

Atty Docket No.: 273913US-2-SD

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MCNC Research and Development Institute

Additional name(s) of conveying party(ies) attached? ☐ Yes ☒ No

3. Nature of Conveyance:

- ☒ Assignment ☐ Merger
☐ Security Agreement ☐ Change of Name
☐ Other

Execution Date: February 8, 2005

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

Name: Research Triangle Institute

Address: 3040 Cornwallis Road
Research Triangle Park, North Carolina 27709Additional name(s) and address(es) attached? ☐ Yes ☒ No

4. Application number(s) or patent number(s):

☐ This document is being filed together with a new application

A. Patent Application No.(s)

10/849,204

10/884,963

B. Patent No.(s)

Additional numbers attached? Yes ☐ No ☒

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

Customer Number

22850

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6. Total applications and patents involved: 2

7. Total fee (37 CFR 3.41): \$80.00

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To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

Eckhard H. Kuesters

Name of Person Signing

Signature

Date

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OP \$80.00 10849204

EXECUTION COPY

PATENT ASSIGNMENT

THIS PATENT ASSIGNMENT (this "Assignment"), dated as of the 11th day of March, 2005, is made by and between MCNC RESEARCH & DEVELOPMENT INSTITUTE, a North Carolina nonprofit corporation ("Seller"), to RESEARCH TRIANGLE INSTITUTE, a North Carolina nonprofit corporation ("Buyer").

Statement of Purpose

Seller and Buyer are parties to that certain Asset Purchase Agreement, dated as of February 8, 2005, (the "Purchase Agreement") providing, among other things, for the assignment by Seller to Buyer of all of Seller's right, title and interest in and to the Intellectual Property Assets (as such term is defined in the Purchase Agreement). The parties hereto desire to provide for the assignment of such right, title and interest in and to certain patents in accordance with the terms of the Purchase Agreement.

NOW, THEREFORE, in consideration of the premises and other good and valuable consideration, the parties intending to be legally bound agree as follows:

1. Patent Ownership. Seller represents that it is the owner of the patents and patent applications set forth on Schedule 1 hereto and hereby made a part hereof (the "Patent Rights"):

2. Patent Assignment. Seller does hereby sell, assign and transfer unto Buyer, its successors, assigns and legal representatives, the entire right, title and interest in all the Patent Rights, the inventions described and claimed therein, including any applications or provisional applications now or hereafter filed in any jurisdiction worldwide, including any reissues, divisionals, continuations, continuations-in-part, extensions or foreign counterparts of the Patent Rights heretofore or hereafter granted, any and all letters patent which may be granted therefor, together with all claims for damages in any applicable jurisdiction by reason of past, present, or future infringement thereof, with the right to sue for, and collect the same for its own use and enjoyment, the same to be held and enjoyed by Buyer for its own use, and the use of Buyer's successors and assigns, as fully and entirely as the same would have been held and enjoyed by Seller if this Assignment had not been made. At Buyer's request and expense, Seller agrees further to cooperate with Buyer in any suit or process for dispute resolution, based on claims the Patent Rights assigned herein have been infringed.

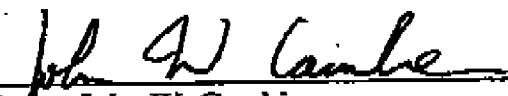
3. Cooperation. At Buyer's request and expense, Seller covenants that it will cooperate with Buyer in perfecting any interests in the Patent Rights. To carry out in good faith the intent and purpose of this Assignment and to facilitate prosecution and enforcement of the Patent Rights in all countries in the world, the Seller will execute, and shall use its best efforts to have inventors execute when needed, all appropriate oaths, declarations, assignments, powers of attorney and other documents.

[Signatures appear on the following page.]

IN WITNESS WHEREOF, Seller has caused this PATENT ASSIGNMENT to be executed and delivered by its duly authorized representative as of the date first set forth above.

MCNC RESEARCH & DEVELOPMENT INSTITUTE

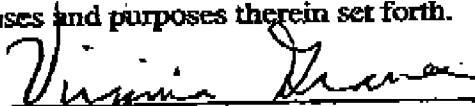
By:


Name: John W. Cambier
Title: Treasurer

County of Durham
State of North Carolina

On this 11th day of March, 2005, personally appeared before me, John W. Cambier, to me known and known to me to be the person aforesaid, who duly acknowledged the signing of the foregoing instrument to be his voluntary act and deed, and as Treasurer (title) of MCNC Research & Development Institute did execute the same for the uses and purposes therein set forth.

