**3GPP TSG-RAN Meeting #90eRP-20xxxx**

**Electronic Meeting, Dec 7-11, 2020**

**Agenda item:** 9.8.12

**Source:** Moderator (vivo)

**Title:** Summary of [90E][30][R17\_MultiSIM\_scope]

**Document for:** Discussion and Agreement

# 1 Introduction

This is the kick off of the email thread on finetuning the scope of the Rel-17 WID on MuSIM.

Goal: Generate an agreeable way forward and potential revised WID.

Input contributions covered:  2356, 2647, 2731, 2743, 2649.

* Initial round: collecting views on the detailed proposals, deadline: Dec. 8, 2020 12:29h UTC.
	+ Moderator to provide intermediate summary before Dec, 8, 2020 15:29h UTC
* Intermediate round:
	+ Collecting views on intermediate summary, deadline: Dec. 9, 2021 11:29h UTC
	+ Moderator to provide an updated intermediate summary before Dec. 9, 2021 12:30h, UTC
	+ Collecting views on updated intermediate summary, deadline for technical comments: Dec. 10, 2021 12:29h UTC
	+ Moderator to provide final proposals and potential revised WID before Dec, 10, 2020 15:29h UTC
* Final round: collecting final comments, deadline: Dec. 11, 2020 11:29h UTC
	+ Moderator to provide final proposals compiled based on the final rounds of comments, before Dec. 11, 2020 12:30h UTC

# 2 Contact Information

To make it easier to find the correct contact delegate in each company for potential follow-up questions, the moderator encourages the delegates who provide input to provide their contact information in this table:

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| --- | --- |
| Company | Contact: Name (E-mail) |
| vivo | Xueming Pan <panxueming@vivo.com> |
| MediaTek Inc. | Guillaume Sébire <guillaume.sebire@mediatek.com> |
| Vodafone | chris.pudney@vodafone.com |
| Intel | Youn.heo@intel.com |
| Apple | Haijing\_hu@apple.com |
| ZTE | huang.he4@zte.com.cn |
| vivo | Kimba Dit Adamou, Boubacar <kimba@VIVO.COM> |
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# 3 Initial round: collecting views on the initial proposals

## 3.1 Topic 1: Support for E-UTRA/5GS (Option 5) due to Switching notification

Currently it is understood that for E-UTRA/5GS, only NAS based solution can be discussed. Contributions 2356 (Intel), 2647 (vivo) proposed to update the WID so that busy/leaving/swiching indication solutions for 5GS can be discussed in the WI.

**Q1: Do companies agree that the WID should be updated for LTE RRC spec (e.g., 36.331/306/304), so that busy/leaving/switching indication solutions for E-UTRA/5GS(option 5) can be further discussed in the WI?**

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| --- | --- | --- |
| Company | Agree/Disagree | Detailed Comments |
| MediaTek Inc. | Agree | It is important to ensure solutions get discussed equally for E-UTRA and NR and decision be taken based on the merit of said solution rather than on it being e.g. not available in E-UTRA. |
| Vodafone | Agree | 3GPP has designed the 5GC to be access-agnostic. Hence TSG-RAN should not make isolated decisions to make the 5GC RAT specific.Also agree with Mediatek. |
| Intel | Agree | The lack of LTE specifications should not be the reason in deciding a solution that will be used in LTE connected to 5GS especially considering that RRC signalling solution could be technically better.  |
| Apple | Agree | Both LTE are NR are considered for RAT concurrency, E-UTRA/5GS is also in the scope although it is not explicitly spelled out in the currently WID. |
| ZTE | Disagree | The option 5 has been discussed and excluded intentionally to minimize the impact on LTE network. We don’t see clear need to add it back at this stage, taking the limited time budget into account. |
| vivo | Agree | This would allow an unified solution for NR and E-UTRA/5GC. |
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## 3.2 Topic 2: Support LTE spec change for paging collision

The agreed SA2 Multi-SIM WID (S2-2009247) contained the following objective about paging reception for EPS. Contributions 2356 (Intel), 2647 (vivo) identified the RAN impact (36.304) based on the SA decisions.

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| - Enabling paging reception for EPS according to the conclusions in TR 23.761 clause 8.2.Editor's note: The objective on enabling paging reception for EPS and the corresponding solution needs to be confirmed by RAN plenary. |

**Q2: Do companies agree that the WID should be updated for LTE RRC spec (e.g., 36.304) for supporting the below SA2 WID bullet?**

