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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* VISWANATHAN SWAMINATHAN, SHENG WEI,  
and SRINIVAS R. MANAPRAGADA

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Appeal 2019-001054  
Application 13/036,927  
Technology Center 2400

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Before MAHSHID D. SAADAT, LARRY J. HUME, and  
JULIET MITCHELL DIRBA, *Administrative Patent Judges*.

DIRBA, *Administrative Patent Judge*.

DECISION ON APPEAL<sup>1</sup>

Pursuant to 35 U.S.C. § 134(a), Appellant<sup>2</sup> seeks review of the Examiner's rejection of claims 1–42. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

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<sup>1</sup> This Decision uses the following abbreviations: “Spec.” for the original Specification, filed February 28, 2011; “Final Act.” for the Final Office Action, mailed July 13, 2017; “Appeal Br.” for Appellant’s Appeal Brief, filed April 20, 2018; “Ans.” for the Examiner’s Answer, mailed September 19, 2018; and “Reply Br.” for Appellant’s Reply Brief, filed November 19, 2018.

<sup>2</sup> We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. According to Appellant, the real party in interest is Adobe Systems, Inc. Appeal Br. 2.

## BACKGROUND

Appellant's disclosed embodiments and claimed invention relate to low-latency streaming of live media content. Spec. 34 (Abstract). Claim 1, reproduced below, is illustrative of the claimed subject matter:

1. A computer-implemented method, comprising:
  - sequentially generating multiple data fragments that each represent a distinct temporal segment of media content generated from a live content source, and each data fragment including multiple sub-portions representing smaller temporal segments of each data fragment, said generating comprising sequentially generating each sub-portion of the data fragments;
  - transmitting bootstrap data to a client device, the bootstrap data mapping time periods to respective ones of the multiple data fragments, and from which the client device determines a data fragment to request;
  - receiving a request for the data fragment from the client device based on the bootstrap data, the request being received during generation of a sub-portion of the data fragment; and*
  - responsive to said receiving the request for the data fragment, *providing the sub-portion of the data fragment to the client device subsequent to the sub-portion being completed and prior to generation of a next sub-portion of the data fragment being completed in order to reduce playback latency from the live content source to the client device.*

Appeal Br. 22 (Claims App.) (emphases added).

## REJECTION

Claims 1–42 stand rejected under 35 U.S.C. § 103 as obvious over Birrer (US 2008/0133767 A1, published Jun. 5, 2008), Bocharov (US 2011/0080940 A1, published Apr. 7, 2011), and Bouazizi (US 2011/0307545 A1, published Dec. 15, 2011). Final Act. 2–15.

## ANALYSIS

We review the appealed rejections for error based upon the issues identified by Appellant and in light of the arguments and evidence produced thereon. *Ex parte Frye*, 94 USPQ2d 1072, 1075 (BPAI 2010) (precedential). For the reasons explained below, we are persuaded of Examiner error.

### *Obviousness Rejection of Claims 1–42*

Claims 1–42 stand rejected under 35 U.S.C. § 103 as obvious over Birrer, Bocharov, and Bouazizi. Final Act. 2–15. Appellant presents arguments directed to: independent claims 1 and 21 as a group, and independent claims 10 and 31 as a group. *See* Appeal Br. 7–21. Because Appellant does not separately argue any dependent claims (*id.* at 21), these claims stand or fall with their respective independent claim. *See In re King*, 801 F.2d 1324, 1325 (Fed. Cir. 1986).

### *Claim 1*

Claim 1 recites: “receiving a request for [a] data fragment from the client device based on the bootstrap data, *the request being received during generation of a sub-portion of the data fragment.*” Appeal Br. 22 (Claims App.) (emphasis added) (referred to in this Decision as the “receiving limitation”). The claim also recites: “responsive to said receiving the request for the data fragment, *providing the sub-portion* of the data fragment to the client device *subsequent to the sub-portion being completed and prior to generation of a next sub-portion of the data fragment* being completed in order to reduce playback latency from the live content source to the client device.” *Id.* (emphases added) (referred to in this Decision as the “providing limitation”).

