**3GPP TSG-RAN WG2 Meeting #125bis *R2-240XXXX***

**Changsha, China, April 15th – 19th, 2024**

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| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  | **38.331** | **CR** | **-** | **rev** | **-** | **Current version:** | **18.1.0** |  |
|  |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* |
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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME | **x** | Radio Access Network | **x** | Core Network |  |

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| ***Title:***  | Correction on 38.331 for SL Relay UE capability |
|  |  |
| ***Source to WG:*** | Samsung |
| ***Source to TSG:*** | R2 |
|  |  |
| ***Work item code:*** | NR\_SL\_relay\_enh-Core |  | ***Date:*** | 2024-04-26 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***Release:*** | Rel-18 |
|  | *Use one of the following categories:****F*** *(correction)****A*** *(mirror corresponding to a change in an earlier release)****B*** *(addition of feature),* ***C*** *(functional modification of feature)****D*** *(editorial modification)*Detailed explanations of the above categories canbe found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | *Use one of the following releases:Rel-8 (Release 8)Rel-9 (Release 9)Rel-10 (Release 10)Rel-11 (Release 11)…Rel-15 (Release 15)Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19)* |
|  |  |
| ***Reason for change:*** | The agreements on UE capability during RAN2 #125bis meeting need to be implemented in 38.306 and 38.331.

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| Agreements:IMS voice over split bearer is not supported for MP operation.Postpone the discussion of new UE capability to indicate whether UE supports UL transmission via direct path and DL reception via either direct path or indirect path for split SRB.Introduce new UE capability to indicate whether UE supports UL transmission via both direct path and indirect path for the split DRB. |

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|  |  |
| ***Summary of change:*** | Added a new parameter for UL transmission via both direct path and indirect path for split DRB is added into *SidelinkParameters* in 6.3.3: ***splitDRB-withUL-Both-Direct-Indirect*** |
| ***Consequences if not approved:*** | UE capability parameters for Release 18 SL relay operation are incomplete. |
|  |  |
| ***Clauses affected:*** | 6.3.3 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** | **x** |  |  Other core specifications  | TS 38.306 ..CR TBD  |
| ***affected:*** |  | **x** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **x** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

START OF CHANGE

### 6.3.3 UE capability information elements

(omitted)

#### – *SidelinkParameters*

The IE *SidelinkParameters* is used to convey capabilities related to NR and V2X sidelink communications.

*SidelinkParameters* information element

-- ASN1START

-- TAG-SIDELINKPARAMETERS-START

SidelinkParameters-r16 ::= SEQUENCE {

 sidelinkParametersNR-r16 SidelinkParametersNR-r16 OPTIONAL,

 sidelinkParametersEUTRA-r16 SidelinkParametersEUTRA-r16 OPTIONAL

}

SidelinkParametersNR-r16 ::= SEQUENCE {

 rlc-ParametersSidelink-r16 RLC-ParametersSidelink-r16 OPTIONAL,

 mac-ParametersSidelink-r16 MAC-ParametersSidelink-r16 OPTIONAL,

 fdd-Add-UE-Sidelink-Capabilities-r16 UE-SidelinkCapabilityAddXDD-Mode-r16 OPTIONAL,

 tdd-Add-UE-Sidelink-Capabilities-r16 UE-SidelinkCapabilityAddXDD-Mode-r16 OPTIONAL,

 supportedBandListSidelink-r16 SEQUENCE (SIZE (1..maxBands)) OF BandSidelink-r16 OPTIONAL,

 ...,

 [[

 relayParameters-r17 RelayParameters-r17 OPTIONAL

 ]],

 [[

 -- R1 32-x: Use of new P0 parameters for open loop power control

 p0-OLPC-Sidelink-r17 ENUMERATED {supported} OPTIONAL

 ]],

 [[

 pdcp-ParametersSidelink-r18 PDCP-ParametersSidelink-r18 OPTIONAL

 ]]

}

SidelinkParametersEUTRA-r16 ::= SEQUENCE {

 sl-ParametersEUTRA1-r16 OCTET STRING OPTIONAL,

 sl-ParametersEUTRA2-r16 OCTET STRING OPTIONAL,

 sl-ParametersEUTRA3-r16 OCTET STRING OPTIONAL,

 supportedBandListSidelinkEUTRA-r16 SEQUENCE (SIZE (1..maxBandsEUTRA)) OF BandSidelinkEUTRA-r16 OPTIONAL,

 ...

}

RLC-ParametersSidelink-r16 ::= SEQUENCE {

 am-WithLongSN-Sidelink-r16 ENUMERATED {supported} OPTIONAL,

 um-WithLongSN-Sidelink-r16 ENUMERATED {supported} OPTIONAL,

 ...

