Source: Ad Hoc 5 Chair

Title: Report on AH5 Meeting of 31 August 1999

Agenda

Ad Hoc 5 met in the afternoon of 31 August 1999. The following was the agreed upon agenda:

1. Rate matching/puncturing: Tdoc B02, D48, B89, D43
2. Concatenation/Segmentation: Tdoc B32; WG2 liaison C41 (point 3)
3. Annex of Informative Channel Coding Diagrams: Tdoc B49
4. Other: None

All contributions related to agenda items 1 and 2 were presented. Tdoc B49 was not presented due to unavailability of the presenter. It will be presented and discussed in Ad Hoc 4.

Results

Rate Matching

The following conclusions were reached:

(1) *Working Assumption* (Text proposal in Tdoc B56, discussing rate matching change, approved in AH5. Modified in Tdoc D56 to also remove of Berrou code puncturing per AH5 recommendation).

- The turbo code rate matching algorithm as proposed by Samsung and LGIC is to be used on both uplink and downlink. Parameters for algorithm = (2,1,1,1).
- The turbo code rate matching algorithm is used to provide all turbo code rates up to maximum specified by higher layers. Hence, code puncturing within turbo encoder ("Berrou puncturing") to produce rate 1/2 code from rate 1/3 code (as in current specification) is no longer used.
- Working assumption is subject to proponents providing additional simulation results regarding uplink performance for 80 ms 1st interleaver span. Performance should be compared with corresponding downlink performance as well as the combination of Berrou code puncturing plus the Samsung/LGIC rate matching algorithm.
- Working assumption will become an agreement if (i) the stipulated simulation data are provided and the results are acceptable to Ad Hoc 5; (ii) there is no challenge to the working assumption by the next RAN meeting. Simulation data should be provided at least one week before next RAN meeting.

(2) *For further study.* There was no consensus on a common rate matching scheme for both turbo codes and convolutional codes. In Tdoc B89, LGIC proposed instead to change the offset value used by the convolutional code rate matching algorithm in

order to avoid cases in which arm '711' is always punctured. This alternative approach was considered interesting; but more time is needed for further evaluation of the issue.

Concatenation/Segmentation

The following conclusions were reached:

(1) *Agreement* (Text proposal: Tdoc B32). Ericsson presented a proposal that, for release 99, transport block concatenation always be performed, even when there is no 1st multiplexing. Ad Hoc 5 agreed with the proposal. The issue would be re-examined if Hybrid ARQ is implemented in future releases.

(2) *Agreement*. The liaison from WG2 (point 3 of C41) was discussed. It was agreed that Ericsson would draft a response for approval in the plenary. The principal ideas to be conveyed in the response were also identified: (1) Concatenation and segmentation in layer 1 is independent of higher layers; (2) Concatenation of transport blocks in layer 1 is used to achieve higher coding gain with turbo codes; (3) Segmentation in layer 1 is used to manage implementation complexity.

Text Proposals

Tdocs D56 (rate matching plus removal of Berrou code puncturing—supersedes Tdoc B56 discussed in AH5), B32.