

# Ad-hoc

Ad-hoc

가

\* \* \*\*

Ad-hoc

가

가

Ad-hoc

Ad-hoc

가



I.

Ad-hoc

I.

II.

III.

Ad-hoc

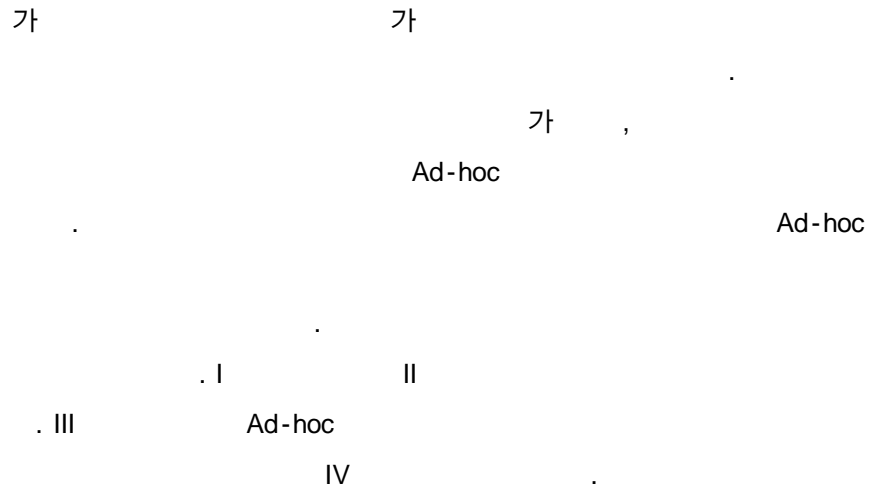
Ad-hoc

IV.

가

\* ETRI /  
 \*\* ETRI /

LBS(Location Based Service)



II.

( ) ( ) [1]. 가  
 (Triangulation) (Vantage Point)  
 (Scene Analysis), (Proximity)

1.

GPS(Global Positioning System)  
 ( ) ( )  
 [2]. 3  
 2 , 3 4  
 . GPS  
 가 가  
 , 가 GPS 가

가

2.

가

[3]. GPS

가

가

3.

(Diffuse-  
Infrared) (Ultrasonic Wave), RF(Radio Frequency), UWB(Ultra Wideband), RFID

가 ID 가

가

AT&T Lab.

Active Badge System[4,5]

RF

3 가

가 MIT Cricket System[6]

AT&T Lab Active Bat System[7]

가 RF (Signal Strength)

IEEE 802.11 ISM

(Industrial, Scientific and Medical) RF 가

1186 2005. 3. 9. ....

가 , 가  
 . RADAR [10]  
 Pinpoint 3D-iD [11,12,13] .  
 RFID RFID ID 가 IC  
 가 가  
 가 . RFID 가 (Non-line-of-Sight) (No-  
 contact) 가  
 . LANDMARC[14]가 .  
 UWB  
 , 가  
 가 가 .  
 가

4.

EasyLiving [15]  
 (Person Tracker)[16,17]가 .

III. Ad-hoc

II

, GPS[2] [3],  
 [4], [6], [7]  
 , Ad-hoc  
 가 가  
 가 . , Ad-hoc

.....

GPS  
 GPS  
 가 Ad-hoc  
 GPS 가 가,  
 가  
 가  
 Ad-hoc

1.

Ad-hoc 가 가  
 Geographic Routing  
 가 가 가  
 가 ,  
 가

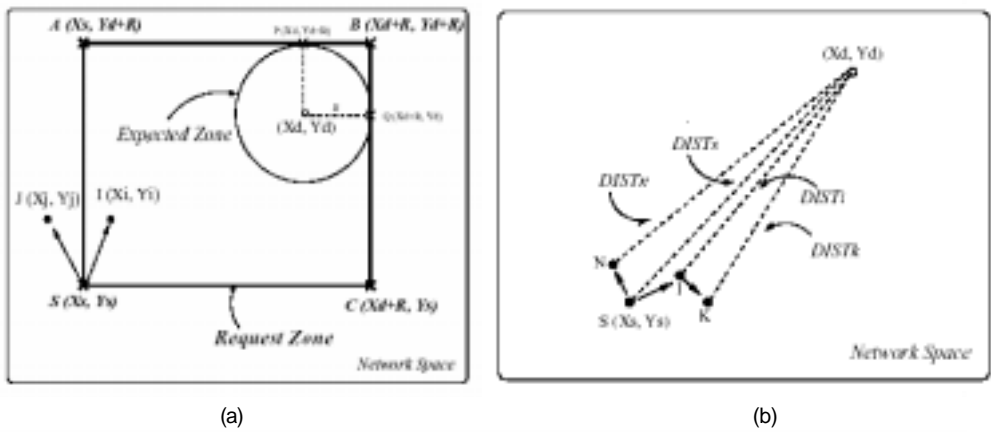
가. LAR

LAR(Location-aware Routing)[18] GPS

가  
 (Expected Zone)  
 (Request Zone)  
 D 가  $t_0$  L  $v$  S  $t_1$  가 ,  
 L  $v(t_1-t_0)$  D 가

