

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT6834447

SUBMISSION TYPE:	NEW ASSIGNMENT	
NATURE OF CONVEYANCE:	ASSIGNMENT	
CONVEYING PARTY DATA		
	Name	Execution Date
	THE NIELSEN COMPANY (US), LLC	04/15/2021
RECEIVING PARTY DATA		
Name:	ROKU, INC.	
Street Address:	1155 COLEMAN AVENUE	
City:	SAN JOSE	
State/Country:	CALIFORNIA	
Postal Code:	95110	
PROPERTY NUMBERS Total: 1		
	Property Type	Number
	Application Number:	17386257
CORRESPONDENCE DATA		
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ATTORNEY DOCKET NUMBER:	19-882-US-CON	
NAME OF SUBMITTER:	DAVID A. GRABELSKY	
SIGNATURE:	/David A. Grabelsky/	
DATE SIGNED:	07/27/2021	
Total Attachments: 30		
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PATENT ASSIGNMENT

THIS PATENT ASSIGNMENT (together with all Attachments hereto, this “**Patent Assignment**”), entered into on April 15, 2021, is made and entered into by and between The Nielsen Company (US), LLC, a Delaware limited liability company (the “**Seller**”), and Roku, Inc., a Delaware corporation (the “**Buyer**”). The Seller and the Buyer are referred to collectively herein as the “**Parties**” and individually as a “**Party**.” Capitalized terms used herein and not otherwise defined shall have the respective meanings ascribed thereto in the Purchase Agreement (as defined below).

WHEREAS, the Seller and certain of its Affiliates and the Buyer have entered into that certain Asset and Stock Purchase Agreement, dated as of February 28, 2021 (the “**Purchase Agreement**”), pursuant to which the Seller has agreed to sell to the Buyer all of the Seller’s right, title and interest in and to, among other things, the Patents and other Intellectual Property included in the Acquired Assets, including the Assigned Patents (as defined below); and

WHEREAS, the Seller and the Buyer desire to execute this Patent Assignment for purposes of, among other things, recording the assignment of the Assigned Patents and filing this Patent Assignment with the United States Patent and Trademark Office and/or any other applicable agencies outside of the United States, including to indicate ownership of the Intellectual Property described below.

NOW, THEREFORE, in consideration of the premises and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties hereby agree as follows:

1. **Assignment and Transfer.** The Seller hereby irrevocably and forever, without reservation, sells, assigns, conveys, transfers and delivers to the Buyer the Seller’s entire right, title and interest throughout the world in, to and under the patents and patent applications listed on Attachment 1 and the inventions and other Proprietary Information disclosed, described, embodied or claimed therein (the “**Assigned Patents**”), the same to be held and enjoyed by the Buyer for its own use and enjoyment and the use and enjoyment of its successors, assigns and other legal representatives to the full end of the term or terms for which Patents or other rights may be granted, as fully and entirely as the same would have been held and enjoyed by the Seller if this assignment had not been made and the Buyer hereby accepts from the Seller and succeeds to the Assigned Patents, including (a) all applications or counterparts in any jurisdiction pertaining to any of the foregoing, including applications filed pursuant to any international patent law treaty, together all worldwide rights and priorities afforded under any Law with respect to any of the foregoing, and any other Patents, applications or extensions that claim priority to or through any of the foregoing, and any inventions or other Proprietary Information disclosed, described, embodied or claimed in any of the foregoing, (b) continuations, continuations-in-part, divisionals, reissues, re-examinations, renewals, confirmations, substitutions and extensions thereof or related thereto, (c) all other rights of any kind whatsoever, whether statutory, common law or otherwise, in, arising out of, or associated with the foregoing in any jurisdiction worldwide, including those arising under international treaties and convention rights; (d) all rights and powers to assert, defend and recover title to any of the foregoing; (e) all rights to assert, defend, sue, and recover damages for any past, present and future infringement, misuse, misappropriation, impairment, unauthorized use or other violation of any rights in or to any of the foregoing; (f) all proceeds, income, royalties, damages and payments now or hereafter due and payable under or in respect of all of the foregoing (including with respect to past, present or future infringement or violation thereof); and (g) all administrative rights arising from the foregoing, including the right to file and prosecute applications and oppose, interfere with or challenge the applications of others and obtain legal protection pertaining to any of the foregoing.

2. **Terms of the Purchase Agreement.** None of the representations, warranties, covenants, obligations, rights or remedies of any party under the Purchase Agreement shall be deemed to be limited, qualified, enlarged, modified or altered in any way by the execution, delivery or acceptance of this Patent Assignment. In the event of any conflict or inconsistency between the terms of the Purchase Agreement and the terms hereof, the terms of the Purchase Agreement shall govern.

3. **Governing Law.** Section 10.2 of the Purchase Agreement shall apply *mutatis mutandis* to this Patent Assignment.

4. **Counterparts.** This Patent Assignment may be executed in multiple counterparts (including by means of copied or PDF signature pages), each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. Counterpart signatures need not be on the same page and shall be deemed effective upon receipt. A signed copy of this Patent Assignment delivered by email or other means of electronic transmission shall be deemed to have the same legal effect as delivery of an original signed copy of this Patent Assignment.

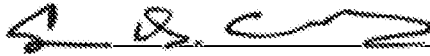
[SIGNATURE PAGES TO FOLLOW]

IN WITNESS WHEREOF, the Parties have executed this Patent Assignment as of the date first set forth above.

SELLER:

THE NIELSEN COMPANY (US), LLC

By:

A handwritten signature in black ink, appearing to read "G. D. Callard", written over a horizontal line.

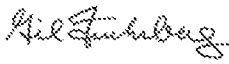
Name George D. Callard

Title: President

IN WITNESS WHEREOF, the Parties have executed this Patent Assignment and as of the date first set forth above.

BUYER:

ROKU, INC.

By: 
Name: Gil Fuchsberg
Title: Head of Corporate Development &
Strategic Planning

Attachment 1

Schedule of AVA Patent Assets

Patent Reference	Application Title	Country	Application Number	Application Filing Date	Publication Number	Publication Date	Patent Number	Issue Date
GN232- AVA-US01	Use of Steganographically-Encoded Data as Basis to Control Dynamic Content Modification as to at Least One Modifiable Content Segment Identified Based on Fingerprint Analysis	United States of America	62/863,007	6/18/2019	N/A	N/A	N/A	N/A
GN232- AVA-US02	Use of Steganographically-Encoded Data as Basis to Control Dynamic Content Modification Based on Fingerprint Analysis	United States of America	15/929,225	2/14/2020	US-2020-0404371	12/24/2020	N/A	N/A
GN232- AVA- WO01	Use of Steganographically-Encoded Data as Basis to Control Dynamic Content Modification as to at Least One Modifiable Content Segment Identified Based on Fingerprint Analysis	Patent Cooperation Treaty	PCT/US2020/037884	6/16/2020	WO2020/257163	12/24/2020	N/A	N/A
GN234- AVA-US01	Content Modification System with Determination of Render Delay Feature	United States of America	62/863,070	6/18/2019	N/A	N/A	N/A	N/A
GN234- AVA-US02	Content-Modification System with Determination of Input-Buffer Switching Delay Feature	United States of America	16/905,172	6/18/2020	US-2020-0404216	12/24/2020	N/A	N/A
GN234- AVA- WO01	Content-Modification System with Determination of Input-Buffer Switching Delay Feature	Patent Cooperation Treaty	PCT/US2020/038387	6/18/2020	WO2020/257424	12/24/2020	N/A	N/A
GN245- AVA-TW01	Use of Watermarking to Trigger Fingerprint-Related Action	Taiwan	109120280	6/16/2020	202105366	2/1/2021	N/A	N/A
GN245- AVA-US01	Use of Watermarking to Trigger Fingerprint-Related Action	United States of America	62/865,613	6/24/2019	N/A	N/A	N/A	N/A
GN245- AVA-US02	Use of Watermarking Derived from Transport-Stream Metadata, as a Basis to Trigger Fingerprint-Related Action	United States of America	62/882,217	8/2/2019	N/A	N/A	N/A	N/A
GN245- AVA-US03	Use of Watermarking to Trigger Fingerprint-Related Action	United States of America	15/929,219	2/6/2020	US-2020-0275168	8/27/2020	N/A	N/A
GN245- AVA- WO01	Use of Watermarking to Trigger Fingerprint-Related Action	Patent Cooperation Treaty	PCT/US2020/037898	6/16/2020	WO2020/263621	12/30/2020	N/A	N/A
GN246- AVA-US01	Use of Watermarking to Control Abandonment of Dynamic Content Modification	United States of America	62/882,220	8/2/2019	N/A	N/A	N/A	N/A
GN246- AVA-US02	Use of Watermarking to Control Abandonment of Dynamic Content Modification	United States of America	15/929,212	1/29/2020	US-2021-0037294	2/4/2021	N/A	N/A
GN246- AVA- WO01	Use of Watermarking to Control Abandonment of Dynamic Content Modification	Patent Cooperation Treaty	PCT/US2020/044762	8/3/2020	WO2021/026079	2/11/2021	N/A	N/A
GN247- AVA-US01	Responding to Emergency-Alert Audio Tone by Abandoning Dynamic Content Modification	United States of America	16/947,182	7/22/2020	N/A	N/A	N/A	N/A

Schedule of AVA Patent Assets

Patent Reference	Application Title	Country	Application Number	Application Filing Date	Publication Number	Publication Date	Patent Number	Issue Date
GN255- AVA-US01	Media Channel Identification and Action with Multi-Match Disambiguation Feature	United States of America	63/126,383	12/16/2020	N/A	N/A	N/A	N/A
GN255- AVA-US02	Media Channel Identification and Action with Multi-Match Disambiguation Feature	United States of America	63/126,384	12/16/2020	N/A	N/A	N/A	N/A
GN258- AVA-TW01	Content-Modification System with Delay Buffer Feature	Taiwan	109/138014	11/2/2020	N/A	N/A	N/A	N/A
GN258- AVA-US01	Content Modification System	United States of America	62/928,867	10/31/2019	N/A	N/A	N/A	N/A
GN258- AVA-US02	Content Modification System with Buffer Feature	United States of America	17/086,119	10/30/2020	N/A	N/A	N/A	N/A
GN258- AVA- WO01	Content-Modification System with Delay Buffer Feature	Patent Cooperation Treaty	PCT/US2020/058399	10/30/2020	N/A	N/A	N/A	N/A
GN262- AVA-US01	Client-Side Advertisement Caching	United States of America	62/929,046	10/31/2019	N/A	N/A	N/A	N/A
GN262- AVA-US02	Content-Modification System with Client-Side Advertisement Caching	United States of America	16/949,515	10/31/2020	N/A	N/A	N/A	N/A
GN262- AVA- WO01	Content-Modification System with Client-Side Advertisement Caching	Patent Cooperation Treaty	PCT/US2020/070730	10/31/2020	N/A	N/A	N/A	N/A
GN263- AVA-TW01	Dynamic Ad Insertion Decision-making for Linear Live TV	Taiwan	109/135184	10/12/2020	N/A	N/A	N/A	N/A
GN263- AVA-US01	Dynamic Ad Insertion Decision-making for Linear Live TV	United States of America	62/914,290	10/11/2019	N/A	N/A	N/A	N/A
GN263- AVA-US02	Dynamic Ad Insertion Decision-Making for Linear Live TV	United States of America	16/949,014	10/9/2020	N/A	N/A	N/A	N/A
GN263- AVA- WO01	Dynamic Ad Insertion Decision-making for Linear Live TV	Patent Cooperation Treaty	PCT/US2020/070645	10/9/2020	N/A	N/A	N/A	N/A
GN266- AVA-US01	Content-Modification System with Local Avail Detection Feature	United States of America	63/109,208	11/3/2020	N/A	N/A	N/A	N/A
GN269- AVA-US01	Content-Modification System with Jitter Effect Mitigation Feature	United States of America	63/046,014	6/30/2020	N/A	N/A	N/A	N/A
GN269- AVA-US02	Content-Modification System with Jitter Effect Mitigation Feature	United States of America	17/180,213	2/19/2021	N/A	N/A	N/A	N/A
GN270- AVA-US01	Content-Modification System with Jitter Effect Mitigation Feature	United States of America	63/046,022	6/30/2020	N/A	N/A	N/A	N/A

