PATENT APPLICATION FEE DETERMINATION RECORD
Effective October 1, 2000

Application or Docket Number: 9/948059

CLAIMS AS FILED - PART I

	(Column 1)		(Column 2)
TOTAL CLAIMS	27		
FOR	NUMBER FILED		NUMBER EXTRA
TOTAL CHARGEABLE CLAIMS	27	minus 20=	* 7
INDEPENDENT CLAIMS	3	minus 3 =	*
MULTIPLE DEPENDENT CLAIM PRESENT			☐

* If the difference in column 1 is less than zero, enter "0" in column 2

SMALL ENTITY TYPE ☐		OR	OTHER THAN SMALL ENTITY	
RATE	FEE		RATE	FEE
BASIC FEE	355.00	OR	BASIC FEE	710.00
X$ 9=	63	OR	X$18=	
X40=		OR	X80=	
+135=		OR	+270=	
TOTAL	418	OR	TOTAL	

5/18/06

CLAIMS AS AMENDED - PART II

AMENDMENT A

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	* 29	Minus	** 27	= 2
Independent	* 3	Minus	*** 3	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				☐

SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
~~X$ 9=~~ 25	50	OR	X$18=	
~~X40=~~ 100		OR	X80=	
+135=		OR	+270=	
TOTAL ADDIT. FEE	50	OR	TOTAL ADDIT. FEE	

1/19/07

AMENDMENT B

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	* 29	Minus	** 29	=
Independent	* 3	Minus	*** 3	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				☐

RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X$ 9=		OR	X$18=	
X40=		OR	X80=	
+135=		OR	+270=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

AMENDMENT C

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	*	Minus	**	=
Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				☐

RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X$ 9=		OR	X$18=	
X40=		OR	X80=	
+135=		OR	+270=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20."
***If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3."
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

FORM PTO-875
(Rev. 8/00)

Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE
*U.S. GPO: 2000-450-706/30103

PETITIONER NOKIA
Ex.1012

Issue Classification	Application/Control No. 09/948,059	Applicant(s)/Patent under Reexamination STRUHSAKER, PAUL F.
	Examiner Salman Ahmed	Art Unit 2616

ISSUE CLASSIFICATION

ORIGINAL		INTERNATIONAL CLASSIFICATION	
CLASS	SUBCLASS	CLAIMED	NON-CLAIMED
370	280	H 04 J 03 /00	/

CROSS REFERENCES						
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)					
370	294				/	/
					/	/
					/	/
					/	/
					/	/

Salman Ahmed 12/4/2006
(Assistant Examiner) (Date)

(Legal Instruments Examiner) (Date)

HASSAN KIZOU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600
(Primary Examiner) (Date)

Total Claims Allowed: 29

O.G. Print Claim(s)	O.G. Print Fig.
1	14

☒ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
	1		31		61		91		121		151		181
	2		32		62		92		122		152		182
	3		33		63		93		123		153		183
	4		34		64		94		124		154		184
	5		35		65		95		125		155		185
	6		36		66		96		126		156		186
	7		37		67		97		127		157		187
	8		38		68		98		128		158		188
	9		39		69		99		129		159		189
	10		40		70		100		130		160		190
	11		41		71		101		131		161		191
	12		42		72		102		132		162		192
	13		43		73		103		133		163		193
	14		44		74		104		134		164		194
	15		45		75		105		135		165		195
	16		46		76		106		136		166		196
	17		47		77		107		137		167		197
	18		48		78		108		138		168		198
	19		49		79		109		139		169		199
	20		50		80		110		140		170		200
	21		51		81		111		141		171		201
	22		52		82		112		142		172		202
	23		53		83		113		143		173		203
	24		54		84		114		144		174		204
	25		55		85		115		145		175		205
	26		56		86		116		146		176		206
	27		57		87		117		147		177		207
	28		58		88		118		148		178		208
	29		59		89		119		149		179		209
	30		60		90		120		150				210

PETITIONER NOKIA
Ex.1012

Search Notes	Application/Control No.	Applicant(s)/Patent under Reexamination	
	09/948,059	STRUHSAKER, PAUL F.	
	Examiner	Art Unit	
	Salman Ahmed	2616	

SEARCHED			
Class	Subclass	Date	Examiner
Updated	Search	12/4/2006	SA

INTERFERENCE SEARCHED			
Class	Subclass	Date	Examiner
See interference search		12/5/2006	SA

SEARCH NOTES (INCLUDING SEARCH STRATEGY)		
	DATE	EXMR
Updated search	12/4/2006	SA

PETITIONER NOKIA
Ex.1012

04-20-07

PART B - FEE(S) TRANSMITTAL

USPTO PATENT & TRADEMARK OFFICE APR 19 2007

Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

7590 01/22/2007

NOVAKOV DAVIS & MUNCK
A PROFFESSIONAL CORPORATION
900 THREE GALLERIA TOWER
13155 NOEL ROAD
DALLAS, TX 75240

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

Nancy L. Lamberti (Depositor's name)
Nancy L. Lamberti (Signature)
4-19-07 (Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/948,059	09/05/2001	Paul F. Struhsaker	WEST14-00103	5591

TITLE OF INVENTION: WIRELESS ACCESS SYSTEM USING SELECTIVELY ADAPTABLE BEAM FORMING IN TDD FRAMES AND METHOD OF OPERATION

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	$700	$300	$0	$1000	04/23/2007

04/20/2007 TBESHAH2 00000070 09948059

EXAMINER	ART UNIT	CLASS-SUBCLASS
AHMED, SALMAN	2616	370-280000

01 FC:2501 700.00 OP
02 FC:1504 300.00 OP
15.00 OP

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,

(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 _____
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE: Raze Technologies, Inc.

(B) RESIDENCE: (CITY and STATE OR COUNTRY): Plano, Texas

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☑ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

☑ Issue Fee
☑ Publication Fee (No small entity discount permitted)
☑ Advance Order - # of Copies 5

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**

☑ A check is enclosed.
☐ Payment by credit card. Form PTO-2038 is attached.
☑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number 50-0208 (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)

☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.

☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature William A. Munck Date Apr. 19, 2007

Typed or printed name William A. Munck Registration No. 39,308

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

USPTO PATENT AND TRADEMARK OFFICE APR 19 2007

PART B - FEE(S) TRANSMITTAL DUPLICATE

Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

7590 01/22/2007

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900 THREE GALLERIA TOWER
13155 NOEL ROAD
DALLAS, TX 75240

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

Nancy J. Lamberti	(Depositor's name)
Nancy J. Lamberti	(Signature)
4-19-07	(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/948,059	09/05/2001	Paul F. Struhsaker	WEST14-00103	5591

TITLE OF INVENTION: WIRELESS ACCESS SYSTEM USING SELECTIVELY ADAPTABLE BEAM FORMING IN TDD FRAMES AND METHOD OF OPERATION

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	$700	$300	$0	$1000	04/23/2007

EXAMINER	ART UNIT	CLASS-SUBCLASS
AHMED, SALMAN	2616	370-280000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
☑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.
1 _____
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE: Raze Technologies, Inc.

(B) RESIDENCE: (CITY and STATE OR COUNTRY): Plano, Texas

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☑ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:
☑ Issue Fee
☑ Publication Fee (No small entity discount permitted)
☑ Advance Order - # of Copies 5

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**
☑ A check is enclosed.
☐ Payment by credit card. Form PTO-2038 is attached.
☑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number 50-0208 (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)
☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.
☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature William A. Munck
Typed or printed name William A. Munck
Date Apr. 19 2007
Registration No. 39,308

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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DOCKET NO.: WEST14-00103 **PATENT**
Customer No.: 23990

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	:	Paul F. Struhsaker
Application No.	:	09/948,059
Filed	:	September 5, 2001
For	:	WIRELESS ACCESS SYSTEM USING SELECTIVELY ADAPTABLE BEAM FORMING IN TDD FRAMES AND METHOD OF OPERATION
Art Unit	:	2616
Examiner	:	Salman Ahmed

USPTO IAP78 APR 19 2007 PATENT & TRADEMARK OFFICE

Mail Stop Issue Fee
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

CERTIFICATE OF MAILING BY EXPRESS MAIL

The undersigned hereby certifies that the following documents:

1) Part B Issue Fee Transmittal (in duplicate);
2) Check in the amount of $1,015.00 for issue fee ($700.00), publication fee ($300.00) and soft copies of patent ($15.00);
3) Fee Transmittal for FY 2006 (in duplicate);
4) Change of Correspondence Address; and
5) A Postcard receipt

relating to the above application, were deposited as "Express Mail", Label No. EV863464611US with the United States Postal Service, addressed to Mail Stop Issue Fee, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on April 19, 2007.

Date: 4-19-07 _____
Mailer

Date: Apr. 19, 2007 _____
William A. Munck
Reg. No. 39,308

P.O. Drawer 800889
Dallas, Texas 75380
Phone: (972) 628-3600
Fax: (972) 628-3616
E-mail: *wmunck@munckbutrus.com*

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OIPE
APR 19 2007
PATENT & TRADEMARK OFFICE

PTO/SB/17 (12-04)
Approved for use through 07/31/2006. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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Effective on 12/08/2004.
Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).

FEE TRANSMITTAL
For FY 2006

☑ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT ($) 1,015.00

Complete if Known	
Application Number	09/948,059
Filing Date	September 5, 2001
First Named Inventor	Paul F. Struhsaker
Examiner Name	Salman Ahmed
Art Unit	2616
Attorney Docket No.	WEST14-00103

METHOD OF PAYMENT (check all that apply)

☑ Check ☐ Credit Card ☐ Money Order ☐ None ☐ Other (please identify): _____

☑ Deposit Account Deposit Account Number: 50-0208 Deposit Account Name: Munck Butrus P.C.

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

☐ Charge fee(s) indicated below ☐ Charge fee(s) indicated below, **except for the filing fee**

☑ Charge any additional fee(s) or underpayments of fee(s) under 37 CFR 1.16 and 1.17 ☑ Credit any overpayments

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

FEE CALCULATION

1. BASIC FILING, SEARCH, AND EXAMINATION FEES

Application Type	FILING FEES Fee ($)	FILING FEES Small Entity Fee ($)	SEARCH FEES Fee ($)	SEARCH FEES Small Entity Fee ($)	EXAMINATION FEES Fee ($)	EXAMINATION FEES Small Entity Fee ($)	Fees Paid ($)
Utility	300	150	500	250	200	100	
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	

2. EXCESS CLAIM FEES

Fee Description	Fee ($)	Small Entity Fee ($)
Each claim over 20 or, for Reissues, each claim over 20 and more than in the original patent	50	25
Each independent claim over 3 or, for Reissues, each independent claim more than in the original patent	200	100
Multiple dependent claims	360	180

Total Claims	Extra Claims	Fee ($)	Fee Paid ($)
_____ - 20 or HP =	_____	x _____	= _____

HP = highest number of total claims paid for, if greater than 20

Indep. Claims	Extra Claims	Fee ($)	Fee Paid ($)
_____ - 3 or HP =	_____	x _____	= _____

HP = highest number of independent claims paid for, if greater than 3

Multiple Dependent Claims Fee ($)	Fee Paid ($)
_____	_____

3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets	Extra Sheets	Number of each additional 50 or fraction thereof	Fee ($)	Fee Paid ($)
_____ - 100 =	_____	/ 50 = _____ (round up to a whole number) x	_____	= _____

4. OTHER FEE(S)

	Fees Paid ($)
Non-English Specification, $130 fee (no small entity discount)	
Other: Issue Fee ($700), Publication Fee ($300) and copies of patent ($15)	$1,015.00

SUBMITTED BY

Signature	William C. Munck	Registration No. (Attorney/Agent) 39,308	Telephone 972-628-3600
Name (Print/Type)	William A. Munck		Date Apr. 19, 2007

This collection of information is required by 37 CFR 1.136. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PETITIONER NOKIA
Ex.1012

USPTO IAP78 APR 19 2007 PATENT & TRADEMARK OFFICE

PTO/SB/122 (09-03)
Approved for use through 11/30/2005. OMB 0651-0035
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

CHANGE OF CORRESPONDENCE ADDRESS
Application

Address to:
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450.

