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(54) **POWER-EFFICIENT OPERATION FOR WIDER BANDWIDTH**

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H04L 12/24 (2006.01)
H04W 52/14 (2009.01)
(Continued)

(52) **U.S. Cl.**
CPC **H04L 41/0833** (2013.01); **H04L 5/001** (2013.01); **H04L 5/0048** (2013.01); **H04L 5/0053** (2013.01); **H04L 5/0092** (2013.01); **H04W 48/00** (2013.01); **H04W 52/146** (2013.01); *H04W 48/12* (2013.01); *H04W 72/042* (2013.01)

(58) **Field of Classification Search**
None
See application file for complete search history.

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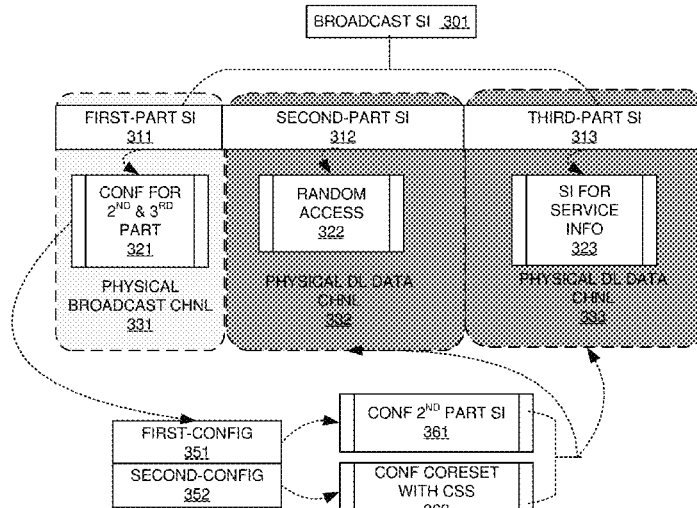
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(57) **ABSTRACT**

Apparatus and methods are provided for power-efficient operation for wide bandwidth. In one novel aspect, the configuration of the CORESET with CSS includes at least one of the time duration of the CORESET within a slot and the periodicity of the CORESET burst. In another embodiment, each configured BWP includes at least one CORESET with UE-specific search space and one CORESET with CSS. In another embodiment, at least one of the configured BWPs includes one CORESET with type-1 CSS for PCell. Each configured BWPs includes one CORESET with type-2 CSS for both PCell and SCell and at least one CORESET with UE-specific search space for PCell and SCell. In another novel aspect, a timer-triggered transmission of activating DL BWP indication in all DL BWP configured is used when the UE mis-detects or false-alarms the explicit signaling for BWP switch.

28 Claims, 7 Drawing Sheets

(51) **Int. Cl.**

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H04W 48/00	(2009.01)
H04W 72/04	(2009.01)
H04W 48/12	(2009.01)

