3GPP TSG-RAN WG3 #117bis-e [R3-22](https://ericsson-my.sharepoint.com/personal/filip_barac_ericsson_com/Documents/WORK/3GPP.exe/Meetings/RAN3%23113-e.exe/Meetings/RAN3%23113/chairnotes/Inbox/R3-214141.zip)5907

Online, 10th Oct – 18th Oct 2022

Agenda Item: 10.2.1.

Source: Qualcomm (moderator)

Title: Summary of Offline Discussion on CB: # SONMDT1\_SHRandSPCR

Document for: Approval

# Introduction

**CB: # SONMDT1\_SHRandSPCR**

**Inter RAT SHR:**

**- Discuss whether Inter-RAT SHR has no RAN3 impact? (e.g, only NR configures trigger condition; only NR needs and fetches SHR; UE only generates NR format SHR after inter-RAT handover)**

**- HO from LTE to NR should be supported?**

**- Inter-RAT SHR format, SHR fetching, forwarding**

**SPCR:**

**- which node (MN or SN) generates the SPCR configuration? and whether the coordination between MN and SN is needed?**

**- SPCR fetching, forwarding**

**- Capture agreements and open issues, and provide CRs if agreeable**

**- LS to RAN2?**

(Qualcomm - moderator)

Summary of offline disc [R3-225907](file:///E:\3GPP%20Standardization\RAN3\RAN3%23117bis-e\draft\CB%20%23%20SONMDT1_SHRandSPCR\Inbox\R3-225907.zip)

# For the Chair’s Notes

LS to RAN2 on inter-RAT SHR and SPCR in R3-22xxxx

**Inter-RAT SHR**

**Proposal 1**: T310 and T312 related triggers are to be considered for inter-RAT SHR from NR to LTE. LS RAN2 to check whether T304 trigger for inter-RAT SHR from NR to LTE is also to be considered and whether RAN2 is planning to impact LTE specifications to support inter-RAT SHR.

**Proposal** 2: In LS, also ask RAN2 to check the encoding of inter-RAT SHR (if T304 triggers are supported). Ask RAN2 whether the inter-RAT SHR is always encoded in source RAT format or can be encoded based on the RAT format which generates the inter-RAT SHR trigger condition (e.g., encoding in NR format for T310/T312 triggers and in LTE format for T304 triggers for inter-RAT HO from NR to LTE)

**Proposal 3:** In LS, also ask RAN2 to provide their preference among Option 1 vs. Option 2 below (if T304 triggers are to be supported):

* During a successful inter-RAT HO from NR to LTE, if inter-RAT SHR is collected due to T304 triggers (configured by target LTE node)
  + Option 1: It is sufficient for UE to report the inter-RAT SHR once UE is back to NR
  + Option 2: The LTE node should have the capability to retrieve the inter-RAT SHR

**Proposal 6:** RAN3 thinks that at least the following parameters can be useful for optimizing inter-RAT successful handover from NR to LTE. LS RAN2 to confirm and request support. Whether the existing IEs defined in Rel-17 for intra-NR SHR can be reused is up to RAN2 decision.

* Source NR cell information
* Target LTE cell information
* Measurement results for source, target and neighbours
* Cause to indicate which inter-RAT SHR triggering condition was met
* Target C-RNTI
* UE location Information

FFS whether the presence of Target C-RNTI IE in inter-RAT SHR is related to the decision on supporting T304 trigger

**Proposal 7:** RAN3 thinks that all CHO related information in intra-NR SHR (e.g., time from CHO configuration to execution) is not applicable for inter-RAT SHR. LS RAN2 to confirm.

**Successful PSCell Change Report**

**Proposal 10:** The following information can be included as part of SPCR (parallel discussion happening in RAN2 as well, no need to LS RAN2 if already agreed in RAN2)

1. Source PSCell information, in case of PSCell change/CPC
2. Target PSCell information
3. SPCR cause
4. Latest measurement results
5. Location information of the UE
6. Time elapsed between the CPAC execution and reception of CPAC configuration, in case of CPAC

**Proposal 12:** LS RAN2 to check the reporting of SPCR (delayed or immediate). Ask RAN2 whether the SPCR can be stored at the UE and sent later or is sent immediately after the successful PSCell change or addition.

**Proposal 14:** T310 of SCG and T312 of SCG are not considered as SPCR triggers for classic PSCell addition or CPA (since there is no source SN undergoing RLF). LS RAN2 to confirm.

**Proposal 15:** Root cause analysis for SPCR should be done by the node deciding the SPCR trigger.

**Proposal 16:** Send LS to RAN2 to check which node (MN or SN) retrieves the SPCR from the UE.

**To be continued in next meeting:**

**Inter-RAT SHR**

**Proposal 5:** RAN3 should discuss the forwarding mechanism at network side for inter-RAT SHR from NR to LTE. If T304 triggers are to be supported, then following options are possible:

* Option 1: The receiving node forwards the inter-RAT SHR to source NR node, then source NR node forwards the inter-RAT SHR to target LTE node
* Option 2: The receiving node forwards the inter-RAT SHR to target LTE node, then target LTE node forwards the inter-RAT SHR to source NR node
* Option 3: The receiving node forwards the inter-RAT SHR to corresponding node which generates the SHR trigger condition that triggers the inter-RAT SHR

**Proposal 8:** FFS whether to also include the following in inter-RAT SHR from NR to LTE

* Time between HO execution and SHR retrieval
* source C-RNTI

**Proposal 9:** FFS whether and how to support inter-RAT SHR from LTE to NR in Rel-18. RAN3 can evaluate the following and discuss whether this needs to be supported in Rel-18

* Motivation and scope (e.g., is optimizing LTE also in scope of the Rel-18 WID?)
* Trigger conditions (e.g., can we restrict to only T304 to limit LTE impacts)
* Encoding of inter-RAT SHR from LTE to NR
* Parameters to be included in inter-RAT SHR from LTE to NR

**SPCR**

**Proposal 11:** FFS whether to also include the following in Successful PSCell Change Report:

* PCell information, in case of MN initiated PSCell change/CPC
* Information that PSCell change was MN-initiated or SN-initiated
* Time between CPC execution and report retrieval
* C-RNTI (MN, target SN, source SN)

**Proposal 13:** FFS whether the objective of SPCR is to optimize T310/T312/T304 configuration or to optimize PSCell change/addition configuration. Way forward is as below:

* If the objective of SPCR is to optimize T310/T312/T304 configuration, the node which configures the timers decides the SPCR triggers.
* If the objective of SPCR is to optimize PSCell change configuration, the node which initiates the PSCell change/addition decides the SPCR triggers

# Phase-II Discussion

# Phase-I Discussion

## Inter-RAT SHR

### Triggers for inter-RAT SHR (NR to LTE)

HW, Observation 3a: For the HO from NR to LTE, the **T310 and T312** related SHR triggering condition(s) should be introduced in the NR handover message from NR to LTE

HW, Observation 3b: For the HO from NR to LTE, the introduction of the T304 related triggering condition in the NR handover message will impact LTE RAN2 specification. **FFS on the T304 related triggering condition.**

E///, Proposal 1.1: The gNB (but not the eNB) is allowed to supply configuration for Inter-RAT SHR from NR to LTE

E///, Proposal 1.2: Use only thresholds based on timers **T310 and T312** for Inter-RAT SHR from NR to LTE

QC, Proposal 8: Consider **only T310 and T312 thresholds** for inter-RAT SHR from NR to LTE. Source NR cell determines the T310/T312 thresholds. It is up to RAN2 whether to reuse the T310/T312 thresholds for SHR introduced in case of intra-NR handovers for the inter-RAT case

Intel, Proposal 1: The UE logs the SHR if, during NR to LTE HO, **T310 or T312 or T304 value** exceeds a threshold.