}

MAC-ParametersSidelink-r16 ::= SEQUENCE {

 mac-ParametersSidelinkCommon-r16 MAC-ParametersSidelinkCommon-r16 OPTIONAL,

 mac-ParametersSidelinkXDD-Diff-r16 MAC-ParametersSidelinkXDD-Diff-r16 OPTIONAL,

 ...

}

UE-SidelinkCapabilityAddXDD-Mode-r16 ::= SEQUENCE {

 mac-ParametersSidelinkXDD-Diff-r16 MAC-ParametersSidelinkXDD-Diff-r16 OPTIONAL

}

MAC-ParametersSidelinkCommon-r16 ::= SEQUENCE {

 lcp-RestrictionSidelink-r16 ENUMERATED {supported} OPTIONAL,

 multipleConfiguredGrantsSidelink-r16 ENUMERATED {supported} OPTIONAL,

 ...,

 [[

 drx-OnSidelink-r17 ENUMERATED {supported} OPTIONAL

 ]],

 [[

 sl-LBT-FailureDectectionRecovery-r18 ENUMERATED {supported} OPTIONAL

 ]]

}

MAC-ParametersSidelinkXDD-Diff-r16 ::= SEQUENCE {

 multipleSR-ConfigurationsSidelink-r16 ENUMERATED {supported} OPTIONAL,

 logicalChannelSR-DelayTimerSidelink-r16 ENUMERATED {supported} OPTIONAL,

 ...

}

BandSidelinkEUTRA-r16 ::= SEQUENCE {

 freqBandSidelinkEUTRA-r16 FreqBandIndicatorEUTRA,

 -- R1 15-7: Transmitting LTE sidelink mode 3 scheduled by NR Uu

 gnb-ScheduledMode3SidelinkEUTRA-r16 SEQUENCE {

 gnb-ScheduledMode3DelaySidelinkEUTRA-r16 ENUMERATED {ms0, ms0dot25, ms0dot5, ms0dot625, ms0dot75, ms1,

