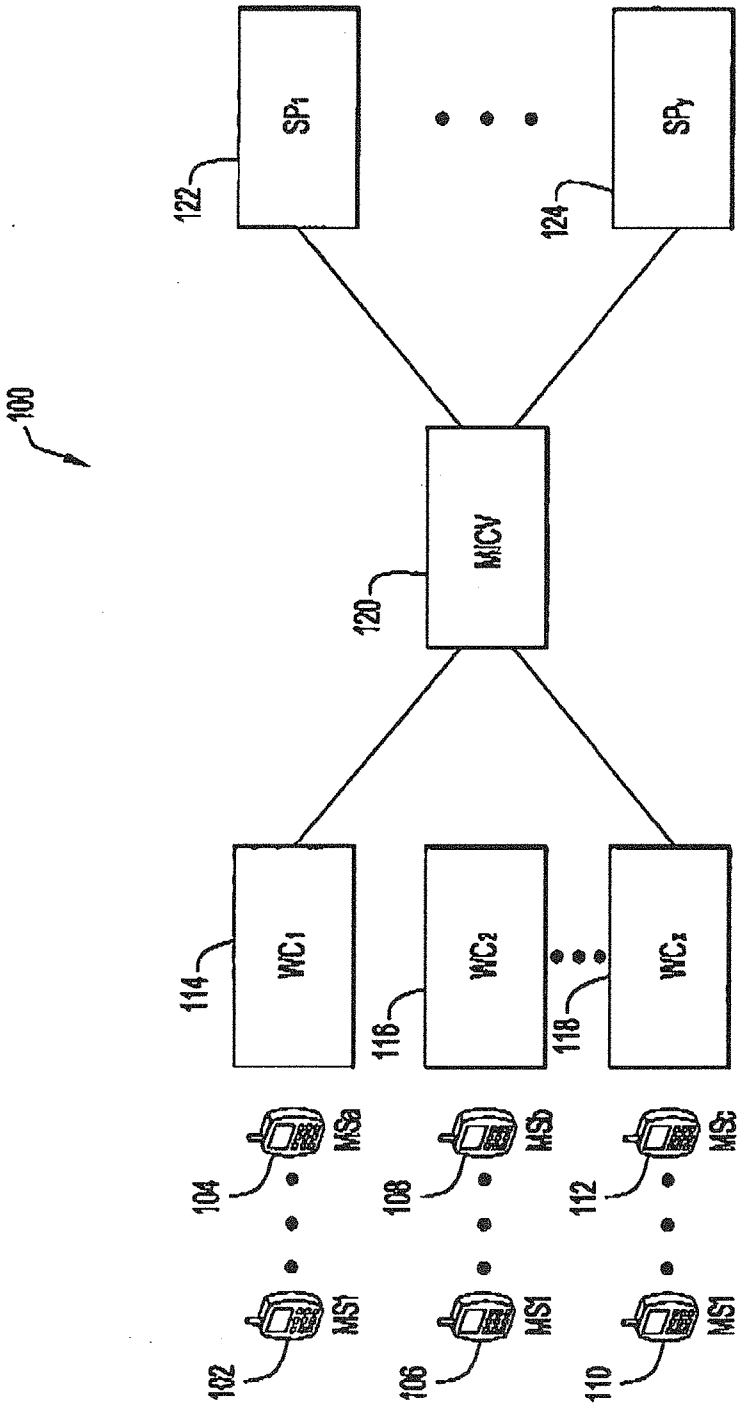

100
SP1
SPy
122
124
MICV
120
WC1
WC2
WCz
114
116
118
MSa
MSb
MSc
MS1
MS1
MS1
104
108
112
102
106
110

FIG.1

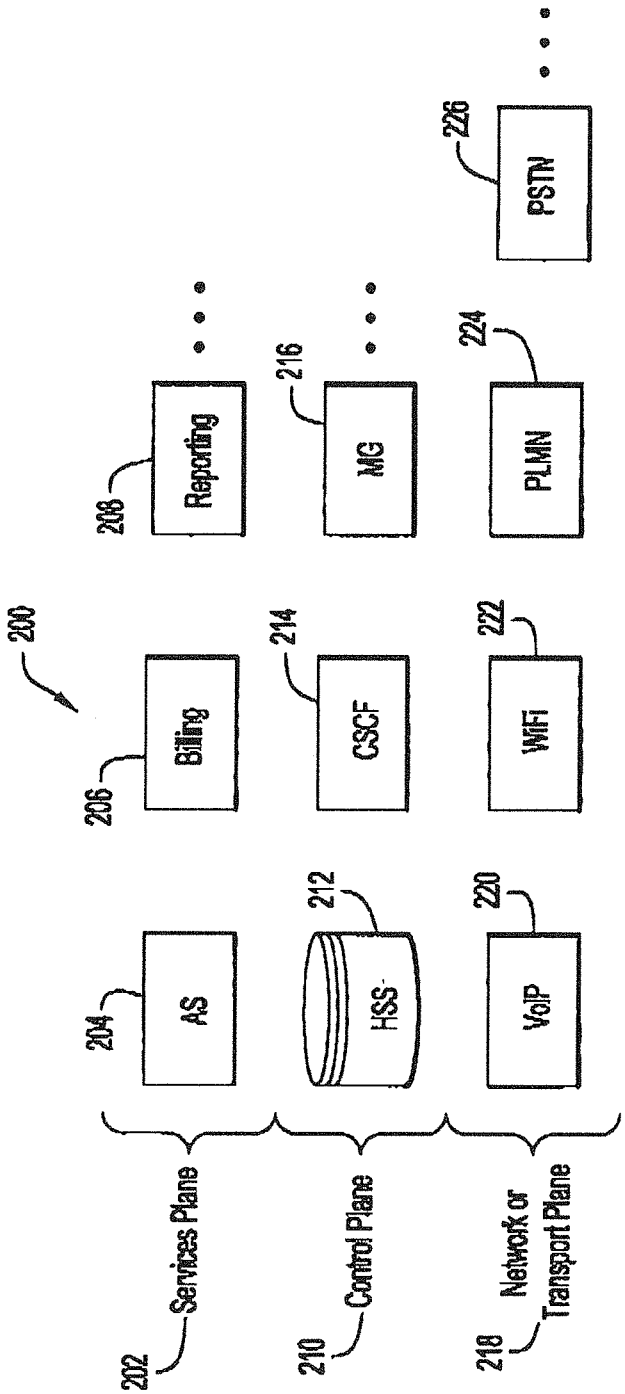

200
202
Services Plane
204
AS
206
Billing
208
Reporting
210
Control Plane
212
HSS
214
CSCF
216
MG
218
Network or
Transport Plane
220
VoIP
222
WiFi
224
PLMN
226
PSTN

