

## PATENT ASSIGNMENT COVER SHEET

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EPAS ID: PAT3553953

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
FRANCISCO RAFAEL MARQUES LIMA	05/12/2015
TARCÍSIO MACIEL	05/14/2015
WALTER DA CRUZ FREITAS JUNIOR	05/12/2015
FRANCISCO RODRIGO PORTO CAVALCANTI	05/12/2015
NIBIA SOUSA BEZERRA	05/28/2015
EMANUEL B. RODRIGUES	05/18/2015
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<b>Name:</b>	ERICSSON TELECOMUNICACOES S.A.
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<b>State/Country:</b>	BRAZIL
<b>Postal Code:</b>	CEP 02047-901
<b>PROPERTY NUMBERS Total: 2</b>	
<b>Property Type</b>	<b>Number</b>
Application Number:	61726412
Application Number:	14441285
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(919)854-2084
<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>	
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<b>ATTORNEY DOCKET NUMBER:</b>	4015-9155 / P38991-US2_1
<b>NAME OF SUBMITTER:</b>	JOHN R. OWEN
<b>SIGNATURE:</b>	/John R. Owen, Reg. No. 42055/
<b>DATE SIGNED:</b>	10/02/2015

PATENT

**Total Attachments: 9**

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P-number / P-número: P38991

Filing Application – number and date / Aplicação – número e data: PCT/SE2013/051339 , 13 November, 2013

Title / Título: METHOD AND APPARATUS FOR RESOURCE ALLOCATION SATISFYING MULTIPLE PERFORMANCE CONSTRAINTS

<p>Right to an invention</p> <p style="text-align: center;"><b>ASSIGNMENT</b></p> <p>[I/We] hereby declare, that [I/we] have previously on or before 13 November 2013 and/or do hereby assigned to:</p> <p><b>ERICSSON TELECOMUNICAÇÕES S.A.</b> (hereinafter referred as "ASSIGNEE"), Rua Maria Prestes Maia, 300, São Paulo, SP, Brasil, CNPJ/MF 33.067.745/0001-27, all [my/our] rights with respect to the invention made by:</p> <p>[Names of all inventors], (herein referred to as the "ASSIGNOR(S)")</p> <p>Francisco RAFAEL MARQUES LIMA Tarcísio MACIEL Walter da CRUZ FREITAS JUNIOR Francisco Rodrigo Porto CAVALCANTI Nibia SOUZA BEZERRA Emanuel B. RODRIGUES</p> <p>which bear the title "(Slogan)" <b>METHOD AND APPARATUS FOR RESOURCE ALLOCATION SATISFYING MULTIPLE PERFORMANCE CONSTRAINTS</b> and which is disclosed in the following patent application(s): US 61/726412 14 Nov 2012 PCT Application PCT/SE2013/051339, filed 13 November 2013 US 14/441285 7 May 2015 We hereby authorize and request ASSIGNEE's Attorneys to insert the serial number and filing date of said applications, when known.</p> <p>The assignment of the above mentioned rights to patents on inventions includes a transfer of the patent rights, including continuations-in-part, conversions and utility models, in all countries.</p> <p>Hereafter, the ASSIGNEE alone shall have the entire right of disposal of the invention and possesses entire ownership to any domestic and foreign patents granted with respect to the invention.</p> <p>The ASSIGNOR(S) undertake to sign all documents necessary or desirable for the filing of any patent application or taking out patents on the invention above mentioned and, moreover, all such documents which may be required to assert the rights transferred hereby.</p> <p>If the ASSIGNOR(S) are prevented by any obstacles from signing said documents in person, this document of assignment shall be valid as a Power of Attorney for the ASSIGNEE to sign these documents on behalf of the</p>	<p>Direito a uma invenção</p> <p style="text-align: center;"><b>CESSÃO DE DIREITOS</b></p> <p>Pelo presente instrumento [declaro/declaramos] que em ou antes de 13 de Novembro de 2013 [cedo/cedemos] para:</p> <p><b>ERICSSON TELECOMUNICAÇÕES S.A.</b> (doravante denominada "CESSIONÁRIA"), Rua Maria Prestes Maia, 300, São Paulo, SP, Brasil, CNPJ/MF 33.067.745/0001-27, todos os [meus/nossos] direitos relacionados à invenção feita por:</p> <p>[Nome de TODOS os inventores], (doravante denominados "CEDENTE(S)")</p> <p>Francisco RAFAEL MARQUES LIMA Tarcísio MACIEL Walter da CRUZ FREITAS JUNIOR Francisco Rodrigo Porto CAVALCANTI Nibia SOUZA BEZERRA Emanuel B. RODRIGUES</p> <p>com o título "(Título)" <b>METHOD AND APPARATUS FOR RESOURCE ALLOCATION SATISFYING MULTIPLE PERFORMANCE CONSTRAINTS</b> descrito no seguinte(s) pedido(s) de patente:</p> <p>Patente internacional PCT/SE2013/051339, depositado em 13 November 2013</p> <p>O(s) CEDENTE(S) aqui autoriza(m) e solicita(m) aos Advogados da CESSIONÁRIA a inserir série e a data de depósito da referida aplicação(ões), quando conhecidos.</p> <p>A cessão dos direitos acima mencionados para as patentes de invenção inclui a transferência dos direitos sobre a patente, bem como certificado de adição de invenção, conversões e modelos de utilidade, em todos os países.</p> <p>A partir da presente data, somente a CESSIONÁRIA tem a inteira disposição da invenção e possui direito total sobre a propriedade de todas e quaisquer patentes concedidas nacional e internacionalmente relacionadas à invenção.</p> <p>O(s) CEDENTE(S) se compromete(m) a assinar todos os documentos necessários ou solicitados para a aplicação ou depósito das patentes sobre a invenção supramencionada, bem como, todos os documentos que possam ser requisitados para fazer valer os direitos transferidos por este documento.</p> <p>Se o(s) CEDENTE(S) estiver(em) impedido(s) por qualquer obstáculo de assinar os referidos documentos pessoalmente, o presente documento de cessão será válido como Procuração para a CESSIONÁRIA ter o</p>
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PATENT

