**3GPP TSG-RAN5 Meeting #92-e**

**Online, -**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **37.901-5** | **CR** | **0014** | **rev** | **1** | **Current version:** | **16.4.0** |  |
|  | | | | | | | | |
| *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 |  | Radio Access Network |  | Core Network |  |

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| ***Title:*** | Updates to 37.901-5 Annex A for Downlink Throughput tests with Variable Reference Channel | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Qualcomm CDMA Technologies | | | | | | | | | |
| ***Source to TSG:*** | R5 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | FS\_UE\_5GNR\_App\_Data\_Perf | | | | |  | ***Date:*** | | | 2021-08-05 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | | Rel-16 |
|  | *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-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | * Annex A.10, A.11, A.12 and A.13 needs update in TR 37.901-5 to include VRC as agreed in RAN4 Meeting #100-e | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | * Added Test definition and test purpose for Tests A.10, A.11, A.12 and A.13 * Updated Test title to include VRC | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | * VRC test case structure will remain incomplete | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | A.10, A.11, A.12, A.13 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  |  | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  |  | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  |  | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | | R5-215261r1--> R5-216121 | | | | | | | | |

**< Unchanged sections omitted >**

# A.10 5G NR /TCP Downlink Throughput /Conducted for Variable Reference Channel (VRC) Scenarios with Fading for SA and NSA

## A.10.1 5G NR /TCP Downlink Throughput /Conducted/Fading/VRC for SA and NSA

### A.10.1.1 5G NR /TCP Downlink Throughput /Conducted/Fading/VRC/2Rx for SA and NSA

#### A.10.1.1.1 5G NR /TCP Downlink Throughput /Conducted/Fading/VRC/2Rx FDD /FR1 PDSCH mapping Type A performance - for SA and NSA

#### A.10.1.1.1.1 Definition

The UE application layer downlink performance for TCP under fading environment with variable reference channel is determined by the UE application layer TCP throughput.

#### A.10.1.1.1.2 Test Purpose

To measure the performance of the 5G NR UE while downloading TCP based data in a fading channel environment with variable reference channel under 2 receive antenna conditions for FR1.

#### A.10.1.1.1.3 Test Parameters

FFS

#### A.10.1.1.1.4 Test Description

##### A.10.1.1.1.4.1 Initial Conditions

FFS

##### A.10.1.1.1.4.2 Test Procedure

FFS

#### A.10.1.1.2 5G NR /TCP Downlink Throughput /Conducted/Fading/VRC/2Rx TDD /FR1 PDSCH mapping Type A performance - for SA and NSA

#### A.10.1.1.2.1 Definition

The UE application layer downlink performance for TCP under fading environment with variable reference channel is determined by the UE application layer TCP throughput.

#### A.10.1.1.2.2 Test Purpose

To measure the performance of the 5G NR UE while downloading TCP based data in a fading channel environment with variable reference channel under 2 receive antenna conditions for FR1.

#### A.10.1.1.2.3 Test Parameters

FFS

#### A.10.1.1.2.4 Test Description

##### A.10.1.1.2.4.1 Initial Conditions

FFS

##### A.10.1.1.2.4.2 Test Procedure

FFS

**< Unchanged sections omitted >**

# A.11 5G NR /UDP Downlink Throughput /Conducted for Variable Reference Channel (VRC) Scenarios for SA and NSA

## A.11.1 5G NR /UDP Downlink Throughput /Conducted/Fading/VRC

### A.11.1.1 5G NR /UDP Downlink Throughput /Conducted/Fading/VRC/2Rx

#### A.11.1.1.1 5G NR /UDP Downlink Throughput /Conducted/Fading/VRC/2Rx FDD/FR1 PDSCH mapping Type A performance - for SA and NSA

#### A.11.1.1.1.1 Definition

The UE application layer downlink performance for UDP under fading environment with variable reference channel is determined by the UE application layer UDP throughput.

#### A.11.1.1.1.2 Test Purpose

To measure the performance of the 5G NR UE while downloading UDP based data in a fading channel environment with variable reference channel under 2 receive antenna conditions for FR1.

#### A.11.1.1.1.3 Test Parameters

FFS

#### A.11.1.1.1.4 Test Description

##### A.11.1.1.1.4.1 Initial Conditions

FFS

##### A.11.1.1.1.4.2 Test Procedure

FFS

#### A.11.1.1.2 5G NR /UDP Downlink Throughput /Conducted/Fading/VRC/2Rx TDD/FR1 PDSCH mapping Type A performance - for SA and NSA

#### A.11.1.1.2.1 Definition

The UE application layer downlink performance for UDP under fading environment with variable reference channel is determined by the UE application layer UDP throughput.

#### A.11.1.1.2.2 Test Purpose

To measure the performance of the 5G NR UE while downloading UDP based data in a fading channel environment with variable reference channel under 2 receive antenna conditions for FR1.

#### A.11.1.1.2.3 Test Parameters

FFS

#### A.11.1.1.2.4 Test Description

FFS

##### A.11.1.1.2.4.1 Initial Conditions

FFS

##### A.11.1.1.2.4.2 Test Procedure

FFS

**< Unchanged sections omitted >**

# A.12 5G NR /TCP Downlink Throughput /Radiated for Variable Reference Channel Scenarios (VRC) with Fading

## A.12.1 5G NR /TCP Downlink Throughput /Radiated/Fading/VRC

### A.12.1.1 5G NR /TCP Downlink Throughput /Radiated/Fading/VRC/2Rx

#### A.12.1.1.1 Definition

The UE application layer downlink performance for TCP under fading environment with variable reference channel is determined by the UE application layer TCP throughput.

#### A.12.1.1.2 Test Purpose

To measure the performance of the 5G NR UE while downloading TCP based data in a fading channel environment with variable reference channel under 2 receive antenna conditions for FR1.

#### A.12.1.1.3 Test Parameters

FFS

#### A.12.1.1.4 Test Description

##### A.12.1.1.4.1 Initial Conditions

FFS

##### A.12.1.1.4.2 Test Procedure

FFS

# A.13 5G NR /UDP Downlink Throughput /Radiated for Variable Reference Channel (VRC) Scenarios

## A.13.1 5G NR /UDP Downlink Throughput /Radiated/Fading/VRC

### A.13.1.1 5G NR /UDP Downlink Throughput /Radiated/Fading/VRC/2Rx

#### A.13.1.1.1 Definition

The UE application layer downlink performance for UDP under fading environment with variable reference channel is determined by the UE application layer UDP throughput.

#### A.13.1.1.2 Test Purpose

To measure the performance of the 5G NR UE while downloading UDP based data in a fading channel environment with variable reference channel under 2 receive antenna conditions for FR1.

#### A.13.1.1.3 Test Parameters

FFS

#### A.13.1.1.4 Test Description

##### A.13.1.1.4.1 Initial Conditions

FFS

##### A.13.1.1.4.2 Test Procedure

FFS

**< Unchanged sections omitted >**

< End of changes >