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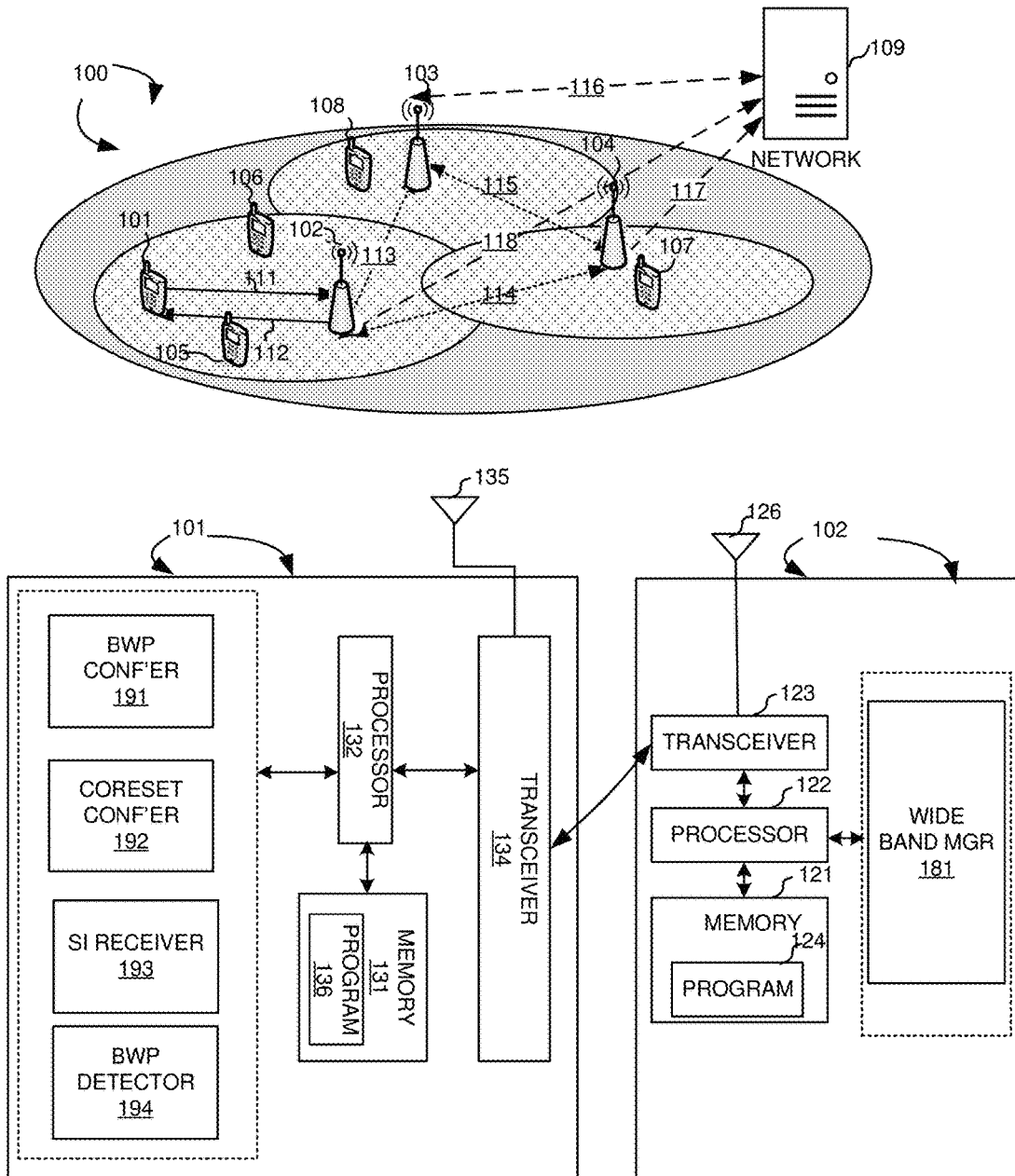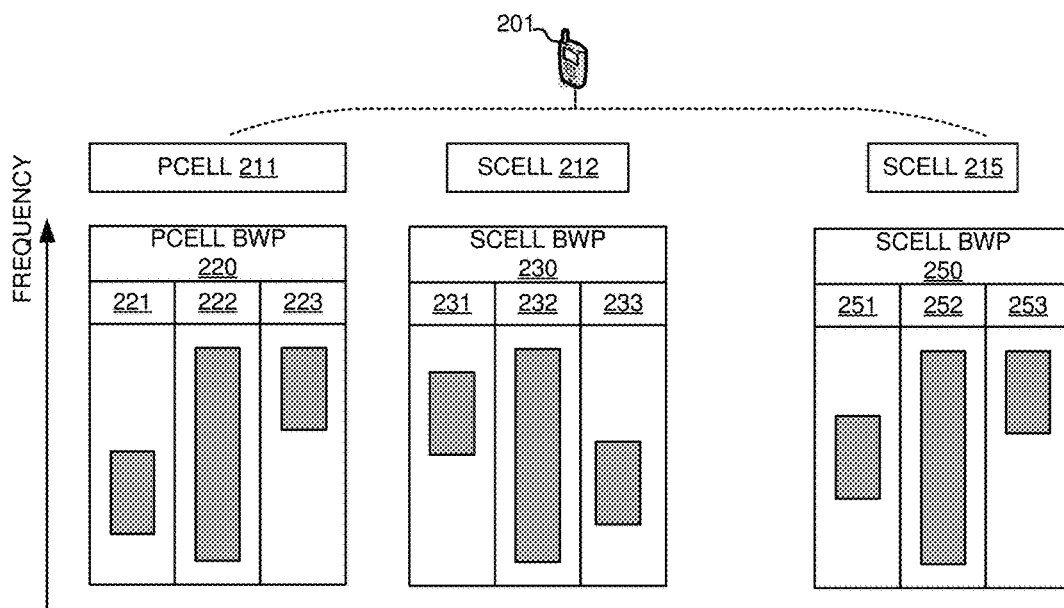