

學士學位 請求論文
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Location Management for Searching
in Mobile Communication

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9254994

1.

2.

3.

3.1

3.2

3.2.1

3.2.1.1

3.2.1.2

3.2.1.2.1

3.2.1.2.2

3.2.1.2.3

가 MSC가

가 MSC가

가 LS가

3.2.2

3.2.2.1

3.2.2.2

3.2.2.3

3.2.2.4

가 MSC

가 LS

가 LS

가 LS

4. 가

5.

- [1]
- [2] : **Power On**
- [3] : **MSC가**
- [4] : **LS가 MSC**
- [5] : **LS가**
FPL + 1 <= MAX_FP
- [6] : **LS가**
FPL + 1 > MAX_FP
- [7] : **가 MSC**
- [8] : **가 LS**
- [9] : **가 LS**
- [10] : **가 LS**

[1]

*

[2]

[3]

1.

가

[7].

ATM

가

[10,15].

가

가

가

[6,8,9]

(PCS, PCN, WATM)

[3,4,5,13,14].

Home Location Server(HLR)
, HLR

/ /

[11].

.2

,3

Cost

.4

가

2.

가

가

가

가

[1].

[1]

[2].

[1]

User Transparency	가
Location and Confidentiality	
Cell/Network Identification	
Minimize Signaling Load	
User Controlled Access	
User Information	
Access Restriction	
Roaming	, ,
Easy Internetworking	
Support of Paging	
Scalability	

(Flat), (Expanding), (Forward Pointing:FP), (Paging),
 (Mobile PNNI), (Location Registers:LR)

Seshaddri Mohan (Base Station) (Paging) Home Location Server(HLS)가
 Broadcasting HLS Paging Message
 HLS Message

[4].

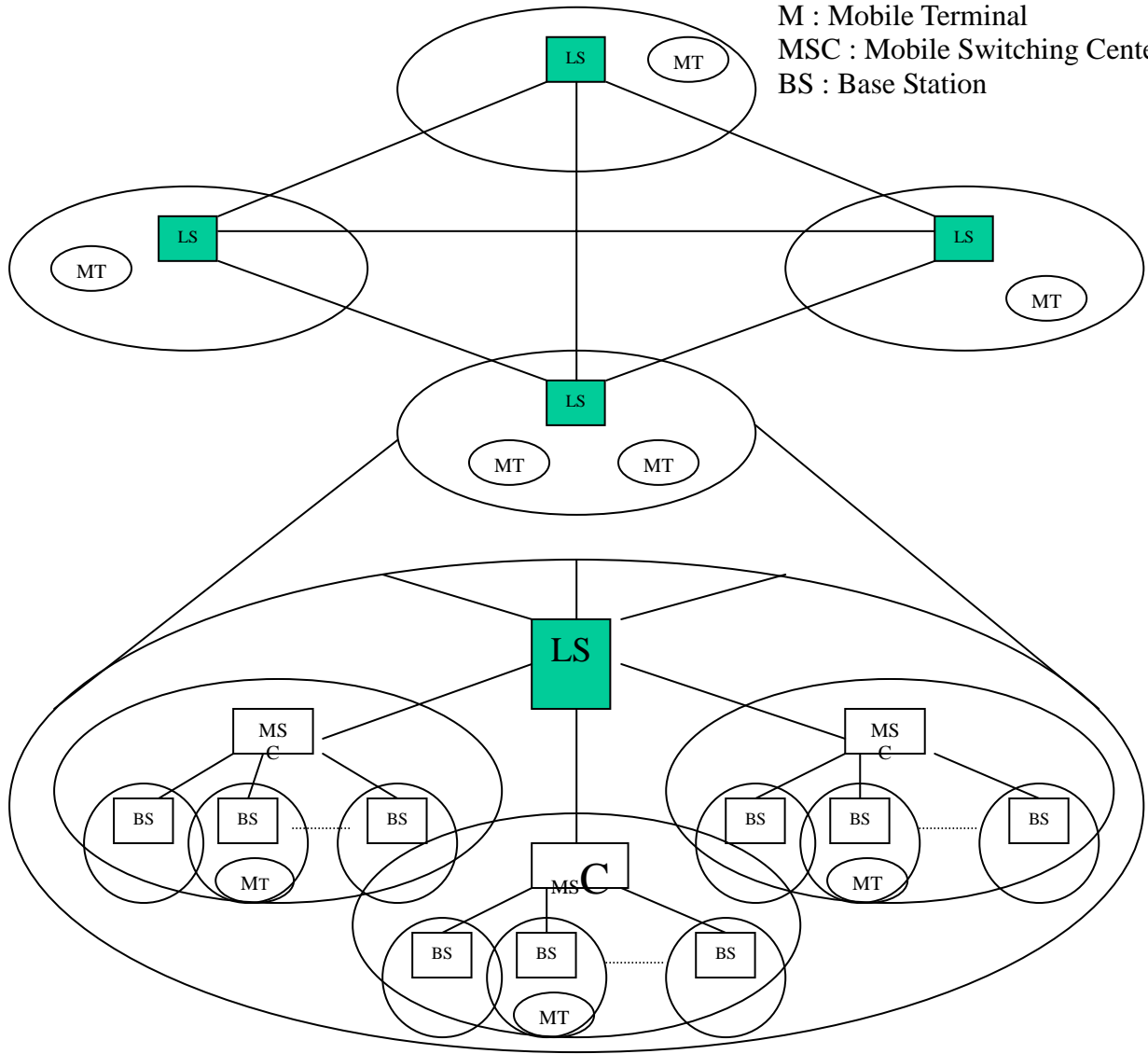
Badrinath (Flat) (Expanding), HLS
 ON/OFF VLR(Visi-
 tor Location Register) HLS VLR(Visi-
 가 (Root) LS Location server(LS)
 LS LS LS
 (Routing Protocol)
 LS [12].

