**[R19 FS\_UAS\_Ph3] Pre-SA2#164 NWM Discussion for KI#3 - Version 0.0.1**

**SA2**

[**https://nwm-trial.etsi.org/#/documents/8897**](https://nwm-trial.etsi.org/#/documents/8897)

# 1 Introduction

**As a result of SA2#163 meeting (May 2024), TR 23.700-59 including KI#3 interim conclusion was sent to SA#104 for Information. After SA#104 (June 2024), TR 23.700-59v1.0.0 is available.**

**SA#104 received and discussed the Reply LS from RAN on NTZ solution impacts to RAN (SP-240975/RP-241668) including the following contents.**

The following way forward was agreed in RP-241658:

* The RAN network should not be involved in the process of informing the UE on Non Transmit Zone(s) ● The RAN network should not be involved in the process of enforcing UE behavior when it is located within the NTZ(s).
* The UE is responsible of following any applicable the NTZ(s) regulations.
* The RAN network should not receive the NTZ(s) information.
* Any solution that breaks the above principles should be excluded from SA2 discussions.

RAN thinks that with this guidance, SA2 WGs can exclude a number of solutions and there should be no need for RAN WGs to provide a response or analyze all the individual solutions identified by SA2.

**As a result of SA#104 (June 2024), WID ”Phase 3 for UAS, UAV and UAM” including the following KI#3 objective was approved (SP-240997).**

* **WT#3:** Support no-transmit zones for UAV UEs.
* Support configuring/provisioning NTZ assistance information to UAV UE and NTZ enforcement by UAV UE.

Editor’s note: The objective for WT#3 can be updated based on final conclusions to be described in clause 8.3 of TR 23.700-59.

***Please provide you feedback by July 26th EoB.***

# 2 Collecting companies view related to KI#3

# KI#3 (NTZ)

# 2.1.1 Companies View related to KI#3

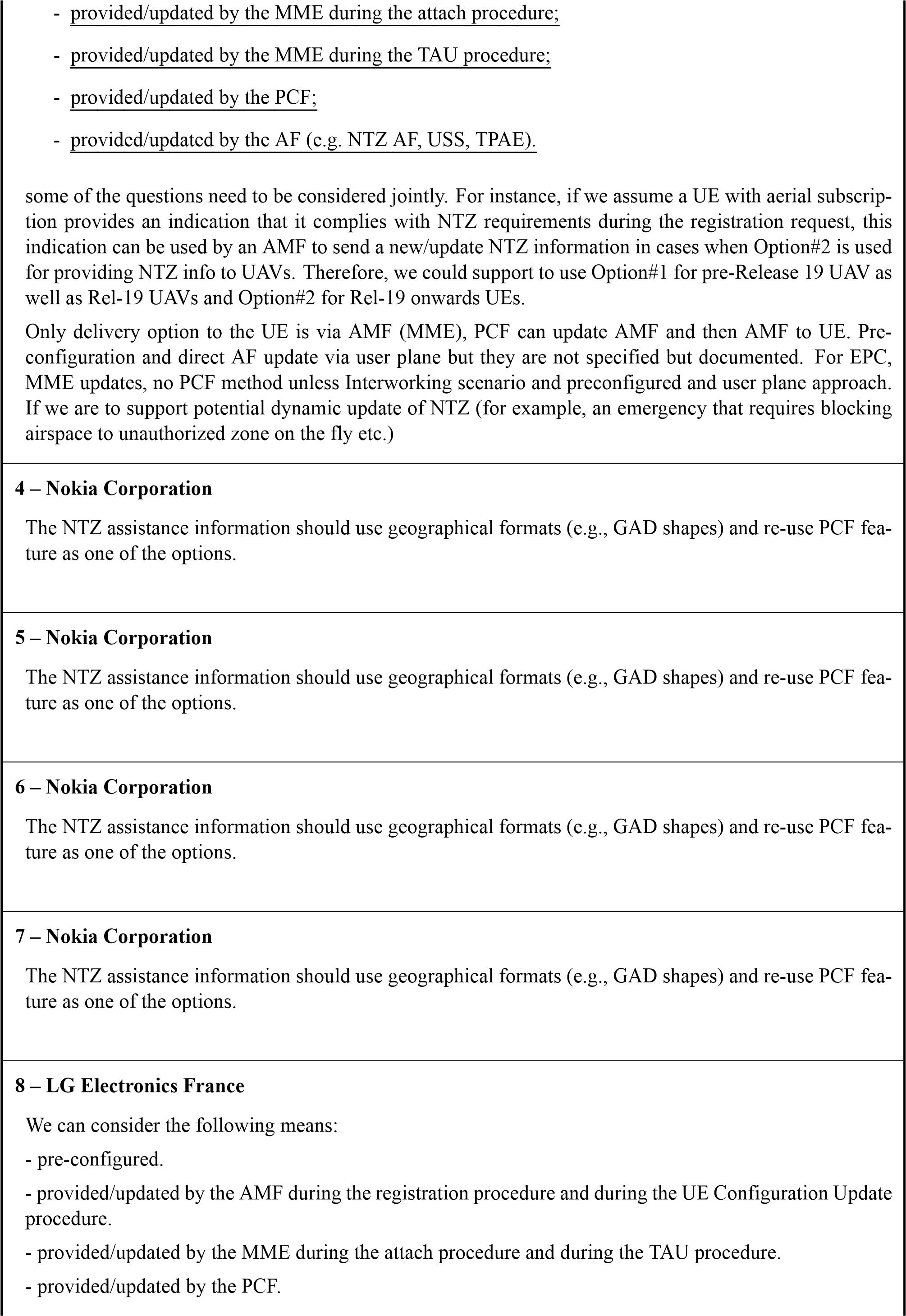
**Question#3-1:** ”Configuring/Provisioning NTZ assistance information to UAV UE and NTZ enforcement by UAV UE” includes ”NOTE 2: Whether all options are required will be determined in normative phase.”.

