**SA WG2 Meeting #149eS2-220xxx**

**February 14th – 25th, 2022; Elbonia**

**Source: China Mobile**

**Title: Key issue for coodinately transmission for multi-modality traffic among multiple UEs related with WT1&WT2.1**

**Document for: Approval**

**Agenda Item: 9.19**

**Work Item / Release:** **FS\_XRM / Rel-18**

*Abstract of the contribution:*

# 1 Discussion

This key issue focus on multi-modality data among multiple UEs. Some specific scenarios includes:

1. Multiple sensors in a factory detect some equipment’s status or signals in the same time, in order to get the real status of the factory, even to build a virtual factory in VR environment.
2. The devices for immersive multi-modal VR application may include multiple types of devices such as VR glass type device, the gloves and other potential devices that support haptic and/or kinaesthetic modal. These devices may be produced by different manufactures and these devices need coordination transmission.

These flows among multiple UEs should be transmitted with maybe the same QoS profile, the same end-to-end latency, to support the best experience for user.

# 2 Proposal

**It is proposed to update TR 23.700-60 on FS\_XRM as follows**

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\* \* \* \* First change \* \* \* \*(all new texts)

## 5.X Key Issue #X: Policy control enhancements to support multi-modality flows among multiple UEs coordinately transmission

### 5.X.1 Description

This key issue studies how to support co-ordinately transmission for multi-modality flows among multiple UEs with an application. Some advanced XR or media services may include more type of flows besides video and audio stream, such as information from different sensors and tactile for more immersive experience e.g. haptic data or sensor data. To support such tactile and multi-modality communication services (identified by SA WG1 TACMM in TS 22.261 clause 6.43 and 7.10), 5G system need to address service requirement of multi-modality flows among multiple UEs with coordinated QoS selection , packet processing, guaranteed latency, reliability, bandwidth or time synchronization, in order to ensure best service experience.

Specific scenarios:

1. Multiple sensors in a factory detect some equipment’s status or signals in the same time, in order to get the real status of the factory, even to build a virtual factory in VR environment.

In this case, the multiple UEs’ detection signal should be transmitted to the application almost in the same time. And the QoS policy should support the above even if the transmission path between the UEs and application server is different or changed over time.

1. The devices for immersive multi-modal VR application may include multiple types of devices such as VR glass type device, the gloves and other potential devices that support haptic and/or kinaesthetic modal. These devices may be produced by different manufactures and these devices need coordination transmission.

The data from the gloves and other potential devices should be synchronized with the VR video/audio data, i.e. the 5GS should support to transmit the haptic datas with learning the video/audio data characteristics.

Key issue description: the following aspects shall be studied to support coordination transmission for multi-modality flows among multiple UEs:

* How to identify the multi-modality flows among multiple UEs that need such coordination transmission.
* The coordination aspect should be specified e.g. QoS profile selection, latency, reliability or time synchronization.
* How to support such coordination transmission with utilizing policy control enhancement, e.g. defining new QoS parameter, extension QoS control mechanism.
* What parameters/information the AF can provide to 5GS or vice verse, to assist the coordination transmission among multiple UEs, e.g. to help identify the specific flows, information to help create the coordinated policy, or triggering events.

- How to coordinate the QoS policy among multiple PCFs.

- How to support the coordination transmission if there are multiple SMFs/UPFs selected for the multi-modality flows among multiple UEs.

- During UEs mobility, how to support the coordination transmission.

\* \* \* \*end of change \* \* \* \*