**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 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)* |
|  |  |
| ***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
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|  |  |
| ***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
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| ***Consequences if not approved:*** | * VRC test case structure will remain incomplete
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|  |  |
| ***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 >