REEL: 036716 FRAME: 0539

P-number / P-número: P38991

Filing Application – number and date / Aplicação – número e data: PCT/SE2013/051339, 13 November, 2013

Title / Título: METHOD AND APPARATUS FOR RESOURCE ALLOCATION SATISFYING MULTIPLE PERFORMANCE CONSTRAINTS

<p><i>Francisco Rafael Marques Lima</i> Signature of the ASSIGNOR/ Assinatura do CEDENTE</p> <p>RAFAEL MARQUES LIMA, Francisco CP 6005, Campus do Pici 60445-760 FORTALEZA - CEARÁ BRAZIL</p> <p>Name and address of the ASSIGNOR / Nome e Endereço do CEDENTE: <i>Fortaleza, May 12th, 2015</i> Place and date / Local e data</p> <p><i>Walter da Cruz Freitas Junior</i> Signature of the ASSIGNOR/ Assinatura do CEDENTE</p> <p>CRUZ FREITAS JUNIOR, Walter da Professor Dias da Rocha, 711, apt.1604 60445-760 FORTALEZA - CEARÁ BRAZIL</p> <p>Name and address of the ASSIGNOR / Nome e Endereço do CEDENTE: <i>Fortaleza, May 12th, 2015</i> Place and date / Local e data</p>	<p><i>Tarcísio Farcina Maciel</i> Signature of the ASSIGNOR/ Assinatura do CEDENTE</p> <p>MACIEL, Tarcísio Rua Maria Consuelo, 350 Ap. 1901-A 60824-040 FORTALEZA- CEARÁ BRAZIL</p> <p>Name and address of the ASSIGNOR / Nome e Endereço do CEDENTE: <i>FORTALEZA, MAY 14TH, 2015</i> Place and date / Local e data</p> <p><i>Francisco Rodrigo Porto Cavalcanti</i> Signature of the ASSIGNOR/ Assinatura do CEDENTE</p> <p>CAVALCANTI, Francisco Rodrigo Porto Rua General Tertuliano Potiguara, 1313 Apartamento 1102 B. Aldeota 60135-280 FORTALEZA - CEARÁ BRAZIL</p> <p>Name and address of the ASSIGNOR / Nome e Endereço do CEDENTE: <i>FORTALEZA, MAY 13th, 2015</i> Place and date / Local e data</p>
<p><i>Nibia Souza Bezerra</i> Signature of the ASSIGNOR/ Assinatura do CEDENTE</p> <p>SOUZA BEZERRA, Nibia Rua Estado do Rio, 55 - Bl. C, Ap. 823. Pan Americano 60440-782 FORTALEZA – CE BRAZIL</p> <p>Name and address of the ASSIGNOR / Nome e Endereço do CEDENTE: <i>Fortaleza, May 28th, 2015</i> Place and date / Local e data</p>	<p><i>Emanuel Souza Rodrigues</i> Signature of the ASSIGNOR/ Assinatura do CEDENTE</p> <p>RODRIGUES, Emanuel B. Rua Visconde de Mauá, 2555 / Apto. 1502. Dionísio Torres 60125-161 FORTALEZA - CE BRAZIL</p> <p>Name and address of the ASSIGNOR / Nome e Endereço do CEDENTE: <i>Fortaleza, May 18th, 2015</i> Place and date / Local e data</p>

**ERICSSON TELECOMUNICACOES S.A.**

Name: João Eduardo Diogenes Yazile  
Title: Head of Strategy & Marketing RLAM

Name: Edvaldo dos Santos  
Title: Head RLAM Innovation Center

**WITNESSES:**

Name: Karam Takieddine  
Id: CPF: 126.248.388-30  
RLAM Innovation Center  
Head of Research & IPR

Name: Maria Valéria Marquezini  
Id: CPF: 150.019.178-75  
RLAM Innovation Center  
Research Project Management

P-number / P-número: P38891

Filing Application – number and date / Aplicação – número e data: PCT/SE2013/051339, 13 November, 2013

