7.6.1 Pathloss and Effective Pathloss

Path loss between each user and BS needs to be calculated within the cellular layout. In SEAMCAT, there is a distinction between the raw pathloss and the effective pathloss. The effective pathloss considers the minimum coupling loss (MCL) as defined in 3GPP. The MCL is the parameter describing the minimum loss in signal between BS and UE or UE and UE in the worst case and is defined as the minimum distance loss including antenna gains measured between antenna connectors. Note that the effective path loss includes shadowing.

The effective pathloss is defined such as:

$$Effective\_pathloss(Tx, Rx) = \max\left(pathloss - G_{TX} - G_{Rx}, MCL\right) \quad \text{(Eq. 32)}$$

where:

- G_{Tx} : antenna gain at the transmitter (Tx) in dBi.
- G_{Rx} : antenna gain at the receiver (Rx) in dBi.

The MCL is an input parameter to SEAMCAT. Typical values of MCL can be found in 3GPP documents (3). By default this value is 70 dB (i.e. typical value for Macro cell Urban Area BS <-> UE for frequency of 2000 MHz, e.g., there is a difference between 900 MHz and 2500 MHz with respect to MCL.) when defining the victim or interferer OFDMA system, but the default MCL value for generic interferer is set to 0 dB when assessing the interference between victim and interferer (ILT -> VLR path).

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