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**Source:** TSG-RAN WG3  
**To:** TSG-RAN WG2  
**Cc:** TSG-RAN WG1  
**Title:** On Iub NBAP Signaling Support for CPCH  
**Contact:** Sungho Choi, Samsung Electronics  
Email: schoi@samsung.com

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RAN3 would like to thank RAN2 for the LS (R3-002350-R2-001846) on Iub NBAP signaling support for CPCH. RAN2 asked RAN3 two questions and they were

1. *What is the reason for limiting maxNrOfCPCHs in 25433 to 4?*
2. *If there is no strong reason for this limitation, could RAN3 modify 25433 to set maxNrOfCPCHs to 16?*

RAN2 also gave some clarification of the reason why CPCH in a cell should be 16.

RAN3 would like to give the answer to the questions from RAN2.

RAN3 approved CR25433-193 (R3-001847) after some discussion where RAN3 agreed that the maximum number of CPCH in a cell should be 4. The CR was also approved at RAN#9 plenary.

In the RAN3 point of view, the reason why the maximum number of CPCH in a cell should be 4 is as follows:

When a CPCH is set up, an associated set of resources should set up simultaneously and the resources are one DL AP-AICH channelisation code which is also for CSICH, one DL CD/CA-ICH channelisation code, one UL AP scrambling code, one UL CD scrambling code and multiple PCPCHes. Therefore, if 16 CPCHes are to be setup, 16 DL AP-AICH channelisation codes, 16 DL CD/CA-ICH channelisation codes, 16 UL AP scrambling codes, and 16 UL CD scrambling codes need to be setup with multiple PCPCHes, where the maximum number of PCPCHes is 64. Moreover, the DL AP-AICH channelisation code and DL CD/CA-ICH channelisation code should be allocated in primary scrambling code. Therefore, the maximum number of CPCHes is subject to the available resources in a cell.

AP-AICHes with CSICHes and CD/CA-ICHes are indication channels that are not power-controlled. If 16 CPCHes can be defined in a cell, upto 32 indication channels will be allocated, which can increase interference on DL. Therefore, the maximum number of CPCHes is also subject to DL channel environment.

For every UL Access preamble (AP) scrambling code and every UL CD scrambling code, one decoder with a matched filter or a similar device is needed. If 16 CPCHes can be defined in a cell, Node B should have upto 16 matched filters per each cell. Therefore, the maximum number of CPCHes is limited by the HW capability of a Node B.

Therefore, the maximum number of CPCHes are not only related to CPCH service with various configurations but also related to resource capacity in a cell, DL channel environment, and the HW capability of a Node B per cell. If the maximum number of CPCHes is set too high, vendors will have undesirable overhead in implementation for CPCH service.

In current specification, the maximum number of PCPCHes in a cell is defined as 64. Moreover, the maximum number of PCPCHes per CPCH is also defined as 64. Since there are upto 16 signatures, one CPCH can be set up with upto 16 PCPCHes in UCSM mode and with upto 64 PCPCHes in VCAM mode. Therefore, it is reasonable that one CPCH is set up with multiple of 8 to 64 PCPCHes.

RAN3 would like to conclude that it is reasonable that the maximum number of CPCHes in a cell is set to 4, which requires a reasonable HW capability of a Node B for each cell to support CPCH service.

RAN3 also would like to ask RAN2 to modify 25.331 to set the maximum number of CPCH set in a cell to 4.