3GPP TSG-RAN WG2 Meeting #119 Electronic R2-220xxxx

Elbonia, 17 – 26 August 2022

**Agenda item: 6.15.2**

**Source: Nokia (Rapporteur)**

**Title: Report of [AT119-e][505][V2X/SL] 38.300 corrections**

**WID/SID: NR\_SL\_enh-Core - Release 17**

**Document for: Discussion and Decision**

# 1 Introduction

This document is the report of the following email discussion:

* [AT119-e][505][V2X/SL] 38.300 corrections (Nokia)

**Scope:** Discuss proposed corrections in R2-2208220, R2-2207175, and R2-2208257 (including need of corrections and detailed wordings). Merge agreeable corrections in a CR.

**Intended outcome:** 38.300 CR in R2-2208845 and discussion summary in R2-2208846 (if needed). Email approval.

**Deadline:** 8/23 13:00 (UTC)

**Rapporteur suggests deadline for P1;** 8/19 16:00 UTC, **deadline P2**: 8/23(email approval)

# 2 Contact Points

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

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| --- | --- | --- |
| Company | Name | Email Address |
| Nokia (Rapporteur) | Buthler, Jakob | Jakob.buthler@nokia.com |
| Xiaomi | Xing Yang | Yangxing1@xiaomi.com |
| Lenovo | Jing Han | hanjing8@lenovo.com |
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# 3 Discussion

## 3.2 On changes proposed in [R2-2207175](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_119-e/Docs/R2-2207175.zip)

These changes, proposed by Xiaomi, captures changes related to sidelink DRX operation in groupcast/broadcast

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| Change number | Reason for change and summary | Details of change |
| 1 | According to SA2’s LS, multiple TX profiles with support of SL DRX and without support of SL DRX may be mappted to a L2 ID. It’s agreed SL DRX is supported only when all TX profiles support SL DRX. No SL DRX is applied if no TX profile is mapped to a L2 id. These agreements were not captured by the spec.  Capture that multiple TX profiles may be mappted to a L2 ID. SL DRX is supported only when all TX profiles support SL DRX. No SL DRX is applied if no TX profile is mapped to a L2 id. Rephrase the description to align with the new text. | 16.9.6.3 Groupcast/Broadcast For groupcast/broadcast, SL DRX is configured commonly among multiple UEs based on QoS profile …  *[text omitted due to no change]*  TX profile is introduced to ensure compatibility for groupcast and broadcast transmissions between UEs supporting/not-supporting SL DRX functionality. A TX profile is provided by upper layers to AS layer and identifies one or more sidelink feature group(s). Multiple TX profiles with support of SL DRX and without the support of SL DRX can be associated to a L2 ID. A TX UE only assumes SL DRX for the destination L2 ID when all the associated TX profiles corresponds to support of SL DRX. A TX UE assumes No SL DRX for the destination L2 ID if no TX profile is associated. An RX UE determines that SL DRX is used if all destination L2 IDs of interest is assumed to support of SL DRX. For groupcast, the UE reports each destination L2 ID and associated SL DRX on/off indication to the gNB. |
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**Rapporteurs comments;** The text seems aligned with SA2 response, and earlier RAN2 agreements

**Question 1.1**: Does companies agree with the change to capture the agreements for multiple Tx profiles in spec?

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| Answers to Question 1.1 | | |
| Company | Yes/No | Technical Arguments |
| Xiaomi | Yes | The agreements should be captured. Otherwise, it’s not clear how to determine SL DRX applicability in case multiple TX profiles are associated with one destination. |
| Lenovo | Yes |  |
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**Summary 1.1**: TBD.

**Proposal 1.1**: TBD.

## 3.2 On changes proposed in [R2-2208220](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_119-e/Docs/R2-2208220.zip)

These changes, proposed by Nokia, captures missing agreements, as well as aligning terminology in respect to sidelink IUC operation

