# PATENT ASSIGNMENT

Electronic Version v1.1
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| SUBMISSION TYPE: | NEW ASSIGNMENT |
| NATURE OF CONVEYANCE: | SECURITY AGREEMENT |

CONVEYING PARTY DATA

| Name | Execution Date |
|---|---|
| ASYST TECHNOLOGIES, INC. | 07/13/2006 |
| ASYST JAPAN, INC. | 07/13/2006 |

RECEIVING PARTY DATA

| | |
|---|---|
| Name: | BANK OF AMERICA, N.A., AS ADMINISTRATIVE AGENT |
| Street Address: | 800 Fifth Avenue, Floor 32 |
| City: | Seattle |
| State/Country: | WASHINGTON |
| Postal Code: | 98104 |

PROPERTY NUMBERS Total: 131

| Property Type | Number |
|---|---|
| Patent Number: | 4700321 |
| Patent Number: | 4724874 |
| Patent Number: | 4735548 |
| Patent Number: | 4749330 |
| Patent Number: | 4770600 |
| Patent Number: | 4778331 |
| Patent Number: | 4802809 |
| Patent Number: | 4827110 |
| Patent Number: | 4833306 |
| Patent Number: | 4859137 |
| Patent Number: | 4880348 |
| Patent Number: | 4888473 |
| Patent Number: | 4892455 |
| Patent Number: | 4893932 |

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| Patent Number: | 4895486 |
| Patent Number: | 4974166 |
| Patent Number: | 4977688 |
| Patent Number: | 4983093 |
| Patent Number: | 4986729 |
| Patent Number: | 5054991 |
| Patent Number: | 5059079 |
| Patent Number: | 5097421 |
| Patent Number: | 5102291 |
| Patent Number: | 5115576 |
| Patent Number: | 5125790 |
| Patent Number: | 5166884 |
| Patent Number: | 5169272 |
| Patent Number: | 5315766 |
| Patent Number: | 5339074 |
| Patent Number: | 5365672 |
| Patent Number: | 5370491 |
| Patent Number: | 5386481 |
| Patent Number: | 5493123 |
| Patent Number: | 5547328 |
| Patent Number: | 5570990 |
| Patent Number: | 5586585 |
| Patent Number: | 5653565 |
| Patent Number: | 5664926 |
| Patent Number: | 5674123 |
| Patent Number: | 5788458 |
| Patent Number: | 5803979 |
| Patent Number: | 5815637 |
| Patent Number: | 5831738 |
| Patent Number: | 5846338 |
| Patent Number: | 5848933 |
| Patent Number: | 5853214 |
| Patent Number: | 5879458 |
| Patent Number: | 5895191 |
| Patent Number: | 5931631 |

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| Patent Number: | 5944475 |
| Patent Number: | 5980183 |
| Patent Number: | 5984610 |
| Patent Number: | 5988233 |
| Patent Number: | 6056026 |
| Patent Number: | 6077026 |
| Patent Number: | 6082949 |
| Patent Number: | 6086323 |
| Patent Number: | 6120371 |
| Patent Number: | 6135698 |
| Patent Number: | 6138721 |
| Patent Number: | 6164664 |
| Patent Number: | 6168085 |
| Patent Number: | 6187182 |
| Patent Number: | 6188323 |
| Patent Number: | 6220808 |
| Patent Number: | 6223886 |
| Patent Number: | 6234738 |
| Patent Number: | 6240335 |
| Patent Number: | 6261044 |
| Patent Number: | 6298280 |
| Patent Number: | 6308818 |
| Patent Number: | 6318953 |
| Patent Number: | 6326755 |
| Patent Number: | 6364595 |
| Patent Number: | 6419438 |
| Patent Number: | 6430877 |
| Patent Number: | 6435330 |
| Patent Number: | 6468021 |
| Patent Number: | 6470227 |
| Patent Number: | 6473668 |
| Patent Number: | 6478532 |
| Patent Number: | 6481558 |
| Patent Number: | 6494308 |
| Patent Number: | 6502869 |

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| Patent Number: | 6520727 |
| Patent Number: | 6530736 |
| Patent Number: | 6533101 |
| Patent Number: | 6575687 |
| Patent Number: | 6579052 |
| Patent Number: | 6591160 |
| Patent Number: | 6591162 |
| Patent Number: | 6591960 |
| Patent Number: | 6592317 |
| Patent Number: | 6592679 |
| Patent Number: | 6612797 |
| Patent Number: | 6634851 |
| Patent Number: | 6704998 |
| Patent Number: | 6709225 |
| Patent Number: | 6810294 |
| Patent Number: | 6677690 |
| Patent Number: | 6729462 |
| Patent Number: | 6848876 |
| Patent Number: | 6853876 |
| Application Number: | 10087092 |
| Application Number: | 10087400 |
| Application Number: | 10234640 |
| Application Number: | 10087638 |
| Application Number: | 10194702 |
| Application Number: | 10438470 |
| Application Number: | 10618313 |
| Application Number: | 10888819 |
| Application Number: | 10624133 |
| Application Number: | 09496009 |
| Application Number: | 09899833 |
| Application Number: | 11064880 |
| Application Number: | 11238030 |
| Application Number: | 11107508 |
| Application Number: | 11014401 |
| Application Number: | 11340101 |

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| Application Number: | 60681389 |
| Application Number: | 11177645 |
| Application Number: | 60697785 |
| Application Number: | 11178072 |
| Application Number: | 60697528 |
| Application Number: | 60697616 |
| Application Number: | 60698124 |
| Application Number: | 60730688 |
| Application Number: | 11305256 |
| Application Number: | 11352154 |
| Application Number: | 10719069 |
| Application Number: | 10237078 |

CORRESPONDENCE DATA


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*Correspondence will be sent via US Mail when the fax attempt is unsuccessful.*

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Address Line 2: Mayer Brown Rowe & Maw LLP

Address Line 4: Chicago, ILLINOIS 60606-4637


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|---|---|
| NAME OF SUBMITTER: | Christopher Dore |

Total Attachments: 17
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# PATENT SECURITY AGREEMENT

This PATENT SECURITY AGREEMENT, dated as of July 13, 2006 (this "Agreement"), is made by ASYST TECHNOLOGIES, INC., a California corporation (the "Company"), and ASYST JAPAN, INC., a Japanese corporation (collectively with the Company, the "Grantors" and each, a "Grantor"), in favor of BANK OF AMERICA, N.A., as the administrative agent (together with its successor(s) thereto in such capacity, the "Administrative Agent") for each of the Secured Parties.

