**3GPP TSG-RAN WG2 Meeting #110-e** **R2-200xxxx R2-200**

**Electronic, 1 Jun – 11 Jun 2020**

**Agenda Item: 6.20.1.1 Open / ongoing proposals**

**Source: CMCC**

**Title: Summary for EN-DC cell reselection issue**

**Document for: Discussion and decision**

# 1 Introduction

Agreements in RAN2#109bis-e meeting on EN-DC cell reselection:

R2-2003492 36.304 CR to introduce alternative cell reselection priority for EN-DC CMCC, SoftBank, Ericsson, Huawei, ZTE, CATT, vivo, OPPO CR Rel-16 36.304 16.0.0 0782 1 B TEI16 R2-200203

**[051] Agreed in princple**

R2-2003493 36.306 CR to introduce alternative cell reselection priority for EN-DC CMCC, SoftBank, Ericsson, Huawei, ZTE, CATT, vivo, OPPO CR Rel-16 36.306 16.0.0 1755 - B TEI16

**[051] Agreed in principle**

R2-2003491 36.331 CR to introduce alternative cell reselection priority for EN-DC CMCC, SoftBank, Ericsson, Huawei, ZTE, CATT, vivo CR Rel-16 36.331 16.0.0 4229 1 B TEI16 R2-2002038

**Email discussion to next meeting**

R2-2004237 Summary for EN-DC cell reselection issue CMCC

**[051] Noted**

Agreements Email [051]

* 1 bit *altFreqPriorities-r16* in RRC Release message to indicate whether the UE shall apply the broadcasted alternative frequency priority or not.
* *altFreqPriorities-r16* and dedicated priority should not be configured together in release message.
* The delete mechanism for *altFreqPriorities-r16* is the same as dedicated priority handling as in R15.
* For*camped on any cell* state, the legacy principle for dedicated priority can be reused, i.e. preserve the *alterFreqPriorities-r16*and in this state the UE shall apply the legacy priorities provided in system information rather than the alternative priority, and applies it upon entering Camped Normally state.
* An email discussion after the meeting is suggested to be kicked off to finalization the open points if any, and agree-in-principle the updated CRs.
* We don’t address SA at this point in time. Assume SA can be left to further release.

This email discussion is to collect companies’ views on the open points and agreeable CRs. We suggest to separate the discussion into 2-phase. Phase 1 to collect views on open points, and Phase 2 to check agreeable CR.

**[Post109bis-e][051][TEI16] EN-DC cell reselection (CMCC)**

Scope: RRC CR   
Intended Outcome: agreeable CR

Phase 1: Share views on open points (deadline: 2020.5.13)

Phase 2: Agreeable CR (deadline: 2020.5.20)

# 2 Phase-1 Finalize open points

During the email discussion [AT109bis-e][051], 4 companies mentioned that a new timer can be introduced for the validity of *altFreqPriorities-r16*. And RAN2 agreed that the delete mechanism for altFreqPriorities-r16 is the same as dedicated priority handling as in R15.

Here t320 is provided for comparison.

t320 ENUMERATED {

min5, min10, min20, min30, min60, min120, min180,

spare1} OPTIONAL, -- Need OR

**Q1: Does companies agree that a new timer T3xx is introduced and can be configured together with *altFreqPriorities-r16*? If yes, what’s the value range?**

