**TS updates to support ProSe\_Ph3**

**TS 23.304**

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| **Clause** | **Comment** |  | **Interested companies** |
| 3.1 | Add terms | CR#1 | KPN N.V.  Huawei  LGE |
| New 4.2.X  Or update 4.2.7.1 and 4.2.7.2 | 5G ProSe  Multi-hop UE-to-Network Relay reference architecture | CR#1 | KPN N.V.  Huawei  Qualcomm: shouldn’t this be better be 4.2.7.1A; and 4.2.7.2A? Might be better to have a separate but related clause numbering. |
| New 4.2.X  Or update 4.2.8 | 5G ProSe  Multi-hop UE-to-UE Relay reference architecture | CR#1 | KPN N.V.  Huawei  Qualcomm: For this it would be better to have a 4.2.8A or 4.2.X, as the Rel-19 multi-hop U2U Relay can be very different for the single hop. |
| New 4.3.X  Or update 4.3.1 | 5G ProSe  Intermediate Relay | CR#1 | KPN N.V.  Huawei  Qualcomm: For this, it is probably better to have that as a subclause of 4.3.9.4, or a 4.3.x, instead of inside 4.3.1 which is for the UE.  We also need to update the 4.3.12 to add the multi-hop L3 UE-to-UE Relay.  OPPO: 4.3.1 is updated, 4.3.9.4(new) and 4.3.12.4(new) are added  LGE |
| 5.1.X  (5.1.5.1, 5.1.4) | Authorization and Provisioning for Multi-hop relay | CR#13 | Huawei  CTC  Qualcomm: For the U2N Relay case, the provisioning for Intermediate Relay should be made a separate clause, i.e. 5.1.X, as it can be quite different from a normal U2N Relay (that has to be in coverage). As for the U2N Relay itself, clause 5.1.4 may also be updated for the multi-hop case.  For the U2U Relay case, the provisioning of the multi-hop U2U Relay can be documented in clause 5.1.5A, as there may be some small differences in the parameters.  OPPO: clause 5.1.4/5.1 can be updated to 5.1.4/5.1.1(single -hop) and 5.1.4/5.1.2 (multi-hop);  CATT |
| New 5.2.X | 5G ProSe Multi-hop UE-to-Network Relay Discovery | CR#2 | KPN N.V.  Qualcomm  FirstNet |
| New 5.2.X | 5G ProSe Multi-hop UE-to-UE Relay Discovery | CR#3 | AT&T  Qualcomm  FirstNet |
| New 5.4.X | 5G ProSe Multi-hop Layer-3 UE-to-Network Relay | CR#2 | KPN N.V.  Qualcomm: We also need a separate clause for Intermediate Relay, e.g. 5.4.Y. |
| New 5.4.X | 5G ProSe Multi-hop Layer-2 UE-to-Network Relay | CR#2 | Qualcomm: This should be just a placeholder. |
| New 5.6.X  Or update 5.6.2 | QoS handling for Multi-hop UE-to-Network Relay | CR#8 | Huawei  CTC  Qualcomm: It is fine to update 5.6.2, and make it 5.6.2.1A, 5.6.2.2A.  We can also directly modify 5.6.2.3 or add an 5.6.2.3A.  OPPO: clause 5.6.2.X can be updated to 5.6.2.x.1(single -hop) and 5.6.2.X.2 (multi-hop);  Interdigital |
| New 5.6.X  Or update 5.6.3 | QoS handling for Multi-hop UE-to-UE Relay | CR#9 | Huawei  CTC  Qualcomm: It is fine to have a new subclause as 5.6.3.3  OPPO: clause 5.6.3.X can be updated to 5.6.3.x.1(single -hop) and 5.6.3.X.2 (multi-hop); |
| 5.8.3 | Common identifiers for 5G ProSe UE-to-Network Relay Discovery | CR#12? | Huawei  LGE |
| 5.8.4 | Common identifiers for 5G ProSe UE-to-UE Relay Discovery | CR#8? | Huawei  Qualcomm: This title should be corrected. It seemed to be a typo.  The multi-hop support should be added as a subclause 5.8.4.x. Also, we may need to have two subclauses, given we have two type of U2U Relay operations.  So, it can be:  5.8.4.x Identifiers for 5G ProSe multi-hop U2U Relay discovery  5.8.4.x.1 general;  5.8.4.x.2 identifiers for IP based multi-hop U2U Relay discovery;  5.8.4.x.3 identifiers for Ethernet and unstructured multi-hop U2U Relay discovery; |
