**Title:** [IBACS] Basic AR call flow

**Source:** Nokia Corporation1, Qualcomm Inc.

**Document For:** Agreement

**Agenda item:** 10.6

# Introduction

The contribution provides a call flow for a basic AR call for IBACS.

# Basic AR call flow

The figure shows the call flow for a basic AR call. Enhanced MRF consists of both the Data channel media function and the AR media function. The figure may be updated later based on SA2 work.



The steps are as follows:

A. Call Setup

1. The calling UE, in this case UE1, sends a SIP invite to the P-CSCF to initiate the call
2. The P-CSCF identifies this as an AR call and forward the invite request to the MMTel AS
3. The MMTel AS sends a request to the DCSF to request the data channel resources for the AR call data channel application.
4. The DCSF selects a Enhanced MRF and requests the allocation of data channel resources and the execution of the AR call data channel application
5. The Enhanced MRF confirms the successful allocation of resources and the DCSF forwards the confirmation to the MMTel AS
6. The MMTel AS then forwards the invite to UE2 via the P/S/I-CSCF
7. UE2 accepts the invitation and informs UE1. Both UE1 and UE2 establish a data channel connection and channels for media flows to the Enhanced MRF.

 B. Scene description distribution

1. Enhanced MRF prepares the scene description based on media descriptions and assets for the call.
2. Enhanced MRF delivers the scene description to the UEs.

C. Scene description update

1. A UE may trigger a scene update e.g., when a new object is added/removed in the scene, or a spatial information update is sent. The figure shows the update is triggered by UE1, but this can be either UE.
2. The Enhanced MRF will process the new information and creates a scene description update. It is also possible for the Enhanced MRF to initiate an update without an update from the UEs.
3. Enhanced MRF distributes scene description update to all UEs.

NOTE: Spatial data related updates may be required for collaborative AR calls, e.g., when multiple users are physically collocated and also part of the same AR experience. The type of spatial description updates is FFS.

D. AR Media and Metadata Exchange

1. Both UEs will send and receive the AR media required (and negotiated) for the call as part of the call setup and scene description information received. Prestored media can be fetched from the Enhanced MRF. Real-time conversational media can flow via the Enhanced MRF. The Enhanced MRF may process the AR media before delivery.
2. Related metadata (e.g. User Pose) may be needed during the AR session. The metadata may be delivered as RTP header extension, RTCP feedback or over data channel; this aspect is FFS.

NOTE: Delivery of real-time media over data channel is FFS.

NOTE: split rendering for UE1 and/or UE2 needs to adhere to the procedures and formats that are defined by the SR\_MSE work item. The Enhanced MRF may be the entity that performs the split rendering for the UE.

# Proposal

The proposal is to include the text in section 2 to the permanent document of IBACS.