3GPP TSG-RAN WG2 Meeting #123bis R2-231xxxx

Xiamen, China, 09 – 13 October 2023

**Agenda item: 7.13.4**

**Source: Nokia (Rapporteur)**

**Title: Pre-meeting summary for 7.13.4 (SHR and SPCR) (Nokia)**

**WID/SID: NR\_ENDC\_SON\_MDT\_enh2-Core - Release 18**

**Document for: Discussion and Decision**

# 1 Introduction

This document is the summary of the documents submitted for agenda item 7.13.4.

This summary includes proposals from the following documents:

* [R2-2309672](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123bis/Docs/R2-2309672.zip) Remaining issues on SPR vivo
* [R2-2309941](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123bis/Docs/R2-2309941.zip) Discussion on inter-RAT SHR from NR to LTE Lenovo
* [R2-2309942](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123bis/Docs/R2-2309942.zip) SON enhancements for SPR Lenovo
* [R2-2310365](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123bis/Docs/R2-2310365.zip) Further discussion on inter-RAT SHR and SPR CATT
* [R2-2310422](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123bis/Docs/R2-2310422.zip) Remain issues on SPR SHARP Corporation
* [R2-2310501](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123bis/Docs/R2-2310501.zip) Discussion on SHR and SPCR (RAN3 LS R3-234716) Huawei, HiSilicon
* [R2-2310502](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123bis/Docs/R2-2310502.zip) Discussion on leftover issues for SHR and SPCR Huawei, HiSilicon
* [R2-2310565](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123bis/Docs/R2-2310565.zip) Consideration on SHR and SPR remaining issues ZTE Corporation, Sanechips
* [R2-2310595](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123bis/Docs/R2-2310595.zip) SON/MDT enhancements for Inter-RAT SHR and SPR Samsung
* [R2-2310615](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123bis/Docs/R2-2310615.zip) Clearing SPR configuration Samsung
* [R2-2310703](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123bis/Docs/R2-2310703.zip) SPR configuration and reporting related issues Nokia, Nokia Shanghai Bell discussion
* [R2-2310704](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123bis/Docs/R2-2310704.zip) Correlation of inter-RAT SHR with RLF Report Nokia, Nokia Shanghai Bell discussion
* [R2-2310746](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123bis/Docs/R2-2310746.zip) Discussion on inter-RAT SHR and SPR Ericsson
* [R2-2311084](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123bis/Docs/R2-2311084.zip) Discussion on successful PSCell change report Qualcomm Incorporated

# 2 Discussion

The colour coding in the proposals:

Proposal X: the proposal to be discussed online

Proposal Y: the proposal to be discussed online if time permits

Proposal Z: discussion of the proposal to be postponed

## 2.1 Correlation between inter-RAT SHR and RLF Report

There are the following proposals on correlating SHR and RLF reports for inter-RAT SHR in NR-to-LTE handover:

* [R2-2309941](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123bis/Docs/R2-2309941.zip) Discussion on inter-RAT SHR from NR to LTE Lenovo

Proposal 1: For retrieval of UE context as well as correlating SHR and RLF reports at source RAN node for inter-RAT HO from NR to LTE, the UE can include source C-RNTI, and time between the handover command and the reporting of SHR in the inter-RAT SHR.

* [R2-2310365](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123bis/Docs/R2-2310365.zip) Further discussion on inter-RAT SHR and SPR CATT

Proposal 2: Source C-RNTI is introduced in inter-RAT SHR from NR to LTE for correlating the inter-RAT SHR from NR to LTE and LTE RLF report.

* [R2-2310501](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123bis/Docs/R2-2310501.zip) Discussion on SHR and SPCR (RAN3 LS R3-234716) Huawei, HiSilicon

Proposal 1: Introduce the time information between HO command and SHR retrieval into the inter-RAT SHR from NR to LTE.

Proposal 2: Introduce the source C-RNTI to the inter-RAT SHR for optimization at the Source NR node.

* [R2-2310502](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123bis/Docs/R2-2310502.zip) Discussion on leftover issues for SHR and SPCR Huawei, HiSilicon

Proposal 1: Introduce source C-RNTI in inter-RAT SHR from NR to LTE for the purpose of retrieving mobility information related to a UE.

Proposal 2: Introduce time between reception of HO Command and inter-RAT SHR fetching in inter-RAT SHR from NR to LTE.

* [R2-2310565](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123bis/Docs/R2-2310565.zip) Consideration on SHR and SPR remaining issues ZTE Corporation, Sanechips

Proposal 3: For inter-RAT SHR, UE includes target C-RNTI in SHR, which can reuse existing C-RNTI field.