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| Change number | Reason for change and summary | Details of change |
| 1 | IUC is defined in the first paragraph of section 16.9.8, however, during the remaining section it is simply stated as “coordination information”.  This change proposes alignment of the wording within section 16.9.8 by replacing “coordination information” with “IUC” | The SL UE can support inter-UE coordination (IUC) in Mode 2, whereby a UE-A sends information about resources to UE-B, which UE-B then uses for resource (re)selection. The following schemes of inter-UE coordination are supported:  - IUC scheme 1, where the IUC information sent from a UE-A to a UE-B is the preferred or non-preferred resources for UE-B's transmission, and  - IUC scheme 2, where the IUC information sent from a UE-A to a UE-B is the presence of expected/potential resource conflict on the resources indicated by UE-B's SCI.  In scheme 1, IUC can be triggered by an explicit request from UE-B, or by a condition at UE-A. UE-A determines the set of resources reserved by other UEs or slots where UE-A, when it is the intended receiver of UE-B, does not expect to perform SL reception from UE-B due to half-duplex operation. UE-A uses these resources as the set of non-preferred resources, or excludes these resources to determine a set of preferred resources and sends the preferred/non-preferred resources to UE-B. UE-B's resources for resource (re)selection can be based on both UE-B's sensing results (if available) and the IUC received from UE-A, or it can be based only on IUC information received from UE-A. For scheme 1, MAC CE and second-stage SCI or MAC CE only can be used to send IUC. explicit request and reporting for IUC in unicast manner is supported.  … |
| 2 | For scheme 1, it is state that; “For scheme 1, MAC CE and second-stage SCI or MAC CE only can be used to send IUC.”, however, this is also true for the request.  Added notation that MAC CE and second-stage SCI or MAC CE only can be used to request IUC also. | 16.9.8 Inter-UE Coordination (IUC) *[Text omitted due to no change]*  In scheme 1, IUC transmission can be triggered by an explicit request from UE-B, or by a condition at UE-A. UE-A determines the set of resources reserved by other UEs or slots where UE-A, when it is the intended receiver of UE-B, does not expect to perform SL reception from UE-B due to half-duplex operation. UE-A uses these resources as the set of non-preferred resources, or excludes these resources to determine a set of preferred resources and sends the preferred/non-preferred resources to UE-B. UE-B's resources for resource (re)selection can be based on both UE-B's sensing results (if available) and the IUC received from UE-A, or it can be based only on IUC information received from UE-A. For scheme 1, MAC CE and second-stage SCI or MAC CE only can be used to request, or send IUC. For transmission of the explicit request and reporting for IUC unicast manner is supported. |
| 3 | It is not specified that the IUC information is used within the resource selection procedure  Added description that the IUC is used within the resource selection procedure | 16.9.8 Inter-UE Coordination (IUC) *[Text omitted due to no change]*  In scheme 2, UE-A determines the expected/potential resource conflict within the resources indicated by UE-B's SCI as either resources reserved by other UEs and identified by UE-A as fully/partially overlapping with the resources indicated by UE-B's SCI, or as slots where UE-A is the intended receiver of UE-B and does not expect to perform SL reception on those slots due to half-duplex operation. UE-B uses the conflicting resources to determine the resources to be reselected and exclude the conflicting resources when performing resource (re)selection from the reselected resources. For scheme 2, PSFCH is used to send IUC. |

**Rapporteurs comments;** Proponent – we think that the proposed changed are valid for the understanding of the specification.

**Question 2.1**: Does companies agree with the change 1 proposed to capture the behaviour of IUC?

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| Answers to Question 2.1 | | |
| Company | Yes/No | Technical Arguments |
| Xiaomi | Comments | We can follow majority on the wording, as long as all places are aligned.  If it’s agreed to change to IUC information, the third change of ‘IUC’ should be ‘IUC information’. |
| Lenovo | Yes | Seems somewhere use “IUC” and somewhere use “IUC information”. Suggest to align the wording to e.g. “IUC information”  …UE-B's resources for resource (re)selection can be based on both UE-B's sensing results (if available) and the IUC information received from UE-A, or it can be based only on IUC information received from UE-A. For scheme 1, MAC CE and second-stage SCI or MAC CE only can be used to send IUC information |
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**Summary 2.1**: TBD.

**Proposal 2.1**: TBD.

**Question 2.2**: Does companies agree with the change 2 proposed to capture the behaviour of IUC?

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| Answers to Question 2.2 | | |
| Company | Yes/No | Technical Arguments |
| Xiaomi | Comments | We follow majority on the wording, as long as all places are aligned.  If it’s agreed to change to IUC information, the second change of ‘IUC’ should be ‘IUC information’.  Furthermore, we wonder whether the existing ‘IUC’ should be changed to ‘IUC information’ or ‘coordination information’ as following highlighted in yellow,  For scheme 1, MAC CE and second-stage SCI or MAC CE only can be used to request, or send IUC. For transmission of the explicit request and reporting for IUC unicast manner is supported. |
| Lenovo | Yes | Seems somewhere use “IUC” and somewhere use “IUC information”. Suggest to align the wording to e.g. “IUC information”  In scheme 1, the transmission of IUC ~~transmission~~ information from UE-A can be triggered by an explicit request from UE-B, …UE-B's resources for resource (re)selection can be based on both UE-B's sensing results (if available) and the IUC information received from UE-A, or it can be based only on IUC information received from UE-A. For scheme 1, MAC CE and second-stage SCI or MAC CE only can be used to send request, or send IUC information. For transmission of the explicit request and reporting for IUC information unicast manner is supported. |
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**Summary 2.2**: TBD.

