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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex Parte MATTIAS LIDSTROM and MONA MATTI

Appeal 2016-008295
Application 12/809,097
Technology Center 3600

Before JOHN A. EVANS, BETH Z. SHAW, and KIMBERLY McGRAW, *Administrative Patent Judges*.

SHAW, *Administrative Patent Judge*.

DECISION ON APPEAL[1]

Appellants[2] seek our review under 35 U.S.C. § 134(a) of the Examiner's final rejection of claims 22–42, which represent all the pending claims. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm-in-part.

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[1] Throughout this Decision we have considered the Appeal Brief filed January 21, 2016 ("App. Br."), Reply Brief filed September 2, 2016 ("Reply Br."), the Specification filed June 18, 2010 ("Spec."), the Examiner's Answer mailed July 7, 2016 ("Ans."), the Advisory action mailed October 2, 2015 ("Advisory Act."), and the Final Rejection mailed May 22, 2015 ("Final Act.").

[2] Appellants identify Telefonaktiebolaget L M Ericsson on as the real party in interest (App. Br. 2).

INVENTION

Appellants' invention is directed to "a method and apparatus for providing differentiated and flexible levels of service quality to terminal users in a communication network." Spec. p. 1, ll. 5–8. Method claim 22 and system claim 36 are the only independent claims on appeal. Claim 22 is illustrative of the claims at issue and is reproduced below:

> 22. A method of adapting a multi-media service level for a service consumed by a terminal user in a communication network, comprising the following steps, executed automatically in a service level control system:
>
> collecting information on service usage of said multi-media service by the user;
>
> extracting features of a usage pattern of the user from the collected service usage information;
>
> estimating the user with respect to his/her service usage based on the extracted usage pattern features, by applying a machine learning algorithm on data of the extracted usage pattern features;
>
> adjusting or introducing a corresponding rule or policy in the user's subscription profile in addition to a Quality-of-Service (QoS) service level already subscribed by the user based on the result from said user estimating step, wherein said rule or policy impacts the resulting service quality;
>
> adapting the service level of said multi-media service in accordance to the rule or policy in the user's subscription profile; and
>
> enforcing said rule or policy by a policy enforcing node in the communication network whenever the user invokes the multi-media service, wherein the multi-media service is consumed by said user with the adapted service level.[3]

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[3] Appellants' Claims Appendix includes a list of claims that appear to correspond to the list of amended claims that was submitted to the Office on August 21, 2015 in response to Examiner's Final Office Action. *Compare* App. Br. 23–26 *with* Response dated August 21, 2015, pp. 2–5 (Amendment after Final). However, these amendments were not entered by the Examiner. Advisory Act. 2–3. As such, Appellants' Claims Appendix does

REJECTIONS

The Examiner rejected claims 22–42 under 35 U.S.C. § 101 as directed to non-statutory subject matter. Final Act. 2–4.

The Examiner rejected claims 22–42 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. Final Act. 4–5.

The Examiner rejected claims 22, 25–29, 34–37, 39, 40, and 41 under 35 U.S.C. § 102(e) as being anticipated by Taylor (US 2007/0133428). Final Act. 5–15.

The Examiner rejected claims 23, 24, and 38 under 35 U.S.C. § 103(a) as being unpatentable over Taylor and Soliman (US 2004/0085909). Final Act. 15–17.

The Examiner rejected claims 30 and 31 under 35 U.S.C. § 103(a) as being unpatentable over Taylor and McKinnon (US 2009/0070454). Final Act. 17–19.

The Examiner rejected claims 32, 33, and 42 under 35 U.S.C. § 103(a) as being unpatentable over Taylor and Vasametti (US 2007/0195788). Final Act. 19–20.

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not accurately reflect the claims that are under appeal. This Decision considers the claims as rejected in the Final Rejection, as under appeal.

ANALYSIS

Section 101 Rejection

Appellants argue the Examiner erred in rejecting claims 22–42 under 35 U.S.C. § 101 as directed to non-statutory subject matter. App. Br. 7–18. The Examiner finds claims 22–42 are directed to:

> an abstract idea of **adjusting a service level** specifically, directed towards *collecting information, extracting a usage pattern from the information, estimating the user based on the pattern, adjusting a rule in the user's profile to adjust the service quality, adapt the service level in accordance with the rule, and enforce the rule,* which is (i) a fundamental economic practice, (ii) a method of organizing human activities, (iii) an idea of itself, or (iv) a mathematical relationship or formula.