|  |  |  |  |
| --- | --- | --- | --- |
| **Company** | **Yes/No** | **Value range** | **Comments** |
| CMCC | Yes | Same range as t320 |  |
| SoftBank | Yes | Same range as t320 |  |
| MediaTek | Yes | Same range as t320 |  |
| Samsung | No |  | Since the UE shall *ignore* all the priorities provided in system information if priorities are provided in dedicated signalling, it makes sense to have the validity time of dedicated priorities (T320 timer) i.e. the UE can apply common priorities in broadcast signalling upon T320 expiry.  On the other hand, if the UE is configured with *alterFreqPriorities-r16*, the UE applies EN-DC common priorities if broadcast; otherwise the UE applies legacy common priorities. Since the only difference here is *which* common priorities will be applied depending on whether the cell broadcasts legacy common priorities and/ or EN-DC common priorities, there seems no real need/ benefit to configure *altFreqPriorities-r16* with any dedicated timer.  We also want to highlight that NW will configure either dedicated priorities or *altFreqPriorities-r16* in release message. So if the *altFreqPriorities-r16* can be configured with any dedicated timer, there seems no need for a different timer i.e. same field can be re-used considering that proponents indicate its same value range. |
| vivo |  | Not sure | If we have new timer Txx, do we need *altFreqPriorities-r16 at all?* The new timer can implicitly means *altFreqPriorities-r16.* |
| Huawei | Yes |  | We think to have a separate timer is a clean way to separate dedicated priorities and the alternative priorities. However we actually see some reason as Samsung commented, as this is an alternative common priority, if the value range is exactly the same as t320, this sounds not so practical as common priorities are regarded as cell specific and should not be changed so frequently. We think we can have larger granularity and adds like 60 min, 120 min, 180 min and some even larger number. |
| Ericsson | Yes | Same value range works fine but if companies believe there is a need to have more granular values, we are open to such discussion | We share some sympathy with Samsung’s comments. However, having a new timer is cleaner approach and from a UE perspective only one timer will be running. So, it will not be any overhead. It makes the specification reading easier where each timer is used for a specific purpose. |
| OPPO | No |  | If we configure the new timer just for *altFreqPriorities-r16* configuration, it seems the *altFreqPriorities-r16* IE is not necessary. We agree that *altFreqPriorities-r16* IE will not be configured with dedicated frequency priority together, I think *altFreqPriorities-r16* IE can be configured in *CellReselectionPriorities* IE and reuse the T320.  CellReselectionPriorities ::= SEQUENCE {  freqPriorityListEUTRA FreqPriorityListEUTRA OPTIONAL, -- Need M  freqPriorityListNR FreqPriorityListNR OPTIONAL, -- Need M  t320 ENUMERATED {min5, min10, min20, min30, min60, min120, min180, spare1} OPTIONAL, -- Need R  ...  } |
| CATT | Yes | Same range as t320 |  |
| LG | See comments |  | Currently, we don’t see clear difference from T320 yet, especially when UE performs cell reselection from the source cell. Therefore, we need to make clear UE behaviour when the serving cell is changed, while the timer is running.  After receiving *altFreqPriorities-r16* in *RRCRelease*, when the UEperforms cell reselection, possible scenarios may be following:   1. If the new serving cell broadcasts alt-priority:    1. The UE ignores the new alt-priority from the new serving cell and keeps the alt-priority received from the source cell until the new timer expires. (Latest text proposal assumes this scenario)    2. The UE applies the new alt-priority 2. If the new serving cell does not broadcast alt-priority (Stop the validity timer or not?):    1. The UE keeps the latest alt-priority from the previous serving cell.    2. The UE applies common priority from the new serving cell. |
| CMCC1 |  | Larger value is also fine. | We are fine with Huawei’s proposal that larger value (e.g. min360, min720, min1440) is applied for the new timer, as this is a relative stable configuration.  Regarding to vivo and OPPO’s comments on whether *altFreqPriorities-r16* IE is not needed if the new timer is introduced. I thought similar as T320, the new timer is optional configured. If *altFreqPriorities-r16* IE is configured without the new timer, the *altFreqPriorities* will be applied until next state transition. We are also open to see other companies’ views.  For LG’s comments, I though the answer for both questions are B, i.e. the priority from serving cell SI is applied. I am not sure if the current CR is conflict with this. |
| Apple | See comments |  | 1) To some extent, we agree with Samsung that a new timer may not be well justified, due to the reason that this *altFreqPriorities-r16* is a common priority. If NW is always providing this parameter in a large geographical area, what’s the motivation for UE to change to use the legacy common priority upon a timer?  If RAN2 do want to introduce a new timer, we prefer a rather large granularity to support a much larger value than 180min, as Huawei proposed.  2) For LG’s question (thanks for bringing it up), our understanding is if a new timer is configured eventually, the purpose is to control which priority (legacy one or alt-priority) in SIB should be used, but not to let UE re-use the old alt-priority received from previous cell. That is to say, we think the reasonble UE behavior should be 1B and 2B. Further, in 2B, UE should keep the timer run. |

10 companies participated this email discussion.

