**3GPP TSG-RAN WG2 Meeting #121bis-e R2-230xxxx**

**e-Meeting, 17th April – 26th April 2023**

**Agenda item:** 7.2.1

**Source:** Intel Corporation

**Title:** [AT121bis-e][422][POS] SLPP specification baseline (Intel)

**Document for:**  Discussion and decision

# Introduction

This is the report of following at meeting offline discussion:

* [AT121bis-e][422][POS] SLPP specification baseline (Intel)

Scope: Collect comments on R2-2302738 and R2-2302739 and attempt to converge to a baseline, taking into account also related contributions on SLPP structure.

Intended outcome: Report and endorseable skeleton

Deadline: Monday 2023-04-24 2359 UTC

# Contact Information

Respondents to the email discussion are kindly asked to fill in the following table.

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| Company | Contact: Name (E-mail) |
| Huawei, HiSilicon | yinghaoguo@huawei.com |
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# Discussion

### 3.1 TS Skeleton

As discussed in R2-2302738:

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| In summary, we captured following agreements in [8].  Regarding the structure of SLPP, e.g. general part, procedure part , Information Element Abstract Syntax Definition, the structure of LPP (TS 37.355) can be used as baseline for further discussion.  Regarding the ASN.1 part of SLPP, follow NR RRC approach, e.g.  Define ASN.1 elements for common UE capabilities in a dedicated section (i.e. “UE capability information elements”);  - Common section for constraints    **Proposal 1: Endorse the TS Skeleton in R2-230xxxx as baseline for further updates.** |

Rapporteur would like to check companies’ view .

**Question 1: Do companies agree to endorse the TS skeleton in R2-2302739.**

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| **Company** | **Yes/No** | **Remark** |
| Huawei, HiSilicon | Yes, but | OK to leave the FFS for segmentation. We need to know what will be the size of the SLPP message and then see whether segmentation is needed that the SLPP msg cannot be transmitted in one shot  Then, for the chapters on reliable transport. There are two cases   * On PC5, we have already agreed that it shall be transported in the user plane, while reliable transport is not needed for user plane transport * For UE-LMF signaling, we have not agreed on how this can be done since there are still 3 options on the table. If the SLPP is included in the a LPP container, SLPP reliable transport will not be needed either since LPP has this functionality. |
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### 3.2 Open issues for the TS38.355

### 3.2.1 Need code and delta signalling

R2-2302738 discussed the open issues “FFS on Need code (e.g. how to support no UL/DL)”:

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| To our understanding, the principle used for PC5 RRC is to follow legacy RRC, i.e. Need code is applied if the PC5 RRC message is defined as downlink in legacy RRC, e.g. Need code is applied for *RRCReconfigurationSidelink* message, but not applied for *RRCReconfigurationCompleteSidelink* message. We can follow the same principle for SLPP message, i.e. Need code is applied for the messages which are provided from anchor/server to a target UE.  **Proposal 2: Need code is applied for SLPP messages transmitted from the anchor/server node/UE.** |

Rapporteur would like to check companies’ view .

**Question 2: Do companies agree the proposal 2 in R2-2302738 , i.e.**

**Need code is applied for SLPP messages transmitted from the anchor/server node/UE.**

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| **Company** | **Yes/No** | **Remark** |
| Huawei, HiSilicon | Yes,but | The need code also needs to be considered in the scenario of UE-LMF singaling |
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R2-2302885 discussed open issue FFS support of delta signalling for unicast transmission

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| **Proposal 1:** Delta signaling is applied for the unicast transmission of the SLPP ProvideAssistanceData message. |

**Question 3: Do companies agree the proposal 1 in R2-2302885 , i.e.**

**Delta signaling is applied for the unicast transmission of the SLPP ProvideAssistanceData message..**

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| **Company** | **Yes/No** | **Remark** |
| Huawei, HiSilicon |  | The general understanding from the last R2 meeting is that we should first identify the requirement for SLPP signaling, like are there cases where frequent reconfiguration is needed. If there is such case, we need to support delta signaling. |
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R2-2302885 also discussed open issue FFS support of delta signalling for groupcast/broadcast transmission

