What is claimed is:

1. In a WLAN positioning system for estimating the position of a WLAN-enabled device, a method of estimating an expected error of a position estimate, the method comprising:
the WLAN-enabled device receiving signals transmitted by at least one WLAN access point in range of the WLAN-enabled device, the at least one WLAN access point having an estimated characteristic; and
estimating an expected error, in terms of distance, of a position estimate that would result if the received signals from the at least one WLAN access point were used in a position estimation determination based on the estimated characteristics of the at least one WLAN access point in range of the WLAN enabled device, wherein the expected error predicts a relative accuracy of the position estimate.

2. In a WLAN positioning system for estimating the position of a WLAN-enabled device, a system for estimating an expected error of a position estimate, the system for estimating the expected error comprising:
a WLAN-enabled device for receiving signals transmitted by at least one WLAN access point in range of the WLAN-enabled device, the at least one WLAN access point having an estimated characteristic; and
error estimating logic for estimating an expected error, in terms of distance, of a position estimate that would result if the received signals from the at least one WLAN access point were used in a position estimation determination based on the estimated characteristics of the at least one WLAN access points in range of the WLAN enabled device, wherein the expected error predicts a relative accuracy of the position estimate.

3. The method of claim 1, the estimated characteristic being at least one of received signal strength, estimated geographic location, and signal coverage area.

4. The method of claim 3, the signal coverage area for each WLAN access point being estimated by the method comprising:
determining geographic locations at which a WLAN-enabled device receives a signal from the WLAN access point;

determining a standard deviation of the coverage area based on the determined geographic locations; and

estimating the coverage area of the WLAN access point based on the standard deviation of the coverage area.

5. The method of claim 1, the at least one WLAN access point including a plurality of WLAN access points, and the estimated characteristic being a spatial spread of distance between estimated geographic positions of the plurality of WLAN access points.

6. The method of claim 1, the estimating the expected error of the position estimate being based on characteristics from more than one WLAN access point in range of the WLAN-enabled device.

7. The method of claim 1, the WLAN-enabled device receiving signals transmitted by a plurality of WLAN access points in range of the WLAN-enabled device, the WLAN access points of the plurality having aggregate statistics of estimated characteristics of the plurality of WLAN access points, and the estimating the expected error that would result if the received signals from the plurality of WLAN access points were used in a position estimation determination being based on the aggregate statistics of the estimated characteristics of the plurality of WLAN access points.

8. The method of claim 7, the aggregate statistics being at least one of a maximum value, a minimum value, a median value, an average value, a standard deviation, and a sum.

9. The method of claim 7, the aggregate statistics being at least one of received signal strength, estimated geographic location, signal coverage area, a spatial spread of distance between estimated geographic positions of the plurality of WLAN access points, and a count of the plurality of WLAN access points.

10. The method of claim 9, the estimating the expected error of the position estimate being based on a smallest signal coverage area of the WLAN access points of the plurality.

11. The method of claim 10, the expected error of the position estimate being directly proportional to the smallest signal coverage area of the WLAN access points of the plurality.

12. The method of claim 1, further comprising estimating the position of the WLAN-enabled device based on signals received from the at least one WLAN access point in range of the

WLAN enabled device only if the expected error of the position estimate is lower than a predetermined threshold.

13. The method of claim 1, the estimating the expected error of the position estimate being based on a weighted average of at least two of a first expected error value estimated based on a count of WLAN access points available for estimating the position of the WLAN enabled device, a second expected error value estimated based on a smallest signal coverage area of the WLAN access points available to estimate the position of the WLAN-enabled device, and a third expected error value estimated based on a spatial spread of the geographic positions of the WLAN access points available to estimate the position of the WLAN-enabled device, the spatial spread being based on a distance between the estimated geographic positions of the WLAN access points available to estimate the position of the WLAN-enabled device.

14. The method of claim 13, the first, second, and third expected error values being weighted according to corresponding correlation coefficients, each correlation coefficient measuring the accuracy with which its corresponding expected error value predicts the actual error.

15. The method of claim 1, the at least one WLAN access point including a plurality of WLAN access points, and the expected error of the position estimate being inversely proportional to the square root of the number of access points available to estimate the position of the WLAN enabled device.

