

3GPP TSG RAN Rel-18 workshop
Electronic Meeting, June 28 - July 2, 2021

RWS-210345



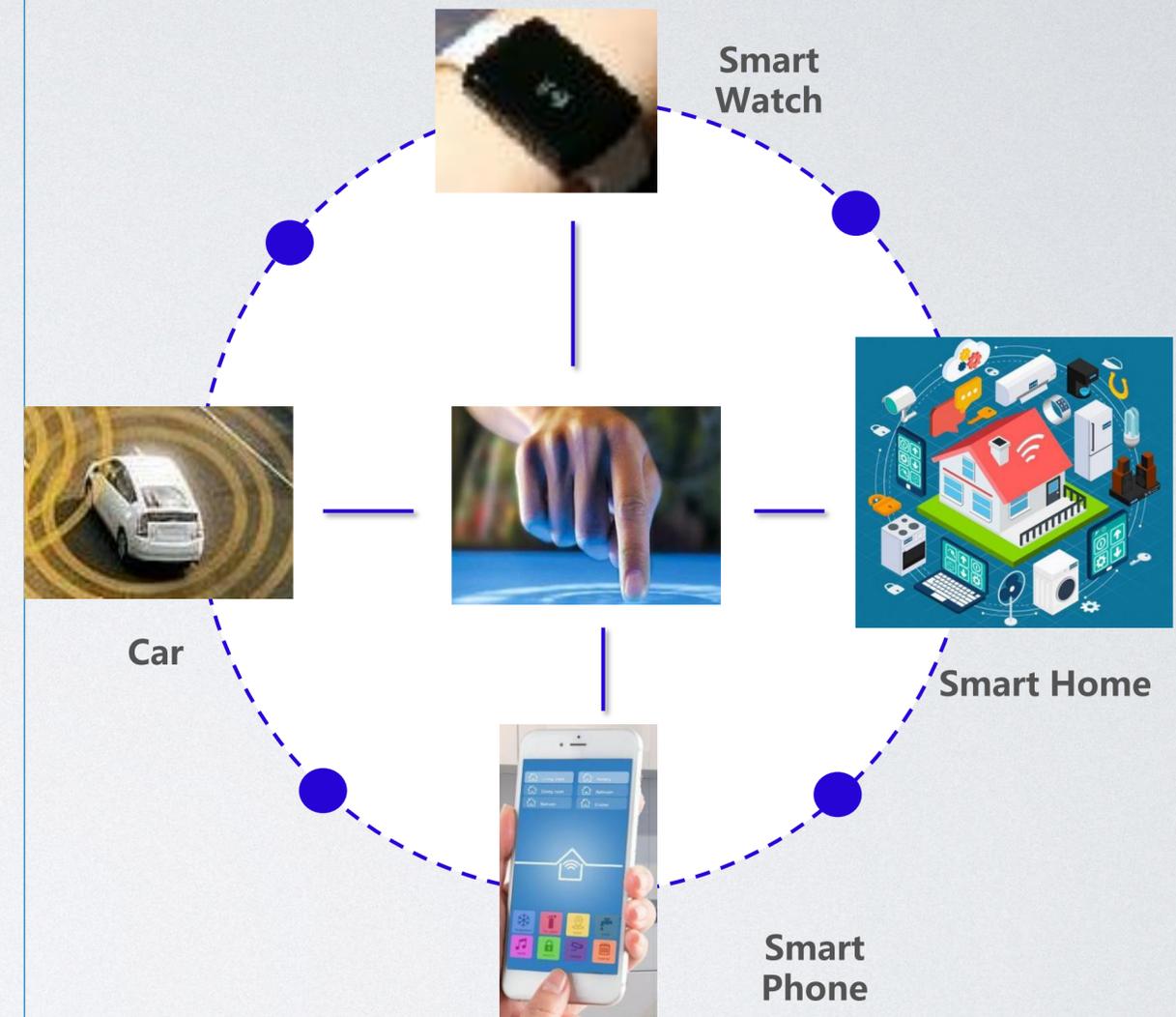
Motivation of study for Inter-UE Handover or Replication for Same User

