Localized Mobility Management Using Proxy Mobile IPv6

Sri Gundavelli, Kent Leung

draft-gundavelli-netlmm-mip6-proxy-00.txt

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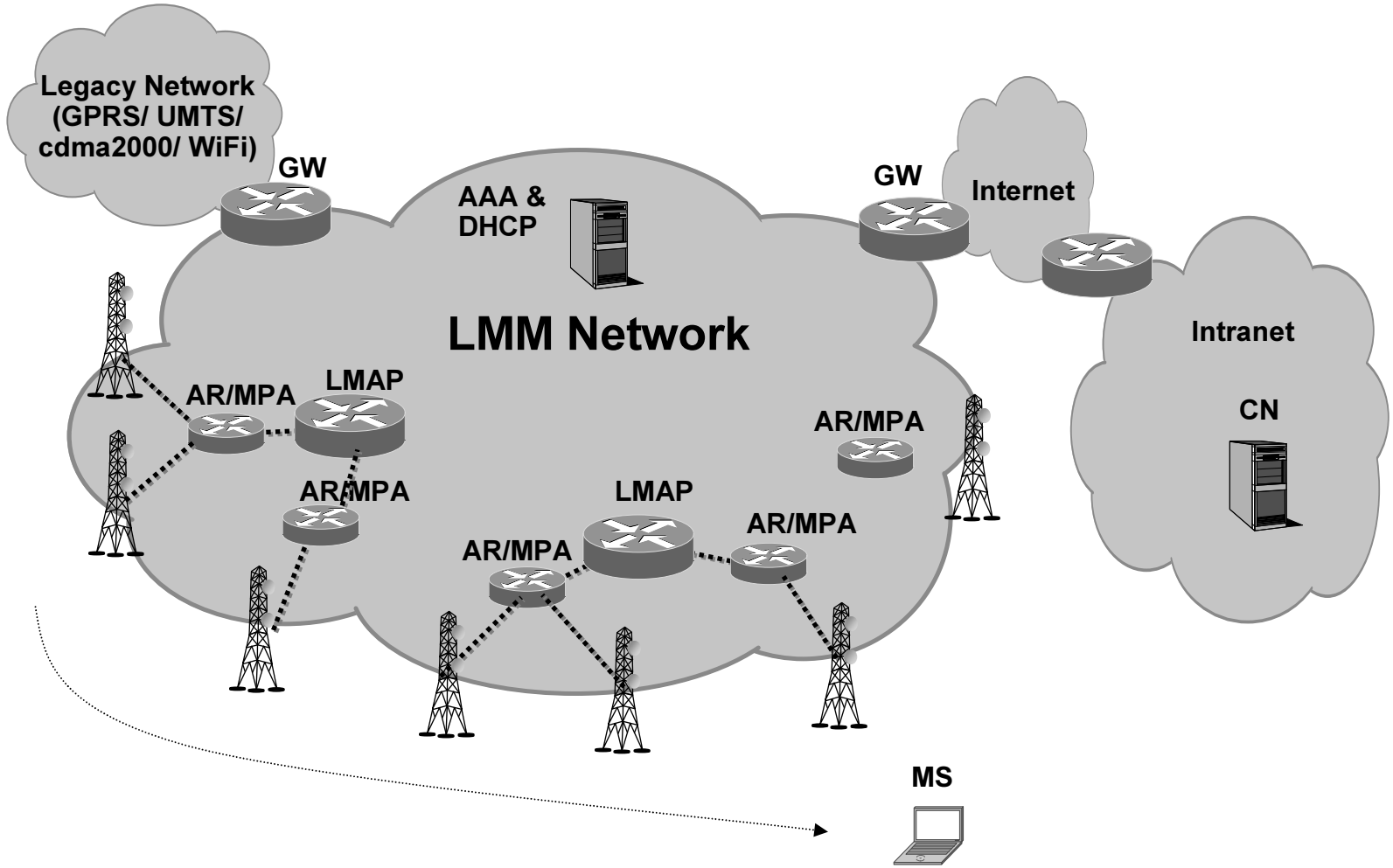
Functional Entities

- MS – Mobile Station is an IPv6 host with no involvement in mobility signaling
- MPA – Mobility Proxy Agent performs registration on behalf of MS
- LMAP – Local Mobility Anchor Point is the Home Agent servicing proxy registration
- AR – Access Router, where L2 meets L3 for MS (MPA function provided by AR)
- AAA – authentication, authorization, accounting server