Which options do you support for normative work ? Please provide scenarios related to the options/solutions you support if you can provide.

# Feedback Form 1: Feedback on Question#3-1

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| **1 – QUALCOMM Europe Inc. - Italy**  Webelieve at a minimum we need tosupport the ability for the AMF to indicatethat thereis at least oneNTZ in the Registration Area (this has minimal impact on the AMF, since AMF does not need to be configured with actual NTZ information). As for policy configuration/provisioning, we believe we need to support in standards the provisioning by PCC as part of UE policies provisioning (e.g. the policy can be pushed to the UE or the UE, based on indication from AMF, can retrieve new UE policies) AND provisioning by an AF with the ability for the AMF to provide supporting information wrt which AF can provide the NTZ information to the UAV (e.g. AMF can provide the indication above and the AF address/URL, so that the UE can retrieve the configuration information over the user plane; this would be beneficial in roaming scenarios where the UAV may not be configured a priori with the AF information). |
| **2 – T-Mobile Austria GmbH**  The only useful case I could think of for signaling is in order to inform the HPLMN of the reason why the UE is ”gone” if that is indeed what the UE enforced (e.g. no other frequency without restrictions is available). While the HPLMN need not know about the NTZs themselves, it would be good to know for the HPLMN that it is nothing abnormal (or wrong with the VPLMN) if UEs keep dropping when roaming (USS / UAV AF communicate with the VPLMN).  Let’s discuss during the meeting a solution respecting RAN’S answer in RP-241668. |
| **3 – Ericsson LM**  The referred options are these:  The  above  NTZ  as  sis  tance  in  for  ma  tion  is  made  avail  able  to  the  UAV  UE  by  us  ing  one  or  more  fol  low  ing  ways:   * pre-configured; * provided/updated by the AMF during the registration procedure; * provided/updatedbytheAMFduringtheUEConfigurationUpdateprocedurespecifiedinclause 4.2.4. |
| of TS 23.502 [4]; |