FIG.2

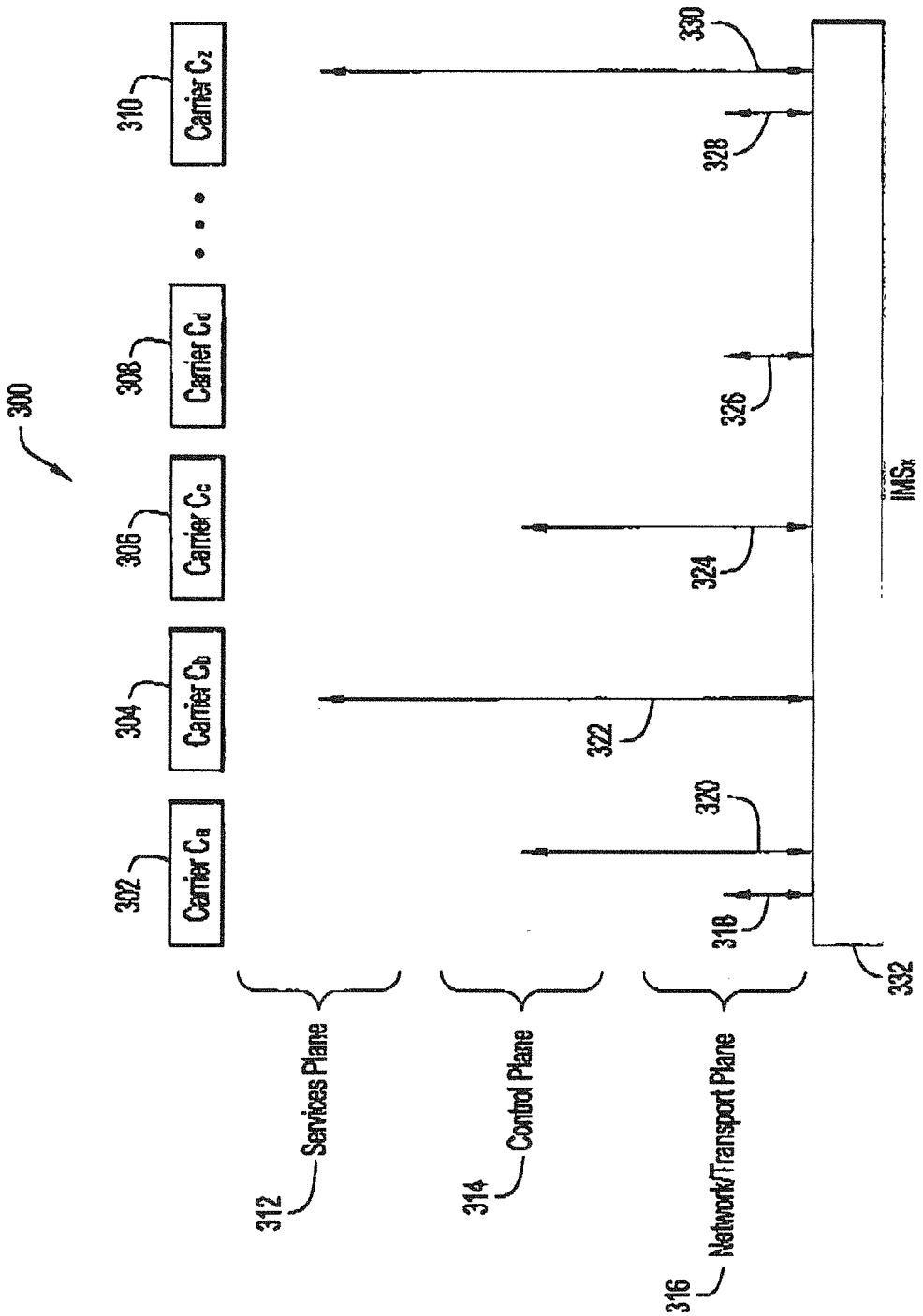

300
302
Carrier Ca
304
Carrier Cb
306
Carrier Cc
308
Carrier Cd
310
Carrier Cz
312
Services Plane
314
Control Plane
316
Network/Transport Plane
318
320
322
324
326
328
330
332
IMSx