(Seal)


Notary Public

17. 2005 2:39PM

OBLON, SPIVAK

NO. 778

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J Scott Merrell

919-541-6001

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SCHEDULE 1

Patent Rights

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Patent Assignment - Schedule 1
MCNC-RDI ACTIVE U.S. CASES

Family No.	Matter No.	App. No.	Filing Date	Pat. No.	Issue Date	Status	Title
066825-0011	0011	10/435,047	6/12/2003			Pending	COMMUNICATION SYSTEM WITH ADAPTIVE CHANNEL CORRECTION
066825-0012	0012	10/184,345	6/27/2002			Published	MEMS ELECTROSTATICALLY ACTUATED OPTICAL DISPLAY DEVICE AND ASSOCIATED ARRAYS
066825-0013	0013	09/878,824	6/11/2001			Published	INTRUSION TOLERANT SERVER SYSTEM
066825-0015	0015	09/889,857	10/12/2000	6880788	1/20/2004	Granted	SCANNING APPARATUS AND ASSOCIATED METHOD
066825-0016	0016	10/185,338	6/28/2002	6817849	9/9/2003	Granted	LOW POWER TUNNELING METAL-OXIDE SEMICONDUCTOR (MOS) DEVICE
066825-0017	0017	10/334,985	12/31/2002			Published	THREE DIMENSIONAL MULTIMODE AND OPTICAL COUPLING DEVICE
066825-0018	0018	10/321,348	12/17/2002			Published	IMPEDANCE CONTROL DEVICES FOR USE IN THE TRANSITION REGIONS OF ELECTROMAGNETIC AND OPTICAL CIRCUITRY AND METHODS FOR USING THE SAME
066825-0019	0019	10/437,091	5/13/2003			Pending	VISUAL DISPLAY WITH INCREASED FIELD OF VIEW
066825-0020	0020	10/170,714	6/12/2002	6763158	7/13/2004	Granted	FLEXIBLE OPTOELECTRONIC CIRCUIT AND ASSOCIATED METHOD
066825-0023	0023	10/160,992	5/31/2002			Published	SAMPLE ANALYSIS DEVICE HAVING A EUCENTRIC GONIOMETER AND ASSOCIATED METHOD
066825-0024	0024	10/044,316	1/11/2002			Published	USER-EXECUTABLE METHOD FOR COMPLEX MODEL DATA ANALYSIS AND ASSOCIATED SYSTEM, COMPUTER DEVICE, AND COMPUTER SOFTWARE PROGRAM PRODUCT
066825-0034	0028	10/447,620	5/29/2003			Published	ELECTROMAGNETIC RADIATION DETECTORS HAVING A MICROELECTROMECHANICAL SHUTTER, DEVICE
066825-0038	0029	07/598,772	8/25/1999	5043988	8/27/1991	Granted	METHOD AND APPARATUS FOR HIGH-PRECISION WEIGHTED RANDOM PATTERN GENERATION
066825-0030	0030	07/924,247	3/15/1999	4921157	5/1/1990	Granted	FLUXLESS SOLDERING PROCESS