ZTE, Observation 2: In the case of gNB to ng-eNB handover, the NR cell may include SHR configuration in MobilityFromNRCommand message sent to UE, where the **T310 and T312 threshold** is configured by source RAT (NR), and the **T304 threshold** is configured by target RAT (LTE).

**Q1: Companies are requested to provide their preference among the following 2 options:**

* **Option 1:** Only T310 and T312 related triggers for inter-RAT SHR from NR to LTE
* **Option 2:** T310, T312 and T304 related triggers for inter-RAT SHR from NR to LTE

|  |  |  |
| --- | --- | --- |
| Company | Option 1 or 2 | Comment |
| Samsung | Option 2 | We think T304 related triggers should be considered as well.  Firstly the configuration of T304 may bring the potential failures which will also impact the performance of inter-RAT handover from NR to LTE.  Secondly, the intention to only support T310 and T312 is to reduce the impact on LTE specification. Actually even if only supporting T310/T312, the store and reporting of the SHR may still have LTE specification impact.  Furthermore, RAN3 agreed to consider “*SHR for intra-system inter-RAT, HO from NR to LTE will be treated first*” firstly. HO from LTE to NR may be considered after HO from NR to LTE is done. With this in mind, it’s good to have a solution to cover both directions. If we define a sub-optimal solution for HO from NR to LTE just for reducing the impact on LTE and later we find the change cannot be avoided to support HO from LTE and NR, it’s not a good exercise. All the aspects including network performance, technical benefit and specification impacts should be considered in order to make a decision. |
| Nokia | Opt. 1 |  |
| Qualcomm | Option 1 | Firstly, if we are supporting only T310/T312 triggers for inter-RAT SHR from NR 🡪 LTE and retrieve the SHR only when back to the source RAT (i.e., NR), then **there will be NO LTE impacts!**  **If T304 trigger is to be supported:**  In case of inter-RAT HO (NR🡪 LTE), T304 timer is configured by the target LTE node via an LTE container (*targetRAT-MessageContainer*) within *MobilityFromNRCommand*. So, if a T304 related trigger is to be defined for inter-RAT SHR, there are 2 ways to do it:   * Alt 1: Target LTE node also sends T304 trigger for inter-RAT SHR to source NR node in MobilityFromNRCommand (LTE RRCReconfiguration) **🡪 this means we need support in TS 36.331 (LTE RRCReconfiguration) for including T304 related triggers for inter-RAT SHR and require UE to encode inter-RAT SHR in LTE format so that root cause analysis can done directly at target LTE node** * Alt 2: Target LTE node sends T304 value to source NR node over Xn/NG. Source NR node then decides the T304 trigger and configures the UE via NR RRCReconfiguration 🡪 **UE still records inter-RAT SHR in NR format. The NR node receiving the inter-RAT SHR reads the NR SHR and informs the target LTE node via Xn/NG/S1 on the shr-Cause.** Alt2 has no LTE/RAN2 impacts; there will be only Xn/NG impacts   Considering the complexity of UE encoding SHR in Alt 1 and backhaul signaling impacts in Alt 2, we propose to not consider T304 related trigger in inter-RAT SHR (NR🡪 LTE). If at all, only Alt 2 should be considered. |
| Lenovo | Option 2 | Option 2 is slightly preferred to follow R17 intra-RAT SHR trigger condition. Agree with SS that it may still have LTE specification impact even if only supporting T310/T312. We find that RAN2 is also discussing this issue, we may need to check with RAN2. |
| Huawei | Option1 | No strong view, but option1 seems reasonable to reduce impact on LTE RRC |
| Intel | Option 2 | It's beneficial to introduce T304 as a triggering condition to assist the target cell configuration adjustment.  If T304 is adopted, T304 related triggering condition needs to be added in *RRCConnectionReconfiguration* message which is defined in TS36.331 in RAN2, so we prefer to leave this issue to RAN2 to decide. |
| CATT | Option 1 | We think LTE specification shall not be impacted. So, only source NR is required to configure T310 and T312 threshold. |
| ZTE | Option 2 | In general, inter-RAT SHR mechanism should be keep in line with intra-RAT SHR.While means all timer thresholds including T304 should be considered from start point. From our point view, Alt1 and Alt2 from QC are all feasible , but the detail should be defined in RAN2. |
| Ericsson | Option 1 | T304 will have for sure impact on LTE, whether option 1 can be implemented without LTE impacts (configuration in NR, logging in NR, reporting in NR) |
| China Telecom | Option1 | Introducing SHR for inter-RAT HO from NR to LTE is to optimize the RLM related timers (T310/T312) in the source NR cell. For T304, it is configured by the target LTE cell and shouldn’t be treated at this stage. |

**Moderator Summary:**

Option 1 (6/10), Option 2 (4/10)

No consensus on T304 related trigger. So, the moderator proposes to at least agree T310 and T312 related triggers. T304 can be FFS

Since it is not clear to RAN3 whether T304 trigger should be supported for inter-RAT SHR from NR to LTE as this might have LTE RRC specification impacts and there are parallel discussions in RAN2, it is proposed to send an LS to RAN2 to check.

**Proposal 1: T310 and T312 related triggers are to be considered for inter-RAT SHR from NR to LTE.** **LS to RAN2 to check whether T304 trigger for inter-RAT SHR from NR to LTE is also to be considered.**

### Encoding of inter-RAT SHR (NR to LTE)

SS: Ifthe save of the SHR is due to the target configuration, UE saves SHR in target RAT format.

SS: If the store of the SHR is due to the source configuration, the UE saves SHR in source RAT format.

Len: Proposal 2: How to encode the SHR for intra-system inter-RAT HO depends on RAN2 progress.