FIG.3

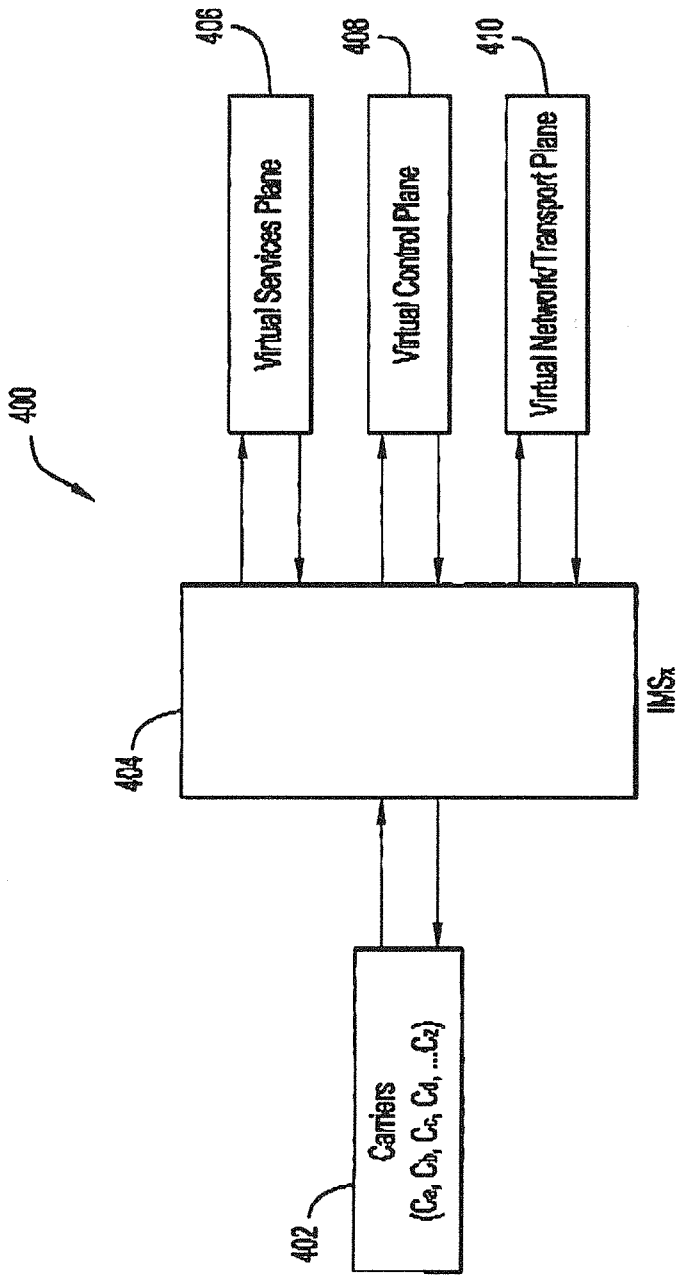

400
406
Virtual Services Plane
408
Virtual Control Plane
410
Virtual Network/Transport Plane
404
IMSx
402
Carriers
(Ca, Cb, Cc, Cd, ...Cz)

