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PATENT ASSIGNMENT

Electronic Version v1.1 Stylesheet Version v1.1

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
Jerome M. Shapiro	09/20/2000
Stuart D. Sandberg	09/19/2000
Marcos C. Tzannes	09/25/2000

RECEIVING PARTY DATA

Name:	Aware, Inc.
Street Address:	40 Middlesex Turnpike
City:	Bedford
State/Country:	MASSACHUSETTS
Postal Code:	01730

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	10957612

CORRESPONDENCE DATA

 Fax Number:
 (206)292-0460

 Phone:
 2066221711

Email: jrose@schwabe.com

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent

via US Mail.

Correspondent Name: Schwabe, Williamson & Wyatt, P.C.

Address Line 1: 1420 5th Ave., Suite 3400
Address Line 4: Seattle, WASHINGTON 98101

ATTORNEY DOCKET NUMBER:	120531-168748
NAME OF SUBMITTER:	Jessica Rose

Total Attachments: 6

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ASSIGNMENT

WHEREAS, We, Jerome M. Shapiro, Stuart D. Sandberg, and Marcos C. Tzannes, have invented one or more improvements in:

Allocation Of Communication Bits Among Carriers In Multicarrier Communications

described in an application (or provisional application) for Letters Patent of the United States:

| identified by Attorney Docket No. | , and/or executed by us of even date herewith and about to be filed in the United States Patent Office;

| Serial No. 09/600,971 filed in the United States Patent Office on July 20, 2000; and

| WHEREAS, Aware, Inc. (hereinafter "ASSIGNEE"), a corporation organized and existing under

WHEREAS, Aware, Inc. (hereinafter "ASSIGNEE"), a corporation organized and existing under the laws of the Commonwealth of Massachusetts, and having a usual place of business at 40 Middlesex Turnpike, Bedford, Massachusetts 01730 desires to acquire an interest therein, in accordance with agreements duly entered into with us;

NOW, THEREFORE, to all whom it may concern be it known that for and in consideration of said agreements and of other good and valuable consideration, the receipt of which is hereby acknowledged, we have sold, assigned and transferred and by these presents do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns, and legal representatives, our entire right, title and interest in and throughout the United States of America, its territories and all foreign countries, in and to the inventions described in said application, together with our entire right, title and interest in and to said application and such Letters Patent as may issue thereon or claim priority under international convention, including but not limited to continuations, divisionals, reissues, and reexaminations of said application of such Letters Patent; said inventions, applications and Letters Patent to be held and enjoyed by said ASSIGNEE for its own use and behalf and for its successors, assigns and legal representatives, to the full end of the term for which said Letters Patent may be granted as fully and entirely as the same would have been held by us had this assignment and sale not been made; we hereby convey all of our rights arising under or pursuant to any and all international agreements, treaties or laws relating to the protection of industrial property by filing any such applications for Letters Patent. We hereby acknowledge that this assignment, being of our entire right, title and interest in and to said inventions, carries with it the right in ASSIGNEE to apply for and obtain from competent authorities in all countries of the world any and all Letters Patent by attorneys and agents of ASSIGNEE's selection and the right to procure the grant of all Letters Patent to ASSIGNEE for its own name as assignee of our entire right, title and interest therein.

AND, we hereby further agree for ourselves and our executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the aforesaid invention to said ASSIGNEE, its successors, assigns, and legal representatives, but at its or their expense and charges, including: the execution of applications for patents in foreign countries; the execution of substitution, reissue, divisional or continuation applications; and preliminary or other statements or the giving of testimony in any interference or other proceeding in which said inventions or any application or patent directed thereto may be involved; and we further hereby authorize ASSIGNEE or its attorneys or agents to insert the correct serial number and filing date into this assignment, if none is indicated on that date of our execution of this assignment;

PATENT REEL: 011189 FRAME: 0184

Joint Assignment Serial No.: 09/600,971 AWR-007 (457/9) Page 2

AND, we do hereby authorize and request the Commissioner of Patents of the United States to issue such Letters Patent as shall be granted upon said application or applications based thereon to said ASSIGNEE, its successors, assigns, and legal representatives.

IN TESTIMONY WHEREOF, we have hereunto set our hands and affixed our seals the date set forth below.

in below.	
	Inventor: Strong M. Shapiro
Commonwealth of Massachusetts County of)) ss
Subscribed and sworn to before September, 2000.	Notary Public My Commission Expires: 9/30/04
	Inventor: Stuart D. Sandberg
Commonwealth of Massachusetts County of)) ss
Subscribed and sworn to before, 2000.	ore me, by the above-named Stuart D. Sandberg this day of
	Notary Public My Commission Expires:
	Inventor: Marcos C. Tzannes
Complete)) ss
Subscribed and sworn to be, 2000.	efore me, by the above-named Marcos C. Tzannes this day of
	Notary Public My Commission Expires:
RODRIGUEZ457/9.1067983-1	