QC, Proposal 9: For inter-RAT SHR from NR to LTE, UE should encode the Inter-RAT SHR in the source RAT (i.e., NR) format and should indicate its availability (and further report it) only upon coming back to the same RAT (NR)

**Q2: Companies are requested to provide their preference among the following 2 options (this can also be confirmed with RAN2):**

* **Option 1:** Inter-RAT SHR is encoded in source RAT format
* **Option 2:** Inter-RAT SHR is encoded based on the SHR trigger (SS’s proposal)

|  |  |  |
| --- | --- | --- |
| Company | Option 1 or 2 | Comment |
| Samsung | Option 2 | Option 2 is reasonable from technical point of view. If the store of SHR is due to the source configuration, it should be the source node to make the optimization. Inter-RAT SHR should be encoded in the source RAT format so that the source node can decode and analyze it, then make the optimization. If the store of the SHR is due to the target configuration, it should be the target node to make the optimization. So Inter-RAT SHR should be encoded in the target RAT format so that the target node can decode and analyze it, then make the optimization.  Actually, Option 1 follows the principle of Option 2. Option 1 proposed by QC is based on the assumption that only T310 and T312 thresholds are considered. T310/T312 are configured by the source so Inter-RAT SHR is encoded in source RAT format. So we think we can check whether the following principle could be agreed by RAN3:  Inter-RAT SHR is encoded based on the SHR trigger. |
| Nokia | ? | It feels like having different encoding depending on the condition is problematic for the UE and imposes decision on the network (like if UE encoded it according to the target’s RAT, the report can’t be used elsewhere).  But it should rather be decided in RAN2, we think. |
| Qualcomm | Option 1 (and ask RAN2 in LS) | Same view as Nokia. Asking UE to do different encoding depending on configured thresholds seems very complex.  Even if T304 trigger is to be supported, this can be configured by source NR node (after Xn/NG coordination with target LTE node) in NR RAT format. See Alt 2 in our comment on Q1 for more details.  OK to discuss this directly in RAN2, but we want to highlight that Option 2 is not practical at the UE.  We can ask this in our LS to RAN2. |
| Lenovo | Option 2 | Agree with SS, it is suitable for the node which generates SHR trigger condition that triggers the inter-RAT SHR to perform root cause analysis, so Option 2 is preferred without decoding issue. We also find that RAN2 is discussing this issue, we are fine to check with RAN2. |
| Huawei |  | Encoding of SHR seems to be in the scope of RAN2. Traditionally, they will be stored it in according to serving node when report is constructed. There is impact from Q1 above. We think we need to ask RAN2, once the Q1 is agreed. |
| Intel |  | Related to Q1. Leave this issue to RAN2 to decide. |
| CATT | Option 1 | We think LTE specification shall not be impacted. For handover from NR to LTE, NR format should be used, i.e. source RAT. |
| ZTE | Option 2 (and ask RAN2 in LS) | Related to Q1. Leave this issue to RAN2 to decide. |
| Ericsson |  | If only T310/T312 are configured, both options are similar. Prefer to wait until Q1 is answered |
| China Telecom |  | It should be decided by RAN2. |

**Moderator summary:**

Majority companies want to check with RAN2. So, the moderator proposes to RAN3 therefore have the following questions:

**Proposal 2: LS to RAN2 to check the encoding of inter-RAT SHR. Ask RAN2 whether the inter-RAT SHR is always encoded in source RAT format or can be encoded based on the RAT format in which it received the inter-RAT SHR configuration**

### Reporting NR SHR to LTE node

E///, Proposal 1.3: Inter-RAT SHRs are fetched by gNBs but not eNBs

Intel, Proposal 3: The target LTE node transfers the receiving SHR to the source NG-RAN node by triggering the DOWNLINK RAN CONFIGURATION TRANSFER procedure over NG or ACCESS AND MOBILITY INDICATION procedure over Xn.

CATT, Proposal 1: It is proposed to send SHR directly to source RAN node in case that only source cell needs optimization after SHR is retrieved by NR RAN.

QC, Proposal 9: For inter-RAT SHR from NR to LTE, UE should encode the Inter-RAT SHR in the source RAT (i.e., NR) format and should indicate its availability (and further report it) only upon coming back to the same RAT (NR)

Len, Proposal 5: Reuse the ACCESS AND MOBILITY INDICATION message to transfer intra-system inter-RAT SHR.

CT, Proposal 1: Change the current SHR to a CHOICE structure to include both NR SHR and LTE SHR for NGAP, XnAP and F1AP.

SS: Similar like RLF report, LTE SHR can be reported to a gNB

**Q3: Companies are requested to provide their preference among the following 3 options:**

* **Option 1:** It is sufficient to report the inter-RAT SHR collected during a successful NR🡪 LTE handover once UE is back to NR (no need to report to LTE node)
* **Option 2:** Inter-RAT SHR collected during a successful NR🡪 LTE handover can be retrieved by the target LTE node and forward it to source NR node via Xn/NG signalling.
  + In this option, UE needs to include the Source NR Cell Id outside the SHR container in the inter-RAT SHR sent to the target LTE node
* **Option 3:** The same principle as RLF Report: NR SHR and LTE SHR could be reported to NR node, LTE SHR is reported to LTE node.

|  |  |  |
| --- | --- | --- |
| Company | Option 1 or 2 or 3 | Comment |
| Samsung | Option 3 | It’s straight forward that NR SHR is reported to NR node, LTE SHR is reported to LTE node. For RLF Report, RAN2 has agreed that LTE RLF report can be reported to NR node. This gives more flexibility for the network node to get the report on time. The same principle could be used for SHR reporting. |
| Nokia |  | Historically, it was RAN2 to decide when the UE makes the report available – we only enable possible transfer to the relevant node. |
| Qualcomm | Option 1 | There is no urgency to retrieve the SHR by the target LTE node and report it back to source NR node via Xn/NG signaling (this would also need identification of source NR cell by target LTE node for proper forwarding). SHR can be reported once back to the same RAT. Hence, Option 1 is sufficient.  Option 2 is just unnecessary signaling and support without much benefit.  Unlike RLF Report, we don’t have LTE SHR in the first place. Hence Option 3 (reporting LTE SHR to LTE node or LTE SHR to NR node) itself is questionable to be supported in Rel-18. |
| Lenovo | See comments | Q3 somehow depends on Q2, we should discuss Q2 first.  On other hand, before discussing the two options, we should first discuss the forwarding mechanism at network side, e.g. the receiving node forwards the SHR to source NR node, then source NR node forwards the SHR to target LTE node? Or, the receiving node forwards the SHR to target LTE node, then target LTE node forwards the SHR to source NR node? Or, the receiving node forwards the SHR to corresponding node which generates the SHR trigger condition that triggers the inter-RAT SHR?  In Option 1, there is a possibility that the UE is not back to NR but the inter-RAT SHR has been stored at the UE for 48 hours, if so, the inter-RAT SHR is released and can’t be reported. It seems that Option 1 can’t work well. |
| Huawei |  | RAN2 need to decide this. This is related to Q1+Q2. The impact on RAN3 is only how to forward the information once the network has retrieved it. |
| Intel | Option 2 | Same view with Lenovo. There is no guarantee that after how long the UE will be back to a NR node, and thus it’s a possibility that the UE will release the non-retrieved measurement logs after 48 hours. So, if option 1 is adapted, the optimization could be less effective than expected.  The forwarding solution depends on which node the UE reports the inter-RAT SHR to. |
| CATT | Option 1 | We do not want to enhance LTE specification to support retrieving NR SHR. |
| ZTE | Option 2 | We support option2. Agree with Lenovo, Option 1 can’t work well, inter-SHR may be discarded before the UE moves back to NR.  We also can accept option3. |
| Ericsson | Option 1 | But ok to let RAN2 decide if this is the majority view |
| China Telecom | Option 2 | There is no guarantee that the UE will reconnect to the NR cell before the UE releases the SHR report, so we think the SHR should be reported to the target LTE cell once UE successfully accesses, and then forward to the source NR cell for optimization. |

