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| --- | --- | --- | --- |
| Company | Clause | Comment | Rapp Response |
| Sharp | 5.22.1.1 | In this meeting, it was confirmed only Approach 1 and 2 for MCSt are supported in SL-U. Thus, specs including resource (re-)selection procedures for MCSt seems to be within scope of this email discussion. We wonder the Rapp’s plan for the above mentioned case. | Current CR already supports approach 1/2. In approach 1/2 below, the UE behaviour to be written in the running CR is the resource selection part, and the yellow highlighted part of the RAN1 #114 agreement below has been added as a NOTE as shown below:- “NOTE 3A4: When the MAC entity receives S\_A from the lower layers for MCSt, it is up to the UE implementation whether to select resources based on random selection or consecutive slots.”Since MAC does not use the term SA, there will be additional correction to NOTE in the next rapp\_version.Approach 1: “best effort for multiple TBs”* Step 1: Higher layer triggers L1 resource selection for one TB with one set of parameters ($prio\_{TX}$, remaining PDB, $L\_{subCH}$ and $P\_{rsvp\\_TX}$) - R16/17 behavior.
* Step 2: L1 report a set of candidate single-slot resource (*SA*) according to existing L1 resource allocation procedure - R16/17 behavior.
* Step 3: Higher layer selects a set of resources either randomly (R16/17 behavior) or according to a consecutive-slots criterion (new behavior) to achieve MCSt.
* Step 4: Repeat Step 1-3 for different TB if required.

Approach 2: “guarantee MCSt for single TB and best effort for multiple TBs”* Step 1: Higher layer triggers L1 resource selection for one TB with one set of parameters ($prio\_{TX}$, remaining PDB, $L\_{subCH}$ and $P\_{rsvp\\_TX}$) + “number of slots for MCSt” which could be derived based on CAPC of the logical channel/TB or other means.
* Step 2: L1 report a set of candidate multi-slot resource (*SA*) according to most of the existing L1 resource allocation procedure (FFS: RSRP calculation / threshold may need to change)
* Step 3: Higher layer selects a candidate multi-slot resource either randomly (R16/17 behavior) or according to a consecutive-slots criterion (new behavior).
* Step 4: Repeat Step 1-3 for different TB if required.

RAN1 #114 agreement:In Mode 2 resource allocation,* The higher layer can indicate a “number of consecutive slots for MCSt” ($N\_{slot,MCSt}$) larger than 1 for L1 reporting multi-slots candidates to the higher layer. The candidate multi-slots resource definition is applied.
	+ Otherwise, the candidate single-slot resource definition is applied (same as R16/17).
* The higher layer selects resources from the reported $S\_{A}$ according to one of the following based on UE implementation:
	+ Random selection as per R16/17
	+ Higher layer is not restricted to select resources at random, and can select in consecutive slots
		- It is up to RAN2 to define detailed behaviour as needed
	+ It is RAN1 intention that, once the higher layer selects a multi-slots candidate from the set $S\_{A}$, it will use all the single-slot resources of the selected multi-slots candidate for transmission. This RAN1 agreement has no intention on potential RAN2 discussion about how SL resource selection processes are defined in MCSt.
* Note, the above is intended to support Approach 1 and 2 only.
