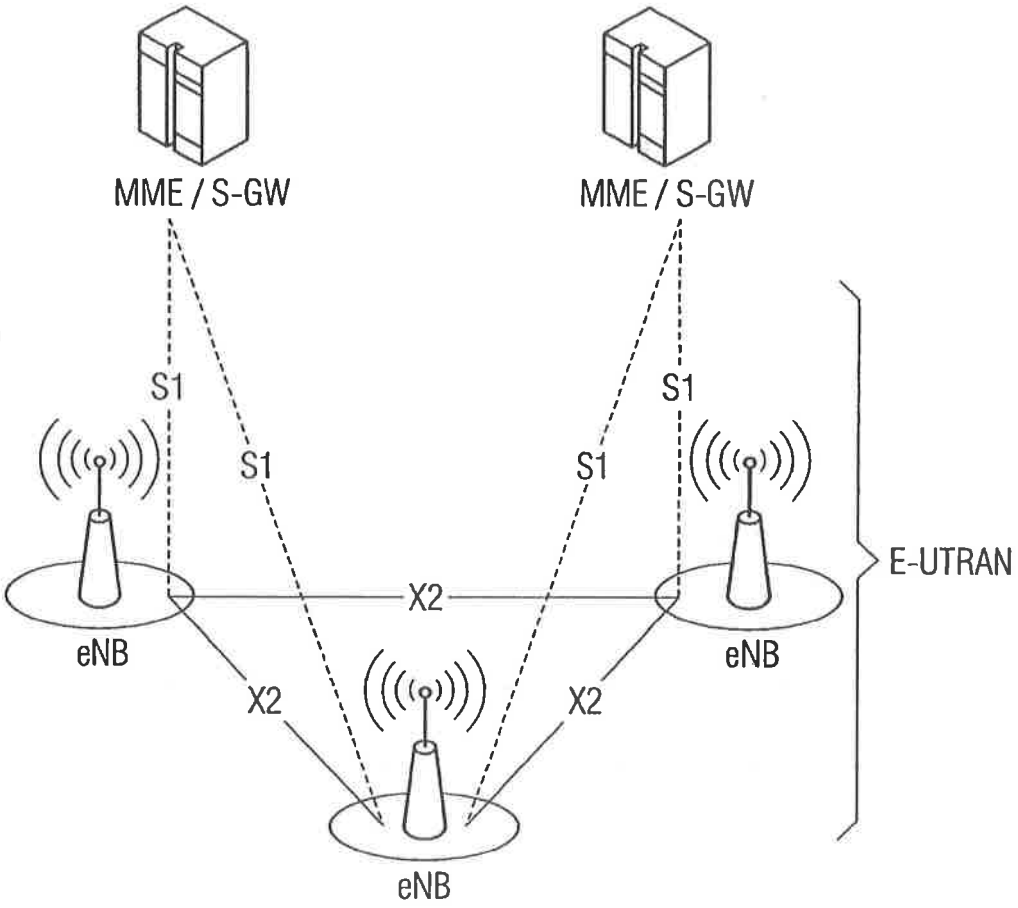
FIG 1



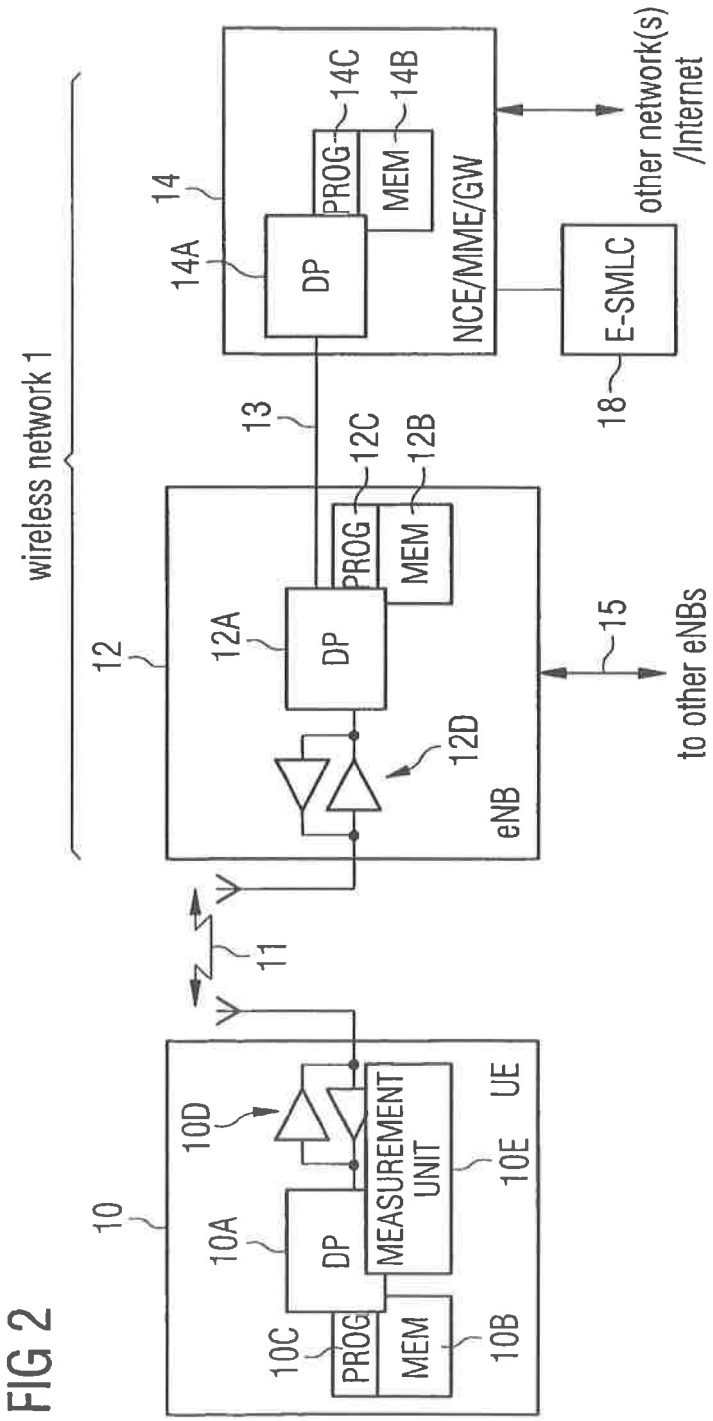

wireless network 1
12
12A
DP
12B
MEM
12C
PROG
12D
eNB
15
to other eNBs
13
14
14A
DP
14B
MEM
14C
PROG
NCE/MME/GW
other network(s)
/Internet
18
E-SMLC
11
10
10A
DP
MEASUREMENT
UNIT
10E
UE
10D
10C
PROG
MEM
10B