**Proposal 2.2**: TBD.

**Question 2.3**: Does companies agree with the change 3 proposed to capture the behaviour of IUC?

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| Answers to Question 2.3 | | |
| Company | Yes/No | Technical Arguments |
| Xiaomi | No | Seems current description is clear enough. |
| Lenovo | Yes |  |
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**Summary 2.3**: TBD.

**Proposal 2.3**: TBD.

## 3.3 On changes proposed in [R2-2208257](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_119-e/Docs/R2-2208257.zip)

These changes, proposed by Samsung, captures the agreements from RAN2#116 on SL-DRX for sidelink discovery/sidelink relay discovery

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| Change number | Reason for change and summary | Details of change |
| 1 | RAN2 made following agreements on SL-DRX for sidelink discovery/sidelink relay discovery during RAN2#116e meeting.  Agreements on SL-DRX for ProSe:  2: RAN2 confirm the R17 SL-DRX design can support non-relay-related ProSe discovery by reusing SL default-DRX configuration used for communication without further additional specific solution discussion / specification effort.  3: RAN2 confirms Rel-17 SL-DRX design can be reused for L3 relay-related ProSe discovery without additional specific solution discussion/specification effort (by applying SL default-DRX configuration). No conclusion if L2 relay-related ProSe discovery is supported or not in Rel-17 now. RAN2 does not specify any restriction now.  Based on these agreements, how to set SL DRX configuration for sidelink discovery and sidelink relay discovery should be incorporated under SL DRX in stage 2 specification.  About L2 relay related ProSe discovery, the relay discovery procedure for L2 relay is same as that for L3 relay discovery. So the SL-DRX configuration to be used for L2 relay discovery can be SL default DRX configuration for groupcast/broadcast.  It is proposed to add the following texts for sidelink discovery and for both L2 and L3 sidelink relay discovery in clause 16.9.6.1.  A default SL DRX configuration for groupcast/broadcast can be used for discovery message in Sidelink discovery in clause 16.9.5 and for Relay discovery messages in clause 16.12.3. | 16.9.6.1 General Sidelink supports SL DRX for unicast, groupcast, and broadcast. Similar parameters as defined in clause 11 for Uu (on-duration, inactivity-timer, retransmission-timer, cycle) are defined for SL to determine the SL active time for SL DRX. During the SL active time, the UE performs SCI monitoring for data reception (i.e., PSCCH and 2nd stage SCI on PSSCH). The UE may skip monitoring of SCI for data reception during SL DRX inactive time.  The actual parameters supported for each cast type (unicast, groupcast, broadcast) are specified in the following clauses.  The SL active time of the RX UE includes the time in which any of its applicable SL on-duration timer(s), SL inactivity-timer(s) or SL retransmission timer(s) (for any of unicast, groupcast, or broadcast) are running. In addition, the slots associated with announced periodic transmissions by the TX UE andthe time in which a UE is expecting CSI report following a CSI request (for unicast) are considered as SL active time of the RX UE.  The TX UE maintains a set of timers corresponding to the SL DRX timers in the RX UE(s) for each pair of source/destination L2 ID for unicast or destination L2 ID for groupcast/broadcast. When data is available for transmission to one or more RX UE(s) configured with SL DRX, the TX UE selects resources taking into account the active time of the RX UE(s) determined by the timers maintained at the TX UE.  The UE can determine from SIB12 whether the gNB supports SL DRX or not.  A default SL DRX configuration for groupcast/broadcast can be used for discovery message in Sidelink discovery in clause 16.9.5 and for Relay discovery messages in clause 16.12.3. |

**Rapporteurs comments;** The text seems aligned with SA2 response, and earlier RAN2 agreements

**Question 3.1**: Does companies agree with the change to capture the agreements for multiple Tx profiles in spec?

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| Answers to Question 3.1 | | |
| Company | Yes/No | Technical Arguments |
| Xiaomi | Yes |  |
| Lenovo | Yes | the agreement for relay discovery is for L3 relay case but no conclusion for L2 relay case. Above change is only fine when assume relay discovery is same between L2 relay and L3 relay. |
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**Summary 3.1**: TBD.

**Proposal 3.1**: TBD.

# 4 Conclusion

TBD.