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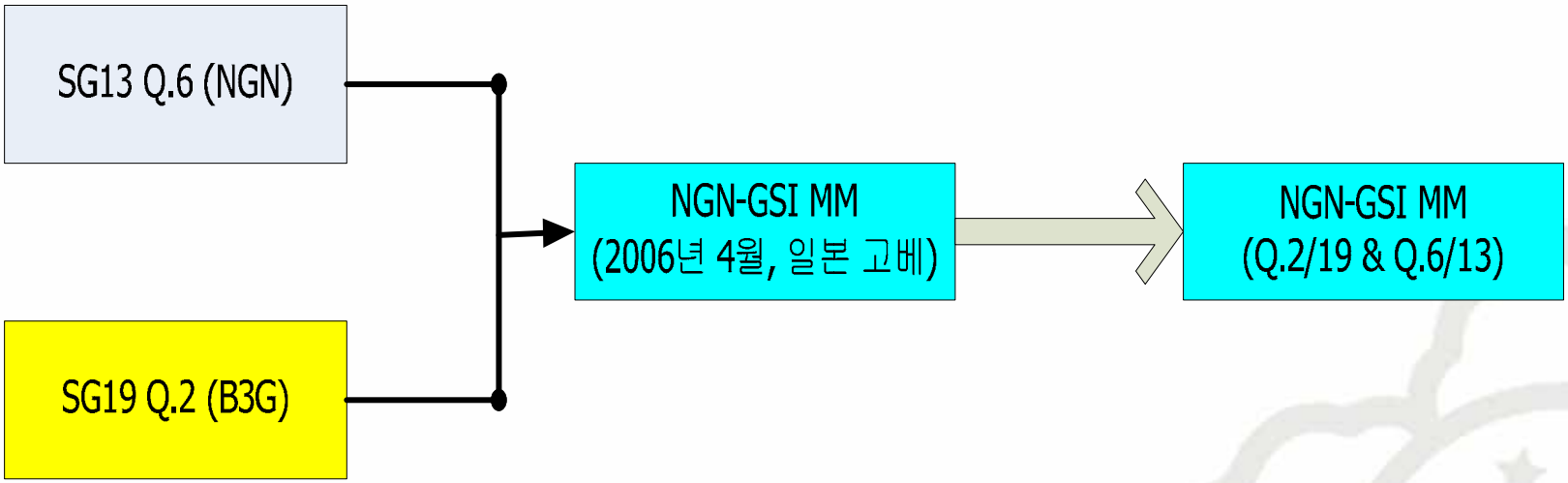
목 차

- **MM** 관련 **NGN-GSI** 표준화 현황 개요
- **MMR (Mobility Management Requirements)**
- **MMF (Mobility Management Framework)**
- 향후 표준화 이슈 및 전망

ITU-T NGN MM 표준화

❖ NGN-GSI (Global Standard Initiative) MM 그룹

- ➢ NGN MM (Mobility Management) 표준화 그룹
- ➢ Q.2/19 + Q.6/13: 2006년 4월 이후 (일본/고베 미팅)



MM 관련 권고안 작업문서

권고안	Title	현황	최신문서
Q/Y.MMR	MM Requirements for NGN	Q.1706 승인 (2006년 7월)	SG19-TD-397
Q/Y.MMF	Generic Framework of MM for NGN	MMF 1.1 (2006년 7월)	SG19-TD-398
Q/Y.LMF	Framework of Location Management for NGN	LMF 0.2 (2006년 7월)	SG19-TD-400
Q/Y.HMF	Framework of Handover Management for NGN	HMF 0.2 (2006년 7월)	SG19-TD-399