Agenda Item: 4.2
Source: CMCC



SCENARIO

- To meet the increasingly communication demands of diverse communication services and applications of the user, 3GPP has introduced various network capabilities and various type devices
 - which can be wearable devices, IoT devices in the home, or devices equipped in personal vehicle
 - e.g. smart watch, smart glasses, cameras, headsets, AR/VR devices, earphones, actuators, thermostats, speakers, fridge, washing machines etc.
- This means that user are no longer just own smart phone and computer but are now owns several devices for communication for various requirement in different scenarios
- This requires the network can enable the users to initiate, handover (transfer/ switch), or sometimes replicate communication streaming (e.g. video, speech, audio) between multiple devices of the same end-user for a variety of reasons
- Moreover, this requires the service/traffic/packet can be switched among different type devices of a same end-user
 - in seamless and lossless mode





USE CASES

- This section defines some of the use cases for Inter UE Transfer (i.e. transfer/switching/replication), examples of which are given below:
 - A User is having a call (audio/video stream) on his mobile while he is goanna to get on a car. After getting on the car, then he would like to switch the connection with the network for the video stream from his mobile to another device equipped in the car that belongs to him, and transfer the data of audio/video steam from his mobile to another device equipped in the car as well.
 - A User is listening to his favourite music on line on his mobile while he is goanna to a jog. After start the jog, then he would like to switch the connection with the network for the music stream from his mobile to the smart watch, and transfer the data of music steam from his mobile to smart watch as well.
 - A User is watching a video on her mobile while coming home. After arriving at home, he starts to clean the rooms and need to frequently moving amongst the rooms in the house. In this case, the user starts the replicate the data of video steam on her mobile to the other devices located in each room in the house, and keep the synchronization of the data of video steam amongst the other devices.
- Part of the above use cases also mentioned in the IMS Inter-UE Transfer in SA1 TS 22.228.

Although , nowadays, it always realized in application level, we aim to support inter-UE handover/replication via 5G network, in order to make the inter-UE handover/replication more flexibility and improve radio resource efficiency via RAN-based solutions.





POTENTIAL ENHANCEMENTS

- CN is responsible for the transfer/replication of the data via the separate tunnel to the associated devices