Ans. 5–7 (emphases in original). The Examiner further states the claims are directed to a "fundamental economic practice, because they are directed to concepts relating to the economy and commerce." *Id.* at 8. The Examiner also finds that the claims are directed to "certain methods of organizing human activity as the claims include concepts relating to managing relationships or transactions between people." *Id.* at 9. The Examiner finds the claims do not include additional elements sufficient to amount to significantly more than the judicial exception because "because the additional elements or combination of elements in the claims other than the abstract idea per se amounts to no more than: (i) adjusting a service level, and/or (ii) recitation of computer readable storage medium having instructions encoded to perform functions of adjusting a service level are well understood, routine, and conventional activities previously known to the industry." *Id.* at 23.

Claim 22 is directed to a method of adapting a multi-media service level for a service consumed by a terminal user in a communication network.

Claim 36 is directed to a system for adjusting a service level for a service consumed by a user. Appellants argue that "adjusting a service level (i.e., quality level) is not a fundamental economic process as alleged by the Office." Reply Br. 2. We agree with Appellants.

We conclude that Appellants' claims are patent eligible as directed to a specific improvement (adapting a multi-media service level for a service consumed by a terminal user in a communication network) in a technological process and solve a problem by adapting the service layer in the network. Our reviewing court has approved claims of this general character. *See, e.g.*, *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299, 1316 (Fed. Cir. 2016) (finding eligible claims that use "limited rules" in a computerized "process specifically designed to achieve an improved technological result in conventional industry practice"); *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1256–1259 (Fed. Cir. 2014) (finding eligible claims directed to creation of an improved type of web page); *see also Trading Techs. Int'l, Inc. v. CQG, Inc.*, 675 F. App'x 1001, 1005 (Fed. Cir. 2017) ("Abstraction is avoided or overcome when a proposed new application or computer-implemented function is not simply the generalized use of a computer as a tool to conduct a known or obvious process, but instead is an improvement to the capability of the system as a whole."); *Amdocs (Israel) Ltd. v. Openet Telecom, Inc.*, 841 F.3d 1288, 1300–01 (Fed. Cir. 2016) (finding claims eligible where, although "[t]he solution requires arguably generic components," a specific limitation "requires that these generic components operate in an unconventional manner to achieve an improvement in computer functionality."). The instant claims are subject matter eligible because they are directed to an improvement in the

functioning of a computer by adapting a multi-media service level for a service consumed by a terminal user in a communication network.

We note that, because the claims are narrowly directed to adapting a multi-media service level for a service consumed by a terminal user in a communication network, any preemption is appropriately limited to Appellants' contribution to the art, and not to adjusting service levels in general. For these reasons, we do not sustain the rejection of claims 22–42 under 35 U.S.C. § 101.

Section 112 Rejection

Appellants also argue the Examiner erred in rejecting claims 22–42 under 35 U.S.C. § 112, ¶ 1 as failing to comply with the written description requirement. App. Br. 18–19; Reply Br. 3–4. The Examiner rejected claims 22–42 for failing to provide written description support for the term "multi-media service" (Final Act. 5) and rejected claims 22–35 and 39 for failing to provide written description support for the phrase "machine learning algorithm" (Ans. 2–4). Specifically, the Examiner states that although the background section of the Specification mentions "multimedia services," the Specification "does not make it clear that the invention is directed to multimedia services." Final Act. 5, 27. The Examiner further states that the Specification does not sufficiently describe the "specific machine learning algorithm" in such a way as to convey possession of the "machine learning algorithm" recited in claims 22 and 39. Ans. 2–3 (rejecting claims 22–35 and 39 under § 112, ¶ 1).

Appellants point to the Specification for support of the claimed "multimedia service." App. Br. 19 (citing Spec. p. 1, ll. 15–19). We agree with Appellants that page 1, lines 15–19, *inter alia*, of the Specification

provide support for the recited "multi-media service." The Specification states that "multimedia services typically involve the transmission of media in different formats and combinations over IP networks." Spec. p. 1, ll. 13–15. The Specification then describes a particular network architecture, commonly referred to as "the IMS network," which "control[s] multimedia services" including "file transfers," "media downloads" and "conversational sessions" such as "Multimedia Telephony and Push-to-Talk over Cellular." *Id.* at p. 1, ll. 15–19. The Specification then goes on to state that the "present invention is not limited to services enabled by IMS." *Id.* at p. 1, ll. 26–27. We find that a person of ordinary skill in the art would understand from these disclosures in the Specification that the present invention is *not limited to,* and therefore includes, the multi-media services enabled by IMS.

