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Squire Patton Boggs (US) LLP
Nokia Technologies Oy
8000 Towers Crescent Drive, 14th Floor
Vienna, VA 22182

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte KASHYAP KAMDAR, BRIAN MOORE,
SADHANA AVASARALA, and RAKESH RANJAN

Appeal 2018-006486
Application 14/649,695¹
Technology Center 2400

Before MAHSHID D. SAADAT, BETH Z. SHAW, and
JAMES W. DEJMEK, *Administrative Patent Judges*.

DEJMEK, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134(a) from a Non-Final Rejection of claims 1, 3, 4, 6–8, and 11–16. Appellants have canceled claim 2. *See* App. Br. 21. The Examiner has objected to claims 5, 9, and 10 as being dependent upon a rejected base claim, but has indicated these claims would be allowable if rewritten in independent form. Non-Final Act. 4. We have jurisdiction over the remaining pending claims under 35 U.S.C. § 6(b). *See Ex parte Lemoine*, 46 USPQ2d 1420, 1423 (BPAI 1994) (precedential).

We affirm-in-part.

¹ Appellants identify Nokia Solutions and Networks Oy as the real party in interest. App. Br. 3.

STATEMENT OF THE CASE

Introduction

Appellants' disclosed and claimed invention generally relates to traffic steering within a communication network comprising at least two technology layers. Spec. 2:15–17. Traffic steering, as used throughout the Specification, refers to a “mechanism that allows steering traffic efficiently between multiple radio access technologies and frequency bands for a flexible utilization of network assets.” Spec. 3:5–7. In a disclosed embodiment, the method for traffic steering uses one or more policies, such as a load distribution policy, subscriber prioritization policy, application mapping policy, or session characterization policy, to identify users to be moved from a first technology layer to a second technology layer. Spec. 2:17–21, 4:6–30. According to the Specification, a technology layer is understood as “RATs (Radio Access Technologies) or frequency bands of different technologies, such as GSM, UMTS, LTE, WiFi, etc.” Spec. 3:1–3.

Claim 1 is illustrative of the subject matter on appeal and is reproduced below with the disputed limitations emphasized in italics:

1. A method for traffic steering in a communication network comprising at least two technology layers, the method comprising:

utilizing for traffic steering at least one policy of the group comprising a subscription prioritization policy, an application mapping policy, and a session characterization policy;

selecting one or more users in a first technology layer according to the at least one policy; and

preparing a movement of one or more selected users to a second technology layer.

The Examiner's Rejection

Claims 1, 3, 4, 6–8, and 11–16 stand rejected under pre-AIA 35 U.S.C. § 102(e) as being anticipated by Yeh et al. (US 2016/0183281 A1; June 23, 2016) (“Yeh”). Non-Final Act. 2–4.

ANALYSIS²

Claims 1, 3, 4, 6, and 11–16

The Examiner finds Yeh anticipates the pending claims. *See* Non-Final Act. 2–4. We begin our analysis with a brief overview of Yeh.

Yeh generally relates to improving on-time throughput in wireless networks by “handing off certain users and prioritizing communications based on specific criteria.” Yeh, Abstract. More particularly, Yeh describes providing “the best throughput and Quality of Service (QoS) for the user” in a wireless network comprising various radio access technologies (RATs), such as cellular, 3GPP-LTE, WiFi, WiMAX, and Bluetooth. Yeh ¶¶ 3, 21–27. Yeh refers to such a network as a Multi-RAT HetNet—i.e., a Multiple Radio Access Technology Heterogeneous Network. Yeh ¶ 21. Yeh discloses using a QoS metric to prioritize certain types of network traffic. Yeh ¶ 20. “For example, gaming may have a lower priority than video streaming[,] which may have a lower priority than voice calls.” Yeh ¶ 20. Yeh discloses “techniques to improve on-time throughput for delay sensitive traffic [(e.g., voice calls)] by judiciously scheduling and using multiple radio

² Throughout this Decision, we have considered the Appeal Brief, filed January 8, 2018 (“App. Br.”); the Reply Brief, filed June 8, 2018 (“Reply Br.”); the Examiner’s Answer, mailed May 10, 2018 (“Ans.”); and the Non-Final Office Action, mailed July 10, 2017 (“Non-Final Act.”), from which this Appeal is taken.

links per client in a multi-radio heterogeneous network.” Yeh ¶ 26. Yeh’s on-time throughput scheduling technique incorporates a throughput scheduling algorithm wherein certain metrics (e.g., instantaneous data rate and data throughput) are obtained by the servicing node for each user. Yeh ¶¶ 39, 44, 53. Yeh describes that estimates of on-time throughput for a user may be used for user radio assignments. Yeh ¶ 59.