**Moderator summary:**

* Option 1 (3/10)
* Option 2 (3/10)
* Option 3 (1/10)
* Up to RAN2 (2/10)
* Depends on Q2 (1/10)

Some companies’ view is that this depends on Q1 and Q2. Also, some companies want to check this with RAN2. The moderator proposes the following:

**Proposal 3: LS RAN2 to check whether it is sufficient for UE to report the inter-RAT SHR collected during a successful NR to LTE handover once UE is back to NR (i.e., no need to report to LTE node) or whether the LTE node should have the capability to retrieve the inter-RAT SHR from NR to LTE**

Also, some companies mentioned about “LTE SHR” and about reporting LTE SHR to LTE node. It is not clear to the moderator whether intra-LTE SHR is to be supported and if it is in the objective of the WID.

**Proposal 4: LS RAN2 to check whether intra-LTE Successful HO Report is to be supported**

Also, some companies mentioned that RAN3 should discuss the forwarding mechanism for inter-RAT SHR (also this might have dependencies with Rel-17 intra-NR SHR forwarding if we want a unified solution). The moderator therefore proposes the following:

**Proposal 5: RAN3 should discuss the forwarding mechanism at network side for inter-RAT SHR from NR to LTE (other options are not precluded):**

* **Option 1: The receiving node forwards the inter-RAT SHR to source NR node, then source NR node forwards the inter-RAT SHR to target LTE node**
* **Option 2: The receiving node forwards the inter-RAT SHR to target LTE node, then target LTE node forwards the inter-RAT SHR to source NR node**
* **Option 3: The receiving node forwards the inter-RAT SHR to corresponding node which generates the SHR trigger condition that triggers the inter-RAT SHR**

Whether the receiving node can be an LTE node or NR node, or both depends on RAN2 decision

### Parameters for inter-RAT SHR (NR to LTE)

SS: The parameters defined for intra-NR SHR can be reused for inter-RAT SHR except the Timer from CHO configuration to execution which is only used for intra-NR handover case.

HW, Observation 5: For the HO from NR to LTE, RAN2 is requested to provide the following successful handover information in LTE:

• Source NR cell info and target LTE cell info

• Measurement results for source, target and neighbours

• Shr-cause to indicate which triggering condition was met

• UE information, e.g., C-RNTI

**Q4: Companies are requested to provide their views on which parameters to include in inter-RAT SHR (NR🡪 LTE). This can be confirmed with RAN2 via an LS.**

1. Source NR cell info and target LTE cell info
2. Measurement results for source, target and neighbours
3. Shr-cause to indicate which triggering condition was met
4. UE information, e.g., C-RNTI
5. Time from CHO configuration to execution
6. SHR cause
7. Mobility information
8. Location information
9. time between HO execution and SHR retreival

|  |  |  |
| --- | --- | --- |
| Company | Support among a) to i) | Comment |
| Samsung | a, b, c, d, f | e is not valid because CHO is only used for intra-NR handover. |
| Nokia | a, b, c/f, d | But: for inter-RAT, time after the HO may be longer, so instead of C-RNTI, the Mobility Information could be included;  Point (f) is the same as ©, isn’t it? |
| Qualcomm | a, b, c/f, d, h, g | **To Nokia:** We already support target C-RNTI for SHR in Rel-17, so why not use it for inter-RAT SHR as well? Also, the proposed Mobility Information is only over RAN3 interfaces right – are you proposing to send it over Uu? If Uu, we don’t support it. |
| Lenovo | a, b, c/f, d, h | For e, no, since only intra-NR CHO is supported. |
| Huawei | a, b, c/f, d, h,i | **Detailed comments:**  d+i: we need *source C-RNTI* information and *time between HO event and report*. This is in order to enable correlation between report and event. Whether *target C-RNTI* is needed depends on Q1.  g: UE does not have mobility information.  e: not needed – no inter RAT CHO |
| Intel | a, b, c/f, d, h | In general, we think the existing *SuccessHO-Report* IE can be reused. Need RAN2 decision. |
| CATT | a)b)c)d)h) | a)b)c)d)h) is in legacy SHR.  For e), CHO is not supported in inter-RAT handover.  For g), focus on the difference introduced by inter-RAT. |
| ZTE | a,b,c(f),d,h |  |
| Ericsson | a, b, c/f, d, h, i | Need to define what is d) exactly  e) is not supported |
| China Telecom | a, b, c/f, d, h |  |

**Moderator summary:**

a (10/10), b (10/10), c/f (10/10), d (10/10), e (0/10), g (1/10), h (8/10), i (2/10)

* a, b, c/f, d got support from all companies
* h was added only after 1st two companies provided input; therefore, considered as well
* g is not considered as FFS as there was no other support
* i can be an FFS as this is also being discussed in forwarding for intra-RAT SHR

**Proposal 6: RAN3 thinks that the following parameters can be useful for optimizing inter-RAT successful handover from NR to LTE. LS RAN2 to confirm and request support. Whether the existing IEs defined in Rel-17 for intra-NR SHR can be reused is up to RAN2 decision.**

* **Source NR cell information**
* **Target LTE cell information**
* **Measurement results for source, target and neighbours**
* **Cause to indicate which inter-RAT SHR triggering condition was met**
* **Target C-RNTI (only needed if T304 trigger is supported)**
* **UE location Information**

**Proposal 7: The time from CHO configuration to execution is not needed to be included in inter-RAT SHR. LS RAN2 to confirm.**

**Proposal 8: FFS whether to also include the following in inter-RAT SHR from NR to LTE**

* **Time between HO execution and SHR retrieval**
* **source C-RNTI**

### Inter-RAT SHR (LTE to NR)

HW, Proposal 1: For intra-system inter-RAT SHR, HO from LTE to NR should be supported.