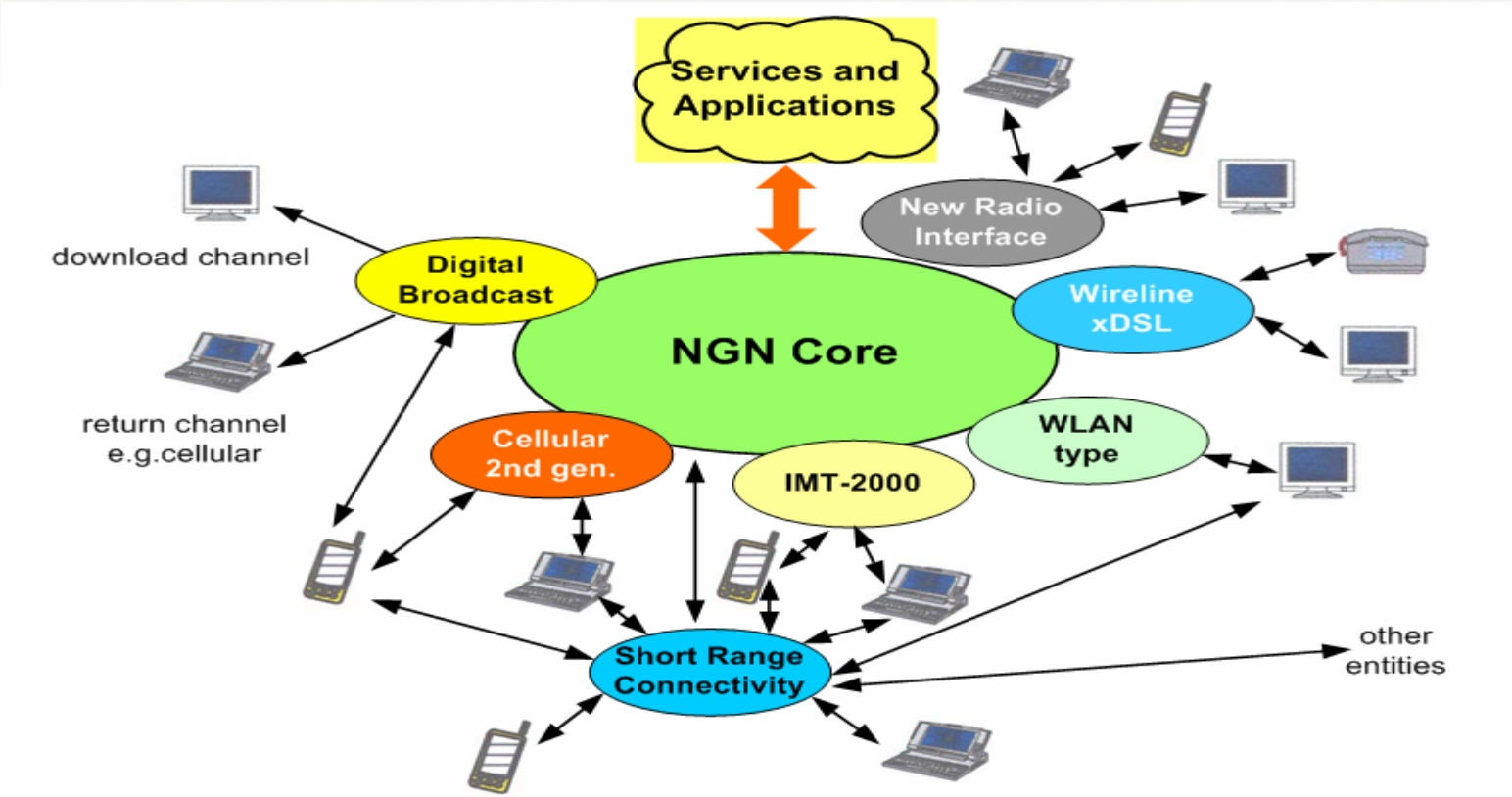
MMR: Overview

❖ Mobility Management Requirements for NGN

- ➢ Considerations for MM in NGN
- ➢ Classification of MM for NGN
- ➢ Requirements for MM in NGN

MMR: Considerations

❖ **NGN Environment**



MMR: Considerations

- **Mobility Types (by Moving Object)**
  - Terminal Mobility
    - ✓For Mobile Terminal (User)
  - Personal Mobility
    - ✓For different terminals per user
  - Network Mobility
    - ✓For Moving Network

MMR: Considerations

❖ MM Functionality

- ➢ Location Management
  - ✓ Manage the current location of User for up-coming sessions
  - ✓ Location Registration/Update
  - ✓ Location Query and Response (for Session Setup)
- ➢ Handover Management
  - ✓ Session Continuity for on-going sessions
  - ✓ Against the change of network location (IP address, AP, etc)
  - ✓ Handover signaling for address change (and tunneling)

MMR: Classification

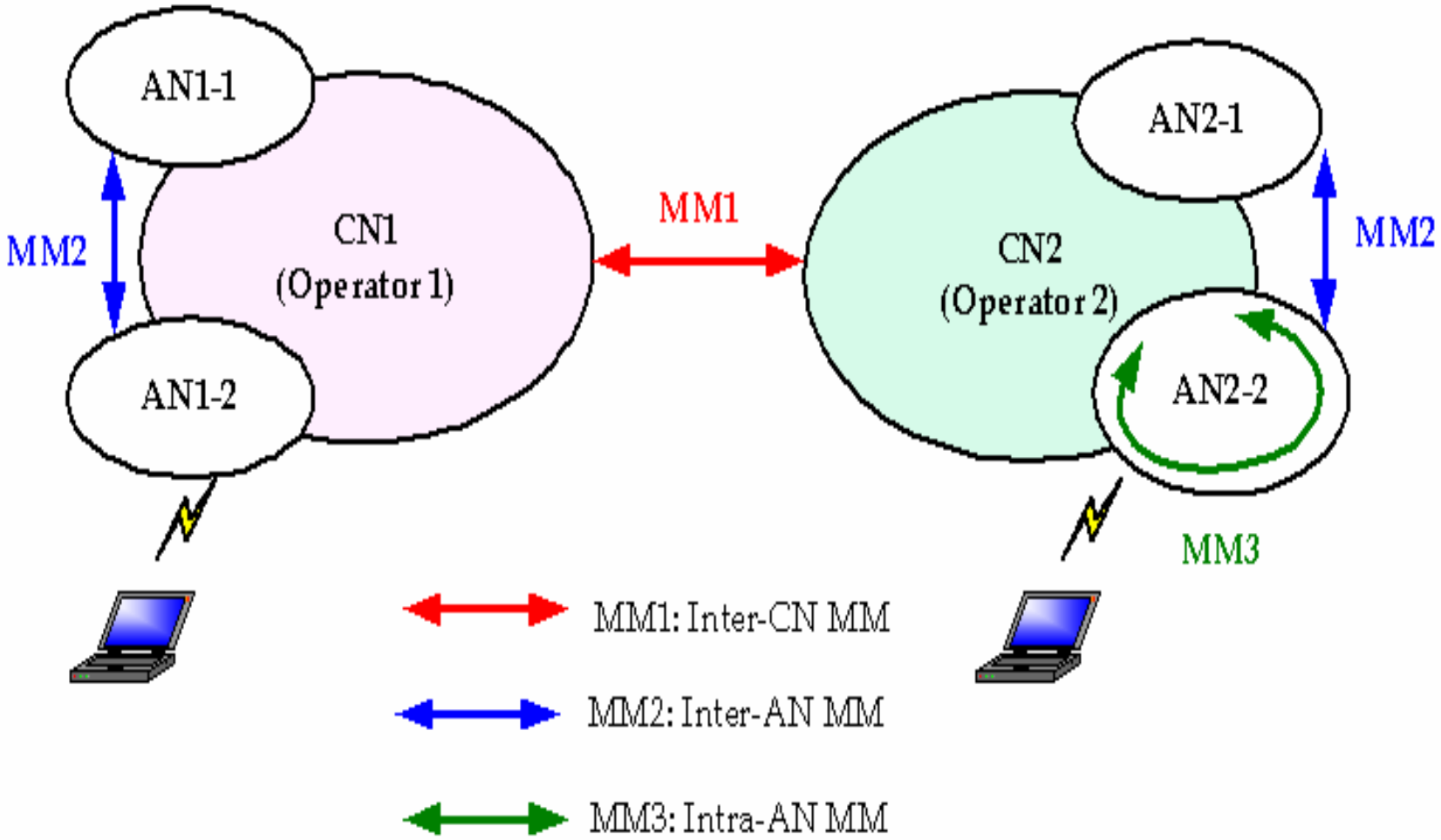
❖ Core and Access Networks

- ➢ CN: Core Network (for NGN Service Provider)
- ➢ AN: Access Network (for Access Technology)
  - ✓3GPP, 3GPP2, WLAN, WiBro, etc

