

MERL-1969

RECORDATION FORM COVER SHEET  
**PATENTS ONLY**

To the Assistant Commissioner for Patents: Please record the attached original documents or copy thereof.

## 1. Name of conveying party(ies):

Matthew Brand  
Petar Maymoukov  
Andreas F. Molisch

Additional name(s) of conveying party(ies) attached?  Yes  No

## 3. Nature of Conveyance:

Assignment  Merger  
 Security Agreement  Change of Name

Execution Dates: February 2, 2009; February 25, 2009; March 6, 2009

## 2. Name and address of receiving party(ies):

Name: Mitsubishi Electric Research Laboratories, Inc.

Street Address: 201 Broadway

City: Cambridge State: MA Zip: 02139

Additional name(s) and address(es) attached?  Yes  No

## 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)

12/324,673

B. Patent No.(s)

Additional numbers attached?  Yes  No

## 5. Name and address of party to whom correspondence concerning document should be mailed:

Name: Mitsubishi Electric Research Laboratories, Inc.

Street Address: 201 Broadway

City: Cambridge State: MA Zip: 02139

## 6. Total number of applications and patents involved: [1]

7. Total fee (37CFR 3.41): \$40.00

Enclosed

Authorized to be charged to deposit account

8. Deposit account number: 50-0749

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.*

Erika J. Cherko-Soykan

Name of Person Signing

/Erika J. Cherko-Soykan/

Signature

Apr. 8, 2009

Date

Total number of pages comprising cover sheet: [1]

CH \$40.00 500749 12324673

MERL-1969

## ASSIGNMENT

WHEREAS, We, LISTED INVENTORS, have made certain inventions or discoveries (or both) set forth in an Application for Uti METHOD FOR CONSTRUCTING QUASI-CYCLIC LOW-DENSITY PARITY-CHECK CODES WITH LARGE GIRTHS lity Patent of the United States of America entitled "Method for Routing Packets in Wireless Ad-Hoc Networks with Probabilistic Delay Guarantee", the specification of which:

- was executed by us on the date indicated below;
- was filed on November 26, 2008 as Application Serial No. 12/324,673
- was patented under U.S. Patent No.      on     ;

WHEREAS, Mitsubishi Electric Research Laboratories, Inc., a corporation of the State of Delaware, whose address is 201 Broadway, Cambridge, Massachusetts 02139, and who, together with its successors and assigns is hereinafter called "Assignee", is desirous of acquiring the entire right, title, and interest together with the benefits and privileges hereinafter recited;

NOW, THEREFORE, for valuable consideration furnished by Assignee to us, receipt and sufficiency of which we hereby acknowledge, we hereby, without reservation;

1. Assign, transfer and convey to Assignee the entire right, title and interest together with the benefits and privileges in and to said inventions and discoveries, said Application for Letters Patent or similar forms of protection of the United States of America, and all other applications for Letters Patent on said inventions and discoveries in whatsoever countries, including all divisional, renewal, substitute, continuation and convention applications based in whole or in part upon said inventions or discoveries, or upon said application, and any and all Letters Patent, reissues and extensions of Letters Patent or similar forms of protection granted for said inventions and discoveries or upon said applications, and every priority right that is or may be predicated upon or arise from said inventions, said discoveries, said applications and said Letters Patent;

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2. Authorize Assignee to file patent applications in any or all countries or groups of countries on any or all of said inventions and discoveries in our name or in the name of Assignee or otherwise as Assignee may deem advisable, under the International Convention or any other relevant convention or treaty or otherwise;

3. Authorize and request the Assistant Commissioner for Patents of the United States of America and the empowered officials of all other governments to issue or transfer all said Letters Patent to Assignee, as Assignee of the entire right, title and interest therein or otherwise as Assignee may direct;

4. Warrant that we have not knowingly conveyed to others any rights in said inventions, discoveries, applications or patents or any license to use the same or to make, use or sell anything embodying or utilizing any of said inventions or discoveries; and that we have good right to assign the same to Assignee without encumbrance;

5. Bind our heirs, legal representatives and assigns, as well as ourselves, to do, upon Assignee's request and at Assignee's expense, but without additional consideration to us or them, all acts reasonable serving to assure that said inventions and discoveries, said patent applications and said Letters Patent shall be held and enjoyed by Assignee as fully and entirely as the same could have been held and enjoyed by us, our heirs, legal representatives and assigns if this assignment had not been made; and particularly to execute and deliver to Assignee all lawful application documents including petitions, specifications, and oaths, and all assignments, disclaimers, and lawful affidavits in form and substance as may be requested by Assignee; to communicate to Assignee all facts known to us relating to said inventions and discoveries or the history thereof; and to furnish Assignee with any and all documents, photographs, models, samples and other physical exhibits in our control or in the control of our heirs, legal representatives or assigns which may be useful for establishing any facts of our conceptions, disclosures, and reduction to practice of said inventions or discoveries.