16. The system of claim 2, the estimated characteristic being at least one of received signal strength, estimated geographic location, and signal coverage area.

17. The system of claim 16, the signal coverage area for each WLAN access point being estimated by the method comprising:

determining geographic locations at which a WLAN-enabled device receives a signal from the WLAN access point;

determining a standard deviation of the coverage area based on the determined geographic locations; and

estimating the coverage area of the WLAN access point based on the standard deviation of the coverage area.

18. The system of claim 2, the at least one WLAN access point including a plurality of WLAN access points, and the estimated characteristic being a spatial spread of distance between estimated geographic positions of the plurality of WLAN access points.

19. The system of claim 2, the estimating the expected error of the position estimate being based on characteristics from more than one WLAN access point in range of the WLAN-enabled device.

20. The system of claim 2, the WLAN-enabled device receiving signals transmitted by a plurality of WLAN access points in range of the WLAN-enabled device, the WLAN access points of the plurality having aggregate statistics of estimated characteristics of the plurality of WLAN access points, and the estimating the expected error that would result if the received signals from the plurality of WLAN access points were used in a position estimation determination being based on the aggregate statistics of the estimated characteristics of the plurality of WLAN access points.

21. The system of claim 20, the aggregate statistics being at least one of a maximum value, a minimum value, a median value, an average value, a standard deviation, and a sum.

22. The system of claim 20, the aggregate statistics being at least one of received signal strength, estimated geographic location, signal coverage area, a spatial spread of distance between estimated geographic positions of the plurality of WLAN access points, and a count of the plurality of WLAN access points.

23. The system of claim 22, the estimating the expected error of the position estimate being based on a smallest signal coverage area of the WLAN access points of the plurality.

24. The system of claim 23, the expected error of the position estimate being directly proportional to the smallest signal coverage area of the WLAN access points of the plurality.

25. The system of claim 2, further comprising position estimating logic for estimating the position of the WLAN-enabled device based on signals received from the at least one WLAN access point in range of the WLAN enabled device only if the expected error of the position estimate is lower than a predetermined threshold.

26. The system of claim 2, the estimating the expected error of the position estimate being based on a weighted average of at least two of a first expected error value estimated based on a

count of WLAN access points available for estimating the position of the WLAN enabled device, a second expected error value estimated based on a smallest signal coverage area of the WLAN access points available to estimate the position of the WLAN-enabled device, and a third expected error value estimated based on a spatial spread of the geographic positions of the WLAN access points available to estimate the position of the WLAN-enabled device, the spatial spread being based on a distance between the estimated geographic positions of the WLAN access points available to estimate the position of the WLAN-enabled device.

27. The system of claim 26, the first, second, and third expected error values being weighted according to corresponding correlation coefficients, each correlation coefficient measuring the accuracy with which its corresponding expected error value predicts the actual error.

28. The system of claim 2, the at least one WLAN access point including a plurality of WLAN access points, and the expected error of the position estimate being inversely proportional to the square root of the number of access points available to estimate the position of the WLAN enabled device.

29. The method of claim 1, the estimating the expected error of the position estimate based on the estimated characteristics of the at least one WLAN access point including estimating the expected error of the position estimate based on statistical parameters of the characteristics of the at least one WLAN access point.

30. The method of claim 29, the statistical parameters including at least one of correlation coefficients, standard deviation values, maximum values, minimum values, sample counts, average values, and median values.

31. The method of claim 1, the WLAN positioning system using public and private WLAN access points for estimating the position of the WLAN-enabled device.

32. The method of claim 1, the WLAN positioning system using public and private WLAN access points that are deployed over a wide area relative to an indoor positioning system.

33. The system of claim 2, the error estimating logic for estimating the expected error of the position estimate based on the estimated characteristics of the at least one WLAN access

point including logic for estimating the expected error of the position estimate based on statistical parameters of the characteristics of the at least one WLAN access point.

34. The system of claim 33, the statistical parameters including at least one of correlation coefficients, standard deviation values, maximum values, minimum values, sample counts, average values, and median values.

35. The system of claim 2, the WLAN positioning system using public and private WLAN access points for estimating the position of the WLAN-enabled device.

36. The system of claim 2, the WLAN positioning system using public and private WLAN access points that are deployed over a wide area relative to an indoor positioning system.

