Substitute Form PTO-1595
Attorney Docket No.: 07470-0089002

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| | |
|---|---|
| 1. Name of conveying party(ies): <br><br> Architecture LLC <br> 201 Spring Street <br> Lexington, MA 02421 <br><br> Additional name(s) attached? ☐ Yes ☒ No | 2. Name and address of receiving party(ies): <br><br> Ab Initio Technology LLC <br> 201 Spring Street <br> Lexington, MA 02421 |
| 3. Nature of conveyance: <br><br> ☒ Assignment <br> ☐ Merger <br> ☐ Security Agreement <br> ☐ Change of Name <br> ☐ Other: <br><br> Execution Date: 07/16/2008 | <br><br><br><br><br><br> Additional names/addresses attached? ☐ Yes ☒ No |

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

If this document is being filed with a new application, the execution date of the application is:

| A. Patent Application No(s).: <br><br> 12/977,545 | B: Patent No(s).: |
|---|---|

Additional numbers attached? ☐ Yes ☒ No

| | |
|---|---|
| 5. Name/address of party to whom correspondence concerning document should be mailed: <br><br> **PTO Customer Number:** <br> **26161** | 6. Total number of applications/patents involved: 1 |
| | 7. Total fee (37 CFR §3.41): $40 <br><br> ☐ Enclosed <br> ☒ Authorized to charge Deposit Account. |
| | 8. Deposit Account No.: 06-1050 <br><br> Please apply any additional charges, or any credits, to our Deposit Account No. 06-1050. |

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9. Statement and Signature: *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.*

| Elliott J. Mason, III <br> Name of Person Signing | /Elliott J. Mason, III  Reg. No. 56,569/___ <br> Elliott J. Mason, III | January 18, 2011 <br> Date |
|---|---|---|

Total number of pages including coversheet, attachments and document: 9

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I hereby certify under 37 CFR §1.8(a) that this correspondence is being transmitted by facsimile in accordance with 37 CFR § 1.6(d).

| 1/18/11 <br> Date of Deposit | _____ <br> Signature | Paul J. Micele <br> Typed or Printed Name of Person Signing Certificate |
|---|---|---|

**PATENT**

700454402

# ASSIGNMENT OF TRADE SECRET, INVENTION & PATENT RIGHTS

**Assignor:** Architecture LLC, a Delaware limited liability company

**Assignee:** Ab Initio Technology LLC, a Delaware limited liability company

1. The subject matter of this Assignment of Trade Secret, Invention & Patent Rights (the "Assignment") is the following Invention & Trade Secret Rights: (1) the patents and patent applications identified in attached Exhibit PATENT, the inventions embodied therein, and any and all domestic or foreign continuation, continuation-in-part, or divisional applications and reissue, correction, reexamination, or other patents, or certificates of invention, utility models, design registrations, and the like, that issue or derive priority therefrom or claim priority thereto, and (2) any and all inventions (whether or not patentable), trade secrets, and confidential information, whether tangible or intangible, developed by or on behalf of Assignor for use or potential use in its business, including (without limitation) all technical information, devices, formulae, methods, processes, techniques, know how, show how, designs, patterns, drawings, compilations, cost data, pricing, customer lists, vendor lists, employee lists, and computer programs (including source code) and related documentation.

2. For good and valuable consideration, the receipt and sufficiency of which is acknowledged by Assignor, Assignor hereby assigns to Assignee all of Assignor's worldwide rights, title, and interest (without reservation of any rights whatsoever) in and to (1) the Invention & Trade Secret Rights, (2) the right to claim priority based on the filing dates of any of the Invention & Trade Secret Rights, and (3) any claims (known or unknown, suspected or unsuspected) of any nature that Assignor has or may have against any entity for infringement or misappropriation of the Invention & Trade Secret Rights.

3. Assignor agrees to sign all lawful papers, make all rightful oaths, communicate to Assignee or its representatives all facts known to Assignor with respect to the Invention & Trade Secret Rights, cooperate with Assignee and its representatives, and generally do everything deemed necessary by Assignee to:
   a. complete and fulfill the terms of this Assignment;
   b. enable Assignee, at Assignee's expense, to apply for or prosecute any patent, invention right, or application for Invention & Trade Secret Rights, to maintain any application or issued patent for the Invention & Trade Secret Rights, and to record this Assignment, including executing separate or additional assignments in connection with such recordation or applications, and generally secure and/or perfect legal protection for the Invention & Trade Secret Rights;
   c. assist Assignee, at Assignee's expense, to apply for, obtain, and enforce legal protection for the Invention & Trade Secret Rights in all countries, including applying for protection of the Invention & Trade Secret Rights under any provisions of the International Convention for Protection of Industrial Property, the Patent Cooperation Treaty, the European Patent Convention, and all similar agreements or treaties, whether in the name of Assignor or of Assignee;
   d. assist Assignee, at Assignee's expense, with respect to any action, suit, or other legal proceeding relating to enforcement or defense of any of the Invention & Trade Secret Rights, including obtaining evidence and testifying in any such legal proceeding (in any such legal proceeding, Assignor will be represented by the same legal counsel as Assignee).

4. Each examining, registration, or recording office or agency (including, without limitation, the United States Patent and Trademark Office) is hereby authorized by Assignor to deliver to Assignee, its attorneys, agents, successors or assigns, all official documents and communications as may be warranted by this Assignment.

