EXHIBIT A

Skyhook Wireless, Inc. v. Google Inc.
Case No. 11-11571-RWZ

**AMENDED SIDE-BY-SIDE COMPARISON OF GOOGLE'S AND SKYHOOK'S
POSITIONS REGARDING INDEFINITENESS AND PROPOSED CLAM CONSTRUCTIONS**

The parties have stipulated to the proper construction of term nos. 1, 3, 5, 16, 26, 28, 29, 34 and 35.
The parties dispute the proper construction of term nos. 2, 4, 6, 8, 18, 22-25, 30 and 32.
Google contends, and Skyhook denies, that term nos. 7, 9-15, 17, 19, 20, 21, 27, 31 and 33 are indefinite, and not amenable to claim construction.

Term No.	Claim language	Google's Position	Skyhook's Position	Appears in asserted claims
1.	"Wi-Fi access points"	**Stipulated construction**: Devices operating consistent with the IEEE 802.11 standard to provide network connectivity.		'988/1, 3 '694/1 '245/1, 2 '897/1, 3, 4
2.	"target area"	A pre-identified geographic region throughout which a shortest route is planned along all drivable roads.	A targeted geographic area.	'988/1 '694/1, 2 '245/1
3.	"a radius on the order of tens of miles"	**Stipulated construction**: A radius of ten miles or more but fewer than a hundred miles.		'988/1 '694/1
4.	"substantially all Wi-Fi access points" / "for substantially all Wi-Fi access points in the target area"	All but an insignificant number of Wi-Fi access points in the target area.	Substantially all observed Wi-Fi access points. *See* "Wi-Fi access points." For substantially all observed Wi-Fi access points in the target area *See* "Wi-Fi access points."	'988/1 '694/1

Term No.	Claim language	Google's Position	Skyhook's Position	Appears in asserted claims
5.	"identification information for a corresponding Wi-Fi access point"	**Stipulated construction**: An identifier (*e.g.*, a MAC address) for a corresponding Wi-Fi access point. *See* "Wi-Fi access points."		'988/1 '694/1
6.	"calculated position information"	The physical location (*i.e.*, latitude and longitude) attributed to each Wi-Fi access point determined mathematically from readings recorded along a shortest planned route throughout all drivable roads in the target area (*i.e.* by following the Chinese Postman routing algorithm), that avoids arterial bias and meets the stated reference symmetry criteria. The "calculated position information" cannot be based on randomly, or non-systematically, collected readings of Wi-Fi access points. Synonymous with "calculated locations" in the '245 patent, as well as "recorded location" and "recorded location information" in the '897 patent.	Estimated physical position(s) of the observed Wi-Fi access point(s) calculated using characteristics of their transmitted signals.	'988/1 '694/1
7.	"reference symmetry"	This limitation is indefinite in violation of 35 U.S.C. § 112, ¶ 2 because it does not apprise one skilled in the art of the bounds of the claim. Alternatively, "the balanced or symmetrical distribution of numerous access points on all sides of the user device and within range of the user device's WiFi radio."	From the perspective of a user whose location is being calculated, the calculated positions of observed Wi-Fi access points in range of the user tend to be distributed around the user with reduced arterial bias.	'988/1 '694/1

Term No.	Claim language	Google's Position	Skyhook's Position	Appears in asserted claims
8.	"arterial bias"	The deviation of the calculated position information for a Wi-Fi access point toward heavily trafficked roads and away from the actual geographic location of the access point due to the tendency of random scanning to result in a greater number of scans from heavily trafficked roads.	The deviation of the calculated position information for a Wi-Fi access point towards heavily trafficked roads and away from the actual geographic location of the access point.	'988/1 '694/1
9.	"recording multiple readings of the Wi-Fi access point at different locations around the Wi-Fi access point so that the multiple readings have reference symmetry relative to other Wi-Fi access points in the target area"	This limitation is indefinite in violation of 35 U.S.C. § 112, ¶ 2 because it does not apprise one skilled in the art of the bounds of the claim, and in particular (1) impermissibly recites a method step in an apparatus claim; and (2) fails to apprise the person of ordinary skill in the art as to what it means for "multiple readings of the Wi-Fi access point at different locations around the Wi-Fi access point" to "have reference symmetry *relative to other Wi-Fi access points* in the target area." Alternatively, "systematically driving each road in the target area using a pre-designed Chinese Postman scanning route so as to collect multiple readings of the Wi-Fi access point at different locations around the Wi-Fi access point so that the multiple readings have reference symmetry relative to other Wi-Fi access points in the target area."	Multiple scans of a Wi-Fi access point are recorded. The scans are taken at different locations around the Wi-Fi access point. This results in the following: (1) the multiple readings produce reference symmetry relative to other Wi-Fi access points in the target area and (2) the calculated position of the Wi-Fi access point reduces the effects of arterial bias. *See* "Wi-Fi access points," "reference symmetry," "avoids arterial bias," and "calculated position information."	'988/1