What is claimed is:

1. In a Wireless Local Area Network (WLAN) positioning system for estimating the position of a WLAN-enabled device, a method of estimating an expected error of a position estimate, the method comprising: the WLAN-enabled device receiving signals transmitted by at least one WLAN access point in range of the WLAN-enabled device, the at least one WLAN access point having an estimated characteristic; and estimating an expected error, in terms of distance, of a position estimate that would result if the received signals from the at least one WLAN access point were used in a position estimation determination based on the estimated characteristics of the at least one WLAN access point in range of the WLAN enabled device, wherein the expected error predicts a relative accuracy of the position estimate.

2. The method of claim 1, the estimated characteristic being at least one of received signal strength, estimated geographic location, and signal coverage area.

3. The method of claim 2, the signal coverage area for each WLAN access point being estimated by the method comprising: determining geographic locations at which a WLAN-enabled device receives a signal from the WLAN access point; determining a standard deviation of the coverage area based on the determined geographic locations; and estimating the coverage area of the WLAN access point based on the standard deviation of the coverage area.

4. The method of claim 1, the at least one WLAN access point including a plurality of WLAN access points, and the estimated characteristic being a spatial spread of distance between estimated geographic positions of the plurality of WLAN access points.

5. The method of claim 1, the estimating the expected error of the position estimate being based on characteristics from more than one WLAN access point in range of the WLAN-enabled device.

6. The method of claim 1, the WLAN-enabled device receiving signals transmitted by a plurality of WLAN access points in range of the WLAN-enabled device, the WLAN access points of the plurality having aggregate statistics of estimated characteristics of the plurality of WLAN access points, and the estimating the expected error that would result if the received signals from the plurality of WLAN access points were used in a position estimation determination being based on the aggregate statistics of the estimated characteristics of the plurality of WLAN access points.

7. The method of claim 6, the aggregate statistics being at least one of a maximum value, a minimum value, a median value, an average value, a standard deviation, and a sum.

8. The method of claim 6, the aggregate statistics being at least one of received signal strength, estimated geographic location, signal coverage area, a spatial spread of distance between estimated geographic positions of the plurality of WLAN access points, and a count of the plurality of WLAN access points.

9. The method of claim 8, the estimating the expected error of the position estimate being based on a smallest signal coverage area of the WLAN access points of the plurality.

10. The method of claim 9, the expected error of the position estimate being directly proportional to the smallest signal coverage area of the WLAN access points of the plurality.

11. The method of claim 1, further comprising estimating the position of the WLAN-enabled device based on signals received from the at least one WLAN access point in range of the WLAN enabled device only if the expected error of the position estimate is lower than a predetermined threshold.

12. The method of claim 1, the estimating the expected error of the position estimate being based on a weighted average of at least two of a first expected error value estimated based on a count of WLAN access points available for estimating the position of the WLAN enabled device, a second expected error value estimated based on a smallest signal coverage area of the WLAN access points available to estimate the position of the WLAN-enabled device, and a third expected error value estimated based on a spatial spread of the geographic positions of the WLAN access points available to estimate the position of the WLAN-enabled device, the spatial spread being based on a distance between the estimated geographic positions of the WLAN access points available to estimate the position of the WLAN-enabled device.

13. The method of claim 12, the first, second, and third expected error values being weighted according to corresponding correlation coefficients, each correlation coefficient measuring the accuracy with which its corresponding expected error value predicts the actual error.

14. The method of claim 1, the at least one WLAN access point including a plurality of WLAN access points, and the expected error of the position estimate being inversely proportional to the square root of the number of access points available to estimate the position of the WLAN enabled device.

15. The method of claim 1, the estimating the expected error of the position estimate based on the estimated characteristics of the at least one WLAN access point including estimating the expected error of the position estimate based on statistical parameters of the characteristics of the at least one WLAN access point.

16. The method of claim 15, the statistical parameters including at least one of correlation coefficients, standard deviation values, maximum values, minimum values, sample counts, average values, and median values.

17. The method of claim 1, the WLAN positioning system using public and private WLAN access points for estimating the position of the WLAN-enabled device.

18. The method of claim 1, the WLAN positioning system using public and private WLAN access points that are deployed over a wide area relative to an indoor positioning system.