LMM Domain


Legacy Network
(GPRS/ UMTS/
cdma2000/ WiFi)
GW
AAA &
DHCP
GW
Internet
LMM Network
Intranet
CN
AR/MPA
LMAP
AR/MPA
AR/MPA
LMAP
AR/MPA
AR/MPA
MS

Mobile IPv6 Enhancements

- The Mobility Proxy Agent is a new functional entity (with some resemblance of a Mobile Router) that maintains a visitor entry for attached MS
- Home Agent is enhanced to support proxy registration
- Binding Update and Acknowledgement messages marked as proxy
- New error code in Binding Ack

PMIPv6 States

- Binding Cache Entry (BCE) – LMAP (aka Home Agent) maintains this state for registered MS, includes tunnel to location (MPA) of MS.
- Visitor Entry – MPA maintains state for attached MS, used for proxy registration and tunnel set up to LMAP.

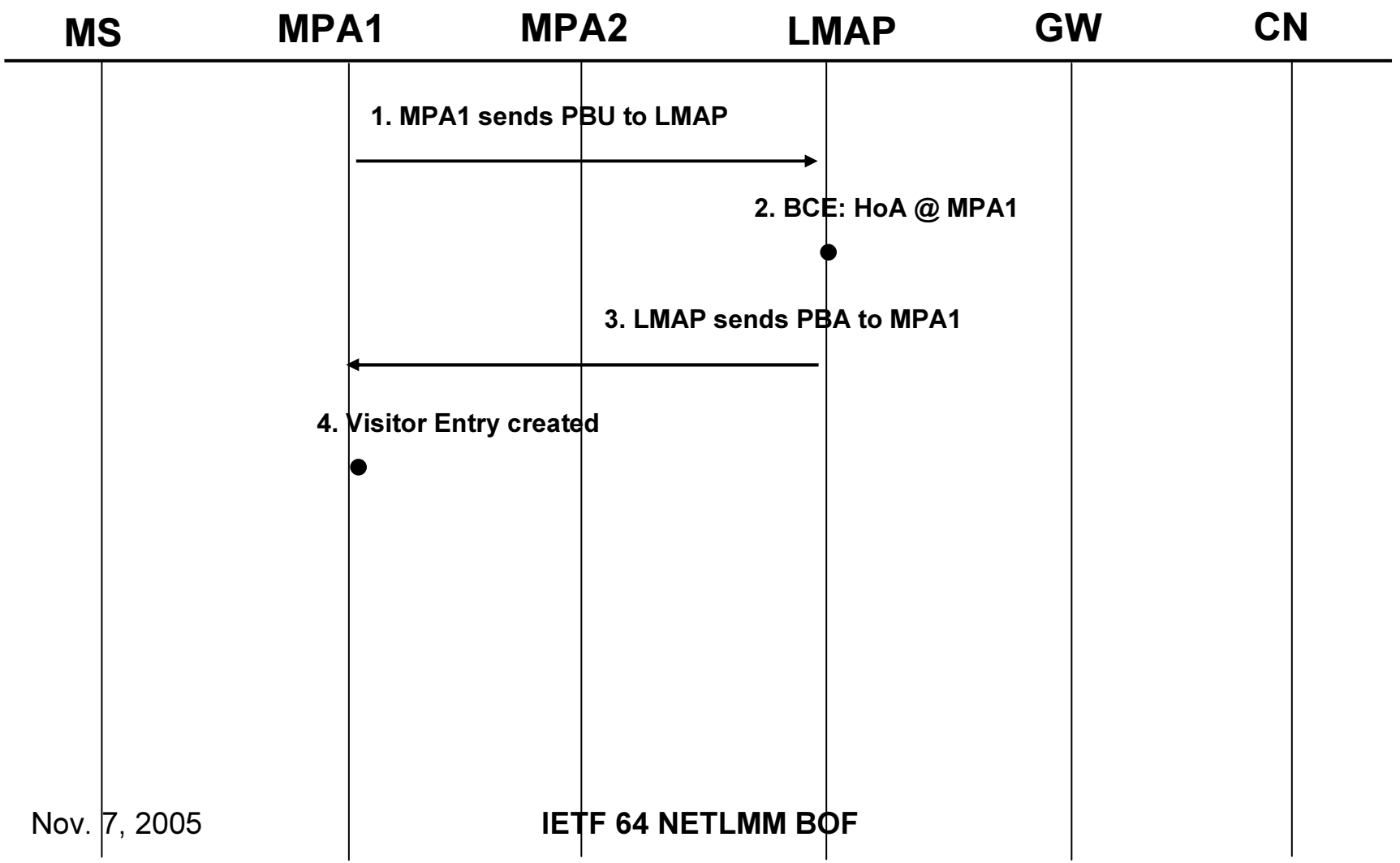
PMIPv6 Messages

- New ‘P’ bit to identify a Proxy Binding Update and Proxy Binding Acknowledgement
- New status code “Proxy Registration not supported” in Binding Acknowledgement