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| Company | Agree/Disagree | Detailed Comments |
| MediaTek Inc. | Agree | The IMSI offset approach can help resolving permanent collisions arising from the use of a permanent identifier (i.e. IMSI) in EPS+EPS scenarios.  |
| Vodafone | Agree | Agree with Mediatek. At least 36.304 changes that can be implemented in just the UE’s NAS layer behaviour should be allowed.  |
| Intel | Agree | We think that the IMSI offset signalling solution is reasonable to resolve collision in EPS as IMSI is permanent and cannot be re-assigned. RAN2 change in TS36.304 is very minimal and it is desirable to respect SA2 agreement.  |
| Apple  | Agree | It’s desirable to follow SA2 agreement on it. |
| ZTE | Agree | Considering the impact on LTE is quite small, we are fine to support the IMSI offset based solution in LTE as well. |
| vivo | Agree | The objective on enabling paging reception for EPS and the corresponding solution is technically possible in RAN. Potential impacts include the UE capability for PF/PO calculation with IMSI and IMSI offset in TS36.306 and the description on method of PF/PO calculation based on IMSI and IMSI offset in TS36.304. |
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## 3.3 Topic 3: Support of Dual Tx/Dual Rx UEs

Contribution 2731 (China Telecom, vivo, CMCC, China Unicom, Spreadtrum Communications) discussed the issue with dual Tx/ dual Rx UEs with shared Tx or Rx chains between two USIMs and proposed to consider such UE in RRC CONNECTED state in network A to switch its partial Tx chains to network B for activities and hence change its Tx capabilities in NW A. A corresponding WID update is proposed in 2743, i.e. to add the following objective

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| 1. Specify mechanism for UE to notify Network A of its update in capabilities when it tune away partial of Tx or Rx chains from Network A (for MUSIM purpose) [RAN2]:
	* RAT Concurrency: Network A is NR. Network B can either be LTE or NR.
	* Applicable UE architecture: Dual-Rx/Dual-Tx,
 |

**Q3: Do companies agree that Multi-SIM UEs support dual Tx/ dual Rx with shared Tx or Rx chains between two USIMs should be considered in Rel 17?**

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| Company | Agree/Disagree | Detailed Comments |
| MediaTek Inc. | Disagree | Existing means enable sync between the network and the UE as to the UE capabilities available for use – it is not clear from the inputs on this subject to this meeting what exactly is missing and what more should be done.We prefer that focus and priority be put on fulfilling the other objectives first. |
| Vodafone | Candidate for R18? | The Rel 17 timeline is already under pressure, We need to be very careful before adding more work to R17. |
| Intel | Yes with comment | We think that if we reuse the existing UE assistance information to indicate the change of capabilities, the required efforts and spec change would not be significant.  |
| Apple  | Disagree | RF structure was discussed before RAN plenary approved the R17 MUSIM WID, dual Tx is not in the scope of the R17 WID. We don’t think it should revisited now or extend the scope. In addition, “shared Tx or Rx chains between two SIMs” should be UE implementation dependent, and it’s not clear to us what specifically to be discussed on it in standards. |
| ZTE | Agree, but- | We see some requirements on this aspect and we are fine to discuss this in Rel-17 if time permits. Considering the limited time budget, we think this should be listed as secondary priority task in the WID, and no extra TU shall be allocated to this WI for this new scope. |
| vivo | Agree | In 5G generation, operators can foresee more and more devices supporting dual Rx/ dual Tx for multi-SIM as a result of the increase in numbers of UE Tx chains. It is common for 5G devices to support SA 2Tx/4Rx and NSA dual connection, which requires the RF module to support at least 2 Tx chains and 4 Rx chains working concurrently. For this kind of UEs, it is cost efficient to support Dual Tx/ Dual Rx for Multi-SIM operation by sharing one Tx and multiple Rx chains between two USIMs dynamically.  |
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**Q4: Do companies agree the scenario that UE mentioned in Q3 in RRC CONNECTED state in network A switches partial of Tx chains to network B for activities and hence change its Tx capabilities in NW A should be considered in Rel 17?**

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| Company | Agree/Disagree | Detailed Comments |
| MediaTek Inc. | See above | See above |
| Intel | Agee | It seems worthwhile for RAN2 to discuss for further optimization.  |
| Apple | Disagree | See our response to Q3 |
| ZTE | Agree, but | We see some requirements on this aspect and we are fine to discuss this in Rel-17 iif time permits. Considering the limited time budget, we think this should be listed as secondary priority task in the WID, and no extra TU shall be allocated to this WI for this new scope. |
| vivo | Agree | UE may temporary change its capability in NW A to allow simultaneous transmission in both NW A and B. |
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**Q5: Do companies agree the scenario that UE mentioned in Q3 in RRC CONNECTED state in network A switches partial of Rx chains to network B for activities and hence change its Rx capabilities in NW A should be considered in Rel 17?**

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| Company | Agree/Disagree | Detailed Comments |
| MediaTek Inc. | See above | See above |
| Intel | Agee | It seems worthwhile for RAN2 to discuss for further optimization.  |
| Apple | Disagree | See our response to Q3 |
| ZTE | Agree, but | We see some requirements on this aspect and we are fine to discuss this in Rel-17 if time permits. Considering the limited time budget, we think this should be listed as secondary priority task in the WID, and no extra TU shall be allocated to this WI for this new scope. |
| vivo | Agree | UE may temporary change its capability in NW A to allow simultaneous reception in both NW A and B. |
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# 4 Intermediate round: collecting views on intermediate summary

**TBD**

# 5 Conclusion