# PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT6990958

SUBMISSION TYPE:	CORRECTIVE ASSIGNMENT
NATURE OF CONVEYANCE:	Corrective Assignment to correct the ASSIGNEE previously recorded on Reel 057910 Frame 0789. Assignor(s) hereby confirms the OP SOLUTIONS, LLC 368 MIDDLE STREET AMHERST, MASSACHUSETTS 01002.

# **CONVEYING PARTY DATA**

Name	Execution Date
BORIVOJE FURHT	10/20/2021
HARI KALVA	10/20/2021

# **RECEIVING PARTY DATA**

Name:	FLORIDA ATLANTIC UNIVERSITY RESEARCH CORPORATION ("FAURC")
Street Address:	777 GLADES ROAD
City:	BOCA RATON
State/Country:	FLORIDA
Postal Code:	33431

# **PROPERTY NUMBERS Total: 23**

Property Type	Number
Application Number:	62856339
PCT Number:	US1938499
Application Number:	62883503
Application Number:	62883484
Application Number:	62883480
Application Number:	62883459
Application Number:	62883454
Application Number:	62883407
Application Number:	62932597
PCT Number:	US1963707
PCT Number:	US1963704
PCT Number:	US1963698
PCT Number:	US1963694
Application Number:	63009978
Application Number:	17394511
Application Number:	63235552
Application Number:	63235438

**PATENT** 

506944121 REEL: 057928 FRAME: 0313

Property Type	Number
PCT Number:	US2147927
PCT Number:	US2147902
PCT Number:	US2147886
PCT Number:	US2147857
Application Number:	63249984
Application Number:	63252266

#### **CORRESPONDENCE DATA**

Fax Number:

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:** 6175773963

**Email:** docketing@caldwellip.com

Correspondent Name: CALDWELL INTELLECTUAL PROPERTY LAW, LLC

Address Line 1: 200 CLARENDON STREET, 59TH FLOOR

Address Line 4: BOSTON, MASSACHUSETTS 02116

NAME OF SUBMITTER:	KEEGAN M. CALDWELL
SIGNATURE:	/KEEGAN M. CALDWELL/
DATE SIGNED:	10/27/2021

### **Total Attachments: 7**

source=Assignment from Inventors to FAURC 1097-031USP1 - 1097-054USP1 (Fully Executed)#page1.tif source=Assignment from Inventors to FAURC 1097-031USP1 - 1097-054USP1 (Fully Executed)#page2.tif source=Assignment from Inventors to FAURC 1097-031USP1 - 1097-054USP1 (Fully Executed)#page3.tif source=Assignment from Inventors to FAURC 1097-031USP1 - 1097-054USP1 (Fully Executed)#page4.tif source=Assignment from Inventors to FAURC 1097-031USP1 - 1097-054USP1 (Fully Executed)#page5.tif source=CONFIRMATION REC#page1.tif

PATENT REEL: 057928 FRAME: 0314 10/27/21, 10:46 AM Assignment

# PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

# **CONVEYING PARTY DATA**

Name	Execution Date
	10/20/2021
HARI KALVA	10/20/2021

## **RECEIVING PARTY DATA**

Name:	OP SOLUTIONS, LLC
Street Address:	368 MIDDLE STREET
City:	AMHERST
State/Country:	MASSACHUSETTS
Postal Code:	01002

## PROPERTY NUMBERS Total: 23

Property Type	Number
Application Number:	62856339
PCT Number:	US1938499
Application Number:	62883503
Application Number:	62883484
Application Number:	62883480
Application Number:	62883459
Application Number:	62883454
Application Number:	62883407
Application Number:	62932597
PCT Number:	US1963707
PCT Number:	US1963704
PCT Number:	US1963698
PCT Number:	US1963694
Application Number:	63009978
Application Number:	17394511
Application Number:	63235552

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REEL: 057928 FRAME: 0315

10/27/21, 10:46 AM **Assignment** 

Application Number:	63235438
PCT Number:	US2147927
PCT Number:	US2147902
PCT Number:	US2147886
PCT Number:	US2147857
Application Number:	63249984
Application Number:	63252266

#### CORRESPONDENCE DATA

Fax Number:

Phone: 6175773963

Email: docketing@caldwellip.com

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that is unsuccessful, it will be sent via US Mail.

