Agenda item:	8
Source:	AH26
Title:	AH26 report to RAN WG1 meeting #15
Document for:	Approval

Summary:

Twelve contributions were handled in the AH26 meeting #3. The modeling principle of the channel model for Tx diversity simulations with correlated antennas was agreed upon. It was also agreed that no new Tx diversity or beamforming solutions will be included to Rel.-00. Furthermore, the planned TR on Tx diversity solutions for multiple antennas was agreed not to be made. The issue of how to continue the Tx diversity studies was left to be discussed and decided in the plenary.

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1. INTRODUCTION

In AH26 meeting #3, 12 contributions were dealt with [1-12].

2. INPUT DOCUMENTS TO THE MEETING

In [3], a proposal was made to enhance the beamforming feature of the multiple antenna Tx diversity. No simulation results were presented but proponents agreed to provide them in the future. The contribution included also a proposal on how to define the CPICH pilot patterns for 4 Tx antennas. It should be considered later together with [6, 10]. The contribution was submitted for discussion so no decision needed to be made.

In [4], a channel model for Tx diversity simulations with correlated antennas were proposed. The modeling principle itself was agreed. The long-term properties of the channel were assumed to remain unchanged over time. Thus, proponents promised to provide a further extension of the model that also takes into consideration changes of the long-term parameters. There were some discussion about the proposed parameter values of the model. It was agreed that also other parameter values should be used in the simulations and therefore a proposal on the different parameter values will be made to be agreed over the reflector.

In [5], first simulation results of Tx diversity using the eigenbeamformer concept were presented. The document was for information and no decision needed to be made.

In [10], a possible solution how to specify the CPICH for up to 4 Tx antennas was presented. It was commented that impacts to e.g. AFC should be studied. The contribution was submitted for information and no decision needed to be made.

In [6], another proposal on how to specify the CPICH for up to 4 Tx antennas was made. The proposal was supported by Panasonic. Yet, it was agreed that companies need some time to check the details of the proposal. Therefore, the proposal was not yet accepted.

In [7], further simulation results for a closed loop mode 2 modified for 4 Tx antennas were presented. The document was submitted for information only so no decision needed to be made.

In [12], a new proposal on closed loop transmit diversity mode 2 with reduced states for 4 Tx antennas was made. The contribution was submitted for information and no decision needed to be made. Proponent will provide further simulations results later.

In [2], various aspects of the Tx diversity solutions in general for multiple Tx antennas were presented. Due to various reasons related to e.g. performance and implementation complexity issues it was proposed that no new Tx diversity/beamforming solutions for more than 2 Tx antennas should be included to Rel.-00. The proposal was supported by Interdigital, Siemens, Samsung, Nokia and Motorola. Therefore, AH26 recommends that no new Tx diversity or beamforming solutions will be included to Rel.-00.

Regarding the possible RAN WG1 report on Tx diversity solutions for multiple antennas that was tentatively agreed to be made in the TSG-R WG1 meeting #14, it was agreed that it will not be made as no further enhancements of Tx diversity will be proposed to be included to

Rel.-00. It was also agreed that there is no need to consider the text inputs to the TR [1, 8, 11] in the meeting.

There was also some discussion how to continue the Tx diversity studies. It was decided that this issue will be left to be discussed and decided in the plenary.

In [9], an input was made showing one example how to do the weight verification for closed loop mode 2 of Rel.-99. It was proposed that the method could be described in the informative Annex A of 25.214 of Rel.-00. The contribution was submitted for information so no decisions were made.

3. CONCLUSIONS

Twelve contributions were handled in the AH26 meeting #3. The modeling principle of the channel model for Tx diversity simulations with correlated antennas was agreed upon. It was also agreed that no new Tx diversity or beamforming solutions will be included to Rel.-00. Furthermore, the planned TR on Tx diversity solutions for multiple antennas was agreed not to be made. The issue of how to continue the Tx diversity studies was left to be discussed and decided in the plenary.

REFERENCES

[1] Nokia. Text proposal for extended closed loop mode 1 concept to Tx diversity TR. TSG-R WG1 document, TSGR1#15(00)1040, 22-25th, August, 2000, Berlin, Germany, 15 pp.

[2] Ericsson. Comments on transmit diversity schemes with more than two antennas. TSG-R WG1 document, TSGR1#15(00)1054, 22-25th, August, 2000, Berlin, Germany, 3 pp.

[3] Fujitsu. Enhance the beamforming feature of the multiple antenna Tx diversity. TSG-R WG1 document, TSGR1#15(00)1065, 22-25th, August, 2000, Berlin, Germany, 8 pp.

[4] Siemens. Channel model for Tx diversity simulations using correlated antennas. TSG-R WG1 document, TSGR1#15(00)1067, 22-25th, August, 2000, Berlin, Germany, 4 pp.

[5] Siemens. First simulation results of Tx diversity using the eigenbeamformer concept. TSG-R WG1 document, TSGR1#15(00)1068, 22-25th, August, 2000, Berlin, Germany, 2 pp.

[6] Samsung. New CPICH Transmission scheme for 4-antenna transmit diversity. TSG-R WG1 document, TSGR1#15(00)1072, 22-25th, August, 2000, Berlin, Germany, 6 pp.

[7] Samsung. Performance results of basis selection transmit diversity for 4 antennas. TSG-R WG1 document, TSGR1#15(00)1073, 22-25th, August, 2000, Berlin, Germany, 7 pp.

[8] Samsung. Proposed TR for Transmit diversity for more than 2 antennas. TSG-R WG1 document, TSGR1#15(00)1074, 22-25th, August, 2000, Berlin, Germany, 12 pp.

[9] Motorola. Verification algorithm for closed loop transmit diversity mode 2. TSG-R WG1 document, TSGR1#15(00)1087, 22-25th, August, 2000, Berlin, Germany, 7 pp.

[10] Siemens. Possible enhanced transmit diversity pilot patterns. TSG-R WG1 document, TSGR1#15(00)1117, 22-25th, August, 2000, Berlin, Germany, 2 pp.

[11] Siemens. Text proposal for RAN WG1 report on Tx diversity solutions for multiple antennas. TSG-R WG1 document, TSGR1#15(00)1126, 22-25th, August, 2000, Berlin, Germany, 10 pp.

[12] Motorola. Closed loop transmit diversity mode 2 with reduced states for 4 elements. TSG-R WG1 document, TSGR1#15(00)1132, 22-25th, August, 2000, Berlin, Germany, 7 pp.