FIG 2

FIG 3

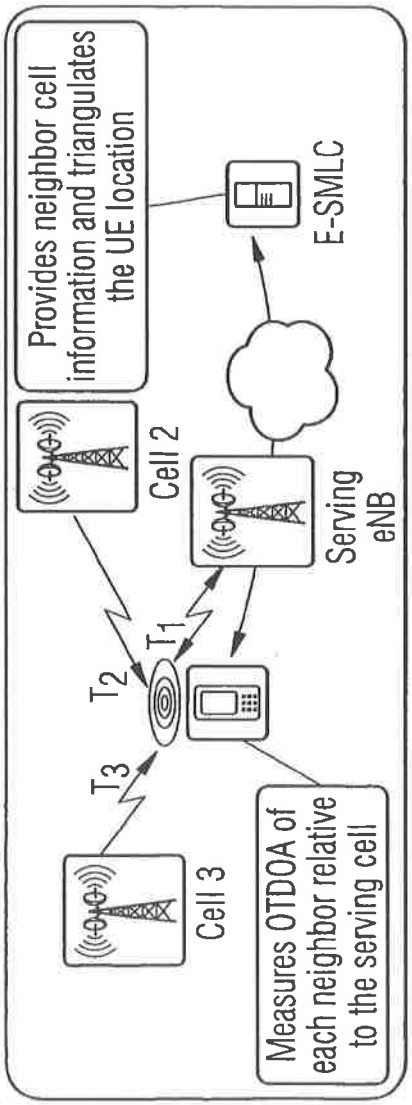
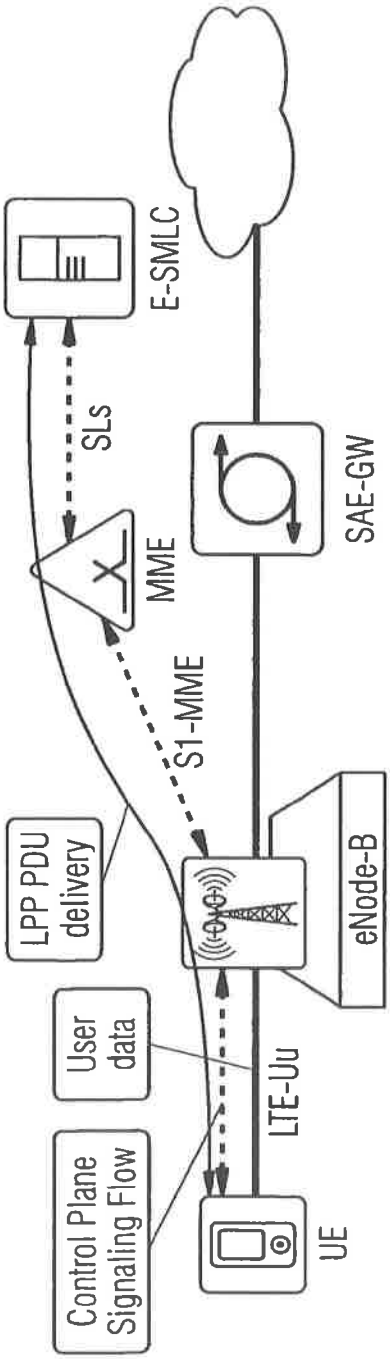

Provides neighbor cell information and triangulates the UE location
E-SMLC
Cell 2
Serving eNB
T1
T2
T3
Cell 3
Measures OTDOA of each neighbor relative to the serving cell

FIG 4


E-SMLC
SLs
MME
SAE-GW
S1-MME
LPP PDU delivery
eNode-B
User data
LTE-Uu
Control Plane Signaling Flow
UE

