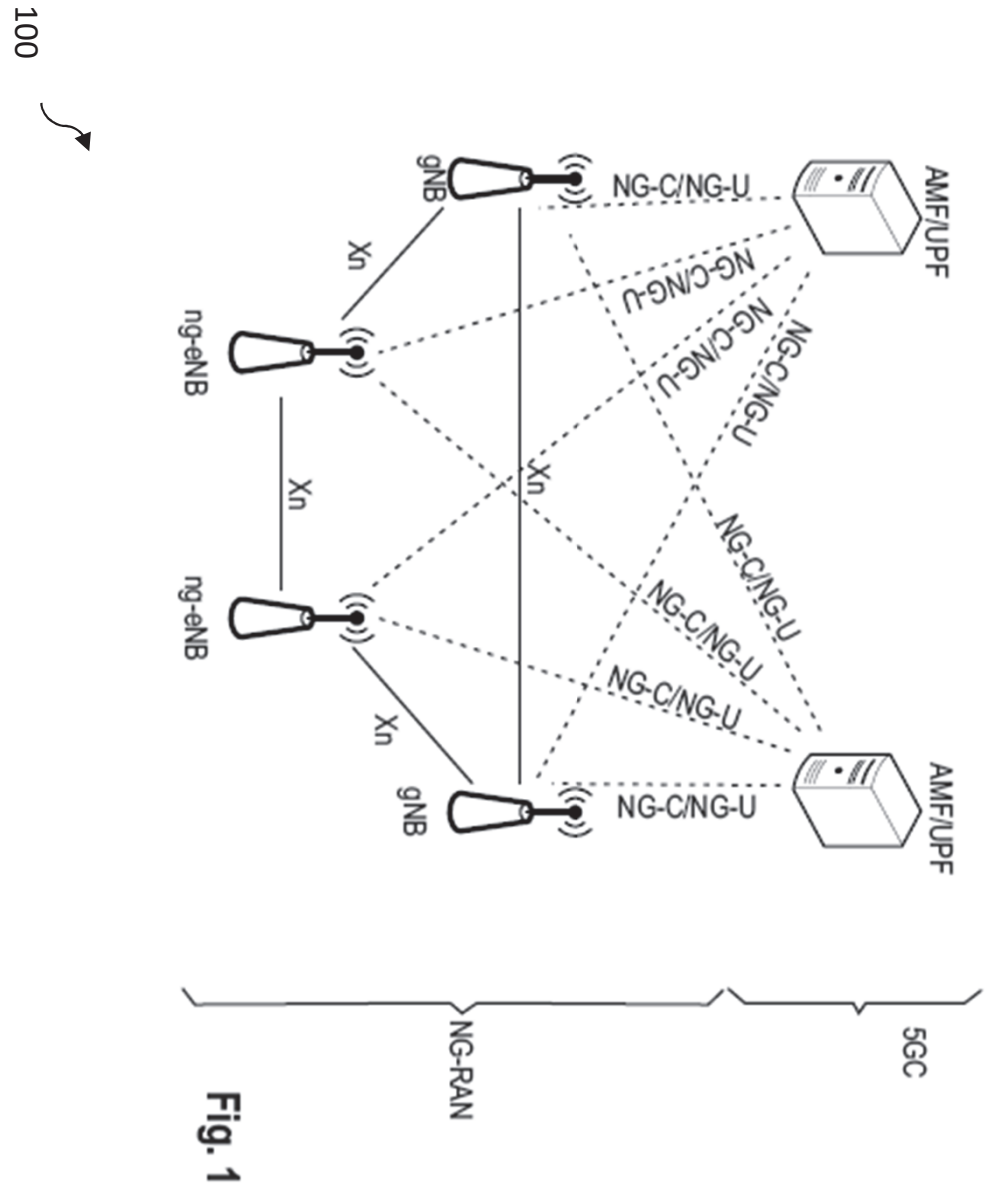

100
gNB
NG-C/NG-U
AMF/UPF
Xn
ng-eNB
NG-C/NG-U
NG-C/NG-U
NG-C/NG-U
Xn
Xn
NG-C/NG-U
ng-eNB
NG-C/NG-U
NG-C/NG-U
Xn
gNB
NG-C/NG-U
AMF/UPF
NG-RAN
5GC