In the Final Office Action, the Examiner found that Bocharov teaches both the receiving limitation and the providing limitation. Final Act. 4–6, 15–17 (citing Bocharov ¶¶ 33, 35, 40). In particular, the Examiner found Bocharov’s client manifest teaches the claimed “bootstrap data.” *Id.* at 5. This manifest includes information about media “fragments stored by the system 100 up to the current time.” Bocharov ¶ 33. The client uses this manifest “either to begin requesting ongoing live fragments, or to skip backwards in time to earlier portions of a presentation.” *Id.*

The Examiner further found that Bocharov discloses the temporal requirements of these limitations. *See* Final Act. 4–6, 15–17. In particular, the Examiner found that Bocharov teaches “receiving a request for [a] data fragment . . . *during* generation of a sub-portion of the data fragment” because paragraph 40 discloses:

*During streaming, particularly live content, a server 105 cannot provide a complete manifest because the event is still ongoing. Thus, the server 105 provides as much of the manifest as it can through the metadata in the media chunks . . . The manifest allows the client 150 to request previously streamed portions of the media element (e.g., by rewinding), and the client 150 continues to receive new portions of the manifest through the metadata of the streamed media chunks . . . .*

Final Act. 5 (emphasis omitted and added) (quoting Bocharov ¶ 40). The Examiner also found that Bocharov teaches “responsive to said receiving the request for the data fragment, providing the sub-portion . . . subsequent to the sub-portion being completed *and prior to generation of a next sub-portion of the data fragment* being completed” because paragraph 35 discloses:

*[T]he client interface component 130 responds to client requests for available fragments without waiting for subsequent*

*fragments* from which to include information with the current fragment. The client can request subsequent fragments by referencing the current fragment. For example, if the client last requested a fragment at time 1000 and wants the subsequent fragment, the client may send a request to get the fragment following the fragment at time 1000. In this way, the server can send fragments without introducing additional latency by waiting for subsequent fragments before sending a fragment.

Final Act. 5–6 (emphasis omitted and added) (quoting Bocharov ¶ 35); *see also id.* at 16–17 (stating, without further explanation, that a person of ordinary skill in the art would interpret the claim language as taught by the identified disclosure of Bocharov).

Appellant alleges error in these findings. Appeal Br. 7–13. According to Appellant, although Bocharov receives a client request for a fragment, Bocharov fails to indicate that this request is received “during generation of the requested fragment.” *Id.* at 9. Instead, according to Appellant, “Bocharov is directed to fragments that are completely created and stored prior to providing clients with media fragments.” *Id.* Further, Appellant argues the cited portions of Bocharov fail to mention providing “a portion of the fragment . . . in response to the client request for the fragment” much less “providing a sub-portion of a data fragment . . . before the generation of a following sub-portion is complete.” *Id.* at 12.

In the Answer, the Examiner reiterates the findings in the Final Office Action. Ans. 3–4. In addition, the Examiner points to “the combined teachings of Birrer and Bocharov.” *Id.* at 4. The Examiner finds that Birrer discloses a “‘super chunk’ 840” (which maps to the claimed “fragment”) that includes several “chunks” of video data (which map to the claimed “sub-portions”). *Id.* at 5 (citing Birrer ¶ 57); *see also* Final Act. 3 (finding this

portion of Birrer discloses the claimed fragment that includes multiple sub-portions). The Examiner also points to Bocharov’s disclosure that it sends fragments “without introducing additional latency by waiting for subsequent fragments before sending a fragment.” Ans. 6 (quoting Bocharov ¶ 35).

On this record, we are persuaded of error in the Examiner’s rejection. In particular, we find that the Examiner has not adequately explained (and it is unclear from our review) how the relied-upon disclosures teach or suggest the temporal requirements of the receiving and providing limitations—e.g., “receiving a request for [a] data fragment . . . *during generation of a sub-portion of the data fragment*” and, in response, “providing *the sub-portion . . . prior to generation of a next sub-portion of the data fragment being completed.*” Appeal Br. 22 (Claims App.).

