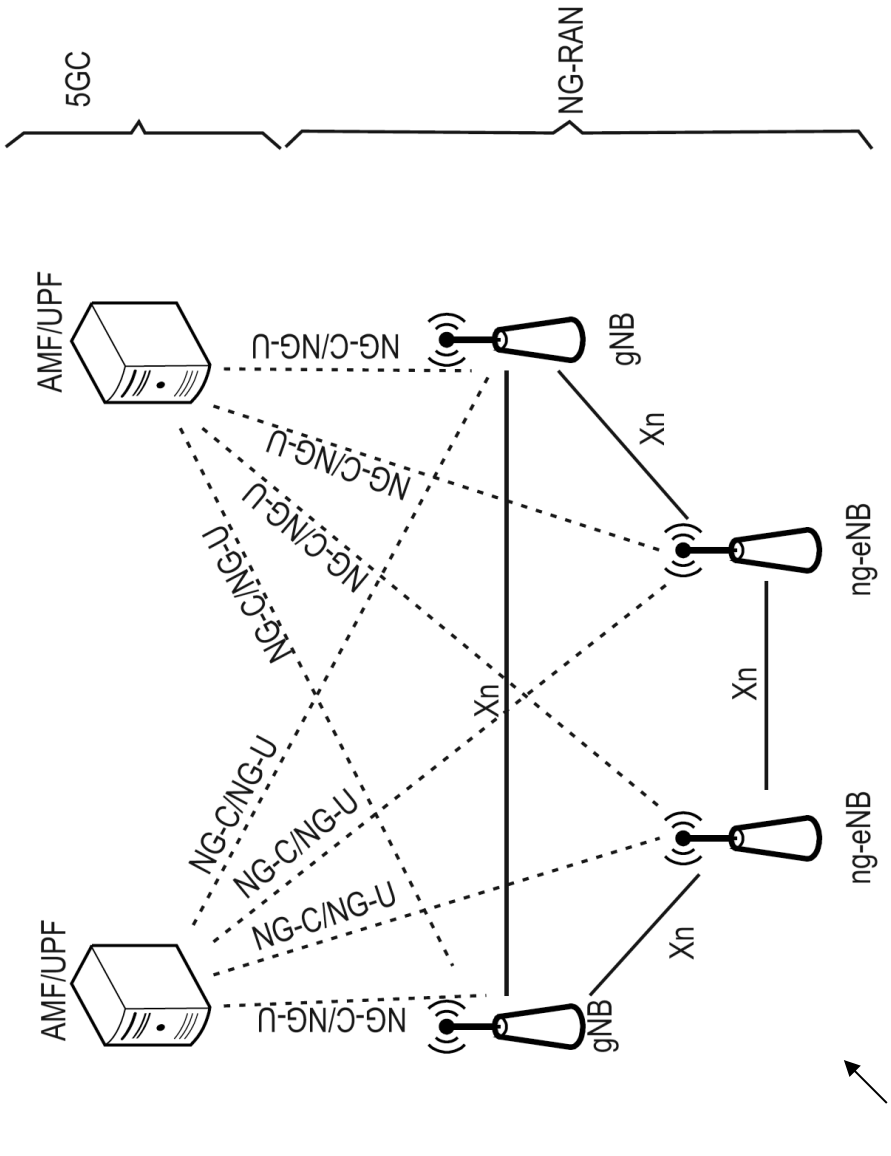

5GC
NG-RAN
AMF/UPF
AMF/UPF
NG-C/NG-U
NG-C/NG-U
NG-C/NG-U
NG-C/NG-U
NG-C/NG-U
NG-C/NG-U
NG-C/NG-U
gNB
gNB
ng-eNB
ng-eNB
Xn
Xn
Xn
Xn
100