Fig. 1

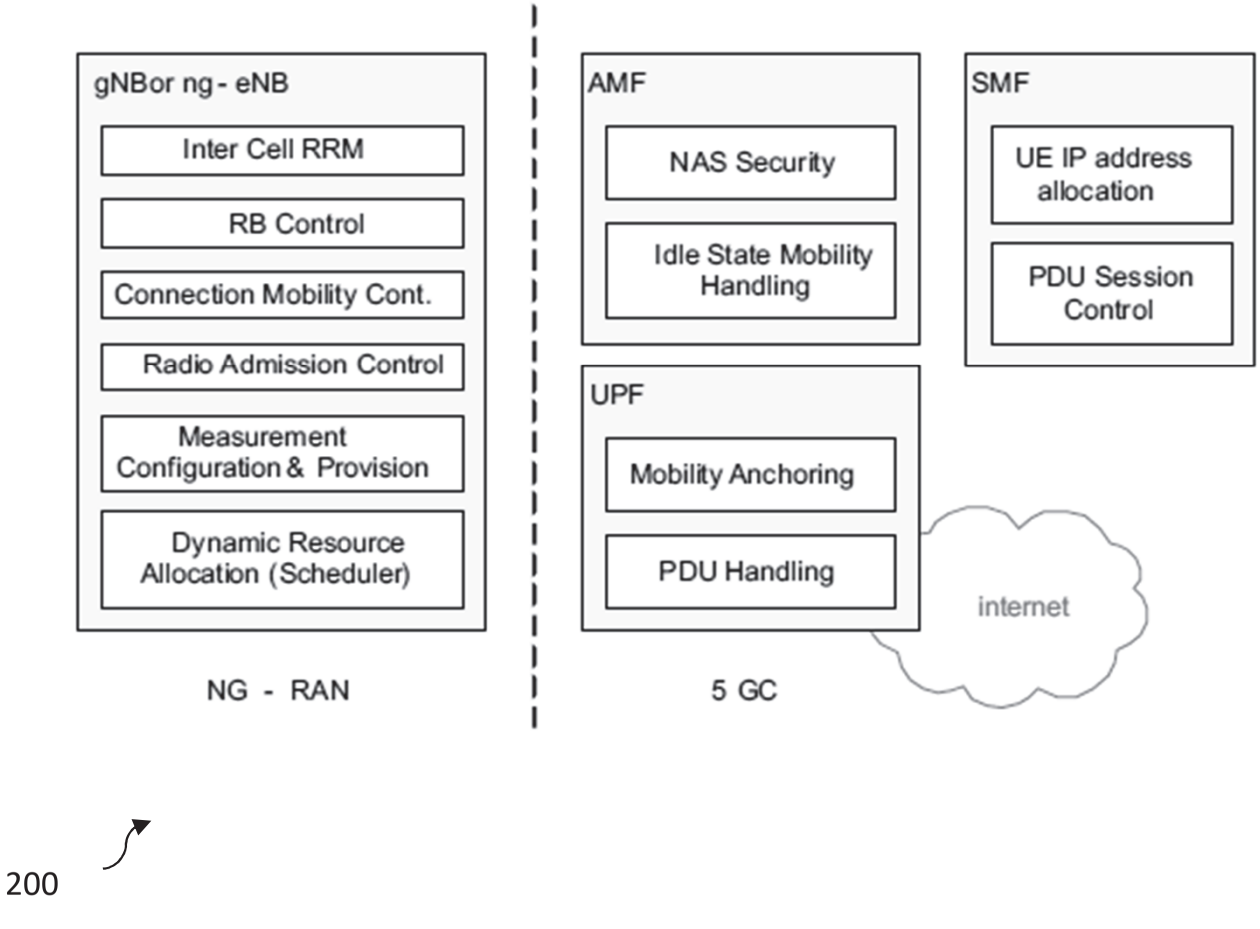

gNBor ng - eNB
Inter Cell RRM
RB Control
Connection Mobility Cont.
Radio Admission Control
Measurement Configuration & Provision
Dynamic Resource Allocation (Scheduler)
NG - RAN
AMF
NAS Security
Idle State Mobility Handling
UPF
Mobility Anchoring
PDU Handling
5 GC
SMF
UE IP address allocation
PDU Session Control
internet
200

