3GPP TSG RAN WG2 Meeting #115-e draftR2-2108893

**Electronic meeting, 16th – 27th August 2021**

**Agenda item: 8.12.3.1**

**Source: vivo**

**Title: Summary of offline 105 - [REDCAP] eDRX cycles - second round**

**Document for: Discussion and decision**

# Introduction

This document is the summary of following offline discussion:

* [AT115-e][105][RedCap] eDRX cycles (Vivo)

Updated scope: discuss all remaining proposals from [R2-2108881](file:///C:\Data\3GPP\RAN2\Inbox\R2-2108881.zip)

Intended outcome: Summary of the offline discussion with e.g.:

* + - List of proposals for agreement (if any)
    - List of proposals that require online discussions
    - List of proposals that should not be pursued (if any)

Updated deadline (for companies' feedback): Monday 2021-08-23 10:00 UTC

Updated deadline (for rapporteur's summary in R2-2108893): Monday 2021-08-23 16:00 UTC

Proposals marked "for agreement" in R2-2108893 not challenged until Tuesday 2021-08-24 0800 UTC will be declared as agreed via email by the session chair (for the rest the discussion will further continue online).

This is the second round of offline discussion on eDRX for RedCap. Per suggestion from Chair, the discussion will focus on the follow proposals in [17]:

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| ***Configuration of eDRX cycle:***  ***Proposal 1: [To agree] [15/20]*** *RAN2 considers the configuration as an invalid case, where INACTIVE eDRX cycle is configured but IDLE eDRX cycle is not configured. Whether to capture this restriction in spec is FFS.*  ***Proposal 2: [To agree] [18/20]*** *RAN2 considers the configuration as invalid case, where INACTIVE eDRX cycle is longer than IDLE eDRX cycle. Whether to capture this restriction in spec is FFS.*  ***PTW calculation for multi-beam:***  ***Proposal 7: [To agree] [17/20]:*** *When determining PTW\_start and/or PTW\_end for eDRX, the issue that multi-beam PO may be located outside the PTW will not be considered in RAN2 before getting enough supporters.*  ***Paging monitoring mechanism in eDRX for different cases:***  ***Proposal 12: [To agree] [18/20]*** *For RRC\_INACTIVE UE, when IDLE eDRX cycle is no longer than 10.24s and RAN eDRX cycle is no longer than 10.24s, T is determined by the shortest of IDLE eDRX cycle and INACTIVE eDRX cycle. FFS whether the same eDRX cycle value should be set for both Idle and Inactive.*  ***Proposal 14: [To agree] [17/20]*** *For RRC\_INACTIVE UE, when IDLE eDRX cycle is longer than 10.24s and RAN eDRX cycle is no longer than 10.24s, T is determined by the shortest of UE specific DRX cycle, if configured by upper layer, INACTIVE eDRX cycle and default paging cycle during CN PTW.*  ***Proposals need further online discussion:***  ***PTW\_start calculation (P4 and P5 will be discussed together):***  ***Proposal 4: [To agree] [15/20]:*** *When IDLE eDRX cycle is longer than 10.24s, CN PTW\_start calculation formula defined in LTE is re-used, i.e.*   |  | | --- | | *PTW\_start denotes the first radio frame of the PH that is part of the PTW and has SFN satisfying the following equation:*  *SFN = 256\* ieDRX, where*  *- ieDRX = floor(UE\_ID\_H /TeDRX,H) mod 4* |   ***Proposal 5: [To discuss] [9/20]:*** *RAN2 to discuss enhancement on CN PTW\_Start position is configurable by network.*  ***Paging monitoring mechanism in eDRX for different cases:***  ***P9 and P11 will be discussed together:***  ***Proposal 9 [To discuss] [11 vs. 10]*** *When IDLE eDRX cycle is no longer than 10.24s and INACTIVE eDRX cycle is not configured, RAN2 to discuss the following options on the paging monitoring mechanism for RRC\_INACTIVE UE:*   * *Option 1: T is determined by the shortest of RAN paging cycle, IDLE eDRX cycle, and default paging cycle.* * *Option 2: T is determined by the shortest of RAN paging cycle and IDLE eDRX cycle.*   ***Proposal 11: [To discuss] [8 vs. 13]*** *When IDLE eDRX cycle is longer than 10.24s and INACTIVE eDRX cycle is not configured, RAN2 to discuss the following options on the paging monitoring mechanism for RRC\_INACTIVE UE outside CN PTW:*   * *Option 1: T is determined by the shortest of RAN paging cycle and default paging cycle.* * *Option 2: T is determined by RAN paging cycle.*   ***Proposal 13: [To discuss] [11 vs. 13]*** *RAN2 to select one option for the configuration of INACTIVE eDRX cycle when it is no longer than 10.24s:*   * *Option 1: Extend the existing ran-pagingCycle field as LTE.* * *Option 2: Introduce an additional IE for INACTIVE eDRX to contain all values of INACTIVE eDRX cycles (also include values >10.24, if agreed in future).*   ***P16 will be discussed after the decision on P1:***  ***Proposal 16: [To discuss] [4 vs. 3]*** *If the case that IDLE eDRX cycle is not configured and INACTIVE eDRX cycle <=10.24s is allowed, RAN2 will further study the following options on the paging monitoring mechanism for RRC\_INACTIVE UE for this case:*   * *Option 1: T is determined by the shortest of INACTIVE eDRX cycle, default paging cycle and UE specific DRX cycle if configured by upper layer.* * *Option 2: T is determined by INACTIVE eDRX cycle.*   ***Proposals for discussion (1st priority) or to be captured as FFS***  ***Proposal 17:*** *FFS whether eDRX feature is optional or coupled with RedCap at network and UE.* |

Besides, during the online discussion, some companies also mentioned the PTW length should be discussion, as this is required by RAN4. It would also be included.

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|  |  |
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# 2nd Round Discussion

## eDRX configuration

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| ***Proposal 1: [To agree] [15/20]*** *RAN2 considers the configuration as an invalid case, where INACTIVE eDRX cycle is configured but IDLE eDRX cycle is not configured. Whether to capture this restriction in spec is FFS.*  ***Proposal 2: [To agree] [18/20]*** *RAN2 considers the configuration as invalid case, where INACTIVE eDRX cycle is longer than IDLE eDRX cycle. Whether to capture this restriction in spec is FFS.* |

During the first round of offline discussion [17], whether to allow different eDRX configurations have been discussed and 20 companies provided their views. However, we failed to reach consensus on the following two configurations:

* Configuration 1: Only INACTIVE eDRX is configured without IDLE eDRX
* Configuration 2: Both INACTIVE and IDLE eDRX are configured, and INACTIVE eDRX cycle is longer than IDLE eDRX cycle

For configuration 1 and 2, most companies think the configuration is invalid since there is no benefit and we should follow LTE principle. While 5 companies think there is no need to limit any configuration. Rapporteur agrees with the companies that configuration 1 could be beneficial, but introducing some interaction between CN and RAN, and there may be no benefit for INACTIVE UE since the UE still needs to monitor CN paging.

