**3GPP TSG-RAN WG3 #122 R3-237810**

**13th - 17th Nov 2023, Chicago, USA**

Agenda Item: 26.3

Source: ZTE (moderator)

Title: Summary of Offline Discussion on CB: # R18Slice

Document for: Approval

# Introduction

CB: # R18Slice

- Discuss the open issues

- Provide TPs if agreeable

- LS to SA2 to inform RAN3 agreements?

(moderator - ZTE)

Summary of offline disc [R3-237810](file:///D%3A%5C%E4%BC%9A%E8%AE%AE%E7%A1%AC%E7%9B%98%5CTSGR3_122%5CInbox%5CR3-237810.zip)

# For the Chairman’s Notes

# Discussion

## Stage 2 update for key issue 3

The following draft TP has been uploaded in the folder, please provide your suggestion directly in the folder.

draft R3-237805 (TP for BL CR to 38.300) Support Slice Area of Service not mapping to existing TA

## Key issue 5: Partially Allowed NSSAI

The contribution [3] provides a user case in figure 1 and a proposal:



**Figure 1**: S-NSSAI changing from Partially Allowed to Allowed slice without SMF awareness

**Proposal: add a new NGAP Cause Value cause value “Outside Area of Service of partially allowed Slice”.**

The Moderator collects following arguments on each different view so far:

Negative points:

Argument N1: AMF aware the location of UE, AMF provides information to SMF, no impact in RAN.

Argument N2:

Positive points:

Argument P1: In current specification, no information will be provide from AMF to SMF to help differentiate the case of keep PDU context in SMF.

Argument P2: In current specification, SMF is not made aware whether the slice is allowed or partially allowed when it receives the deactivation from NG-RAN.

**Q1: companies are invited to show view on whether to support the proposal.**

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| **Companies** | **Comments** |
| Nokia | Support.As explained in the paper, the SMF can currently be made aware whether it exits/enters the AoS but it is not made aware whether the slice is allowed or partially allowed when it receives the deactivation from NG-RAN. Therefore it cannot determine whether to release the PDU session completely or not. |
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## Send LS to SA2 for RAN3 understanding of Slice availability?

The issue raised during the meeting when discussion stage 2 TP [R3-237463](file:///D%3A%5C%E4%BC%9A%E8%AE%AE%E7%A1%AC%E7%9B%98%5CTSGR3_122%5CDocs%5CR3-237463.zip) Rev in [R3-237809](file:///D%3A%5C%E4%BC%9A%E8%AE%AE%E7%A1%AC%E7%9B%98%5CTSGR3_122%5CInbox%5CR3-237809.zip) as TP.

**Proposal: Send LS to SA2 for RAN3 understanding of Slice availability.**

Negative points:

Argument N1: SA2 has correct understanding on slice availability.

Positive points:

Argument P1: RAN3 provides the update of slice availability in RAN specification and hope SA2 can do further specification alignment.

**Q2: companies are invited to show view on the proposal.**

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| **Companies** | **Comments** |
| Nokia | No. Can be left contribution driven in SA2. |
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## Add both Alternative S-NSSAI and Original S-NSSAI IE in the NGAP PDU Session Setup Request and the XnAP Handover Request message?

The issue has been discussed for several meetings, the issue detail can be found in SoD [R3-235755] of RAN3#121bis.

**Proposal: Add both Alternative S-NSSAI and Original S-NSSAI IE in the NGAP PDU Session Setup Request and the XnAP Handover Request message.**

The Moderator collects following arguments on each different view so far:

Motivation of restore original S-NSSAI:

Negative points:

Argument N1: The user case is not very common in Rel-18.

Argument N2: AMF has no reason to restore original S-NSSAI when alive PDU session(s) in such exceeded cells.

Argument N3: The original S-NSSAI and replaced S-NSSAI are all Allowed NSSAI and UE will receive equal service quality in replaced S-NSSAI.

Argument N4: The user case should be intra frequency. For inter Frequency mobility the RAN receives the RFSP and use it to keep in original NS-AOS.

Argument N5: For intra frequency reasons mobility is decided on the basis of radio measurements.

Argument N6: Propagation of both information may introduce new issue especially across RA.

Argument N7: Over engineer (unnecessary handover optimization for future)

Positive points:

Argument P1: Alternative slice is not always as good as original slice, otherwise we may then question the whole scenario of slice replacement.

Argument P2: Usage of RSFP the original slice is no longer in the allowed NSSAI so the Alllowed NSSAI RSFP would not help.

Motivation of target RAN resource shortage

Negative points:

Argument N1: Already solved in Rel-17 WID.

Argument N2: user case out of scope.

Positive points:

Argument P1: Service continuity issue caused by target gNB in slice resource shortage cannot be totally solved by the R17 mechanism (e.g SA2 has not conducted a thorough study on KI#1)

Argument P2: Different understanding on Slice unavailability.

Argument P3: User case in the working scope.

**Q3: companies are invited to show view on the proposal.**

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| **Companies** | **Comments** |
| Nokia | Support the proposal. |
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## Enhancing Slice Based Mobility based on Target NSSAI

The issue has been discussed for several meetings; the issue detail can be found in SoD [R3-235755] of RAN3#121bis.

**Proposal: Enhancing Slice Based Mobility based on Target NSSA in NGAP and send LS to SA2.**

The Moderator collects following arguments on each different view so far:

Negative points:

Argument N1: SA2 was heavily discussing the topic related to Target NSSAI, no need for duplicated discussion.

Positive points:

Argument P1: SA2 is waiting for RAN3 ‘s progress.