Schedule of AVA Patent Assets

Patent Reference	Application Title	Country	Application Number	Application Filing Date	Publication Number	Publication Date	Patent Number	Issue Date
GN270- AVA-US02	Content-Modification System with Jitter Effect Mitigation Feature	United States of America	17/180,231	2/19/2021	N/A	N/A	N/A	N/A
GN271- AVA-US01	Content-Modification System with Jitter Effect Mitigation Feature	United States of America	63/046,028	6/30/2020	N/A	N/A	N/A	N/A
GN271- AVA-US02	Content-Modification System with Jitter Effect Mitigation Feature	United States of America	17/180,242	2/19/2021	N/A	N/A	N/A	N/A
GN272- AVA-US01	Content-Modification System with Jitter Effect Mitigation Feature	United States of America	63/046,035	6/30/2020	N/A	N/A	N/A	N/A
GN272- AVA-US02	Content-Modification System with Jitter Effect Mitigation Feature	United States of America	17/180,263	2/19/2021	N/A	N/A	N/A	N/A
GN273- AVA-US01	Content-Modification System with Jitter Effect Mitigation Feature	United States of America	63/046,043	6/30/2020	N/A	N/A	N/A	N/A
GN273- AVA-US02	Content-Modification System with Jitter Effect Mitigation Feature	United States of America	17/180,289	2/19/2021	N/A	N/A	N/A	N/A
GN280- AVA-US01	Use of Video Frame Format as Basis for Differential Handling of Automatic Content Recognition and Associate Action	United States of America	63/199,110	12/7/2020	N/A	N/A	N/A	N/A
GN280- AVA-US02	Use of Video Frame Format as Basis for Differential Handling of Automatic Content and Associated Action	United States of America	17/208,283	3/22/2021	N/A	N/A	N/A	N/A
SOR001- AVA-US01	Video Overlay Formats, Targeting Capabilities, and Call-to-Action Options	United States of America	62/049,995	9/12/2014	N/A	N/A	N/A	N/A
SOR001- AVA-US02	Content Management of a Feed	United States of America	14/820,476	8/6/2015	N/A	N/A	9,641,870	5/2/2017
SOR001- AVA-US03	Content Management of a Content Feed	United States of America	15/459,627	3/15/2017	N/A	N/A	10,395,277	8/27/2019
SOR001- AVA-US04	Content Management of a Content Feed	United States of America	16/295,626	3/7/2019	US-2019-0272563	9/5/2019	N/A	N/A
SOR002- AVA-US01	ACR Fingerprinting and Video Encoding	United States of America	62/095,539	12/22/2014	N/A	N/A	N/A	N/A
SOR002- AVA-US02	Automatic Content Recognition (ACR) Fingerprinting and Video Encoding	United States of America	14/839,339	8/28/2015	N/A	N/A	9,628,830	4/18/2017
SOR002- AVA-US03	Automatic Content Recognition (ACR) Fingerprinting and Video Encoding	United States of America	15/457,483	3/13/2017	N/A	N/A	10,687,092	6/16/2020
SOR002- AVA-US04	Automatic Content Recognition (ACR) Fingerprinting and Video Encoding	United States of America	16/868,651	5/7/2020	N/A	N/A	N/A	N/A
SOR003- AVA-US01	Television Content Replacement	United States of America	62/151,912	4/23/2015	N/A	N/A	N/A	N/A

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Schedule of AVA Patent Assets

Patent Reference	Application Title	Country	Application Number	Application Filing Date	Publication Number	Publication Date	Patent Number	Issue Date
SOR003-								
AVA-US02	Content Replacement with Onscreen Displays	United States of America	14/820,490	8/6/2015	US-2016-0234564	8/11/2016	9,743,153	8/22/2017
SOR003-								
AVA-US03	Content Replacement with Onscreen Displays	United States of America	15/658,345	7/24/2017	US-2018-0014087	1/11/2018	10,057,657	8/21/2018
SOR003-								
AVA- WO01	Content Replacement with Onscreen Displays	Patent Cooperation Treaty	PCT/US2016/029227	4/25/2016	WO2016/172715	10/27/2016	N/A	N/A
SOR004-	Detecting Channel Change in Automatic Content Recognition	China	201680043941.0	5/26/2016	107852252	3/27/2018	107852252	10/22/2019
AVA-CN01	Fingerprint Matching							
SOR004-	Detecting Channel Change in Automatic Content Recognition	China	201910904897.3	5/26/2016	110830843	2/21/2020	N/A	N/A
AVA-CN02	Fingerprint Matching							
SOR004-	Detecting Channel Change in Automatic Content Recognition	China	201910905526.7	9/24/2019	110730361	1/24/2020	N/A	N/A
AVA-CN03	Fingerprint Matching							
SOR004-	Detecting Channel Change in Automatic Content Recognition	Germany (Federal Republic of)	16608025.7	5/26/2016	3308480	4/18/2018	3308480	2/17/2021
AVA-DE01	Fingerprint Matching							
SOR004-	Detecting Channel Change in Automatic Content Recognition	European Patent	16608025.7	5/26/2016	3308480	4/18/2018	3308480	2/17/2021
AVA-EP01	Fingerprint Matching							
SOR004-	Detecting Channel Change in Automatic Content Recognition	European Patent	21151892.3	1/15/2021	N/A	N/A	N/A	N/A
AVA-EP02	Fingerprint Matching							
SOR004-	Detecting Channel Change in Automatic Content Recognition	France	16608025.7	5/26/2016	3308480	4/18/2018	3308480	2/17/2021
AVA-FR01	Fingerprint Matching							
SOR004-	Detecting Channel Change in Automatic Content Recognition	United Kingdom	16608025.7	5/26/2016	3308480	4/18/2018	3308480	2/17/2021
AVA-GB01	Fingerprint Matching							
SOR004-	Detecting Channel Change in Automatic Content Recognition	Hong Kong	42020004698.5	3/23/2020	40014843A	8/28/2020	N/A	N/A
AVA-HK01	Fingerprint Matching							
SOR004-	Detecting Channel Change in Automatic Content Recognition	Hong Kong	42020004690.2	3/23/2020	40014838A	8/28/2020	N/A	N/A
AVA-HK02	Fingerprint Matching							
SOR004-	Detecting Channel Change in Automatic Content Recognition	Japan	2018-517124	5/26/2016	2018-523433	8/16/2018	6672454	3/6/2020
AVA-JP01	Fingerprint Matching							
SOR004-	Detecting Channel Change in Automatic Content Recognition	Japan	2019-094709	5/26/2016	2019-179557	10/17/2019	N/A	N/A
AVA-JP02	Fingerprint Matching							
SOR004-	Detecting Channel Change in Automatic Content Recognition	Japan	2021-035979	3/8/2021	N/A	N/A	N/A	N/A
AVA-JP03	Fingerprint Matching							
SOR004-	Detecting Channel Change in Automatic Content Recognition	Korea, Republic of (KR)	10-2018-7001098	5/26/2016	10-2018-0035790	4/6/2018	10-2054912	12/5/2019
AVA-KR01	Fingerprint Matching							
SOR004-	Detecting Channel Change in Automatic Content Recognition	Korea, Republic of (KR)	10-2019-7036056	5/26/2016	10-2197311	1/5/2021	10-2197311	12/24/2020
AVA-KR02	Fingerprint Matching							

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Schedule of AVA Patent Assets

Patent Reference	Application Title	Country	Application Number	Application Filing Date	Publication Number	Publication Date	Patent Number	Issue Date
SOR004-	Detecting Channel Change in Automatic Content Recognition	Korea, Republic of (KR)	10-2020-7037208	12/23/2020	N/A	N/A	N/A	N/A
AVA-KR03	Fingerprint Matching	United States of America	62/175,145	6/12/2015	N/A	N/A	N/A	N/A
SOR004-	Detecting Channel Changes in Automatic Content Recognition (ACR) Fingerprint Matching	United States of America	14/815,256	7/31/2015	US-2016-0366474	12/15/2016	9,516,377	12/6/2016
SOR004-	Detecting Channel Change in Automatic Content Recognition	United States of America	15/266,524	9/15/2016	US-2017-0013324	1/12/2017	9,706,261	7/11/2017
AVA-US03	Fingerprint Matching	United States of America	15/617,591	6/8/2017	US-2017-0272836	9/21/2017	9,877,085	1/23/2018
SOR004-	Detecting Channel Change in Automatic Content Recognition	Patent Cooperation Treaty	PCT/US2016/034401	5/26/2016	WO2016/200622	12/15/2016	N/A	N/A
AVA-WO01	Detecting Channel Change in Automatic Content Recognition Fingerprint Matching	United States of America	14/820,484	8/6/2015	N/A	N/A	9,380,325	6/28/2016
SOR005-	Overlay Content and Aggregation of Viewing Data	United States of America	15/182,229	6/14/2016	N/A	N/A	9,661,385	5/23/2017
AVA-US02	Overlay Content and Aggregation of Viewing Data	United States of America	15/483,762	4/10/2017	N/A	N/A	9,912,991	3/6/2018
SOR005-	Overlay Content and Aggregation of Viewing Data	United States of America	15/895,775	2/13/2018	US-2018-0184166	6/28/2018	10,313,753	6/4/2019
AVA-US04	Overlay Content and Aggregation of Viewing Data	United States of America	16/411,533	5/14/2019	US-2019-0268657	8/29/2019	10,798,448	10/6/2020
SOR005-	Providing Restricted Overlay Content to an Authorized Client Device	United States of America	16/411,602	5/14/2019	US-2019-0268658	8/29/2019	10,757,477	8/25/2020
SOR005-	Criteria Verification to Facilitate Providing of Highest Cross per Mile (CPM) Overlays to Client Devices	United States of America	16/928,770	7/14/2020	US-2020-0344524	10/29/2020	N/A	N/A
AVA-US07	Providing Restricted Overlay Content to an Authorized Client Device	China	201680063089.3	9/27/2016	108353201	7/31/2018	108353201	11/24/2020
SOR006-	Devices and Non-Transitory Machine-Readable Storage Medium for Sequentially Overlaying Media Content	China	202011279263.2	11/16/2020	CN112380384A	2/19/2021	N/A	N/A
AVA-CN02	Medium for Sequentially Overlaying Media Content	United Kingdom	1805115.1	9/27/2016	GB2556850	6/6/2018	N/A	N/A
SOR006-	Sequentially Overlaying Media Content	Hong Kong	19101474.2	9/27/2016	1258989A	11/22/2019	N/A	N/A
AVA-HK01	Sequentially Overlaying Media Content	Korea, Republic of (KR)	10-2018-7012371	9/27/2016	10-2018-0084765	7/25/2017	10-2076642	2/6/2020
SOR006-	Sequentially Overlaying Media Content							

