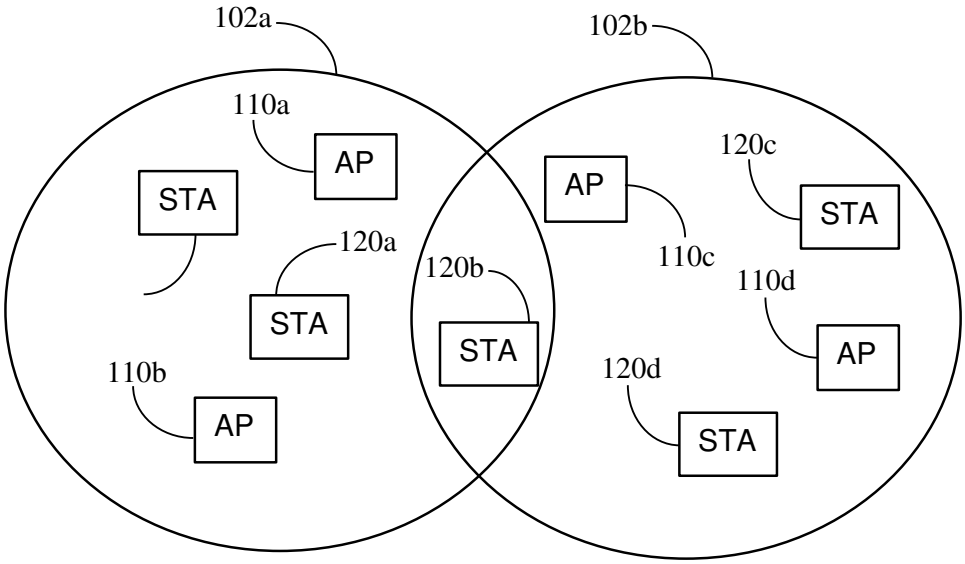


FIG. 1A

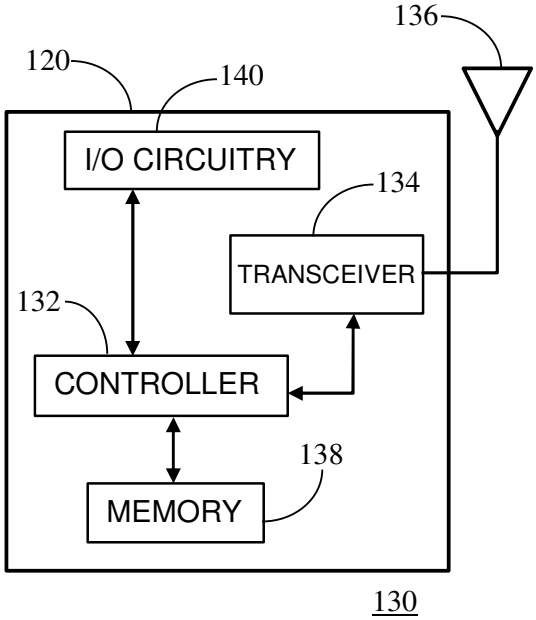


FIG. 1B

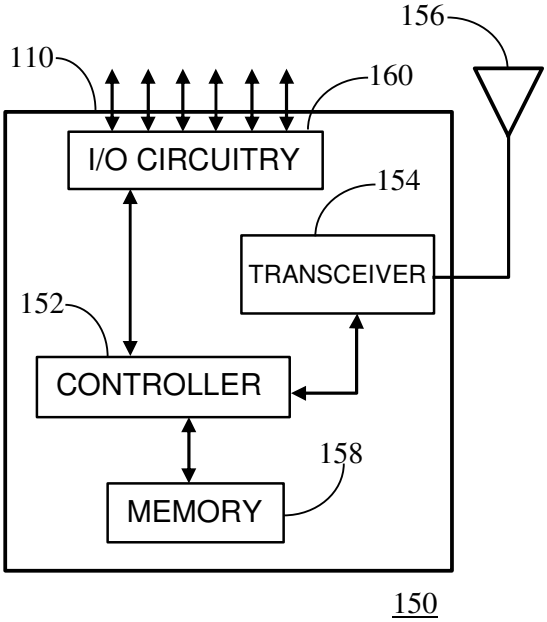
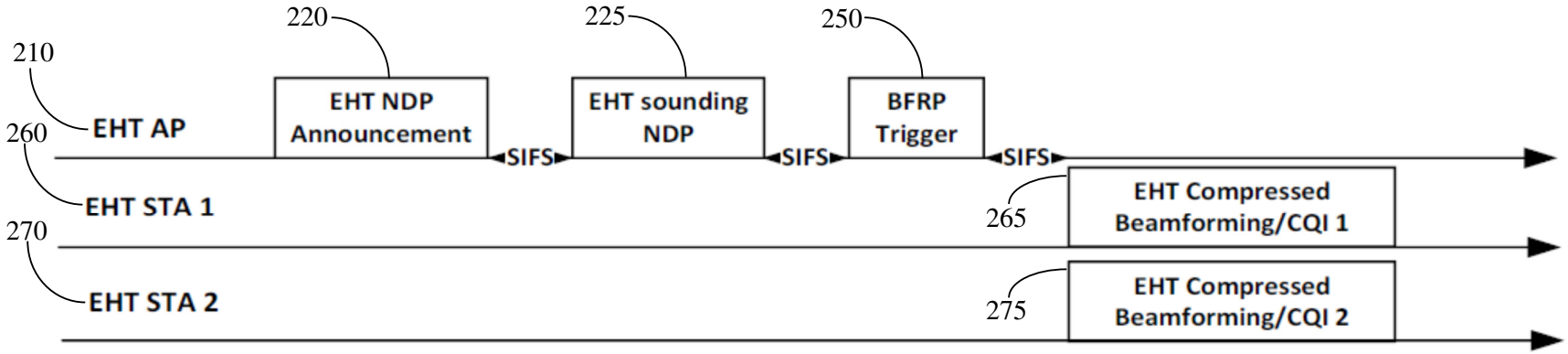
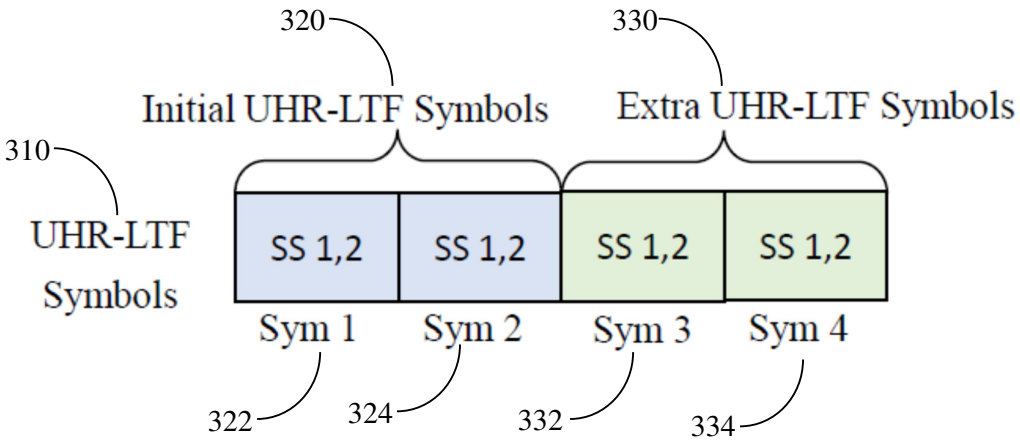


