PMIPv6 Update Notifications

draft-krishnan-netext-update-notifications-01

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Why do we need this mechanism?

- Once the mobility session is setup, the LMA has no mechanism to inform the MAG about
  - any changes to the mobility session (or)
  - any parameters related to the mobility session
- This draft specifies a mechanism for the LMA to notify the MAG

What are the scenarios?

- There are some scenarios where the LMA needs to send update notifications to the MAG
  - E.g. LMA needs to inform the MAG that it needs to reregister
    - It can do so to redirect the MAG to another LMA
    - Similar to RFC6463 but not at initial binding time
- There is some 3GPP CT4 work that requires such a mechanism*

Example LMA Redirection flow
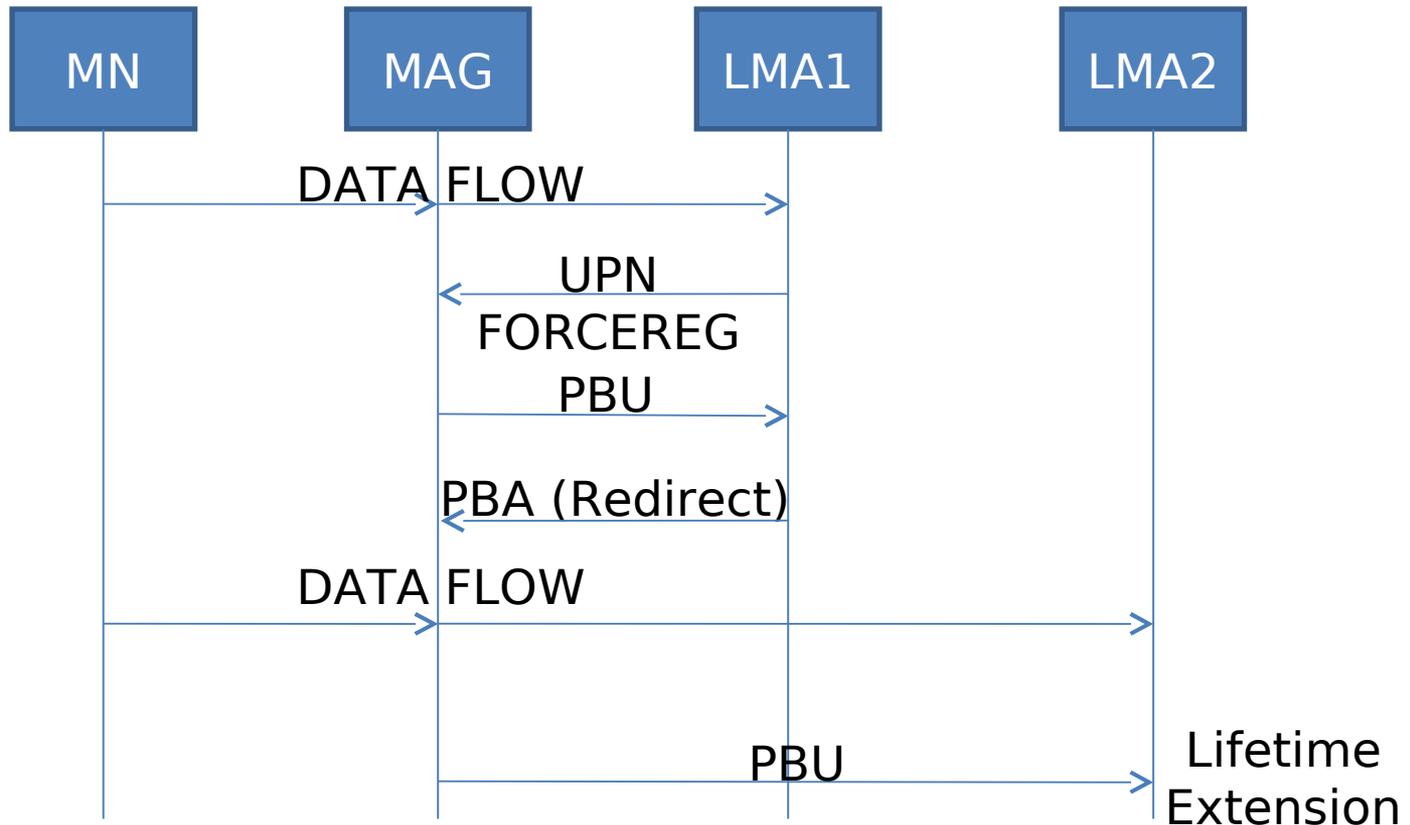
Mechanism

- The draft uses two Mobility Header signaling messages to accomplish this
  - The UPN and UPA messages
- The Notification message contains a reason
  - There are also mobility options included based on the reason