Schedule of AVA Patent Assets

Patent Reference	Application Title	Country	Application Number	Application Filing Date	Publication Number	Publication Date	Patent Number	Issue Date
SOR006- AVA-KR02	Sequentially Overlaying Media Content	Korea, Republic of (KR)	10-2020-7003558	2/6/2020	N/A	N/A	N/A	N/A
SOR006- AVA-MX01	Sequentially Overlaying Media Content	Mexico	MX/a/2018/003808	9/27/2016	N/A	1/14/2019	N/A	N/A
SOR006- AVA-US01	Frequency Capping for Multimedia Content	United States of America	62/235,811	10/1/2015	N/A	N/A	N/A	N/A
SOR006- AVA-US02	Sequentially Overlaying Multimedia Content	United States of America	62/235,856	10/1/2015	N/A	N/A	N/A	N/A
SOR006- AVA-US03	Sequentially Overlaying Media Content	United States of America	15/130,823	4/15/2016	US-2017-0099506	4/6/2017	9,848,214	12/19/2017
SOR006- AVA-US04	Sequentially Overlaying Media Content	United States of America	15/842,750	12/14/2017	US-2018-0109822	4/19/2018	10,334,286	6/25/2019
SOR006- AVA-US05	Sequentially Overlaying Media Content	United States of America	16/399,267	4/30/2019	US-2019-0261030	8/22/2019	N/A	N/A
SOR006- AVA-US06	Sequentially Overlaying Media Content	United States of America	16/399,354	4/30/2019	US-2019-0261031	8/22/2019	10,979,756	4/13/2021
SOR006- AVA-US07	Sequentially Overlaying Media Content	United States of America	16/399,401	4/30/2019	US-2019-0261032	8/22/2019	N/A	N/A
SOR006- AVA-US08	Sequentially Overlaying Media Content	United States of America	16/399,450	4/30/2019	US-2019-0261033	8/22/2019	N/A	N/A
SOR006- AVA-WO01	Sequentially Overlaying Media Content	Patent Cooperation Treaty	PCT/US2016/053996	9/27/2016	WO2017/058811	4/6/2017	N/A	N/A
SOR007- AVA-CN01	Frequency Capping for Multimedia Content	China	201680062705.3	9/27/2016	108351857	7/31/2018	N/A	N/A
SOR007- AVA-GB01	Frequency Capping for Multimedia Content	United Kingdom	1805116.9	9/27/2016	GB2558453	7/11/2018	N/A	N/A
SOR007- AVA-HK01	Frequency Capping for Multimedia Content	Hong Kong	19101472.4	9/27/2016	1258987A	11/22/2019	N/A	N/A
SOR007- AVA-KR01	Frequency Capping for Multimedia Content	Korea, Republic of (KR)	10-2018-7012363	9/27/2016	10-2018-0084764	7/25/2018	10-1993913	6/21/2019
SOR007- AVA-KR02	Frequency Capping for Multimedia Content	Korea, Republic of (KR)	10-2019-7017960	9/27/2018	N/A	N/A	N/A	N/A
SOR007- AVA-MX01	Frequency Capping for Multimedia Content	Mexico	MX/a/2018/003807	9/27/2016	N/A	N/A	N/A	N/A
SOR007- AVA-US01	Frequency Capping for Media Content	United States of America	15/164,682	5/25/2016	US-2017-0099511	4/6/2017	9,723,347	8/1/2017

Schedule of AVA Patent Assets

Patent Reference	Application Title	Country	Application Number	Application Filing Date	Publication Number	Publication Date	Patent Number	Issue Date
SOR007-								
AVA-US02	Frequency Capping for Media Content	United States of America	15/641,796	7/5/2017	US-2017-0302984	10/19/2017	10,187,682	1/22/2019
SOR007-								
AVA-WO01	Frequency Capping for Multimedia Content	Patent Cooperation Treaty	PCT/US2016/053997	9/27/2016	WO2017/058812	4/6/2017	N/A	N/A
SOR008-								
AVA-CN01	Dynamic Video Advertisement Replacement	China	201680057676.1	8/16/2016	108140199	6/8/2018	N/A	N/A
SOR008-								
AVA-GB01	Dynamic Video Advertisement Replacement	United Kingdom	1805117.7	8/16/2016	2557531	6/20/2018	2557531	2/10/2021
SOR008-								
AVA-GB02	Dynamic Video Advertisement Replacement	United Kingdom	2019630.9	8/16/2016	2588048	4/14/2021	N/A	N/A
SOR008-								
AVA-KR01	Dynamic Video Advertisement Replacement	Korea, Republic of (KR)	10-2018-7009915	8/16/2016	10-2018-0082427	7/18/2018	10-2075512	2/4/2020
SOR008-								
AVA-KR02	Dynamic Video Advertisement Replacement	Korea, Republic of (KR)	10-2020-7003289	2/4/2020	N/A	N/A	N/A	N/A
SOR008-								
AVA-MX01	Dynamic Video Advertisement Replacement	Mexico	MX/a/2018/002966	8/16/2016	N/A	N/A	N/A	N/A
SOR008-								
AVA-US01	Creating and Fulfilling Dynamic Advertisement Replacement	United States of America	62/216,216	9/9/2015	N/A	N/A	N/A	N/A
SOR008-								
AVA-US02	Dynamic Video Advertisement Replacement	United States of America	15/058,750	3/2/2016	US-2017-0070789	3/9/2017	9,743,154	8/22/2017
SOR008-								
AVA-US03	Dynamic Video Advertisement Replacement	United States of America	15/650,425	7/14/2017	US-2017-0325005	11/9/2017	10,110,969	10/23/2018
SOR008-								
AVA-US04	Dynamic Video Advertisement Replacement	United States of America	16/144,361	9/27/2018	US-2019-0028778	1/24/2019	10,728,627	7/28/2020
SOR008-								
AVA-US05	Dynamic Video Advertisement Replacement	United States of America	16/399,525	4/30/2019	US-2019-0261059	8/22/2019	10,728,628	7/28/2020
SOR008-								
AVA-US06	Dynamic Video Advertisement Replacement	United States of America	16/399,548	4/30/2019	US-2019-0261060	8/22/2019	10,728,629	7/28/2020
SOR008-								
AVA-US07	Dynamic Video Advertisement Replacement	United States of America	16/908,677	6/22/2020	US-2020-0322695	10/8/2020	N/A	N/A
SOR008-								
AVA-WO01	Dynamic Video Advertisement Replacement	Patent Cooperation Treaty	PCT/US2016/047203	8/16/2016	WO2017/044258	3/16/2017	N/A	N/A
SOR009-								
AVA-US01	Creating and Fulfilling Dynamic Advertisement Replacement	United States of America	15/058,819	3/2/2016	N/A	N/A	9,854,326	12/26/2017

PATENT

REEL: 056998 FRAME: 0861

Schedule of AVA Patent Assets

Patent Reference	Application Title	Country	Application Number	Application Filing Date	Publication Number	Publication Date	Patent Number	Issue Date
SOR009- AVA-US02	Creating and Fulfilling Dynamic Advertisement Replacement Inventory	United States of America	15/831,838	12/5/2017	US-2018-0098133	4/5/2018	10,771,858	9/8/2020
SOR009- AVA-US03	Creating and Fulfilling Dynamic Advertisement Replacement Inventory	United States of America	16/399,577	4/30/2019	US-2019-0261061	8/22/2019	10,764,653	9/1/2020
SOR009- AVAUS04	Creating and Fulfilling Dynamic Advertisement Replacement Inventory	United States of America	16/931,402	7/20/2020	US-2020-0351571	11/5/2020	N/A	N/A
SOR010- AVA-CN01	Media Content Matching and Indexing	China	201680062405.5	9/27/2016	108352914	7/31/2018	108352914	3/2/2021
SOR010- AVA-CN02	Media Content Matching and Indexing	China	202110191670.6	2/19/2021	N/A	N/A	N/A	N/A
SOR010- AVA-GB01	Media Content Matching and Indexing	United Kingdom	1805125	9/27/2016	2557156	6/13/2018	N/A	N/A
SOR010- AVA-HK01	Media Content Matching and Indexing	Hong Kong	19101473.3	9/27/2016	1258988A	11/22/2019	N/A	N/A
SOR010- AVA-KR01	Media Content Matching and Indexing	Korea, Republic of (KR)	10-2018-7014587	9/27/2016	10-2018-0084812	7/25/2018	10-2083996	2/26/2020
SOR010- AVA-KR02	Media Content Matching and Indexing	Korea, Republic of (KR)	10-2020-7005598	2/26/2020	N/A	N/A	N/A	N/A
SOR010- AVA-MX01	Media Content Matching and Indexing	Mexico	MX/a/2018/003806	9/27/2016	N/A	N/A	N/A	N/A
SOR010- AVA-US01	Media Content Matching and Indexing	United States of America	62/247,060	10/27/2015	N/A	N/A	N/A	N/A
SOR010- AVA-US02	Media Content Matching and Indexing	United States of America	15/081,738	3/25/2016	US-2017-0118538	4/27/2017	9,813,781	11/7/2017
SOR010- AVA-US03	Media Content Matching and Indexing	United States of America	15/728,687	10/10/2017	US-2018-0035175	2/1/2018	10,187,705	1/22/2019
SOR010- AVA-US04	Media Content Matching and Indexing	United States of America	16/217,980	12/12/2018	US-2019-0200101	6/27/2019	10,827,234	11/3/2020
SOR010- AVA-US05	Media Content Matching and Indexing	United States of America	16/948,766	9/30/2020	US-2021-0014577	1/14/2021	N/A	N/A
SOR010- AVA- WO01	Media Content Matching and Indexing	Patent Cooperation Treaty	PCT/US2016/053998	9/27/2016	WO2017/074634	5/4/2017	N/A	N/A
SOR011- AVA-CN01	Digital Overlay Offers on Connected Media Devices	China	201680054373.4	9/13/2016	108141563	6/8/2018	201680054373.4	2/5/2021
SOR011- AVA-CN02	Flagging Advertisement Frames for Automatic Content Recognition	China	202110164240.5	2/5/2021	N/A	N/A	N/A	N/A

