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Paper 9
Entered: February 17, 2015

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ERICSSON INC. AND
TELEFONAKTIEBOLAGET LM ERICSSON,
Petitioners,

v.

INTELLECTUAL VENTURES II LLC,
Patent Owner.

Case IPR2014-01170
Patent 7,385,994 B2

Before BRYAN F. MOORE, BRIAN J. MCNAMARA, and DAVID C. MCKONE, *Administrative Patent Judges*.

MOORE, *Administrative Patent Judge*.

DECISION
Denying Institution of *Inter Partes* Review
37 C.F.R. § 42.108

I. INTRODUCTION

Ericsson Inc. and Telefonaktiebolaget LM Ericsson ("Petitioners") filed a Corrected Petition requesting an *inter partes* review of claims 1–25 ("challenged claims") of U.S. Patent No. 7,385,994 B2 (Ex. 1001, "the '944 patent"). Paper 1 ("Pet."). Intellectual Ventures II LLC ("Patent Owner") filed a Preliminary Response. Paper 6 ("Prelim. Resp"). We have jurisdiction under 35 U.S.C. § 314.

Petitioners challenge claims 1–25 as being obvious (35 U.S.C. § 103). For the reasons to be discussed, Petitioners have not established a reasonable likelihood that it would prevail on its challenge of claims 1–25 of the '944 patent. Accordingly, we do not institute *inter partes* review of any claim.

Petitioners indicate that the '944 patent is involved in the following co-pending civil actions in the United States District Court for the District of Delaware: *Intellectual Ventures II LLC v. AT&T Mobility LLC et al.*, 1:13-cv-01668-UNA; *Intellectual Ventures II LLC v. Leap Wireless International Inc. et al.*, 1:13-cv-01669-UNA; *Intellectual Ventures II LLC v. Nextel Operations Inc. et al.*, 1:13-cv-01670-UNA; *Intellectual Ventures II LLC v. T-Mobile USA Inc. et al.*, 1:13-cv-01671-UNA; *Intellectual Ventures II LLC v. United States Cellular Corporation*, 1:13-cv-01672-UNA. Pet. 1.

A. The '994 Patent

The '994 patent is directed to "to gateway queuing algorithms in packet networks. The invention is applicable to, but not limited to, gateway queuing algorithms in packet data transmissions, for example for use in the universal mobile telecommunication standard." Ex. 1001, 1:5–9. In an embodiment of the invention of the '994 patent, "one or more processing elements 248 contained with one or more RNCs [Radio Network Controllers] 236–240 have been adapted, to facilitate packet data queuing and scheduling in accordance with the preferred embodiment of the present invention." *Id.* at 6:14–19. The '994 patent recognizes that in embodiments "any elements managing packet data transmission, queuing, scheduling and/or routing may be controlled, implemented in full or implemented in part by adapting any other suitable part of the communication system 200." *Id.* at 7:8–12.

The exemplary packet data queuing algorithm "is based around the concept of employing different tiers of service. In particular, each tier, of a number of tiers of service, is configured to provide users with a commitment that a proportion of the entire system bandwidth will be allocated to users operating on that particular tier." *Id.* at 6:47–51. The '994 patent provides an example: "if we assume two tiers of service with a single user in each tier, we might allocate 75% of the entire system resource to the user of the higher tier and 25% of the entire resource to the user of the lower tier." *Id.* at 6:52–55.

The '994 patent explains that, in an embodiment, the "tier of service for each user is determined when the session for each user begins." *Id.* at

7:22–23. In this exemplary embodiment, "each user is provided with an identification (ID) code, which provides an identifier for the user and an indication of the amount of the data the user wishes to transfer." *Id.* at 7:26–28. When a user is entered onto the exemplary packet data scheme, the user's ID is placed at the tail of the appropriate queue. Users "move from the tail of the queue at location 355, through an intermediate location at 365 to the head of the queue at location 375, and then back to the tail of the queue at location 355." *Id.* at 7:62–65. This process "is repeated for all tiers, in the pre-allocated proportions for each tier. Within each lower tier, packets are also allocated in a round-robin fashion." *Id.* at 8:1–3.

