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Title:	**IP Address Preservation**
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Abstract of the contribution:

This document shows when and why there is a need for the network to take UE capability into account when deciding upon IP address preservation in mobility scenarios.

Definitions

- IPMM IP Mobility Mode
- IPMS IP Mobility Selection
- NBM Network-Based Mobility
- MAG Mobility Access Gateway
- IID Interface ID
- AP (IP) Address Preservation
- VI Virtual Interface

Background

- When on 3GPP access, NBM is always used. (UE is on home link if client-based mobility is supported)
- It is agreed that the network decides if client- or network based mobility is used on non-3GPP access, depending on network and UE capabilities.
- For the general case, it has not been agreed to mandate UE support for Address Preservation when moving between 3GPP and non-3GPP access with NBM
- (Exception: for CDMA interworking, NBM with Address Preservation *is* agreed!)

What is the actual problem?

- When UE performs network re-selection according to 23.402 procedures, the UE attaches to a new access and expects the PDN GW to initiate release of the old access bearers.
- When NBM is used on the non-3GPP access, the PDN GW must understand if the UE is capable of receiving the same IP address/prefix on the new access, as was in use on the old access.
- In other words, does the UE implement a Virtual Interface, hiding the different access types from the IP stack?
- If not, the UE will not be happy to receive the same IP address/prefix on the new access, unless the old access has already been released.
- This leads to the choice of whether Address Preservation can be performed or not, depending on UE capability.

Case 1: split (legacy) UE

- Scenario: device, e.g. laptop, with two or more <u>independent</u> 3GPP / non-3GPP access cards.
  - No support for IP address preservation between interfaces
- Problem only occurs if the USIM credentials can be used to connect to EPS over different accesses concurrently
- Possible solution for this case: mandate that UE must perform break-before-make when switching between accesses

Case 2: UE with no VI for network-based AP

- Scenario: phone with 3GPP and non-3GPP radios.
  The UE may support VI for DSMIPv6, but (in this case) does not support VI for PMIP.
- Performing break-before-make network re-selection is not an option if UE desires local connectivity for UE-based mobility. However, if IPMS selects PMIP for non-3GPP access, then AP should not happen in this case.
- The Serving GW in 3GPP NW and MAG in non-3GPP NW must have sufficient information about the UE to populate the relevant fields in PMIP PBU accordingly
- In PMIP terms, <u>how does the MAG know how to populate the HO indicator</u>?
  - That is, how to know if UE has VI for PMIP or not if there is no difference in the signaling from the UE?

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