Fig. 2

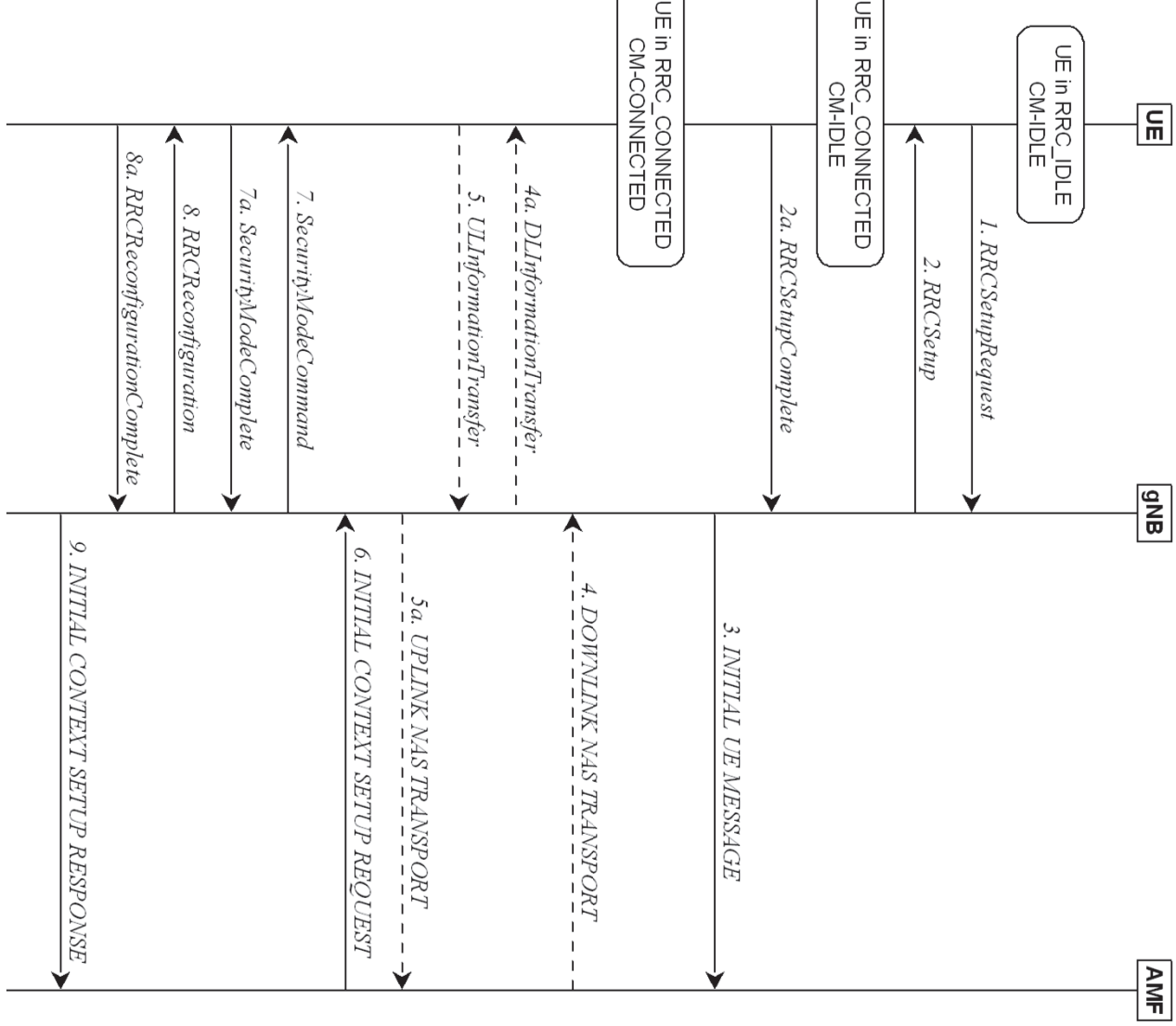

300
UE
gNB
AMF
UE in RRC_IDLE
CM-IDLE
1. RRCSetupRequest
2. RRCSetup
UE in RRC_CONNECTED
CM-IDLE
2a. RRCSetupComplete
3. INITIAL UE MESSAGE
UE in RRC_CONNECTED
CM-CONNECTED
4a. DLInformationTransfer
4. DOWNLINK NAS TRANSPORT
5. ULInformationTransfer
5a. UPLINK NAS TRANSPORT
6. INITIAL CONTEXT SETUP REQUEST
7. SecurityModeCommand
7a. SecurityModeComplete
8. RRCReconfiguration
8a. RRCReconfigurationComplete
9. INITIAL CONTEXT SETUP RESPONSE