CATT, Proposal 3: Without impact on LTE, SHR configuration of thresholdPercentageT304 can be sent to UE and SHR can be generated during HO from LTE to NR. We may wait for RAN2’s progress for SHR for intra-system inter-RAT, HO from LTE to NR.

**Q5: Companies are requested to provide their views on whether to support inter-RAT SHR (LTE🡪 NR)**

|  |  |  |
| --- | --- | --- |
| Company | Yes/No | Comment |
| Samsung | Yes | Seamless handover should be supported in the whole network, not only one direction. Some users may prefer to access NR with priority whenever possible e.g. for better throughput. It’s important to guarantee good QoE of the UE for handover from LTE to NR. |
| Nokia | ? | We are fine to consider it, but since reasons for triggering of such a HO may be different, the content of the report must be analysed separately (i.e. we can’t simply copy the report defined for NR to LTE HO). |
| Qualcomm | Not yet | Optimizing T310/T312 timers in source LTE node seems of little benefit because of the absence of beam-based structure in LTE. Also, this would require the support of defining a SHR configuration in LTE (TS 36.331).  We agree with CATT Proposal 3 that SHR configuration of thresholdPercentageT304 can be sent to UE without LTE impact (by sending it in *MobilityFromLTE* command), but we are not sure how UE generates and stores SHR in this case – can it encode it in the target RAT (NR) format and store it in a UE variable without any spec impacts? |
| Lenovo | Not yet | We should discuss inter-RAT SHR from NR to LTE first. |
| Huawei | Yes | If we can agree on Q1, we can make an agreement aligned with that and only consider T304 as triggering condition.  Generating the report according to target RRC seems easier (this is what we do in RLF) but this is something RAN2 need to decide. One option is to ask RAN2 to get their view on the impact, given that only T304 is used as triggering condition. |
| Intel |  | No strong opinion. If time allows, we’re ok to include it. |
| CATT | Yes | The handover from LTE to NR still has no impact on LTE specification. So, we think it should be supported.  No matter handover from NR to LTE or from LTE to NR, UE shall record the inter-RAT SHR in NR format. |
| Zte | yes | We are fine to consider it. |
| Ericsson | Not yet | Should be deprioritized. The WID allows for the development of Inter-RAT SHR for the improvement of NR, but not for the improvement of E-UTRA |
| China Telecom | Neutral | If time allows, we are fine to support inter-RAT SHR from LTE to NR. But at this stage, we should focus on inter-RAT SHR from NR to LTE. |

**Moderator summary:**

Yes (4/10), Not yet (4/10), Neutral (2/10)

There is no consensus, and the moderator proposes to capture the below as open issue for discussion in future meetings.

**Proposal 9: FFS whether and how to support inter-RAT SHR from LTE to NR in Rel-18. RAN3 can evaluate the following and discuss whether this needs to be supported in Rel-18**

* **Motivation and scope (e.g., is optimizing LTE also in scope of the Rel-18 WID?)**
* **Trigger conditions (e.g., can we restrict to only T304 to limit LTE impacts)**
* **Encoding of** **inter-RAT SHR from LTE to NR**
* **Parameters to be included in inter-RAT SHR from LTE to NR**

## Successful PSCell Change Report (SPCR)

RAN3 agreed on the following scope for SPCR in R3#117e:

SPCR for NR-DC, including: ​

* SN- and MN-initiated classic PSCell change / CPC​
* intra-SN classic PSCell change / CPC​
* classic Addition / CPA​
* HO with SN change are not prohibited, but possibly addressed once the basic solution for SPCR is known.​

In this meeting, we will discuss further details on SPCR in the following sections.

### LS to RAN2 on triggers for SPCR and contents of SPCR

**Triggers for SPCR**

QC, Proposal 1: Similar to successful handover report, RAN3 agrees to optimize RLM timers (T310/T312) of SCG and detect near PSCell change failures (optimize T304 timer of SCG) for optimizing successful PSCell change scenarios in NR-DC

QC, Proposal 2: **LS RAN2** to check whether similar thresholds as defined for SHR (T310/T312/T304 thresholds) can be defined for optimizing successful PSCell change scenarios in NR-DC

HW, Observation 6: SPCR triggering conditions should be **considered in RAN2.**

**Contents of SPCR**

E///, Proposal 2.1: Source PSCell, PCell and target PSCell Cell Global Identities (CGI) are included in the SPR. RAN2 should be informed of this decision

E///, Proposal 2.2: SPR includes information that PSCell change was MN-initiated or SN-initiated. RAN2 should be informed of this decision

HW: Send LS to RAN2 to discuss the potential information provided in the SPCR

o Source PSCell information, in case of PSCell change/CPC

o target PSCell information

o SPCR cause

o Latest measurement results

o PCell information, in case of MN initiated PSCell change/CPC

o Time elapsed between the CPC execution and the reception of the CPAC configuration in case of CPC

**Q6: Whether RAN3 can send an LS to RAN2 to check further on the following regarding SPCR:**

1. Triggers for SPCR (e.g., T310/T312/T304 of SCG)
2. The reporting of SPCR (delayed or immediate)
3. Potential contents of SPCR (final decision up to RAN2)
4. Source PSCell information, in case of PSCell change/CPC
5. Target PSCell information
6. SPCR cause
7. Latest measurement results
8. PCell information, in case of MN initiated PSCell change/CPC
9. Time elapsed between the CPAC execution and reception of CPAC configuration, in case of CPAC
10. Information that PSCell change was MN-initiated or SN-initiated
11. Location information of the UE
12. time between CPC execution and report retrieval
13. C-RNTI (MN, target SN, source SN)

|  |  |  |
| --- | --- | --- |
| **Company** | **Yes/No for 1, 2 and 3a)- 3g)** | **Comment** |
| Samsung | Yes for 1), 2) and 3a, 3b), 3c), 3d), 3f), 3g), 3h) | For 3e), it’s depending on whether the reporting of SPCR is immediate or delayed. If the reporting is immediate i.e. similar as SCGFailureInformation, then 3e) is not needed. |
| Nokia | Yes for 1, 3a, 3b, 3c, 3d, 3f, 3g |  |
| Qualcomm | All except 3e), 3f) and 3g) | Not sure on the need for 3e)  3f) Wait for progress on MRO for CPAC  3g) is NOT needed as UE doesn’t know whether PSCell Change was MN initiated or SN initiated |
| Lenovo | All except 3e), and 3g) | 3e) needs more discussion.  3g) is not needed since UE doesn’t know whether PSCell change was MN or SN initiated. |
| Huawei | All a)-j) | For i+j) similar is for SHR above, this depends a bit on the reporting mechanism in RAN2. If we use a delayed report (like RLF, SHR) we need this time to correlate an event and a report.  For e) Depends on the reporting mechanism. |
| Intel | 3) a, b, c, d, f, h |  |
| CATT | 1) | For 1), we think it is up to RAN2.  For 2), it is RAN3 to decide.  For 3), RAN3 shall make first analysis. If SPCR is not sent to network immediately, i.e. UE context may have been removed, a)-h) is needed for MRO analysis. |
| ZTE | Yes for 1), 2)  3a,b,c,d,f,h |  |
| Ericsson | Yes for 1), 3) a, b, c, d, e, f, g, h, i/j (FFS) | Some parameters from 3) also depends on 2) |
| China Telecom | Yes for 1) 2) 3 a, b, c, d, e, f, g, h |  |