MERL-1969

IN WITNESS WHEREOF:

DATE I SIGNED INVENTOR'S DECLARATION: November 11, 2008

*mb*  
Matthew Brand

Date: 2 FEB 09

Witnessed: EVANDRO B. GOUVÊA  
Printed Name

*Evandro B. Gouvêa*  
Signature

2 FEB 2009  
Date

Witnessed: Danielle Mucci  
Printed Name

*Danielle Mucci*  
Signature

2/22/09  
~~2/19/09~~  
Date

MERL-1969

IN WITNESS WHEREOF:

DATE I SIGNED INVENTOR'S DECLARATION: November 5, 2008

P. Maymounkov  
Petar Maymounkov

Date: 2/25/2009

Witnessed: Neha Nambh  
Printed Name

Neha Nambh  
Signature

2/25/2009  
Date

Witnessed: Jeremy Stirling  
Printed Name

[Signature]  
Signature

2/25/2009  
Date

MERL-1969

IN WITNESS WHEREOF:

DATE I SIGNED INVENTOR'S DECLARATION: November 9, 2008

\_\_\_\_\_  
Andreas F. Molisch Date: \_\_\_\_\_

Witnessed: \_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Signature Date

Witnessed: \_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Signature Date

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NOW, THEREFORE, for valuable consideration furnished by Assignee to us, receipt and sufficiency of which we hereby acknowledge, we hereby, without reservation;

1. Assign, transfer and convey to Assignee the entire right, title and interest together with the benefits and privileges in and to said inventions and discoveries, said Application for Letters Patent or similar forms of protection of the United States of America, and all other applications for Letters Patent on said inventions and discoveries in-whatsoever countries, including all divisional, renewal, substitute, continuation and convention applications based in whole or in part upon said inventions or discoveries, or upon said application, and any and all Letters Patent, reissues and extensions of Letters Patent or similar forms of protection granted for said inventions and discoveries or upon said applications, and every priority right that is or may be predicated upon or arise from said inventions, said discoveries, said applications and said Letters Patent;

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2. Authorize Assignee to file patent applications in any or all countries or groups of countries on any or all of said inventions and discoveries in our name or in the name of Assignee or otherwise as Assignee may deem advisable, under the International Convention or any other relevant convention or treaty or otherwise;

3. Authorize and request the Assistant Commissioner for Patents of the United States of America and the empowered officials of all other governments to issue or transfer all said Letters Patent to Assignee, as Assignee of the entire right, title and interest therein or otherwise as Assignee may direct;

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5. Bind our heirs, legal representatives and assigns, as well as ourselves, to do, upon Assignee's request and at Assignee's expense, but without additional consideration to us or them, all acts reasonable serving to assure that said inventions and discoveries, said patent applications and said Letters Patent shall be held and enjoyed by Assignee as fully and entirely as the same could have been held and enjoyed by us, our heirs, legal representatives and assigns if this assignment had not been made; and particularly to execute and deliver to Assignee all lawful application documents including petitions, specifications, and oaths, and all assignments, disclaimers, and lawful affidavits in form and substance as may be requested by Assignee; to communicate to Assignee all facts known to us relating to said inventions and discoveries or the history thereof; and to furnish Assignee with any and all documents, photographs, models, samples and other physical exhibits in our control or in the control of our heirs, legal representatives or assigns which may be useful for establishing any facts of our conceptions, disclosures, and reduction to practice of said inventions or discoveries.



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IN WITNESS WHEREOF:

DATE I SIGNED INVENTOR'S DECLARATION: November 11, 2008

*mb*  
Matthew Brand

Date: 2 FEB 09

Witnessed: EVANDRO B. GOUVEA  
Printed Name

*Evandro*  
Signature

2 FEB 2009  
Date

Witnessed: Danielle Kucsi  
Printed Name

*Danielle Kucsi*  
Signature

2/02/09  
~~2/9/09~~  
Date

MERL-1969

IN WITNESS WHEREOF:

DATE I SIGNED INVENTOR'S DECLARATION: November 5, 2008

\_\_\_\_\_  
Petar Maymounkov Date: \_\_\_\_\_

Witnessed: \_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Signature Date

Witnessed: \_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Signature Date

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IN WITNESS WHEREOF:

DATE I SIGNED INVENTOR'S DECLARATION: November 9, 2008

Andreas Molisch  
Andreas F. Molisch

Date: 03/06/09

Witnessed: Sunghyun Moon  
Printed Name

SM  
Signature

03/06/09  
Date

Witnessed: Young Tae Kim  
Printed Name

YTK  
Signature

03/06/09  
Date