066825-0042	0042	10/168,921	9/11/2002			Published	INTRUSION TOLERANT COMMUNICATION NETWORKS AND ASSOCIATED METHODS
066825-0043	0043	10/227,059	8/23/2002			Published	THROUGH-VIA VERTICAL INTERCONNECTS, THROUGH-VIA HEAT SINKS AND ASSOCIATED FABRICATION METHODS
066825-0044	0044	10/258,424	10/10/2002			Pending	OPTICAL-INCLUSIVE DWDM LOCAL AREA NETWORK
066825-0050	0050	09/448,080	11/23/1999	6359374	3/16/2002	Granted	MINIATURE ELECTRICAL RELAYS USING A PIEZOELECTRIC THIN FILM AS AN ACTUATING ELEMENT
066825-0051	0051	09/626,725	7/26/2000	6455420	8/24/2002	Granted	MICROELECTROMECHANICAL ELEVATING STRUCTURES
066825-0052	0052	09/637,533	4/25/2000	6392355	5/21/2002	Granted	CLOSED-LOOP COLD CATHODE CURRENT REGULATOR
066825-0053	0053	09/694,835	10/23/2000	6377436	4/23/2002	Granted	HYBRID MICROELECTROMECHANICAL SYSTEM TUNABLE CAPACITOR AND ASSOCIATED FABRICATION METHODS
066825-0054	0054	09/834,825	4/13/2001	6588738	7/12/2003	Granted	ELECTROMAGNETIC RADIATION DETECTORS HAVING A MICROELECTROMECHANICAL SHUTTER DEVICE
066825-0035	0055	10/041,881	1/7/2002	6520649	2/18/2003	Granted	IMAGE PROJECTION DEVICE AND ASSOCIATED METHOD
066825-0055	0058	10/045,358	10/23/2001	6545329	4/8/2003	Granted	HIGH SENSITIVITY POLARIZED-LIGHT DISCRIMINATOR DEVICE
066825-0052	0057	10/076,186	2/14/2002	6482781	12/10/2002	Granted	CLOSED-LOOP COLD CATHODE CURRENT REGULATOR
066825-0058	0058	08/247,582	5/23/1994	5434484	7/18/1995	Granted	UNIDIRECTIONAL SUPPORTING STRUCTURE FOR MICROELECTROMECHANICAL TRANSDUCERS
066825-0059	0059	08/228,116	4/16/1994	5453881	9/26/1995	Granted	THIN FILM FERROELECTRIC FLAT PANEL DISPLAY DEVICES, AND METHODS FOR OPERATING AND FABRICATING SAME
066825-0060	0060	08/155,020	11/19/1993	5407121	4/18/1996	Granted	FLUXLESS SOLDERING OF COPPER
066825-0062	0082	08/401,001	8/5/1995	5740286	4/14/1998	Granted	ACTIVE NOISE SUPPRESSORS AND METHODS FOR USE IN THE EAR CANAL
066825-0063	0083	09/828,548	4/4/2001	6593833	7/15/2003	Granted	TUNABLE MICROWAVE COMPONENTS UTILIZING FERROELECTRONIC AND FERROMAGNETIC COMPOSITE DIELECTRICS AND METHODS FOR MAKING SAME
066825-0068	0068	09/484,010	12/15/1998	6373652	4/16/2002	Granted	ELECTROSTATICALLY CONTROLLED VARIABLE CAPACITOR