3

Term No.	Claim language	Google's Position	Skyhook's Position	Appears in asserted claims
10.	"recording multiple readings of the Wi-Fi access point at different locations around the Wi-Fi access point … so that the calculation of the position of the Wi-Fi access point avoids arterial bias in the calculated position information"	This limitation is indefinite in violation of 35 U.S.C. § 112, ¶ 2 because it does not apprise one skilled in the art of the bounds of the claim, and in particular (1) impermissibly recites a method step in an apparatus claim; and (2) fails to provide any measure of when recording multiple readings … around the Wi-Fi access point … so that the calculation of the position of the Wi-Fi access point avoids arterial bias is achieved. In the alternative, "storing Wi-Fi access point signals received while scanning along a shortest planned route along each drivable road throughout each target area, *e.g.* Chinese Postman, and not using random scanning or collection methods."	"Multiple scans of a Wi-Fi access point are recorded. The scans are taken at different locations around the Wi-Fi access point. This results in the following: (a) the multiple readings produce a calculated position of the Wi-Fi access point having reference symmetry relative to other Wi-Fi access points in the target area and (b) the calculated position of the Wi-Fi access point reduces the effects of arterial bias."	'988/1
11.	"avoid arterial bias" /"avoids arterial bias"	This limitation is indefinite in violation of 35 U.S.C. § 112, ¶ 2 because it does not apprise one skilled in the art of the bounds of the claim. In the alternative, "eliminates arterial bias."	Reduce(s) the effects of arterial bias. *See* "arterial bias."	'988/1 '694/1

Term No.	Claim language	Google's Position	Skyhook's Position	Appears in asserted claims
12.	"logic to recalculate position information for Wi-Fi access points previously stored in the database to utilize position information for the newly-discovered readings of previously stored Wi-Fi access points"	This limitation is indefinite in violation of 35 U.S.C. § 112, ¶ 2 because the specification does not disclose a structure corresponding to the claimed "logic" capable of performing the recited function of "recalculat[ing] position information for Wi-Fi access points previously stored in the database to utilize position information for the newly-discovered readings of previously stored Wi-Fi access points."	Software and/or hardware to recalculate position information for Wi-Fi access points previously stored in the database This recalculation utilizes new position information for such Wi-Fi access points calculated using scans taken after the previously stored Wi-Fi access points were stored. *See* "Wi-Fi access points." This is not a means plus function claim element. If the Court were to construe this claim element as a means plus function claim element, then Skyhook identifies the following corresponding structure: *12:24–38* "An additional enhancement to the algorithm would include a weighting value based on the age of the records such that new records represent a more significant indication of the present location for a given access point. Once the parsing process has been completed the central network system . . . begins processing the new data. . . . 2) existing access points are repositioned based on any new data recorded by the scanners. The . . . algorithm factors in the number of records and their associated signal strengths to weight stronger signal readings more than weaker signals with a quasi weighted average model."	'988/1

Term No.	Claim language	Google's Position	Skyhook's Position	Appears in asserted claims
13.	"computer-implemented logic to add records to the database for newly-discovered Wi-Fi access points"	This limitation is indefinite in violation of 35 U.S.C. § 112, ¶ 2 because the specification does not disclose a structure corresponding to the claimed "computer-implemented logic" capable of performing the recited function of "add[ing] records to the database for newly-discovered Wi-Fi access points."	Computer-implemented software and/or hardware to add data records to the database for newly-discovered Wi-Fi access points. *See* "Wi-Fi access points" and "database records." This is not a means plus function claim element. If the Court were to construe this claim element as a means plus function claim element, then Skyhook identifies the following corresponding structure: <u>12:29–38</u> "Once the parsing process has been completed the central network system . . . begins processing the new data. During this process 1) new access points are added to the database and their physical location is calculated . . . . The . . . algorithm factors in the number of records and their associated signal strengths to weight stronger signal readings more than weaker signals with a quasi weighted average model."	'988/1

