3GPP TSG-RAN WG3 Meeting #127bis R3-252301

Wuhan, CN, 7-11 April, 2025

**Agenda item: 10.3.2**

**Source: ZTE Corporation**

**Title: Summary of discussion on network slicing**

**Document for: Discussion**

# 1 Introduction

This document summarizes the discussion on network slicing.

# 2 For the meeting notes

**RAN3 to work on the following topic in next meeting:**

To filtering Slice related SHR, the MRO for Successful Case where target cell selected based on Slice instead of radio to be resolved in Rel-19.

Option 1：To add on-going slice ID in SHR.

Option 2: To add source C-RNTI in SHR.

Option 3: To add Mobility information in SHR to solve slice issue.

Option 4: To add source C-RNTI and Mobility information over XnAP.

For on-line discussion, only the following topics be evaluated whether or not to solved in Rel-19:

1: Reporting of Rejected Slice to RAN

Description: Reporting information about slices requested by the UE but rejected by the network to the RAN side. This could be valuable for the network to understand slice demand and for network planning.

2: Conditional Reporting of Immediate MDT (filter MDT data based on Slice usage level)

Description: Whether there is a need to support conditional reporting of immediate MDT. Specific conditions might include being based on slice-level or node-level utilization, or based on the selected UE having one or more active PDU sessions on the given slice(s).

# Discussion

It is observed from the Moderator that the following issues have been discussed in RAN3 for at least 3 meetings without any progress.

The Moderators would like to achieve agreements on which topics / issues will not continue to be discussed in RAN3 for Rel-19.

# Issue 1: Reporting of Rejected Slice to RAN

Description: Reporting information about slices requested by the UE but rejected by the network to the RAN side. This could be valuable for the network to understand slice demand and for network planning.

Support companies:

- Propose establishing a mechanism for the gNB to request per-UE-level information from the AMF on allowed and rejected slice requests, indicating their belief that the RAN needs to know about rejected slice information.( Ericsson, Jio Platforms, BT, InterDigital, Deutsche Telekom (R3-252053)

- Observes that the information about slice initiation failure inside the UE (rejected by NAS) is valuable for operators to assess slice requirements and for network planning. CMCC (R3-252182):

Opposition: R3-251928 believes that there is no need to report rejected slices to the RAN. They argue that CN nodes and RAN nodes can collect and report this information directly to OAM separately, and using MDT would not bring any additional benefit.

The Moderator ‘s question:

Can the following be agreeable?

RAN3 not pursuit to enhance Reporting of Rejected Slice to RAN in Rel-19.

# Issue 2: Conditional Reporting of Immediate MDT(filter MDT data based on Slice usage level)

Description: Whether there is a need to support conditional reporting of immediate MDT. Specific conditions might include being based on slice-level or node-level utilization, or based on the selected UE having one or more active PDU sessions on the given slice(s).

Support: Ericsson, Jio Platforms, Deutsche Telekom, AT&T, InterDigital, FiberCop, Orange (R3-252051): Strongly propose enhancements to Management-based and Signaling-based Immediate MDT measurements where MDT measurement collection/reporting is conditional on slice-level or node-level utilization and/or on the selected UE having one or more active PDU sessions on the given slice(s).

Opposition: R3-251928 concludes that there is no need to support conditional reporting of immediate MDT. Although the detailed reasons for opposition are not provided in this section, their overall stance leans towards utilizing existing frameworks and avoiding unnecessary enhancements.

The Moderator ‘s question:

Can the following be agreeable?

RAN3 not pursuit to enhance Conditional Reporting of Immediate MDT in Rel-19.

# Issue 3: Reporting of User-Plane Interruption Times

Description: Reporting user-plane interruption times during handover, potentially with slice awareness.

Supporting: Ericsson, Jio Platforms (R3-252054): Discuss slice-aware user plane interruption times during handovers and propose to extend the data collection reporting procedure between gNBs to obtain per-slice user plane interruption times.

Opposition: R3-251928 argues that there is no need to report user-plane interruption times. They point out that current interruption time measurement is only specified for DAPS, and extending it to all mobility scenarios would break the principle of not introducing new functionalities in SON work items.

The Moderator ‘s question:

Can the following be agreeable?

RAN3 not pursuit to enhance Reporting of User-Plane Interruption Time in Rel-19.

# Issue 4: MRO for Failure Cases

Description: Analyze mobility failures triggered by slice reasons so that the network can ignore certain failures or perform different optimizations based on the impact on slice availability.

Support: CATT (R3-251777): Primarily focuses on avoiding wrong optimization due to slice, the proponent company think the source node should know the failure is due to slice selection.

Opposite: (R3-251928): slice-aware MRO for failure cases can be supported without any specification impact. (HW,Len,QC)

The Moderator ‘s question:

Can the following be agreeable?

RAN3 not pursuit to enhance MRO for failure cases in Rel-19.

# Issue 5: MRO for Successful Cases

Description: Avoid UEs passing through cells that do not support their required slices during successful handovers, and instead try to maintain slice support by handing over to a supporting cell immediately.

Support: Analyzes scenarios to avoid unnecessary handovers to cells that do not support all necessary slices. Even a successful handover is considered a scenario needing optimization if the target cell does not support certain slices.: Nokia (R3-251597):

Opposite: R3-251928 argues that there is no need for enhancement of MRO for successful cases. Their reasoning is that the node performing MRO parameter optimization already knows the boundaries of mobility parameters and the slices supported by neighbor cells, and will try its best to perform handover to supporting cells where possible.