W I T N E S S E T H :

WHEREAS, pursuant to a Credit Agreement, dated as of June 22, 2006 (as amended, supplemented, amended and restated or otherwise modified from time to time, the "Credit Agreement"), among the Grantors and certain Subsidiaries of the Company party thereto from time to time (each a "Designated Borrower" and, collectively with the Grantors, the "Borrowers"), the Lenders and the Administrative Agent, the Lenders and the L/C Issuer have extended Commitments to make Credit Extensions to the Borrowers; and

WHEREAS, in connection with the Credit Agreement, the Grantors have executed and delivered a US Pledge and Security Agreement, dated as of July 13, 2006 (as amended, supplemented, amended and restated or otherwise modified from time to time, the "Security Agreement");

WHEREAS, pursuant to the Credit Agreement and pursuant to clause (e) of Section 4.5 of the Security Agreement, the Grantors are required to execute and deliver this Agreement and to grant to the Administrative Agent a continuing security interest in all of the Patent Collateral (as defined below) to secure all Obligations as set forth in Section 2.2 of the Credit Agreement; and

WHEREAS, the Grantors have duly authorized the execution, delivery and performance of this Agreement; and

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Grantors agree, for the benefit of each Secured Party, as follows:

SECTION 1. Definitions. Unless otherwise defined herein or the context otherwise requires, terms used in this Agreement, including its preamble and recitals, have the meanings provided in the Security Agreement.

SECTION 2. Grant of Security Interest. The Grantors hereby grant to the Administrative Agent, for its benefit and the ratable benefit of each other Secured Party, a continuing security interest in all of the Grantors' right, title and interest throughout the world (except Japan and Taiwan), whether now or hereafter existing or acquired by the Grantors, in and to the following (Patent Collateral"):

(a) inventions and discoveries, whether patentable or not, all letters patent and applications for letters patent throughout the world (except Japan and Taiwan), including

all patent applications in preparation for filing, including all reissues, divisions, continuations, continuations-in-part, extensions, renewals and reexaminations of any of the foregoing ("Patents"), including each Patent and Patent application referred to in Item A of Schedule I;

(b) all Patent licenses, and other agreements for the grant by or to such Grantor of any right to use any items of the type referred to in clause (a) above (each a "Patent License"), including each Patent License referred to in Item B of Schedule I;

(c) the right to sue third parties for past, present and future infringements of any Patent or Patent application, and for breach or enforcement of any Patent License; and

(d) all proceeds of, and rights associated with, the foregoing (including Proceeds, licenses, royalties, income, payments, claims, damages and proceeds of infringement suits).

Notwithstanding the foregoing, Patent Collateral shall not include those items set forth in clauses (i) through (v) of Section 2.1 of the Security Agreement.

SECTION 3. Security Agreement. This Agreement has been executed and delivered by the Grantors for the purpose of registering the security interest of the Administrative Agent in the Patent Collateral with the United States Patent and Trademark Office and corresponding offices in other countries of the world (except Japan and Taiwan). The security interest granted hereby has been granted as a supplement to, and not in limitation of, the security interest granted to the Administrative Agent for its benefit and the ratable benefit of each other Secured Party under the Security Agreement. The Security Agreement (and all rights and remedies of the Administrative Agent and each Secured Party thereunder) shall remain in full force and effect in accordance with its terms.

SECTION 4. Waiver, etc. The Grantors hereby waive promptness, diligence, notice of acceptance and any other notice with respect to any of the Obligations, this Agreement and the Security Agreement and any requirement that any Secured Party protect, secure, perfect or insure any Lien, or any property subject thereto, or exhaust any right or take any action against any Loan Party or any other Person (including any other Grantor) or entity or any Collateral securing the Obligations, as the case may be. The Grantors waive any rights and defenses that are or may become available to Grantors by reason of §§ 2787 to 2855, inclusive, and §§ 2899 and 3433 of the California Civil Code. As provided below, this Agreement shall be governed by, and construed in accordance with, the Laws of the State of New York. The foregoing waivers and the provisions hereinafter set forth in this Agreement and the Security Agreement which pertain to California Law are included solely out of an abundance of caution, and shall not be construed to mean that any of the above-referenced provisions of California Law are in any way applicable to this Agreement, the Security Agreement or the Obligations.

SECTION 5. Release of Liens. Upon (i) the Disposition of Patent Collateral in accordance with the Credit Agreement or (ii) the occurrence of the Termination Date, the security interests granted herein shall automatically terminate with respect to (A) such Patent

Collateral (in the case of clause (i)) or (B) all Patent Collateral (in the case of clause (ii)). Upon any such Disposition or termination, the Administrative Agent will, at the Grantors' sole expense, release without any representations, warranties or recourse of any kind whatsoever, all Patent Collateral held by the Administrative Agent hereunder, and execute and deliver to the Grantors such Documents as the Grantors shall reasonably request to evidence such termination.

SECTION 6. Acknowledgment. The Grantors do hereby further acknowledge and affirm that the rights and remedies of the Administrative Agent with respect to the security interest in the Patent Collateral granted hereby are more fully set forth in the Security Agreement, the terms and provisions of which (including the remedies provided for therein) are incorporated by reference herein as if fully set forth herein.

SECTION 7. Loan Document. This Agreement is a Loan Document executed pursuant to the Credit Agreement and shall (unless otherwise expressly indicated herein) be construed, administered and applied in accordance with the terms and provisions thereof, including Article X thereof.

SECTION 8. Governing Law, Entire Agreement, etc. **THIS AGREEMENT WILL BE DEEMED TO BE A CONTRACT MADE UNDER AND GOVERNED BY THE INTERNAL LAWS OF THE STATE OF NEW YORK.**

SECTION 9. California Judicial Reference. If any action or proceeding is filed in a court of the State of California by or against any party hereto in connection with any of the transactions contemplated by this Agreement, the Security Agreement or any other Loan Document, (a) the court shall, and is hereby directed to, make a general reference pursuant to California Code of Civil Procedure Section 638 to a referee (who shall be a single active or retired judge) to hear and determine all of the issues in such action or proceeding (whether of fact or of Law) and to report a statement of decision, provided that at the option of any party to such proceeding, any such issues pertaining to a "provisional remedy" as defined in California Code of Civil Procedure Section 1281.8 shall be heard and determined by the court; and (b) without limiting the generality of Section 10.04 of the Credit Agreement, the Grantors (including the undersigned), jointly and severally, shall be solely responsible to pay all fees and expenses of any referee appointed in such action or proceeding.

SECTION 10. Counterparts. This Agreement may be executed by the parties hereto in several counterparts, each of which shall be deemed to be an original and all of which shall constitute together but one and the same agreement. Delivery of an executed counterpart of a signature page to this Agreement by facsimile or via other electronic means shall be effective as delivery of a manually executed counterpart of this Agreement.

