The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 25

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MARK GRAYSON

Appeal No. 2003-0289
Application No. 09/234,702

ON BRIEF

Before THOMAS, GROSS, and LEVY, Administrative Patent Judges.
LEVY, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the examiner's final rejection[1] of claims 1-14, which are all of the claims pending in this application.

BACKGROUND

Appellant's invention relates to a satellite communications system and user terminal providing path diversity depending on

[1] The amendment filed subsequent to the final rejection (Paper No. 13, filed February 11, 2002) has been entered by the examiner (Paper No. 14) mailed February 19, 2002).

path attenuation. An understanding of the invention can be derived from a reading of exemplary claim 1, which is reproduced as follows:

1. A satellite communications system wherein a user terminal may be in radio contact with at least one earth station through at least one radio path to at least two satellites and wherein another satellite may potentially be included among said at least two satellites, said system being characterized by said user terminal being operable to assess which of said at least two satellites presents the highest radio path attenuation to said user terminal and to interrupt the radio path between said user terminal and that one of said at least two satellites which presents the highest path attenuation for said user terminal to assess information related to synchronization and information related to the signal quality of said another satellite.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Chennakeshu et al. (Chennakeshu)	5,661,724	Aug. 26, 1997
Sherman et al. (Sherman)	6,091,933	Jul. 18, 2000 (filed Jan. 3, 1997)
Diekelman	6,104,911	Aug. 15, 2000 (filed Nov. 14, 1997)

Claims 1-4 and 8-11 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Chennakeshu in view of Sherman.

Claims 5-7 and 12-14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Chennakeshu in view of Sherman and Diekelman.

Rather than reiterate the conflicting viewpoints advanced by the examiner and appellant regarding the above-noted rejections,

we make reference to the examiner's answer (Paper No. 19, mailed May 24, 2002) for the examiner's complete reasoning in support of the rejections, and to appellant's brief (Paper No. 18, filed April 11, 2002) for appellant's arguments thereagainst. Only those arguments actually made by appellant have been considered in this decision. Arguments which appellant could have made but chose not to make in the brief have not been considered. See 37 CFR 1.192(a).

OPINION

In reaching our decision in this appeal, we have carefully considered the subject matter on appeal, the rejections advanced by the examiner, and the evidence of obviousness relied upon by the examiner as support for the rejections. We have, likewise, reviewed and taken into consideration, in reaching our decision, appellant's arguments set forth in the brief along with the examiner's rationale in support of the rejections and arguments in rebuttal set forth in the examiner's answer. Upon consideration of the record before us, we reverse, essentially for the reasons set forth by appellant.

We begin with the rejection of claims 1-4 and 8-11 under 35 U.S.C. § 103(a) as being unpatentable over Chennakeshu in view of Sherman. We turn first to independent claims 1 and 8.

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, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the examiner is expected to make the factual determinations set forth in Graham v. John Deere Co., 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), and to provide a reason why one having ordinary skill in the pertinent art would have been led to modify the prior art or to combine prior art references to arrive at the claimed invention. Such reason must stem from some teaching, suggestion or implication in the prior art as a whole or knowledge generally available to one having ordinary skill in the art. Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir. 1988); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985); ACS Hosp. Sys., Inc. v. Montefiore Hosp., 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). These showings by the examiner are an essential part of complying with the burden of presenting a prima facie case of obviousness. Note In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). If that burden is met, the burden then shifts to the applicant to overcome the prima facie case with argument and/or

evidence. Obviousness is then determined on the basis of the evidence as a whole. See id.; In re Hedges, 783 F.2d 1038, 1039, 228 USPQ 685, 686 (Fed. Cir. 1986); In re Piasecki, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984); and In re Rinehart, 531 F.2d 1048, 1052, 189 USPQ 143, 147 (CCPA 1976).

The examiner's position (answer, page 3-4) is that Chennakeshu clearly discloses a satellite diversity scheme in which a mobile unit (user terminal), in communication with at least two satellites, interrupts communication with one of said satellites with the highest attenuation to then establish a communication link with a third satellite. Relying on Fig. 4 and col. 5, lines 3-20, the examiner states the mobile unit then assess information related to synchronization and signal quality of said third satellite.

