

**3GPP TSG RAN WG2 #4  
25-28 May 1999, Berlin, Germany**

**Tdoc RAN WG2 422/99**

**TSG RAN Working Group 3, Meeting 3  
Kawasaki, Japan, 26-30 April, 1999**

**TSG R3#3(99)414**

**Source: TSG RAN WG3**

**Title: Reply to TSG RAN WG2 Liaison Statement on Hybrid ARQ  
Type II/III**

**Document For: Request for Comment**

WG3 has not studied the impacts of this incremental hybrid ARQ on lur and lub interfaces.

Regarding the time schedule for release 99, WG3 naturally prefers hybrid ARQ mechanisms that would not have major impact on lur and lub interfaces. WG2 is asked to consider if hybrid ARQ is really necessary to include in release 99.

WG3 would like to know more about the signaling requirements and signaling mechanisms between the SRNC and node-Bs required for hybrid ARQ. Note that from UTRAN architecture point of view this possible control signaling crosses lub and may also cross the lur interface.

Additional considerations are represented in the annex.

## Annex:

WG3 understands from the Minutes of RAN WG2 meetings #2 & #3, and from documents presented at these meetings (R2-99302 and R2-99084), that there are specific proposals for H-ARQ using out-band transmission of PDU identities on the FACH in parallel to the transmission of PDUs in the respective transport channel. We understand that there is no conclusion yet about these proposals, however we would like to inform WG2 about the potential impacts of the proposals, as an input to the ongoing discussion in WG2. Further, if proposals for the in-band signaling H-ARQ case are generated in WG2, please inform WG3 of relevant details (e.g. Transport Format management).

WG3 understands that for the H-ARQ variant using out-band transmission there is an expected increase in the common transport channel (RACH/FACH) traffic load and a possible requirement for scheduling prioritization of H-ARQ FACH data over existing DCCH/DTCH "best effort" data to maintain performance of DSCH/USCH/DCH H-ARQ channels needs to be investigated.

WG3 requests further information from WG2 regarding the *increase in common channel utilization* for support of Hybrid ARQ (types 2 & 3). An estimation of FACH and RACH activity associated with H-ARQ is needed to assess the effect on common channel transport and queuing/scheduling functions in the C-RNC.

WG3 also requests information regarding the *allowable latency* associated with common channel transmissions in the UL and DL cases. This is needed to determine if *priority scheduling* is needed between MAC-d and MAC-c as compared with DCCH/DTCH data streams. Associated with FACH scheduling WG3 asks WG2 if FACH *scheduling delays need to be known by MAC-d and MAC-sh* (e.g. to reduce physical layer buffering at the UE in the DL case). WG3 thinks that it is difficult to guarantee a maximum latency on the FACH on Iur since admission control does not rely on enough parameters, only prioritization can be achieved.

Whether examination of the effect of Iur *signaling latency*, and common channel (RACH, FACH, DSCH and USCH) transport over Iur should to be taken into consideration needs to be confirmed. This situation may for example occur if a UE using H-ARQ performs an inter-RNS cell update without switching in the CN. In this case, the ARQ transmission loop includes the Iur interface, which will cause additional latency for RLC PDU's as well as the PDU number transmissions.

Further WG3 has recognized that the LS from WG2 also identified the working assumption for support of the USCH for TDD. It is understood that the RACH is used for USCH allocation requests and for TDD the FACH is used for USCH allocation confirmation. For a complete analysis for the effects on common channel transport latency and FACH scheduling and prioritization requirements, WG3 requests WG2 also to identify the expected additional RACH/FACH utilization for USCH support. Similar to the H-ARQ case it is recognized there may also be a need for FACH scheduling prioritization for the USCH allocation confirmation.

WG3 appreciates WG2 support and comments on these issues.