Figure 1

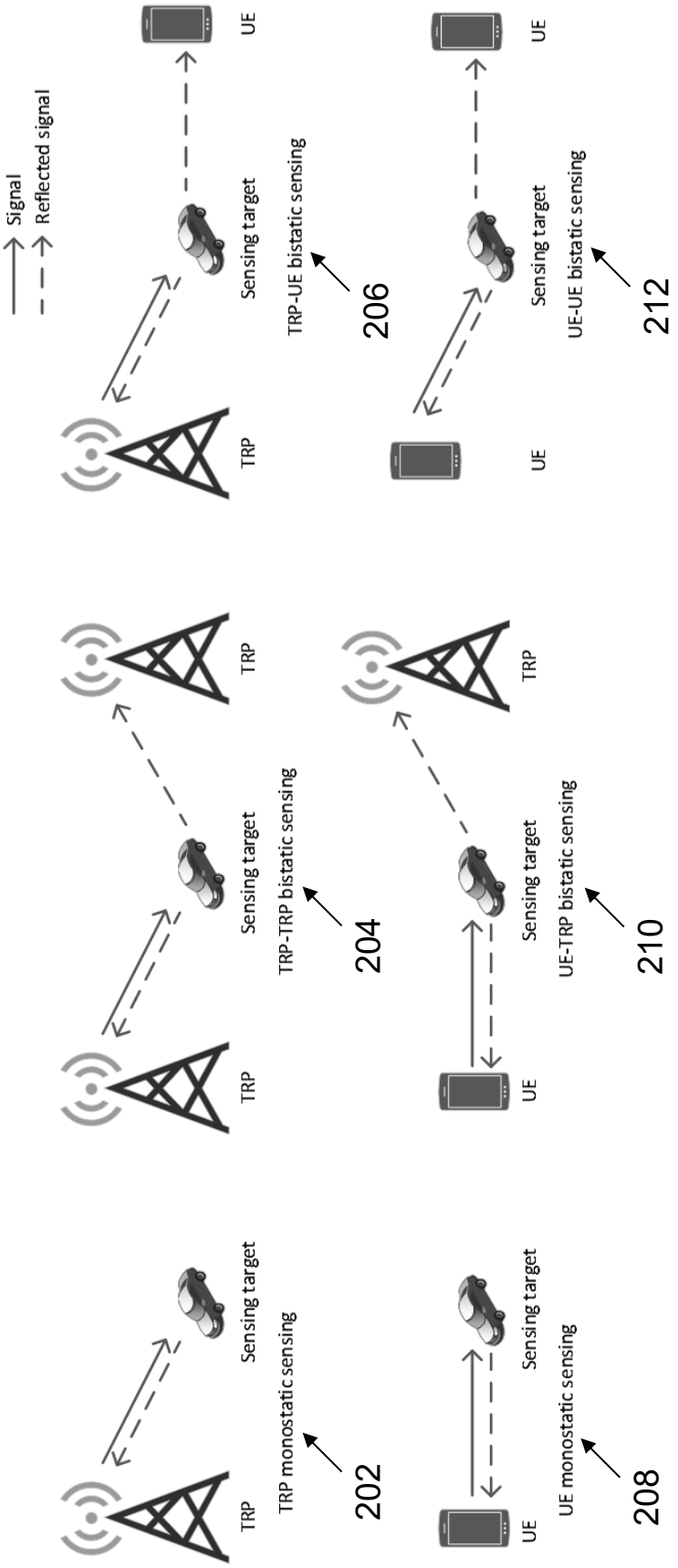

Signal
Reflected signal
TRP
Sensing target
UE
TRP monostatic sensing
202
TRP-TRP bistatic sensing
204
TRP-UE bistatic sensing
206
UE monostatic sensing
208
UE-TRP bistatic sensing
210
UE-UE bistatic sensing
212