D 가  $t_0$  D 가 L  
 D 가  $t_1$  가  
 LARS  
 (LAR scheme) 1 2  
 LARS 1 ( 1 a) 4 가  
 S D D  $(X_d, Y_d)$ 가  
 S D X Y S  
 가 D , S  
 4  
 , LARS 2 ( 1 b) S가  $t_0$  D  
 $(X_d, Y_d)$   $(DIST_s)$   
 $i$   $(X_d, Y_d)$   $DIST_i$   
 $DIST_{s+} \gg DIST_i$   $DIST_s$   $DIST_i$

LARS  
(Limited flooding)



( 1) LAR scheme 1 (a), 2 (b)

. DREAM

DREAM(Distance Routing Effect Algorithm for Mobility)[19]

가  
가  
가  
가  
가

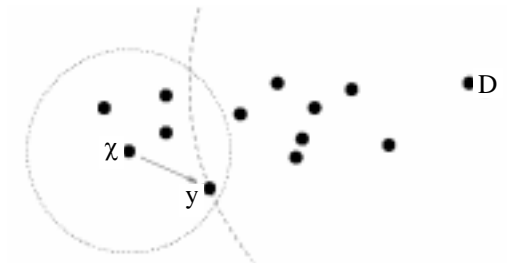
. GPSR

GPSR(Greedy Perimeter Stateless Routing)[20]

Greedy  
가 가  
( 2) Greedy  
D  
가 가  
Greedy 가  
GPS  
Hello

GPSR

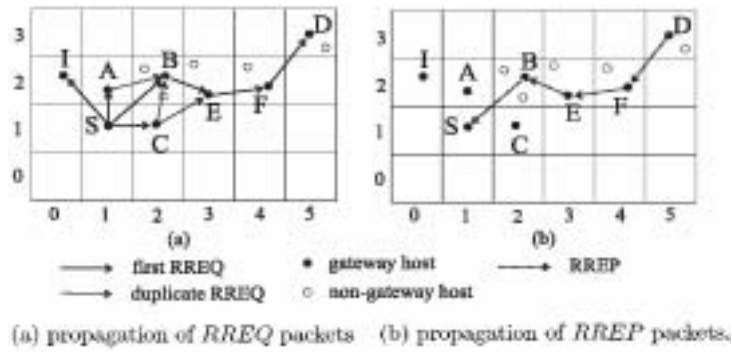
Distance Vector



( 2) Greedy

. GRID

GRID[21] GR(Geographic Area) grid  
 , GL(Grid Leader)  
 . grid (d×d) (x, y) . GPS  
 가 grid  
 grid-by-grid grid 가 grid  
 ( 3) grid



( 3) GRID

. GLS

GLS(Grid Location Service)[22,23] GRID 가 grid  
 . GRID  
 grid , GLS 가 grid  
 grid 가 order 가 , order i  
 4 가 order i +1 . order 1  
 ID 가 ID (Location Server)  
 order 가 ID , 가 ID  
 ID ID 가 ID 가 . ID ID 가  
 order 가 ID .



GLS

가

가

가

2.

(Geocasting)[24,25]

GA(Geographical Area)

가

. GA

가. LBM

LBM(Location-Based Multicast)[26]

LAR

GA MR(Multicast Region)

(Location Based Multicast Group)

가 MR

가

가 . LBMS(LBM Scheme)

LBMS 1

GZ(Geographic Zone) 가

MR(Multicast Region)

FZ(Forwarding Zone) . FZ ( 4 a)

