**3GPP TSG RAN WG1 Meeting #107-e R1-** **211xxxx**

**e-Meeting, November 11th – 19th, 2021**

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**Source:** Moderator (LG Electronics)

**Title:** Feature lead summary for AI 8.11.1.2 Inter-UE coordination for Mode 2 enhancements

**Document for:** Discussion and information

1. **Draft proposals for Thursday’s GTW (November 11th)**
	1. **Scheme 1**

FL’s observation: It is observed that companies’ views on the container and signalling contents are still divergent. Considering this is the last RAN1 meeting for this WI, it is proposed to take a straightforward signalling design based on the bitmap without further consideration, e.g., compression of signalling bits. And it is observed that higher layer signalling is suitable for the bitmap because of the size issue.

***Draft proposal 1-1****:*

* *For the set of resources in Scheme 1, the following is supported for its indication mechanism:*
	+ *Bitmap indication where each bit indicates whether a pair of sub-channel and slot is included in the set of resources*
		- *Higher layer signalling (Working assumption: MAC CE) is used as the container of this bitmap*

FL’s observation: Assuming that higher layer signalling is used as the container of inter-UE coordination information, it seems that there is no technical difference between Option 1-1 and Option 1-2. Also for this case, PHY layer doesn’t need to report the intersection of S\_A and the preferred resource set to MAC layer. Given that this is the last RAN1 meeting for this WI, this direction seems more preferable than Option 2 which has FFS points that need to be resolved additionally and can be a wayforward to simplify the operation.

***Draft proposal 1-2****:*

* *For Option A of Scheme 1 with preferred resource set,*
	+ *S\_A report from PHY layer of UE-B is the same as the outcome after Step 7) of Rel-16 TS 38.214 Section 8.1.4*
	+ *MAC layer selects resources using S\_A and the received preferred resource set*
		- *MAC layer firstly selects resources for transmissions within the intersection of S\_A and the preferred resource set until it becomes impossible to select a resource within the intersection under the constraint defined in Rel-16.*
		- *After this, if the number of selected resources is smaller than the required number of transmissions for a TB, MAC layer selects resources for the remaining transmissions outside the intersection but inside S\_A*

FL’s observation: Since Option 2 in the contribution summary is supported by the majority of companies, so it is proposed to adopt it.

***Draft proposal 1-3****:*

* *For Scheme 1 with non-preferred resource set,*
	+ *Option 2: Physical layer at UE-B excludes in its resource (re-)selection, candidate single-slot resource(s) obtained after Step 6) of Rel-16 TS 38.214 Section 8.1.4 overlapping with the non-preferred resource set*
	+ *FFS: Whether/how to handle the case when the requirement of* $X⋅M\_{total}$ *as specified in Step 7) of TS 38.214 Section 8.1.4 is not satisfied*
	+ *FFS: Whether/how to determine M\_total based on non-preferred resources in step 7)*

FL’s observation: Since applying RSRP threshold increase is supported by the majority of companies, so following is proposed.

***Draft proposal 1-4:***

* *For Condition 1-A-1 of Scheme 1, when UE-A determines the set of resoruces preferred for UE-B’s transmission, apply RSRP threshold increase in the same way according to Rel-16 TS38.214 Sectoin 8.1.4.*

FL’s observation: Since informing UE-B’s resource selection window from UE-B to UE-A is supported by the majority of companies, so following is proposed.

***Draft proposal 1-5:***

* *For Condition 1-A-1 in Scheme 1,* *when the inter-UE coordination information transmission is triggered by UE-B’s explicit request,*
	+ *Starting/Ending time locations of resource selection window is provided by signaling from UE-B*
		- *It replaces the time interval [n+T\_1,n+T\_2]*

FL’s observation: Since employing UE-B’s request to convey the parameters for determining the set of resoruces is supported by the majority of companies, so following is proposed.

***Draft proposal 1-6:***

* *For Scheme 1, at least following parameters are provided by UE-B’s request:*
	+ *Priority value to be used for PSCCH/PSSCH transmission*
	+ *Number of sub-channels to be used for PSSCH/PSCCH transmission in a slot*
	+ *Resource reservation interval*
	+ *Starting/Ending time locations of resource selection window*

FL’s observation: Since companies’ views are still divergent and it seems that common understanding that which feature combinations are supported in Rel-17 is a separate issue/discussion, so following is proposed.

***Draft proposal 1-7:***

* *The following feature combination(s) can be enabled or disabled or controlled by (pre)configuration*
	+ Scheme 1 with preferred resource set triggered by an explicit request
	+ Scheme 1 with non-preferred resource set triggered by an explicit request
	+ Scheme 1 with preferred resource set triggered by a condition rather than request reception
	+ Scheme 1 with non-preferred resource set triggered by a condition rather than request reception
	+ Scheme 2
	+ Note: It is a separate issue/discusison which combinations of features are supported in Rel-17.
	1. **Scheme 2**
* *Agreement:*
	+ *In scheme 2, at least the following is supported for UE(s) to be UE-A(s)/UE-B(s) in the inter-UE coordination transmission triggered by a detection of expected/potential resource conflict(s) in Mode 2:*
		- *A UE that transmitted PSCCH/PSSCH with SCI indicating reserved resource(s) to be used for its transmission, received inter-UE coordination information from UE-A indicating expected/potential resource conflict(s) for the reserved resource(s), and uses it to determine resource re-selection is UE-B*
		- *A UE that detects expected/potential resource conflict(s) on resource(s) indicated by UE-B’s SCI sends inter-UE coordination information to UE-B, subject to satisfy one of the following conditions, is UE-A*
			* *(Working assumption) At least a destination UE of one of the conflicting TBs, i.e., TBs to be transmitted in the expected/potential conflicting resource(s)*
				+ *Whether a non-destination UE of a TB transmitted by UE-B can be UE-A is (pre-)configured*
			* *FFS: Additional details and condition(s) on UE-A and UE-B*
		- *The above feature can be enabled or disabled or controlled by (pre-)configuration*
			* *FFS: Details on how to support this, including (pre-)configuration signaling granularity*
		- *FFS: Definition of expected/potential resource conflict(s) and other details (if any)*

Note from FL: In the discussion of Scheme 2, ‘UE-B’ and ‘other UE’ mean the UEs scheduling the conflicting TBs as in the working assumption above, where UE-A is a destination UE of at least one of two TBs.

FL’s observation: FL understands that the original Option 1 is for the case where UE-A is a destiantoin of UE-B and in order to incorporate the other case implied by the working assumption, a variant of Option 1 (Option 1’) is also necessary for the case where UE-A is a destination of the other UE.

FL’s observation: Option 1 (and its variant) is supported by the majority of companies, so it is proposed to adopt it as an additional criteria.

***Draft proposal 2-1-1:***

* *For Condition 2-A-1 of Scheme 2, support following additional criteria to determine resource(s) where expected/potential resource conflict occurs*
	+ *For the case when UE-A is a destination UE of a TB transmitted by UE-B*
		- *Option 1: The resource(s) are fully/partially overlapping in time-and-frequency with other UE’s reserved resource(s) whose RSRP measurement is larger than a RSRP threshold according to the priorities included in the SCI:*
			* *prio\_TX and prio\_RX are the priorities indicated in the SCI making the overlapping reservations*
			* *Strive to reuse Rel-16 specification wherever possible*
	+ *For the case when UE-A is a destination UE of a TB transmitted by another UE*
		- *Option 1’: The resource(s) are fully/partially overlapping in time-and-frequency with other UE’s reserved resource(s) when RSRP measurement of UE-B’s reserved resource is larger than a RSRP threshold according to the priorities included in the SCI:*
			* *prio\_TX and prio\_RX are the priorities indicated in the SCI making the overlapping reservations*
			* *Strive to reuse Rel-16 specification wherever possible*

FL’s observation: It is observed that several companies propose to consider additional critieria which in FL’s understanding is compatible with Option 1. It is porposed to adopt Option 4 which is claimed to provide the performance benefit over Option 1 by simulation submitted to this meeting.

***Draft proposal 2-1-2:***

* *For Condition 2-A-1 of Scheme 2, support following additional criteria to determine resource(s) where expected/potential resource conflict occurs*
	+ *For the case when UE-A is a destination UE of a TB transmitted by UE-B*
		- *Option 4: The resource(s) are fully/partially overlapping in time-and-frequency with other UE’s reserved resource(s) whose RSRP measurement is larger than a (pre)configured RSRP threshold compared to the RSRP measurement of UE-B’s reserved resource.*
			* *FFS: Whether the threshold depends on priority*
	+ *For the case when UE-A is a destination UE of a TB transmitted by another UE*
		- *Option 4’: The resource(s) are fully/partially overlapping in time-and-frequency with other UE’s reserved resource(s) when RSRP measurement of UE-B’s reserved resource is larger than a (pre)configured RSRP threshold compared to the RSRP measurement of the resource(s).*
			* *FFS: Whether the threshold depends on priority*

FL’s observation: Since UE-B selection among UEs scheduling conflicting TBs based on their priority is supported by the majority of companies, so following is proposed. For better understanding on the draft proposal 2-2, let me provide some example. When UE-1, UE-2, and UE-3 schedule the conflicting TBs, UE-A selects UE(s) with higher priority value as UE-B(s) for each pair of (UE-1, UE-2)-pair, (UE-1, UE-3)-pair, (UE-2, UE-3)-pair. If priority values of UE-1, UE-2, and UE-3 are in increasing order, UE-A finally sends the inter-UE coordination information to UE-2 and UE-3.

***Draft proposal 2-2:***

* *For Condition 2-A-1 in Scheme 2, when “a non-destination UE of a TB transmitted by UE-B can be UE-A” is enabled, for each pair of UEs scheduling the conflicting TBs, a UE with the higher priority value can be UE-B.*

FL’s observation: It is observed that the following was claimed as the main motivation of each option in the PSFCH occasion for inter-UE coordination information transmission. No strong majority view was observed.