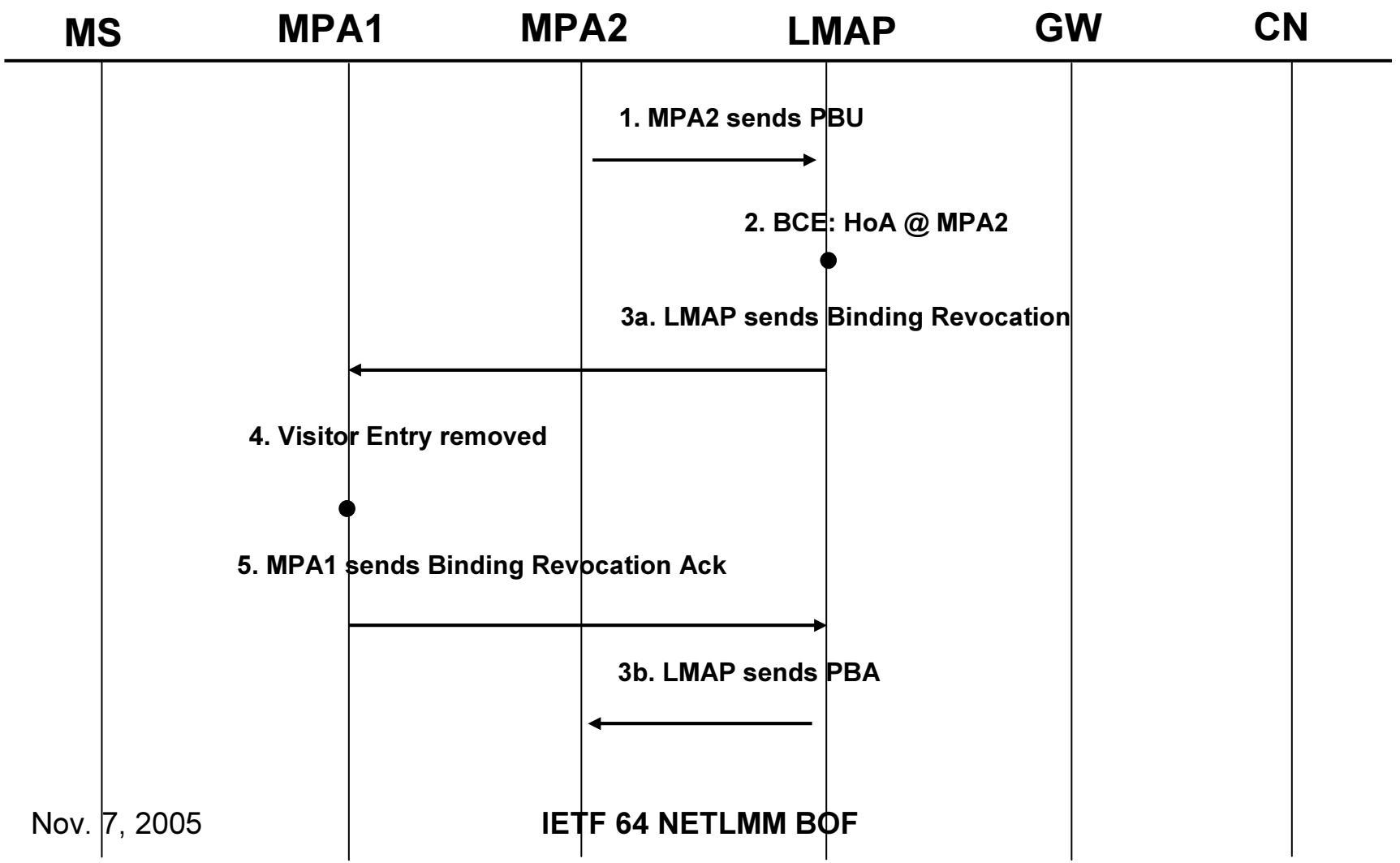
PMIPv6 Messages

- Proxy Binding Update (PBU) – Message sent from MPA to LMAP to register MS.
- Proxy Binding Ack (PBA) – Confirmation from LMAP to MPA that PBU was received for setting up tunnel between them.
- Binding Revocation – LMAP notifies MPA that MS has registered elsewhere.
- Binding Revocation Ack – MPA confirmation Visitor Entry for MS is removed.

