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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/578,579	12/22/2014	Roni Bar-Yanai	T00380	8597
33438	7590	09/28/2020	EXAMINER	
TERRILE, CANNATTI & CHAMBERS, LLP P.O. BOX 203518 AUSTIN, TX 78720			KHAN, ATTA	
			ART UNIT	PAPER NUMBER
			2449	
			NOTIFICATION DATE	DELIVERY MODE
			09/28/2020	ELECTRONIC

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte RONI BAR-YANAI and NERY STRASMAN

Appeal 2019-003170
Application 14/578,579
Technology Center 2400

Before JOHN A. JEFFERY, SCOTT E. BAIN, and
MICHAEL T. CYGAN, *Administrative Patent Judges*.

BAIN, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant¹ appeals under 35 U.S.C. § 134(a) from the Examiner's decision to reject claims 1, 3, 4, 6–14, 16, 17, and 19–30. Claims 2, 5, 15, and 18 have been canceled. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

¹ We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42(a). Appellant identifies the real party in interest as Vasona Networks Inc. Appeal Br. 1.

BACKGROUND

The Claimed Invention

The invention relates “to communication analysis,” and specifically, to “bit-rate estimation” in adaptive bit-rate multimedia streaming. Spec. 1. The Specification explains that adaptive bit-rate streaming is a technique “in which multimedia content is encoded in advance at several predefined bit rates and divided into segments.” *Id.* The content “is streamed to a client, while adaptively selecting the bit rate to be streamed depending, for example, on the communication channel conditions en-route to the client.” *Id.* Appellant’s invention endeavors to improve adaptive bit-rate streaming via the claimed methods and apparatuses for deriving bit-rate estimations. *Id.* at 1–2.

Claims 1 and 14 are independent. Claim 1 is illustrative of the invention and the subject matter in dispute, and is reproduced below:

1. A method, comprising:
 - monitoring a media stream that is streamed over a network, from a server to a client, by a processor separate from the server and the client;
 - determining, by a processor, a traffic pattern of the monitored stream over time, including a communication bit-rate of the monitored media stream as a function of time;
 - identifying in the traffic pattern, a sequence of traffic bursts;
 - determining times of bursts in the sequence of traffic bursts;
 - measuring a time between successive traffic bursts in the sequence;*
 - estimating respective data volumes of one or more traffic bursts of the sequence;

deriving a given media bit-rate of the media stream from a ratio between the estimated data volumes and the measured time between bursts; and

assessing or acting upon video quality experienced by a user responsive to the derived media bit-rate, for allocating bandwidth in the network or selecting a quality of service policy to be applied in the network,

wherein estimating the data volumes and deriving the given media bit-rate are performed without decoding content of the media stream, and

wherein identifying the sequence of traffic bursts comprises interpreting upstream packets, from the client to the server, in a corresponding upstream of the monitored media stream as requests that are each followed by a respective traffic burst in the media stream.

Appeal Br. 15 (Claims Appendix) (emphases added).

References

The references relied upon by the Examiner are:

Name	Reference	Date
Demircin et al. ("Demircin")	US 2006/0095944 A1	May 4, 2006
Grinkemeyer et al. ("Grinkemeyer")	US 2011/0001833 A1	Jan. 6, 2011
Jadallah et al. ("Jadallah")	US 2012/0311126 A1	Dec. 6, 2012

The Rejection on Appeal

Claims 1, 3, 4, 6–14, 16, 17, and 19–30 stand rejected under 35 U.S.C. § 103 as unpatentable over Jadallah, Demircin, and Grinkemeyer. Final Act. 3–22.

DISCUSSION

We have reviewed the Examiner's rejections in light of Appellant's arguments presented in this appeal. On the record before us, we cannot sustain the Examiner's rejections.

Claim 1 recites a method of "deriving a given media bit-rate" of a media stream by (among other things) "identifying . . . a sequence of traffic bursts," "determining times of bursts in the sequence," "*measuring* a time between successive traffic bursts," and "deriving" a bit-rate based upon the foregoing "measured time" and estimated data volumes of traffic bursts. Appeal Br. 15 (Claims Appendix) (emphasis added). Appellant argues the Examiner erred in finding the prior art teaches or suggests "measuring" a time between successive traffic bursts in the sequence, as recited in claim 1. Appeal Br. 11–12; Reply Br. 3–4. Specifically, Appellant argues that in claim 1, a bit-rate is derived from a sequence of bursts in which the time between bursts must be "measured" because (by the terms recited in the claim) the time between bursts is otherwise *unknown*. Reply Br. 5. Appellant argues that Demircin, the prior art relied upon by the Examiner, does not teach the recited "measure[ment]" but rather only teaches a *predetermined* time between bursts in a sequence. *Id.* at 3–5. On this record, we are persuaded by Appellant's argument.

The Examiner relies on Demircin's disclosure of ten-packet bursts in which "the time between subsequent bursts [is] scheduled to be 40 ms." Ans. 12–13 (citing Demircin ¶ 216). The Examiner finds Demircin discloses "the receiver may use the computed bandwidth value directly to *compute* a new packet and/or payload size and/or *timing* between packets (or bursts) to be used for subsequent packet transmissions . . . *computing the*

time between packets and between bursts, can be performed either at the receiver or the transmitter, or a combination of the two.” Ans. 13 (citing Demircin ¶ 289) (emphasis added). As Appellant argues, however, the Examiner does not explain (and we do not discern, on this record) how “schemat[ing]” an interval and “comput[ing]” an interval time teaches the claimed “measuring” of time between bursts as recited in claim 1. Demircin’s teachings cited by the Examiner relate solely to predetermining certain features of the traffic bursts (payload size or fixed intervals) before they are sent, not “measuring” anything about the bursts, as recited in claim 1.

In the Final Action, the Examiner also cited Demircin’s disclosure that “data packets may arrive at the transmitter portion of the system *at regular intervals*, for example, if they come from a video encoder or transcoder that is operating at a constant bit rate.” Demircin ¶ 204 (emphasis added); Final Act. 5–6. Demircin further explains that the “time interval” and other parameters of the stream can be “controll[ed].” Demircin ¶ 205; Final Act. 5–6. Again, however, the Examiner does not explain how controlling the time interval in advance of sending bursts, or the fact that such time interval might be “regular,” teaches or suggests “measuring” a time between successive bursts, as recited in claim 1. Measuring a parameter is not the same as controlling it (in advance) such as by setting a constant bit rate. Appeal Br. 3–4.

Moreover, although the Examiner also relies on Jadallah and Grinkemeyer in rejecting claim 1 (Final Act. 4), on this record the Examiner has not explained how those references (and the combination thereof with Demircin) remedies the deficiencies of Demircin as discussed above.

Accordingly, we are persuaded the Examiner erred in rejecting claim 1. For the same reasons, we are persuaded of error regarding the same rejection of independent claim 14, which includes the same disputed limitation. We, therefore, do not sustain the rejection of claims 1 and 14. For the same reasons, we also do not sustain the rejection of the remaining claims on appeal, all of which depend from claims 1 or 14.

CONCLUSION

We reverse the Examiner's decision rejecting claims 1, 3, 4, 6–14, 16, 17, and 19–30.

SUMMARY

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1, 3, 4, 6–14, 16, 17, 19–30	103	Jadallah, Demircin, Grinkemeyer		1, 3, 4, 6–14, 16, 17, 19–30

REVERSED