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11-13-12

Our Ref.: HWB-2380-1968

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HEET

PATENTS ONLY

To the Director of the U.S. Patent and Trademark Office: Please record the attached original documents or copy thereof. 1. Name of conveying party(ies): 1. Pier Giorgio RAPONI 5 2. Nicola ANDRIOLLI 6 3. Piero CASTOLDI 7 4. Marzio PULERI 8 Additional name/s of conveying party/ies attached? 3. Nature of conveyance:		
1 Pier Giorgio RAPONI 5 2 Nicola ANDRIOLLI 6 3 Piero CASTOLDI 7 4 Marzio PULERI 8 Additional name/s of conveying party/ies attached? ☐ 3. Nature of conveyance: ☐ Merger ☐ Security Assignment ☐ Change of Name ☐ Other Execution Date: 27 August 2012, 27 August 2012, 3 Name: TELEFONAKTIEBOLAGET LM ERICSSON (publ) Street Address: Torshamnsgatan 23 City: Stockholm State/Country: Sweden Zip: S-164 83 Street Address: City: Street Address: City: Street Address: City: State/Country: Zip: State/Country: Zip: Additional name/s & address/es attached? ☐ Yes ☐ No		
2 Nicola ANDRIOLLI 6 3 Piero CASTOLDI 7 4 Marzio PULERI 8 Additional name/s of conveying party/ies attached? ☐ 3. Nature of conveyance: ☐ Merger ☐ Security Assignment ☐ Change of Name ☐ Other Execution Date: 27 August 2012, 27 August 2012, 3 Name: TELEFONAKTIEBOLAGET LM ERICSSON (publ) Street Address: Torshamnsgatan 23 City: Stockholm State/Country: Sweden Zip: S-164 83 Street Address: City: Street Address: City: State/Country: Zip: State/Country: Zip: State/Country: Zip: Additional name/s & address/es attached? ☐ Yes ☐ No		
3 Piero CASTOLDI 7		
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Additional name/s of conveying party/ies attached? 3. Nature of conveyance: Assignment Merger Security Assignment Change of Name Other Execution Date: 27 August 2012, 27 August 2012, 3 City: Stockholm State/Country: Sweden Zip: S-164 83 2) Name Street Address: City: State/Country: Zip: Additional name/s & address/es attached? Yes No		
Additional name/s of conveying party/ies attached? 3. Nature of conveyance: Assignment Merger Street Address: City: Other Execution Date: 27 August 2012, 27 August 2012, 3 Additional name/s & address/es attached? Yes No		
3. Nature of conveyance: ☐ Assignment ☐ Merger ☐ Security Assignment ☐ Change of Name ☐ Other ☐ Execution Date: 27 August 2012, 27 August 2012, 3 ☐ Additional name/s & address/es attached? ☐ Yes ☐ No		
Security Assignment Change of Name City: Other State/Country: Zip: Execution Date: 27 August 2012, 27 August 2012, 3 Additional name/s & address/es attached? Yes No		
☐ Other State/Country: Zip: Execution Date: 27 August 2012, 27 August 2012, 3 Additional name/s & address/es attached? ☐ Yes ☒ No		
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Execution Date: 27 August 2012, 27 August 2012, 3 Additional name/s & address/es attached? Yes No		
Sentember 2012 and 3 Sentember 2012		
respectively		
4. Application number(s) or patent number(s): This assignment is being filed together with a new application.		
A. Patent Application No(s). B. Patent No(s).		
(1) 13/581,372		
(2) (2)		
(3)		
Additional numbers attached Yes No		
5. Name and address of party to whom correspondence 6. Total number of applications & patents involved: 1		
concerning document should be mailed:		
7. Total fee (37 CFR 3.41) \$40.00		
Name: H. Warren Burnam, Jr. Enclosed		
Authorized to be charged to Deposit Account No. 14-		
1140		
Internal Address:		
8. The Commissioner is hereby authorized to charge any		
Street Address: Nixon & Vanderhye P.C. deficiency in the fee(s) filed, or asserted to be filed, or which		
901 North Glebe Road should have been filed herewith (or with any paper thereafter		
11th Floor filed in this application by this firm) to Deposit Account No.		
City: Arlington State: VA Zip: 22203 14-1140.		
DO NOT USE THIS SPACE		
9. Statements 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.		
H. Warren Burnam, Jr. Hovernen Bearing Secretary November 13, 2012		
H. Warren Burnam, Jr. Warren Burnam, Jr. Howarren Bewrice Grant November 13, 2012 Name of Person Signing Signature Date		
Reg. No. 29,366		
Total number of pages including original cover sheet, attachments, and document: [8]		
Total number of pages including original cover sheet, attachments, and document. [8]		