| New 5.14.X | 5G ProSe Multi-hop Layer-3 UE-to-UE Relay Communication | CR#3 | AT&T  FirstNet  Qualcomm: This would also require a structured subclauses to cover the two cases:  5.14.x 5G ProSe Multi-hop Layer-3 UE-to-UE Relay Communication  5.14.x.1 general;  5.14.x.2 IP based multi-hop U2U Relay communication;  5.14.x.3 Ethernet and unstructured multi-hop U2U Relay communication. |
| New 6.1.1.7.X  Or update 6.1.1.7.1 | 5G ProSe Multi-hop Layer-3 UE-to-Network Relay | CR#2 | KPN N.V.  Huawei  Interdigital  Qualcomm: Better to make it 6.1.1.7.1A or as Hugh suggested a new clause, instead of modifying 6.1.1.7.1. |
| New 6.1.1.7.X | 5G ProSe Multi-hop Layer-2 UE-to-Network Relay | CR#2 |  |
| New 6.1.1.8.X | 5G ProSe Multi-hop Layer-3 UE-to-UE Relay | CR#3 | AT&T  FirstNet |
| New 6.1.2.3.X  Or update 6.1.2.3.1 | 5G ProSe Multi-hop Layer-2 UE-to-Network Relay | CR#2 | KPN N.V.  Huawei  Qualcomm: Shouldn’t we only add the Layer-3 U2N Relay stack now? Again, it is better to make that 6.1.2.3.1A, instead of add it to the existing single hop clause.  The Layer-2 U2N Relay stack should be only added after RAN2 finished the job. |
| New 6.1.2.4.X | 5G ProSe Multi-hop Layer-3 UE-to-UE Relay | CR#3 | AT&T  FirstNet |
| New 6.3.2.3.X | 5G ProSe Multi-hop UE-to-Network Relay Discovery with Model A | CR#4 |  |
| New 6.3.2.3.X  Or adding new 6.3.2.3.3a | 5G ProSe Multi-hop UE-to-Network Relay Discovery with Model B | CR#5 | KPN N.V.  Huawei can drive  OPPO  Qualcomm: Prefer to have a new procedure in the new clause, or group with the above multi-hop Model A.  Because the message to be used will have different types than single hop, and there are more common parts with the Model A above, than the single hop.  CATT  Interdigital |
| New 6.3.X | 5G ProSe Multi-hop UE-to-UE Relay Discovery with MANET | CR#6 | AT&T  FirstNet  Qualcomm: Maybe the title can be changed to:  “5G ProSe Multi-hop UE-to-UE Relay Discovery with IP PDU type” |
| New 6.3.2.X or 6.3.2.4.2a (model A) and 6.3.2.4.3a(model B) | 5G ProSe Multi-hop UE-to-UE Relay Discovery for PDU type Ethernet and Unstructured | CR#7/12 | Huawei can drive  CATT  interdigital |
| New 6.4.3.X or 6.4.3.7.3a | Layer-2 link management over PC5 reference point for Multi-hop 5G ProSe Layer-3 UE-to-UE Relay | CR#12? | Huawei  Qualcomm: It is better to have a new clause, i.e. 6.4.3.8, instead of overloading 6.4.3.7.  interdigital |
| New 6.4.3.X or 6.4.3.6a | Layer-2 link management over PC5 reference point for Multi-hop 5G ProSe UE-to-Network Relay after Model B Discovery | CR#8?/CR10? | Huawei  Qualcomm: Again, it might be better to have a separate clause.  Also, we should have it for the general multi-hop U2N, and then a sub-clause for the case when Model B is used. |
| New 6.5.X | 5G ProSe Communication via Multi-hop 5G ProSe Layer-2 UE-to-Network Relay | CR#10 | KPN N.V. |
| New 6.5.X or new 6.5.1.1a (without N3IWF) and 6.5.1.2a (with N3IWF) | 5G ProSe Communication via Multi-hop 5G ProSe Layer-3 UE-to-Network Relay | CR#10 | KPN N.V.  Huawei  Qualcomm  OPPO  LGE  CATT  Interdigital |
| New 6.5.X.y or New 6.5.1.3A  (depending on structure for CR#10) | Additional parameters announcement procedure via Multi-hop 5G ProSe Layer-3 UE-to-Network Relay | CR#10\_1 | LGE |
| New 6.7.X | 5G ProSe Communication via Multi-hop 5G ProSe Layer-3 UE-to-UE Relay | CR#11 | AT&T  FirstNet |
| New6.7.X.1 | 5G ProSe Communication via Multi-hop 5G ProSe Layer-3 UE-to-UE Relay for IP PDU type | CR#11 | AT&T  FirstNet |
| New 6.7.X.2 or new 6.7.1a | 5G ProSe Communication via Multi-hop 5G ProSe Layer-3 UE-to-UE Relay for PDU type Ethernet and Unstructured | CR#12 | Huawei  OPPO  Qualcomm: Better to be 6.7.x.2, as this is a new clause, we don’t have to use a in the numbering.  CATT  interdigital |