MN Agnostic Fast Handover for Proxy Mobile IPv6

draft-xia-netlmm-fmip-mnagno-01.txt
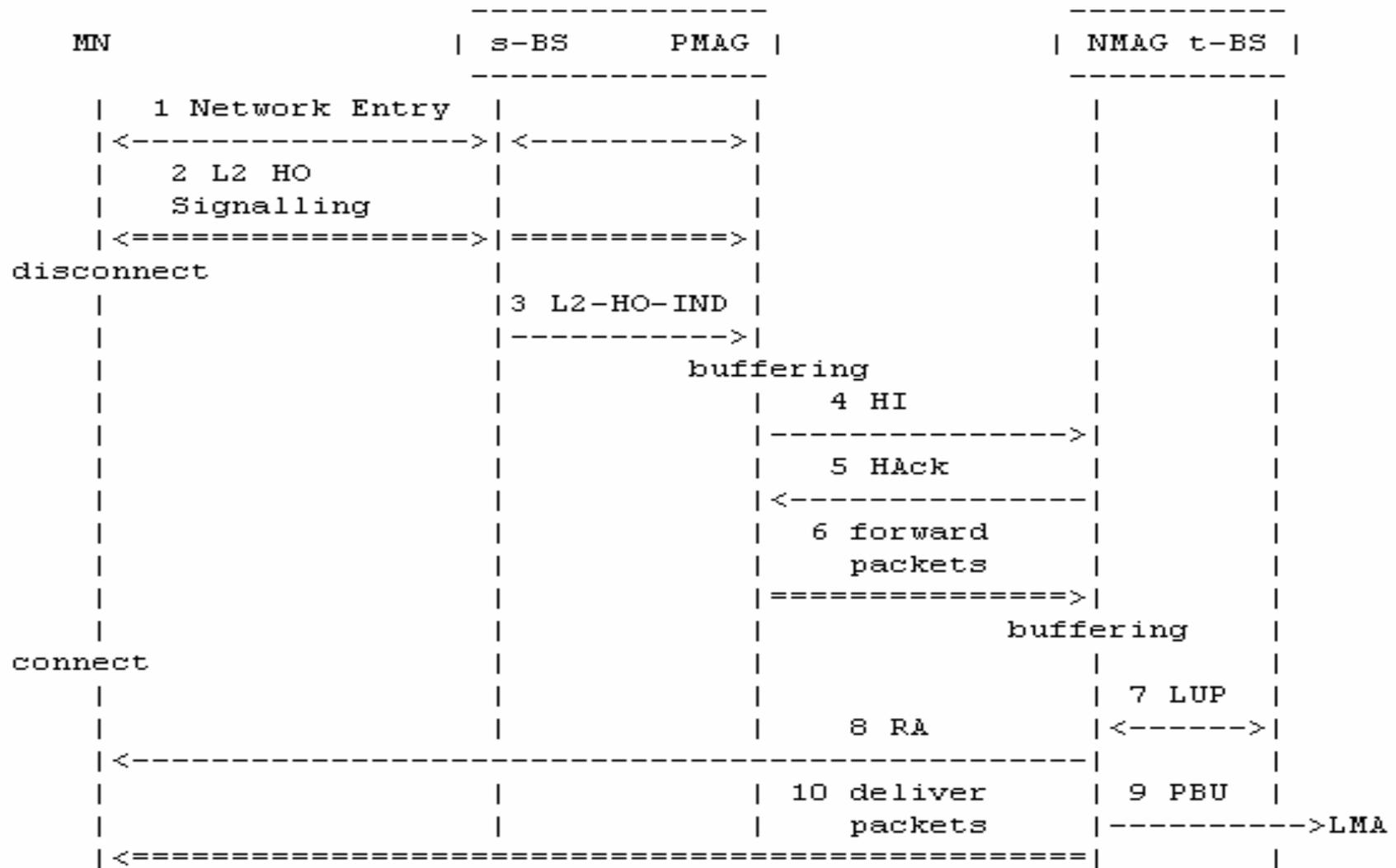
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Main Ideas in the proposal

