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Additional name(s) of conveying party(ies) attached? Yes No  3. Nature of conveyance/Execution Date(s):  Execution Date(s) September 7, 2007  Assignment  Merger	Street Address: 5000 Forbes Avenue		
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Security Agreement Change of Name  Joint Research Agreement	State; Pennsylvania		
Government Interest Assignment			
Executive Order 9424, Confirmatory License	Country: United States of America Zip: 15213		
Other	Additional name(s) & address(es) attached?  Yes  No		
A. Patent Application No.(s) 11/810,209 Additional numbers at	B. Patent No.(s) ached? ☐Yes ☑No		
5. Name and address to whom correspondence	6. Total number of applications and patents		
concerning document should be mailed:	involved: One (1)		
Name:Darren E. Wolf	7. Total fee (37 CFR 1.21(h) & 3.41) \$ 40		
Internal Address: Dickie, McCamey & Chilcote, P.C.	Authorized to be charged by credit card		
Street Address: Two PPG Place, Suite 400	✓ Authorized to be charged to deposit account     ☐ Enclosed     ☐ None required (government interest not affecting title)		
City: Pittsburgh	8. Payment Information		
State: Pennsylvania Zip:15222-5402	a. Credit Card Last 4 Numbers Expiration Date		
Phone Number: <u>412-392-5681</u>	·		
Fax Number: 412-392-5 <b>99</b> 0	b. Deposit Account Number 50-3198		
Email Address: dw/s/@dmclaw.com	Authorized User Name Darren E. Wolf		
9. Signature: MMM WAG	September 19, 2007		
Signature	Date		
Darren E. Wolf // Name of Person <b>\$i</b> gning	Total number of pages including cover sheet, attachments, and documents:		

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DOCKET NO. CMU05-096 PATENT

## ASSIGNMENT OF INVENTION

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For:	U.S. Application or 🛛 U.S. Provisional Application	
For:	U.S. Patent	
For:	PCT Application	
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ASSIGNOR(S)		
	Carnegie Mellon University	
Sarah S. Bedair	Department of Electrical & Computer Engineering	United States of
	5000 Forbes Avenue	America
	Pittsburgh, PA 15213-3890	
Name of Assignor	Address	Nationality
Come V. Doddon	Carnegie Mellon University	TInited Ctates of
Gary K. Fedder	ICES 5000 Forbes Avenue	United States of America
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_	·	and the second second
	claim priority, all rights to file patent applications, and all other it all improvements, inventions, and other intellectual property which	
<u></u>		on is/are found in.
(a) U.S. provisional application no.: 60/810,995 filed on June 5, 2006.		
(b) 🛛 U.S. applicati	on no.: <u>11/810,209</u> filed on <u>June 5, 2007</u> .	
(c) 🔲 PCT applicati	on no.: filed on	
(d) the application	n(s) and invention disclosure(s) identified in the Attachments here	eto.
(e) U.S. patent ap	plication executed on	
(f) U.S. patent application executed on even date herewith.		
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Sarah S. Bedair	Sch Bedan 9/7/07
Name of Assignor or  Name & Title of Person entitled to sign on behalf of  Assignor	Signature of Assignor or Date Person entitled to sign on behalf of Assignor
Place of signing of assignment	
City/County: Pittsburgh/Allegheny County State: Pennsylvania Country: United States of America	
Before me this day of to be the person who is described in and who contents of his/her own free will for the purp	, 2007 personally appeared <u>Sarah S. Bedair</u> to me known executed the foregoing assignment instrument and acknowledged its ose therein expressed.
	Notary Public or Consular Officer of the United States of America

Each Inventor: Initial and date here for acknowledgement of this page

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his page 9/1/n

REEL: 019846 FRAME: 0316

DOCKET NO. CMU05-096 PATENT	
	All Assignor Open Date  On entitled to sign on behalf of Assignor
Place of signing of assignment	
City/County: Pittsburgh/Allegheny County State: Pennsylvania Country: United States of America	
Before me this day of be the person who is described in and who execute contents of his/her own free will for the purpose the	, 2007 personally appeared <u>Gary K. Fedder</u> to me known to ed the foregoing assignment instrument and acknowledged its herein expressed.
	Notary Public or Consular Officer of the United States of America

Each Inventor: Initial and date here for acknowledgement of this page

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9 17/07

*#/*7/0**1** 

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COMPANY:	U.S. Patent and Trademark Office	PHONE NO.:	
NAME:	Assignment Fax Number	DATE:	September 19, 2007

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State: Pennsylvania    Joint Research Agreement	3. Nature of conveyance/Execution Date(s):  Execution Date(s) September 7, 2007	Street Address: 5000 Forbes Avenue		
4. Application or patent number(s):  A. Patent Application No.(s)  11/810,209  Additional numbers attached? Yes VNo  5. Name and address to whom correspondence concerning document should be malled:  Name: paren E. Wolf  Internal Address: Dickie, McCamey & Chilcote, P.C.  Street Address: Two PPG Place, Suite 400  City: Pittsburgh  State: Pennsylvania Zip:15222-5402  Phone Number: 412-392-5891  Fax Number: 412-392-5890  Email Address: dwyleg gnctaw.com  9. Signature:  Derren E. Wolf  This document is being filed together with a new application.  B. Patent No.(s)  6. Total number of applications and patents involved: One (1)  7. Total fee (37 CFR 1.21(h) & 3.41) \$.40  Authorized to be charged to deposit account  Enclosed  None required (government interest not affecting title)  8. Payment Information  a. Credit Card Last 4 Numbers  Expiration Date  b. Deposit Account Number 50-3198  Authorized User Name Darren E. Wolf  September 19, 2007  Date  Total number of pages Including cover  5	Joint Research Agreement Government Interest Assignment Executive Order 9424, Confirmatory License	State: Pennsylvania  Country: United States of America Zip: 15213		
Involved: One (1)   Involved: One (1)	A. Patent Application No.(s) 11/810,209	B. Patent No.(s)		
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Internal Address: Dickie, McCamey & Chilcote, P.C.  Street Address: Two PPG Place, Suite 400  City: Pittsburgh State: Pennsylvania Zip:15222-5402  Phone Number: 412-392-5881 Fax Number: 412-392-5890 Email Address: dwbr@dmclaw.com  Penne Number: 412-392-5890 Email Address: dwbr@dmclaw.com  Derren E. Wolf  Authorized to be charged by credit card  Authorized to be charged to deposit account  Enclosed  None required (government interest not affecting title)  8. Payment Information  a. Credit Card Last 4 Numbers  Expiration Date  b. Deposit Account Number 50-3198  Authorized User Name Darren E. Wolf  September 19, 2007  Date  Total number of pages including cover	Name: <u>Darren E. Wolf</u>	7. Total fee (37 CFR 1.21(h) & 3.41) \$ 40		
None required (government interest not affecting title)  City: Pittsburgh State: Pennsylvania Zip:15222-5402  Phone Number: 412-392-5681  Fax Number: 412-392-5681  Email Address: dwb/@dmclaw.com  Phone Signature:  September 19, 2007  Date  Derren E. Wolf  Total number of pages Including cover		Authorized to be charged by credit card  Authorized to be charged to deposit account		
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