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| * provided/updated by the AF (e.g. NTZ AF, USS, TPAE). * provided/updated by the AF (e.g. NTZ AF, USS, TPAE) via PCF. |
| **9 – CATT**  We support the following options:  The above NTZ assistance information is made available to the UAV UE by using one or more following |
| **10 – Huawei Technologies France**  We consider NTZ assistance information is a type of policy data, so it should be stored in the PCF.  PCF provisioning the NTZ assistance information to UAV is preferred. |
| **11 – Samsung R&D Institute India**  As the question is limited to provisioning NTZ information to UAV, as usual the UAV can be pre-configured and then UAV will receive from network as well.  For 5G: It will receive from AMF during registration and then as part of UCU whenever there any update happens to NTZ information  For 4G: During attach and TAU procedure from MME.  We do not support to bring any node before AMF and MME to just store and again it has to go through  AMF and MME only by unnecessarily increasingly the signaling (no energy efficiency) |

**Question#3-2:** ”Reception of downlink data from the network by the UAV UE located in the NTZ is allowed given the regulatory requirements are not violated.” needs further clarification/work in SA2.

At least at this point in time SA2 has not considered RAN impacts from this item. Therefore, SA2 needs further clarification/details to figure out how the end-to-end solution may work. Please provide your opinion/soltuions on this matter.

# Feedback Form 2: Feedback on Question#3-2

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| **1 – QUALCOMM Europe Inc. - Italy**  When DL transmission is not allowed in the NTZ, given no RAN work can take place, the MNO must plan no transmission over the protected frequencies in the area of the NTZ. By the way, this is enforcement done by the MNO, even if the MNOs do not want to do any enforcement. Additional solutions do not seem necessary. |
| **2 – Ericsson LM**  RAN feedback does not change the problem space, even if RAN is not aware of NTZ, solns can be developed if wanted. If MNOs have to enforce no DL for NTZ then the network needs to know when the UE is within NTZ. If not, then the network will try and page the UE in its last known location, since UE/UAV won’t be able to respond, the paging may be expanded and continue to fail resulting in wasted resources for trying to find these devices. If DL data received for a UE (UAV), and AMF sees the UE in its record, it will proceed with normal paging etc. To deliver DL. Since UE is in NTZ and won’t respond to paging (ignore paging), the normal paging and DL delivery failure will occur. This is with the assumption that the network will not know whether the UE is in NTZ or not due to the assumption that the UAV UE must not send any UL in NTZ. If the UE does not have the latest NTZ info and responds, then network will need to reject (paging response) the UE with specific error code so UE understands it shall not respond (we may consider including latest NTZ info sending to the UE via AMF?) or UE may have sent RA update/TA update which should trigger AMF/MME to send updated NTZ info and correct the UE/UAV. This may waste some resources in the network but simplest way to handle the situation. (Assuming that the UE updates the network when it changes frequencies and height, otherwise network will not know accurate UE location).  Additionally, it needs to be clearly defined in the specs what means being in NTZ, i.e., UAV is in the geographical area, at certain height, and not able to use the restricted frequency; if a UAV is using notrestricted frequency, it is consider being “inside NTZ” |
| **3 – Nokia Corporation**  When NTZ provisioned to UAV in geographical coordinates (like GAD shapes), UAV can re-use the eLCS procedures defined in 23.273/23.271 which uses the same geographical format and it could fulfil the requirements. |
| **4 – LG Electronics France**  In case that DL is allowed in NTZ and DL data happens,   * for UAV in RRC\_Idle or RRC\_Inactive, paging is not appropriate to deliver DL data because paging response by the UAV is not allowed. * for UAV in RRC\_Connected, delivering DL data may cause UL due to ACK from the UAV which is not appropriate. RAN node cannot suppress ACK/NACK by the UAV because impact to RAN node is not considered. Suppressing response (e.g. ACK/NACK) by the UAV compliant of NTZ itself can be considered after receiving DL data. Anyhow, the suppression by the UAV may cause mis-aligned operation between the UAV and RAN node if the RAN node looks forward to response from the UAV, and/or of application layer between in the UAV and in peer entity (e.g. USS/UTM). |
| For the latter case (i.e. application layer mis-alignment), if we assume that the peer entity can know the UAV is in NTZ, no response seems not an issue.  For the former case (i.e. UAV - RAN node mis-alignment), SA2 may need to check with RAN2 whether RAN node can withstand or handle such situation. |
| **5 – CATT**  Based on existing RAN mechanism, when RAN sends data/signalling (unicast) to UE, acknowledge from UE is required. This means based on existing mechanism, sending downlink data will trigger uplink transmission on radio interface. So sending DL data will conflict with the NTZ requirements. To avoid RAN impact, we prefer to make the regulatory requirement stricter, i.e. network does not send downlink data/signalling to UAV UE located in the NTZ. To support the assumption above, the AMF needs to know the event that UAV UE enters into and moves out of the NTZ area and enforce the function of not to send DL data/signalling to UAV UE located in the NTZ.  Considering the function above is quite similar with the existing MICO mode, as follows:  *When the AMF indicates MICO mode to a UE, the AMF considers the UE always unreachable while the UE CM state in the AMF is CM-IDLE. The AMF rejects any request for downlink data delivery for UE in MICO mode and whose UE CM state in the AMF is CM-IDLE with an appropriate cause. For MT-SMS over NAS, the AMF notifies the SMSF that UE is not reachable, then the procedure of the unsuccessful Mobile terminating SMS delivery described in clause 4.13.3.9 of TS 23.502 [3] is performed. The AMF also defers location services, etc. The UE in MICO mode is only reachable for mobile terminated data or signalling when the UE is in CM-CONNECTED.*  *A UE in MICO mode need not listen to paging while in CM-IDLE.*  So it is proposed to re-used the MICO mode for UAV UE located in the NTZ. |
| **6 – Huawei Technologies France**  based on RAN reply, not sure what SA2 need to do. Better to conclude with simple assumptions. QC’s view looks reasonable. |
| **7 – Samsung R&D Institute India**  Here we have a scenario where if regulatory requirement mandates UAV to receive the downlink packet then network shall send and in other cases network should block. To address this there is only one solution possible which is to identify network when UAV is present inside NTZ. As RAN is not going to do any work in our view the simplest solution will be not to allow the UAV to go inside NTZ area which means UAV will do self enforcement based on the availability NTZ information (either pre-configured or received from network) |

