**3GPP TSG-SA5 Meeting #141-e *S5-221241rev5***

e-meeting, 17 -26 January 2022 (revision of xx-yyxxxx)

**Source: China Unicom**

**Title: New SID on Management Aspects of URLLC**

**Document for: Approval**

**Agenda Item: 6.2**

3GPP™ Work Item Description

Information on Work Items can be found at <http://www.3gpp.org/Work-Items>
See also the [3GPP Working Procedures](http://www.3gpp.org/specifications-groups/working-procedures), article 39 and the TSG Working Methods in [3GPP TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm)

Title: **Study on Management Aspects of URLLC**

Acronym: FS\_URLLC\_Mgt

Unique identifier:

{A number to be provided by MCC at the plenary}

Potential target Release: *{Rel-18}*

# 1 Impacts

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Affects:** | **UICC apps** | **ME** | **AN** | **CN** | **Others (specify)** |
| **Yes** |  |  | X |  |  |
| **No** | X | X |  | X | X |
| **Don't know** |  |  |  |  |  |

# 2 Classification of the Work Item and linked work items

## 2.1 Primary classification

### This work item is a study item.

|  |  |
| --- | --- |
|  | **Feature** |
|  | **Building Block** |
|  | *Work Task* |
| X | **Study Item** |

## 2.2 Parent Work Item

|  |
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| **Parent Work / Study Items**  |
| **Acronym** | **Working Group** | **Unique ID** | **Title (as in 3GPP Work Plan)** |
| N/A |  |  |  |

### 2.3 Other related Work Items and dependencies

|  |
| --- |
| **Other related Work /Study Items (if any)** |
| **Unique ID** | **Title** | **Nature of relationship** |
| 840074 | Physical Layer Enhancements for NR Ultra-Reliable and Low Latency Communication (URLLC) | FS\_MAU may have relation on physical layer features standardized in NR\_L1enh\_URLLC. |
|  |  |  |

# 3 Justification

eMBB, a main service in 5G, is characterized by large bandwidth and high bit-rate. It mainly meets the demand for heavy traffic, wide bandwidth and continuous coverage, but it only does its best rather than guarantee for delay performance. URLLC, another important service in 5G, is characterized by ultra-reliability and ultra-low latency. It provides time-critical communication service which can satisfy a pre-defined delay and reliability target. There is difference between the service targets of URLLC and eMBB. Consequently, in order to achieve the pre-defined target of URLLC, several new features different from that of eMBB are standardized in the frozen specifications made by RAN to implement low latency and high reliability, some examples are shown below:

* Release 15: Mini-slot, UL grant free, UE fast processing capability, PDCCH monitoring, PDCP duplication, low spectral efficiency MCS/CQI tables and DL pre-emption etc.
* Release 16: Configurable DCI enhancement, Sub-slot ACK/NACK, PUSCH repetition type B, DL pre-emption (Intra UE), UL pre-emption (Inter UE) and multi-TRP repetition etc.

Compared with the eMBB features, the features above bring in some changes in some aspects, such as: physical resource division mode, scheduling algorithm and the network deployment mode (e.g. PDCP duplication). Corresponding mechanisms needs to be updated to manage the feature updates of network functions. However, the research on management aspects of URLLC has not been carried out. Especially for the scenario when eMBB and URLLC coexist on the same network, the two services with different performance objectives and different user types sharing resource may lead to conflictions. For example, eMBB and URLLC need to set parameters separately, otherwise it is easy to overdesign eMBB or under-design URLLC.

Therefore, it is necessary to sort out the management requirements for multi-service scenario and study network management functions for parameter management granularity, performance measurements and domain management for the two service respectively.

# 4 Objective

This item is focus on the management aspects after the introduction of URLLC, the objectives of the study item are:

* Study potential requirements related to management of URLLC serviced-based features in RAN network;
* Study the potential configuration management requirements (e.g. physical resource division configuration per BWP) when eMBB and URLLC are deployed in RAN with different coexistence modes (e.g. slice, slice+5QI, BWP, independent network);
* Study whether new performance measurements and new key indicators needs to be introduced to TS 28.552 and TS 28.554 to evaluate the performance of URLLC service.
* Specify which performance measurements defined in TS 28.552 should be reported on a per-service granularity to evaluate services respectively.

# 5 Expected Output and Time scale

|  |
| --- |
| New specifications {One line per specification. Create/delete lines as needed} |
| Type  | TS/TR number | Title | For info at TSG#  | For approval at TSG# | Rapporteur |
| Internal TR | 28.xyz | Study on management aspects of URLLC | SA#96 (June 2022) | SA#97 (Sep 2022) | Zhaoning Wang |

|  |
| --- |
| Impacted existing TS/TR {One line per specification. Create/delete lines as needed} |
| TS/TR No. | Description of change  | Target completion plenary# | Remarks |
|  |  |  |  |
|  |  |  |  |

# 6 Work item Rapporteur(s)

<Wang>,<Zhaoning>,<China Unicom>,< wangzn18@chinaunicom.cn>

# 7 Work item leadership

SA WG5

# 8 Aspects that involve other WGs

# 9 Supporting Individual Members

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| --- |
| **Supporting IM name** |
| China Unicom |
| ZTE |
| HUAWEI |
| NOKIA |
| CATT |
| CMCC |
| China Telecom |