FIG.4

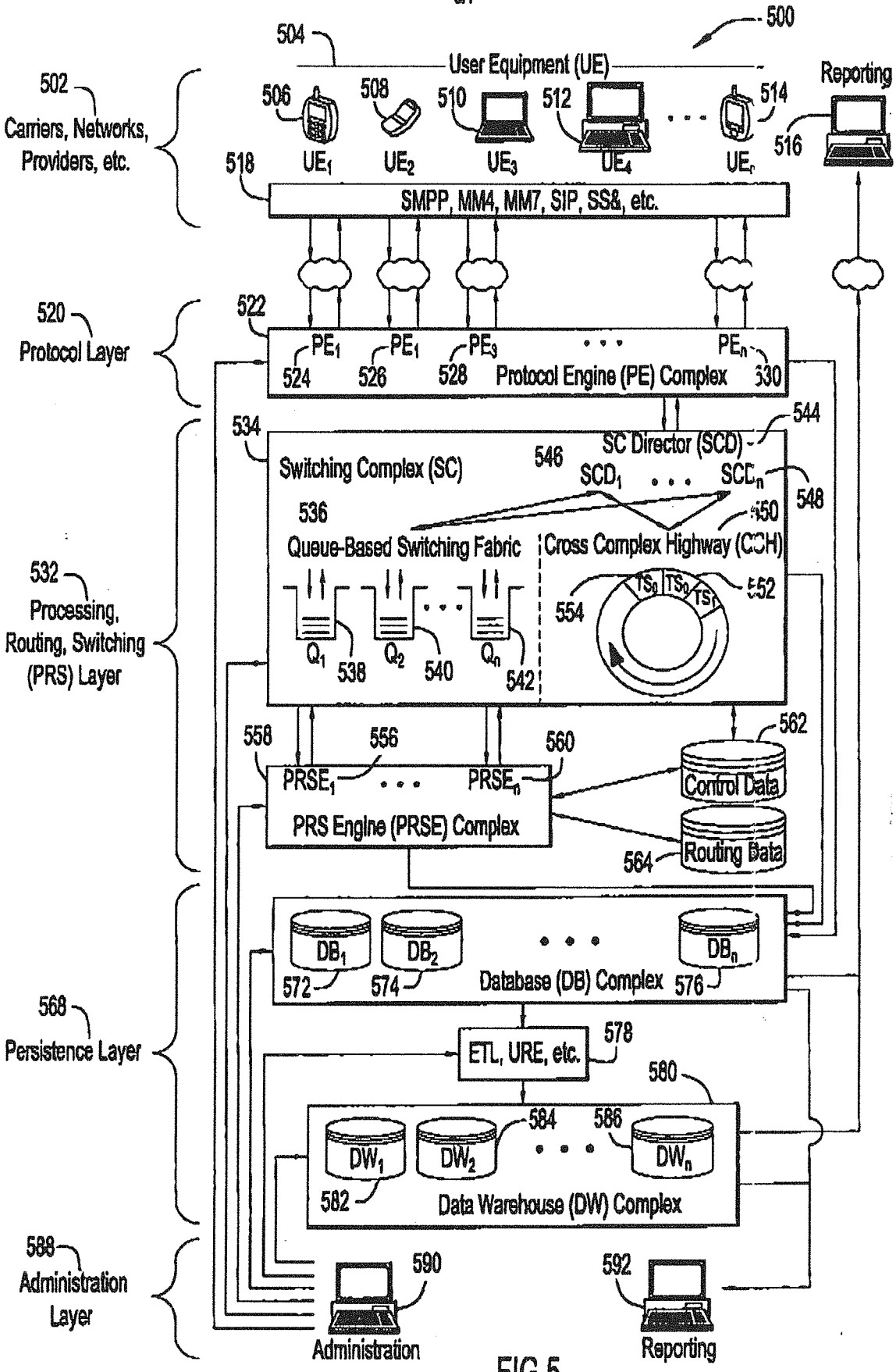

500
504
User Equipment (UE)
502
Carriers, Networks, Providers, etc.
506
508
510
512
514
UE1
UE2
UE3
UE4
UEn
Reporting
516
518
SMPP, MM4, MM7, SIP, SS&, etc.
520
Protocol Layer
522
PE1
PE1
PE3
PEn
524
526
528
Protocol Engine (PE) Complex
530
544
SC Director (SCD)
534
Switching Complex (SC)
546
SCD1
SCDn
548
536
550
Queue-Based Switching Fabric
Cross Complex Highway (CCH)
532
Processing, Routing, Switching (PRS) Layer
552
554
TS0
TS0
TS1
Q1
Q2
Qn
538
540
542
558
556
560
562
PRSE1
PRSEn
PRS Engine (PRSE) Complex
