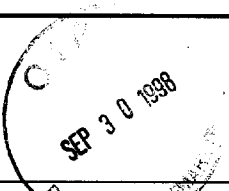


MRO 9-30-98

FORM PTO-1595  
1-31-92

10-13-1998

U.S. DEPARTMENT OF COMMERCE  
Patent and Trademark Office



100848301

PD-970166

To the Honorable Commissioner of Patents and Trademarks. Please record the attached original documents or copy thereof.

1. Name of conveying party(ies):

Mohammad SOLEIMANI  
A. Roger HAMMONS, Jr.  
Zheng-Liang SHI  
Yash VASAVADA  
Moe RAHNEMA  
Yezdi ANTIA

Additional Name(s) of conveying party(ies) attached?  
Yes  no

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

Name: HUGHES ELECTRONICS CORPORATION

Internal Address: Bldg. 001, M/S A109  
PO Box 956  
200 N. Sepulveda Blvd.  
El Segundo, CA 90245-0956

3. Nature of Conveyance:

Assignment  Merger  
 Security Agreement  Change of Name  
 Other \_\_\_\_\_

Execution Date: September 24, 1998 and September 25, 1998

Street Address: 200 N. Sepulveda Blvd.  
P.O. Box 956  
El Segundo, California 90245

Additional name(s) & 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) 09/110,035      B. Patent No.(s)

Additional numbers attached?  yes  no

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

Name: HUGHES ELECTRONICS CORPORATION  
Internal Address: Bldg. 001, M/S A109  
PO Box 956  
200 N. Sepulveda Blvd.  
El Segundo, CA 90245-0956

**PLEASE ASSOCIATE THIS APPLICATION WITH  
CUSTOMER NO. 020991.**

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

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

Enclosed  
 Authorized to be charged to deposit account

8. Deposit account number:  
50-0383

(Attached duplicate copy of this page if paying by deposit account)

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10/06/1998 DNESH1 00000072 500383 09110035

02 FF:581 Statement of Signatures

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.

John T. Whelan  
Name of Person Signing

Signature

9-28-98  
Date

Total number of pages comprising cover sheet: [ 1 ]

**ASSIGNMENT**

WHEREAS, I, as below named sole inventor (if only one name is listed below) or joint inventor (if plural names are listed below) of the city and state as stated below next to my name, have invented a(an) Burst Format and Associated Signal Processing to Improve Frequency and Timing Estimation for Random Access Channels for which application for Letters Patent of the United States has been executed by me on this day, or (if the following is completed) filed on July 2, 1998 as Serial No. 09/110,035 ; and

WHEREAS, **HUGHES ELECTRONICS CORPORATION**, (hereinafter referred to as **HUGHES**), a Delaware Corporation, having its principal place of business in El Segundo, California, is desirous of acquiring the entire and exclusive right, title and interest in, to and under said invention, said application and any and all Letters Patent that may be granted therefor in the United States and throughout the world;

NOW, THEREFORE, in consideration of the obligations voluntarily assumed by me and set forth in an invention agreement between me and my employer, effective the date as stated below next to my name, and other good and valuable consideration, receipt of which is hereby acknowledged, I do hereby sell, assign and transfer to HUGHES, its successors, assigns or other legal representatives, the entire and exclusive right, title and interest in and to said invention invented by me, to said application and any and all applications which are continuations, continuations-in- part, divisions or substitutes of said application and any and all Letters Patent that may be granted therefor in the United States and throughout the world on any of said applications and to any and all reexaminations, reissues, renewals or extensions of said Letters Patent in the United States and throughout the world for the full term or terms for which said Letters patent may be granted in the United States and throughout the world; authorize and request The Commissioner of Patents and Trademarks of the United States and all foreign countries to issue all such Letters Patent to said HUGHES, its successors, assigns or other legal representatives; covenant that no assignment, sale, agreement, transfer or encumbrance has been, or will be, made or entered into which would conflict with this assignment, sale and transfer; and agree to communicate to HUGHES, its successors, assigns or other legal representatives, upon request and at no cost or expense to me, any facts known by me respecting said invention, do all lawful acts, including the execution and delivery of all papers and proper oaths and giving of testimony that is deemed necessary or desirable by HUGHES, its successors, assigns or other legal representatives with regard to said invention for protecting, obtaining, maintaining and enforcing any and all of said Letters Patent in the United States and throughout the world for said invention and for perfecting, affirming, recording and maintaining the title of HUGHES, its successors, assigns or other legal representatives, and generally cooperate to the fullest extent in all matters pertaining to said invention, and any and all of said Letters Patent and the title thereto in HUGHES, its successors, assigns or other legal representatives.

IN WITNESS WHEREOF, I have executed this instrument.