6 companies support to introduce a new timer to make spec cleaner, and 3 of them are fine with same range as T320.

1 company think the timer is not needed.

2 companies thought if the new timer is introduced, *altFreqPriorities-r16* IE is not necessary. Other companies are also invited to share views on this point.

2 companies prefer to reuse T320.

1 company suggested to introduce larger value.

1 company suggest to make clear UE behaviour when the serving cell is changed, while the timer is running.

Email rapporteur suggest we can go with majority way to introduce a new timer.

**Proposal 1: A new timer T3xx is introduced for *altFreqPriorities-r16*.**

Next question we need to discuss is when to start/stop the timer. According to the agreements, I provide the corresponding Start/Stop/AtExpiry behaviour for T3xx. The change is made in red font. T320 is copied here for comparison.

Add a new timer for chapter 7.3 Timers:

|  |  |  |  |
| --- | --- | --- | --- |
| Timer | Start | Stop | At expiry |
| T320 | Upon receiving t320 or upon cell (re)selection to E-UTRA from another RAT with validity time configured for dedicated priorities (in which case the remaining validity time is applied). | Upon entering RRC\_CONNECTED, when PLMN selection is performed on request by NAS, when the UE enters RRC\_IDLE from RRC\_INACTIVE, or upon cell (re)selection to another RAT (in which case the timer is carried on to the other RAT) , or upon reception of RRCEarlyDataComplete or RRCConnectionRelease for UP-EDT | Discard the cell reselection priority information provided by dedicated signalling. |
| T3xx | Upon receiving *t3xx* or upon cell (re)selection to E-UTRA from another RAT with validity time configured for alternative broadcasted frequency priorities (in which case the remaining validity time is applied). | Upon entering RRC\_CONNECTED, when PLMN selection is performed on request by NAS, when the UE enters RRC\_IDLE from RRC\_INACTIVE, or upon cell (re)selection to another RAT (in which case the timer is carried on to the other RAT) , or upon reception of *RRCEarlyDataComplete* or *RRCConnectionRelease* for UP-EDT | Discard the *altFreqPriorities* provided by dedicated signalling. And discard the alternative cell reselection priority information provided by broadcasted signalling. |

Add the following description in 5.3.8.3

1. if the *RRCConnectionRelease* message includes the *altFreqPriorities*:

2> apply the alternative cell reselection priority information broadcast in the system information, when available;

2> if the *t3xx* is included:

3> start timer T3xx, with the timer value set according to the value of *t3xx*;

In addition, the Start/Stop T3xx also needs to be added in 5.3.3.4, 5.3.8 and 5.3.12, where T320 also exists.