Krishna 가 (Forward Pointing:FP) HLS HLS
 HLS HLS FP 가
 HLS FP 가
 [14].

(Mobile PNNI) (Location Registers
 :LR) 가 PNNI (scope parameter) S PNNI
 Reachability infomation PNNI
 (Location Registers:LR) PNNI ATM LR Mobile
 PNNI , LR 가 가
 [1].

3.
3.1

*Legend
 LS : Location Server
 M : Mobile Terminal
 MSC : Mobile Switching Center
 BS : Base Station



[1]

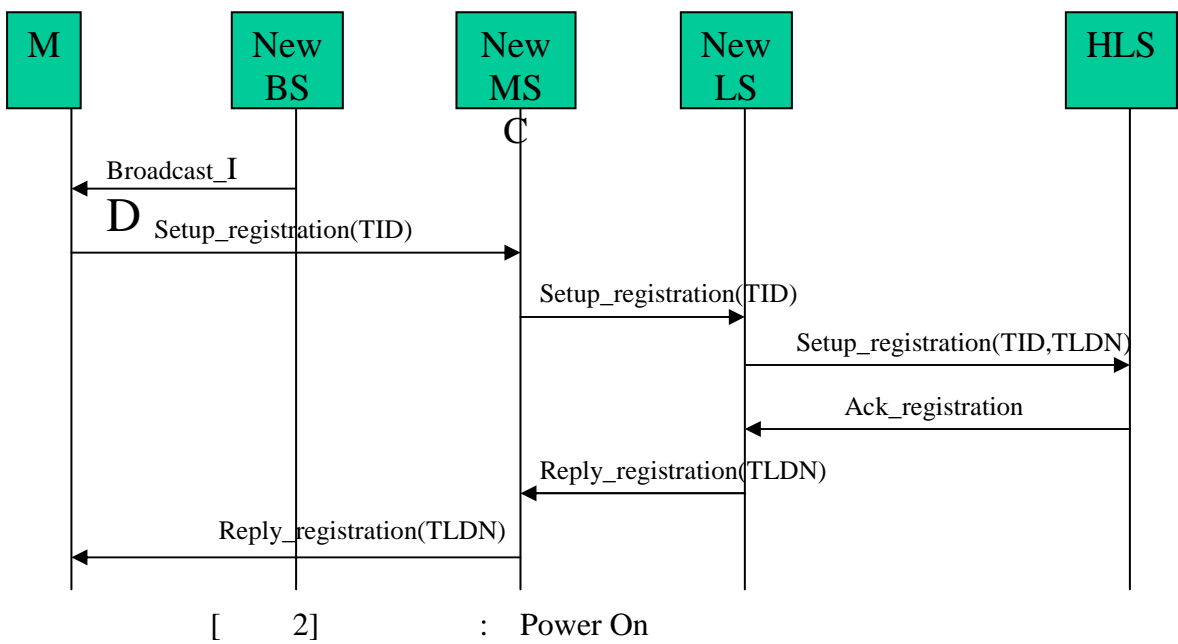
(BS)
 ID Broadcasting ID 가
 MSC (Registration Area) , HLS
 LS MSC VLR MSC
 MSC

