3GPP TSG-RAN WG3 Meeting #121 R3-23xxxx

**Toulouse, France, 21 – 25 Aug, 2023**

Agenda Item: 10.2.3

Source: Huawei

Title: (TPs for SON BLCR for TS 36.300): Remaining issues for RACH optimisation

Document for: other

# Introduction

This ducumemnt contains a TP for SON BLCR for TS 36.300.

# TP for SON BLCR for TS 36.300

/\*\*\*\*\*\*\*\*\*\*\*\*\*Start of change\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

### 22.4.3 Support for RACH Optimisation

#### 22.4.3.1 General

The aim of this function is to support RACH Optimisation. RACH optimisation is supported by UE reported information and by RACH parameters exchange between:

- E-UTRA cells;

- NR cells, in case of EN-DC.

#### 22.4.3.2 Solution description

##### 22.4.3.2.1 E-UTRA cell case

The setting of RACH parameters that can be optimized are:

- RACH configuration (resource unit allocation);

- RACH preamble split (among dedicated, group A, group B, RSRP level, NRSRP level (for NB-IoT), NPRACH resource pools (for NB-IoT), EDT);

- RACH backoff parameter value;

- RACH transmission power control parameters.

RACH optimisation is supported by UE reported information and by PRACH parameters exchange or NPRACH parameters (for NB-IoT) between eNBs.

UEs which receive polling signalling shall report the below information:

- Number of RACH preambles sent until the successful RACH completion;

- Contention resolution failure;

- For BL UE or UE in enhanced coverage or NB-IoT UE, the RSRP (NRSRP for NB-IoT) level in which the UE started the random access procedure;

- For BL UE or UE in enhanced coverage or NB-IoT UE, an EDT fallback indication.

UE reporting of RACH information is not supported for a NB-IoT UE using the Control Plane CIoT EPS Optimisation,

##### 22.4.3.2.2 NR cell in EN-DC case

The solution applies to an en-gNB supporting EN-DC operation. RACH optimisation is supported by UE reported information (RA report, see TS 38.300 [79]) made available at the eNB and further forwarded to the en-gNB, and by PRACH parameters exchanged (see TS 38.300 [79]) between en-gNBs and eNBs.

In EN-DC, when the UE performs a successful random-access procedure in the secondary en-gNB, the secondary en-gNB may inform the potential availability of RA Report in the UE to the master eNB via a RACH indication. The eNB may then retrieve the RA Report from the UE based on the RACH indication received via X2AP signalling from the secondary en-gNB.

##### 22.4.3.2.3 Retrieval and forwarding of NR RA Report by eNB

When an eNB retrieves an NR RA Report, it may forward the NR RA Report to those en-gNBs serving the PSCell IDs indicated by the PSCell List Container along with the NR RA Report. The eNB may also forward the RA report to the source master eNB via X2AP signalling.

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