❖ MM Types in NGN

- ➢ Inter-CN: MM1 (between different NGN Service Providers)
- ➢ Inter-AN: MM2 (between different Access Network/Tech.)
- ➢ Intra-AN: MM3 (Within the same Access Network)

MMR: Classification



MMR: Requirements

- **MM Requirements**
  - General Requirements (for MM 1/2/3)
  - Requirements for Inter-CN (MM1)
  - Requirements for Inter-AN (MM2)
  - Requirements for Intra-AN (MM3)
- **Notice**
  - Different MM Requirements by MM 1/2/3
    - ✓(e.g.) location management (roaming) for MM1
    - ✓(e.g.) seamless Handover for MM3

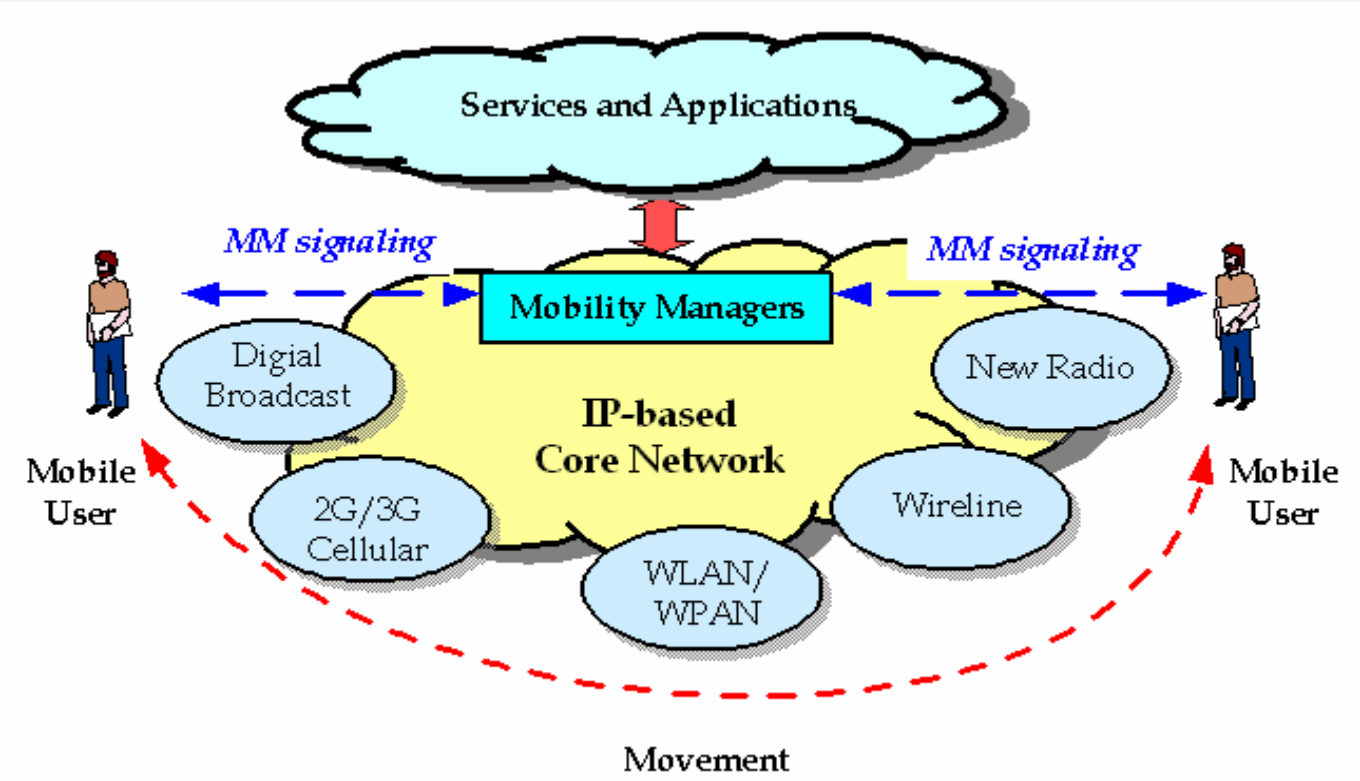
MMF: Overview

❖ Generic Framework of MM for NGN

- ➢ Design Considerations for MMF
- ➢ Conceptual Model for MMF
- ➢ Mobility Managers
- ➢ Generic Information Flows
- ➢ Analysis of Mobile IP and SIP in terms of MMF

