

## PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT								
NATURE OF CONVEYANCE:	ASSIGNMENT								
CONVEYING PARTY DATA									
<table border="1"> <thead> <tr> <th>Name</th> <th>Execution Date</th> </tr> </thead> <tbody> <tr> <td>JUNG-FU CHENG</td> <td>11/30/2011</td> </tr> <tr> <td>SOROOR FALAHATI</td> <td>11/28/2011</td> </tr> <tr> <td>MATTIAS FRENNE</td> <td>11/30/2011</td> </tr> </tbody> </table>		Name	Execution Date	JUNG-FU CHENG	11/30/2011	SOROOR FALAHATI	11/28/2011	MATTIAS FRENNE	11/30/2011
Name	Execution Date								
JUNG-FU CHENG	11/30/2011								
SOROOR FALAHATI	11/28/2011								
MATTIAS FRENNE	11/30/2011								
RECEIVING PARTY DATA									
Name:	Telefonaktiebolaget L M Ericsson (publ)								
Street Address:	Torshamnsgatan 23								
City:	STOCKHOLM								
State/Country:	SWEDEN								
Postal Code:	SE-164 83								
PROPERTY NUMBERS Total: 1									
<table border="1"> <thead> <tr> <th>Property Type</th> <th>Number</th> </tr> </thead> <tbody> <tr> <td>Application Number:</td> <td>13502243</td> </tr> </tbody> </table>		Property Type	Number	Application Number:	13502243				
Property Type	Number								
Application Number:	13502243								
CORRESPONDENCE DATA									
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ATTORNEY DOCKET NUMBER:	2380-1908								
NAME OF SUBMITTER:	JOHN R. LASTOVA								
Signature:	/John R. Lastova/								
Date:	02/21/2014								

PATENT

**Total Attachments: 6**

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## ASSIGNMENT

This Assignment is made by:

**CHENG, Jung-Fu**

1731 Mandan Place  
CA 94539 FREMONT  
United States

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Sweden

**FRENNE, Mattias**

Arkeologvägen 20  
SE-754 43 UPPSALA  
Sweden

(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 SE-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:

### TRANSMIT DIVERSITY FOR THE PHYSICAL UPLINK CONTROL CHANNEL

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

Country Code	Priority Application(s)	Filing Date(s)
US	61/558383	2011-11-10
		- -
		- -

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

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

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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 hereinafter. 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:  
**Sweden**

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 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


## ASSIGNMENT

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.

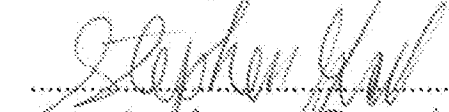
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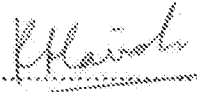
*November 30, 2001*Signature on behalf of  
Assignee  
Joakim Hasselgren

ASSIGNMENT

Title: TRANSMIT DIVERSITY FOR THE PHYSICAL UPLINK CONTROL CHANNEL

Date Nov 30, 2011 Signature of Assignor   
CHENG Jung-Fu

Date 11/30/2011 Witnessed by   
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Date 11/30/2011 Witnessed by   
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ASSIGNMENT

Title: TRANSMIT DIVERSITY FOR THE PHYSICAL UPLINK CONTROL CHANNEL


Date 2011-11-28 Signature of Assignor [Signature]  
FALAHATI, Sorour


Date 2011-11-28 Witnessed by [Signature]  
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Address: KANNEBERGSGATAN 37  
THOR SOCMA  
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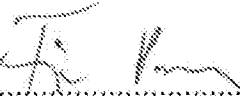
Date 2011-11-28 Witnessed by [Signature]  
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19146 SOLLENTUNA  
SWEDEN

# ASSIGNMENT

Title: TRANSMIT DIVERSITY FOR THE PHYSICAL UPLINK CONTROL CHANNEL

Date: 2011-11-30 Signature of Assignor   
 FRENNE, Mattias

Date: 2011-11-30 Witnessed by   
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Date: 2011-11-30 Witnessed by   
 Name: Finn Pedersen  
 Address: Steffens 9A  
74172 Kuirak