Figure 2

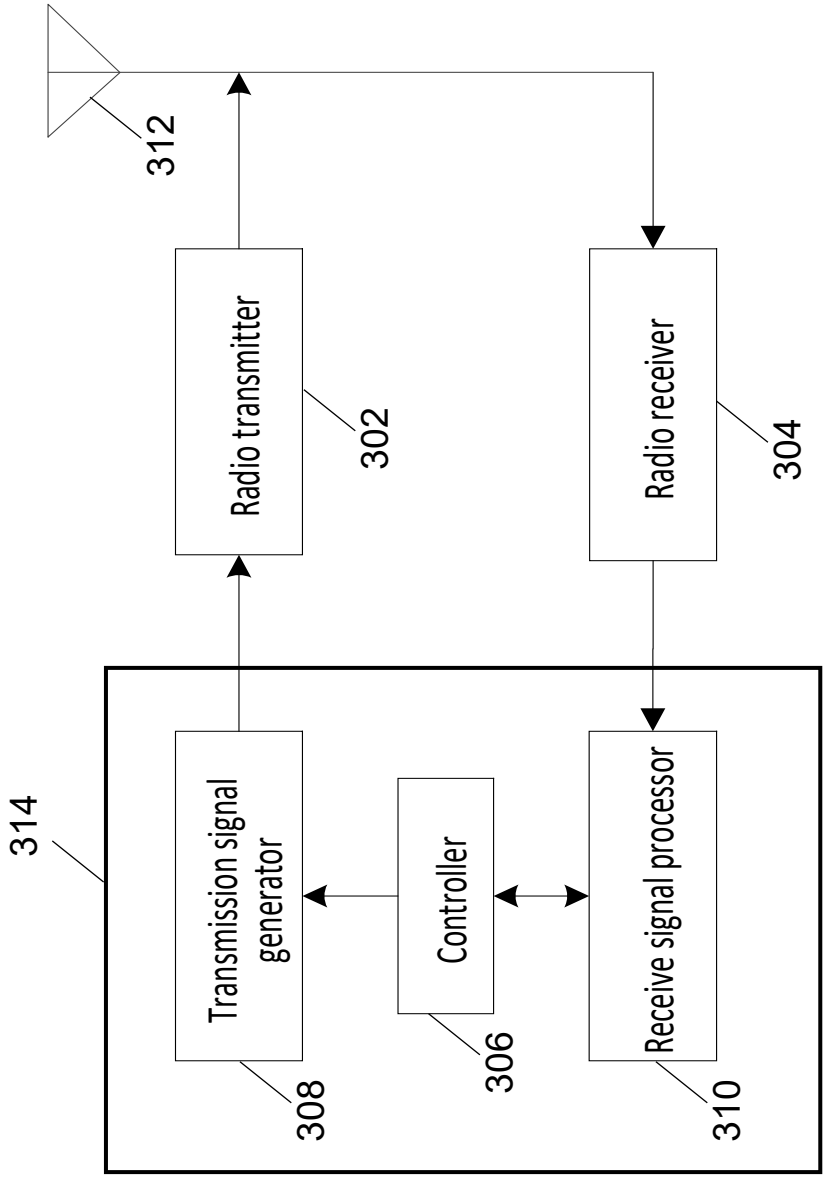

312
Radio transmitter
302
Radio receiver
304
314
Transmission signal generator
Controller
Receive signal processor
308
306
310
300