The examiner notes that Chennakeshu does not specifically disclose that one or more radio paths include “one or more earth stations” to select which radio path used by the mobile unit to interrupt (answer, page 4). To overcome this deficiency in Chennakeshu, the examiner turns to Sherman (Fig. 1 and col. 5, lines 20-29)[2] for a teaching of communication link optimization

[2]Examiner incorrectly refers to Fig. 4 (answer, page 4) whereas Fig. 1 coincides with description in the answer.

in a satellite communication system in which path diversity is provided between a user terminal and at least two satellites through gateways (earth stations). These gateways then determine the diversity paths (e.g. selection of a radio path to interrupt). In the examiner's opinion, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the system in Chennakeshu with the teachings of Sherman to include “earth stations” to decide on diversity paths (e.g. selection of a radio path to interrupt) (answer, page 5).

Appellant asserts that both independent claims 1 and 8, containing similar language, require the user terminal to assess which of at least two satellites presents the highest radio path attenuation and to interrupt that path to assess another satellite (brief, page 5). Appellant further asserts (id.) that Chennakeshu does not interrupt one link of a diversity pair of links, rather it scans for an alternative satellite during “idle time slots of the TDMA link” (col. 5, lines 6-7). If the signal quality of one satellite connected to the user terminal falls below a first threshold, and the signal quality of a second satellite would be above a second threshold, the mobile unit will then establish a communication link with the second satellite

(brief, page 5). In contradiction to the examiner's assertion, appellant states that claims 1 and 8 do not require earth stations to select which radio paths to interrupt (brief, page 6). Appellant further states that the claims require the user terminal to independently interrupt a radio path between said user terminal and one of at least two satellites without the assistance of any other software/hardware (i.e. earth station). Appellant concludes by stating (brief, page 7) that "Sherman et al. describes ground station software for providing traffic control for allocating traffic to satellites using gateways," and that neither modeling software nor the processor required could reasonably fit in a commercial "user terminal," which are typically handheld units. The examiner responds (answer, page 8) that the use of earth stations to select which radio path to interrupt is in claims 3 and 10.

We note at the outset that the examiner's assertions that limitations regarding earth stations selecting which radio path to interrupt are present in claims 3 and 10 does not address the limitations of independent claims 1 and 8. A review of Chennakeshu reveals that the reference relates to a diversity scheme in a "satellite mobile communication method and system in which a mobile unit can selectively exchange signals with

multiple satellites" (col. 1, lines 7-9). "Transmission of signals in a TDMA system[3] occurs in a buffer-and-burst, or discontinuous-transmission, mode." The mobile unit in Chennakeshu communicates with the first satellite during the active time slots, while scanning for a second satellite during the idle time slots (col. 5, lines 4-6). If the signal quality of the first satellite falls below a predefined threshold, <u>and</u> the signal quality of the second satellite is above a second threshold, the mobile unit establishes a communication link with the second satellite [emphasis added](Fig. 4 and col. 5, lines 11-17).

Because in Chennakeshu thresholds are used to both determine when to establish communication with a new satellite, and when to discontinue service with a different satellite, we find that Chennakeshu does not interrupt the radio path between the user terminal and the satellite with the highest radio path attenuation, and then connect with the other satellite. What Chennakeshu discloses is that the mobile unit will only connect to the second satellite if the two threshold tests are met, a part of which is assessing the second satellite before dropping

[3]Time Division Multiple Access - Users share the radio spectrum in the time domain. This invention also applies to FDMA (Frequency Division Multiple Access), and CDMA (Code Division Multiple Access). See (col. 3, lines 26-27).

the first. Chennakeshu does allow for the mobile unit to be connected to two satellites “substantially” simultaneously, either during transition between two satellites or if both satellites offer sufficient signal quality (col. 7, lines 50-54). In this alternate embodiment of Chennakeshu, the mobile unit will communicate with one satellite on each even-numbered TDMA frame, and communicate with the other satellite on every odd-numbered TDMA frame (col. 7, lines 55-60). These two separate transmissions will then be integrated into a singular communication at an earth station to increase the effective signal margin (col. 7, lines 60-65). Thus, we find that in Chennakeshu, the user terminal uses two threshold tests and does not interrupt the radio path of one satellite before accessing the next satellite.