CALDWELL INTELLECTUAL PROPERTY LAW, LLC Correspondent Name:

Address Line 1: 200 CLARENDON STREET

Address Line 2: 59TH FLOOR

Address Line 4: BOSTON, MASSACHUSETTS 02116

NAME OF SUBMITTER:	KEEGAN M. CALDWELL
Signature:	/KEEGAN M. CALDWELL/
Date:	10/26/2021

#### Total Attachments: 5

source=Assignment from Inventors to FAURC 1097-031USP1 - 1097-054USP1 (Fully Executed)#page1.tif source=Assignment from Inventors to FAURC 1097-031USP1 - 1097-054USP1 (Fully Executed)#page2.tif source=Assignment from Inventors to FAURC 1097-031USP1 - 1097-054USP1 (Fully Executed)#page3.tif source=Assignment from Inventors to FAURC 1097-031USP1 - 1097-054USP1 (Fully Executed)#page4.tif source=Assignment from Inventors to FAURC 1097-031USP1 - 1097-054USP1 (Fully Executed)#page5.tif

#### RECEIPT INFORMATION

EPAS ID: PAT6988207 **Receipt Date:** 10/26/2021

#### ASSIGNMENT

We, Borivoje Furht, and Hari Kalva, the undersigned, for good and valuable consideration, the receipt of which is hereby acknowledged, confirm that we have sold and assigned, and do hereby assign, sell and transfer to Florida Atlantic University Research Corporation ("FAURC"), Boca Raton, FL, and to its successors, assigns and legal representatives, collectively hereinafter referred to as the ASSIGNEE: (1) our entire right, title and interest for the United States and in all countries, in and to any and all inventions, discoveries and applications which are disclosed in the application for United States Letters Patent identified in Appendix "A" attached hereto and including any subsequently filed applications in any country of the world, which claim priority to, and/or the benefit of the identified U.S. Patent Applications, and including any renewals, revivals, reissues, reexaminations, extensions, continuations and divisions thereof and any substitute applications therefor; (2) the full and complete right to file patent applications in the name of the ASSIGNEE, its designee, or in my/our names as the ASSIGNEE, or its designee's election, on the aforesaid inventions, discoveries and applications in all countries of the world; (3) the entire right, title and interest in and to any Letters Patent which may issue thereon in the United States or in any country, and any renewals, revivals, reissues, reexaminations and extensions thereof, and any patents of confirmation, registration and importation of the same; and (4) the entire right, title and interest in all Convention and Treaty Rights of all kinds thereon, including without limitation all rights of priority in any country of the world, in and to the above inventions, discoveries and applications.

We hereby authorize and request the competent authorities to grant and to issue any and all such Letters Patent in the United States and throughout the world to the ASSIGNEE of the entire right, title and interest therein, as fully and entirely as the same would have been held and enjoyed by me had this assignment, sale and transfer not been made.

We agree, at any time, upon the request of the ASSIGNEE, to execute and to deliver to the ASSIGNEE any additional applications for patents for said inventions and discoveries, or any part or parts thereof, and any applications for patents of confirmation, registration and importation based on any Letters Patent issuing on said inventions, discoveries, or applications and divisions, continuations, renewals, revivals, reissues, reexaminations and extensions thereof.

We further agree at any time to execute and to deliver upon request of the ASSIGNEE such additional documents, if any, as are necessary or desirable to secure patent protection on said inventions, discoveries and applications throughout all countries of the world, and otherwise to do the necessary to give full effect to and to perfect the rights of the ASSIGNEE under this Assignment, including the execution, delivery and procurement of any and all further documents evidencing this assignment, transfer and sale as may be necessary or desirable.

We hereby covenant that no assignment, sale, agreement, or encumbrance has been or will be made or entered into which would conflict with this assignment.

We further covenant that ASSIGNEE will, upon its request, be provided promptly with all pertinent facts and documents relating to said invention and said Letters Patent and legal equivalents as may be known and accessible to ASSIGNOR and will testify as to the same in any

interference, litigation or proceeding related thereto and will promptly execute and deliver to ASSIGNEE or its legal representatives any and all papers, instruments or affidavits required to apply for, obtain, maintain, issue and enforce said application, said invention and said Letters Patent and said equivalents thereof which may be necessary or desirable to carry out the purposes thereof.
Date: 10/20/2021 //mofuel/
Date: /0/20/202/ /NO Fueld Signature of: Borivoje Furht
M 2 00 L-
IN WITNESS WHEREOF, I, Maria Pin/O, hereby declare (Printed Name of Witness)
(Printed Name of Witness)
that I was personally present and did see the above-named person dully sign and execute the
assignment.
Naws
(Signature of Witness)
Date: 10/20/2021
IN WITNESS WHEREOF, I, Nota Ling Neghenko, hereby declare (Printed Name of Witness)
that I was personally present and did see the above-named person dully sign and execute the
assignment.
Meshenia
(Signature of Witness)
Date: 10/20/2021
Date: 10/20/201)
Signature of: Hari Kalva
IN WITNESS WHEREOF, L. Maria Pinto, hereby declare
IN WITNESS WHEREOF, I, //////////////////////////////////
that I was personally present and did see the above-named person dully sign and execute the
assignment.
Mary
(Signature of Witness)
Date: 10/20/2021

