**3GPP TSG-SA5 Meeting #154 *S5-242125d1***

**Changsha, China, 15 -19 April 2024**

**Source: China Unicom**

**Title: Add use case and potential requirement on throughput performance evaluation of RedCap**

**Document for: Approval**

**Agenda Item: 6.19.17**

# 1 Decision/action requested

***The group is asked to approve the proposal.***

# 2 References

[1] 3GPP TR 28.876: “Management aspects of RedCap feature”

[2] 3GPP TS 28.552: “Management and orchestration;5G performance measurements”

[3] 3GPP TS 28.554: “Management and orchestration; 5G end to end Key Performance Indicators (KPI)”

# 3 Rationale

It was approved in SP-231734 to study the management of aspects of RedCap features. One of the working taks is to investigate the measurements and KPIs to evaluate the performance of NR networks delivering communication services for RedCap UEs. In order to achieve the objective mentioned above, issue on throughput performance evalution for RedCap is proposed in this contribution.

# 4 Detailed proposal

This contribution proposes to make the following changes in [1].

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| **1st Change** |

# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non‑specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[X] 3GPP TS 28.552: " Technical Specification Group Services and System Aspects; Management and orchestration; 5G performance measurements"

[Y] 3GPP TS 38.865: " Technical Specification Group Radio Access Network; Study on further NR RedCap UE complexity reduction"

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| **2nd Change** |

5.Y Use case #Y: Performance evaluation on throughput of RedCap

5.Y.1 Description

RedCap (Reduced Capability) represents a lightweight access technology within the 5G NR network, designed to satisfy the requirements for cost-effective, energy-efficient, and moderate-data-rate solutions. Some typical use cases, such as industrial sensors, video surveillance, wearables, etc., have been specified in TR 38.865 [Y], primarily applied in verticals to to facilitate the digital transformation.

UE experienced data rate is an essential and important performance indicator for communication services. Compared to non-Redcap UEs, RedCap UEs have a lower cost and streamlined capabilities. For instance, in terms of average DL data rate which is measured by throughput, the requirement for legacy eMBB UEs is mostly more than 100Mbps while that for RedCap UE is ranging from less than 2Mbps to 50Mbps. In co-existence scenario, average throughput is calculated combining the two types of UEs together in the current approach specfied in TS 28.552 [X]. As a result, it is challenging for the MnS to accurately obtain the experienced data rate for RedCap UEs in the network, as the result is influenced by the legacy UEs.

Consequently, it is crucial to investigate an approach for separately calculating the data rate of RedCap UEs and defining the throughput performance of networks that deliver RedCap services. This will ensure a more precise evaluation of the user experience for RedCap UEs.

5.Y.2 Potential requirements

**REQ-RedCap-Perf-Throughput:** The MnS shall have capability to provide measurements or KPIs related to throughput for RedCap UEs in NR network.

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| **End of changes** |