TSG-RAN Working Group 2 (Radio layer 2 and Radio layer 3)
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Agenda Item :

Source : NTT DoCoMo

Title : RRC Message Parameters
(For RAB Setup / Reconfiguration / Release, Transport CH Reconfiguration, and Physical CH Reconfiguration)

Document for : Decision

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1. Abstract
This contribution shows the parameters for RRC protocol. This contribution is focused on RAB Setup/Reconfiguration/Release, Transport CH Reconfiguration, and Physical CH Reconfiguration.

2. Categorization of RRC parameters
RRC parameters are classified into 4 categories; RAB parameters, Transport CH parameters, Physical CH parameters and UE parameters. Each parameters are used as follows.

Parameter Category	Usage
RAB parameters	-Used when a new RAB is setup / added -Used when an existing RAB is reconfigured -Used when an existing RAB is released
Transport CH parameters	-Used when a new Transport CHs which can be possibly used are setup / added -Used when an existing Transport CHs which can be possibly used are reconfigured -Used when an existing Transport CHs which can be possibly used are released
Physical CH parameters	-Used when a new Physical CH is setup -Used when an existing Physical CH is reconfigured
UE parameters	-Used when SRNC needs to send them on each procedure.

Table 1 Usage of parameters

RAB Setup/Reconfiguration/Release can be the combination of 4 types of parameters. **Transport CH Reconfiguration** can be the combination of 3 types of parameters; Transport CH parameters, Physical CH parameters, UE parameters. **Physical CH Reconfiguration** can be the combination of 2 types of parameters; Physical CH parameters and UE parameters.

	RAB parameters	Transport CH parameters	Physical CH parameters	UE parameters
RAB Setup/Reconfiguration/Release	M	O	O	O
Transport CH Reconfiguration		M	O	O
Physical CH Reconfiguration			M	O

Table 2 Combination of types of parameters

3. RAB Parameters

RAB Parameters are listed in Table 3.

(1) When setting a RAB, all the candidate transport CH IDs of the transport CHs which the RAB can be mapped onto should be listed as a mapping Info.

(2) NAS Info. is only needed in case of setting the RAB.

(3) Logical CH ID (LID) is unique in 1 Transport CH (FFS). Therefore when 2 DCHs exists, same LID(DTCH#) can be used for both DCHs.

(4) MAC Logical Channel Priority indicated “Allowed buffering size” or “Allowed buffering time”.

Parameter Name		SETUP	RECONF	RELEASE
RAB ID		M	M	M
NAS Info.	e.g. Bearer ID	M		
RLC Info.	RLC Mode	M	M	
	RLC PDU Size			
	RLC Transmission Window Size			
	RLC Retransmission Info			
	RLC In-sequence delivery			
Mapping Info.	Transport CH ID	M	M	
	Logical channel ID			
	MAC Logical Channel Priority			
	:			
	Transport CH ID			
	Logical channel ID			
	MAC Logical Channel Priority			

Table 3 RAB Parameters

4. Transport CH Parameters

Transport CH parameters are listed in Table 4.

(1) All the transport CHs which may be used for UE should be reported to UE. If one of the transport CHs become unnecessary for UE due to RAB reconfiguration or release, it should be reported to UE.

(2) If RAB support both DCH and RACH/FACH, both parameters should be notified to UE.

(3) In transport CH Reconfiguration procedure, only the RECONF of transport CH parameters are executed. SETUP and RELEASE of transport CH parameters are only executed in RAB Setup / Reconfiguration / Release procedures.

(4) When executing Transport CH Reconfiguration, Transport CH ID is mandatory. But it can be Transport CH ID for DCH, RA/FACH or DSCH.

Parameter Name		SETUP/ RECONF	RELEASE
Transport CH ID (DCH)		O	O
UL TFS Info.	Transport block size	O	
	Transport Block Set Size		
	Transmission time interval		
	Type of channel coding		
	Rate matching		
DL TFS Info.	Transport block size		
	Transport Block Set Size		
	Transmission time interval		
	Type of channel coding		
	Rate matching		
TFCS Info.	UL TFCS	O	O
	DL TFCS		
	TFCS Subset (UL)	O	O
Transport CH ID (RA/FACH)		O	O
Transport CH ID (DSCH)		O	O

Transport CH ID (FAUSCH)		O	O

Table 4 Transport CH Parameters

5. Physical CH Parameters

Physical CH parameters are listed in Table 5.

(1) When establishing dedicated CH or reconfiguring existing dedicated CH, “Dedicated CH Info.” is used.

(2) When UE transits to Common CH state or changing current common CH, “Common CH Info.” is used.

(3) Detailed Common CH Info. are notified to UE by System Information on BCCH or may be notified by DCCH when UE makes a handover. Other way is to include code parameters and etc to Common CH Info.

(4) In case of DCH→DCH, there are several combinations of “UL Scrambling Code Reconfiguration”, “UL Channelization Code Reconfiguration”, “DL Scrambling Code Reconfiguration” and “DL Channelization Code Reconfiguration”.

(5) Cell List Reference ID is used in System Information.

Parameter Name			CCH→ CCH	CCH→ DCH	DCH→ DCH	DCH→ CCH
Dedicated CH Info.	Cell List Reference ID		O	O	O	O
	UL Power Control Info	UL Interference Level				
	UL Radio Resources	UL Scrambling Code		O	O	
		DPCCH Channelization Code (can be fixed value)		M	O	
		DPDCH Channelization Code#0				
		:				
		DPDCH Channelization Code#n				
	DL Radio Resources Radio Link #0	BCH DL Scrambling Code#		M	O	
		DL Scrambling Code				
		Channelization Code#0				
		:				
		Channelization Code#n				
	DL Radio Resources Radio Link #k	BCH DL Scrambling Code#		M	O	
		DL Scrambling Code				
		Channelization Code#0				
		:				
		Channelization Code#n				
Common CH Info. (RA/FACH)		RA/FACH Indicator	O			O
		BCH DL Scrambling Code#				
Common CH Info. (DSCH)		(FFS)	O			O
		BCH DL Scrambling Code#				

Table 5 Physical CH Parameters

6. UE Parameters

UE parameters are listed in Table 6.

(1) Activation time is notified to UE in case of DCH to DCH synchronous procedure.

Parameter Name		CCH→ CCH	CCH→ DCH	DCH→ DCH	DCH→ CCH
	Activation Time			O	

Table 6 UE Parameters

7. References

[1] RAN TSG WG2 S2.31 V0.0.1, Description of the RRC protocol;