3.2

3.2.1

3.2.1.1

가



가

Power ON

broadcasting

BS ID

가

BS

MSC

ID(TID)

MSC

TID

가

LS

LS

(Temporary Local Directory Number: TLDN)

LS

HLS

HLS 가

HLS

(TID, TLDN)

Forwarding Pointer

LS

LS

MSC

(TLDN)

, MSC

(TID, TLDN)

가 , BS

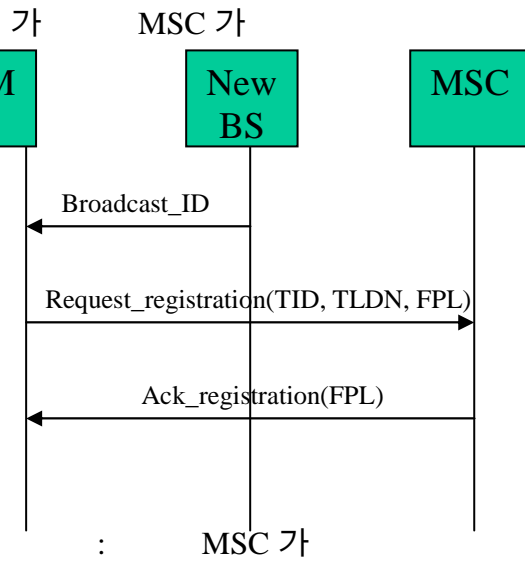
(TLDN) 가

Forwarding Pointer(FP) 1 가 1 가 . FP LS 가
 FP 1 가 . FP [14].

3.2.1.2

가 가

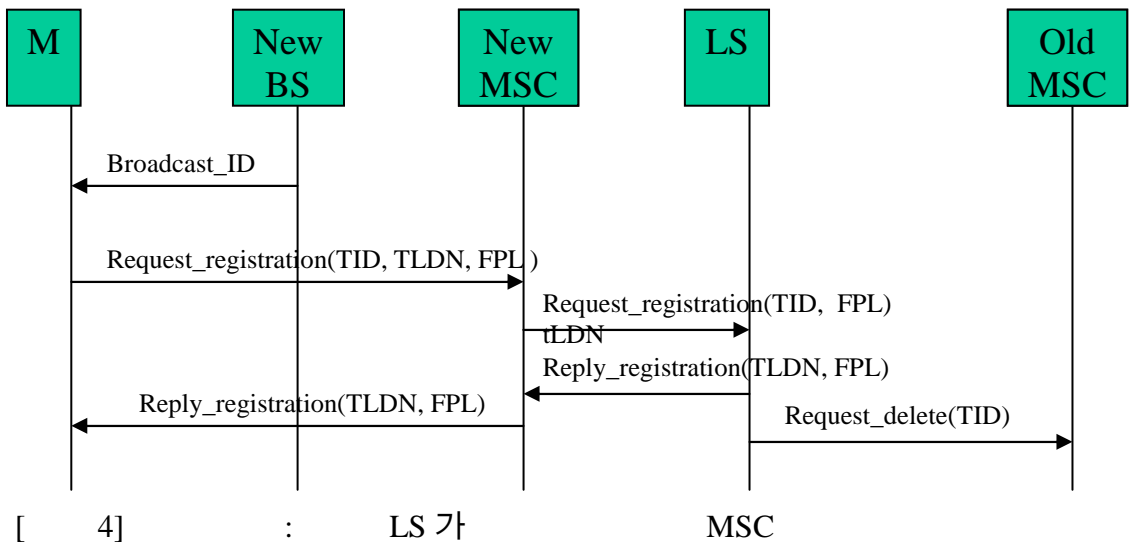
3.2.1.2.1



(roaming) , MSC (TID, TLDN, FPL) . MSC TLDN . Subnet Masking 가 BS .