* Send an LS to RAN2 informing that it is up to RAN2 to decide in regards to the HARQ RTT timing (minimum time gap)
	+ whether a single TB transmitted over consecutive slots is supported in a resource pool configured with PSFCH resource

[Sharp2]: Thank you for the response. Yet, we have a different understanding on implementation of Approach 1/2. As can be seen from the above referred Approach 2, “Step 2: L1 report a set of candidate multi-slot resource (*SA*) according to most of the existing L1 resource allocation procedure”, a candidate resource in Approach 2 is a resource spanning for multiple slots and the number of the slots is $N\_{slot,MCSt}$. As for the agreement in RAN1#114, if MAC layers indicate $N\_{slot,MCSt}$ larger than 1, physical layer shall apply candidate multi-slot resource in Approach 2 (marked in cyan). The yellow highlight part refers to resource selection only in Approach 1, since in Approach 1, physical layer reports candidate single-slot resource and RAN1 indicates MAC layers can select as R16/17 or consecutive resources (it is up to RAN2). In Approach 2, obviously once MAC layers select a candidate resource, the resource is in consecutive slots. |
| OPPO | 5.22.1.1 | *if Sidelink consistent LBT Failure is detected as specified in clause 5.31.2 in some RB set(s) of the selected resource pool that spans multiple RB sets for the logical channel for single carrier frequency:*Yet this agreement is more about resource reselection rather than pool reselection? Now seems this would lead to pool reselection? | Thanks for pointing this out. The text will be corrected in the next Rapp\_version. |
|  | 5.22.1.2 | *[1> if a MAC PDU is not transmitted in all of the resources for MCSt due to the Sidelink LBT failure:]*Given we had 5.22.1.2c already, should this be merged into it as well? | I will merge the text into 5.22.1.2c in the next rapp\_version. Thanks |
|  | 5.22.1.3.3 | *4> carrier whose numConsecutiveDTX has reached sl-maxNumConsecutiveDTX are* ***removed from the carrier configuration available to the UE as specified in clasue x.x.x of TS 38.331 [5].***Maybe this part can be replaced by just an indication to upper layer (i.e., RRC), and then the release operation can be reflected by procedural text in RRC, by referring to the related IE | In the next version, I will modify the text to pass the indication to RRC, similar to the C-LBT based RLF detection text. |
|  | 5.22.1.4.1.2 | For the change to reflect:For the subsequent slots in MCSt, LCP procedure for COT initiating UE is enhanced: the LCHs with lower or equal CAPC than the CAPC value used for LBT check for the first TB.Indeed we had this agreement, yet when we double check the R1 status, seems R1 already concluded thatWhen a UE applies Type 1 channel access procedure to initiate a channel occupancy for multiple SL transmissions over one slot or multiple consecutive slots, the highest CAPC value among the associated CAPC values with the multiple SL transmissions is used for performing the Type 1 channel access procedure.So given the R1 conclusion above, seems the LCP restriction is a bit redundant.. | It is true that there is a need for clarification of the RAN2 agreement according to the mentioned RAN1 agreement.This is a separate issue and can be discussed at the next meeting. No big issue, just a little clarification is needed.I plan to include this issue in the rapp paper as a stage 3 MAC open issue.First, let's capture RNA2's agreement itself in the running CR. I will handle the ambiguous parts with square bracket. Please check the next version. |
|  | 5.22.1.4.1.2 | Also for the Q above, if we do want to continue with the R2 agreement, 5> if a CAPC value of the subsequent SL transmission has an equal or smaller CAPC value than a CAPC value **indicated in the prior SL transmission**; and#123bis agreement:For the subsequent slots in MCSt, LCP procedure for COT initiating UE is enhanced: the LCHs with lower or equal CAPC than the **CAPC value used for LBT check for the first TB**.It does not = CAPC value **indicated** in the **prior** SL transmission, since 1/ the first SL transmission does not have to indicate it 2/ it may not be the prior one, but should be the very first one. Finally, we are still wonder, if there is still a need for this, given the R1 conclusion. | Same comment as above. |
|  | 5.22.1.4.1.2 | Now the LCP restriction for COT-sharing and MCSt case are merged together, but since the two requires different operation of destination selection1/ COT-sharing requires destination towards COT initiator2/ MCSt does not have such requirementIt seems cleaner to capture the two separately | Even without separation, isn't the sentence in running CR clear now? DST restrictions in running CR is not considered in MCSt. |
|  | 5.15.2 | Similar to the case of NR-U, should we add a condition to 2> stop the sl-lbt-FailureDetectionTimer for all RB sets in the SL BWP, if running.Like 2> if *sl-lbt-FailureRecoveryConfig* is configured: | Thanks.I will incorporate your suggestions in the next version. |
