UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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NETFLIX, INC., ARRIS SOLUTIONS, INC., and
COMCAST CABLE COMMUNICATIONS, LLC,
Petitioner,

v.

REALTIME ADAPTIVE STREAMING, LLC,
Patent Owner.

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IPR2018-01169
Patent 8,934,535 B2

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Before KEVIN W. CHERRY, GARTH D. BAER, and
NABEEL U. KHAN, *Administrative Patent Judges.*

KHAN, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining All Challenged Claims Unpatentable
35 U.S.C. § 318(a)

I. INTRODUCTION

A. Background

Netflix, Inc.[1] ("Petitioner") filed a Petition (Paper 8, "Pet.") to institute an *inter partes* review of claims 1–14 (the "challenged claims") of U.S. Patent No. 8,934,535 B2 (Exhibit 1001, "the '535 Patent"). Realtime Adaptive Streaming, LLC ("Patent Owner") timely filed a Preliminary Response. Paper 19 ("Prelim. Resp."). On January 17, 2019, upon consideration of the Petition, the Preliminary Response, and the evidence cited by the parties, we determined that Petitioner established a reasonable likelihood that it would prevail with respect to at least one of the claims challenged in the Petition and instituted review to determine the patentability of the challenged claims on all grounds. Paper 20 ("Dec. Inst."), 1.

Subsequent to institution, Patent Owner filed a Patent Owner Response. Paper 26 ("PO Resp."). Petitioner filed a Reply (Paper 31, "Reply") thereto, and Patent Owner filed a Sur-Reply (Paper 33, "Sur-Reply"). Petitioner supports its challenge with the Declaration of James Storer, Ph.D. Ex. 1003. Patent Owner supports its Response with the Declaration of Kenneth A. Zeger, Ph.D. Ex. 2001. An oral hearing was held before the Board, the transcript of which was entered into the record (Paper 44).

B. Related Proceedings

The parties inform us that the '535 Patent is involved in the following litigations:

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[1] ARRIS SOLUTIONS, INC., who filed a petition in IPR2019-00674, and Comcast Cable Communications, LLC, who filed a petition in IPR2019-00684, have been joined as petitioners in this proceeding.

- *Realtime Data LLC d/b/a IXO v. Echostar Corp.*, No. 6:17-cv-00084 (E.D. Tex.)

- *Realtime Data LLC d/b/a IXO v. DISH Network Corp. et al.*, 6:17-cv-00421 (E.D. Tex.)

- *Realtime Adaptive Streaming, LLC v. Sling TV, LLC*, No. 1:17-cv-02097 (D. Colo.)

- *Realtime Adaptive Streaming, LLC v. Amazon.com, Inc.*, No. 6:17-cv-00549 (E.D. Tex.)

- *Realtime Adaptive Streaming LLC v. EchoStar Technologies, LLC et al.*, No. 6:17-cv-00567 (E.D. Tex.).

- *Realtime Adaptive Streaming, LLC v. Hulu, LLC*, No. 2:17-cv-07611 (C.D. Cal.)

- *Realtime Adaptive Streaming, LLC v. Cisco Systems, Inc.*, No. 6:17-cv-00591 (E.D. Tex.)

- *Realtime Adaptive Streaming, LLC v. Brightcove, Inc.*, No. 1:17-cv-01519 (D. Del.)

- *Realtime Adaptive Streaming, LLC v. Haivision Network Video, Inc.*, No. 1:17-cv-01520 (D. Del.)

- *Realtime Adaptive Streaming, LLC v. Polycom, Inc.*, No. 1:17-cv-02692 (D. Colo.)

- *Realtime Adaptive Streaming, LLC v. Netflix, Inc.*, No. 1:17-cv-01692 (D. Del.)

- *Realtime Adaptive Streaming, LLC v. Sony Electronics Inc.*, No. 1:17-cv-01693 (D. Del.)