FIG. 1C


220
225
250
210
EHT NDP Announcement
EHT sounding NDP
BFRP Trigger
EHT AP
260
SIFS
SIFS
SIFS
EHT STA 1
265
EHT Compressed Beamforming/CQI 1
270
EHT STA 2
275
EHT Compressed Beamforming/CQI 2

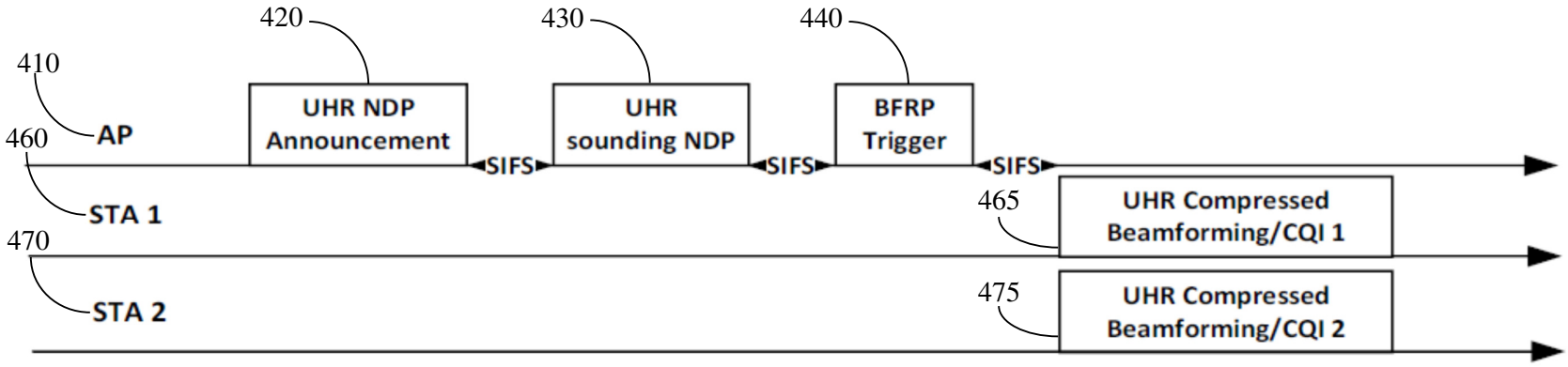
200

FIG. 2


320
330
Initial UHR-LTF Symbols
Extra UHR-LTF Symbols
310
UHR-LTF
Symbols
SS 1,2
SS 1,2
SS 1,2
SS 1,2
Sym 1
Sym 2
Sym 3
Sym 4
322
324
332
334

300

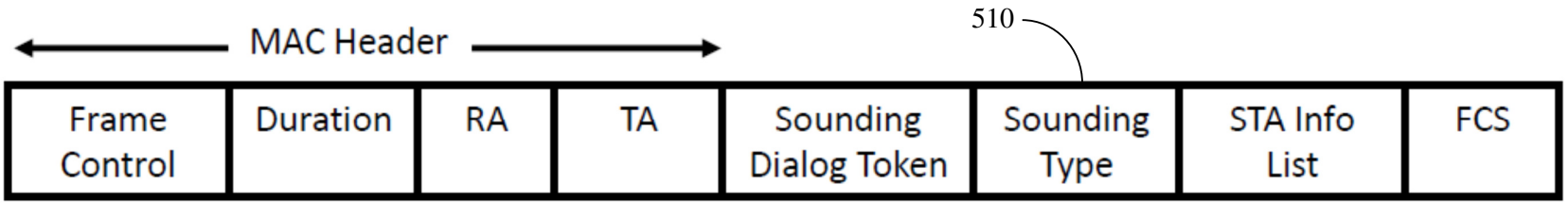
FIG. 3



400

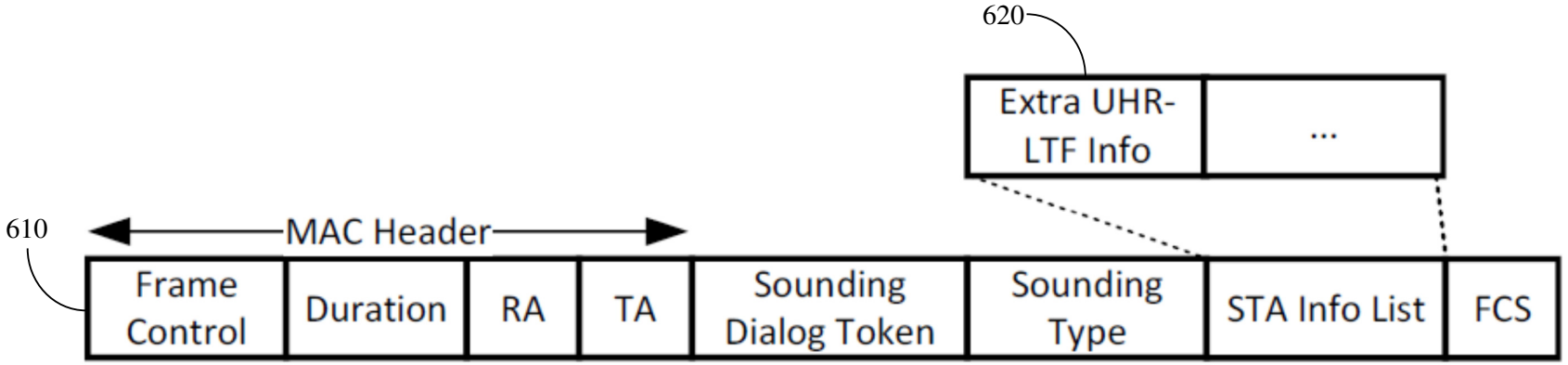
FIG. 4

422



500

FIG. 5


620
Extra UHR-LTF Info
...
610
MAC Header
Frame Control
Duration
RA
TA
Sounding Dialog Token
Sounding Type
STA Info List
FCS

