**3GPP TSG-SA WG1 Meeting #96-e S1-21xxxx**

**Electronic Meeting, 08-18 Nov 2021** *(revision of S1-21xxxx)*

**Source: Huawei**

**pCR Title: FS\_TACMM resolving the ENs in clause 5.1**

**Draft Spec: 3GPP TR 22.847 V18.0.0**

**Agenda item: 7.11.1**

**Document for: Approval**

**Contact: Alice Li, alice.li1@huawei.com**

*Abstract: There are several editor’s notes in clause 5.1 “Immersive multi-modal Virtual Reality (VR) application”. This document discusses the remaining issues and proposes the way forward to resolve these ENs.*

**Discussion**

There are several editor’s notes in clause 5.1 “Immersive multi-modal Virtual Reality (VR) application”.

Service Area

The service area for the immersive multi-modal VR application is set as “several km2” with a note:

*NOTE 3: In practice, the service area can vary depends on the actual deployment. In some cases a local approach (e.g. the application servers are hosted at the network edge) is preferred in order to satisfy the requirements of low latency and high reliability.*

Considering the end-to-end latency requirement of one way < 5ms, it is suggested to update the service area to “typically < 100 km2”

**Proposal 1: To update the service area as “typically < 100 km2”.**

Requirements related to “synchronization threshold”

There are a couple of ENs related to the synchronization threshold. During the course of the consolidation, it seems acceptable to update the related requirements as following.

**Proposal 2:**

***Service exposure –***

The 5G system shall support a means for an authorized 3rd party to provide 5GS with synchronization threshold(s) between the multiple flows (e.g., haptic, audio and video) associated with a multi-modal communication session.

The 5G system shall support a means to assist a 3rd party application to coordinate the transmission of multiple flows (e.g., haptic, audio and video) of a multi-modal communication session to enable presenting the related tactile and multi-modal data to the user within a certain time.

***Performance KPIs –***

To support immersive multi-modal VR applications, the 5G system shall support the following synchronisation thresholds in order to avoid having a negative impact on the user experience (i.e. viewers detecting lack of synchronisation).

Table: Potential Key performance requirements for synchronization thresholds for immersive multi-modal VR applications

|  |  |  |
| --- | --- | --- |
|  | **synchronisation threshold** | |
| **audio-tactile** | audio delay:  [50 ms] | tactile delay:  [25 ms] |
| **visual-tactile** | visual delay:  [15 ms] | tactile delay:  [50 ms] |

A CR is provided to update the TR accordingly.