Alternate Mechanisms

- This can be achieved by using a smaller lifetime instead of asynchronous notifications
  - Unfortunately a lower lifetime can cause unnecessary traffic when the LMA does not require to change anything
- Use an existing MH message like PMIPv6 Heartbeat instead
  - Does not have a reason code

Next steps

- Any questions?
- We would like to request adoption of this draft.

Backup Slides

UPN Message

```
 0                   1                   2                   3
 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
                                +-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
                                |           Sequence #          |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|     Notification Reason       |A|          Reserved           |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|                                                               |
.                                                               .
.                       Mobility options                        .
.                                                               .
|                                                               |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
```
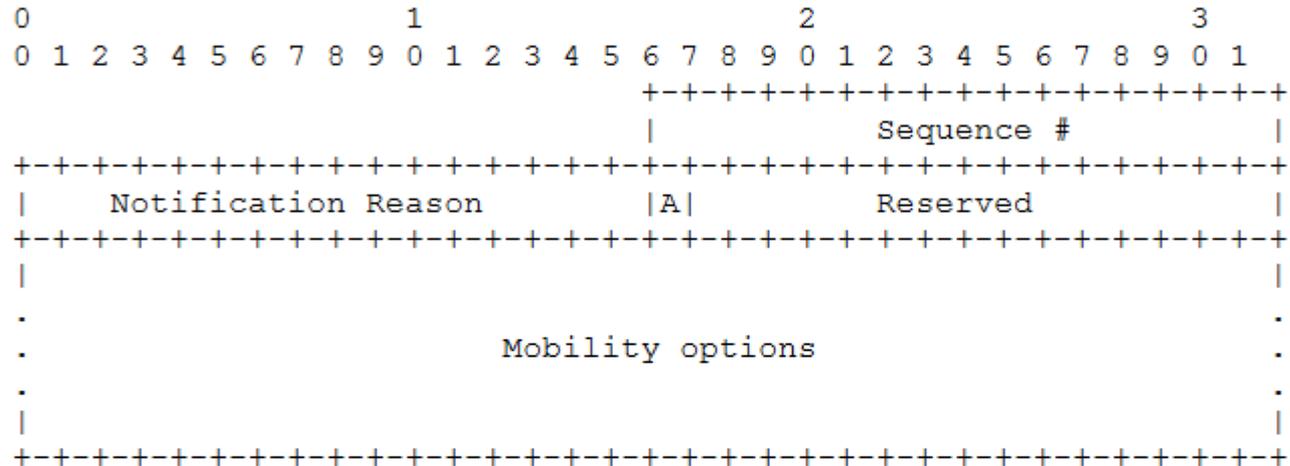
Sequence Number: A monotonically increasing integer. Set by the
LMA and retained for retransmissions.

Acknowledgement Requested (A): If this bit is set, the MAG MUST
send an UPA message in response to the received UPN message.

Notification Reason: Contains the code corresponding to the reason
that caused the LMA to send the Update Notification to the MAG.
This field does not contain any structure and MUST be treated as
an enumeration.

Mobility Options: Contains a set of mobility options for the MAG
to act upon. The set of mobility options that can be present in
the message is related to the Notification Reason field in the
message.

UPA Message

```
0                   1                   2                   3
0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
                                +-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
                                |           Sequence #          |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|     Status      |                                             |
+-+-+-+-+-+-+-+-+-+                                             +
|                                                               |
.                       Mobility options                        .
.                                                               .
|                                                               |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
```

Sequence Number: Copied from the UPN message being acknowledged.

Status: Specifies the result of the MAG's processing of the UPN message. The status codes between 0 and 127 signify successful processing of the UPN message and codes between 128 and 255 signify that an error occurred during processing of the UPN message.

Mobility Options: Contains a set of mobility options used to provide context to the LMA. The set of mobility options that can be present in the message is related to the Status field in the message.