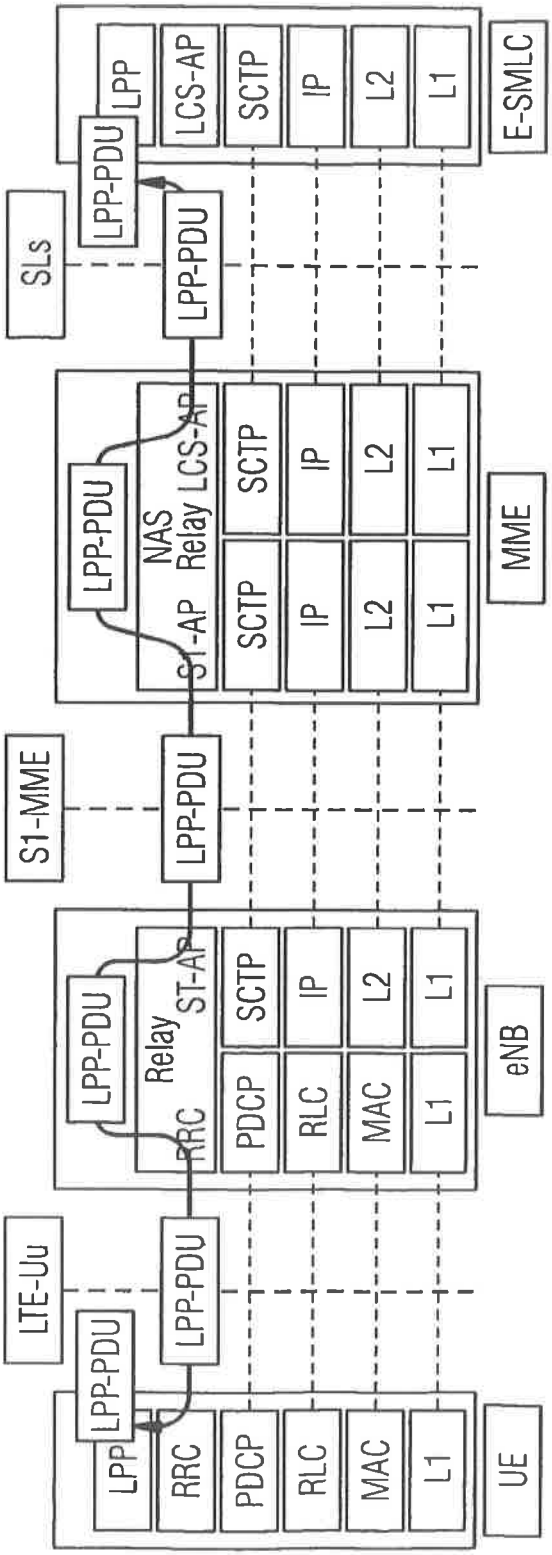

UE
LPP
RRC
PDCP
RLC
MAC
L1
LPP-PDU
LTE-Uu
eNB
Relay
RRC
ST-AP
PDCP
RLC
MAC
L1
SCTP
IP
L2
L1
LPP-PDU
S1-MME
MME
NAS Relay
ST-AP
LCS-AP
SCTP
IP
L2
L1
LPP-PDU
SLs
E-SMLC
LPP
LCS-AP
SCTP
IP
L2
L1

