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

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ARNOLD SHEYNMAN and JATIN J. PATEL

Appeal 2007-1415
Application 09/795,704
Technology Center 2600

Decided: July 11, 2007

Before ANITA PELLMAN GROSS, JEAN R. HOMERE, and JOHN A. JEFFERY, *Administrative Patent Judges*.

JEFFERY, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134 from the Examiner's rejection of claims 1, 4, 7, 10, 18, 20, 33, 34, and 36.[1] Claims 2, 3, 8, 9, 11-17, 19, 21-23, 25, 35, 37, and 38 have been indicated as containing allowable subject matter (Answer 2) and claims 24, 26-32, and 39 have been cancelled. We have jurisdiction under 35 U.S.C. § 6(b). We affirm.

STATEMENT OF THE CASE

Appellant**s** invented a mobile station communications system for supporting packet data and circuit mode services in a cellular telephone handset. Specifically, the system includes an interoperability entity that is coupled to a packet stack, a circuit stack, and a router and operating mode switch for communication therebetween.[2] Claim 1 is illustrative:

1. A mobile station supporting packet and circuit modes of operation, comprising:

an RF transceiver;

a router and operating mode switch coupled to the RF transceiver; a packet stack coupled to the RF transceiver;

a circuit stack coupled to the router and operating mode switch,

the circuit stack coupled to the RF transceiver, the circuit stack coupled to the packet stack;

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[1] Appellants did not appeal the Examiner's rejection of claims 5 and 6. *See* Br. 4 (appealing only the Examiner's rejection of claims 1, 4, 7, 10, 18, 20, 33, 34, and 36). Accordingly, the rejection of claims 5 and 6 is not before us.

[2] *See generally* Specification 1:10-15 and 3:22-27.

an interoperability entity coupled to the router and operating mode switch, the interoperability entity coupled with the packet stack and with the circuit stack.

The Examiner relies on the following prior art references to show unpatentability:

Rydbeck	US 6,108,562	Aug. 22, 2000
Mazur	US 6,438,115 B1	Aug. 20, 2002 (filed Mar. 8, 1999)

Claims 1, 4, 7, 10, 18, 20, 33, 34, and 36 stand rejected[3] under 35 U.S.C. § 103(a) as unpatentable over Rydbeck in view of Mazur.

Rather than repeat the arguments of Appellants or the Examiner, we refer to the Briefs and the Answer for their respective details. In this decision, we have considered only those arguments actually made by Appellants. Arguments which Appellants could have made but did not make in the Briefs have not been considered and are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(vii).

OPINION

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

[3] We note that the Examiner's Answer does not expressly state the Examiner's grounds of rejection with particularity, but instead refers us to a final office action from Feb. 2006 for "further details of the rejection" (Answer 3). Such incorporations by reference, however, are improper under current practice. *See* MPEP § 1207.02 ("An examiner's answer should not refer, either directly or indirectly, to any prior Office action without fully restating the point relied on in the answer.").

obviousness. *See In re Fine*, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the Examiner must make the factual determinations set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966). Furthermore, "'there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness' . . . . [H]owever, the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ." *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741, 82 USPQ2d 1385, 1396 (2007) (quoting *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006)).

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 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992).

Regarding independent claim 1, the Examiner's rejection essentially finds that Rydbeck teaches a mobile phone with every claimed feature except for a packet stack. The Examiner, however, cites Mazur as teaching that it is well known to integrate both circuit and packet switching. In view of this teaching, the Examiner concludes that it would have been obvious to one of ordinary skill in the art at the time of the invention to include a packet stack in Rydbeck's system to include new communication protocols (Final Rejection 2-3).

Appellants argue that Rydbeck does not disclose circuit and packet stacks coupled to an RF transceiver as claimed. Appellants add that

Rydbeck fails to disclose a router and operating mode switch coupled to the RF transceiver as claimed. Appellants further argue that Rydbeck does not disclose an interoperability entity that is (1) coupled to the router and operating mode switch, and (2) coupled with the packet and circuit stacks as claimed. In this regard, Appellants contend that controller 160 in Rydbeck is not an interoperability entity, but rather only (1) detects the presence of modules 120, (2) identifies the protocol supported by each module, and (3) connects via switch 150 one module to man-machine interface 105 (Br. 5; Reply Br. 2).

The Examiner argues that because each communications module (i.e., protocol stack) in Rydbeck contains functionality to facilitate communication between the mobile phone and a particular communication network, the stacks must be coupled to the RF transceiver in order to communicate at all (Answer 4). The Examiner adds that Rydbeck's controller 160 fully meets an "interoperability entity" as claimed since it "interoperates with the different network protocols" by selecting different protocols (Answer 5).

Appellants also argue that the secondary reference, Mazur, teaches away from combining circuit and packet technologies. According to Appellants, Mazur teaches implementing packet switched technology without circuit switched technology. In particular, Appellants contend that Mazur introduces synchronization and frequency correction in a stand alone packet communications system without needing to implement a circuit switched system and its associated control channels (Br. 5). Appellants also argue that Mazur is concerned with network architecture -- not handset architecture (Br. 5-6).

