3GPP TST RAN Meeting #101
Bangalore, India, September 11-15, 2023
Agenda Item: 8A.2.8

RP-232537

Views on Rel-19 XR Evolution

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Background

eXtended Reality (XR) merges the physical and digital world

- XR requirements on data rates, latency, QoS, far more stringent than any media streaming
- Support for enterprise, consumer, and public safety use cases
- Not a single RAN feature, but a diverse (and complex) toolbox

Rel-18 work item specified enhancements based on evaluations over Rel. 15-17 baselines

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XR Categories and Requirements

High **jitter** sensitivity due to compute offload

UL data bottlenecks with stringent media and control latency requirements

Lower user density but **extended session durations**

Augmented Reality (AR)

Real-time context and notifications

Cloud Gaming (CG)

Remote rendering & service continuity

Mixed Reality (MR)

Interactive 3D digital objects

Virtual Reality (VR)

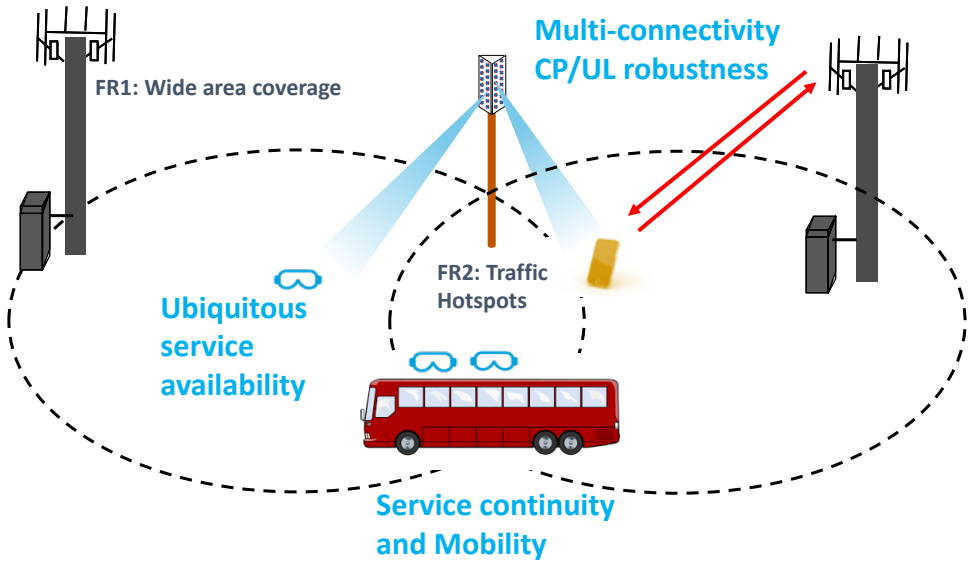
High-fidelity 360° **immersive media**

Standalone devices with **local/split compute resources**

Rel-19 Scope

Focus on XR services in mobile environments including urban and suburban deployments, venues, and enterprise campuses

- Multi-device interactions (e.g. tethering) and user mobility make XR traffic scalability challenging
- E2E QoE combines spatial, temporal and interactivity measures as a function of network KPIs
- Significant opportunities for cross-layer App/RAN optimizations to improve E2E QoE and network scalability



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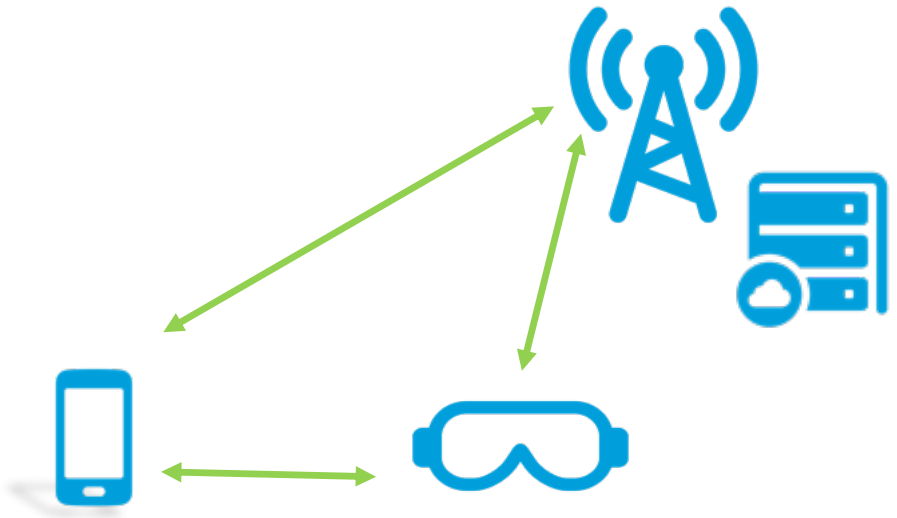
Rel-19 Key Objectives

Paired/tethered device status and user-context/mobility awareness enhancements

Real-time PDU-set QoE monitoring and feedback within the RAN and/or UEs

Protocol enhancements at gNB/UE to support scalability/congestion mitigation solutions (e.g. L4S)



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