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| LSP Correlation Clarification for Scenario 4 |
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Abstract

How the large scale parameter (LSP) correlation in ITU UMi/Uma is applied to scenario 4 is missing.

Currently, ITU UMi or UMa channel model is used for scenario 4 of the TGax simulation scenario document. However, neccesnecessarymation to implement the channel for scenario 4 is missing, namely how the large scale parameter correlation should be applied to APs and STAs.

In the ITU UMi/UMa channel model, the large scale parameters that control, shadowing, delay spread, angular spread, etc is correlated between users as a function of distance. For example, channel links between base statation (BS) and user terminal (UT) will be correlated if the UT are near each other as shown in Figure 1.



Figure 1. ITU LSP Correlations

Although, it is not explicitly stated in the TGax simulation scenario document, we can assume that BS corresponds to AP and UT correspond to STA. However, the LSP description for STA to STA link or AP to AP link are still missing.

It should be noted that this information is needed not only for MIMO channel generation but also for SISO channel generation as well.

Therefore, we propose to clarify the description for the channel model in scenario 4.

It is proposed that LSP correlation of channel links between:

* AP and STA: assume AP is BS and STA is UT, and apply distance based correlation between STAs as done for UT in ITU UMi or UMa channels.
* AP and AP: do not apply any correlation between AP and AP links. AP in scenario 4 are sufficiently spaced apart. Furthermore, no LSP correlation is performed between BS in ITU channel model.
* STA and STA: do not apply any correlation between STA and STA links. Although, channel link between STA to STA will have LSP correlations, the ITU channel model lacks the right information on how LSP correlation should apply for UT to UT as it such link does not exist in FDD or synchronous TDD systems. Given that applying LSP correlation between STA to STA link will be computationaly challenging and IEEE community lack information on the right set of correlation parameters, we proposed to not apply any correlation for the time being.

---- Proposed Text Changes to the TGax Simualation Scenario document ----

# 4 - Outdoor Large BSS Scenario

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| **Parameter** | **Value** |
| Channel Model | [UMi] or UMa The distance based large scale parameter (LSP) correlation among channel link between base station (BS) and user terminals (UT) is applied to channel link between AP and STAs, where AP is treated as BS and STA is treated as UT. No LSP correlation are applied to channel links between AP to AP, and links between STA to STA.The following equations from ITU-UMi model [4] are to be used for computing the path loss for each drop in an outdoor scenario***…{omitted}…*** |

---- End of Text Changes ---