* Option 1: PSFCH occasion is derived by a slot where UE-B’s SCI is transmitted
	+ Reselection can be triggered earlier, so more resources remain for the reselection
* Option 2: PSFCH occasion is derived by a slot where expected/potential resource conflict occurs on PSSCH resource indicated by UE-B’s SCI
	+ When an SCI with conficting TB is transmitted after the PSFCH occastion of Option 1, Option 1 has a limitation in sending the inter-UE coordination information. Option 2 can avoid this problem.

***FL’s suggestion:***

* *For PSFCH occasion for inter-UE coordination information for Scheme 2, collect company input on the main main motivation of two options and make down-selection.*

FL’s observation: Since applying different m\_CS values for different conditioins is supported by the majority of companies, so following is proposed.

***Draft proposal 2-3:***

* *For PSFCH resource index determination in Scheme 2,*
	+ *m\_CS: 0 when UE-A determines Condition 2-A-1 is satisfied*
	+ *m\_CS: 6 when UE-A determines Condition 2-A-2 is satisfied*
1. **Email discussion before Monday’s GTW (November 15th)**

I ask companies to provide inputs until **November 12th 4:59pm UTC**. To prepare/make more stable draft proposals before the start of the next GTW session, it would be highly appreciated if companies make comments as soon as possible. Also to make progress more efficiently, **I would like to encourage companies to directly provide “revised wording” or “new wording needed to be added”**.

* 1. **Scheme 1**

Q1-1: When Condition 1-A-2 is enabled, when UE-A excludes “slot(s) where UE-A, when it is intended receiver of UE-B, does not expect to perform SL reception from UE-B due to half duplex operation” to determine the preferred resource set? Please provide rationales for your answer.

* Option 1: After Step 4) of TS 38.214 Section 8.1.4.
* Option 2: After Step 6) of TS 38.214 Section 8.1.4
* Option 3: After Step 7) of TS 38.214 Section 8.1.4

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| **Company** | **Option(s)** | **Comment** |
| Vivo | Option 2/3 |  |
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Q1-2: For inter-UE coordination triggered by an explicit request in Scheme 1, how UE-A and UE-B assume TX resource pool associated with the set of resources? Please provide rationales for your answer.

* Option 1: A resource pool indicated by UE-B’ request
* Option 2: A resource pool used for UE-B’s request transmission
* Option 3: A resource pool inidicated by UE-A’s inter-UE coordination information
* Option 4: A resource pool used for UE-A’s inter-UE coordination information transmission
* Option 5: Others (please specify it)

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| **Company** | **Option for UE-A** | **Option for UE-B** | **Comment** |
| vivo | Option 2 | Option 4 | If UE-A and UE-B do not change their TX pool information, it is not necessary to indicate pool ID in request or coordination information. |
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Q1-3: For inter-UE coordination triggered by a condition rather than request reception in Scheme 1, how UE-A and UE-B assume TX resource pool associated with the set of resources? Please provide rationales for your answer.

* Option 1: A resource pool inidicated by UE-A’s inter-UE coordination information
* Option 2: A resource pool used for UE-A’s inter-UE coordination information transmission
* Option 3: Others (please specify it)

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| **Company** | **Option for UE-A** | **Option for UE-B** | **Comment** |
| vivo | Option 2 | Option 2 |  |
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Q1-4: For Scheme 1, when inter-UE coordination is triggered by an explicit request in Scheme 1, whether or not following information needs to be included additionally in UE-B’s request? Please provide rationales for your answer.

* Resource set type
* C\_resel
* sl-TxPercentageList (X)
* Message size
* Number of resources to be reported
* Resoruces to be used for inter-UE coordination information signaling
* Number of time resrouces for a TB
* Others (please specify it)

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| **Company** | **Parameter(s)** | **Comment** |
| vivo | Number of time resrouces for a TB | The information can assist UE-A to determine the number of preferred resources. |
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Q1-5: For Scheme 1, when inter-UE coordination information is triggered by an explicit request, how UE-A assume priority value of the inter-UE coordination information signaling? Please provide rationales for your answer.

* Option 1: Priority value is (pre)configured
* Option 2: Priority value is indicated by UE-B’s request
* Option 3: Others (please specify it)

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| **Company** | **Option(s)** | **Comment** |
| vivo | Option 2 | We may not understand the intention of the proposal, is it the priority used by UE-A to determine resource set, option 2 seems agreed. If you mean the priority associated with the transmission resource, then option 2 seems simple option. We are open for other options if benefit is justified. |
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Q1-6: For Scheme 1, how UE-B assume priority value of request signaling? Please provide rationales for your answer.

* Option 1: Priority value is (pre)configured
* Option 2: Priority value of a TB to be transmitted by UE-B
* Option 3: Others (please specify it)

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| **Company** | **Option(s)** | **Comment** |
| vivo | Option 2 |  |
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Q1-7: For Scheme 1, when inter-UE coordination information is triggered by a condition rather than request receptoin, how UE-A assume priority value of the inter-UE coordination information signaling? Please provide rationales for your answer.

* Option 1: Priority value is (pre)configured
* Option 2: Priority value is indicated by UE-B’s prior SCI
* Option 3: Others (please specify it)

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| **Company** | **Option(s)** | **Comment** |
| vivo | Option 2 |  |
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Q1-8: For Scheme 1, when inter-UE coordination information is triggered by an explicit request, how UE-A assume L1-source ID and L1-destination ID of the inter-UE coordination information signaling? Please provide rationales for your answer.

* Option 1: (Pre)configured
* Option 2: L1-destination ID and L1-source ID of UE-B’s request signaling
* Option 3: L1-source ID and L1-destinatoin ID of a data to be multiplexed with the inter-UE coordination information
* Option 4: Others (please specify it)

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| **Company** | **Option(s)** | **Comment** |
| vivo | Option 4 | The destination of the coordination information is at least UE-B, how to determine the associated ID, it seems RAN2 work, is it. |
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Q1-9: For Scheme 1, how UE-B assume L1-source ID and L1-destiantion ID of request signaling? Please provide rationales for your answer.

* Option 1: (Pre)configured
* Option 2: L1-source ID and L1-destination ID to be used for UE-B’s transmission
* Option 3: L1-source ID and L1-destinatoin ID of a data to be multiplexed with the request
* Option 4: Others (please specify it)

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| **Company** | **Option(s)** | **Comment** |
| vivo | Option 4 | The destination of the coordination information is at least UE-A, how to determine the associated ID, it seems RAN2 work, is it. |
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Q1-10: For Scheme 1, when inter-UE coordination information is triggered by a condition rather than request receptoin, how UE-A assume L1-source ID and L1-destination ID of the inter-UE coordination information signaling? Please provide rationales for your answer.

* Option 1: (pre)configured
* Option 2: L1-source ID and L1-destinatoin ID of a data to be multiplexed with the inter-UE coordination information
* Option 3: Others (please specify it)

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| **Company** | **Option(s)** | **Comment** |
| vivo | Option 4 | The destination of the coordination information is at least UE-A, how to determine the associated ID, it seems RAN2 work, is it. |
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Q1-11: For inter-UE coordination information triggered by UE-B’s explicit request in Scheme 1, if UE-A is a destination UE of a TB transmitted by UE-B, which option(s) are supported for condition(s) to trigger a transmission of the explicit request to UE-A? Please provide rationales for your answer.

* Option 1: When UE-B expects to trigger resource (re)selection for PSCCH/PSSCH transmission to UE-A.
* Option 2: Priority value of UE-B’s transmission is smaller than a threshold.
* Option 3: UE-B’s sensing results is not available.
* Option 4: UE-B has a TB to be transmitted other than the explicit request. .
* Option 5: There is no available inter-UE coordination information at UE-B side for a certain duration of time.
* Option 6: The size of S\_A obtained after Step 7) of Rel-16 TS 38.214 Section 8.1.4 is larger than a threshold.
* Option 7: Remaining PDB of UE-B’s transmission is larger than a threshold
* Option 8: UE-B has data/TB for transmission that can be multiplexed with request to UE-A
* Option 9: It is up to UE-B’s implementation.

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| **Company** | **Option(s)** | **Comment** |
| vivo | Option 1 and option 4 | If data of a TB is ready in LCH, option 4 can be used. If data is still available in LCH other than the transmitted TB, option 1 is used. |
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Q1-12: For inter-UE coordination information triggered by UE-B’s explicit request in Scheme 1, is there a possibility of that UE-A does not transmit the inter-UE coordination information even though it received the explicit request? Please provide rationales for your answer.

* Option 1: SL transmission containining the request is dropped due to prioritization (e.g. UL/SL prioritization, LTE SL/NR SL prioritization).
* Option 2: Based on congestion control (e.g. CR limit)
* Option 3: RSRP measurement based on UE-A’s transmission at UE-B is smaller than a threshold
* Option 4: Distance between UE-A and UE-B is larger than a threshold
* Option 5: Up to UE implementation

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| **Company** | **Option(s)** | **Comment** |
| vivo | Option 1/2/3/5 |  |
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Q1-13: For inter-UE coordination information triggered by a condition other than explicit request reception in Scheme 1, what is condition(s) to trigger a transmission of UE-A’s inter-UE coordination information to UE-B? Please provide rationales for your answer.

* Option 1: When UE-A identifies that UE-B’s reserved resource(s) are overlapping with the non-preferred resource set
* Option 3: When contents of the inter-UE coordination information are changed
* Option 4: When UE-A receives a TB from its intended transmitter
* Option 5: When the number of failure of TB decoding at UE-A side is larger than a threshold
* Option 6: UE-A has data/TB for transmission that can be multiplexed with the inter-UE coordination information to UE-B
* Option 7: Up to UE implementation

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| **Company** | **Option(s)** | **Comment** |
| vivo | Option 6 and option 7, depends on scheme | Option 6 with modification: UE-A has data/TB for transmission. For scheme 1 non-preferred resource, for condition1-B-2, we assume UE-A reserve its transmisson slots using legacy SCI, UE-B exclude the slots reserved by UE-A to avoid HD issue. so, Rel-16 SCI-1/SCI-2 is used to re-interpret as coordination.Option 7 can be applied to scheme 1 preferred resource |
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Q1-14: For inter-UE coordination information triggered by a condition rather than request reception in Scheme 1, is there a possibility of that UE-A does not transmit the inter-UE coordination information even though the triggering condition is met? Please provide rationales for your answer.