Application Number	09/948,059
Filing Date	September 5, 2001
First Named Inventor	Paul F. Struhsaker
Art Unit	2616
Examiner Name	Salman Ahmed
Attorney Docket Number	WEST14-00103

Please change the Correspondence Address for the above-identified patent application to:

☑ Customer Number : 23990

OR

☐ **Firm or Individual Name**					
Address					
Address					
City		**State**		**Zip**	
Country					
Telephone		**Fax**			

This form cannot be used to change the data associated with a Customer Number. To change the data associated with an existing Customer Number use "Request for Customer Number Data Change" (PTO/SB/124).

I am the:

☐ Applicant/Inventor

☐ Assignee of record of the entire interest.
Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96).

☑ Attorney or Agent of record. Registration Number 39,308.

☐ Registered practitioner named in the application transmittal letter in an application without an executed oath or declaration. See 37 CFR 1.33(a)(1). Registration Number_____.

Typed or Printed Name	William A. Munck
Signature	Wm C Munck
Date	Apr. 19, 2007
Telephone	972-628-3600

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

☐ *Total of _____forms are submitted.

This collection of information is required by 37 CFR 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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PETITIONER NOKIA
Ex.1012

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
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BIBDATASHEET

Bib Data Sheet

CONFIRMATION NO. 5591

SERIAL NUMBER	FILING OR 371(c) DATE / RULE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
09/948,059	09/05/2001	370	2616	WEST14-00103

APPLICANTS

Paul F. Struhsaker, Plano, TX;

**** CONTINUING DATA ***************************

This appln claims benefit of 60/262,712 01/19/2001
and claims benefit of 60/262,825 01/19/2001
and claims benefit of 60/262,698 01/19/2001
and claims benefit of 60/262,827 01/19/2001
and claims benefit of 60/262,826 01/19/2001
and claims benefit of 60/262,951 01/19/2001
and claims benefit of 60/262,824 01/19/2001
and claims benefit of 60/263,101 01/19/2001
and claims benefit of 60/263,097 01/19/2001
and claims benefit of 60/273,579 03/05/2001
and claims benefit of 60/262,955 01/19/2001
and claims benefit of 60/262,708 01/19/2001
and claims benefit of 60/273,689 03/05/2001
and claims benefit of 60/273,757 03/05/2001
and claims benefit of 60/270,378 02/21/2001
and claims benefit of 60/270,385 02/21/2001
and claims benefit of 60/270,430 02/21/2001

**** FOREIGN APPLICATIONS *********************

IF REQUIRED, FOREIGN FILING LICENSE GRANTED ** SMALL ENTITY **
** 10/06/2001

Foreign Priority claimed	STATE OR COUNTRY	SHEETS DRAWING	TOTAL CLAIMS	INDEPENDENT CLAIMS
☐ yes ☐ no	TX	14	27	3
35 USC 119 (a-d) conditions met ☐ yes ☐ no ☐ Met after Allowance				
Verified and Acknowledged Examiner's Signature Initials				

ADDRESS
23990

TITLE
WIRELESS ACCESS SYSTEM USING SELECTIVELY ADAPTABLE BEAM FORMING IN TDD FRAMES AND METHOD OF OPERATION

FILING FEE RECEIVED	FEES: Authority has been given in Paper	☐ All Fees
848	No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:	☐ 1.16 Fees (Filing)
		☐ 1.17 Fees (Processing Ext. of time)

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UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/948,059	06/12/2007	7230931	WEST14-00103	5591

23990 7590 05/23/2007

DOCKET CLERK
P.O. DRAWER 800889
DALLAS, TX 75380

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 1088 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site http://pair.uspto.gov for additional applicants):

Paul F. Struhsaker, Plano, TX;

DOCKET NO.: WEST14-00103 **PATENT**
Customer No.: 23990

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of	:	Paul F. Struhsaker
U.S. Patent No.	:	7,230,931
Issued	:	June 12, 2007
Application No.	:	09/948,059
Filed	:	September 5, 2001
For	:	WIRELESS ACCESS SYSTEM USING SELECTIVELY ADAPTABLE BEAM FORMING IN TDD FRAMES AND METHOD OF OPERATION
Art Unit	:	2616
Examiner	:	Salman Ahmed
Confirmation No.	:	5591

Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Sir:

REQUEST FOR WITHDRAWAL AS ATTORNEY OR AGENT AND CHANGE OF CORRESPONDENCE ADDRESS

The undersigned attorney, on behalf of and including the attorneys/agents associated with Customer No. 23990, hereby withdraw as attorneys or agents in connection with the above-identified matter.

The reasons for withdrawal are that the Owner/Applicant (1) has effectively discharged the practitioners by failing to respond and communicate with practitioners to

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reasonable requests concerning representation and/or (2) has failed to pay one or more bills rendered by the practitioners for an unreasonable period of time and/or has knowingly and freely assented to termination of the employment.

Accordingly, the practitioners believe that no further action on the part of the practitioners is necessary for withdrawal. However, as a precautionary matter, the practitioners have taken reasonable steps to avoid any foreseeable prejudice to the rights of the Owner/Applicant, including having performed the following:

- Given due notice to the Owner/Applicant that the practitioners are withdrawing from representation in this matter and have filed, or will be filing, the necessary papers with the Patent & Trademark Office,
- Delivered to the Owner/Applicant all papers and property to which the Owner/Applicant is entitled, or requesting instructions from the Owner/Applicant regarding disposition of the Owner/Applicant's files; and
- Notified the Owner/Applicant of any responses that may be due and the time frame within which Owner/Applicant must respond.