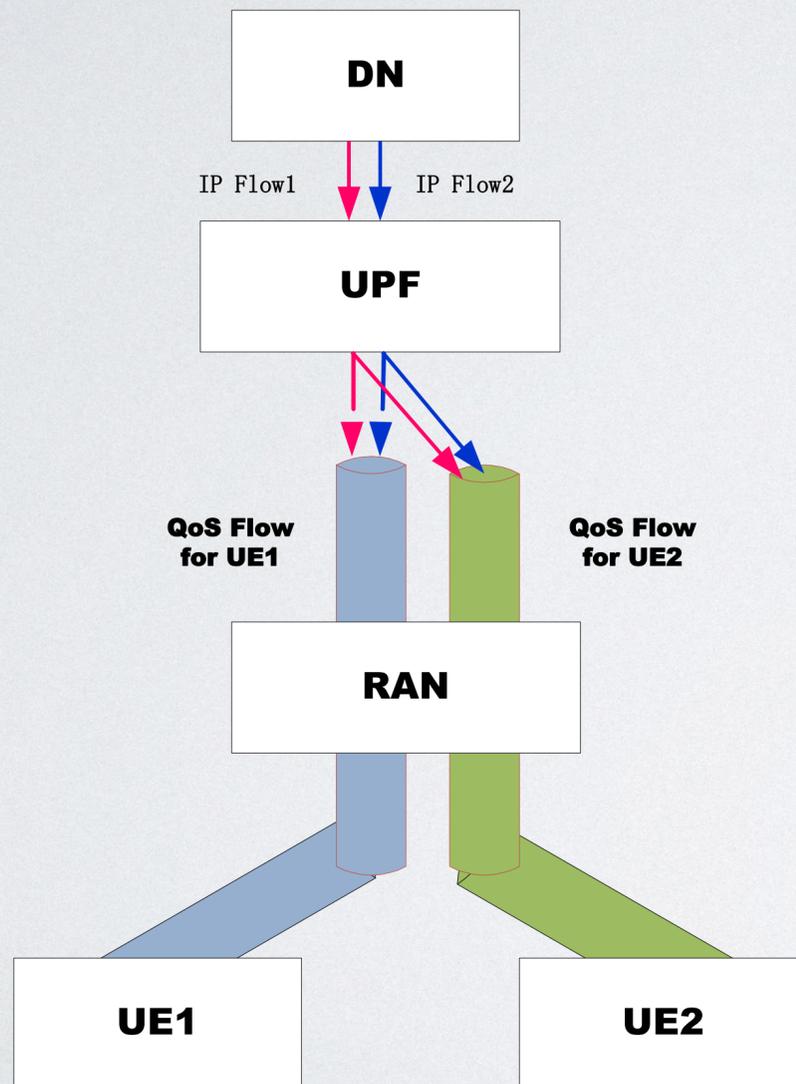


Figure 1: CN-based approach

- RAN is responsible for the splitting/transfer/replication of the data from the shared tunnel with separate DRB to the associated devices

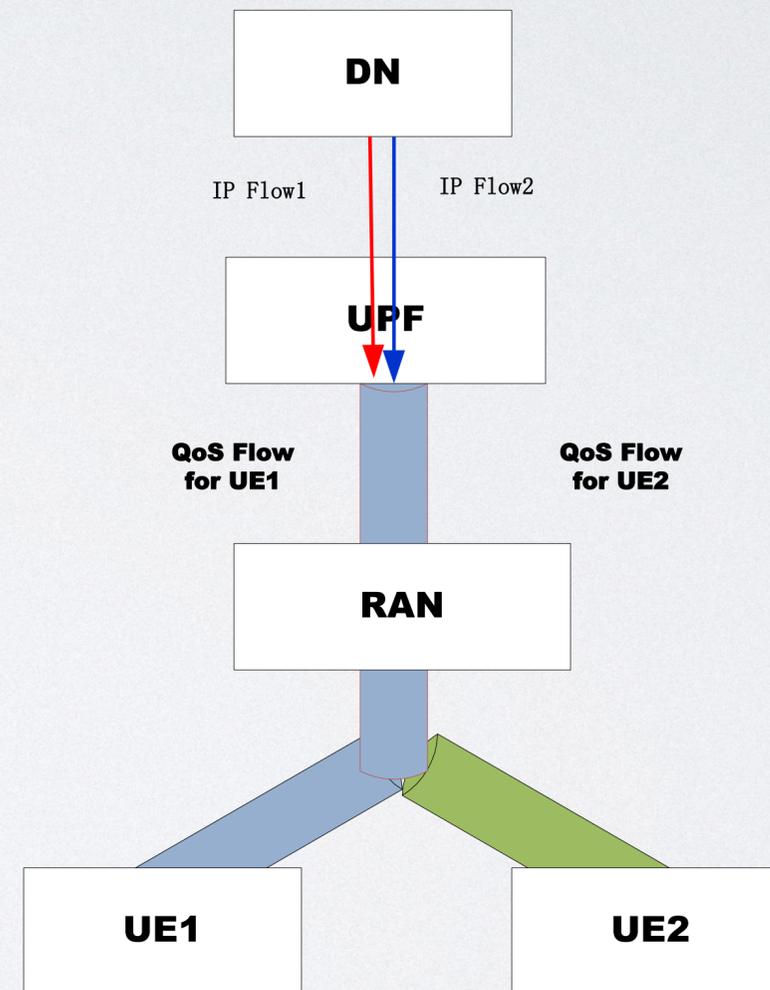


Figure 2: RAN-based approach





SI OBJECTIVES

- The objective of this SI is to investigate how to handover/replicate at the RAN-level or Core Network level of all or some of the services between UEs under the control of the same end-user while maintaining service continuity. The specific objectives of this study item are as follows
 - Target device(s) discovery [RAN2]
 - Study the control plane procedure design, including RRC connection management, paging mechanism and access control for initiating inter-UE handover and replication for the same end-user. [RAN2, RAN3]
 - Study user plan functionalities that will support data forwarding/data replication of communication data amongst multiple devices of the same end-user. [RAN2, RAN3]



Thank you!