- **Mobile Node Agnostic Fast Handover**

- **Temporary Data Tunnel between Previous MAG and New MAG**

- **Context transfer**

  - **For expediting IP connectivity**

  - **Context as per the base draft draft-ietf-netlmm-proxymip6**
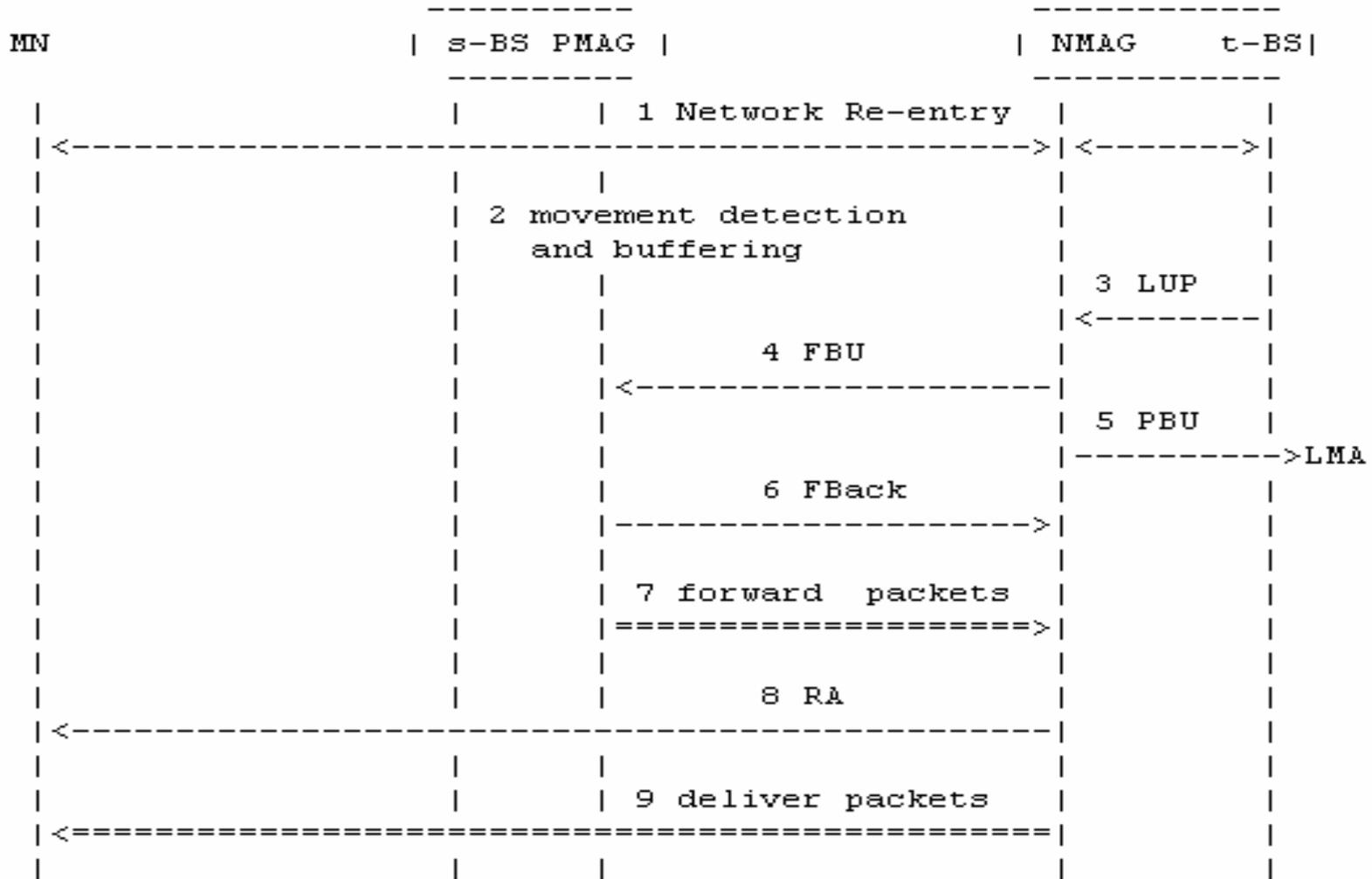
- **Layer 2 dependence is abstract**

Predictive Flow

```
                       ---------------               ----------
  MN                  | s-BS      PMAG |            | NMAG t-BS |
                       ---------------               ----------
   |    1 Network Entry  |                 |             |          |
   |<------------------->|<--------->|             |          |
   |    2 L2 HO          |                 |             |          |
   |      Signalling     |                 |             |          |
   |<==================>|==========>|             |          |
 disconnect              |                 |             |          |
   |                     |3 L2-HO-IND |             |          |
   |                     |---------->|             |          |
   |                     |      buffering  |             |          |
   |                     |                 |    4 HI     |          |
   |                     |                 |------------>|          |
   |                     |                 |    5 HAck   |          |
   |                     |                 |<------------|          |
   |                     |                 |  6 forward  |          |
   |                     |                 |    packets  |          |
   |                     |                 |===========>|          |
   |                     |                 |      buffering |          |
 connect                 |                 |             |          |
   |                     |                 |             | 7 LUP    |
   |                     |                 |    8 RA     |<------>|
   |<-------------------------------------------------|          |
   |                     |                 | 10 deliver | 9 PBU    |
   |                     |                 |    packets  |--------->LMA
   |<=======================================================|          |
```

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Main Steps for Predictive Mode

- **L2 event of Network side triggers Fast Handover Procedure (FMIPv6)**

- **HI/Hack exchange builds bi-directional tunnel between Previous MAG and New MAG. Proxy-CoAs of PMAG and NMAC are tunnel's two ends respectively.**

- **Packets are buffered in previous MAG and new MAG during handover.**

- **Packets are tunneled through temporary tunnel before new proxy binding update.**

- **Context is transferred using HI message to accelerate IP connectivity establishment in new MAG**

Reactive flow

```
                      ----------                    -----------
MN                   | s-BS PMAG |                  | NMAG    t-BS|
                      ----------                    -----------
 |                    |          | 1 Network Re-entry |          |
 |<-------------------------------------------------->|<------->|
 |                    |          |                    |          |
 |                    | 2 movement detection          |          |
 |                    |   and buffering               |          |
 |                    |          |                    | 3 LUP    |
 |                    |          |                    |<-------->|
 |                    |          |     4 FBU          |          |
 |                    |          |<------------------|          |
 |                    |          |                    | 5 PBU    |
 |                    |          |                    |--------->LMA
 |                    |          |     6 FBack        |          |
 |                    |          |------------------>|          |
 |                    |          |                    |          |
 |                    |          | 7 forward  packets |          |
 |                    |          |==================>|          |
 |                    |          |                    |          |
 |                    |          |     8 RA           |          |
 |<-------------------------------------------------|          |
 |                    |          |                    |          |
 |                    |          | 9 deliver packets  |          |
 |<================================================|          |
 |                    |          |                    |          |
```

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Main Steps for Reactive Mode

- **Movement detection and packet buffering are essential in reactive case**

- **FBU/FBack exchange (adopted from FMIPv6) is used for establishing bi-directional tunnel**

- **FBU is used for fetching context information from previous MAG**

- **PBU is sent to LMA in parallel with the temporary tunnel establishment**

Make it a WG document?

Thank You.
Questions?