**3GPP TSG RAN WG1 #103-e R1-200xxxx**

**e-Meeting, October 26th – November 13th, 2020**

Title: LS on Mode 2 enhancements in NR sidelink

Response to:

Release: Rel-17

Work Item: NR\_SL\_enh-Core

Source: RAN WG1

To: RAN

Cc:

**Contact Person:**

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Attachments: None

**1. Overall Description:**

For NR sidelink enhancement WI, the objective of Mode 2 enhancements is as follows:

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| * + *Study the feasibility and benefit of the enhancement(s) in mode 2 for enhanced reliability and reduced latency in consideration of both PRR and PIR defined in TR37.885 (by RAN#91), and specify the identified solution if deemed feasible and beneficial [RAN1, RAN2]*
		- *Inter-UE coordination with the following until RAN#90.*
			* *A set of resources is determined at UE-A. This set is sent to UE-B in mode 2, and UE-B takes this into account in the resource selection for its own transmission.*
		- *Note: The study scope after RAN#90 is to be decided in RAN#90.*
		- *Note: The solution should be able to operate in-coverage, partial coverage, and out-of-coverage and to address consecutive packet loss in all coverage scenarios.*
		- *Note: RAN2 work will start after RAN#89.*
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On the objective mentioned above, RAN1 made the following conclusions on inter-UE coordination. RAN1 has categorized schemes for inter-UE coordination in mode 2 sidelink resource allocation, and concluded that further study is required from RAN1 perspective to complete the assessment of their feasibility and benefits.

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| ***Conclusion****:** + *The schemes of inter-UE coordination in Mode 2 are categorized as being based on the following types of “A set of resources” sent by UE-A to UE-B:*
		- *UE-A sends to UE-B the set of resources preferred for UE-B’s transmission*
			* *e.g., based on its sensing result*
		- *UE-A sends to UE-B the set of resources not preferred for UE-B’s transmission*
			* *e.g., based on its sensing result and/or expected/potential resource conflict*
		- *UE-A sends to UE-B the set of resource where the resource conflict is detected*
		- *FFS: details of resource conflict, e.g., including type of resource conflict*
		- *FFS: details of sensing operation at UE-A side*
		- *FFS: which type(s) of resource set information is(are) beneficial/feasible to which cast type(s)*
		- *Note: these different types may be used in combination with each other*
	+ *From RAN1 perspective, further study on the feasibility/benefit of inter-UE coordination is required*
	+ *Send an LS to RAN plenary*

***Conclusion****:** + *For the schemes of inter-UE coordination identified as feasible/beneficial, at least the following aspects are further discussed.*
		- *How/when UE-A determines the contents of ”A set of resources”, including consideration of UL scheduling*
		- *When UE-A sends ”A set of resources” to UE-B, including which UE(s) sends it*
		- *How UE-A and UE-B are determined*
		- *How UE-A sends ”A set of resources” to UE-B, including container used for carrying it, implicitly or explicitly or both*
		- *How/when/whether UE-B receives “A set of resources” and takes it into account in the resource selection for its own transmission*
		- *How/whether to define the relationship between support/signaling of inter-UE coordination and cast type*
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**2. Actions:**

To RAN: RAN1 kindly asks RAN to take the above conclusions into account.

**3. Date of Next RAN1 Meetings:**

TSG RAN WG1 Meeting #104-e 25 Jan – 5 Feb 2021 e-Meeting

TSG RAN WG1 Meeting #104-bis-e 12 Apr – 20 Apr 2021 e-Meeting