PATENT REEL: 011189 FRAME: 0185

PATENT

REEL: 027085 FRAME: 0968

ASSIGNMENT

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identified by Attorney Docket No. , and/or executed by us of even date herewith and about to be filed in the United States Patent Office;

Serial No. 09/600,971 filed in the United States Patent Office on July 20, 2000; and

WHEREAS, Aware, Inc. (hereinafter "ASSIGNEE"), a corporation organized and existing under the laws of the Commonwealth of Massachusetts, and having a usual place of business at 40 Middlesex Turnpike, Bedford, Massachusetts 01730 desires to acquire an interest therein, in accordance with agreements duly entered into with us;

NOW, THEREFORE, to all whom it may concern be it known that for and in consideration of said agreements and of other good and valuable consideration, the receipt of which is hereby acknowledged, we have sold, assigned and transferred and by these presents do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns, and legal representatives, our entire right, title and interest in and throughout the United States of America, its territories and all foreign countries, in and to the inventions described in said application, together with our entire right, title and interest in and to said application and such Letters Patent as may issue thereon or claim priority under international convention, including but not limited to continuations, divisionals, reissues, and reexaminations of said application of such Letters Patent; said inventions, applications and Letters Patent to be held and enjoyed by said ASSIGNEE for its own use and behalf and for its successors, assigns and legal representatives, to the full end of the term for which said Letters Patent may be granted as fully and entirely as the same would have been held by us had this assignment and sale not been made; we hereby convey all of our rights arising under or pursuant to any and all international agreements, treaties or laws relating to the protection of industrial property by filing any such applications for Letters Patent. We hereby acknowledge that this assignment, being of our entire right, title and interest in and to said inventions, carries with it the right in ASSIGNEE to apply for and obtain from competent authorities in all countries of the world any and all Letters Patent by attorneys and agents of ASSIGNEE's selection and the right to procure the grant of all Letters Patent to ASSIGNEE for its own name as assignee of our entire right, title and interest therein.

AND, we hereby further agree for ourselves and our executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the aforesaid invention to said ASSIGNEE, its successors, assigns, and legal representatives, but at its or their expense and charges, including: the execution of applications for patents in foreign countries; the execution of substitution, reissue, divisional or continuation applications; and preliminary or other statements or the giving of testimony in any interference or other proceeding in which said inventions or any application or patent directed thereto may be involved; and we further hereby authorize ASSIGNEE or its attorneys or agents to insert the correct serial number and filing date into this assignment, if none is indicated on that date of our execution of this assignment;

PATENT REEL: 011189 FRAME: 0186

Joint Assignment Serial No.: 09/600,971 AWR-007 (457/9) Page 2

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IN TESTIMONY WHEREOF, we have hereunto set our hands and affixed our seals the date set forth below.

		Inventor:		
		200.000	Jerome M. Shapiro	
Commonwealth of Massachusetts County of)) ss			
Subscribed and sworn to before, 2000.	re me, by	y the above-name	d Jerome M. Shapiro this	day of
		Notary Public My Commission	on Expires:	_
		Inventor:	Stuart D. Sandberg	
Commonwealth of Massachusetts County of M. Julie)) ss	ou the above-nam	ed Stuart D. Sandberg this 197	day of
Subscribed and sworn to bell	ore me, d	Notary Public	2110	
		Inventor:	Marcos C. Tzannes	
County of)) ss			
Subscribed and sworn to be 2000.	fore me,	, by the above-nar	med Marcos C. Tzannes this	day of
		Notary Publ My Commis	ic ssion Expires:	
RODRIGUEZ457/9.1067983-1				

PATENT REEL: 011189 FRAME: 0187

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Joint Assignment Serial No.: 09/600,971 AWR-007 (457/9) Page 2

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IN TESTIMONY WHEREOF, we have hereunto set our hands and affixed our seals the date set forth below.

		Inventor:	16.00	
		·	Jerome M. Shapiro	
Commonwealth of Massachusetts County of)) ss			
•	•	_	V M. Chamina this	day of
Subscribed and sworn to before, 2000.	re me, by	the above-named	Jerome M. Shapiro uns	uu, o.
		Notary Public		
		My Commissio	n Expires:	•
		Inventor:		
			Stuart D. Sandberg	
Commonwealth of Massachusetts County of)) ss			
Subscribed and sworn to before, 2000.	ore me, b	by the above-name	ed Stuart D. Sandberg this	day of
		Notary Public		
		My Commiss	ion Expires:	_
		Inventor:	Marchs C. Trannes	
County of Med ksex	chubt) ss		م ما المعاملة	A day of
Subscribed and sworn to be 2000.	efore me,	Notary Publ	ic Funises: 4/19/0	
RODRIGUEZ457/9,1067983-1		My Commi	ssion Expires:	

PATENT REEL: 011189 FRAME: 0189

PATENT

REEL: 027085 FRAME: 0972

RECORDED: 10/19/2011