

Next Generation Mobile Networks

Verticals URLLC Requirements

Title: Liaison between NGMN project on Verticals URLLC Requirements and GSMA

Source: Next Generation Mobile Networks (NGMN) Project Verticals URLLC Requirements

To: GSMA

CC:

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1 OVERALL DESCRIPTION

Thank you for your liaison statement: “GST and Cooperation with NGMN”, Doc. Number NEST_59_003, dated 11/10/2018.

Supporting vertical URLLC use cases is one of the most important differentiators of 5G. To facilitate the technology development in Standards Developing Organizations (SDOs), to enable operator business development and to foster the ecosystem, a holistic view of URLLC use cases and their requirements for 5G is needed.

The board of NGMN decided in June 2018 to set up the project “Verticals URLLC Requirements” (hereafter referred to as “NGMN URLLC project”) to

- Collect URLLC use cases, requirements from verticals, operators and vendors. The project focuses on URLLC use cases in Energy, Transport, Health, Manufacturing, Smart cities etc. Use cases for automotive are out of scope.
- Study from an end-to-end perspective on how 5G can meet the vertical requirements, and the related architectural considerations and deployment models.
- Explore a balance between highly-specialised customisation of solutions and a one-size-fits-all type of approach. Address as many use cases as possible with a common solution, while providing differentiation capabilities in the service offerings for different industry sectors.
- Provide requirements to the ecosystem (& future SDO work), including influencing 3GPP & its scope on priorities / requirements from the operators and monitor the progress
- Share the best practices on vertical application and understand the role of (and value provided by) the operators in this ecosystem
- Demonstrate 5G capability to vertical industries

NGMN has studied 5G Verticals Requirements and 5G extreme requirements. Based on these results, Project of Vertical URLLC Requirements focuses on URLLC use cases as well as technology and solutions. It will align with other relevant NGMN projects for example End-to-End Architecture Project.

2 TOPICS FOR CLARIFICATION

NGMN is delighted in being notified of your work in network slicing and GST, and are grateful for the opportunity to have our suggestions considered in your work.

For vertical use cases and especially for URLLC use cases, communication service availability¹ is a very important requirement parameter. Vertical customers need to know the network's ability to function as promised. When and if a network slice is instantiated to provide communication services to support vertical (URLLC) use cases, customers will require a high level of assurance of the communication service availability from the network slice.

From the current GST description, we did not find any attributes that describe the service availability aspects of a network slice.

As NGMN's work on URLLC use cases and requirements is at its early stage, we shall keep you informed of any further findings as the work progresses.

¹ Communication service availability is defined in 3GPP TS 22.261 as follows:

Communication service availability: percentage value of the amount of time the end-to-end communication service is delivered according to an agreed QoS, divided by the amount of time the system is expected to deliver the end-to-end service according to the specification in a specific area.

NOTE 1: The end point in "end-to-end" is assumed to be the communication service interface.

NOTE 2: The communication service is considered unavailable if it does not meet the pertinent QoS requirements. If availability is one of these requirements, the following rule applies: the system is considered unavailable in case an expected message is not received within a specified time, which, at minimum, is the sum of end-to-end latency, jitter, and survival time.

NGMN URLLC project has adopted the definition with a clarification the communication service interface in the above NOTE 1 is assumed to be application layer service access point. In case the communication service interface in NOTE 1 refers to network layer service access point, the term **network availability** is used in NGMN URLLC project.