Please address all future correspondence to:

Mr. Michael S. Hynek
17519 Muirfield Drive
Dallas, Texas 75287

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Respectfully submitted,

MUNCK CARTER, P.C.

Date: 11 Dec. 2008

John T. Mockler
Reg. No. 39,775

Docket Clerk
P.O. Drawer 800889
Dallas, Texas 75380
Phone: (972) 628-3600
Fax: (972) 628-3616
Email: *jmockler@munckcarter.com*

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Doc Code: PET.POA.WDRW
Document Description: Petition to withdraw attorney or agent (SB83)

PTO/SB/83 (11-08)
Approved for use through 11/30/2011. OMB 0651-0035
U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

REQUEST FOR WITHDRAWAL AS ATTORNEY OR AGENT AND CHANGE OF CORRESPONDENCE ADDRESS

Patent Number	7,230,931
Issue Date	June 12, 2007
First Named Inventor	Paul F. Struhsaker
Art Unit	2616
Examiner Name	Salman Ahmed
Attorney Docket Number	WEST14-00103

To: Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Please withdraw me as attorney or agent for the above identified patent application, and

☐ all the practitioners of record;

☐ the practitioners (with registration numbers) of record listed on the attached paper(s); or

☑ the practitioners of record associated with Customer Number: 23990

NOTE: The immediately preceding box should only be marked when the practitioners were appointed using the listed Customer Number.

The reason(s) for this request are those described in 37 CFR :

☐ 10.40(b)(1)	☐ 10.40(b)(2)	☐ 10.40(b)(3)	☐ 10.40(b)(4)
☐ 10.40(c)(1)(i)	☐ 10.40(c)(1)(ii)	☐ 10.40(c)(1)(iii)	☐ 10.40(c)(1)(iv)
☐ 10.40(c)(1)(v)	☑ 10.40(c)(1)(vi)	☐ 10.40(c)(2)	☐ 10.40(c)(3)
☐ 10.40(c)(4)	☐ 10.40(c)(5)	☐ 10.40(c)(6) Please explain below:	

Certifications

Check each box below that is factually correct. WARNING: If a box is left unchecked, the request will likely not be approved.

1. ☑ I/We have given reasonable notice to the client, prior to the expiration of the response period, that the practitioner(s) intend to withdraw from employment.

2. ☑ I/We have delivered to the client or a duly authorized representative of the client all papers and property (including funds) to which the client is entitled.

3. ☑ I/We have notified the client of any responses that may be due and the time frame within which the client must respond.

Please provide an explanation, if necessary:

Please see attachment.

This collection of information is required by 37 CFR 1.36. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PTO/SB/83 (11-08)
Approved for use through 11/30/2011. OMB 0651-0035
U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE
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REQUEST FOR WITHDRAWAL AS ATTORNEY OR AGENT AND CHANGE OF CORRESPONDENCE ADDRESS

Complete the following section only when the correspondence address will change. *Changes of address will only be accepted to an inventor or an assignee that has properly made itself of record pursuant to 37 CFR 3.71.*

Change the correspondence address and direct all future correspondence to:

A. ☐ The address of the inventor or assignee associated with Customer Number: _____

OR

B. ☑ Inventor or Assignee name	Michael S. Hynek			
Address	17519 Muirfield Drive			
City Dallas	State Texas	Zip 75287	Country USA	
Telephone		Email		

I am authorized to sign on behalf of myself and all withdrawing practitioners.

Signature	John T Mockler		
Name	John T. Mockler	Registration No. 39,775	
Address	600 Banner Place, 12770 Coit Road		
City Dallas	State Texas	Zip 75251	Country USA
Date	11 Dec. 2008	Telephone No. 972-628-3600	

NOTE: ***Withdrawal is effective when approved rather than when received.***

This collection of information is required by 37 CFR 1.36. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Electronic Acknowledgement Receipt

EFS ID:	4442186
Application Number:	09948059
International Application Number:	
Confirmation Number:	5591
Title of Invention:	WIRELESS ACCESS SYSTEM USING SELECTIVELY ADAPTABLE BEAM FORMING IN TDD FRAMES AND METHOD OF OPERATION
First Named Inventor/Applicant Name:	Paul F. Struhsaker
Customer Number:	23990
Filer:	John Mockler/Keith Woods
Filer Authorized By:	John Mockler
Attorney Docket Number:	WEST14-00103
Receipt Date:	11-DEC-2008
Filing Date:	05-SEP-2001
Time Stamp:	19:57:25
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Petition to withdraw attorney or agent (SB83)	WithdrawalAsAttorney.pdf	301990 6e94fa71930d4e2958cf6b22654c03bcfbbc11ce	no	5

Warnings:

Information:

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Total Files Size (in bytes):	301990

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

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PTO/SB/81A (12-08)
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PATENT - POWER OF ATTORNEY OR REVOCATION OF POWER OF ATTORNEY WITH A NEW POWER OF ATTORNEY AND CHANGE OF CORRESPONDENCE ADDRESS

Patent Number	7,230,931
Issue Date	6/12/07
First Named Inventor	Struhsaker
Title	Wireless Access System Using Selectively Adaptable Beam Forming...
Attorney Docket Number	9030101.147-US1

I hereby revoke all previous powers of attorney given in the above-identified patent.

☐ A Power of Attorney is submitted herewith.

OR

☒ I hereby appoint Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s) with respect to the patent identified above, and to transact all business in the United States Patent and Trademark Office connected therewith: 70763

OR

☐ I hereby appoint Practitioner(s) named below as my/our attorney(s) or agent(s) with respect to the patent identified above, and to transact all business in the United States Patent and Trademark Office connected therewith:

Practitioner(s) Name	Registration Number

Please recognize or change the correspondence address for the above-identified patent to:

☒ The address associated with the above-mentioned Customer Number.