SECTION 11. ENTIRE AGREEMENT. THIS AGREEMENT AND THE OTHER LOAN DOCUMENTS REPRESENT THE FINAL AGREEMENT AMONG THE PARTIES AND MAY NOT BE CONTRADICTED BY EVIDENCE OF PRIOR, CONTEMPORANEOUS, OR SUBSEQUENT ORAL AGREEMENTS OF THE PARTIES. THERE ARE NO UNWRITTEN ORAL AGREEMENTS AMONG THE PARTIES.

* * * * *

IN WITNESS WHEREOF, each of the parties hereto has caused this Agreement to be duly executed and delivered by its Responsible Officer as of the date first above written.

ASYST TECHNOLOGIES, INC.

By: _____
Name: Stephen S. Schwartz
Title: President and Chief Executive Officer

ASYST JAPAN, INC.

By: _____
Name: Stephen S. Schwartz
Title: Director

BANK OF AMERICA, N.A.,
as Administrative Agent

By: Ronald R Parsons

Name:

Title: RONALD R. PARSONS
Vice President

SCHEDULE I
to US Patent Security Agreement

## Item A. Patents

### I. Issued Patents – United States

| Country | Patent No. | Issue Date | Inventor(s) | Title | Owner |
|---|---|---|---|---|---|
| United States | 4,700,321 | October 13, 1987 | Assigned from Proconics | TIMING SIGNAL GENERATOR | Asyst Technologies, Inc. |
| United States | 4,724,874 | February 16, 1988 | M. Parikh and A. Bonora | SEALABLE TRANSPORTABLE CONTAINER HAVING A PARTICLE FILTERING SYSTEM | Asyst Technologies, Inc. |
| United States | 4,735,548 | April 5, 1988 | Assigned to Asyst Japan, Inc. | CARRIER SYSTEM FOR CLEAN ROOM | Asyst Japan, Inc. |
| United States | 4,749,330 | June 7, 1988 | Assigned from Hine Design | TRANSPORT MECHANISM | Asyst Technologies, Inc. |
| United States | 4,770,600 | September 13, 1988 | Assigned to Asyst Japan, Inc. | APPARATUS FOR POSITIONING SILICON WAFER | Asyst Japan, Inc. |
| United States | 4,778,331 | October 18, 1988 | Assigned to Asyst Japan, Inc. | CARRIER SYSTEM FOR SILICON WAFER | Asyst Japan, Inc. |
| United States | 4,802,809 | February 7, 1989 | A. Bonora | MANIPULATOR FOR STANDARD MECHANICAL INTERFACE APPARATUS | Asyst Technologies, Inc. |
| United States | 4,827,110 | May 2, 1989 | Assigned from Fluoroware | METHOD AND APPARATUS FOR MONITORING THE LOCATION OF WAFER DISKS | Asyst Technologies, Inc. |
| United States | 4,833,306 | May 23, 1989 | Assigned from Fluoroware | BAR CODE REMOTE RECOGNITION SYSTEM FOR PROCESS CARRIERS OF WAFER DISKS | Asyst Technologies, Inc. |
| United States | 4,859,137 | August 22, 1989 | A. Bonora and F. Rosenquist | APPARATUS FOR TRANSPORTING A HOLDER BETWEEN A PORT OPENING OF A STANDARDIZED MECHANICAL INTERFACE SYSTEM AND A LOADING AND UNLOADING STATION | Asyst Technologies, Inc. |
| United States | 4,880,348 | November 14, 1989 | Assigned from Roboptek | WAFER CENTRATION DEVICE | Asyst Technologies, Inc. |
| United States | 4,888,473 B1 | October 15, 1996 | Assigned from Fluoroware | WAFER DISK LOCATION MONITORING SYSTEM AND TAGGED PROCESS CARRIERS FOR USE THEREWITH | Asyst Technologies, Inc. |
| United States | 4,888,473 | December 19, 1989 | Assigned from Fluoroware | WAFER DISK LOCATION MONITORING SYSTEM AND TAGGED PROCESS CARRIERS FOR USE THEREWITH | Asyst Technologies, Inc. |
| United States | 4,892,455 | January 9, 1990 | Assigned from Hine Design | WAFER ALIGNMENT AND TRANSFER MECHANISM | Asyst Technologies, Inc. |
| United States | 4,893,932 | January 16, 1990 | Assigned from Particle Measuring Systems, Inc. | SURFACE ANALYSIS SYSTEM AND METHOD | Asyst Technologies, Inc. |
| United States | 4,895,486 | January 23, 1990 | Assigned from Roboptek | WAFER MONITORING DEVICE | Asyst Technologies, Inc. |
| United States | 4,974,166 | November 27, 1990 | G. Maney, A. Bonora, M. Parikh and M. Brain | PROCESSING SYSTEMS WITH INTELLIGENT ARTICLE TRACKING | Asyst Technologies, Inc. |

