#### ***Offline consensus 2-2-1-r1:***

For UPT (user perceived throughput) related performance metrics for FTP model 3 in SLS, adopt the following option.

* Option 1: UPT is defined as the size of an FTP packet divided by the time which starts when the packet is received in the transmit buffer and ends when the last bit of the packet is correctly delivered to the receiver [Refer to TR36.814].
  + Unfinished FTP packets should be incorporated in the UPT calculation. The number of served bits (possibly zero) of an unfinished FTP packet by the end of the simulation is divided by the served time (simulation end time – file arrival time) [Refer to TR36.889].
  + Consider zero bit for dropped FTP packets.
  + Average-UPT of a user: defined as the average from all UPTs for all FTP packets intended for this user [Refer to TR36.814].
  + Tail-UPT of a user: defined as the worst 5% UPT among all FTP packets intended for this user [Refer to TR36.814].
  + Median-UPT of a user: defined as the 50% UPT among all FTP packets intended for this user.
  + Average-UPT CDF: The CDF of the Average-UPTs for all users.
  + Tail-UPT CDF: The CDF of the Tail-UPTs for all users.
  + Median-UPT CDF: The CDF of the Median-UPTs for all users.
  + Mean/5%/50%/95% Average-UPT: The mean/5%/50%/95% value of Average-UPTs for all users.
  + Mean/5%/50%/95% Tail-UPT: The mean/5%/50%/95% value of Tail-UPTs for all users.
  + Mean/5%/50%/95% Median-UPT: The mean/5%/50%/95% value of Median-UPTs for all users.

#### ***Updated proposal 2-2-2-r2(Open):***

For latency related performance metric for FTP model 3 in SLS, option 1 is baseline, it is up to companies to report the latency with option 2.

* Packet latency: defined as the time which starts when the packet is received in the transmit buffer and ends when the last bit of the packet is correctly delivered to the receiver.
  + (baseline) Option 1: Calculate the latency for each packet for each UE, and then generate CDF of latency for all these packets from all the UEs.
    - Packet-Latency CDF: The CDF of the packet latencies of all the packets from all the UEs.
    - Mean/5%/50%/95% Packet-Latency: The mean/5%/50%/95% value of Packet-Latency of all the packets from all the UEs.
  + (optional) Option 2: Calculate the latency for each packet for each UE, and then calculate the average latency for each UE, then generate the CDF for these average latency for each UE
    - UE-Average-Latency: defined as the average packet latency for a UE
    - UE-Average-Latency CDF: The CDF of the UE-Average-Latency for all users.
    - Mean/5%/50%/95% UE-Average-Latency: The mean/5%/50%/95% value of UE-Average-Latency for all users.
* Note: HARQ re-transmission should be considered for latency evaluation.
* Unfinished FTP packets are not incorporated in the packet latency calculation.
  + Unfinished Packet Rate is defined as the number of the unfinished packets for all users divided by the total number of generated packets for all users

#### ***Updated proposal 2-5-1-r1 (Open):***

Adopt the following table for traffic model of FTP model 3 for scenarios in deployment case 1 for SBFD.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Indoor office (FR1&FR2) | Urban Macro (FR1) | Dense Urban Macro layer (FR1&FR2) | Dense Urban Micro layer (FR2) | Dense Urban with 2-layer (FR1) |
| General | UL and DL are simulated simultaneously.   * Baseline: Each UE is either assigned UL traffic or DL traffic. * Optional: Each UE is assigned both UL traffic and DL traffic. | | | | |
| FTP packet size | Both symmetric and asymmetric packet size for UL and DL can be considered.   * Option 1: Symmetric packet size: 0.1Mbytes for DL/UL (baseline), 0.5Mbytes or 2Mbytes for DL/UL (optional)   + FFS: 1Kbyte for DL/UL * Option 2: Asymmetric packet size: 0.5Mbyte for DL and 0.125 Mbytes for UL.   + FFS: 1Kbyte for UL | | | | |
| DL arrival rate for legacy TDD | * The DL arrival rate is selected to reach a target DL traffic load (RU). * DL Traffic load: low DL RU (20%-25%), medium DL RU (40%-50%), and high DL RU (60%-80%). * Note: Type-2 RU definition (calculated per link direction) is used | | | | * The DL arrival rate#1 of Macro cell and DL arrival rate#2 of Micro cell are selected to reach target DL traffic load (RU)#1 of Macro cell and target DL traffic load (RU)#2 of Micro cell, respectively * DL Traffic load: low DL RU (20%-25%), medium DL RU (40%-50%), and high DL RU (60%-80%). * Note: Type-2 RU definition (calculated per link direction) is used |
| UL arrival rate for legacy TDD | * The UL arrival rate is determined by the ratio of DL/UL traffic * Ratio of DL/UL traffic: {2:1} as baseline, {4:1} and {1:1} as optional. | | | | * The UL arrival rate#1 is determined by the DL arrival rate#1 and ratio of DL/UL traffic of Macro cell. UL arrival rate#2 is determined by the DL arrival rate#2 and ratio of DL/UL traffic of Micro cell * Ratio of DL/UL traffic: {2:1} as baseline, {4:1} and {1:1} as optional. |
| Arrival rate for SBFD | The UL and DL FTP packet arrival rate for SBFD are the same as legacy TDD. | | | | |

#### ***Updated proposal 2-7-1-r2 (Open):***

For LOS probability of gNB-gNB channel,

* For Macro-gNB-to-Macro-gNB case, option 1 is baseline, it is up to companies to use option 3
  + Option 1: Reuse the gNB-to-UE LOS probability equation in TS38.901
  + Option 3: If the 2D distance between two Macro gNBs are less than or equal to the ISD (200m for Dense Urban, and 500m for Urban Macro), set the LOS probability to X; Otherwise, reuse gNB-to-UE LOS probability equation in TR 38.901.
    - FFS: X = [0.7~~, 0.8, 1~~]
* For other cases, reuse gNB-to-UE LOS probability equation in TR 38.901.