- *Realtime Adaptive Streaming, LLC v. Apple, Inc.*, No. 1:17-cv-02869 (D. Colo.)

- *Realtime Adaptive Streaming, LLC v. Adobe Systems Inc.*, No. 1:18-cv-10355 (D. Mass.)

- *Realtime Adaptive Streaming, LLC v. Samsung Electronics Co.*, No. 6:18-cv-00113 (E.D. Tex.)

- *Realtime Adaptive Streaming LLC v. Wowza Media Systems LLC*, No. 1:18-cv-00927 (D. Colo.)

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- *Realtime Adaptive Streaming LLC v. Google LLC et al*, No. 2:18-cv-03629 (C.D. Cal.)

- *Realtime Adaptive Streaming LLC v. Avaya Inc.*, No. 1:18-cv-01046 (D. Colo.)

- *Realtime Adaptive Streaming LLC v. Broadcom Corp. et al.*, No. 1:18-cv-01048 (D. Colo.)

- *Realtime Adaptive Streaming LLC v. LG Electronics Inc. et al*, No. 6:18-cv-00215 (E.D. Tex.)

- *Realtime Adaptive Streaming LLC v. Advanced Micro Devices, Inc.*, No. 1:18-cv-01173 (D. Colo.)

- *Realtime Adaptive Streaming LLC v. Intel Corp.*, No. 1:18-cv-01175 (D. Colo.)

- *Realtime Adaptive Streaming LLC v. Mitel Networks, Inc.*, No. 1:18-cv-01177 (D. Colo.)

- *Realtime Adaptive Streaming LLC v. Charter Communications, Inc. et al*, No. 1:18-cv-01345 (D. Colo.)

- *Realtime Adaptive Streaming LLC v. Cox Communications, Inc.*, No. 8:18-cv-00942 (C.D. Cal.)

- *Realtime Adaptive Streaming LLC v. Comcast Cable Communications, LLC*, No. 1:18-cv-01446 (D. Colo.).

Pet. 63–65; Paper 9, 2–4.

Petitioner further informs us that the '535 Patent is involved in the following *inter partes* review proceedings which are no longer pending before the Board:

- *Unified Patents Inc. v. Realtime Adaptive Streaming LLC*, IPR2018-00883

- *Hulu, LLC, Amazon.com, Inc., & Netflix, Inc. v. Realtime Adaptive Streaming LLC*, IPR2018-01170.

C. The '535 Patent

The '535 Patent relates generally to "compressing and decompressing data based on an actual or expected throughput (bandwidth) of a system." Ex. 1001, 1:21–25. The '535 Patent explains that data compression algorithms can have varied performance characteristics. Ex. 1001, 1:32–35. "For example, with a typical dictionary[-]based compression algorithm[,] such as Lempel-Ziv, the size of the dictionary can affect the performance of the algorithm." Ex. 1001, 1:35–38. A large dictionary may yield very good compression ratios but may make the algorithm take a long time to execute. On the other hand, a smaller dictionary would yield a faster compression time but at the expense of a lower compression ratio. Ex. 1001, 1:38–44. Thus, one challenge in employing data compression is selecting the appropriate algorithm from a variety of algorithms for a given application or system. Ex. 1001, 1:47–50. The desired balance between speed and efficiency is an important factor in determining which algorithm to select for data compression. Ex. 1001, 1:50–53. A system that provides dynamic modification of compression system parameters to provide an optimal balance between speed and compression ratio is highly desirable. Ex. 1001, 1:56–60.

The '535 Patent describes two categories of compression algorithms: asymmetrical and symmetrical. An asymmetrical data compression algorithm is "one in which the execution time for the compression and decompression routines differ significantly." Ex. 1001, 9:64–66. Thus, in an asymmetrical algorithm, either the compression time is fast and the decompression time is slow, or vice versa. An example of an asymmetric algorithm is Lempel-Ziv. Ex. 1001, 10:2–4. A symmetric compression algorithm, on the other hand, is "one in which the execution time for the

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