Argument P2:

**Q4: companies are invited to show views on this proposal.**

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| **Companies** | **Comments** |
| Nokia | NOK.SA2 is discussing the topic this week. SA2 did introduce the target NSSAI concept and is the one to assess. It is also not true to say that SA2 is waiting for RAN3 progress.  |
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## Other issues

**Q5: If any issue missing, companies are invited to list below**

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| **Companies** | **Comments** |
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# References

1. [R3-237609](file:///D%3A%5C%E4%BC%9A%E8%AE%AE%E7%A1%AC%E7%9B%98%5CTSGR3_122%5CDocs%5CR3-237609.zip) Support for Network Slices with Area of Service not matching TAs (ZTE, China Telecom, CATT)
2. [R3-237247](file:///D%3A%5C%E4%BC%9A%E8%AE%AE%E7%A1%AC%E7%9B%98%5CTSGR3_122%5CDocs%5CR3-237247.zip) (TP to BLCR for TS 38.300) Finalizing the enhanced network slicing phase 3 (Huawei)
3. [R3-237463](file:///D%3A%5C%E4%BC%9A%E8%AE%AE%E7%A1%AC%E7%9B%98%5CTSGR3_122%5CDocs%5CR3-237463.zip) (TP for TS 38.300 and TS 38.413) Finalization of Partially Allowed NSSAI (Nokia, Nokia Shanghai Bell, Orange)
4. [R3-237608](file:///D%3A%5C%E4%BC%9A%E8%AE%AE%E7%A1%AC%E7%9B%98%5CTSGR3_122%5CDocs%5CR3-237608.zip) Leftover issues for eNS (ZTE)
5. [R3-237462](file:///D%3A%5C%E4%BC%9A%E8%AE%AE%E7%A1%AC%E7%9B%98%5CTSGR3_122%5CDocs%5CR3-237462.zip) (TP for TS 38.413 and TS 38.423) Finalization of Network Slice Service Continuity (Nokia, Nokia Shanghai Bell, Orange, CMCC, CATT, Samsung)
6. [R3-237495](file:///D%3A%5C%E4%BC%9A%E8%AE%AE%E7%A1%AC%E7%9B%98%5CTSGR3_122%5CDocs%5CR3-237495.zip) Enhancements to Target NSSAI (Ericsson, Deutsche Telekom, Bell Mobility)
7. [R3-237496](file:///D%3A%5C%E4%BC%9A%E8%AE%AE%E7%A1%AC%E7%9B%98%5CTSGR3_122%5CDocs%5CR3-237496.zip) (TP for eNS\_Ph3-NR-Core for BLCR TS38.413) Target NSSAI Enhancements (Ericsson, Deutsche Telekom, Bell Mobility)
8. [R3-237497](file:///D%3A%5C%E4%BC%9A%E8%AE%AE%E7%A1%AC%E7%9B%98%5CTSGR3_122%5CDocs%5CR3-237497.zip) LS on the use of Target NSSAI for optimised slice based mobility (Ericsson, Deutsche Telekom, Bell Mobility)
9. [R3-237498](file:///D%3A%5C%E4%BC%9A%E8%AE%AE%E7%A1%AC%E7%9B%98%5CTSGR3_122%5CDocs%5CR3-237498.zip) Clarifications and Way Forward on Network Slice Service Continuity (Ericsson)
10. [R3-237570](file:///D%3A%5C%E4%BC%9A%E8%AE%AE%E7%A1%AC%E7%9B%98%5CTSGR3_122%5CDocs%5CR3-237570.zip) Discussion on remaining issues for RAN slicing enhancement (China Telecommunication)
11. [R3-237600](file:///D%3A%5C%E4%BC%9A%E8%AE%AE%E7%A1%AC%E7%9B%98%5CTSGR3_122%5CDocs%5CR3-237600.zip) TP for 38.423 for supporting alternative S-NSSAI (CATT, Nokia, Nokia Shanghai Bell)
12. [R3-237610](file:///D%3A%5C%E4%BC%9A%E8%AE%AE%E7%A1%AC%E7%9B%98%5CTSGR3_122%5CDocs%5CR3-237610.zip) (TP for BL CR to 38.300) Support Slice Area of Service not mapping to existing TA (ZTE,CATT,China Telecom)
13. [R3-237611](file:///D%3A%5C%E4%BC%9A%E8%AE%AE%E7%A1%AC%E7%9B%98%5CTSGR3_122%5CDocs%5CR3-237611.zip) (TP for BL CR to 38.423) Support Slice Area of Service not mapping to existing TA (ZTE,CATT,China Telecom)
14. [R3-237641](file:///D%3A%5C%E4%BC%9A%E8%AE%AE%E7%A1%AC%E7%9B%98%5CTSGR3_122%5CDocs%5CR3-237641.zip) Leftover issues on the enhancement of RAN slicing (Samsung, Nokia, Nokia Shanghai Bell)
15. [R3-237649](file:///D%3A%5C%E4%BC%9A%E8%AE%AE%E7%A1%AC%E7%9B%98%5CTSGR3_122%5CDocs%5CR3-237649.zip) Discussion on remaining open issue for RAN slicing (LG Electronics)
16. [R3-237650](file:///D%3A%5C%E4%BC%9A%E8%AE%AE%E7%A1%AC%E7%9B%98%5CTSGR3_122%5CDocs%5CR3-237650.zip) (TP to TS 38.413 and 38.423) TP for RAN slicing enhancement (LG Electronics)
17. [R3-237676](file:///D%3A%5C%E4%BC%9A%E8%AE%AE%E7%A1%AC%E7%9B%98%5CTSGR3_122%5CDocs%5CR3-237676.zip) Discussion on network slice service continuity (CMCC, Nokia, Nokia Shanghai Bell)