**3GPP TSG-RAN WG4 Meeting#97-e R4-2016136**

**E-meeting,2th Nov – 13th Nov, 2020**

**Agenda item: 11.1.3.3**

**Source: ZTE Corporation**

**Title: TP to TR38.921: uplink ACIR model**

**Document for:** **Approval**

1. Introduction

In the RAN4#95-e-Bis meeting, WF on simulation assumption [1] and WF for BS antenna parameters [2-3] were approved for coexistence evaluation work, meanwhile uplink ACIR model should be explicitly described for the benefit of simulation alignment.

1. Discussion

As mentioned in the existing TR 38.921, if a UE occupies a smaller bandwidth than the channel bandwidth for transmission, a two stop ACLR model could be considered in frequency to avoid overly estimating interference, however corresponding uplink ACIR model was not clearly described yet which is also quite critical for evaluation work in uplink coexistence simulation study. Similar as what has been agreed for uplink ACIR model of LTE coexistence study captured in TR 36.942, some minor modifications is made as following considering channel bandwidth 100MHz and 30KHz SCS for both aggressive system and victim system.

Table 1.uplink ACIR value

|  |  |
| --- | --- |
| Frequency offset between aggressor (91RBs) and victim (91RBs) | ACIR value |
| **0-90 RBs** | **30 + X** |
| **91-181RBs** | **43 + X** |
| **>181RBs** | **43+ X** |

1. Text proposal

# 4 Co-existence study

## 4.2 Co-existence simulation assumption

4.2.6 ACLR and ACS modelling

For DL it seems reasonable from the perspective of simulating worst case scenarios that we assume BS ACLR is modelled as flat in space, and the UE ACS can be modelled flat in space.

If this assumption is for DL, then the similar assumption could be made for the UL because:

- UE has a much small number of antennas, thus the effect of directivity should be smaller for ACLR (or the adjacent channel interference). It can also be reasonably assumed that the UE ACLR will play a dominant role than the BS ACS in the adjacent channel interference.

- Again, BS ACS flat in space might mean worse coexistence performance than actual performance because BS has better capability of steering its receive antennas to suppress interference.

If a UE occupies a smaller bandwidth than the channel bandwidth for transmission, a two step ACLR model shown in Table 4.2.6-1 could be considered in frequency to avoid overly estimating interference, similar as done in E-UTRA coexistence study (as recorded in TR 36.942).

Table 4.2.6-1 uplink ACIR value

|  |  |
| --- | --- |
| Frequency offset between aggressor (91RBs) and victim (91RBs) | ACIR value |
| **0-90 RBs** | **30 + X** |
| **91-181RBs** | **43 + X** |
| **>181RBs** | **43+ X** |

Note : 1 user scheduling is baseline assumption for coexistence evaluation and two step ACLR model could be used for 3 user scheduling simulation.Therefore, it is assumed that both ACLR (or the adjacent channel interference) and ACS are flat in both space and frequency. The ACIR model can be express as



(assuming ACLR, ACS and ACIR to be linear).