Fig. 3

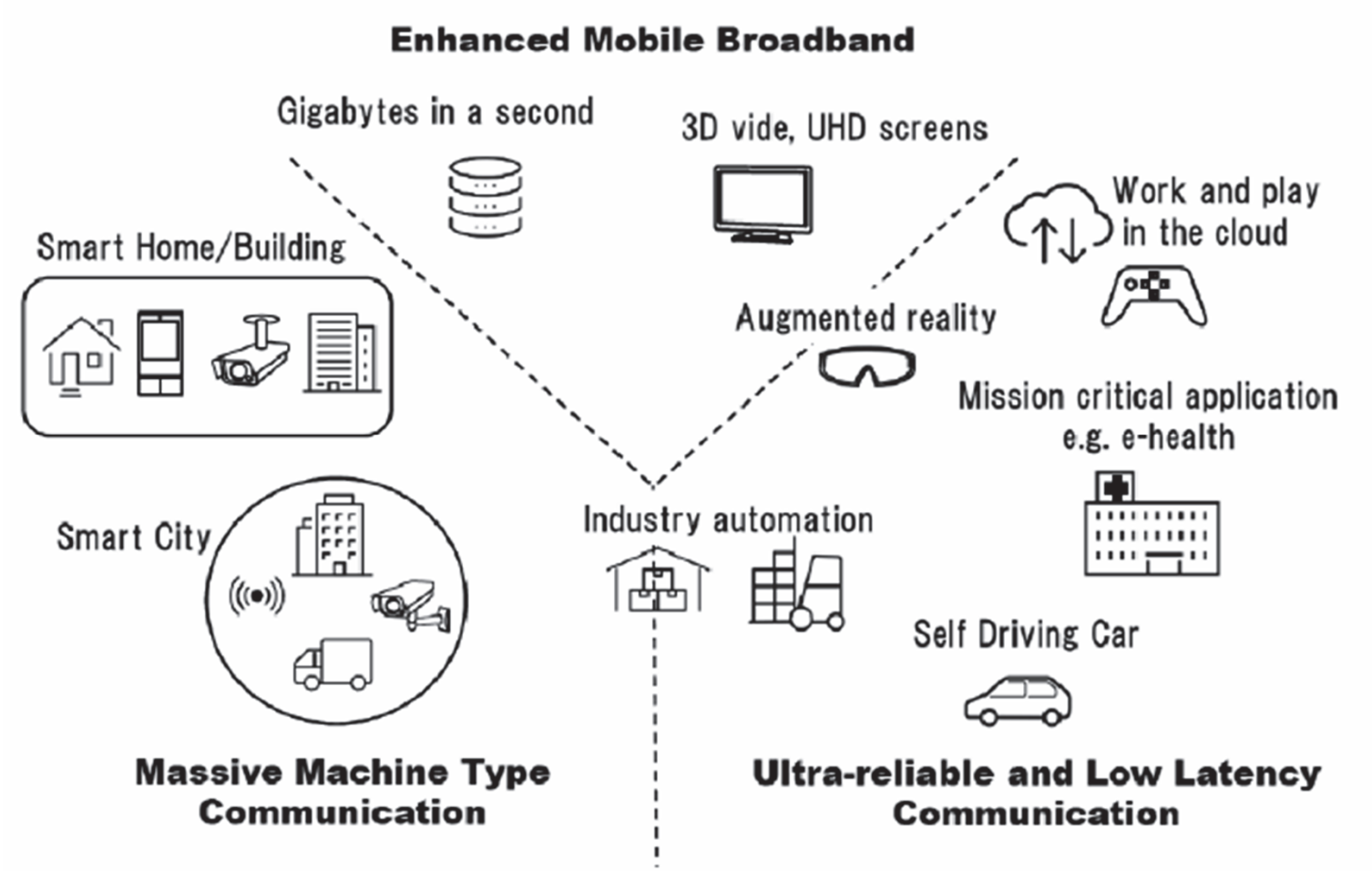

Enhanced Mobile Broadband
Gigabytes in a second
3D vide, UHD screens
Work and play in the cloud
Smart Home/Building
Augmented reality
Mission critical application e.g. e-health
Smart City
Industry automation
Self Driving Car
Massive Machine Type Communication
Ultra-reliable and Low Latency Communication
400