* Option 1: SL transmission containining the inter-UE coordination information is dropped due to prioritization (e.g. UL/SL prioritization, LTE SL/NR SL prioritization).
* Option 2: Based on congestion control (e.g. CR limit)
* Option 3: RSRP measurement based on UE-B’s transmission at UE-A is smaller than a threshold
* Option 4: Distance between UE-A and UE-B is larger than a threshold
* Option 5: Up to UE implementation

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| **Company** | **Option(s)** | **Comment** |
| vivo | Option 5 | The intention to have option 1-4 is not clear for the question. At least it is freedom of UE-A whether to send coordination information. |
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* 1. **Scheme 2**

Q2-1: For Scheme 2, how UE-A or UE-B assume priority value of PSFCH transmission or reception, respectively? Please provide rationales for your answer.

* Option 1: Priority value(s) are (pre)configured
* Option 2: Smallest priority values among the priorites of the conflicting TBs.
* Option 3: Priority value of a conflicting TB transmitted by UE-B
* Option 4: Others (please specify it)

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| **Company** | **Option for UE-A** | **Option for UE-B** | **Comment** |
| vivo | Option 1 | Option 1 | At least for prioritization for Rel-16 PSFCH and Rel-17 PSFCH, option 1 is used, Rel-17 PSFCH has lowest priority, i.e., option 1.  |
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Q2-2: When PSFCH TX/RX for SL HARQ-ACK feedback is overlapping with PSFCH TX/RX for Scheme 2, how UE-A or UE-B performs prioritization rule, respectively? Please provide rationales for your answer.

* Option 1: PSFCH TX/RX for SL HARQ-ACK feedback is always prioritized over PSFCH TX/RX for Scheme 2
* Option 2: PSFCH TX/RX prioritization rule as specified in Rel-16 TS 38.213 Section 16.2.4.2 is commonly applied to both PSFCH TX/RX for SL HARQ-ACK feedback and PSFCH TX/RX for Scheme 2
* Option 3: Others (please specify it)

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| **Company** | **Option for UE-A** | **Option for UE-B** | **Comment** |
| vivo | Option 1 | Option 1 | Protect Rel-16 PSFCH, which is basic feature. |
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Q2-3: Do you support following proposal? Please provide rationales for your answer.

* When PSFCH TX/RX for Scheme 2 is overlapping with LTE SL TX/RX and/or UL in a UE, whehter PSFCH TX/RX for Scheme 2 is prioritized or not is determined as the same way according to TS 38.213 Section 16.2.4.1 and 16.2.4.3.1.

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| **Company** | **Yes or no** | **Comment** |
| vivo | Yes |  |
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Q2-4: For Scheme 2, how UE-A and UE-B assumes the values of the following parameters including possilibity of having separate (pre)configuration? Please provide rationales for your answer.

* Period of PSFCH resources (sl-PSFCH-Period)
* Number of cyclic shift pairs used for a PSFCH transmission that can be multiplexed in a PRB (sl-NumMuxCS-Pair)
* Number of PSFCH resources available for multiplexing information in a PSFCH transmission (sl-PSFCH-CandidateResourceType)

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| **Company** | **Comment** |
| vivo | Separate (pre)configuration |
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Q2-5: For Scheme 2, when UE-B performs exclusion of the candidate single-slot resouces overlappig with resources corresponding to the expected/potential resource conflict? Please provide rationales for your answer.

* Option 1: After Step 4) of TS 38.214 Section 8.1.4
* Option 2: After Step 6) of TS 38.214 Section 8.1.4
* Option 3: After Step 7) of TS 38.214 Section 8.1.4
* Option 4: Others (please specify it)

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| **Company** | **Option(s)** | **Comment** |
| vivo | Option 2 | Aligned with scheme 1 non-preferred resource. Save spec. effort. |
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Q2-6: For Scheme 2, do you support following proposal?

* For Scheme 2, PRB and m\_0 for PSFCH transmission/reception is derived by PSFCH resource index in the same way according to Rel-16 TS 38.213 Section 16.3

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| **Company** | **Yes or no** | **Comment** |
| vivo | Yes |  |
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1. **Summary of contributions**
* Details on supported conditions to determine inter-UE coordination information
	+ Condition 1-A-1
		- If inter-UE coordination information is triggered by an explicit request
			* Signaling from UE-B which provides prio\_TX, L\_subCH, P\_rsvp\_TX
				+ UE-B’s explicit request for inter-UE cooridnatoin information

Supported by [Huawei,1] [vivo,4] [CATT,7] [OPPO,8] [Zhejiang Lab,9] [Fraunhofer,14] [ZTE,16] [NEC,17] [Samsung,18] [LGE,19] [InterDigital,20] [Apple,22] (12)

* + - * Additional parameters provided by UE-B’s expclicit request
				+ Starting and/or ending time position of resource selection window

Supported by [Huawei,1] [CATT,7] [OPPO,8] [Intel,11] [Xiaomi,12] [CMCC,13] [LGE,19] [Apple,22] [Sharp,25] [Lenovo,29] (10)

With respect to the time location of UE-B’s request signaling [OPPO,8] [LGE,19] (2)

* + - * + Resource set type

Supported by [Nokia,2] [CATT,7] [ZTE,16] [InterDigital,20] [Apple,22] [Convida,26] [Lenovo,29] (7)

* + - * + Remaining PDB (UE-A determines resource selection window)

Supported by [vivo,4] [CMCC,13](if resource selection window is absent) [Fraunhofer,14] [ZTE,16] [NEC,17] [Samsung,18] (6)

* + - * + C\_resel

Supported by [OPPO,8] [LGE,19] (2)

* + - * + Message size

Supported by [Nokia,2]

* + - * + Number of resoruces to be reported

Supported by [Nokia,2]

* + - * + X%

Supported by [Fujitsu,6]

* + - * + Resoruces to be used for inter-UE coordination information signaling

Supported by [Fujitsu,6]

* + - * + Number of time resrouces for a TB [Apple,22]
		- If inter-UE coordination information is triggered by a condition rather than request reception
			* Setting of prio\_TX, L\_subCH, P\_rsvp\_TX, resource selection window
				+ Indicated by a (pre)configuration

Supported by [Futurewei,3] [vivo,4] [Intel,11](except for resource selection window) [LGE,19] [Lenovo,29] (5)

* + - * + Indicated by UE-B’s prior SCI

Supported by [Futurewei,3] [OPPO,8] [Fraunhofer,14] (3)

* + - * + Determined by UE-A’s implementation, and they are included in UE-A’s inter-UE coordination information

Supported by [Huawei,1] [vivo,4] [Intel,11](resrouce selection window) (3)

* + - * + Indicated by PC5-RRC

Supported by [Futurewei,3]

* + - RSRP threshold increase in Step 7) of Rel-16 TS 38.214 Sectoin 8.1.4
			* Supported by [CATT,7] [Samsung,18] [LGE,19] [Apple,22] [Ericsson,32] (5)
			* Objected by [ZTE,16]
	+ Condition 1-A-2
		- Removal of the possibility of disabling this feature
			* Supported by [CATT,7] [Lenovo,29] (2)
		- Consider it in Step 6) of TS 38.214 Section 8.1.4
			* Supported by [LGE,19]
	+ Condition 1-B-1
		- Support Option 1 only: [Spreadtrum,5] [Fraunhofer,14] [ZTE,16] [InterDigital,20] (4)
		- Removal of RSRP part in option 2: [CATT,7]
		- Support both with separate labeling: [LGE,19]
		- Add “measured RSRP of UE-B’s reserved reserouces in option 2: [MediaTek,31]
	+ Condition 1-B-2
		- Removal of “due to half duplex operation”: [vivo,4]
	+ Condition 2-A-1
		- Additional criteria
			* Option 1: The resource(s) are fully/partially overlapping in time-and-frequency with other UE’s reserved resource(s) whose RSRP measurement is larger than a RSRP threshold according to the priorities included in the SCI:
				+ prio\_TX and prio\_RX are the priorities indicated in the SCI making the overlapping reservations
				+ Strive to reuse Rel-16 specification wherever possible
				+ Supported by [Huawei,1] [Spreadtrum,5] [CATT,7] [Fraunhofer,14] [ZTE,16] [Samsung,18] [LGE,19] [Panasonic,23] [ETRI,24] [Convida,26] [Ericsson,32] (11)

For the case when UE-A is a destination UE of UE-B’s TB [LGE,19] [Panasonic,23] (2)

UE expects symmetric configuration of RSRP thresholds based on priorities [Ericssson,32]

* + - * Option 1’: The resource(s) are fully/partially overlapping in time-and-frequency with other UE’s reserved resource(s) when RSRP measurement of UE-B’s reserved resource(s) is larger than a RSRP threshold according to the priorities included in the SCI:
				+ prio\_TX and prio\_RX are the priorities indicated in the SCI making the overlapping reservations
				+ Supported by [LGE,19] [Panasonic,23] (2)

For the case when UE-A is a destination UE of other UE’s TB [LGE,19] [Panasonic,23] (2)

* + - * Option 2: The resource(s) are fully/partially overlapping in time-and-frequency with other UE’s reserved resource(s) whose RSRP measurement is within a (pre)configured RSRP threshold compared to the RSRP measurement of UE-B’s reserved resource.
				+ FFS: Whether the threshold depends on priority
				+ Supported by [Futurewei,3] [Intel,11] [Qualcomm,30] [MediaTek,31] (4)