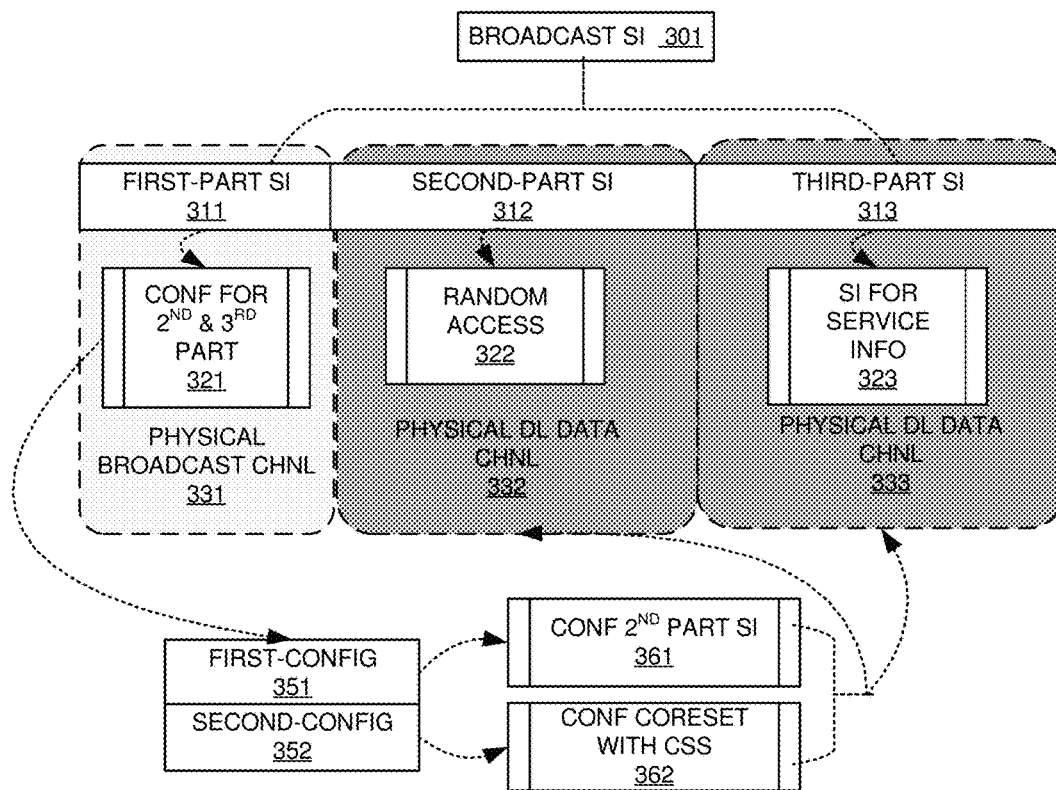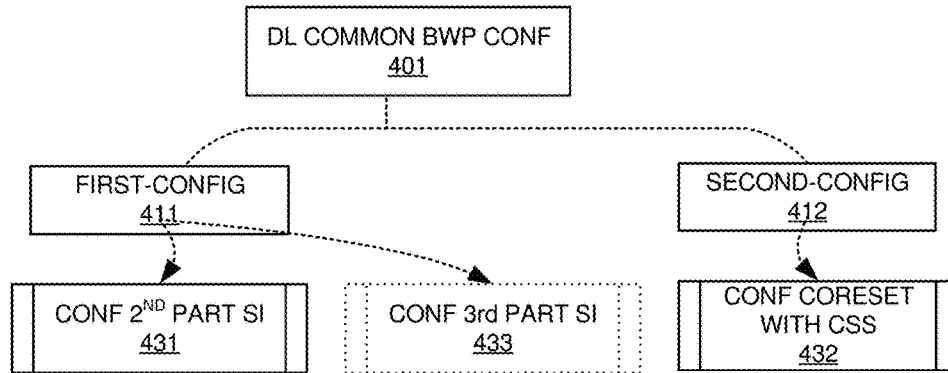
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FIG. 1