Term No.	Claim language	Google's Position	Skyhook's Position	Appears in asserted claims
14.	"computer-implemented clustering logic to identify position information based on error prone GPS information"	This limitation is indefinite in violation of 35 U.S.C. § 112, ¶ 2 because (1) it does not apprise one skilled in the art of the bounds of the claim, and in particular fails to apprise the person of ordinary skill in the art what constitutes "error prone GPS information"; and (2) in violation of 35 U.S.C. § 112, ¶ 2 because the specification does not disclose a structure corresponding to the claimed "computer-implemented clustering logic" capable of performing the recited function of "identify[ing] position information based on error prone GPS information."	Computer-implemented software and/or hardware to identify when position information for a Wi-Fi access point based on GPS readings is likely erroneous the logic identifies position information that is not located within a certain threshold distance of other position information for the Wi-Fi access point. This is not a means plus function claim element. If the Court were to construe this claim element as a means plus function claim element, then Skyhook identifies the following corresponding structure: *12:1-12:10* "In some cases the GPS receiver may record erroneous or error records for some period of time, which could negatively affect the final access point location calculation. The parser and filter process identifies these bad records and either corrects them or removes them from the system. The filtering process users clustering techniques to weed out error prone GPS readings. For example, if 90% of the readings are within 200 meters of each other but the remaining 10% of the readings are 5 kilometers away then those outliers are removed by the filter . . . ."	'988/2

7

Term No.	Claim language	Google's Position	Skyhook's Position	Appears in asserted claims
15.	"logic to determine a weighted centroid position for all position information reported for an access point"	This limitation is indefinite in violation of 35 U.S.C. § 112, ¶ 2 because the specification does not disclose a structure corresponding to the claimed "logic" capable of performing the recited function of "determine[ing] a weighted centroid position for all position information reported for an access point."	Software and/or hardware to determine a weighted centroid position for a Wi-Fi access point. The weighted centroid position is determined using all position information reported for that Wi-Fi access point. *See* "weighted centroid position" and "Wi-Fi access points." This is not a means plus function claim element. If the Court were to construe this claim element as a means plus function claim element, then Skyhook identifies the following corresponding structure: *12:11-13* "In particular, the system first calculates the weighted centroid for the access point using all reported data." *12:34–38* "The . . . algorithm factors in the number of records and their associated signal strengths to weight stronger signal readings more than weaker signals with a quasi weighted average model."	'988/3

Term No.	Claim language	Google's Position	Skyhook's Position	Appears in asserted claims
16.	"a weighted centroid position"	**Stipulated construction**: a position determined by weighted averaging of position information.		'988/3
17.	"logic to identify position information that exceeds a statistically-based deviation threshold amount away from the centroid position"	This limitation is indefinite in violation of 35 U.S.C. § 112, ¶ 2 because the specification does not disclose a structure corresponding to the claimed "logic" capable of performing the recited function of "identify[ing] position information that exceeds a statistically-based deviation threshold amount away from the centroid position."	Software and/or hardware to identify position information whose distance from the centroid position exceeds a certain threshold distance. This threshold distance is based on the distribution of the position information used to calculate the centroid position. *See* "weighted centroid position." This is not a means plus function claim element. If the Court were to construe this claim element as a means plus function claim element, then Skyhook identifies the following corresponding structure: *12:11-17* "In particular, the system first calculates the weighted centroid for the access point using all reported data. It then determines the standard deviation based on the distribution of the reported locations. The system uses a definable threshold based on the sigma of this distribution to filter out access points that are in error."	'988/3
18.	"calculated positions of the Wi-Fi access points"	Synonymous with "calculated position information for the corresponding Wi-Fi access point" in claim 1 of the '988 patent; "calculated locations" in the '245 patent, and "recorded location" and "recorded location information" in the '897 patent.	Estimated physical positions of the observed Wi-Fi access points calculated using characteristics of their transmitted signals. *See* "Wi-Fi access points."	'988/3

