**3GPP TSG-SA WG1 Meeting #99-eS1-222173**

**E-Meeting, 22th August – 1st September 2022**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **22.261** | **CR** | **0651** | **rev** | **-** | **Current version:** | **18.6.1** |  |
|  | | | | | | | | |
| *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)*.* | | | | | | | | |
|  | | | | | | | | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME | **x** | Radio Access Network | **x** | Core Network | **X** |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | Add requirements on multi-path relay UEs | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | China Telecom, ZTE | | | | | | | | | |
| ***Source to TSG:*** | SA1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | MultiRelay | | | | |  | ***Date:*** | | | 2022-08-12 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | | | Rel-19 |
|  | *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 can be 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-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | Indirect network connection is important for coverage extension. Requirements have been specified in TS 22.278, TS 22.261 and TS 22.115 for indirect network connection on public safety, wearables, IoT and vertical scenarios.  While there is a requirement in TS 22.261 on supporting relaying different traffic flows via multiple UE relay paths, there is no explicit requirement to support relaying same traffic flow through different paths.  .  Hence, it is proposed to specify additional requirements for multi-path indirect network connection, including network-assistance for traffic routing. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | To add requirements on multi-path indirect network connection, including network-assistance traffic routing. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Requirements on multi-path relay UEs are incomplete. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 6.9.2.1 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **X** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

#### 6.9.2.1 General

The 5G system shall support the relaying of traffic between a remote UE and a gNB using one or more relay UEs.

The 5G system shall support same traffic flow of a remote UE to be relayed via different indirect network connection paths.

The 5G system shall support different traffic flows of a remote UE to be relayed via different indirect network connection paths.

The connection between a remote UE and a relay UE shall be able to use 3GPP RAT or non-3GPP RAT and use licensed or unlicensed band.

The connection between a remote UE and a relay UE shall be able to use fixed broadband technology.

The 5G system shall support indirect network connection mode in a VPLMN when a remote UE and a relay UE subscribe to different PLMNs and both PLMNs have a roaming agreement with the VPLMN.

The 5G system shall be able to support a UE using simultaneous indirect and direct network connection mode.

The network operator shall be able to define the maximum number of hops supported in their networks when using relay UEs.

The 5G system shall be able to support network-assistance for traffic routing between a remote UE and the gNB across different multi-path indirect network connections.