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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte ERIK LARSSON, JOHAN BERGMAN,
BO GÖRANSSON, JOHAN HULTELL,
NIKLAS JOHANSSON, and FREDRIK OVESJÖ¹

Appeal 2018-002245
Application 13/202,670
Technology Center 2400

Before BRADLEY W. BAUMEISTER, JAMES B. ARPIN, and
KARA L. SZPONDOWSKI, *Administrative Patent Judges*.

BAUMEISTER, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's
Final Rejection of claims 1, 3–8, 10–14, 16–20, and 22–25. App. Br. 11.
We have jurisdiction under 35 U.S.C. § 6(b).

We reverse.

¹ Appellants list Telefonaktielbolaget LM Ericsson (publ) as the real party in
interest. Appeal Brief 2, filed June 14, 2017 (“App. Br.”).

STATEMENT OF THE CASE

Appellants describe the present invention as devices and methods of transmission in a wideband code division multiple access (WCDMA) system for transmitting to and receiving at user equipment (UE) instructions for subsequent uplink transmission from the UE to a base station (NodeB).

Title; Abstract.

The instructions to the UE comprise Transmit Power Commands [(TPCs or TPC commands)] as well as other instructions to the UE (120) for the UE's uplink transmissions. The NodeB (110) is arranged to use a first WCDMA slot format for the TPC commands to the UE and a second WCDMA slot format for the other instructions to the UE.

Abstract.

Independent claim 1 is reproduced with the disputed limitation emphasized:

1. A NodeB for a WCDMA system, the NodeB being arranged to transmit instructions to a UE for the UE['s uplink transmissions, the NodeB being arranged to transmit said instructions on a dedicated downlink physical channel [that] the NodeB is arranged to use for transmissions to a plurality of UEs and [that] comprises a plurality of radio frames, with each radio frame comprising a number of slots, each slot comprising a number of WCDMA symbols, the instructions to the UE comprising Transmit Power Commands[("TPC commands")] as well as other instructions to the UE for the UE's uplink transmissions, *the NodeB being arranged to simultaneously use a first WCDMA slot format for the TPC commands to the UE and a second WCDMA slot format for the other instructions to the UE*, wherein the NodeB is further arranged to transmit instructions to more than one UE in one and the same WCDMA symbol.

Claims 1, 3, 8, 10, 14, 16, 20, and 22 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Sidi et al. (US 2010/0041429 A1; published Feb. 18, 2011) in view of 3GPP TS 25.21 V9.1.0 (2009-12); 3rd Generation Partnership Project; Technical Specification Group Radio Access Network' Physical channels and mapping of transport channels onto physical channels ([Frequency Division Duplex] FDD) (Release 9) ("3GPP TS 25.211") and Ahn et al. (WO 2009/099271 A1; published Aug. 13, 2009). Final Act. 6–19.²

Claims 4–7, 11–13, 17–19, and 23–25 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Sidi, 3GPP TS 25.21, Ahn, and Wang et al. (US 2010/0103877 A1; published Apr. 29, 2010). Final Act. 19–24.

Claims 2, 9, 15, and 21 are withdrawn from consideration. *Id.* at 1.

We review the appealed rejections for error based upon the issues identified by Appellants, and in light of the arguments and evidence produced thereon. *Ex parte Frye*, 94 USPQ2d 1072, 1075 (BPAI 2010) (precedential).

FINDINGS AND CONTENTIONS

The Examiner finds that Sidi discloses or suggests most of the limitations of independent claim 1, including the requirement that “the Node B [is] arranged to simultaneously use a first WCDMA slot format for the

² Rather than repeat the Examiner’s positions and Appellants’ arguments in their entirety, we refer to the above cited Appeal Brief, as well as the following documents for their respective details: the Final Action mailed December 6, 2016 (“Final Act.”); the Examiner’s Answer mailed October 25, 2017 (“Ans.”); and the Reply Brief filed December 22, 2017 (“Reply Br.”).

TPC commands to the UE and a second WCDMA slot format for the other instructions to the UE,” as recited in independent claim 1. Final Act. 6–12.

