3GPP TSG-RAN WG2 #118-e R2-22xxxxx

Electronic meeting, 09th May– 20th May 2022

Agenda Item: 6.13.3

Source: Ericsson, Huawei

Title: Summary of RILs discussion – Phase 3

Document for: Discussion, Decision

#  Introduction

This email discussion is to collect views related to the phase 3 of the RRC RILs discussion.

* **[AT118e][801][SON/MDT] Summary of RILs discussion (Ericsson, Huawei)**

For 1st round: Based on pre118 #801 email discussion, figure out the controversial RILs and RILs with easy agreeable proposals.

For 2nd round: Discuss NOKIA094, H073, Z422 and proposal 3-19 in R2-2206344 and try to get consensus on these issues.

For 3rd round: “To be discussed how/where information associated to the visited PSCells [ensuring the chronological order] should be captured in the spec”

 1st round Intended outcome: Report full of proposals…

 1st round Deadline: 11:23 UTC, Tuesday May 10th

 2nd round Intended outcome: Report full of proposals…

 2nd round Deadline: 11:23 UTC, Monday May 16th

 3rd round Intended outcome: Report with only one proposal…

 3rd round Deadline: 11:23 UTC, Wed May 18th

In order to allow some time for the conclusions before the online session, Rapporteur invites companies to provide comments at latest by Wednesday May 16th, 09:00 UTC.

# Discussion

This email discussion will in particular focus on the modelling of the new Rel.17 PSCell MHI framework. All the other open RILs were addressed during the previous online sessions.

Related to MHI, during the online discussion, the following was agreed:

For the Rel.17 PSCell MHI, the PSCells visited while connected to a certain PCell X are appended to the certain PCell X List in the MHI in the nested structure when the corresponding PCell X related entries are appended to the MHI. To be discussed how/where information associated to the visited PSCells [ensuring the chronological order] should be captured in the spec.

To solve the issue highlighted in yellow above, two alternatives were proposed during the previous the email/online discussion:

1. Add variable that stores all the PSCells visited while connected to PCell X. Such visited PSCell are added into the MHI, when then PCell X is added into the MHI, e.g. at PCell X change
2. UE implementation.

When the UE is connected to a certain Pcell, the UE may be handed over through a certain number of PSCell, or experience failures in the PSCells (upon which the UE is left with no PSCell) or be deconfigured with DC (upon which the UE is left with no PSCell). As an example, the following scenario may need to be captured in the Rel.17 MHI.

Example:

* + UE configured with PCell X, no PSCell.
	+ After 10 seconds in PCell X, the UE gets configured with a PSCell A (time without PSCell = 10 seconds)
	+ After 5 seconds, the UE is handed over to PSCell B (time with PSCell A = 5 seconds)
	+ After another 3 seconds, the UE gets PSCell B released (time with PSCell B = 3 seconds)
	+ After another 7 more seconds, the UE is handed over to PCell Y (time without PSCell = 7 seconds)

When the UE is handed over to PCell Y, the PCell X is added into the MHI, and the following entries should be appended in the PSCell nested structure associated to the PCell X:

1. Time without PSCell = 10 seconds
2. PSCell A ID; timeSpent = 5 seconds
3. PSCell B ID; timeSpent = 3 seconds
4. Time without PSCell = 7 seconds

Hence, Rapporteur understanding is that for each visited PSCell there should be an entry indicating the PSCell ID of the visited PSCell, and the time spent in the PScell, and whenever the UE is left with no PSCells the UE should log the timeSpent with no PSCell

* **Q1: Do you agree that as in the example above, the UE should log in the PSCell nested structure the following entries in chronological order:**
	+ **One entry for each visited PSCell (including the timeSpent with the PSCell and the PSCell ID)**
	+ **One entry for each time interval without PSCells (including the time spent without PSCell)**

If you disagree, please explain what the UE should log.

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| **Company** | **Agree/Disagree** | **Comments** |
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We should now discuss how to represent in the procedural text that the UE should capture within the MHI all the information associated to the visited PSCells, and all the time intervals without PSCells.

Option a): Add variable that stores in the chronological order all the PSCells visited while connected to PCell X, and all the time intervals without PSCells. The content of this variable is then added into the MHI, when the PCell X is added into the MHI, e.g. at PCell X change (as agree in the online discussion).
Impact of this option is available in the CR [R2-2205894](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_118-e/Docs/R2-2205894.zip).

Option b): How to capture in the MHI, the information associated to the visited PSCells and the time intervals without PSCells, is left to the UE implementation.
Related to this approach b), Rapporteur wonders how to make sure that the procedural text ensures the wanted UE behaviour discussed in Q1, without leaving ambiguity. For example, in rapporteur´s view, without introducing a UE variable, it seems not easy to specifiy an RRC procedure such that each time interval with no PSCells and each visited PSCell (with related time spent) is included in the MHI in chronological order.

* **Q2: In order to facilitate the specification work, do you agree to introduce a UE variable that stores in the chronological order all the PSCells visited while connected to PCell X, and all the time intervals without PSCells? The content of this variable is then added into the MHI, when the PCell X is added into the MHI, e.g. at PCell X change (as agree in the online discussion)**
	+ **Yes, i.e. prefer option a)**
	+ **No, it should be left to UE implementation, i.e. prefer option b)**

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| **Company** | **Yes/No** | **Comments** |
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A possible way to implement option a) is available in [R2-2205894](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_118-e/Docs/R2-2205894.zip). How to implement option b) has not been discussed yet or presented in contributions/CRs. Hence, if option b) is preferred, Rapporteur would like to ask proponents to provide a TP on the procedural text needed to represent the outcome of Q1, i.e. how to represent the PSCells information into the MHI.

* **Q3: If option b) above is selected, could you please provide a TP example on the RRC procedural text needed to address the outcome of Q1, i.e. how to represent the PSCells information into the MHI?**

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| **Company** | **TP for Option b)** |
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# Conclusions

**TBW**