FIG 5

FIG 6

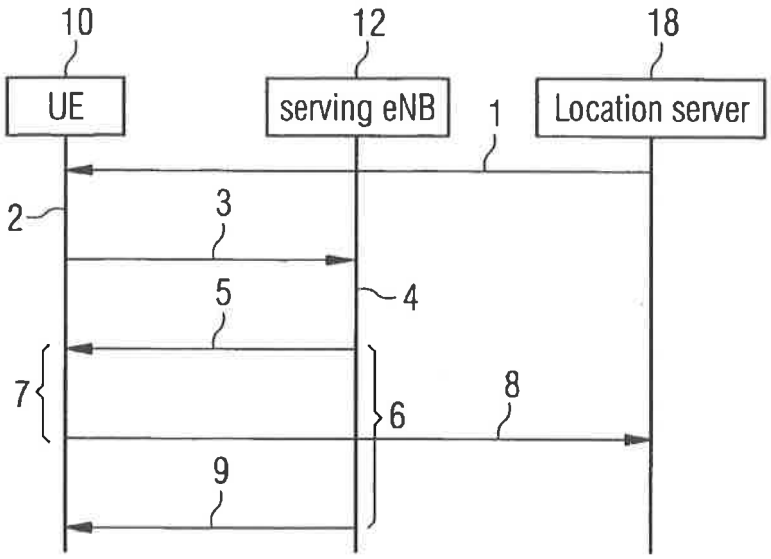

10
12
18
UE
serving eNB
Location server
1
2
3
4
5
6
7
8
9

FIG 7

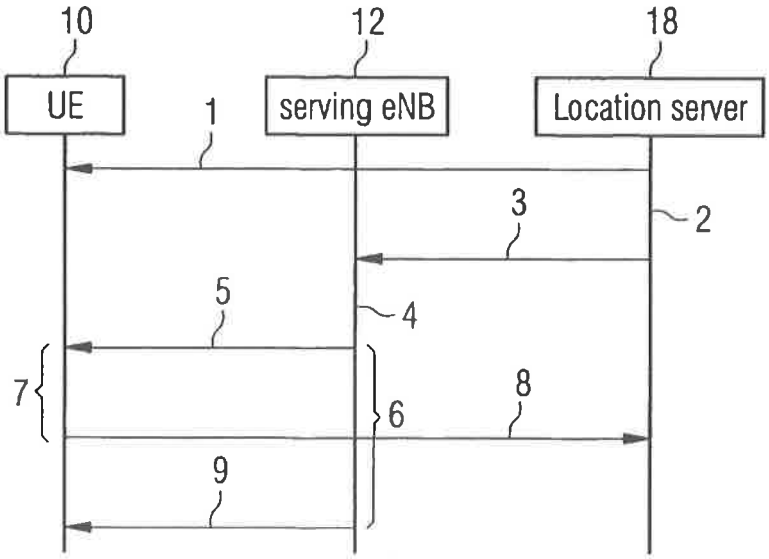