Besides, as mentioned by some companies, there may be no need to have such restriction on top of what already specified in TS 23.501. Rapporteur think whether to capture this in RAN2 specification could be further discussed during normative phase, so we put FFS on this part. By now, we only focus not to define the specific UE haviour for configuration 1 and 2.

Rapporteur suggests companies to re-consider the issue and hope we can reach consensus.

1. Do companies agree the proposal:

**Proposal:** RAN2 considers the configuration as an invalid case, where INACTIVE eDRX cycle is configured but IDLE eDRX cycle is not configured. FFS whether to capture this restriction in spec.

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| --- | --- | --- |
| **Company’s name** | **Yes/No** | **Comments, if any** |
| Qualcomm | Yes |  |
| OPPO | Yes |  |
| Xiaomi | Yes |  |
| MediaTek | Yes |  |
| Apple | This is not strictly invalid.. but changes would be needed. But we are ok to go with majority. |  |
| Futurewei | Yes |  |
| vivo | Yes |  |
| Convida | Yes | There may not be a need to repeat and capture this restriction in the RAN2 specs, on top of what is specified in TS 23.501. |
| Intel | Neutral | In our understanding gNB should provide valid configurations without having to set a requirement on UE side to check them, but we are ok going with majority view. |
| ZTE | Yes |  |
| Samsung | Yes |  |
| Sharp | Yes |  |
| Huawei, HiSilicon | Yes |  |
| CATT | Yes |  |
| NTTDOCOMO | Yes |  |
| Lenovo | Yes |  |
| LGE | Yes |  |
| Sequans | Yes |  |
| Ericsson | Neutral | Agree with Apple and Intel comments. |
| DENSO | Neutral | Configuration 1 should be supported. The specification should support configuring the eDRX cycle for inactive and idle, independently for power saving. However, given the potential specification impact, we are ok going with majority. |
| Nokia | Neutral | We don’t see a need to restrict this case in the specification – can be handled by the NW. |

1. Do companies agree the proposal:

**Proposal:** RAN2 considers the configuration as invalid case, where INACTIVE eDRX cycle is longer than IDLE eDRX cycle. Whether to capture this restriction in spec is FFS.

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| --- | --- | --- |
| **Company’s name** | **Yes/No** | **Comments, if any** |
| Qualcomm | Yes |  |
| OPPO | Yes |  |
| Xiaomi | Yes |  |
| MediaTek | Yes |  |
| Apple | Again, it is not an invalid case. The NW is free to chose it’s own config. | Might be better to evaluate this after the decision from SA2 on >10.24s INACTIVE eDRX. |
| Futurewei | Yes |  |
| vivo | Yes |  |
| Convida | Yes | As in DP1, There may not be a need to repeat and capture this restriction in the RAN2 specs, on top of what is specified in TS 23.501, e.g., “If the UE supports eDRX in RRC inactive, based on its UE radio capabilities, NG-RAN configures the UE with an eDRX cycle in RRC-INACTIVE up to the value for the UE’s idle mode eDRX cycle as provided by the AMF in “RRC Inactive Assistance Information”. |
| Intel | Neutral | Same reasoning as for discussion point 1) |
| ZTE | Yes |  |
| Samsung | Yes |  |
| Sharp | Yes |  |
| Huawei, HiSilicon | Yes | As described in TS23.501, INACTIVE eDRX cycle shall be nolonger than IDLE eDRX cycle |
| CATT | Yes |  |
| NTTDOCOMO | Yes |  |
| Lenovo | Yes |  |
| LGE | Yes |  |
| Sequans | Yes |  |
| Ericsson | Neutral | Agree with Apple and Intel |
| DENSO | Yes | It is noted that an eDRX cycle in RRC\_INACTIVE is less than or equal to the value for RRC\_IDLE, according to TS 23.501, section 5.31.7.2.1. |
| Nokia | Neutral | Up to NW. |

## PTW configuration/calculation

We have agreed the PH and PTW\_end calculation formula re-use LTE as baseline during online discussion. This section continues to discuss the range for PTW length and PTW\_start calculation formula for CN PTW.

Note: The scope for this offline discussion is assuming eDRX cycle in INACTIVE <= 10.24s. As we agreed PH and PTW are applied for the case eDRX cycle >10.24s, then, the discussion for PTW only refer to RRC\_IDLE scenario. Regarding PH and PTW for RRC\_INACTIVE, it could be discussed in case SA/CT concluded that eDRX cycle in INACTIVE could be longer than 10.24s.

During online discussion, some companies mentioned the PTW length is urgent required by RAN4, which should be offline discussed.

In LTE, PTW length can take values between 1.28s and 20.48s for eMTC and between 2.56s and 40.96s for NB-IoT. The PTW step length is 1.28s for eMTC, i.e. the allowed PTW length for eMTC is (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16)\* 1.28s, while the PTW step length is 2.56s for NB-IoT, i.e. the allowed PTW length for eMTC is (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16)\* 2.56s.

Company [12] proposed that the minimum and maximum PTW length values in RedCap are 1.28 s and 40.96 s respectively, as RedCap UEs have wide range of scenarios and use cases. Then, the combined range of LTE/NB-IoT, i.e. 1.28s to 40.96s is proposed. This can cover the use cases where minimizing the delay for the paging response is important, such as wearables, as well as the use cases where the power savings is a critical factor, such as industrial sensors. The exact values within this range also needs further discussion.

1. Companies are invited to provide your views on the maximum, minimum value of PTW length and the step length/granularity for PTW.