The Examiner responds that Mazur discusses integrating circuit and packet switching services in cellular communication systems in the Background section of the patent. The Examiner adds that since Rydbeck specifically teaches that the subscriber can add communication modules as new protocols are introduced, the skilled artisan would have had ample reason to include a packet stack in Rydbeck's system in light of Mazur (Answer 5-6).

We will sustain the Examiner's rejection of independent claim 1 essentially for the reasons stated by the Examiner. Rydbeck discloses a mobile telephone 100 with multiple communication modules 120 that each contain functionality for effectuating communication between the telephone and a respective communication network 200 using the protocol of the particular communication network (Rydbeck, col. 2, ll. 36-48; Fig. 1). That is, each communication module has an associated communications protocol that is compatible with a particular communication network 200. In addition, the communication modules are easily connected and disconnected from the converter 110. Such functionality enables the user to equip a particular telephone to communicate with a variety of networks having diverse protocols by merely connecting the appropriate modules (Rydbeck, col. 3, ll. 5-12).

Controller 160 (1) detects the presence of each communication module 120, and (2) identifies the particular protocol supported by each respective module (Rydbeck, col. 3, ll. 14-35). Once the controller 160 knows which protocols are supported by the mobile telephone based on which modules are attached to the converter, the controller determines which networks are available in the telephone's current location. Based on this

determination, the controller then selects one communication network and connects the man-machine interface 105 to the appropriate communication module 120 supporting the protocol of the selected network 200 via interface 230 and switch 120 (Rydbeck, col. 3, ll. 36-47).

We agree with the Examiner that Rydbeck's controller 160 fully meets an "interoperability entity" giving the term its broadest reasonable interpretation. In our view, the controller "interoperates" with multiple modules that support diverse communications protocols by selecting and connecting the appropriate module to effectuate communication with the appropriate network.

Moreover, we find that Rydbeck's controller 160 (i.e., "interoperability entity") is "coupled to" not only to the respective modules (stacks), but also the router and operating mode switch 150. To obtain the protocol information, the controller 160 reads the memory 220 of the appropriate module (Rydbeck, col. 3, ll. 29-34). Certainly, the controller must be coupled to the modules to read their memories. Moreover, the controller is coupled to switch 150 as shown in Fig. 1 and described in col. 2, ll. 40-44.

We also agree with the Examiner that there must be a transceiver in Rydbeck's mobile telephone to effectuate wireless communication to the networks 200 -- a point Appellants apparently concede in the Reply Brief.[4] Although the transceiver is not shown, it must be "coupled to" the modules (stacks) and router and operating mode switch -- at least indirectly -- to

[4] *See* Reply Br. 1 ("Applicants do not assert that Rydbeck fails to disclose a transceiver per se as alleged by the Examiner."). We also agree with the Examiner on Page 4 of the Answer that the antenna on top of mobile phone 100 implies the presence of a transceiver.

effectuate communication at all. Significantly, the scope and breadth of the limitation "coupled to" does not preclude an *indirect coupling*. For example, two components in an electrical circuit are "coupled to" each other despite the presence of an intervening component. In light of this interpretation, we find Rydbeck's components are at least indirectly coupled (and in some instances directly coupled) in the manner claimed.

Given our agreement with the Examiner regarding the Rydbeck reference, we are left with the question of whether the skilled artisan would have reasonably included a packet stack in Rydbeck in view of the teachings of Mazur. We answer this question in the affirmative.

As the Examiner indicates, Mazur discusses a trend in telecommunications to focus more on wireless packet data communication rather than circuit switched voice communication. Due to the tremendous increase in internet users, packet switched communication is believed to grow and ultimately surpass circuit switched voice communication. As a result, cellular system manufacturers and operators are attempting to integrate their circuit switched services with wireless packet switched services (Mazur, col. 1, ll. 10-28).

Mazur notes that there are efforts to extend the current GSM cellular communications system to accommodate packet communication in a system known as General Packet Radio Services (GPRS). Essentially, GPRS is a packet switched system that is designed to coexist with GSM and provide the same coverage as GSM. Significantly, GPRS cannot exist by itself: it is dependent upon a GSM circuit switched control channel (Mazur, col. 1, ll. 29-41; col. 1, l. 60 - col. 2, l. 8).

Mazur further describes another circuit/packet integration development that integrates a high throughput packet data system with the TDMA/136 circuit switched mode (Mazur, col. 2, ll. 12-23). Mazur, however, discusses the tradeoffs associated with this integration, including the need to allocate substantial bandwidth for GPRS (Mazur, col. 2, ll. 23-43).

The clear import of this discussion is that integrating cellular packet switched systems with existing circuit switched systems is seen as a potential solution to accommodate the tremendous growth of internet users. In our view, the ordinarily skilled artisan would find ample reason from this discussion alone to include a module supporting a packet switching protocol (i.e., a packet stack) along with the modules that support circuit switching protocols (circuit stacks). At a minimum, such a feature would allow the mobile phone of Rydbeck to accommodate packet switched protocols in addition to circuit switched protocols.