9

Term No.	Claim language	Google's Position	Skyhook's Position	Appears in asserted claims
19.	"the clustering logic … excludes such deviating position information from the database and from influencing the calculated positions of the Wi-Fi access points"	This limitation is indefinite in violation of 35 U.S.C. § 112, ¶ 2 because the specification does not disclose a structure corresponding to the claimed "clustering logic" capable of performing the recited function of "exclude[ing] such deviating position information from the database and from influencing the calculated positions of the Wi-Fi access points."	The software and/or hardware excludes such deviating position information from being stored in the database of WiFi access points. Such deviating position information is not used to determine the calculated positions of the Wi-Fi access points. *See* "computer-implemented clustering logic . . . " and "Wi-Fi access points." This is not a means plus function claim element. If the Court were to construe this claim element as a means plus function claim element, then Skyhook identifies the following corresponding structure: *12:1–12:19* "In some cases the GPS receiver may record erroneous or error records for some period of time, which could negatively affect the final access point location calculation. The parser and filter process identifies these bad records and either corrects them or removes them from the system. The filtering process users clustering techniques to weed out error prone GPS readings. For example, if 90% of the readings are within 200 meters of each other but the remaining 10% of the readings are 5 kilometers away then those outliers are removed by the filter . . . . In	'988/3

Term No.	Claim language	Google's Position	Skyhook's Position	Appears in asserted claims
			particular, the system first calculates the weighted centroid for the access point using all reported data. It then determines the standard deviation based on the distribution of the reported locations. The system uses a definable threshold based on the sigma of this distribution to filter out access points that are in error. Once these error records are marked, the centroid is recalculated with the remaining location records to determine the final centroid. . . . ."	
20.	"recording multiple readings of the Wi-Fi access point at different locations around the Wi-Fi access point so that the multiple readings avoid arterial bias in the calculated position information of the Wi-Fi access point"	This limitation is indefinite in violation of 35 U.S.C. § 112, ¶ 2 because it does not apprise one skilled in the art of the bounds of the claim, and in particular impermissibly recites a method step in an apparatus claim. In the alternative, "storing Wi-Fi access point signals received while scanning along a shortest planned route along each drivable road throughout each target area, *e.g.* Chinese Postman and not using random scanning or collection methods to avoid the tendency of random scanning to result in a greater number of scans of the Wi-Fi access point from heavily trafficked roads."	Multiple scans of a Wi-Fi access point are recorded. The scans are taken at different locations around the Wi-Fi access point. The multiple readings avoid arterial bias in the calculated position information of the Wi-Fi access point. *See* "Wi-Fi access points," "avoid arterial bias," and "calculated position information."	'694/1

Term No.	Claim language	Google's Position	Skyhook's Position	Appears in asserted claims
21.	"wherein the database records for substantially all Wi-Fi access points in the target area provide reference symmetry within the target area"	This limitation is indefinite in violation of 35 U.S.C. § 112, ¶ 2 because it does not apprise one skilled in the art of the bounds of the claim, and in particular fails to apprise the person of ordinary skill in the art as to what it means to "provide reference symmetry within the target area."	Wherein the database records for substantially all Wi-Fi access points in the target area are distributed such that when the database records are used to calculate a user's location, the calculated positions of the observes Wi-Fi access points in range of the user tend to be distributed around the user with reduced levels of arterial bias. *See* "database records" "substantially all Wi-Fi access points," "target area." "Wi-Fi access points," and "reference symmetry.	'694/1
22.	"a user-device having a Wi-Fi radio"	An end user or consumer device having a Wi-Fi radio.	Does not need to be construed. But if construed: A user device having a Wi-Fi radio.	'245/1
23.	"providing a reference database of calculated locations of Wi-Fi access points in a target area"	A database that contains calculated locations for all the Wi-Fi access points collected in the pre-identified target area by scanning a shortest planned route along all drivable roads, including information about the target area. The database does not include information about Wi-Fi access points gathered using random or end-user based collection methods. *See also* "a database of Wi-Fi access points for at least one target area" in the '988 and '694 patents.	Does not need to be construed. But if construed: Providing a database of calculated locations of Wi-Fi access points in a target area. The database is used to locate a user device having a Wi-Fi radio. *See* "calculated locations," "Wi-Fi access points," and "target area."	'245/1
24.	"calculated locations"	Synonymous with "calculated position information" in the '988 patent, as well as "recorded location" and "recorded location information" in the '897 patent.	Estimated physical locations of Wi-Fi access points calculated using characteristics of signals transmitted by such Wi-Fi access points	'245/1, 2

