#### 504137656 12/20/2016 PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT4193943

SUBMISSION TYPE:		NEW ASSIGNMENT				
NATURE OF CONVEYA	NCE:	ASSIGNMENT	ASSIGNMENT			
CONVEYING PARTY D	ΑΤΑ					
		Name	Execution Date			
ANVATO, INC.			11/16/2016			
RECEIVING PARTY DA	ATA					
Name:	GOOGLE	E INC.				
Street Address:	1600 AM	PHITHEATRE PARKWAY				
City:	MOUNT	AIN VIEW				
State/Country:	CALIFOR	RNIA				
Postal Code:	94043					
Property Type		Number				
PROPERTY NUMBERS		Number				
Patent Number:	9	047534				
Patent Number:	8	587668				
Patent Number:	8	830331				
Application Number:	6	2333377				
Application Number:	6	2334143				
Application Number:	6	2334157				
Application Number: 623		2334221				
Application Number:	6	2334228				
Application Number:	6	2334236				
Application Number:	6	2334064				
Application Number:	6	2334163				
Application Number:	6	2336823				

## **CORRESPONDENCE DATA**

Fax Number: (414)225-9753 Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail. Phone: 414-225-9755 Email: docketing@boylefred.com Correspondent Name: BOYLE FREDRICKSON, S.C. Address Line 1: 840 NORTH PLANKINTON AVENUE Address Line 4: **MILWAUKEE, WISCONSIN 53203** 

504137656

ATTORNEY DOCKET NUMBER:	2109.000			
NAME OF SUBMITTER:	ERIC L. SCHLEVENSKY			
SIGNATURE:	/Eric L. Schlevensky/			
DATE SIGNED:	12/20/2016			
Total Attachments: 8				
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#### ASSIGNMENT AND CONFIRMATION OF PATENT RIGHTS

THE SALE, ASSIGNMENT, AND TRANSFER OF PATENT RIGHTS (the "Assignment"), in accordance with, and pursuant to the terms and conditions of an agreement between Anvato, Inc. a Delaware corporation having a place of business at 1600 Amphitheatre Parkway, Mountain View, CA 94043, United States of America ("Assignor"), and Google Inc., a Delaware corporation having a place of business at 1600 Amphitheatre Parkway, Mountain View, CA 94043, United States of America ("Assigner"), and Google Inc., a Delaware corporation having a place of business at 1600 Amphitheatre Parkway, Mountain View, CA 94043, United States of America ("Assignee"), dated July 7, 2016, (the "Agreement") is hereby confirmed. Capitalized terms used herein and not expressly defined shall have the meaning ascribed to such terms in the Agreement.

"Listed Patents" means the provisional patent applications, patent applications, and/or patents listed on Exhibit A.

"Patents" means, all (a) Listed Patents; (b) patents or patent applications (i) to which any of the Listed Patents claims priority, (ii) for which any of the Listed Patents forms a basis for priority, (iii) that were co-owned applications that incorporate by reference, or are incorporated by reference into, the Listed Patents, and/or (iv) which are subject to a terminal disclaimer with any of the Listed Patents; (c) reissues, reexaminations, extensions, continuations, continuations in part, continuing prosecution applications, requests for continuing examinations, divisions, and registrations of any item in any of the foregoing categories (a) and (b); (d) national (of any country of origin) and multinational patents, patent applications and counterparts relating to any item in any of the foregoing categories (a) through (c), including, without limitation, certificates of invention and utility models; and (e) any items in any of the foregoing categories (b) through (d) whether or not expressly listed as Listed Patents and whether or not claims in any of the foregoing have been rejected, withdrawn, cancelled, or the like.

#### NOW, THEREFORE, TO ALL WHOM IT MAY CONCERN:

Assignor hereby confirms the irrevocable sale, assignment, transfer and conveyance unto said Assignee, and Assignee hereby confirms acceptance of, all of Assignor's right, title, and interest throughout the world (i) in and to the Patents, the same to be held and enjoyed by said Assignee for its own use, and for the use of its successors, assigns, or other legal representatives to the end of the term or terms for which said Patents may be granted as fully and entirely as the same would have been held and enjoyed by Assignor if the Assignment had not been made; (ii) in and to causes of action and enforcement rights for the Patents including all rights to pursue damages, injunctive relief and other remedies for past and future infringement of the Patents in respect of all causes of action and enforcement rights for the Patents arising before, on, or after the date of this Assignment; and (iii) to apply, including in Assignee's own name, in any and all countries for the world for patents, certificates of invention or other governmental grants for the Patents. Assignor also hereby confirms the right to claim priority to any of the Patents pursuant to the International Convention for the Protection of Industrial Property, the Patent Cooperation Treaty, the European Patent Convention, and all other treaties of like purposes. Assignor also hereby confirms authorization for the respective patent office or governmental agency in each jurisdiction to issue any and all patents or certificates of invention which may be granted upon any of the Patents in the name of Assignee, as the assignee to the entire interest therein. Assignor hereby confirms to execute all papers necessary in connection with the Patents and to execute any separate Assignment

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that Assignee may deem necessary or expedient, and Assignor hereby confirms to perform all affirmative acts which may be necessary to obtain a grant of valid patent to Assignee on any of the Patents. The foregoing sale, assignment, transfer and conveyance occurred by operation of the Agreement. Should Assignor have any remaining interest, Assignor hereby sells, assigns, transfers, and conveys any right, title, or interest Assignor may have in and to the Patents anywhere in the world to Assignee. The foregoing assignments have been made for good and valuable consideration, the receipt of which is hereby acknowledged, and in accordance with the Agreement.