* [R2-2310595](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123bis/Docs/R2-2310595.zip) SON/MDT enhancements for Inter-RAT SHR and SPR Samsung

Proposal 5: UE includes target-CRNTI and time since failure in Inter-RAT SHR.

* [R2-2310704](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123bis/Docs/R2-2310704.zip) Correlation of inter-RAT SHR with RLF Report Nokia, Nokia Shanghai Bell discussion

Proposal 1: RAN2 should abandon the C-RNTI (plus time measurement) based solution.

Proposal 2: It is proposed to amend the SHR with a new flag added by the UE when RLF happens shortly after successful inter-RAT handover completion. The correlation afterwards can be derived in MRO domain from the created inter-RAT MRO counters.

* [R2-2310746](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123bis/Docs/R2-2310746.zip) Discussion on inter-RAT SHR and SPR Ericsson

Proposal 1 Introduce the target C-RNTI in SHR for handovers from NR to LTE. This is an LTE C-RNTI.

Proposal 2 Add an IE timeSHRFailure (similar to timeConnFailure, i.e. the time elapsed between HO execution and RLF in the target cell) to the SHR for correlating RLF Report and SHR in NR-to-LTE handovers.

**Rapporteur’s summary:** The starting point of the discussion is the RAN3 LS (R2-2309439/R3-234716), where RAN3 provided the following guidance and request to RAN2:

* For inter RAT SHR (from NR to LTE), RAN3 see a benefit of correlating SHR and RLF reports for cases where the failure happens shortly after a successful handover. In order to do so, RAN3 agreed that it is beneficial that the UE reports a C-RNTI (from either source or target cell) and the time between the handover command and the reporting of this event in SHR. RAN3 leaves it up to RAN2 to decide whether to use source C-RNTI or target C-RNTI.

There was only a single company that disagrees with the RAN3 concept of using C-RNTI and time between HO command and reporting of the SHR to NR network to get the NR-SHR and an immediately followed RLF in the LTE network correlated. Companies’ views are divergent whether to report the source C-RNTI (Lenovo, CATT, Huawei) or target C-RNTI (ZTE, Samsung, Ericsson), therefore further discussion on this issue is needed before RAN2 replies to RAN3. As there is a clear agreement in RAN3 that “the time between the handover command and the reporting of this event in SHR” should be provided by the UE, the rapporteur’s view that this issue requires no discussion in RAN2.

Rapporteur’s proposal is to discuss these proposals online as this has RAN3 impacts:

**Proposal 1: RAN2 decides whether the source or the target C-RNTI is included in inter-RAT SHR to enable the correlation of the SHR and RLF report. RAN2 should send a reply LS to RAN3 after making the decision.**

## 2.2 Other SHR related proposals

There are the following other SHR related proposals:

* [R2-2310595](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123bis/Docs/R2-2310595.zip) SON/MDT enhancements for Inter-RAT SHR and SPR Samsung

Proposal 1: There is no critical overhead issue/feasibility issue for configuration information based solution.

Proposal 2: RAN2 to discuss below two options for configuring “configuration information”

a. Include configuration information in SHR/SPR configuration. UE logs the configuration information received for the corresponding configuration in SHR/SPR.

b. Include configuration information in RRCReconfiguration outside SHR/SPR config. UE logs the configuration information received for the corresponding cellgroup in SHR/SPR.

Proposal 3: UE includes the configuration information received from the network in SHR/SPR.

Proposal 4: SHR configuration can be included in MobilityFromNRCommand.

* [R2-2310746](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123bis/Docs/R2-2310746.zip) Discussion on inter-RAT SHR and SPR Ericsson

Proposal 3 UE logs source C-RNTI and time elapsed between SHR generation and retrieval by the network in the SHR to enable corelation of the SHR with the UE context.

Proposal 4 RAN2 agree to enhance the inter-RAT SHR configuration with one or both of the following triggering conditions: - Option a: A triggering condition associated to the number of random accesses attempts toward the LTE cell. - Option b: The source (NR) node configures triggers for T304 for inter-RAT SHR.

Proposal 5 For Inter-RAT handover from NR to LTE, UE includes LTE RACH information in the SHR.

**Rapporteur’s summary:**

Proposal 1, 2, 3 and 4 in R2-2130595 and proposal 3 of R2-2310746 are related to the RAN2 reply LS sent to RAN3 at RAN2#123 ([R2-2309022](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123/Docs/R2-2309022.zip)). During the discussion it was noted that a RAN2 specific issue is whether the addition of configuration information to the handover command creates a significant overhead and there was no consensus on this issue:

RAN2 has no consensus on whether it imposes significant overhead on RRCReconfigurationWithSync containing Handover Command or PSCell change command.

