**3GPP TSG-****RAN WG2 Meeting #119** **electronic R2-2209218**

**Online, 17th Aug – 29th Aug, 2022**

**Agenda Item:** 6.21.1

**Source:** Huawei, HiSilicon

**Title:** Report of [AT119-e][037][NRTEI17] Emergency Service Enhancement

**Document for:** Discussion and decision

# Introduction

This is the report of the following offline discussion.

* [Post119-e][037][NRTEI17] Emergency Service Enhancement CR (Huawei)

      Scope: Continue from [AT119-e][037], Collect further comments on the proposals, clarify potential issue if possible, reach a potentially agreeable way forward for the next meeting,

      Intended outcome: Report (to be submitted to next meeting, to be used as baseline for continued disc)

      Deadline: 1 week

The email discussion is the follow-up discussion of [AT119-e][037][NRTEI17] Emergency Service Enhancement (Huawei) [1]. The goal is to allow time on further checking the proposals from offline-037.

# Discussion and summary

## Overview of [AT119-e][037]

During the offline-037, the following aspects have been discussed:

* During EPS fallback for emergency call, whether UE is allowed to select an acceptable E-UTRA cell upon HO failure.
* During Emergency fallback, whether UE is allowed to select a suitable/acceptable E-UTRA cell upon HO failure.
* In the above two cases, if the selected E-UTRA cell can be either suitable or acceptable, whether there should be an order for suitable cell selection and acceptable cell selection.

The summary of companies’ views on the above aspects is:

* All companies agreed that during EPS fallback for emergency call, the UE is allowed to select an acceptable E-UTRA cell upon HO failure when there is no suitable cell.
* All companies agreed that during Emergency fallback, the UE is allowed to select a suitable/acceptable E-UTRA cell upon HO failure. And the UE can only select acceptable cell when there is no suitable cell. Regarding whether such UE behaviour should be captured in specification, one company commented it can be left to UE implementation and no need to be captured in specification, while other companies agreed to capture the UE behaviour in the specification.

Based on majority view, the following proposals were given, and the report was submitted in R2-2209116.

Proposal 1: UE should be allowed to select an acceptable cell when there is no suitable cell for emergency call upon HO failure during EPS fallback.

Proposal 2: UE shall perform suitable cell search first, and may perform acceptable cell search only when no suitable cell is found.

Proposal 3: the UE is allowed to select a suitable E-UTRA cell upon HO failure during Emergency service fallback.

Proposal 4: UE is allowed to select an acceptable cell when there is no suitable cell for emergency call upon HO failure during EPS fallback.

Proposal 5: the same option adopted for EPS fallback applies to emergency service fallback, i.e. UE shall perform suitable cell search first, and may perform acceptable cell search only when no suitable cell is found.

Proposal 6: the specification is to be updated to allow the UE to select to a suitable first, and may select an acceptable cell if no suitable cell found for emergency service fallback.

Proposal 7: To have a short post email discussion to finalize RRC CR by capturing P1-P6.

However, due to limited time, the above proposals have not been discussed online, and a short post email discussion was assigned for further comment collection.

## Discussion in [Post119-e][037]

After EOM, there were comments received from Qualcomm and T-mobile as below:

* Qualcomm can accept the preference from majority, and has a strong view that the new behaviour we are going to introduce should NOT be mandatory. This is a late release-17 addition and not all implementations may be able to follow it, and this behaviour should not be verified as mandatory behaviour in RAN5 tests.
* T-Mobile thinks the proposed changes modify legacy UE behavior, e.g. P1 changes behavior that is release 15.8.0. EPS fallback has been deployed for a long time now as such we need time to check the proposed changes against current implementations. T-Mobile has concerns with approving this now and requests that a decision be made at the next RAN2 meeting.

In response to the above comments, it was clarified that the proposed enhancements are optional UE behaviour for Rel-17, no change on legacy UEs and no impact on network side.

The proposals are updated to reflect the above clarification as below:

Proposal 1: During EPS fallback for emergency call, upon HO failure the UE is allowed to select an acceptable cell when there is no suitable cell found, i.e. UE shall perform suitable cell search first, and may perform acceptable cell search only when no suitable cell is found. This is optional for Rel-17.

Proposal 2: During Emergency service fallback, upon HO failure the UE is allowed to select an acceptable E-UTRA cell when there is no suitable E-UTRA cell found. This is optional for Rel-17.

Proposal 3: The specification is to be updated to allow a UE to select a suitable E-UTRA cell first, and may select an E-UTRA acceptable cell if no suitable cell found, upon HO failure during EPS fallback for emergency call or during Emergency service fallback.

# Conclusion

Based on the companies’ views in at meeting offline discussion and post email discussion, the following proposals are given:

Proposal 1: During EPS fallback for emergency call, upon HO failure the UE is allowed to select an acceptable cell when there is no suitable cell found, i.e. UE shall perform suitable cell search first, and may perform acceptable cell search only when no suitable cell is found. This is optional for Rel-17.

Proposal 2: During Emergency service fallback, upon HO failure the UE is allowed to select an acceptable E-UTRA cell when there is no suitable E-UTRA cell found. This is optional for Rel-17.

Proposal 3: The specification is to be updated to allow a UE to select a suitable E-UTRA cell first, and may select an E-UTRA acceptable cell if no suitable cell found, upon HO failure during EPS fallback for emergency call or during Emergency service fallback.

The report will be resubmit to RAN2 #119-bis-e meeting, and the above proposals can be taken as baseline for further discussion.

# Reference

1. R2-2209116, Report of [AT119-e][037][NRTEI17] Emergency Service Enhancement.