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Paper 10
Entered: August 9, 2021

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

NETFLIX, INC.,
Petitioner,

v.

BROADCOM CORPORATION,
Patent Owner.

IPR2021-00468
Patent 6,982,663 B2

Before MELISSA A. HAAPALA, *Senior Lead Administrative Patent Judge*, KRISTEN L. DROESCH and THOMAS L. GIANNETTI, *Administrative Patent Judges.*

GIANNETTI, *Administrative Patent Judge.*

DECISION
Denying Institution of *Inter Partes* Review
37 C.F.R. § 42.108

I. INTRODUCTION

Netflix, Inc. ("Petitioner") filed a Petition (Paper 2, "Pet.") requesting an *inter partes* review of claims 12–16, 18, and 19 (the "challenged claims") of U.S. Patent No. 6,982,663 B2 (Ex. 1001, "the '663 patent"). Patent Owner, Broadcom, Inc., filed a Preliminary Response (Paper 6, "Prelim. Resp."). At the request of the panel, Petitioner filed a supplemental brief (Paper 8) and Patent Owner filed a supplemental reply (Paper 9) addressing a specific argument raised by Patent Owner in the Preliminary Response.

The Board has authority to determine whether to institute an *inter partes* review. *See* 35 U.S.C. § 314; 37 C.F.R. § 42.4(a). Under 35 U.S.C. § 314(a), we may not authorize an *inter partes* review unless the information in the petition and the preliminary response "shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition."

For the reasons stated below, we determine that Petitioner has not established a reasonable likelihood that it would prevail with respect to at least one claim. We therefore do not institute *inter partes* review as to any of the challenged claims of the '663 patent on the asserted ground of unpatentability.

A. Related Matters

The parties identify the following district court proceedings as related: *Broadcom Corp. et al. v. Netflix, Inc.*, Case No. 3:20-cv-04677-JD (N.D. Cal.); *Broadcom Corp. et al. v. Netflix, Inc.*, Case No. 8:20-cv-00529-JVS-ADS (C.D. Cal.). Pet. 90, Paper 5, 1.

In addition, the '663 patent was previously before the Board in IPR2017-00964 (institution denied). IPR2017-00964, Paper 15.

B. Real Parties-in-Interest

Petitioner identifies Nexflix, Inc., and Netflix Streaming Services, Inc., as the real parties-in-interest. Pet. 90. Patent Owner identifies Broadcom Corporation as the real party-in-interest. Paper 5, 1. Neither party challenges those identifications.

C. The '663 Patent (Ex. 1001)

The '663 patent is titled "Method and System for Symbol Binarization." Ex. 1001, (54). According to the Abstract, the invention is directed to an improved method for the binarization of data in an MPEG data stream.[1] *Id.* at (57). Binarization is described in the '663 patent as creation of binary representations of each inputted symbol in the form of a "codeword." *See id.* at 4:1–4.

The '663 patent describes a practical application of binarization in transmitting MPEG video. Ex. 1001, 3:21–4:33. An MPEG video transmission is essentially a series of pictures or frames taken at closely spaced time intervals. *Id.* at 3:21–22. The '663 patent discloses that a frame is divided into blocks. *Id.* at 3:22–26. According to the '663 patent, transmitting block movements only (known as "motion vectors") and differences between picture blocks, as opposed to the entire picture, results in considerable savings in data transmission. *Id.* at 3:26–38.

Motion is usually represented as a difference from a predicted motion vector, known as a predicted motion vector residual. *Id.* at 3:39–41. In practice, the pixel differences between picture blocks are transformed into

[1] The '663 patent uses MPEG "as a generic reference to a family of international standards set by the Motion Picture Expert Group." Ex. 1001, 1:16–18.

frequency coefficients and then quantized into discrete levels by an encoder to further reduce the data transmission. *Id.* at 3:41–44. Figure 2 of the '663 patent follows:

FIG. 2

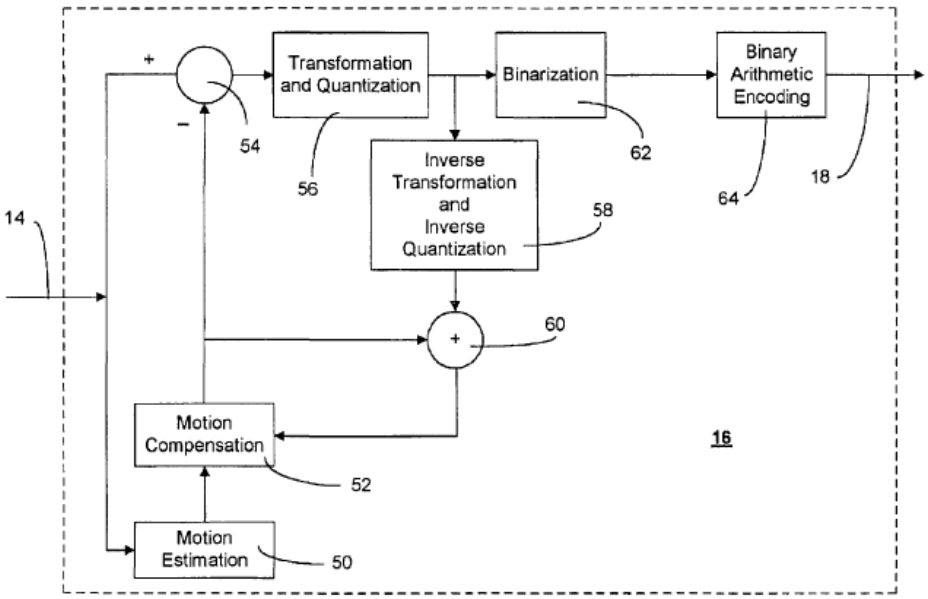

Figure 2 is a block diagram of an encoder for video compression. *Id.* at 2:44, 3:50–51. The '663 patent states that the "invention resides" in binarization module 62 depicted in Figure 2. *Id.* at 4:1–2. The encoder accepts as input video source 14. *Id.* at 3:51–52. Binarization module 62 accepts, as input, symbols created by module 56 and creates a binary representation of each one, in the form of a codeword. *Id.* at 4:2–4.

The '663 patent recognizes that different binarization methods have different applications. *Id.* at 1:63–2:11. The patent identifies a need for a binarization system that retains the most valuable properties of two such binarization methods, unary and exp-Golomb. *Id.* at 2:1–3. In such a system, small codewords would be distinguishable, as with a unary

binarization, and large codewords would have their binarization limited to a reasonable length. *Id.* at 2:3–6.

The patent, therefore, describes a hybrid scheme using "unary binarization to create codewords up until an index threshold. Once the threshold has been met, succeeding code symbols have appended to them an exp-Golomb suffix." Ex. 1001, (57). This hybrid binarization scheme reduces the complexity in processing codewords. *Id.* at 6:19–28, (57).

According to the '663 patent, "exp-Golomb codewords . . . use a unary prefix followed by a binary postfix, [and] may be regarded as compromise positions between unary and binary binarizations." Ex. 1001, 5:41–44. Golomb codewords with parameter "k" begin with unary binarizations representing the Most Significant Bits (MSB). *Id.* at 5:44–46, Table 2. Appended to the unary binarizations are "k" binary bits representing the Least Significant Bits (LSB). This combination produces 2^k distinct binarizations for each MSB. *Id.* at 5:46–49.

The '663 patent discloses the following algorithm for constructing a hybrid binarization of a given index "v" that switches from unary to exp-Golumb at threshold "N":

> If v<N
> 1) use a unary code of v 1's terminated with a 0
> If v>=N
> 1) Form an initial prefix of (N-1) 1's;
> 2) Determine the number of bits γ+1 required to represent v-(N-2). For example, for N=64, $\gamma=[\log_2 (v-62)]$, and put it in a unary representation. The unary representation is appended to the initial prefix to form the unary prefix . . . .
> 3) Append the γ least significant bits of "g" where g=v-(N-2)-2**γ in its binary representation to the prefix. . . .

Id. at 6:50–63.

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