**Question#3-3:** There exists ”NOTE 3: Whether indication about UAV UE’s NTZ support to the AMF/MME is needed will be decided during normative phase. This work does not have RAN impacts.”.

Please provide your opinion on this matter.

# Feedback Form 3: Feedback on Question#3-3

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| **1 – QUALCOMM Europe Inc. - Italy**  Though the indication from the UAV could be useful it is not essential given the decision that enforcement of NTZ restriction is done in the UAV UE. If there is NTZ-related information provided by the CN to the UAV in NAS, and the UAV does not support such information, then the UAV UE would simply ignore the received IEs, thus the capability indication from the UAV UE is not needed. |
| **2 – Ericsson LM**  The issue is whether dynamic NTZ zones can be created for example due to sudden local emergency events where the UAVs already in the area are not updated/have registered. Do they need to move out, need to be updated so they don’t transmit and if so what would be easiest way to deal with them? In such cases, only the UAVs that support NTZ and network knows the UAV presence should be updated and may then need to know. Related to the first question as well since update procedure is some of the options listed. |
| **3 – Nokia Corporation**  NTZ rules can be propagated from PCF and/or OAM/AF. The device can be pre-provisioned and/or instructed on-demand.  AMF/MME with legacy features can fulfil these procedures. |
| **4 – LG Electronics France**  We believe that indication about UAV UE’s NTZ support to the AMF/MME is useful to enable the AMF/MME to determine whether providing/updating NTZ assistance information to UAV UE is needed. |
| **5 – CATT**  Based on the conclusion that “The UAV UE is responsible for NTZ enforcement independently of the UAV UE 3GPP Release”, all the UAV UE should obey the NTZ requirements, so it seems the indication is not mandatory. |
| **6 – Huawei Technologies France**  NTZ is mainly RAN issue, because it is related frequency band control. Since RAN decided to do nothing, it is not meaningful for core network to support more than RAN does. |
| **7 – Samsung R&D Institute India**  As answered in previous question, we should not allow UAV to enter NTZ area and UAV UE with self enforcement will not enter. Hence there is no need of UAV to provide this indication. |
| **8 – Samsung R&D Institute India**  The above answer from Samsung should be considered for Question 4. For this question 3, we agree with LGE view that based on UAV capability for the support of NTZ feature, network will provision the NTZ information to UAV. |