MMF: Design Considerations

- **Network Environments (for MM2/3)**



MMF: Design Considerations

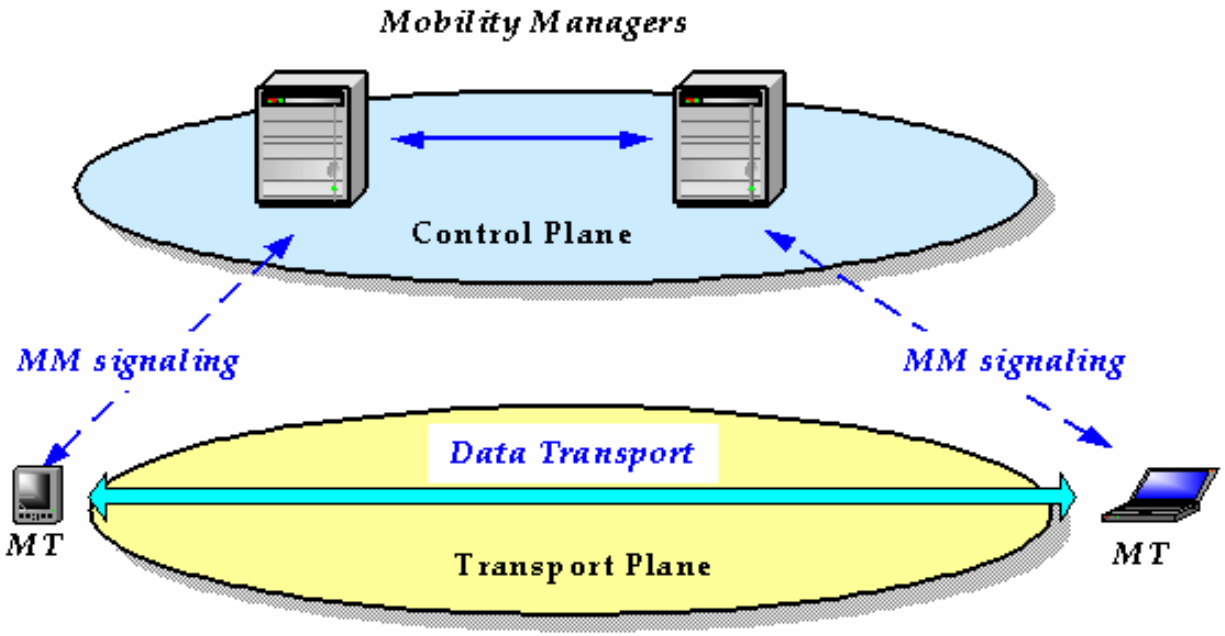
❖ Design Principles

- ➢ Focused on IP-based MM Framework
  - ✓ For heterogeneous AN (different link-layer tech.)
- ➢ User ID and Location ID
  - ✓ User ID: service-specific, subscriber (permanent)
  - ✓ Location ID: IP address, Network ID (temporary)
- ➢ MM as Control Function (separation from data transfer function)
- ➢ Location and Handover Management (for MM functionality)
- ➢ Inter-operability with the other IP-based protocols
  - ✓ AAA, DHCP, etc

MMF: Conceptual Model

❖ MM as Control Function

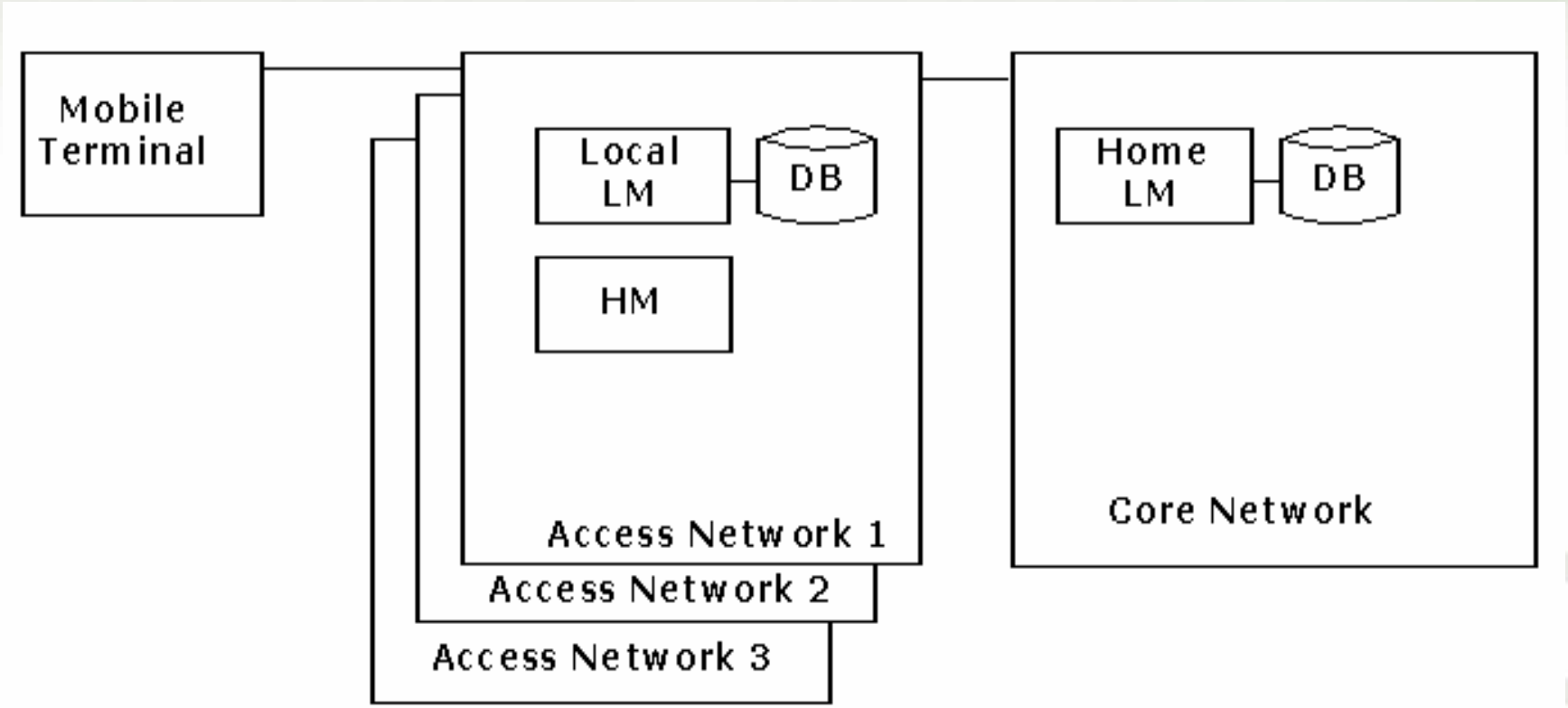
- ➢ Independent of specific type of network/system
- ➢ For easy deployment



MMF: Mobility Managers

- **Location Manager (LM)**
  - Home LM (per CN) versus Local LM (per AN)
    - ✓For MM 2/3 support
  - Home LM (Home NGN) versus Visiting LM (Visiting LM)
    - ✓For MM1 support
- **Handover Manager (HM)**
  - Within Access Network (e.g., with Access Routers)
  - (cf.) User Equipment (for end-to-end handover scheme)

