504930374 05/24/2018

PATENT ASSIGNMENT COVER SHEET

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| SUBMISSION TYPE: | NEW ASSIGNMENT |
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| NATURE OF CONVEYANCE: | ASSIGNMENT |

CONVEYING PARTY DATA

| Name | Execution Date |
|---|----------------|
| ELECTRONICS AND TELECOMMUNICATIONS RESEARCH INSTITUTE | 04/23/2018 |
| KYONGGI UNIVERSITY INDUSTRY & ACADEMIA COOPERATION FOUNDATION | 04/23/2018 |

RECEIVING PARTY DATA

| Name: | ELECTRONICS AND TELECOMMUNICATIONS RESEARCH INSTITUTE | |
|-----------------|---|--|
| Street Address: | 218 GAJEONG-RO, YUSEONG-GU 34129 | |
| City: | DAEJEON | |
| State/Country: | KOREA, REPUBLIC OF | |

PROPERTY NUMBERS Total: 1

| Property Type | Number |
|---------------------|----------|
| Application Number: | 15714690 |

CORRESPONDENCE DATA

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| NAME OF SUBMITTER: | CHARLES Y. PARK | |
| SIGNATURE: | /Charles Y. Park/ | |
| DATE SIGNED: | 05/24/2018 | |

Total Attachments: 3

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PATENT 504930374 REEL: 045896 FRAME: 0810

ASSIGNMENT

For valuable consideration,

ELECTRONICS AND TELECOMMUNICATIONS RESEARCH

INSTITUTE, a Korean corporation having principal executive offices or place of business at 218 Gajeong-ro, Yuseong-gu, Daejeon 34129, Republic of Korea

And

KYONGGI UNIVERSITY INDUSTRY & ACADEMIA COOPERATION

FOUNDATION, a Korean corporation having principal executive offices or place of business at 154-42, Gwanggyosan-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16227, Republic of Korea (hereinafter called "the Assignors"),

hereby assign to:

ELECTRONICS AND TELECOMMUNICATIONS RESEARCH INSTITUTE, a Republic of Korea corporation having principal executive offices or place of business at 218 Gajeong-ro, Yuseong-gu, Daejeon 34129, Republic of Korea; and

its successors and assigns (collectively hereinafter called "the Assignee"), the entire right, title and interest throughout the world in the inventions and improvements which are subject of U.S. Patent Application:

| Application | Filing Date | Title |
|-------------|-------------|---|
| No. | 4 4 4 | |
| 15/714,690 | 09-25-2017 | AUDIO METADATA PROVIDING APPARATUS AND METHOD, AND MULTICHANNEL AUDIO DATA PLAYBACK APPARATUS AND METHOD TO SUPPORT DYNAMIC FORMAT CONVERSION |

this Assignment includes said applications, any and all United States and foreign patents, utility models, and design registrations granted for any of said inventions or improvements, any reissues, supplemental examinations, and reexaminations, and the right to claim priority based on the filing date of said applications under the International Convention for the Protection of Industrial Property, the Patent Cooperation Treaty, the European Patent Convention, and all other treaties of like purposes; and Assignors authorizes the Assignee to apply in all countries in Assignors' name or in its own name for patents, utility models, design registrations and like rights of exclusion and for inventors' certificates for said inventions and improvements; and Assignors agrees for itself and its heirs, legal representatives and assigns, without further

PATENT REEL: 045896 FRAME: 0811 compensation to perform such lawful acts and to sign such further applications, assignments, preliminary statements and other lawful documents as the Assignee may reasonably request to effectuate fully this Assignment.

PATENT REEL: 045896 FRAME: 0812 IN TESTIMONY/WITNESS WHEREOF, undersigned Assignors intending to be legally bound, has hereto affixed its signature by its duly authorized representative.

| Signature of Representative: (ELECTRONICS AND TELECOMMUNICATIONS RESEARCH INSTITUTE) Yung-Sik Kwon Printer Name Director Title This 23 day of April 2018 Signature of Representative: (KYONGGI UNIVERSITY INDUSTRY & ACADEMIA COOPERATION FOUNDATION) Joon - Seong Lee Printed Name | This 23 day of April, 2018 | Yang-sik Kigon |
|--|-----------------------------|--------------------------------|
| TELECOMMUNICATIONS RESEARCH INSTITUTE) Yung-Sik Kwon Printer Name Director Title This 23 day of April , 2018 Signature of Representative: (KYONGGI UNIVERSITY INDUSTRY & ACADEMIA COOPERATION FOUNDATION) Joon - Seong Lee Printed Name | | Signature of Representative: |
| TELECOMMUNICATIONS RESEARCH INSTITUTE) Yung-Sik Kwon Printer Name Director Title This 23 day of April , 2018 Signature of Representative: (KYONGGI UNIVERSITY INDUSTRY & ACADEMIA COOPERATION FOUNDATION) Joon - Seong Lee Printed Name | | (ELECTRONICS AND |
| Yung-Sik Kwon Printer Name Director Title This 23 day of April 2018 Signature of Representative: (KYONGGI UNIVERSITY INDUSTRY & ACADEMIA COOPERATION FOUNDATION) Joon - Seong Lee Printed Name | | • |
| Printer Name Director Title This 23 day of April, 2018 Signature of Representative: (KYONGGI UNIVERSITY INDUSTRY & ACADEMIA COOPERATION FOUNDATION) Joon - Seong Lee Printed Name | | INSTITUTE) |
| Printer Name Director Title This 23 day of April, 2018 Signature of Representative: (KYONGGI UNIVERSITY INDUSTRY & ACADEMIA COOPERATION FOUNDATION) Joon - Seong Lee Printed Name | | |
| Director Title This 23 day of April 2018 Signature of Representative: (KYONGGI UNIVERSITY INDUSTRY & ACADEMIA COOPERATION FOUNDATION) Joon - Seong Lee Printed Name | | Yung-Sik Kwon |
| This _23 day of _April _, 2018 Signature of Representative: (KYONGGI UNIVERSITY INDUSTRY & ACADEMIA COOPERATION FOUNDATION) Joon - Seong Lee Printed Name | | Printer Name |
| This 23 day of April, 2018 Signature of Representative: (KYONGGI UNIVERSITY INDUSTRY & ACADEMIA COOPERATION FOUNDATION) Joon - Seong Lee Printed Name | | Director |
| This 23 day of 7913 2 2018 Signature of Representative: (KYONGGI UNIVERSITY INDUSTRY & ACADEMIA COOPERATION FOUNDATION) Joon - Seong Lee Printed Name | | Title |
| This 23 day of 7913 2 2018 Signature of Representative: (KYONGGI UNIVERSITY INDUSTRY & ACADEMIA COOPERATION FOUNDATION) Joon - Seong Lee Printed Name | | |
| Signature of Representative: (KYONGGI UNIVERSITY INDUSTRY & ACADEMIA COOPERATION FOUNDATION) Joon - Seong Lee Printed Name | This 23 day of April , 2018 | Toms, lee |
| ACADEMIA COOPERATION FOUNDATION Joon - Seong Lee Printed Name | | Signature of Representative: |
| ACADEMIA COOPERATION FOUNDATION Joon - Seong Lee Printed Name | | (KYONGGI UNIVERSITY INDUSTRY & |
| Joon - Seong Lee Printed Name | | |
| Printed Name | | FOUNDATION) |
| | | Joon-Seong Lee |
| Dean | | Printed Name |
| V V V | | Dean |

Title

PATENT REEL: 045896 FRAME: 0813

RECORDED: 05/24/2018