Term No.	Claim language	Google's Position	Skyhook's Position	Appears in asserted claims
25.	"in response to a user application request to determine a location of a user-device having a Wi-Fi radio"	In response to a request made by an end-user facing application, *i.e.*, not by the operating system, to determine the location of an end user-device using a Wi-Fi radio.	In response to a request made by an application running on user-device having a Wi-Fi radio to determine the location of the user-device. *See* "a user-device having a Wi-Fi radio."	'245/1
26.	"triggering the Wi-Fi device to transmit a request to all Wi-Fi access points within range of the Wi-Fi device"	**Stipulated construction**: Causing the Wi-Fi device to actively search for Wi-Fi access points. The Wi-Fi device transmits a request to all Wi-Fi access points within range of the Wi-Fi device to identify themselves. *See* "Wi-Fi access points."		'245/1
27.	"said chosen algorithm being suited for the number of identified Wi-Fi access points"	This limitation is indefinite in violation of 35 U.S.C. § 112, ¶ 2 because it does not apprise one skilled in the art of the bounds of the claim, and in particular fails to apprise the person of ordinary skill in the art which algorithm(s) is (are) "suited" for a particular number of identified Wi-Fi access points.	Does not need to be construed. But if construed: The chosen location-determination algorithm is suited for the number of Wi-Fi access points that are identified. *See* "Wi-Fi access points."	'245/1
28.	"simple signal strength weighted average model"	**Stipulated construction**: An algorithm that includes taking a simple average of the calculated locations of identified Wi-Fi access points weighted according to a function of their received signal strengths.		'245/6
29.	"triangulation technique"	**Stipulated construction**: An algorithm that includes (1) estimating the distances from the user device to at least two identified Wi-Fi access points using their received signal strengths and (2) determining a location based on the estimated distances		'245/8

13

Term No.	Claim language	Google's Position	Skyhook's Position	Appears in asserted claims
30.	"a WiFi-enabled device communicating with WiFi access points within range of the WiFi-enabled device so that observed WiFi access points identify themselves"	A user device having a Wi-Fi radio actively searching for Wi-Fi access points by transmitting a signal to all Wi-Fi access points within range and receiving a response that includes a unique identifier (*e.g.*, a MAC address) from each such Wi-Fi access point.	A user device having a Wi-Fi radio communicates with Wi-Fi access points within range of the user device. Communications received by the user device include an identifier (e.g., a MAC address) for observed Wi-Fi access points. *See* "Wi-Fi access points."	'897/1
31.	"using the recorded location information for each of the observed WiFi access points in conjunction with predefined rules to determine whether an observed WiFi access point should be included or excluded from a set of WiFi access points"	This limitation is indefinite in violation of 35 U.S.C. § 112, ¶ 2 because (a) it does not apprise one skilled in the art of the bounds of the claim, and in particular fails to apprise the person of ordinary skill in the art what constitutes the claimed "predefined rules."	Does not need to be construed. But if construed: Predefined rules are used to determine whether each observed WiFi access point should be included or excluded from a set of WiFi access points that is to be used to calculate location. The predefined rules consider recorded location information for each of the observed WiFi access points. *See* "recorded location information" and "WiFi access points."	'897/1
32.	"recorded location information"	Synonymous with "calculated position information" in the '988 and '694 patents, as well as "calculated locations" in the '245 patent.	Estimated physical location of Wi-Fi access points calculated using characteristics of signals transmitted by such Wi-Fi access points.	'897/1, 3

14

Term No.	Claim language	Google's Position	Skyhook's Position	Appears in asserted claims
33.	"rules to determine a reference point and to compare the recorded location information for each of the observed WiFi access points to the reference point"	This limitation is indefinite in violation of 35 U.S.C. § 112, ¶ 2 because (a) it does not apprise one skilled in the art of the bounds of the claim, and in particular fails to apprise the person of ordinary skill in the art what constitutes the claimed "rules."	Does not need to be construed. But if construed: Rules that (1) first determine a reference point and (2) then compare the recorded location information for each of the observed WiFi access points to the reference point. *See* "recorded location information" and "WiFi access points."	'897/3
34.	"WiFi access points having a recorded location within a predefined threshold distance of the reference point"	**Stipulated construction**: WiFi access points having a recorded location that is within a certain distance of the reference point. That distance was previously defined. *See* "WiFi access points."		'897/3
35.	"WiFi access points having a recorded location in excess of the predefined threshold distance of the reference point"	**Stipulated construction**: WiFi access points having a recorded location that exceeds a certain distance from the reference point. That distance was previously defined. *See* "WiFi access points."		'897/3