| Country | Patent No. | Issue Date | Inventor(s) | Title | Owner |
|---|---|---|---|---|---|
| United States | 4,977,688 | December 12, 1990 | Assigned from Semifab, Inc. | VAPOR DEVICE AND METHOD FOR DRYING ARTICLES AS SEMICONDUCTOR WAFER WITH SUBSTANCES SUCH AS ISOPROPYL ALCOHOL | Asyst Technologies, Inc. |
| United States | 4,983,093 | January 8, 1991 | Assigned from Proconics | WAFER TRANSFER APPARATUS | Asyst Technologies, Inc. |
| United States | 4,986,729 | January 22, 1991 | Assigned from Proconics | WAFER TRANSFER APPARATUS | Asyst Technologies, Inc. |
| United States | 5,054,991 | October 8, 1991 | Assigned to Asyst Japan, Inc. | WAFER POSITIONING APPARATUS | Asyst Japan, Inc. |
| United States | 5,059,079 | October 22, 1991 | Assigned from Proconics | PARTICLE-FREE STORAGE FOR ARTICLES | Asyst Technologies, Inc. |
| United States | 5,097,421 | March 17, 1992 | M. Parikh | INTELLIGENT WAFER CARRIER (COMPUTER AIDED DISCRETE TRAVELER SYSTEM FOR INTEGRATED CONTROL) | Asyst Technologies, Inc. |
| United States | 5,102,291 | April 7, 1992 | Assigned from Hine Design | METHOD FOR TRANSPORTING SILICON WAFERS | Asyst Technologies, Inc. |
| United States | 5,115,576 | May 26, 1992 | Assigned from Semifab, Inc. | VAPOR DEVICE AND METHOD FOR DRYING ARTICLES AS SEMICONDUCTOR WAFER WITH SUBSTANCES SUCH AS ISOPROPYL ALCOHOL | Asyst Technologies, Inc. |
| United States | 5,125,790 | June 30, 1992 | Assigned from Proconics | WAFER TRANSFER APPARATUS | Asyst Technologies, Inc. |
| United States | 5,166,884 | November 24, 1992 | G. Maney, A. O'Sullivan and W. Faraco | INTELLIGENT SYSTEM FOR PROCESSING AND STORING ARTICLES | Asyst Technologies, Inc. |
| United States | 5,169,272 | December 8, 1992 | A. Bonora, G. Guerre and M. Parikh | METHOD AND APPARATUS FOR TRANSFERRING ARTICLES BETWEEN TWO CONTROLLED ENVIRONMENTS | Asyst Technologies, Inc. |
| United States | 5,315,766 | May 31, 1994 | Assigned from Semifab, Inc. | VAPOR DEVICE AND METHOD FOR DRYING ARTICLES AS SEMICONDUCTOR WAFER WITH SUBSTANCES SUCH AS ISOPROPYL ALCOHOL | Asyst Technologies, Inc. |
| United States | 5,339,074 | August 16, 1994 | Assigned from Fluoroware | VERY LOW FREQUENCY TRACKING SYSTEM | Asyst Technologies, Inc. |
| United States | 5,365,672 | November 22, 1994 | Assigned to Asyst Japan, Inc. | POSITIONING APPARATUS FOR A SEMICONDUCTOR WAFER | Asyst Japan, Inc. |
| United States | 5,370,491 | December 6, 1994 | A. Bonora, G. Guerre, M. Parikh, F. Rosenquist and S. Jain | METHOD AND APPARATUS FOR TRANSFERRING ARTICLES BETWEEN TWO CONTROLLED ENVIRONMENTS | Asyst Technologies, Inc. |
| United States | 5,386,481 | January 31, 1995 | Assigned from Hine Design | DEVICES AND METHODS FOR READING IDENTIFICATION MARKS ON SEMICONDUCTOR WAFERS | Asyst Technologies, Inc. |
| United States | 5,493,123 | February 20, 1996 | Assigned from Particle Measuring Systems, Inc. | SURFACE DEFECT INSPECTION SYSTEM AND METHOD | Asyst Technologies, Inc. |
| United States | 5,547,328 | August 20, 1996 | A. Bonora, G. Guerre, M. Parikh, F. Rosenquist and S. Jain | METHOD AND APPARATUS FOR TRANSFERRING ARTICLES BETWEEN TWO CONTROLLED ENVIRONMENTS | Asyst Technologies, Inc. |

| Country | Patent No. | Issue Date | Inventor(s) | Title | Owner |
|---|---|---|---|---|---|
| United States | 5,570,990 | November 5, 1996 | A. Bonora, B. Richardson, M. Brain, E. Cortez and B. Huang | HUMAN GUIDED MICRO STOCKER AND PLACEMENT SYSTEM | Asyst Technologies, Inc. |
| United States | 5,586,585 | December 24, 1996 | A. Bonora and J. Oen | CYLINDRICAL LOADLOCK CHAMBER WITH INTEGRAL PORT | Asyst Technologies, Inc. |
| United States | 5,653,565 | August 5, 1997 | A. Bonora, W. Fosnight, R. Martin and B. Rhine | ADAPTER FOR SMIF PORT INTERFACE | Asyst Technologies, Inc. |
| United States | 5,664,926 | September 9, 1997 | Assigned from Progressive | STAGE ASSEMBLY FOR A SUBSTRATE PROCESSING SYSTEM | Asyst Technologies, Inc. |
| United States | 5,674,123 | October 7, 1997 | Assigned from Semifab, Inc. | DOCKING AND ENVIRONMENTAL PURGING SYSTEM FOR INTEGRATED CIRCUIT WAFER TRANSPORT | Asyst Technologies, Inc. |
| United States | 5,788,458 | August 4, 1998 | A. Bonora, M. Neads and J. Oen | METHOD AND APPARATUS FOR VERTICAL TRANSFER OF A SEMICONDUCTOR WAFER CASSETTE | Asyst Technologies, Inc. |
| United States | 5,803,979 | September 8, 1998 | Assigned from Hine Design | TRANSPORT APPARATUS FOR SEMICONDUCTOR WAFER (CMP) | Asyst Technologies, Inc. |
| United States | 5,815,637 | September 29, 1998 | Assigned from Semifab, Inc. | HUMIDIFIER FOR CONTROL OF SEMI-CONDUCTOR MANUFACTURING ENVIRONMENTS | Asyst Technologies, Inc. |
| United States | 5,831,738 | November 3, 1998 | Assigned from Hine Design | APPARATUS AND METHODS FOR VIEWING IDENTIFICATION MARKS ON SEMICONDUCTOR WAFERS | Asyst Technologies, Inc. |
| United States | 5,846,338 | December 8, 1998 | A. Bonora, N. Kedarnath and J. Oen | METHOD AND APPARATUS FOR DRY CLEANING CLEAN ROOM CONTAINERS | Asyst Technologies, Inc. |
| United States | 5,848,933 | December 15, 1998 | Assigned from Semifab, Inc. | DOCKING AND ENVIRONMENTAL PURGING SYSTEM FOR INTEGRATED CIRCUIT WAFER TRANSPORT | Asyst Technologies, Inc. |
| United States | 5,853,214 | December 29, 1998 | Sold to Entegris | ALIGNER FOR A SUBSTRATE CARRIER | Asyst Technologies, Inc. |
| United States | 5,879,458 | March 9, 1999 | Assigned from Semifab, Inc. | MOLECULAR CONTAMINATION CONTROL SYSTEM | Asyst Technologies, Inc. |
| United States | 5,895,191 | April 20, 1999 | A. Bonora and W. Fosnight | SEALABLE, TRANSPORTABLE CONTAINER ADAPTED FOR HORIZONTAL LOADING AND UNLOADING | Asyst Technologies, Inc. |
| United States | 5,931,631 | August 3, 1999 | A. Bonora, M. Neads and J. Oen | METHOD AND APPARATUS FOR VERTICAL TRANSFER OF A SEMICONDUCTOR WAFER CASSETTE | Asyst Technologies, Inc. |
| United States | 5,944,475 | August 31, 1999 | A. Bonora, W. Fosnight and R. Martin | ROTATED, ORTHOGONAL LOAD COMPATIBLE FRONT-OPENING INTERFACE | Asyst Technologies, Inc. |
| United States | 5,980,183 | November 9, 1999 | W. Fosnight | INTEGRATED INTRABAY BUFFER, DELIVERY, AND STOCKER SYSTEM | Asyst Technologies, Inc. |
| United States | 5,984,610 | November 16, 1999 | Assigned from Fortrend Engineering Corporation | POD LOADER INTERFACE | Asyst Technologies, Inc. |
| United States | 5,988,233 | November 23, 1999 | W. Fosnight, A. Bonora, R. Martin and J. Tatro | EVACUATION-DRIVEN SMIF POD PURGE SYSTEM | Asyst Technologies, Inc. |
| United States | 6,056,026 | May 2, 2000 | W. Fosnight and J. Shenk | PASSIVELY ACTIVATED VALVE FOR CARRIER PURGING | Asyst Technologies, Inc. |