B. Illustrative Claim

Of the challenged claims, 1, 11, and 24 are independent. Claim 1 is illustrative of the claimed subject matter of the '994 patent and is reproduced below:

> 1. A method of processing queued data packets in a packet data communication system, the method comprising:
>
> allocating a tier of service for each of a plurality of individual packet data queues, wherein allocating a tier of service comprises:
>
> determining a total number of data packets that can use an available communication resource;
>
> allocating different weights to each tier of service based on a number of users requiring access to the available communication resource;
>
> allocating a proportion of said total number of data packets to a number of the tiers of service to allow individual packet data queues on a number of tiers to share a communication resource; and

providing said communication resource to queued packet data users on a tier-by-tier basis, such that said communication resource is made available to a number of tiers.

Ex. 1001, 9:12–28.

C. Prior Art Relied Upon

Petitioners rely upon the following prior art references (Pet. 5):

Applicant	**Patent No.**	**Effective Date**	**Exhibit Number**
Mäkelä, et al. ("Mäkelä")	US 7,336,661 B2	Jan. 16, 2001	Ex. 1002
Hluchyj , et. al. ("Hluchyj")	US 5,231,633	July 27, 1993	Ex. 1004
Tzeng ("Tzeng")	US 6,438,135 B1	Oct. 21, 1999	Ex. 1005
Yamamoto ("Yamamoto")	US 6,993,041 B2	May 24, 2001	Ex. 1006
Giroux, et al. ("Giroux")	WO97/14240	April 17, 1997	Ex. 1003

D. The Asserted Grounds

Petitioners assert that the challenged claims are unpatentable based on the following grounds (Pet. 7):

Reference[s]	**Basis**	**Claims challenged**
Mäkelä and Giroux	§ 103	1–7, 10–17, and 20–25
Mäkelä, Giroux, and Yamamoto	§ 103	8, 9, 18, and 19
Hluchyj and Tzeng	§ 103	1–7, 10–17, 20, and 23–25
Hluchyj, Tzeng, and Yamamoto	§ 103	8, 9, 18, and 19
Hluchyj, Tzeng, and Mäkelä	§ 103	21 and 22

Hluchyj and Giroux	§ 103	1–7, 10–17, 20, and 23–25
Hluchyj, Giroux, and Yamamoto	§ 103	8, 9, 18, and 19
Hluchyj, Giroux, and Mäkelä	§ 103	21 and 22

II. ANALYSIS

A. Claim Construction

In an *inter partes* review, claim terms in an unexpired patent are given their broadest reasonable construction in light of the specification of the patent in which they appear. *See* 37 C.F.R. § 42.100(b); *see also, In re Cuozzo Speed Tech*, No. 2014–130, 2015 WL 448667 (Fed. Cir. February 04, 2015). Under the broadest reasonable construction standard, claim terms "are . . . given their ordinary and customary meaning," as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007) (quoting *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc)). Any special definition for a claim term must be set forth in the specification with "reasonable clarity, deliberateness, and precision." *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994).

Petitioners recognize that claims 11–23[1] contain limitations written in means-plus-function format and that, as such, they are presumed to be governed by § 112, ¶ 6. On the present record, we determine that § 112, ¶ 6

[1] Claims 20–23 depend ultimately from claim 11 and incorporate the means-plus-function limitations of claim 11.

governs the limitations, as they use the word "means," and no rebuttal has been presented. Thus, pursuant to the statute, they are to be construed to cover the corresponding structure described in the specification and equivalents. *See* 35 U.S.C. § 112, ¶ 6.

Claim 24 of the '994 patent recites limitations that include the term "logic for." The claim does not include the term "means," which creates a rebuttable presumption that the claim is not written in means-plus-function format under 35 U.S.C. §112, ¶ 6. *See Lighting World, Inc. v. Birchwood Lighting, Inc.*, 382 F.3d 1354, 1359 (Fed. Cir. 2004). However, this presumption may be overcome if the claim limitation "fails to 'recite sufficiently definite structure'" or recites a "'function without reciting sufficient structure for performing that function.'" *Id.* at 1358 (quoting *Watts v. XL Sys., Inc.*, 232 F.3d 877, 880 (Fed.Cir.2000)). We conclude that the term "logic" would not be recognized by one of ordinary skill in the art as providing sufficiently definite structure for performing the claimed function. Pet. 8 (citing Ex. 1015, ¶ 40). Because Claim 24 fails to recite sufficiently definite structure, the presumption that the claim is not written in means-plus-function format is rebutted. Accordingly, we interpret claim 24 under 35 U.S.C. § 112, ¶ 6.

