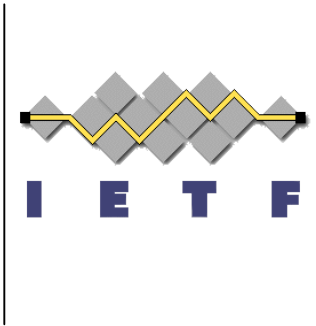# NetLMM WG
IETF-73

LMA Discovery for Proxy Mobile IPv6

`draft-korhonen-netlmm-lma-discovery-00`

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I E T F

Dynamic LMA Discovery

- There are a number of different ways for dynamically discovering the LMA at the MAG. This I-D describes:

- AAA-based solutions
  - LMA Address from AAA during the network access authentication procedure when the MN attaches to the MAG.
  - LMA FQDN from AAA during the network access authentication, followed by a DNS lookup.

- Lower layers based solutions
  - LMA FQDN derived from the MN identity received from the lower layers during the network attachment, followed by a DNS lookup.
  - LMA FQDN or IP address received from the lower layers during the network attachment followed by an optional DNS lookup.
  - LMA FQDN derived from the service selection indication received from lower layers during the network attachment, followed by a DNS lookup.
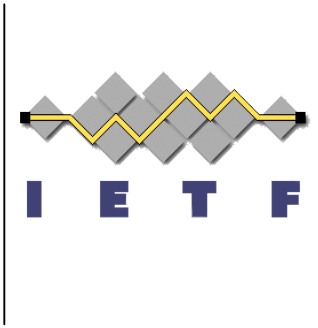
AAA-based Solutions

- Follows the "Integrated scenario" principles from Mobile IPv6.

- Requires support from AAA infrastructure:
    - PMIP6 awareness in the AAA server.
    - Routing of AAA messages from the MAG/NAS to the AAA server.

- Upon a successful access authentication & authorization the MAG receives either:
    - IP address(es) of the AAA assigned LMA to the MAG, or
    - a FQDN of some LMA assigned to the MAG. The MAG needs to resolve the LMA IP address(es) from DNS.

- DNS has implications to handover, which are discussed later.
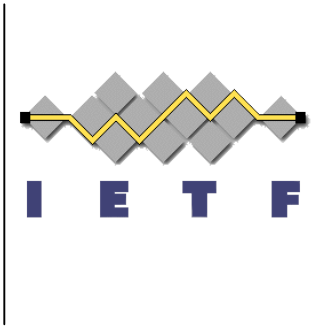
Lower Layers based Solutions

- The basic idea is that the MAG receives (from "lower layers") detailed information of the MN such as MN's identity or the desired service when the MN attaches to the PMIP6 Domain.

- Based on the lower layers provided information the MAG is able to construct a FQDN of a LMA belonging to the same PIMP6 Domain the MN attached to. The MAG obviously needs to resolve the FQDN to the LMA IP address(es).

- Whatever the lower layers provided information is (e.g. MN identity in NAI format, IMSI, ...), it should contain information that identifies MN's home network.

- The selected service (e.g. RFC5149) may also contain information that allows constructing a FQDN of a LMA in MN's home network.
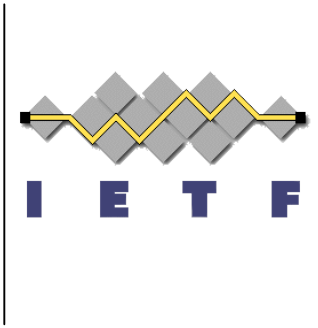
Handover Considerations

- Whenever a MN moves and attaches to a new MAG in a PMIPv6 Domain, all the MAGs that the MN attaches to, should use the same LMA:
  - If there is one LMA per PMIPv6 Domain, then there is no issue.
  - If there is a context transfer mechanism between the MAGs, then the new MAG learns the LMA information from the old MAG.

- If the MN related context is not transferred between the MAGs, then a mechanism to deliver the current LMA information to the new MAG is required:
  - Relying on DNS during handovers is not a working solution if the PMIPv6 Domain has more than one LMA, and the LMA FQDN may resolve to one or more LMAs.
  - AAA infrastructure may be used to relay the LMA information to the new MAG after the handover.

Handover Considerations cont'd
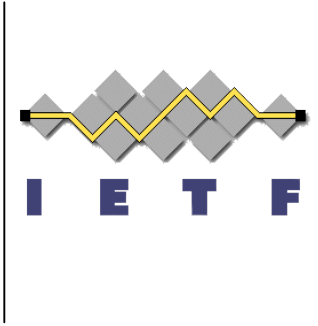
- Extend the AAA-based "integrated" solution..
  - Once the MN completes its initial attachment to a PMIPv6 Domain, the information of the LMA that is selected to serve the MN should be stored in the Policy Store (e.g. the AAA server).
  - The AAA can then be used to convey the LMA information when the MN moves and attaches to another MAG in the PMIPv6 Domain.

- Define a DNS-based solution that would always result to the same LMA within the PMIPv6 Domain..
  - Set of rules how to configure DNS and derive FQDNs from e.g. lower layers provided information...
  - ...not really a part of the I-D at the moment.

Questions & comments?
Consider as a WG item?