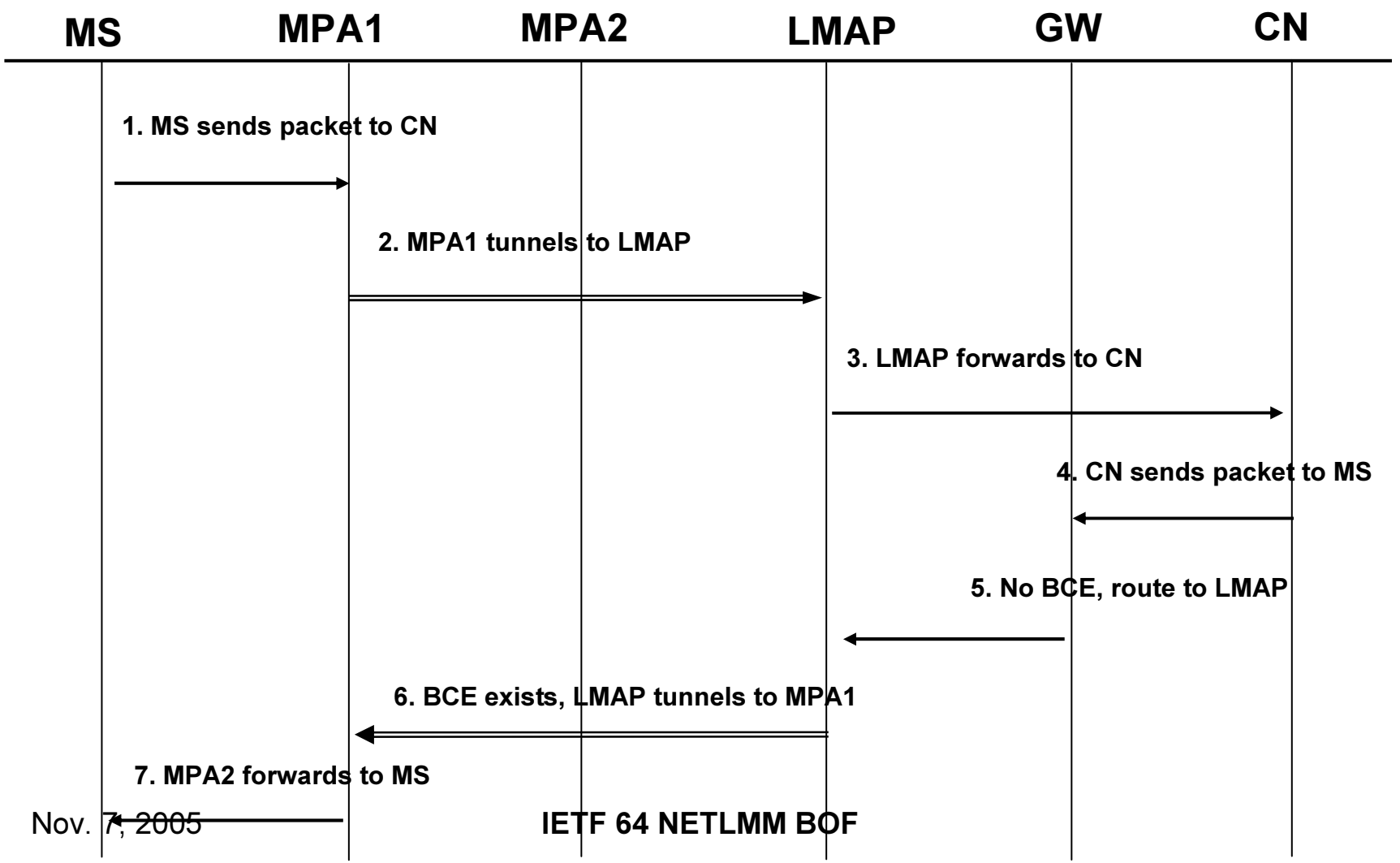
Signaling Flow: L3 Mobility Setup



Signaling Flow: Access Router (AR) Handover



Data Flow: Traffic between MS and CN



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