Control Data
Routing Data
564
568
Persistence Layer
DB1
DB2
DBn
572
574
Database (DB) Complex
576
578
ETL, URE, etc.
580
584
586
DW1
DW2
DWn
582
Data Warehouse (DW) Complex
588
Administration Layer
590
592
Administration
Reporting

FIG.5

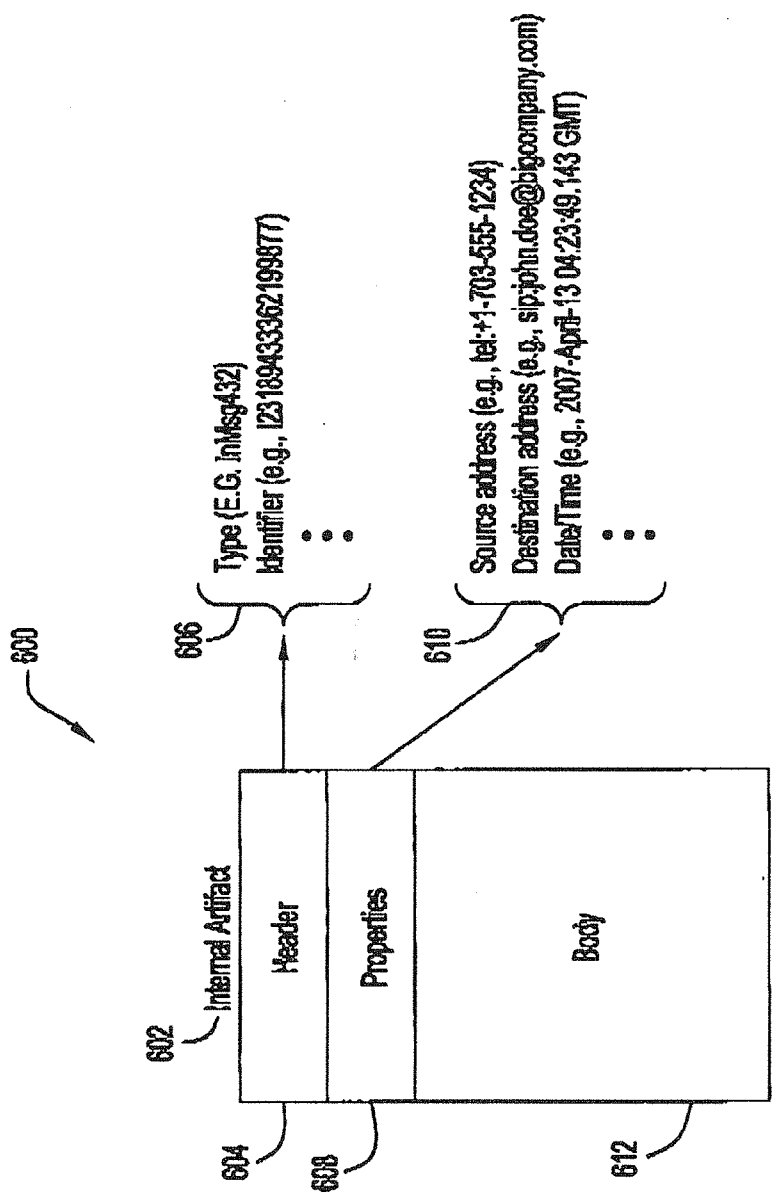

600
602
Internal Artifact
Header
Properties
Body
604
608
612
606
Type (E.G. InMsg432)
Identifier (e.g., 12318943336219987 7)
610
Source address (e.g., tel:+1-703-555-1234)
Destination address (e.g., sip:john.doe@bigcompany.com)
DateTime (e.g., 2007-April-13 04:23:49.143 GMT)