Rapporteur’s view is that before there is a RAN3 progress on this issue, it is not very useful to further discuss the details of the solutions. However, an agreement on the overhead may help in the progress. Therefore, the Rapporteur’s proposal is to discuss only Proposal 1 of R2-2130595 and postpone the other proposals of R2-2130595 and proposal 3 of R2-2310746.

Proposal 4 of R2-2310746 is about new triggering condition for SHR. Proposal 5 of R2-2310746 is about enhancing the content of SHR. As these are individual company proposals, rapporteur’s proposal to discuss them if time permits.

**Proposal 2.1: RAN2 discuss if there is no critical overhead issue/feasibility issue for configuration information based solution for SHRs.**

**Proposal 2.2: RAN2 postpone the discussion on the following proposals:**

**R2-2130595 Proposal 2: RAN2 to discuss below two options for configuring “configuration information”  
a. Include configuration information in SHR/SPR configuration. UE logs the configuration information received for the corresponding configuration in SHR/SPR.  
b. Include configuration information in RRCReconfiguration outside SHR/SPR config. UE logs the configuration information received for the corresponding cellgroup in SHR/SPR.**

**R2-2130595 Proposal 3: UE includes the configuration information received from the network in SHR/SPR.**

**R2-2130595 Proposal 4: SHR configuration can be included in MobilityFromNRCommand.**

**R2-2310746 Proposal 3 UE logs source C-RNTI and time elapsed between SHR generation and retrieval by the network in the SHR to enable corelation of the SHR with the UE context.**

**Proposal 2.3: RAN2 discuss the following proposals:**

**R2-2310746 Proposal 4 RAN2 agree to enhance the inter-RAT SHR configuration with one or both of the following triggering conditions: - Option a: A triggering condition associated to the number of random accesses attempts toward the LTE cell. - Option b: The source (NR) node configures triggers for T304 for inter-RAT SHR.**

**R2-2310746 Proposal 5 For Inter-RAT handover from NR to LTE, UE includes LTE RACH information in the SHR.**

## 2.3 Clearing SPR configuration

There are the following proposals on clearing the SPR configuration:

* [R2-2309672](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123bis/Docs/R2-2309672.zip) Remaining issues on SPR vivo

Proposal 1: UE clears all the SPR configurations (i.e., configuration by MCG and SCG) if SCG failure occurs.

Proposal 2: UE clears the SPR configuration by SCG and keeps the SPR configuration by MCG after successful PSCell addition or change.

Proposal 3: UE clears all the SPR configurations (i.e., configuration by MCG and SCG) if reconfiguration with synch on PCell occurs.

* [R2-2310422](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123bis/Docs/R2-2310422.zip) Remain issues on SPR SHARP Corporation

Proposal 5: UE releases SPR configuration in case of PCell HO with/without PSCell change.

Proposal 6: in case of PSCell change without PCell HO, UE releases SPR configuration configured by PSCell but keeps SPR configuration configured by PCell

* [R2-2310615](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123bis/Docs/R2-2310615.zip) Clearing SPR configuration Samsung

Proposal 1: UE clears both MN and SN configured SPR configuration during Successful PSCellAddition or PSCellChange or SCGFailure.

Proposal 2: RAN2 to downselect from the below options for clearing of the SPR configurations during PCell change:  
a. Clear only MN configured SPR configuration  
b. Clear both MN and SN configured SPR configuration.

* [R2-2310746](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123bis/Docs/R2-2310746.zip) Discussion on inter-RAT SHR and SPR Ericsson

Proposal 17 UE clears different SPR configuration depending on the scenarios:  
a. Successful PSCell addition: The UE keeps the SPR configuration configured by the target PSCell except the T304 configuration.  
b. Successful PSCell change- UE keeps the SPR configuration(s) configured by the PCell and the target PSCell, except the T304 configuration. UE releases the SPR configuration configured by the source PSCell.  
c. Reconfiguration with synch on PCell- UE keeps the SPR configuration configured by the PSCell and releases the SPR configuration configured by the source PCell.

* [R2-2311084](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123bis/Docs/R2-2311084.zip) Discussion on successful PSCell change report Qualcomm Incorporated

Proposal 1: Irrespective of whether PSCell change is MN or SN initiated, the UE is provided with., single thresholds for T310, T312, and T304).

Proposal 2: For PSCell addition, the UE is provided with single thresholds for T310, T312, and T304).