**Q2: Do you agree with the above added description in red font for Start/Stop/AtExpiry behaviour for 36.331CR?**

|  |  |  |
| --- | --- | --- |
| **Company** | **Yes/No** | **Comments** |
| CMCC | Yes |  |
| SoftBank | No | As we agreed SA is not considered in Rel-16, a new timer is introduced for EUTRA only. Therefore, I’m not sure which timer is inherited from another RAT. Then, the related text should be removed for now.  Start:  Upon receiving *t3xx* ~~or upon cell (re)selection to E-UTRA from another RAT with validity time configured for alternative broadcasted frequency priorities (in which case the remaining validity time is applied)~~.  Stop:  Upon entering RRC\_CONNECTED, when PLMN selection is performed on request by NAS, when the UE enters RRC\_IDLE from RRC\_INACTIVE, or upon cell (re)selection to another RAT ~~(in which case the timer is carried on to the other RAT)~~ , or upon reception of *RRCEarlyDataComplete* or *RRCConnectionRelease* for UP-EDT.  For at expiry, it is not needed to discard the alternative cell reselection priority to avoid SIB re-reading.  Discard the *altFreqPriorities* provided by dedicated signalling. ~~And discard the alternative cell reselection priority information provided by broadcasted signalling.~~ |
| MediaTek | See Comment | Yes on the proposed change for 5.3.8.3.  For the change in timer table (chapter 7.3), we agree the further changes suggested by SoftBank except for the expiry part. We think that it is OK to discard the stored alternative cell reselection priority since it is useless now. And this does not imply that the UE shall re-read the SIB.  So the “*And discard alternative cell reselection...“* sentence, could be kept. |
| Samsung | See comments | It depends on the outcome of Q1 i.e. whether any dedicated timer can be configured with *altFreqPriorities-r16* or not. Regardless of whether any dedicated timer is configured with *altFreqProrities-r16* or not, we are fine to delete the *altFreqProrities-r16* in the added description for Stop behaviour except inherit case i.e. we agree with Softbank’s comments.  Also, RAN2 agreed that *altFreqPriorities-r16* and dedicated priority should not be configured together in release message, one example is as follows:   1. if the *RRCConnectionRelease* message includes the *idleModeMobilityControlInfo*:   2> store the cell reselection priority information provided by the *idleModeMobilityControlInfo*;  2> if the *t320* is included:  3> start timer T320, with the timer value set according to the value of *t320*;   1. else if the *RRCConnectionRelease* message includes the *altFreqPriorities*:   2> store the received *alterFreqPriorities*;  …   1. else:   2> apply the cell reselection priority information broadcast in the system information; |
| vivo | See the comments | Further discussion is needed. We do not think that all can be inherited from T320. |
| Huawei | See comments | we think the timer should be stopped in the relevant procedural sections, however as this is a common priority we should not discard the corresponding priorities and *altFreqPriorities*. |
| Ericsson |  | One small comment on the change in the procedural text. We believe the proposed change is inserted at the following placeÖ  1> if the *RRCRelease* message includes the *cellReselectionPriorities*:  2> store the cell reselection priority information provided by the *cellReselectionPriorities*;  2> if the *t320* is included:  3> start timer T320, with the timer value set according to the value of *t320*;   1. else if the *RRCConnectionRelease* message includes the *altFreqPriorities*:   2> apply the alternative cell reselection priority information broadcast in the system information, when available;  2> if the *t3xx* is included:  3> start timer T3xx, with the timer value set according to the value of *t3xx*;  1> else:  2> apply the cell reselection priority information broadcast in the system information;  For the timer related informative text, we agree with Softbank’s comments. Regarding the timer expiry behaviour, we think that the UE can keep the alternative cell reselection priorities until the next cell reselection to avoid re-reading of the SIBs. As the UE might spend more time in this cell where it is currently camping, it is good if the UE continues to camp here as per alternative priorities. This increases the possibility to configure EN-DC if this UE performs state transition in this cell itself. However, the price to pay is that there might be successive cell reselections (with one second gap) at the next reselection instance wherein the first reselection is based on alternative priorities as stored by the UE and the next is based on normal priorities of the new cell. But as mentioned before, we believe there is a larger gain in keeping the alternative priorities at the timer expiry and until next state transition or reselection. |
| OPPO | See answer to Q1 | The timer is not necessary. |
| CATT | No | We agree the changes from Softbank for timer table (chapter 7.3). For text procedure, we think the wording from Ericsson is more clear from our side. |
| LG | See comments | Please see our comments in Q1. We think it is not clear yet when reselected cell does not provide the alt-priority. When the UE behaviour after cell reselection is clear, we can finalize the description. |
| Apple | See comments | If a timer is introduced eventually, for expiry case, we also share MediaTek’s comment, UE does not necessarily to re-read SIB even UE discard the alt-priority. |

Regarding to the start/stop/expire behaviour, most companies agree with Softbank’s proposals.

For the ‘at expiry’ behaviour, 4 companies prefer to keep the alternative cell reselection priority to avoid SIB re-reading. And 1 company prefer to discard it. Therefore, email rapporteur suggest we try to agree with Softbank’s proposals.

**Proposal 2: Agree on the following Start/Stop/AtExpiry behavior:**

**Start: Upon receiving *t3xx*.**

**Stop: Upon entering RRC\_CONNECTED, when PLMN selection is performed on request by NAS, when the UE enters RRC\_IDLE from RRC\_INACTIVE, or upon cell (re)selection to another RAT, or upon reception of *RRCEarlyDataComplete* or *RRCConnectionRelease* for UP-EDT.**

**At expiry: Discard the *altFreqPriorities* provided by dedicated signalling.**

Regarding to the procedure text, it seems all companies are fine with Samsung and Ericsson’s proposal.