PATENT

REEL: 056998 FRAME: 0862

Schedule of AVA Patent Assets

Patent Reference	Application Title	Country	Application Number	Application Filing Date	Publication Number	Publication Date	Patent Number	Issue Date
SOR011- AVA-CN03	Flagging Advertisement Frames for Automatic Content Recognition	China	202110163371.1	2/5/2021	N/A	N/A	N/A	N/A
SOR011- AVA-GB01	Digital Overlay Offers on Connected Media Devices	United Kingdom	1805114.4	9/13/2016	2556849	6/6/2018	N/A	N/A
SOR011- AVA-GB02	Digital Overlay Offers on Connected Media Devices	United Kingdom	2101328.9	2/1/2021	N/A	N/A	N/A	N/A
SOR011- AVA-KR01	Digital Overlay Offers on Connected Media Devices	Korea, Republic of (KR)	10-2018-7010846	9/13/2016	10-2018-0084750	7/25/2018	2123108	6/9/2020
SOR011- AVA-KR02	Digital Overlay Offers on Connected Media Devices	Korea, Republic of (KR)	10-2020-7016540	6/9/2020	N/A	N/A	N/A	N/A
SOR011- AVA-MX01	Digital Overlay Offers on Connected Media Devices	Mexico	MX/a/2018/003399	9/13/2016	N/A	N/A	N/A	N/A
SOR011- AVA-US01	Digital Overlay Offers on Connected Media Device	United States of America	62/220,466	9/18/2015	N/A	N/A	N/A	N/A
SOR011- AVA-US02	Digital Overlay Offers on Connected Media Devices	United States of America	15/130,639	4/15/2016	US-2017-0085934	3/23/2017	10,075,755	9/11/2018
SOR011- AVA-US03	Digital Overlay Offers on Connected Media Devices	United States of America	15/418,439	1/27/2017	US-2017-0142464	5/18/2017	10,341,705	7/2/2019
SOR011- AVA-US04	Digital Overlay Offers on Connected Media Devices	United States of America	16/052,267	8/1/2018	US-2018-0343483	11/29/2018	10,341,706	7/2/2019
SOR011- AVA-US05	Digital Overlay Offers on Connected Media Devices	United States of America	16/388,070	4/18/2019	US-2019-0281338	9/12/2019	10,863,222	12/8/2020
SOR011- AVA-US06	Digital Overlay Offers on Connected Media Devices	United States of America	16/388,081	4/18/2019	US-2019-0246156	8/8/2019	10,863,223	12/8/2020
SOR011- AVA-US07	Digital Overlay Offers on Connected Media Devices	United States of America	16/388,097	4/18/2019	US-2019-0246157	8/8/2019	10,869,078	12/15/2020
SOR011- AVA-US08	Digital Overlay Offers on Connected Media Devices	United States of America	17/090,126	11/5/2020	US-2021-0058661	2/25/2021	N/A	N/A
SOR011- AVA-WO01	Digital Overlay Offers on Connected Media Devices	Patent Cooperation Treaty	PCT/US2016/051532	9/13/2016	WO2017/048718	3/23/2017	N/A	N/A
SOR012- AVA-US01	Video Fingerprinting Based on Fourier Transform of Histogram	United States of America	62/298,376	2/22/2016	N/A	N/A	N/A	N/A
SOR012- AVA-US02	Video Fingerprinting Based on Fourier Transform of Histogram	United States of America	15/098,135	4/13/2016	N/A	N/A	9,848,235	12/19/2017
SOR012- AVA-US03	Video Fingerprinting Based on Fourier Transform of Histogram	United States of America	15/826,044	11/29/2017	US-2018-0084303	3/22/2018	10,390,083	8/20/2019

Schedule of AVA Patent Assets

Patent Reference	Application Title	Country	Application Number	Application Filing Date	Publication Number	Publication Date	Patent Number	Issue Date
SOR012-		United States of America	16/502,649	7/3/2019	US-2019-0327525	10/24/2019	N/A	N/A
AVA-US04	Video Fingerprinting Based on Fourier Transform of Histogram							
SOR012-		Patent Cooperation Treaty	PCT/US2017/017797	2/14/2017	WO2017/146937	8/31/2017	N/A	N/A
AVA-WO01	Video Fingerprinting Based on Fourier Transform of Histogram							
SOR013-		United States of America	62/299,455	2/24/2016	N/A	N/A	N/A	N/A
AVA-US01	Fingerprinting Media Content Using a Hash-Map							
SOR013-		United States of America	15/138,678	4/26/2016	US-2017-0244999	8/24/2017	9,906,831	2/27/2018
AVA-US02	Fingerprinting Media Content Using Hashing							
SOR013-		United States of America	15/886,848	2/2/2018	US-2018-0160169	6/7/2018	10,116,987	10/30/2018
AVA-US03	Fingerprinting Media Content Using Hashing							
SOR013-		United States of America	16/802,820	2/27/2020	N/A	N/A	N/A	N/A
AVA-US04	Fingerprinting Media Content Using Hashing							
SOR013-		Patent Cooperation Treaty	PCT/US2017/018189	2/16/2017	WO2017/146990	8/31/2017	N/A	N/A
AVA-WO01	Fingerprinting Media Content Using Hashing							
SOR014-		China	201780064956.X	3/9/2017	CN109906611A	6/18/2019	N/A	N/A
AVA-CN01	Fingerprint Layouts for Content Fingerprinting							
SOR014-		European Patent	17844056.6	3/9/2017	3500943	6/26/2019	N/A	N/A
AVA-EP01	Fingerprint Layouts for Content Fingerprinting							
SOR014-		Hong Kong	19127286.3	3/9/2017	N/A	4/17/2020	N/A	N/A
AVA-HK01	Fingerprint Layouts for Content Fingerprinting							
SOR014-		Japan	2019-511582	3/9/2017	2019-532560	11/7/2019	6750103	8/14/2020
AVA-JP01	Fingerprint Layouts for Content Fingerprinting							
SOR014-		Japan	2020-136267	8/12/2020	2020-205594	12/24/2020	N/A	N/A
AVA-JP02	Fingerprint Layouts for Content Fingerprinting							
SOR014-		Korea, Republic of (KR)	2019-7007862	3/9/2017	N/A	N/A	10-2173417	10/28/2020
AVA-KR01	Fingerprint Layouts for Content Fingerprinting							
SOR014-		Korea, Republic of (KR)	2020-7031089	10/28/2020	N/A	N/A	N/A	N/A
AVA-KR02	Fingerprint Layouts for Content Fingerprinting							
SOR014-		Korea, Republic of (KR)	2020-7031093	10/28/2020	N/A	N/A	N/A	N/A
AVA-KR03	Fingerprint Layouts for Content Fingerprinting							
SOR014-		United States of America	62/309,366	3/16/2016	N/A	N/A	N/A	N/A
AVA-US01	Layouts of Dividing Frame to Perform Ordinal Fingerprinting							
SOR014-		United States of America	15/243,658	8/22/2016	US-2017-0272814	9/21/2017	10,063,917	8/28/2018
AVA-US02	Fingerprint Layouts for Content Fingerprinting							

PATENT

REEL: 056998 FRAME: 0864

Schedule of AVA Patent Assets

Patent Reference	Application Title	Country	Application Number	Application Filing Date	Publication Number	Publication Date	Patent Number	Issue Date
SOR014-	Fingerprint Layouts for Content Fingerprinting	United States of America	16/035,051	7/13/2018	US-2018-0343494	11/29/2018	10,257,570	4/9/2019
AVA-US03	Fingerprint Layouts for Content Fingerprinting	United States of America	16/287,752	2/27/2019	US-2019-0215560	7/11/2019	10,743,062	8/11/2020
SOR014-	Fingerprint Layouts for Content Fingerprinting	United States of America	16/925,730	7/10/2020	US-2020-0413132	12/31/2020	N/A	N/A
AVA-US05	Fingerprint Layouts for Content Fingerprinting	Patent Cooperation Treaty						
SOR014- AVA- WCO1	Fingerprint Layouts for Content Fingerprinting	United States of America	PCT/US2017/021690	3/9/2017	WO2018/038766	3/1/2018	N/A	N/A
SOR015-	Associating Media Content	United States of America	62/064,949	10/16/2014	N/A	N/A	N/A	N/A
AVA-US01	Associating Media Content	United States of America	14/881,852	10/13/2015	N/A	N/A	10,194,177	1/29/2019
SOR015-	Interweaving Media Content	United States of America	16/217,852	12/12/2018	US-2019-0222873	7/18/2019	N/A	N/A
AVA-US03	Interweaving Media Content	United States of America	14/736,158	6/10/2015	N/A	N/A	10,509,824	12/17/2019
SOR016-	Automatic Content Recognition Search Optimization	United States of America	16/588,211	9/30/2019	US-2020-0026730	1/23/2020	N/A	N/A
AVA-US02	Automatic Content Recognition Search Optimization	China	201680023388.4	4/21/2016	107851103	3/27/2018	N/A	N/A
SOR017-	Automatic Content Recognition Fingerprint Sequence	European Patent	16783829.1	4/21/2016	3286669	2/28/2018	N/A	N/A
AVA-EP01	Automatic Content Recognition Fingerprint Sequence	Japan	2018-506796	4/21/2016	2018-521601	8/2/2018	6438628	11/22/2018
SOR017-	Automatic Content Recognition Fingerprint Sequence	Korea, Republic of (KR)	10-2017-7033908	4/21/2016	10-2018-0036647	4/9/2018	10-2063117	12/31/2019
AVA-KR01	Automatic Content Recognition Fingerprint Sequence	Korea, Republic of (KR)	10-2019-7038947	12/31/2019	N/A	N/A	N/A	N/A
SOR017-	Automatic Content Recognition Fingerprint Sequence	United States of America	62/151,915	4/23/2015	N/A	N/A	N/A	N/A
AVA-US01	Automatic Content Recognition (ACR) Fingerprint Local Matching	United States of America	14/813,416	7/30/2015	US-2016-0316262	10/27/2016	10,750,236	8/18/2020
SOR017-	Automatic Content Recognition with Local Matching	United States of America	16/924,119	7/8/2020	US-2020-0344520	10/29/2020	N/A	N/A
AVA-US02	Automatic Content Recognition with Local Matching	United States of America						
SOR017-	Automatic Content Recognition with Local Matching	United States of America						
AVA-US03	Automatic Content Recognition with Local Matching	United States of America						

PATENT

REEL: 056998 FRAME: 0865

Schedule of AVA Patent Assets

Patent Reference	Application Title	Country	Application Number	Application Filing Date	Publication Number	Publication Date	Patent Number	Issue Date
SOR017- AVA- WO01	Automatic Content Recognition Fingerprint Sequence Matching	Patent Cooperation Treaty	PCT/US2016/028583	4/21/2016	WO2016/172304	10/27/2016	N/A	N/A
SOR018- AVA-CN01	Automatic Content Recognition Fingerprint Sequence Matching	China	201680023473.0	4/25/2016	107851104	3/27/2018	N/A	N/A
SOR018- AVA-EP01	Automatic Content Recognition Fingerprint Sequence Matching	European Patent	16784091.7	4/25/2016	3286673	2/28/2018	N/A	N/A
SOR018- AVA-JP01	Automatic Content Recognition Fingerprint Sequence Matching	Japan	2018-506816	4/25/2016	2018-523419	8/16/2018	6612432	11/8/2019
SOR018- AVA-JP02	Automatic Content Recognition Fingerprint Sequence Matching	Japan	2019-197011	10/30/2019	2020-025322	2/13/2020	6818846	1/5/2021
SOR018- AVA-JP03	Automatic Recognition Fingerprint Sequence Matching	Japan	2020-218559	12/28/2020	6818846	1/20/2021	N/A	N/A
SOR018- AVA-KR01	Automatic Content Recognition Fingerprint Sequence Matching	Korea, Republic of (KR)	10-2017-7033910	4/25/2016	10-2018-0026377	3/12/2018	N/A	N/A
SOR018- AVA-US01	Automatic Content Recognition (ACR) Fingerprint Sequence Matching	United States of America	62/151,914	4/23/2015	N/A	N/A	N/A	N/A
SOR018- AVA-US02	Automatic Content Recognition Fingerprint Sequence Matching	United States of America	14/801,307	7/16/2015	US-2016-0316261	10/27/2016	N/A	N/A
SOR018- AVA- WO01	Automatic Content Recognition Fingerprint Sequence Matching	Patent Cooperation Treaty	PCT/US2016/029221	4/25/2016	WO2016/172711	10/27/2016	N/A	N/A
SOR019- AVA-US01	A/B Testing on Linear TV Streams	United States of America	62/296,513	2/17/2016	N/A	N/A	N/A	N/A
SOR019- AVA-US02	Content Comparison Testing on Linear Media Streams	United States of America	15/164,714	5/25/2016	US-2017-0238037	8/17/2017	10,432,994	10/1/2019
SOR019- AVA-US03	Content Comparison Testing on Linear Media Streams	United States of America	16/555,507	8/29/2019	US-2019-0387266	12/19/2019	10,721,515	7/21/2020
SOR019- AVA-US04	Content Comparison Testing on Linear Media Streams	United States of America	16/899,261	6/11/2020	US-2020-0304857	9/24/2020	N/A	N/A
SOR019- AVA- WO01	Content Comparison Testing on Linear Media Streams	Patent Cooperation Treaty	PCT/US2017/016666	2/6/2017	WO2017/142728	8/24/2017	N/A	N/A
SOR020- AVA-US01	Interactive Overlays to Determine Viewer Data	United States of America	62/478,185	3/29/2017	N/A	N/A	N/A	N/A
SOR020- AVA-US02	Interactive Overlays to Determine Viewer Data	United States of America	15/938,049	3/28/2018	US-2018-0288473	10/4/2018	10,462,514	10/29/2019

