

VIA EXPRESS MAIL EV 425039082 US
CUSTOMER NO. 24498

FORM PTO-1595
Rev. 04/2003

10-15-04

06-30-2005



103031491

PU020118
5 Rec'd PCT/PTO 15 OCT 2004

U.S. DEPARTMENT OF COMMERCE
Patent and Trademark Office

1ET

To the Honorable Director of the United States Patent and

Please record the attached original documents or copy thereof.

1. Name of conveying party(ies):
**SEO WEON HEO; IVONETE MARKMAN;
JEONGSOON PARK; SAUL BRIAN GELFAND**

Additional name(s) of
conveying party(ies)
attached: ☒ Yes ☐ No

3. Nature of convenience:
☒ Assignment ☐ Merger
☐ Security Agreement ☐ Change of Name
☐ Other

Execution Date March 18, 12, 20 and 27, 2003, respectively

4. Application number(s) or patent number(s):
If this document is being filed together with a new application, the execution date of the application is:
A. Patent Application No.(s): **PCT/US03/10889**

Additional numbers attached? ☐ Yes ☐ No ☒ X

2. Name and address of receiving party(ies):
Name: **Thomson Licensing S.A.**
Internal Address:

Street Address: **46 Quai A. Le Gallo
F-92100 Boulogne-Billancourt, France**

Additional name(s) & address(es) attached? ☐ Yes ☒ No

5. Name and address of party to whom correspondence
concerning document should be mailed:
Name: **JOSEPH S. TRIPOLI**
Internal Address: **PATENT OPERATIONS
THOMSON LICENSING INC.**

Street Address: **P. O. Box 5312**

City: **PRINCETON** State: **NEW JERSEY** Zip: **08543-5312**

6. Total number of applications and patents involved: **1**

7. Total Fee (37 CFR 3.41): **\$40.00**
☐ Enclosed
☒ Authorized to be charged to deposit account

8. Deposit account number:
07-0832

DO NOT USE THIS SPACE

9. Statement and signature.
To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

JOSEPH J. OPALACH
Name of Person Signing

Signature - Registration No. 36,229

10/15/04
Date

Total number of pages including cover sheet, attachments, and document **7**

DO NOT DETACH THIS PORTION

Mail documents to be recorded with this sheet to:

**Mail Stop Assignment Recordation Services
Director of the United States Patent and Trademark Office
P. O. Box 1450
Alexandria, Virginia 22313-1450**

Public burden reporting for this sample cover sheet is estimated to average about 30 minutes per document to be recorded, including time for reviewing the document and gathering the data needed, and completing and reviewing the sample cover sheet. Send comments regarding this burden estimate to the U.S. Patent and Trademark Office, Office of Information Systems, PK2-1000C, Washington, D.C. 20231, and to the Office of Management and Budget, Paperwork Reduction Project (0651-0011), Washington, D.C. 20503.

PATENT
REEL: 016726 FRAME: 0727

ASSIGNMENT AND AGREEMENT

I hereby declare that I am the sole inventor (if only one inventor is named below) or one of _____ joint inventors
(if plural inventors are named below) of the inventions relating to **DECISION FEEDBACK EQUALIZER**

and described in Docket No. PU020118 and the thereupon-based International (Patent Cooperation Treaty) Application for patent about to be filed or lately filed by said corporation naming me/us as inventor(s).

For valuable consideration received, I hereby sell, assign and transfer to **THOMSON Licensing S.A.**, a corporation duly organized and existing under the laws of France, its successors, and assigns my entire right, title and interest, for all countries in and to said inventions and application, and all the rights and privileges under any and all Patents that may be granted therefor, and any divisions, continuations, reissues and extensions thereof.

I agree that, when requested, I will, without charge to said corporation but at its expense, sign all papers, take all rightful oaths, make all rightful declarations and do all acts which may be necessary, desirable or convenient for securing and maintaining patents or other forms of protection for said inventions in any and all countries and for vesting title thereto in said corporation, its successors, assigns or nominees.

I agree that I will communicate to said corporation or its representatives any facts known to me respecting said inventions and when requested by said corporation and at its expense will testify in any legal proceedings, and generally do everything possible to aid said corporation, its successors, assigns and legal representatives or nominees, to obtain or enforce proper protection for said inventions in any and all countries.

I authorize and empower said corporation, its successors, assigns or nominees, to make application for patent or other form of protection for said inventions in its or their own name, or in my/our name, in any and all countries and to invoke and claim for any application for patent or other form of protection for said inventions filed by it or them, the benefit of the right of priority provided by the International Convention for the Protection of Industrial Property, as amended, or by any convention which may henceforth be substituted for it, and to invoke and claim such right of priority without further written or oral authorization from me.

