

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT7383159

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
KAI XU	06/18/2021
ESMAEL DINAN	06/18/2021
HUA ZHOU	06/18/2021
YUNJUNG YI	06/22/2021
ALI CIRIK	06/18/2021
JONGHYUN PARK	06/18/2021
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	COMCAST CABLE COMMUNICATIONS, LLC
<b>Street Address:</b>	1701 JFK BOULEVARD
<b>City:</b>	PHILADELPHIA
<b>State/Country:</b>	PENNSYLVANIA
<b>Postal Code:</b>	19103
<b>PROPERTY NUMBERS Total: 2</b>	
<b>Property Type</b>	<b>Number</b>
Application Number:	63046355
Application Number:	17364446
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	
<i>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.</i>	
<b>Email:</b>	dbelson@bannerwitcoff.com, bwptopat@bannerwitcoff.com
<b>Correspondent Name:</b>	BANNER WITCOFF
<b>Address Line 1:</b>	1100 13TH ST NW
<b>Address Line 2:</b>	#1200
<b>Address Line 4:</b>	WASHINGTON, D.C. 20005
<b>ATTORNEY DOCKET NUMBER:</b>	007412.05422,5418
<b>NAME OF SUBMITTER:</b>	VENKATRAM PEPKAYALA
<b>SIGNATURE:</b>	/Venkatram Pepakayala/
<b>DATE SIGNED:</b>	06/15/2022

**Total Attachments: 7**

source=20-1075P Executed Provisional Assignment (Inventors to Comcast)#page1.tif

source=20-1075P Executed Provisional Assignment (Inventors to Comcast)#page2.tif

source=20-1075P Executed Provisional Assignment (Inventors to Comcast)#page3.tif

source=20-1075P Executed Provisional Assignment (Inventors to Comcast)#page4.tif

source=20-1075P Executed Provisional Assignment (Inventors to Comcast)#page5.tif

source=20-1075P Executed Provisional Assignment (Inventors to Comcast)#page6.tif

source=20-1075P Executed Provisional Assignment (Inventors to Comcast)#page7.tif

## ASSIGNMENT

Attorney Docket No.: 007412.05418 (20-1075P)

Serial Number: 63/046355

Filing Date: June 30, 2020

Inventors: Kai Xu, Esmael Dinan, Hua Zhou, Yunjung Yi, Ali Cirik, Jonghyun Park

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 (including but not limited to all non-provisional, divisional, continuation, continuation-in-part, continuing prosecution applications, requests for continuing examinations, reissue, and substitute applications worldwide; all extensions of such applications; and all patent applications, patents, and/or other similar governmental grants or issuances worldwide that directly or indirectly claims or forms a basis for claiming priority thereto) of the undersigned disclosed in an application for Letters Patent of the United States, entitled:

#### **Beam Management Procedure in Wireless Networks**

and identified as Attorney Docket No. 007412.05418 in the offices of Barner & Witcoff, Ltd. and in said application 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 (including but not limited to all non-provisional, divisional, continuation, continuation-in-part, continuing prosecution applications, requests for continuing examinations, reissue, and substitute applications worldwide; all extensions of such applications; and all patent applications, patents, and/or other similar governmental grants or issuances worldwide that directly or indirectly claims or forms a basis for claiming priority thereto), 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 application to insert in this assignment the filing date and serial number of said application when officially known.

The undersigned warrant themselves to be the owners of the entire right, title and interest in said invention or improvements (including but not limited to all non-provisional, divisional, continuation, continuation-in-part, continuing prosecution applications, requests for continuing examinations, reissue, and substitute applications worldwide; all extensions of such applications; and all patent applications, patents, and/or other similar governmental grants or issuances worldwide that directly or indirectly claims or forms a basis for claiming priority thereto) 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 non-provisional, divisional, continuation, continuation-in-part, continuing prosecution applications, requests for continuing examinations, reissue, and substitute applications worldwide, all extensions of such

applications, and all patent applications, patents, and/or other similar governmental grants or issuances worldwide that directly or indirectly claims or forms a basis for claiming priority thereto, 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 application 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: 6/18/2021 Kai Xu  
Kai Xu

Date: 06-18-2021 [Signature]  
Witness

Date: 6/18/2021 [Signature]  
Witness

Date: \_\_\_\_\_  
Esmael Dinan

Date: \_\_\_\_\_  
Witness

Date: \_\_\_\_\_  
Witness

Date: \_\_\_\_\_  
Hua Zhou

Date: \_\_\_\_\_  
Witness

Date: \_\_\_\_\_  
Witness

applications, and all patent applications, patents, and/or other similar governmental grants or issuances worldwide that directly or indirectly claims or forms a basis for claiming priority thereto, 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 application 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: \_\_\_\_\_

Kai Xu

Date: \_\_\_\_\_

Witness

Date: \_\_\_\_\_

Witness

Date: 6/18/2021

Esmal Dinal  
Esmael Dinal

Date: 6/18/2021

Witness

Date: 6/18/2021

Witness

Date: \_\_\_\_\_

Hua Zhou

Date: \_\_\_\_\_

Witness

Date: \_\_\_\_\_

Witness

applications, and all patent applications, patents, and/or other similar governmental grants or issuances worldwide that directly or indirectly claims or forms a basis for claiming priority thereto, 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 application 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: \_\_\_\_\_  
Kai Xu

Date: \_\_\_\_\_  
Witness

Date: \_\_\_\_\_  
Witness

Date: \_\_\_\_\_  
Esmael Dinan

Date: \_\_\_\_\_  
Witness

Date: \_\_\_\_\_  
Witness

Date: 06/18/2021  
Hua Zhou

Date: 06/18/2021  
Witness

Date: 6/18/2021  
Witness

Date: 6/22/2021

Yunjung Yi

Date: 6/22/2021

Witness

Date: 6/22/2021

Witness

Date: \_\_\_\_\_

Ali Cirik

Date: \_\_\_\_\_

Witness

Date: \_\_\_\_\_

Witness

Date: \_\_\_\_\_

Jonghyun Park

Date: \_\_\_\_\_

Witness

Date: \_\_\_\_\_

Witness

Date: \_\_\_\_\_

Yunjung Yi

Date: \_\_\_\_\_

Witness

Date: \_\_\_\_\_

Witness


Date: 06/18/2021

  
Ali Cirik

Date: 06/18/2021

  
Witness

Date: 06/18/2021

  
Witness

Date: \_\_\_\_\_

Jonghyun Park

Date: \_\_\_\_\_

Witness

Date: \_\_\_\_\_

Witness



Date: \_\_\_\_\_  
Yunjung Yi

Date: \_\_\_\_\_  
Witness

Date: \_\_\_\_\_  
Witness

Date: \_\_\_\_\_  
Ali Cirik

Date: \_\_\_\_\_  
Witness

Date: \_\_\_\_\_  
Witness

Date: 06-18-2021  
Jonghyun Park

Date: 6/18/2021  
Witness

Date: June 18, 2021  
Witness