PATENT

REEL: 056998 FRAME: 0866

Schedule of AVA Patent Assets

Patent Reference	Application Title	Country	Application Number	Application Filing Date	Publication Number	Publication Date	Patent Number	Issue Date
SOR020- AVA-US03	Interactive Overlays to Determine Viewer Data	United States of America	16/574,858	9/18/2019	US-2020-0014972	1/9/2020	10,869,083	12/15/2020
SOR020- AVA-US04	Interactive Overlays to Determine Viewer Data	United States of America	17/094,150	11/10/2020	US-2021-0058664	2/25/2021	N/A	N/A
SOR020- AVA- WO01	Interactive Overlays to Determine Viewer Data	Patent Cooperation Treaty	PCT/US2018/024740	3/28/2018	WO2018/183430	10/4/2018	N/A	N/A
SOR021- AVA-CN01	Targeted Content Placement Using Overlays	China	201880022785.9	3/28/2018	110476428	11/19/2019	N/A	N/A
SOR021- AVA-EP01	Targeted Content Placement Using Overlays	European Patent	18717816.5	3/28/2018	3603079	2/5/2020	N/A	N/A
SOR021- AVA-HK01	Targeted Content Placement Using Overlays	Hong Kong	62020011726	7/20/2020	40022724A	11/20/2020	N/A	N/A
SOR021- AVA-JP01	Targeted Content Placement Using Overlays	Japan	2019-553182	3/28/2018	2020-512775	4/23/2020	N/A	N/A
SOR021- AVA-KR01	Targeted Content Placement Using Overlays	Korea, Republic of (KR)	2019-7028430	3/28/2018	N/A	N/A	N/A	N/A
SOR021- AVA-US01	Targeted Content Placement Using Overlays	United States of America	62/478,196	3/29/2017	N/A	N/A	N/A	N/A
SOR021- AVA-US02	Targeted Content Placement Using Overlays	United States of America	15/938,167	3/28/2018	US-2018-0288494	10/4/2018	10,542,326	1/21/2020
SOR021- AVA-US03	Targeted Content Placement Using Overlays	United States of America	16/704,356	12/5/2019	US-2020-0107082	4/2/2020	N/A	N/A
SOR021- AVA- WO01	Targeted Content Placement Using Overlays	Patent Cooperation Treaty	PCT/US2018/024756	3/28/2018	WO2018/183441	10/4/2018	N/A	N/A
SOR022- AVA-US01	Employing Automatic Content Recognition to Allow Resumption of Watching Interrupted Media Program from Television Broadcast	United States of America	62/476,159	3/24/2017	N/A	N/A	N/A	N/A
SOR022- AVA-US02	Employing Automatic Content Recognition to Allow Resumption of Watching Interrupted Media Program from Television Broadcast	United States of America	15/933,899	3/23/2018	US-2018-0278973	9/27/2018	N/A	N/A
SOR022- AVA- WO01	Employing Automatic Content Recognition to Allow Resumption of Watching Interrupted Media Program from Television Broadcast	Patent Cooperation Treaty	PCT/US2018/024035	3/23/2018	WO2018/175894	9/27/2018	N/A	N/A
SOR023- AVA-KR01	Enabling Interactive Control of Live Television Broadcast Streams	Korea, Republic of (KR)	2019-7027609	3/23/2018	N/A	N/A	2117922	5/27/2020

Schedule of AVA Patent Assets

Patent Reference	Application Title	Country	Application Number	Application Filing Date	Publication Number	Publication Date	Patent Number	Issue Date
SOR023-AVA-KR02	Media Channel Identification and Action with Multi-Media Detection and Disambiguation Based on Matching with Differential Reference-Fingerprint Feature	Korea, Republic of (KR)	2020-7015181	5/27/2020	N/A	N/A	10-222,705	3/9/2021
SOR023-AVA-KR03	Enabling Interactive Control of Live Television Broadcast Streams	Korea, Republic of (KR)	2021-7007089	3/9/2021	N/A	N/A	N/A	N/A
SOR023-AVA-US01	Enabling Interactive Control of Live Television Broadcast Streams	United States of America	62/476,152	3/24/2017	N/A	N/A	N/A	N/A
SOR023-AVA-US02	Enabling Interactive Control of Live Television Broadcast Streams	United States of America	15/934,753	3/23/2018	US-2018-0279005	9/27/2018	10,182,263	1/15/2019
SOR023-AVA-US03	Enabling Interactive Control of Live Television Broadcast Streams	United States of America	16/495,337	3/23/2018	US-2020-0021858	1/16/2020	N/A	N/A
SOR023-AVA-WO01	Enabling Interactive Control of Live Television Broadcast Streams	Patent Cooperation Treaty	PCT/US2018/024165	3/23/2018	WO2018/175979	9/27/2018	N/A	N/A
SOR024-AVA-US01	Obtaining Viewer Demographics Through Advertisement Selections	United States of America	15/725,260	10/4/2017	US-2019-0104344	4/4/2019	10,277,958	4/30/2019
SOR024-AVA-US02	Obtaining Viewer Demographics Through Advertisement Selections	United States of America	16/366,790	3/27/2019	US-2019-0327537	10/24/2019	10,897,657	1/19/2021
SOR024-AVA-US03	Obtaining Viewer Demographics Through Advertisement Selections	United States of America	17/128,860	12/21/2020	N/A	N/A	N/A	N/A
SOR025-AVA-AU01	Cold Matching by Automatic Content Recognition	Australia	2018331314	9/10/2018	N/A	1/28/2021	N/A	N/A
SOR025-AVA-AU02	Cold Matching by Automatic Content Recognition	Australia	2021201776	3/22/2021	N/A	N/A	N/A	N/A
SOR025-AVA-BR01	Cold Matching by Automatic Content Recognition	Brazil	1120200050849	9/10/2018	N/A	9/15/2020	N/A	N/A
SOR025-AVA-CA01	Cold Matching by Automatic Content Recognition	Canada	3075730	9/10/2018	N/A	N/A	N/A	N/A
SOR025-AVA-CN01	Cold Matching by Automatic Content Recognition	China	201880059344.6	9/10/2018	CN111133765A	5/8/2020	N/A	N/A
SOR025-AVA-EP01	Cold Matching by Automatic Content Recognition	European Patent	18782578.1	9/10/2018	3682644	7/22/2020	N/A	N/A
SOR025-AVA-JP01	Cold Matching by Automatic Content Recognition	Japan	2020-515170	9/10/2018	2020-533918	11/19/2020	N/A	N/A
SOR025-AVA-KR01	Cold Matching by Automatic Content Recognition	Korea, Republic of (KR)	2020-7010283	9/10/2018	N/A	N/A	N/A	N/A

Schedule of AVA Patent Assets

Patent Reference	Application Title	Country	Application Number	Application Filing Date	Publication Number	Publication Date	Patent Number	Issue Date
SOR025- AVA-US01	Cold Matching by Automatic Content Recognition	United States of America	15/703,684	9/13/2017	US-2019-0079961	3/14/2019	10,803,038	10/13/2020
SOR025- AVA-US02	Cold Matching by Automatic Content Recognition	United States of America	16/946,862	7/9/2020	US-2020-0341960	10/29/2020	N/A	N/A
SOR025- AVA- WO01	Cold Matching by Automatic Content Recognition	Patent Cooperation Treaty	PCT/US2018/050230	9/10/2018	WO2019/055344	3/21/2019	N/A	N/A
SOR026- AVA-AU01	Flagging Advertisement Frames for Automatic Content Recognition	Australia	2018331308	9/10/2018	N/A	N/A	2018331308	1/7/2021
SOR026- AVA-AU02	Flagging Advertisement Frames for Automatic Content Recognition	Australia	2020289863	12/18/2020	N/A	N/A	N/A	N/A
SOR026- AVA-BR01	Flagging Advertisement Frames for Automatic Content Recognition	Brazil	1120200050865	9/10/2018	N/A	8/18/2020	N/A	N/A
SOR026- AVA-CA01	Flagging Advertisement Frames for Automatic Content Recognition	Canada	3075620	9/10/2018	3075620	3/21/2019	N/A	N/A
SOR026- AVA-CN01	Flagging Advertisement Frames for Automatic Content Recognition	China	201880059810.0	9/10/2018	CN111095940A	5/1/2020	N/A	N/A
SOR026- AVA-EP01	Flagging Advertisement Frames for Automatic Content Recognition	European Patent	18782247.3	9/10/2018	3682643	7/22/2020	N/A	N/A
SOR026- AVA-JP01	Flagging Advertisement Frames for Automatic Content Recognition	Japan	2020-515215	9/10/2018	2020-533920	11/19/2020	N/A	N/A
SOR026- AVA-KR01	Flagging Advertisement Frames for Automatic Content Recognition	Korea, Republic of (KR)	2020-7008760	9/10/2018	N/A	N/A	10-2148248	8/20/2020
SOR026- AVA-KR02	Flagging Advertisement Frames for Automatic Content Recognition	Korea, Republic of (KR)	2020-7023993	8/20/2020	N/A	N/A	N/A	N/A
SOR026- AVA-US01	Flagging Advertisement Frames for Automatic Content Recognition	United States of America	15/703,391	9/13/2017	US-2019-0082231	3/14/2019	10,306,333	5/28/2019
SOR026- AVA-US02	Flagging Advertisement Frames for Automatic Content Recognition	United States of America	16/409,733	5/10/2019	US-2019-0268670	8/29/2019	10,887,667	1/5/2021
SOR026- AVA-US03	Flagging Advertisement Frames for Automatic Content Recognition	United States of America	17/247,070	11/27/2020	US-2021-0084386	3/18/2021	N/A	N/A
SOR026- AVA- WO01	Flagging Advertisement Frames for Automatic Content Recognition	Patent Cooperation Treaty	PCT/US2018/050184	9/10/2018	WO2019/055338	3/21/2019	N/A	N/A
SOR027- AVA-CN01	Frame Certainty for Automatic Content Recognition	China	201880025752.X	6/29/2018	110537371	12/3/2019	N/A	N/A