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| **Proposal 2:** Delta signaling may be applied for the groupcast transmission of the SLPP ProvideAssistanceData message when protection of groupcast transmission of SL positioning assistance data information can be ensured.  **Proposal 3:** No delta signaling is applied for the broadcast transmission of the SLPP ProvideAssistanceData message if supported. |

**Question 4: Do companies agree the proposal 2 in R2-2302885 , i.e.**

**Delta signaling may be applied for the groupcast transmission of the SLPP ProvideAssistanceData message when protection of groupcast transmission of SL positioning assistance data information can be ensured.**

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| **Company** | **Yes/No** | **Remark** |
| Huawei, HiSilicon |  | Similar to the unicast scenario, requirements need to be first clarified |
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**Question 5: Do companies agree the proposal 3 in R2-2302885 , i.e.**

**No delta signaling is applied for the broadcast transmission of the SLPP ProvideAssistanceData message if supported..**

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| **Company** | **Yes/No** | **Remark** |
| Huawei, HiSIlicon | Yes | There is no UE state in the configuration by broadcast and it is not possible to configure by delta signaling. This is the same as the current SIB and posSIB |
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If proposal 1, 2 and 3 in R2-2302885 are agreeable, R2-2302885 also proposed to introduce full configuration as what we have in RRC.

**Question 6: Do companies agree the proposal 4 in R2-2302885 , i.e.**

**Consider full configuration signaling for the unicast/groupcast transmission of the SLPP ProvideAssistanceData message.**

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| **Company** | **Yes/No** | **Remark** |
| Huawei, HiSilicon | No, but | This seems to be somewhat related to delta signaling. If delta signaling is not needed, full configuration also seems less motivated  Also, need to clarify what will be the scenario full configuration will be needed, like for LTE/NR, there is case of inter-RAT handover and gNB with different capabilities. While are these scenario also applicable for SLPP?? |
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### 3.2.2 Import IEs from LPP

R2-2302738 also discussed whether import IE definition from LPP as

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| Similar to PC5 RRC, if some IE definitions from LPP can be reused for SLPP, we may simply import them from LPP specification, as  IMPORTS  Xxx  FROM LPP-PDU-Definitions;  **Proposal 3: We may import some IE definitions from LPP specification if needed.** |

R2-2302885 also discussed to import IE definition from LPP as

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| **Proposal 6:** Create SLPP ASN.1 as separate module and use IMPORT function for importing useful IEs, constants and LPP messages from the LPP module if deemed necessary. |

Rapporteur would like to check companies’ view .

**Question 7: Do companies agree that we may import some IE definitions from LPP specification if needed.**

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| **Company** | **Yes/No** | **Remark** |
| Huawei, HiSilicon | Yes | We don’t need to duplicate IEs if they are already defined in the other 3GPP specs. |
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### 3.2.3 Too early to discuss

Following issues are valid, but Rapporteur think these issues should be discussed when the details are more clear, therefore no proposal on this.

Issue 1: Setup/release or release (R2-2302885 );

* Proposal 5: Discuss and agree on the basic release mechanisms to support for session-based SLPP.

Issue 2: Message mode indication (R2-2303591)

* Proposal 14: SLPP should indicate the transaction (communication) mode to be used for each SLPP message, i.e. whether broadcast mode, groupcast mode or unicast mode is to be used (e.g., in a common SLPP message header). At least the following common transaction modes shall be supported:
* • Unicast transaction
* • Group Transaction with Group Replies
* • Group Transaction with Unicast Replies
* • Broadcast Transaction.

# Summary

Based on the input from companies, we have the following proposals:

# Reference

[1] R2-2302738 Further considerations on SLPP specification Intel Corporation

[2] R2-2302739 TS 38.355 skeleton Intel Corporation

[3] R2-2302885 Discussion on further SLPP aspects Lenovo discussion

[4] R2-2303591 Sidelink Positioning Protocol (SLPP) Signaling and Procedures Qualcomm Incorporated