**3GPP TSG-RAN WG3 Meeting #126 R3-247785**

**Orlando, USA, 18th – 22nd Nov, 2024**

Agenda Item: 11.2

Source: Lenovo (Moderator)

Title: SoD of CB AI based Slicing

Document for: Approval

# 1 Introduction

 **CB: # AIRAN1\_Slicing**

**- Check the open issues above**

**- Provide TPs to capture the agreements**

(moderator - Lenovo)

Summary of offline disc [R3-247785](Inbox/R3-247785.zip)

# 2 Summary for chairman notes

**Update the Semantics Description of Predicted Radio Resource Status IE in the DATA COLLECTION UPDATE message to indicate that this IE also includes the Slice Radio Resource Status List IE.**

**Companies have different understandings on if per slice per UE performance (e.g., throughput) is really supported by SA5 specification.**

**Source node can request per UE per S-NSSAI granularity for UE performance feedback.**

**There is no consensus if UE performance can be measured in per UE per S-NSSAI and reported from target node to source node.**

Agree TP for 38.423 BLCR:

# 3 Discussion

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| --- |
| **First Bit (Predicted Radio Resource Status) can be reused for requesting predicted slice radio resource status with list of Slice in the DATA COLLECTION REQUEST message.****Update the Semantics Description of Predicted Radio Resource Status IE in the DATA COLLECTION UPDATE message to indicate that this IE also includes the Slice Radio Resource Status List IE?****Introduce the new bit for Predicted slice available capacity in the Report Characteristics for Data Collection IE in the DATA COLLECTION REQUEST message.****Introduce a Predicted Slice Available Capacity IE in the DATA COLLECTION UPDATE message to report the requested predicted slice available capacity to the requesting node.***WA: UE performance per each PDU session associated to a requested S-NSSAI is reported from target node to source node.***Turn WA to agreement: UE performance per Slice is reported from target node to source node.** |

**Issue#1:**

**First Bit (Predicted Radio Resource Status) can be reused for requesting predicted slice radio resource status with list of Slice in the DATA COLLECTION REQUEST message.**

**Update the Semantics Description of Predicted Radio Resource Status IE in the DATA COLLECTION UPDATE message to indicate that this IE also includes the Slice Radio Resource Status List IE?**

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| --- | --- | --- |
| [R3-247442](file:///D%3A%5C%E4%BC%9A%E8%AE%AE%E7%A1%AC%E7%9B%98%5CTSGR3_126%5CDocs%5CR3-247442.zip) | (TP to BLCR 38.423) Discussion on AIML based network slicing (Lenovo) | other |

For chair note:

**Update the Semantics Description of Predicted Radio Resource Status IE in the DATA COLLECTION UPDATE message to indicate that this IE also includes the Slice Radio Resource Status List IE.**

**Issue#2:**

*WA: UE performance per each PDU session associated to a requested S-NSSAI is reported from target node to source node.*

**Turn WA to agreement: UE performance per Slice is reported from target node to source node.**

To align companies’ understanding:

* **Aspect#1:** How **UE performance per slice granularity** can be discussed/decided by RAN3, but has some dependency on how **UE performance per UE granularity** is calculated which was discussed in Rel-18 correction and an LS to SA5 is triggered, e.g.,
	+ Or if it is an average over time among all packets via all DRBs within the same slice/UE, e.g., R3-247412
* $AvgTputDL\_{UE-SA5}=\frac{DV\_{1}+DV\_{2}}{∆T\_{1}+∆T\_{2}}=\frac{\left(5+10\right)Mbit}{\left(500+200\right)ms}≅21.43Mbps$
	+ Or if it is an average of DRB level metric within the same slice/UE, e.g., R3-247412
* $AvgTputDL\_{UE-RAN3}=\frac{Tput\_{DRB\#1}+Tput\_{DRB\#2}}{2}=\frac{\left(10+50\right)}{2}Mbps=30Mbps$

E///, Huawei, ZTE: SA5 has defined and supported the per slice per UE performance. RAN3 does not need to further discuss.

Nokia, CATT: it is unclear from SA5 spec, how per slice per UE performance is calculated. What’s supported in SA5 spec now is per slice, but not per slice per UE.

For Chair Note:

**Companies have different understandings on if per slice per UE performance (e.g., throughput) is really supported by SA5 specification.**

**Source node can request per UE per S-NSSAI granularity for UE performance feedback.**

**There is no consensus if UE performance can be measured in per UE per S-NSSAI and reported from target node to source node.**

* **Aspect#2:** Issue raised by some companies is that: **transferring UE performance per slice level may cause problem for the source gNB to correctly understand if UE performance is improved/degraded after handover, no matter how it is calculated according to Aspect#1.** Same issue exists in Rel18 with UE level performance transfer.
	+ Proponent companies propose to support per QoS flow (group) level UE performance transfer (measured per DRB eventually) to resolve the issue.
	+ Opponent companies either don’t believe this is a big issue, or don’t believe per QoS flow (group) level UE performance measurement can resolve the issue neither.

Example given in R3-247469

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| Definition flavour and sub-flavour | Before handover | After handover (no data on DRB1) |
| Simple average, excluding DRBs with no data when averaging | DRB1: average delay = 40msDRB2: average delay = 100msoverall average delay = 70ms | DRB1: average delay = N/ADRB2: average delay = 100msoverall average delay = 100ms |
| Simple average, regarding the value as 0 for DRBs with no data | DRB1: average delay = 40msDRB2: average delay = 100msoverall average delay = 70ms | DRB1: average delay = 0msDRB2: average delay = 100msoverall average delay = 50ms |
| Average weighted by number of packets (assume the number of packets of the two DRBs are the same before handover) | DRB1: average delay = 40msDRB2: average delay = 100msoverall average delay = 70ms | DRB1: average delay = N/ADRB2: average delay = 100msoverall average delay = 100ms |