**Proposal 3: Add the following procedure text in 5.3.8.3:**

1. **else if the *RRCConnectionRelease* message includes the *altFreqPriorities*:**

**2> apply the alternative cell reselection priority information broadcast in the system information, when available;**

**2> if the *t3xx* is included:**

**3> start timer T3xx, with the timer value set according to the value of *t3xx*;**

Another question is what’s the UE behaviour if the new timer T3xx is not configured. If the above red font description is agreed. The UE behavior for T3xx will be the same as T320, i.e. the alternative priority will be valid until state transition. And add the following behavior description (red font) in 36.331 chapter 5.3.3.4/5.3.3.4a/5.3.3.4b Reception of the *RRCConnectionSetup/RRCConnectionResume/RRCEarlyDataComplete* by the UE.

1> if stored, discard the cell reselection priority information provided by the *idleModeMobilityControlInfo* or inherited from another RAT;

1> if stored, discard the *altFreqPriorities* provided by the *RRCConnectionRelease* and discard the alternative cell reselection priority information;

**Q3: Do you agree that if T3xx is not configured, the alternative priority will be valid until UE state transition? And do you agree with the above description for 36.331CR in red font?**

|  |  |  |
| --- | --- | --- |
| **Company** | **Yes/No** | **Comments** |
| CMCC | Yes |  |
| SoftBank | No | See Q2, it is not needed to discard the alternative cell reselection priority to avoid SIB re-reading.  1> if stored, discard the *altFreqPriorities* provided by the *RRCConnectionRelease* ~~and discard the alternative cell reselection priority information~~; |
| MediaTek | Yes | See comment in Q2, we think the sentence on discard the alternative priority is OK. However, if majorities prefer to delete it, it is also acceptable to us. |
| Samsung | See comments | Agree with Softbank i.e. the UE does not need to store the alternative cell reselection priority information broadcast in the system information. |
| vivo | See the comments | Further discussion is needed. We do not think that all can be inherited from T320. |
| Huawei |  | We do not have strong view here, either way is OK for us. |
| Ericsson |  | Agree with the first part, second part can be rmoved for reasons as explained in Q2. |
| OPPO | See answer to Q1 | The timer handling is same as current T320. |
| CATT | No | Agree with Softbank |
| LG | See comments | If the timer is introduced, is it really needed to separate the explicit indication and timer? We think presence of the timer can implicitly indicate to apply the alt-priority, similar with T331. |
| Apple | Yes |  |

10 companies reply this question.

6 companies are OK with Softbank’s suggestion to keep the alternative priority to avoid SIB re-reading. Email rapporteur suggest we try to agree on this.

1 company consider the presence of timer can implicitly indicate to apply the alt-priority, and 2 more companies share similar view in Q1. Other companies are also invited to share views on this topic.

**Proposal 4: Upon reception of the *RRCConnectionSetup/RRCConnectionResume/RRCEarlyDataComplete* by the UE, if stored, discard the *altFreqPriorities* provided by the *RRCConnectionRelease*.**

1 company commented that valid area can be applied for *altFreqPriorities-r16*, i.e. the UE does not apply the alternative frequency priority while camping on a cell which is not included in the validity area.

**Q4: Do we need to introduce valid area for *altFreqPriorities-r16*?**

|  |  |  |
| --- | --- | --- |
| **Company** | **Yes/No** | **Comments** |
| CMCC | No | We don’t see the need to introduce valid area for *altFreqPriorities*.  Any LTE cell can broadcast the alternative priorities. And the UEs (which are EN-DC capable Ues) that is configured with *altFreqPriorities* are always intended to camp on the EN-DC frequencies, if there is EN-DC coverage.  To be honest, it would be really hard for operators to configure a sufficient EN-DC cell PCI list inside the valid area list, if we assume the valid area works similar as R16 Idle Mode Measurement.  So we prefer not to have it. |
| SoftBank | No | Agree with CMCC |
| MediaTek | No |  |
| Samsung | No | Agree with CMCC i.e. frequency-granularity seems sufficient. So we prefer to avoid further optimization at this late stage. |
| Vivo |  | Can be further discussed. |
| Huawei | No | Agree with CMCC. |
| Ericsson | No | Agree with CMCC |
| OPPO | No | Can not see the necessary. |
| CATT | No | Agree with CMCC |
| LG |  | We just proposed the validity area for the network flexibility, but we are okay to avoid further optimization if the operator does not want to. |
| Apple | No |  |

9 companies are fine without valid area for *altFreqPriorities-r16*.