OR

☐ The address associated with Customer Number:

OR

☐ Firm or Individual Name					
Address					
City		State		Zip	
Country					
Telephone		Email			

I am the:

☐ Inventor, having ownership of the patent.

OR

☒ Patent owner.

Statement under 37 CFR 3.73(b) (Form PTO/SB/96) submitted herewith or filed on _____.

SIGNATURE of Inventor or Patent Owner

Signature	Michael S. Hynek	Date	7-8-10
Name	Michael S. Hynek	Telephone	
Title and Company	Manager, Access Solutions, Ltd.		

NOTE: Signatures of all the inventors or patent owners of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

☒ *Total of 1 forms are submitted.

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

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PTO/SB/96 (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

STATEMENT UNDER 37 CFR 3.73(b)

Applicant/Patent Owner: Access Solutions, Ltd.

Application No./Patent No.: 7,230,931 Filed/Issue Date: 6/12/07

Titled: Wireless Access System Using Selectively Adaptable Beam Forming in TDD Frames and Method of Operation

Access Solutions, Ltd. (Name of Assignee), a Texas limited partnership (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that it is:

1. [X] the assignee of the entire right, title, and interest in;

2. [ ] an assignee of less than the entire right, title, and interest in (The extent (by percentage) of its ownership interest is _____ %); or

3. [ ] the assignee of an undivided interest in the entirety of (a complete assignment from one of the joint inventors was made)

the patent application/patent identified above, by virtue of either:

A. [ ] An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy therefore is attached.

OR

B. [X] A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: P. Struhsaker To: Raze Technologies, Inc.

The document was recorded in the United States Patent and Trademark Office at
Reel 12467, Frame 0944, or for which a copy thereof is attached.

2. From: Raze Technologies, Inc. To: Access Solutions, Ltd.

The document was recorded in the United States Patent and Trademark Office at
Reel 012449, Frame 0730, or for which a copy thereof is attached.

3. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

[ ] Additional documents in the chain of title are listed on a supplemental sheet(s).

[X] As required by 37 CFR 3.73(b)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (*i.e.*, a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

Michael S. Hynek — Signature

7-8-10 — Date

Michael S. Hynek — Printed or Typed Name

Manager — Title

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

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Electronic Acknowledgement Receipt

EFS ID:	7990110
Application Number:	09948059
International Application Number:	
Confirmation Number:	5591
Title of Invention:	WIRELESS ACCESS SYSTEM USING SELECTIVELY ADAPTABLE BEAM FORMING IN TDD FRAMES AND METHOD OF OPERATION
First Named Inventor/Applicant Name:	Paul F. Struhsaker
Customer Number:	23990
Filer:	Matthew T. Byrne
Filer Authorized By:	
Attorney Docket Number:	WEST14-00103
Receipt Date:	11-JUL-2010
Filing Date:	05-SEP-2001
Time Stamp:	12:08:10
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Power of Attorney	9030101_147_US1_POA.pdf	118626 b8a306601439e2c81a0be63f235918abc813cf0e	no	2

Warnings:	
Information:	

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Total Files Size (in bytes):	118626

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

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UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
09/948,059	09/05/2001	Paul F. Struhsaker	9030101.147-US1

CONFIRMATION NO. 5591

70763
Byrne Poh LLP
11 Broadway, Ste 865
New York, NY 10004

POA ACCEPTANCE LETTER

OC000000042600139

Date Mailed: 07/16/2010

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 07/11/2010.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

/skiflemariam/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

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UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
09/948,059	09/05/2001	Paul F. Struhsaker	WEST14-00103

CONFIRMATION NO. 5591

23990
DOCKET CLERK
P.O. DRAWER 800889
DALLAS, TX 75380

POWER OF ATTORNEY NOTICE

OC000000042600128

Date Mailed: 07/16/2010

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 07/11/2010.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

/skiflemariam/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

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AO 120 (Rev. 08/10)

TO:	Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court for the Eastern District of Texas on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT for the Eastern District of Texas
PLAINTIFF GENERAL ACCESS SOLUTIONS, LTD.		DEFENDANT SPRINT CORPORATION, VIRGIN MOBILE USA, L.P. and BOOST MOBILE LLC

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	US 6,891,810 B2	5/10/2005	General Access Solutions, Ltd.
2	US 7,173,916 B2	2/6/2007	General Access Solutions, Ltd.
3	US 7,230,931 B2	6/12/2007	General Access Solutions, Ltd.
4			
5			

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

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Trials@uspto.gov
571.272.7822

Paper 5
Entered: March 9, 2018

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SPRINT SPECTRUM L.P.,
Petitioner,

v.

GENERAL ACCESS SOLUTIONS, LTD.,
Patent Owner.

Case IPR2017-01889
Patent 7,230,931 B2

Before KALYAN K. DESHPANDE, DAVID M. KOHUT, and MELISSA A. HAAPALA, *Administrative Patent Judges*.

HAAPALA, *Administrative Patent Judge*.

DECISION
Institution of *Inter Partes* Review
37 C.F.R. § 42.108

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Sprint Spectrum L.P. ("Petitioner") filed a Petition pursuant to 35 U.S.C. §§ 311–319 to institute an *inter partes* review of claims 1–29 of U.S. Patent No. 7,230,931 B2 ("the '931 patent"). Paper 1 ("Pet."). General Access Solutions, Ltd. ("Patent Owner") did not file a Preliminary Response. Applying the standard set forth in 35 U.S.C. § 314(a), which requires demonstration of a reasonable likelihood that Petitioner would prevail with respect to at least one challenged claim, we grant Petitioner's request to institute an *inter partes* review of claims 1, 3–10, 12–19, and 21–29. We decline to institute a review of claims 2, 11, and 20.