We acknowledge that Mazur discusses a problem of being able to run a stand-alone GPRS system without having to implement a circuit switched mode (Mazur, col. 2, ll. 9-11). We also recognize that Mazur discusses introducing synchronization and frequency correction possibilities in a GPRS system without having to implement a GSM circuit switched mode and associated control channels as Appellants indicate (Mazur, col. 3, ll. 53-57).

But these discussions essentially refer to a preferred embodiment of Mazur. That Mazur may prefer to implement a stand-alone GPRS system does not foreclose the skilled artisan from considering the reference's other

teachings clearly establishing that integrating packet and circuit modes of operation is well known.

In any event, even with Mazur's preferred embodiment, Mazur hardly discards the idea of integrating packet and circuit switched modes as Appellants seem to suggest. On the contrary, Mazur notes that if it is possible to provide a GPRS system without a GSM circuit mode, it will also be possible to introduce the GPRS system in other circuit switched system environments. According to Mazur, migrating to a system with TDMA/136 as a circuit switched mode and GPRS as a packet switched mode will become more straightforward (Mazur, col. 7, ll. 57-63). In our view, this teaching only bolsters the Examiner's position that combining packet and circuit stacks in Rydbeck would have been within the level of the skilled artisan.

We further note that Figure 8 of Mazur also strongly suggests integrating packet and circuit switched modes. The figure illustrates a GPRS system integrated with a TDMA/136 system according to different embodiments of Mazur's invention (Mazur, col. 4, ll. 59-61). As shown in Figure 8, the upper portion corresponds to a TDMA/136 system part and the lower portion corresponds to a GPRS system part. Significantly, the accompanying discussion indicates that several of the functional nodes in the TDMA/136 mode or system part can be co-located or integrated with the functional nodes in the GPRS mode or system part (Mazur, col. 9, ll. 24-33).

But perhaps most significant is the depiction of a *dual mode terminal* in Figure 8. As shown in the figure, the terminal has a wireless connection with both the TDMA/136 and GPRS system parts. From this depiction alone, the skilled artisan would readily understand that providing a single

terminal capable of communicating in both packet and circuit switched modes is, at the very least, desirable. Given the capability of Mazur's dual-mode wireless device, we find this teaching readily combinable with the multi-network wireless device of Rydbeck.[5]

Furthermore, even if we assume, without deciding, that Mazur's dual-mode terminal in Figure 8 is not a "mobile station," we find the teachings of Mazur nonetheless readily applicable to a wide variety of mobile stations that are capable of wireless communication, including cellular telephones. On this record, we see no reason why integrating packet and circuit switched modes as taught by Mazur would not be applicable to mobile stations as well as fixed stations. In any event, Mazur expressly discusses cellular communications systems as the Examiner indicates.[6]

For at least these reasons, we will sustain the Examiner's rejection of independent claim 1. Since Appellants have not separately argued the patentability of dependent claims 4 and 7, these claims fall with independent claim 1. *See In re Nielson*, 816 F.2d 1567, 1572, 2 USPQ2d 1525, 1528 (Fed. Cir. 1987); *see also* 37 C.F.R. § 41.37(c)(1)(vii).

Likewise, we will sustain the Examiner's rejection of independent claims 10, 20, 33, and 34 for similar reasons. Although Appellants argue the claims separately, Appellants essentially reiterate the arguments made with respect to the alleged deficiencies of Rydbeck and Mazur in connection with claim 1 (Br. 6-10). Appellants have simply not persuasively rebutted the Examiner's findings regarding Rydbeck and Mazur, including the

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[5] We further note that Mazur's dual-mode terminal in Figure 8 has an antenna mounted on top of the structure similar to that shown in Figure 1 of Rydbeck.

[6] *See, e.g.*, Mazur, col. 1, ll. 5-8; *see also* col. 10, l. 2 (preamble of claim 1).

Examiner's findings in the Final Rejection and Answer regarding an EGPRS stack (claim 10), CDMA stack (claims 33 and 34), and the functionality of the router and interoperability entity of Rydbeck previously discussed and its collective capability to route messages between Rydbeck's user interface and circuit/packet technologies (claim 20). We find the Examiner has reasonably established a prima facie case of obviousness with respect to these claims which has not been persuasively rebutted.

The Examiner's rejection of claims 10, 20, 33, and 34 is therefore sustained. Likewise, we will sustain the Examiner's rejection of claims 18 and 36 which fall with independent claims 10 and 33 respectively.

DECISION

We have sustained the Examiner's rejections with respect to all claims on appeal. Therefore, the Examiner's decision rejecting claims 1, 4, 7, 10, 18, 20, 33, 34, and 36 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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MOTOROLA INC
600 NORTH US HIGHWAY 45
ROOM AS437
LIBERTYVILLE, IL 60048-5343