MMF: Mobility Managers

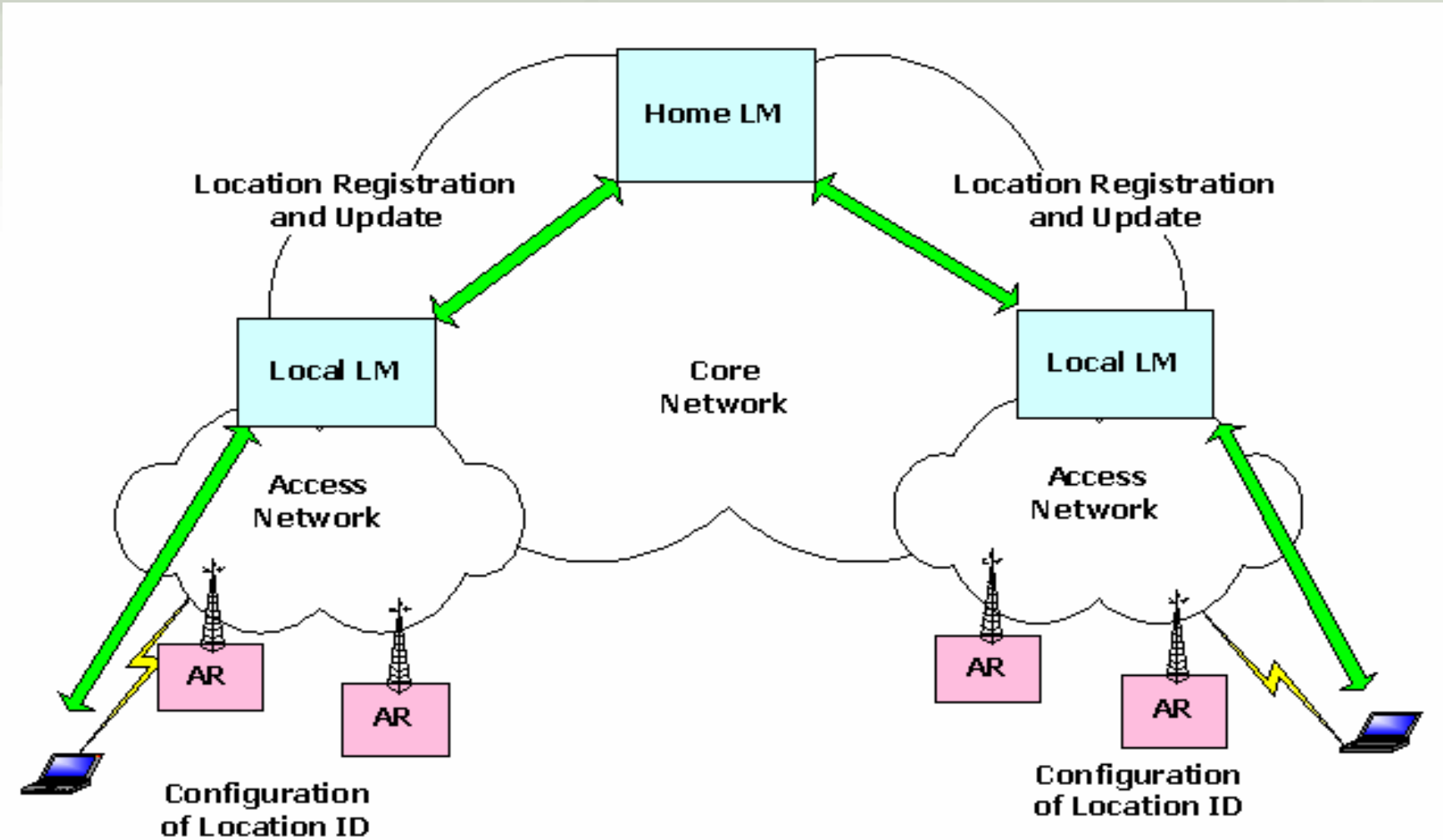


MMF: Information Flows

❖ Generic Information Flows

- ➢ Location Management
  - ✓ Location Registration/Update: LU & LU-ACK
  - ✓ Location Query/Response: LQ & LQ-ACK
- ➢ Handover Management
  - ✓ Handover Signaling
  - ✓ Two Types of Handover Support (IP Handover)
    - ▪ Network-Layer Handover Support
    - ▪ Session/Application Handover Support (end-to-end)

