TSG-RAN Working Group 1 meeting #10 ***TSGR1#10(00)134***
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Source: SONY, Panasonic
Title: Proposed Modifications to TR 25.926 "UE Radio Access Capabilities"

Introduction:

At the last meeting at Dresden, the following UE capabilities were introduced in TR 25.926:

- " *Maximum sum of number of bits of all transport blocks received/delivered in TTIs that end/start at the same time*"
- " *Maximum sum of number of sustainedly processable bits of all transport blocks received in TTIs that end at the same time, normalized with the respective TTI lengths in number of radio frames.*"

Currently, the value range for these parameter is specified as:
640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480, 40960, 81920, 163840

However, the specified value range has following problems:

1. Resource allocated for DCCH processing is not considered. For an example, an UE that is capable of processing 2Mbps with TTI=80msec data is also required to decode x-bits DCCH at the same time. This implies that the UE must have processing capability of 163840+x, which is not within the specified range.
2. The lower range specified does not fit very well for basic terminals; e.g. terminals with no services or AMR only terminals.

Proposal:

The following modifications are proposed for redefining the value range " *maximum sum of number of bits of all transport blocks received/delivered in TTIs that end/start at the same time*" and for "*Maximum sum of number of sustainedly processable e bits of all transport blocks received in TTIs that end at the same time, normalized with the respective TTI lengths in number of radio frames*"

- Incorporate DCCH processing capability into the value range. The DCCH load was considered as 16kbps with TTI=20msec as in [1]. This DCCH load meets both reference channel specification given in TS25.101 and coding examples given in TR25.944.
- Introduce the lower range value 564 for the most basic terminal. The 12.2kbps with TTI=20msec for DTCH and 16kbps with TTI=20msec is used to derive this value.

Theses modifications are applicable for both downlink and uplink channels.

Reference:

[1] TSGR1#9(99)j93 "Proposal for TR 25.926 parameter combination table", source Nokia

		UE radio access capability parameter	Value range
PDCP parameters		Header compression algorithm supported	Yes/No
RLC parameters		Total RLC AM buffer size	2,10,50,100,150,500,1000 kBytes
		Maximum number of AM entities	2,3,4,8,16,32
PHY parameters	Transport channel parameters in downlink	Maximum sum of number of bits of all transport blocks received in TTIs that end at the same time	564, 640+320, 1280+320, 2560+320, 3840+320, 5120+320, 6400+320, 7680+320, 8960+320, 10240+320, 20480+320, 40960+320, 81920+320, 163840+320
		Maximum sum of number of sustainedly processable bits of all transport blocks received in TTIs that end at the same time, normalized with the respective TTI lengths in number of radio frames.	564, 640+320, 1280+320, 2560+320, 3840+320, 5120+320, 6400+320, 7680+320, 8960+320, 10240+320, 20480+320, 40960+320, 81920+320, 163840+320
		Maximum number of simultaneous transport channels	4, 8, 16, 32
		Maximum number of simultaneous CCTrCH (of DCH type	1, 2, 3, 4, 5, 6, 7, 8
		Maximum total number of transport blocks received within TTIs that end at the same time	4, 8, 16, 32, 48, 64, 96, 128, 256, 512
		Maximum number of TFC in the TFCS	16, 32, 48, 64, 96, 128, 256, 512, 1024
		Support for turbo decoding	Yes/No
		Support of 24 bits CRC	Yes/No
		Support of blind transport format detection (FFS) This should be first specified fully. Then a LS should be sent by WG1 to WG2 about what needs to be the UE capability.	Yes/No
	Transport channel parameters in uplink	Maximum sum of number of bits of all transport blocks transmitted in TTIs that start at the same time	564, 640+320, 1280+320, 2560+320, 3840+320, 5120+320, 6400+320, 7680+320, 8960+320, 10240+320, 20480+320, 40960+320, 81920+320, 163840+320
		Maximum sum of number of sustainedly processable bits of all transport blocks received in TTIs that end at the same time, normalized with the respective TTI lengths in number of radio frames.	564, 640+320, 1280+320, 2560+320, 3840+320, 5120+320, 6400+320, 7680+320, 8960+320, 10240+320, 20480+320, 40960+320, 81920+320, 163840+320
		Maximum number of simultaneous transport channels	2, 4, 8, 16, 32
		Maximum number of simultaneous CCTrCH of DCH type (TDD only)	1, 2, 3, 4, 5, 6, 7, 8
		Maximum total number of transport blocks transmitted within TTIs that start at the same time	2, 4, 8, 16, 32, 48, 64, 96, 128, 256, 512
		Maximum number of TFC in the TFCS	4, 8, 16, 32, 48, 64, 96, 128, 256, 512, 1024
		Support for turbo encoding	Yes/No
		Support of 24 bits CRC	Yes/No