3GPP TSG RAN WG2 Meeting #116-e R2-211xxxx

Electronic, 1st - 12th Nov, 2021

**Title: [draft]Reply LS on discovery and relay (re)selection**

**Response to: R2-2111236 (S2-2107972)**

**Release: Release 17**

**Work Item: NR\_SL\_Relay-Core**

**Source: CATT [To be RAN2]**

**To: SA2, RAN3**

**CC:**

**Contact Person:**

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Attachments: None

**1. Overall Description:**

RAN2 thanks SA2 for the LS on discovery and relay (re)selection. RAN2 had discussed the LS in RAN2#116-e meeting, and provided RAN2 understanding on these issues as below:

**Q1)** SA2 has assumed 5G MOCN architecture is supported for 5G ProSe Layer-2 UE-to-Network Relay as described in clause 4.2.7.2 of TS 23.304, and would like to ask RAN2 to confirm this assumption. SA2 has also realized PLMN IDs are required (before Layer-2 link has been established) for the Layer-2 Remote UE to perform PLMN selection as well as Relay selection under 5G MOCN architecture, and would like to know whether PLMN IDs are forwarded by Layer-2 UE-to-Network Relay to Layer-2 Remote UE via the AS layer message.

**[Answer]:**

For Rel-17 U2N sidelink relay, RAN2 discussed whether RAN sharing can be supported for the NG-RAN node for Rel-17 Layer-2 UE-to-Network Relay. Unfortunately, no consensus was reached. While the majority view is it can be supported. Furthermore, RAN2 has made working assumption:

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| Agreements  Proposal 17: WA: cellAccessRelatedInfo from SIB1 [16/23] is forwarded before PC5-RRC connection. FFS the exact signalling. |

plmn-IdentityList is included in cellAccessRelatedInfo. If SA2 conclude RAN sharing should be supported, RAN2 majority prefer to deliver the non-serving PLMN IDs to remote UE via discovery message. It is up to SA2 to decide whether to include the non-serving PLMN IDs in discovery message or in a RRC container of discovery message. Both can work while the majority view is a RRC container of discovery message is preferred.

**Q2)** SA2 has realized TAI is needed for 5G ProSe Layer-2 Remote UE to determine the type of initial access message (Mobility Registration Update or Service Request), and would like to ask whether TAI is forwarded by 5G ProSe Layer-2 UE-to-Network Relay to the 5G ProSe Layer-2 Remote UE via the AS layer message.

**[Answer]:**

RAN2 confirms that TAI can be forwarded by 5G ProSe Layer-2 UE-to-Network Relay to the 5G ProSe Layer-2 Remote UE via PC5-RRC message after PC5 connection establishment. trackingAreaCode is also included in cellAccessRelatedInfo. Hence, TAI can be forwarded by 5G ProSe Layer-2 UE-to-Network Relay to the 5G ProSe Layer-2 Remote UE before PC5 connection establishment. And FFS in discovery or by forwarding SIB.

**Q3)** SA2 has discussed the Editor’s Note in TS 23.304 clause 6.4.3.6:

Editor’s Note Whether the Layer-2 link modification procedure is also applicable to ProSe Communication via 5G ProSe Layer-2 UE-to-Network Relay requires cooperation with RAN2.

SA2 understands that during the Layer-2 link establishment procedure the 5G ProSe Layer-2 UE-to-Network Relay and 5G ProSe Layer-2 Remote UE do not interact with the QoS Info (the information about PC5 QoS Flows), meaning there is no PC5 QoS Flow established in the PC5 unicast link between Layer-2 UE-to-Network Relay and Layer-2 Remote UE and the QoS handing is therefore setup by RAN. SA2 would like to ask as the Layer-2 link modification procedure is used to add/modify/remove PC5 QoS Flow(s) in the PC5 unicast link, whether this procedure is applicable or not to the Layer-2 UE-to-Network Relay?

**[Answer]:**

RAN2 confirms during the Layer-2 link establishment procedure the Relay UE and Remote UE do not interact with the PC5 QoS Flows Info. Whether the Layer-2 link modification procedure is used should be decided by SA2.

**Q4)** Per TS 23.304 clause 6.6.2, NG-RAN is provided with 5G ProSe authorised information indicating whether a UE is authorized to use 5G ProSe Direct Discovery, 5G ProSe Direct Communication, to act as a 5G ProSe Layer-2 UE-to-Network Relay, a 5G ProSe Layer-3 UE-to-Network Relay and a 5G ProSe Layer-2 Remote UE. NG-RAN is not provided with authorisation information for whether a UE is authorised to act as a 5G ProSe Layer-3 Remote UE.

Is the authorisation information for whether a UE can act as a 5G ProSe Layer-3 Remote UE needed by NG-RAN to enable configuring the UE with correct discovery configuration information via dedicated signalling?

**[Answer]:**

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| Whether authorization information for L3 remote UE is needed for NG-RAN can be decided by RAN3. From RAN2’s perspective, the below agreements made in RAN2#113bis and RAN2#114 meeting are common for L2 and L3 relay:Agreements:  Proposal 4 [Easy][23/23]: Relay UE and remote UE (IC) in RRC CONNECTED can use the discovery configuration provided via dedicated signalling if available.  Proposal 1 [easy]: RAN2 agrees that for relay/remote UE in RRC IDLE/INACTIVE state, and in-coverage on the serving frequency, if there is discovery related SIB broadcasted on the serving frequency, and if the configuration of concerned SL frequency is included within the SIB of the serving frequency but the Tx resource pool configuration is absent, UE shall enter RRC CONNECTED state to acquire dedicated configuration on Tx resource pool.  Proposal 2 [easy]: RAN2 agree that RRC\_CONNECTED relay/remote UE which are in-coverage on the serving frequency, if there is discovery related SIB broadcasted on the serving frequency, and if the configuration of concerned SL frequency is included within the SIB of the serving frequency, it can only use the SL discovery Tx resource configuration provided by dedicated signalling if provided, or not transmit discovery if not provided. |

**2. Actions:**

**To SA2:** RAN2 kindly asks SA2 to take the above information into account for the future work.

**To RAN3:** RAN2 kindly asks RAN3 to take the above information into account for the future work and feedback on Q4.

**3. Date of Next RAN2 Meetings:**

TSG-RAN WG2 #116bis-e Jan 17 – 25 2022 Electronic Meeting

TSG-RAN WG2 #117-e Feb 21 – Mar 3 2022 Electronic Meeting