600

FIG. 6

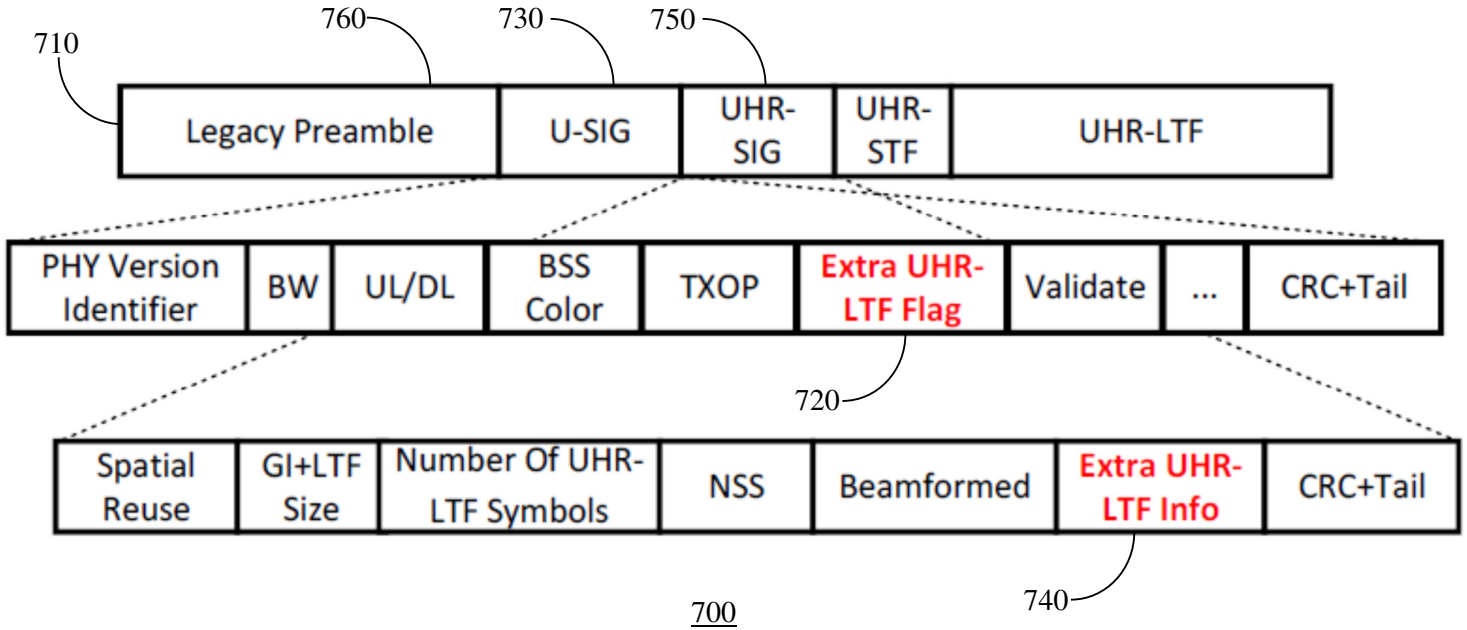

710
760
730
750
Legacy Preamble
U-SIG
UHR-SIG
UHR-STF
UHR-LTF
PHY Version Identifier
BW
UL/DL
BSS Color
TXOP
Extra UHR-LTF Flag
Validate
...
CRC+Tail
720
Spatial Reuse
GI+LTF Size
Number Of UHR-LTF Symbols
NSS
Beamformed
Extra UHR-LTF Info
CRC+Tail
740
700

FIG. 7

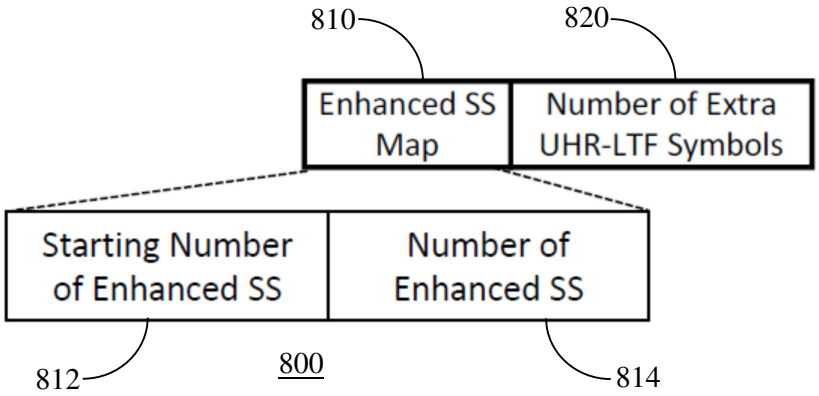

810
820
Enhanced SS Map
Number of Extra UHR-LTF Symbols
Starting Number of Enhanced SS
Number of Enhanced SS
812
800
814

FIG. 8

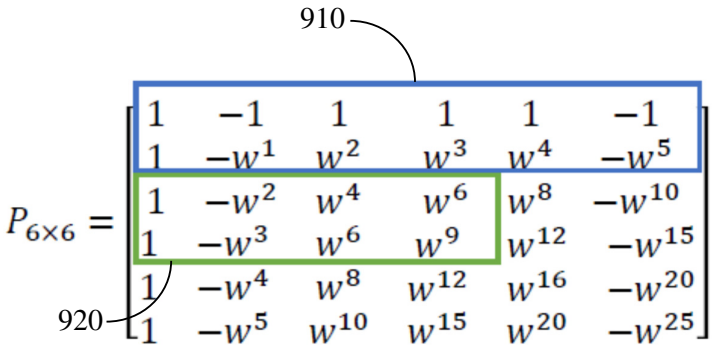

910
920
$P_{6\times6} =$
$\begin{bmatrix} 1 & -1 & 1 & 1 & 1 & -1 \\ 1 & -w^1 & w^2 & w^3 & w^4 & -w^5 \\ 1 & -w^2 & w^4 & w^6 & w^8 & -w^{10} \\ 1 & -w^3 & w^6 & w^9 & w^{12} & -w^{15} \\ 1 & -w^4 & w^8 & w^{12} & w^{16} & -w^{20} \\ 1 & -w^5 & w^{10} & w^{15} & w^{20} & -w^{25} \end{bmatrix}$