201

PCELL 211			SCELL 212			SCELL 215		

PCELL BWP 220			SCELL BWP 230			SCELL BWP 250		
221	222	223	231	232	233	251	252	253

FREQUENCY

FIG. 2

BROADCAST SI　301

FIRST-PART SI 311	SECOND-PART SI 312	THIRD-PART SI 313
CONF FOR 2ND & 3RD PART 321	RANDOM ACCESS 322	SI FOR SERVICE INFO 323
PHYSICAL BROADCAST CHNL 331	PHYSICAL DL DATA CHNL 332	PHYSICAL DL DATA CHNL 333

FIRST-CONFIG 351
SECOND-CONFIG 352

CONF 2ND PART SI 361
CONF CORESET WITH CSS 362

FIG. 3

DL COMMON BWP CONF
401

FIRST-CONFIG
411

SECOND-CONFIG
412

CONF 2ND PART SI
431

CONF 3rd PART SI
433

CONF CORESET
WITH CSS
432

FIG. 4

FREQUENCY

PCELL BWP
501

511   512   513

SCELL BWP
502

521   522   523

SCELL BWP
503

531   532   533

CSS CORESET   UE-SPECIFIC CORESET

FIG. 5A

FREQUENCY

PCELL BWP
505

551   552   553

SCELL BWP
506

561   562   563

SCELL BWP
507

571   572   573

TYPE-1 CSS CORESET   TYPE-2 CSS CORESET   UE-SPECIFIC CORESET

FIG. 5B

DOCKET ALARM
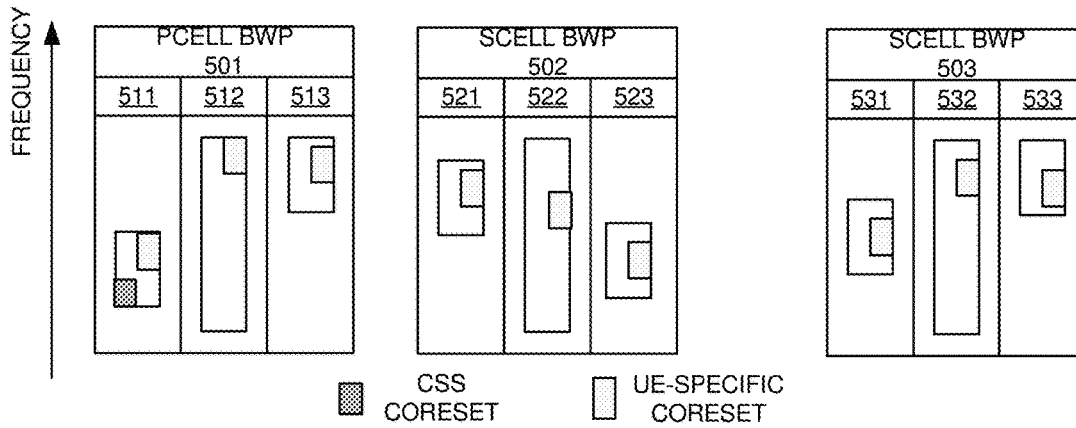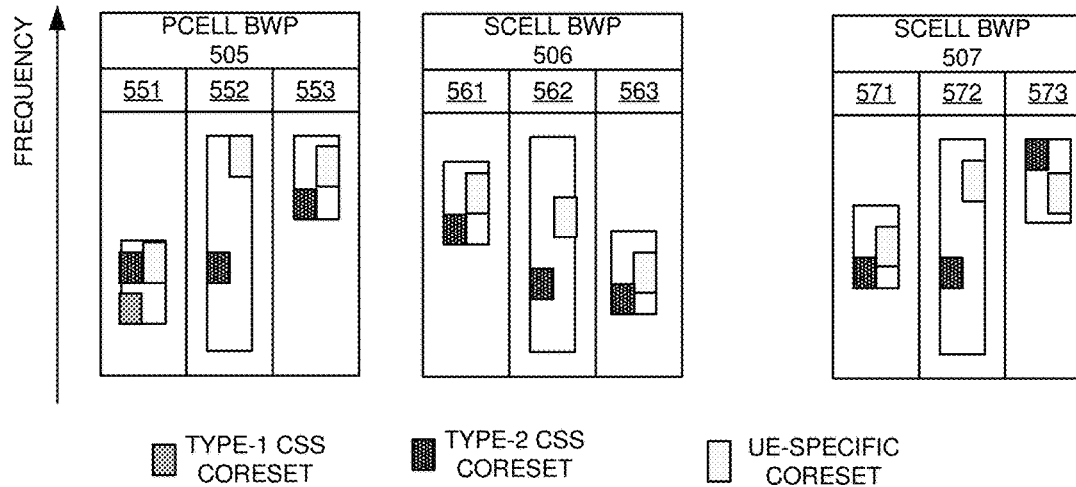
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