**SA WG2 Meeting #143E S2-20xxxxx**

**24 February-09 March 2021, Electronic (revision of S2-20xxxx)**

**Source: Intel (Rapporteur)**

**Title: FS\_MUSIM moderated email discussion**

**Document for: Information**

**Agenda Item: TBD**

**Work Item / Release: FS\_MUSIM / Rel-17**

*Abstract of the contribution: This contribution includes the moderated email discussions for the FS\_MUSIM open issues.*

# 1. Introduction

This document includes a request for companies to provide their opinion on selected FS\_MUSIM open issues.

The result will be used as an input to a proposed conclusion at SA2#143E, and possibly we will target a working assumption at CC#1.

# 2. Discussion

## 2.1 Sending of Paging Cause

In relation to the following NOTE in TR 23.761 Clause 8.1:

*NOTE 1: During normative phase, it will be determined whether the Paging Cause is applied 1) only for UEs with the request, or 2) to all UEs indiscriminately.*

Companies are invited to provide their opinions in the table below.

**Q.1**: Please indicate whether the Paging Cause is applied by the network only for UEs that have requested it (e.g. in the MUSIM capability) or indiscriminately.

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| --- | --- |
| **Company name** | **Comments** |
| Spreadtrum | Prefer  *1) only for UEs with the request* |
| OPPO | We support “only for UE that have requested”, because unnecessary paging cause can be avoided |
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## 2.2 Paging Cause and legacy RAN node

In relation to the following NOTE in TR 23.761 Clause 8.1:

*NOTE 2: Whether and how the UE discriminates (if needed) between paging for non-voice service and paging from legacy RAN node is FFS and will be determined during normative phase.*

While the exact mechanism allowing the UE to discriminate between the two cases mentioned in the NOTE has RAN dependency, the highlighted text (“if needed”) can be answered from system-level perspective.

Companies are invited to provide their opinions in the table below.

**Q.2**: Please indicate whether the UE needs to discriminate the case where the absence of Paging Cause in the Uu Paging message is due to a non-voice MT service from the case where the absence of Paging Cause in the Uu Paging message is due to a legacy RAN node (i.e. regardless whether the MT service is voice or not).

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| **Company name** | **Comments** |
| Spreadtrum | The UE does NOT need to discriminate the two cases. |
| OPPO | Leave it to RAN WG, since RAN may resolve the issue by encoding.  |
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## 2.3 RRC-based Busy Indication in RRC\_Inactive

The cover page of TR 23.761 submitted to SA#90E plenary for information ([SP-200968](https://www.3gpp.org/ftp/tsg_sa/TSG_SA/TSGs_90E_Electronic/Docs/SP-200968.zip)) includes the following outstanding issue:

*Progress on the RRC-based Busy Indication enabler for UE in RRC\_Inactive state depends on progress in RAN2 and RAN3.*

From SA2 perspective the impact is whether to extend the NAS-based Busy Indication procedure to RRC\_Inactive or whether to define a new system-level procedure for RRC-based Busy Indication (please note that TR 23.761 solution #3 currently has no call flow for the RRC-based Busy Indication).

Another unknown is that RAN#90E plenary has not decided whether TS 36.331 changes are allowed for Busy Indication, according to the following conclusion in the [RAN#90 plenary meeting report](https://www.3gpp.org/ftp/tsg_ran/TSG_RAN/TSGR_90e/Report/draft_MeetingReport_RAN_90e_201211_eom.zip):

***RP-202894******Moderator's summary of email discussion*** ***Vivo***

***[90E][30][R17\_MultiSIM\_scope]***

 *covered Tdocs 2356, 2647, 2731, 2743, 2649*

 *proposal: Inclusion of TS 36.331 will be revisited in the next RAN plenary after RAN2/RAN3 discussion on paging cause that SA2 agreed for both EPS and 5GS.*

 *conclusion: proposal is endorsed*

This means that, even if RRC-based Busy Indication is agreed by RAN WGs, it may be applicable only to NR/5GC, but not to LTE/5GC.

The RAN WG meetings are taking place from 25 Jan to 05 Feb, meaning that their conclusion may not be available before SA2#143E submission deadline.