Of particular relevance, the Examiner finds

Sidi further teaches *the NodeB (110) being arranged (25, 28, 30, 27) to use a first [[WCDMA]] slot format for the TPC commands to the UE and a second [WCDMA] slot format for the other instructions to the UE in that “base stations 110–120 and/or UE 130 can utilize any suitable channel format for conveying TPC command information (to use a first [WCDMA] slot format for the TPC commands) and/or any other suitable information within system 100.[”]* “In accordance with one aspect, an uplink DPCCH can be structured at the UE such that information is communicated to the [Universal Terrestrial Radio Access Network (UTRAN)] in respective slots (a second [WCDMA] slot format for the other instructions to the UE). Respective slots can include, for example, one or more pilot symbols, a Transport Format Combination Indicator (TFCI), TPC command information, or the like”.

Id. at 11–12 (citing Sidi ¶¶ 38–40); *see also* Sidi ¶ 42. This statement indicates that the Examiner equates at least the disclosed transmission of “TPC command information, or the like” to the claimed “other instructions.”

In the Response-to-Arguments section of the Examiner’s Answer, however, the Examiner makes multiple statements that appear to indicate the Examiner’s position is that Sidi does *not* actually disclose simultaneously using first and second WCDMA slot formats for transmitting distinct types of instructions to a single UE, but merely renders it obvious to do so:

[O]ne skilled in the art would have had *and be capable of offering design considerations* as outlined in Sidi regarding “the NodeB being arranged to **simultaneously use a first WCDMA slot format for the TPC commands to the UE** and a second WCDMA slot format for the other instructions to the UE, as cited below because this Examiner, *when applying broadest reasonable interpretation of the specific teachings in Sidi*, which

are cited above, and in conjunction with Figure 2 citing below,
directly teaches the Applicant's claimed alleged invention;

Ans. 24 (italicized emphasis added).

Sidi's Figure 2, reproduced at page 24 of the Examiner's Answer, depicts a radio frame that is comprised of 15 frame slots numbered from slot #0 to #14. Sidi's Figure 2 further depicts that a given slot is comprised of a block of TPC bits, "TPC N_{TPC} ," sandwiched between two blocks of slots that are defined by offset parameters, "(Tx OFF) N_{OFF1} Bits" and "(Tx OFF) N_{OFF2} Bits." The Examiner labels the block of TPC bits as having a first format, "Format 1," and labels the other two portions of the slot, which are defined by the offset parameters, as having a second format, "Format 2."

Ans. 24 (reproducing Sidi, Fig. 2 with annotated labels).

The Examiner further clarifies the rejection's reasoning, as follows:

One skilled in the art at the time of this alleged inventive technique, when applying broadest reasonable interpretation of Figure 2 and the following Sidi paragraph [0041] would have had more than sufficient information to not only be capable of offering (baseline) design considerations within the basic framework as outlined but also have the wherewithal based on the cited teaching by Examiner to identify further design considerations, for example, within the (baseline) design given the Sidi teachings, wherein, "In one example, based on a channel format as illustrated by diagram 200 and/or another suitable format, TPC command bits can be generated and transmitted as illustrated by diagram 300 in FIG. 3: meaning Format 1 and Format 2 differ at least in length of the slots and in light of Figure 3, which further details not only slot length but also format which would have been obvious to one skilled in the art at the time of this alleged invention based on Examiners cited references and paragraph [0043].

Id. at 24–25 (emphasis added).

In relation to the additional claim elements for which 3GPP TS 25.21 and Ahn are cited, the Examiner finds that “Sidi is silent regarding sufficient details [that] comprise[] a plurality of radio frames, with each radio frame comprising a number of slots, each slot comprising a number of [WCDMA] symbols.” *Id.* at 12 (emphasis omitted). But the Examiner finds that

[3GPP TS 25.211] discloses the characteristics of the Layer 1 transport channels and physical channels in the FDD mode of UTRA. The main objectives of the document are to be a part of the full description of the UTRA Layer 1, and to serve as a basis for the drafting of the actual technical specification (TS).

Id. at 7.

The Examiner concludes

it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Sidi method and systems that facilitates power control command generation and processing in a wireless communication system in which UEs are serviced by NodeBs, and when this scenario is augmented by the teachings and capabilities of [3GPP TS 25.211,] which in combination outlines the “characteristics of the Layer 1 transport channels and physical channels in the FDD mode of UTRA” having as its main objective the full description of the UTRA Layer 1, and to serve as a basis for the drafting of the actual technical specification (TS)”.

Id. at 14.

