

Discussion on MMRelay

Xiaomi

Motivation

➤ Mobile relay can provide more extensive network coverage. However, some problems which haven't been considered in existing TRs/TSs may prevent mobile relay from practical use.

- Remote UE power consumption

The remote UE and relay UE are not always in proximity due to mobility, so the remote UE may need to perform relay discovery frequently even no UL/DL data is transmitted, which will consume more battery power.

- Relay capability limitation

When there are massive remote UEs connecting through the relay UE to access the network, the relay's limited capability may not be able to serve the remote UEs simultaneously.

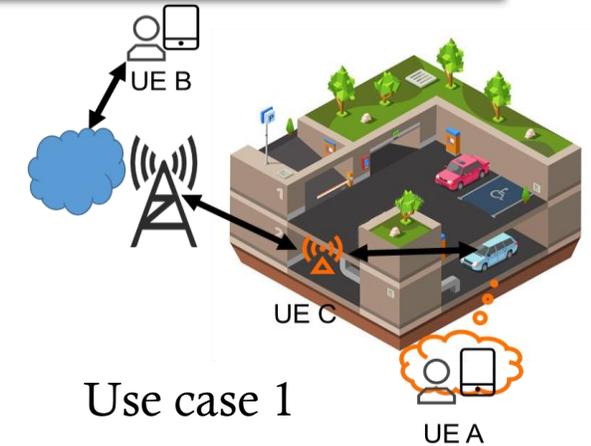
Potential use cases

Use case 1

User B wants to have a phone call with user A, but user A drives into an area of no network coverage.

For power saving purpose, user A may not have established connection with user C (the relay).

To establish connection with user A, 5GC network interacts with the relay(e.g. UE C) which has the network coverage for discovery of UE A.



Use case 2

The relay may provide network connection for massive remote UEs.

The relay UE may not be able to offer the required QoS for the remote UEs due to capability limitation or the relay UE's QoS is limited by its subscription.

The group of devices share the limited QoS of relay. And the QoS of the devices behind a relay has to be well managed.



Objective

- The aim of this study item is to identify the use cases and potential requirements to support mobile relay service, including:
 - Identify new use cases and requirements to enable communication over mobile relay for extending the network coverage, including:
 - Mobility management enhancement for UEs behind relay
 - QoS management for massive devices using relay to access the network
 - Other aspects, including charging, security and privacy of mobile relay service
 - Gap analysis between the identified requirements and existing 5GS requirements or functionalities

Thank you