Co-existence of 5GS and ID-LOC Separation Architecture
I-D.homma-dmm-5gs-id-loc-coexist-01

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Background and Purpose

- This I-D is related to work of LS with 3GPP CT4, especially solutions about ID-LOC separation protocols. (ID-LOC separation protocols are expected to achieve enhanced mobility in mobile network)

- The specifications of the 5GS rel15 is fixed, and 3GPP would dislike to change the 5GS specs.

=> This I-D provides an approach to introduce ID-LOC separation architecture with no or low impact to the 5GS specs.
Summary

• ID-LOC architecture would be a solution to achieve enhanced mobility in mobile network.
• By utilizing 5GS's UL CL (Uplink Classifier) feature, ID-LOC architecture can be introduced to 5GC without any impact on the specification.
• This way will be a preferable migration path until 5GS natively supports ID-LOC separation features.
Assumed Network Model

- Local UPFs are deployed geographically. (e.g., for V2V and V2X scenarios)

UP traffic are basically conveyed to the central UPF with GTP-U

Local UPFs and DNs are deployed near user site for some service cases (e.g., MEC)
Challenges on UE2UE communication

- cUPF becomes an anchor point
  - May cause additional delay on UE2UE or UE2dDN communication
Challenges on UE2dDN Communication

cUPF becomes an anchor point
=> May cause additional delay on UE2UE or UE2dDN communication

Moves to another site

IETF102@Montreal
Key Concepts

• This proposal uses UL CL (Uplink Classifier) as a fundamental function of UPF
• By utilizing UL CL, diverting just packets need to be forwarded with an anchor-less path to the ID-LOC domain
Key Concepts
UP/CP Features

• User Plane
  – GTP-U or any other UP protocol can be used in this approach

• Control Plane
  – Some interaction between ID-LOC Mapping System and SMF
Conclusion (Repeated)

• By utilizing 5GS's UL CL (Uplink Classifier) feature, the proposal enables to introduce ID-LOC architecture into 5GC without any impact on the specification.

• This way will be a preferable migration path until 5GS natively supports ID-LOC separation features.
Next Steps

• Feedback would be appreciated.
• Will suggest this proposal as an option to introduce ID-LOC architecture to 3GPP. (draft-bogineni-dmm-optimized-mobile-user-plane-01 includes this as an option.)

=> Will be one of LS replies of DMM WG?
Thank you!

Questions or Comments?