**Rel.17 NR FeMIMO: Phase 2 EVM discussion – Item 1**

1. Compilation of companies’ views

Based on the companies’ inputs in Phase 1 discussion, an initial proposal on baseline EVM assumptions needed for Rel.17 item 1 beyond Rel.16 EVM is given in section 2.

Companies are encouraged to share their views on the content of section 2 in Table 1 – *especially* on the yellow highlighted rows.

Based on the inputs gathered in Table 1, the content of section 2 will be refined accordingly to arrive at a final proposal.

Table 1. Inputs from companies on the content of section 2

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| **Company** | **Input** |
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1. Baseline assumptions for item 1 EVM – *initial proposal*

**Note:** The content of this section pertains to the proposed baseline assumption where baseline is interpreted as follows:

* When simulation is needed and/or justified, the agreed baseline constitutes the required minimum to be simulated
* This does not preclude companies from providing additional simulation results with other set(s) of assumptions, e.g. to strengthen their arguments

**Proposal 1:** When it is needed and/or justified, SLS is the baseline tool for evaluation. Examples include (but not limited to):

* Evaluating enhancements for high mobility scenarios, at least for intra-cell mobility
* Evaluating UL coverage loss mitigation due to MPE regulation

**Proposal 2:** When SLS is needed and/or justified, the simulation assumptions are given in Table 2. Items that are the same as what has been agreed in Rel.16 are in green.

Table 2 Baseline assumptions for SLS

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| --- | --- |
| **Parameters** | **Values** |
| Frequency Range | FR2 @ 30 GHz,   * SCS: 120 kHz * BW: 80 MHz |
| Scenarios | Dense urban (TR 38.901/38.913)  High speed @FR2:   * Highway (Urban Macro, TR 38.901/37.885) @FR2 * High speed train (TR 38.802/38.913) @FR2 |
| UE Speed | 60 km/hr (for outdoor UEs, Dense Urban)  120 km/hr (for outdoor UEs, Dense Urban)  256 km/hr (only for HST @FR2) note: 160mph per operator’s input |
| Transmission Power | Maximum Power and Maximum EIRP for base station and UE as given by corresponding scenario in 38.802 (Table A.2.1-1 and Table A.2.1-2) |
| BS Antenna Configuration | (M, N, P, Mg, Ng) = (4, 8, 2, 2, 2). (dV, dH) = (0.5, 0.5) λ. (dg,V, dg,H) = (2.0, 4.0) λ  Companies to explain TXRU weights mapping.  Companies to explain beam selection.  Companies to explain number of BS beams |
| BS Antenna radiation pattern | TR 38.802 Table A.2.1-6, Table A.2.1-7 |
| UE Antenna Configuration | **Number/location of Panels**   * 3 Panel UEs (left, right and back)   **Panel structure**   * 1x4x2 (Baseline) * Other panel structures optional (company to report)   Companies to explain TXRU weights mapping.  Companies to explain beam and panel selection.  Companies to explain number of UE beams |
| UE Antenna radiation pattern | TR 38.802 Table A.2.1-8, Table A.2.1-10 |
| Beam correspondence | Companies to explain beam correspondence assumptions (in accordance to the two types agreed in RAN4) |
| Link adaptation | Based on CSI-RS |
| Traffic Model | FTP model 1 with packet size 0.5Mbytes (other value is not precluded).  Other traffic models including the full buffer are not precluded. |
| Inter-cell mobility related | Companies to explain cell association scheme |
| Panel Blockage Modeling | Need discussion |
| MPE Modeling | Need discussion  e.g. Maximum power (EPIR) per beam direction/panel |
| UE-side panel switching latency | Need discussion |
| UE Mobility, trajectory handling and UE rotation | Need discussion  e.g. Mobility with linear trajectories;  Companies to provide details on add-on features including UE mobility, rotation, blockage, spatial consistency etc. |
| Inter-panel calibration for UE | Ideal, non-ideal following 38.802 (optional) – Explain any errors |
| Control and RS overhead | Companies report details of the assumptions |
| Control channel decoding | Ideal or Non-ideal (Companies explain how it is modelled) |
| UE receiver type | MMSE-IRC as the baseline, other advanced receiver is not precluded |
| BF scheme | Companies explain what scheme is used |
| Transmission scheme | Multi-antenna port transmission schemes  Note: Companies explain details of the using transmission scheme. |
| Other simulation assumptions | Companies to explain serving TRP selection  Companies to explain scheduling algorithm |
| Algorithm details (when applicable) | Companies to report:   * Beam reporting mechanism * Beam metric L1-RSRP; L1-SINR is optional * Number of active panels |
| Performance metrics (when applicable) | * Outage * CDF of UPT, avg. and 5% UPT * Overhead * Latency of beam switching * Latency of Handover |