FIG. 9A

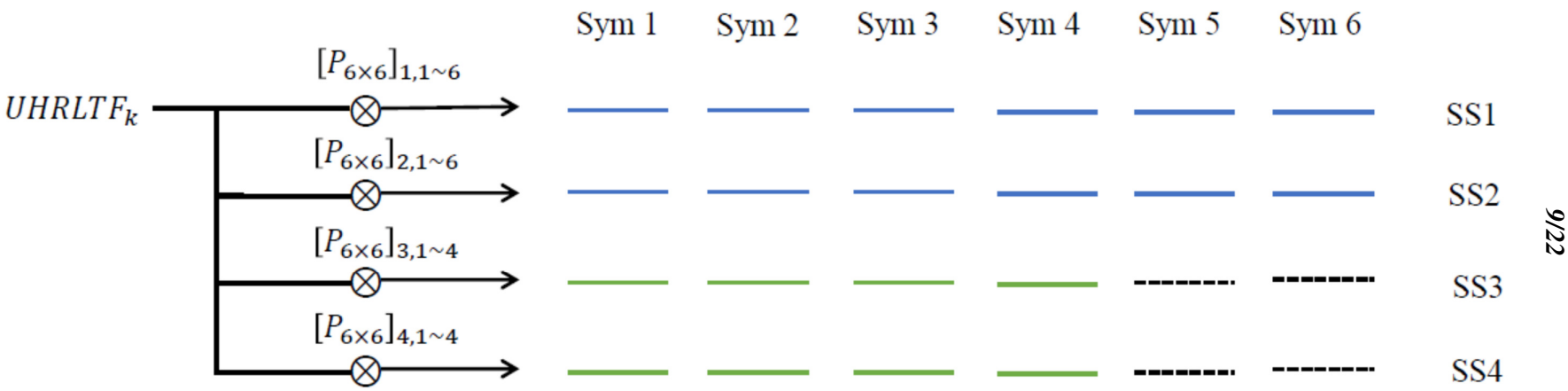

Sym 1
Sym 2
Sym 3
Sym 4
Sym 5
Sym 6
$UHRLTF_k$
$[P_{6\times6}]_{1,1\sim6}$
$[P_{6\times6}]_{2,1\sim6}$
$[P_{6\times6}]_{3,1\sim4}$
$[P_{6\times6}]_{4,1\sim4}$
SS1
SS2
SS3
SS4

FIG. 9B

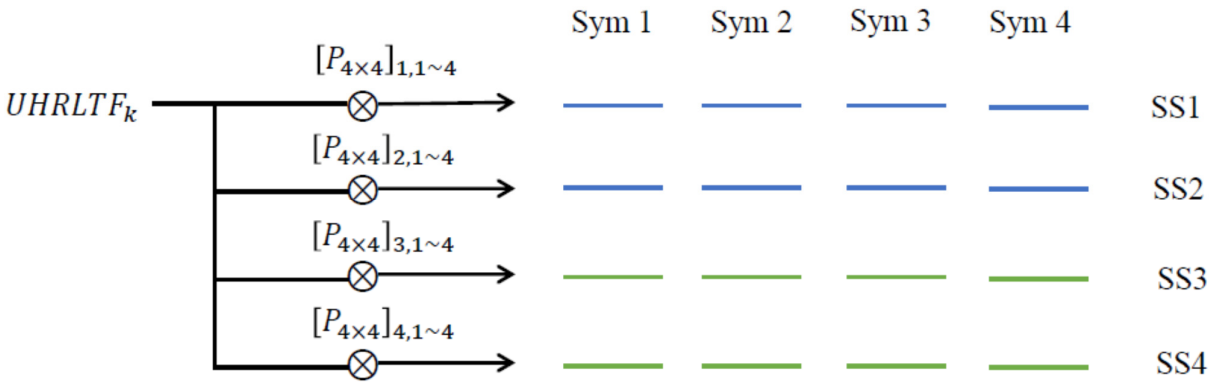


FIG. 10A

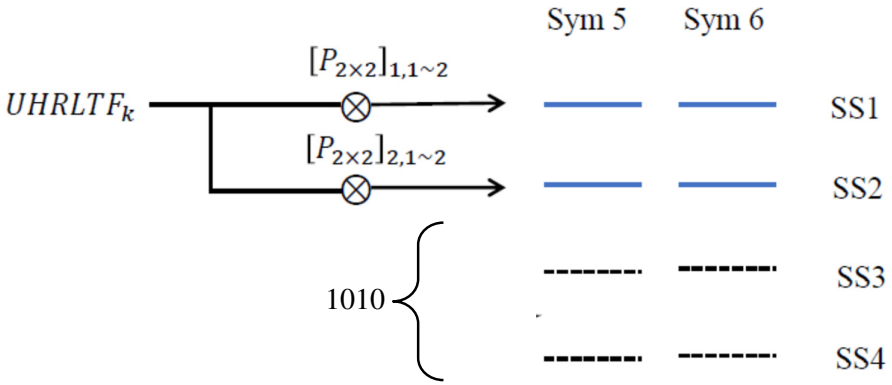
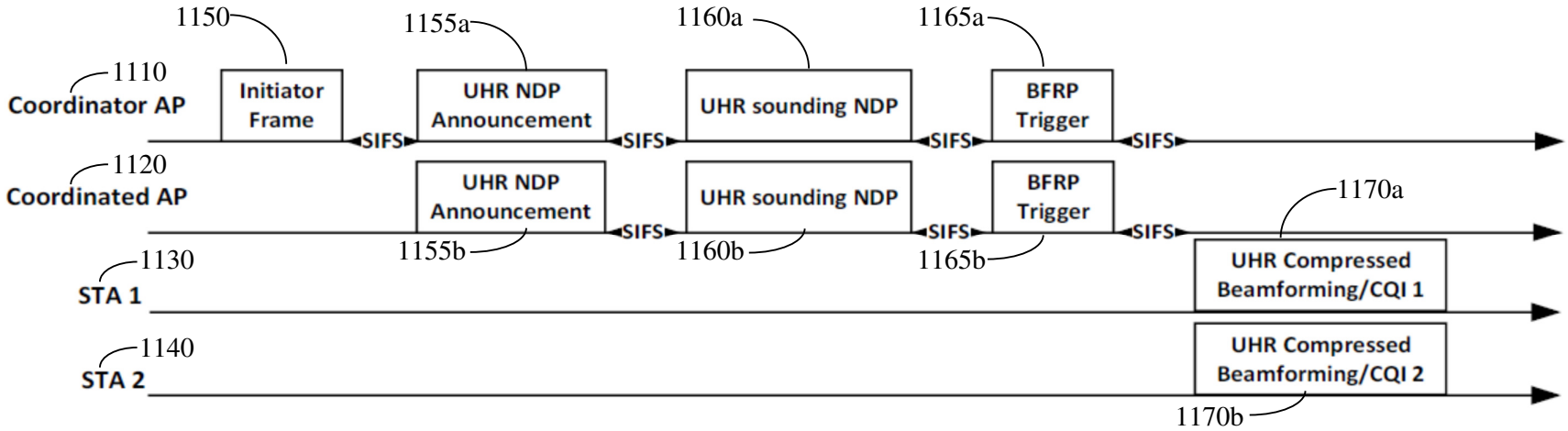
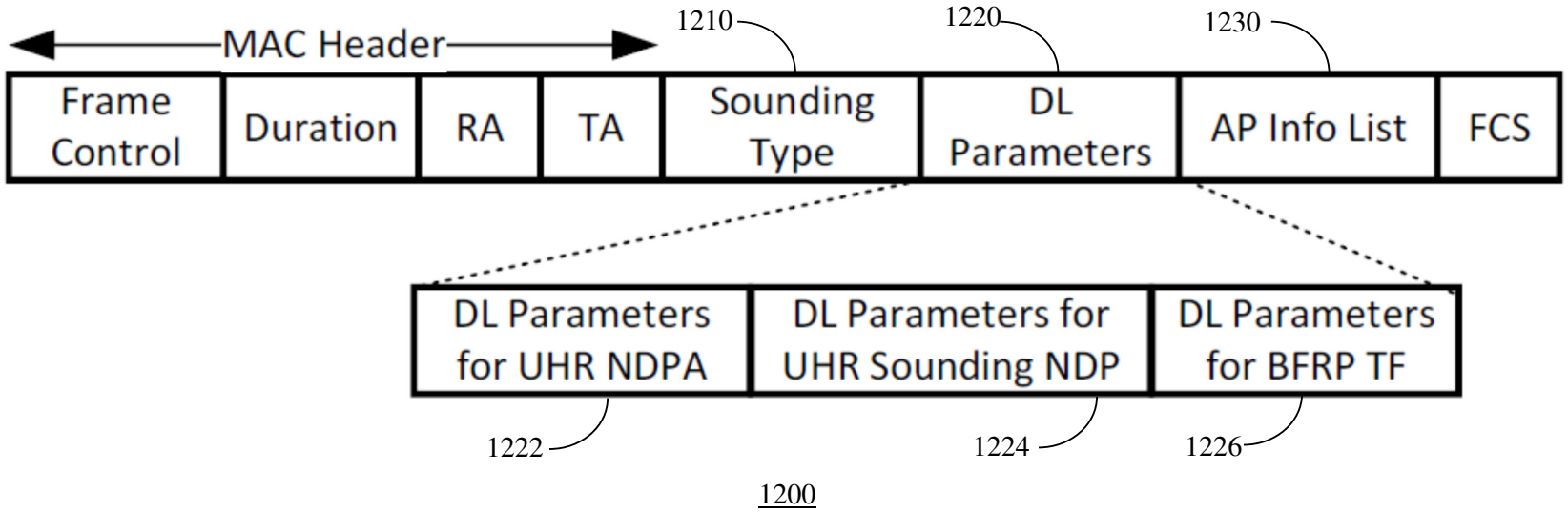