Title / Título: METHOD AND APPARATUS FOR RESOURCE ALLOCATION SATISFYING MULTIPLE PERFORMANCE CONSTRAINTS

Signature of the ASSIGNOR/ Assinatura do CEDENTE	Signature of the ASSIGNOR/ Assinatura do CEDENTE
SOUZA BEZERRA, Nibia Rua Estado do Rio, 55 - Bl. C, Ap. 823, Pan Americano 60440-782 FORTALEZA -- CE BRAZIL	RODRIGUES, Emanuel B Rua Visconde de Mauá, 2555 / Apto. 1502, Dionísio Torres 60125-161 FORTALEZA - CE BRAZIL
Name and address of the ASSIGNOR / Nome e Endereço do CEDENTE:	Name and address of the ASSIGNOR / Nome e Endereço do CEDENTE:
Place and date / Local e data	Place and date / Local e data

**ERICSSON TELECOMUNICACOES S.A.**


Name: João Eduardo Diogenes Yazlle  
Title: Head of Strategy & Marketing RLAM



Name: Edvaldo dos Santos  
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Head of Research & IPR



Name: Maria Valéria Marquêsini  
Id: CPF: 150.019.178-75  
RLAM Innovation Center  
Research Project Management

P38991

Right to an Invention

### ASSIGNMENT

We hereby declare, that we have assigned to

**ERICSSON TELECOMUNICAÇÕES S.A.** (hereinafter referred as ASSIGNEE),  
Rua Maria Prestes Maia, 300, São Paulo, SP, Brasil, CNPJ/MF 33.067.745/0001-27, our rights  
to patents, in all countries, on inventions made by:

Tarcisio MACIEL; Emanuel B. RODRIGUES; Nibia SOUZA BEZERRA, Fco. Rodrigo P.  
CAVALCANTI, Vitor da CRUZ FREITAS JUNIOR; Francisco RAFAEL MARQUES LIMA,  
referred as ASSIGNORS.

and which bear the title "Method and Apparatus for Resource Allocation for Minimum  
Satisfaction Guarantees in SC-FDMA Uplink"

The assignment of the above mentioned rights to patents on inventions includes a transfer of the  
patent rights in all countries, as well as the right to use a convention priority of any patent  
application in all countries.

The ASSIGNEE alone hereinafter has the entire disposal of the invention and possesses entire  
ownership to any domestic and foreign patents granted thereinafter.

The ASSIGNORS undertake to sign all documents necessary for taking out patents on the  
inventions above mentioned and, moreover, all such documents which may be required to assert  
the rights transferred hereby.

If the ASSIGNORS are prevented by any obstacles from signing said documents in person, this  
document of assignment shall be valid as a Power of Attorney for the ASSIGNEE to sign these  
documents on behalf of the ASSIGNORS or, in the event of the death of the latter, the estate  
thereof.

Fortaleza, 31/10/2012  
Place and date

Francisco Rafael Marques Lima  
Signature of the Assignor

**RAFAEL MARQUES LIMA, Francisco**  
CP 6005, Campus do Pici  
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BRAZIL

P38981

Right to an Invention

### ASSIGNMENT

We hereby declare, that we have assigned to

**ERICSSON TELECOMUNICAÇÕES S.A.** (hereinafter referred as ASSIGNEE),  
Rua Maria Prestes Maia, 300, São Paulo, SP, Brasil, CNPJ/MF 33.067.745/0001-27, our rights  
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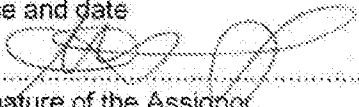
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FORTALEZA SA - 10 - 2012  
.....  
Place and date

  
.....  
Signature of the Assignor

**CAVALCANTI, Fco. Rodrigo P.**  
CP 6005, Campus do Pici  
60445-760 FORTALEZA - CE  
BRAZIL

P38991

Right to an Invention

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Fortaleza, 31/10/2012  
.....  
Place and date

  
.....  
Signature of the Assignor

**CRUZ FREITAS JUNIOR, Walter da**  
Professor Dias da Rocha, 711, apt.1604  
60445-760 FORTALEZA, CE  
BRAZIL



P38991

Right to an Invention

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Fortaleza, 31/10/2012  
.....  
Place and date

Nibia Souza Bezerra  
.....  
Signature of the Assignor

**SOUZA BEZERRA, Nibia**  
Rua Estado do Rio, 55 - Bl. C, Ap. 823. Pan Americano  
60440-782 FORTALEZA - CE  
BRAZIL

P3899f

Right to an Invention

### ASSIGNMENT

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FORTALEZA, 31/10/2012

Place and date

Tarcísio Ferreira Maciel

Signature of the Assignor

**MACIEL, Tarcísio**

Av. Frei Cirilo, 4749 Ap. 404 Bl. D  
60840-285 FORTALEZA- CE  
BRAZIL

P38891

Right to an Invention

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FORTALEZA, 04 / 09 / 2012.

Place and date



Signature of the Assignor:

**RODRIGUES, Emanuel B.**  
Rua Visconde de Mauá, 2555 / Apto. 1502. Dionísio Torres  
60125-161 FORTALEZA - CE  
BRAZIL