Fig. 4

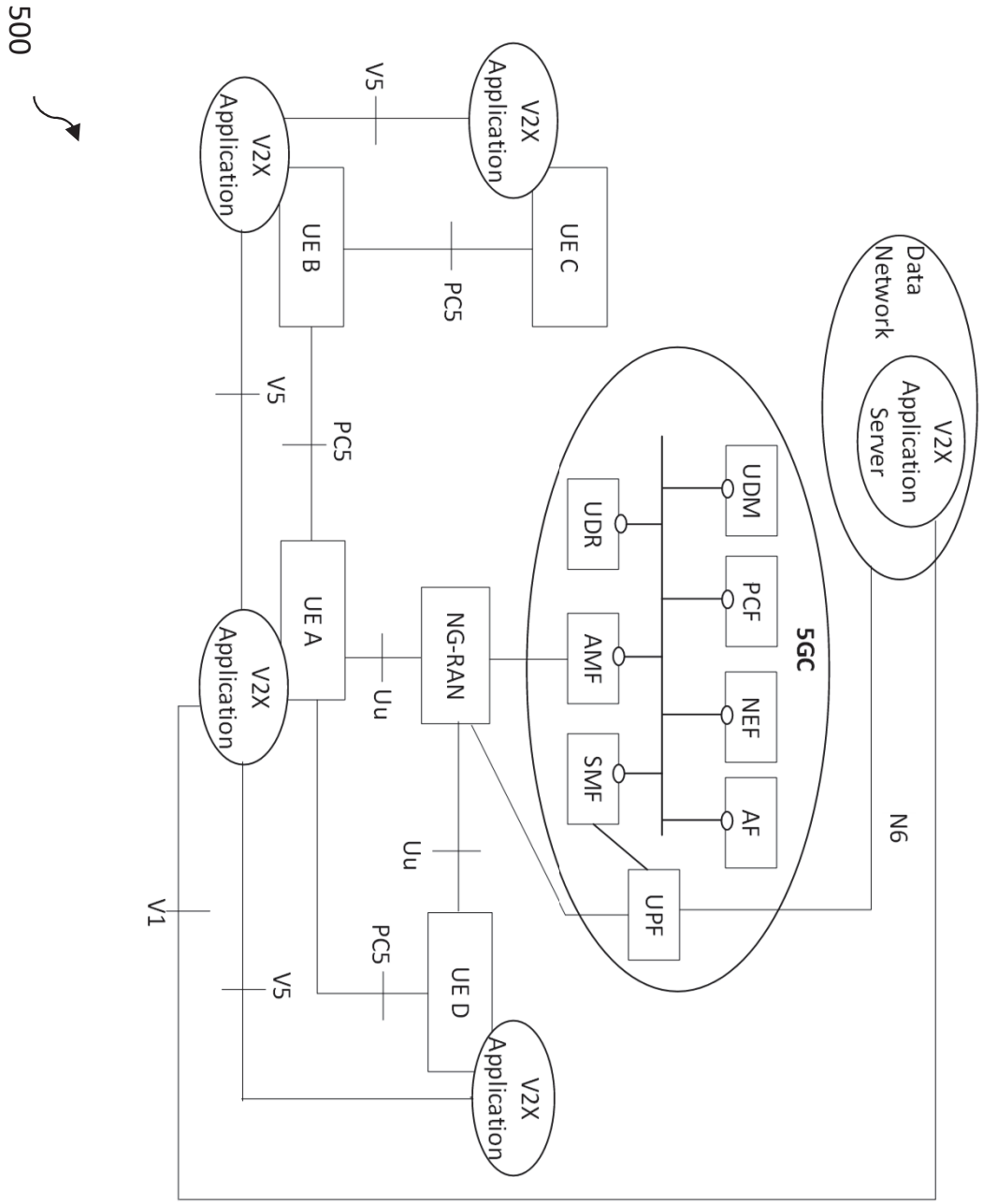

500
Data Network
V2X Application Server
N6
5GC
UDM
PCF
NEF
AF
UDR
AMF
SMF
UPF
NG-RAN
Uu
Uu
V2X Application
V2X Application
V2X Application
V2X Application
UE A
UE B
UE C
UE D
V5
V5
V5
PC5
PC5
PC5
V1

