# Method of data analysis

It is thus believed that the operation and construction of the present invention will be apparent from the foregoing description. While the method shown and described has been characterized as being preferred, it will be readily apparent that various changes and modifications could be been characterized as being preferred, it will be readily apparent that various changes and modifications could be made there in without departing from the scope of the invention as defined in the following claims

What is claimed is:

1. a handoff A method in a cellular telecommunications network of optimizing border between a present cell and a neighbor cell, said method comprising the steps of:

* determining a current hysteresis value utilized to ensure that a mobile station (MS) is receiving a stronger signal from the neighbor cell than the present cell before a handoff is performed from the present cell to the neighbor cell, said stronger signal being stronger by the hysteresis value;
* calculating a midpoint SS by determining an average SS measurement from the present cell, an average SS measurement from the neighbor cell, and an overall average of the average SS measurement from the present cell and the average SS measurement from the neighbor cell; and
* optimizing the handoff border by subtracting from the current hysteresis value, an amount approximately equal to the difference between the midpoint SS and the average SS measurement from the present cell.

1. The method of optimizing a handoff border of claim 1 further comprising repeating the steps of claim 1 utilizing SS measurements from a greater number of MSs.
2. A method in a cellular telecommunications network of optimizing an outgoing hysteresis value utilized for control- ling handoff of a mobile station from a present cell to a neighbor cell at a handoff border, said method comprising the steps of:

* determining a current outgoing hysteresis value; collecting a plurality of signal strength (SS) measurements taken by a plurality of mobile stations operating near the handoff border.
* calculating an average SS on the present cell side of the handoff border (CP).
* calculating an average SS on the neighbor cell side of the handoff border (CN.
* calculating a midpoint SS between the present cell and the neighbor cell by calculating an average of CP and CN.
* calculating an expected signal strength on the present cell side of the handoff border following the handoff (EP) by subtracting a factor due to rounding errors from the

midpoint SS; and

* calculating a recommended hysteresis value for outgoing handoffs from the present cell to the neighbor cell by subtracting from the current outgoing hysteresis value, the difference between EP and CP.

1. The method of optimizing an outgoing hysteresis value of claim 3 further comprising updating the outgoing hysteresis value by repeating the steps of claim 1 utilizing the most recent SS measurements from MSs in the present cell.
2. The method of optimizing an outgoing hysteresis value of claim 3 further comprising fine tuning the outgoing hysteresis value by repeating the steps of claim 1 utilizing SS measurements from all of the MSs operating in the present cell.
3. The method of optimizing an outgoing hysteresis value of claim 3 further comprising the steps of:

* determining whether the recommended hysteresis value is less than or equal to a default hysteresis value; and
* upon determining that the recommended hysteresis value is less than or equal to the default hysteresis value, utilizing the default hysteresis value to control handoff...

1. The method of optimizing an outgoing hysteresis value of claim 3 further comprising the steps of:

* determining whether the SS for the present cell is below a predefined threshold for weak signal strength while the SS for the neighbor cell is above a predefined threshold for strong signal strength; and
* adjusting the current hysteresis value based on the calculated midpoint SS, upon determining that the SS for the present cell is below the weak SS threshold and the SS for the neighbor cell is above the strong SS threshold.

1. The method of optimizing an outgoing hysteresis value of claim 7 further comprising adjusting the current hysteresis value based on the measured SS, upon determining that either the SS for the present cell is above the weak SS threshold or the SS for the neighbor cell is below the strong SS threshold.