3.2.1.2.2

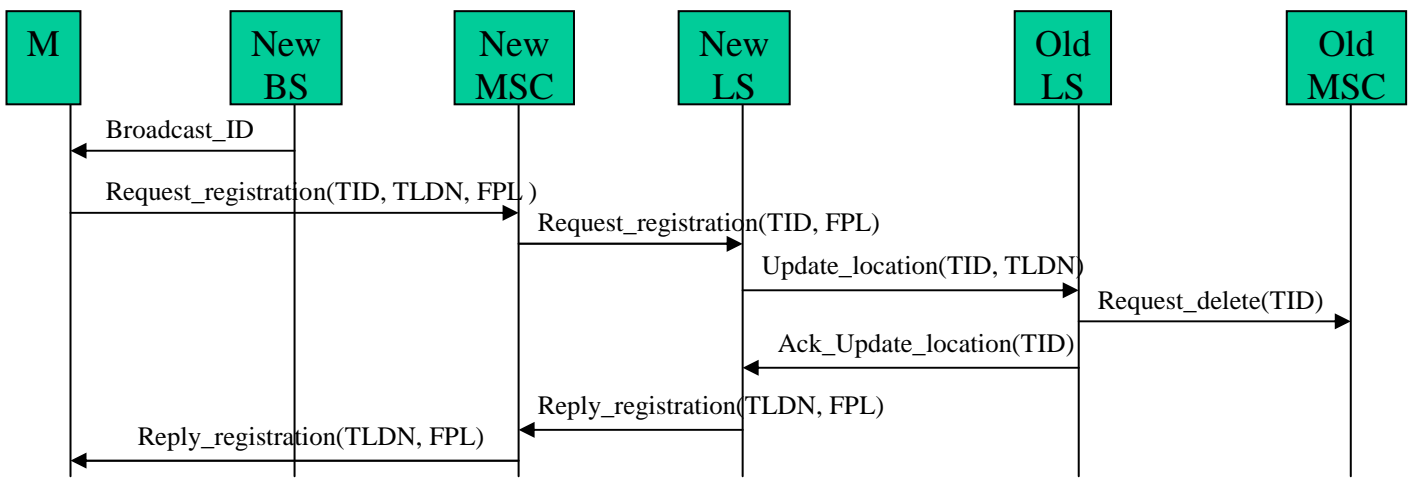
가 MSC 가



LS 가 LS 가
 가 TID MSC TLDN Subnet TLDN
 MSC TID MSC LS

3.2.1.2.3 가 LS 가

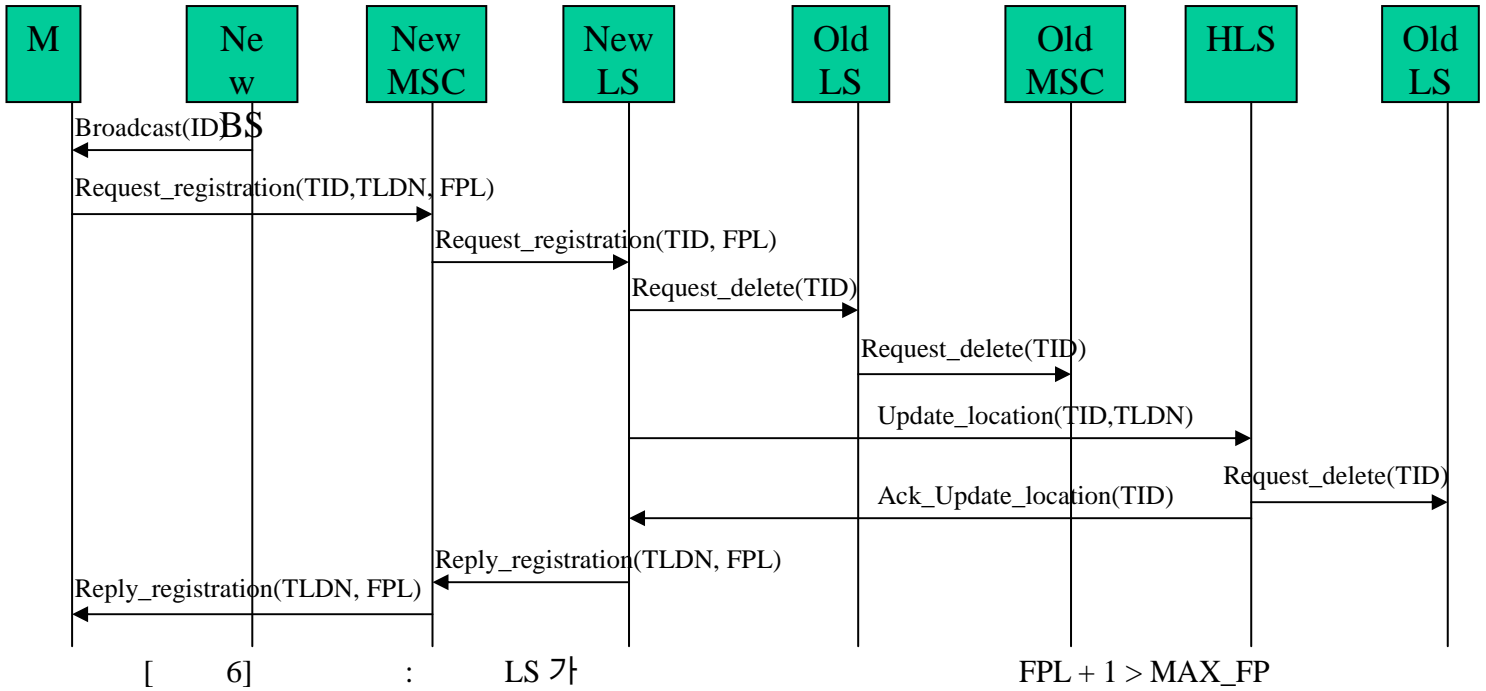
(1) $FPL + 1 \leq MAX_FP$ (FPL : Forwarding Pointer Path Length)