For the case when UE-A is a destination UE of other UE’s TB [Futurewei,3]

* + - * Option 3: The resource(s) are fully/partially overlapping in time-and-frequency with other UE’s reserved resource(s) and the other UE is within a distance threshold of UE-B as determined by both UEs’ SCIs.
				+ Supported by [Intel,11] [Fraunhofer,14] [Panasonic,23] (3)
			* Option 4: The resource(s) are fully/partially overlapping in time-and-frequency with other UE’s reserved resource(s) whose RSRP measurement is larger than a (pre)configured RSRP threshold compared to the RSRP measurement of UE-B’s reserved resource.
				+ FFS: Whether the threshold depends on priority
				+ Supported by [Nokia,2] [Futurewei,3] [LGE,19] [InterDigital,20] [DCM,28] (5)

For the case when UE-A is a destination UE of UE-B’s TB [Nokia,2] [Futurewei,3] [LGE,19] [DCM,28] (4)

* + - * Option 4’: The resource(s) are fully/partially overlapping in time-and-frequency with other UE’s reserved resource(s) when RSRP measurement of UE-B’s reserved resoruce is larger than a (pre)configured RSRP threshold compared to the RSRP measurement of other UE’s reserved resource.
				+ FFS: Whether the threshold depends on priority
				+ Supported by [Nokia,2] [Futurewei,3] [LGE,19] [DCM,28] (4)

For the case when UE-A is a destination UE of other UE’s TB [Nokia,2] [Futurewei,3] [LGE,19] [DCM,28] (4)

* + - * Alt 3: No additional criteria is supported
				+ Supported by [OPPO,8] [NEC,17] (2)
		- UE-B selection
			* UE-B is a UE transiting a TB with lower or equal priority value among the conflicting TBs
				+ Supported by [Intel,11] [Samsung,18] [LGE,19] [DCM,28] [Qualcomm,30] (5)

Further consider the arrival time of reservation [Qualcomm,30]

* + Condition 2-A-2
		- UE-A does not indicate a resource conflict if UE-B’s transmission has higher priority than UE-A’s [Nokia,2]
	+ How to align TX resource pool between UE-A and UE-B
		- In scheme 1
			* If inter-UE coordination information is triggered by an explicit request
				+ TX resource set where a slot of UE-A’s inter-UE coordination information singaling belongs to

Supported by [OPPO,8] [Zhejiang Lab,9] (2)

* + - * + TX resource pool ID is indicated by UE-B’s request

Supported by [Intel,11] [ZTE,16] (2)

* + - * + UE-B’s Tx/Rx resource pool is assumed to be aligned with UE-A’s Tx/Rx resource pool via implementation

Supported by [Huawei,1]

* + - * + TX resource set where a slot of UE-B’s explicit request singaling belongs to

Supported by [LGE,19]

* + - * If inter-UE coordination information is triggered by a condition rather than request reception
				+ TX resource set where a slot of UE-A’s inter-UE coordination information singaling belongs to

Supported by [OPPO,8] [Zhejiang Lab,9] [Intel,11] [LGE,19] (4)

* + - * + UE-B’s Tx/Rx resource pool is assumed to be aligned with UE-A’s Tx/Rx resource pool via implementation

Supported by [Huawei,1]

* + - * + TX resource pool ID indicated by UE-A’s inter-UE coordination information

Supported by [Intel,11]

* + - In scheme 2
			* UE-B’s Tx/Rx resource pool is assumed to be aligned with UE-A’s Tx/Rx resource pool via implementation
				+ Supported by [Huawei,1] [LGE,19] (2)
			* UE-A receives other UE’s SCI and UE-B’s SCI in slot(s) belonging to the same TX resource pool
				+ Supported by [LGE,19]
* Contents of inter-UE coordination information and its request
	+ Contents of the inter-UE coordination information in Scheme 1
		- Set of resources
			* Indication mechanism
				+ Option 1: N combinations of TRIV, FRIV, resource reservation period as specified in Rel-16 TS 38.214 Section 8.1.5 with following modification:

First resource location of each TRIV is separately indicated by the inter-UE coordination information

FFS: Value of N.

Supported by [Fraunhofer,14] [LGE,19] [Apple,22] [ETRI,24](optional) [Sharp,25] [DCM,28] [Qualcomm,30] (7)

Removal of indicating number of sub-channels [Sharp,25]

* + - * + Option 2: Bitmap indication where each bit indicates whether a pair of sub-channel(s) and slot(s) is included in inter-UE coordination information

FFS: Granularity in time-and-frequency resources

FFS: other information (if any) e.g. periodicity

Supported by [CATT,7] [OPPO,8] [Zhejiang Lab,9] [Fraunhofer,14] [Samsung,18] [Apple,22](for non-preferred resource set) [ETRI,24](1st priority) [Sharp,25] (8)

* + - * + Option 3: Reuse a single combination of TRIV and FRIV as specified in Rel-16 TS 38.214 Section 8.1.5 with following modification:

For TRIV, window size of 32 slots is replaced with the value corresponding to the resource selection window

For FRIV, only combinations of starting sub-channels are indicated

For a pair of TRIV and FRIV, more than 2 additional resources can be indicated

Supported by [Nokia,2]

* + - * + Option 4: 2-dimensional resource indicator value

Each value is associated with a pair of sub-channel(s) and slot(s) is included in inter-UE coordination information

Supported by [Huawei,1] [Nokia,2] (2)

Not allowing resoruces overlapping in time [Huawei,1]

Allowing resoruces overlapping in time [Nokia,2]

* + - Identifier to identify a UE receiving this coordination information [Huawei,1] [Fujitsu,6] [Intel,11] [Samsung,18] [LGE,19] (5)
		- Identifier to identify a UE transmitting this coordination information [Huawei,1] [Fujitsu,6] [Samsung,18] [LGE,19] (4)
		- Resource set type [Huawei,1] [Zhejiang Lab,9] [Fraunhofer,14] [LGE,19] (4)
		- TX parameters to be used to determine the set of resoruces
			* TX Priority [Huawei,1] [InterDigital,20] [ASUSTek,27] (3)
			* Resoruce selection window [Huawei,1] [Intel,11] [InterDigital,20] (3)
			* Number of sub-channels [Huawei,1] [InterDigital,20] (2)
			* Resource reservation period [Huawei,1] [InterDigital,20] (2)
		- Condition type for non-preferred resource set [Intel,11] [LGE,19] (2)
		- RSRP measurement of reserved resources [Apple,22] [ASUSTek,27] [Ericsson,32] (3)
		- RX priority value of non-preferred resources [LGE,19] [Apple,22] (2)
		- Zone ID and communication range requirement [Samsung,18] [InterDigital,20] (2)
		- ID(s) of UE-B’s intended receiver(s) [Nokia,2]
		- ID(s) used by UE-B [Nokia,2]
		- Source ID of other UE’s reserved resources [Intel,11]
		- Feedback timestamp [Intel,11]
		- Indicator to indicate whether coordination information is assistance type or scheduling type [Convida,26]
* Container of inter-UE coordination information and its request
	+ Container of the inter-UE coordination information in Scheme 1
		- SCI format 1-A [Futurwei,3] [vivo,4](non-preferred resource set) [Fujitsu,6] [CMCC,13] [Sharp,25] [MediaTek,31] (6)
			* Stand-alone PSCCH [Futurewei,3]
		- New 2nd-stage SCI format [Huawei,1] [Futurewei,3] [vivo,4](preferred resource set) [Spreadtrum,5] [Fujitsu,6] [CATT,7] [OPPO,8] [Zhejiang Lab,9] [Sony,10] [Xiaomi,12] [CMCC,13] [Fraunhofer,14] [Samsung,18] [Mitsubishi,21] [Apple,22] (for preferred resource set) [Qualcomm,30](for preferred resource set) [MediaTek,31] (17)
			* Possibility of having 2nd SCI without TB scheduling [Huawei,1] [Futurewei,3] [Sony,10] [Xiaomi,12] [Fraunhofer,14] [Samsung,18] (6)
			* with scheduling TB containing remaining L2 source/destination ID [LGE,19]
			* Keep Rel-16 SCI format size budget [LGE,19]
		- MAC CE [vivo,4](preferred resource set, for Condition 1-B-1 optoin 2) [Spreadtrum,5] [Fujitsu,6] [Intel,11] [ZTE,16] [LGE,19] [InterDigital,20] [Mitsubishi,21] [Apple,22](for non-preferred resource set) [Panasonic,23] [DCM,28] [Qualcomm,30](for non-preferred resource set) [MediaTek,31] [Ericsson,32] (14)
			* With the possibility of multiplexing with other data [Intel,11] [LGE,19] [Qualcomm,30] (3)
				+ Destination ID are always the same [LGE,19]
				+ Destination ID can be different [Intel,11]
			* Without multiplexing with other data [Futurewei,3]
		- PC5-RRC [Intel,11] [InterDigital,20] [MediaTek,31] [Ericsson,32] (4)
	+ Container of the explicit request in Scheme 1
		- New 2nd-stage SCI format [Huawei,1] [Nokia,2] [Futurewei,3] [vivo,4] [Spreadtrum,5] [Fujitsu,6] [CATT,7] [Zhejiang Lab,9] [Sony,10] [Xiaomi,12] [CMCC,13] [CAICT,15] [Samsung,18] [Apple,22] [Lenovo,29] (15)
			* without TB scheduling [Huawei,1] [Samsung,18] (2)
		- MAC CE [Nokia,2] [vivo,4] [Fujitsu,6] [Sony,10] [Fraunhofer,14] [ZTE,16] [LGE,19] [Apple,22] [Panasonic,23] [Lenovo,29] (10)
			* With the possibility of multiplexing with data [Intel,11] [LGE,19] (2)
				+ Destination ID are always the same [LGE,19]
				+ Destination ID can be different [Intel,11]
		- PC5-RRC [Qualcomm,30]
		- PSFCH [MediaTek,31]
	+ Other details for scheme 1
		- Inter-UE coordination triggered by UE-B’s request
			* Cast type
				+ Unicast [Huawei,1] [Nokia,2] [Futurewei,3] [Spreadtrum,5] [CATT,7] [Fraunhofer,14] [Mitsubishi,21] [Panasonic,23] [Ericsson,32] (9)
				+ Groupcast [Nokia,2] [Fraunhofer,14] (2)
			* Source ID
				+ Destination ID of UE-B’s request signaling [LGE,19]
			* Destinatoin ID
				+ Source ID of UE-B’s request signaling [CATT,7] [Intel,11] [LGE,19] (3)
				+ Broadcast destination ID [Intel,11](standalone mode)
				+ Groupcast desitnation ID of UE-B’s transmission [Intel,11]
			* Priority value
				+ Indicated by UE-B’s request [Intel,11]
				+ (pre)configured [LGE,19]
		- Request signaling
			* Cast type
				+ Unicast [Huawei,1] [Nokia,2] [Futurewei,3] [Intel,11] [Fraunhofer,14] [Mitsubishi,21] [Panasonic,23] [Ericsson,32] (8)
				+ Groupcast [Nokia,2] [Futurewei,3] [Fraunhofer,14] [Mitsubishi,21] (4)
			* Source ID
				+ Source ID to be used for UE-B’s transmission [LGE,19]
			* Destinatoin ID
				+ Destinatoin ID to be used for UE-B’s transmission [LGE,19]
			* Priority value
				+ (pre)configured [LGE,19]
		- Inter-UE coordination triggered by a condition rather than request reception
			* Cast type
				+ Unicast [Huawei,1] [Futurewei,3] [Spreadtrum,5] [Mitsubishi,21] [Ericsson,32] (5)
				+ Groupcast [Futurewei,3] [Panasonic,23] (2)
				+ Broadcast [Panasonic,23]
			* Source ID
				+ Target destination ID to be used for UE-B’s transmission [LGE,19]
			* Destinatoin ID
				+ Broadcast destination ID [Intel,11]
				+ (pre)configured [LGE,19]
			* Priority value
				+ (Pre)configured value [Intel,11] [LGE,19] (2)
				+ Highest priority between multiplexed data and inter-UE coordination information [Intel,11]
	+ Container of the inter-UE coordination in Scheme 2
		- PSFCH resource set
			* Period of PSFCH resources (sl-PSFCH-Period)
				+ Indicated by a separate (pre)configuration