**Proposal 5: Valid area is not introduced for *altFreqPriorities-r16.***

One more question is how to reflect the agreement “altFreqPriorities-r16 and dedicated priority should not be configured together in release message” in the spec. Do we need to capture a note in 36.331?

**Q5: How to reflect the agreement “altFreqPriorities-r16 and dedicated priority should not be configured together in release message” in the spec?** **Do we need to capture a note in 36.331?**

|  |  |
| --- | --- |
| **Company** | **Comments** |
| SoftBank | No strong opinion. It may be useful to capture it e.g. in field descriptions. |
| MediaTek | We could simply mention in the field description of *altFreqPriorities-r16*, saying that “This field is not configured together with *idleModeMobilityControlInfo*” |
| Samsung | We would add constraint on network for the contents of the Release message. I.e. normally we specify something like 'Network does not signal a and b together. So, field description is fine. |
| vivo | Agree with Samsung. |
| Huawei | Agree with previous comments. We can clarify in the corresponding fields. |
| Ericsson | We can provide it in field description and also the procedural text as indicated by us in Q1 should also handle it indirectly. |
| OPPO | Capture this point in field description of freqPriorityListEUTRA/ freqPriorityListNR.  If endorse the OPPO’s suggestion in Q1, it is easy to capture it in field description.  CellReselectionPriorities ::= SEQUENCE {  freqPriorityListEUTRA FreqPriorityListEUTRA OPTIONAL, -- Need M  freqPriorityListNR FreqPriorityListNR OPTIONAL, -- Need M  t320 ENUMERATED {min5, min10, min20, min30, min60, min120, min180, spare1} OPTIONAL, -- Need R  ...  } |
| CATT | Agree with Ericsson |
| LG | We agree with Samsung. We can just describe clear network’s behaviour in the spec. |
| Apple | Adding it to field description is fine. |

All companies agree to capture one sentence in field description to indicate that “This field is not configured together with *idleModeMobilityControlInfo*”.

**Proposal 6: Capture “This field is not configured together with *idleModeMobilityControlInfo*” in field description of *altFreqPriorities-r16*.**

In case any other important open point is missing, please provide it here.

**Q6: Is there any other open points we need to discuss, before check the 36.331 CR?**

|  |  |  |
| --- | --- | --- |
| **Company** | **Open Points & Comments** | **Comments from other companies** |
| MediaTek | We think there should be a capability bit define for this feature. | CMCC1: Yes, the capability is introduced in the 36.331CR and 36.306CR. |
| OPPO | I wonder if the dedicated priority is inherited form NR or the dedicated priority are configured in a non EN-DC cell or R15 LTE Cell, how to make the UE to use the *altFreqPriorities-r16* timely? | CMCC1: I thought both unicasted *altFreqPriorities-r16* and the broadcasted alternative priorities information can be configured by R16 non EN-DC LTE cell.  I don’t have strong view on NR and R15 LTE case.  [SoftBank] Even for the EN-DC UE, the network may indicate a non EN-DC cell by the dedicated priority for temporally load balancing, cell deployments and so forth. I think it is up to network implementation and any issues are foreseen. |
| Apple | Regarding OPPO’s question, we think in those cases, e.g., inherited from NR, Rel-16 non EN-DC cell or R15 LTE cell, UE will not get the alt-priority config enabled from the first beginning. That is to say, UE can only use the dedicated priority. |  |
|  |  |  |

# 3 Phase-2 Check the Agreeable CR

The updated draft 36.331CR will be provided in the same folder ASAP.

If update for 36.304 CR is needed, it will also be provided to the folder for check.

