

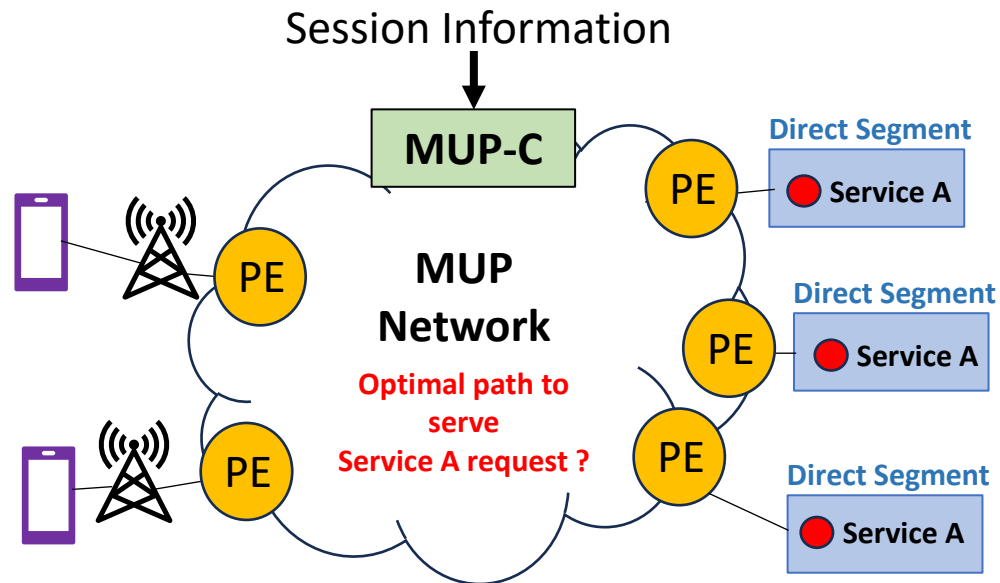
Computing Aware Traffic Steering Consideration for Mobile User Plane Architecture

draft-dcn-dmm-cats-mup-01

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Multiple service instances network target

- Draft [draft-mhkk-dmm-mup-architecture](#) proposes a Mobile User Plane architecture for DMM in which a MUP controller converts mobility session information into Dataplane routing information
- This document aims to **leverage this MUP architecture** to **address the optimal routing path problem** in **multiple service instances network scenario**
 - the target in our previous meeting presentation was only anycast service scenario



- ➔ Multiple service instances of the same service running at different location
- ➔ To select optimal route, it is important to consider network and service metrics related to each service instance.



Also the core problem discussed in CATS working group

Multiple service instances network target

To select the optimal path, the MUP architecture components need to:

- Identify the service and its candidate location

CATS WG: <https://datatracker.ietf.org/doc/draft-ietf-cats-framework/>

- Identifier to differentiate different services: CATS Service ID (CS-ID)
- Identifier to differentiate different instances of the same service: CATS Instance Selector ID (CIS-ID)

- Advertise service deployment information

IDR WG: <https://datatracker.ietf.org/doc/draft-lin-idr-distribute-service-metric/>

- Introduces a BGP NLRI that stores CS-ID and CIS-ID information of the edge services attached to the egress router.

- Advertise service metrics information

IDR WG: <https://datatracker.ietf.org/doc/draft-ietf-idr-5g-edge-service-metadata/>

- Introduces Metadata BGP Path Attribute (consists of several sub-TLVs) that contains different CATS metrics of the edge services attached to the egress router

How to integrate into the MUP architecture?