10
12
18
UE
serving eNB
Location server
1
2
3
4
5
6
7
8
9

FIG 8

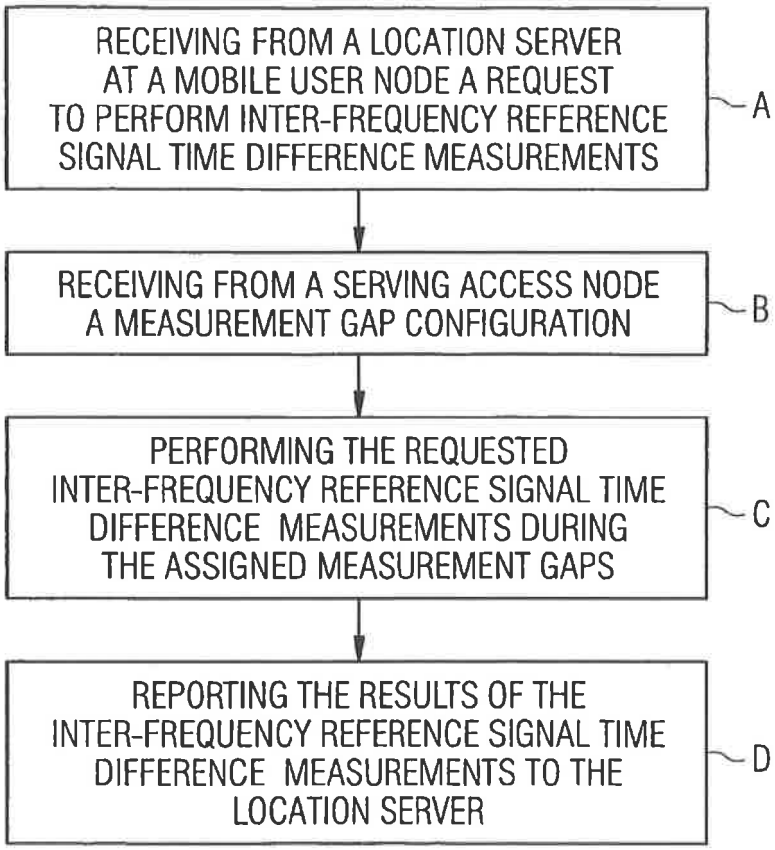
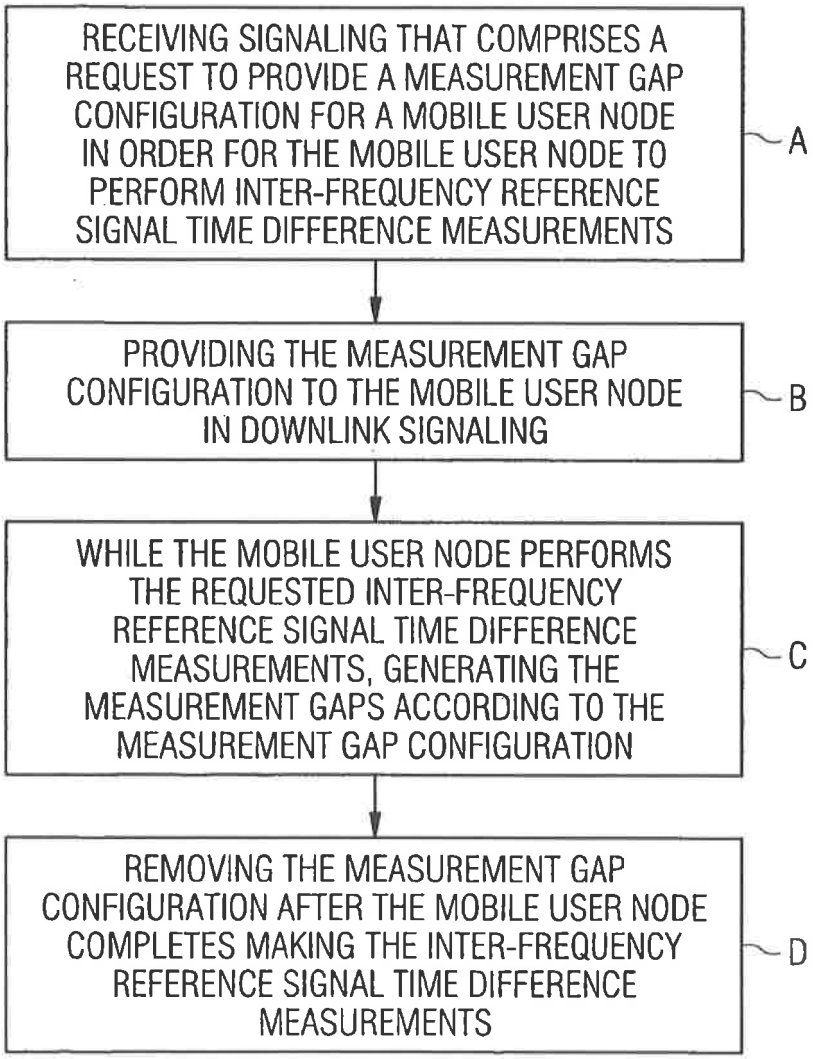

