Source: Samsung Electronics Co., Ltd.

**Title: FS\_5GSTAR: pCR on architecture & media flow for interactive services**

**Agenda Item: 11.9**

**Document for: Discussion and Agreement**

# **Introduction & Proposal**

In the previous SA4#112e meeting, five service scenarios including 5G interactive immersive services were agreed and the technical report was structured to put them in. During the meeting, a simple architecture for 5G interactive immersive services was added in clause 6.3.3 and it still need to be aligned with 5GMS architecture. This contribution is providing the updated figure for STAR-based showing 5GMS interfaces and entities and the basic procedure, taking into account the recent work in FS\_EMSA, for further discussion. We propose to include the text and figure in section 2 of this document into TR26.998

# **Proposed change**

\*\*\* Change 1 \*\*\*

6.3.3 Architectures

6.3.3.1 STAR-based

Figure 6.3.1 provides a basic extension of 5G interactive immersive media services using a STAR UE, when the immersive media is processed in 5GMSd AS. Based on the user interaction and the pose information sent from UE through M4d interface, 5GMSd AS generate the desired immersive media accordingly. Further, 5GMSd AS may perform split rendering in case when 5G STAR UE needs to rely on 5G cloud/edge.



**Figure 6.3.1: STAR-based 5G interactive immersive service architecture**

\*\*\* End of Change 1 \*\*\*

### \*\*\* Change 2 \*\*\*6.3.4 Procedures and call flows

Figure 6.3.3 illustrates the procedure diagram for 5G interactive immersive services for STAR UE (option A) and EDGAR UE (option B).



**Figure 6.3.1: Procedure for 5G interactive immersive services**

Procedures:

1. Provisioning step: AR/MR Application Provider communicates with 5GMSd AF to configure resources required for the application.

2. Service Access Information including Media Player Entry is exchanged.

3. User selects the desired interactive immersive media contents.

4. AR/MR Application triggers session establishment with QoS requirements.

5. Media Session Handler establishes a session to inform 5GMSd AF of the required capabilities, QoS requirements, etc.

6. 5GMSd AF verifies the received QoS requirements with information in Provisioning step (Step 1) and creates the required 5GMSd AS instance.

7. 5GMSd AF confirms the configuration is ready.

8. AR/MR Application sends the Media Entry information to Media Stream Handler.

9. Session for interactive immersive media transmission is established.

10. The Media Stream Handler configures the media playback pipeline.

11. The Media Stream Handler notifies to the Media Session Handler that the playback is ready.

12. The Media Stream Handler requests the transmission of immersive media and may send the relevant information for further processing in 5GMSd AS such as pose and user interaction.

In case of STAR UE (on-device rendering enabled):

13a. 5GMSd AS sends the requested immersive media.

14a. The Media Stream Handler renders the received immersive media.

 In case of EDGAR UE:

13b. 5GMSd AS renders the immersive media.

14b. 5GMSd AS sends the rendered media to the Media Stream Handler.

\*\*\* End of Change 2 \*\*\*