

CLAIMS

1. A method for configuring beamforming settings, the method being performed by a wireless radio transceiver device (200) configured to communicate in directional beams, the method comprising:
 - 5 obtaining (S102) a performance indication requiring configuration of the beamforming settings of the wireless radio transceiver device (200);
 - selecting (S104) a similarity measure objective based on what kind of performance indication was obtained; and
 - determining (S106), based on the similarity measure objective and
 - 10 results from a similarity measure procedure applied to pairs of received signals, an order in which to evaluate the directional beams (110a, 110b, 120a, 120b) when configuring the beamforming settings, wherein the similarity measure procedure determines correlation between the pairs of received signals.
- 15 2. The method according to claim 1, further comprising:
 - evaluating (S108) the directional beams (110a, 110b, 120a, 120b) according to the determined order.
3. The method according to claim 2, wherein the radio transceiver device (200) comprises signal processing resources, and wherein evaluating the
- 20 directional beams (110a, 110b, 120a, 120b) comprises:
 - re-mapping (S108a) the signal processing resources from one beam port to another beam port according to the determined order.
4. The method according to any of the preceding claims, wherein the radio transceiver device (200) comprises at least two receiver chains (130a, 130b),
- 25 and wherein the pairs of signals are received from mutually different ones of the at least two receiver chains (130a, 130b).
5. The method according to any of claims 1 to 3, wherein the radio transceiver device (200) comprises at least one receiver chain (130a, 130b), and wherein the pairs of signals are received from same receiver chain (130a,
- 30 130b).

6. The method according to claim 5, wherein the signals are received on a radio channel having a coherence time, and wherein signals of each pair of signals are received within the coherence time.
7. The method according to any of claims 1 to 3, wherein the radio
5 transceiver device (200) comprises at least two receiver chains (130a, 130b), and wherein similarity measure of a pair of signals received from same ones of the at least two receiver chains (130a, 130b) is based on similarity measure between each of the signals in the pair of signals with the same signal from another one of the at least two receiver chains (130a, 130b).
- 10 8. The method according to any of the preceding claims, wherein the similarity measure procedure is evaluated in terms of signal strength similarity between the pairs of received signals.
9. The method according to any of claims 1 to 7, wherein the similarity
measure procedure is evaluated in terms of complex-valued similarity
15 between the pairs of received signals.
10. The method according to any of the preceding claims, wherein the similarity measure objective is to evaluate the directional beams (110a, 110b, 120a, 120b) according descending similarity measure results.
11. The method according to any of claims 1 to 9, wherein the similarity
20 measure objective is to evaluate the directional beams (110a, 110b, 120a, 120b) according ascending similarity measure results.
12. The method according to any of claims 1 to 10, wherein the similarity measure objective is to span as large angular space as possible when evaluating the directional beams (110a, 110b, 120a, 120b).
- 25 13. The method according to any of the preceding claims, wherein the performance indication pertains to network coverage of the wireless radio transceiver device (200).

14. The method according to claim 12 and 13, wherein the similarity measure procedure is evaluated in terms of signal strength similarity of the received signals and the similarity measure procedure is determined in terms of signal strength similarity when the performance indication pertains to network coverage and the similarity measure objective is to span as large angular space as possible.
15. The method according to any of claims 1 to 12, wherein the performance indication pertains to bitrate of the wireless radio transceiver device (200).
16. The method according to any of claims 1 to 9, wherein the similarity measure objective is to use as high rank as possible when evaluating the directional beams (110a, 110b, 120a, 120b).
17. The method according to claim 15 and 16, wherein the similarity measure procedure is evaluated in terms of signal strength similarity of the received signals and the similarity measure objective is to evaluate the directional beams (110a, 110b, 120a, 120b) according descending similarity measure results when the performance indication pertains to bitrate and when the similarity measure objective is to use as high rank as possible.
18. The method according to claim 15 and 16, wherein the similarity measure procedure is evaluated in terms of complex-valued similarity of the received signals and the similarity measure objective is to evaluate the directional beams (110a, 110b, 120a, 120b) according ascending similarity measure results when the performance indication pertains to bitrate and when the similarity measure objective is to use as high rank as possible.
19. The method according to any of the preceding claims, wherein the received signals are any of reference signals and data signals.
20. A wireless radio transceiver device (200) for configuring beamforming settings, the wireless radio transceiver device (200) being configured to communicate in directional beams (110a, 110b, 120a, 120b) and comprising processing circuitry (210), the processing circuitry being configured to cause

wireless radio transceiver device (200) to:

obtain a performance indication requiring configuration of the beamforming settings of the wireless radio transceiver device (200);

select a similarity measure objective based on what kind of performance indication was obtained; and

determine, based on the similarity measure objective and results from a similarity measure procedure applied to pairs of received signals, an order in which to evaluate the directional beams (110a, 110b, 120a, 120b) when configuring the beamforming settings, wherein the similarity measure procedure determines correlation between the pairs of received signals.

21. A wireless radio transceiver device (200) for configuring beamforming settings, the wireless radio transceiver device (200) being configured to communicate in directional beams (110a, 110b, 120a, 120b) and comprising:

processing circuitry (210); and

a storage medium (230) storing instructions that, when executed by the processing circuitry (210), cause the wireless radio transceiver device (200) to:

obtain a performance indication requiring configuration of the beamforming settings of the wireless radio transceiver device (200);

select a similarity measure objective based on what kind of performance indication was obtained; and

determine, based on the similarity measure objective and results from a similarity measure procedure applied to pairs of received signals, an order in which to evaluate the directional beams (110a, 110b, 120a, 120b) when configuring the beamforming settings, wherein the similarity measure procedure determines correlation between the pairs of received signals.

22. A wireless radio transceiver device (200) for configuring beamforming settings, the wireless radio transceiver device (200) being configured to communicate in directional beams (110a, 110b, 120a, 120b) and comprising:

an obtain module (210a) configured to obtain a performance indication requiring configuration of the beamforming settings of the wireless radio transceiver device (200);

a select module (210b) configured to select a similarity measure objective based on what kind of performance indication was obtained; and
a determine module (210c) configured to determine, based on the similarity measure objective and results from a similarity measure procedure
5 applied to pairs of received signals, an order in which to evaluate the directional beams (110a, 110b, 120a, 120b) when configuring the beamforming settings, wherein the similarity measure procedure determines correlation between the pairs of received signals.

23. An access node (800) comprising a radio transceiver device (200)
10 according to claim 20, 21, or 22.

24. A wireless device (900) comprising a radio transceiver device (200)
according to claim 20, 21, or 22.

25. A computer program (1020) for configuring beamforming settings, the computer program comprising computer code which, when run on
15 processing circuitry (210) of a wireless radio transceiver device (200) being configured to communicate in directional beams (110a, 110b, 120a, 120b), causes the wireless radio transceiver device (200) to:

obtain (S102) a performance indication requiring configuration of the beamforming settings of the wireless radio transceiver device (200);

20 select (S104) a similarity measure objective based on what kind of performance indication was obtained; and

determine (S106), based on the similarity measure objective and results from a similarity measure procedure applied to pairs of received signals, an order in which to evaluate the directional beams (110a, 110b, 120a, 120b)
25 when configuring the beamforming settings, wherein the similarity measure procedure determines correlation between the pairs of received signals.

26. A computer program product (1010) comprising a computer program (1020) according to claim 25, and a computer readable storage medium (1030) on which the computer program is stored.