**Agenda item:** 10.6

**Source:** Qualcomm Inc.

**Title: Use Case and Call Flows**

**Document for** Discussion andAgreement

# Introduction

3GPP SA1 has defined a set of use cases and requirements for the evolution of the IMS multimedia telephony service in TR22.873. SA2 has started a study on the architectural modifications, in order to support these identified use cases.

As part of the IMS4AR work item, SA4 is tasked with defining the session setup and control as well as the real-time transport of AR media. In this contribution, we use one of the SA1 identified use cases as a reference use case and provide an example call flow for the session establishment and media exchange for that use case.

# Reference Use Case

TR22.873 defines an AR call scenario, with an example use case of remote support. In the remote support use case, a technician starts an AR call with a remote engineer to get help fixing a car. The technician sees an avatar of the remote engineer next to them and they can both interact with the car. The remote engineer is able to add content, e.g. 3D part models or repair instructions to assist the technician with the repair.

# Potential Reference Architecture

The following diagram depicts a potential reference architecture that is being discussed by SA2 as part of FS\_NG\_RTC in TR23.700-87.



# Example Call Flow

In this section, we provide an example call flow for the reference use case.

The steps are as follows:

1. UE1 sends an invite for an AR remote assistance call with UE to the MMTel AS, which involves a data channel.
2. CSCF forwards the invite to the MMTel AS, which will setup the data channel resources for the AR support application.
3. The AS selects the proper DCS-C and DCS-M that will provide the AR application data channel resources.
4. The AS instructs the DCS-C to setup the data channel resources with the DCS-M for the AR support application.
5. The DCS-M prepares the entry point for the session, which is a description of the shared space and includes a set of assets that will be used to augment the real world
6. The DCS-C confirms the data channel resources to the MMTel aS
7. The AS forwards the invite to UE2 via the CSCF.
8. The CSCF forwards the invite to UE.
9. UE2 accepts the invite and the session starts.
10. The DCS-M sends out the entry point to the endpoints UE1 and UE2.
11. -11.: UE1 and UE2 share their pose and action information with the AS, which generates a scene update and sends it to the data channel server for distribution.

12-14.: UE1 and UE2 exchange media potentially through an MRF, which may perform functions such as 3D reconstruction or mixing/composition.

# Proposal

We propose to agree the reference use case and the example call flow and document them in the permanent document.

# References

[1] 3GPP TR22.873: " Study on evolution of IMS multimedia telephony service (Release 18)"