[5] : LS 가 $FPL + 1 \leq MAX_FP$

LS 가 LS 가 TLDN
 가 TLDN Subnet TLDN
 FPL(Forwarding Pointer Length) 1 가
 MAX_FP(FP Path Address) 가 LS Forwarding
 가 MSC 가 LS
 1 가 FPL MSC
 FPL MSC (TLDN, FPL)
 FP HLS

(2) $FPL + 1 > MAX_FP$



[6] : LS 가 FPL + 1 > MAX_FP

FPL+1 MAX_FP LS HLS LS FP 가 Path LS FP
 (Purging) . , . Backward
 Pointer FP Path .
 HLS LS FP 가 HLS LS
 LS TLDN 1 가 FPL MSC

3.2.2

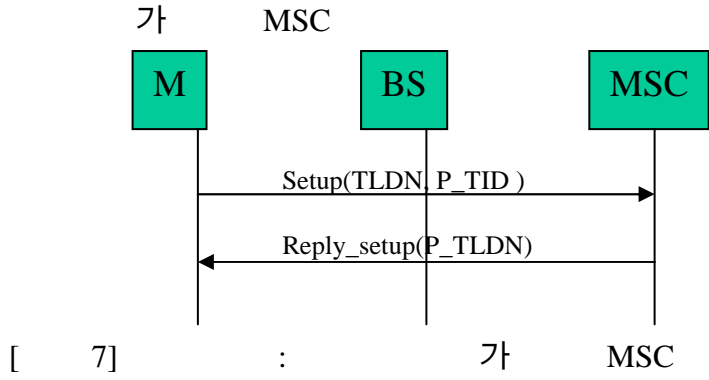
가

MSC 가

ID(Partner's Terminal ID : P_TID)