I hereby consent that a copy of this assignment shall be deemed a full legal and formal equivalent of any assignment, consent to file or like document which may be required in any country for any purpose and more particularly in proof of the right of the said corporation or its successors, assigns or nominees to apply for patent or other proper protection for said inventions, and to claim the aforesaid benefits of the right of priority provided by the International Convention for the Protection of Industrial Property, as amended, or by any convention which may henceforth be substituted for it.

I covenant with **THOMSON Licensing S.A.**, its successors, assigns, legal representatives, and nominees, that to the best of my knowledge the right, title and interest herein conveyed by me are free and clear of any encumbrance, and that I have full right to convey the same as herein expressed.

Signed at <u>Seoul, South Korea</u>	Date <u>Mar 18, 2003</u>
Inventor (1) <u>SEO WEON HEO</u> (Type or Print)	<u>[Signature]</u> (Signature in Full. No initials.)
Post Office Address <u>127-18 Gaebongbon-Dong, Guro-Gu, Seoul, South Korea 152-090</u>	
1st Witness <u>Hee Joo Jang</u> (Type or Print)	<u>[Signature]</u> (Signature in Full. No initials.)
2nd Witness <u>WON PYUNG JANG</u> (Type or Print)	<u>[Signature]</u> (Signature in Full. No initials.)
Signed at <u>Indianapolis, Indiana</u>	Date _____
Inventor (2) <u>IVONETE MARKMAN</u> (Type or Print)	_____ (Signature in Full. No initials.)
Post Office Address <u>11388 Royal Court, Carmel, Indiana 46032</u>	
1st Witness _____ (Type or Print)	_____ (Signature in Full. No initials.)
2nd Witness _____ (Type or Print)	_____ (Signature in Full. No initials.)
Signed at _____	Date _____
Inventor (3) <u>JEONGSOON PARK</u> (Type or Print)	_____ (Signature in Full. No initials.)
Post Office Address <u>738 Young Graduate House, West Lafayette, Indiana 47906</u>	
1st Witness _____ (Type or Print)	_____ (Signature in Full. No initials.)
2nd Witness _____ (Type or Print)	_____ (Signature in Full. No initials.)

After this Assignment has been recorded please RETURN to:

Patent Operations
THOMSON multimedia Licensing Inc.
P. O. Box 5312
Princeton, NJ 08543-5312

ASSIGNMENT AND AGREEMENT

Signed at	_____	Date	_____
Inventor (1)	<u>SAUL BRIAN GELFAND</u> (Type or Print)	_____	(Signature in Full. No initials.)
Post Office Address	<u>70 Sugar Maple Court, Lafayette, Indiana 47905</u>		
1st Witness	_____	_____	(Signature in Full. No initials.)
	(Type or Print)		
2nd Witness	_____	_____	(Signature in Full. No initials.)
	(Type or Print)		
Signed at	_____	Date	_____
Inventor (2)	_____	_____	(Signature in Full. No initials.)
	(Type or Print)		
Post Office Address	_____		
1st Witness	_____	_____	(Signature in Full. No initials.)
	(Type or Print)		
2nd Witness	_____	_____	(Signature in Full. No initials.)
	(Type or Print)		
Signed at	_____	Date	_____
Inventor (3)	_____	_____	(Signature in Full. No initials.)
	(Type or Print)		
Post Office Address	_____		
1st Witness	_____	_____	(Signature in Full. No initials.)
	(Type or Print)		
2nd Witness	_____	_____	(Signature in Full. No initials.)
	(Type or Print)		

After this Assignment has been recorded please RETURN to:

Patent Operations
THOMSON multimedia Licensing Inc.
P. O. Box 5312
Princeton, NJ 08543-5312

ASSIGNMENT AND AGREEMENT

I hereby declare that I am the sole inventor (if only one inventor is named below) or one of 4 joint inventors (if plural inventors are named below) of the inventions relating to **DECISION FEEDBACK EQUALIZER**

and described in Docket No. PU020118 and the thereupon-based International (Patent Cooperation Treaty) Application for patent about to be filed or lately filed by said corporation naming me/us as inventor(s).

For valuable consideration received, I hereby sell, assign and transfer to **THOMSON Licensing S.A.**, a corporation duly organized and existing under the laws of France, its successors, and assigns my entire right, title and interest, for all countries in and to said inventions and application, and all the rights and privileges under any and all Patents that may be granted therefor, and any divisions, continuations, reissues and extensions thereof.

I agree that, when requested, I will, without charge to said corporation but at its expense, sign all papers, take all rightful oaths, make all rightful declarations and do all acts which may be necessary, desirable or convenient for securing and maintaining patents or other forms of protection for said inventions in any and all countries and for vesting title thereto in said corporation, its successors, assigns or nominees.