**Question#3-4:** There exists ”NOTE 4: For the network to know about UAV presence inside NTZ, whether registration updates by the UAV UE before entering the NTZ and when exiting the NTZ are needed or the existing mechanism (e.g. AMF subscribing with NG-RAN by providing NTZ as AoI) can be applied will be decided during normative phase. This work does not have RAN impacts.”.

Please provide your opinion/solutions on this matter including whether and including any consideration of RAN impacts or not.

# Feedback Form 4: Feedback on Question#3-4

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| **1 – QUALCOMM Europe Inc. - Italy**  We believe an explicit indication by the UAV UE enables the network to track the correct status of the UAV UE and perform any necessary actions (e.g. suspend user plane resources) in real-time. This is not a new mechanism, we can re-use existing mechanisms designed for other use cases. The concern about excessive signalling is fake news, since there are few NTZ in any geographical area, and therefore there won’t be any unexpected signalling storms. |
| **2 – Ericsson LM**  This note should have been taken with the context of the solution/conclusion paragraph…we agreed that  an NTZ includes at least three components – 1) geographical area, and here a UE’s presence in AoI can be exploited, 2) restricted frequency, as NTZ is only for specific bands, and 3) UAV’s flight altitude/height; so we have 4 dimensions here. The note is about only 1)…since an NTZ can fully/partly cover NTZ area…It  seems that TA/Cell granularity can be sufficient at least to approximate NTZ areas… |
| **3 – LG Electronics France**  Because UAV UE can know it will enter NTZ and it just left from NTZ based on NTZ assistance information, pre-planned flight path information and trajectory, its location including height, etc., registration updates by the UAV UE before entering the NTZ and when exiting the NTZ can be performed. |
| **4 – CATT**  Based on the CATT answer to question#3-2, we think AMF needs to know about UAV presence inside NTZ.  The existing Area Of Interest mechanism can be reused. Besides the AoI, the existing MICO mode could also be re-used, e.g. the UAV UE initiates Registration procedure to request MICO mode before the UAV UE flying into the NTZ area. |
| **5 – Huawei Technologies France**  we don’t think core network need to support anything more than NTZ provisioning. |

**6 – Samsung R&D Institute India**

We should not allow UAV to enter NTZ area and UAV UE with self enforcement will not enter. Hence there is no need of UAV to provide this indication when it is entering and when it is about to exit.

**Question#3-5:** There exists ”NOTE 5: Whether extension of Service Restrictions for NTZs using Restricted Transmission Area (RTA) mapped from the NTZ information is needed will be discussed during normative phase. This work does not have RAN impacts.”.

Please provide your opinion on this matter.