Figure 3

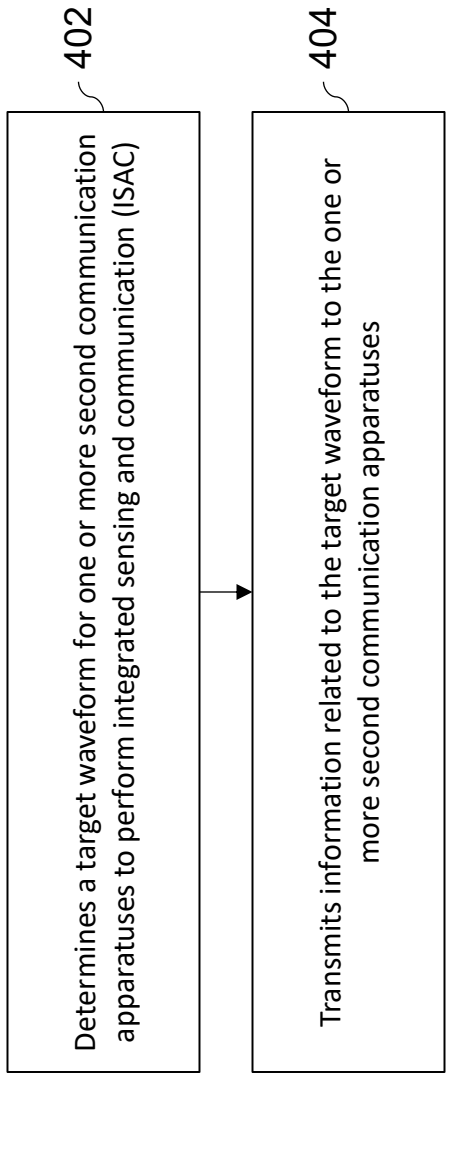

402
Determines a target waveform for one or more second communication apparatuses to perform integrated sensing and communication (ISAC)
404
Transmits information related to the target waveform to the one or more second communication apparatuses
400

Figure 4

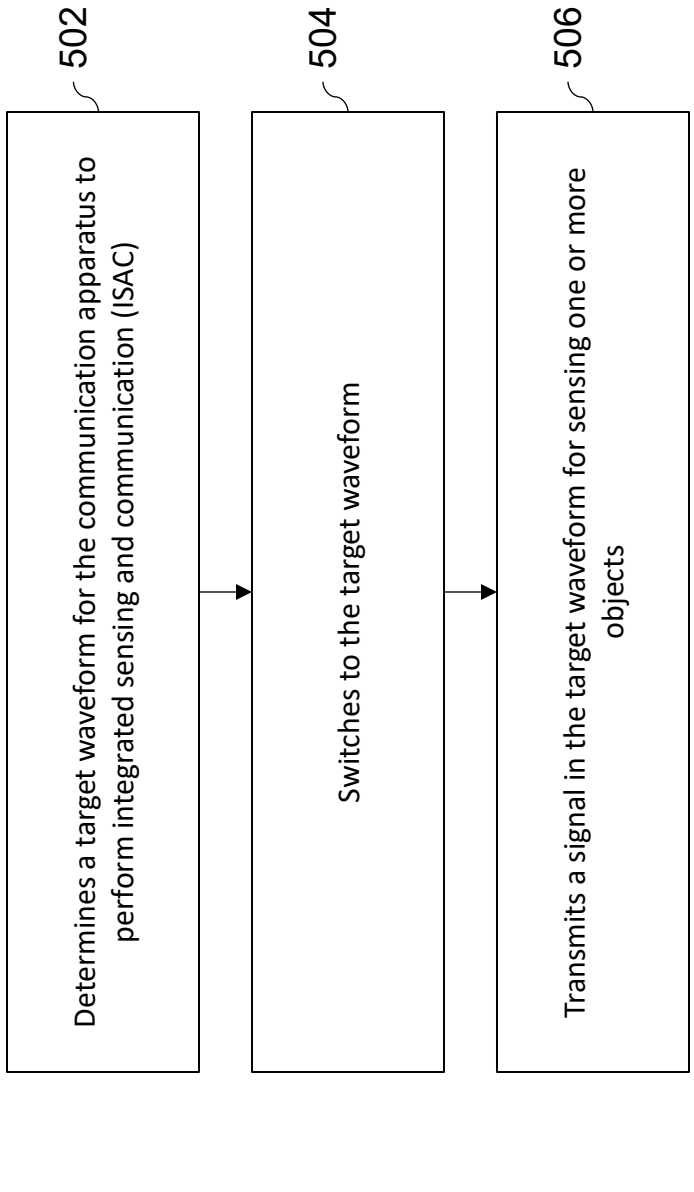

502
Determines a target waveform for the communication apparatus to perform integrated sensing and communication (ISAC)
504
Switches to the target waveform
506
Transmits a signal in the target waveform for sensing one or more objects
500