FIG.6

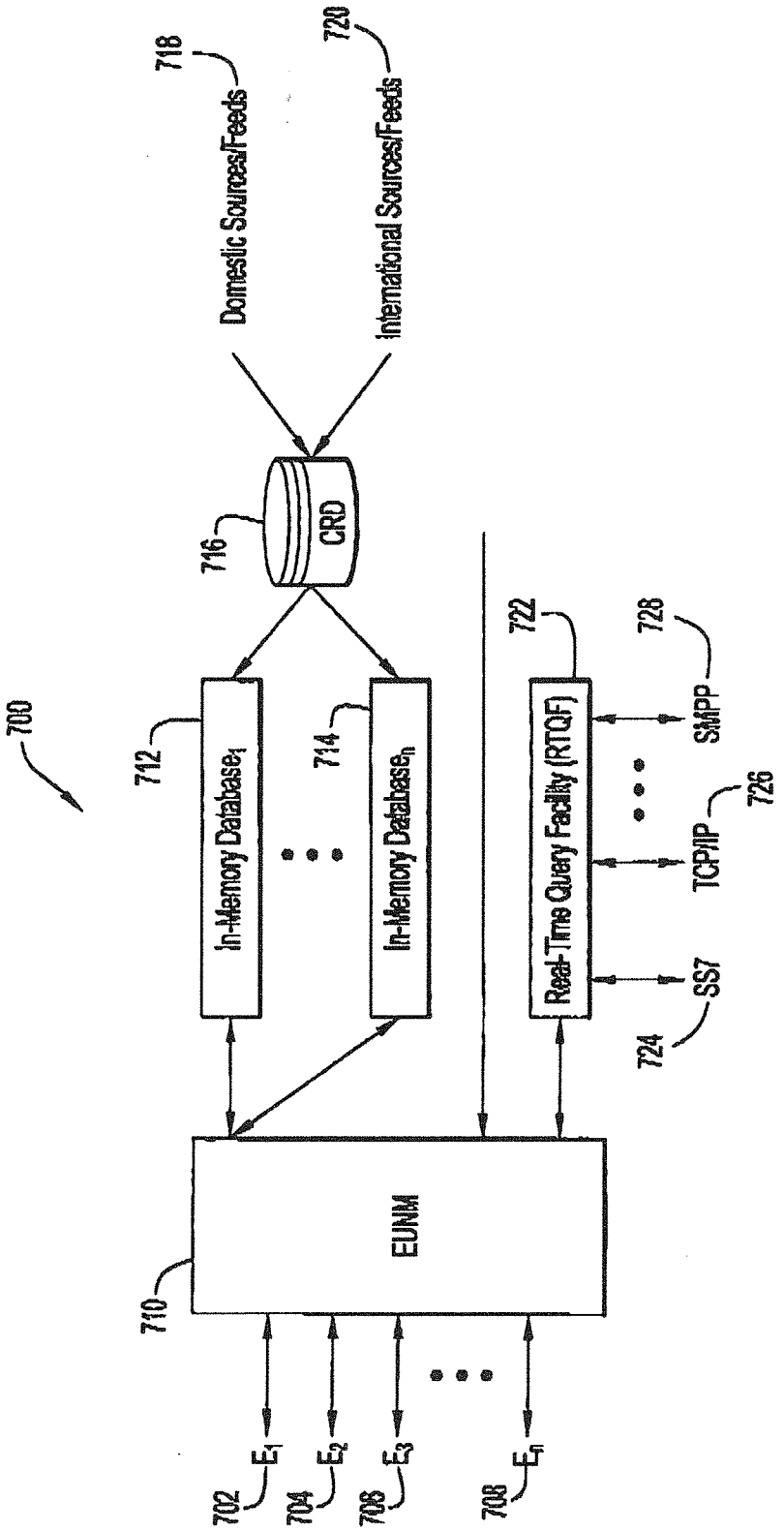

700
718
Domestic Sources/Feeds
720
International Sources/Feeds
716
CRD
712
In-Memory Database1
714
In-Memory Databasen
722
Real-Time Query Facility (RTQF)
728
SMPP
726
TCP/IP
SS7
724
710
EUNM
702
E1
704
E2
706
E3
708
En

FIG.7