**Moderator Summary:**

Majority agrees with 3a), 3b), 3c), 3d), 3f)

3e) – 4/10, 3g) – 6/10, 3h) – 8/10, 3i)/j) – (1/10)

The moderator notes that a parallel discussion is happening in RAN2 on the contents of SPCR and an LS to RAN2 on the content and triggers for SPCR is not needed if RAN2 already agrees.

The following is therefore proposed:

**Proposal 10:** The following can included as part of SPCR (parallel discussion happening in RAN2 as well, no need to LS RAN2 if already agreed in RAN2)

* 1. Source PSCell information, in case of PSCell change/CPC
  2. Target PSCell information
  3. SPCR cause
  4. Latest measurement results
  5. Location information of the UE
  6. Time elapsed between the CPAC execution and reception of CPAC configuration, in case of CPAC

**Proposal 11: FFS whether to also include in Successful PSCell Change Report:**

* **PCell information, in case of MN initiated PSCell change/CPC**
* **Information that PSCell change was MN-initiated or SN-initiated**
* **Time between CPC execution and report retrieval**
* **C-RNTI (MN, target SN, source SN)**

However, the moderator proposes to LS RAN2 and check on the reporting of SPCR (delayed vs. immediate) as that impacts the forwarding mechanism and backhaul signaling in RAN3.

Proposal 12: LS RAN2 to check the reporting of SPCR (delayed or immediate). Ask RAN2 whether the SPCR can be stored at the UE and sent later or is sent immediately after the successful PSCell change or addition.

### Configuring T310 and T312 triggers for SPCR

Observation 2-3: MN cannot configure a meaningful T310 and T312 threshold in SPCR configuration, as MN is unaware of T310 and T312 timer value configured by the SN during connection establishment.

NOK, Proposal 1: Coordination between MN and SN is needed for the MN to properly configure SPCR.

NOK, Proposal 2: SN may provide the MN with the currently used values for T310/T312 by means of the MN-initiated modification (S-NODE MODIFICATION REQUEST ACKNOWLEDGE) or SN-initiated SN Change (S-NODE CHANGE REQUIRED).

NOK, Proposal 4: SN may indicate its preferences in terms of T310/T312 thresholds to the MN via the SN change required message in case of SN initiated PSCell change

NOK, Proposal 5: MN may inform the SN with regard to the used SPCR configuration via the SN Change Confirm message

ZTE, Proposal 4: Source SN or SN provides SPCR configuration (e.g., Thresholds of T312/T310) in the following user cases: SN initiated classic PSCell change, SN initiated CPC, MN-initiated classic PSCell change, MN-initiated CPC, intra-SN classic PSCell change, intra-SN CPC.

ZTE, Proposal 5: MN provides SPCR configuration (e.g., Thresholds of T312/T310) in the following user cases: Classic Addition, CPA.

QC, Proposal 4: In case of MN initiated successful PSCell Change/CPC and classical Addition/CPA, MN generates the Successful PSCell Change configuration and configures the UE with SPC configuration. MN is also responsible for performing the SPC related optimizations

QC, Proposal 5: In case of SN initiated successful PSCell Change/CPC, SN (whether S-SN or T-SN depends on the timers) generates the Successful PSCell Change configuration, forwards it to the MN, which then configures it to the UE. SN is also responsible for performing the SPC related optimizations

QC, Proposal 6: Even in case of intra-SN initiated successful PSCell Change, SN (whether S-SN or T-SN depends on the timers) generates the Successful PSCell Change configuration, forwards it to the MN, which then configures it to the UE via SRB1. SN is also responsible for performing the SPC related optimizations

Considering the above proposals, the moderator would like to propose the following options for configuring T310 and T312 triggers for SPCR (assuming RAN2 supports it) for different SN addition/change scenarios. T304 triggers can be discussed later (e.g., in Phase-II or next meeting).

**Case 1: Classic Addition/CPA:**

Option 1: MN decides the T310 and T312 triggers for SPCR autonomously (without any SN coordination) and configures it to the UE

Option 2: SN provides MN with the currently configured values of T310/T312 for SCG e.g., during SN addition (S-NODE ADDITION REQUEST ACKNOWLEDGE). MN then decides the T310 and T312 triggers for SPCR and configures it to the UE

Option 3: Source SN decides the T310 and T312 thresholds, forwards it to the MN over a transparent container, which then configures it to the UE.

**Case 2: MN-initiated classic PSCell change / MN-initiated CPC**

Option 1: MN decides the T310 and T312 triggers for SPCR autonomously (without any SN coordination) and configure it to the UE

Option 2: SN provides MN with the currently configured values of T310/T312 for SCG e.g., by means of the MN-initiated modification (S-NODE MODIFICATION REQUEST ACKNOWLEDGE). MN then decides the T310 and T312 triggers for SPCR and configures it to the UE

Option 3: Source SN decides the T310 and T312 thresholds, forwards it to the MN over a transparent container, which then configures it to the UE.

**Case 3: SN initiated classic PSCell change / SN initiated CPC**

Option 1: Source SN decides the T310 and T312 thresholds, forwards it to the MN over a transparent container, which then configures it to the UE

Option 2: SN provides MN with the currently configured values of T310/T312 for SCG by means of SN-initiated SN Change (S-NODE CHANGE REQUIRED). SN may further indicate its preferences in terms of T310/T312 thresholds to the MN, but MN has the final say in deciding the T310/T312 triggers for SPCR and informs SN on the configured triggers

**Case 4: Intra-SN classic PSCell change / intra-SN CPC**

Can be discussed once there is consensus on Case 1-3.