| Country | Patent No. | Issue Date | Inventor(s) | Title | Owner |
|---|---|---|---|---|---|
| United States | 6,077,026 | June 20, 2000 | Assigned from Progressive | A PROGRAMMABLE SUBSTRATE SUPPORT FOR A SUBSTRATE POSITIONING SYSTEM | Asyst Technologies, Inc. |
| United States | 6,082,949 | July 4, 2000 | F. Rosenquist | LOAD PORT OPENER | Asyst Technologies, Inc. |
| United States | 6,086,323 | July 11, 2000 | Assigned from Fortrend Engineering Corporation | METHOD FOR SUPPLYING WAFERS TO AN IC MANUFACTURING PROCESS | Asyst Technologies, Inc. |
| United States | 6,120,371 | September 19, 2000 | Assigned from Semifab, Inc. | DOCKING AND ENVIRONMENTAL PURGING SYSTEM FOR INTEGRATED CIRCUIT WAFER TRANSPORT | Asyst Technologies, Inc. |
| United States | 6,135,698 | October 24, 2000 | A. Bonora, E. Cortez, J. DiPaola and R. Netsch | UNIVERSAL TOOL INTERFACE AND/OR WORKPIECE TRANSFER APPARATUS FOR SMIF AND OPEN POD APPLICATIONS | Asyst Technologies, Inc. |
| United States | 6,138,721 | October 31, 2000 | A. Bonora, E. Cortez, J. Kyffin and M. Ng | TILT AND GO LOAD PORT INTERFACE ALIGNMENT SYSTEMS | Asyst Technologies, Inc. |
| United States | 6,164,664 | December 26, 2000 | W. Fosnight, J. Shenk and P. Peterson | KINEMATIC COUPLING COMPATIBLE PASSIVE INTERFACE SEAL | Asyst Technologies, Inc. |
| United States | 6,168,085 | January 2, 2001 | Assigned from Semifab, Inc. | SYSTEM AND METHOD FOR CASCADE CONTROL OF TEMPERATURE AND HUMIDITY FOR SEMI-CONDUCTOR MANUFACTURING ENVIRONMENTS | Asyst Technologies, Inc. |
| United States | 6,187,182 B1 | | | FILTER CARTRIDGE ASSEMBLY FOR A GAS PURGING SYSTEM | Asyst Technologies, Inc. |
| United States | 6,188,323 | February 13, 2001 | F. Rosenquist, B. Richardson, W. Fosnight and A. Bonora | WAFER MAPPING SYSTEM | Asyst Technologies, Inc. |
| United States | 6,220,808 | April 24, 2001 | A. Bonora, W. Fosnight and R. Martin | ERGONOMIC, VARIABLE SIZE, BOTTOM OPENING SYSTEM COMPATIBLE WITH A VERTICAL INTERFACE | Asyst Technologies, Inc. |
| United States | 6,223,886 | May 1, 2001 | M. Bonora, R. Gould Assigned from Palo Alto Technologies, Inc. | INTEGRATED ROLLER TRANSPORT POD AND ASYNCHRONOUS CONVEYOR | Asyst Technologies, Inc. |
| United States | 6,234,738 | May 22, 2001 | Assigned to Asyst Japan, Inc. | THIN SUBSTRATE TRANSFERRING APPARATUS | Asyst Japan, Inc. |
| United States | 6,240,335 | May 29, 2001 | B. Wehrung, C. Holden Assigned from Palo Alto Technologies, Inc. | DISTRIBUTED CONTROL SYSTEM ARCHITECTURE AND METHOD FOR A MATERIAL TRANSPORT | Asyst Technologies, Inc. |
| United States | 6,261,044 | July 17, 2001 | W. Fosnight and J. Shenk | POD TO PORT DOOR RETENTION AND EVACUATION SYSTEM | Asyst Technologies, Inc. |
| United States | 6,298,280 | October 2, 2001 | A. Bonora, W. Fosnight, K. Swamy, M. Davis and M. Cookson | METHOD AND APPARATUS FOR IN-CASSETTE WAFER CENTER DETERMINATION | Asyst Technologies, Inc. |
| United States | 6,308,818 | October 30, 2001 | M. Bonora, R. Gould Assigned from Palo Alto Technologies, Inc. | TRANSPORT SYSTEM WITH INTEGRATED TRANSPORT CARRIERS AND DIRECTOR | Asyst Technologies, Inc. |