PATENT

REEL: 056998 FRAME: 0869

Schedule of AVA Patent Assets

Patent Reference	Application Title	Country	Application Number	Application Filing Date	Publication Number	Publication Date	Patent Number	Issue Date
SCOR027- AVA-EP01	Frame Certainty for Automatic Content Recognition	European Patent	18752314.7	6/29/2018	3646197	5/6/2020	N/A	N/A
SCOR027- AVA-HK01	Frame Certainty for Automatic Content Recognition	Hong Kong	62020007501.3	5/14/2020	N/A	N/A	N/A	N/A
SCOR027- AVA-JP01	Frame Certainty for Automatic Content Recognition	Japan	2019-5552201	6/29/2018	2020-511880	4/16/2020	N/A	N/A
SCOR027- AVA-KR01	Frame Certainty for Automatic Content Recognition	Korea, Republic of (KR)	2019-7027218	6/29/2018	N/A	N/A	N/A	N/A
SCOR027- AVA-US01	Frame Certainty for Automatic Content Recognition	United States of America	62/527,305	6/30/2017	N/A	N/A	N/A	N/A
SCOR027- AVA-US02	Frame Certainty for Automatic Content Recognition	United States of America	16/023,555	6/29/2018	US-2019-0007733	1/3/2019	10,715,863	7/14/2020
SCOR027- AVA-US03	Frame Certainty for Automatic Content Recognition	United States of America	16/925,552	7/10/2020	US-2020-0413131	12/31/2020	N/A	N/A
SCOR027- AVA- WO01	Frame Certainty for Automatic Content Recognition	Patent Cooperation Treaty						
SCOR028- AVA-US01	Scene Frame Matching for Automatic Content Recognition	United States of America	15/726,987	10/6/2017	US-2019-0108401	4/11/2019	10,922,551	2/16/2021
SCOR028- AVA-US02	Scene Frame Matching for Automatic Content Recognition	United States of America	16/390,410	4/22/2019	US-2019-0251361	8/15/2019	10,963,699	3/30/2021
SCOR028- AVA-US03	Scene Frame Matching for Automatic Content Recognition	United States of America	16/447,344	6/20/2019	US-2019-0303681	10/3/2019	N/A	N/A
SCOR028- AVA-US04	Scene Frame Matching for Automatic Content Recognition	United States of America	17/142,619	1/6/2021	N/A	N/A	N/A	N/A
SCOR029- AVA-US01	Method and System for Image Compression Using Block Size Heuristics	United States of America	10/029,142	12/20/2001	US-2003-0118101	6/26/2003	6,909,748	6/21/2005
SCOR031- AVA-US01	Method, Graphical Interface and Computer-Readable Medium for Forming a Batch Job	United States of America	11/140,773	5/31/2005	US-2006-0288294	12/21/2006	7,885,979	2/8/2011
SCOR032- AVA-US01	Method, Graphical Interface and Computer-Readable Medium for Reformating Data	United States of America	11/141,434	5/31/2005	US-2006-0271848	11/30/2006	7,975,219	7/5/2011
SCOR033- AVA-US01	Method, Graphical Interface and Computer-Readable Medium for Generating a Preview of a Reformatted Preview Segment	United States of America	11/140,784	5/31/2005	US-2006-0271836	11/30/2006	8,296,649	10/23/2012
SCOR034- AVA-US01	Client-Side Video Advertisement Replacement Using Automatic Content Recognition	United States of America	61/981,045	4/17/2014	N/A	N/A	N/A	N/A
SCOR034- AVA-US02	Client-Side Video Advertisement Replacement Using Automatic Content Recognition	United States of America	14/468,080	8/25/2014	N/A	N/A	10,825,056	11/3/2020

Schedule of AVA Patent Assets

Patent Reference	Application Title	Country	Application Number	Application Filing Date	Publication Number	Publication Date	Patent Number	Issue Date
SCOR034-AVA-US03	Client-Side Video Advertisement Replacement Using Automatic Content Recognition	United States of America	16/395,509	4/26/2019	US-2019-0251602	8/15/2019	10,810,629	10/20/2020
SCOR034-AVA-US04	Client-Side Video Advertisement Replacement Using Automatic Content Recognition	United States of America	16/930,087	7/15/2020	US-2020-0349612	11/5/2020	N/A	N/A
SCOR035-AVA-US01	Content Modification System with Broadcast Schedule Utilization Feature	United States of America	62/858,823	6/7/2019	N/A	N/A	N/A	N/A
SCOR035-AVA-US02	Content-Modification System with Broadcast Schedule Utilization Feature	United States of America	16/895,794	6/8/2020	US-2020-0389681	12/10/2020	N/A	N/A
SCOR035-AVA-WO01	Schedule-Assisted Replacement Content Advanced Delivery	Patent Cooperation Treaty	PCT/US2020/036622	6/8/2020	WO2020/247919	12/10/2020	N/A	N/A
SCOR036-AVA-US01	Content Modification System with In-Band Message Data Utilization Feature	United States of America	62/858,826	6/7/2019	N/A	N/A	N/A	N/A
SCOR036-AVA-US02	Content Modification System with In-Band Message Data Utilization Feature	United States of America	16/895,806	6/8/2020	US-2020-0389688	12/10/2020	N/A	N/A
SCOR036-AVA-WO01	Content-Modification System with In-Band Message Data Utilization Feature	Patent Cooperation Treaty	PCT/US2020/036632	6/8/2020	WO2020/247921	12/10/2020	N/A	N/A
SCOR037-AVA-TW01	Content-Modification System with Content-Presentation Device Grouping Feature	Taiwan	109119092	6/5/2020	202106035	2/1/2021	N/A	N/A
SCOR037-AVA-US01	Content Modification System with Content Presentation Device Grouping Feature	United States of America	62/858,838	6/7/2019	N/A	N/A	N/A	N/A
SCOR037-AVA-US02	Content-Modification System with Content-Presentation Device Grouping Feature	United States of America	16/892,131	6/3/2020	US-2020-0389687	12/10/2020	N/A	N/A
SCOR037-AVA-WO01	Content-Modification System with Content-Presentation Device Grouping Feature	Patent Cooperation Treaty	PCT/US2020/036443	6/5/2020	WO2020/247833	12/10/2020	N/A	N/A
SCOR038-AVA-TW01	Reference Fingerprint Data Feature	Taiwan	109115458	5/8/2020	202046137	12/16/2020	N/A	N/A
SCOR038-AVA-US01	Content Modification System with Responsive Transmission of Reference Fingerprint Data Feature	United States of America	62/846,385	5/10/2019	N/A	N/A	N/A	N/A
SCOR038-AVA-US02	Content Modification System with Responsive Transmission of Reference Fingerprint Data Feature	United States of America	16/870,451	5/8/2020	US-2020-0359065	11/12/2020	N/A	N/A
SCOR038-AVA-WO01	Content-Modification System with Responsive Transmission of Reference Fingerprint Data Feature	Patent Cooperation Treaty	PCT/US2020/032106	5/8/2020	WO2020/231813	11/19/2020	N/A	N/A

Schedule of AVA Patent Assets

Patent Reference	Application Title	Country	Application Number	Application Filing Date	Publication Number	Publication Date	Patent Number	Issue Date
SOR039-AVA-TW01	Content-Modification System with Technical Characteristic-Based Selection Feature	Taiwan	109119088	6/5/2020	202103498	1/16/2021	N/A	N/A
SOR039-AVA-US01	Content Modification System with Technical Characteristic-Based Selection Feature	United States of America	62/858,845	6/7/2019	N/A	N/A	N/A	N/A
SOR039-AVA-US02	Content-Modification System with Technical Characteristic-Based Selection Feature	United States of America	16/835,935	3/31/2020	US-2020-0389694	12/10/2020	N/A	N/A
SOR039-AVA-WO01	Content-Modification System with Technical Characteristic-Based Selection Feature	Patent Cooperation Treaty	PCT/US2020/036448	6/5/2020	WO2020/247838	12/10/2020	N/A	N/A
SOR040-AVA-US01	Content Modification System with Geographic Area-Based Feature	United States of America	62/846,396	5/10/2019	N/A	N/A	N/A	N/A
SOR040-AVA-US02	Content-Modification System With Geographic Area-Based Feature	United States of America	16/836,034	3/31/2020	US-2020-0356755	11/12/2020	10,846,506	11/24/2020
SOR040-AVA-US03	Content-Modification System With Geographic Area-Based Feature	United States of America	17/069,356	10/13/2020	US-2021-0027042	1/28/2021	N/A	N/A
SOR040-AVA-WO01	Content-Modification System with Geographic Area-Based Feature	Patent Cooperation Treaty	PCT/US2020/032110	5/8/2020	WO2020/231814	11/19/2020	N/A	N/A
SOR041-AVA-US01	Content Modification System with Geographic Area-Based Feature	United States of America	62/846,403	5/10/2019	N/A	N/A	N/A	N/A
SOR041-AVA-US02	Content-Modification System With Geographic Area-Based Feature	United States of America	16/836,090	3/31/2020	US-2020-0356756	11/12/2020	N/A	N/A
SOR041-AVA-WO01	Content-Modification System With Geographic Area-Based Feature	Patent Cooperation Treaty	PCT/US2020/032143	5/8/2020	WO2020/231829	11/19/2020	N/A	N/A
SOR042-AVA-TW01	Content-Modification System with Determination of Input-Buffer Switch Delay Feature	Taiwan	109115457	5/8/2020	202102000	1/1/2021	N/A	N/A
SOR042-AVA-US01	Content Modification System with Render Delay-Based Feature	United States of America	62/846,409	5/10/2019	N/A	N/A	N/A	N/A
SOR042-AVA-US02	Content-Modification System with Determination of Input-Buffer Switch Delay Feature	United States of America	16/870,482	5/8/2020	US-2020-0359089	11/12/2020	N/A	N/A
SOR042-AVA-WO01	Content-Modification System with Determination of Input-Buffer Switch Delay Feature	Patent Cooperation Treaty	PCT/US2020/032120	5/8/2020	WO2020/231817	11/19/2020	N/A	N/A
SOR043-AVA-US01	Content Modification System with Geographic Area-Based Feature	United States of America	62/846,401	5/10/2019	N/A	N/A	N/A	N/A

Schedule of AVA Patent Assets

Patent Reference	Application Title	Country	Application Number	Application Filing Date	Publication Number	Publication Date	Patent Number	Issue Date
SOR043- AVA-US02	Content-Modification System with Geographic Area-Based Feature	United States of America	16/836,253	3/31/2020	US-2020-0356757	11/12/2020	N/A	N/A
SOR043- AVA-WO01	Content-Modification System With Geographic Area-Based Feature	Patent Cooperation Treaty	PCT/US2020/032122	5/8/2020	WO2020/231818	11/19/2020	N/A	N/A
SOR044- AVA-US01	Content Modification System with Fingerprint Data Multimatch Detection Feature	United States of America	62/846,413	5/10/2019	N/A	N/A	N/A	N/A
SOR044- AVA-US02	Content Modification System with Responsive Transmission of Reference Fingerprint Data Feature	United States of America	16/872,073	5/11/2020	US-2020-0359110	11/12/2020	N/A	N/A
SOR044- AVA-WO01	Content-Modification System with Responsive Transmission of Reference Fingerprint Data Feature	Patent Cooperation Treaty	PCT/US2020/032350	5/11/2020	WO2020/231927	11/19/2020	N/A	N/A
SOR045- AVA-TW01	Content Modification System with Fingerprint Data Match and Mismatch Detection Feature	Taiwan	109115459	5/8/2020	202101250	1/1/2021	N/A	N/A
SOR045- AVA-US01	Content Modification System with Fingerprint Data Match and Mismatch Detection Feature	United States of America	62/846,416	5/10/2019	N/A	N/A	N/A	N/A
SOR045- AVA-US02	Content Modification System with Fingerprint Data Match and Mismatch Detection Feature	United States of America	16/869,860	5/8/2020	US-2020-0356758	11/12/2020	N/A	N/A
SOR045- AVA-WO01	Content Modification System with Fingerprint Data Match and Mismatch Detection Feature	Patent Cooperation Treaty	PCT/US2020/032127	5/8/2020	WO2020/231821	11/19/2020	N/A	N/A
SOR047- AVA-TW01	Content-Modification System with Use of Multiple Fingerprint Data Types Feature	Taiwan	109115461	5/8/2020	202102001	1/1/2021	N/A	N/A
SOR047- AVA-US01	Content Modification System with Use of Multiple Fingerprint Data Types Feature	United States of America	62/846,421	5/10/2019	N/A	N/A	N/A	N/A
SOR047- AVA-US02	Content-Modification System with Use of Multiple Fingerprint Data Types Feature	United States of America	16/836,170	3/31/2020	N/A	N/A	10,796,159	10/6/2020
SOR047- AVA-US03	Content-Modification System with Use of Multiple Fingerprint Data Types Feature	United States of America	16/994,033	8/14/2020	US-2020-0372256	11/26/2020	N/A	N/A
SOR047- AVA-WO01	Content-Modification System with Use of Multiple Fingerprint Data Types Feature	Patent Cooperation Treaty	PCT/US2020/032133	5/8/2020	WO2020/231823	11/19/2020	N/A	N/A
SOR048- AVA-TW01	Content-Modification System with Overlay Handling Feature	Taiwan	109119090	6/5/2020	202106034	2/1/2021	N/A	N/A
SOR048- AVA-US01	Content Modification System with Overlay Handling Feature	United States of America	62/858,855	6/7/2019	N/A	N/A	N/A	N/A

