**3GPP TSG-RAN WG4 Meeting # 102-e R4-220xxxx**

**Electronic Meeting, Feb 21st - Mar 3rd, 2022**

**Agenda item:** 10.19.3.2

**Source:** Samsung

**Title:** WF on RRM requirements for inter-cell beam management

**Document for:** Approval

# Introduction

This contribution is to capture the agreements for the email discussion for Rel-17 FeMIMO RRM w.r.t. inter-cell beam management in RAN4 #102-e meeting.

# Agreements in GTW session

In GTW session, the following bullets have been agreed

***TBA***

# Way Forward on Inter-cell Beam Management

* Configure L1-RSRP measurement on a cell with different PCI for UE
  + Network shall configure L3 measurement on a cell with different PCI before L1-RSRP measurement is configured for UE on that cell.
* Known condition for a cell with different PCI on which L1-RSRP measurement is performed.
  + A cell with different PCI is considered as known provided
    - Serving cell and the cell with different PCI has the same center frequency, SCS and SFN offset;
    - During the last [X]s before L1-RSRP measurement is configured, the UE has sent a valid L3 measurement report for the cell with different PCI;
    - Timing offset between serving cell and the cell with different PCI are within CP.
  + A cell with different PCI is considered as unknown provided the known condition is not meet.
* Assumptions for defining inter-cell L1-RSRP measurement requirement
  + For FR1 measurement within SMTC, measurement on SC and NSC can be performed simultaneously.
  + [TBA]
* Introduce sharing factor for inter-cell L1-RSRP measurement requirement
  + [TBA]
* Applicability of RRM requirements for UE L1-RSRP measurements on NSC
  + [TBA]
* UE behaviour for defining L1-RSRP measurement on a cell with different PCI
  + For outside SMTC, UE scheduling availability for serving cell may be introduced.
  + For FR1 inside SMTC, measurement on SC and NSC can be performed simultaneously; and L1 and L3 measurement on NSC can be performed simultaneously.
  + For FR2 inside SMTC, measurement on SC and NSC CANNOT be performed by the same beam.
* UE behaviour when SSBs associated with different PCIs overlap
  + [TBA]
* L1-RSRP measurement requirements on cell with different PCI from serving cell
  + Define the measurement period requirement for known NSC based on existing L1-RSRP measurement for SC and extra sharing factor may be needed.
  + Add extra cell identification requirement for unknown NSC if unknown NSC requirement is defined
    - Adding an additional time equal to cell detection and one L3 measurement period
* Whether to define requirements for CSI-RS based L1-RSRP measurement on a cell with different PCI
  + Define the requirement for SSB-based measurement only in Rel-17.