#### ***Updated proposal 2-7-2-r1 (Open):***

Adopt the following table for gNB-gNB channel model and gNB-UE channel model.

gNB-UE channel model and gNB-gNB channel model

|  |  |  |
| --- | --- | --- |
|  | **Dense urban, Urban macro** | **Indoor office** |
| Large-scale channel parameters | FR1:   * Macro-to-UE: UMa in TR 38.901 * Micro-to-UE: UMi-Street canyon in TR 38.901 * Macro-to-Macro: UMa in TR 38.901 (hUE =25m), * Macro-to-Micro: UMa in TR 38.901 (hUE =10m) * Micro-to-Micro: UMi-Street canyon in TR 38.901 (hUE =10m)   FR2-1:   * Macro-to-UE: UMa in TR 38.901 * Micro-to-UE: UMi-Street canyon in TR 38.901 * Macro-to-Macro: UMa in TR 38.901 (hUE =25m) * Macro-to-Micro: UMa in TR 38.901 (hUE =10m) * Micro-to-Micro: UMi-Street canyon in TR 38.901 (hUE =10m) | FR1:   * TRP-to-UE: InH-Office in TR 38.901 * TRP-to-TRP: InH-Office in TR 38.901 (hUE =3m)   FR2-1:   * TRP-to-UE: InH-Office in TR 38.901 * TRP-to-TRP: InH-Office in TR 38.901 (hUE =3m) |
| Fast fading parameters | FR1:   * Macro-to-UE: UMa in TR 38.901 * Micro-to-UE: UMi-Street canyon in TR 38.901 * Macro-to-Macro: UMa O2O in TR 38.901 (hUE =25m); ASA and ZSA statistics updated to be the same as ASD and ZSD; ZoD offset = 0 * Macro-to-Micro: UMa O2O in TR 38.901 * Micro-to-Micro: UMi-Street canyon O2O in TR 38.901 (hUE=10m); ASA and ZSA statistics updated to be the same as ASD and ZSD; ZoD offset = 0   FR2-1:   * Macro-to-UE: UMa in TR 38.901 * Micro-to-UE: UMi-Street canyon in TR 38.901 * Macro-to-Macro: UMa O2O in TR 38.901 (hUE=25m); ASA and ZSA statistics updated to be the same as ASD and ZSD; ZoD offset = 0 * Macro-to-Micro: UMa O2O in TR 38.901 * Micro-to-Micro: UMi-Street canyon O2O in TR 38.901 (hUE=10m); ASA and ZSA statistics updated to be the same as ASD and ZSD; ZoD offset = 0 | FR1:   * TRP-to-UE: InH-Office in TR 38.901 * TRP-to-TRP: InH-Office in TR 38.901 (hUE=3m), ASA and ZSA statistics updated to be the same as ASD and ZSD   FR2-1:   * TRP-to-UE: InH-Office in TR 38.901 * TRP-to-TRP: InH-Office in TR 38.901 (hUE =3m), ASA and ZSA statistics updated to be the same as ASD and ZSD |

#### ***Updated proposal 2-7-3-r2 (Open):***

For UE-UE channel model, reuse the UE-UE channel model for flexible duplex evaluation in TR 38.802 for both FR1 and FR2, and adopt the following tables.

UE-UE channel model

|  |  |  |
| --- | --- | --- |
|  | **Dense urban, Urban macro** | **Indoor office** |
| Large-scale channel parameters | FR1:   * UE-to-UE: A.2.1.2 in TR36.843(\*), penetration loss between UEs follows Table A.2.1-13 in TR38.802   FR2-1:   * UE-to-UE: UMi-Street canyon in TR 38.901 (hBS =1.5m ~ 22.5m), penetration loss between UEs follows Table A.2.1-12 in TR38.802 | FR1:   * UE-to-UE: A.2.1.2 in TR36.843 (\*)   FR2-1:   * UE-to-UE: InH-Office in TR 38.901 (hBS =1.5m) |
| Fast fading parameters | FR1:   * UE-to-UE: A.2.1.2 in TR36.843 (ITU InH) for indoor to indoor, and 3D UMi for other cases. ASD and ZSD statistics updated to be the same as ASA and ZSA.   FR2-1:   * UE-to-UE: UMi-Street canyon in TR 38.901; ASD and ZSD statistics updated to be the same as ASA and ZSA. | FR1:   * UE-to-UE: A.2.1.2 in TR36.843 (ITU InH), ASD statistics updated to be the same as ASA.   FR2-1:   * UE-to-UE: InH-Office in TR 38.901 (hBS =1.5m), ASD and ZSD statistics updated to be the same as ASA and ZSA |