1. Direct Segment Route advertises Direct Segment reachability information (no changes)

- Direct segment extended community ID
- Corresponding PE SRv6 SID

2. CATS metric update Route advertises service deployment information and metrics related to each instance

- Direct segment extended community ID
- CS-ID*
- CIS-ID*
- Metrics*

**mentioned IDR WG solutions are examples to realize these*

3. Session Transformed Route: converts optimal path selection decision from CATS-MUP-C to gNB-side PE

- **Optimal** Direct segment extended community ID
- TEID
- CIS-ID

Packet at PE after import session transformed route

Segment list
To corresponding PE of Direct Segment B

Src: UE
Dst: CIS-ID

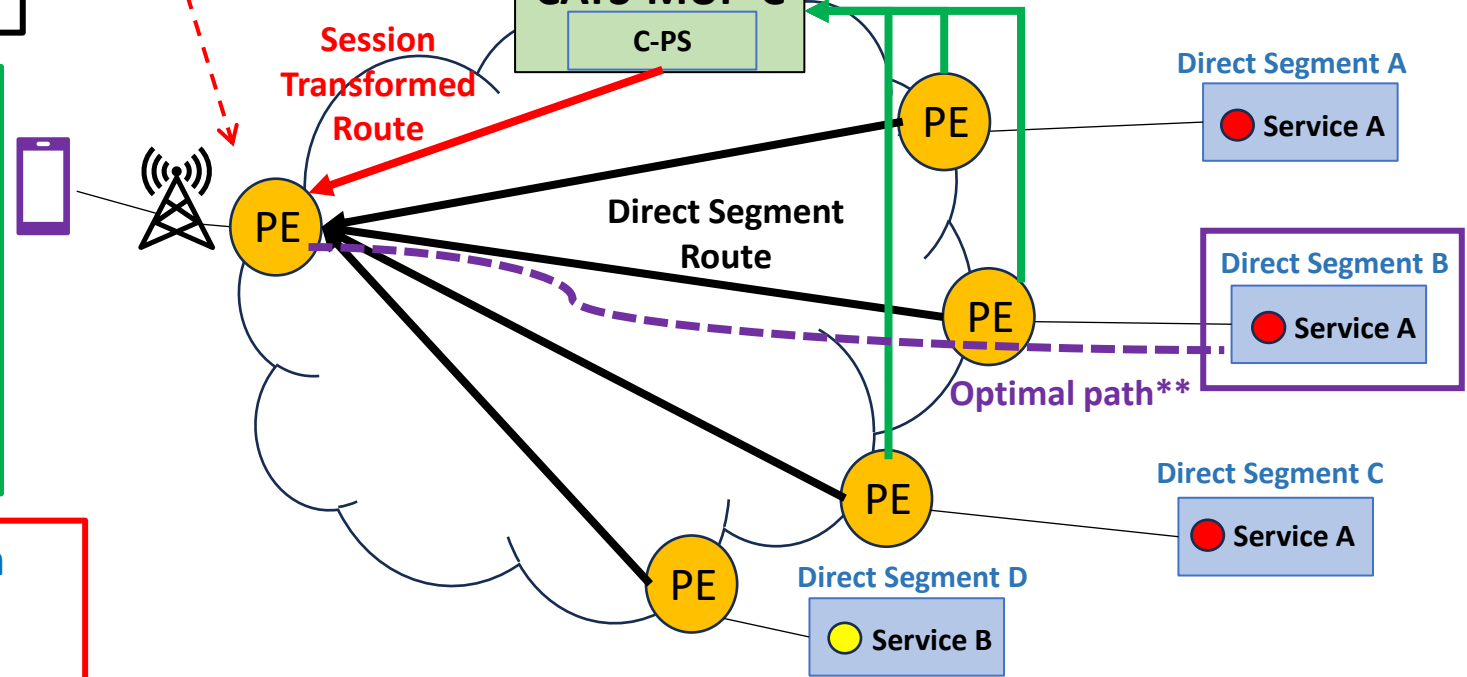
Session Information

+ CS-ID

CATS-MUP-C
C-PS

- CS-ID: CATS Service ID
- C-PS: CATS Path Selector

**Direct Segment can be directly attached MEC or DN*



****Suppose the optimal location is Direct Segment B**

Summary

- The MUP architecture mentioned in [draft-mhkk-dmm-mup-architecture](#) can address the non-optimal routing path problem in multiple service instance network scenario by integrating CATS capabilities
- The purpose of this document is to propose potential enhancement to the original draft. Possible addition proposals:
 - [Add as a separate MUP deployment illustration example](#)
 - [Or mention the MUP-CATS integration as a method to partly address the non optimal routing problem of “Multicast Consideration” RFC 7333 DMM requirement](#)
- Thank you!