~~**[00116] WHAT IS CLAIMED IS:**~~

CLAIMS

1. A method of wireless communication, comprising:

receiving, by a user equipment (UE), a synchronization signal block (SSB) configuration for a discovery signal detection window having a plurality of communication slots, wherein, based on the SSB configuration, the UE identifies ~~random access resource and~~ time and frequency locations to monitor remaining minimum system information (RMSI) configured for each SSB;

receiving, by the UE, an SSB transmission indicator;

mapping, by the UE, the SSB configuration using the SSB transmission indicator to determine one or more SSB for rate matching in one or more slots of the plurality of communication slots; and

rate matching, by the UE, data transmission around each of the one or more SSBs in the one or more slots.

2. The method of claim 1, wherein the SSB configuration includes an SSB bitmap identifying one or more actual SSB transmissions.

3. The method of claim 2, wherein the SSB bitmap is received at the UE via one of: a remaining material system information (RMSI) signal or a UE-specific radio resource control (RRC) signal.

4. The method of claim 2,

wherein the SSB transmission indicator identifies a beginning of transmissions within the discovery signal detection window and is received via one of: a preamble, a common control signal, or a downlink grant, and

wherein the mapping includes:

identifying a beginning slot of the plurality of communication slots corresponding to the beginning of transmissions within the discovery signal detection window; and

shifting a first bit of the SSB bitmap to the beginning slot to identify the one or more slots of the determined one or more SSB for rate matching.

5.——The method of claim 2,

wherein the SSB transmission indicator identifies one of: a beginning of the discovery signal detection window or a cyclical extension of the SSB bitmap according to a number of slots of the plurality of slots passed prior to the beginning of transmissions within the discovery signal detection window, and

wherein the mapping includes:

———cyclically extending, by the UE, each bit of the SSB bitmap into a cyclically extended SSB bitmap, wherein the cyclic extension corresponds to one or more slots of the plurality of slots passed prior to the beginning of transmissions within the discovery signal detection window, and

———identifying the one or more slots of the determined one or more SSB for rate matching according to the cyclically extended SSB bitmap.

6.——The method of claim 5, wherein the SSB transmission indicator is received via one of: ~~:~~a preamble, a common control signal, or a downlink grant.

7.——The method of claim 2, further including:

detecting, by the UE, one or more opportunistic SSB transmissions outside of the one or more slots, wherein the one or more opportunistic SSB transmissions include an opportunistic indicator indicating the one or more opportunistic SSB transmissions are outside of the one or more actual SSB transmissions identified in the SSB bitmap; and

obtaining, by the UE, from the one or more opportunistic SSB transmissions a cell identifier (ID) and system timing associated with the one or more opportunistic SSB transmissions, wherein the SSB configuration does not have associated random access resource and RMSI for the one or more opportunistic SSB transmissions.

8.——The method of claim 1,

wherein the SSB configuration includes a set of downlink resources identifying each potential SSB location across the discovery signal detection window,

wherein the SSB transmission indicator identifies each one of the set of downlink resources including one or more actual SSB transmissions the UE will rate match the data transmissions around, and

wherein the mapping includes identifying the one or more slots associated with the each one of the set of downlink resources the UE will rate match SSB with the data transmissions.

9.——The method of claim 8,

wherein the set of downlink resources are grouped into one or more groups including one or more SSB resources, and

wherein the SSB transmission indicator identifies the each one by identifying the corresponding one or more groups.

10.——The method of claim 8, further including:

detecting, by the UE, one or more opportunistic SSB transmissions outside of the each one of the set of downlink resources the UE will rate match the data transmissions around, wherein the one or more opportunistic SSB transmissions include an opportunistic indicator indicating the one or more opportunistic SSB transmissions are outside of the one or more actual SSB transmissions identified in the SSB transmission indicator; and

obtaining, by the UE, from the one or more opportunistic SSB transmissions a cell identifier (ID) and system timing associated with the one or more opportunistic SSB transmissions, wherein the SSB configuration does not include random access resource and RMSI for the one or more opportunistic SSB transmissions.