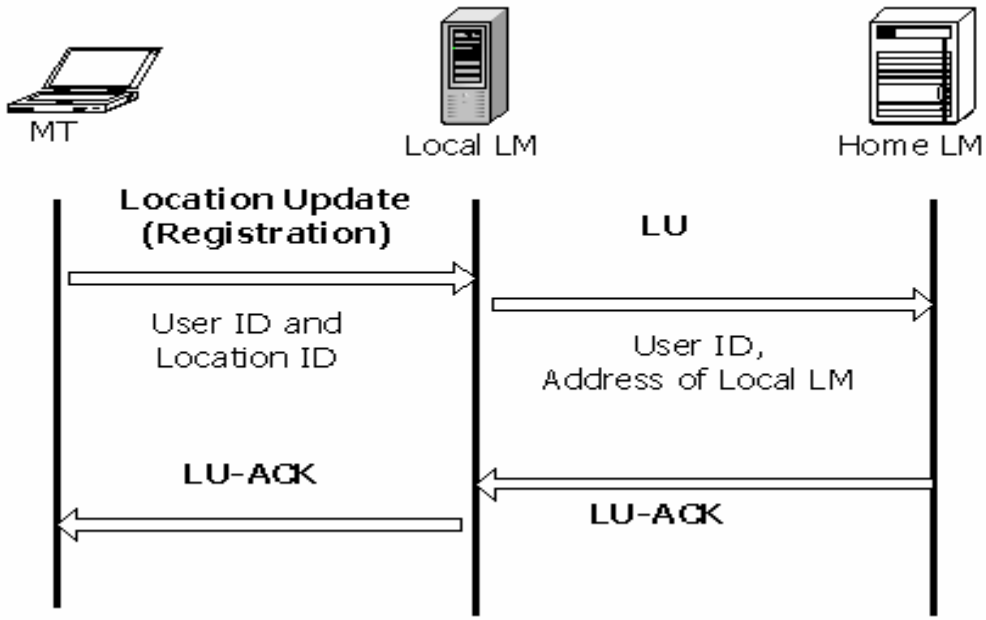
MMF: Location Management



MMF: Location Management

❖ Location Registration Flows

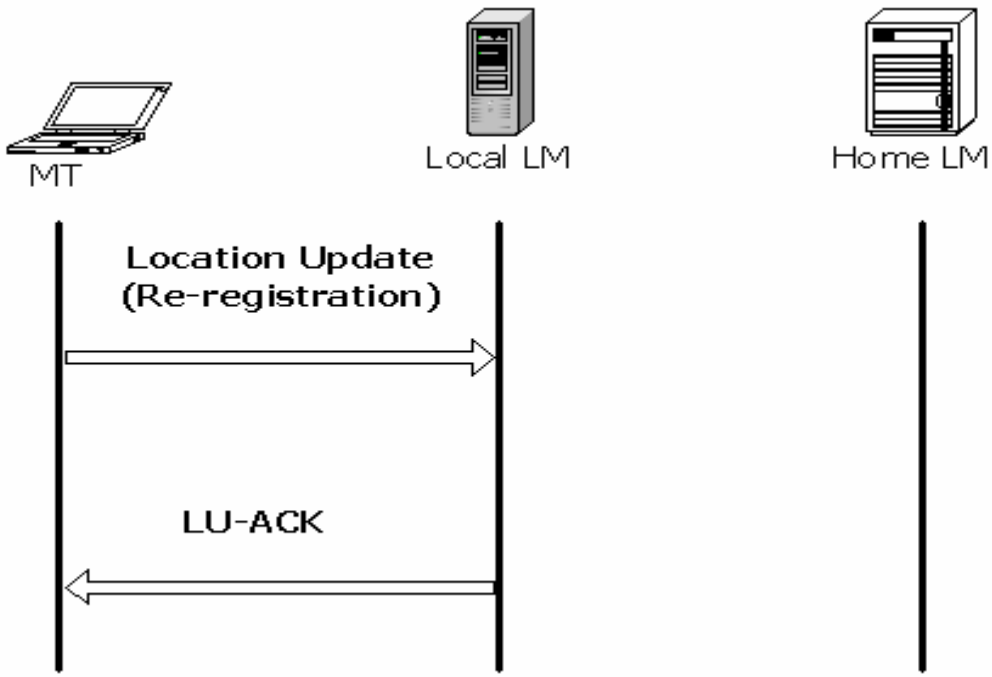
- ➢ MIP: MT ⇔ FA (Local LM) ⇔ HA (Home LM)
- ➢ SIP: SIP UA (MT) ⇔ SIP Registrar (Local/Home LM)



MMF: Location Management

❖ Location Update (Re-registration)

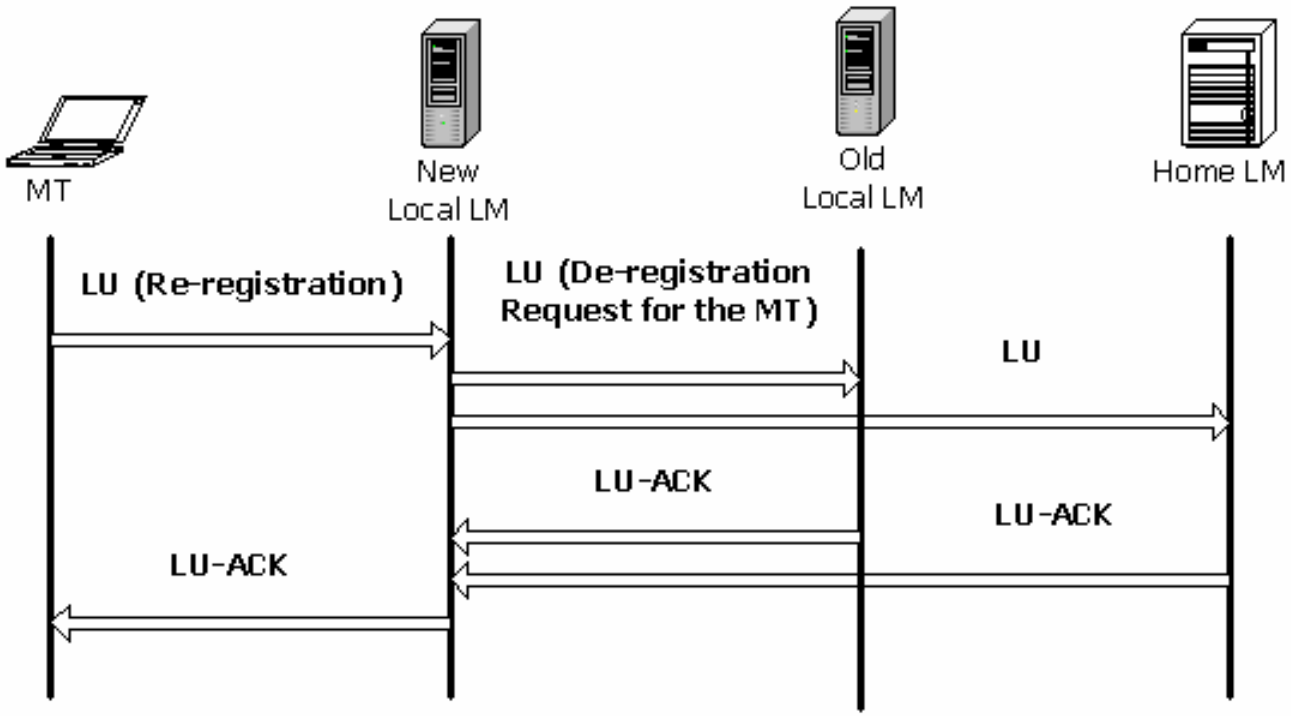
- ➢ Movement within the same Local LM
  - ✓ No update to the Home LM



MMF: Location Management

❖ Location Update (Re-registration)

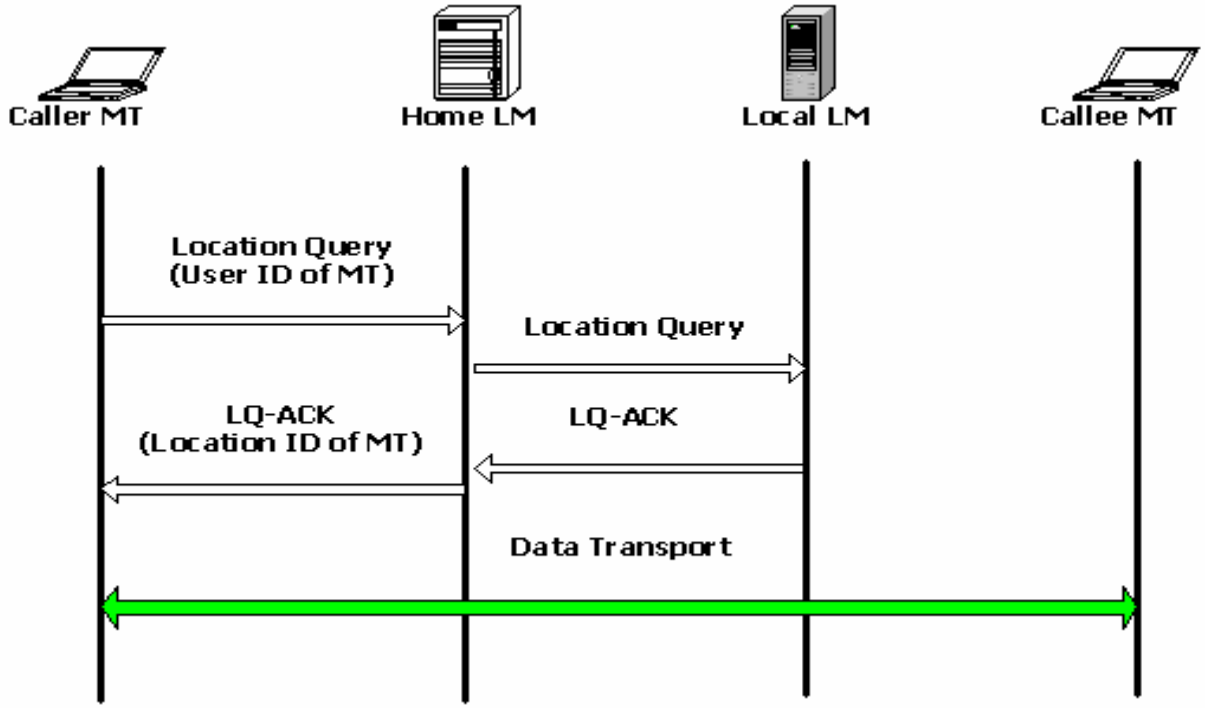
- ➢ Movement across the different Local LM



