**Agenda item:** 10.5

**Source:** Qualcomm Inc.

**Title: Architectural Considerations for iRTCW**

**Document for** Discussion andAgreement

# Introduction

In this contribution, we identify relevant WebRTC functions in the context of iRTCW.

# WebRTC Functions

## 2.1 General

We have agreed on 4 different collaboration scenarios for iRTCW at the SA4-118e meeting. The collaboration scenarios are listed here for convenience:

1. 5G support for OTT WebRTC: in this scenario the WebRTC session runs completely over the top. However, the MNO may offer support in form of QoS allocation, bitrate recommendations, and QoE report collection based on request by the UE.
2. MNO-provided trusted WebRTC functions: in this scenario the MNO offers trusted support functions such as ICE servers to the WebRTC application on the UE.
3. MNO-facilitated WebRTC services: the MNO may host and facilitate WebRTC sessions by providing a trusted WebRTC signaling server, which may also offer 5G network assistance.
4. Inter-operable WebRTC services: collaboration scenario 3 is extended with functions to support MNO to MNO inter-operability.

Based on the documented collaboration scenarios, we identify the following functions and describe their roles.

## 2.2 Provisioning Server

The provisioning server may enable an application provider to perform provisioning of the following functionalities:

* QoS support provisioning for WebRTC sessions
* Charging provisioning for WebRTC sessions
* Collection of consumption and QoE metrics data provisioning related to WebRTC sessions
* ICE functionality provisioning such as STUN and TURN servers
* WebRTC signaling servers provisioning, potentially with interoperability to other signaling servers

The provisioning server may not be relevant to all collaboration scenarios and some of the 5G support functionality may be offered without application provider provisioning.

## 2.3 Configuration Server

The configuration server stores WebRTC-related configuration information and makes them accessible to the UE. It stores information and recommendations to operate network-assisted WebRTC sessions over 5G.

The configuration information may consist of static information such as the following:

* Recommendations for media configurations
* Configurations of STUN and TURN server locations
* Configuration about consumption and QoE reporting
* Discovery information for WebRTC signaling and data channel servers and their capabilities

## 2.5 Media Session Handler (MSH)

The MSH is an entity running on the UE, which assists with the 5G integration of the WebRTC application. It exchanges, on behalf of the application, information about the WebRTC sessions with the network.

## 2.4 UE or MSH Support Function, or MSH itself?

The support functionality includes the following:

* MSH informs the MSH (What is this???) about a WebRTC session and its state
* MSH requests QoS allocation for a starting or modified session
* MSH receives notification about changes to the QoS allocation for the ongoing WebRTC session
* MSH receives updates exchanges information about the WebRTC session with the 5G-RTC STUN/TURN/Signaling Server, e.g. to identify a WebRTC session and associate it with a QoS template

## 2.5 Trusted ICE Functions

The MNO may offer trusted ICE functions to the WebRTC application to be used during the WebRTC ICE gathering phase. These functions may be STUN and TURN servers that facilitate NAT and Firewall traversal.

The MNO-operated trusted ICE functions may assist with the 5G integration of the WebRTC application. This could be done by triggering network assistance to starting or ongoing WebRTC sessions.

## 2.6 Trusted WebRTC Signaling Server

The trusted WebRTC signaling server is used to setup and manage MNO-operated WebRTC applications. They offer a standardized signaling protocol for the session setup to both parties of the WebRTC session. The WebRTC signaling server will handle the offer/answer exchange and will have access to the SDP in both directions.

The WebRTC signaling server may use that knowledge to offer network assistance and other 5G features to the endpoints of the WebRTC session.

## 2.7 Media Server

A media server may be offered by the MNO to support WebRTC sessions. It may offer a wide range of functionality such as:

* a data channel server that serves content to the WebRTC application
* media processing functionality: may be used by the WebRTC application as a relay that performs some media processing function such as transcoding, recording, 3D reconstruction, etc.
* scene composition functionality: the server may compose a 3D scene and distribute it to several point-to-point WebRTC sessions
* MCU functionality: the server may offer multi-party conferencing functionality to merge a number of point-to-point WebRTC sessions
* SFU (Selective Forwarding Unit) functionality: To be defined.

# Proposal

We propose to agree the baseline architecture and the interface functionality in clause 2 and document them in the iRTCW PD.