Petitioners contend that the only possible structure that could be relied upon for the recited function is disclosed in two sentences of the '994 specification. Pet. 9 (citing Ex. 1015 ("Lanning Dec.") ¶ 41). However, neither Petitioners nor Patent Owner points to any algorithm for performing the functions contained in the limitations of claims 11–19 and 24. Pet. 9; *see also Function Media, LLC v. Google, Inc.*, 708 F.3d 1310, 1318 (Fed. Cir. 2013) (holding that a computer-implemented means-plus-function limitation

is indefinite because the specification failed to disclose the specific algorithm used by the computer to perform the recited function). Thus, Petitioners fail to demonstrate a reasonable likelihood of prevailing in its challenge to claims 11–24 and the Petition as to those claims is *denied*. *See Blackberry Corp. v. MobileMedia Ideas, LLC*, IPR2013-00036, Paper No. 65 (Mar. 7, 2014) (terminating *inter partes* review proceeding because specification did not disclose specific algorithm to perform recited function of a computer-implemented means plus-function term).

B. Claims 1–7, 10, and 25—Obviousness over Mäkelä (Ex. 1002) and Giroux (Ex. 1003)

Petitioners argue that claims 1–7, 10, and 25 are unpatentable under 35 U.S.C. § 103(a) over Mäkelä and Giroux. Pet. 10–27.[2] Mäkelä is directed to packet data queuing and scheduling systems in which data packets are queued based on priority and the queues are weighted relative to other queues according to priority. Ex. 1002, Abstract. Giroux is also directed to packet processing and queuing, specifically utilizing fair queue servicing using dynamic weights. Ex. 1003, 2:5–8, 3:18–21.

Below we discuss independent claim 1. Claim 1 recites "allocating a proportion of said total number of data packets [that can use an available communication resource] to a number of the tiers of service to allow

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[2] We denied institution of claims 11–17 and 20–24, which are included in this ground, based on a failure to cite to an algorithm. Thus, we will not discuss those claims in this section of the decision.

individual packet data queues on a number of tiers to share a communication resource." Petitioners assert that Giroux teaches this limitation. For example, Petitioners assert that "Figure 1 discloses that 'Timescale [Ts] = ~ 100 cell units,' which is the number of cells that can be sent in a given time." Pet. 13 (citing Ex. 1003, Fig. 1). We note that "[Ts]" does not appear in Figure 1 but was added by Petitioners. *See* Prelim. Resp. 21. Petitioners assume, for purpose of the challenge, that a cell is a data packet of fixed-length. Pet. 13 (citing Ex. 1015 ¶ 58; Ex. 1016, 134, 509; Ex. 1001, 6:35–37). Petitioners assert that Figure 3 discloses a service weight (W_i) which is the "number of cells to be served in [Ts] for output queue i." *Id.* (quoting Ex. 1003, Fig. 3). Petitioners state "[t]he relationship between these elements is shown by '$W_i = \mu_i \cdot T_s$,' which indicates that the service weight (W_i) is a proportion of the total number of cells that can be sent in a given time." *Id.* (citing Ex. 1003, 5:20–6:3). Petitioners, thus, argue that Giroux determines that 100 cell units are available to be allocated in a sampling interval T_s and further determines a service weight (W_i) for each queue representing the portion of those 100 cell units allocated to each queue. *Id.* (citing Ex. 1015 ¶ 58).

Patent Owner asserts that there is no disclosure in Giroux tying "Timescale" to T_s. Prelim. Resp. 21. Additionally, Ts is described as the number of cell slots in a sampling interval. *Id.* Thus, Petitioners have not explained sufficiently how Timescale or Ts represents the total number of data packets that can use an available communication resource. Additionally, Petitioners have not explained how Timescale or T_s relate to the total number of cell slots for the entire communication resource as opposed to one particular tier and how the allocation of that total to a

particular tier is determined. Thus, on the record before us, Petitioners have not shown sufficiently that Giroux teaches or suggests this limitation.

Thus, upon review of Petitioners' analysis and supporting evidence, we determine that Petitioners have not demonstrated that there is a reasonable likelihood that it would prevail with respect to claim 1 and claims 2–7, 10, and 25 that ultimately depend from claim 1.