| Country | Patent No. | Issue Date | Inventor(s) | Title | Owner |
|---|---|---|---|---|---|
| United States | 6,318,953 | November 20, 2001 | A. Bonora, R. Netsch, P. Sullivan, W. Fosnight, J. Shenk and E. Noma | SMIF-COMPATIBLE OPEN CASSETTE ENCLOSURE | Asyst Technologies, Inc. |
| United States | 6,326,755 | December 4, 2001 | D. Babbs, T. Ewald, M. Coady and J. Kim | SYSTEM FOR PARALLEL PROCESSING OF WORKPIECES | Asyst Technologies, Inc. |
| United States | 6,364,595 | April 2, 2002 | A. Bonora, W. Fosnight and J. Shenk | RETICLE TRANSFER SYSTEM | Asyst Technologies, Inc. |
| United States | 6,419,438 | July 16, 2002 | F. Rosenquist | FIMS INTERFACE WITHOUT ALIGNMENT PINS | Asyst Technologies, Inc. |
| United States | 6,430,877 | August 13, 2002 | M. Bonora, R Gould Assigned from Palo Alto Technologies, Inc. | POD DOOR ALIGNMENT DEVICE | Asyst Technologies, Inc. |
| United States | 6,435,330 | August 20, 2002 | M. Bonora, R Gould Assigned from Palo Alto Technologies, Inc. | IN/OUT LOAD PORT TRANSFER MECHANISM | Asyst Technologies, Inc. |
| United States | 6,468,021 | October 22, 2002 | M. Bonora, R. Gould, M. Brain, D. Adams Assigned from Palo Alto Technologies, Inc. | INTEGRATED INTRA-BAY TRANSFER, STORAGE AND DELIVERY SYSTEM | Asyst Technologies, Inc. |
| United States | 6,470,227 | October 22, 2002 | M. Rangachari, A. Sharma, R. Balakrishnan and B. Pitchaikani | METHOD AND APPARATUS FOR AUTOMATING A MICROELECTRONIC MANUFACTURING PROCESS | Asyst Technologies, Inc. |
| United States | 6,473,668 | October 29, 2002 | S. Abuzeid, X. He and G. Tannous | INTELLIGENT MINIENVIRONMENT | Asyst Technologies, Inc. |
| United States | 6,478,532 | November 12, 2002 | M. Coady and H. Bailey | WAFER ORIENTING AND READING MECHANISM | Asyst Technologies, Inc. |
| United States | 6,481,558 | November 19, 2002 | M. Bonora, R. Could, J. Kerr Assigned from Palo Alto Technologies, Inc. | INTEGRATED LOAD PORT-CONVEYOR TRANSFER SYSTEM | Asyst Technologies, Inc. |
| United States | 6,494,308 | December 18, 2002 | M. Bonora, R. Gould Assigned from Palo Alto Technologies, Inc. | INTEGRATED ROLLER TRANSPORT AND ASYNCHRONOUS CONVEYOR | Asyst Technologies, Inc. |
| United States | 6,502,869 | January 7, 2003 | F. Rosenquist and M. Ng | POD DOOR TO PORT DOOR RETENTION SYSTEM | Asyst Technologies, Inc. |
| United States | 6,520,727 | February 18, 2003 | D. Babbs, T. Ewald, M. Coady and W. Fosnight | MODULAR SORTER | Asyst Technologies, Inc. |
| United States | 6,530,736 | March 11, 2003 | F. Rosenquist | SMIF LOAD PORT INTERFACE INCLUDING SMART PORT | Asyst Technologies, Inc. |
| United States | 6,533,101 | March 18, 2003 | M. Bonora, R. Gould Assigned from Palo Alto Technologies, Inc. | INTEGRATED TRANSPORT CARRIER AND CONVEYOR SYSTEM | Asyst Technologies, Inc. |
| United States | 6,575,687 | June 10, 2003 | A. Bonora, R. Netsch and R. Gould | WAFER TRANSPORT SYSTEM | Asyst Technologies, Inc. |
| United States | 6,579,052 | June 17, 2003 | A. Bonora, R. Martin, W. Fosnight, R. Netsch, J. Oen and T. Mosier | SMIF POD STORAGE, DELIVERY AND RETRIEVAL SYSTEM | Asyst Technologies, Inc. |
| United States | 6,591,160 | July 8, 2003 | R. Hine and G. Hine | SELF TEACHING ROBOT | Asyst Technologies, Inc. |
| United States | 6,591,162 | July 8, 2003 | R. Martin | SMART LOAD PORT WITH INTEGRATED CARRIER MONITORING AND FAB-WIDE CARRIER MANAGEMENT SYSTEM | Asyst Technologies, Inc. |

| Country | Patent No. | Issue Date | Inventor(s) | Title | Owner |
|---|---|---|---|---|---|
| United States | 6,591,960 | July 15, 2003 | D. Babbs, J. Kim, M. Coady and W. Fosnight | EDGE GRIP ALIGNER WITH BUFFERING CAPABILITIES | Asyst Technologies, Inc. |
| United States | 6,592,317 | July 15, 2003 | J. Rush, T. Ulander Assigned from Fortrend Engineering Corporation | POD LOADER INTERFACE END EFFECTORS | Asyst Technologies, Inc. |
| United States | 6,592,679 | July 15, 2003 | Michael Krolak | CLEAN METHOD AND APPARATUS FOR VACUUM HOLDING OF SUBSTRATES | Asyst Technologies, Inc. |
| United States | 6,612,797 | September 2, 2003 | A. Bonora, W. Fosnight and J. Shenk | CASSETTE BUFFERING WITHIN A MINIENVIRONMENT | Asyst Technologies, Inc. |
| United States | 6,634,851 | October 21, 2003 | A. Bonora, R. Hine, M. Krolak, and J. Grilli | WORKPIECE HANDLING ROBOT | Asyst Technologies, Inc. |
| United States | 6,704,998 | March 16, 2004 | A. Bonora, W. Fosnight and R. Martin | PORT DOOR REMOVAL AND WAFER HANDLING ROBOTIC SYSTEM | Asyst Technologies, Inc. |
| United States | 6,709,225 B1 | March 23, 2004 | L. Pitts, J. Rydman, W. Oliver and M. Neads | SYSTEM FOR INSTALLATION, MAINTENANCE AND REMOVAL OF MINIENVIRONMENT COMPONENTS | Asyst Technologies, Inc. |
| United States | 6,810,294 B2 | October 26, 2004 | M. Rangachari, A. Sharma, R. Balakrishnan, and B. Pitchaikani | METHOD AND APPARATUS FOR AUTOMATING MICROELECTRONIC MANUFACTURING PROCESS | Asyst Technologies, Inc. |
| United States | 6,677,690 | January 13, 2004 | W. Fosnight, D. Babbs, R. Gould, M. Krolak, D. Feindel and T. Luong | SYSTEM FOR SAFEGUARDING INTEGRATED INTRABAY POD DELIVERY AND STORAGE SYSTEM | Asyst Technologies, Inc. |
| United States | 6,729,462 | May 4, 2004 | D. Babbs, J. Kim, M. Coady and W. Fosnight | EDGE GRIP ALIGNER WITH BUFFERING CAPABILITIES | Asyst Technologies, Inc. |
| United States | 6,848,876 | February 1, 2005 | D. Babbs, W. Fosnight, T. Cosentino, M. Sammut, P. Pinna and R. Zemen | WORKPIECE SORTER OPERATING WITH MODULAR BARE WORKPIECE STOCKERS AND/OR CLOSED CONTAINER STOCKERS | Asyst Technologies, Inc. |
| United States | 6,853,876 B2 | February 8, 2005 | B. Wehrung, C. Holden Assigned from Palo Alto Technologies, Inc. | DISTRIBUTED CONTROL SYSTEM ARCHITECTURE AND METHOD FOR A MATERIAL TRANSPORT | Asyst Technologies, Inc. |
| United States | 5365672 | November 22, 1994 | | WAFER POSITIONING APPARATUS | Asyst Japan, Inc. |
| United States | 5054991 | October 8, 1991 | | WAFER POSITIONING APPARATUS | Asyst Japan, Inc. |
| United States | 4735548 | April 5, 1988 | | CARRIER SYSTEM FOR CLEAN ROOM | Asyst Japan, Inc. |
| United States | 4770600 | September 13, 1988 | | APPARATUS FOR POSITIONING SILICON WAFER | Asyst Japan, Inc. |
| United States | 4778331 | October 18, 1988 | | CARRIER SYSTEM FOR SILICON WAFER | Asyst Japan, Inc. |