# Feedback Form 5: Feedback on Question#3-5

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| **1 – QUALCOMM Europe Inc. - Italy**  The use of a new different type of Service Restriction enables the UAV UE to determine the correct behavior when in an area impacted by NTZs, since current service restrictions would allow for mobile initiated emergency services which are not acceptable for NTZs. Using existing service restrictions would require tricky implementation hacks which cannot be tested, and testing will be essential for certification of aerial devices. |
| **2 – Ericsson LM**  Is it possible to reuse “Forbidden Area” concept for RAT restrictions, specifically, *“In a Forbidden Area, the UE, based on subscription, is not permitted to initiate any communication with the network for this PLMN. The UE behaviour in terms of cell selection, RAT selection and PLMN selection depends on the network response that informs the UE of Forbidden Area. A Forbidden Area applies either to 3GPP access or to non-3GPP access”.* I don’t think is works when the UE has been registered with the network and then moves in the NTZ area unless it then does a Registration update, but it’s per RAT and not frequency.... Or it’s about “Non-Allowed Area”? with that there are some issue, for instance,  -“The UE shall not use the entering of a Non-Allowed Area as a criterion for Cell Reselection, a trigger for PLMN Selection or Domain selection for UE originating sessions or calls. The RRC procedures while the UE is in CM-CONNECTED with RRC\_INACTIVE states are unchanged compared to when the UE is in an Allowed Area…”  - an UEs needs to respond to paging (how to ensure these responses are not provided in the restricted frequencies?) “shall respond with a Service Request to core network paging indicating 3GPP access type or to a NAS Notification message received over non-3GPP access indicating 3GPP access type or when RAN paging failed, but the UE shall not request User Plane resource establishment, except for emergency services or when the UE is MPS-subscribed or MCX-subscribed.” |
| **3 – LG Electronics France**  Our understanding is RTA based Service Restriction is designed considering characteristics of NTZ (i.e. no Tx is allowed over the restricted band in NTZ), so a bit different from the existing service restriction mechanisms. Therefore, we are positive to specify RTA based Service Restriction. |
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| **4 – Huawei Technologies France**  NO, we don’t think SA2 need to spend effort on this aspect. |
| **5 – Samsung R&D Institute India**  We are already defining what UAV UE has to do like not sending any packet while being inside NTZ is enough. Nothing extra wrt definition of service area restriction is needed. |

**Question#3-6:** S2-2407319 (Solution#7 update) was not approved at SA2#163. Do you think that discussing the example and updates proposed in S2-2407319 can add value to understand Solution#7 better ?

# Feedback Form 6: Feedback on Question#3-6

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| **1 – QUALCOMM Europe Inc. - Italy**  We believe the harmless example that concerned only one company is needed to clarify the overall solution, and now that RAN has decided not to do any work, the example is anyway harmless while still helping clarifying the TR solution. |
| **2 – T-Mobile Austria GmbH**  There is no need to revisit S2-2407319 as-is because solution updates for the next meeting would need to reflect RAN’s answer in RP-241668. But this applies to any solution update in general.  Our view is that it is OK to (further) document in a TR’s solution as long as:   * it is in scope of the SID and KI(s) * is technically correct * it conveys some useful information regarding how/why this solution works and what it solves * it works   Additionally, whether one likes a given solution or not is a matter of (company) preference, but it should not hinder the inclusion of a valid solution to a TR. What the final solution(s) and/or concluded principle(s) is a matter of evaluation and must be based on consensus.  It would be good if the conclusion text we (hopefully) agree on in the next meeting clarifies the principles we apply for KI#3 in a way that is understandable for the reader. If in order to achieve this a minor update to any solution in the TR is needed, we have nothing against that. |
| **3 – Nokia Corporation**  The tdoc uses RAN techniques but is not consistent with RAN LS reply.  It is not technical way forward. |
| **4 – LG Electronics France**  We better focus on conclusion part rather than solution update although adding the example introduced by S2-2407319 to Solution#7 seems not harmful. Anyhow. if time permits, Sol#7 update can be discussed and handled. |
| **5 – CATT**  Whether the updates proposed in S2-2407319 impact the conclusion? If not, we suggest focusing our discussion on the NOTEs included in the conclusion. Otherwise, it can be discussed. |
| **6 – Huawei Technologies France**  NO, SA2 finished study phase so solution #7 should not be further considered. |
| **7 – Samsung R&D Institute India**  As RAN LS Reply clearly stated no work is going to be done by them, so this example is not going to help to SA2 in concluding the study. Hence agree with CATT. |

**Question#3-7:** ”Editor’s note: What is requirement to 3GPP system with regard to aerial UEs not supporting 3GPP Rel-19 NTZ mechanism and how to handle these aerial UEs need to be addressed during the study and conclusion of KI#3 and coordination with RAN WGs.” in clause 5.3.1 needs to be resolved/finalized.