MMF: Location Management

❖ Location Query & Response

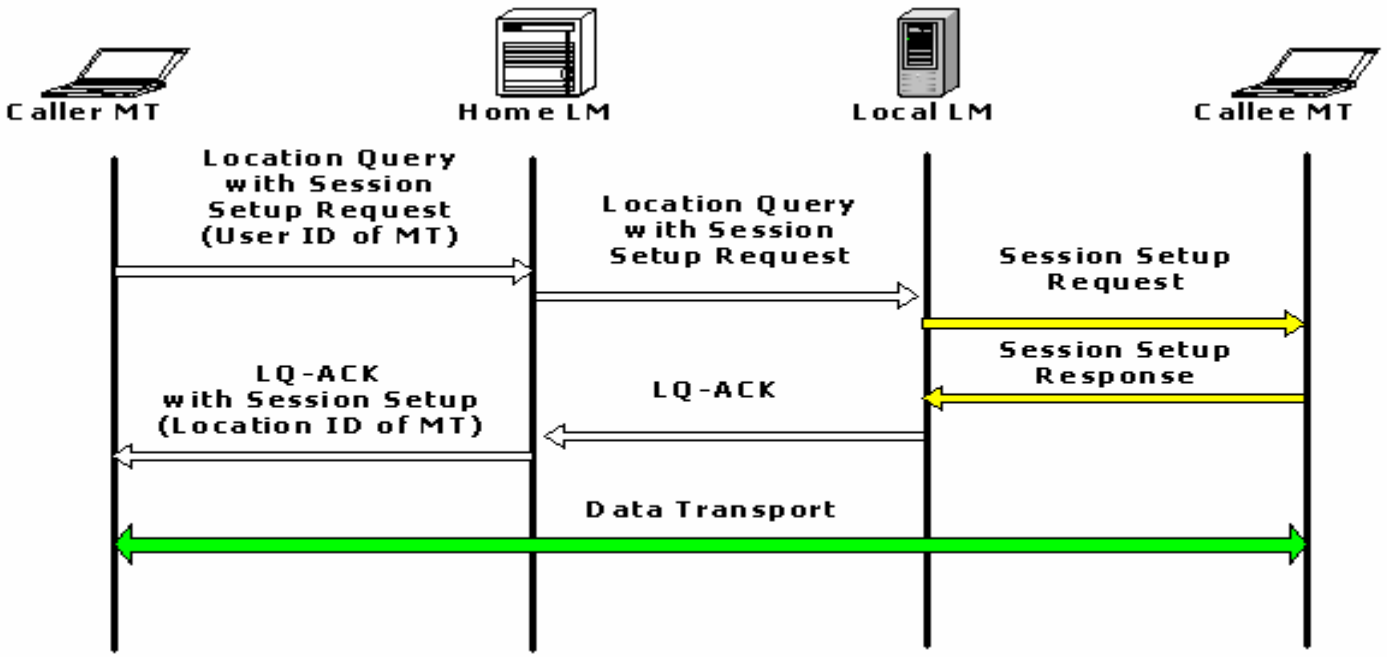
- ➢ In case without session setup signaling (e.g., SMS)
- ➢ Note: MIP has no explicit Location Query/Response



MMF: Location Management

❖ Location Query & Response

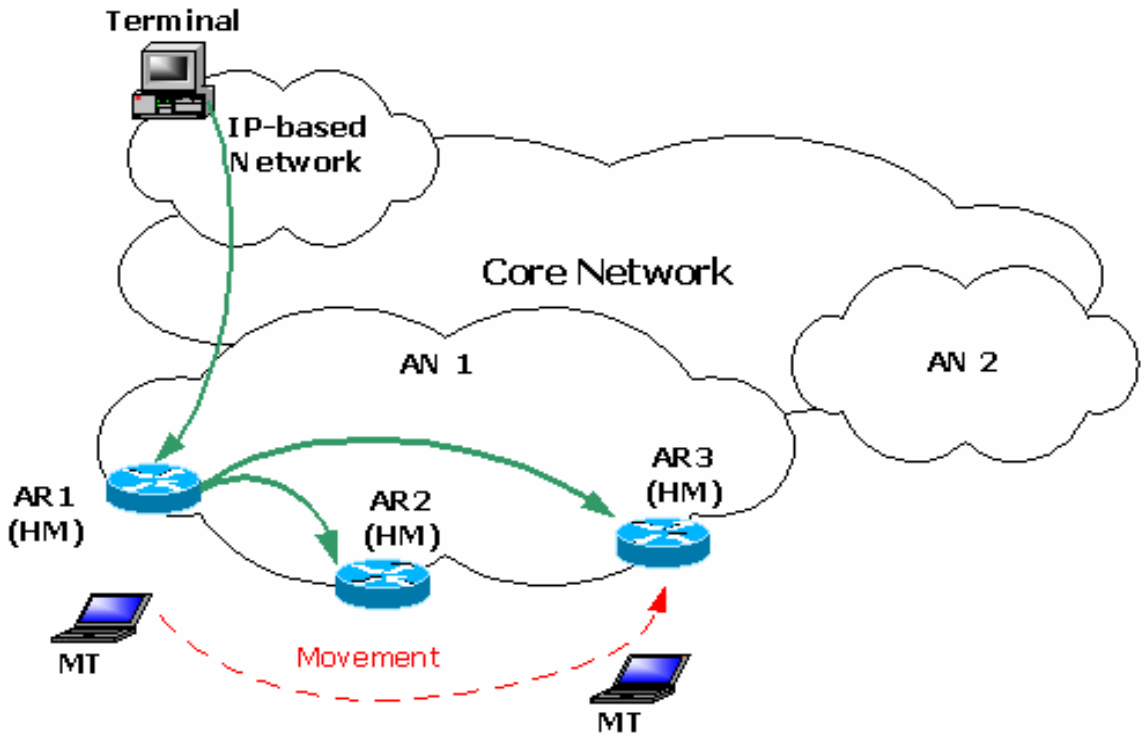
- ➢ In case with session setup signaling (e.g., SIP-based VoIP)
- ➢ SIP (IMS): Home LM ⇔ S-CSCF, Local LM ⇔ P-CSCF



