

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* DANIEL ALJADEFF,  
YAIR GRANOT, and  
SHALOM TSRUYA

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Appeal 2008-2899  
Application 10/225,267  
Technology Center 2600

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Decided: September 26, 2008

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Before JOSEPH F. RUGGIERO, JOHN A. JEFFERY, and  
CARLA M. KRIVAK, *Administrative Patent Judges*.

KRIVAK, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134 from a final rejection of  
claims 1-30. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

## STATEMENT OF CASE

Appellants' claimed invention is directed to a method and apparatus of physically locating a wireless device within a wireless local area network (WLAN) (Spec. 5:3-4).

Independent claims 1 and 26, reproduced below, are representative of the subject matter on appeal.

1. A method for determining the location of a wireless device within a wireless local area network (LAN), said method comprising:

receiving a wireless LAN signal from said wireless device at multiple location units;

in response to said receiving, determining multiple times of arrival of said wireless LAN signal at each corresponding one of said multiple location units;

sending said times of arrival from each of said corresponding multiple location units to a given one of said multiple location units; and

determining, within said given location unit, the location of said wireless device by comparing location information for said multiple location units with said received times of arrival to determine said location of said wireless device.

26. A master unit, comprising:

a data interface for receiving from multiple external location units, times of arrival of a standard wireless local area network (LAN) signal received from a wireless device by said multiple external location units;

a database including physical location information of said multiple external location units; and

a computation unit for comparing said times of arrival from said multiple external location units in conformity with location information retrieved from said database to determine a location of wireless devices in a wireless LAN, and wherein said master unit initiates a location-finding process by causing transmission of an initiating wireless LAN signal to said wireless device to stimulate said wireless device to respond.

#### REFERENCES

Belcher	US 2002/0086640 A1	Jul. 4, 2002
Soliman	US 6,556,832 B1	Apr. 29, 2003 (filed Feb. 4, 2000)
Whitehill	US 6,768,730 B1	Jul. 27, 2004 (filed Oct. 11, 2001)

Claims 1-5, 7, 10-15, 19, 22, and 23 stand rejected under 35 U.S.C. § 102(e) based upon the teachings of Belcher.

Claims 6, 8, 9, 16-18, 20, 21, 24-26, and 28-30 stand rejected under 35 U.S.C. § 103(a) based upon the teachings of Belcher and Whitehill.

Claim 27 stands rejected under 35 U.S.C. § 103(a) based upon the teachings of Belcher, Whitehill, and Soliman.

Appellants contend that Belcher does not teach location determination within a given location of a wireless local area network (WLAN) or within an access point (AP) of a WLAN (Br. 7).<sup>1</sup>

#### ISSUES

Did the Examiner err in rejecting claims 1-5, 7, 10-15, 19, 22, and 23 under 35 U.S.C. § 102(e) as anticipated by Belcher?

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<sup>1</sup> We refer throughout this opinion to the resubmitted Appeal Brief filed August 15, 2007.

Did the Examiner err in rejecting claims 6, 8, 9, 16-18, 20, 21, 24-26, and 28-30 under 35 U.S.C. § 103(a) as obvious over the teachings of Belcher and Whitehill?

Did the Examiner err in rejecting claim 27 under 35 U.S.C. § 103(a) as obvious over the teachings of Soliman?

### FINDINGS OF FACT

1. Appellants' invention is a method and apparatus that has location units (access points) that determine times of arrival of signals received from a wireless device (16). The location units send the determined times of arrival to a given location unit (MST) that determines the location of the wireless device by comparing location information for each location unit with the determined times of arrival (Br. 4).

2 Belcher teaches a WLAN and location system. A mobile station (131; Fig. 1) is in communication with a plurality of access point stations. A processor (132a) connected to each access point station, processes communication signals received from the mobile station, and determines the communication signals that are first-to-arrive so as to locate a station (Belcher ¶[0011]). Further, either processors 132 and/or 132a of Belcher determine which signals are first-to-arrive signals and conduct differentiation of the first-to-arrive signals to locate the mobile station (¶[0045]).

3. Whitehill teaches locating a wireless node in a communications network. When a node wishes to transmit a message to another node, the node transmits a Request-to-Send (RST) message to the other node to notify that node and other nodes of its intent to reserve one of the available data

channels (col. 5, ll. 59-67). Further, Whitehill teaches using Carrier Sense Multiple Access with Collision Avoidance (CSMA/CA). This involves a handshake of an RST message followed by a Clear-to-Send (CTS) message (col. 1, ll. 34-51).

