**3GPP T****SG-RAN WG2 Meeting #123 R2-230xxxx**

Toulouse, France, 21- 25August, 2023

Agenda Item: 7.13.2

Source: CMCC (moderator)

Title: Summary of [Post122][584][R18 SON/MDT] Open issues on fast MCG recovery

Document for: Discussion and Decision

# Introduction

This document is the report of the following email discussion,

* **[Post122][584][R18 SON/MDT] Open issues on fast MCG recovery (CMCC)**

Scope: Discussion should focus on the proposals raised and not concluded in R2-2305779.

Intended outcome: Report

Deadline: Long

Please provide your comments before Aug. 09th, 23:59 UTC

# Contact Information

Participants are encouraged to leave their contact information in the following table.

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| --- | --- |
| Company | Contact info (name, email address) |
| CMCC | Fang Xie, xiefang@chinamobile.com |
| CATT | Haocheng Wang, wanghaocheng@catt.cn |
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# Discussion

In RAN2#122 meeting, companies agreed to introduce the near failure case for fast MCG recovery and initial agreements on fast MCG recovery are concluded as follows:

Agreements:

1 RAN2 confirms scenario of near failure fast MCG recovery.

2 RAN2 confirms scenario f1, i.e., SCG fails or is deactivated before the UE sends the MCGFailureInformation. FFS RAN2 impact.

In this email discussion, the open issues on fast MCG recovery are mainly based on the proposals provided in R2-2305779, including the information for the optimization of near failure of fast MCG recovery reported by UE, T316 related triggering threshold and time information reported by UE for fast MCG link recovery optimization.

## Information reported by UE for the optimization of near failure of fast MCG recovery

Following options are proposed in R2-2305779 for UE to report for the optimization of near failure of fast MCG recovery:

Option 1: Elapsed T316 between the transmission of MCGFailureInformation and receiving RRC reconfiguration or RRC release message;

Option 2: The ratio between the elapsed T316 and the configured value of T316;

**Question 1: Companies are invited to provide the views on which information should be reported by UE for the optimization of near failure of fast MCG recovery.**

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| **Company** | **Comments** |
| CMCC | From our view, both options can help network to detect potential underlying issues and optimize the configuration of T316.  Option 1 is preferred, since for option 2 the network needs to remember the configured T316. |
| CATT | Either is OK to us. |
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## T316 related triggering threshold

In R2-2305779, it is proposed that UE could only report the information when a triggering threshold is met, e.g., T316 exceeds a configured threshold, to reduce the unnecessary reporting for fast MCG link recovery near failure case, which is similar to SNR.

**Question 2: Companies are invited to provide the views on whether to introduce the T316 related triggering threshold.**

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| **Company** | **Comments** |
| CMCC | We support to introduce the T316 related triggering threshold. Only if the triggering threshold is met, UE generates and reports the information, which will reduce the reporting overhead for UE. |
| CATT | Agree with CMCC, and maybe the similar thresholds configuration of SHR T310 can be reused: ENUMERATED {p40, p60, p80, spare5, spare4, spare3, spare2, spare1}. |
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## Time information reported by UE for fast MCG link recovery optimization

Until now, following cases for fast MCG link recovery have been agreed to be addressed in both RAN2 and RAN3:

* Case a: SCG fails when the UE is undergoing fast MCG recovery (i.e. SCG failure happens while T316 is running)
* Case f1: SCG fails or is deactivated yet before the UE sends the MCGFailureInformation
* Case b: the signalling delay is longer than the time the UE waits for the response (T316 expired)

Regard to fast MCG link recovery optimization, some time-related information is also beneficial for network to understand the situation of SCG and do further optimization of fast MCG recovery, e.g., the time between MCG failure (or transmitting MCGFailureInformation) and SCG failure or SCG deactivation.

Therefore, for case a, UE reports the time between MCG failure (or transmitting MCGFailureInformation) and SCG failure. For case f1, UE reports the time between MCG failure (or transmitting MCGFailureInformation) and SCG failure or SCG deactivation.

**Question 3:** **Companies are invited to provide the views on whether to agree to report the time information for fast MCG link recovery optimization in the proposal listed below.**

**Proposal: UE reports following time information for fast MCG link recovery optimization:**

* **Time between MCG failure (or transmitting MCGFailureInformation) and SCG failure for case a and f1**
* **Time between MCG failure (or transmitting MCGFailureInformation) and SCG deactivation for case f1**

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| **Company** | **Comments** |
| CMCC | We support to report the above time information for fast MCG link recovery optimization.  For the scenario that both MCG failure and SCG failure happen in a short time, it means there is a coverage issue, since the UE cannot connect to the network at all, the coverage enhancement is necessary.  For the scenario that both MCG failure and SCG deactivation happen in a short time, it means the decision of SCG deactivation is not appropriate, so the principle to deactivate SCG needs further optimization. |
| CATT | Agree with CMCC, at least the time between MCG failure and SCG failure should be introduced since the time can be used to indicate whether the coverage problem of the MN an SN maybe occurred in a nearby location. Then some optimization can be performed.  For the MCG failure and SCG deactivation scenario, the NW could consider reducing the possibility of initiating SCG deactivation near the location of MCG failure, so that MCG link can be recovery as much as possible. |
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## In which report to capture fast MCG recovery related information

As for in which report to capture fast MCG recovery related information, we would like to ask the following question.

**Question 4: Companies are invited to provide their view on which report to be used for supporting data collection for above information.**

1. **Existing RLF report**
2. **SHR**
3. **New report**

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| **Company** | **(A/B/C)** | **Comments** |
| CMCC | A | Since the UE will generate an RLF report when MCG failure occurs, it is straightforward to reuse it to collect fast MCG recovery related information. |
| CATT | A for failure;  B for near failure | RLF report is appropriate to include all the real failure scenario(s), but we think the near failure case (case c) can reuse the SHR mechanism since the triggering threshold should be configured by the NW. |
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# Conclusion

If needed.

# Reference

1. R2-2305779, Further considerations on fast MCG recovery, CMCC