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| **Company’s name** | **PTW length** | | | **Comments, if any** |
| **maximum** | **minimum** | **Step length/granularity** |
| Qualcomm | 40.96s | 1.28s | 1.28s | We are fine with adopting NB-IoT’s max PTW length of 40.96s as the max eDRX cycle is same as that of NB-IoT |
| OPPO | 40.96s | 1.28s | 1.28s |  |
| Xiaomi | 20.48s or 40.96s | 1.28s | 1.28s | Ok to aligned with eMTC  And ok to use the NB-IoT’s max PTW length since the e-DRX cycle is extended to 2.9h. |
| MediaTek | 40.96 s | 1.28 s | 1.28s | The values can be expressed as N x 1.28 s, e.g. N = 1, 2, … 32 |
| Apple | 40.96 s | 1.28 s | 1.28s | Ensure full flexibility |
| Futurewei | 40.96 s | 1.28 s | 1.28s |  |
| vivo | 40.96 s | 1.28 s | 1.28s |  |
| Convida | 40.96s | 1.28s | 1.28s | We think that adopting NB-IoT max PTW length of 40.96s as the max eDRX cycle is preferred. |
| Intel | 20.49s (see comment) | 1.28s | 1.28s | We are ok keeping eMTC maximum understanding that UE always monitors the shortest configured DRX cycle within the PTW. Therefore we do not see strong need to have a larger PTW length which would impact negatively on UE’s power consumption. NB-IoT increased this considering the large amount of repetitions required to support. Said this, we are ok with a larger value (e.g. 40.96s) if this is preferable by majority view. |
| ZTE | 40.96s | 1.28s | 1.28s |  |
| Samsung | 40.96s | 1.28s | 1.28s |  |
| Sharp | 40.96s | 1.28s | 1.28s |  |
| Huawei, HiSilicon | 20.48s | 1.28s | 1.28s | 40.96s value in NB-IoT is not so much due to the larger eDRX cycle but rather due to the long DRX cycle (up to 10.24s) in NB-IoT. In our understanding, the value was set to allow 4 paging attempts in the PTW.  Reusing 20.48s allows to reuse LTE coding |
| CATT | 40.96s | 1.28s | 1.28s |  |
| NTTDOCOMO | 40.96s | 1.28s | 1.28s |  |
| Lenovo | 40.96s | 1.28s | 1.28s |  |
| LGE | 20.49s (see comment) | 1.28s | 1.28s | Similar view with Intel. 20.24s seems fine but 40.96s is also acceptable. |
| Sequans | 20.48s (see comment) | 1.28 s | 1.28s | Don’t see the need for the NB-IoT max PTW value, but OK to go with majority |
| Ericsson | 20.48 s | 1.28 s | 1.28 s | Share view comments from Intel and HW, we think 20.48 s should be enough for RedCap use cases. Therefore, we prefer to use the same values as for LTE-M. |
| DENSO | 40.96s | 1.28s | 1.28s |  |
| Nokia | 40.96s | 1.28s | 1.28s | OK with [12] proposal. |

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| ***Proposal 4: [To agree] [15/20]:*** *When IDLE eDRX cycle is longer than 10.24s, CN PTW\_start calculation formula defined in LTE is re-used, i.e.*   |  | | --- | | *PTW\_start denotes the first radio frame of the PH that is part of the PTW and has SFN satisfying the following equation:*  *SFN = 256\* ieDRX, where*  *- ieDRX = floor(UE\_ID\_H /TeDRX,H) mod 4* |   ***Proposal 5: [To discuss] [9/20]:*** *RAN2 to discuss enhancement on CN PTW\_Start position is configurable by network.* |

During the first-round of offline discussion, companies provided their preference on the following 4 options of PTW\_start:

* + Option1: Re-use LTE PTW\_start calculation formula (i.e. Fixed to multiples of 256 SFNs)
  + Option2: Fixed to multiples of 128 SFNs
  + Option3: Configurable by the network
  + Option4: Others (if you prefer other methods, please provide your comments)

Most companies (15/20) prefer option 1, while a number of companies (9/20) would like to have enhancement on CN PTW\_start position, which could be configurable by network (i.e. option 3). Rapporteur thinks it might be hard for all companies to agree enhancement by now. Rapporteur suggests to agree firstly reusing formula defined in LTE as the baseline, and leave the enhancement on configurable PTW\_start as the FFS part, which could be further discussed in RAN2.

For companies supporting configurable PTW\_start, please feel free to provide your support in the comments. The “FFS whether” could be removed if most companies support it.

1. Do companies agree the proposal:

**Proposal:** When IDLE eDRX cycle is longer than 10.24s, CN PTW\_start calculation formula defined in LTE is re-used as the baseline, as below. FFS whether CN PTW\_start position could be configurable by network.

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| PTW\_start denotes the first radio frame of the PH that is part of the PTW and has SFN satisfying the following equation:  SFN = 256\* ieDRX, where   * ieDRX = floor(UE\_ID\_H /TeDRX,H) mod 4 |

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| **Company’s name** | **Yes/No** | **Comments, if any** |
| Qualcomm | - | We prefer Option 3, i.e. configurable by network |
| OPPO |  | We prefer to making PTW\_start configurable by the network |
| Xiaomi | Yes | For option3, I guess we need to ask SA2/CT1 and there may have impact on CT1 since the CN needs to know when UE is available for transmission. |
| MediaTek |  | Prefer Option 3, i.e. configurable by the network because it gives more flexibility and can allow fairer distribution in some cases. |
| Apple | Yes | It is still FFS for the flexible option, so, this proposal is not controversial at all ☺ . |
| Futurewei | Yes |  |
| vivo | Yes | We agree to re-use LTW formula as baseline. |
| Convida | Yes | We think that it is ok to re-use the LTE PTW-start calculation formula as a baseline. However, we can also envision an offset between PTW\_start for Redcap UEs that can be configurable by the network. This could potentially enable more efficient, flexible scheduling. |
| Intel | See comment | We would prefer Option 3 if PTW start is same for IDLE and INACTIVE. Whether eDRX in INACTIVE is greater than 10.24sec is FFS (dependent on CT1 input), therefore we suggest post-pone this discussion and left it FFS. If majority of companies want to have a baseline/initial agreement, we are ok keeping LTE one. |
| ZTE | Yes, but not configurable | We are ok to take LTE PTW-start calculation formula as a baseline, however, we don’t think there is need of configurable mechanism.  And it is also unclear to us what configurable is referring to, based on company contributions, there are two different solutions:   * Solution 1: The number of starting locations within a PH is configurable. (e.g. “mod N” where N is configured by network); * Solution 2: The number of starting locations within a PH is fixed, but network can configure an ‘offset’ to the calculated PTW\_start position.   As we commented during phase 1, we think the number of starting locations within a PH is related to the minimum value of PTW length. So if the minimum PTW length is 1.28s, then there should be 8 starting locations of PTW within a PH (not 4). With 8 PTW\_start locations, UEs can be distributed uniformly, and there is no gap between PTWs.  It is unclear how can configurable approach (either solution 1 or 2) bring more benefit. |
| Samsung | Yes | Support to use LTE formula as baseline, and RAN2 can discuss FFS part further. |
| Sharp | Yes |  |
| Huawei, HiSilicon | Yes |  |
| CATT | Yes | We agree LTE calculation as baseline. Whether some additional parameter e.g. PTW\_start\_offset is introduced to adjust the PTW\_start position can be further discussed. |
| NTTDOCOMO | Yes |  |
| Lenovo | Yes | LTE mechanism is the baseline. |
| LGE | Yes |  |
| Sequans | Yes |  |
| Ericsson | Yes | Prefer LTE PTW start formulation for simplicity. We can consider other options if there are concrete proposals on how configure e.g. configurable starting locations. |
| DENSO |  | We would prefer Option 3. Allow NW to select 1 or 2. Based on the existing formula, NW will be able to select flexibly. |
| Nokia | Yes | We are OK as baseline and are OK to consider Option 3 as additional option. |

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| ***Proposal 7: [To agree] [17/20]:*** *When determining PTW\_start and/or PTW\_end for eDRX, the issue that multi-beam PO may be located outside the PTW will not be considered in RAN2 before getting enough supporters.* |

During the first round of offline discussion, there is not too much support on the issue that multi-beam PO may be located outside the PTW when determining PTW\_start and/or PTW\_end. As the PTW\_end calculation has been agreed, but the PTW\_start calculation has not been agreed, companies could also check whether there is problem if configurable PTW\_start was agreed. In future, any further enhancement could be considered if companies really found problem. Rapporteur suggests not to consider this issue before getting enough supporters.