We also disagree with the Examiner's finding that the Specification does not convey possession of the "machine learning algorithm" recited in claims 22 and 39. Ans. 2–3. The Specification provides examples of machine learning algorithms including "clustering methods (such as 'Soft Clustering with Probabilistic Latent Semantic Analysis' (PLSA) and 'Soft Clustering with Gaussian Mixture Models' (GMMs)), novelty detection (such as 'One-Class Support Vector Machines' and 'Density Modelling techniques)[,] . . . Social Networks (SN) (such as 'kernel methods applied over graph'), and supervised classification (such as 'Neural network Multilayer Perceptrons' (MLPs), 'Radial Basis Function Networks' (RBFNs), Decision trees, 'Support Vector Machine' (SVM))." Spec. p. 20, ll. 10–21.

Thus, we disagree with the Examiner's findings that the terms "multi-media service" and "machine learning algorithm" are not supported by the

Specification. Accordingly, we do not sustain the rejection of claims 22–42 under 35 U.S.C. § 112 as failing to comply with the written description requirement.

Section 102 Rejection

Appellants argue the Examiner erred in rejecting claim 22, 25–29, 34–37, 39, 40, and 41 under 35 U.S.C. § 102(e) as being anticipated by Taylor. App. Br. 19–21. We agree with Appellants that the cited portions of Taylor do not disclose "applying a machine learning algorithm on data of the extracted usage pattern features," as recited in independent claim 22.App. Br. 20; Reply Br. 4–5.

The Examiner finds Taylor teaches "that the quality of service level is determined for the group and is based upon the *determined usage pattern."* Ans. 28. The Examiner concludes, "[s]ince Taylor uses a machine to discern the usage pattern, Taylor therefore applies a machine learning algorithm." *Id.* We disagree. The Examiner has not persuasively explained why Taylor's discernment of a usage pattern constitutes the claimed "applying a machine learning algorithm on data of the extracted usage pattern features." As Appellants argue, and we agree, the usage pattern is an input to the machine-learning algorithm. Reply Br. 5.

This is a rejection under Section 102.

> [U]nless a reference discloses within the four corners of the document not only all of the limitations claimed but also all of the limitations arranged or combined in the same way as recited in the claim, it cannot be said to prove prior invention of the thing claimed and, thus, cannot anticipate under 35 U.S.C. § 102.

Net MoneyIn, Inc. v. VeriSign, Inc., 545 F.3d 1359, 1371 (Fed. Cir. 2008).

> Thus, it is not enough that the prior art reference discloses part of the claimed invention, which an ordinary artisan might supplement to make the whole, or that it includes multiple, distinct teachings that the artisan might somehow combine to achieve the claimed invention.

Id.

Thus, we persuaded of error in the Examiner's rejection of independent claim 22 under 35 U.S.C. § 102(a). Therefore, we do not sustain the § 102 rejection of independent claim 22. For the same reasons, we do not sustain the § 102 rejection of claims 25–29, 34, 35, and 39, which depend directly or indirectly from claim 22. Further, we do not sustain the Examiner's rejection of dependent claims 23, 24, and 30–33 because the Examiner does not find that the additional references cure the deficiencies discussed above. We address independent claim 36 separately below.

Independent Claim 36

As noted above, Appellants' Claims Appendix includes a list of claims with amendments that were not entered by the Examiner. *See* Advisory Act. 2. Appellants' arguments appear to consider claim 36 as including the "machine learning algorithm" limitation addressed above with respect to claim 22.[4] App. Br. 19–20. If the amendment submitted by Appellants after the Final Rejection was entered, claim 36 would include the "machine learning algorithm" limitation discussed above with respect to claim 22. However, because this amendment was not entered, claim 36 does

[4] Appellants' argument related to "features of service usage are relevant and to be considered") (App. Br. 20) relates to a claim element of dependent claim 25, which is not found in independent claim 36. Because we do not sustain the rejection of dependent claim 25, we need not reach this issue.

not recite "machine learning algorithm." As such, Appellants' arguments are not persuasive.

We are also not persuaded by Appellants' arguments that Taylor does not disclose "a multi-media service." App. Br. 20–21. Taylor describes, in paragraph 4, "high bandwidth applications, such as streaming video or audio applications," which discloses multi-media services.

Accordingly, we sustain the § 102 rejection of independent claim 36, and dependent claims 37, 38, and 40–42, which were not argued separately.

CONCLUSION

We reverse the rejection of claims 22–42 under 35 U.S.C. § 101 as directed to non-statutory subject matter.

We reverse the rejection of claims 22–42 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement.

We reverse the § 102 rejection of claims 22, 25–29, 34, 35, and 39.

We reverse the § 103 rejection of claims 23, 24, and 30–33.

We affirm the § 102 rejection of independent claim 36, and dependent claims 37, 38, and 40–42.

DECISION

The decision of the Examiner to reject claims 22–35 and 39 is reversed.

The decision of the Examiner to reject claims 36–38 and 40–42 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). *See* 37 C.F.R.

§ 1.136(a)(1)(iv).

AFFIRMED-IN-PART