MRO for Successful Cases where target cell selected based on Slice instead of radio to be resolved in Rel-19:

Option 1：To add on-going slice ID in SHR.

Option 2: To add source C-RNTI in SHR.

Option 3: To add Mobility information in SHR to solve slice issue

Option 4: To add source C-RNTI and Mobility information over XnAP.

MRO for Successful Cases due to CHO have not achieved consensus.

The Moderator ‘s question:

Can the following be agreeable?

RAN3 not pursuit to enhance MRO for Successful cases in Rel-19.

# Issue 6: Using MDT to Report Not Available Slices

Description: Using MDT to collect information regarding slices available only in part of the network to monitor slice requests and potentially for replanning zero-resource slices.

Support: CMCC (R3-252182): Proposes to only report slice unavailability after handover if the UE is still inside the geographical area where the slice is intended to provide coverage. This implies a need for collecting information about slice unavailability.

Opposition: R3-251928's argues that there is no need to use MDT to report not available slices. They believe that CN nodes can report rejected slices, and RAN nodes can collect statistics on how often slices are dropped during handover to a certain cell, making MDT unnecessary.

The Moderator ‘s question:

Can the following be agreeable?

RAN3 not pursuit to enhance MDT to Report Not Available Slice in Rel-19.

# Issue 7: Enhancing MDT to Evaluate the Coverage of Certain NG-RAN Cells

Description: Enhancing MDT functionality to better evaluate the coverage of specific NG-RAN cells in terms of network slicing.

Supporting Companies : Discussions in R3-252053 and R3-252182 regarding slice coverage observability and slice unavailability imply a need for better coverage evaluation.

Opposition: R3-251928 concludes that there is no need to enhance MDT to evaluate the coverage of certain NG-RAN cells. The detailed reasons for opposition are not provided in this section.

The Moderator ‘s question:

Can the following be agreeable?

RAN3 not pursuit to enhance MDT to Evaluate the Coverage cases in Rel-19.

# References

1. [R3-251928](file:///D%3A%5C%E4%BC%9A%E8%AE%AE%E7%A1%AC%E7%9B%98%5CTSGR3_127-bis%5CDocs%5CR3-251928.zip) Network Slicing (Huawei, Lenovo, Qualcomm)
2. [R3-251590](file:///D%3A%5C%E4%BC%9A%E8%AE%AE%E7%A1%AC%E7%9B%98%5CTSGR3_127-bis%5CDocs%5CR3-251590.zip) SON MDT for network slicing (Qualcomm Incorporated)
3. [R3-251597](file:///D%3A%5C%E4%BC%9A%E8%AE%AE%E7%A1%AC%E7%9B%98%5CTSGR3_127-bis%5CDocs%5CR3-251597.zip) MDT TP to BL CR to TS 38.300] Slice-related mobility enhancements (Nokia)
4. [R3-251777](file:///D%3A%5C%E4%BC%9A%E8%AE%AE%E7%A1%AC%E7%9B%98%5CTSGR3_127-bis%5CDocs%5CR3-251777.zip) Network slicing for SONMDT (CATT)
5. [R3-252051](file:///D%3A%5C%E4%BC%9A%E8%AE%AE%E7%A1%AC%E7%9B%98%5CTSGR3_127-bis%5CDocs%5CR3-252051.zip) MDT Enhancements for slice-focused measurements collection (Ericsson, Jio Platforms (JPL), Deutsche Telekom, AT&T, InterDigital, FiberCop, Orange)
6. [R3-252052](file:///D%3A%5C%E4%BC%9A%E8%AE%AE%E7%A1%AC%E7%9B%98%5CTSGR3_127-bis%5CDocs%5CR3-252052.zip) (TP for BL CR to 38.413 for MDT) Deferred MDT for slice-focused measurements collection (Ericsson, Jio Platforms (JPL), Deutsche Telekom, AT&T, InterDigital, FiberCop)
7. [R3-252053](file:///D%3A%5C%E4%BC%9A%E8%AE%AE%E7%A1%AC%E7%9B%98%5CTSGR3_127-bis%5CDocs%5CR3-252053.zip) Data collection for slice coverage observability enhancement (Ericsson, Jio Platforms, BT, InterDigital, Deutsche Telekom)
8. [R3-252054](file:///D%3A%5C%E4%BC%9A%E8%AE%AE%E7%A1%AC%E7%9B%98%5CTSGR3_127-bis%5CDocs%5CR3-252054.zip) Slice-aware user plane interruption times during handovers (Ericsson, Jio Platforms)
9. [R3-252086](file:///D%3A%5C%E4%BC%9A%E8%AE%AE%E7%A1%AC%E7%9B%98%5CTSGR3_127-bis%5CDocs%5CR3-252086.zip) Discussion on the per UE slice enhancements for immediate MDT measurements collection (Jio Platforms)
10. [R3-252182](file:///D%3A%5C%E4%BC%9A%E8%AE%AE%E7%A1%AC%E7%9B%98%5CTSGR3_127-bis%5CDocs%5CR3-252182.zip) Discussion on SON/MDT for network slicing (CMCC)