Companies are welcome to provide comments directly inside the draft CRs. If the issue need further discussion, it can be discussed here.

Based on the comments and proposals above, the updated 36.331CR\_v1 is provided in the same folder, with correction made by CMCC1.

**Companies are kindly invited to share views on the CRs. Simple comments or corrections can directly made inside the CR. Issues that need further discussion can be listed inside the following table.**

**Q7: 36.331CR related issues that needs discussion:**

|  |  |  |
| --- | --- | --- |
| Company | Open issues | Views from other companies |
| CMCC1 | Can we extend the value for T3xx as:  min30, min60, min120, min180, min360, min 720, min1440, spare | [ZTE] We think it is fine to reuse the same values as in T320.  [CMCC2]: It seems 4 companies suggest to have larger value, while 5 companies is fine with same value as T320. I think the compromise way forward is to use the same value as T320 for the first 7 values and change the spare bit into a larger value, like min720. |
| ZTE | 1. Would it be better to group the *altFreqPriorities-r16* and *t3xx-r16* together in a field *altFreqPrioritiesConfig-r16*? 2. The last sentence (as highlighted) is a little bit vague since the common reselection priority and alternative reselection priority are both broadcast in system information.   Two possible solutions can be considered to make it clearer:  Solution 1: Specify that UE will discard the *altFreqPriorities* provided by the *RRCConnectionRelease* and the alternative reselection priority provided in system information when T3xx expires.  Solution 2: Add a definition for the common reselection priority and alternative reselection priority and specify that UE will apply the common reselection priority when T3xxx expires. For example, we can have the following definitions added in TS36.304:  **Common cell reselection priority:** Cell reselection priority broadcast via *cellReselectionPriority* and *cellReselectionSubPriority* in system information.  **Alternative cell reselection priorty:** Cell reselection priority broadcast via*altCellReselectionSubPriority* and *altCellReselectionSubPriority* in the system information.  5.3.8.x T3xx expiry  The UE shall:  1> if T3xx expires:  2> if stored, discard the *altFreqPriorities* provided by the *RRCConnectionRelease*;  2> apply the cell reselection priority information broadcast in the system information; | [SoftBank] For the issue 2, it is valid to clarify. We prefer Solution 2, but it is enough just to define the alternative cell reselection priority (i.e. not needed to add the definition of common cell reselection priority). On top of that, the added text should be aligned with “alternative cell reselection priority(ies)”, e.g.  In 36.331CR,  ***altFreqPriorities***  Indicate that the UE shall apply the alternative ~~broadcast frequency~~ cell reselection priorities, …  ***altCellReselectionPriority, altCellReselectionSubPriority***  Alternative ~~C~~cell reselection priorities to be used …  In 36.304CR,  In case the UE receives *RRCConnectionRelease* with *altFreqPriorities*, the UE shall consider the alternative cell reselection priorities broadcasted via ... If the UE receives *RRCConnectionRelease* with *altFreqPriorities* and the alternative cell reselection priorities are not broadcasted via *…*  [CMCC2]: ZTE and Softbank’s suggestion looks fine. The definition for Alternative cell reselection priority is added inside the 36304CR. And Softbank’s corrections are also reflected inside the 36331 and 36304CRs. |
| Apple | 1) We prefer to extend the value range for the new timer. |  |

**Q8: 36.304CR related issues that needs discussion:**

|  |  |  |
| --- | --- | --- |
| Company | Open issues | Views from other companies |
| SoftBank | See the reply comment in Q7, the added text should be aligned with “alternative cell reselection priority(ies)”. | [CMCC2] Yes, the CR is updated. |
|  |  |  |
|  |  |  |

The endorsed 36.306CR is also uploaded into the folder without any change, for checking.