Supported by [Zhejiang Lab,9] [Intel,11] (2)

* + - * + Same as that of SL HARQ-ACK feedback in the same resource pool

Supported by [Qualcomm,30]

* + - * Number of cyclic shift pairs used for a PSFCH transmission that can be multiplexed in a PRB (sl-NumMuxCS-Pair)
				+ Indicated by a separate (pre)configuration

Supported by [CATT,7] [Zhejiang Lab,9] (2)

* + - * + Same as that of SL HARQ-ACK feedback in the same resource pool

Supported by

* + - * Number of PSFCH resources available for multiplexing information in a PSFCH transmission (sl-PSFCH-CandidateResourceType)
				+ Indicated by a separate (pre)configuration

Supported by [CATT,7] [Zhejiang Lab,9] (2)

* + - * + Starting sub-channel index

Supported by [Intel,11]

* + - * + Same as that of SL HARQ-ACK feedback in the same resource pool

Supported by

* + - * Scrambling ID for sequence hopping of PSFCH (sl-PSFCH-HopID)
				+ Indicated by a separate (pre)configuration

Supported by [Intel,11]

* + - * + Same as that of SL HARQ-ACK feedback in the same resource pool

Supported by [Qualcomm,30]

* + - Prioritization rule
			* PSFCH TX/TX and TX/RX prioritization rule
				+ Based on highest priority of conflicting TBs [Fujitsu,6] [Lenovo,29] (2)
				+ PSFCH for SL HARQ-ACK feedback is prioritized over PSFCH for Scheme 2 [vivo,4] [Ericsson,32] (2)
			* PSFCH and UL/LTE SL prioritization rule
				+ Based on highest priority of conflicting TBs [vivo,4] [Fujitsu,6] [Lenovo,29] (3)
		- PSFCH resource determination
			* Timing of the PSFCH transmission
				+ Option 1: PSFCH occasion is derived by a slot where UE-B’s SCI is transmitted

Supported by [Huawei,1] [CATT,7] [Xiaomi,12] [ZTE,16] [Samsung,18] [Apple,22] [Convida,26] [Qualcomm,30] [Ericsson,32] (9)

* + - * + Option 2: PSFCH occasion is derived by a slot where expected/potential resource conflict occurs on PSSCH resource indicated by UE-B’s SCI

Supported by [Futurewei,3] [vivo,4] [OPPO,8] [Intel,11] [LGE,19] [InterDigital,20] [Panasonic,23] [ETRI,24] [ASUSTek,27] [DCM,28] (10)

Latest PSFCH slot for Scheme 2 T\_proc,x slots before the resource with resource conflict [Futurewei,3] [vivo,4] [Intel,11] [LGE,19] [DCM,28] (5)

T\_proc,x is a function of T\_3 and/or T\_prep [vivo,4] [Intel,11] [LGE,19] (3)

* + - * Frequency and code domain resources derived by
				+ m\_CS

Option 1:

0

Supported by [ZTE,16] [Samsung,18] [Apple,22] [Sharp,25] [Ericsson,32] (5)

Option 2:

0 for Condition 2-A-1,

6 for Condition 2-A-2

Supported by [Nokia,2] [Futurewei,3] [vivo,4](for option 2) [Spreadtrum,5] [CATT,7] [Intel,11] [LGE,19] [InterDigital,20] [DCM,28] (9)

Option 3:

0 for 2nd reserved resource,

6 for 3rd reserved resource

Supported by [vivo,4](for option 1) [Qualcomm,30] (2)

Option 4:

0 for 2nd reserved resoruce

2 for 3rd reserved resoruce

4 for both 2nd and 3rd reserved resource

6 for the case when no UE transmitted SCI with periodic reservation on the non-moniotred slot of UE-B

8 for Condition 2-A-2

Supported by [Huawei,1]

Optoin 5:

(pre)configured

Supported by [Panasonic,23]

* + - * + m\_0 determination based on PSFCH resource index

In the same way as specified in TS 38.213 Section 16.3

Supported by [LGE,19] [DCM,28] [Ericsson,32] (3)

Update to indicate the time location of expected/potential resrouce conflict

Supported by [CATT,7] [Samsung,18] (2)

* + Dedicated resource pool is (pre)configured for inter-UE coordination information transmission in Scheme 1
		- Supported by [Nokia,2] [Qualcomm,30] (2)
* Details on how UE-B uses or skip the received inter-UE coordination in its resource (re)selection
	+ Scheme 1 with preferred resource set Option A
		- Option 1-1:
			* Physical layer at UE-B reports both the intersection set between the preferred resource set and S\_A obtained after Step 7) of Rel-16 TS 38.214 Section 8.1.4 and the S\_A to higher layer for its resource (re-)selection
			* Higher layer at UE-B first uses the candidate single-slot resource(s) belonging to the intersection set, and then further uses the remaining S\_A outside the intersection in its resource (re-)selection if necessary
			* Supported by [Huawei,1] [vivo,4] [Apple,22] [DCM,28] [Ericsson,32] (5)
				+ [DCM,28]: If MAC CE is used as a container, physical layer at UE-B reports only S\_A.
		- Option 1-2:
			* Physical layer at UE-B reports both the preferred resource set (if necessary) and S\_A obtained after Step 7) of Rel-16 TS 38.214 Section 8.1.4 to higher layer for its resource (re-)selection
			* Higher layer at UE-B first uses the candidate single-slot resource(s) belonging to the intersection set between the preferred resource set and S\_A, and then it is up to UE-B’s implementation to further uses the remaining S\_A or remaining preferred resources outside the intersection in its resource (re-)selection if necessary
			* Supported by [Futurewei,3] [CMCC,13] (2)
		- Option 2:
			* If the number of candidate single-slot resources belonging to the intersection between the preferred resource set and S\_A obtained after Step 7) of Rel-16 TS 38.214 Section 8.1.4 satisfies the requirement of X⋅M\_"total" as specified in Step 7) of TS 38.214 Section 8.1.4
				+ Physical layer at UE-B reports the intersection set instead of S\_A to higher layer for its resource (re-)selection
			* Otherwise,
				+ Physical layer at UE-B reports the set(s) determined by the intersection set as defined above and the S\_A obtained after Step 7) of Rel-16 TS 38.214 Section 8.1.4 to higher layer for its resource (re-)selection.