## II. Pending Patent Applications – United States

| Country | Serial No. | Filing Date | Inventor(s) | Title | Owner |
|---|---|---|---|---|---|
| United States | 10/087,092 | March 1, 2002 | A. Bonora, R. Gould, R. Hine, M. Krolak and J. Speasl | SEMICONDUCTOR MATERIAL HANDLING SYSTEM | Asyst Technologies, Inc. |
| United States | 10/087,400 | March 1, 2002 | A. Bonora, R. Gould, R. Hine, M. Krolak and J. Speasl | WAFER ENGINE | Asyst Technologies, Inc. |
| United States | 10/234,640 | September 3, 2002 | A. Bonora, R. Gould, R. Hine, M. Krolak and J. Speasl | UNIVERSAL MODULAR WAFER TRANSPORT SYSTEM | Asyst Technologies, Inc. |
| United States | 10/087,638 | March 1, 2002 | A. Bonora, R. Gould, R. Hine, M. Krolak and J. Speasl | UNIFIED FRAME FOR SEMICONDUCTOR MATERIAL HANDLING SYSTEM | Asyst Technologies, Inc. |
| United States | 10/194,702 | July 12, 2002 | R. Hine, M. Danna and R. Fillippuzzi | INTEGRATED SYSTEM FOR TOOL FRONT END WAFER HANDLING | Asyst Technologies, Inc. |
| United States | 10/438,470 | May 15, 2003 | M. Mayo | PRE-ALIGNER | Asyst Technologies, Inc. |
| United States | 10/618,313 | July 10, 2003 | D. Fritschen and C. Barbazzette | DATA COLLECTION AND DIAGNOSTIC SYSTEM FOR A SEMICONDUCTOR FABRICATION FACILITY | Asyst Technologies, Inc. |
| United States | 10/888,819 | July 10, 2004 | Anthony C. Bonora and Roger G. Hine | ULTRA LOW CONTACT AREA END EFFECTOR | Asyst Technologies, Inc. |
| United States | tba | April 17, 2006 | Anthony C. Bonora and Roger G. Hine | ULTRA LOW CONTACT AREA END EFFECTOR (CONTINUATION) | Asyst Technologies, Inc. |
| United States | 10/624,133 | July 21, 2003 | Shawn Hamilton, Mike Mayo, Ted Rogers | ACTIVE EDGE GRIPPER END EFFECTOR | Asyst Technologies, Inc. |
| United States | 09/496,009 | February 1, 2000 | Raymond W. Ellis, Mark T. Pendleton | APPARATUS AND METHOD FOR WEB-BASED TOOL MANAGEMENT | Asyst Technologies, Inc. |
| United States | 09/899,833 | July 5, 2001 | Raymond W. Ellis, Mark T. Pendleton, and Charles M. Bayliss | AUTOMATED TOOL MANAGEMENT IN A MULTI-PROTOCOL ENVIRONMENT | Asyst Technologies, Inc. |
| United States | 11/064,880 | February 24, 2005 | Anthony C. Bonora, Michael Krolak, and Roger G. Hine | DIRECT TOOL LOADING | Asyst Technologies, Inc. |
| United States | 11/238,030 | September 28, 2005 | | DISCONTINUOUS CONVEYOR SYSTEM | Asyst Technologies, Inc. |
| United States | 11/107,508 | April 15, 2005 | Evzen Wagner, Ray Ellis, Tim Yoas, Toni Guckert, and Intel Corporation | AUTOMATED JOB MANAGEMENT | Asyst Technologies, Inc. |
| United States | 11/014,401 | December 16, 2004 | Anthony C. Bonora, Roger Hine | ACTIVE EDGE GRIP REST PAD | Asyst Technologies, Inc. |
| United States | 11/340,101 | January 26, 2006 | Charles Bayliss, Ray Ellis, Toni Guckert, and Timothy Yoas | US/(EIB) MULTI-PROTOCOL MULTI-CLIENT EQUIPMENT SERVER | Asyst Technologies, Inc. |
| United States | 60/681,389 | May 16, 2005 | Anthony C. Bonora, and Michael Krolak | INTEGRATED CONVEYOR AND SEMICONDUCTOR PROCESS TOOL LOAD PORT | Asyst Technologies, Inc. |
| United States | 11/177,645 | July 8, 2005 | Anthony C. Bonora, Michael Krolak, and Roger G. Hine | DIRECT TOOL LOADING | Asyst Technologies, Inc. |
| United States | 60/697,785 | July 8, 2005 | Anthony C. Bonora, Roger G. Hine, and Michael Krolak | MODULAR TERMINAL FOR HIGH THROUGHPUT AMHS | Asyst Technologies, Inc. |
| United States | 11/178,072 | July 8, 2005 | Anthony C. Bonora, Roger G. Hine, and Michael Krolak | INTERFACE BETWEEN CONVEYOR AND SEMICONDUCTOR PROCESS TOOL LOAD PORT | Asyst Technologies, Inc. |

| Country | Serial No. | Filing Date | Inventor(s) | Title | Owner |
|---|---|---|---|---|---|
| United States | 60/697,528 | July 8, 2005 | Anthony C. Bonora | END EFFECTOR WAFER SUPPORT AND TRANSFER METHODS | Asyst Technologies, Inc. |
| United States | 60/697,616 | July 8, 2005 | Anthony C. Bonora, Roger G. Hine, and Michael Krolak | STOCKER AND CONTROLS FOR USE WITH CONVEYOR | Asyst Technologies, Inc. |
| United States | 60/698,124 | July 11, 2005 | Anthony C. Bonora, Roger G. Hine, and Michael Krolak | BELT CONVEYOR FOR USE WITH SEMICONDUCTOR CONTAINERS | Asyst Technologies, Inc. |
| United States | 60/730,688 | October 27, 2005 | Theodore W. Rogers and Norma Riley | HORIZONTAL ARRAY STOCKER | Asyst Technologies, Inc. |
| United States | 11/305,256 | December 16, 2005 | A. Bonora, R. Gould, R. Hine, M. Krolak and J. Speasl | WAFER ENGINE | Asyst Technologies, Inc. |
| United States | 11/352,154 | February 10, 2006 | A. Bonora, R. Gould, R. Hine, M. Krolak and J. Speasl | SEMICONDUCTOR PROCESSING TOOL | Asyst Technologies, Inc. |
| United States | tba | Must be Filed by May 15, 2006 | Anthony C. Bonora, Roger G. Hine, and Michael Krolak | MODULAR TERMINAL FOR HIGH SPEED AMHS | Asyst Technologies, Inc. |
| United States | tba | Must be Filed by July 8, 2006 | Anthony C. Bonora, | END EFFECTOR WAFER SUPPORT AND TRANSFER METHODS | Asyst Technologies, Inc. |
| United States | 10/719069 | | | DISTRIBUTED CONTROL SYSTEM ARCHITECTURE AND METHOD FOR A MATERIAL TRANSPORT SYSTEM | Asyst Technologies, Inc. |
| United States | 10/237078 | | | WAFER ALIGNER | Asyst Japan, Inc. |

## III. Patent Applications in Preparation – United States

| Country | Docket No. | Expected Filing Date | Inventor(s) | Title |
|---|---|---|---|---|
| N/A | N/A | N/A | N/A | N/A |

**Item B. Patent Licenses**

1. Technology License dated April 1, 1998 from Asyst Technologies, Inc., as licensor, to Toshiba Machine Co., Ltd. granting non-exclusive, non-transferable license to manufacture and distribute pods worldwide, utilizing design and manufacture of pods described in patent nos. 4,815,912; 4,739,882; 5,169,272; 4,674,939; and 4,995430. License term is for ten years.