1. Do companies agree not to consider this issue before getting enough supporters/or really finding problem.

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| --- | --- | --- |
| **Company’s name** | **Yes/No** | **Comments, if any** |
| Qualcomm | Yes | It can be left to network implementation |
| OPPO | Yes | In our view, there is no issue so far. |
| Xiaomi | Yes |  |
| MediaTek | Yes |  |
| Apple | Yes | Same view for start as well. |
| Futurewei | Yes |  |
| vivo | Yes | We can discuss this issue at later meetings if really issues exist. |
| Convida | No | First, we think that this discussion point should be rephrased. There was a problem identified in Round 1. Multi-beam support is one of the key differences with LTE and should be addressed, and again this doesn’t mean a new formula is needed for the calculation of PTW\_start or PTW\_end, but the UE behavior in this case should not be left to implementation since it is not a corner case and will lead to UE missing pages. In fact this may be a quite frequent scenario considering that the PTW length is decided by the CN while the PO length is decided by the RAN. If we re-use the LTE PTW calculation, one or more POs may not be entirely contained within the PTW and solutions to address this scenario should be discussed in RAN2. We think that Redcap UE behaviors associated with multi-beam PO and monitoring a set of PDCCH monitoring occasions that may be located outside the PTW could be configured and addressed by the network. This would avoid the distinct possibility for the UE to miss pages. Alternatively, simple rules can be captured in the specification to define the UE behavior when a PTW overlaps a PF or partially overlaps a PO but is not fully contained within the PO. A potential solution could follow the same principle of how a similar issue was handled in the case of C-DRX for the scenario where the Active Time starts or ends in the middle of a PDCCH occasion, although in this case, we believe the UE should monitor an incomplete PO or POs with PF that overlaps with the PTW. |
| Intel | Yes |  |
| ZTE | Yes |  |
| Samsung | Yes |  |
| Sharp | Yes |  |
| Huawei, HiSilicon | Yes | Leave to network implementation and we think we have already agreed to exclude this. |
| CATT | See comment | We don’t think this issue is a corner case, and the optional solutions are not necessarily complex. We think we should discuss how to solve it. But we can accept that it is checked after the baseline PTW\_start calculation is determined. |
| NTTDOCOMO | Yes |  |
| Lenovo | Yes |  |
| LGE | Yes |  |
| Sequans | Yes |  |
| Ericsson | Yes | Proposal to agree this now and further discussion during R17 based on contributions, if needed. |
| DENSO | Yes | We think that this problem can be dealt with by controlling the PTW on the NW side. |
| Nokia | Yes | Up to NW. |

## Paging monitoring for RRC\_INACTIVE

This section aims to discuss paging monitoring mechanism for UEs in RRC\_INACTIVE.

### INACTIVE eDRX configuration

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| ***Proposal 13: [To discuss] [11 vs. 13]*** *RAN2 to select one option for the configuration of INACTIVE eDRX cycle when it is no longer than 10.24s:*   * *Option 1: Extend the existing ran-pagingCycle field as LTE.* * *Option 2: Introduce an additional IE for INACTIVE eDRX to contain all values of INACTIVE eDRX cycles (also include values >10.24, if agreed in future).* |

During the first round of discussion, companies have different understanding on the RAN paging cycle. Some companies think RAN paging cycle means the INACTIVE eDRX cycle when the INACTIVE eDRX cycle is no longer than 10.24s, while some companies think RAN paging cycle only mean the RAN DRX cycle. It will result different meanings when using RAN paging cycle to determine the paging monitoring mechanism in various cases.

Hence, how to configure INACTIVE eDRX cycle when it is no longer than 10.24s, considering following options was discussed:

* Option 1: Extend the existing ran-pagingCycle field as LTE.
* Option 2: Introduce an additional IE for INACTIVE eDRX to contain all values of INACTIVE eDRX cycles (also include values >10.24, if agreed in future).

Unfortunately, it seems split views on this issue between companies:

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| ***Summary:*** *20 companies provided views on the configuration of INACTIVE eDRX cycle when it is not longer than 10.24s.*   * *7/20 (Qualcomm, OPPO, Xiaomi, Intel, Apple, DENSO, Sharp) companies prefer option 1, i.e. Extend the existing ran-pagingCycle field as LTE. The supporting companies think we should follow the LTE principle.* * *9/20 (Huawei,Samsung, Sequans, ZTE, MediaTek, Futurewei, vivo, Lenovo,Convida) companies prefer option 2, i.e. Introduce an additional IE for INACTIVE eDRX to contain all values of INACTIVE eDRX cycles. The following comments were raised by supporting companies:*   + *Huawei thinks UE can’t differentiate between the legacy 2.56 RAN paging cycle and the 2.56 INACTIVE eDRX cycle in option 1.*   + *ZTE think option 2 is more future proof. And separating eDRX cycle and RAN paging cycle is clearer in specification.* * *4/20 (LGE,Nokia, CATT, Ericsson) companies can accept either.* |

Rapporteur suggest companies could re-consider following options on how to configure INACTIVE eDRX cycle when it is no longer than 10.24s.

1. Companies are invited to provide their views on which option do you prefer on the configuration of INACTIVE eDRX cycle when it is not longer than 10.24s:

* Option 1: Extend the existing *ran-pagingCycle* field as LTE.
* Option 2: Introduce an additional IE for INACTIVE eDRX to contain all values of INACTIVE eDRX cycles (also include values >10.24, if agreed in future).

