

Source: TSG-RAN WG2
To: TSG-RAN WG3
Cc: TSG-RAN WG1
Title: LS on Iub NBAP Signaling Support for CPCH
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Introduction

RAN2 has noted that at RAN3#14, RAN3 approved CR25433-193 (R3-001847) in the UTRAN Iub Interface NBAP Signalling specification. This CR modifies the constant, maxNrOfCPCHs, changing this value from 10 to 4. In 25433, this constant provides an upper bound (limit) for the number of CPCH sets per cell which can be configured in Node B and supported on Iub. In the RRC Protocol Specification, 25331, the constant maxCPCHsets defines the maximum number of CPCH sets per cell which can be supported in the UE. In 25.331 maxCPCHsets has a value of 16. Thus, in this case, the NBAP signalling limit on Iub will restrict the UE and System capability. Why does the Iub NBAP signalling need to so restrict the Radio Interface?

Discussion

In order for operators to fully utilize CPCH, maxCPCHsets is defined to be 16 in 25331. Like RACH, CPCH is configured with a single TFS per CPCH set. In order to offer CPCH service at various TTIs and using various coding schemes, multiple TFSs in multiple CPCH sets are needed in a cell. For instance, if an operator wishes to offer CPCH services at all TTI lengths, 4 CPCH sets, one for each TTI, will be needed. If an operator wishes to provide CPCH services at all TTI lengths and with two different FEC coding schemes, 8 CPCH sets will be needed (4 TFSs for TTIs x 2 coding schemes = 8 TFSs). In addition, separate CPCH sets using the same TFS can be used to provide various levels of QOS (delay). In the above example, if the operator also wished to provide two levels of QOS for the offered TFSs for CPCH, then 16 CPCH sets would be needed. It is clear that restricting the number of CPCH sets per cell to 4 will restrict System capability and the flexibility of the Radio Interface.

Note that a CPCH set may contain only one PCPCH, so that the maximum CPCH sets per cell is not directly related to maximum CPCH capacity in the cell. Maximum CPCH capacity is the sum of the capacities of all PCPCHs in the cell.

While the current discrepancy in these definitions of maximum CPCH sets per cell may be acceptable for Release 99, this discrepancy is not ideal and should be aligned as soon as practical. RAN 2 would like RAN3 to consider aligning the constant maxNrOfCPCHs in 25433 with maxCPCHsets in 25331 for Release 99. RAN2 may consider modifying 25331 to align these constants based on the responses to the following questions.

Questions

What is the reason for limiting maxNrOfCPCHs in 25433 to 4?

If there is no strong reason for this limitation, could RAN3 modify 25433 to set maxNrOfCPCHs to 16?