Control and Data Plane Separation for PMIPv6

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Motivation

- Some deployments of PMIPv6 are planning to separate the control and data plane end points for the MAG
  - Authentication and authorization anchored at one MAG, whereas the data tunneling is with the MAG to which the MN is currently attached to
  - Load balancing scenarios
- According to RFC 3775 and 5213, only one address is stored in the binding cache entry – Proxy CoA
  - Proxy CoA is used for signaling messages as well as for tunneling data traffic
- Requires a new extension to convey the control and data plane end points addresses
Data Plane Address Option

- New mobility option defined to carry the tunnel end point for data traffic
  - Sent in the Proxy Binding Update by the MAG
- The LMA stores the data plane address in the binding cache
- Proxy CoA used for all signaling, including LMA initiated signaling messages like binding revocation and LMA switch message
- Data plane address used for tunneling MN traffic
- Can also be used for separation of control and data plane for the LMA
Message exchange between the Control and Data plane end points

- Separation of the control and data end points might require some interaction between the two
  - For example, for creating forwarding entries on the data plane end point

- Out-of-scope for now
  - Could use SDO specific interfaces
  - IETF-based mechanism using new mobility header messages is possible
The Use of AltCoA option

- Currently, the LMA does not store the address in the AltCoA option and the source address of the PBU
  - If the AltCoA option is present, the address in the AltCoA option is stored as the Proxy CoA
- The LMA-initiated signaling messages might not reach the MAG control plane