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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte DAVID M. DALY, PETER A. FRANASZEK,
and LUIS A. LASTRAS-MONTANO

Appeal 2017-009874
Application 13/848,355[1]
Technology Center 2100

Before JUSTIN BUSCH, JASON J. CHUNG, and
MATTHEW J. McNEILL, *Administrative Patent Judges*.

CHUNG, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134(a) of the Final Rejection of claims 1–14. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

INVENTION

The invention is directed to task scheduling in computing systems. Spec. ¶ 2. Claim 1 is illustrative of the invention and is reproduced below:

> 1. A method for scheduling task requests, the method comprising:
>
> maintaining a plurality of queues for receiving a plurality of task requests to be processed within a computing system, the

[1] According to Appellants, the real party in interest is International Business Machines. App. Br. 2.

> plurality of task requests comprising high priority task requests and low priority task requests;
>
> identifying a low priority task request to be scheduled for processing;
>
> using a predictor mechanism to determine if interference between the low priority task request and a high priority task request is likely or unlikely, wherein interference is likely when a determined probability indicates that the high priority task request will be received during execution of the low priority task request, the probability determined empirically using a historical log of high priority task request submissions to calculate a likelihood of receipt of high priority task requests at any given time; and scheduling the low priority task request when interference is unlikely.

REJECTIONS AT ISSUE

Claims 1–4, 6–11, 13, and 14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Lin (US 2006/0168383 A1; published July 27, 2006) (hereinafter, "Lin") and Ghosal et al. (US 2005/0289312 A1; published Dec. 29, 2005) (hereinafter, "Ghosal"). Final Act. 2–6.

Claims 5 and 12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Lin, Ghosal, and Apostol, Jr. et al. (US 7,095,752 B2; issued Aug. 22, 2006). Final Act. 6–7.

ANALYSIS

The Examiner finds although Lin teaches calculating predicted arrival time of a high priority task based on historical information, Lin is silent as to probability. Final Act. 4 (citing Lin ¶¶ 21–24, 30). The Examiner finds Ghosal teaches probability based on historical task arrival. Final Act. 4 (citing Ghosal ¶¶ 59, 117, Abst.). The Examiner finds it would have been

obvious to a person having ordinary skill in the art at the time of the invention to combine Lin and Ghosal to have a probability of task arrivals based on historical information. Final Act. 4. Further, the Examiner finds the modification would have been obvious to a person having ordinary skill in the art to utilize Ghosal's probability to incorporate the error ratio of prediction calculation. *Id.* (citing Ghosal ¶ 117).

Appellants argue Lin does not teach probabilities. App. Br. 6. Furthermore, Appellants argue the Examiner admits that Lin does not teach probability based on prediction information; claims 1 and 8, however, recite probability based on a history of task requests, not probability based on prediction information. *Id.* And Appellants argue there is no reason to modify Lin to use probabilities because claims 1 and 8 pertain to a probability of occurrences based on a history of occurrences whereas Lin is looking at durations and times to complete. *Id.* at 7.

Moreover, Appellants argue the Examiner's reason to combine is flawed because the Examiner's motivation of incorporating the error ratio of prediction calculation is not the same as Appellants' reason for using the empirically derived probability of claim 1 and not the same type of probability of claims 1 and 8. *Id.* In addition, Appellants argue Ghosal does not teach determining probabilities empirically from the request history because Ghosal teaches a discount ratio reflecting the probability that a predicted request would arrive and is used in addition to the prediction of request arrival as a threshold determination in whether to use a given predicted request. *Id.* at 9. Appellants argue Lin's estimating fails to teach predicting. Reply Br. 3–5.

Regarding Appellants' first argument, we disagree with Appellants because one cannot show non-obviousness "by attacking references individually" where the rejections are based on combinations of references. *In re Merck & Co.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986) (citing *In re Keller*, 642 F.2d 413, 426 (CCPA 1981)). In this case, the Examiner relies on Ghosal, not Lin, to teach probabilities. Final Act. 4 (citing Ghosal ¶¶ 59, 117); Ans. 4.