Figure 5

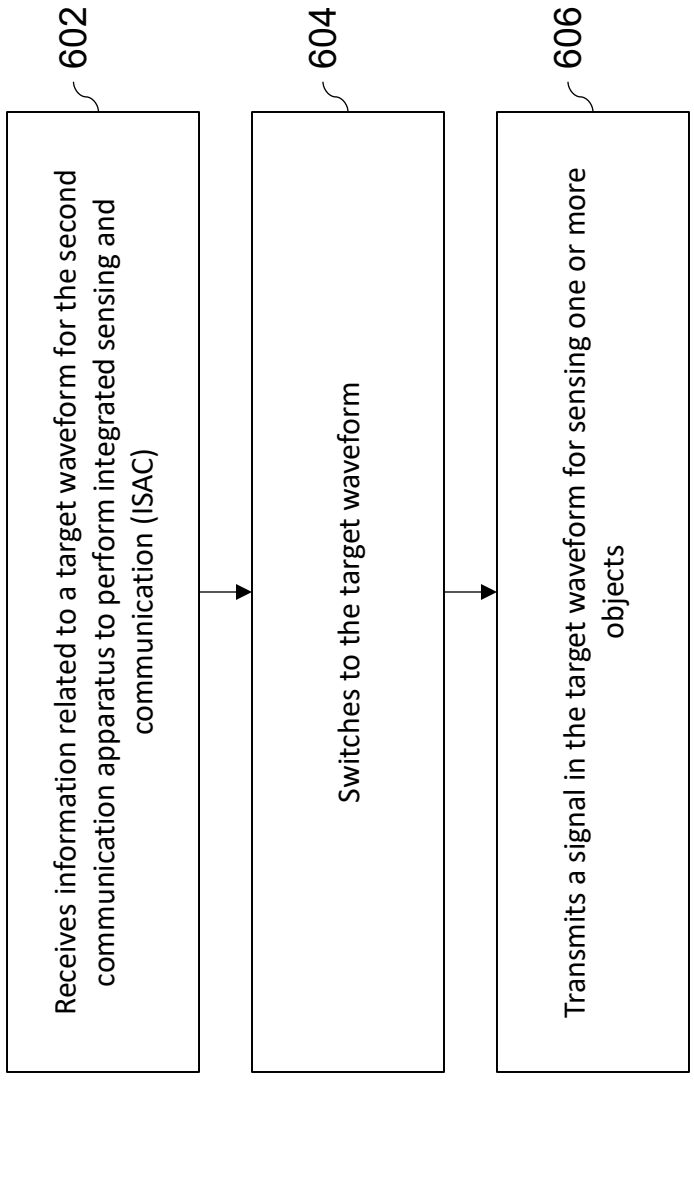

602
604
606
Receives information related to a target waveform for the second communication apparatus to perform integrated sensing and communication (ISAC)
Switches to the target waveform
Transmits a signal in the target waveform for sensing one or more objects
600