FFS: how to determine the set(s) based on the intersection set and S\_A

* + - * Supported by [Fujitsu,6] [Intel,11] [Xiaomi,12] [CMCC,13] [Fraunhofer,14] [Samsung,18] [ETRI,24] (7)
				+ The set is the intersection set plus preferred resources excluded in Step 5) [Fujitsu,6] [CMCC,13] [Samsung,18] (3)
				+ The set is all or a subset of S\_A [Intel,11] [Xiaomi,12] [Fraunhofer,14] (3)
		- Other option
			* [CATT,7]: Apply the set of resrouces in Step 4)
	+ Scheme 1 with preferred resource set Option B
		- Applicable scenario
			* It is applied if UE-B’s transmission is on a TX resource pool (pre)configured with random selection only
				+ Supported by [OPPO,8] [LGE,19] [DCM,28] (3)
			* It is applied if UE-B is not capable of performing sensing
				+ Supported by [vivo,4] [DCM,28] [Ericsson,32] (3)
			* UE-B selects no to perform sensing [vivo,4] [Fraunhofer,14] (2)
			* It is applied up to UE-B’s implementation [Lenovo,29]
		- Alt 1:
			* Physical layer at UE-B reports preferred resource set to higher layer for its resource (re-)selection
			* Higher layer at UE-B uses the candidate single-slot resource(s) belonging to the preferred resource set in its resource (re-)selection
			* Supported by [Huawei,1] [LGE,19] (2)
		- Alt 2:
			* If the number of candidate single-slot resources belonging to the preferred resource set satisfies the requirement of X⋅M\_"total" as specified in Step 7) of TS 38.214 Section 8.1.4
				+ Physical layer at UE-B reports the preferred resource set to higher layer for its resource (re-)selection
			* Otherwise,
				+ Physical layer at UE-B reports the S\_A obtained after Step 4) of Rel-16 TS 38.214 Section 8.1.4 to higher layer for its resource (re-)selection.
			* Supported by [Intel,11]
		- Alt 3:
			* If the number of candidate single-slot resources belonging to the preferred resource set satisfies the requirement of X⋅M\_"total" as specified in Step 7) of TS 38.214 Section 8.1.4
				+ Physical layer at UE-B reports the preferred resource set to higher layer for its resource (re-)selection
			* Otherwise,
				+ Physical layer at UE-B reports both the preferred resource set and the S\_A obtained after Step 4) of Rel-16 TS 38.214 Section 8.1.4 to higher layer for its resource (re-)selection.
				+ Higher layer at UE-B first uses the candidate single-slot resource(s) belonging to the preferred resource set, and then further uses the remaining S\_A in its resource (re-)selection if necessary
			* Supported by [Apple,22]
	+ Scheme 1 with non-preferred resource set
		- Option 1: Physical layer at UE-B excludes candidate single-slot resource(s) overlapping with the non-preferred resource set from S\_A obtained after Step 7) of Rel-16 TS 38.214 Section 8.1.4. It reports the updated S\_A to higher layer for its resource (re)selection.
			* Supported by [Huawei,1] [Fujitsu,6] [Xiaomi,12] (3)
		- Option 2: Physical layer at UE-B excludes in its resource (re-)selection, candidate single-slot resource(s) obtained after Step 6) of Rel-16 TS 38.214 Section 8.1.4 overlapping with the non-preferred resource set
			* Supported by [vivo,4] [Fujitsu,6] [Fraunhofer,14] [Samsung,18] [LGE,19] [Apple,22] [ETRI,24] [DCM,28] [Qualcomm,30] [Ericsson,32] (10)
		- Option 3: Physical layer at UE-B excludes in its resource (re-)selection, candidate single-slot resource(s) obtained after Step 4) of Rel-16 TS 38.214 Section 8.1.4 overlapping with the non-preferred resource set
			* Supported by [Futurewei,3] [CATT,7] [Xiaomi,12] [CMCC,13] [Fraunhofer,14] (5)
		- M\_total update
			* Number of candidate single-slot resoruces overlapping with non-prefered resources is not counted for M\_total [vivo,4] [CATT,7] [CMCC,13] [Qualcomm,30] (4)
			* Number of candidate single-slot resoruces overlapping with non-prefered resources associated with Condition 1-B-2 is not counted for M\_total [LGE,19]
	+ Validity check for scheme 1
		- Based on priority level used for determining the set of resrouces [Intel,11] [Fraunhofer,14] [LGE,19](for Condition 1-B-1 with option 2) [InterDigital,20] [Lenovo,29] (5)
		- Based on radio/geographical distance [Intel,11] [Fraunhofer,14] [Samsung,18] [Mitsubishi,21] (4)
		- Destinatoin ID of inter-UE coordination information [Fraunhofer,14] [LGE,19] (2)
		- Source ID of inter-UE coordination information [Intel,11] [Samsung,18] (2)
		- Aging time condition expires [Intel,11]
		- Remaining PDB is smaller than a threshold [Apple,22]
	+ Scheme 2
		- Condition when UE-B does not perform re-selection upon the reception of the inter-UE coordination
			* Priority of UE-B’s transmission is high [Nokia,2] [Fraunhofer,14] (2)
			* For Condition 2-A-2, the destination of a PSCCH/PSSCH to be transmitted by UE-B is not UE-A [Fraunhofer,14] [LGE,19] (2)
			* Time gap between UE-B’s SCI and its reserved resource is smaller than a threshold [CATT,7] [Apple,22] (2)
			* Remaining PDB of UE-B’s transmission is smaller than a threshold [Nokia,2]
			* UE-B reselects its reserved resource where resource conflict occurs [Fujitsu,6]
			* There is not enough resources for its transmission [Ericsson,32]
		- Skip Step 5) if UE-A informs that there is periodic reservation from other UEs on non-monitored slots of UE-B [Huawei,1]
		- UE-B excludes the resources corresponding to the collision indication in its resource reselection [vivo,4] [LGE,19] [DCM,28] (3)
* Details on a condition to trigger inter-UE coordination information
	+ Condition(s) when UE-A transmits the inter-UE coordination information to UE-B in Scheme 1
		- Potential/expected resource conflict is detected on the resources reserved by UE-B [Futurewei,3] [OPPO,8] [Xiaomi,12] [Fraunhofer,14] [Mitsubishi,21] (5)
		- Up to UE’s implementation [Futurewei,3] [LGE,19] [Apple,22] [DCM,28] (4)
		- Reception at an intended destination UE of an SCI indicating reserved resources for its reception [Nokia,2] [Qualcomm,30] (2)
		- UE-A completes its resource selection [vivo,4] [Qualcomm,30] (2)
		- UE has data to UE-B which is multiplexed with feedback payload [Intel,11] [DCM,28] (2)
		- Number of failure of TB decoding at UE-A side is larger than a threshold [Mitsubishi,21] [Lenovo,29] (2)
		- Change in resource to be sent via inter-UE coordination [Nokia,2]
		- UE-A transmits resource reservation signaling [vivo,4]
		- Feedback was not transmitted for a certain amount of time [Intel,11]
		- Distance between UE-A and UE-B is smaller than a threshold [Xiaomi,12]
		- Distance between UE-A and UE-B is larger than a threshold [Xiaomi,12]
		- CBR is higher than a threshold [Apple,22]
		- CBR is lower than (pre)configured threshold [DCM,28]
		- UE-A detects a resource re-selection is to be performed by UE-B [Ericsson,32]
	+ Condition(s) when UE-B transmits the request for the inter-UE coordination information in Scheme 1
		- Up to UE’s implementation [CATT,7] [ZTE,16] [LGE,19] [DCM,28] (4)
		- Resource re-selection is triggered by UE-B [OPPO,8] [Intel,11] [Xiaomi,12] (3)
		- Resource re-selection is expected to be performed by UE-B [Intel,11] [Ericsson,32] (2)
		- UE-B has data/TB for transmission that can be multiplexed with request to UE-A [Intel,11] [DCM,28] (2)
		- TB arrives at physical layer of UE-B [vivo,4]
		- Priority index of UE-B’s packet is smaller than a threshold [OPPO,8]
		- Remainig PDB of UE-B’s packet is larger than a threshold [OPPO,8]
		- Number of resoruces within the set S\_A is larger than a threshold [OPPO,8]
		- UE-B does not have valid inter-UE coordination information [Intel,11]
		- Elapsed time from the previous inter-UE coordination feedback request exceeds pre-configured value [Intel,11]
		- UE-B supports inter-UE coordination scheme 1 [Intel, 11]
		- UE-B does not have valid inter-UE coordination information from nay destination UE [Intel,11]
	+ whether/how UE-A knows that UE-B is capable of receiving inter-UE coordination information and taking into account it in its resource re-selection
		- Option 1: UE-B’s SCI indicates whether UE-B has such a capability or not [CATT,7] [OPPO,8] [Intel,11] [InterDigital,20] [Apple,22] (5)
		- Option 2: UE-A is provided with whether UE-B has such a capability or not via PC5-RRC signaling. [CAICT,15]
* Details on a (pre)configuration to enable or disable or control feature of the inter-UE coordination
	+ Alt 1: [Qualcomm,30]
		- Scheme 1 with preferred-resource indication
		- Scheme 1 with non-preferred resource indication
		- Scheme 2
	+ Alt 2: [CATT,7]
		- Scheme 1 with explicit request-based manner
		- Scheme 1 with condition-based manner
		- Scheme 2
	+ Alt 3: [ZTE,16]
		- Scheme 1
		- Scheme 2
	+ Alt 4: [LGE,19]
		- Scheme 1
			* Preferred resource vs non-preferred resource
			* Expclicit request-based manner vs condition-based manner
		- Scheme 2
			* Whehter UE-A is non-destinatoin of a TB transmitted by UE-B or not
* Others
	+ Futher consideration on skipping inter-UE coordination information signaling when a condition is met [vivo,4] [Fujitsu,6] [Apple,22]
	+ Further consideration on specifying details for Condition 1-A-2/1-B-2/2-A-2 [vivo,4] [DCM,28] [Qualcomm,30]
	+ Further consideration on supporting additional feature or condition of determing the set of resources [Nokia,2] [CATT,7] [OPPO,8] [Intel,11]
	+ Further consideration on restricting combinations of features to be supported in Scheme 1 [Fujitsu,6] [CATT,7] [Xiaomi,12] [Fraunhofer,14] [ZTE,16] [Samsung,18] [LGE,19] [Apple,22] [DCM,28] [Qualcomm,30]
	+ Further consideration on additional criteria for determining the set of resoruces in Scheme 1 based on RSRP distance between UE-A and UE-B [Fujitsu,6] [Intel,11] [Ericsson,32]
	+ Further restrict or expand on the condition to be UE-A and/or UE-B [Huawei,1] [Nokia,2] [vivo,4] [Sony,10] [Fraunhofer,14] [ZTE,16] [Samsung,18] [InterDigital,20] [Mitsubishi,21] [DCM,28] [Qualcomm,30] [Ericsson,32]
	+ Furuther consideration on latency bound for the inter-UE coordination information singaling [CATT,7] [Samsung,18] [Lenovo,29]
	+ Further consideration of repetition of inter-UE coordination information signaling [BOSCH,33]
1. **Reference**
2. R1-2110845 Inter-UE coordination in sidelink resource allocation Huawei, HiSilicon
3. R1-2110862 Inter-UE coordination for Mode 2 enhancements Nokia, Nokia Shanghai Bell
4. R1-2110887 Discussion on techniques for inter-UE coordination FUTUREWEI
5. R1-2111037 Remaining issues on mode-2 enhancements vivo
