3GPP TSG-RAN WG1 Meeting #103-e R1-20xxxxx

e-Meeting, October 26th – November 13th, 2020

**Agenda Item: 8.14**

**Title: Email discussion/approval for XR TR skeleton**

**Source: Rapporteur (Qualcomm)**

**Document for: Discussion, Decision**

# 1 Introduction

This document captures the RAN1#103e email discussion [103-e-NR-XR-01] for the TR skeleton for the study item “Study on XR Evaluations for NR” with SID in RP-201145. Companies are invited to enter their comments on the TR skeleton below.

# 2 Draft TR skeleton

A draft TR skeleton has been provided by the rapporteur in [R1-2009281](file:///C%3A%5CUsers%5Cwanshic%5COneDrive%20-%20Qualcomm%5CDocuments%5CStandards%5C3GPP%20Standards%5CMeeting%20Documents%5CTSGR1_103%5CDocs%5CR1-2009281.zip).

# 3 Discussion

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| **Company** | **Comments** |
| Nokia | **Introduction and Scope sections**: The scope seems to extend the scope of the SID. We would suggest moving the SID stated scope from Introduction to the Scope section. IntroductionIn RAN #86 meeting, a new Rel-17 study item on XR Evaluation for NR was approved, and later updated in RAN#88 meeting. The objectives of this study are recorded in the Study Item description [2]. 1 ScopeThe present document captures the results and findings from the study item "Study on XR Evaluation for NR "[2]. The purpose of this TR is document the findings related to the objectives of the study item1. Confirm XR and Cloud Gaming applications of interest
2. Identify the traffic model for each application of interest taking outcome of SA WG4 work as input, including considering different upper layer assumptions, e.g. rendering latency, codec compression capability etc.
3. Identify evaluation methodology to assess XR and CG performance along with identification of KPIs of interest for relevant deployment scenarios
4. Once traffic model and evaluation methodologies are agreed, carry out performance evaluations towards characterization of identified KPIs

**Evaluation sections:** We suggest deleting sections 8, 9 and 10 and making section 7 just “XR Evaluation for NR”. We can add sub-structure and possibly have a split of 7.1,…7.4 that would correspond to 7, 8, 9, 10, when the time comes and we have content to add to the TR. However, at this time it is not at all evident that the evaluations would or should be split to the 4 top categories as the current skeleton is foreseeing. |
| Apple | Note as made clear in our contribution, we do see the importance of capacity and UE power consumption in XR study, whether any enhancement is needed and how to achieve it when found necessary still needs to be studied. Since no study has been conducted in RAN1 yet on XR-- even the evaluation assumptions are still to start, it is premature to identify the capacity and power tradeoff under Section 8.2, so we suggest to remove Section 8.2. For the same reason, we also suggest to remove Section 8.4.2, 8.4.3, 8.4.4 and 8.4.5; looking at section 7.4, the details under 7.4.1 and 7.4.2 are suggested to be removed also. After the suggested changes, the skeleton of Section 7 and Section 8 will be aligned with that for Section 9 and Section 10:XR Evaluation for NR: Capacity 87.2 KPI 87.3 Evaluation Methodology and Assumption 87.4 Evaluation Results 8~~7.4.1 Baseline capacity results 8~~~~7.4.2 Capacity Impact of Different Evaluation Assumptions 9~~7.5 Observations 98 XR Evaluation for NR: UE Power Consumption 98.1 KPI 9~~8.2 Capacity and Power Tradeoff 9~~8.3 Evaluation Methodology and Assumption 98.4 Evaluation Results 98.4.1 ~~Baseline Results 9~~~~8.4.2 Upper Bound of UE Power Saving by Power Saving Schemes 9~~~~8.4.3 Power Saving by Power Saving Schemes 9~~~~8.4.4 Impact of UE Staggering on UE Power Consumption 9~~~~8.4.5 Impact of DL and UL Alignment on UE Power Consumption 10~~8.5 Observations 109 XR Evaluation for NR: Coverage 109.1 KPI 109.2 Evaluation Methodology and Assumption 109.3 Evaluation Results 109.4 Observations 1010 XR Evaluation for NR: Mobility 1010.1 KPI 1010.2 Evaluation Methodology and Assumption 1010.3 Evaluation Results 1010.4 Observations 10 |
| CATT | Our view is that the evaluation methodologies could be in one section including the following1. Deployment scenarios
2. Link and system level Simulation assumptions
3. Performance matrix – KPI
	1. System Capacity and coverage
	2. Power consumption
	3. UE mobility
4. Traffic models for XR applications

The other section should be the aspects of NR enhancement to support the XR application and improve the all aspects of performance indexIntroduction 61 Scope 62 References 63 Definitions of terms, symbols and abbreviations 73.1 Terms 73.2 Symbols 73.3 Abbreviations 74 XR Applications and System Architecture 75 ~~Traffic Models 8~~6 ~~Deployment Scenarios 8~~~~7 XR Evaluation for NR: Capacity 8~~~~7.2 KPI 8~~~~7.3 Evaluation Methodology and Assumption 8~~~~7.4 Evaluation Results 8~~~~7.4.1 Baseline capacity results 8~~~~7.4.2 Capacity Impact of Different Evaluation Assumptions 9~~~~7.5 Observations 9~~~~8 XR Evaluation for NR: UE Power Consumption 9~~~~8.1 KPI 9~~~~8.2 Capacity and Power Tradeoff 9~~~~8.3 Evaluation Methodology and Assumption 9~~~~8.4 Evaluation Results 9~~~~8.4.1 Baseline Results 9~~~~8.4.2 Upper Bound of UE Power Saving by Power Saving Schemes 9~~~~8.4.3 Power Saving by Power Saving Schemes 9~~~~8.4.4 Impact of UE Staggering on UE Power Consumption 9~~~~8.4.5 Impact of DL and UL Alignment on UE Power Consumption 10~~~~8.5 Observations 10~~~~9 XR Evaluation for NR: Coverage 10~~~~9.1 KPI 10~~~~9.2 Evaluation Methodology and Assumption 10~~~~9.3 Evaluation Results 10~~~~9.4 Observations 10~~10 ~~XR Evaluation for NR: Mobility 10~~~~10.1 KPI 10~~~~10.2 Evaluation Methodology and Assumption 10~~~~10.3 Evaluation Results 10~~~~10.4 Observations 10~~11 Conclusions 10Annex <A>: Simulation assumptions 11A.1 Simulation assumptions for FR1 11A.2 Simulation assumptions for FR2 11Annex <B> (informative): Change history 11 |
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