As for Appellant's arguments pertaining to the Examiner's reason to combine Lin and Ghosal, we agree with the Examiner's finding that it would have been obvious to a person having ordinary skill in the art at the time of the invention to combine Lin and Ghosal to have a probability of task arrivals based on historical information. Final Act. 4. We also agree with the Examiner that the modification would have been obvious to a person having ordinary skill in the art to utilize Ghosal's probability to incorporate the error ratio of prediction calculation. *Id.* (citing Ghosal ¶ 117). Thus, we find that the Examiner articulated reasoning with rational underpinnings to support a motivation to combine the teachings of Lin and Ghosal. *See In re Kahn*, 441 F.3d 977, 989 (Fed. Cir. 2006).

Moreover, Appellants' argument that the Examiner's motivation of incorporating the error ratio of prediction calculation is not the same as Appellants' reason for using the empirically derived probability of claim 1 is unpersuasive; Appellants' argument is unpersuasive because the identity of purpose does not negate necessarily a suggestion for modifying the prior art to arrive at the claimed invention. *In re Fulton*, 391 F.3d 1195, 1202 (Fed. Cir. 2004) ("Furthermore, as we emphasized in *In re Beattie*, '[a]s long as some motivation or suggestion to combine the references is provided by the

prior art taken as a whole, the law does not require that the references be combined for the reasons contemplated by the inventor.' 974 F.2d at 1312. Accordingly, this argument is unpersuasive because the Board need not have found the combination of Bowerman and Pope to be desirable for the reason stated in the '198 application.").

Concerning Appellants' argument about Ghosal's probability, we disagree with Appellants and agree with the Examiner's finding. Final Act. 4; Ans. 7–8. That is, the cited portions of Ghosal relied upon by the Examiner teach *probability* based on predictions (Ghosal ¶ 117) and predictions based on *historical* requests (Ghosal ¶ 59); put another way, probability is based on historical requests indirectly. Final Act. 4. Moreover, we agree with the Examiner that Ghosal's discount ratio reflects the probability that a predicted request would arrive and, thus, must operate in conjunction with (and in the context of) the predicted arrival rate of requests; this probability of arrival principally must be rooted in and derived from the records of previous or historical requests—i.e., determined empirically. Ans. 7–8.

We do not consider Appellants' argument that Lin's estimating fails to teach a "predictor mechanism" as recited in claims 1 and 8 (Reply Br. 3–5) because it was not raised properly. Appellants' argument (*see id.*) was not raised in the Appeal Brief and is not responsive to a new finding or conclusion in the Examiner's Answer. 37 C.F.R. § 41.41(b)(2). Appellants' argument that Lin's estimating fails to teach predicting (Reply Br. 3–5) is untimely because the Examiner presented the theory based on Lin's estimating in the Final Rejection. Final Act. 3. Even if Appellants' argument were raised properly, which it was not, we agree with the

Examiner's finding that Lin's estimating teaches a "predictor mechanism" as recited in claims 1 and 8. *Id.* (citing Lin ¶¶ 21–24). And we also agree with the Examiner's finding that Ghosal's predicting teaches a "predictor mechanism" as recited in claims 1 and 8. *Id.* at 4 (citing Ghosal ¶¶ 59, 117).

For the reasons stated *supra*, we sustain the Examiner's rejection of independent claim 1.[2] Because Appellants argue against the rejections of independent claim 1–14 as a group (*see* App. Br. 11), we sustain the Examiner's rejection of: (1) independent claim 8; and (2) dependent claims 2–7 and 9–14. *See* 37 C.F.R. § 41.37 (c)(1)(iv).

DECISION

We affirm the Examiner's decision rejecting claims 1–14 under 35 U.S.C. § 103(a).

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

[2] We have decided the Appeal before us. However, in the event of further prosecution, the Examiner should evaluate whether to give patentable weight to a conditional limitation (i.e., the two "when" clauses) when one condition is already satisfied by the prior art. This footnote only pertains to the "method" of claim 1 in light of our recent Decision in *Ex parte Schulhauser*, 2016 WL 6277792, No. 2013-007847 (PTAB 2016) (precedential); *see also Cybersettle, Inc. v. Nat'l Arbitration Forum, Inc.*, 243 Fed. App'x 603, 607 (Fed. Cir. Jul. 24, 2007) (The Federal Circuit states that "method steps may be contingent," and "[i]f the condition for performing a contingent step is not satisfied, the performance recited by the step need not be carried out in order for the claimed method to be performed."