6. R1-2111112 Discussion on inter-UE coordination in sidelink resource allocation Spreadtrum Communications
7. R1-2111151 Considerations on inter-UE coordination for mode 2 enhancements Fujitsu
8. R1-2111229 Remaining issues on Inter-UE coordination for Mode 2 enhancements CATT, GOHIGH
9. R1-2111301 Inter-UE coordination in mode 2 of NR sidelink OPPO
10. R1-2111354 Inter-UE coordination for mode 2 enhancements Zhejiang Lab
11. R1-2111407 Discussion on inter-UE coordination for Mode 2 enhancements Sony
12. R1-2111515 Design of Inter-UE Coordination Solutions for Sidelink Communication Intel Corporation
13. R1-2111547 Discussion on inter-UE coordination Xiaomi
14. R1-2111626 Discussion on inter-UE coordination for mode 2 enhancement CMCC
15. R1-2111650 Resource Allocation Enhancements for Mode 2 Fraunhofer HHI, Fraunhofer IIS
16. R1-2111657 Considerations on mode 2 enhancements CAICT
17. R1-2111667 Discussion on inter-UE coordination ZTE
18. R1-2111700 Discussion on mode 2 enhencements NEC
19. R1-2111759 On Inter-UE Coordination for Mode2 Enhancements Samsung
20. R1-2111816 Discussion on inter-UE coordination for Mode 2 enhancements LG Electronics
21. R1-2111825 On inter-UE coordination for Mode 2 enhancement InterDigital, Inc.
22. R1-2111827 Inter-UE coordination for enhanced resource allocation Mitsubishi Electric RCE
23. R1-2111895 Inter-UE Coordination Apple
24. R1-2111967 Inter-UE coordination for Mode 2 enhancements Panasonic Corporation
25. R1-2111998 Discussion on inter-UE coordination for Mode 2 enhancements ETRI
26. R1-2112025 Discussion on inter-UE coordination for mode 2 enhancements Sharp
27. R1-2112034 Inter-UE Coordination for NR SL Mode 2 Enhancement Convida Wireless
28. R1-2112043 Discussion on V2X mode 2 enhancements ASUSTeK
29. R1-2112127 Resource allocation for reliability and latency enhancements NTT DOCOMO, INC.
30. R1-2112165 Inter-UE coordination for Mode 2 enhancements Lenovo, Motorola Mobility
31. R1-2112238 Reliability and Latency Enhancements for Mode 2 Qualcomm Incorporated
32. R1-2112318 Discussion on Mode 2 enhancements MediaTek Inc.
33. R1-2112352 Details on mode 2 enhancements for inter-UE coordination Ericsson
34. R1-2112396 Remaining details on mode 2 inter-UE coordination ROBERT BOSCH GmbH
35. **Appendix**
	1. **Conclusions made in RAN1#103-e meeting**
* ***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*
		- *Final LS in R1-2009841*
* ***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*
	1. **Conclusions made in RAN1#104-e meeting**
* ***Conclusion****:*
	+ *RAN1 concludes that the inter-UE coordination in Mode 2 is feasible, and is beneficial (e.g., reliability, etc.) compared to Rel-16 Mode 2 RA, and thus recommends specification of the feature.*
		- *The detailed observations can be found in the attachment of the LS*
* *Draft LS in R1-2102165, along with the attachment R1-2102166, is approved (with a typo fix)*
	+ *Final LS in R1-2102168*
	1. **Agreements made in RAN1#104bis-e meeting**
* *Agreement:*
	+ *Support the following schemes of inter-UE coordination in Mode 2:*
		- *Inter-UE Coordination Scheme 1:*
			* *The coordination information sent from UE-A to UE-B is the set of resources preferred and/or non-preferred for UE-B’s transmission*
				+ *FFS details including a possibility of down-selection between the preferred resource set and the non-preferred resource set, whether or not to include any additional information other than indicating time/frequency of the resources within the set in the coordination information*
			* *FFS condition(s) in which Scheme 1 is used*
		- *Inter-UE Coordination Scheme 2:*
			* *The coordination information sent from UE-A to UE-B is the presence of expected/potential and/or detected resource conflict on the resources indicated by UE-B’s SCI*
				+ *FFS details including a possibility of down-selection between the expected/potential conflict and the detected resource conflict*
			* *FFS condition(s) in which Scheme 2 is used*
* *Agreement:*
	+ *Study further to determine the conditions for UEs to be UE-A(s)/UE-B(s) for inter-UE coordination:*
		- *Details include applicable scenario(s)/inter-UE coordination scheme(s)*
		- *E.g., only UE(s) among the intended receiver(s) of UE-B can be a UE-A, any UE can be a UE-A, high-layer configured, etc.*
			* *Including the possibility of being subject to certain conditions and/or capability*
* *Agreement:*
	+ *When UE-B receives the inter-UE coordination information from UE-A, consider at least one of the following options (with details FFS including possibly down-selecting/merging one or more of the options below, applicable scenario(s)/condition(s) for each option, UE behavior) for UE-B’s to take it into account in the resource (re)-selection for its own transmission*
		- *For scheme 1:*
			* *Option 1-1: UE-B’s resource(s) to be used for its transmission resource (re)-selection is based on both UE-B’s sensing result (if available) and the received coordination information*
			* *Option 1-2: UE-B’s resource(s) to be used for its transmission resource (re)-selection is based only on the received coordination information*
			* *Option 1-3: UE-B’s resource(s) to be re-selected based on the received coordination information*
			* *Option 1-4: UE-B’s resource(s) to be used for its transmission resource (re)-selection is based on the received coordination information*
		- *For scheme 2:*
			* *Option 2-1: UE-B can determine resource(s) to be re-selected based on the received coordination information*
			* *Option 2-2: UE-B can determine a necessity of retransmission based on the received coordination information*
	1. **Agreements made in RAN1#106-e meeting**
* *Agreement:*
	+ *For scheme 1, the following inter-UE coordination information signalling from UE-A is supported. FFS details including condition(s)/scenario(s) under which each information is enabled to be sent by UE-A and used by UE-B.*
		- *Set of resources preferred for UE-B’s transmission*
		- *Set of resources non-preferred for UE-B’s transmission*
* *Agreement:*
	+ *For scheme 2, the following inter-UE coordination information signalling from UE-A is supported. FFS details including condition(s)/scenario(s) under which each information is enabled to be sent by UE-A and used by UE-B*
		- *Presence of expected/potential resource conflict on the resources indicated by UE-B’s SCI*
			* *FFS: UE behaviour when the presence of expected/potential resource conflict is detected by the transmitter*
		- *FFS: Whether to additionally support the presence of detected resource conflict on the resources indicated by UE-B’s SCI*
* *Agreement:*
	+ *In scheme 1, the following is supported for UE(s) to be UE-A(s)/UE-B(s) in the inter-UE coordination information transmission triggered by an explicit request in Mode 2:*
		- *A UE that sends an explicit request for inter-UE coordination information can be UE-B*
		- *A UE that received an explicit request from UE-B and sends inter-UE coordination information to the UE-B can be UE-A*
		- *(Working assumption) At least a destination UE of a TB transmitted by UE-B can be UE A*
		- *The above feature can be enabled or disabled or controlled by (pre-)configuration*
			* *FFS: Details on how to support this, including (pre-)configuration signaling granularity*
		- *FFS: Additional details and conditions on UE-A and UE-B*
	+ *(Working Assumption) In scheme 1, the following is supported for UE(s) to be UE-A(s)/UE-B(s) in the inter-UE coordination information transmission triggered by a condition other than explicit request reception in Mode 2:*
		- *A UE that satisfies the condition mentioned in the main bullet and sends inter-UE coordination information is UE-A*
		- *A UE that received inter-UE coordination information from UE-A and uses it for resource (re-)selection is UE-B*
		- *The above feature can be enabled or disabled or controlled by (pre-)configuration*
			* *FFS: Details on how to support this, including (pre-)configuration signaling granularity*
		- *FFS: Additional details and conditions on UE-A and UE-B*
* *Agreement:*
	+ *In scheme 2, at least the following is supported for UE(s) to be UE-A(s)/UE-B(s) in the inter-UE coordination transmission triggered by a detection of expected/potential resource conflict(s) in Mode 2:*
		- *A UE that transmitted PSCCH/PSSCH with SCI indicating reserved resource(s) to be used for its transmission, received inter-UE coordination information from UE-A indicating expected/potential resource conflict(s) for the reserved resource(s), and uses it to determine resource re-selection is UE-B*
		- *A UE that detects expected/potential resource conflict(s) on resource(s) indicated by UE-B’s SCI sends inter-UE coordination information to UE-B, subject to satisfy one of the following conditions, is UE-A*
			* *(Working assumption) At least a destination UE of one of the conflicting TBs, i.e., TBs to be transmitted in the expected/potential conflicting resource(s)*
				+ *Whether a non-destination UE of a TB transmitted by UE-B can be UE-A is (pre-)configured*
			* *FFS: Additional details and condition(s) on UE-A and UE-B*
		- *The above feature can be enabled or disabled or controlled by (pre-)configuration*
			* *FFS: Details on how to support this, including (pre-)configuration signaling granularity*
		- *FFS: Definition of expected/potential resource conflict(s) and other details (if any)*
* *Agreement:*
	+ *In scheme 2, the following UE-B’s behavior in its resource (re)selection is supported when it receives inter-UE coordination information from UE-A:*
		- *UE-B can determine resource(s) to be re-selected based on the received coordination information*
			* *UE-B can reselect resource(s) reserved for its transmission when expected/potential resource conflict on the resource(s) is indicated*
				+ *FFS: Other details (if any)*
* *Agreement:*
	+ *In scheme 1, at least following UE-B’s behavior in its resource (re-)selection is supported when it receives inter-UE coordination information from UE-A:*
		- *For preferred resource set, the following two options are supported:*
			* *Option A): UE-B’s resource(s) to be used for its transmission resource (re-)selection is based on both UE-B’s sensing result (if available) and the received coordination information*
				+ *UE-B uses in its resource (re-)selection, resource(s) belonging to the preferred resource set in combination with its own sensing result*