Do you agree that SA2 can assume that aerial UEs not supporting 3GPP Rel-19 NTZ mechanism are capable of complying with NTZ regulation using methods not provided by 3GPP (e.g. Application layer configuration) ? If you cannot agree with the above assumption, please provide what kind of NTZ enforcement by NW is needed for these aerial UEs.

# Feedback Form 7: Feedback on Question#3-7

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| **1 – QUALCOMM Europe Inc. - Italy**  Yes, it is the only realistic assumption. |
| **2 – T-Mobile Austria GmbH**  Agree. In order for Rel’19 normative work to be agreeable, it should be understandable from the CRs’ text (at least the cover page!) what the advantage is/what is lacking compared to what is already possible without SA2 work (e.g. Application layer configuration). |
| Proposed text for the conclusion: ”UEs not supporting 3GPP Rel-19 NTZ mechanism(s) are assumed to comply with NTZ regulation using methods outside of 3GPP scope (e.g. application layer configuration)” |
| **3 – Ericsson LM**  We can also agree on that, it may not be “good-enough” for ECC, as they state that we need to develop mechanisms that ensure the NTZ respect: “*n)that a mechanism is necessary to ensure that aerial UE respect no-transmit zones;*”. Are we risking that we would need to redo the work? Use case: if there are incidents where dynamic NTZ needs to be created where UAVs are not allowed but was allowed before, UAVs may not have been updated or possible to update? Other case can be that certain incidents like fire etc. May cause some UAVs to be allowed but rest to be restricted. How do we handle this without network being able to reject? |
| **4 – LG Electronics France** We can agree. |
| **5 – Huawei Technologies France**  It is not SA2 responsibility to manage ”NTZ-capable” or ”non-NTZ capable” UAV. Whether and how to complying with NTZ is completely up to UAV implementation. The question is not valid. |
| **6 – Samsung R&D Institute India**  Before the study it was discussed that at application layer UAV UE can get NTZ info and then can do self enforcement. As it was not enough the study was started. If the same mechanism somehow can be done by non-supporting UAV then how it is different for supporting UAV, meaning all kind of UAV can do enforcement after getting NTZ info at application level, so no kind of work is needed here. Actually for non-supporting UAV network should reject the registration saying the existing case of no suitable cells and then same UAV will try registering with network only when it moves out of the area (NTZ area). This is only possibility. |

**Question#3-8:** Regarding how to configure/provision NTZ assistance information to CN, it can be considered that pre-configuration and configuration via OAM (who or where is this OAM configuration coming from and which NFs/nodes are involved need to be included in the response) are basically supported. Then, do you think whether additional means is needed, if so how (i.e. which mechanism) ?

# Feedback Form 8: Feedback on Question#3-8

**1 – InterDigital Communications**

When considering NTZ information may be updated, it should be possible for USS to use NEF service for updating NTZ information in 5GC. (it is reusing provisioning capability of NEF)

Both configuration via OAM and provisioning capability via NEF are available options in 5GC and should be selectable by operator.

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| **2 – QUALCOMM Europe Inc. - Italy**  OAM configuration is sufficient |
| **3 – Ericsson LM**  We may need to support additional means in case based on the USS/AF request and then we go via PCF to AMF (and MME for 4G/EPC). |
| **4 – Nokia Corporation**  OAM can take the pre-provision. Meanwhile, NTZ as PCC rules (provide NTZ from USS/AF (USS->PCF>UE)) can be used in above example of on-demand emergent NTZ area case. |
| **5 – LG Electronics France**  In addition to pre-configuration and configuration via OAM, we can consider the following means:   * provided/updated by the USS via UAS NF/NEF to the AMF. * provided/updated by the USS via UAS NF/NEF to the PCF. * provided/updated by the USS via UAS NF/NEF to the MME. |
| **6 – CATT**  We think OAM configuration is enough. |
| **7 – Huawei Technologies France** OAM configuration is enough. |
| **8 – Samsung R&D Institute India**  OAM configuration to AMF is only enough. USS can provide the NTZ information to OAM in the background. No other node of 5GC is needed to be aware of ot. |
| **9 – Samsung R&D Institute India**  Also any kind of pre-configuration at AMF and MME is always possible by operator/USS. |