Schedule of AVA Patent Assets

Patent Reference	Application Title	Country	Application Number	Application Filing Date	Publication Number	Publication Date	Patent Number	Issue Date
SOR048- AVA-US02	Content-Modification System With Overlay Handling Feature	United States of America	16/855,268	4/22/2020	US-2020-0389685	12/10/2020	N/A	N/A
SOR048- AVA- WO01	Content-Modification System with Overlay Handling Feature	Patent Cooperation Treaty	PCT/US2020/036451	6/5/2020	WO2020/247840	12/10/2020	N/A	N/A
SOR049- AVA-US01	Content Modification System with Fingerprint Data Mismatch and Responsive Action Feature	United States of America	62/846,425	5/10/2019	N/A	N/A	N/A	N/A
SOR049- AVA-US02	Content Modification System with Fingerprint Data Mismatch and Responsive Action Feature	United States of America	16/870,583	5/8/2020	US-2020-0356759	11/12/2020	N/A	N/A
SOR049- AVA- WO01	Content-Modification System with Fingerprint Data Mismatch and Responsive Action Feature	Patent Cooperation Treaty	PCT/US2020/032113	5/8/2020	WO2020/231815	11/19/2020	N/A	N/A
SOR050- AVA-TW01	Content Modification System with Issue Detection and Responsive Action Feature	Taiwan	109115462	5/8/2020	202102002	1/1/2021	N/A	N/A
SOR050- AVA-US01	Content Modification System with Issue Detection and Responsive Action Feature	United States of America	62/846,429	5/10/2019	N/A	N/A	N/A	N/A
SOR050- AVA-US02	Content Modification System with Issue Detection and Responsive Action Feature	United States of America	16/835,569	3/31/2020	US-2020-0359080	11/12/2020	N/A	N/A
SOR050- AVA- WO01	Content-Modification System with Issue Detection and Responsive Action Feature	Patent Cooperation Treaty	PCT/US2020/032135	5/8/2020	WO2020/231824	11/19/2020	N/A	N/A
SOR051- AVA-TW01	Content-Modification System with Volume Level Adjustment Feature	Taiwan	109115456	5/8/2020	N/A	N/A	N/A	N/A
SOR051- AVA-US01	Content Modification System with Volume Level Adjustment Feature	United States of America	62/846,433	5/10/2019	N/A	N/A	N/A	N/A
SOR051- AVA-US02	Content Modification System with Volume Level Adjustment Feature	United States of America	16/835,635	3/31/2020	US-2020-0359082	11/12/2020	N/A	N/A
SOR051- AVA- WO01	Content-Modification System with Volume Level Adjustment Feature	Patent Cooperation Treaty	PCT/US2020/032138	5/8/2020	WO2020/231826	11/19/2020	N/A	N/A
SOR056- AVA-TW01	Content-Modification System with Responsive Transmission of Reference Fingerprint Data Feature	Taiwan	109115460	5/8/2020	202046742	12/16/2020	N/A	N/A
SOR056- AVA-US01	Content Modification System with Responsive Transmission of Reference Fingerprint Data Feature	United States of America	62/846,391	5/10/2019	N/A	N/A	N/A	N/A
SOR056- AVA-US02	Content Modification System with Responsive Transmission of Reference Fingerprint Data Feature	United States of America	16/870,460	5/8/2020	US-2020-0359066	11/12/2020	N/A	N/A

Schedule of AVA Patent Assets

Patent Reference	Application Title	Country	Application Number	Application Filing Date	Publication Number	Publication Date	Patent Number	Issue Date
SOR056- AVA- WO01	Content-Modification System with Responsive Transmission of Reference Fingerprint Data Feature	Patent Cooperation Treaty	PCT/US2020/032139	5/8/2020	WO2020/231827	11/19/2020	N/A	N/A
SOR057- AVA-US01	Content Modification System with Broadcast Delay-Based Feature	United States of America	62/846,405	5/10/2019	N/A	N/A	N/A	N/A
SOR057- AVA-US02	Content-Modification System With Transmission Delay-Based Feature	United States of America	16/836,098	3/31/2020	US-2020-0359092	11/12/2020	10,972,794	4/6/2021
SOR057- AVA-US03	Content-Modification System With Transmission Delay-Based Feature	United States of America	16/836,082	3/31/2020	US-2020-0359091	11/12/2020	N/A	N/A
SOR057- AVA-US04	Content-Modification System With Transmission Delay-Based Feature	United States of America	17/191,372	3/3/2021	N/A	N/A	N/A	N/A
SOR057- AVA- WO01	Content-Modification System with Transmission Delay-Based Feature	Patent Cooperation Treaty	PCT/US2020/032118	5/8/2020	WO2020/231816	11/19/2020	N/A	N/A
SOR058- AVA-US01	Content Modification System with Testing and Reporting Feature	United States of America	62/858,840	6/7/2019	N/A	N/A	N/A	N/A
SOR058- AVA-US02	Content Modification System with Testing and Reporting Feature	United States of America	16/850,499	4/16/2020	US-2020-0389695	12/10/2020	N/A	N/A
SOR058- AVA- WO01	Content-Modification System with Testing and Reporting Feature	Patent Cooperation Treaty	PCT/US2020/036445	6/5/2020	WO2020/247835	12/10/2020	N/A	N/A
SOR059- AVA-US01	Content Modification System with System Resource Request Feature	United States of America	62/858,856	6/7/2019	N/A	N/A	N/A	N/A
SOR059- AVA-US02	Content-Modification System With System Resource Request Feature	United States of America	16/895,685	6/8/2020	US-2020-0389680	12/10/2020	10,986,382	4/20/2021
SOR059- AVA-US03	Content-Modification System With System Resource Request Feature	United States of America	17/201,322	3/15/2021	N/A	N/A	N/A	N/A
SOR059- AVA- WO01	Content-Modification System with System Resource Request Feature	Patent Cooperation Treaty	PCT/US2020/036633	6/8/2020	WO2020/247922	12/10/2020	N/A	N/A
SOR060- AVA-US01	Content Modification System with Probability-Based Selection Feature	United States of America	62/858,859	6/7/2019	N/A	N/A	N/A	N/A
SOR060- AVA-US02	Content-Modification System With Probability-Based Selection Feature	United States of America	16/853,932	4/21/2020	US-2020-0389684	12/10/2020	N/A	N/A
SOR060- AVA- WO01	Content-Modification System with Probability-Based Selection Feature	Patent Cooperation Treaty	PCT/US2020/036456	6/5/2020	WO2020/247845	12/10/2020	N/A	N/A

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Schedule of AVA Patent Assets

Patent Reference	Application Title	Country	Application Number	Application Filing Date	Publication Number	Publication Date	Patent Number	Issue Date
SOR061- AVA-TW01	Content-Modification System with Supplemental Content Stitching Feature	Taiwan	109119089	6/5/2020	202106033	2/1/2021	N/A	N/A
SOR061- AVA-US01	Content Modification System with Supplemental Content Stitching Feature	United States of America	62/858,870	6/7/2019	N/A	N/A	N/A	N/A
SOR061- AVA-US02	Content-Modification System with Supplemental Content Stitching Feature	United States of America	16/866,005	5/4/2020	US-2020-0389689	12/10/2020	N/A	N/A
SOR061- AVA- WO01	Content-Modification System with Supplemental Content Stitching Feature	Patent Cooperation Treaty	PCT/US2020/036459	6/5/2020	WO2020/247847	12/10/2020	N/A	N/A
SOR062- AVA-TW01	Content-Modification System with Uncheduling Feature	Taiwan	109119087	6/5/2020	N/A	N/A	N/A	N/A
SOR062- AVA-US01	Content Modification System with Uncheduling Feature	United States of America	62/858,873	6/7/2019	N/A	N/A	N/A	N/A
SOR062- AVA-US02	Content-Modification System with Uncheduling Feature	United States of America	16/866,023	5/4/2020	US-2020-0389686	12/10/2020	N/A	N/A
SOR062- AVA- WO01	Content-Modification System with Uncheduling Feature	Patent Cooperation Treaty	PCT/US2020/036461	6/5/2020	WO2020/247849	12/10/2020	N/A	N/A
SOR063- AVA-TW01	Content-Modification System with Broadcast Schedule Utilization Feature	Taiwan	109124819	7/22/2020	202106038	2/1/2021	N/A	N/A
SOR063- AVA-US01	Content Modification System with Broadcast Schedule Utilization Feature	United States of America	62/877,228	7/22/2019	N/A	N/A	N/A	N/A
SOR063- AVA-US02	Content-Modification System with Broadcast Schedule Utilization Feature	United States of America	16/934,972	7/21/2020	US-2021-0029398	1/28/2021	N/A	N/A
SOR063- AVA-US- MIS	Content Modification System with Broadcast Schedule Utilization Feature	United States of America	62/877,223	7/22/2019	N/A	N/A	N/A	N/A
SOR063- AVA- WO01	Content-Modification System with Broadcast Schedule Utilization Feature	Patent Cooperation Treaty	PCT/2020/042990	7/22/2020	WO2021/016303	1/28/2021	N/A	N/A
SOR064- AVA-TW01	Content-Modification System with Broadcast Schedule Utilization Feature	Taiwan	109124820	7/22/2020	202106039	2/1/2021	N/A	N/A
SOR064- AVA-US01	Content Modification System with Broadcast Schedule Utilization Feature	United States of America	62/877,229	7/22/2019	N/A	N/A	N/A	N/A
SOR064- AVA-US02	Content Modification System with Broadcast Schedule Utilization Feature	United States of America	16/934,974	7/21/2020	US-2021-0029399	1/28/2021	N/A	N/A