 ms1dot25, ms1dot5, ms1dot75, ms2, ms2dot5, ms3, ms4,

 ms5, ms6, ms8, ms10, ms20}

 } OPTIONAL,

 -- R1 15-9: Transmitting LTE sidelink mode 4 configured by NR Uu

 gnb-ScheduledMode4SidelinkEUTRA-r16 ENUMERATED {supported} OPTIONAL

}

BandSidelink-r16 ::= SEQUENCE {

 freqBandSidelink-r16 FreqBandIndicatorNR,

 --15-1

 sl-Reception-r16 SEQUENCE {

 harq-RxProcessSidelink-r16 ENUMERATED {n16, n24, n32, n48, n64},

 pscch-RxSidelink-r16 ENUMERATED {value1, value2},

 scs-CP-PatternRxSidelink-r16 CHOICE {

 fr1-r16 SEQUENCE {

 scs-15kHz-r16 BIT STRING (SIZE (16)) OPTIONAL,

 scs-30kHz-r16 BIT STRING (SIZE (16)) OPTIONAL,

 scs-60kHz-r16 BIT STRING (SIZE (16)) OPTIONAL

 },

 fr2-r16 SEQUENCE {

 scs-60kHz-r16 BIT STRING (SIZE (16)) OPTIONAL,

 scs-120kHz-r16 BIT STRING (SIZE (16)) OPTIONAL

 }

 } OPTIONAL,

 extendedCP-RxSidelink-r16 ENUMERATED {supported} OPTIONAL

 } OPTIONAL,

 --15-2

 sl-TransmissionMode1-r16 SEQUENCE {

 harq-TxProcessModeOneSidelink-r16 ENUMERATED {n8, n16},

 scs-CP-PatternTxSidelinkModeOne-r16 CHOICE {

 fr1-r16 SEQUENCE {

 scs-15kHz-r16 BIT STRING (SIZE (16)) OPTIONAL,

 scs-30kHz-r16 BIT STRING (SIZE (16)) OPTIONAL,

 scs-60kHz-r16 BIT STRING (SIZE (16)) OPTIONAL

 },

 fr2-r16 SEQUENCE {

 scs-60kHz-r16 BIT STRING (SIZE (16)) OPTIONAL,

 scs-120kHz-r16 BIT STRING (SIZE (16)) OPTIONAL

 }

 },

 extendedCP-TxSidelink-r16 ENUMERATED {supported} OPTIONAL,

 harq-ReportOnPUCCH-r16 ENUMERATED {supported} OPTIONAL

 } OPTIONAL,

 --15-4

 sync-Sidelink-r16 SEQUENCE {

 gNB-Sync-r16 ENUMERATED {supported} OPTIONAL,

 gNB-GNSS-UE-SyncWithPriorityOnGNB-ENB-r16 ENUMERATED {supported} OPTIONAL,

 gNB-GNSS-UE-SyncWithPriorityOnGNSS-r16 ENUMERATED {supported} OPTIONAL

 } OPTIONAL,

 --15-10

 sl-Tx-256QAM-r16 ENUMERATED {supported} OPTIONAL,

 --15-11

 psfch-FormatZeroSidelink-r16 SEQUENCE {

 psfch-RxNumber ENUMERATED {n5, n15, n25, n32, n35, n45, n50, n64},

 psfch-TxNumber ENUMERATED {n4, n8, n16}

 } OPTIONAL,

 --15-12

 lowSE-64QAM-MCS-TableSidelink-r16 ENUMERATED {supported} OPTIONAL,

 --15-15

 enb-sync-Sidelink-r16 ENUMERATED {supported} OPTIONAL,

 ...,

 [[

 --15-3

 sl-TransmissionMode2-r16 SEQUENCE {

 harq-TxProcessModeTwoSidelink-r16 ENUMERATED {n8, n16},

 scs-CP-PatternTxSidelinkModeTwo-r16 ENUMERATED {supported} OPTIONAL,

 dl-openLoopPC-Sidelink-r16 ENUMERATED {supported} OPTIONAL

 } OPTIONAL,

 --15-5

 congestionControlSidelink-r16 SEQUENCE {

 cbr-ReportSidelink-r16 ENUMERATED {supported} OPTIONAL,

 cbr-CR-TimeLimitSidelink-r16 ENUMERATED {time1, time2}

 } OPTIONAL,

 --15-22

 fewerSymbolSlotSidelink-r16 ENUMERATED {supported} OPTIONAL,

 --15-23

 sl-openLoopPC-RSRP-ReportSidelink-r16 ENUMERATED {supported} OPTIONAL,

 --13-1

 sl-Rx-256QAM-r16 ENUMERATED {supported} OPTIONAL

 ]],

 [[

 ue-PowerClassSidelink-r16 ENUMERATED {pc2, pc3, spare6, spare5, spare4, spare3, spare2, spare1}

 OPTIONAL

 ]],

 [[

 --32-4a

 sl-TransmissionMode2-RandomResourceSelection-r17 SEQUENCE {

 harq-TxProcessModeTwoSidelink-r17 ENUMERATED {n8, n16},

 scs-CP-PatternTxSidelinkModeTwo-r17 CHOICE {

 fr1-r17 SEQUENCE {

 scs-15kHz-r17 BIT STRING (SIZE (16)) OPTIONAL,

 scs-30kHz-r17 BIT STRING (SIZE (16)) OPTIONAL,

 scs-60kHz-r17 BIT STRING (SIZE (16)) OPTIONAL

 },

 fr2-r17 SEQUENCE {

 scs-60kHz-r17 BIT STRING (SIZE (16)) OPTIONAL,

 scs-120kHz-r17 BIT STRING (SIZE (16)) OPTIONAL

 }

 } OPTIONAL,

 extendedCP-Mode2Random-r17 ENUMERATED {supported} OPTIONAL,

 dl-openLoopPC-Sidelink-r17 ENUMERATED {supported} OPTIONAL

 } OPTIONAL,

 --32-4b

 sync-Sidelink-v1710 SEQUENCE {

 sync-GNSS-r17 ENUMERATED {supported} OPTIONAL,

 gNB-Sync-r17 ENUMERATED {supported} OPTIONAL,

 gNB-GNSS-UE-SyncWithPriorityOnGNB-ENB-r17 ENUMERATED {supported} OPTIONAL,

 gNB-GNSS-UE-SyncWithPriorityOnGNSS-r17 ENUMERATED {supported} OPTIONAL

 } OPTIONAL,

 --32-4c

 enb-sync-Sidelink-v1710 ENUMERATED {supported} OPTIONAL,

 --32-5a-2

 rx-IUC-Scheme1-PreferredMode2Sidelink-r17 ENUMERATED {supported} OPTIONAL,

 --32-5a-3

 rx-IUC-Scheme1-NonPreferredMode2Sidelink-r17 ENUMERATED {supported} OPTIONAL,

 --32-5b-2

 rx-IUC-Scheme2-Mode2Sidelink-r17 ENUMERATED {n5, n15, n25, n32, n35, n45, n50, n64} OPTIONAL,

 --32-6-1

 rx-IUC-Scheme1-SCI-r17 ENUMERATED {supported} OPTIONAL,

 --32-6-2

 rx-IUC-Scheme1-SCI-ExplicitReq-r17 ENUMERATED {supported} OPTIONAL

 ]],

 [[

 sharedSpectrumChAccessParamsSidelinkPerBand-r18 SharedSpectrumChAccessParamsSidelinkPerBand-r18 OPTIONAL,

