primitive is issued only for initial configuration or when a parameter shall be changed, not for every RACH transmission.

The CMAC-Config-REQ primitive is used to configure MAC parameters required for the random access procedure (e.g. persistence value, maximum number of preamble ramping cycles, initial and subsequent backoff times).

When there is data to be transmitted on the RACH, i.e. reception of a MAC-Data-REQ primitive, the RACH transmission control procedure is started, which includes selection of Access Service Class (ASC).

After some initial backoff, a primitive PHY-~~Data~~Access-REQ containing the selected ~~Access Service Class (~~ASC~~)~~ is sent to L1. This triggers the PRACH preamble transmission procedure, i.e. the physical layer selects a PRACH access slot and signature without further backoff delay imposed on L1, but within the ~~ASC~~ constraints of the selected ASC.

If the maximum permitted transmission power was reached without receiving an acknowledgement, or a negative acknowledgement (Nack) has been received on AICH, the preamble ramping cycle is repeated. The number of preamble ramping cycles is counted in MAC.

Upon successful transmission of a preamble, MAC receives an acknowledgement via PHY-~~Status~~Access-~~IND ~~CNF primitive that the acquisition indicator was received.~~ and t~~Then message ~~sent~~transmission is requested with the PHY-Data-REQ primitive.

6.7.3 Random access transmission sequence (TDD)

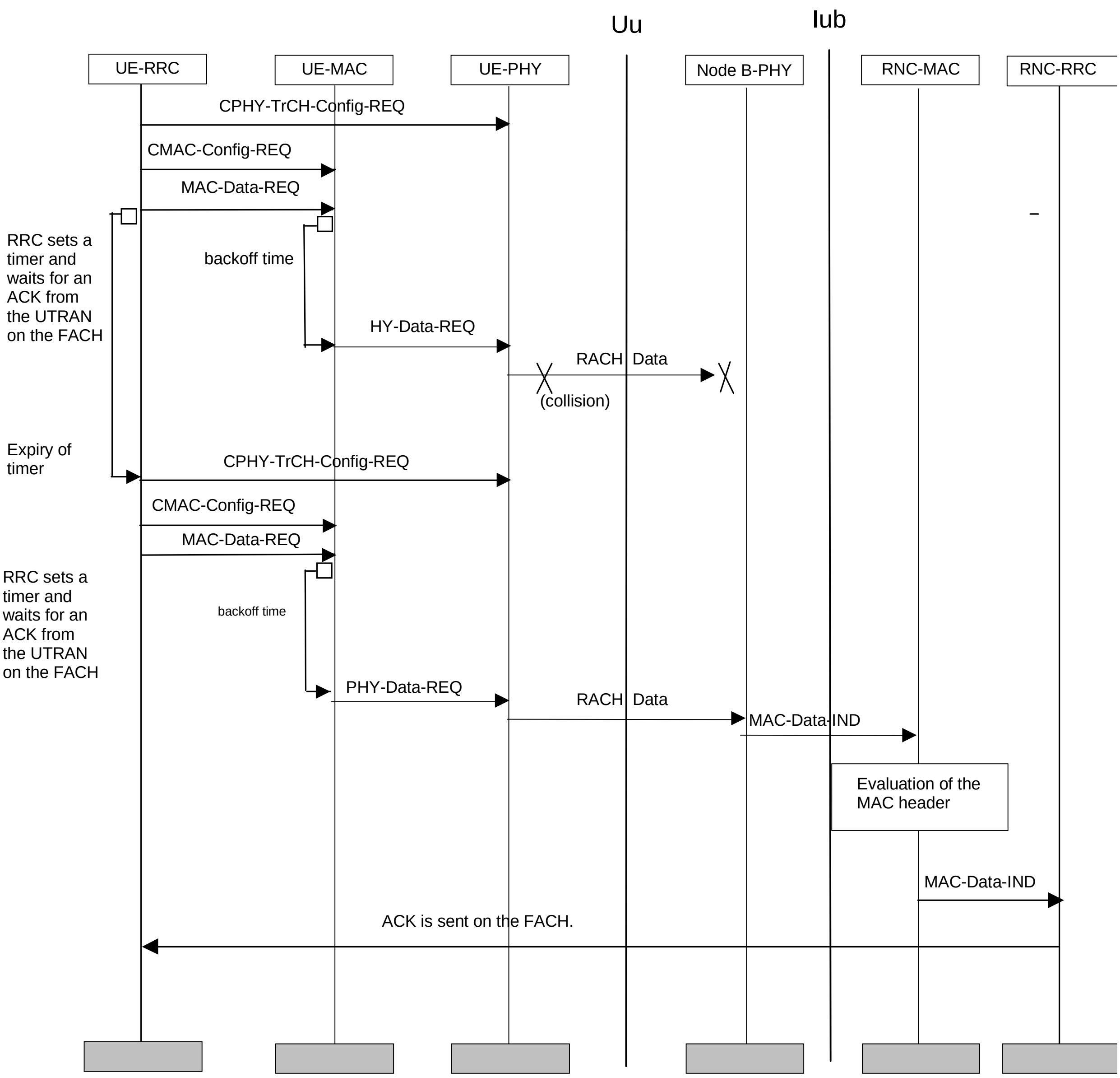


Figure 41: Random access transmission sequence (TDD)

The RACH is configured once via a CPHY-TrCH-Config-REQ primitive. This primitive needs to be used only for initial configuration (e.g. power parameter) or when a parameter shall be changed, not for every RACH transmission.

The CMAC-Config-REQ primitive is used to configure MAC parameters required for the random access procedure. The parameters could include random access control parameters such as, persistence value and Access Service Class (ASC) parameters

When there is data to be transmitted on the RACH, i.e. reception of a MAC-Data-REQ primitive, the RACH transmission control procedure is started, which includes selection of an Access Service Class (ASC).

After some backoff, a primitive PHY-Data-REQ is sent to L1, which triggers the PRACH message transmission, i.e. the physical layer selects a PRACH spreading-code without further backoff delay imposed on L1, but within the ~~ASC~~

constraints of the selected ASC.~~.~~ Note that the backoff time on MAC may in certain conditions be set to zero (e.g. when the uplink load is low).

At the UTRAN-side MAC the further processing of received RACH message depends on the MAC header. An acknowledgement that the message was received correctly is given by a RRC procedure. In case of transparent RLC, message retransmission shall be handled entirely on RRC employing retransmission timers. In case of non-transparent RLC, the timers are controlled by the RLC. The parameters of PRACH transmission are chosen such that the number of retransmissions for the messages are kept low. Message loss on the PRACH should be due to a collision on the same spreading code.