From our review of Sherman, we find that the reference relates to a multiple satellite communication system, in particular, related to “traffic control in a satellite network for optimizing link allocation” (col. 1, lines 7-9). A traffic controller allocates traffic to the satellites using gateways for power allocation reasons designed to meet a desired quality of service (col. 3, lines 65-67, and col. 4, lines 51-54). The user in Fig. 1 can be served by a gateway using “one” of three

possible transmission paths (col. 5, lines 19-20). In diversity, the user may be serviced from multiple satellites redundantly to increase the signal quality of reception by the user as decided by the operations control center (OCC), not the user terminal itself (col. 5, lines 49-55). Likewise, the gateway, without the user terminal, may independently determine the radio path to be used or interrupted (col. 6, lines 5-10).

Sherman specifically discloses that either the OCC or a gateway actively determines the radio path to be used by the mobile unit. Sherman was introduced by the examiner for the purpose of introducing “earth stations” and their integral role in the decision process (e.g. interrupting the radio path of the satellite with the highest attenuation and accessing the other satellite). This argument, however, is misplaced, as independent claims 1 and 8 do not require that “one of at least two earth stations providing said paths is operable to select which of said radio paths between said user terminal and said at least two satellites to interrupt” as recited in claims 3 and 10. Because Chennakeshu discloses the use of two thresholds before establishing communication with the second satellite, and does not interrupt the radio path between the user terminal and the satellite with the highest attenuation before accessing the next

or other satellite, and Sherman does not disclose that the terminal interrupts the radio path between the user terminal and the satellite, we find no teaching or suggestion to combine the teachings of Chennakeshu and Sherman.

Assuming, arguendo, that an artisan were to combine the teachings of Chennakeshu and Sherman, the language of claims 1 and 8 would still not be met. Because Sherman discloses the use of ground station software for providing traffic control, if the teachings of Chennakeshu and Sherman were combined, the result would be that the user terminal of Chennakeshu would be carrying out the traffic control of Sherman. However, as asserted by appellant (brief, page 7) the modeling software and processor size required to execute the modeling software could not reasonably fit in a portable user terminal. Thus, we find that the combined teachings of Chennakeshu and Sherman would not have suggested the language of independent claim 1, and similarly recited in independent claim 8.

From all of the above, we find that the examiner has failed to establish a prima facie case of obviousness of independent claims 1 and 8. Accordingly, the rejection of claims 1 and 8, and claims 2-4 and 9-11 dependent therefrom, is reversed.

We turn next to the rejection of claims 5-7 and 12-14 under 35 U.S.C. § 103 as being unpatentable over Chennakeshu in view of Sherman and Diekelman. However, the addition of Diekelman provides no teaching or suggestion to overcome the deficiencies of Chennakeshu and Sherman with respect to the independent claims 1 and 8 as discussed, supra. We therefore find that the teachings of Chennakeshu, Sherman and Diekelman fail to establish a prima facie case of obviousness of claims 5-7 and 12-14. Accordingly, the rejection of claims 5-7 and 12-14 under 35 U.S.C. § 103(a) is reversed.

CONCLUSION

To summarize, the decision of the examiner to reject claims 1-14 under 35 U.S.C. § 103(a) is reversed.

REVERSED

JAMES D. THOMAS Administrative Patent Judge	)	
ANITA PELLMAN GROSS Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
STUART S. LEVY Administrative Patent Judge	)	

SSL/kis

DAVID L. STEWART
ALLEN, DYER, DOPPELT,
MILBRATH & GILCHRIST, P.A.
255 SOUTH ORANGE AVENUE

SUITE 1401
ORLANDO, FL 32801