

CLAIMS

1. A method, in a wireless device, for operating in a wireless communications network, the method comprising:

operating in a dormant mode, wherein operating in the dormant mode comprises

intermittently activating receiver circuitry to scan for synchronization signals

and/or system information signals; and

while scanning for synchronization signals and/or system information signals:

performing a measurement on each of a plurality of resources from a

predetermined set of resources or demodulating and decoding

information from each of a plurality of resources from a predetermined

set of resources, where the resources in the predetermined set of

resources are each defined by one or more of a beam, a timing, and a

frequency;

evaluating the measurement or the demodulated and decoded information for

each of the plurality of resources against a predetermined criterion;

discontinuing the performing and evaluating of measurements or discontinuing

the demodulating and decoding and evaluation of information, in

response to determining that the predetermined criterion is met for one

of the resources, such that one or more resources in the predetermined

set of resources are not measured or demodulated and decoded; and

deactivating the activated receiver circuitry, further in response to determining

that the predetermined criterion is met for one of the resources;

wherein the method further comprises:

receiving, in a first downlink subframe, a first Orthogonal Frequency-Division

Multiplexing (OFDM) transmission formatted according to a first numerology;
and
receiving, in a second downlink subframe, a second OFDM transmission formatted
according to a second numerology, the second numerology differing from the
first numerology.

2. The method of claim 1, wherein the method comprises operating in the dormant mode for one or more first intervals and operating in a connected mode for one or more second intervals, and wherein said operating in the dormant mode further comprises:

monitoring signals carrying tracking area identifiers;
comparing tracking area identifiers received during said monitoring with a tracking area identifier list; and
notifying the wireless communication network in response to determining that a received tracking area identifier is not on said list but otherwise refraining from notifying the wireless communication network in response to receiving changing tracking area identifiers.

3. The method of claims 1 or 2, wherein the method further comprises:

receiving a downlink signal comprising an uplink access configuration index;
using the uplink access configuration index to identify an uplink access configuration from among a predetermined plurality of uplink access configurations;
and transmitting to the wireless communications network according to the identified uplink access configuration.

4. The method of one of the preceding claims, wherein the first numerology has a first subcarrier spacing and the second numerology has a second subcarrier spacing, the first subcarrier spacing differing from the second subcarrier spacing.

5. The method of one of the preceding claims, wherein the method further comprises:

receiving and processing first Layer 2 data on a first physical data channel, wherein

the receiving and processing of the first Layer 2 data comprises the use of soft HARQ combining; and

receiving and processing second Layer 2 data on a second physical data channel,

wherein the receiving and processing of the second Layer 2 data comprises no soft HARQ combining.

6. The method of one of the preceding claims, wherein said first and second downlink subframes are received on the same carrier frequency.

7. The method of one of the preceding claims, wherein subframes of said first and second numerologies comprise first and second predetermined numbers of OFDM symbols, respectively.

8. The method of one of the preceding claims, wherein at least one of said first and second numerologies comprises subframes having a length of 250 microseconds or less.

9. The method of one of the preceding claims, wherein the wireless device is a user equipment (UE).

10. A wireless device, comprising radio-frequency circuitry and a processing circuit operatively connected to the radio-frequency circuitry and configured to:

operate in a dormant mode, wherein operating in the dormant mode comprises

intermittently activating receiver circuitry to scan for synchronization signals and/or system information signals; and

while scanning for synchronization signals and/or system information signals:

perform a measurement on each of a plurality of resources from a predetermined set

of resources or demodulate and decode information from each of a plurality of resources from a predetermined set of resources, where the resources in the predetermined set of resources are each defined by one or more of a beam, a timing, and a frequency;

evaluate the measurement or the demodulated and decoded information for each of the plurality of resources against a predetermined criterion;

discontinue the performing and evaluating of measurements or discontinuing the

demodulating and decoding and evaluation of information, in response to determining that the predetermined criterion is met for one of the resources, such that one or more resources in the predetermined set of resources are not measured or demodulated and decoded; and

deactivate the activated receiver circuitry, further in response to determining that the predetermined criterion is met for one of the resources;

wherein the processing circuit is further configured to use the radio-frequency circuit to:

receive, in a first downlink subframe, a first Orthogonal Frequency-Division

Multiplexing (OFDM) transmission formatted according to a first numerology;
and

receive, in a second downlink subframe, a second OFDM transmission formatted
according to a second numerology, the second numerology differing from the
first numerology.

11. The wireless device of claim 10, wherein the processing circuit is configured to operate
in the dormant mode for one or more first intervals and to operate in a connected mode for
one or more second intervals, and wherein said operating in the dormant mode further
comprises:

monitoring signals carrying tracking area identifiers;
comparing tracking area identifiers received during said monitoring with a tracking
area identifier list; and
notifying the wireless communication network in response to determining that a
received tracking area identifier is not on said list but otherwise refraining
from notifying the wireless communication network in response to receiving
changing tracking area identifiers.

12. The wireless device of claims 10 or 11 wherein the processing circuit is further
configured to:

receive a downlink signal comprising an uplink access configuration index;
use the uplink access configuration index to identify an uplink access configuration
from among a predetermined plurality of uplink access configurations; and
transmit to the wireless communications network according to the identified uplink
access configuration.

13. The wireless device of one of claims 10-12, wherein the first numerology has a first subcarrier spacing and the second numerology has a second subcarrier spacing, the first subcarrier spacing differing from the second subcarrier spacing.

14. The wireless device of one of claims 10-13, wherein the processing circuit is further configured to:

receive and process first Layer 2 data on a first physical data channel, wherein the receiving and processing of the first Layer 2 data comprises the use of soft HARQ combining; and

receive and process second Layer 2 data on a second physical data channel, wherein the receiving and processing of the second Layer 2 data comprises no soft HARQ combining.

15. The wireless device of one of claims 10-14, wherein said first and second downlink subframes are received on the same carrier frequency.

16. The wireless device of one of claims 10-15, wherein subframes of said first and second numerologies comprise first and second predetermined numbers of OFDM symbols, respectively.

17. The wireless device of one of claims 10-16, wherein at least one of said first and second numerologies comprises subframes having a length of 250 microseconds or less.

18. The wireless device of one of claims 10-17, wherein the wireless device is a user equipment (UE).