**Q7: Companies are requested to provide their views and preferences (Option 1 or 2) on how to configure T310 and T312 triggers for SPCR in Case 1-3:**

|  |  |  |
| --- | --- | --- |
| Company | Option 1 or 2 for Cases 1-3 | Comment |
| Samsung |  | For Case 3, our preference is Option 1  For Case 1 and Case 2, we need to consider more about whether Option 2 or Option 3. To decide which option is better, the main question is that the nearly failure is brought by the inappropriate timer setting or the SN addition/change is not triggered in proper time. |
| Nokia | Opt 2, possibly opt 3 |  |
| Qualcomm | Case 1 – Opt 3  Case 2 – Opt 3  Case 3 – Opt 1 | On Samsung’s comment, we think SPCR is mainly collected to optimize inappropriate RLM timer settings in SCG (e.g., improper T310/T312) and not collected to optimize SN change/addition timepoints. So irrespective of which node triggers SN change (MN-initiated or SN-initiated) or SN addition, source SN which configures the T310/T312 timers of SCG should also configure the SPCR triggers for T310/T312.  Thereby, the following unified solution can be used for cases 1-3:  **Source SN decides the T310 and T312 thresholds, forwards it to the MN over a transparent container, which then configures it to the UE** |
| Lenovo | Option 1 | We prefer the node which initiates classic PSCell change/CPC/classic addition/CPA that decides the T310 and T312 triggers for SPCR. |
| Huawei | Option 1 | We think the optimization T310 and T312 is done by the triggering node. Therefore option1 makes sense.  For T304, the optimization is done by the target node and the target node sets the triggering conditions. However we miss the discussion of T304 in this comeback. |
| Intel | Option 1 |  |
| CATT | See comment | For Case 1: Classic Addition/CPA, there is no source SN before SN addition, so, we think T310 and T312 triggers for SPCR is not needed to detect source SN underlying RLF.  For case 2-4: CPC, considering source SN configure T310/T312 related configuration and target SN configure T304, T310 and T312 triggers for SPCR shall be configured by source SN while T304 triggers for SPCR shall be configured by target SN.  Which node configures threshold for SPCR and which node initiate CPA/CPC, we think it is two different issue. We shall discuss these two issues separately. |
| ZTE |  | For case 1: Option 1, since there is no source SN  For case 2&3, Option 2 or option 3 |
| Ericsson | See comment | As a general comment, how to configure the UE i.e. in which RRC message the configuration is included, should be decided by RAN2  Looking at above answers, it seems that we first need to decide if triggers/thresholds are configured by:  1. the initiating node i.e. MN for MN initiated CPA  2. the node configuring the timer  Case 1: Thresholds set for the T310 and T312 are not applicable to PSCell addition (only PSCell change) |
| China Telecom |  | For case 1: Option 1 is acceptable.  For case 2: FFS on Option 2 or option 3.  For case 3: FFS on Option 1 or option 2. |

**Moderator summary:**

There are contrasting views on which node decides the SPCR thresholds and the objective of SPCR. The moderator therefore created a summary below based on the discussion and the moderator’s understanding:

|  |  |
| --- | --- |
| **Objective of SPCR is to optimize T310/T312/T304 configuration** | **Objective of SPCR is to optimize PSCell change configuration** |
| The node which configures the timers decides the SPCR thresholds | The node which initiates the SN change decides the SPCR thresholds |
| **MN initiated SN change/CPC:**  Source SN configures T310/T312 and therefore decides the T310/T312 related SPCR trigger  Target SN configures T304 and therefore decides T304 related SPCR trigger | **MN initiated SN change/CPC**  MN initiates the SN change and therefore decides the T310/T312/T304 related SPCR thresholds |
| **SN initiated SN change/CPC** (same as above)  Source SN configures T310/T312 and therefore decides T310/T312 related SPCR trigger  Target SN configures T304 and therefore decides T304 related SPCR trigger | **SN initiated SN change/CPC**  Source SN initiates the SN change and therefore decides the T310/T312/T304 related SPCR thresholds |
| **Classic PSCell change addition/CPA:**  Target SN configures T304 and therefore decides the T304 related SPCR trigger | **Classic PSCell change addition/CPA:**  MN initiates the PSCell change addition or CPA and therefore decides the T304 related SPCR trigger |
| The node which configures the timers should perform the root cause analysis | The node which initiates the SN change decides should perform the root cause analysis |

**Proposal 13: FFS whether the objective of SPCR is to optimize T310/T312/T304 configuration or to optimize PSCell change/addition configuration**

* **If the objective of SPCR is to optimize T310/T312/T304 configuration, the node which configures the timers decides the SPCR thresholds**
* **If the objective of SPCR is to optimize PSCell change configuration, the node which initiates the PSCell change/addition decides the SPCR thresholds**

Also, some companies highlighted that in case of Classic SN Addition/CPA, T310 and T312 triggers for SPCR are not needed to detect source SN undergoing RLF (as there is no source SN before SN addition). The moderator therefore proposes the following:

**Proposal 14: T310 of SCG and T312 of SCG are not considered as SPCR triggers for classic PSCell addition or CPA (since there is no source SN undergoing RLF). LS RAN2 to confirm**

### Root cause analysis for SPCR

Len, Proposal 3: If successful PSCell addition/change report is triggered due to T304 trigger threshold is fulfilled, MN may forward the successful PSCell addition/change report to target SN for root cause analysis.

Len, Proposal 4: In case of MN initiated PSCell change or CPC, if successful PSCell change report is triggered due to T310 or T312 trigger threshold is fulfilled, MN performs root cause analysis.

Len, Proposal 5: In case of SN initiated PSCell change or CPC, if successful PSCell change report is triggered due to T310 or T312 trigger threshold is fulfilled, MN may forward the successful PSCell change report to source SN for root cause analysis.

QC, Proposal 4: In case of MN initiated successful PSCell Change/CPC and classical Addition/CPA, …..MN is also responsible for performing the SPC related optimizations

QC, Proposal 5: In case of SN initiated successful PSCell Change/CPC, SN… is also responsible for performing the SPC related optimizations

ZTE, Proposal 6: NG-RAN nodes should transport report to the MN where SPCR occur.

ZTE, Proposal 7: MN should transport report to the source SN in the following user cases: SN initiated classic PSCell change, SN initiated CPC, MN-initiated classic PSCell change, MN-initiated CPC, intra-SN classic PSCell change, intra-SN CPC.

QC, Proposal 7: In case of SN initiated successful PSCell Change (including intra-SN case), MN forwards the SPCR to the SN via Xn upon receiving the SPCR from UE. It is FFS whether to reuse an existing Xn message or define a new Xn message

HW, Proposal 6: The forwarding of SPCR depends on the reporting scheme to be decided in RAN2.

CT, Proposal 3: For SN-initiated PSCell change, the RRC TRANSFER message can be reused to transmit the SPCR over Xn interface from MN to the Source SN.