Figure 6

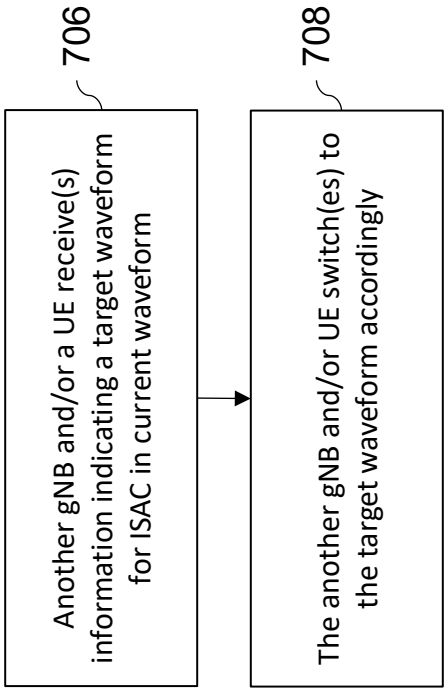


Figure 7B

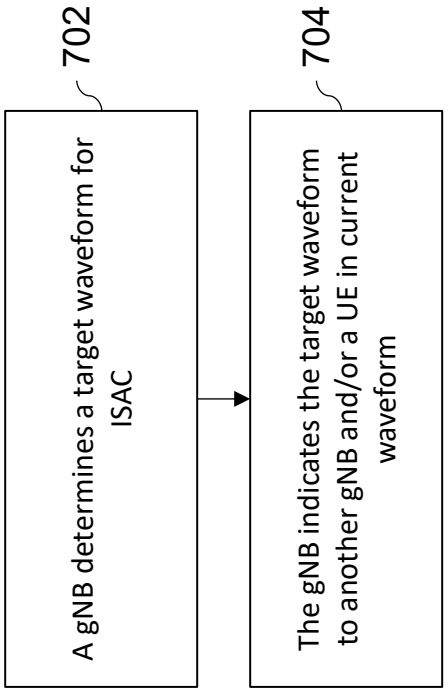


Figure 7A

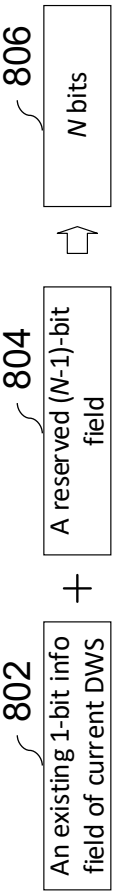

802
An existing 1-bit info field of current DWS
+
804
A reserved (N-1)-bit field
806
N bits

Figure 8

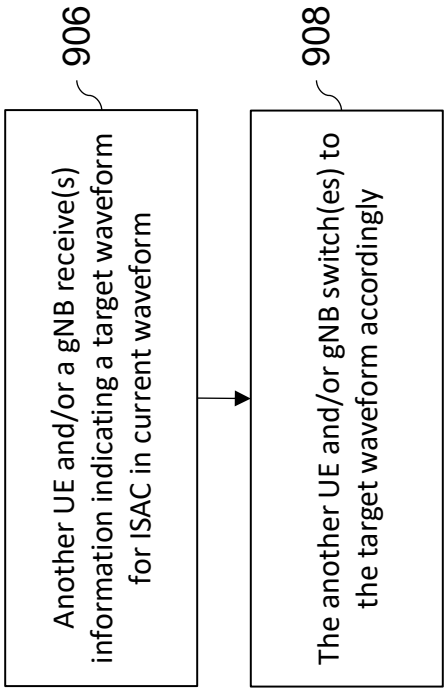


Figure 9B

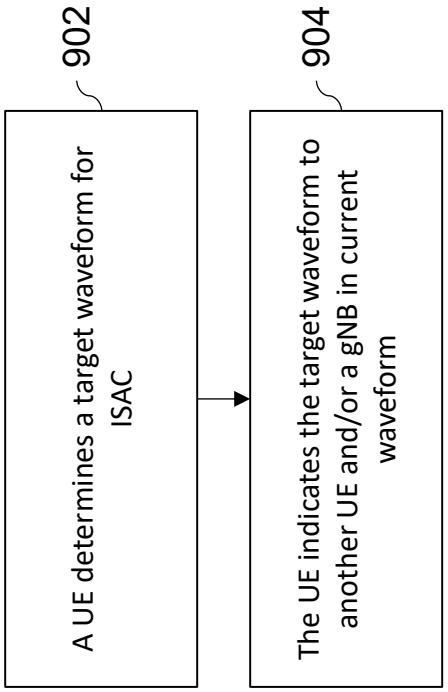


Figure 9A

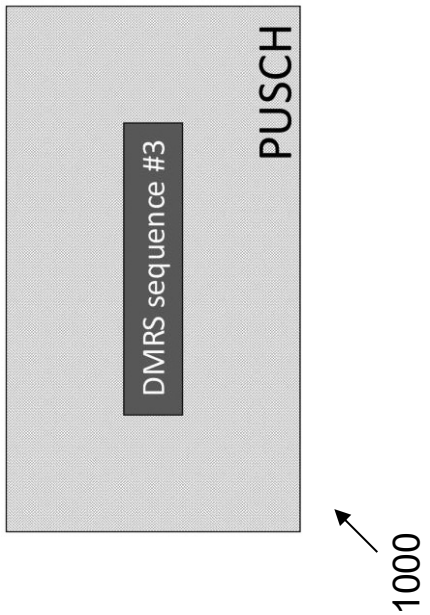