 -- R1 41-1-2: Receiving SL-PRS in a shared resource pool

 sl-PRS-RxInSharedResourcePool-r18 ENUMERATED {supported} OPTIONAL,

 -- R1 41-1-3: Receiving SL-PRS in a dedicated resource pool

 sl-PRS-RxInDedicatedResourcePool-r18 ENUMERATED {supported} OPTIONAL,

 -- R1 41-1-4a: Transmitting SL-PRS in a shared resource pool

 sl-PRS-TxInSharedResourcePool-r18 ENUMERATED {supported} OPTIONAL,

 -- R1 41-1-4b: Transmitting SL-PRS scheme 1 in a dedicated resource pool

 sl-PRS-TxScheme1InDedicatedResourcePool-r18 ENUMERATED {supported} OPTIONAL,

 -- R1 41-1-4c: Transmitting SL-PRS mode 2 in a dedicated resource pool

 sl-PRS-TxScheme2InDedicatedResourcePool-r18 ENUMERATED {supported} OPTIONAL,

 -- R1 41-1-5: SL-PRS congestion control in a dedicated resource pool

 sl-PRS-CongestionCtrl-r18 ENUMERATED {supported} OPTIONAL,

 -- R1 41-1-8: Support of random selection in a dedicated resource pool

 sl-PRS-TxRandomSelection-r18 ENUMERATED {supported} OPTIONAL,

 -- R1 47-s1: Transmission/Reception using dynamic resource pool sharing

 sl-DynamicSharingTxRx-r18 ENUMERATED {supported} OPTIONAL,

 -- R4 45-2: SL reception in intra-carrier guard band

 sl-ReceptionIntraCarrierGuardBand-r18 ENUMERATED {supported} OPTIONAL

 ]]

}

RelayParameters-r17 ::= SEQUENCE {

 relayUE-Operation-L2-r17 ENUMERATED {supported} OPTIONAL,

 remoteUE-Operation-L2-r17 ENUMERATED {supported} OPTIONAL,

 remoteUE-PathSwitchToIdleInactiveRelay-r17 ENUMERATED {supported} OPTIONAL,

 ...,

 [[

 relayUE-U2U-OperationL2-r18 ENUMERATED {supported} OPTIONAL,

 remoteUE-U2U-OperationL2-r18 ENUMERATED {supported} OPTIONAL,

 remoteUE-U2N-PathSwitchOperationL2-r18 ENUMERATED {supported} OPTIONAL,

 multipathRemoteUE-PC5L2-r18 ENUMERATED {supported} OPTIONAL,

 multipathRelayUE-N3C-r18 ENUMERATED {supported} OPTIONAL,

 multipathRemoteUE-N3C-r18 ENUMERATED {supported} OPTIONAL,

 remoteUE-IndirectPathAddChangeToIdleInactiveRelay-r18 ENUMERATED {supported} OPTIONAL,

 pdcp-DuplicationMoreThanOneUuRLC-r18 ENUMERATED {supported} OPTIONAL,

 pdcp-CADuplicationDirectpath-DRB-r18 ENUMERATED {supported} OPTIONAL,

 pdcp-CADuplicationDirectpath-SRB-r18 ENUMERATED {supported} OPTIONAL,

 pdcp-DuplicationMP-SplitDRB-r18 ENUMERATED {supported} OPTIONAL,

 pdcp-DuplicationMP-SplitSRB-r18 ENUMERATED {supported} OPTIONAL,

 directpathRLF-RecoveryViaSRB1-r18 ENUMERATED {supported} OPTIONAL,

 splitDRB-withUL-Both-Direct-Indirect-r18 ENUMERATED {supported} OPTIONAL

 ]]

}

PDCP-ParametersSidelink-r18 ::= SEQUENCE {

 pdcp-DuplicationSRB-sidelink-r18 ENUMERATED {supported} OPTIONAL,

 pdcp-DuplicationDRB-sidelink-r18 ENUMERATED {supported} OPTIONAL,

 ...

}

-- TAG-SIDELINKPARAMETERS-STOP

-- ASN1STOP

|  |
| --- |
| *SidelinkParametersEUTRA* field descriptions |
| ***sl-ParametersEUTRA1, sl-ParametersEUTRA2, sl-ParametersEUTRA3***This field includes IE of *SL-Parameters-v1430* (where *v2x-eNB-Scheduled-r14* and *V2X-SupportedBandCombination-r14* shall not be included), *SL-Parameters-v1530* (where *V2X-SupportedBandCombination-r1530* shall not be included) and *SL-Parameters-v1540* respectively defined in 36.331 [10]. It is used for reporting the per-UE capability for V2X sidelink communication. |

(omitted)

END OF CHANGE