

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC,
Petitioner

v.

REALTIME ADAPTIVE STREAMING LLC,
Patent Owner

Case IPR2019-01035
Patent 9,769,477

**DECLARATION OF KENNETH A. ZEGER, PH.D., IN SUPPORT OF
PATENT OWNER'S RESPONSE**

Table of Contents

I. Introduction	1
A. Engagement	1
B. Background and Qualifications	1
II. Materials Considered	5
III. Relevant Legal Standards	6
A. Burden of Proof	6
B. Claim Construction	6
C. Anticipation	7
D. Obviousness	8
IV. Person of Skill in The Art	9
V. The '447 Patent (Ex. 1001)	11
VI. Claim Construction	17
A. “throughput”	17
VII. Overview of Prior Art	18
A. Overview of Brooks Reference (Ex. 1006)	18
B. Overview of the '468 Application (Ex. 1007)	20
VIII. Limitation 1[b]: “wherein a first asymmetric data compression encoder of the plurality of different asymmetric data compression encoders is configured to compress data blocks containing video or image data at a higher data compression rate than a second asymmetric data compression encoder of the plurality of different asymmetric data compression encoders”	21
A. The requirements of Limitation 1[b]	21
B. Brooks does not disclose a first encoder configured to compress data at a higher compression rate than a second encoder.	24
1. Brooks’ general references to MPEG-class compression standards do not disclose different “compression rates” between encoders or algorithms.	26
2. The '468 Application does not expressly disclose different encoders that compress at different compression rates.	34

C. A POSITA would not understand that Brooks expressly or inherently discloses Limitation 1[b] 37

IX. Limitation 20[c] “wherein at least one of the plurality of video data compression encoders is configured to utilize an arithmetic data compression algorithm”..... 38

X. Claims 3, 4, 7, 9, 16, and 17 Are Not Proven to Be Invalid 46

XI. Claims 21 and 22 Are Not Proven to Be Invalid 46

XII. Conclusion..... 47

EXHIBIT LIST

Exhibit No.	Description
2007	Declaration of Kenneth A. Zeger, Ph.D., in Support of Patent Owner's Response
2008	Transcript of February 18, 2020 Deposition of Dr. Jeffrey J. Rodriguez
2009	ITU-T Rec. H.262 (1995 E) (Information Technology – Generic Coding of Moving Pictures and Associated Audio Information)
2010	ITU-T Rec. H.263 (03/96) (Video Coding for Low Bit Rate Communication)
2011	Cote et al., H.263+: Video Coding at Low Bit Rates (IEEE Transactions on Circuits and Systems for Video Technology, Vol. 8, No. 7, November 1998)
2012	Wiegand & Marpe, Context-Based Adaptive Binary Arithmetic Coding in the H.264/AVC Video Compression Standard (IEEE Transactions on Circuits and Systems for Video Technology, 2003)

I, Kenneth A. Zeger, Ph.D., a resident of San Diego, California, declare as follows:

I. Introduction

A. Engagement

1. I have been retained by Patent Owner Realtime Adaptive Streaming LLC (“Realtime” or “Patent Owner”) through Zunda LLC to provide my opinions with respect to their Response to the Petition for *Inter Partes* Review in IPR2019-01035 (“Petition” or “Pet.”) as to U.S. Patent No. 9,769,477 (“’477 patent,” Exhibit 1001). I have no interest in the outcome of this proceeding and my compensation is in no way contingent on my providing any particular opinions.

2. As a part of this engagement, I have also been asked to provide my technical review, analysis, insights, and opinions regarding the Petition and the supporting declaration of Dr. Jeffrey J. Rodriguez (“Rodriguez Declaration” or “Rodriguez Decl.” Ex. 1002) with respect to the challenged claims of the ’477 patent.

3. The statements made herein are based on my own knowledge and opinions.

B. Background and Qualifications

4. I have studied, taught, and practiced electrical and computer engineering for thirty-nine years. I attended the Massachusetts Institute of

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.