3GPP TSG-RAN WG2 Meeting #125bis draft-R2-24XXXXX

Athens, Greece, 26 February – 01 March 2024

**Agenda item: 7.24.2**

**Source: Apple**

**Title: Summary of [POST125][022][RedCap emergency calls] Discussion**

**Document for: Discussion and Decision**

# 1 Introduction

This summarizes the discussion on EM call handling for RedCap and eRedCap.

# 2 Discussion on Deployment Scenarios and Emergency Call support

In RAN2-125, the following was agreed regarding EM call support for RedCap UEs in RedCap supporting cells.

[R2-2401347](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_125%5CDocs%5CR2-2401347.zip) RedCAP/eRedCAP and Emergency call handling Vodafone, Apple Inc, Verizon, Deutsche Telekom, BT Plc, TMobile USA, Ericsson discussion Rel-18

- LG agrees the intention but the field should be condpresence rather than need R as then it wouldu be ambiguous.

- CATT would like to understand case 3 better. Apple explains the intention is not Iot bit, we would like to allow emergency calls even in the case that the UEs are barred.

- Qualcomm agrees to general intention but doesn’t see why we don’t support this for both 1rx and 2RX, and expand the use case for 1 and 2. Huawei and Vivo agrees with Qualcomm to make it common.

- ZTE thinks case 3 is a real case that we will have. Some cases wouldn’t happen in the field. Case 1 can but even that may not needed.

- BT hasn’t seen the case for 2RX, and if we bar both 1RX and 2RX it is because we want to bar all redcaps. Vodafone explains that common understanding between operators that scenario configuration is not very common. Tmobile agrees, so we should just move forward with case 1.

- Qualcomm thinks that different operators have different plans, like for case 2 there are some operators that would like to deploy 1RX and 2RX in different freq.

=> Noted

**Agreements:**

1. Agree to the feature of allowing emergency calls for barred RedCap UEs. The network indicates in SIB whether the UE is allowed to initiate emergency calls.

2. We will create a common framework for the cases (i.e. we will not cover only case 3)

* [POST125][022][RedCap emergency calls] Review CRs (Apple)

 Deadline: March 28, 2024

Since we agreed to create a common framework and not limit to case 3 alone, the moderator requests companies to evaluate and provide view on the other cases.

The following table from [1] is used as the discussion point to see if any of the cases (in addition to case1, case 2 and case 3) need to be considered.

**Companies are requested to fill in their view “if” they consider other cases are to be considered.** The moderator has included initial views.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Scenario Number | Description | MIB Setting of cellBarred  | SIB1 Settings | Possible use case | **Comments from companies** |
| 1 | In this case, Operator does not bar Non-RedCAP UEs, Implement the support RedCAP UEs, but bar them | Not-barred | cellBarredRedCap1Rx-r17: barred  cellBarredRedCap2Rx-r17: barredintraFreqReselectionRedCap: Present  | The operator wants to bar RedCAPs temporarily using barring bits in SIB1, but still like to allow emergency from 1Rx and 2Rx to be performed on this carrier. | *[Apple] This case is considered in the CRs. There was some support for this in RAN2-125 and so it is considered for discussion.* ***Companies are requested to comment here if they strongly oppose it.****[Company XYZ] Comment here.* |
| *1a* | *In this case the operator A has not deployed RedCAP and Operator B did deployed it and the customer of operator B roams into the NW of Operator A* | *Operator A settings*Not-barred | *Operator A settings**cellBarredRedCap1Rx-r17: Not present**cellBarredRedCap2Rx-r17: Not present**intraFreqReselectionRedCap: Not present* | *The customers of operator who deployed RedCAPs should perform emergency calls in the networks which have not implemented Redcap.* | *[Apple] This case is NOT considered. Main reason – if the cell does NOT support redcap, EM call cannot be handled in all cases.**[Company XYZ] Comment here.**[Huawei] Agree not to support RedCap UE accessing the cell not support/allow RedCap.**[Ericsson] Agree that this case is NOT considered.**[QC] Agree that this case is not supported* |
| *2* | *In this case, Non- RedCAP UEs are allowed and 1Rx RedCAP UEs are allowed, but 2Rx RedCAP UEs are barred*  | Not-barred | *cellBarredRedCap1Rx-r17: non barred**cellBarredRedCap2Rx-r17: barred**intraFreqReselectionRedCap: Present* | *Not identified yet* | *[Apple] This case is considered in the CR. While there were questions on the practicality of this, considering case 1 above, case 2 should have equal claim for validity assume….**[Company XYZ] Comment here.**[QC] Agree this case should be considered. The possible use case is that some operators deploy 1Rx and 2Rx on different frequencies.* |
| *2a* | *This is the same case as 2 with the difference that the operator also bar Non-redCAP UEs* | *Barred* | *cellBarredRedCap1Rx-r17: non barred**cellBarredRedCap2Rx-r17: barred**intraFreqReselectionRedCap: Present* | *not a valid case as all UEs are barred in the cell* | *[Apple] Not considered, as the intent is to bar all UEs.**[Company XYZ] Comment here.**[Ericsson] Agree that this case is not considered.**[QC] Agree with the rapporteur* |
| 3 | In this case, the operator allows Non-redCAP UEs and 2Rx to enter the cell, but bar 1Rx  | Not-barred | cellBarredRedCap1Rx-r17: barredcellBarredRedCap2Rx-r17: not barredintraFreqReselectionRedCap: present | The operator has not deployed 1Rx on a particular carrier and bar such UEs, but wants to allow e.g. roaming UEs supporting 1Rx to be able to perform emergency calls | *[Apple] This case is considered in the CR.**[Company XYZ] Comment here.* |
| *3a* | *This is the same case as 3 with a difference that NON-Red CAP UEs are barred* | *Barred* | *cellBarredRedCap1Rx-r17:  barred**cellBarredRedCap2Rx-r17:not barred**intraFreqReselectionRedCap: Present* | *not a valid case as all UEs are barred in the cell* | *[Apple] Not considered, as the intent is to bar all UEs.**[Company XYZ] Comment here.**[Ericsson] Agree that this case is not considered.**[QC] Agree with the rapporteur* |
| *4* | *This is the case where operator is blocking Non redCAP, implemented Redcap, but block both 1Rx and 2Rx.*  | *Barred* | *cellBarredRedCap1Rx-r17: barred**cellBarredRedCap2Rx-r17: barred**intraFreqReselectionRedCap: Present* | *not a valid case as all UEs are barred in the cell* | *[Apple] Not considered, as the intent is to bar all UEs.**[Company XYZ] Comment here.**[Ericsson] Agree that this case is not considered.**[QC] Agree with the rapporteur* |
| *5* | ***Any other cases?*** |  |  |  |  |

