

Title: LS on 1.28 Mcps TDD and 3.84 Mcps TDD co-existence studies in RAN4
(answer to R1-00-1321)
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At the last TSG RAN #9 meeting in Hawaii, it was decided:

“WG4 was requested to study/continue studying the co-existence of the two TDD options in the unsynchronised case in adjacent bands, and to study to what extent requirements needed to be tightened.”

The following results have been achieved.

1. In accordance with the RAN 4 agreed simulation methodology on co-existence investigations, Monte Carlo based simulation results for unsynchronised operation in adjacent bands have been provided covering the following scenarios:
 - a) 1.28 Mcps TDD MS ? 3.84 Mcps TDD BTS
 - b) 1.28 Mcps TDD BTS ? 3.84 Mcps TDD MS
 - c) 1.28 Mcps TDD MS ? 3.84 Mcps TDD MSIn the additional RAN4 Ad-hoc meeting in Berlin it was concluded:
“General consensus is that using the Monte Carlo based simulation method the MS to MS, MS to BTS and BTS to MS cases only produce a minor degradation in capacity (<2%).”
The results on these co-existence studies will be included in the RAN4 technical report on 1.28 Mcps TDD (TR 25.945).
The relevant documents are attached in Annex A.
2. A deterministic calculation for 1.28 Mcps TDD BTS ? 3.84 Mcps TDD BTS interference for the unsynchronised case in adjacent bands has been provided.
In the additional RAN4 Ad-hoc meeting in Berlin it was noted:
“The BTS to BTS case is of greatest concern, however the group need more time to study the assumptions. Given that operators will be willing to co-ordinate their planning there may be possibilities to improve the scenario.”
The relevant document is attached in Annex B.
3. Information on the system performance in case of co-siting of 1.28 Mcps and 3.84 Mcps TDD base stations and co-ordination between operators was provided during RAN4#14. Based on link level simulations the document concludes:
“1.28 Mcps TDD and 3.84 Mcps TDD option can be synchronised. In the worst case of co-sited base stations, the overall cell capacity in the synchronised case is about 95 % of an ideal synchronised cell.”
The relevant document is attached in Annex C.

Based on the provided results RAN4 concludes that for operation in adjacent bands a further alignment of the physical layer parameters / frame structure between 1.28 Mcps TDD and 3.84

Mcps TDD is not necessary, if operators co-ordinated to ensure both frame and switching point synchronisation.

RAN4 has finalised its simulation and study requested by RAN#9 on co-existence of the two TDD options in the unsynchronised case in adjacent bands. Based on the above listed results the work will be continued in order to complete the RAN4 technical report on 1.28 Mcps TDD, which includes to determine ACLR and ACS requirements.

Annex A:



R4-00COX002.doc



R4-00COX003.doc

Annex B:



R4-00COX005.doc



R4-000956.doc

Annex C:



R4-000972.doc