Figure 10

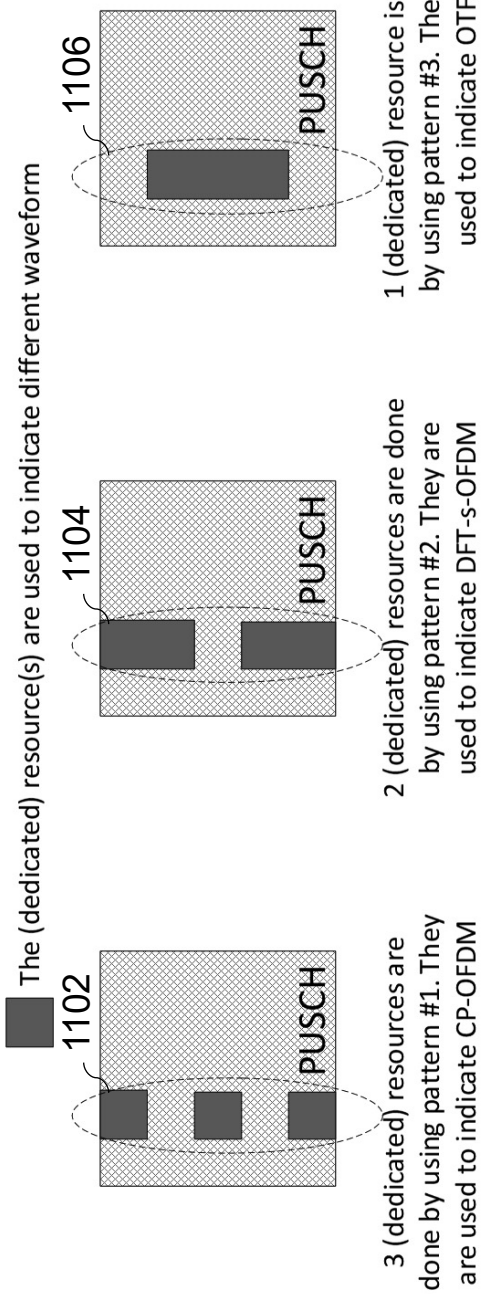

The (dedicated) resource(s) are used to indicate different waveform
1102
PUSCH
3 (dedicated) resources are done by using pattern #1. They are used to indicate CP-OFDM
1104
PUSCH
2 (dedicated) resources are done by using pattern #2. They are used to indicate DFT-s-OFDM
1106
PUSCH
1 (dedicated) resource is done by using pattern #3. They are used to indicate OTFS