The RRC-based Busy Indication also has SA3 dependency. In their LS reply (S2-2008353) SA3 provided the following answer:

*SA3 answer: Sending an unsecured busy indication in an RRC message is a security risk. This need to be avoided.*

This aspect is included in the SA3 study on MUSIM security ([SP-201131](https://www.3gpp.org/ftp/tsg_sa/TSG_SA/TSGs_90E_Electronic/Docs/SP-201131.zip)) that is due for completion in March 2021.

This clause aims at checking if there is a preference in SA2 to conclude on extending the NAS-based Busy Indication procedure to RRC\_Inactive, or whether SA2 should wait for RAN and SA3 WG’s feedback before concluding.

Companies are invited to provide their opinions in the table below.

**Q.3**: Should the use of NAS-based Busy Indication be extended to RRC\_Inactive or should SA2 wait for RAN and SA3 WG’s feedback before concluding?

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| --- | --- |
| **Company name** | **Comments** |
| Spreadtrum | SA2 should wait for RAN and SA3 WG’s feedback before concluding. |
| OPPO | The busy indication in RRC-Inactive should be determined by RAN2 and SA3. SA2 does not need to do anything. |
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## 2.4 Paging Filtering

In relation to the following EN in TR 23.761 Clause 8.1:

*Editor's note: According to the conclusion in KI#3, upon NAS-level leaving the UE may provide assistance information including information to temporarily restrict/filter MT data in this network while the UE has left. Whether UE is allowed to provide information to temporarily restrict/filter MT data in other circumstances is FFS.*

The attempt to resolve this EN in SA2#142E was unsuccessful (refer to the [EMEET discussion](https://list.etsi.org/scripts/wa.exe?A2=ind2011C&L=3GPP_TSG_SA_WG2_EMEET&O=D&P=4336253) on baseline document S2-2008924) and the underlying proposal has no RAN dependency.

Companies are invited to provide their opinions in the table below.

**Q.4**: Can we simply delete the EN or do you see the need for further discussion on this EN?

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| **Company name** | **Comments** |
| Spreadtrum | Prefer to simply delete the EN. |
| OPPO | No strong opinion |
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## 2.5 Enabling paging reception for 5GS

The cover page of TR 23.761 submitted to SA#90E plenary for information ([SP-200968](https://www.3gpp.org/ftp/tsg_sa/TSG_SA/TSGs_90E_Electronic/Docs/SP-200968.zip)) includes the following outstanding issue:

*Progress on enabling paging reception for 5GS depends on progress in RAN2.*

In their LS reply ([S2-2009092](https://www.3gpp.org/ftp/tsg_sa/WG2_Arch/TSGS2_142e_Electronic/Docs/S2-2009092.zip)) RAN2 provided the following answer:

***From RAN2 point of view, Solution 1, 2a, 2b, and 3 are feasible to solve paging collision issue in 5GS. On their effectiveness, RAN2 will continue to evaluate their pros and cons.***

The attempt to resolve this EN in SA2#142E was unsuccessful (refer to the [EMEET discussion](https://list.etsi.org/scripts/wa.exe?A2=ind2011C&L=3GPP_TSG_SA_WG2_EMEET&O=D&P=4397570) on baseline document S2-2008718), several companies proposing to wait for RAN2 to complete their evaluation.

In Rapporteur’s understanding there is a consensus to use the Registration procedure when UE detects a possible collision, whereas the differences are whether UE and AMF need to keep track of an additional UE-ID for the purpose of PO calculation, and whether UE may provide UE-ID offset in the Registration Request, as captured in S2-[2008718r07](https://www.3gpp.org/ftp/tsg_sa/WG2_Arch/TSGS2_142e_Electronic/INBOX/Revisions/S2-2008718r07.zip) (which seemed to have significant support):

* *When a MuSIM device detects a paging collision, the MuSIM device requests mobility registration request to the 5GS network.*
* *The AMF allocates the new 5G GUTI in the accept message as described in clause of 6.12.3 in TS 33.501[12].*

*Editor's note: It will be determined during normative phase whether UE and AMF need to keep track of an additional UE-ID (different from 5G-GUTI) for the purpose of PO calculation.*

*Editor’s note: It will be determined during normative phase whether UE may provide UE-ID offset for AMF to allocate the new 5G-GUTI.*

This clause aims at checking if SA2#143E should work on a normative CR based on the Registration procedure (e.g. as in the proposed conclusions in [S2-2008718r07](https://www.3gpp.org/ftp/tsg_sa/WG2_Arch/TSGS2_142e_Electronic/INBOX/Revisions/S2-2008718r07.zip)), leaving either or both of the open points in ENs (to be resolved once RAN2 have completed their evaluation).