FIG. 10B


1150
1155a
1160a
1165a
1110
Coordinator AP
Initiator Frame
SIFS
UHR NDP Announcement
SIFS
UHR sounding NDP
SIFS
BFRP Trigger
SIFS
1120
Coordinated AP
UHR NDP Announcement
SIFS
UHR sounding NDP
SIFS
BFRP Trigger
SIFS
1170a
1155b
1160b
1165b
1130
STA 1
UHR Compressed Beamforming/CQI 1
1140
STA 2
UHR Compressed Beamforming/CQI 2
1170b

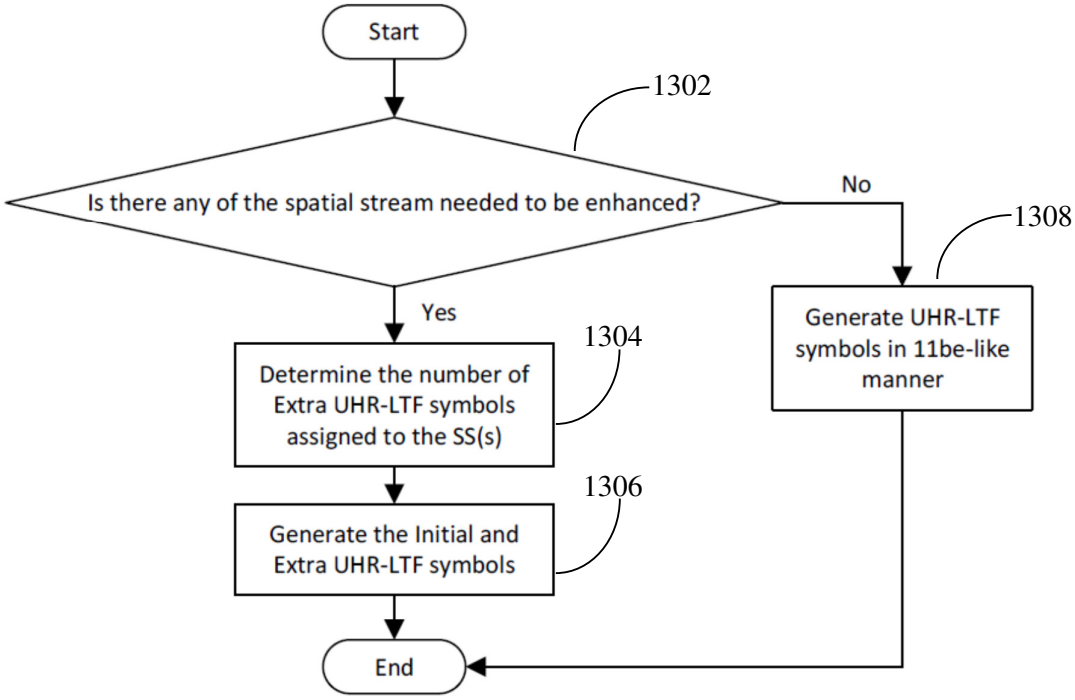
1100

FIG. 11


MAC Header
1210
1220
1230
Frame Control
Duration
RA
TA
Sounding Type
DL Parameters
AP Info List
FCS
DL Parameters for UHR NDPA
DL Parameters for UHR Sounding NDP
DL Parameters for BFRP TF
1222
1224
1226

