CLAIMS

1. A method of determining signal measurements on a plurality of frequencies at a mobile device, comprising:

conducting a first plurality of scans within a first frequency band using a first wireless LAN (WLAN) transceiver in the mobile device;

conducting a second plurality of scans within a second frequency band using the first WLAN transceiver in the mobile device, wherein the second frequency band is higher than the first frequency band;

conducting a third plurality of scans within a third frequency band using a second WLAN transceiver in the mobile device, wherein the third frequency band is higher than the second frequency band;

determining location information comprising indications of signal measurements measured within the first frequency band, indications of signal measurements measured within the second frequency band, or indications of signal measurements measured within the third frequency band, or a combination thereof, wherein indications of signal measurements measured in a higher frequency band are assigned a higher priority than indications of signal measurements measured in a lower frequency band; and

sending up to a maximum response count of indications of signal measurements, from the mobile device to a location server, wherein, in response to the total number of the indications of signal measurements exceeding the maximum response count, sending the maximum response count of the indications of signal measurements, wherein the maximum response count of the indications of signal measurements are selected based, at least in part, upon priority.

2. The method of Claim 1, further comprising:

transmitting at least one probe request within the first frequency band using the first WLAN transceiver in the mobile device;

transmitting at least one probe request within the second frequency band using the first WLAN transceiver in the mobile device; and

transmitting at least one probe request within the third frequency band using the second WLAN transceiver in the mobile device.

3. The method of Claim 1, wherein indications of signal measurements comprise indications of time of arrival or indications of signal strength or indications of frequency band or a combination thereof, and wherein each indication of the indications of signal measurements is associated with an access point identifier.

4. The method of Claim 1, wherein a combined duration of the first plurality of scans and the second plurality of scans does not exceed a maximum response time and a duration of the third plurality of scans exceeds the maximum response time.

5. The method of Claim 4, wherein the maximum response time comprises a Quality of Service (QoS) parameter.

6. The method of Claim 1, wherein a duration of the first plurality of scans and a duration of the second plurality of scans are less than or equal to a duration of the third plurality of scans.

7. The method of Claim 1, further comprising receiving an almanac of access points from the location server; and wherein determining the location of the mobile device comprises determining the location of the mobile device based, at least in part, on the location information and the almanac of access points.

8. The method of Claim 1, wherein the first plurality of scans and the second plurality of scans are conducted concurrent with at least part of the third plurality of scans.

9. A mobile device for determining signal measurements on a plurality of frequencies, comprising:

one or more processing units;

a first WLAN transceiver capable of operating in a first frequency band and in a second frequency band; and

a second WLAN transceiver capable of operating in a third frequency band;

wherein the one or more processing units are configured to:

conduct a first plurality of scans within the first frequency band using the first WLAN

transceiver in the mobile device;

conduct a second plurality of scans within the second frequency band using the first WLAN transceiver in the mobile device, wherein the second frequency band is higher than the first frequency band;

conduct a third plurality of scans within the third frequency band using the second WLAN transceiver in the mobile device, wherein the third frequency band is higher than the second frequency band;

determine location information comprising indications of signal measurements measured within the first frequency band, indications of signal measurements measured within the second frequency band, or indications of signal measurements measured within the third frequency band, or a combination thereof, wherein indications of signal measurements measured in a higher frequency band are assigned a higher priority than indications of signal measurements measured in a lower frequency band; and

send up to a maximum response count of indications of signal measurements, from the mobile device to a location server, wherein, in response to the total number of the indications of signal measurements exceeding the maximum response count, sending the maximum response count of the indications of signal measurements, wherein the maximum response count of the indications of signal measurements are selected based, at least in part, upon priority.

10. The mobile device of Claim 9, wherein the one or more processing units are further configured to:

transmit at least one probe request within the first frequency band using the first WLAN transceiver in the mobile device;

transmit at least one probe request within the second frequency band using the first WLAN transceiver in the mobile device; and

transmit at least one probe request within the third frequency band using the second WLAN transceiver in the mobile device.