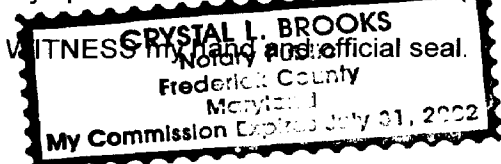
FULL NAME OF SOLE OR JOINT INVENTOR Mohammad Soleimani	INVENTOR'S SIGNATURE <i>M. Soleimani</i>	DATE 9/24/98
RESIDENCE (CITY AND STATE) Rockville, Maryland		INVENTION AGREEMENT DATE
FULL NAME OF SOLE OR JOINT INVENTOR A. Roger Hammons, Jr.	INVENTOR'S SIGNATURE <i>A. R. Hammons Jr.</i>	DATE 9/25/98
RESIDENCE (CITY AND STATE) North Potomac, Maryland		INVENTION AGREEMENT DATE
FULL NAME OF SOLE OR JOINT INVENTOR Zheng-Liang SHI	INVENTOR'S SIGNATURE <i>Zheng Liang Shi</i>	DATE 9/25/98
RESIDENCE (CITY AND STATE) Germantown, Maryland		INVENTION AGREEMENT DATE
FULL NAME OF SOLE OR JOINT INVENTOR Yash VASAVADA	INVENTOR'S SIGNATURE <i>Yash M. Vasavada</i>	DATE 9/25/98
RESIDENCE (CITY AND STATE) Germantown, Maryland		INVENTION AGREEMENT DATE
FULL NAME OF SOLE OR JOINT INVENTOR Moe RAHNEMA	INVENTOR'S SIGNATURE <i>Moe Rahnama</i>	DATE 9/24/98
RESIDENCE (CITY AND STATE) Bethesda, Maryland		INVENTION AGREEMENT DATE
FULL NAME OF SOLE OR JOINT INVENTOR Yezdi ANTIA	INVENTOR'S SIGNATURE <i>Y. Antia</i>	DATE 9-25-98
RESIDENCE (CITY AND STATE) Gaithersburg, Maryland		INVENTION AGREEMENT DATE

STATE OF Maryland )  
COUNTY OF Frederick )

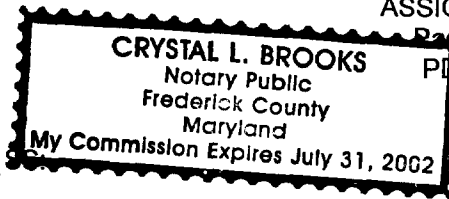
SS:

On Sept. 24, 1998 before me, Crystal L. Brooks  
a Notary Public in and for said State, personally appeared  
Mohammad Soleimani & Moe Rahnama

personally known to me or proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.



Notary Public Crystal L. Brooks



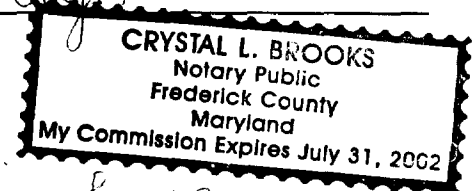
STATE OF Maryland  
COUNTY OF Frederick

On Sept. 25, 1998 before me, Crystal L. Brooks  
a Notary Public in and for said State, personally appeared  
A. Roger Hammons Jr.

personally known to me or proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Notary Public Crystal L. Brooks



STATE OF Maryland  
COUNTY OF Frederick

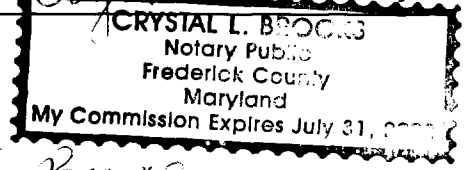
SS:

On Sept. 25, 1998 before me, Crystal L. Brooks  
a Notary Public in and for said State, personally appeared  
Zheng-Liang Shi

personally known to me or proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Notary Public Crystal L. Brooks



STATE OF Maryland  
COUNTY OF Frederick

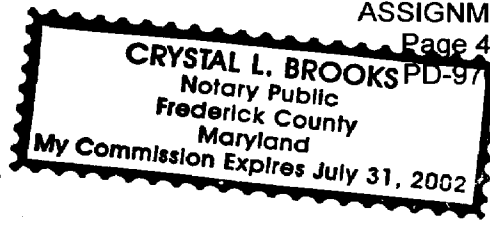
SS:

On Sept. 25, 1998 before me, Crystal L. Brooks  
a Notary Public in and for said State, personally appeared  
Yash Vasavada

personally known to me or proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Notary Public Crystal L. Brooks



STATE OF Maryland )  
COUNTY OF Fredenick )

SS:

Crystal L Brooks

On Sept. 25, 1998 before me,  
a Notary Public in and for said State, personally appeared  
Yezdi Antia

personally known to me or proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Notary Public Crystal L. Brooks