*UE-B uses in its resource (re-)selection, resource(s) not belonging to the preferred resource set when condition(s) are met*

*FFS: Details of condition(s)*

*This option is supported when UE-B performs sensing/resource exclusion*

*FFS: Other details (if any)*

* + - * *Option B): UE-B’s resource(s) to be used for its transmission resource (re-)selection is based only on the received coordination information*
				+ *UE-B uses in its resource (re-)selection, resource(s) belonging to the preferred resource set*

*This option is supported at least when UE-B does not support sensing/resource exclusion*

*FFS: Whether the support is conditional or UE capability*

*FFS: Other details (if any)*

* + - * *FFS: Other option(s), and other details (if any)*
		- *For non-preferred resource set,*
			* *UE-B’s resource(s) to be used for its transmission resource (re-)selection is based on both UE-B’s sensing result (if available) and the received coordination information*
				+ *UE-B excludes in its resource (re-)selection, resource(s) overlapping with the non-preferred resource set*

*FFS: Details including*

*Whether/how UE-B can use in its resource (re-)selection, resource(s) overlapping with the non-preferred resource set, definition of the overlap, and other details (if any)*

*When UE-B excludes in its resource (re-)selection, resource(s) overlapping with the non-preferred resource set*

* + - * + *FFS: UE-B reselects in its resource (re-)selection, resource(s) to be used for its transmission when the resource(s) are fully/partially overlapping with the non-preferred resource set*
			* *FFS: Other option(s), and other details (if any)*
* *Agreement:*
	+ *In scheme 2, at least the following is supported to determine inter-UE coordination information:*
		- *Among resource(s) indicated by UE-B’s SCI, UE-A considers that expected/potential resource conflict occurs on the resource(s) satisfying at least one of the following condition(s):*
			* *Condition 2-A-1:*
				+ *Other UE’s reserved resource(s) identified by UE-A are fully/partially overlapping with resource(s) indicated by UE-B’s SCI in time-and-frequency*
				+ *FFS: Other details (if any)*
				+ *FFS: Whether/how to specify additional criteria and other details (if any) including signaling details of conflict indication*
			* *(Working Assumption) Condition 2-A-2:*
				+ *Resource(s) (e.g., slot(s)) where UE-A, when it is intended receiver of UE-B, does not expect to perform SL reception from UE-B due to half duplex operation*

*FFS: Other details (if any)*

* + - * *FFS: Other condition(s)*
		- *FFS: Other details (if any)*
* *Agreement:*
	+ *In scheme 1, at least the following is supported to determine inter-UE coordination information of preferred resource set:*
		- *UE-A considers any resource(s) satisfying all the following condition(s) as set of resource(s) preferred for UE-B’s transmission*
			* *Condition 1-A-1:*
				+ *Resource(s) excluding those overlapping with reserved resource(s) of other UE identified by UE-A whose RSRP measurement is larger than a RSRP threshold*

*FFS: Other details (if any)*

* + - * *FFS: Condition 1-A-2:*
				+ *Resource(s) excluding slot(s) where UE-A, when it is intended receiver of UE-B, does not expect to perform SL reception from UE-B*

*FFS: Other details (if any)*

* + - * *FFS: Condition 1-A-3:*
				+ *Resource(s) satisfying UE-B’s traffic requirement (if available)*

*FFS: Other details (if any)*

* + - * *FFS: Other condition(s)*
		- *FFS: Other details (if any)*
* *Agreement:*
	+ *In scheme 1, at least the following is supported to determine inter-UE coordination information of non-preferred resource set:*
		- *UE-A considers any resource(s) satisfying at least one of the following condition(s) as set of resource(s) non-preferred for UE-B’s transmission*
			* *Condition 1-B-1:*
				+ *Reserved resource(s) of other UE identified by UE-A from other UEs’ SCI (including priority field) and RSRP measurement*

*FFS: Other details (if any)*

* + - * *FFS: Condition 1-B-2:*
				+ *Resource(s) (e.g., slot(s)) where UE-A, when it is intended receiver of UE-B, does not expect to perform SL reception from UE-B*

*FFS: Other details (if any)*

* + - * *FFS: Other condition(s)*
		- *FFS: Other details (if any)*
	1. **Agreements made in RAN1#106bis-e meeting**
* *Agreement:*
	+ *For Scheme 2, PSFCH format 0 is used to convey the presence of expected/potential resource conflict on reserved resource(s) indicated by UE-B’s SCI*
* *Agreement:*
	+ *For Condition 2-A-1 of Scheme 2, down-select one or more of following additional criteria to determine resource(s) where expected/potential resource conflict occurs*
		- *Option 1: The resource(s) are fully/partially overlapping in time-and-frequency with other UE’s reserved resource(s) whose RSRP measurement is larger than a RSRP threshold according to the priorities included in the SCI:*
			* *prio\_TX and prio\_RX are the priorities indicated in the SCI making the overlapping reservations*
			* *Strive to reuse Rel-16 specification wherever possible*
		- *Option 2: The resource(s) are fully/partially overlapping in time-and-frequency with other UE’s reserved resource(s) whose RSRP measurement is within a (pre)configured RSRP threshold compared to the RSRP measurement of UE-B’s reserved resource.*
			* *FFS: Whether the threshold depends on priority*
		- *Option 3: The resource(s) are fully/partially overlapping in time-and-frequency with other UE’s reserved resource(s) and the other UE is within a distance threshold of UE-B as determined by both UEs’ SCIs.*
		- *Option 4: The resource(s) are fully/partially overlapping in time-and-frequency with other UE’s reserved resource(s) whose RSRP measurement is larger a (pre)configured RSRP threshold compared to the RSRP measurement of UE-B’s reserved resource.*
			* *FFS: Whether the threshold depends on priority*
		- *FFS: In case of collisions of resources for two UEs having TBs with UE A as destination UE, if needed*
* *Working Assumption*
	+ *For Condition 1-B-1 of Scheme 1, the following two options are supported*
		- *Option 1: Reserved resource(s) of other UE(s) identified by UE-A whose RSRP measurement is larger than a (pre)configured RSRP threshold which is determined by at least priority value indicated by SCI of the UE(s)*
		- *Option 2: Reserved resource(s) of other UE identified by UE-A whose RSRP measurement is smaller than a (pre)configured RSRP threshold which is determined by at least priority value indicated by SCI of the UE(s) when UE-A is a destination of a TB transmitted by the UE(s)*
* *Working Assumption*
	+ *For Scheme 1 with non-preferred resource set, support following condition:*
		- *Condition 1-B-2:*
			* *Resource(s) (e.g., slot(s)) where UE-A, when it is intended receiver of UE-B, does not expect to perform SL reception from UE-B due to half duplex operation*
* *Agreement:*
	+ *For Condition 1-A-1 of Scheme 1, the set of resources preferred for UE-B’s transmission is a form of candidate single-slot resource as specified in Rel-16 TS 38.214 Section 8.1.4*
		- *When the inter-UE coordination information transmission is triggered by UE-B’s explicit request, the candidate single-slot resource(s) are determined in the same way according to Rel-16 TS 38.214 Section 8.1.4 with at least following parameters provided by signaling from UE-B. FFS whether or not to apply RSRP threshold increase in Step 7) of Rel-16 TS 38.214 Section 8.1.4.*
			* *Priority value to be used for PSCCH/PSSCH transmission*
				+ *It replaces prio\_TX*
			* *Number of sub-channels to be used for PSSCH/PSCCH transmission in a slot*
				+ *It replaces L\_subCH*
			* *Resource reservation interval*
				+ *It replaces P\_rsvp\_TX*
			* *FFS: Starting/ending time location of resource selection window*
		- *FFS : In addition to Rel-16 procedure, use inter-UE coordination information from other UEs*
			* *If there is no consensus in RAN1#106bis-e, no further discussions for Rel-17*
* ***Conclusion****:*
	+ *No consensus that UE-A uses inter-UE coordination information from other UEs when it determines the preferred resource set for Condition 1-A-1 of Scheme 1.*
* *Working Assumption*
	+ *For Scheme 1 with preferred resource set, support following condition:*
		- *Condition 1-A-2:*
			* *Resource(s) excluding slot(s) where UE-A, when it is intended receiver of UE-B, does not expect to perform SL reception from UE-B due to half duplex operation*
			* *This can be disabled by RRC (pre-)configuration*
* *Agreement:*
	+ *For allocating PSFCH resources in Scheme 2, at least following can be (pre)configured separately from those for SL HARQ-ACK feedback.*
		- *Set of PRBs for PSFCH transmission/reception (sl-PSFCH-RB-Set)*
* *Agreement:*
	+ *For Scheme 2,*
		- *Index of a PSFCH resource for inter-UE coordination information transmission is determined in the same way according to Rel-16 TS 38.213 Section 16.3 with at least following modification*
			* *P\_ID is L1-Source ID indicated by UE-B’s SCI*
			* *M\_ID is 0*
		- *FFS: How to set m\_CS*
		- *FFS: How to set m\_0*
		- *FFS: Whether M\_ID can be (pre)configured*