Schedule of AVA Patent Assets

Patent Reference	Application Title	Country	Application Number	Application Filing Date	Publication Number	Publication Date	Patent Number	Issue Date
SOR064- AVA-US- MIS	Content Modification System with Broadcast Schedule Utilization Feature	United States of America	62/877,219	7/22/2019	N/A	N/A	N/A	N/A
SOR064- AVA- WO01	Content-Modification System with Broadcast Schedule Utilization Feature	Patent Cooperation Treaty	PCT/US2020/042906	7/21/2020	WO2021/016255	1/28/2021	N/A	N/A
SOR065- AVA-US01	System for Dynamic Advertisement Insertion	United States of America	62/882,360	8/2/2019	N/A	N/A	N/A	N/A
SOR067- AVA-TW01	Content-Modification System with Broadcast Schedule Utilization Feature	Taiwan	109128205	8/19/2020	202110200	3/1/2021	N/A	N/A
SOR067- AVA-US01	Content Modification System	United States of America	62/888,923	8/19/2019	N/A	N/A	N/A	N/A
SOR067- AVA-US03	Content Modification System	United States of America	62/914,309	10/11/2019	N/A	N/A	N/A	N/A
SOR067- AVA-US04	Content Modification System with Broadcast Schedule Utilization Feature	United States of America	16/996,701	8/18/2020	US-2021-0058674	2/25/2021	N/A	N/A
SOR067- AVA- WO01	Content-Modification System with Broadcast Schedule Utilization Feature	Patent Cooperation Treaty	PCT/US2020/046922	8/19/2020	WO2021/034892	2/25/2021	N/A	N/A
SOR068- AVA-TW01	Use of In-Band Metadata as Basis to Access Reference Fingerprints to Facilitate Content-Related Action	Taiwan	109131270	9/11/2020	N/A	N/A	N/A	N/A
SOR068- AVA-US01	Use of In-Band Metadata as Basis to Access Reference Fingerprints to Facilitate Content-Related Action	United States of America	62/900,037	9/13/2019	N/A	N/A	N/A	N/A
SOR068- AVA-US02	Use of In-Band Metadata as Basis to Access Reference Fingerprints to Facilitate Content-Related Action	United States of America	15/929,210	1/28/2020	US-2021-0884091	3/18/2021	N/A	N/A
SOR068- AVA- WO01	Use of In-Band Metadata as Basis to Access Reference Fingerprints to Facilitate Content-Related Action	Patent Cooperation Treaty	PCT/US2020/049374	9/4/2020	WO2021/050376	3/18/2021	N/A	N/A
SOR069- AVA-TW01	Method and System for Re-Uniting Metadata with Media-Stream Content at a Media Client, to Facilitate Action by the Media Client	Taiwan	109131266	9/11/2020	N/A	N/A	N/A	N/A
SOR069- AVA-US01	Method and System for Re-Uniting Metadata with Media-Stream Content at a Media Client, to Facilitate Action by the Media Client	United States of America	62/900,043	9/13/2019	N/A	N/A	N/A	N/A
SOR069- AVA-US02	Method and System for Re-Uniting Metadata with Media-Stream Content at a Media Client, to Facilitate Action by the Media Client	United States of America	15/929,211	1/28/2020	US-2021-0084345	3/18/2021	N/A	N/A

Schedule of AVA Patent Assets

Patent Reference	Application Title	Country	Application Number	Application Filing Date	Publication Number	Publication Date	Patent Number	Issue Date
SOR069-AVA-WO01	Method and System for Re-Uniting Metadata with Media-Stream Content at a Media Client, to Facilitate Action by the Media Client	Patent Cooperation Treaty	PCT/US2020/049362	9/4/2020	WO2021/050374	3/18/2021	N/A	N/A
SOR070-AVA-US01	Content-Modification System With Feature For Managing Multiple Content-Modification Requests	United States of America	17/146,569	1/12/2021	N/A	N/A	N/A	N/A
SOR071-AVA-US01	Content Modification System	United States of America	62/925,090	10/23/2019	N/A	N/A	N/A	N/A
SOR071-AVA-US02	Content Modification System	United States of America	62/925,093	10/23/2019	N/A	N/A	N/A	N/A
SOR073-AVA-US01	Real-time Guaranteed Campaign Delivery Optimization Using Broadcast Schedules And Historic Viewing Data	United States of America	63/056,988	7/27/2020	N/A	N/A	N/A	N/A
SOR073-AVA-US02	Real-time Guaranteed Campaign Delivery Optimization Using Broadcast Schedules and Historic Viewing Data	United States of America	17/089,930	11/5/2020	N/A	N/A	N/A	N/A
SOR074-AVA-US01	Advertising Campaign To Viewing Device Suitability Matching	United States of America	63/059,118	7/30/2020	N/A	N/A	N/A	N/A
SOR074-AVA-US02	Advertising Campaign to Viewing Device Suitability Matching	United States of America	17/115,363	12/8/2020	N/A	N/A	N/A	N/A
SOR075-AVA-US01	Content Modification System	United States of America	63/007,339	4/8/2020	N/A	N/A	N/A	N/A
SOR075-AVA-US02	Content-Modification System With Feature For Detecting And Responding To A Content Modification By A Tuner Device	United States of America	17/162,299	1/29/2021	N/A	N/A	N/A	N/A
SOR075-AVA-US03	Content-Modification System With Feature For Detecting And Responding To A Content Modification By A Tuner Device	United States of America	17/162,310	1/29/2021	N/A	N/A	N/A	N/A
SOR075-AVA-US04	Content-Modification System With Feature For Detecting And Responding To Content Modifications By Tuner Devices	United States of America	17/162,490	1/29/2021	N/A	N/A	N/A	N/A
SOR075-AVA-WO01	Content-Modification System With Feature For Detecting And Responding To A Content Modification By A Tuner Device	Patent Cooperation Treaty	PCT/US2021/018974	2/22/2021	N/A	N/A	N/A	N/A
SOR075-AVA-WO02	Content-Modification System With Feature For Detecting And Responding To A Content Modification By A Tuner Device	Patent Cooperation Treaty	PCT/US2021/018995	2/22/2021	N/A	N/A	N/A	N/A
SOR075-AVA-WO03	Content-Modification System With Feature For Detecting And Responding To Content Modifications By Tuner Devices	Patent Cooperation Treaty	PCT/US2021/018997	2/22/2021	N/A	N/A	N/A	N/A
SOR076-AVA-US01	Automated Replacement of Unwanted and Unethical Adverts in Linear TV Streams	United States of America	63/198,593	10/29/2020	N/A	N/A	N/A	N/A

Schedule of AVA Patent Assets

Patent Reference	Application Title	Country	Application Number	Application Filing Date	Publication Number	Publication Date	Patent Number	Issue Date
SOR077-	Replacement Advertising Selection Using Viewer Switching Behavior And Pay Points	United States of America	63/053,998	7/20/2020	N/A	N/A	N/A	N/A
AVA-US01								
SOR077-	Replacement Advertising Selection Using Viewer Switching Behavior and Pay Points	United States of America	17/076,404	10/21/2020	N/A	N/A	N/A	N/A
AVA-US02								
SOR078-	Viewer Retention Through Targeted Advertisements Based On Viewer Behavior	United States of America	63/056,990	7/27/2020	N/A	N/A	N/A	N/A
AVA-US01								
SOR078-	Viewer Retention Through Targeted Advertisements Based on Viewer Behavior	United States of America	17/096,542	11/12/2020	N/A	N/A	N/A	N/A
AVA-US02								
SOR079-	Increasing Advertisement Revenue By Repeated Re-Evaluation Of Value Of Advertisement Spot	United States of America	63/057,834	7/28/2020	N/A	N/A	N/A	N/A
AVA-US01								
SOR079-	Increasing Advertisement Revenue by Repeated Re-Evaluation Of Value of Advertisement Spot	United States of America	17/108,281	12/1/2020	N/A	N/A	N/A	N/A
AVA-US02								
SOR080-								
AVA-US01	Replacement Advertisement Selection After Channel Changes	United States of America	63/059,119	7/30/2020	N/A	N/A	N/A	N/A
SOR080-								
AVA-US02	Replacement Advertisement Selection After Channel Changes	United States of America	17/118,400	12/10/2020	N/A	N/A	N/A	N/A
SOR081-	Adjustment of Supplemental Content Duration to Avoid Pauses in Consecutive Content-Modification Operations	United States of America	63/198,595	10/29/2020	N/A	N/A	N/A	N/A
AVA-US01								
SOR082-	Adjustment of Supplemental Content Duration to Avoid Flash Frames	United States of America	63/198,596	10/29/2020	N/A	N/A	N/A	N/A
AVA-US01								
SOR083-	Using Multiple Video Buffers to Increase Success Rate of Content-Modification Operations	United States of America	63/198,594	10/29/2020	N/A	N/A	N/A	N/A
AVA-US01								
SOR084-	Content-Modification System With Multiple Video Buffers Feature	United States of America	16/951,180	11/18/2020	N/A	N/A	N/A	N/A
AVA-US01								
SOR085-	Content-Modification System With Content Segment Frequency Feature	United States of America	63/119,225	11/30/2020	N/A	N/A	N/A	N/A
AVA-US01								
SOR086-	Server-side Matching of Supplemental Content Audio to Perceived Audio by End-user	United States of America	63/117,670	11/24/2020	N/A	N/A	N/A	N/A
AVA-US01								
SOR087-	CONTENT-MODIFICATION SYSTEM WITH USER EXPERIENCE ANALYSIS FEATURE	United States of America	63/148,582	2/11/2021	N/A	N/A	N/A	N/A
AVA-US01								
SOR088-	Content-Modification System with Volume-Level Detection Feature	United States of America	63/148,268	2/11/2021	N/A	N/A	N/A	N/A
AVA-US01								
SOR089-	Content Modification System With Viewer Behavior-Based Content Delivery Selection Feature	United States of America	63/148,568	2/11/2021	N/A	N/A	N/A	N/A
AVA-US01								
SOR090-	Content Modification System with Viewer Behavior-Based Content Delivery Selection Feature	United States of America	63/148,575	2/11/2021	N/A	N/A	N/A	N/A
AVA-US01								

Schedule of AVA Patent Assets

Patent Reference	Application Title	Country	Application Number	Application Filing Date	Publication Number	Publication Date	Patent Number	Issue Date
SOR091-								
AVA-US01	Content-Modification System	United States of America	63/082,892	9/24/2020	N/A	N/A	N/A	N/A
SOR092-	Content-Modification System With Advertisement	United States of America	63/148,219	2/11/2021	N/A	N/A	N/A	N/A
AVA-US01	Reconciliation Feature	United States of America	63/148,220	2/11/2021	N/A	N/A	N/A	N/A
SOR093-	Content-Modification System With Feature For Exposing Multiple Devices In A Household To The Same Advertisement	United States of America	63/148,223	2/11/2021	N/A	N/A	N/A	N/A
AVA-US01	Optimization And Viewer Retention Features	United States of America	63/148,223	2/11/2021	N/A	N/A	N/A	N/A
SOR094-	Content-Modification System With Advertisement Revenue	United States of America	63/148,223	2/11/2021	N/A	N/A	N/A	N/A
AVA-US02	Optimization and Viewer Retention Features	United States of America	17/223,223	4/6/2021	N/A	N/A	N/A	N/A
SOR095-	Content-Modification System With Feature For Controlling Viewer Exposure To Spoilers In Advertisements	United States of America	63/148,221	2/11/2021	N/A	N/A	N/A	N/A
AVA-US01	CONTENT-MODIFICATION SYSTEM WITH HOUSEHOLD COORDINATION FEATURE	United States of America	63/149,532	2/15/2021	N/A	N/A	N/A	N/A
SOR096-	CONTENT-MODIFICATION SYSTEM WITH QUIET CONTENT DETECTION FEATURE	United States of America	63/150,490	2/17/2021	N/A	N/A	N/A	N/A
AVA-US01	Use of SCTE Data to Facilitate Ad Harvesting for Dynamic Ad Replacement	United States of America	63/200,090	2/12/2021	N/A	N/A	N/A	N/A
SOR098-	Centralized Application of Policy Rules to Dynamically Define Ad-Inventories for Dynamic AdReplacement	United States of America	63/200,092	2/12/2021	N/A	N/A	N/A	N/A
AVA-US01	Use of SCTE Data to Correct Schedule Drift	United States of America	63/200,093	2/12/2021	N/A	N/A	N/A	N/A
SOR101-	Content-Modification System with Feature for Prioritizing Channels Used in Channel Identification	United States of America	63/166,052	3/25/2021	N/A	N/A	N/A	N/A