Proposal 3: SPR configurations are cleared upon  
 Successful PSCell Addition or PSCell change   
 SCG Failure  
 Reconfiguration with SYNC on PCell

**Rapporteur’s summary:**

At RAN#123 it remained open whether MCG or SCG or both SPR configuration is cleared in some scenarios:

Clearing of the SPR configurations for the following scenarios. FFS which configuration (e.g., MCG or SCG based on configuration) will be cleared.

- Successful PSCellAddition or PSCellChange

- SCG failure

- Reconfiguration with synch on PCell

Rapporteur’s view is that R2-2311084 contains two proposals (UE provided with single thresholds for T310, T312, and T304), which have a major impact on the decision on the FFS items, thus they should be discussed first.

The companies’ views on the FFS items from RAN2#123 are summarized by the following table:

|  |  |  |
| --- | --- | --- |
|  | MN config to be | SN config to be |
| **Successful PSCellAddition** | Kept: Sharp, Cleared: Vivo, Samsung, Qualcomm, | Kept: Ericsson (except T304) Cleared: Vivo, Sharp, Samsung, Qualcomm |
| **Successful PSCellChange** | Kept: Sharp, Ericsson (except T304) Cleared: Vivo, Samsung, Qualcomm, | Kept: Ericsson (except T304) Cleared: Vivo, Sharp, Samsung, Qualcomm |
| **SCG failure** | Kept: Vivo, Sharp, Cleared: Samsung, Qualcomm | Kept:  Cleared: Vivo, Sharp, Samsung, Qualcomm |
| **Reconfiguration with SYNC on PCell** | Kept:  Cleared: Vivo, Sharp, Samsung, Ericsson, Qualcomm | Kept: Ericsson Cleared: Vivo, Sharp, Qualcomm |

In some cases, all companies agree that the SPR configuration should be cleared (highlighted by green), in the other cases the views are divergent.

**Proposal 3.1: RAN2 to discuss the following proposals:**

**R2-2311084 Proposal 1: Irrespective of whether PSCell change is MN or SN initiated, the UE is provided with., single thresholds for T310, T312, and T304).**

**R2-2311084 Proposal 2: For PSCell addition, the UE is provided with single thresholds for T310, T312, and T304).**

**Proposal 3.2: RAN2 discuss for all scenarios whether the UE should clear the SPR configuration:**

* **1a: At successful PSCellAddition the UE clears the SPR configuration provided by MN**
* **1b: At successful PSCellAddition the UE clears the SPR configuration provided by SN**
* **2a: At successful PSCellChange the UE clears the SPR configuration provided by MN**
* **2b: At successful PSCellChange the UE clears the SPR configuration provided by SN**
* **3a: At SCG failure the UE clears the SPR configuration provided by MN**
* **3b: At SCG failure PSCellChange the UE clears the SPR configuration provided by SN**
* **4a: At Reconfiguration with synch on PCell the UE clears the SPR configuration provided by MN**
* **4b: At Reconfiguration with synch on PCell the UE clears the SPR configuration provided by SN**

## 2.4 CGI in SPR

There are the following proposals on the addition of the CGI of the PCell in SPR:

* [R2-2309672](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123bis/Docs/R2-2309672.zip) Remaining issues on SPR vivo

Proposal 4: RAN2 confirms that CGI of the PCell which sent the SPR configuration should be included in SPR.

* [R2-2310422](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123bis/Docs/R2-2310422.zip) Remain issues on SPR SHARP Corporation

Proposal 1: RAN2 discusses whether PCell CGI is optional or mandatory included in SPR

* [R2-2310502](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123bis/Docs/R2-2310502.zip) Discussion on leftover issues for SHR and SPCR Huawei, HiSilicon

Proposal 4: The UE logs the CGI of the PCell where the SPR configuration is sent.

**Rapporteur’s summary:**

The addition of CGI into SPR is proposed by some companies, no companies have proposal against it. However, it requires further discussion in RAN2 whether it is optional or mandatory. Rapporteur’s proposal to only discuss this issue if time permits, as this decision does not impact other issues.

**Proposal 4: RAN2 discusses whether PCell CGI that sent the SPR configuration is optional or mandatory in SPR.**

## 2.5 Indication if a PSCell change is MN-initiated or SN-initiated

There are the following proposals on an indication if a PSCell change is MN-initiated or SN-initiated:

* [R2-2309672](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123bis/Docs/R2-2309672.zip) Remaining issues on SPR vivo

Proposal 5: An explicit indication of whether the PSCell change was MN-initiated or SN-initiated should be included in SPR.