4. Soliman teaches evaluating position performance. Time difference of arrival (TDOA) techniques are employed that include comparing time stamps of a signal so a hyperbolic curve is drawn and a unique two-dimensional position is identified from their intersection. This technique is referred to as hyperbolic trilateration (col. 6, ll. 11-31).

## PRINCIPLES OF LAW

### *Anticipation*

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros., Inc. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987). The inquiry as to whether a reference anticipates a claim must focus on what subject matter is encompassed by the claim and what subject matter is described by the reference. As set forth by the court in *Kalman v. Kimberly-Clark Corp.*, 713 F.2d 760, 772 (Fed. Cir. 1983), it is only necessary for the claims to “‘read on’ something disclosed in the reference, i.e., all limitations of the claim are found in the reference, or ‘fully met’ by it.”

The terminology in a pending application's claims is to be given its broadest reasonable interpretation (*see In re Zletz*, 893 F.2d 319, 321 (Fed. Cir. 1989)). Moreover, anticipation by a prior art reference does not require either the inventive concept of the claimed subject matter or the recognition

of inherent properties that may be possessed by the prior art reference. *See Verdegaal Bros., Inc. v. Union Oil Co.*, 814 F.2d at 633.

*Obviousness*

*KSR Int'l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1739 (2007) (citing *Graham v. John Deere Co.*, 383 U.S. 1, 12 (1966)), reaffirmed principles based on its precedent that “[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *Id.* The Court explained:

When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.

*Id.* at 1740. The operative question in this “functional approach” is thus “whether the improvement is more than the predictable use of prior art elements according to their established functions.” *Id.*

In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the Examiner to establish a factual basis to support the legal conclusion of obviousness. *See In re Fine*, 837 F.2d 1071, 1073 (Fed. Cir. 1988). In so doing, the Examiner must make the factual determinations set forth in *Graham v. John Deere Co.*, 383 U.S. at 17. “[T]he examiner bears the initial burden, on review of the prior art or on any other ground, of presenting a *prima facie* case of unpatentability.” *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992). If the Examiner’s burden is met, the burden

then shifts to the Appellants to overcome the prima facie case with argument and/or evidence. Obviousness is then determined on the basis of the evidence as a whole and the relative persuasiveness of the arguments. *See In re Oetiker*, 977 F.2d at 1445.

“[D]uring examination proceedings, claims are given their broadest reasonable interpretation consistent with the specification.” *In re Hyatt*, 211 F.3d 1367, 1372 (Fed. Cir. 2000). That last proposition “serves the public interest by reducing the possibility that claims, finally allowed, will be given broader scope than is justified,” *In re Yamamoto*, 740 F.2d 1569, 1571 (Fed. Cir. 1984), and it is not unfair to applicants, because “before a patent is granted the claims are readily amended as part of the examination process,” *Burlington Indus., Inc. v. Quigg*, 822 F.2d 1581, 1583 (Fed. Cir. 1987)

## ANALYSIS

### *Anticipation*

#### *Claims 1-5, 7, 10-15, 19, 22, and 23*

The Examiner rejected claims 1-5, 7, 10-15, 19, 22, and 23, as anticipated by Belcher under 35 U.S.C. § 102(e). We address this rejection with respect to representative claim 1 as the features in this claim are similar to those in claims 10 and 22 and Appellants have grouped these claims together (Br. 7). The Examiner contends that Belcher teaches all the features of claim 1 (Belcher ¶¶ [0002], [0011], [0012], and [0045]; Fig. 1; Ans. 3-4).

Appellants assert that Belcher does not “disclose location determination within a given location unit of a wireless local area network (WLAN), nor does *Belcher* disclose location determination within an Access

Point (AP) of a WLAN” (Br. 7). Appellants cite paragraph [0045] of Belcher as stating that “processors 132 and/or 132a can determine which signals are first-to-arrive signals and conduct ‘differentiation’ of the first-to-arrive signals to locate the mobile station” but that this language “does not constitute disclosure of determining the location of the mobile station” (Br. 8). Appellants further state that location of the mobile station according to the invention includes compensating for the location of each access point and triangulating the relative times-of arrival. In order to perform this computation at a given location unit, a location database for the access points and a communication of times-of-arrival to that unit must be employed: Belcher does not disclose this (Br. 8).