Figure 11

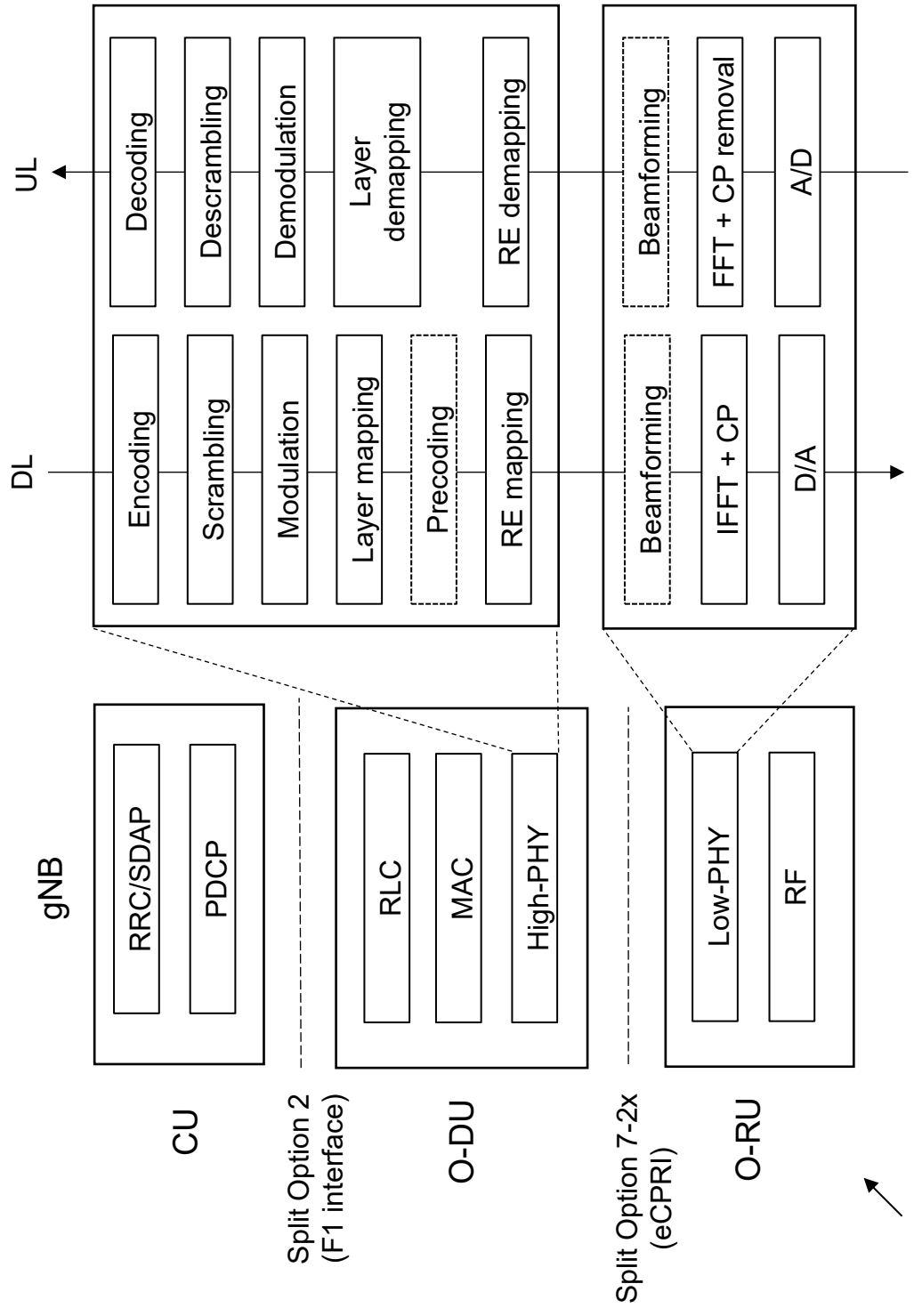

gNB
CU
RRC/SDAP
PDCP
Split Option 2
(F1 interface)
O-DU
RLC
MAC
High-PHY
Split Option 7-2x
(eCPRI)
O-RU
Low-PHY
RF
DL
Encoding
Scrambling
Modulation
Layer mapping
Precoding
RE mapping
Beamforming
IFFT + CP
D/A
UL
Decoding
Descrambling
Demodulation
Layer
demapping
RE demapping
Beamforming
FFT + CP removal
A/D
1200

Figure 12