

MERL-2044

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):  
Zafer Sahinoglu;  
Yi Huang  
Qinghe Du  
Zhifeng Tao  
Ghulam Bhatti  
Jinyun Zhang  
Additional name(s) of conveying party(ies)  
attached? ☐ Yes ☒ No

3. Nature of Conveyance:

☒ Assignment ☐ Merger  
☐ Security Agreement ☐ Change of Name

Execution Dates: March 5, 2009; March 20,  
2009; March 23, 2009; March 11, 2009; March  
5, 2009; and March 5, 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)

12/359,470

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

/Erika J. Cherko-Soykan/

Apr. 8, 2009

Name of Person Signing

Signature

Date

Total number of pages comprising cover sheet: [1]

MERL-2044

## ASSIGNMENT

WHEREAS, We, LISTED INVENTORS, have made certain inventions or discoveries (or both) set forth in an Application for Utility Patent of the United States of America entitled "Joint Carrier Allocation and Time Sharing for OFDMA/TDMA Networks", the specification of which:

\_\_\_ was executed by us on the date indicated below;

x was filed on January 26, 2009 as Application  
Serial No. 12/359,470

\_\_\_ 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;

2. Authorize Assignee to file patent applications in any or all countries or groups of countries on any or all of

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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;

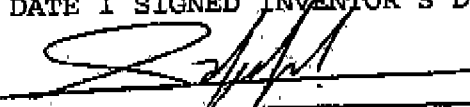


4. Warrant that we have not knowingly conveyed to others any rights in said inventions, discoveries, applications or patents or any license to use the same or to make, use or sell anything embodying or utilizing any of said inventions or discoveries; and that we have good right to assign the same to 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-2044

IN WITNESS WHEREOF:

DATE I SIGNED INVENTOR'S DECLARATION: February 25, 2009

  
\_\_\_\_\_  
Zafer SahinogluDate: March 5, 2009Witnessed: Ramesh Annamalai  
Printed Name  
\_\_\_\_\_  
SignatureMarch 05, 2009  
DateWitnessed:   
\_\_\_\_\_  
Printed Name  
\_\_\_\_\_  
SignatureMarch 05, 2009  
Date

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IN WITNESS WHEREOF:

DATE I SIGNED INVENTOR'S DECLARATION: January 26, 2009

*Yi Huang*  
Yi Huang

Date: Mar. 20, 2009

Witnessed: Ting Kong  
Printed Name

*Ting Kong*  
Signature

03/20/2009  
Date

Witnessed: Xiang DONG  
Printed Name

*Xiang DONG*  
Signature

3/20/2009  
Date

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IN WITNESS WHEREOF:

DATE I SIGNED INVENTOR'S DECLARATION: January 26, 2009

\_\_\_\_\_  
Qinghe Du Date: \_\_\_\_\_

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

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

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

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

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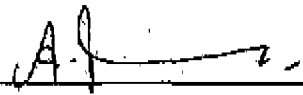
IN WITNESS WHEREOF:

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Zhifeng Tao


Date: 03/19/09

Witnessed: Ramesh Annamajjala  
Printed Name

  
Signature

Date: 03/19/09

Witnessed: MAN-ON PUN  
Printed Name



  
Signature

Date: 03/19/09

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IN WITNESS WHEREOF:

DATE I SIGNED INVENTOR'S DECLARATION: January 16, 2009

  
Ghulam BhattiDate: ~~Feb~~ March 5, 2009Witnessed: Ramesh Annamajjala  
Printed Name  
SignatureMarch 05, 2009  
DateWitnessed: Masashi SAITO  
Printed Name  
SignatureMarch 05, 2009  
Date



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IN WITNESS WHEREOF:

DATE I SIGNED INVENTOR'S DECLARATION: January 24, 2009

Jr Yun Zhang  
Jinyun Zhang

Date: March 5, 2009

Witnessed: Michael Jones  
Printed Name

Michael Jones  
Signature

Mar 5, 2009  
Date

Witnessed: RAYMOND YIM  
Printed Name

[Signature]  
Signature

March 8, 2009  
Date

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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

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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.

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\_\_\_\_\_  
Yi Huang

Date: \_\_\_\_\_

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

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

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

\_\_\_\_\_  
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Du Qinghe  
Qinghe Du

Date: Mar 23, 2009

Witnessed: XI CHEN  
Printed Name

[Signature]  
Signature

3/23/09  
Date

Witnessed: Xiaojian Wu  
Printed Name

[Signature]  
Signature

3/23/2009  
Date

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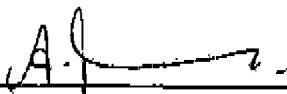
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