UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD
GOOGLE LLC, Petitioner
V.
REALTIME ADAPTIVE STREAMING LLC,

Case IPR2019-01035 Patent 9,769,477

Patent Owner

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



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enco conf data	I. Limitation 1[b]: "wherein a first asymmetric data compression oder of the plurality of different asymmetric data compression encoders is figured to compress data blocks containing video or image data at a higher compression rate than a second asymmetric data compression encoder of plurality of different asymmetric data compression encoders"
A	. The requirements of Limitation 1[b]21
B	. Brooks does not disclose a first encoder configured to compress data at higher compression rate than a second encoder
	mat compress at unicrem compression rates



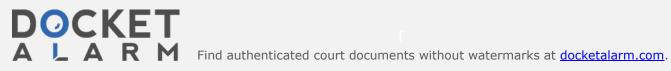
## IPR2019-01035 ('477 Patent) EXHIBIT 2007, ZEGER POR DECLARATION

	A POSITA would not understand that Brooks expressly or inherently closes Limitation 1[b]3	
comp	Limitation 20[c] "wherein at least one of the plurality of video data oression encoders is configured to utilize an arithmetic data compression ithm"	
Χ.	Claims 3, 4, 7, 9, 16, and 17 Are Not Proven to Be Invalid 4	6
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## **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



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