Based on the above proposals, the moderator proposes the following on which node should perform root cause analysis in different SN addition/change scenarios:

**Moderator Proposal 1:** In case of classic SN addition or CPA, if SPCR is triggered due to T310 or T312 trigger threshold being fulfilled, MN performs root cause analysis

**Moderator Proposal 2**: In case of MN initiated PSCell change or MN initiated CPC, if SPCR is triggered due to T310 or T312 trigger threshold being fulfilled, MN performs root cause analysis

**Moderator Proposal 3:** In case of SN initiated PSCell change or SN initiated CPC, if SPCR is triggered due to T310 or T312 trigger threshold being fulfilled, MN may forward the SPCR to Source SN for root cause analysis

**Q8: Companies are requested to provide their views on Moderator Proposals 1-3 and whether they agree or not (Yes/No)?**

|  |  |  |
| --- | --- | --- |
| Company | Yes/No on Mod Proposals 1-3 | Comment |
| Samsung | Yes for P3. | For SN addition or CPA or MN initiated PSCell change, the nearly failure could be brought by the inappropriate setting of the T310/T312? In this case, the (source) SN should be involved for root cause analysis? |
| Nokia | Yes |  |
| Qualcomm | Yes for P3  P1 & P2 – Source SN should perform root cause analysis  (see Alternative Proposal) | The node which decides the T310 and T312 triggers for SPCR (source SN as per our comment in Q7) should also perform the root cause analysis  Rather than MN, Source SN should perform the root cause analysis in P1 and P2  **Alternative Proposal: If SPCR is triggered due to T310 or T312 trigger threshold being fulfilled, source SN performs the root cause analysis in all these scenarios:**   * **classic SN addition or CPA** * **MN initiated PSCell change or MN initiated CPC** * **SN initiated PSCell change or SN initiated CPC** |
| Lenovo | Yes |  |
| Huawei | Yes |  |
| Intel | Yes |  |
| CATT | See comments | For P1, as discussed in Q7, we do not think SPCR will be triggered due to T310 or T312 in CPA due to no source SN.  For P2 and P3, we may first confirm the objective of SPCR, i.e. optimization for handover configuration or t310/t312 configuration? If it is T310/t312 configuration, the node which configures T310/t312 shall perform root cause analysis. If it is handover configuration to be optimized, maybe it is the node which initiates CPC/CPA. We tend to agree that the handover configuration optimization is the purpose of SPCR.  We propose to first decide the objective for SPCR, and then discuss this question. |
| ZTE | Yes | For Alternative Proposal, there is no source SN for classic SN addition. |
| Ericsson | See comment | See comment on Q7, and agree with CATT. We first need to decide if triggers/thresholds are configured by:  1. the initiating node i.e. MN for MN initiated CPA  2. the node configuring the timer  Root cause analysis should be done by the node configuring the trigger/threshold. |
| China Telecom | Yes |  |

**Moderator Summary:**

Since this question is related to the previous question, the moderator makes a generic proposal below:

**Proposal 15: Root cause analysis for SPCR should be done by the node deciding the SPCR trigger.**

### Retrieving SPCR

CATT, Proposal 5: It is proposed for RAN3 to discuss which RAN node can retrieve PSCell SHR (MN or SN)?

E///, Proposal 2.3: If UE is still in DC operation, only the MN is allowed to fetch the SPR

E///, Observation 2.3: MN is not aware that an SPR is available in the UE

E///, Proposal 2.4: SN signals SPR availability to the MN via Xn interface, at reception of the RRCReconfigurationComplete indicating that an SPR is available at the UE

The moderator apologizes for going over the limit of 8 questions. But feel free to reply to Q9 if you can.

**Q9: Companies are requested to provide their views on which node (MN or SN) should retrieve SPCR from UE?**

|  |  |  |
| --- | --- | --- |
| Company | MN or SN | Comment |
| Samsung |  | It depends on which message the UE will indicates the availability and which message is used for the reporting. We prefer to leave this issue to RAN2. |
| Nokia |  | Historically, it was up to RAN2 to decide when the UE can provide the report. |
| Qualcomm | MN | OK to discuss this in RAN2 |
| Lenovo | MN | OK to discuss this in RAN2 |
| Huawei | MN | Should be discussed in RAN2 |
| Intel | MN |  |
| CATT | MN | We prefer MN to SN for the following reason:  1. UE may be not in DC after SPCR generated. It may be not suitable for UE to wait DC setup and then send SPCR to network.  2. If SN fetching SPCR, it is hard for SN to send SPCR back to SN in which SPCR generated. |
| ZTE | MN | OK to discuss this in RAN2 |
| Ericsson | MN | This will probably have an impact on RAN3 (depending on the availability flag decided by RAN2). RAN3 can give guidance to RAN2 |
| China Telecom | MN |  |

**Moderator Summary:**

**Proposal 16: Send LS to RAN2 to check which node (MN or SN) retrieves the SPCR from the UE.**

# Conclusion, Recommendations

If needed

# References

|  |  |  |
| --- | --- | --- |
|  |  |  |
| [1] | [R3-225384](file:///D:\会议硬盘\TSGR3_117bis-e\Docs\R3-225384.zip) | SON enhancement for Successful Handover Report and Successful PSCell Change Report (Samsung) |
| [2] | [R3-225393](file:///D:\会议硬盘\TSGR3_117bis-e\Docs\R3-225393.zip) | [TP to 38.423, SON] Configuration coordination for the successful PSCell change report (Nokia, Nokia Shanghai Bell) |
| [3] | [R3-225405](file:///D:\会议硬盘\TSGR3_117bis-e\Docs\R3-225405.zip) | Successful PSCell Change Report and inter-RAT Successful Handover Report (Qualcomm Incorporated) |
| [4] | [R3-225424](file:///D:\会议硬盘\TSGR3_117bis-e\Docs\R3-225424.zip) | Discussion on support of SHR and SPCR (China Telecommunication) |
| [5] | [R3-225472](file:///D:\会议硬盘\TSGR3_117bis-e\Docs\R3-225472.zip) | SON enhancements for successful PSCell change report (Lenovo) |
| [6] | [R3-225473](file:///D:\会议硬盘\TSGR3_117bis-e\Docs\R3-225473.zip) | Successful Handover Report for inter-RAT HO (Lenovo) |
| [7] | [R3-225543](file:///D:\会议硬盘\TSGR3_117bis-e\Docs\R3-225543.zip) | SHR and SPCR (Huawei) |
| [8] | [R3-225550](file:///D:\会议硬盘\TSGR3_117bis-e\Docs\R3-225550.zip) | Inter-RAT SHR and SPR discussion (Ericsson) |
| [9] | [R3-225772](file:///D:\会议硬盘\TSGR3_117bis-e\Docs\R3-225772.zip) | SHR for NR to LTE HO (Intel Corporation) |
| [10] | [R3-225789](file:///D:\会议硬盘\TSGR3_117bis-e\Docs\R3-225789.zip) | Discussion on SON enhancement for SHR and SPCR (CATT) |
| [11] | [R3-225866](file:///D:\会议硬盘\TSGR3_117bis-e\Docs\R3-225866.zip) | Discussion on inter-RAT SHR and SPCR (ZTE) |