It should be noted, however, that these features relied upon by Appellants are not recited in claim 1. Rather, Appellants’ claim 1 merely recites that the location of the wireless device is determined within the given location unit (MST). Further, we are hard pressed to find a difference between the terms “locate the mobile station” and “location of the mobile station.”

Appellants continue with their argument that Belcher makes a “final determination of the location of the mobile access point within processor 132 and not one of the processors 132a” (Br. 8). Appellants then recognize the contrary when reciting paragraph [0045] which states that the processors “132 and/or 132a determine which signals are first-to-arrive and conduct differentiation of the first-to-arrive signals to locate the mobile station” (emphasis added) (FF2). Further on, Appellants state that in Belcher: “the final location determination is made by a single processor operative with each of the access points, such as processor 132 of Figure 1” (Br. 9; FF2). It

appears that Appellants are unsure of what they are claiming and what Belcher teaches. Appellants teach that the location of the wireless device is determined within the given location unit (MST), which corresponds to Belcher's teaching of making a final determination of a location of a wireless device in the processor 132, as acknowledged by Appellants. Belcher also teaches that the location of the wireless device can also be determined by the processors 132a, which contradicts Appellants' assertion that Belcher does not disclose the location processor within a location unit or access point (Br. 7).

Thus, giving the claims their broadest reasonable interpretation, and the fact that it is only necessary for the claims to “‘read on’ something disclosed in the reference,” we find that Belcher anticipates claim 1. Because independent claims 10 and 22 contain substantially the same features as claim 1, we also find that Belcher anticipates claims 10 and 22. Claims 2-5, 7, 11-15, 19, and 23 depend directly or indirectly from claims 1, 10, and 22, and thus Belcher also anticipates these claims.

#### *Obviousness*

##### *Claims 6, 8, 9, 16-18, 20, 21, 24-26, and 28-30*

The Examiner rejected claims 6, 8, 9, 16-18, 20, 21, 24-26, and 28-30 under 35 U.S.C. § 103(a) as obvious over Belcher and Whitehill. The Examiner contends that Belcher teaches all the features of independent claim 26 except that the “master unit initiates a location-finding process by causing transmission of an initiating wireless LAN signal to said wireless device to stimulate said wireless device to respond” (Ans. 5).

Appellants counter that Whitehill describes sending a time-of-arrival message in response to a request-to-send signal and not a wireless LAN

clear-to-send signal, which is a particular signal defined by the wireless LAN system (Br. 10). Again, it should be noted that these features argued by Appellants, are not found in claim 26. Further, Whitehill does teach a clear-to-send signal (FF3; col. 1, ll. 35-44).

Appellants' additional arguments with respect to Whitehill do not address the fact that Whitehill was cited solely to teach "initiating a location finding process by causing transmission of an initiation WLAN signal to the wireless device to stimulate the wireless device to respond" (Ans. 8). Thus, it is of no weight that Whitehill does not teach multiple times of arrival as asserted by Appellants, because Belcher does, and the Examiner is relying on the combination of these references, which are in the same field of endeavor.

We therefore find that Appellants have not persuasively rebutted the Examiner's prima facie case of obviousness and thus, claim 26 is obvious over the collective teachings of Belcher and Whitehill, as are claims 6, 8, 9, 16-18, 20, 21, 24, 25 and 28-30 for the reasons set forth above.

*Claim 27*

Claim 27 was rejected by the Examiner as being obvious over Belcher, Whitehill, and Soliman. However, since Soliman was not addressed or even recognized in Appellants' Brief and we have found that Belcher and Whitehill teach or suggest the features of Appellants' invention, we find that the features of claim 27 are also taught or suggested by the collective teachings of the cited prior art.

### CONCLUSION

We therefore conclude that the Examiner did not err in rejecting claims 1-5, 7, 10-15, 19, 22, and 23 under 35 U.S.C. § 102(e), and that the Examiner also did not err in rejecting claims 6, 8, 9, 16-18, 20, 21, and 24-30 under 35 U.S.C. § 103(a).

### DECISION

The Examiner's decision in rejecting claims 1-30 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

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