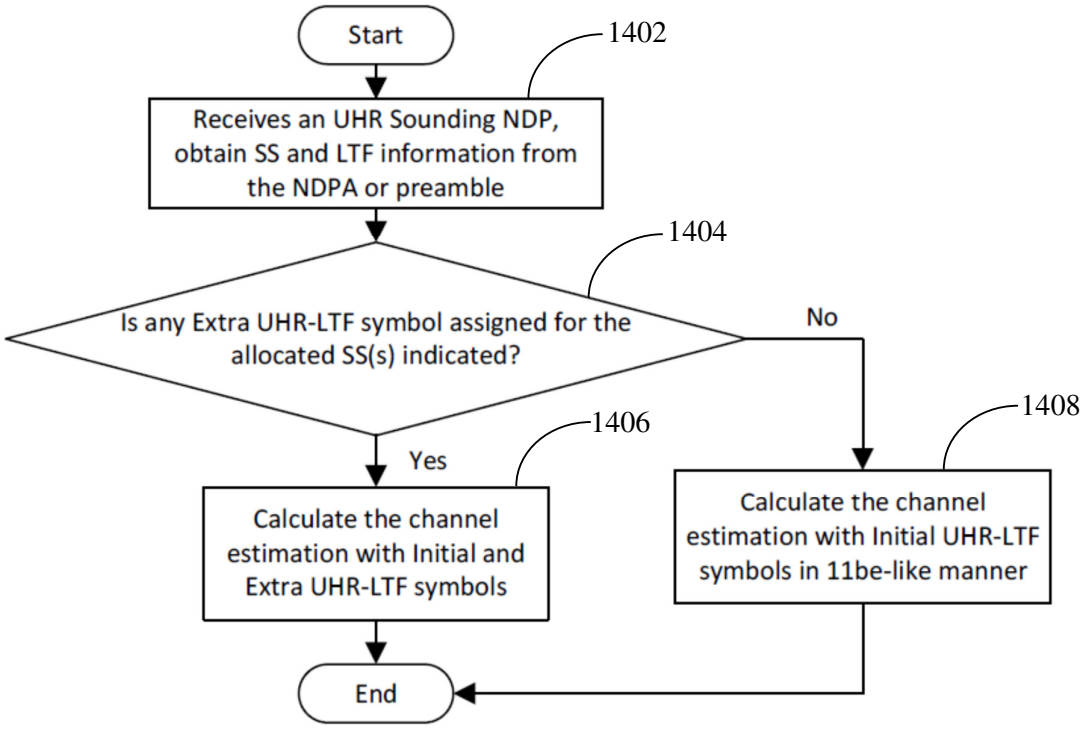
1200

FIG. 12


Start
1302
Is there any of the spatial stream needed to be enhanced?
No
1308
Yes
Generate UHR-LTF symbols in 11be-like manner
1304
Determine the number of Extra UHR-LTF symbols assigned to the SS(s)
1306
Generate the Initial and Extra UHR-LTF symbols
End

1300

FIG. 13


Start
1402
Receives an UHR Sounding NDP, obtain SS and LTF information from the NDPA or preamble
1404
Is any Extra UHR-LTF symbol assigned for the allocated SS(s) indicated?
No
Yes
1406
Calculate the channel estimation with Initial and Extra UHR-LTF symbols
1408
Calculate the channel estimation with Initial UHR-LTF symbols in 11be-like manner
End

1400

FIG. 14

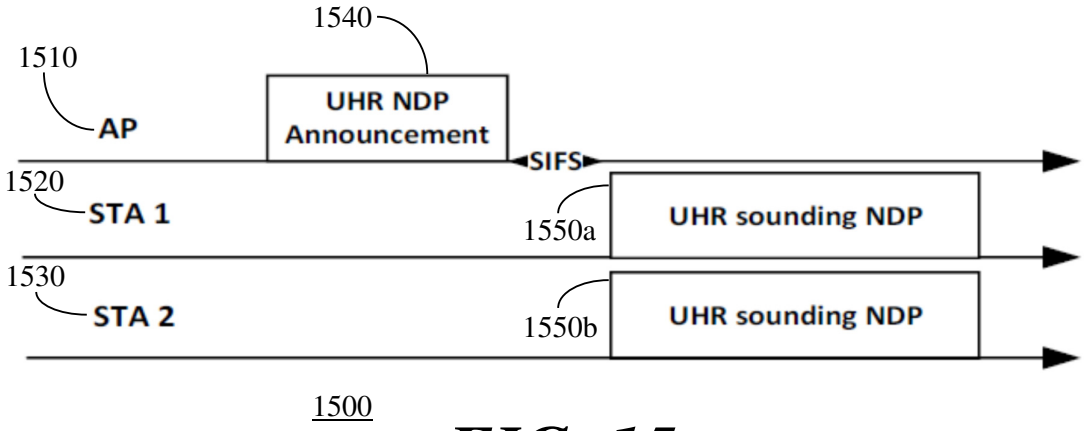
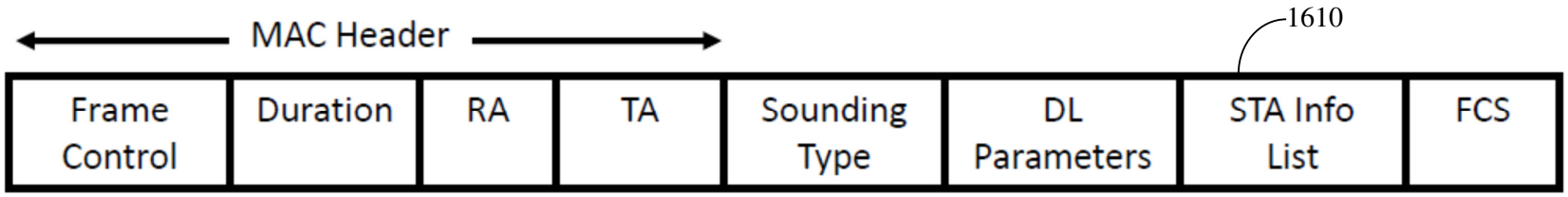
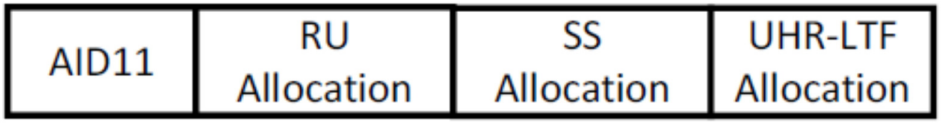

1540
1510
AP
UHR NDP Announcement
SIFS
1520
STA 1
1550a
UHR sounding NDP
1530
STA 2
1550b
UHR sounding NDP
1500