Companies are invited to provide their opinions in the table below.

**Q.5**: Should SA2#143E work on a normative CR based on the Registration procedure (e.g. as proposed in S2-2008718r07), leaving the unresolved aspects in ENs? Or should SA2 wait for RAN2 to complete their evaluation first?

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| --- | --- |
| **Company name** | **Comments** |
| Spreadtrum | SA2 should wait for RAN2 to complete their evaluation first |
| OPPO | We support NAS based solution only.  |
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## 2.6 5GS Leaving

The cover page of TR 23.761 submitted to SA#90E plenary for information ([SP-200968](https://www.3gpp.org/ftp/tsg_sa/TSG_SA/TSGs_90E_Electronic/Docs/SP-200968.zip)) includes the following outstanding issue:

*- The decision to support NAS-based leaving or RRC-based leaving or both for 5GS depends on the progress on RRC-based leaving procedure for 5GS in RAN2.*

While RAN2 have already started the discussion on the feasibility of the RRC-based Leaving procedure, there is again an issue with the lack of guidance from RAN#90E plenary on whether TS 36.331 changes are allowed for the RRC-based Leaving procedure (refer to the endorsed conclusion from RAN#90E plenary report referenced in clause 2.3 of this document).

This means that, even if RRC-based Leaving is agreed by RAN WGs for NR/5GC, it may not be applicable to LTE/5GC.

The RAN WG meetings are taking place from 25 Jan to 05 Feb, meaning that their conclusion may not be available before SA2#143E submission deadline.

This clause aims at checking if there is any new element that would allow SA2#143E to conclude ahead of the RAN WG’s feedback.

Companies are invited to provide their opinions in the table below.

**Q.6**: Please indicate whether you see a possibility for SA2#143E to make further progress on the type of 5GS Leaving procedure (i.e. NAS-based only vs RRC-based only vs both) and how this can be achieved. Alternatively, this topic will need to be postponed to SA2#144E.

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| --- | --- |
| **Company name** | **Comments** |
| Spreadtrum | This topic needs to be postponed to SA2#144E for waiting the feedback from RAN. |
| OPPO | We prefer NAS based solution, but as a way forward, we propose that both methods are specified |
|  |  |

## 2.7 Assistance information in Leaving request

In relation to the following ENs in TR 23.761 Clause 8.3:

*Editor's note: It is FFS whether the assistance information is common for EPC and 5GC, e.g., whether the assistance information in EPC supports only partial features comparing to 5GC.*

*Editor's note: Whether need an indication that the UE is leaving for a "short duration" in assistance information is FFS.*

*Editor's note: Whether need the expected leaving time/duration in assistance information is FFS. How the UE selects the proper value for expected leaving time/duration is FFS*

*Editor's note: Whether this information preferences for MT service delivery indication using non-3GPP access is FFS.*

Companies are invited to provide their opinions in the table below.

**Q.7.1**: Should the assistance information be the same for EPC and 5GC? If “No”, please justify why.

**Q.7.2**: Should the assistance information include an indication that the UE is leaving for a “short duration” (i.e. without any leaving time / duration expressed in seconds)?

**Q.7.3**: Should the assistance information include an indication of the expected leaving time / duration (i.e. expressed in seconds)?

**Q.7.4**: Should the assistance information include a preference for MT service delivery using non-3GPP access? If “yes”, please justify why.

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| --- | --- |
| **Company name** | **Comments** |
| Spreadtrum | **Q.7.1**: Yes**Q.7.2**: No**Q.7.3**: No**Q.7.4**: No |
| OPPO | Q 7.1: YesQ 7.2: No. If periodic gap negotiation is supported in RAN2, then the “short duration” is not needed in SA2. Q7.3: No. We don’t think UE can properly and accurately expect leaving time/duration. Q7.4: No. |
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# 3. Rapporteur’s Summary

# 4. Proposed Conclusions