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| **Company’s name** | **Option(s)** | **Please justify your response** |
| Qualcomm | 1 & 2 | We can accept both, if it helps companies to converge |
| OPPO | 2 | If to cover the case of 2.56s eDRX cycle |
| Xiaomi | 2 | We change to 2 considering 2 is more future proof. |
| MediaTek | 2 | Cleaner approach. |
| Apple | We are ok to go with majority. |  |
| Futurewei | 2 | Agree that Option 2 is cleaner and future proof. |
| vivo | 2 | The 2.56s eDRX cycle and 2.56s RAN paging cycle cann’t distinguish in option 1. |
| Convida | 2 | We believe option 2 is a more flexible solution. |
| Intel | 1 & 2 (see comment) | We have slightly preference for 1 but could also accept both options based on majority view. |
| ZTE | 2 | Cleaner and future proof |
| Samsung | 2 | Agree that option 2 is future proof and differentiate 2.56 RAN paging cycle and 2.56 RAN eDRX cycle. |
| Sharp | Neutral |  |
| Huawei, HiSilicon | Option 2 | In option 1, UE cannot differentiate between the legacy 2.56 RAN paging cycle and the 2.56 INACTIVE eDRX cycle, if 2.56s is agreed as minimum eDRX value.  On the other hand, this is stage 3 details and can be discussed later |
| CATT | We are OK to go with majority | We can accept option 1/2 for eDRX<=10.24s.  If support of eDRX>10.24s is confirmed, option 2 can be used to extend supporting eDRX>10.24s. But if option 1 is adopted for eDRX<=10.24s, one separate additional IE for INACTIVE eDRX>10.24s should be defined. |
| NTTDOCOMO | 1 & 2 | ok to go with majority. |
| Lenovo | 2 | For future proof. |
| LGE | No strong view |  |
| Sequans | 2 |  |
| Ericsson | 1 & 2 | Similar view as Qualcomm. |
| DENSO | See comment | If the INACTIVE is no longer than 10.24s, we prefer Option 1. If this case considers the future (i.e. INACTIVE is longer than 10.24s) at this time, set it to option 2. |
| Nokia | Neutral | Either works. |

### When INACTIVE eDRX is not configured

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| ***Proposal 9 [To discuss] [11 vs. 10]*** *When IDLE eDRX cycle is no longer than 10.24s and INACTIVE eDRX cycle is not configured, RAN2 to discuss the following options on the paging monitoring mechanism for RRC\_INACTIVE UE:*   * *Option 1: T is determined by the shortest of RAN paging cycle, IDLE eDRX cycle, and default paging cycle.* * *Option 2: T is determined by the shortest of RAN paging cycle and IDLE eDRX cycle.*   ***Proposal 11: [To discuss] [8 vs. 13]*** *When IDLE eDRX cycle is longer than 10.24s and INACTIVE eDRX cycle is not configured, RAN2 to discuss the following options on the paging monitoring mechanism for RRC\_INACTIVE UE outside CN PTW:*   * *Option 1: T is determined by the shortest of RAN paging cycle and default paging cycle.* * *Option 2: T is determined by RAN paging cycle.* |

During the online discussion, we have agreed the paging monitoring mechanism during CN PTW for RRC\_INACTIVE UE when IDLE eDRX cycle is longer than 10.24s and INACTIVE eDRX cycle is not configured. However, the views on paging monitoring mechanism **outside CN PTW** are diverse. Besides, the views on paging monitoring mechanism when IDLE eDRX cycle is no longer than 10.24s and INACTIVE eDRX is not configured are also diverse.

Rapporteur thinks divergence between companies is whether the missing of SI change notification exists/or whether should be considered when IDLE eDRX is configured but INACTIVE eDRX isn’t configured.

Besides, during the first round of offline discussion, Rapporteur agrees with some companies that we should have a consistent decision for all cases. (i.e., Include default DRX cycle in all the cases vs. Not include default DRX cycle in all the cases). Thus, Rapporteur suggests to discuss them together to have a consistent decision, where answers for the below two questions are expected to be same.

1. For RRC\_INACTIVE UE, when IDLE eDRX cycle is no longer than 10.24s and INACTIVE eDRX cycle is not configured, companies are invited to provide their preference on the paging monitoring mechanism among the following options.
   * Option 1: T is determined by the shortest of RAN paging cycle, IDLE eDRX cycle, and default paging cycle.
   * Option 2: T is determined by the shortest of RAN paging cycle and IDLE eDRX cycle.

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| **Company’s name** | **Option(s)** | **Comments / arguments** |
| Qualcomm | Option 1 | We think the rule we may follow is that if a RRC state is not configured with eDRX, then UE has to follow default paging cycle too to monitor SI change notifications. If a RRC state is configured with eDRX, then UE does not need to follow default paging cycle. |
| OPPO | Option 2 | When IDLE eDRX cycle is no longer than 10.24s, we think UE does not need to follow default paging cycle [regardless](javascript:;) [of](javascript:;) the UE’s RRC state. |
| Xiaomi | Option 2 | Agree with oppo that when IDLE eDRX cycle is no longer than 10.24s, the default paging cycle is not used. |
| MediaTek | Option 2, but | Aligns with the LTE mechanism. Also, according to previous agreement, default paging cycle is not considered in a similar scenario in Idle mode (“For RRC\_IDLE UE, when eDRX cycle is no longer than 10.24s, T is determined by IDLE eDRX cycle”), so why does it have to be considered in Inactive mode? Note that SI change notification in eDRX was handled by a separate mechanism in LTE (eDRX acquisition period), which may need to be discussed in NR.  Also, the check is redundant in option 2 because RAN paging cycle is always <= IDLE eDRX cycle, so T could be just equal to the RAN paging cycle. |
| Apple | Option 2 |  |
| Futurewei | Option 1 |  |
| vivo | Option 2 | We agree with MediaTek. |
| Convida | Neither | Similar to MediaTek, with think that for a UE in RRC\_Inactive state, when eDRX is not configured for Inactive, T is simply determined by the RAN paging cycle since the RAN paging cycle is always less than or equal to the IDLE eDRX cycle. Impacts of not using the default paging cycle could lead to missing SI change notifications. However, in this particular case, the UE is at least configured by the CN with IDLE eDRX cycle, so missing SI change notifications should not be an issue for implementations. |
| Intel | Option 1 | UE in RRC\_INACTIVE is not configured with eDRX, therefore it should behave the same than legacy with the only different that IDLE eDRX cycle value is also considered.  Said this, we believe it is unlikely that IDLE eDRX cycle is smaller than other legacy paging DRX cycles configured to the UE. |
| ZTE | Option 2 |  |
| Samsung | Option 2 | Agree with MediaTek |
| Sharp | Option 2 |  |
| Huawei, HiSilicon | Option 1 | We think the default paging cycle should be considered for NR principle, wherein UE has to monitor SI change notification if not configured with eDRX |
| CATT | Option 2 | If option 1 is adopted in discussion point 6), and INACTIVE eDRX cycle>10.24s is not supported, we wonder whether the definition of “INACTIVE eDRX” does exist.  Anyway we think SI modification should be monitored according to the eDRX acquisition period not according to the default paging cycle. As for the PWS notification, we think for UE configured with eDRX, it is not necessary information. And UE can acquire this notification according to RAN paging cycle. So option1 shouldn’t be supported. |
| NTTDOCOMO | Option 1 |  |
| Lenovo | Option 1 |  |
| LGE | Option 1 |  |
| Sequans | Option 1 | Prefer to keep NR principle of using default paging cycle if eDRX is not configured |
| Ericsson | Option 1 | Share view with Qualcomm. |
| DENSO | Option 2 | We agree with OPPO. |
| Nokia | Option 1 |  |

1. For RRC\_INACTIVE UE, when IDLE eDRX cycle is longer than 10.24s and INACTIVE eDRX cycle is not configured, **outside CN PTW**, companies are invited to provide their preference on the paging monitoring mechanism among the following options.
   * Option 1: T is determined by the shortest of RAN paging cycle and default paging cycle.
   * Option 2: T is determined by RAN paging cycle.

