3GPP TSG RAN Rel-19 Workshop
Taipei, Taiwan – June 15th – 16th, 2023

RWS-230125
Agenda Item 5

[RAN2-led] XR enhancements [WI]

MediaTek Inc.

Motivation
Problem Statement

Enhancements to XR capacity and XR power saving

- R18 study identified some potential enhancements to XR capacity and power-saving. It is still TBD if those enhancements will be specified in R18. If not included in R18, they should be prioritized for R19.

Enhancements to support multi-modal XR (single UE)

- SA1 study on multi-modality services(1) defines new use cases, traffic characteristics and requirements for multi-flow of single UE and of multiple UEs requiring high data rate/capacity and low latency. Potential efficiency enhancements to synchronization and scheduling/RRM coordination between different flows of a single UE. We see no immediate value in enhancements for multi-UE scenarios.

Support for 2Rx XR (if it is not already supported in R18)

- There is clear demand to introduce 2Rx support for XR device in bands where 4Rx are currently mandated. This shall be introduced in R19 if it is not already specified in R18.

(1): TR22.847 Study on supporting tactile and multi-modality communication services

Proposal

SA/CT Dependency: Yes

Key Message:
We propose a RAN2-led work item to continue enhancements in XR capacity and XR power saving aspects; and to study and specify potential enhancements to support multi-modality at RAN-level.

Objective I: Enhancements to XR capacity and XR power saving [RAN1, RAN4, RAN2]
- Specify measurement gap enhancements to improve XR system capacity [RAN1, RAN4]
- Specify enhancements to support PDCCH monitoring resumption after NACK (if it is not already supported in R18) [RAN1, RAN2]
- Specify enhancements to C-DRX to reduce active time for power saving [RAN2]

Objective II: Support 2Rx XR [RAN4, RAN2]
- Specify support of 2Rx for XR device with 100MHz channel bandwidth and optional CA support (if it is not already supported in R18) [RAN4, RAN2]

Objective III: Synchronization and coordination between multiple flows for multi-modal XR (single UE) [RAN2, RAN3]
- Study and specify, if justified, multi-flow synchronization/coordination enhancements for <u>single</u> UE only [RAN2, RAN3]

Objective IV: Scheduling enhancements for multi-modal XR [RAN1, RAN2]
- Study new traffic characteristics for multi-modality (e.g., sensors, haptic data) [RAN1]
- Study and specify, if justified, identified enhancements based on multi-modal traffic requirements for data rate, capacity, latency [RAN2, RAN1]
- Study and specify, if justified, dynamic grant enhancements for low-latency aperiodic haptic packets [RAN1, RAN2]

Expected TU

	2024												2025 [Calendar TBC at the time of writing]												2026		
	Q1			Q2			Q3			Q4			Q1			Q2			Q3			Q4			Q1		
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
RAN			**103**			**104**			**105**			**106**			**107**			**108**			**109**			**110**			**111**
R1	115b	116		116b	117			118		118b	119		119b	120		120b	121			122		122b	123		123b	124	
R2	124b	125		125b	126			127		127b	128		128b	129		129b	130			131		131b	132				
R3	122b	123		123b	124			125		125b	126		126b	127		127b	128			129		129b	130				
R4	109b	110		110b	111			112		112b	113		113b	114		114b	115			116		116b	117		117b	118	
R1		0.5		0.5	0.5			0.5		0.5	0.5			0.5		0.5	0.5										
R2				1	1			1		1	1			1		1	1			1							
R3				0.5	0.5			0.5		0.5	0.5			0.5		0.5	0.5			0.5							
R4 RD				0	0			0.25		0.25	0.25			0		0	0			0							
R4 RF				0	0			0.25		0.25	0.25			0		0	0			0							

RAN4 Core

RAN4 Perf

Study TU

Feature TU

Thank you!