Fig. 5

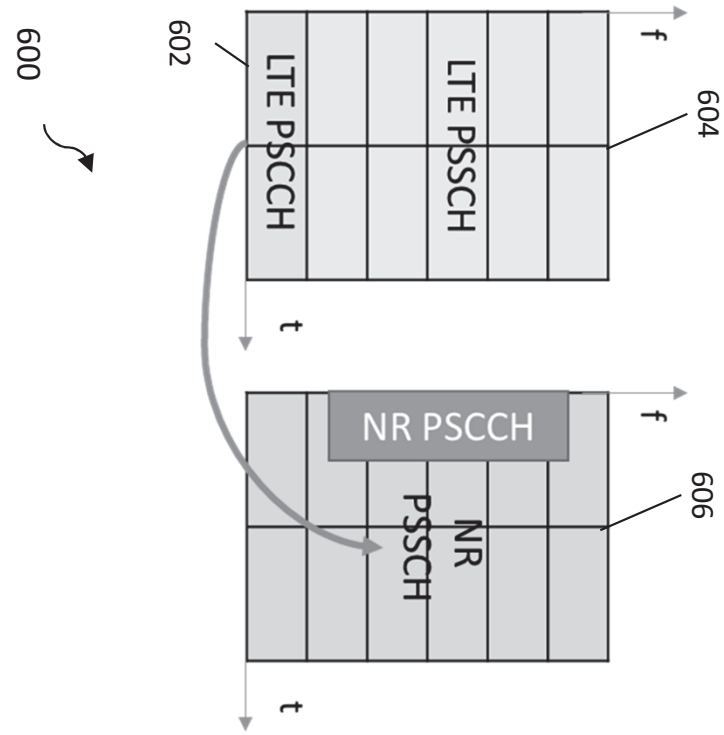

600
602
LTE PSCCH
LTE PSSCH
f
t
604
NR PSCCH
NR PSSCH
606

Fig. 6A

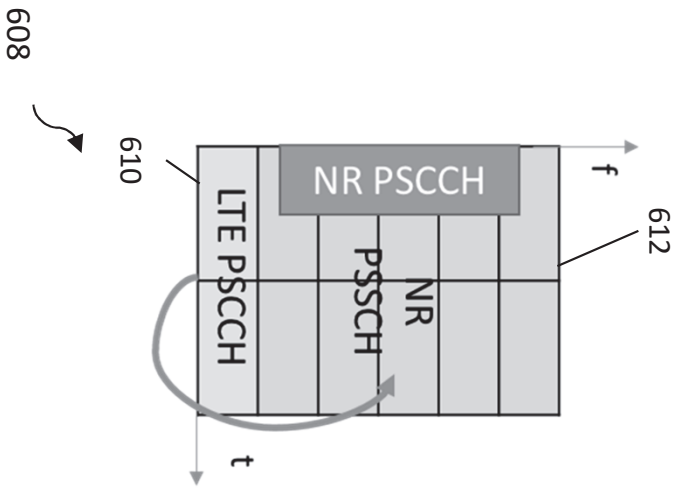

608
610
NR PSCCH
LTE PSCCH
NR PSSCH
f
t
612

Fig. 6B

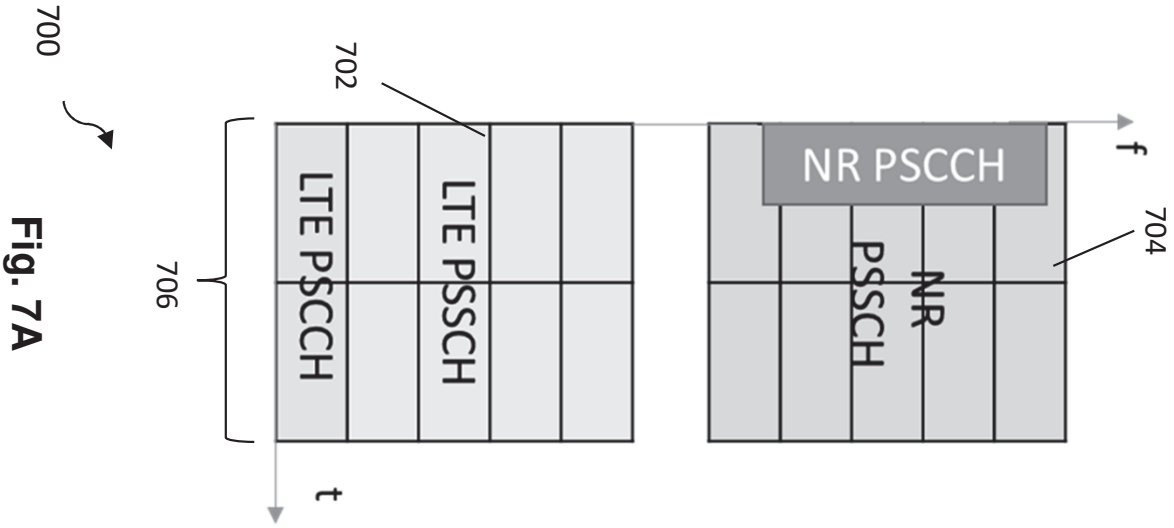

700
702
LTE PSCCH
LTE PSSCH
NR PSCCH
NR PSSCH
704
706
f
t

Fig. 7A

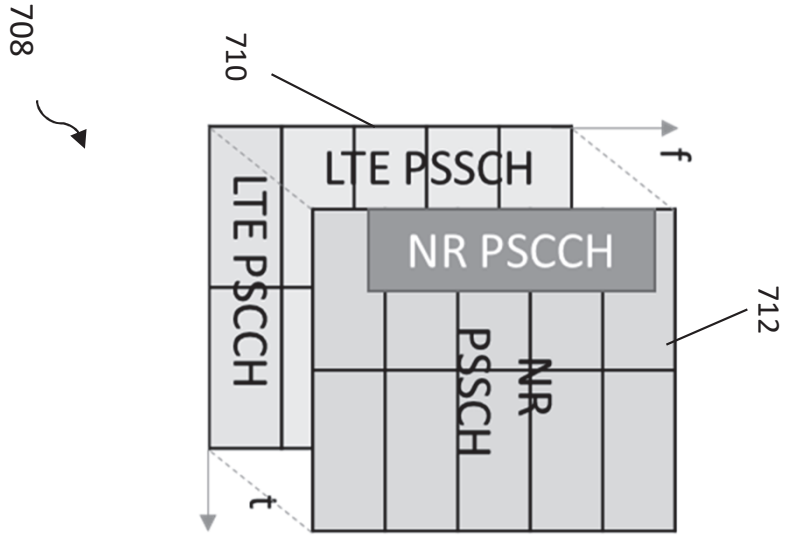

708
710
LTE PSSCH
LTE PSCCH
NR PSCCH
NR PSSCH
712
f
t

Fig. 7B

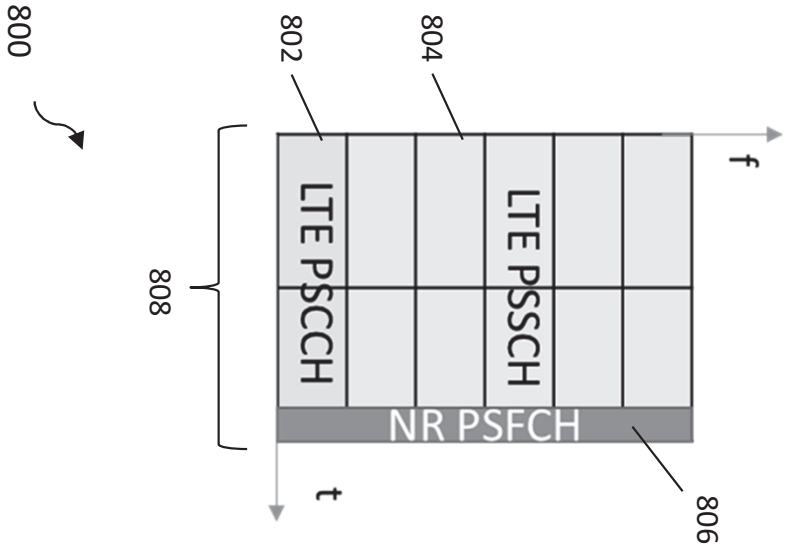

800
802
804
LTE PSCCH
LTE PSSCH
NR PSFCH
808
806
f
t

