FORM PTO-1619A

Expires 06/30/99 OMB 0651-0027 07-16-1999



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Name [Mark G. Knedeisen, Esquire	
Address (line 1)	Kirkpatrick & Lockhart LLP	
Address (line 2)	1500 Oliver Building	
Address (line 3)	Pittsburgh, PA 15222	
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Application I	Number(s) or Patent Number(s) Mark if additional numbers at	rtached
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Patent A	Application Number(s) Patent Number(s)	
09311683		
	s being filed together with a <u>new Patent Application</u> , enter the date the patent application was month in named executing inventor.	Day Year
Patent Coop	peration Treaty (PCT)	
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Mark G. Knedeisen	Manh Kneelein	7/13/99
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Name (line 1) Mark D. Ol	lis		6/30/99		
Name (line 2)					
Name (line 1)			Execution Date Month Day Year		
Name (line 2)					
Name (line 1)			Execution Date Month Day Year		
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Application Number(s			if additional numbers attached		
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Patent Application !	Number(s)	Pa	atent Number(s)		

ttorney's Docket No. 95/3/CIP	PAIENI	
r	For: ⊠ U.S. and/or ⊠ Foreign Rights	
	For: ⊠ U.S. Application or	
'	☐ U.S. Provisional Application	
,	For: U.S. Patent	
	For: PCT Application	
'	By: Multiple Inventors	
ASSIGNMENT OF INVEN	ITION (MULTIPLE INVENTORS)	
In consideration of the payment by ASSIGNE eceipt of which is hereby acknowledged, and for	E to ASSIGNOR of the sum of One Do other good and valuable consideration	ollar (\$1.00), the
ASSIGNORS (Inventors):		
	137 North Craig Street, Apt. 9	
Alonzo James Kelly	Pittsburgh, PA 15213	Canada
(type or print name of inventors)	Address	Nationality
(3)		
	1719 Coulter Road	
Robert Craig Coulter	Apollo, PA 15613	USA
	6943 Penn Avenue	
Mark D. Ollis	Pittsburgh, PA 15208	USA
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(Assignment of Invention-Multiple Inventors [16-3.2]-page 1 of 3)

ASSIGNEE:	
Carnegie Mellon University (type or print name of ASSIGNEE)	5000 Forbes Avenue Address
(a non-profit Pennsylvania organization) Nationality	Pittsburgh, PA 15213
and the successors, assigns and legal representatives of	f the ASSIGNEE
(complete one of t	he following)
★ the entire right, title and interest	
and its territorial possessions	%) interest for the United States
(check the following box, if foreign r	ights are also to be assigned)
	rights to claim priority, in and to any and all titled: INFRASTRUCTURE INDEPENDENT
(check and complete (a), (b)	, (c), (d), (e), (f) or (g))
and which is found in	
(a) U.S. patent application executed on even da	ate herewith
(b) U.S. patent application executed on	
(c) U.S. provisional application naming the above	ve inventor(s) for the above-entitled invention
Express mail label no.:	
Mailed:	
	this assignment, I, an ASSIGNOR signing below, y to insert below the filing date and application
(d) 🖂 U.S. application no.: <u>09/311.683</u>	filed on <u>May 13, 1999</u>
(e) International application no. PCT /filed on	
(f) U.S. patent no.	issued
 A change of address to which corresponded fees is being sent separately. 	ndence is to be sent regarding patent maintenance
(also check (g), if foreign application	on(s) is also being assigned)

hereby sells, assigns and transfers to

(Assignment of Invention-Multiple Inventors [16-3.2]-page 2 of 3)

(g) and any legal equivalent thereof in a foreign country, including the right to claim priority and, in and to, all Letters Patent to be obtained for said invention by the above application or any continuation, division, renewal, or substitute thereof, and as to letters patent any reissue or reexamination thereof.