TLDN

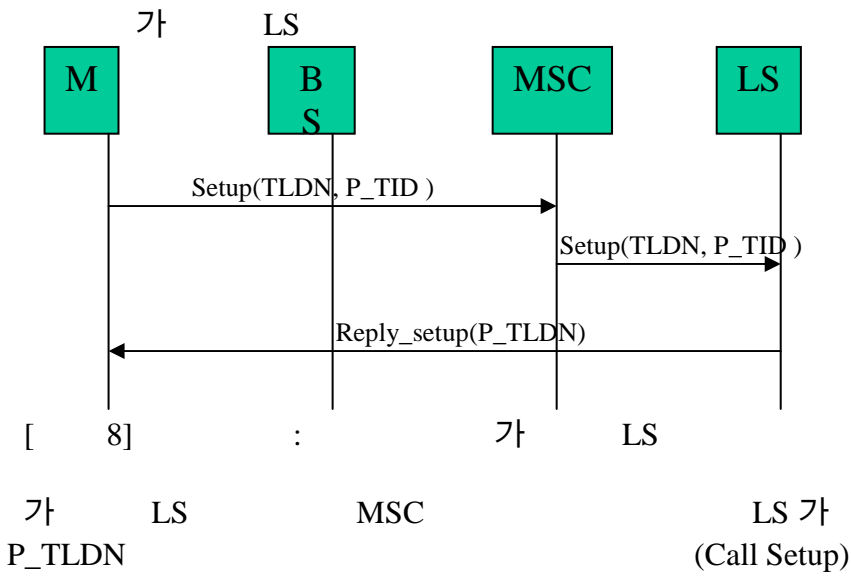
3.2.2.1



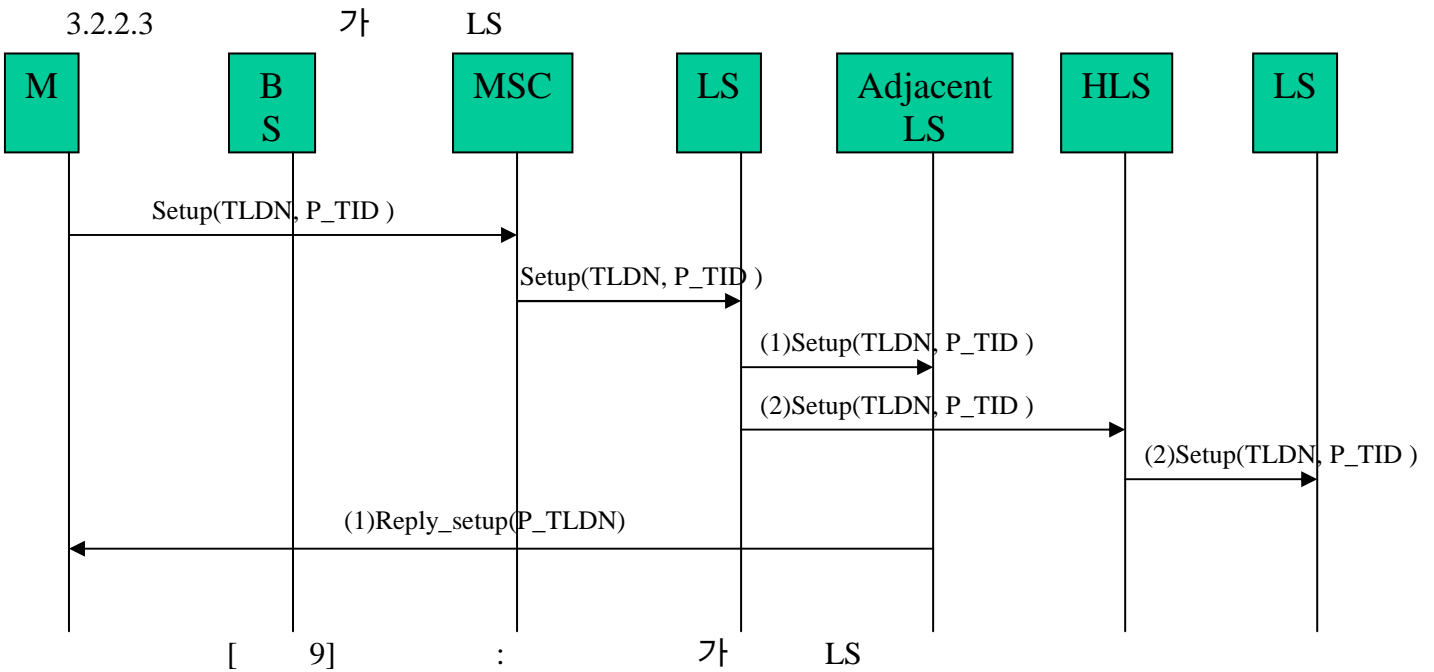
P_TLDN

가 MSC MSC 가 (Call Setup)