Fig. 8A

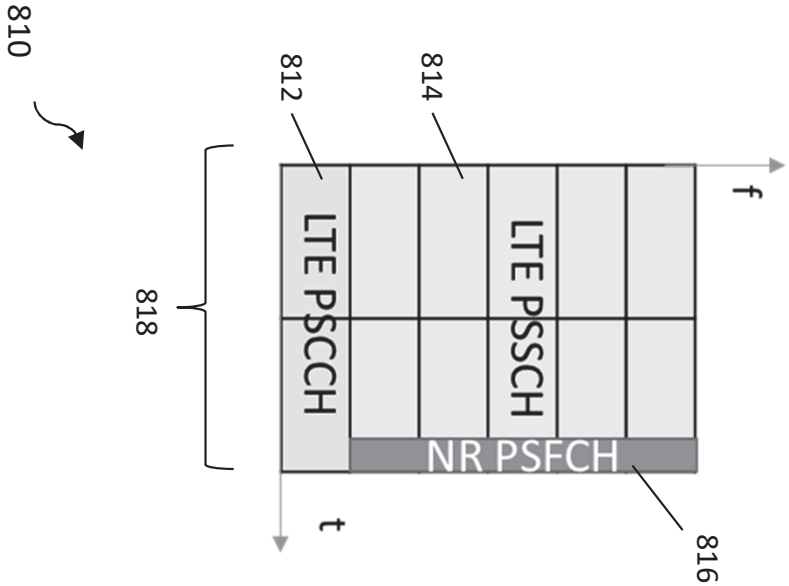

810
812
814
LTE PSCCH
LTE PSSCH
NR PSFCH
818
816
f
t

Fig. 8B

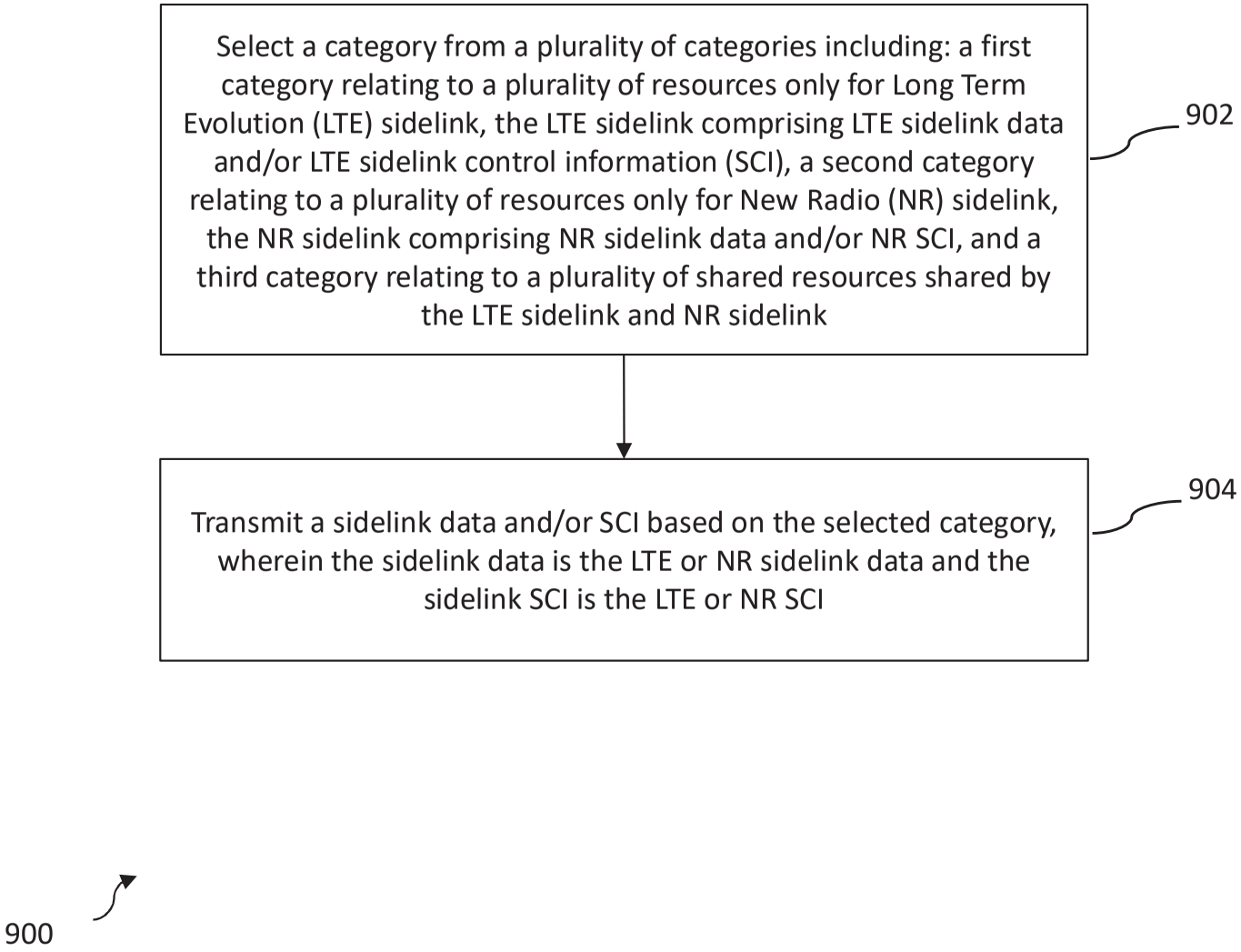

Select a category from a plurality of categories including: a first category relating to a plurality of resources only for Long Term Evolution (LTE) sidelink, the LTE sidelink comprising LTE sidelink data and/or LTE sidelink control information (SCI), a second category relating to a plurality of resources only for New Radio (NR) sidelink, the NR sidelink comprising