Proposal 6: The network node shall provide an explicit indication to indicate whether the PSCell change is MN-initiated or SN-initiated in the legacy PSCell change command signaling if this node provides SPR configuration to UE.

* [R2-2309942](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123bis/Docs/R2-2309942.zip) SON enhancements for SPR Lenovo

Proposal 2: An implicit or explicit indication on whether the PSCell change was MN-initiated or SN-initiated isnot needed in the SPR.

* [R2-2310422](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123bis/Docs/R2-2310422.zip) Remain issues on SPR SHARP Corporation

Proposal 3: UE includes PSCell change type, e.g. whether PSCell change is initiated by SN or MN, in the SPR.

Proposal 4: NW indicates whether the PSCell change is initiated by SN or MN to UE at least in non-CPAC case.

* [R2-2310502](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123bis/Docs/R2-2310502.zip) Discussion on leftover issues for SHR and SPCR Huawei, HiSilicon

Proposal 5: Network sends the indicator to inform UE whether MN initiates the PSCell change.

Proposal 6: The UE logs indicator whether the PSCell change was MN-/SN-initiated.

* [R2-2310565](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123bis/Docs/R2-2310565.zip) Consideration on SHR and SPR remaining issues ZTE Corporation, Sanechips

Proposal 1: An explicit indication is introduced in SPR to indicate whether the PSCell change is MN or SN initiated.

Proposal 2: An one bit indication is send from NW to UE to indicate whether the PSCell change is MN or SN initiated.

* [R2-2310746](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123bis/Docs/R2-2310746.zip) Discussion on inter-RAT SHR and SPR Ericsson

Proposal 8 The network includes a flag in the SPR configuration on whether the PSCell change procedure isMN initiated or SN initiated.

Proposal 9 The UE logs an indication in the SPR on whether the PSCell change that led to the SPR was MNinitiated or SN initiated.

**Rapporteur’s summary:**

This issue was discussed at RAN2#123 when the reply LS to RAN3 was agreed in [R2-2309022](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123/Docs/R2-2309022.zip), which contains the following:

RAN2 has realized that in the case of legacy PSCell change the UE is not aware whether a PSCell change was MN-initiated or SN-initiated without an explicit indication received from the network.

Except one company all companies propose that the NW indicates that a PSCell change is MN-initiated of SN-initiated, and UE includes this information in the SPR. Rapporteur’s view that this proposal should be discussed online as it may have RAN3 impacts.

**Proposal 5: The NW indicates that a PSCell change is MN-initiated of SN-initiated, and UE includes this information in the SPR.**

## 2.6 SPR availability indication over SRB3

There are the following proposals on SPR availability indication over SRB3:

* [R2-2310422](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123bis/Docs/R2-2310422.zip) Remain issues on SPR SHARP Corporation

Proposal 7: UE can indicate SPR availability via SRB3.

* [R2-2310565](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123bis/Docs/R2-2310565.zip) Consideration on SHR and SPR remaining issues ZTE Corporation, Sanechips

Proposal 4: UE can send availability of SPR in *RRCReconfigurationComplete* transmitted over SRB3.

* [R2-2310746](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123bis/Docs/R2-2310746.zip) Discussion on inter-RAT SHR and SPR Ericsson

Proposal 18 UE indicates SPR availability to SN when applying RRC Reconfiguration via SRB3.

**Rapporteur’s summary:**

Three companies proposes that a UE can indicate SPR availability in in *RRCReconfigurationComplete* transmitted over SRB3. RAN2 can agree in this proposal if companies having no proposal on this issue agree with it. As this decision does not impact the progress of other areas this issue should only be discussed if time permits.

**Proposal 6: A UE can indicate SPR availability in in *RRCReconfigurationComplete* transmitted over SRB3.**

## 2.7 Association of SPR and NW configuration

There are the following proposals related to the association of SPR and NW configuration:

* [R2-2309942](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123bis/Docs/R2-2309942.zip) SON enhancements for SPR Lenovo

Proposal 1: For retrieval of UE context at “old MN” which sent the SPR configuration to the UE, the UE can include C-RNTI of the PCell which sent the SPR configuration to the UE, and time between PSCell change/addition command and SPR retrieval in the SPR.

* [R2-2310422](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123bis/Docs/R2-2310422.zip) Remain issues on SPR SHARP Corporation

Proposal 2: C-RNTI for MCG is included in SPR.

* [R2-2310595](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123bis/Docs/R2-2310595.zip) SON/MDT enhancements for Inter-RAT SHR and SPR Samsung

Proposal 1: There is no critical overhead issue/feasibility issue for configuration information based solution.