C. Claims 1–7, 10, and 25 – Obviousness over Hluchyj (Ex. 1004) and Tzeng (Ex. 1005)

Petitioners argue that claims 1–7, 10, and 25 are unpatentable under 35 U.S.C. § 103(a) over Hluchyj and Tzeng.[3] Pet. 30-43. Hluchyj is directed to packet data queuing and scheduling systems in which data packets are queued based on priority and the queues are weighted relative to other queues according to priority. Ex. 1004, Abstract, Fig. 2, 2:1–23; 4:14–17). Tzeng also is directed to packet processing and queuing, specifically utilizing fair queue servicing using dynamic weights. Ex. 1005, Abstract, 5:27–37.

Below we discuss independent claim 1. Claim 1 recites "allocating different weights to each tier of service based on a number of users requiring access to the available communication resource." Petitioners assert that Hluchyj discloses that "packets are queued into multiple queues, for example, CBO traffic is queued in queues 507–509 and data traffic is queued

[3] We denied institution of claims 11-17, 20, 23, and 24, that are included in this ground, based on a failure to cite to an algorithm. Thus, we will not discuss those claims in this section of the decision.

into queues 511–513 based on the requirements of the source of the traffic and that the system separates out packets from different sources into more than one queue." Pet. 46 (citing Ex. 1004, 5:43–63). Petitioners further assert that the "weighted round-robin (WRR) packet selector serves each of the queues proportional to its weight." *Id.* (citing Ex. 1004, 7:17–31). Petitioners also rely on the statement in Tzeng that when setting weights of the queues, "if the administrator is aware of a condition which may change network usage, *such as the addition of a new network user* or other network pattern change, then appropriate changes to service the EIDs and weights can also be made." Pet. 31 (quoting Ex. 1005, 7:1–15).

Patent Owner argues, as to Hluchyj, that the evidence cited by Petitioners does not explain how any individual weight is assigned but only states that queues are assigned to different sources of data and those queues may have different weights. Prelim Resp. 34. We are persuaded by this argument. Petitioners' argument assumes that a source of traffic is a "user" as recited in claim 1. Pet. 31. Even if this is so, Hluchyj does not disclose that the number of sources of traffic ("users") affects the allocation of weight to a particular queue.

Patent Owner argues, as to Tzeng, that the statement relied on by Petitioners does not state that the number of users is the basis for allocating different weights to the queues. Prelim Resp. 35–36. We are persuaded by this argument. The statement from Tzeng simply notes that "appropriate" changes to weights may be made when a user is added without discussing or explaining what changes would be made. The statement does not suggest that different weights are allocated to each queue based on the number of users requiring access to the communication resource as recited in the claim.

Neither Petitioners nor its declarant Dr. Lanning relies on the knowledge of one of skill in the art to teach this limitation; rather they state specifically that Tzeng teaches this limitation. Pet. 31; Ex. 1015 ¶ 116. We are not persuaded that Tzeng so teaches. Thus, Petitioners have not shown sufficiently that the combination of Hluchyj and Tzeng teaches or suggests this limitation.

Thus, upon review of Petitioners' analysis and supporting evidence, we determine that Petitioners have not demonstrated that there is a reasonable likelihood that it would prevail with respect to claim 1 and claims 2–7, 10, and 25 that ultimately depend from claim 1.

D. Claims 8 and 9 – Obviousness over Mäkelä, Giroux, and Yamamoto

Petitioners argue that claims 8 and 9 are unpatentable under 35 U.S.C. § 103(a) over Mäkelä, Giroux, and Yamamoto.[4] Pet. 27–30. Claims 8 and 9 depend ultimately from claim 1. As discussed above in Section II.B., Petitioners have not shown sufficiently that Mäkelä or Giroux discloses "allocating a proportion of said total number of data packets [that can use an available communication resource] to a number of the tiers of service to allow individual packet data queues on a number of tiers to share a communication resource," as is required by independent claim 1. Additionally, Petitioners do not argue that Yamamoto makes up for this

[4] We denied institution of claims 18 and 19, which are included in this ground, based on a failure to cite to an algorithm. Thus, we will not discuss those claims in this section of the decision.

deficiency. Thus, upon review of Petitioners' analysis and supporting evidence, we determine that Petitioners have not demonstrated that there is a reasonable likelihood that it would prevail with respect to the ground that claims 8 and 9 are unpatentable over Mäkelä or Giroux and Yamamoto.