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| **Company’s name** | **Option(s)** | **Comments / arguments** |
| Qualcomm | Option 1 | See our comment to Discussion point 7 |
| OPPO | Option 2 | When IDLE eDRX cycle is longer than 10.24s, we think UE does not need to follow default paging cycle outside PTW [regardless](javascript:;) [of](javascript:;) the UE’s RRC state. |
| Xiaomi | Option2 | See comments above. |
| MediaTek | Option 2 | Aligns with LTE. |
| Apple | Option 2 | Like LTE |
| Futurewei | Option 1 |  |
| vivo | Option 2 |  |
| Convida | Option 2 | Same view as discussion point 7. |
| Intel | Option 1 | See our justification in previous discussion point 7.  NOTE: We had different view during the 1st phase of this email discussion on how the operation should be for a UE in INACTIVE configured with eDRX, however decided to provide our inputs in this 2nd phase accepting that majority preference is to put the burden on UE side regardless of the impact on UE’s power consumption. |
| ZTE | Option 2 |  |
| Samsung | Option 2 |  |
| Sharp | Option 2 |  |
| Huawei, HiSilicon | Option 1 | Same reason as discussion point 7 |
| CATT | Option 2 | See comment to discussion point 7 |
| NTTDOCOMO | Option 1 |  |
| Lenovo | Option 2 | Align to the legacy LTE mechanism. |
| LGE | Option 1 |  |
| Sequans | Option 1 | As for previous discussion point |
| Ericsson | Option 1 | Same reason as for DP7 |
| DENSO | Option 2 |  |
| Nokia | Option 1 |  |

### When IDLE and INACTIVE eDRX cycle are both <= 10.24s

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| ***Proposal 12: [To agree] [18/20]*** *For RRC\_INACTIVE UE, when IDLE eDRX cycle is no longer than 10.24s and RAN eDRX cycle is no longer than 10.24s, T is determined by the shortest of IDLE eDRX cycle and INACTIVE eDRX cycle. FFS whether the same eDRX cycle value should be set for both IDLE and INACTIVE.* |

During the first round of offline discussion, most (18/20) companies agree that for RRC\_INACTIVE UE, T is determined by the shortest of IDLE eDRX cycle and INACTIVE eDRX cycle in this case. Rapporteur suggests to go for the clear majority.

Meanwhile, some companies think that the same eDRX cycle value should be set for IDLE and INACTIVE. For companies supporting/not supporting same eDRX cycle for IDLE and INACTIVE, please feel free to provide your suggestion in the comments. The “FFS whether” or the whole FFS sentence could be removed if most companies prefer.

1. Do companies agree the proposal:

**Proposal:** For RRC\_INACTIVE UE, when IDLE eDRX cycle is no longer than 10.24s and INACTIVE eDRX cycle is no longer than 10.24s, T is determined by the shortest of IDLE eDRX cycle and INACTIVE eDRX cycle. FFS whether the same eDRX cycle value should be set for both IDLE and INACTIVE eDRX.

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| **Company’s name** | **Yes/No** | **Comments, if any** |
| Qualcomm | Yes | We assume there is a typo in the proposal and the rapporteur actually meant eDRX is configured for both RRC Idle and RRC Inactive and they are shorter than 10.24. If this assumption is correct, then since RRC Inactive is configured with eDRX, UE does not need to follow default paging. Hence T is the shorter of IDLE eDRX cycle and INACTIVE eDRX cycle |
| OPPO | Yes | Seems there is a typo in this proposal:  For RRC\_INACTIVE UE, when IDLE eDRX cycle is no longer than 10.24s and INACTIVE eDRX cycle is no longer than 10.24s,… |
| Xiaomi | Yes |  |
| MediaTek | Yes, but | No need for the FFS part (no need to have to configure the same eDRX value) |
| Apple | Yes and no need of FFS (same view as MediaTek) |  |
| Futurewei | Yes | Agree with OPPO on the typo. |
| vivo | Yes |  |
| Convida | Yes with comments | Typo fixed in the Proposal. And per previous email discussions, we do not see the need for the same eDRX cycle value set for both IDLE and INACTIVE eDRX. |
| Intel | Yes | We share the view from other companies that there is a typo on the proposal. Understanding that majority of companies prefer putting the burden on UE side, this would mean that indeed when UE is configured with eDRX <= 10.24sec for IDLE and INACTIVE, T is determined by the shortest of IDLE eDRX cycle and INACTIVE eDRX cycle. |
| ZTE | Yes, but | Agree with MTK, no need of FFS. |
| Samsung | Yes, but | We don't see the value to limit network flexibility in FFS part. |
| Sharp | Yes |  |
| Huawei, HiSilicon | Yes |  |
| CATT | Yes |  |
| NTTDOCOMO | Yes |  |
| Lenovo | Yes |  |
| LGE | Yes |  |
| Sequans | Yes |  |
| Ericsson | Yes | FFS can be removed |
| DENSO | Yes | FFS part should be removed (i.e. each value does not have to be the same) |
| Nokia | Yes |  |

### When IDLE eDRX >10.24s and INACTIVE eDRX <= 10.24s

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| ***Proposal 14: [To agree] [17/20]*** *For RRC\_INACTIVE UE, when IDLE eDRX cycle is longer than 10.24s and RAN eDRX cycle is no longer than 10.24s, T is determined by the shortest of UE specific DRX cycle, if configured by upper layer, INACTIVE eDRX cycle and default paging cycle during CN PTW.* |

During the online discussion, we have agreed the paging monitoring mechanism outside the PTW in this case. During the first round of offline discussion, most (17/20) companies agree that for RRC\_INACTIVE UE, during CN PTW, T is determined by the shortest of UE specific DRX cycle, if configured by upper layer, INACTIVE eDRX cycle and default paging cycle during CN PTW in this case. Other 3 companies can agree with the intention, while 1 company has different views.

Rapporteur suggests to go for the clear majority.

1. Do companies agree the proposal:

**Proposal**: For RRC\_INACTIVE UE, when IDLE eDRX cycle is longer than 10.24s and INACTIVE eDRX cycle is no longer than 10.24s, during CN PTW, T is determined by the shortest of UE specific DRX cycle, if configured by upper layer, INACTIVE eDRX cycle and default paging cycle.