11.——A method of wireless communication, comprising:

receiving, by a user equipment (UE), a synchronization signal block (SSB) configuration for a discovery signal detection window having a plurality of communication slots;

monitoring, by the UE, for a control resource set (CORESET) based on a beginning of transmissions within the discovery signal detection window; and

decoding, by the UE, the CORESET for system information.

12.——The method of claim 11, further including:

receiving, by the UE, an SSB transmission indicator identifying a beginning of transmissions within the discovery signal detection window, wherein the SSB configuration includes an SSB bitmap identifying one or more actual SSB transmissions, and

wherein the monitoring includes:

——— identifying a beginning slot of the plurality of communication slots corresponding to the beginning of transmissions within the discovery signal detection window;

——— shifting a first bit of the SSB bitmap to the beginning; and

——— monitoring for the CORESET at an associated SSB slot according to the shifted SSB bitmap.

13.—— The method of claim 11,

wherein the SSB configuration includes a set of downlink resources identifying each potential SSB location across the discovery signal detection window,

wherein the monitoring includes:

——— searching for the CORESET at each of the set of downlink resources identifying each potential SSB location.

14.——— The method of claim 11,

wherein the SSB configuration includes an SSB bitmap identifying one or more actual SSB transmissions scheduled within the discovery signal detection window, and

wherein the monitoring includes:

——— searching for the CORESET at an scheduled SSB location identified by the SSB bitmap, and at a cyclically extended version of the scheduled SSB location when the CORESET is not detected at the scheduled SSB location.

15.—— An apparatus configured for wireless communication, the apparatus comprising:

at least one processor; and

a memory coupled to the at least one processor,

wherein the at least one processor is configured:

——— to receive, by a user equipment (UE), a synchronization signal block (SSB) configuration for a discovery signal detection window having a plurality of communication slots, wherein, based on the SSB configuration, the UE identifies ~~random access resource and~~ time and frequency locations to monitor remaining minimum system information (RMSI) configured for each SSB;

——— to receive, by the UE, an SSB transmission indicator;

——— to map, by the UE, the SSB configuration using the SSB transmission indicator to determine one or more SSB for rate matching in one or more slots of the plurality of communication slots; and

——— to rate match, by the UE, data transmission around each of the one or more SSBs in the one or more slots.

16.—— The apparatus of claim 15, wherein the SSB configuration includes an SSB bitmap identifying one or more actual SSB transmissions.

17.—— The apparatus of claim 16, wherein the SSB bitmap is received at the UE via one of: a remaining material system information (RMSI) signal or a UE-specific radio resource control (RRC) signal.

18.—— The apparatus of claim 16,

wherein the SSB transmission indicator identifies a beginning of transmissions within the discovery signal detection window and is received via one of: a preamble, a common control signal, or a downlink grant, and

wherein the configuration of the at least one processor to map includes configuration of the at least one processor:

——— to identify a beginning slot of the plurality of communication slots corresponding to the beginning of transmissions within the discovery signal detection window; and

——— to shift a first bit of the SSB bitmap to the beginning slot to identify the one or more slots of the determined one or more SSB for rate matching.

19.—— The apparatus of claim 16,

wherein the SSB transmission indicator identifies one of: a beginning of the discovery signal detection window or a cyclical extension of the SSB bitmap according to a number of slots of the plurality of slots passed prior to the beginning of transmissions within the discovery signal detection window, and

wherein the configuration of the at least one processor to map includes configuration of the at least one processor:

——— to cyclically extend, by the UE, each bit of the SSB bitmap into a cyclically extended SSB bitmap, wherein the cyclic extension corresponds to one or more slots of the

plurality of slots passed prior to the beginning of transmissions within the discovery signal detection window, and

to identify the one or more slots of the determined one or more SSB for rate matching according to the cyclically extended SSB bitmap.