MMF: Handover Management

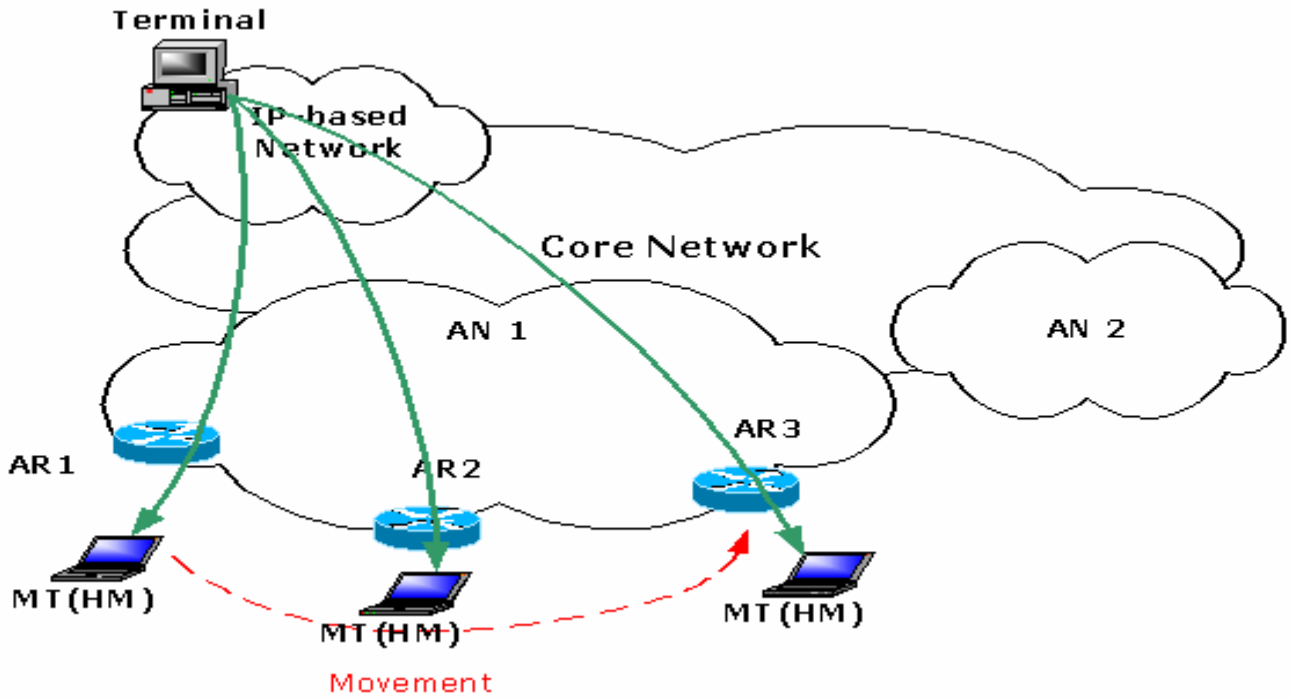
❖ Network-Layer Handover Management

- ➢ Using Handover Tunnel: (e.g.) Mobile IP and its variants



MMF: Handover Management

- **Session / Application Layer Handover Management**
  - End-to-end Handover Signaling (without help of network agents)
  - (e.g.) SIP (RE-INVITE), mSCTP (ADD-IP)



향후 표준화 이슈 (1/3)

❖ NGN-GSI (Q.2/19 & Q.6/13)

- ➢ MMF (version 1.1): focused, completed by 2007
- ➢ LMF (version 0.2): more works to do
- ➢ HMF (version 0.2): more works to do

❖ MMF

- ➢ Clarification of Mobility Managers
  - ✓Local & Home LM, Home & Visiting LM
  - ✓Functional Roles, Interaction with AAA, DHCP, etc
- ➢ Clarification of Generic Information Flows
  - ✓Generic LM and HM steps only

향후 표준화 이슈 (2/3)

❖ LMF

- ➢ Detailed Procedural Steps for MM 1/2/3
- ➢ Information contained within the LM messages
- ➢ Candidate LM schemes and relationship with MIP & SIP

❖ HMF

- ➢ Detailed Schemes for Network and High Layer Handover
- ➢ Detailed Procedural Steps for MM 1/2/3 Handover
- ➢ Information contained within the Handover signaling messages
- ➢ Candidate HM schemes and relationship with MIP & SIP

향후 표준화 이슈 (3/3)

❖ 전반적인 **MM** 표준화 방향

- ➢ 다른 SDO에서 정의된 MM 기법을 수용
  - ✓IETF, IEEE (MIH), 3GPPs, ETSI TISPAN, etc
- ➢ NGN 이동성 관점에서 “Unified MM Framework” 제시
  - ✓Guidelines 혹은 Recommendation

❖ 국내 대응 방안

- ➢ WiBro, 4G 등의 국내 개발 기술의 기고 및 적극반영
- ➢ SG19-Korea (한국 ITU-T SG19 위원회) 의견 수렴 및 기고서 검토
- ➢ Your active participation is urgently required !

감사합니다 (Q&A)

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