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| **Company’s name** | **Yes/No** | **Comments, if any** |
| Qualcomm | No | Since RRC Inactive is configured with eDRX in this case, UE does not need to follow default paging cycle both inside and outside PTW. |
| OPPO | Yes | Seems there is a typo in this proposal:  For RRC\_INACTIVE UE, when IDLE eDRX cycle is longer than 10.24s and INACTIVE eDRX cycle is no longer than 10.24s,… |
| Xiaomi | Yes | During CN PTW, default paging cycle will still be used. |
| MediaTek | Yes |  |
| Apple | Yes |  |
| Futurewei | Yes | Agree with OPPO on the typo. |
| vivo | Yes |  |
| Convida | Yes | Typo fixed in the proposal. |
| Intel | Yes | Understanding that majority of companies prefer putting the burden on UE side, for consistency, this would mean that during CN PTW, UE monitors the shortest of UE specific DRX cycle, if configured by upper layer, INACTIVE eDRX cycle and default paging cycle. Note that LTE eDRX behaviour involves monitoring also the default DRX cycle during the CN PTW. |
| ZTE | Yes |  |
| Samsung | Yes |  |
| Sharp | Yes |  |
| Huawei, HiSilicon | Yes | As a more general formulation to make it simple and to reduce extra restriction to NW configuration |
| CATT | Yes |  |
| NTTDOCOMO | Yes |  |
| Lenovo | Yes |  |
| LGE | Yes |  |
| Sequans | Yes | Agree with QC |
| Ericsson | Yes | During the PTW the default cycle should be used so that there are enough POs to page the UE (i.e. similar as LTE mechanism) |
| DENSO | Yes |  |
| Nokia | Yes |  |

### When IDLE eDRX is not configured and INACTIVE eDRX <= 10.24s

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| ***Proposal 16: [To discuss] [4 vs. 3]*** *If the case that IDLE eDRX cycle is not configured and INACTIVE eDRX cycle <=10.24s is allowed, RAN2 will further study the following options on the paging monitoring mechanism for RRC\_INACTIVE UE for this case:*   * *Option 1: T is determined by the shortest of INACTIVE eDRX cycle, default paging cycle and UE specific DRX cycle if configured by upper layer.* * *Option 2: T is determined by INACTIVE eDRX cycle* |

During the first round of offline discussion, most companies (13/20) think we shouldn’t consider this case as it is invalid case. From rapporteur point of view, whether it is a valid case is discussed in discussion point 1. If it was agreeable, then, we donot need any conclusion on this part. Before that, we could also discuss what the expected UE behaviour is, assuming the configuration in this case is allowed.

1. If the case that IDLE eDRX cycle is not configured and INACTIVE eDRX cycle <=10.24s is allowed, companies are invited to provide their preference on the paging monitoring mechanism for RRC\_INACTIVE UE for this case, among the following options:
   * Option 1: T is determined by the shortest of INACTIVE eDRX cycle, default paging cycle and UE specific DRX cycle if configured by upper layer.
   * Option 2: T is determined by INACTIVE eDRX cycle
   * Option 3: T is determined by the shorter between INACTIVE eDRX cycle and UE specific DRX cycle for RRC IDLE (if configured by upper layer)

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| **Company’s name** | **Option(s)** | **Comments, if any** |
| Qualcomm | Option 3 | Because UE is in a RRC state configured with eDRX so no need to follow default paging cycle. |
| Apple | Option 2 | We think option 2 might be better, assuming that there is a co-ordiantion needed between RAN and CN anyway and RAN needs to buffer. Otherwise, there is no advantage of RAN INACTIVE eDRX! Since eDRX < 10.24sec, the cases where RAN lost the UE context would not be catastrophic! |
| Futurewei |  | We don’t think the case should be allowed. |
| Convida | N/A | Per previous email discussions, we think that RAN eDRX cycle (INACTIVE) can be configured only if CN eDRX cycle (IDLE) is configured, so we do not think this is a valid case. |
| Intel | Option 3 | As majority of companies prefer putting the burden on UE side, we can accept option 3. We share the view with Qualcomm that a UE in INACTIVE configured with eDRX cycle should not use a shortest value that may be configured by RAN via default paging cycle as otherwise eDRX in INACTIVE loses its purpose. |
| Huawei, HiSilicon | N/A | This is invalid case as in discussion point 1). |
| CATT | N/A | We do not support this case |
| Lenovo | N/A |  |
| LGE | N/A |  |
| Sequans | Option 3 | We don’t think this is a valid case, but if it is allowed we agree with QC |
| Ericsson | Option 3 |  |
| DENSO | Option 2 | We agree with Apple. |
| Nokia | Option 3 |  |

## UE/gNB capability on eDRX

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| ***Proposal 17:*** *FFS whether eDRX feature is optional or coupled with RedCap at network and UE.* |

During the first round of offline discussion, 3 companies expressed different views on whether eDRX is an option feature at the gNB and UE sides, but other companies have no chance to provide views on this issue. Rapporteur thinks we could further discuss it here.

Based on the inputs in the first round, it seems there are three options to support eDRX feature at gNB or UE side: generally optional, optional but coupled with RedCap, mandatory but coupled with RedCap. From rapporteur point of view, it seems impossible to have this feature mandatory for normal UE from Rel-17.

1. Companies are invited to show your understanding on the eDRX feature at UE side among the following options:
   * Option 1: eDRX feature is optional for any UE (including RedCap and non-RedCap UEs)
   * Option 2: eDRX feature is optional only for RedCap UE
   * Option 3: eDRX feature is mandatory for RedCap UE
   * Option 3.1: eDRX feature is mandatory for RedCap UE, while optional for non-RedCap UE
   * Option 4: Others, please specify.

