PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2

EPAS ID: PAT3165340

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
JOSEPH KIOK	10/12/2011
GREGORY ALLEN BROOME	11/04/2011
RICHARD JOSEPH FLIAM	10/18/2011
SAM SCHWARTZ	09/28/2011
KEVIN CHRISTOPHER FLANAGAN	10/03/2011

RECEIVING PARTY DATA

Name: COMCAST CABLE COMMUNICATIONS, LLC	
Street Address: 1701 JFK BOULEVARD	
City:	PHILADELPHIA
State/Country:	PENNSYLVANIA
Postal Code:	19103

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	14582290

CORRESPONDENCE DATA

Fax Number: (202)824-3001

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: (202) 824-3000

bwptopat@bannerwitcoff.com, msigur@bannerwitcoff.com Email:

Correspondent Name: BANNER & WITCOFF, LTD.

Address Line 1: 1100 13TH ST. NW

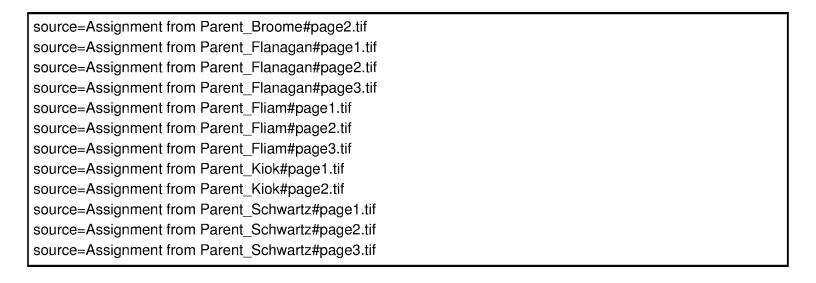
Address Line 2: STE 1200

Address Line 4: WASHINGTON, D.C. 20005

ATTORNEY DOCKET NUMBER:	007412.02890
NAME OF SUBMITTER:	BETTY E. LEE
SIGNATURE:	/Betty E. Lee/
DATE SIGNED:	12/30/2014

Total Attachments: 13

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Attorney Docket No.: 007412.01482 and 007412.01484

Serial Numbers: 61/442,628 and Filing Dates: February 14, 2011 and

Inventors: Joseph Kiok, Allen Broome, Richard Fliam, Sam Schwartz and Kevin Flanagan

For good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the undersigned hereby assign to:

COMCAST CABLE COMMUNICATIONS, LLC

having a place of business at 1701 JFK Boulevard, Philadelphia, PA 19103, its successors and assigns, the entire right, title and interest in the invention or improvements of the undersigned disclosed in applications for Letters Patent of the United States, entitled:

IMAGE SAMPLING FROM MULTICAST STREAMS

and identified as Attorney Docket No. 007412.01482 and 007412.01484 in the offices of Banner & Witcoff, Ltd. and in said applications and any and all other applications, both United States and foreign, which the undersigned may file, either solely or jointly with others, on said invention or improvements, and in any and all Letters Patent of the United States and foreign countries, which may be obtained on any of said applications, and in any reissue or extension of such patents, and further assigns to said assignee the priority right provided by the International Convention.

The undersigned hereby authorize and request the Commissioner of Patents and Trademarks to issue said Letters Patent to said assignee.

The undersigned hereby authorize and request the attorneys of record in said applications to insert in this assignment the filing date and serial number of said applications when officially known.

The undersigned warrant themselves to be the owners of the entire right, title and interest in said invention or improvements and to have the right to make this assignment, and further warrant that there are no outstanding prior assignments, licenses, or other encumbrances on the interest herein assigned.

For said considerations and without additional charge the undersigned hereby agree, upon the request and at the expense of said assignee, its successors and assigns, to execute any and all divisional. continuation and substitute applications for said invention or improvements, and any necessary oath, affidavit or declaration relating thereto, and any application for the reissue or extension of any Letters Patent that may be granted upon said applications and any and all applications and other documents for Letters Patent in foreign countries on said invention or improvements, that said assignee, its successors or assigns may deem necessary or expedient, and for the said considerations and without additional charge the undersigned authorize said assignee to apply for patents for said invention or improvements in its own name in such countries where such procedure is proper and further agree, upon the request of and without additional charge to said assignee, its successors and assigns, to cooperate to the best of the ability of the undersigned with said assignee, its successors and assigns, in any proceedings or transactions involving such applications or patents, including the preparation and execution of preliminary statements, giving and producing evidence, and performing any and all other acts necessary to obtain, maintain and enforce said Letters Patent, both United States and foreign, and vest all rights therein hereby conveyed in the assignee, its successors and assigns, whereby said Letters Patent will be held and enjoyed by the said assignee, its successors and assigns, to the full end of the term for which said Letters Patent will be

granted, as fully and entirely as the same would have been held and enjoyed by the undersigned if this assignment had not been made.

Date:		Joseph Kiok
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	. ,,	Witness GAWAM
Date:	<u>11- 4-2011</u>	Allen Broome
Date:		
		Witness
Date:		
		Witness
Date:		Richard Fliam
Date:		Attharu Fhani
		Witness
Date:		
		Witness

ASSIGNMENT

Attorney Docket No.: 007412.01482 and 007412.01484

Serial Numbers: 61/442,628 and Filing Dates: February 14, 2011 and

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assignment had	not been made.	
Date:	Joseph Kiok	
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Date:	Allen Broome	
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	Witness	
Date:	Richard Fliam	
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PATEN^IT REEL: 034600 FRAME: 0052

Date:		Sam Schwartz
Date:		
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Date:	10/3/2011	Managan Kevin Flanagan
Date:	10/3/2011	EZ

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Attorney Docket No.: 007412.01482 and 007412.01484

Serial Numbers: 61/442,628 and Filing Dates: February 14, 2011 and

Inventors Joseph Kiok, Allen Broome, Richard Fliam, Sam Schwartz and Kevin Flanagan

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IMAGE SAMPLING FROM MULTICAST STREAMS

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Date:		Joseph Kiok	
Date:		Witness	
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Date:		Allen Broome	
Date:		Witness	
Date:		Witness	
Date:	10/18/2011	Richard Fham	
Date:	10/18/2011	amanda m Sm	
Date:	10/19/2011	Witness Witness	

Date:	 Sam Schwartz
Date:	 Witness
Date:	 Witness
Date:	 Kevin Flanagan
Date:	 Witness
Date:	 Witness

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Comcast

PATENT REEL: 034600 FRAME: 0056

303-267-6628

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Attorney Docket No.: 007412.01482 and 007412.01484

Serial Numbers: 61/442,628 and Filing Dates: February 14, 2011 and

Inventors: Joseph Kiok, Allen Broome, Richard Fliam, Sam Schwartz and Kevin Flanagan

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Date:	10/12/11	
Date:	18/12/11	Joseph Kiok
Date:	10/12/11	Witness Witness William Ton Witness
Date:		Allen Broome
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Date:		Witness
Date:		Richard Fliam
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Attorney Docket No.: 007412.01482 and 007412.01484

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Date:		
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Date:	9/28/2011	Sam Schwartz
Date:	<u> </u>	
Date:	<u> </u>	Witness
Date:		Kevin Flanagan
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RECORDED: 12/30/2014