|  | 5.22.1.2c | Should we increase the levels of the following bullets by 1?2> if transmission based on random selection is configured by upper layers:3> randomly select the time and frequency resources for one transmission opportunity from the resource pool, according to the amount of selected frequency resources, the selected number of HARQ retransmissions and the remaining PDB of SL data available in the logical channel(s) by ensuring the minimum time gap between any two selected resources of the selected sidelink grant in case that PSFCH is configured for this pool of resources.2> else:3> randomly select the time and frequency resources for one transmission opportunity from the resources indicated by the physical layer as specified in clause 8.1.4 of TS 38.214 [7], according to the amount of selected frequency resources, the selected number of HARQ retransmissions and the remaining PDB of SL data available in the logical channel(s) by ensuring the minimum time gap between any two selected resources of the selected sidelink grant in case that PSFCH is configured for this pool of resources. | Shouldn’t it be located in the sub-level of 1>? Is there anything I missed? |
|  | 5.22.1.3.3 | Can we merge the two into one?- *numConsecutiveDTX*, which is maintained for each PC5-RRC connection if single carrier frequency is used for NR sidelink. - *numConsecutiveDTX*, which is maintained per carrier associated with a PC5-RRC connection if multiple carrier frequencies are used for NR sidelink. | Let’s hear a little more about the companies’ views. |
|  | 5.22.1.4.1.1 | The following part should be applicable to both destination selection and LCH selection?If duplication is activated as specified in TS 38.323 [4], the MAC entity shall map different sidelink logical channels which correspond to the same PDCP entity onto different carriers in accordance with clause 5.22.1.11, or onto different carriers of different carrier sets (if configured in [*allowedCarrierFreqList*] for the corresponding destination). For a given sidelink logical channel, it is up to UE implementation which carrier set to select among the carrier sets configured in [*allowedCarrierFreqList*] (if configured) for the corresponding destination. | It seems to only apply to the selection of logical channels, but is there any problem if this sentence is included in general? Or do you have any other suggestions? |
|  | 5.22.1.4.1.2 | Should we change the format of the following text to be also in the shape of per-level operation? As for the other stepsIn case of NR sidelink on multiple carrier frequencies, only consider sidelink logical channels which meet the following conditions and only consider one sidelink logical channel among sidelink logical channels corresponding to same PDCP entity, if duplication is activated as specified in TS 38.323 [4];- allowed on the carrier where the SCI is transmitted for NR sidelink, if the carrier is configured by upper layers according to TS 38.331 [5] and TS 23.287 [19];- having a priority whose associated [*sl-threshCBR-FreqReselection*] is no lower than the CBR of the carrier when the carrier is (re-)selected in accordance with 5.22.1.11. | OK. I will try in the next Rapp\_version. |
|  | 5.31.2 | In the following 3 bullets, the first and second is per-RB-set, while the third is for all RB-sets, maybe good to differentiate1> if all triggered SL consistent LBT failures are cancelled in the RB sets; or1> if the *sl-lbt-FailureDetectionTimer* expires; or1> if *sl-lbt-FailureDetectionTimer* or *sl-lbt-FailureInstanceMaxCount* is reconfigured by upper layers: | Thanks for suggestion. Your suggestion is acceptable. Correction will be reflected in the next Rapp\_version. |
|  | 5.31.2 | Should we say for the following sentence that it is only for mode-2?The MAC entity maintains an *sl-LBT-RecoveryTimer* per RB set. The *sl-LBT-RecoveryTimer* is used for recovery of the triggered SL consistent LBT failure. | Correction will be reflected in the next Rapp\_version. |
|  | 5.31.2 | Is the following action only for mode-2?3> start the *sl-LBT-RecoveryTimer*. | Correction will be reflected in the next Rapp\_version. |
|  | 6.1.3.66 | should the following actually be RB-set Index, rather than PRB index?- Ri: If there is a RB set configured for the MAC entity with **Resource Block index** i as specified in TS 38.214 [7] and if SL consistent LBT failure have been triggered and not cancelled in this RB set, the field is set to 1, otherwise the field is set to 0. | Correction will be reflected in the next Rapp\_version. |
| NEC | 5.22.1.1 and following related sections | The following crossing sentence is not necessary since we did not agree to adopt SL-U for relay case(also there are multiple similar description in the following sections)2> if Sidelink consistent LBT Failure is detected as specified in clause 5.31.2 in all RB sets of the selected resource pool for single carrier frequency:3> if *sl-HARQ-FeedbackEnabled* is set to *enabled* for the logical channel: 4> select any pool of resources configured with PSFCH resources among the pools of resources ~~except the pool(s) in~~ *~~sl-BWP-DiscPoolConfig~~* ~~or~~ *~~sl-BWP-DiscPoolConfigCommon~~*, if configured and the pool(s) including all RB sets for which Sidelink consistent LBT failures were detected and not cancelled. | Thanks for pointing this out. “NR Siedelink” was used to ensure that relay cases are not considered in the running CR. I will correct the text related to this in the next rapp\_version. |