FIG. 15



1600

FIG. 16



1700

FIG. 17

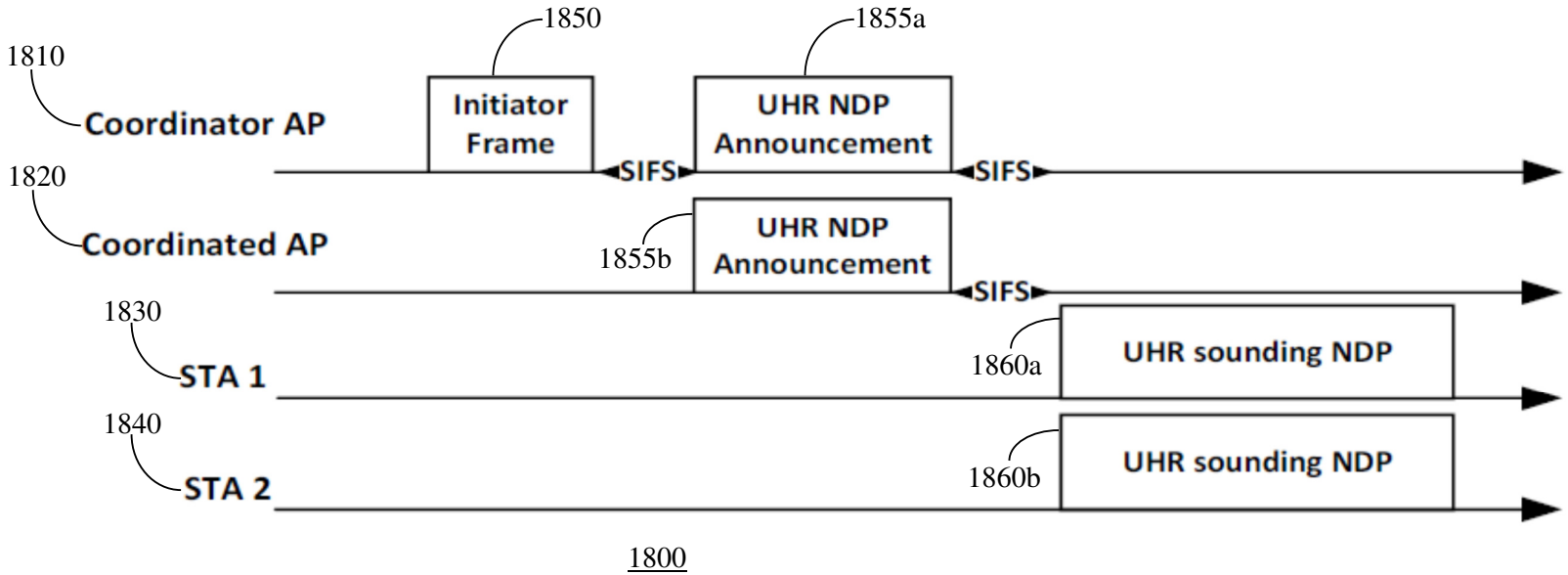
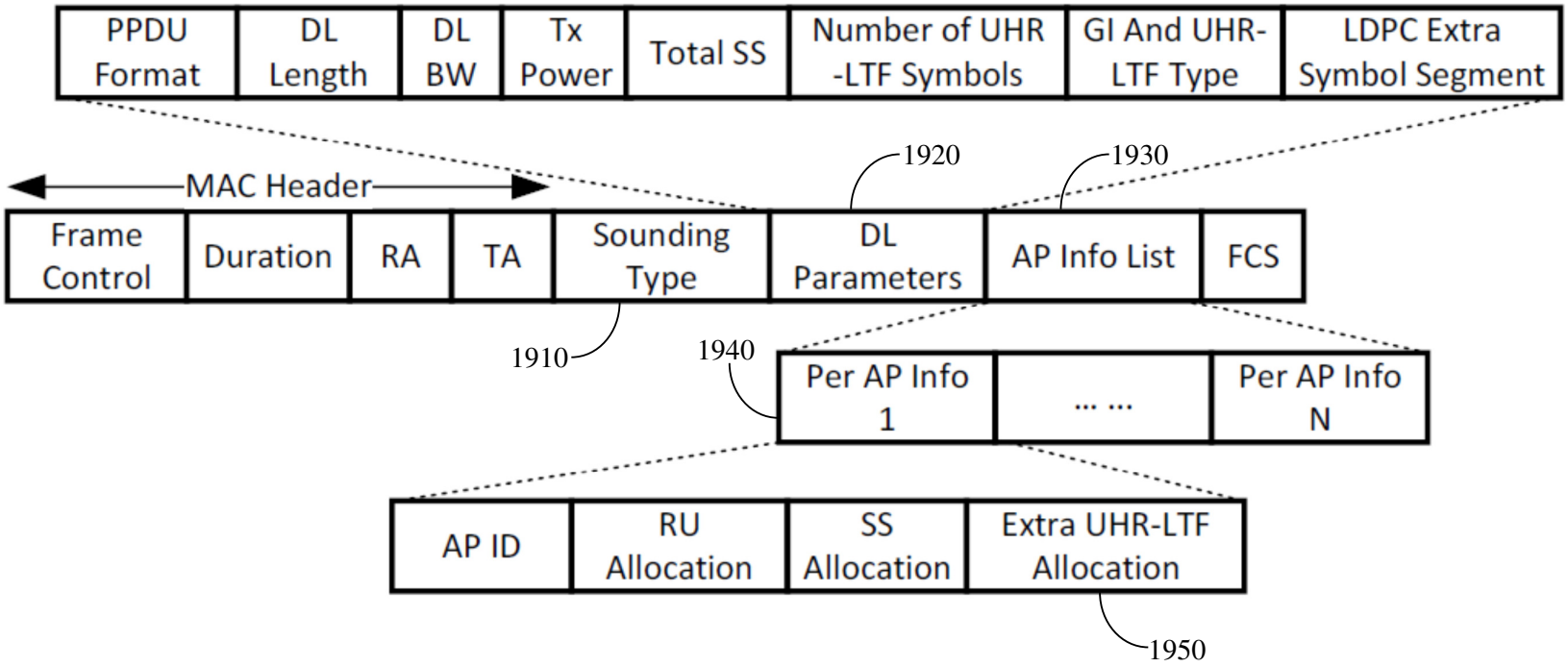

1850
1855a
1810
Coordinator AP
Initiator Frame
SIFS
UHR NDP Announcement
SIFS
1820
Coordinated AP
1855b
UHR NDP Announcement
SIFS
1830
STA 1
1860a
UHR sounding NDP
1840
STA 2
1860b
UHR sounding NDP
1800

FIG. 18


PPDU Format
DL Length
DL BW
Tx Power
Total SS
Number of UHR -LTF Symbols
GI And UHR-LTF Type
LDPC Extra Symbol Segment
MAC Header
1920
1930
Frame Control
Duration
RA
TA
Sounding Type
DL Parameters
AP Info List
FCS
1910
1940
Per AP Info 1
... ...
Per AP Info N
AP ID
RU Allocation
SS Allocation
Extra UHR-LTF Allocation
1950