Assignor retains no ownership rights in the Patents and the rights transferred to Assignee hereunder.

As used in this Assignment, the words "herein," and "hereunder" and other words of similar import refer to this Assignment as a whole, as the same may from time to time be amended or supplemented and not to any particular subdivision contained in this Assignment. The word "including" when used herein is not intended to be exclusive, or to limit the generality of the preceding words, and means "including, without limitation." This Assignment shall be binding upon and shall inure to the benefit of the parties and their respective successors and assigns. This Assignment shall be governed by, and construed in accordance with, the laws of the United States in respect to patent issues and in all other respects by the laws of the State of California, without giving effect to the conflict of laws rules thereof. This Assignment may be signed in counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

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IN WITNESS WHEREOF, Assignor has hereunto set its hand and affixed its seal as dated below.

Date: /1/16/2016

ASSIGNOR: Anyato, Inc. Signature

Kenneth Yi Name Printed or Typed

CEO, President & Secretary

Title

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#### ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California County of Savata Clara

On Nov 16, 2016	, before me,	Candace	Chois	, Notary Public	
personally appeared	Kenneth Yi				,

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledgment to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature

CANDACE CHOW Commission # 2020089 Notary Public - Galifornia Santa Clara County My Comm. Expires Apr 15, 2017

Optional information. This certificate is attached to:

Title or type of document: ASSIGNMENT AND CONFIRMATION OF PATENT RIGHTS

Number of pages: 8 (including signatory pages and Exhibit)

Date of document:

Signer(s) other than named above:

Notary phone number:\_\_

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IN WITNESS WHEREOF, Assignee has hereunto set its hand and affixed its seal as dated below.

ASSIGNEE: Google Inc.

Date: NOV- 14, 2014

am.to

Signature

Allen Lo Name Printed or Typed

Assistant Secretary & Deputy General Counsel Title

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#### ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California

County of Santa Clara

On	Nov	14,	2016		, before m	. <u>Ca</u> i	rdace_	Chow	, Notar	y Public
persor	ally appe	ared_		Alle	en lo					,

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledgment to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature

CANDACE CHOW Commission # 2020089 Notary Public - California Santa Clara County My Comm. Expires Apr 15, 2017

(Seal)

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Number of pages: 8 (including signatory pages and Exhibit)

Date of document:

Signer(s) other than named above:

Notary phone number:

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## EXHIBIT A

CountryPatent / ApplicationNos.		Issued / Filing Date	Inventor(s)	Titled		
US	9,047,534	06/02/2015	Oztan Harmanci Ismail Haritaoglu	Method and Apparatus for Detecting Near-Duplicate Images Using Content Adaptive Hash Lookups		
US	8,587,668	11/19/2013	Ismail Haritaoglu	Method and Apparatus for Detecting Near-Duplicate Videos Using Perceptual Video Signatures		
US	8,830,331	09/09/2014	Ismail Haritaoglu	Method and Apparatus for Detecting Near-Duplicate Videos Using Perceptual Video Signatures		
US	62/333,377	05/09/2016	Ismail R. Haritaoglu Oztan Harmanci	Method and Apparatus for Secure Video Manifest/Playlist Generation and Playback		
US	62/334,143	05/10/2016	Ismail R. Haritaoglu Oztan Harmanci	Method and Apparatus for Tracking Video Playback Events Using a Server Generated Manifest/Playlist		
US	62/334,157	05/10/2016	Ismail R. Haritaoglu Oztan Harmanci	Method and Apparatus for Managing Video Playback Using a Server Generated Manifest/Playlist		
US	62/334,221	05/10/2016	Oztan Harmanci Ismail R. Haritaoglu Alper Turgut	Method and Apparatus for In- Band Metadata Tunneling for Frame Accurate Downstream Video Player Control		
US	62/334,228	05/10/2016	Alper Turgut Oztan Harmanci Ismail R. Haritaoglu	Method and Apparatus for Frame Accurate High Resolution Video Editing in Cloud Using Live Video Streams		
US	62/334,236	05/10/2016	Alper Turgut Oztan Harmanci Ismail R. Haritaoglu	Method and Apparatus for a Virtual Online Video Channel		
US	62/334,064	05/10/2016	Ismail R. Haritaoglu Oztan Harmanci	Method and Apparatus for Server- Side Content Delivery Network Switching		

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US	62/334,163	05/10/2016	Ismail R. Haritaoglu Oztan Harmanci Cihat Goktug Gurler	Method and Apparatus for Providing Peer-to-Peer Content Delivery
US	62/336,823	05/16/2016	Ismail R. Haritaoglu Oztan Harmanci	Method and Apparatus for Spatial Enhanced Adaptive Bitrate Live Streaming for 360 Degree Video Playback
EP	Pub. No. 2321964 EP App. No. 09801114.	05/10/2016	Ismail Haritaoglu	Method and Apparatus for Detecting Near-Duplicate Videos Using Perceptual Video Signatures

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# PATENT REEL: 040694 FRAME: 0050

**RECORDED: 12/20/2016**