I. BACKGROUND

A. The '931 Patent (Ex. 1001)

The '931 patent describes a burst packet transmission media access system using selectively adaptable beam forming in a fixed wireless access network. Ex. 1001, 3:28–31. Figure 1 of the '931 patent is reproduced below:

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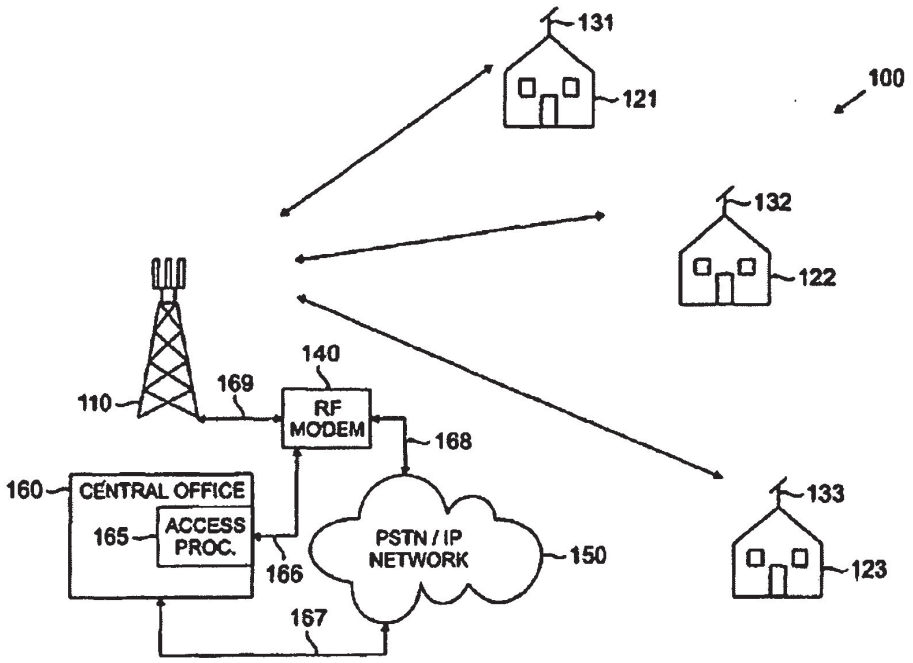


FIG. 1

Figure 1 illustrates exemplary fixed wireless access network 100. *Id.* at 11:55–56. Fixed wireless network 100 comprises a plurality of transceiver base stations, including transceiver base station 110, that transmit forward channel (downlink or downstream) broadband signals to subscriber premises 121, 122, 123 and receive reverse channel (uplink or upstream) broadband signals from subscriber premises 121-123. *Id.* at 11:57–64. Subscriber premises 121-123 transmit and receive via fixed, externally-mounted antennas 131-133, respectively. *Id.* at 11:64–66. Transceiver base station 110 receives the forward channel (downlink) signals from external network 150 and transmits the reverse channel (uplink) signals to external network 150. *Id.* at 12:5–8. External network may be the public switched telephone network (PTSN) or one or more data networks, including the Internet or

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proprietary wide area networks (WANs) and local area networks (LANs). *Id.* at 12:8–13.

Transceiver base station 110 is coupled to RF modem shelf 140, which up-converts baseband data traffic received from external network 150 to radio frequency (RF) signals transmitted in the forward channel to subscriber premises 121-123 and down-converts RF signals received in the reverse channel from subscriber premises 121-123 to baseband data traffic that is transmitted to external network 150. *Id.* at 12:13–20. RF modem shelf 140 comprises a plurality of RF modems capable of modulating the baseband data traffic and demodulating the reverse channel RF signals. *Id.* at 12:21–24. Each of the transceiver base stations may cover a cell site that is divided into a plurality of sectors and each RF modem may be assigned to modulate and demodulate signals in a particular sector of each cell site. *Id.* at 12:25–30. Each RF modem uses an individual antenna to transmit and to receive in its assigned sector. *Id.* at 16:11–13.

Pre-programmed sets of directed beam patterns are used to cover a cell in an angular fashion, which is referred to as "beam scanning." *Id.* at 28:1–3. The base station establishes a set of beams to cover the cell and based on physical location in the sector, a specific beam is used to communicate with one or more subscribers that lie in that sector. *Id.* at 28:9–12.

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Figure 14 of the '931 patent is depicted below:

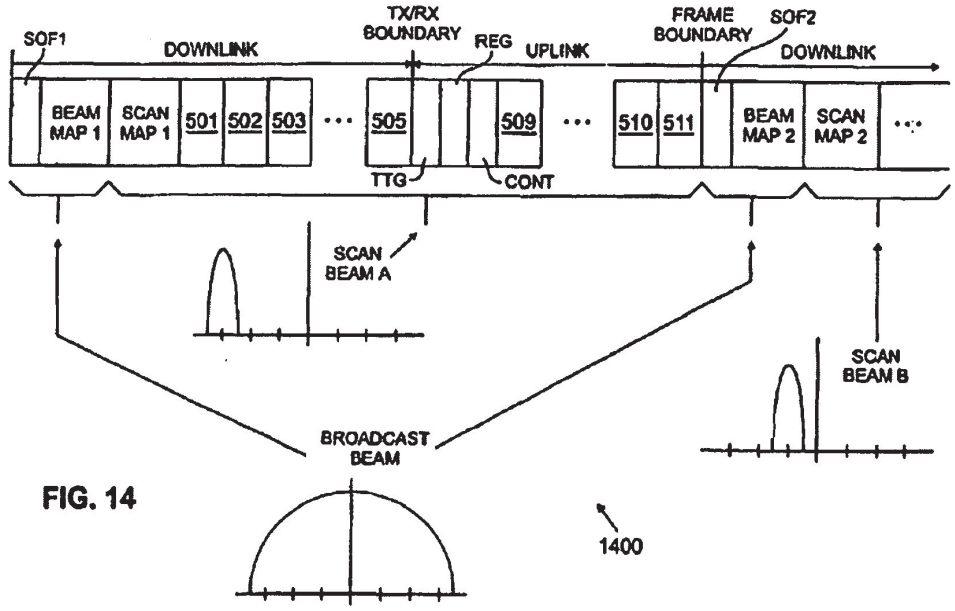


FIG. 14

Figure 14 illustrates the use of broadcast beams and scanning beams in exemplary time division duplex (TDD) signal 1400. *Id.* at 29:3–5. TDD signal 1400 comprises a first TDD frame having a downlink portion comprising a first start-of-frame field (SOF1), a first beam map field (Beam Map 1), and a first scan map field (Scan Map 1). *Id.* at 29:6–10. The first TDD frame is followed by a second TDD frame, which comprises a second start-of-frame field (SOF2), a second beam map field (Beam Map 2), and a second scan map field (Scan Map 2). *Id.* at 29:21–25. A spread spectrum Broadcast Beam is used to transmit start-of-frame fields SOF1, SOF2 and beam map fields Beam Map 1, Beam Map 2 in each TDD frame. *Id.* at 29:26–30. Distinct scan beams (Scan Beam Λ and Scan Beam B) are used to transmit the scan map fields (Scan Map 1 and Scan Map 2) and the remainder of the uplink and downlink portions of each TDD frame. *Id.* at 29:30–33.

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Broadcast Beam Maps 1, 2 provide data indicating which scanning beam (or beams) are used at which time for the frame and also transmits a synchronization field so that all subscribers can maintain synchronization. *Id.* at 29:34–36, 29:47–50. Scanning Beam Maps A, B provides the uplink and downlink map, which state at which time in the frame, using the scanning beam described in the associated Broadcast Beam Map, the downlink modulation groups and specific uplink slots are allocated for the frame using the specific scanning beam. *Id.* at 29:38–43.

B. Illustrative Claim

Claims 1, 10, and 19 are independent claims. Claim 1 is illustrative of the subject matter at issue:

> 1. For use in a wireless access network comprising a plurality of base stations, each of said plurality of base stations capable of bidirectional time division duplex (TDD) communications with wireless access devices disposed at a plurality of subscriber premises in an associated cell site of said wireless access network, a transceiver associated with a first of said plurality of base stations comprising:
>
> transmit path circuitry associated with a beam forming network capable of transmitting directed scanning beam signals each directed to substantially only wireless access devices within a different one of a plurality of sectors of a cell site associated with said first base station, wherein said transmit path circuitry
>
> transmits, at a start of a TDD frame, a broadcast beam signal to wireless access devices within more than one of said sectors, the broadcast beam signal comprising a start of frame field, and
>
> subsequently transmits in a downlink portion of said TDD frame, first downlink data traffic to substantially only wireless access devices within one of said sectors using one of said directed scanning beam signals.

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C. References

Petitioner relies on the following references:

1. Vornefeld, Ulrich et al., *SDMA Techniques for Wireless ATM*, IEEE Communications Magazine (Nov. 1999) ("Vornefeld") (Ex. 1004).
3. U.S. Patent No. 6,470,177, issued Oct. 22, 2002 ("Andersson") (Ex. 1005).
4. U.S. Patent No. 7,366,133, issued Apr. 29, 2008 ("Ahy") (Ex. 1006).[1]
5. U.S. Patent No. 5,684,491, issued Nov. 4, 1997 ("Newman") (Ex. 1007).

Petitioner further relies on testimony of its witness, Mr. James A. Proctor, Jr. (Ex. 1003).

D. Grounds Asserted

Petitioner challenges the patentability of the claims of the '931 patent under 35 U.S.C. §§ 102(b) and 103(a) over the following combinations of references:

Reference(s)	Basis	Claims
Vornefeld	35 U.S.C. § 102(b)	1–3, 6, 7, 10–12, 15, 16, 19–21, 24, 25, 28, 29
Vornefeld and Ahy	35 U.S.C. § 103(a)	4, 5, 8, 9, 13, 14, 17, 18, 22, 23, 26, 27
Vornefeld and Andersson	35 U.S.C. § 103(a)	1–3, 6, 7, 10–12, 15, 16, 19–21, 24, 25, 28, 29
Vornefeld, Andersson, and Ahy	35 U.S.C. § 103(a)	4, 5, 8, 9, 13, 14, 17, 18, 22, 23, 26, 27
Newman, Ahy, and Andersson	35 U.S.C. § 103(a)	1–29

[1] We note the first named inventor of U.S. Patent 7,366,133 is Majidi-Ahy. Ex. 1006, 1. However, as Petitioner refers to this reference as "Ahy" (*see e.g.*, Pet. 17), we use the same shortened form for consistency and to avoid confusion.

E. Related Proceedings

Petitioner and Patent Owner identify the following district court litigation involving the '931 patent: *General Access Sol., Ltd. V. Sprint Spectrum L.P.*, Case No. 2:16-cv-465-RWS (E.D. Tx.). Pet. 2; Paper 3, 1.

F. Real Parties in Interest

Petitioner identifies the following additional real parties in interest: Virgin Mobile USA, L.P.; Boost Mobile, LLC; Clearwire Corporation; Clearwire Communications LLC; and Clear Wireless LLC. Pet. 1. Petitioner further identifies Sprint Corporation as a real party in interest only for purposes of this proceeding and only to the extent Patent Owner contends the separate legal entity should be named a real party in interest in this proceeding. *Id.* Patent Owner does not identify any additional real parties in interest. *See* Paper 3, 1.

II. ANALYSIS

A. Claim Construction

In an *inter partes* review, claims of an unexpired patent are interpreted using the broadest reasonable construction in light of the specification of the patent in which they appear. *See* 37 C.F.R. § 42.100(b); *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2144–46 (2016). Under that standard, claim terms are generally given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

Petitioner proposes constructions for "sector" and "directed scanning beam signal(s)," both terms which appear in all challenged claims. Pet. 10–13. In view of our analysis, we do not find it necessary to construe any terms for purposes of this Decision. *See Vivid Techs., Inc. v. Am. Sci. &*

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Eng'g, Inc., 200 F.3d 795, 803 (Fed. Cir. 1999) (holding that "only those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy").