ASSIGNOR hereby covenants that no assignment, sale, agreement or encumbrance has been or will be made or entered into which would conflict with this assignment;

ASSIGNOR further covenants that ASSIGNEE will, upon its request, be provided promptly with all pertinent facts and documents relating to said invention and said Letters Patent and legal equivalents as may be known and accessible to ASSIGNOR and will testify as to the same in any interference, litigation or proceeding related thereto and will promptly execute and deliver to ASSIGNEE or its legal representatives any and all papers, instruments or affidavits required to apply for, obtain, maintain, issue and enforce said application, said invention and said Letters Patent and said equivalents thereof which may be necessary or desirable to carry out the purposes thereof.

hereunto set hand and seal this _	June 30, 1797
_	Date of signing
me as the date of execution of the applica	ation, if item (a) was checked above.
\bigcap Λ Λ	Lall. A
U. H. X	Illy June 3/99
Signature of INVE	-NTOB /
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(//w.2).	Olls June 30, 199
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	ne as the date of execution of the applica

NOTE: No witnessing, notarization or legalization is necessary. If the assignment is notarized or legalized, then it will only be prima facie evidence of execution. 35 USC 261. Use next page if notarization is desired.

(Assignment of Invention-Multiple Inventors [16-3.2]-page 3 of 3)

Attorney's Docket No.	95737CIP	PATENT	
		For: ⊠ U.S. and/or ⊠ Foreign Rights	
		For: ⊠ U.S. Application or	
		U.S. Provisional Application	
		For: U.S. Patent	
1		For: PCT Application	ت
		By: Multiple Inventors	
A	assignment of I	INVENTION (MULTIPLE INVENTORS)	
In consideration of the receipt of which is hereby	e payment by ASS y acknowledged, a	SIGNEE to ASSIGNOR of the sum of One Dol nd for other good and valuable consideration,	lar (\$1.00), the
ASSIGNORS (Inventors)):		
		137 North Craig Street, Apt. 9	
Alonzo James Kelly		Pittaburgh, PA 15213	Canada
(type or print nar	me of inventors)	Address	Nationality
5		1719 Coulter Road	
Robert Craig Coulter		Apollo, PA 15613	USA
		6943 Penn Avenue	
Mark D. Ollis		Pittsburgh, PA 15208	USA

(Assignment of Invention-Multiple Inventors [16-3.2]-page 1 of 3)

hereby sells, assigns and transfers to	
ASSIGNEE:	•
Camegie Mellon University (type or print name of ASSIGNEE)	5000 Forbes Avenue Address
(a non-profit Pennsylvania organization) Nationality	Pittsburgh, PA 15213
and the successors, assigns and legal representative	es of the ASSIGNEE
(complete one	of the following)
★ the entire right, title and interest	
an undivided percent and its territorial possessions	(%) interest for the United States
(check the following box, if foreig	gn rights are also to be assigned)
☑ and in all foreign countries, including improvements which are disclosed in the invention POSITION DETERMINING SYSTEM	all rights to claim priority, in and to any and all entitled: INFRASTRUCTURE INDEPENDENT
(check and complete (a),	(b), (c), (d), (e), (f) or (g))
and which is found in	
(a) U.S. patent application executed on ever	n date herewith
(b) U.S. patent application executed on	
(c) U.S. provisional application naming the a	bove inventor(s) for the above-entitled invention
Express mail label no.:	
Mailed:	
	al of this assignment, I, an ASSIGNOR signing below rney to insert below the filing date and application
(d) 🛛 U.S. application no.:09/311.683	filed on <u>May 13, 1999</u>
(e) International application no. PCT /filed on	
(f) U.S. patent no.	jssued
A change of address to which corres fees is being sent separately.	pondence is to be sent regarding patent maintenance
(also check (g), If foreign applic	cation(s) is also being assigned)

(Assignment of Invention-Multiple Inventors [16-3.2]-page 2 of 3)

(g) and any legal equivalent thereof in a foreign country, including the right to claim priority and, in and to, all Letters Patent to be obtained for said invention by the above application or any continuation, division, renewal, or substitute thereof, and as to letters patent any reissue or reexamination thereof.

ASSIGNOR hereby covenants that no assignment, sale, agreement or encumbrance has been or will be made or entered into which would conflict with this assignment;

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IN WITNESS WHEREOF, We have hereunto set hand and seal this ___

ann James Walls			
nzo James Kelly pe name of Inventor)	Signature of	INVENTOR	7
·	19	<	
bert Craig Coulter			
rk D. Oilis			
IK D. Ollis			
		<i>J</i> .	

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