NR sidelink data and/or NR SCI, and a third category relating to a plurality of shared resources shared by the LTE sidelink and NR sidelink
902
Transmit a sidelink data and/or SCI based on the selected category, wherein the sidelink data is the LTE or NR sidelink data and the sidelink SCI is the LTE or NR SCI
904
900

Fig. 9

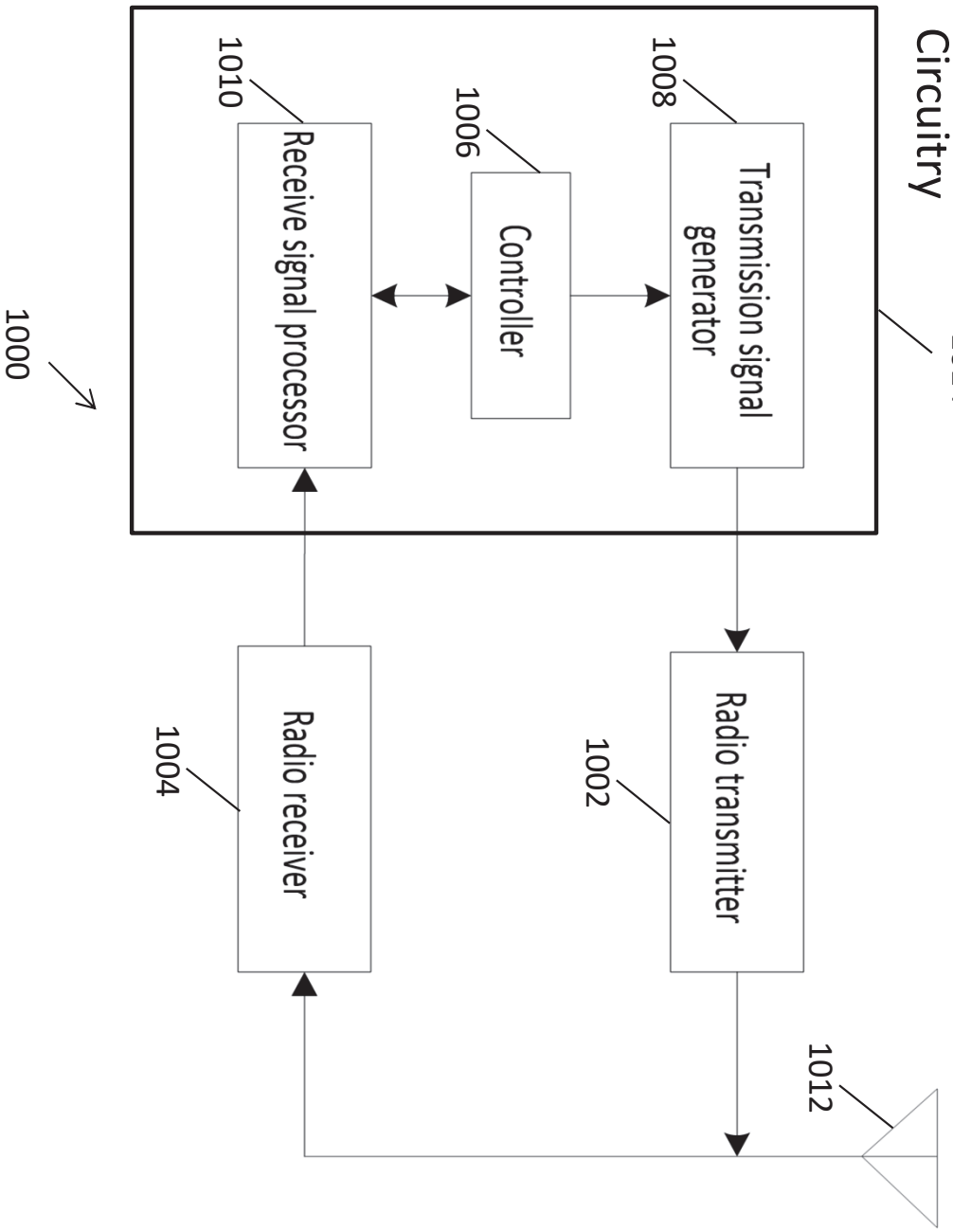

Circuitry
1014
Transmission signal generator
1008
Controller
1006
Receive signal processor
1010
1000
Radio transmitter
1002
Radio receiver
1004
1012

Fig. 10