

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was **not** written for publication in a law journal and (2) is **not** binding precedent of the Board.

Paper No. 14

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MICHAEL J. THOMPSON and STANKO JELAVIC

Appeal No. 1998-0101
Application No. 08/253,996

ON BRIEF

Before KRASS, HECKER and GROSS, **Administrative Patent Judges**.

HECKER, **Administrative Patent Judge**.

DECISION ON APPEAL

This is a decision on appeal from the final rejection of claims 1 through 7, 9 and 10, all claims pending in this application.

The invention relates to a wireless communication system. When operating over a wide geographical area, a wireless communications system is often organized into geographically based subregions. Each subregion is served by a communication

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site which serves to manage, route, or enhance communication signals within the system. The invention provides for the selection of a preferred communication site using fuzzy logic that is based on a combination of a received signal strength indicator and a site preference indicator associated with each site.

Representative independent claim 1 is reproduced as follows:

1. A method for selecting from among a plurality of communication sites a preferred communication site for communicating in a wireless communication system, the method comprising the steps of:

providing a site preference indicator for each of the plurality of communication sites;

receiving a communication signal from at least two of the plurality of communication sites;

determining a received signal strength for each communication signal received; and

selecting a preferred communication site using fuzzy logic based in part on the site preference indicator for each of the plurality of communication sites, and the received signal strength of each communication signal received.

The Examiner relies on the following references:

Hurst et al. (Hurst)	5,276,905	Jan. 4, 1994
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ordinary skill in the art would have been led to the claimed invention by the reasonable teachings or suggestions found in the prior art, or by a reasonable inference to the artisan contained in such teachings or suggestions. ***In re Sernaker***, 702 F.2d 989, 995, 217 USPQ 1, 6 (Fed. Cir. 1983).

"Additionally, when determining obviousness, the claimed invention should be considered as a whole; there is no legally recognizable 'heart' of the invention." ***Para-Ordnance Mfg. v. SGS Importers Int'l, Inc.***, 73 F.3d 1085, 1087, 37 USPQ2d 1237, 1239 (Fed. Cir. 1995) (***citing W. L. Gore & Assocs., Inc. v. Garlock, Inc.***, 721 F.2d 1540, 1548, 220 USPQ 303, 309 (Fed. Cir. 1983), ***cert. denied***, 469 U.S. 851 (1984)).

With regard to the rejection of claim 1, the Examiner contends that Kinoshita teaches the claimed method of selecting a preferred communication site from a plurality of sites using the determined field strength and fuzzy logic. However, the Examiner acknowledges, Kinoshita does not use a site preference indicator for each site as claimed. The Examiner notes that Hurst uses a site preference indicator, and states:

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Therefore it would have been obvious for one with ordinary skill in the art at the time of invention to utilize [the] site preference technique of Hurst et al. in view of Kinoshita et al. because it saves one traffic channel along with a[n] overhead of signaling between base stations as described in col 3, lines 55-60. [Final rejection, pages 1 and 2.]

Appellants argue that the combined references do not teach, "a site preference indicator for each of a plurality of communication sites" (Brief-page 3).

As the Examiner has indicated, Hurst clearly discloses site preference indicators. At column 7, line 66 to column 8, line 4, we find first, second and third preferences. These preferences are selected in their respective order so long as the signal quality is adequate. According to column 6, lines 36-48, the preference list has the first preference (home base station) permanently programmed into the mobile unit. The remainder of the preferences in the list are dynamically acquired and stored in the mobile unit. We find that these teachings meet the language of the claims with respect to preference indicators, and further, Appellants' disclosure. Note page 3, lines 27-29, of Appellants' specification wherein it states "The received signal strength is measured on the

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communication channel corresponding to a communication site. Site preferences are programmed into the radio 104 and vary among the sites."

Appellants further argue that the combination of references does not teach "the selection of a preferred communication site using fuzzy logic based in part on the site preference indicator for each of the plurality of communication sites, and the received signal strength of communication signals from multiple communication sites" (Brief-page 3).

We find it clear from Kinoshita that fuzzy logic is used in determining the preferred communication site. Note the abstract wherein it states, "Priority is particularly determined using fuzzy logic and" The use of fuzzy logic is recited throughout Kinoshita. Note column 4, lines 19-25, wherein fuzzy logic is used to determine and update cell boundary. Note column 4, lines 39-40, wherein fuzzy logic is used to accomplish soft hand-off.

We next ask if the fuzzy logic used is "based on" received signal strength as claimed. We find that it is. In

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determining and updating cell boundary with fuzzy logic, the use of received signal strength is a key factor. Cell boundary **is** the point at which signal strength is equal from adjacent base station units. Signal strength is measured and applied to fuzzy logic to determine cell boundary.

With respect to the fuzzy logic being based on a "site preference indicator," we find no such teaching in Kinoshita. One preference found in Kinoshita is the determination of which mobile unit will be given preference in hand-off (column 5, lines 61-65). However, fuzzy logic is not **based on** this preference, and this preference is not a site preference, but rather a hand-off preference among mobile units. Hurst does base site preference upon a site preference indicator, however, there is no mention of using fuzzy logic in Hurst. The use of fuzzy logic, as disclosed in Kinoshita, with the site preference indicator of Hurst, is central to the issue of combinability as argued by Appellants.

Appellants argue "It is well established that a proposed modification cannot change a principle of operation of a reference. If Kinoshita was modified by Hurst as suggested by

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the Examiner, such modification would either change the principle of operation of the hand-off process of Kinoshita, or would otherwise serve no useful purpose with respect to the hand-off process." (Brief-page 5.)

We agree with Appellants. "[A] proposed modification [is] inappropriate for an obviousness inquiry when the modification render[s] the prior art reference inoperable for its intended purpose. *In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984)." *In re Fritch*, 972 F.2d 1260, 1265-1266 n. 12, 23 USPQ2d 1780, 1783 n. 12 (Fed. Cir. 1992). Kinoshita predicates hand-off on a fuzzy logic determination of updated cell boundary and mobile unit location. Hurst, given sufficient signal strength, ignores cell boundary and remains with a preferred site. A list of preferred sites is stored in Hurst's memory, and accessed on a first preference, second preference and third preference basis. As argued by Appellants, to combine Hurst with Kinoshita would destroy Kinoshita's basic philosophy of updated cell boundary in hand-off determination, or serve no

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useful purpose. Hurst and Kinoshita represent two different principles of operation with no synergism. (Brief-page 5.)

Accordingly, we see no motivation to combine Kinoshita and Hurst to meet Appellants' claim 1 limitations.

The remaining claims on appeal also contain the above limitations discussed in regard to claim 1 and thereby, we will not sustain the rejection as to these claims.

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We have not sustained the rejection of claims 1 through 7, 9 and 10 under 35 U.S.C. § 103. Accordingly, the Examiner's decision is reversed.

REVERSED

ERROL A. KRASS)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
STUART N. HECKER)	APPEALS
Administrative Patent Judge)	AND
)	INTERFERENCES
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ANITA PELLMAN GROSS)	
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