RECEIVING FROM A LOCATION SERVER AT A MOBILE USER NODE A REQUEST TO PERFORM INTER-FREQUENCY REFERENCE SIGNAL TIME DIFFERENCE MEASUREMENTS
A
RECEIVING FROM A SERVING ACCESS NODE A MEASUREMENT GAP CONFIGURATION
B
PERFORMING THE REQUESTED INTER-FREQUENCY REFERENCE SIGNAL TIME DIFFERENCE MEASUREMENTS DURING THE ASSIGNED MEASUREMENT GAPS
C
REPORTING THE RESULTS OF THE INTER-FREQUENCY REFERENCE SIGNAL TIME DIFFERENCE MEASUREMENTS TO THE LOCATION SERVER
D

FIG 9


RECEIVING SIGNALING THAT COMPRISES A REQUEST TO PROVIDE A MEASUREMENT GAP CONFIGURATION FOR A MOBILE USER NODE IN ORDER FOR THE MOBILE USER NODE TO PERFORM INTER-FREQUENCY REFERENCE SIGNAL TIME DIFFERENCE MEASUREMENTS
A
PROVIDING THE MEASUREMENT GAP CONFIGURATION TO THE MOBILE USER NODE IN DOWNLINK SIGNALING
B
WHILE THE MOBILE USER NODE PERFORMS THE REQUESTED INTER-FREQUENCY REFERENCE SIGNAL TIME DIFFERENCE MEASUREMENTS, GENERATING THE MEASUREMENT GAPS ACCORDING TO THE MEASUREMENT GAP CONFIGURATION
C
REMOVING THE MEASUREMENT GAP CONFIGURATION AFTER THE MOBILE USER NODE COMPLETES MAKING THE INTER-FREQUENCY REFERENCE SIGNAL TIME DIFFERENCE MEASUREMENTS
D