20. The apparatus of claim 19, wherein the SSB transmission indicator is received via one of: a preamble, a common control signal, or a downlink grant.

21. The apparatus of claim 16, further including configuration of the at least one processor:

to detect, by the UE, one or more opportunistic SSB transmissions outside of the one or more slots, wherein the one or more opportunistic SSB transmissions include an opportunistic indicator indicating the one or more opportunistic SSB transmissions are outside of the one or more actual SSB transmissions identified in the SSB bitmap; and

to obtain, by the UE, from the one or more opportunistic SSB transmissions a cell identifier (ID) and system timing associated with the one or more opportunistic SSB transmissions, wherein the SSB configuration does not have associated random access resource and RMSI for the one or more opportunistic SSB transmissions.

22. The apparatus of claim 15,

wherein the SSB configuration includes a set of downlink resources identifying each potential SSB location across the discovery signal detection window,

wherein the SSB transmission indicator identifies each one of the set of downlink resources including one or more actual SSB transmissions the UE will rate match the data transmissions around, and

wherein the configuration of the at least one processor to map includes configuration to identify the one or more slots associated with the each one of the set of downlink resources the UE will rate match SSB with the data transmissions.

23. The apparatus of claim 22,

wherein the set of downlink resources are grouped into one or more groups including one or more SSB resources, and

wherein the SSB transmission indicator identifies the each one by identifying the corresponding one or more groups.

24.—— The apparatus of claim 22, further including configuration of the at least one processor:

to detect, by the UE, one or more opportunistic SSB transmissions outside of the each one of the set of downlink resources the UE will rate match the data transmissions around, wherein the one or more opportunistic SSB transmissions include an opportunistic indicator indicating the one or more opportunistic SSB transmissions are outside of the one or more actual SSB transmissions identified in the SSB transmission indicator; and

to obtain, by the UE, from the one or more opportunistic SSB transmissions a cell identifier (ID) and system timing associated with the one or more opportunistic SSB transmissions, wherein the SSB configuration does not include random access resource and RMSI for the one or more opportunistic SSB transmissions.

25.—— An apparatus configured for wireless communication, the apparatus comprising:

at least one processor; and

a memory coupled to the at least one processor,

wherein the at least one processor is configured:

——— to receive, by a user equipment (UE), a synchronization signal block (SSB) configuration for a discovery signal detection window having a plurality of communication slots;

——— to monitor, by the UE, for a control resource set (CORESET) based on a beginning of transmissions within the discovery signal detection window; and

——— to decode, by the UE, the CORESET for system information.

26.—— The apparatus of claim 25, further including configuration of the at least one processor:

to receive, by the UE, an SSB transmission indicator identifying a beginning of transmissions within the discovery signal detection window, wherein the SSB configuration includes an SSB bitmap identifying one or more actual SSB transmissions, and

wherein the configuration of the at least one processor to monitor include configuration of the at least one processor s:

——— to identify a beginning slot of the plurality of communication slots corresponding to the beginning of transmissions within the discovery signal detection window;

——— to shift a first bit of the SSB bitmap to the beginning; and

——— to monitor for the CORESET at an associated SSB slot according to the shifted SSB bitmap.

27.—— The apparatus of claim 25,

wherein the SSB configuration includes a set of downlink resources identifying each potential SSB location across the discovery signal detection window,

wherein the configuration of the at least one processor to monitor includes configuration to search for the CORESET at each of the set of downlink resources identifying each potential SSB location.

28.—— The apparatus of claim 25,

wherein the SSB configuration includes an SSB bitmap identifying one or more actual SSB transmissions scheduled within the discovery signal detection window, and

wherein the configuration of the at least one processor to monitor includes configuration to search for the CORESET at an scheduled SSB location identified by the SSB bitmap, and at a cyclically extended version of the scheduled SSB location when the CORESET is not detected at the scheduled SSB location.