3.2.2.2

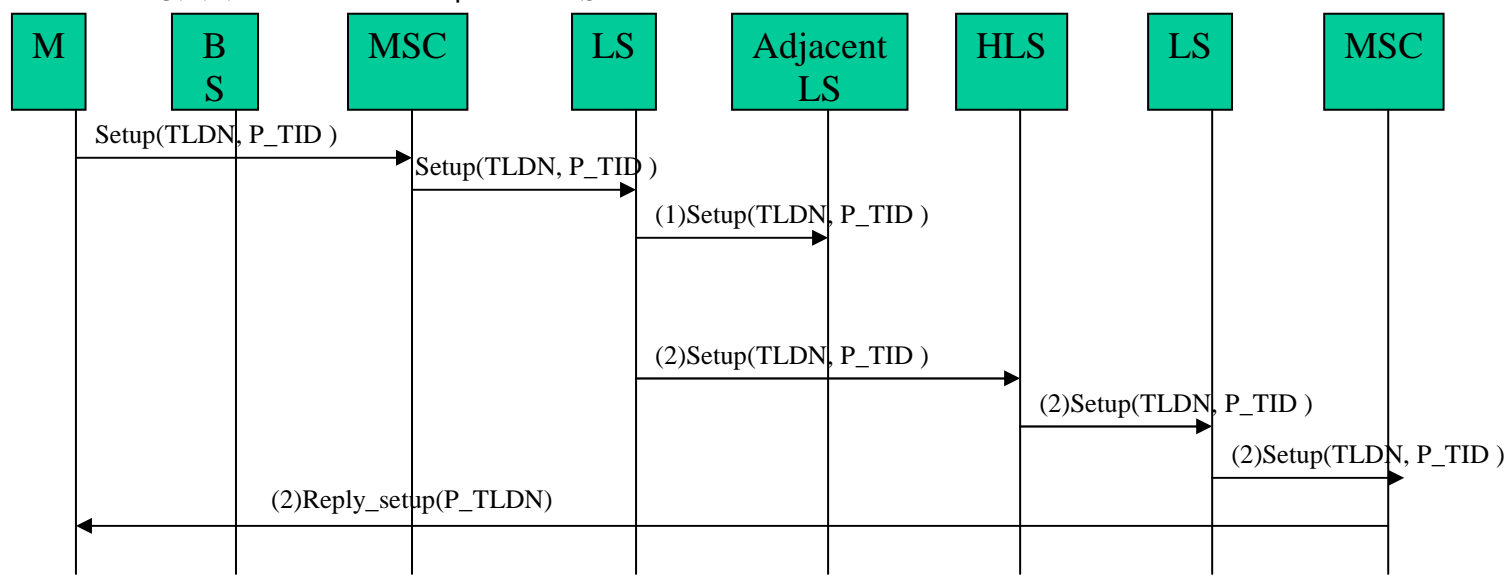


3.2.2.3



가 LS LS 가 가 LS Directory
 (scan) HLS , HLS FP 가 LS LS
 가 .

3.2.2.4



[10] : 가 LS
 가 LS HLS FP 가
 가 .

4. 가

Forwarding Pointer HLS
 (Locality) LS ,
 LS [1] .
 Information 가 , LR Mobile PNNI Reachability
 Group 가 LS Page
 가 [1]. LS
 가 / 가 LS 가 MSC , HLS LS
 가 HLS LS

Mobile
 ()
 Hierarchical
 , LR 가
 Tree LS Page Group
 Explosion) (Storage)가 LS
 가 LS
 가 LS (Exponential)
 가 LS
 , HLR

5.

(Call Setup)
 ..
 Forwarding Pointer HLS
 가 (Locality) HLS FP
 LS LS
 (WATM) Wireless ATM

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- [2] , , "IMT-2000 ", , 1998.5.
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- [5] Kristian Rauhala, Nokia Research Center, "Baseline Text of WATM WG", The ATM Forum, 1998.4.
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- [12] B.R. Badrinath, T. Imielinski, Aashu Virmani, " Locating Strategies for Personal Communication Networks".
- [13] , , , "ATM PCS ", , 1997.11.
- [14] P. Krishna, N.H. Vaidya, D. K. Pradhan, "Efficient Location Management in Mobile Wireless", 1996.7.12.
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(Message)	(Origin)	(Action Indicator)
Broadcast_ID	BS	M BS
Setup_registration(TID)	M	M
Setup_registration(TID, TLDN)	New LS	M HLS
Ack_registration	HLS	M
Ack_registration(FPL)	MSC	
Reply_registration(TLDN)	New LS	M TLDN
Request_registration(TID, TLDN, FPL)	M	M
Request_registration(TID, FPL)	MSC	M MSC , New LS
Request_Delete(TID)	M	
Update_location(TID, TLDN)	MSC	M
Ack_Update_location(TID)	HLS	
Setup(TLDN, P_TID)	M	
Reply_Setup(P_TLDN)	MSC, New LS, Adjacent LS, Old LS	

*

M : Mobile Terminal
 BS : Base Station
 MSC : Mobile Switching Center
 LS : Location Server
 HLS : Home LS

Parameter	
TID	Terminal ID
TLDN	Temporary Local Directory Number
FPL	Forwarding Pointer Length
P_TID	Partner's Terminal ID
P_TLDN	Partner's TLDN