2. Auto-Kinematic Cassette Technology and Trademark License Agreement dated as of September 1, 1993 between Asyst Technologies, Inc., as licensor, and Fluorware, Inc., as licensee, granting a worldwide, non-exclusive, non-transferable license to Asyst's Cassette Technology and a license under the mark "Auto-Kinematic." Licensed patents include U.S. patent application no. 08/311,954 and all other patents owned or controlled by Asyst relating to the structure of or used in the manufacture of 300mm semiconductor wafer handling cassettes. Term of license is 20 years.

3. Cross License Agreement dated as of October 22, 1996 between Fusion Systems Corporation and Asyst Technologies, Inc. pursuant to which the parties grant to each other non-exclusive, worldwide, non-transferable cross-license rights relating to the design and development of Standard Mechanical InterFace (SMIF) Input/Output (I/O) Systems. Licensed patents include Asyst's U.S. Patents 4,674,939; 4,746,256; 4,895,486 and 4,995,430. Term of the agreement is for two years, but license granted survive until the expiration of the last to expire of the patent claims licensed under the Agreement.

4. Technology License Agreement dated as of March 29, 1991 between Asyst Technologies, Inc. and Shinko Electric pursuant to which Asyst granted to Shinko an exclusive, non-sublicensable license to permit the development, manufacture and sale of SMIF-E(s) products in Japan. The agreement remains in effect until the last to expire of the patents licensed under the agreement.

5. Asyst/Jenoptik License Agreement dated as of October 1, 1994 between Asyst Technologies, Inc. and Jenoptik GmbH, pursuant to which Asyst grants to Jenoptik a non-exclusive, non-transferable license in and to Asyst U.S. patent no. 4,895,486 entitled "Wafer Monitoring Device" for the development of certain SMIF system products. The term of the Agreement is for the life of the licensed patent.

6. Product Purchase Agreement dated as of June 4, 2003 between Asyst Technologies, Inc. and Electro Mechanical Solutions, Inc., pursuant to which EMS purchased from Asyst certain proprietary technology relating to the 4.5 Vacuum Robotic Arm and the 48V Random Access Vacuum Elevator and granted to Asyst a non-exclusive, non-transferable, worldwide, perpetual license to make certain robotic products and to fulfill certain existing contractual obligations. The term of the Agreement continues until the last to expire of the intellectual property rights in the technology covered by the agreement.

7. Patent Assignment and Cross-License and Trademark License Agreement dated as of February 11, 2003 between Asyst Technologies, Inc. and Entegris, Inc, and Entegris Cayman, Ltd. pursuant to which Asyst conveyed to Entegris its rights in and to certain patents relating to

wafer and/or reticle containers identified in Exhibit 1 thereto, Asyst also granted to Entegris a worldwide, non-exclusive, non-transferable license under Pod and Carrier Patents, MHS Patents, Environmental Control Patents and other patents to make, use and sell certain sealable transportable containers, and Entegris granted to Asyst a worldwide, non-exclusive, non-transferable license in and to certain Exclusive Rights Patents to make, use and sell products other than certain acquired products.

**Item C. Invention Disclosures**

1. Automated Transfer of Material from Vertical Carousel Storage
2. Vacuum Assisted Wafer Edge Grip
3. Material Routing and Speed Control System and Method for Use in a Material Transport System
4. One Hand Placement RSP
5. Vertical Foup Transporter
6. Arm Link Design
7. Auto-Teaching by Contact with Electrically Grounded Objects
8. Orifice Controlled Batch Transfer End-Effector
9. Application of Pezio-Electronics in the Vibration Damping of an End Effector Used in the Transport of a Semiconductor Substrate
10. Pod Door Particle Control
11. Open Cassette Enclosure with Ergonomic Tilt
12. Open Cassette Exchange Device
13. Humidity Control Using an Electronically Actuated Hot Gas Bypass Valve
14. Active Reticle Retainer
15. Method for Locating and Positioning Material on a Conveyor System
16. Control System and Method for Improving Purge Efficiency in Standard Pods/Foups
17. Fast Swap
18. Manufacturing Low Cost Photovoltaic Cell and IC Substuates
19. Electronic, Automatically Readable Equipment Identity Tag
20. Simplified System for Reading Semiconductor Wafer Identification Marks and Aligning Semiconductor Wafers
21. 300MM SMIF Port Mountable Wafer Protrusion System
22. Isolation Based Storage and Handling Systems for Semiconductor Products
23. Inter-Tool Wafer Transfer for 300MM Wafers
24. Nitrogen/Clean Dry Air (CDA) Curtain for Purging Tool Front Ends
25. Multi-Tool Server for Semiconductor Manufacturing
26. System for Ultra-Clean Automated Reticle Handling
27. Spartan Integrated RGV
28. Random Access Conveyor Buffer
29. Vacuum Foup Holddown
30. Low Cost Active Pod Hold Down Mechanism (APHD)
31. Clean Wafer Gripping System Using Venturi
32. Wafer Server Automated Material Handling System
33. Virtual Cluster Tool Implemented by AMHS and Cell Control Architecture
34. Automated Maintenance System (Spare Parts and Consumables)
35. System and Method for Controlling Moisture and Molecular Level Contamination in Containers Used for Material Transport, Storage, Tool Loading, and Shipping
36. System for Ultra-Clean Automated Reticle Handling
37. System Level Contamination in Containers for Controlling Moisture and Molecular Level Contamination in Container Used for Material Transport, Storage, Tool Loading, and Shipping
38. System for Ultra-Clean Automated Reticle Handling

39. Extended Read Range Radio Frequency Automated Identification (RFID) through the Use of a Passive Transformer
40. Series Impedance Matched Inductive Power Pickup System
41. Adjustable Loadport for Variable Foup Sizes
42. 300MM Variable Lot Size Loadport Adaptable to Standard FIMS Loadport
43. Acoustic Presence Sensor