Documents to be recorded (including cover sheet) should be faxed to (571) 273-0140, or mailed to: Mail Stop Assignment Recordation Services, Director of the USPTO, P.O. Box 1450, Alexandria, VA 22313-1450 11/14/2012 LLANDGRA 00000008 13581372

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PATENT

REEL: 029369 FRAME: 0618

This Assignment is made by:

Pier Giorgio RAPONI	-Via Moruzzi 1; Pisa, Italy I-56100
	LUNGO LEND SIMISTED 100, ROVERETO, ITALY, 1-380
Nicola ANDRIOLLI	VIA CISANELLO 130, PISA, ITALY, 1-56124 MISL M. Wia Sant'Agostino 8, Rovigo, Italy-1-451000—
Piero CASTOLDI	V/A S. AND CZA, 2-S600 V. COP, SCOCPI) - 11 Strada Ela-25/1, Parma, Italy 1-43100
Marzio PULERÌ	Via Venezia 47/A, Fiano Romano (RM), Italy I-00065

(hereinafter referred to as "Assignor(s)") in favor, and for the benefit and behoof of, Telefonaktiebolaget L M Ericsson (publ), a corporation duly organized under and pursuant to the laws of Sweden and having its principal place of business at S-164.83 Stockholm, Sweden (hereinafter referred to as "Assignee").

For good, sufficient and adequate consideration, the receipt of which is hereby acknowledged, the Assignor(s) have, as of the Effective Date, sold, assigned, transferred, and set over, and by these presents, and to the extent any transferable or assignable rights still remain with the inventor, do hereby sell, assign, transfer, and set over, unto the Assignee, its successors, legal representatives, and assigns the entire right, title, and interest in and to the following inventions, application(s) for Letters Patent, and any and all Letters Patent or Patents in all countries and pursuant to all multilateral treaty organizations, including Sweden, the United States of America, the Patent Cooperation Treaty and European Patent Convention, that may be granted therefor and thereon, and in and to any and all divisions, continuations, continuations-in-part, conversions and utility models of said application(s), and reissues and extensions of said Letters Patent or Patents, the same to be held and enjoyed by the Assignee, for its use and behoof and the use and the behoof of its successors, legal representatives, and assigns, to the full end of the term or terms for which Letters Patent, Patents and Utility Models may be granted as fully and entirely as the same would have been held and enjoyed by the Assignor(s) had this sale and assignment not been made:

CONTROL OF TOKEN HOLDING IN MULTI-TOKEN OPTICAL NETWORK

including, but not limited to, the application(s) for Letters Patent and Utility Model filed in:

Country	Application No.	File Date
EP WO	10154671.1 PCT/EP2010/053950	25 February 2010 25 March 2010
	1 0 11,121 20 10,000,000	20 Maion 2010

The Effective date is the earliest date of the above listed Filing Date(s).

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Assignor(s) hereby authorize and request Assignee's Attorneys to insert the serial number and filing date of said application(s) for Letter Patent or Utility Model, when known. The assignment of the above mentioned rights includes a transfer of the whole right to use a priority (including priority according to any convention, multilateral agreement, bilateral agreement and national law) of the above mentioned application(s) for Letter Patent and Utility Model in all countries and multilateral treaty organizations wherein no residual rights shall remain with the Assignor(s). Assignor(s) hereby request that said Letters Patent, Patent or Utility Model be issued to Assignee as the Assignee of said inventions, the Letters Patent, Patent or Utility Model to be issued for the sole use and behoof of the Assignee, its successors, legal representatives, and assigns. Assignee alone hereinafter has the entire disposal of the invention and possesses entire ownership to any domestic and foreign patents or utility models granted thereinafter. The rights granted hereunder shall include all rights to institute legal actions, obtain remedies and recover and retain damages in respect to said Letters Patent, Patent or Utility Model.