The Examiner finds that the combination of Sidi and 3GPP TS 25.211 is silent regarding transmitting instructions to more than one UE in one and the same WCDMA symbol. *Id.* at 15. The Examiner finds, however, that Ahn teaches

[a] method of controlling a transmit power of an uplink channel. . . Downlink control information of which Cyclic Redundancy Check (CRC) parity bits are masked with a TPC identifier is received on a downlink control channel. The

transmit power of the uplink channel is adjusted based on a TPC command in the downlink control information.

Id. at 7. The Examiner further finds that Ahn teaches that the TPC commands may be received by a plurality of UEs, and that motivation existed to combine Ahn’s teachings with those of Sidi and 3GPP TC 25.211 so as to provide TPC commands to plural UEs. *Id.* at 16 (citing Ahn ¶¶ 79–80, Table 1).

Appellants assert that “[Sidi] does not disclose, teach, or suggest ‘the NodeB being arranged to *simultaneously use a first WDDMA slot format for the TPC commands to the UE and a second WCDMA slot format for the other instructions to the UE,*’ as recited in claim 1.” App. Br. 11.

According to Appellants,

the cited portions disclose that “base stations 110–120 and/or UE 130 can utilize any suitable channel format for conveying TPC command information and/or any other suitable information within system 100.” *Sidi* at ¶0039. *Sidi* further discloses that “an uplink [dedicated physical control channel (DPCCH)] can be structured at the UE such that information is communicated to the UTRAN in respective slots. Respective slots can include, for example, one or more pilot symbols, a Transport Format Combination Indicator (TFCI), TPC command information, or the like.” *Id.* at ¶0042. Even assuming, for the sake of argument only, that the one or more pilot symbols or TFCI could be equated to the claimed “other instructions,” there is no indication that *Sidi* discloses “the NodeB being arranged to *simultaneously use a first WCDMA slot format for the TPC commands* to the UE and *a second WCDMA slot format for the other instructions* to the UE,” as recited in Claim 1.

App. Br. 11–12.

In response to the Examiner’s position that that Figure 2 of Sidi discloses the disputed limitation of using two distinct WCDMA slot formats

for the TPC commands and the other instructions to the UE, respectively, Appellants argue, as follows:

Figure 2 of *Sidi* “illustrates an example channel format.” *Sidi* at ¶0018. In particular, the Office Action equates the “TPC N_{TPC} ” portion to the first slot format, and the “(Tx OFF) N_{OFF2} Bits” portion to the second slot format, as shown by the Examiner’s annotations to Figure 2 of *Sidi*. . . . But this is incorrect.

With respect to Figure 2, *Sidi* discloses that: “respective slots can be configured to carry TPC bits [shown as the “TPC N_{TPC} ” portion in Figure 2 of *Sidi*] at one or more portions as defined by offset parameters N_{OFF1} and N_{OFF2} [which the Office Action equates to the claimed second slot format]. In one example, multiple EF-DPCH slot formats can be utilized to vary the positioning of the TPC bits within a slot. For example, 10 slot formats can be utilized, such that for an integral bit position k between 0 and 9, a k -th slot format maps to an offset N_{OFF1} of $(2k+2) \bmod 20$ bits.” *Sidi* at ¶0040 (emphasis added). *Sidi* therefore does not disclose, teach, or suggest that the “TPC N_{TPC} ” is a first slot format and the “(Tx OFF) N_{OFF2} Bits” is a second slot format (let alone “a second slot format for the other instructions to the UE” as recited in Claim 1). Rather, *Sidi* discloses that “TPC N_{TPC} ” and “(Tx OFF) N_{OFF2} Bits” are variables defined by the slot format used, and do not disclose, teach, or suggest “*simultaneously* using a first WCDMA slot format for the TPC commands to the UE and *a second WCDMA slot format for the other instructions to the UE*” as alleged by the Office Action.

App. Br. 12–13.

ANALYSIS

Regardless of whether the Examiner’s theory of the rejection is that *Sidi* discloses the disputed claim limitation or merely renders the limitation obvious, the rejection is flawed. As noted above, the Examiner states that the rejection is based upon applying the broadest reasonable interpretation of

the cited reference Sidi. *Id.* at 24 (“one skilled in the art would have had and be capable of offering design considerations as outlined in Sidi . . . *when applying [the] broadest reasonable interpretation of the specific teachings in Sidi*”) (emphasis added); *id.* (“One skilled in the art at the time of this alleged inventive technique, *when applying broadest reasonable interpretation of Figure 2 and . . . [Sidi’s] paragraph [0041]* would have had more than sufficient information”) (emphasis added).