## 2.1 Summary on the applicable scenarios

7 cases were discussed as the above table shows.

We can sub divide the cases into three broad categories:

Category 1: The cell is barred for all UEs (including non RedCap). Cases 2a, 3a and 4 fall into this.

Category 2: The cell is not barred, but does not support RedCap UEs. Case 1a

Cateogry 3: The cell is not barred, and the cell also supports RedCap UEs. Cases 1,2,3 fall into this.

As per the discussion, we will only consider category 3, and will not support category 1 and category 2.

The minimum requirement is that the cell should NOT be barred, and the cell should support RedCap UEs.

Summary:

**Proposal 1: If the cell is barred for all UEs or if the cell does not support RedCap UEs, such cells are excluded from the discussion on emergency calls for RedCap UEs.**

**Proposal 2: If a RedCap supporting cell is to be barred by the RedCap UE due to not supporting either cellBarredRedCap1Rx-r17 or cellBarredRedCap2Rx-r17 or both, NW can allow such RedCap UEs to consider this cell as acceptable cell if the cell selection criteria is fulfilled. A HD-FDD RedCap UE should not bar the cell due to HD-FDD operation for this to be applicable to the HD-FDD RedCap UE.**

**Proposal 3: Agree to CRs [2][3][4][5]**

# Conclusion

**Proposal 1: If the cell is barred for all UEs or if the cell does not support RedCap UEs, such cells are excluded from the discussion on emergency calls for RedCap UEs.**

**Proposal 2: If a RedCap supporting cell is to be barred by the RedCap UE due to not supporting either cellBarredRedCap1Rx-r17 or cellBarredRedCap2Rx-r17 or both, NW can allow such RedCap UEs to consider this cell as acceptable cell if the cell selection criteria is fulfilled. A HD-FDD RedCap UE should not bar the cell due to HD-FDD operation for this to be applicable to the HD-FDD RedCap UE.**

**Proposal 3: Agree to CRs [2][3][4][5]**

# References

[1] [R2-2401347](file:///C%3A%5CUsers%5Cpanidx%5COneDrive%20-%20InterDigital%20Communications%2C%20Inc%5CDocuments%5C3GPP%20RAN%5CTSGR2_125%5CDocs%5CR2-2401347.zip) RedCAP/eRedCAP and Emergency call handling Vodafone, Apple Inc, Verizon, Deutsche Telekom, BT Plc, TMobile USA, Ericsson discussion Rel-18

[2] R2-240xxx Introduction of barring exemption for RedCap UEs for emergency calls[RedCap\_EM\_Call]

[3] R2-240xxx Introduction of barring exemption for RedCap UEs for emergency calls[RedCap\_EM\_Call]

[4] R2-240xxx Introduction of barring exemption for eRedCap UEs for emergency calls[RedCap\_EM\_Call]

[5] R2-240xxx Introduction of barring exemption for eRedCap UEs for emergency calls[RedCap\_EM\_Call]