## 506304771 10/15/2020 PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:		NEW A	NEW ASSIGNMENT			
NATURE OF CONVEYANCE:		ASSIG	ASSIGNMENT			
ONVEYING PARTY DA	ATA					
	Name	Name				
MOO-RYONG RA				01/03/2018		
RECEIVING PARTY DA	ТА					
Name: AT&T INTELLECTUAL PROPERTY I, L.P.						
Street Address:	754 PEACHTREE STREET					
Internal Address:	SUITE 7C					
City:	ATLAN	ATLANTA				
State/Country:	GEORGIA					
Postal Code:	30308	30308				
			Number			
Property Type Application Number: 1						
Application Number:		16233075	Number			
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## ASSIGNMENT

WHEREAS I, Moo-Ryong Ra residing at Basking Ridge, New Jersey hereafter referred to as Assignor, am listed as an inventor on a patent application entitled "MINIMIZING STALL DURATION TAIL PROBABILITY IN OVER-THE-TOP STREAMING SYSTEMS" having AT&T Docket No. 2018-0639, the patent application to be filed in the United States Patent & Trademark Office; and

WHEREAS, AT&T Intellectual Property I, L.P., a partnership organized and existing under the laws of Nevada and having an address at 675 West Peachtree Street, Atlanta, Georgia, 30308 (hereinafter referred to as Assignee), desires to acquire the entire right, title and interest for the United States of America and elsewhere throughout the world in and to said invention and the patent application identified above, including any and all divisions and continuations thereof and any and all Letters Patent which may be granted thereon, including any and all renewals, reissues and prolongations thereto;

NOW THEREFORE, be it known that for and in consideration of the sum of Ten Dollars (\$10.00) and other good and valuable consideration the receipt of which from Assignee is hereby acknowledged, I, as Assignor, have sold, assigned, transferred, and set over, and do hereby sell, assign, transfer, and set over unto the Assignee, its lawful successors and assigns, my entire right, title, and interest in and to this invention and this non-provisional application, and all divisions, substitutions, and continuations thereof; and all Letters Patent of the United States which may be granted thereon, and all reexaminations and reissues thereof; and all rights to claim priority on the basis of the above provisional application (if any), as well as all rights to claim priority on the basis of this application; and all applications for Letters Patent which may hereafter be filed for this invention in any foreign country and all Letters Patent which may be granted on this invention in any foreign country, including certificates of inventions, utility models, industrial design protection, design patent protection, and other governmental grants or issuances; and all extensions, renewals, prolongations, and reissues thereof; to have and to hold for the sole and exclusive use and benefit of the Assignee, its successors and assigns, to the full end of the term and terms for all such patents;

AND, I HEREBY authorize and request the Commissioner of Patents and Trademarks of the United States and any official of any foreign country whose duty it is to issue patents on applications as described above, to issue all Letters Patent for this invention to Assignee, its successors and assigns, in accordance with the terms of this Assignment;

AND, I HEREBY covenant that I have the full right to convey the interest assigned by this Assignment, and I have not executed and will not execute any assignment, sale, license, agreement, or encumbrance in conflict with this Assignment;

AND, I HEREBY further covenant and agree, for the Assignor and the Assignor's legal representatives, that I will, without further consideration, communicate with Assignee, its successors and assigns, any facts known to us respecting this invention; assist the Assignee in the prosecution of the patent application identified above; assist in the making and prosecution of any other patent applications that the Assignee may elect to make covering the invention identified above; testify in any interference, litigation, or other legal proceeding; sign all lawful papers when called upon to do so; execute and deliver any and all papers that may be necessary or desirable to perfect the title to this invention in said Assignee, its successors or assigns; execute all divisional, continuation, and reissue applications; make all rightful oaths and generally do everything **PATENT**.

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REEL: 054064 FRAME: 0118

possible to aid Assignee, to obtain and enforce proper patent protection for this invention in the United States and any foreign country, it being understood that any expense incident to the execution of such papers shall be borne by the Assignee; and hereby instruct, and further covenant and agree to bind our heirs, legal representatives, and assigns, to do same, without compensation, but at the expense of Assignee or its representatives.

AND, I HEREBY consent that a copy of this assignment shall be deemed a full legal and formal equivalent of any document which may be required in any country in proof of the right of **AT&T Intellectual Property I, L.P.** to apply for patent or other form of protection for said inventions and to claim the aforesaid benefit of the right of priority.

This Assignment may be executed in any number of counterparts, each of which when so executed and delivered shall be deemed an original, and such counterparts together shall constitute one and the same instrument. A facsimile copy of this Assignment, or any form of an electronic copy of this Assignment, including the signature pages hereto, shall be deemed to be an original.

IN TESTIMONY WHEREOF, I have hereunto set my hand this 3rd day of Jan 2018.

Moo-Ryong Ra

State of Will M County of Strait 1/ T

On this 3 day of \_\_\_\_\_\_, 2018, before me a Notary Public in and for the above County and State, personally appeared **Moo-Ryong Ra**, and acknowledged the execution of the foregoing assignment as his/her free act and deed for the purpose herein set forth.

My Commission Expires: \_\_\_\_\_\_\_ PATENT 2 REEL: 054064 FRAME: 0119 **RECORDED: 10/15/2020**