# 3 Summary on companies view related to KI#3

# 3.1 KI#3 (NTZ)

**On Question#3-1:**

- 8 companies provided feedback.

- Seems pre-configuration of NTZ assistance information in UAV UE can be supported naturally.

- Regarding provisioning/update of NTZ assistance information from CN to UAV UE, the number of supporting companies for each way is as below (※ Feedback to Q#3-8 is also considered):

* From PCF as UE policy provisioning: 5 companies
* From AF (e.g. NTZ AF, USS, TPAE) via user plane: 3 companies
* From AF (e.g. NTZ AF, USS, TPAE) via PCF: 2 company
* From AMF (registration procedure, UCU procedure): 4 companies
* From MME (attach procedure, TAU procedure): 4 companies

- One company commented that HPLMN needs not know about the NTZs themselves while just signaling is needed to inform the HPLMN that the UE is "gone" when the UE is enforced by NTZ.

**On Question#3-2:**

- 7 companies provided feedback.

- Feedback from 4 companies can read or be interpreted that additional solution is not necessary to handle DL transmission/blocking for UAV UE in NTZ.

- 1 company commented that the simplest solution will be not to allow the UAV to go inside NTZ using self-enforcement based on the NTZ information (either pre-configured or received from network).

- 3 companies commented that consideration or solution on handling DL transmission/blocking for UAV UE in NTZ seems necessary, e.g. no paging, handling UAV UE not updated with the latest NTZ information, reusing MICO, etc.

- It is considered that this issue may be co-related with other open issues (e.g. NOTE 3, NOTE 4), and SA2 needs to discuss and resolve this aspect from system (e2e) perspective, e.g. transmitting DL data to UAV UE located in NTZ that allows Rx is workable, how AMF/MME can know whether UAV UE is in NTZ to refrain from paging.

**On Question#3-3:**

- 7 companies provided feedback.

- 4 companies are positive while 3 companies are negative on NOTE 3 about indication of UAV UE's NTZ support to the AMF/MME.

**On Question#3-4:**

- 6 companies provided feedback.

- No majority view is identified regarding whether indication from UAV UE about entering/exiting NTZ is needed, whether existing mechanisms can be reused, or whether nothing is needed.

**On Question#3-5:**

- 5 companies provided feedback.

- 2 companies are positive while 3 companies are negative on NOTE 5 about extension of Service Restrictions for NTZs using Restricted Transmission Area (RTA).

**On Question#3-6:**

- 7 companies provided feedback.

- The majority view is that revisit S2-2407319 (Solution#7 update) seems not crucial.

**On Question#3-7:**

- 6 companies provided feedback.

- 3 companies agree that SA2 can assume that aerial UEs not supporting 3GPP Rel-19 NTZ mechanism are capable of complying with NTZ regulation using methods not provided by 3GPP (e.g. Application layer configuration).

- 1 company commented that the question is not valid because it is not SA2 responsibility to manage "NTZ-capable" or "non-NTZ capable" UAV, and whether and how to complying with NTZ is completely up to UAV implementation.

- 2 companies commented that reject from network is needed for non-supporting UAV UE in NTZ.

**On Question#3-8:**

- 8 companies provided feedback.

- 4 companies commented that OAM (pre-)configuration for NTZ assistance information to CN is sufficient.

- 4 companies suggested NTZ assistance information provided by USS to CN (via NEF) as additional option.