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Patent Assignment - Schedule 1
MCNC-RDI ACTIVE U.S. CASES

Family No.	Matter No.	App. No.	Filing Date	Pat. No.	Issue Date	Status	Title
066625-0087	0087	09/702,082	10/30/2000	6396620	5/28/2002	Granted	ELECTROSTATICALLY ACTUATED ELECTROMAGNETIC RADIATOR SHUTTER
066625-0088	0088	09/320,891	9/27/1999	6236491	5/22/2001	Granted	MICROMACHINED ELECTROSTATIC ACTUATOR WITH AIR GAP
066625-0089	0089	09/042,836	3/17/1998	6137623	10/24/2000	Granted	MODULATABLE REFLECTORS AND METHODS FOR USING SAME
066625-0070	0070	09/661,987	9/14/2000	6590267	7/8/2003	Granted	MICROELECTROMECHANICAL FLEXIBLE MEMBRANE ELECTROSTATIC VALVE DEVICE AND RELATED FABRICATION METHODS
066625-0089	0071	09/638,141	8/10/2000	6233086	5/15/2001	Granted	MODULATABLE REFLECTORS AND METHODS FOR USING SAME
066625-0075	0075	07/699,181	12/31/1992	5479061	12/26/1995	Granted	PLEATED SHEET MICROELECTROMECHANICAL TRANSDUCER
066625-0076	0076	10/777,936	11/5/1991	5237434	8/17/1993	Granted	MICROELECTRONIC MODULE HAVING OPTICAL AND ELECTRICAL INTERCONNECTS
066625-0078	0078	08/439,591	5/12/1995	5616826	4/1/1997	Granted	FLUORINATED FLUXLESS SOLDERING
066625-0080	0080	08/528,429	8/15/1997	6013381	1/1/2000	Granted	FLUORINATED FLUXLESS SOLDERING
066625-0081	0081	07/692,528	12/17/1992	5290400	3/1/1994	Granted	FABRICATION METHOD FOR MICROELECTROMECHANICAL TRANSDUCER
066625-0082	0082	07/819,183	11/27/1990	5208557	4/27/1993	Granted	MICROELECTROMECHANICAL TRANSDUCER AND FABRICATION METHOD
066625-0084	0084	08/692,502	6/9/1996	6024767	2/15/2000	Granted	ENCAPSULATED MICRO-RELAY MODULES AND METHODS OF FABRICATING SAME
066625-0085	0085	08/724,910	10/21/1996	5992729	11/30/1999	Granted	TACKING PROCESSES AND SYSTEMS FOR SOLDERING
066625-0086	0086	08/345,722	6/30/1999	6226683	5/9/2001	Granted	HIGH VOLTAGE MICROMACHINED ELECTROSTATIC SWITCH
066625-0087	0087	09/654,446	9/12/2000	6485273	11/26/2002	Granted	DISTRIBUTED MEMS ELECTROSTATIC PUMPING DEVICES
066625-0088	0088	08/345,300	6/30/1999	6057320	5/2/2000	Granted	ARC RESISTANT HIGH VOLTAGE MICROMACHINED ELECTROSTATIC SWITCH
066625-0090	0090	08/840,000	9/29/1997	5890472	11/23/1999	Granted	MICROELECTRONIC RADIATION DETECTORS FOR DETECTING AND EMITTING RADIATION SIGNALS
066625-0049	0049	10/139,527	5/6/2002	6731492	5/4/2004	Granted	OVERDRIVE STRUCTURES FOR FLEXIBLE ELECTROSTATIC SWITCH
066625-0050	0050	10/553,439	1/16/2002	6700306	3/2/2004	Granted	MINIATURE ELECTRICAL RELAYS USING A PIEZOELECTRIC THIN FILM AS AN ACTUATING ELEMENT
066625-0043	0043	10/834,224	4/29/2004			Pending	THROUGH-VIA VERTICAL INTERCONNECTS, THROUGH-VIA HEAT SINKS AND ASSOCIATED FABRICATION METHODS
066625-0131	0131	60/564,571	4/23/2004			Pending	HIGHER OPERATING VOLTAGES FOR FLEXIBLE FILM ACTUATORS
066625-0132	0132	60/564,573	4/23/2004			Pending	FLOW CONTROL FOR HIGHER OPERATING PRESSURES
066625-0133	0133	60/564,594	4/23/2004			Pending	IMPROVED RELEASING STRUCTURES
066625-0134	0134	60/564,580	4/23/2004			Pending	ELECTROSTATIC VALVE WITH NON-WETTING LAYER
066625-0135	0135	60/564,572	4/23/2004			Pending	STRONG AND FLEXIBLE VALVE CLOSING FOR FLEXIBLE ELECTROSTATIC FILM ACTUATOR
066625-0025	0136	10/849,204	5/20/2004			Pending	OPTICAL BURST SWITCH LOCAL AREA NETWORK COMPONENT ARCHITECTURE
066625-0017	0140	10/684,963	7/7/2004			Pending	THREE DIMENSIONAL MULTIMODE AND OPTICAL COUPLING DEVICE
066625-0142	0142	60/574,588	5/27/2004			Pending	UNIFIED ARCHITECTURE FOR IMPLEMENTING JIT, JET & HORIZON

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Patent Assignment - Schedule 1

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MONC FOREIGN APPLICATIONS STATUS REPORT