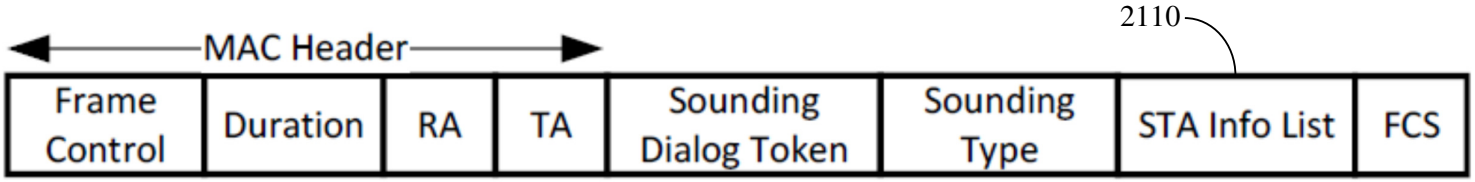
1900

FIG. 19

Extra UHR-LTF Flag	Number of Extra UHR-LTF	The Starting Number of Extra UHR-LTF

2000

FIG. 20



2100

FIG. 21

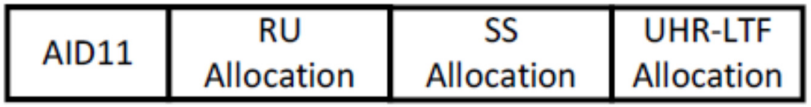


FIG. 22A

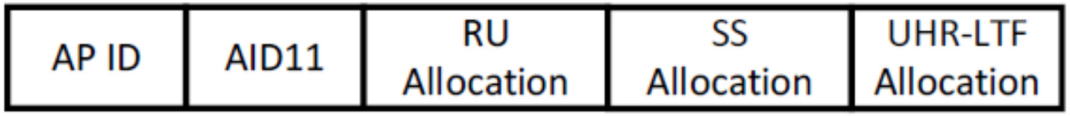
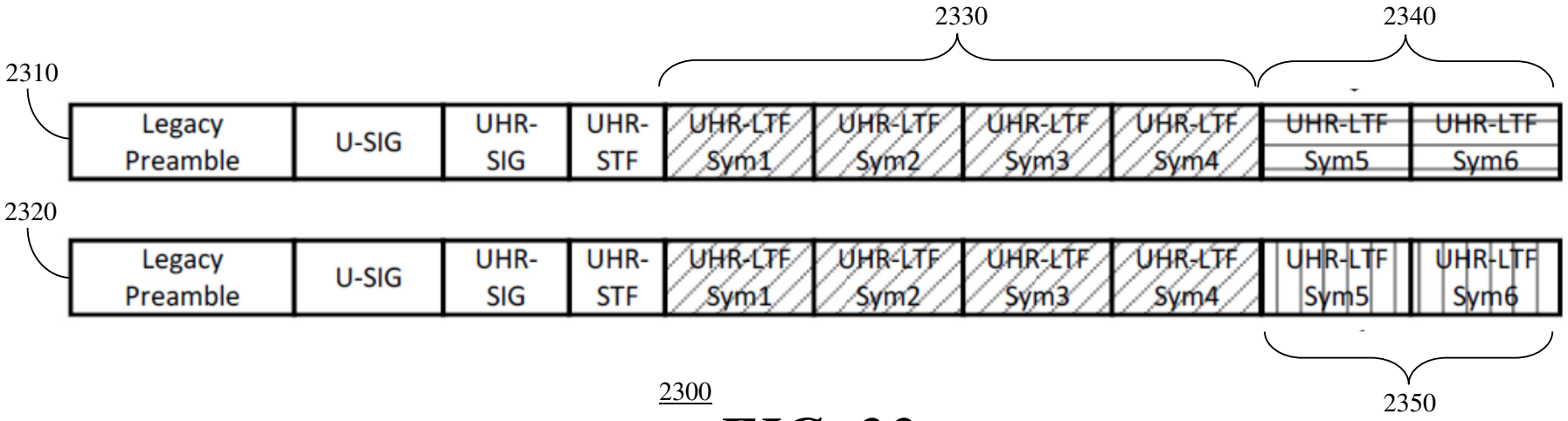
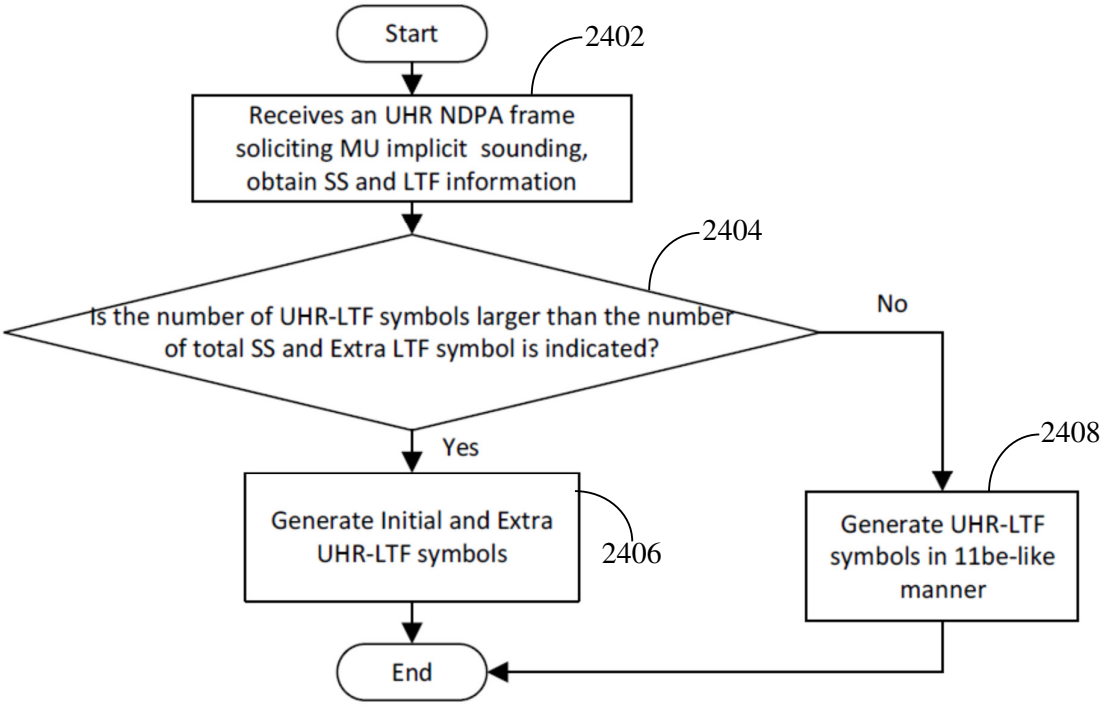


FIG. 22B


2330
2340
2310
Legacy Preamble
U-SIG
UHR-SIG
UHR-STF
UHR-LTF Sym1
UHR-LTF Sym2
UHR-LTF Sym3
UHR-LTF Sym4
UHR-LTF Sym5
UHR-LTF Sym6
2320
Legacy Preamble
U-SIG
UHR-SIG
UHR-STF
UHR-LTF Sym1
UHR-LTF Sym2
UHR-LTF Sym3
UHR-LTF Sym4
UHR-LTF Sym5
UHR-LTF Sym6
2350

2300

FIG. 23


Start
2402
Receives an UHR NDPA frame soliciting MU implicit sounding, obtain SS and LTF information
2404
Is the number of UHR-LTF symbols larger than the number of total SS and Extra LTF symbol is indicated?
No
Yes
2408
Generate Initial and Extra UHR-LTF symbols
2406
Generate UHR-LTF symbols in 11be-like manner
End

2400

FIG. 24