I agree that I will communicate to said corporation or its representatives any facts known to me respecting said inventions and when requested by said corporation and at its expense will testify in any legal proceedings, and generally do everything possible to aid said corporation, its successors, assigns and legal representatives or nominees, to obtain or enforce proper protection for said inventions in any and all countries.

I authorize and empower said corporation, its successors, assigns or nominees, to make application for patent or other form of protection for said inventions in its or their own name, or in my/our name, in any and all countries and to invoke and claim for any application for patent or other form of protection for said inventions filed by it or them, the benefit of the right of priority provided by the International Convention for the Protection of Industrial Property, as amended, or by any convention which may henceforth be substituted for it, and to invoke and claim such right of priority without further written or oral authorization from me.

I hereby consent that a copy of this assignment shall be deemed a full legal and formal equivalent of any assignment, consent to file or like document which may be required in any country for any purpose and more particularly in proof of the right of the said corporation or its successors, assigns or nominees to apply for patent or other proper protection for said inventions, and to claim the aforesaid benefits of the right of priority provided by the International Convention for the Protection of Industrial Property, as amended, or by any convention which may henceforth be substituted for it.

I covenant with **THOMSON Licensing S.A.**, its successors, assigns, legal representatives, and nominees, that to the best of my knowledge the right, title and interest herein conveyed by me are free and clear of any encumbrance, and that I have full right to convey the same as herein expressed.

Signed at		Date	
Inventor (1)	<u>SEO WEON HEO</u> (Type or Print)		(Signature in Full. No initials.)
Post Office Address	<u>127-18 Gaebongbon-Dong, Guro-Gu, Seoul, South Korea 152-090</u>		
1st Witness			(Signature in Full. No initials.)
2nd Witness			(Signature in Full. No initials.)
Signed at	<u>Indianapolis, Indiana</u>	Date	<u>03/12/03</u>
Inventor (2)	<u>IVONETE MARKMAN</u> (Type or Print)		<u>Ivonete Markman</u> (Signature in Full. No initials.)
Post Office Address	<u>11388 Royal Court, Carmel, Indiana 46032</u>		
1st Witness	<u>Charise Antoinette Dennis</u> (Type or Print)		<u>Co. Antoinette Dennis</u> (Signature in Full. No initials.)
2nd Witness	<u>Shalana Monique Dauss</u> (Type or Print)		<u>Shalana Monique Dauss</u> (Signature in Full. No initials.)
Signed at		Date	
Inventor (3)	<u>JEONGSOON PARK</u> (Type or Print)		(Signature in Full. No initials.)
Post Office Address	<u>738 Young Graduate House, West Lafayette, Indiana 47906</u>		
1st Witness			(Signature in Full. No initials.)
2nd Witness			(Signature in Full. No initials.)

After this Assignment has been recorded please RETURN to:

Patent Operations
THOMSON multimedia Licensing Inc.
P. O. Box 5312
Princeton, NJ 08543-5312

ASSIGNMENT AND AGREEMENT

Signed at	_____	Date	_____
Inventor (1)	<u>SAUL BRIAN GELFAND</u> (Type or Print)	_____	(Signature in Full. No initials.)
Post Office Address	<u>70 Sugar Maple Court, Lafayette, Indiana 47905</u>		
1st Witness	_____	_____	(Signature in Full. No initials.)
	(Type or Print)		
2nd Witness	_____	_____	(Signature in Full. No initials.)
	(Type or Print)		
Signed at	_____	Date	_____
Inventor (2)	_____	_____	(Signature in Full. No initials.)
	(Type or Print)		
Post Office Address	_____		
1st Witness	_____	_____	(Signature in Full. No initials.)
	(Type or Print)		
2nd Witness	_____	_____	(Signature in Full. No initials.)
	(Type or Print)		
Signed at	_____	Date	_____
Inventor (3)	_____	_____	(Signature in Full. No initials.)
	(Type or Print)		
Post Office Address	_____		
1st Witness	_____	_____	(Signature in Full. No initials.)
	(Type or Print)		
2nd Witness	_____	_____	(Signature in Full. No initials.)
	(Type or Print)		

After this Assignment has been recorded please RETURN to:

Patent Operations
THOMSON multimedia Licensing Inc.
P. O. Box 5312
Princeton, NJ 08543-5312

ASSIGNMENT AND AGREEMENT

I hereby declare that I am the sole inventor (if only one inventor is named below) or one of
(if plural inventors are named below) of the inventions relating to **DECISION FEEDBACK EQUALIZER**

4 joint inventors

and described in Docket No. PU020118 and the thereupon-based International (Patent Cooperation Treaty) Application for patent about to be filed or lately filed by said corporation naming me/us as inventor(s).