Proposal 2: RAN2 to discuss below two options for configuring “configuration information”  
a. Include configuration information in SHR/SPR configuration. UE logs the configuration information received for the corresponding configuration in SHR/SPR.  
b. Include configuration information in RRCReconfiguration outside SHR/SPR config. UE logs the configuration information received for the corresponding cellgroup in SHR/SPR.

Proposal 3: UE includes the configuration information received from the network in SHR/SPR.

* [R2-2310746](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123bis/Docs/R2-2310746.zip) Discussion on inter-RAT SHR and SPR Ericsson

Proposal 10 UE logs C-RNTI of the PCell in the SPR.

Proposal 11 UE logs the C-RNTI of the source PSCell in the SPR.

Proposal 13 UE logs the elapsed time between SPR generation and fetching the report by the network.

* [R2-2311084](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123bis/Docs/R2-2311084.zip) Discussion on successful PSCell change report Qualcomm Incorporated

Proposal 4: The configuration index associated overhead on the reconfigurationWithSync is not an appropriate reason against adopting a configuration index-based solution.

**Rapporteur’s summary:**

At RAN2#123 during the creation of the reply LS to RAN3 in [R2-2309022](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123/Docs/R2-2309022.zip), there was an intensive discussion on the issue whether “Configuration Information” or “C-RNTI and time since event” should be used to correlate the network configuration associated with the report. The conclusion was that RAN3 should make the decision as this is mainly an issue of the RAN node. Rapporteur’s view is that parallel discussions in RAN2 and RAN3 on this issue do not help in reaching a conclusion, thus RAN2 should wait for RAN3 outcome.

**Proposal 7: Postpone the discussion on the addition of any parameters (C-RNTI, time since configuration, configuration index) in SPR.**

## 2.8 SPR Configuration from MN and SN

There are the following proposals related to SPR configuration from MN and SN:

* [R2-2310365](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123bis/Docs/R2-2310365.zip) Further discussion on inter-RAT SHR and SPR CATT

Proposal 1: UE should be allowed to store two SPR configurations configured by MN and SN respectively.

* [R2-2310746](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123bis/Docs/R2-2310746.zip) Discussion on inter-RAT SHR and SPR Ericsson

Proposal 6 RAN2 to discuss which T310/T312 thresholds are to be monitored by the UE when MN and source SN configures the UE with SPR configuration, based on the following options  
• UE only monitors the SPR configuration configured by the node that initiated the PSCell change  
• UE monitors both SPR configurations

**Rapporteur’s summary:**

Proposal 1 of R2-2310365 (whether the UE can store two SPR configurations) is a basic principle that should be discussed and agreed. Proposal 6 of R2-2310746 also brings up the valid question which thresholds to be used if there are multiple SPR configurations.

**Proposal 8: RAN2 to discuss the following proposals on multiple SPR configurations:**

* **R2-2310365 Proposal 1: UE should be allowed to store two SPR configurations configured by MN and SN respectively.**
* **R2-2310746 Proposal 6 RAN2 to discuss which T310/T312 thresholds are to be monitored by the UE when MN and source SN configures the UE with SPR configuration, based on the following options  
  • UE only monitors the SPR configuration configured by the node that initiated the PSCell change  
  • UE monitors both SPR configurations**

## 2.9 Location information in SPR

There are the following proposals related to location information in SPR:

* [R2-2310565](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123bis/Docs/R2-2310565.zip) Consideration on SHR and SPR remaining issues ZTE Corporation, Sanechips

Proposal 5: UE includes location information in SPR based on both location configuration provided by MCG and SCG.

* [R2-2310746](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123bis/Docs/R2-2310746.zip) Discussion on inter-RAT SHR and SPR Ericsson

Proposal 7 RAN2 discuss how the UE provides the location information:  
• Based on the location configuration configured by node initiating the PSCell change  
• Based on the location configuration of the node that its configured triggering SPR conditions are fulfilled, e.g., if T304 threshold is fulfilled UE logs location info based on the target SCG location configuration, and so on.  
• Based on all provided location configurations.

**Rapporteur’s summary:**

It has not been decided what location information to be included in SPR. As this is not a crucial issue, rapporteur’s proposal is to handle this issue with low priority.

**Proposal 9: RAN2 to discuss how to provide location information in SPR.**

## 2.10 Other SPR related proposals

There are the following other SPR related proposals:

* [R2-2310502](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123bis/Docs/R2-2310502.zip) Discussion on leftover issues for SHR and SPCR Huawei, HiSilicon

Proposal 3: No other triggering condition is needed.