The Examiner finds: (1) Birrer discloses fragments that each include sub-portions, (2) Bocharov sends a data fragment in response to a client’s request for that fragment, (3) Bocharov’s client can request a particular fragment by referencing a previous fragment, and (4) Bocharov “send[s] fragments without introducing additional latency by waiting for subsequent fragments before sending [the requested] fragment.” Final Act. 3–6, 15–17; Ans. 3–6. Appellant does not dispute these factual findings (*see generally* Appeal Br. 7–13)—and we perceive no error in them—but the claim requires more. In particular, it recites receiving a request for a fragment during generation of a sub-portion of that requested fragment and providing that sub-portion of the requested fragment prior to completing generation of another sub-portion of the requested fragment. Stated differently, the claim requires receiving a request for a fragment while that fragment is being generated and, in response, providing a portion of that fragment *before* the

entire fragment has been generated. *See also* Appeal Br. 11–12. The Examiner points to paragraphs 35 and 40 of Bocharov, but the Examiner does not explain (and we do not perceive) how these passages teach or suggest these claimed requirements. Rather, these passages describe receiving a request for a fragment (which may be identified by referencing a prior fragment), sending the requested fragment prior to generating *subsequent* fragments, and updating the client manifest (the claimed “bootstrap data”). Bocharov ¶¶ 35, 40.

Notably, the Examiner does not find or explain why it would have been obvious to modify the cited references to yield these missing temporal requirements. Accordingly, we do not decide whether it would have been obvious to modify Bocharov, in light of *Birrer* and/or *Bouazizi*, to yield the temporal requirements of claim 1. *See In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (requiring a “rational underpinning to support the legal conclusion of obviousness”), *cited with approval in KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007).

Therefore, based upon the findings above, on this record, we are persuaded of error in the Examiner’s reliance on the cited prior art combination to teach or suggest the disputed limitations of claim 1. Accordingly, we do not sustain the Examiner’s obviousness rejection of independent claim 1 or independent claim 21, which recites the disputed limitation in commensurate form. Further, dependent claims 2–9 and 22–30 stand with their respective independent claim.



*Claim 10*

For independent claim 10, Appellant presents substantially the same arguments as those discussed above (*see* Appeal Br. 13–18; Reply Br. 5–8), and the Examiner presents substantially the same findings and response (*see* Final Act. 7–10; Ans. 6–7).<sup>3</sup>

Claim 10 recites limitations analogous to the receiving and providing limitations required by claim 1. In particular, claim 10 recites: “providing a request for [a] data fragment to the remote system based on the bootstrap data, the request being provided *during generation of a sub-portion of the data fragment*” and “*receiving the sub-portion of the data fragment from the remote system subsequent to the sub-portion being completed and prior to generation of a next sub-portion of the data fragment being completed.*” Appeal Br. 24 (Claims App.) (emphases added).

Therefore, on this record, for the reasons explained above with respect to independent claim 1, we are persuaded of error in the Examiner’s reliance on the cited prior art combination to teach or suggest the disputed limitations of claim 10. Accordingly, we do not sustain the Examiner’s obviousness rejection of independent claim 10 or independent claim 31, which recites the disputed limitation in commensurate form. Further, dependent claims 11–20 and 32–42 stand with their respective independent claim.

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<sup>3</sup> Appellant also alleges error in the Examiner’s finding that Bocharov teaches a third limitation of independent claim 10. Appeal Br. 19–21. We do not address this argument because our determination resolves the § 103 rejection for all pending claims. *See, e.g., Beloit Corp. v. Valmet Oy*, 742 F.2d 1421, 1423 (Fed. Cir. 1984) (explaining that an administrative agency may render a decision based on “a single dispositive issue”).

CONCLUSION

In summary:

<b>Claims Rejected</b>	<b>35 U.S.C. §</b>	<b>Reference(s)/Basis</b>	<b>Affirmed</b>	<b>Reversed</b>
1-42	103	Birrer, Bocharov, Bouazizi		1-42

REVERSED