19. In a Wireless Local Area Network (WLAN) positioning system for estimating the position of a WLAN-enabled device, a system for estimating an expected error of a position estimate, the system for estimating the expected error comprising: a WLAN-enabled device for receiving signals transmitted by at least one WLAN access point in range of the WLAN-enabled device, the at least one WLAN access point having an estimated characteristic; and error estimating logic for estimating an expected error, in terms of distance, of a position estimate that would result if the received signals from the at least one WLAN access point were used in a position estimation determination based on the estimated characteristics of the at least one WLAN access points in range of the WLAN enabled device, wherein the expected error predicts a relative accuracy of the position estimate.

20. The system of claim 19, the estimated characteristic being at least one of received signal strength, estimated geographic location, and signal coverage area.

21. The system of claim 20, the signal coverage area for each WLAN access point being estimated by the method comprising: determining geographic locations at which a WLAN-enabled device receives a signal from the WLAN access point; determining a standard deviation of the coverage area based on the determined geographic locations; and estimating the coverage area of the WLAN access point based on the standard deviation of the coverage area.

22. The system of claim 19, the at least one WLAN access point including a plurality of WLAN access points, and the estimated characteristic being a spatial spread of distance between estimated geographic positions of the plurality of WLAN access points.

23. The system of claim 19, the estimating the expected error of the position estimate being based on characteristics from more than one WLAN access point in range of the WLAN-enabled device.

24. The system of claim 19, the WLAN-enabled device receiving signals transmitted by a plurality of WLAN access points in range of the WLAN-enabled device, the WLAN access points of the plurality having aggregate statistics of estimated characteristics of the plurality of WLAN access points, and the estimating the expected error that would result if the received signals from the plurality of WLAN access points were used in a position estimation determination being based on the aggregate statistics of the estimated characteristics of the plurality of WLAN access points.

25. The system of claim 24, the aggregate statistics being at least one of a maximum value, a minimum value, a median value, an average value, a standard deviation, and a sum.

26. The system of claim 24, the aggregate statistics being at least one of received signal strength, estimated geographic location, signal coverage area, a spatial spread of distance between estimated geographic positions of the plurality of WLAN access points, and a count of the plurality of WLAN access points.

27. The system of claim 26, the estimating the expected error of the position estimate being based on a smallest signal coverage area of the WLAN access points of the plurality.

28. The system of claim 27, the expected error of the position estimate being directly proportional to the smallest signal coverage area of the WLAN access points of the plurality.

29. The system of claim 19, further comprising position estimating logic for estimating the position of the WLAN-enabled device based on signals received from the at least one WLAN access point in range of the WLAN enabled device only if the expected error of the position estimate is lower than a predetermined threshold.

30. The system of claim 19, the estimating the expected error of the position estimate being based on a weighted average of at least two of a first expected error value estimated based on a count of WLAN access points available for estimating the position of the WLAN enabled device, a second expected error value estimated based on a smallest signal coverage area of the WLAN access points available to estimate the position of the WLAN-enabled device, and a third expected error value estimated based on a spatial spread of the geographic positions of the WLAN access points available to estimate the position of the WLAN-enabled device, the spatial spread being based on a distance between the estimated geographic positions of the WLAN access points available to estimate the position of the WLAN-enabled device.

31. The system of claim 30, the first, second, and third expected error values being weighted according to corresponding correlation coefficients, each correlation coefficient measuring the accuracy with which its corresponding expected error value predicts the actual error.

32. The system of claim 19, the at least one WLAN access point including a plurality of WLAN access points, and the expected error of the position estimate being inversely proportional to the square root of the number of access points available to estimate the position of the WLAN enabled device.

33. The system of claim 19, the error estimating logic for estimating the expected error of the position estimate based on the estimated characteristics of the at least one WLAN access point including logic for estimating the expected error of the position estimate based on statistical parameters of the characteristics of the at least one WLAN access point.

34. The system of claim 33, the statistical parameters including at least one of correlation coefficients, standard deviation values, maximum values, minimum values, sample counts, average values, and median values.

35. The system of claim 19, the WLAN positioning system using public and private WLAN access points for estimating the position of the WLAN-enabled device.

36. The system of claim 19, the WLAN positioning system using public and private WLAN access points that are deployed over a wide area relative to an indoor positioning system.