|  | 5.22.1.1 | The following highlighted procedure is not completed, i.e. perform the following for each sidelink process, what is the following?2> if the TX resource (re-)selection is triggered as the result of the TX resource (re-)selection check:3> if the TX carrier (re-)selection procedure was triggered in above and one or more carriers have been (re-)selected in the TX carrier (re-)selection according to clause 5.22.1.11:4> determine the order of the (re-)selected carriers, according to the decreasing order based on the highest priority of logical channels which are allowed on each (re-)selected carrier, and perform the following for each Sidelink process on each (re-)selected carrier according to the order: | “Following” means the UE behaviour of the 3> level that follows below.Rapporteur perspective this approach seems to be appropriate out of all the options I've thought so far. Other options require lots of modification of the existing text. Are there any other good suggestions?[NEC] Thanks for further clarification, I see rapp has moved the next 3> /4> bullet once, yet it is still confused.Maybe one possible way is to move the next 3>/4> into 5.31.2 since the whole section describe LBT related operation.[Rapp]Since “*3> if sl-lbt-FailureRecoveryConfig is configured in the SL BWP:, 4>*” is the correct procedure to perform when resource selection is triggered, how about moving it right after “*2> if the TX resource (re-)selection is triggered as the result of the TX resource (re-)selection check:*”? |
|  | 5.22.1.1 | Just to confirm, whether the wording “NR sidelink” include relay case since the following sub-bullet include the relay case1> if the MAC entity has selected to create a selected sidelink grant corresponding to transmission(s) of a single MAC PDU, and if SL data is available in a logical channel, or an SL-CSI reporting is triggered, or a Sidelink DRX Command indication is triggered or a Sidelink Inter-UE Coordination Information reporting is triggered, or a Sidelink Inter-UE Coordination Request is triggered:2> if single carrier frequency is configured for NR sidelink:3> if SL data is available in the logical channel for NR sidelink discovery:4> if *sl-BWP-DiscPoolConfig* or *sl-BWP-DiscPoolConfigCommon* is configured according to TS 38.331 [5]:5> select the *sl-DiscTxPoolSelected* configured in *sl-BWP-DiscPoolConfig* or *sl-BWP-DiscPoolConfigCommon* for the transmission of NR sidelink discovery message.4> else: | “NR Siedelink” was used to ensure that relay cases are not considered in the running CR. I will correct the text related to this in the next rapp\_version. |
|  | 5.22.1.1 | Suggest a rewording “MAC entity, based on UE implementation, decides the value of the number of consecutive slots for MCSt if it decides the number of consecutive slots for MCSt larger than 1, as long as…..”NOTE 3A3: MAC entity, based on UE implementation, decides the value of the number of consecutive slots for MCSt, as long as it meets the CAPC maximum COT duration requirement as specified in TS 37.213 [18]. | Thanks for your good suggestion. I will consider your suggestion in the next Rapp\_version. |
|  | 5.22.1.2 | Our understanding is the added sentence just capture the initial transmission case, so whether to add additional sentence to capture retransmission case according to the agreement.1> if transmission(s) with the selected sidelink grant cannot fulfil the remaining PDB of the data in a logical channel, and the MAC entity selects not to perform transmission(s) corresponding to a single MAC PDU; or[1> if a MAC PDU is not transmitted in all of the resources for MCSt due to the Sidelink LBT failure:]NOTE 2: If the remaining PDB is not met, it is left for UE implementation whether to perform transmission(s) corresponding to single MAC PDU or sidelink resource reselection. | Correction will be reflected in the next Rapp\_version. |
|  | 5.22.1.4.1.2 | According to the WID, only mode 2 is supported for CA in this release, so one more condition should be added.2> else:In case of NR sidelink on multiple carrier frequencies, only consider sidelink logical channels which meet the following conditions and only consider one sidelink logical channel among sidelink logical channels corresponding to same PDCP entity, if duplication is activated as specified in TS 38.323 [4];- allowed on the carrier where the SCI is transmitted for NR sidelink, if the carrier is configured by upper layers according to TS 38.331 [5] and TS 23.287 [19];- having a priority whose associated [*sl-threshCBR-FreqReselection*] is no lower than the CBR of the carrier when the carrier is (re-)selected in accordance with 5.22.1.11. | Rather than adding a condition to the sentence below, it seems to be a more desirable approach to add a NOTE that CA is only supported in mode 2. I will add new text in the next rapp\_version. |
|  | 5.22.1.11 | Doubt the necessity of the highlighted sentences since it is more like constraint to network, prefer to use a note to address it is up to network implementation6> the carrier includes [at least] one pool of resources configured with PSFCH resources among the pools of resources except the pool(s) in *sl-BWP-DiscPoolConfig* or *sl-BWP-DiscPoolConfigCommon*, if configured. 5> else:6> the carrier includes any pool of resources among the pools of resources except the pool(s) in *sl-BWP-DiscPoolConfig* or *sl-BWP-DiscPoolConfigCommon*, if configured.  | Similar to the pool selection procedure considering HARQ attributes in R16, the carrier selection procedure considering HARQ attributes needs to be specified. In the 123bis offline discussion, several companies agreed on the need for text.However, the text of the running CR can be modified based on the ongoing discussion in the issue list. |