Proposal 7: Random access related information is not included for any other conditions.

* [R2-2310703](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123bis/Docs/R2-2310703.zip) SPR configuration and reporting related issues Nokia, Nokia Shanghai Bell discussion

Proposal 1: Coordination between MN and source SN is needed for the MN-initiated SN change to allow the MN to properly configure SPR.

Proposal 2.1: RAN2 to agree that a different mechanism (other than indicating it in *RRCReconfigurationComplete* message) to indicate SPR availability to the network is needed.

Proposal 2.2: RAN2 discusses a different mechanism (other than indicating it in *RRCReconfigurationComplete* message) to indicate SPR availability to the network.

* [R2-2310746](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_123bis/Docs/R2-2310746.zip) Discussion on inter-RAT SHR and SPR Ericsson

Proposal 12 UE logs the PCI and ARFCN of the source/target PSCells in case the CGI is not available at the UE.

Proposal 14 UE logs neighbour cell measurements based on the measobjectNR configured by the node initiating the PSCell change procedure.  
a. If the PSCell change procedure is initated by MN, UE uses the measObjectNR configured by the PCell to log the neighbour cell measurements.  
b. If the PSCell change procedure is initiated by SN, UE uses the measObjectNR configured by the source PSCell to log the neighbour cell measurements.

Proposal 15 UE includes the inter-RAT neighbour cell measurements configured in the measResultListEUTRA.

Proposal 16 UE includes the PCell measurements in the SPR.

**Rapporteur’s summary:**

P3 of R2-2310502 is not to discuss new triggering conditions for SPRs. Rapporteur’s understanding is that no company proposes new triggering conditions, thus this proposal is implicitly agreed even if it is not discussed.

Proposals of R2-2310703 bring up principle technical issue regarding to SPR configuration and reporting. RAN2 should discuss if these are issues that should be solved in Rel-18.

P12, P14, P15, P16 of R2-2310746 are proposal on the details for information to be included in SPRs. Rapporteur’s view that they should be discussed if time permits.

**Proposal 10.1: RAN2 confirms that no other triggering condition for SPR is needed.**

**Proposal 10.2: RAN2 discuss the following proposals:**

* **R2-2310703 Proposal 1: Coordination between MN and source SN is needed for the MN-initiated SN change to allow the MN to properly configure SPR.**
* **R2-2310703 Proposal 2.1: RAN2 to agree that a different mechanism (other than indicating it in *RRCReconfigurationComplete* message) to indicate SPR availability to the network is needed.**

**Proposal 10.3: RAN2 discuss the following proposals:**

* **R2-2310703 Proposal 2.2: RAN2 discusses a different mechanism (other than indicating it in *RRCReconfigurationComplete* message) to indicate SPR availability to the network.**
* **R2-2310746 Proposal 12 UE logs the PCI and ARFCN of the source/target PSCells in case the CGI is not available at the UE.**
* **R2-2310746 Proposal 14 UE logs neighbour cell measurements based on the measobjectNR configured by the node initiating the PSCell change procedure.  
  a. If the PSCell change procedure is initated by MN, UE uses the measObjectNR configured by the PCell to log the neighbour cell measurements.  
  b. If the PSCell change procedure is initiated by SN, UE uses the measObjectNR configured by the source PSCell to log the neighbour cell measurements.**
* **R2-2310746 Proposal 15 UE includes the inter-RAT neighbour cell measurements configured in the measResultListEUTRA.**
* **R2-2310746 Proposal 16 UE includes the PCell measurements in the SPR.**

# 3 Conclusion

The following proposals are for on online discussion and agreement:

**Proposal 1: RAN2 decides whether the source or the target C-RNTI is included in inter-RAT SHR to enable the correlation of the SHR and RLF report. RAN2 should send a reply LS to RAN3 after making the decision.**

**Proposal 2.1: RAN2 discuss if there is no critical overhead issue/feasibility issue for configuration information based solution for SHRs.**

**Proposal 3.1: RAN2 to discuss the following proposals:**

**R2-2311084 Proposal 1: Irrespective of whether PSCell change is MN or SN initiated, the UE is provided with., single thresholds for T310, T312, and T304).**

