3GPP TSG-RAN WG2 Meeting #109e draftR2-20xxxxx

Elbonia, Online, 24 February – 6 March 2020

**Agenda item: 6.9.3.6**

**Source: Nokia, Nokia Shanghai Bell**

**Title: Report from [AT109e][213][MOB] CHO failure handling**

**WID/SID: NR\_Mob\_enh-Core - Release 16**

**Document for: Discussion and Decision**

# 1 Brief scope of the paper

This document aims at collecting companies’ views regarding the open issues for Conditional Handover Failure handling, as summarized in [8].

# 2 Discussion

## 2.1 Proposals from the summary in [8]

The following proposals have been provided in [8]:

**Proposal S2\_1: Do not introduce a new timer to control the conditional handover procedure after RLF or HOF/CHOF.**

**Proposal S4\_1: Ensure *DataInactivityTimer* is stopped when CHO execution is triggered. Check whether the existing RRC CR needs to be updated accordingly.**

**Proposal S5\_1: Do not consider in Rel-16 additional scenarios where failure recovery via CHO can be applied.**

Based on brief RAN2 discussion we had directly before the RAN2#109e meeting, we assume those may be agreeable to most (hopefully all). Thus, we would like to ask collectively:

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| --- | --- |
| **Question 1: Are you OK with the proposals listed above? Please answer YES or NO. If the answer is NO, please kindly inform which proposal is not OK and why.** | |
| **Company** | **Answer** |
| Xiaomi | Regarding Proposal S4\_1, I’m not convinced how gNB could ensure DataInactivityTimer is stopped when CHO execution is triggered, since gNB is not aware when UE executes CHO.  Regarding Proposal S5\_1, I think it’s not clear what are the use cases. Some companies e.g. email rapporteaur (Nokia), seems to think only RLF and intra-RAT HOF should be handled. But some companies e.g. WI rapporteur (Intel), seems to think RLF, intra-RAT HOF and inter-RAT HOF should be handled. We should make this clear, both inter-RAT and intra-RAT HOF should be handled. While at compliance failure with NR RRC connection reconfiguration, LTE UE could also trigger CHO failure recovery, which has little spec or implementation impact. |
| OPPO | YES to all proposals.  For proposal S4\_1, we think the intention is to capture UE’s behaviour. In the current RRC CR, upon CHO execution, UE will reset the MAC entity and *DataInactivityTimer* will be stopped. |
| Huawei, HiSilicon | Yes to all proposals. |

## 2.2 Issues from [8] requiring further discussion

The authors of [6] and [7] have discussed on the UE actions in case recovery via CHO (specified in Rel-16 MobEnh WI) and fast MCG recovery (specified in Rel-16 DC/CA enhancements WI) are configured simultaneously, while the UE encounters PCell’s RLF. In [8] the following suggestion for a discussion was made:

**DISC S6\_1: Discuss further which solution shall be chosen in case of PCell’s failure when both recovery via CHO and fast MCG recovery are configured.**

Thus, we would like to ask the RAN2 companies to answer the following question:

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| --- | --- |
| **Question 2: What shall be the UE’s behaviour in case of PCell’s failure when both recovery via CHO and fast MCG recovery are configured? Please motivate your selection.** | |
| **Company** | **Answer** |
| Xiaomi | Fast MCG recovery has higher probability to recover connection to MCG, therefore should be prioritized. If fast MCG recovery fails, this is a new use case for CHO failure recovery, which is related to use case discussion in [8]. I think UE could trigger CHO failure recovery in this new scenario. |
| OPPO | Fast MCG recovery should be chosen. Recovery via CHO is not always possible in case when the selected cell is not a CHO candidate, in which case, re-establishment will be performed and will introduce more data interruption. Fast MCG recovery is thus a better option. |
| Huawei, HiSilicon | Fast MCG recovery should be chosen. |

# 3 Conclusions

To be filled.

# 4 List of referenced documents

[1] [R2-2000331](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_109_e/Docs/R2-2000331.zip), “*CHO and re-establishment procedure*”, Ericsson

[2] [R2-2000376](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_109_e/Docs/R2-2000376.zip), “*Discussion on the CHO during failure handling*”, vivo

[3] [R2-2001003](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_109_e/Docs/R2-2001003.zip), “*On T312 in Conditional PSCell change or handover*”, Nokia, Nokia Shanghai Bell

[4] [R2-2001105](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_109_e/Docs/R2-2001105.zip), “*Avoid consecutive CHO failure*”, Beijing Xiaomi Software Tech

[5] [R2-2001](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_109_e/Docs/R2-2001106.zip)106, “*Discussion on the use case of CHO failure recovery*”, Beijing Xiaomi Software Tech

[6] [R2-2001](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_109_e/Docs/R2-2001260.zip)260, “*Discussion on fast RLF recovery when applying CHO and fast MCG recovery*”, ZTE

[7] [R2-2000918](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_109_e/Docs/R2-2000918.zip), “*Discussion on CHO for DC scenarios*”, CMCC

[8] [R2-2002016](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_109_e/Docs/R2-2002016.zip), “*Summary of 6.9.3.2 Conditional Handover Failure Handling*”, Nokia, Nokia Shanghai Bell