For valuable consideration received, I hereby sell, assign and transfer to **THOMSON Licensing S.A.**, a corporation duly organized and existing under the laws of France, its successors, and assigns my entire right, title and interest, for all countries in and to said inventions and application, and all the rights and privileges under any and all Patents that may be granted therefor, and any divisions, continuations, reissues and extensions thereof.

I agree that, when requested, I will, without charge to said corporation but at its expense, sign all papers, take all rightful oaths, make all rightful declarations and do all acts which may be necessary, desirable or convenient for securing and maintaining patents or other forms of protection for said inventions in any and all countries and for vesting title thereto in said corporation, its successors, assigns or nominees.

I agree that I will communicate to said corporation or its representatives any facts known to me respecting said inventions and when requested by said corporation and at its expense will testify in any legal proceedings, and generally do everything possible to aid said corporation, its successors, assigns and legal representatives or nominees, to obtain or enforce proper protection for said inventions in any and all countries.

I authorize and empower said corporation, its successors, assigns or nominees, to make application for patent or other form of protection for said inventions in its or their own name, or in my/our name, in any and all countries and to invoke and claim for any application for patent or other form of protection for said inventions filed by it or them, the benefit of the right of priority provided by the International Convention for the Protection of Industrial Property, as amended, or by any convention which may henceforth be substituted for it, and to invoke and claim such right of priority without further written or oral authorization from me.

I hereby consent that a copy of this assignment shall be deemed a full legal and formal equivalent of any assignment, consent to file or like document which may be required in any country for any purpose and more particularly in proof of the right of the said corporation or its successors, assigns or nominees to apply for patent or other proper protection for said inventions, and to claim the aforesaid benefits of the right of priority provided by the International Convention for the Protection of Industrial Property, as amended, or by any convention which may henceforth be substituted for it.

I covenant with **THOMSON Licensing S.A.**, its successors, assigns, legal representatives, and nominees, that to the best of my knowledge the right, title and interest herein conveyed by me are free and clear of any encumbrance, and that I have full right to convey the same as herein expressed.

Signed at		Date	
Inventor (1)	<u>SEO WEON HEO</u> (Type or Print)		(Signature in Full. No initials.)
Post Office Address	<u>127-18 Gaebongbon-Dong, Guro-Gu, Seoul, South Korea 152-090</u>		
1st Witness	(Type or Print)		(Signature in Full. No initials.)
2nd Witness	(Type or Print)		(Signature in Full. No initials.)
Signed at	<u>Indianapolis, Indiana</u>	Date	
Inventor (2)	<u>IVONETE MARKMAN</u> (Type or Print)		(Signature in Full. No initials.)
Post Office Address	<u>11388 Royal Court, Carmel, Indiana 46032</u>		
1st Witness	(Type or Print)		(Signature in Full. No initials.)
2nd Witness	(Type or Print)		(Signature in Full. No initials.)
Signed at	<u>Purdue University W Lafayette, IN</u>	Date	<u>3/20/03</u>
Inventor (3)	<u>JEONGSOON PARK</u> (Type or Print)		<u>Jeongsoo Park</u> (Signature in Full. No initials.)
Post Office Address	<u>321 RAVENWOOD LANE, APT. C 47909</u> <u>738 Young Graduate House, West Lafayette, Indiana 47906</u>		
1st Witness	<u>Cheryl Leuck</u> (Type or Print)		<u>Cheryl Leuck</u> (Signature in Full. No initials.)
2nd Witness	<u>Julie A Comer</u> (Type or Print)		<u>Julie A Comer</u> (Signature in Full. No initials.)

After this Assignment has been recorded please RETURN to:

Patent Operations
THOMSON multimedia Licensing Inc.
P. O. Box 5312
Princeton, NJ 08543-5312

ASSIGNMENT AND AGREEMENT

Signed at	<u>W. Lafayette IN</u>	Date	<u>3/27/07</u>
Inventor (1)	<u>SAUL BRIAN GELFAND</u> (Type or Print)	<u>Saul Gelfand</u> (Signature in Full. No initials.)	
Post Office Address	<u>70 Sugar Maple Court, Lafayette, Indiana 47905</u>		
1st Witness	<u>CHERYL LEUCK</u> (Type or Print)	<u>Cheryl Leuck</u> (Signature in Full. No initials.)	
2nd Witness	<u>Jill A Comer</u> (Type or Print)	<u>Jill A Comer</u> (Signature in Full. No initials.)	
Signed at		Date	
Inventor (2)			
Post Office Address			
1st Witness			
2nd Witness			
Signed at		Date	
Inventor (3)			
Post Office Address			
1st Witness			
2nd Witness			

After this Assignment has been recorded please RETURN to:

Patent Operations
THOMSON multimedia Licensing Inc.
P. O. Box 5312
Princeton, NJ 08543-5312