The Assignor(s) and Assignee hereby understand and agree that with the execution of this Assignment, to the extent necessary or appropriate, national and/or regional applications may be filed by the Assignee as the applicant and on behalf of the assignor.

To the extent Assignee is entitled to receive the rights hereunder pursuant to this Assignment, each of the Assignor(s) hereby covenants and agrees to and with the Assignee, its successors, legal representatives, and assigns, that, at the time of the Effective Date, the Assignor(s) were the sole and lawful owners of the entire right, title, and interest in and to the inventions and application(s) for Letters Patent or Utility Models above-mentioned, and that the same are unencumbered, and that the Assignor(s) have good and full right and lawful authority to sell and convey the same in the manner herein set forth.

Further, and for the same consideration, the Assignor(s) hereby covenant(s) and agree(s) to and with the Assignee, its successors, legal representatives, and assigns that the Assignor(s) will, whenever counsel of the Assignee, or the counsel of its successors, legal representatives, and assigns, shall advise that any proceeding in connection with said inventions or said application(s) for Letters Patent, or any proceeding in connection with Letters Patent or Utility Model for said inventions, in any country and any multilateral treaty organization, including interference proceedings, is lawful and desirable, or that any division, continuation, continuation-in-part, conversion or Utility Model of any application(s) for Letters Patent or Utility Model, or any reissue or extension of any Letters Patent to be obtained thereon, is lawful and desirable, sign all papers and documents, take all lawful oaths, and do all acts necessary or required to be done for the procurement, maintenance, enforcement, and defense of Letters Patent or Utility Model for said inventions, without charge to Assignee, its successors, legal representatives, and assigns, but at the cost and expense of the Assignee, its successors, legal representatives, and assigns. If any of the Assignor(s) is prevented by any obstacles from signing said documents in person, this Assignment shall be valid as a Power of Attorney for the Assignee to sign these documents on behalf of any such Assignor(s) or, in the event of the death of the latter, the estate thereof.

This Assignment shall be governed by and construed under, and any dispute, controversy or claim related hereto shall be decided in accordance with, the laws of:

without regard to the conflicts of laws provisions thereof. Any dispute, controversy or claim arising under, out of or relating to this Assignment and any subsequent amendments of

Page 2 of 7

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this Assignment, including, without limitation, its formation, validity, binding effect, interpretation, performance, breach or termination, as well as non-contractual claims, shall be referred to and finally determined by arbitration in accordance with the WIPO Arbitration Rules. The arbitral tribunal shall consist of a sole arbitrator. The place of arbitration shall be in the country of the inventor's residence. The language to be used in the arbitral proceedings shall be English.

No modifications shall be made to this Assignment unless in writing and signed by each of the Assignor(s) and Assignee. If any of the provisions of this Assignment shall be deemed invalid or unenforceable, then the entire Assignment shall be construed as if not containing the particular invalid or unenforceable provision or provisions, and the rights and obligations of Assignee and Assignor(s) shall be construed and enforced accordingly. Assignee's failure to exercise any option made available as a result hereof, shall not be construed as a waiver of such provisions, rights, or options, or affect the validity of this Assignment. Assignor covenants and agrees that it will not take any actions in violation of this Assignment.

Subsequent assignment from any of the assignors to the assignee purporting to convey the subject matter specified herein for a particular country, patent office, or jurisdiction shall not invalidate any provision of this assignment and any such subsequent assignment shall act as a further confirmation of the assignment herein.

Land Date of the Control of the Cont		
Date	Signature on behalf of Assignee	Geoffey Chisholm
	3	

REEL: 029369 FRAME: 0621

TITLE: CONTROL OF TOKEN HOLDING IN MULTI-TOKEN OPTICAL NETWORK

Date 23 8 2012	Signature of Assignor	Pier Giorgio RAPONI
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Title: CONTROL OF TOKEN HOLDING IN MULTI-TOKEN OPTICAL NETWORK

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Title: CONTROL OF TOKEN HOLDING IN MULTI-TOKEN OPTICAL NETWORK

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Title: CONTROL OF TOKEN HOLDING IN MULTI-TOKEN OPTICAL NETWORK

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Page 7 of 7

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PATENT REEL: 029369 FRAME: 0625