**Q9: 36.306CR related issues that needs discussion:**

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| --- | --- | --- |
| Company | Open issues | Views from other companies |
|  |  |  |
|  |  |  |
|  |  |  |

# 4 Summary

**Summary for phase 1**

**10 companies participated in the phase 1 email discussion. Email rapporteur summarized the following proposals:**

**Proposal 1: A new timer T3xx is introduced for *altFreqPriorities-r16*.**

**Proposal 2: Agree on the following Start/Stop/AtExpiry behavior:**

**Start: Upon receiving *t3xx*.**

**Stop: Upon entering RRC\_CONNECTED, when PLMN selection is performed on request by NAS, when the UE enters RRC\_IDLE from RRC\_INACTIVE, or upon cell (re)selection to another RAT, or upon reception of *RRCEarlyDataComplete* or *RRCConnectionRelease* for UP-EDT.**

**At expiry: Discard the *altFreqPriorities* provided by dedicated signalling.**

**Proposal 3: Add the following procedure text in 5.3.8.3:**

1. **else if the *RRCConnectionRelease* message includes the *altFreqPriorities*:**

**2> apply the alternative cell reselection priority information broadcast in the system information, when available;**

**2> if the *t3xx* is included:**

**3> start timer T3xx, with the timer value set according to the value of *t3xx*;**

**Proposal 4: Upon reception of the *RRCConnectionSetup/RRCConnectionResume/RRCEarlyDataComplete* by the UE, if stored, discard the *altFreqPriorities* provided by the *RRCConnectionRelease*.**

**Proposal 5: Valid area is not introduced for *altFreqPriorities-r16.***

**Proposal 6: Capture “This field is not configured together with *idleModeMobilityControlInfo*” in field description of *altFreqPriorities-r16*.**

# Reference

1. [R2-2003490](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_109bis-e\Docs\R2-2003490.zip) Further consideration on EN-DC cell reselection CMCC,SoftBank, Ericsson, Huawei, ZTE, CATT, vivo, OPPO, Xiaomi discussion Rel-16
2. [R2-2003491](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_109bis-e\Docs\R2-2003491.zip) 36.331 CR to introduce alternative cell reselection priority for EN-DC CMCC, SoftBank, Ericsson, Huawei, ZTE, CATT, vivo CR Rel-16 36.331 16.0.0 4229 1 B TEI16 R2-2002038
3. [R2-2003492](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_109bis-e\Docs\R2-2003492.zip) 36.304 CR to introduce alternative cell reselection priority for EN-DC CMCC, SoftBank, Ericsson, Huawei, ZTE, CATT, vivo, OPPO CR Rel-16 36.304 16.0.0 0782 1 B TEI16 R2-2002037
4. [R2-2003493](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_109bis-e\Docs\R2-2003493.zip) 36.306 CR to introduce alternative cell reselection priority for EN-DC CMCC, SoftBank, Ericsson, Huawei, ZTE, CATT, vivo, OPPO CR Rel-16 36.306 16.0.0 1755 - B TEI16
5. [R2-2003494](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_109bis-e\Docs\R2-2003494.zip) 38.331 CR to introduce alternative cell reselection priority for SA CMCC, Ericsson, SoftBank, vivo CR Rel-16 38.331 16.0.0 1463 1 B TEI16 R2-2000915
6. [R2-2003495](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_109bis-e\Docs\R2-2003495.zip) 38.304 CR to introduce alternative cell reselection priority for SA CMCC, Ericsson, SoftBank, vivo CR Rel-16 38.304 16.0.0 0146 1 B TEI16 R2-2000914
7. [R2-2003496](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_109bis-e\Docs\R2-2003496.zip) 38.306 CR to introduce alternative cell reselection priority for SA CMCC, Ericsson, SoftBank, vivo CR Rel-16 38.306 16.0.0 0290 - B TEI16
8. [R2-2003724](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_109bis-e\Docs\R2-2003724.zip) Further discussion on EN-DC cell reselection Samsung Electronics Co., Ltd discussion Rel-16 TEI16
9. [R2-2003733](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_109bis-e\Docs\R2-2003733.zip) CR on separate cell reselection priority in EN-DC cell reselection in 36.331 Samsung Electronics Co., Ltd CR Rel-16 36.331 16.0.0 4284 - F TEI16
10. [R2-2003739](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_109bis-e\Docs\R2-2003739.zip) CR on separate cell reselection priority in EN-DC cell reselection in 38.331 Samsung Electronics Co., Ltd CR Rel-16 38.331 16.0.0 1581 - F TEI16
11. R2-2004237 Summary for EN-DC cell reselection issue CMCC