E. Claims 8 and 9 – Obviousness over Hluchyj, Tzeng, and Yamamoto

Petitioners argue that independent claims 8 and 9 are unpatentable under 35 U.S.C. § 103(a) over Hluchyj, Tzeng, and Yamamoto.[5] Pet. 43–44. Claims 8 and 9 depend ultimately from claim 1. As discussed above in Section II.C., Petitioners have not shown sufficiently that Hluchyj and Tzeng discloses "allocating different weights to each tier of service based on a number of users requiring access to the available communication resource," as is required by each of independent claim 1. Additionally, Petitioners do not argue that Yamamoto makes up for this deficiency. Thus, upon review of Petitioners' analysis and supporting evidence, we determine that Petitioners have not demonstrated that there is a reasonable likelihood that it would prevail with respect to the ground that claims 8 and 9 are unpatentable over Hluchyj, Tzeng, and Yamamoto.

F. Claims 21 and 22 – Obviousness over Hluchyj, Tzeng, and Mäkelä

Petitioners argue that independent claims 8 and 9 are unpatentable under 35 U.S.C. § 103(a) over Hluchyj, Tzeng, and Mäkelä. Pet. 44–45.

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[5] We denied institution of claims 18 and 19, which are included in this ground, based on a failure to cite to an algorithm and will not discuss those claims in this section of the decision.

We denied institution of claims 21 and 22, each of the claims included in this ground, in Section II.A. above, based on a failure to cite to an algorithm. Therefore, this challenge is *denied*.

G. Claims 1–7, 10, and 25 – Obviousness over Hluchyj and Giroux

Petitioners argue that independent claims 1–7, 10, and 25 are unpatentable under 35 U.S.C. § 103(a) over Hluchyj and Giroux.[6] As discussed above, Petitioners have not shown sufficiently that Giroux discloses "allocating a proportion of said total number of data packets [that can use an available communication resource] to a number of the tiers of service to allow individual packet data queues on a number of tiers to share a communication resource," as is required by independent claim 1. Additionally, for this ground, Petitioners do not rely on Hluchyj to teach or suggest this limitation. Thus, upon review of Petitioners' analysis and supporting evidence, we determine that Petitioners have not demonstrated that there is a reasonable likelihood that it would prevail with respect to the ground that claim 1 and claims 2–7, 10, and 25 are unpatentable over Hluchyj and Giroux.

[6] We denied institution of claims 11–17, 20, 23, and 24, which are included in this ground, based on a failure to cite to an algorithm. Thus, we will not discuss those claims in this section of the decision.

H. Claims 8 and 9 – Obviousness over Hluchyj, Giroux, and Yamamoto

Petitioners argue that independent claims 8 and 9 are unpatentable under 35 U.S.C. § 103(a) over Hluchyj, Giroux, and Yamamoto.[7] As discussed above, Petitioners have not shown sufficiently that Giroux discloses "allocating a proportion of said total number of data packets [that can use an available communication resource] to a number of the tiers of service to allow individual packet data queues on a number of tiers to share a communication resource," as is required by each of independent claim 1. Additionally, for this ground, Petitioners do not rely on Hluchyj or Yamamoto to teach or suggest this limitation. Additionally, Petitioners do not argue that Yamamoto makes up for this deficiency. Thus, upon review of Petitioners' analysis and supporting evidence, we determine that Petitioners have not demonstrated that there is a reasonable likelihood that it would prevail with respect to the ground that claims 8 and 9 are unpatentable over Hluchyj, Giroux, and Yamamoto.

I. Claims 21 and 22 – Obviousness over Hluchyj, Giroux, and Mäkelä

Petitioners argue that independent claims 21 and 22 are unpatentable under 35 U.S.C. § 103(a) over Hluchyj, Giroux, and Mäkelä. We denied institution of claims 21 and 22, each of the claims included in this ground, in

[7] We denied institution of claims 18 and 19, which are included in this ground, based on a failure to cite to an algorithm. Thus, we will not discuss those claims in this section of the decision.

Section II.A. above, based on a failure to cite to an algorithm. Therefore, this challenge is *denied*.

III. CONCLUSION

The information presented does not show that there is a reasonable likelihood that Petitioners would prevail at trial with respect to at least one claim of the '994 patent, based on any ground presented in the petition. On this record, we deny the petition for *inter partes* review of claims 1–25.

IV. ORDER

Accordingly, it is

ORDERED that that the petition is *denied* as to all challenged claims, and no trial is instituted.

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