Further, Yeh describes users may be offloaded (i.e., handed off) to another node or cell if the target on-time rates cannot be satisfied. Yeh ¶¶ 73–77. In a disclosed embodiment, Yeh describes a serving node (i.e., evolved Node B, eNB) comprising a multiple radio access technology scheduling means to determine, *inter alia*, a subset of users who fail to meet the on-time data rate. Yeh ¶ 96. Additionally, Yeh describes the multiple radio access technology scheduling means is configured to “change a user from a first radio access technology to a second radio access technology; and further wherein the first radio access technology and second radio access technology are chosen from WiFi and Long Term Evolution (LTE).” Yeh ¶ 100.

Appellants argue Yeh fails to disclose using for traffic steering at least one of the recited policies (i.e., a subscription prioritization policy, an application mapping policy, and a session characterization policy). App. Br. 8–12. In particular, Appellants assert Yeh merely discloses assigning Quality of Service (QoS) class identifiers (QCIs) to different types of transmissions, for prioritization purposes. App. Br. 8–10. Moreover, Appellants argue Yeh’s QoS metric for prioritization does not correspond to an application mapping policy. App. Br. 10–12. Additionally, Appellants argue Yeh fails to disclose “preparing a movement of one or more selected

users [(from a first technology layer)] to a second technology layer.” App. Br. 9–10; Reply Br. 3–4.

As an initial matter, the Examiner notes, as do we, that independent claim 1 requires only one of the recited policies be used for traffic steering. Ans. 4; *cf.* claim 1. The Examiner explains that Yeh’s on-time throughput requirement of different types of traffic (i.e., applications) corresponds to the claimed application mapping policy. Ans. 4.

As set forth in Appellants’ Specification, the application mapping policy ensures that applications use the appropriate radio access technology for the service. Spec. 4:20–21. As an example, Appellants map voice/text to a UMTS RAT and video on an LTE RAT. Spec. 4:21–22. Such application mapping corresponds to Yeh’s disclosure of identifying applications (e.g., video streaming and voice calls) by their on-time throughput requirements and handing off users to a second radio access technology capable of meeting the on-time requirements for that application. Yeh ¶¶ 20, 96–100. Thus, we agree with the Examiner’s finding that Yeh discloses “utilizing for traffic steering at least one policy of the group comprising a subscription prioritization policy, an application mapping policy, and a session characterization policy.”

Regarding Appellants’ argument that Yeh fails to disclose “preparing a movement of one or more selected users [(from a first technology layer)] to a second technology layer,” we disagree. As an initial matter, we note the limitation broadly recites “*preparing* a movement” of a user from one technology layer to another. *See, e.g.*, claim 1 (emphasis added). Merely *preparing* a movement of users from one technology layer to another does not require the *actual* movement of a user from one technology layer to a

second layer, but rather some step(s) performed in preparation of such a movement. As the Examiner finds, Yeh discloses compiling a list of users to offload (i.e., move) from one technology layer to another. *See, e.g.*, Ans. 4–5 (citing Yeh ¶¶ 96–100, 102). Additionally, Yeh discloses that such offloading occurs in a multiple radio access technology system and expressly describes changing (i.e., moving) a user “from a first radio access technology to a second radio access technology.” Yeh ¶¶ 96–100.

For the reasons discussed *supra*, we are unpersuaded of Examiner error. Accordingly, we sustain the Examiner’s rejection of independent claim 1. For similar reasons, we also sustain the Examiner’s rejection of independent claims 11 and 16, which recite similar limitations and for which Appellants advance similar arguments. *See App. Br.* 15–16, 18–19. Additionally, we sustain the Examiner’s rejection of claims 3, 4, 6, and 10–15, which depend directly or indirectly therefrom and for which Appellants do not advance substantive, different arguments of patentability. *See App. Br.* 12–13, 16–18.

Claims 7 and 8

Claim 4 depends from claim 1 and adds the limitation “generating a user list comprising a plurality of users for traffic steering.” Claims 7 and 8 depend from claim 4 and describe the frequency at which the user list is generated—i.e., “on [a] periodic basis” (claim 7) or “on a real-time, near real-time, online or offline basis” (claim 8).

Appellants assert that Yeh, as relied on by the Examiner, does not describe generating a user list on a periodic basis or on a real-time, near real-time, online or offline basis. *App. Br.* 13–15 (referring to Yeh ¶¶ 61, 63).

Instead, Appellants assert the cited paragraphs relate to “the scheduling of users [(during a measurement period)] on both LTE and WiFi links via algorithms to ensure that each user is scheduled at least once on each link” or how a UE may select its operating on-time throughput data rates. App. Br. 14–15 (citing Yeh ¶¶ 61, 63).

The Examiner does not respond to these arguments. Moreover, we agree with Appellants that the Examiner has not shown how these paragraphs of Yeh are related to the generation of user lists for traffic steering. Accordingly, we do not sustain the Examiner’s rejection of claims 7 and 8.

DECISION

We affirm the Examiner’s decision rejecting claims 1, 3, 4, 6, and 11–16.

We reverse the Examiner’s decision rejecting claims 7 and 8.

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) (2017). *See* 37 C.F.R. § 41.50(f).

AFFIRMED-IN-PART