**R2-2311084 Proposal 2: For PSCell addition, the UE is provided with single thresholds for T310, T312, and T304).**

**Proposal 3.2: RAN2 discuss for all scenarios whether the UE should clear the SPR configuration:**

* **1a: At successful PSCellAddition the UE clears the SPR configuration provided by MN**
* **1b: At successful PSCellAddition the UE clears the SPR configuration provided by SN**
* **2a: At successful PSCellChange the UE clears the SPR configuration provided by MN**
* **2b: At successful PSCellChange the UE clears the SPR configuration provided by SN**
* **3a: At SCG failure the UE clears the SPR configuration provided by MN**
* **3b: At SCG failure PSCellChange the UE clears the SPR configuration provided by SN**
* **4a: At Reconfiguration with synch on PCell the UE clears the SPR configuration provided by MN**
* **4b: At Reconfiguration with synch on PCell the UE clears the SPR configuration provided by SN**

**Proposal 5: The NW indicates that a PSCell change is MN-initiated of SN-initiated, and UE includes this information in the SPR.**

**Proposal 8: RAN2 to discuss the following proposals on multiple SPR configurations:**

* **R2-2310365 Proposal 1: UE should be allowed to store two SPR configurations configured by MN and SN respectively.**
* **R2-2310746 Proposal 6 RAN2 to discuss which T310/T312 thresholds are to be monitored by the UE when MN and source SN configures the UE with SPR configuration, based on the following options  
  • UE only monitors the SPR configuration configured by the node that initiated the PSCell change  
  • UE monitors both SPR configurations**

**Proposal 10.2: RAN2 discuss the following proposals:**

* **R2-2310703 Proposal 1: Coordination between MN and source SN is needed for the MN-initiated SN change to allow the MN to properly configure SPR.**
* **R2-2310703 Proposal 2.1: RAN2 to agree that a different mechanism (other than indicating it in *RRCReconfigurationComplete* message) to indicate SPR availability to the network is needed.**

The following proposals are for on online discussion and agreement if time permits:

**Proposal 2.3: RAN2 discuss the following proposals:**

**R2-2310746 Proposal 4 RAN2 agree to enhance the inter-RAT SHR configuration with one or both of the following triggering conditions: - Option a: A triggering condition associated to the number of random accesses attempts toward the LTE cell. - Option b: The source (NR) node configures triggers for T304 for inter-RAT SHR.**

**R2-2310746 Proposal 5 For Inter-RAT handover from NR to LTE, UE includes LTE RACH information in the SHR.**

**Proposal 4: RAN2 discusses whether PCell CGI that sent the SPR configuration is optional or mandatory in SPR.**

**Proposal 6: A UE can indicate SPR availability in in *RRCReconfigurationComplete* transmitted over SRB3.**

**Proposal 9: RAN2 to discuss how to provide location information in SPR.**

**Proposal 10.1: RAN2 confirms that no other triggering condition for SPR is needed.**

**Proposal 10.3: RAN2 discuss the following proposals:**

* **R2-2310703 Proposal 2.2: RAN2 discusses a different mechanism (other than indicating it in *RRCReconfigurationComplete* message) to indicate SPR availability to the network.**
* **R2-2310746 Proposal 12 UE logs the PCI and ARFCN of the source/target PSCells in case the CGI is not available at the UE.**
* **R2-2310746 Proposal 14 UE logs neighbour cell measurements based on the measobjectNR configured by the node initiating the PSCell change procedure.  
  a. If the PSCell change procedure is initated by MN, UE uses the measObjectNR configured by the PCell to log the neighbour cell measurements.  
  b. If the PSCell change procedure is initiated by SN, UE uses the measObjectNR configured by the source PSCell to log the neighbour cell measurements.**
* **R2-2310746 Proposal 15 UE includes the inter-RAT neighbour cell measurements configured in the measResultListEUTRA.**
* **R2-2310746 Proposal 16 UE includes the PCell measurements in the SPR.**

The discussion on the following proposals to be postponed:

**Proposal 2.2: RAN2 postpone the discussion on the following proposals:**

**R2-2130595 Proposal 2: RAN2 to discuss below two options for configuring “configuration information”  
a. Include configuration information in SHR/SPR configuration. UE logs the configuration information received for the corresponding configuration in SHR/SPR.  
b. Include configuration information in RRCReconfiguration outside SHR/SPR config. UE logs the configuration information received for the corresponding cellgroup in SHR/SPR.**

**R2-2130595 Proposal 3: UE includes the configuration information received from the network in SHR/SPR.**

**R2-2130595 Proposal 4: SHR configuration can be included in MobilityFromNRCommand.**

**R2-2310746 Proposal 3 UE logs source C-RNTI and time elapsed between SHR generation and retrieval by the network in the SHR to enable corelation of the SHR with the UE context.**

**Proposal 7: Postpone the discussion on the addition of any parameters (C-RNTI, time since configuration, configuration index) in SPR.**