B. Anticipation by Vornefeld and Obviousness over Vornefeld and Ahy

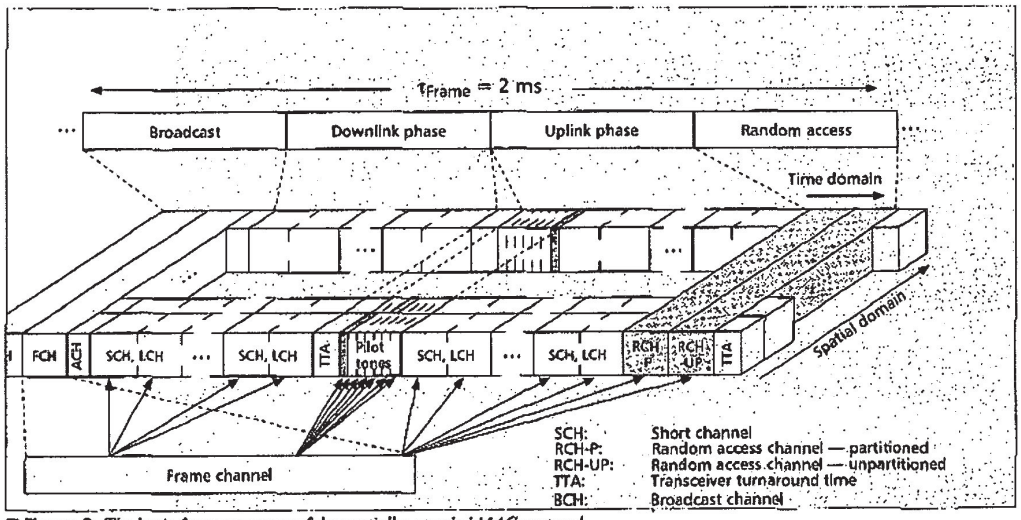
Petitioner contends that claims 1–3, 6, 7, 10–12, 15, 16, 19–21, 24, 25, 28, and 29 are unpatentable as anticipated under 35 U.S.C. § 102(b) by Vornefeld. Pet. 19–35. Petitioner further contends that claims 4, 5, 8, 9, 13, 14, 17, 18, 22, 23, 26, and 27 are unpatentable as obvious under 35 U.S.C. § 103(a) over Vornefeld and Ahy. Pet. 35–44. For the reasons that follow, Petitioner fails to demonstrate a reasonable likelihood of prevailing on these grounds.

1. Overview of Vornefeld

Vornefeld describes space-division multiple access (SDMA) techniques in the context of the HIPERLAN/2 system, which provides wireless network broadband services with guaranteed quality of service. Ex. 1004, 52. The system deploys a smart array antenna with several antenna systems, which provides the ability to set up multiple antenna beams that can be directed adaptively to the mobile terminal (MT) locations and allows different users to be served on the same frequency channel at the same time. *Id.* Depending on the number of antenna elements and the applied beamforming algorithm, array antennas are able to simultaneously direct several beams conveying individual user signals to different positions. *Id.* at Fig. 2, 53. The system uses a Medium Access Control (MAC) protocol to coordinate the access of MTs to the shared radio channel. *Id.* at 54.

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Figure 3 of Vornefeld is depicted below:



■ **Figure 3.** *The basic frame structure of the spatially extended MAC protocol.*

Figure 3 illustrates the basic MAC frame structure of the spatially extended MAC protocol. *Id.* at Fig. 3. MAC frame starts with broadcast channel (BCH), followed by frame channel (FCH), then a downlink phase, an uplink phase, and random access channels (partitioned, RCH-P, and unpartitioned, RCH-UP). *Id.* at 54. BCH conveys signaling information concerning the whole radio cell in the downlink direction and announces the location of the FCH and RCH within the actual MAC frame. *Id.* FCH is broadcast in the downlink direction and transmits information about the structure of the MAC frame for the up-and downlink phases; it contains announcements and reservations of long and short transport channels the individual MTs have to transmit or receive. *Id.* Short Channel (SCH) conveys data link control information and Long Channel (LCH) serves to transmit user data bidirectionally on the up- and downlink. *Id.* RCH-P and RCH-UP are contention channels. *Id.* As depicted in Figure 3, a number of MAC frames can be transmitted concurrently by extension into the space domain using the

smart antenna system. *See id.* at Fig. 3, 53, 55. A space-time scheduler is used to determine the temporal transmission sequence of MAC PDUs (protocol data unit) as well as the MTs that can simultaneously be addressed or allowed to concurrently transmit their bursts. *Id.* at 55.

2. Overview of Ahy

Ahy describes adaptive point to multipoint wireless communications. Ex. 1006, 1:65–66. A base station controller (BSC) maintains a set of physical (PHY) parameters and media-access-control (MAC) parameters, each of which is adaptively modified by the BSC for communication with a plurality of customer premises equipment (CPE). *Id.* at 2:15–21, 7:18–20. The BSC adjusts communication with each CPE individually and adaptively in response to changes in communication characteristics. *Id.* at 2:21–23. Control of each parameter by the BSC is independent and individual with regard to each CPE. *Id.* at 7:20–22. Each parameter actually has two values: a first value for transmission by the BSC and a second value for transmission by the CPE. *Id.* at 7:65–8:1. The communication parameters that can be adapted include: antenna selection to choose the antenna to be used at the BSC and the CPE; modulation type to determine the bit per symbol rate to use to exchange information; and error code type to choose the error detection and correction technique. *See id.* at 8:50–59, 10:38–48, 11:40–45.

Communications between the BSC and each CPE is conducted using a TDD technique in which time durations are divided into individual frames, each of which includes a "downstream" and "upstream" portion. *Id.* at 7:1–5. The BSC controls transmission for both upstream and downstream directions without specific requests from CPEs. *Id.* at 7:5–9. The TDD frame includes a sequence of parameter setting values for the BSC to use to

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