Client	Header	Client Reference	Country	Inventor	Applicant No.	Filing Date	Patent No.	Issue Date	Status
066625	0032	SRT-377	JP	MICROELECTROMECHANICAL FLEXIBLE MEMBRANE ELECTROSTATIC VALVE DEVICE AND RELATED FABRICATION METHODS	2002-528983	9/14/2001			Published
066625	0033	SRT-377	CA	MICROELECTROMECHANICAL FLEXIBLE MEMBRANE ELECTROSTATIC VALVE DEVICE AND RELATED FABRICATION METHODS	2421934	9/14/2001			Pending
066625	0034	SRT-377	SG	MICROELECTROMECHANICAL FLEXIBLE MEMBRANE ELECTROSTATIC VALVE DEVICE AND RELATED FABRICATION METHODS	200301230-9	9/14/2001			Pending
066625	0035	SRT-384	JP	MODULATABLE REFLECTORS AND METHODS FOR USING SAME	2000-537092	3/18/1999			Published
066625	0037	SRT-387, 428, 435	CA	MICROMACHINED ELECTROSTATIC ACTUATOR WITH AIR GAP	2368129	5/19/2000			Pending
066625	0039	SRT-387, 428, 435	JP	MICROMACHINED ELECTROSTATIC ACTUATOR WITH AIR GAP	2001-506902	5/19/2000			Published
066625	0040	SRT-387, 428, 435	KR	MICROMACHINED ELECTROSTATIC ACTUATOR WITH AIR GAP	2001-7013885	6/19/2000			Pending
066625	0041	SRT-377	EP	MICROELECTROMECHANICAL FLEXIBLE MEMBRANE ELECTROSTATIC VALVE DEVICE AND RELATED FABRICATION METHODS	01970902.1	9/14/2001			Published
066625	0045	SRT-499 & SRT-560	WO	THROUGH-VIA VERTICAL INTERCONNECTS, THROUGH-VIA HEAT SINKS AND ASSOCIATED FABRICATION METHODS	US02W027010	8/23/2002			Published
066625	0047	SRT-354	JP	ARC RESISTANT HIGH VOLTAGE MICROMACHINED ELECTROSTATIC SWITCH	2001-508469	5/4/2000			Pending
066625	0048	SRT-337	JP	HIGH VOLTAGE MICROMACHINED ELECTROSTATIC SWITCH	2001-506605	6/23/2000			Published
066625	0072	SRT-387, 428, 435	SG	MICROMACHINED ELECTROSTATIC ACTUATOR WITH AIR GAP	200105157-1	5/19/2000	84111	7/28/2002	Granted
066625	0089	SRT-354	TW	ARC RESISTANT HIGH VOLTAGE MICROMACHINED ELECTROSTATIC SWITCH	89109165	5/12/2000	NI-13416	8/17/2001	Granted
066625	0091	SRT-010	CA	MICROELECTRONICS APPARATUS AND A METHOD OF INTERCONNECTING WIRING PLANES	619,098	9/25/1988	1250372	2/21/1989	Granted
066625	0092	SRT-021	CA	METHOD AND APPARATUS FOR EXPOSING PHOTORESIST BY USING	483,767	8/12/1985	1226075	8/23/1987	Granted
066625	0093	SRT-009	CA	APPARATUS FOR MOUNTING A SEMICONDUCTOR CHIP AND MAKING ELECTRICAL CONNECTIONS THERE TO	519,089	9/23/1986	1250373	2/21/1989	Granted
066625	0094	DRT-4	JP	METHOD AND APPARATUS FOR HIGH PRECISION WEIGHTED RANDOM PATTERN GENERATION	5126301690	8/24/1990	3037409	2/25/2000	Granted
066625	0095	DRT-4	CA	METHOD AND APPARATUS FOR HIGH PRECISION WEIGHTED RANDOM PATTERN GENERATION	2003341	8/24/1990	2065341	5/28/1998	Granted
066625	0096	DRT-4	EP	METHOD AND APPARATUS FOR HIGH PRECISION WEIGHTED RANDOM PATTERN GENERATION	90613170.6	8/24/1990	0641537	7/27/1994	Granted
066625	0102	SRT-488 & SRT-560	JP	THROUGH-VIA VERTICAL INTERCONNECTS, THROUGH-VIA HEAT SINKS AND ASSOCIATED FABRICATION METHODS	2003-520001	8/23/2002			Pending

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OBLON, SPIVAK
 J Scott Merrell

NO. 778 P. 10
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Patent Assignment - Schedule 1

Client	Master	Client Reference	Country	Title	Application No.	Filing Date	Patent No.	Issue Date	Status
066625	0103	SRT-496 & SRT-560	SG	THROUGH-VIA VERTICAL INTERCONNECTS, THROUGH-VIA HEAT SINKS AND ASSOCIATED FABRICATION METHODS	200400515-3	8/23/2002			Pending
066625	0105	SRT-498 & SRT-560	IN	THROUGH-VIA VERTICAL INTERCONNECTS, THROUGH-VIA HEAT SINKS AND ASSOCIATED FABRICATION METHODS	288DELNP04	8/23/2002			Pending
066625	0106	SRT-496 & SRT-560	KR	THROUGH-VIA VERTICAL INTERCONNECTS, THROUGH-VIA HEAT SINKS AND ASSOCIATED FABRICATION METHODS	10-04-7002956	8/23/2002			Published
066625	0137	SRT-489	WO	ELECTROMAGNETIC RADIATION DETECTORS HAVING A MICROELECTROMECHANICAL SHUTTER DEVICE	USDA/16318	5/25/2004			Published
066625	0139	SRT-512, 553 & 571	WO	VISUAL DISPLAY WITH INCREASED FIELD OF VIEW	USDA/14945	5/13/2004			Published
066625	0141	SRT-553-PCT	WO	OPTICAL BURST SWITCH LOCAL AREA NETWORK COMPONENT ARCHITECTURE	USDA/15882	5/20/2004			Published
066625	0143	SRT-387, 423, 435	JP	MICROMACHINED ELECTROSTATIC ACTUATOR WITH AIR GAP	2004-128835	4/26/2004			Pending