IN WITNESS WHEREOF, I,	Natalija	Neshenko	, hereby declare		
	2 L. R. B.				
that I was personally present and assignment.	l did see the above-	named person dully sign	and execute the		
Medienuo					
(Signature of Witness)					
Date: 10/20/202/					

# Appendix A:

Bocket No.	Application No.	Date Filed	Application Title
1097-031USP1	62/856,339	6/3/2019	MERGE CANDIDATES REORDER BASED ON GLOBAL MOTION VECTOR
1097-034PCT1	PCT/US19/38499	6/21/2019	BLOCK LEVEL GEOMETRIC PARTITIONING
1097-010USP1	62/883,503	8/6/2019	FRAME BUFFERING IN ADAPTIVE RESOLUTION MANAGEMENT IMPLICIT SIGNALING OF ADAPTIVE RESOLUTION MANAGEMENT BASED ON
1097-009USP1	62/883,484	8/6/2019	FRAME TYPE ADAPTIVE RESOLUTION MANAGEMENT
1097-008USPI	62/883,480	8/6/2019	USING SUB-FRAMES ADAPTIVE RESOLUTION MANAGEMENT
1097-007USP1	62/883,459	8/6/2019	SIGNALING ADAPTIVE RESOLUTION MANAGEMENT
1097-006USP1	62/883,454	8/6/2019	PREDICTION RESCALING BLOCK-BASED ADAPTIVE RESOLUTION
1097-00SUSP1	62/883,407	8/6/2019	MANAGEMENT METHODS AND SYSTEMS FOR ADAPTIVE
1097-037USP1	62/932,597	11/8/2019	CROPPING ADAPTIVE TEMPORAL FILTER FOR AN UNAVAILABLE REFERENCE PICTURE CROSS-
1097-014PCT1	PCT/US19/63707	11/27/2019	REFERENCE TO RELATED APPLICATIONS BLOCK-BASED SPATIAL ACTIVITY MEASURES
1097-013PCT1	PCT/US19/63704	11/27/2019	FOR PICTURES CROSS-REFERENCE TO RELATED APPLICATIONS BLOCK-BASED PICTURE FUSION FOR CONTEXTUAL SEGMENTATION AND
1097-012PCT1	PCT/US19/63698	11/27/2019	PROCESSING ADAPTIVE BLOCK UPDATE OF UNAVAILABLE REFERENCE FRAMES USING EXPLICIT AND
1097-011PCT1	PCT/US19/63694	11/27/2019	IMPLICIT SIGNALING
1097-040USP1	63/009,978	4/14/2020	METHODS AND SYSTEMS OF VIDEO CODING USING REFERENCE REGIONS BLOCK-BASED ADAPTIVE RESOLUTION
1097-005USCI	17/394,511	8/5/2021	MANAGEMENT SYSTEMS AND METHODS FOR JOINT
1097-052USP1	63/235,552	8/20/2021	OPTIMIZATION TRAINING
1097-051USP1	63/235,438	8/20/2021	SYSTEMS AND METHODS FOR DUAL-PURPOSE ENCODER-SIDE PREPROCESSING
1097-044PCT1	PCT/US21/47927	8/27/2021	METHODS AND SYSTEMS FOR COMBINED LOSSLESS AND LOSSY CODING
1097-043PCTI	PCT/US21/47902	8/27/2021	METHODS AND SYSTEMS FOR COMBINED LOSSLESS AND LOSSY CODING METHODS AND SYSTEMS OF ADAPTIVE
1097-042PCT1	PCT/US21/47886	8/27/2021	GEOMETRIC PARTITIONING METHODS AND SYSTEMS OF ADAPTIVE
1097-041PCT1	PCT/US21/47857	8/27/2021	GEOMETRIC PARTITIONING

1097-053USP1	63/249,984	9/29/2021	SYSTEMS AND METHODS FOR SCALABLE VIDEO CODING FOR MACHINES SYSTEMS AND METHODS FOR PREDICTIVE
1097-054USP1	63/252,266	10/5/2021	CODING