The Examiner errs in applying the broadest-reasonable-interpretation (BRI) standard in interpreting the prior art because it is the claim terms of a pending patent application that are subject to interpretation under the BRI standard—not the disclosures of cited prior art. *See, e.g.*, MPEP § 2111 (“Claim Interpretation; Broadest Reasonable Interpretation”); *In re Am. Acad. of Sci. Tech Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004) (explaining that during examination of a patent application, *pending claims* are given their broadest reasonable construction consistent with the Specification); *In re Prater*, 415 F.2d 1393, 1404–05 (CCPA 1969) (*claims* are analyzed according to the BRI standard because Appellants always have the opportunity to amend the claims during prosecution, and broad interpretation by the Examiner reduces the possibility that the claim, once issued, will be interpreted more broadly than is justified).

These considerations, which exist when interpreting claims of a patent application generally, do not exist when interpreting cited prior art. A cited patent already has issued. Authors of cited prior art typically are not parties to the examination of the patent application being undertaken by the Examiner. An author of cited prior art most likely is not going to revise and republish the document in response to an Examiner interpreting that

document under the BRI standard. As such, cited prior art is interpreted, instead, according to how one of ordinary skill in the art would understand the disclosure. The present Examiner has not applied that standard in interpreting the present claims.

When the cited references are interpreted according to the proper legal standard, neither of the Examiner's two theories reasonably demonstrates that the claims are unpatentable. That is, the Examiner does not sufficiently establish that Sidi either discloses or renders obvious a NodeB simultaneously using a first WCDMA slot format for transmitting TPC commands to the UE and a second WCDMA slot format for transmitting other instructions to that same UE, as claimed.

First, the “pilot symbols, the transport format combination indicator, TPC command information, or the like,” relied upon by the Examiner (Final Act. 11–12) cannot reasonably be interpreted as corresponding to the “other instructions to the UE”—*instructions that the NodeB transmits on the downlink to the UE*. Sidi explains that this relied upon information instead is *uplink information that is sent from the UE to the NodeB*. Sidi ¶ 42 (“In accordance with one aspect, an *uplink* DPCCH can be structured at the UE such that *information is communicated to the UTRAN* in respective slots. Respective slots can include, for example, one or more pilot symbols, a Transport Format Combination Indicator (TFCI), TPC command information, or the like”) (emphasis added).

Second, we agree that Sidi discloses that a NodeB may employ different slot formats. *See, e.g.*, Sidi ¶ 39 (“base stations 110–120 and/or UE 130 can utilize any suitable channel format for conveying TPC command information and/or any other suitable information within

system 100”); *id.* ¶ 40 (“Multiple slot formats can be utilized, for example, to enhance code utilization for systems that can contain a large amount of users in a CELL_DCH state”); *id.* Fig. 4 (depicting that a NodeB communicates TPC commands to plural radio link sets RL1–RL6 with different respective offsets).

But the Examiner does not sufficiently explain how Sidi teaches or suggests a NodeB communicates *to a single UE* TPC commands with a first slot format and other instructions with a different slot format. A general statement that other formats may be used is not a teaching or suggestion to use, more specifically, a first WCDMA slot format for TPC commands to a UE and a second WCDMA slot format for other instructions to the same UE, as required by claim 1. Even if we assume for the sake of argument that one of ordinary skill in the art would have been *capable of modifying* Sidi’s system to satisfy the disputed claim limitation (Ans. 24), the Examiner still does not provide sufficient evidence that one of ordinary skill actually had thought of doing so in the first place, or why one of ordinary skill would have been motivated to make such a modification.

For the foregoing reasons, Appellants have persuaded us of error in the Examiner’s obviousness rejection of independent claim 1. Accordingly, we do not sustain the obviousness rejection of that claim or of claim 3, which depends from claim 1. We likewise do not sustain the obviousness rejection of independent claims 8, 14, and 20, each of which recites similar language, or of claims 10, 16, and 22, which respectively depend from these independent claims.

With respect to the remaining rejection of dependent claims 4–7, 11–13, 17–19, and 23–25, the Examiner does not rely on Wang to cure the

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deficiency of the obviousness rejection explained above. *See* Final Act. 19–24. Accordingly, we do not sustain the rejection of these claims for the reasons set forth above in relation to the rejection of claim 1.

DECISION

The Examiner’s decision rejecting claims 1, 3–8, 10–14, 16–20 and 22–25 is reversed.

REVERSED