**3GPP TSG-RAN WG3 Meeting #120 *R3-23xxxx***

**Incheon, KR, 22 May – 26 May, 2023**

**Title:** (TP to TRS\_URLLC BLCR for TS 38.413) Support of 5G Timing Resiliency enhancements

**Source:** Huawei, China Unicom

**Agenda item:** 26.2

**Document Type:** Other

# 1. Introduction

This TP provides changes following the online discussion for R18 TRS\_URLLC.

# Annex A – TP to TS 38.413

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| **Change Begins** |

**<Unchanged Text Omitted>**

# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

**<Unchanged Text Omitted>**

[50] 3GPP TS 23.203: "Policy and charging control architecture".

[51] 3GPP TS 26.114: "IP Multimedia Subsystem (IMS); Multimedia Telephony; Media handling and interaction".

[52] 3GPP TS 26.118: "Virtual Reality (VR) profiles for streaming applications".

[AA] IEEE Std 1588: "IEEE Standard for a Precision Clock Synchronization Protocol for Networked Measurement and Control Systems", Edition 2019.

**<Unchanged Text Omitted>**

## 3.2 Abbreviations

For the purposes of the present document, the abbreviations given in 3GPP TR 21.905 [1] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in 3GPP TR 21.905 [1].

5GC 5G Core Network

5QI 5G QoS Identifier

ACL Access Control List

AMF Access and Mobility Management Function

CAG Closed Access Group

CGI Cell Global Identifier

CP Control Plane

DAPS Dual Active Protocol Stacks

DC Dual Connectivity

DL Downlink

EPC Evolved Packet Core

FN-RG Fixed Network Residential Gateway

GUAMI Globally Unique AMF Identifier

HFC Hybrid Fiber-Coax

IAB Integrated Access and Backhaul

IMEISV International Mobile station Equipment Identity and Software Version number

LMF Location Management Function

MBS Multicast/Broadcast Service

N3IWF Non 3GPP InterWorking Function

NB-IoT Narrow Band Internet of Things

NID Network Identifier

NGAP NG Application Protocol

NPN Non-Public Network

NRPPa NR Positioning Protocol Annex

NSAG Network Slice AS Group

NSCI New Security Context Indicator

NSSAI Network Slice Selection Assistance Information

OTDOA Observed Time Difference of Arrival

PEIPS Paging Early Indication with Paging Subgrouping

PNI-NPN Public Network Integrated Non-Public Network

ProSe Proximity Services

PSCell Primary SCG Cell

PTP Point to Point

PTM Point to Multipoint

QMC QoE Measurement Collection

QoE Quality of Experience

RedCap Reduced Capability

RIM Remote Interference Management

RIM-RS RIM Reference Signal

RSN Redundancy Sequence Number

SCG Secondary Cell Group

SCTP Stream Control Transmission Protocol

SgNB Secondary gNB

SMF Session Management Function

S-NG-RAN node Secondary NG-RAN node

SNPN Stand-alone Non-Public Network

S-NSSAI Single Network Slice Selection Assistance Information

TAC Tracking Area Code

TAI Tracking Area Identity

TSS Timing Synchronization Status

TNAP Trusted Non-3GPP Access Point

TNGF Trusted Non-3GPP Gateway Function

TNLA Transport Network Layer Association

TWAP Trusted WLAN Access Point

TWIF Trusted WLAN Interworking Function

UL Uplink

UP User Plane

UPF User Plane Function

V2X Vehicle-to-Everything

W-AGF Wireline Access Gateway Function

WUS Wake Up Signal

**<Unchanged Text Omitted>**

#### 9.3.1.x3 RAN Timing Synchronisation Status Information

This IE indicates the RAN timing synchronisation status information provided towards the AMF as defined in TS 23.501 [9].

Editor’s Note: The non-UE associated NGAP procedure(s) used to convey this IE towards the AMF is FFS.

Editor’s Note: This IE may be further refined based on SA2 and RAN3 progress.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description |
| Synchronisation State | O |  | ENUMERATED (locked, holdover, freeRun, …) |  |
| Traceable to UTC | O |  | ENUMERATED (true, false, …) |  |
| Traceable to GNSS | O |  | ENUMERATED (true, false, …) |  |
| Clock Frequency Stability | O |  | 9.3.1.x4 |  |
| Clock Accuracy | O |  | 9.3.1.x5 |  |
| PTP clockClass | O |  | 9.3.1.x6 |  |
| Parent Time Source | O |  | ENUMERATED (pTP, gNSS, atomicClock, terrestrialRadio, serialTimeCode, nTP, handSet, other, …) |  |

**<Unchanged Text Omitted>**

#### 9.3.1.x4 Clock Frequency Stability

This IE indicates the clock frequency stability as defined in TS 23.501 [9].

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description |
| Clock Frequency Stability | M |  | BIT STRING (SIZE (16)) | Indicates the offsetScaledLogVariance as specified in IEEE Std 1588 [AA]. |

**<Unchanged Text Omitted>**

#### 9.3.1.x6 PTP clockClass

This IE indicates the PTP clockClass as defined in TS 23.501 [9].

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description |
| PTP clockClass | M |  | INTEGER(0..255,..) | Indicates the clockClass value as specified in IEEE Std 1588 [AA]. |

**<Unchanged Text Omitted>**

#### 9.3.1.z2 Periodicity Range

This IE indicates the periodicity range for the TSC QoS flow as defined in TS 23.501 [9].

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description |
| CHOICE *Periodicity Range* | M |  |  |  |
| >*Periodicity Bound* |  |  |  |  |
| >>Lower bound | M |  | Periodicity9.3.1.132 | Indicates the acceptable lower bound of the periodicity range. |
| >>Upper bound | M |  | Periodicity9.3.1.132 | Indicates the acceptable upper bound of the periodicity range. |
| >*Periodicity List* |  |  |  |  |
| >>**Allowed Periodicity List** |  | *1* |  |  |
| **>>>Allowed Periodicity Item** |  | *1..<maxnoofPeriodicities>* |  |  |
| >>>>Allowed Periodicity | M |  | Periodicity9.3.1.132 |  |

|  |  |
| --- | --- |
| Range bound | Explanation |
| *maxnoofPeriodicities* | Maximum no. of allowed periodicities. Value is 8 [FFS]. |

**<Unchanged Text Omitted>**

#### 9.3.1.z4 TSC Traffic Characteristics Feedback

This IE provides the TSC traffic characteristics feedback of a TSC QoS flow (see TS 23.501 [9].

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description |
| TSC Feedback Information Downlink | O |  | TSC Feedback Information9.3.1.z5 |  |
| TSC Feedback Information Uplink | O |  | TSC Feedback Information9.3.1.z5 |  |

**<Unchanged Text Omitted>**

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| **Change Ends** |