S MR

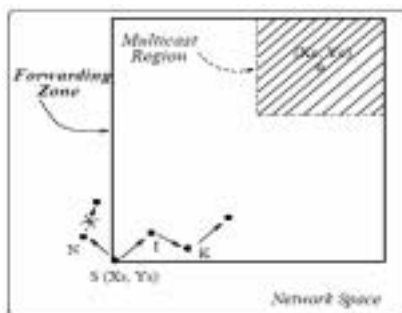
가

S

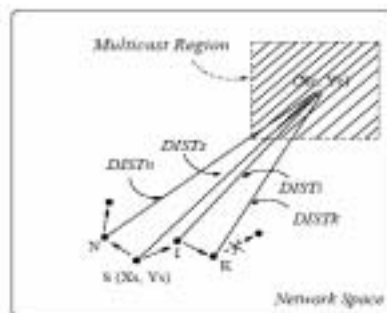
FZ 4

FZ

가



(a) Location-Based Multicast Scheme 1



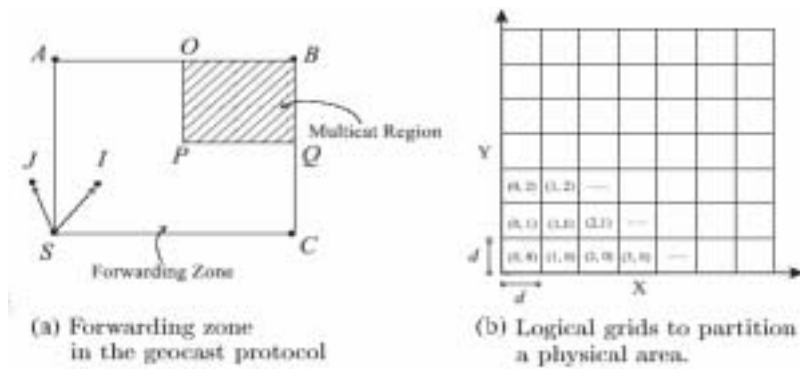
(b) Location-Based Multicast Scheme 2

( 4) LBMS 1,2

FZ 가  
 LBMS 2 FZ 가  
 ( 4 b) MR  $(X_c, Y_c)$   $(X_s, Y_s)$  가  
 MR  $(X_c, Y_c)$  Z  
 DIST<sub>Z</sub> 가 i DIST<sub>i</sub> ,  
 DIST<sub>i+1</sub> >= DIST<sub>i</sub>  
 $(X_s, Y_s)$   $(X_i, Y_i)$

GeoGRID

GeoGRID[27] GRID ( 5 b) GA (dxd)  
 2 grid , grid  
 FZ ( 5 a) MR



( 5) FZ Logical grid

GeoGRID (Flooding)  
 (Ticket)  
 FZ grid  
 가 (mxn) MR (m+n)  
 FZ  
 MR 가

. GeoTORA

LBM      GeoGRID 가      GeoTORA[28]  
 Algorithm)      TORA(Temporally Ordered Routing)  
 . TORA      (Link Reversal)  
 TORA      GR      GeoTORA  
 . ,      TORA      (Anycast)  
 oriented Acyclic Graphs)      DAG(Destination-

3. Ad-hoc

GPS  
 Ad-hoc  
 Ad-hoc      (Ad-hoc Location-Sensing)  
 가

가. APS

APS(Ad-hoc Positioning System)[29]      GPS      Distance Vector  
 hop-by-hop      , GPS  
 3      Landmark      hop-by-hop  
 Landmark  
 . Landmark      hop-by-hop      DVH(DV-hop)  
 DVD(DV-distance)      ,      ED(Euclidean Distance)  
 DVH      (Hop-count)  
 . Landmark 가      가  
 .      Landmark  
 (Correction)      . DVD  
 (Hop-distance)  
 . ED      GPS      (Euclidean Distance)

Landmark .

. APIT

APIT(Approximation Point In Triangulation Test)[30]

. APIT

가 GPS  
(Anchor)

(Triangular Region)

가

가

가

PIT(Point-In Triangulation)

M

A, B, C

가

M

ABC

가

M

A, B, C

가

M

ABC

가

PPIT(Perfect PIT)

PPIT

가

가

M

가 APIT(Approximate PIT)

가

. APIT

grid

. GPS-less Outdoor Localization

GPS-less Outdoor Localization[31]

RF

(Connectivity)

가

가

(Reference Point)

가

가

가

가

.....

가 가 .

. SpotON

SpotON[32,33] DARPA(Defense Advanced Research Projects Agency)

Ad-hoc

RSSI(Radio Signal Strength Information)

Ad-hoc .

SpotON ,

가

Ad-hoc .

가 .

IV.

Ad-hoc

Ad-hoc .

가 . ,

가 .

가 .

가 가 . ,

GPS

Ad-

hoc

가 .

Ad-hoc

RF

,

Ad-hoc 가

Ad-hoc

GPS

가

&lt; &gt;

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