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| **Company’s name** | **Option(s)** | **Comments, if any** |
| Qualcomm | Option 1 | 1. Some RedCap UEs may not support eDRX because they have shorter paging latency requirement. So we should not make eDRX mandatory for RedCap. 2. Non-RedCap UEs in certain use cases may not have short paging latency requirement and hence can benefit from having eDRX configuration. And ultimately network has all the necessary information whether a UE should be allowed to have an eDRX configuration, e.g. if it determines that a UE is not eligible for eDRX, it can reject UE’s request for an eDRX configuration. So non-RedCap UEs should be allowed to support eDRX if it desires. |
| OPPO | Option 1 |  |
| Xiaomi | Option 1 |  |
| MediaTek | Option 1 | Considering the wide use cases for RedCap UEs, it is better to make it optional for RedCap. Non-RedCap UEs can also benefit from eDRX in some scenarios. |
| Apple | Option 1 |  |
| Futurewei | Option 1 |  |
| vivo | Option 1 |  |
| Convida | Option 1 | We do not believe that eDRX support should be mandatory for RedCap and non-RedCap UEs. |
| Intel | Option 1 | No need to limit its usage to any kind of devices. However it might be desirable to discuss/have a different capability for UEs supporting eDRX cycles of 2.56sec (understanding that this may be used by UEs that may tolerate less delays than a UE that can be configured with larger eDRX cycles). |
| ZTE | Option 1 |  |
| Samsung | Option 1 |  |
| Sharp | Option 1 |  |
| Huawei, HiSilicon | Option 2 | eDRX should be optional for RedCap UE like the Video Surveillance which has no specific requirements on battery lifetime and may have stronger paging latency requirements.  We think there is no use case for non-RedCap UE to use eDRX. |
| CATT | Option 1 |  |
| NTTDOCOMO | Option 1 |  |
| Lenovo | Option 1 |  |
| LGE | Option 1 |  |
| Sequans | Option 2 | RedCap UEs: eDRX is not applicable to all use cases and so this should be optional  Non-RedCap UEs: We don’t see a real use case for eDRX for non-RedCap UEs, and would prefer to keep this as a differentiating capability, but are OK to go with majority |
| Ericsson | Option 1 | Prefer to specify generic features instead of restricted ones. If there are no use cases from UE side, the UEs don’t need to support the feature. |
| DENSO | Option 1 |  |
| Nokia | Option 1 |  |

1. Companies are invited to show your understanding on the eDRX feature at gNB side among the following options:
   * Option 1: eDRX is optional for any gNB (either supporting RedCap or not), which means it is up to gNB implementation whether to support eDRX
   * Option 2: eDRX is optional only for gNB supporting RedCap
   * Option 3: eDRX is mandatory for gNB supporting RedCap
   * Option 3.1: eDRX is mandatory for gNB supporting RedCap, while optional for gNB not supporting RedCap
   * Option 4: Others, please specify

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| **Company’s name** | **Option(s)** | **Comments, if any** |
| Qualcomm | Option 1 |  |
| OPPO | Option 1 |  |
| Xiaomi | Option 1 |  |
| MediaTek | Option 1 | Gives flexibility for different network deployments. |
| Apple | Option 3.1 | While we agree that features are optional at the NW, we are not sure about the RedCap feature operation without eDRX! Our view is that RedCap UEs should not have operation modelled to deal with gNB that support RedCap with and without eDRX, esp when mobility is involved between diff RedCap supporting gNBs. |
| Futurewei | Option 1 |  |
| vivo | Option 1 |  |
| Convida | Option 1 |  |
| Intel | Option 1 |  |
| ZTE | Option 1 |  |
| Samsung | Option 1 |  |
| Sharp | Option 1 |  |
| Huawei, HiSilicon | Option 2 | For R17 gNB supporting RedCaP, eDRX can be considered as an additional capability.  Note that we do not see a use case for eDRX for non RedCap UEs |
| CATT | Option 1 |  |
| NTTDOCOMO | Option 1 |  |
| Lenovo | Option 1 |  |
| Sequans | Option 3 or 3.1 | eDRX is a key capability and a primary method for power saving for many RedCap use cases; it does not make sense to us that UEs that require it cannot be supported by some gNBs.  If option 1 is agreed in previous question, then 3.1 is applicable here.  If option 2 is agreed in previous question, then 3 is applicable here. |
| Ericsson | Option 1 | Note that eDRX is not purely a gNB/RAN feature but requires support from CN side. |
| DENSO | Option 1 |  |
| Nokia | Option 1 |  |

# Conclusion

<Section to be updated by Rapporteur>

Aiming to help with the meeting discussion/progress, the proposals are categorized starting with:

* [To agree] when there is large support and hence proposed for easy agreement.
* [To discuss] when there is substantial level of support and agreement may be possible.
* [FFS] when there is low support or companies propose new solutions or options to possibly consider further e.g. if there is sufficient support (understanding that these topic have not been discussed by all companies when providing their views in the different discussion points).

The proposals also start with a number: for the format [x], ‘x’ represents the number of supportive companies (i.e. these solutions are marked as FFS as the proposed solutions were not discussed by all companies) and, for the format [x/y], ‘x’ represents the number of supportive companies, and (y-x) the number of companies with different view.

The proposals captured are the following:

**Proposal 1.** **[To agree]** xxx

**Proposal 2.** **[To discuss]** xxx

**Proposal 3.** **[FFS]** xxx

The following order is suggested for the online discussion:

**Proposals for potential agreement**

<To be updated by Rapporteur>

**Proposals for potential discussion online**

<To be updated by Rapporteur>

**Proposals for potential discussion in future meetings**

<To be updated by Rapporteur>

# Reference

1. R2-2106905 Reply LS on introducing extended DRX for RedCap UEs (C1-213966; contact: Qualcomm) CT1 LS in Rel-17 NR\_redcap-Core To:RAN2 Cc:SA2, RAN3
2. R2-2107073 Discussion on eDRX for RedCap UEs OPPO discussion Rel-17 NR\_redcap-Core
3. R2-2107096 CN PTW and RAN PTW for RedCap eDRX Samsung discussion Rel-17
4. R2-2107210 eDRX for RedCap UE Huawei, HiSilicon discussion Rel-17 NR\_redcap-Core
5. R2-2107217 eDRX configurations for RedCap UEs Qualcomm Incorporated discussion Rel-17 FS\_NR\_redcap
6. R2-2107412 Discussion on eDRX for RedCap UEs vivo, Guangdong Genius discussion Rel-17 FS\_NR\_redcap
7. R2-2107534 Discussion on e-DRX for Redcap Devices Xiaomi Communications discussion
8. R2-2107675 Leftover issues for eDRX Intel Corporation discussion Rel-17 NR\_redcap
9. R2-2107706 Discussion on eDRX for RRC\_IDLE and RRC\_INACTIVE LG Electronics UK discussion Rel-17
10. R2-2107751 eDRX for RedCap UEs ZTE Corporation, Sanechips discussion Rel-17 NR\_redcap-Core
11. R2-2107905 Consideration on eDRX for RedCap UE Lenovo, Motorola Mobility discussion Rel-17
12. R2-2108230 Remaining issues for eDRX MediaTek Inc. discussion Rel-17 NR\_redcap-Core R2-2105671
13. R2-2108280 Details of eDRX and PTW in RRC\_IDLE and RRC\_INACTIVE Ericsson discussion NR\_redcap-Core
14. R2-2108525 Discussion on eDRX for RRC\_Idle and RRC\_Inactive CMCC discussion Rel-17 NR\_redcap-Core
15. R2-2108699 Discussion on eDRX for NR RRC Inactive and Idle CATT discussion Rel-17 NR\_redcap-Core
16. R2-2108778 Open issues on eDRX for UE in RRC\_INACTIVE DENSO CORPORATION discussion Rel-17 NR\_redcap-Core
17. R2-2108881 Summary of offline 105- [REDCAP] eDRX cycles - first round vivo.