11. The mobile device of Claim 9, wherein the indications of signal measurements comprise indications of time of arrival or indications of signal strength or indications of frequency band or a combination thereof, and wherein each indication of the indications of signal measurements is

associated with an access point identifier.

12. The mobile device of Claim 9, wherein a combined duration of the first plurality of scans and the second plurality of scans does not exceed a maximum response time and a duration of the third plurality of scans exceeds the maximum response time.

13. The mobile device of Claim 12, wherein the maximum response time comprises a Quality of Service (QoS) parameter.

14. The mobile device of Claim 9, wherein a duration of the first plurality of scans and a duration of the second plurality of scans are less than or equal to a duration of the third plurality of scans.

15. The mobile device of Claim 9, wherein the one or more processing units are further configured to receive an almanac of access points from the location server; and wherein the one or more processing units configured to determine the location of the mobile device, are configured to determine the location of the mobile device based, at least in part, on the location information and the almanac of access points.

16. The mobile device of Claim 9, wherein the one or more processing units are further configured to conduct the first plurality of scans and the second plurality of scans concurrent with at least part of the third plurality of scans.

17. A non-transitory computer-readable medium, having stored thereon computer-readable instructions to cause a processor to:

conduct a first plurality of scans within a first frequency band using a first WLAN transceiver in a mobile device;

conduct a second plurality of scans within a second frequency band using the first WLAN transceiver in the mobile device, wherein the second frequency band is higher than the first frequency band;

conduct a third plurality of scans within a third frequency band using a second WLAN

transceiver in the mobile device, wherein the third frequency band is higher than the second frequency band;

determine location information comprising indications of signal measurements measured within the first frequency band, indications of signal measurements measured within the second frequency band, or indications of signal measurements measured within the third frequency band, or a combination thereof, wherein indications of signal measurements measured in a higher frequency band are assigned a higher priority than indications of signal measurements measured in a lower frequency band; and

send up to a maximum response count of indications of signal measurements, from the mobile device to a location server, wherein, in response to the total number of the indications of signal measurements exceeding the maximum response count, sending the maximum response count of the indications of signal measurements, wherein the maximum response count of the indications of signal measurements are selected based, at least in part, upon priority.

18. The non-transitory computer-readable medium of Claim 17, wherein the computer-readable instructions are further configured to cause the processor to:

conduct the first plurality of scans and the second plurality of scans concurrent with at least part of the third plurality of scans.

19. A mobile device for determining signal measurements in a plurality of frequency bands, comprising:

means for conducting a first plurality of scans within a first frequency band using a first WLAN transceiver in the mobile device;

means for conducting a second plurality of scans within a second frequency band using the first WLAN transceiver in the mobile device, wherein the second frequency band is higher than the first frequency band;

means for conducting a third plurality of scans within a third frequency band using a second WLAN transceiver in the mobile device, wherein the third frequency band is higher than the second frequency band;

means for determining location information comprising indications of signal measurements measured within the first frequency band, indications of signal measurements

measured within the second frequency band, or indications of signal measurements measured within the third frequency band, or a combination thereof, wherein indications of signal measurements measured in a higher frequency band are assigned a higher priority than indications of signal measurements measured in a lower frequency band; and

means for sending up to a maximum response count of indications of signal measurements, from the mobile device to a location server, wherein, in response to the total number of the indications of signal measurements exceeding the maximum response count, sending the maximum response count of the indications of signal measurements, wherein the maximum response count of the indications of signal measurements are selected based, at least in part, upon priority.

20. The mobile device of Claim 19, wherein the indications of signal measurements comprise indications of time of arrival or indications of signal strength or indications of frequency band or a combination thereof, and wherein each indication of the indications of signal measurements is associated with an access point identifier.

21. The mobile device of Claim 19, wherein the first plurality of scans and the second plurality of scans are conducted concurrent with at least part of the third plurality of scans.