

CLAIMS:

1.A method comprising:

generating (1002,1402) a time-frequency pattern specific to a sensing pilot signal transmitting node, the time-frequency pattern indicating, for a plurality of resource blocks:

a plurality of resource blocks that are to be used for transmitting a plurality of sensing pilot signals, and

a sensing pilot signal parameter for each sensing pilot signal among the plurality of sensing pilot signals; and

transmitting (1004,1404) an indication of the time-frequency pattern to the sensing pilot signal transmitting node.

2.A method comprising:

obtaining (1004,1404), at a sensing pilot signal transmitting node, a time-frequency pattern specific to the sensing pilot signal transmitting node, the time-frequency pattern indicating, for a plurality of resource blocks:

a plurality of resource blocks that are to be used for transmitting a plurality of sensing pilot signals, and

a sensing pilot signal parameter for each sensing pilot signal among the plurality of sensing pilot signals; and

transmitting (1008,1406), to a sensing pilot signal receiving node and in accordance with the time-frequency pattern, a given sensing pilot signal among the plurality of sensing pilot signals.

3.The method of claim 2, further comprising:

receiving an echo (1408) of the given sensing pilot signal; and

obtaining an estimate (1410) of a sensing measurement that characterizes a difference between the given sensing pilot signal and the echo of the given sensing pilot signal.

4.A method comprising:

receiving (1006), at a sensing pilot signal receiving node from a sensing pilot signal transmitting node, a time-frequency pattern specific to the sensing pilot signal transmitting node, the time-frequency pattern indicating, for a plurality of resource blocks:

a plurality of resource blocks that are to be used for transmitting a plurality of sensing pilot signals, and

a sensing pilot signal parameter for each sensing pilot signal among the plurality of sensing pilot signals;

receiving (1008), from the sensing pilot signal transmitting node, a received version of a given sensing pilot signal among the plurality of sensing pilot signals; and

transmitting (1012) an estimate of a sensing measurement that characterizes a difference between a transmitted version of the given sensing pilot signal and the received version of the given sensing pilot signal.

5. The method of any of claim 1 to claim 4, wherein the sensing pilot signal transmitting node comprises at least one of a transmit/receive point and a user equipment.

6. The method of any one of claim 1 to claim 5, wherein the sensing pilot signal comprises a chirp.

7. The method of claim 6, wherein the sensing pilot signal parameter comprises a chirp rate.

8. The method of any one of claim 1 to claim 7, wherein the sensing pilot signal parameter comprises a sub-carrier spacing.

9. The method of any one of claim 1 to claim 8, wherein the time-frequency pattern indicates that a further plurality of resource blocks are to be used for transmitting data content signals.

10. The method of any one of claim 1 to claim 9, wherein the time-frequency pattern indicates a single sensing pilot signal parameter for a particular first resource block among the plurality of first resource blocks.

11. An apparatus comprising:

a non-transitory memory storing instructions; and

a processor caused, by executing the instructions, to:

generate a time-frequency pattern specific to a sensing pilot signal transmitting node, the time-frequency pattern indicating, for a plurality of resource blocks:

a plurality of resource blocks that are to be used for transmitting a plurality of sensing pilot signals, and

a sensing pilot signal parameter for each sensing pilot signal among the plurality of sensing pilot signals; and

transmit an indication of the time-frequency pattern to the sensing pilot signal transmitting node.

12. An apparatus comprising:

a non-transitory memory storing instructions;

a processor caused, by executing the instructions, to:

obtain a time-frequency pattern specific to a sensing pilot signal transmitting node, the time-frequency pattern indicating, for a plurality of resource blocks:

a plurality of resource blocks that are to be used for transmitting a plurality of sensing pilot signals; and

a sensing pilot signal parameter for each sensing pilot signal among the plurality of sensing pilot signals; and

a transmitter adapted to transmit, to a sensing pilot signal receiving node and in accordance with the time-frequency pattern, a given sensing pilot signal among the plurality of sensing pilot signals.

13. The apparatus of claim 12, wherein the processor caused, by executing the instructions, to:

receive an echo (1408) of the given sensing pilot signal; and

obtain an estimate (1410) of a sensing measurement that characterizes a difference between the given sensing pilot signal and the echo of the given sensing pilot signal.

14. An apparatus comprising:

a receiver adapted to:

receive, from a sensing pilot signal transmitting node, a time-frequency pattern specific to the sensing pilot signal transmitting node, the time-frequency pattern indicating, for a plurality of resource blocks:

a plurality of resource blocks that are to be used for transmitting a plurality of sensing pilot signals, and

a sensing pilot signal parameter for each sensing pilot signal among the plurality of sensing pilot signals;

receive, from the sensing pilot signal transmitting node, a received version of a given sensing pilot signal among the plurality of sensing pilot signals; and

a transmitter adapted to transmit an estimate of a sensing measurement that characterizes a difference between a transmitted version of the given sensing pilot signal and the received version of the given sensing pilot signal.

15. The apparatus of any of one of claim 11 to claim 14, wherein the sensing pilot signal transmitting node comprises at least one of a transmit/receive point and a user equipment.

16. The apparatus of any one of claim 11 to claim 15, wherein the sensing pilot signal comprises a chirp.
17. The apparatus of claim 16, wherein the sensing pilot signal parameter comprises a chirp rate.
18. The apparatus of any one of claim 11 to claim 17, wherein the sensing pilot signal parameter comprises a sub-carrier spacing.
19. The apparatus of any one of claim 11 to claim 18, wherein the time-frequency pattern indicates that a further plurality of resource blocks are to be used for transmitting data content signals.
20. The apparatus of any one of claim 11 to claim 19, wherein the time-frequency pattern indicates a single sensing pilot signal parameter for a particular first resource block among the plurality of first resource blocks.
21. An apparatus comprising a processor configured to perform the method of any one of claims 1-10.
22. A computer-readable storage medium comprising instructions which, when executed by a computer, cause the computer to carry out the method of any one of claims 1-10.
23. A communication system, wherein the communication system comprises a first communication apparatus configured to perform the method of any one of claims 2 or 3 and a second communication apparatus configured to perform the method of claim 4.