5. Assignor grants to Assignee the power to insert on this Assignment any further identification when known which may be necessary or desirable in order to comply with the rules of any examining, registration, or recording office or agency for recordation of this Assignment.

Assignor: Architecture LLC, a Delaware limited liability company
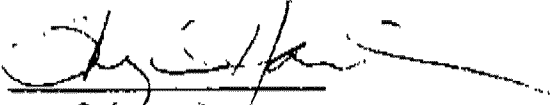
By: _____

Title: _____

Date: ___7/16/08_____

**EXHIBIT PATENT**

**EXHIBIT PATENT**

| STATUS (filing date) | PATENT NO./SERIAL NO. (F&R Docket No.) | COUNTRY | TITLE |
|---|---|---|---|
| ISSUED | 7,167,850/10/268,509 (068001) | US | Startup And Control Of Graph-Based Computation |
| ISSUED | 2004-543637 (068001) | EU | Startup And Control Of Graph-Based Computation |
| ISSUED | 3770720.5 (068001) | JP | Startup And Control Of Graph-Based Computation |
| FILED | 2501876 (068001) | CA | Startup And Control Of Graph-Based Computation |
| FILED | 2007203792 (068001) | AU | Startup And Control Of Graph-Based Computation |
| ISSUED | (068001) | AU | Startup And Control Of Graph-Based Computation |
| ISSUED | (068001) | UK | Startup And Control Of Graph-Based Computation |
| ISSUED | (068001) | IN | Startup And Control Of Graph-Based Computation |
| ISSUED | 2807/DELNP/2007 (068001) | IN | Startup And Control Of Graph-Based Computation |
| ISSUED | 6,654,907/09/731,234 (057001 CIP of 47001) | US | Continuous Flow Compute Point Based Data Processing |
| ISSUED | 7,164,422/09/627,252 (05001) | US | Parameterized Graphs With Conditional Components |
| ISSUED | 1056278 (05001) | EU | Parameterized Graphs With Conditional Components |
| ISSUED | 2002-515753 (05001) | JP | Parameterized Graphs With Conditional Components |
| ISSUED | 2008-302306 (05001) | JP | Parameterized Graphs With Conditional Components |
| ISSUED | 2417107 (05001) | CA | Parameterized Graphs With Conditional Components |
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| ISSUED | 6,584,581/09/608,995 (047001) | US | Continuous Flow Checkpointing Data Processing |
| ISSUED | 992391.2 (047001) | EU | Continuous Flow Checkpointing Data Processing |
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| ISSUED | 7,047,232/09/229,849 (030001) | US | Parallelizing Applications Of Script-Driven Applications |
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| FILED | 2000-594025 (030001) | JP | Parallelizing Applications Of Script-Driven Applications |
| ISSUED | 2006-063273 (030001) | JP | Parallelizing Applications Of Script-Driven Applications |
| ISSUED | 2360286 (030001) | CA | Parallelizing Applications Of Script-Driven Applications |
| ISSUED | 6,665,862/09/915,185 (02002 CON OF 02001) | US | Method For Analyzing Capacity Of Parallel Processing Systems |
| ISSUED | 6,266,804/08/997,142 (020001) | US | Method For Analyzing Capacity Of Parallel Processing Systems |
| ISSUED | 0990546.1.1 (020001) | EU | Method For Analyzing Capacity Of Parallel Processing Systems |
| ISSUED | 2000-555842 (020001) | JP | Method For Analyzing Capacity Of Parallel Processing Systems |
| ISSUED | (020001) | | |

**PATENT
REEL: 025649 FRAME: 0055**

| STATUS (filing date) | PATENT NO./SERIAL NO. (F&R Docket No.) | COUNTRY | TITLE |
|---|---|---|---|
| | | CA | |
| ISSUED | 6,088,716/08/847,909 (010001) | US | Method For Preventing Buffer Deadlock In Dataflow Computations |
| | | EU | Method For Preventing Buffer Deadlock In Dataflow Computations |
| | | JP | Method For Preventing Buffer Deadlock In Dataflow Computations |
| | | CA | Method For Preventing Buffer Deadlock In Dataflow Computations |
| ISSUED | 5,857,204/08/678,398 (006001) | US | A Method For Restoring The State Of A Set Of Files |
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| FILED | (006001) | CA | |
| ISSUED | 5,897,638/08/876,734 (006001) | US | A Parallel Virtual File System |
| ISSUED | | EU | A Parallel Virtual File System |
| ISSUED | 11,604895 | JP | A Parallel Virtual File System |
| ISSUED | | CA | A Parallel Virtual File System |
| ISSUED | 5,712,971/08/570,724 (004001) | US | Methods And Systems For Reconstructing The State Of A Computation |
| | | EU | Methods And Systems For Reconstructing The State Of A Computation |
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| ISSUED | 5,966,072/08/678,411 (003001) | US | Executing Computations Expressed As Graphs |
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| ISSUED | 5,819,021/08/570585 (002001) | US | Overpartitioning System And Method For Increasing Checkpoints In Component-Based Parallel Applications |
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| ISSUED | 179820 | JP | Overpartitioning System And Method For Increasing Checkpoints In Component-Based Parallel Applications |
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| FILED | 11/467,724 (068002 CON of 068001) | US | Startup And Control Of Graph-Based Computation |
| FILED | 11/733,579 (068003 CON of 068001) | US | Transactional Graph Based Computation |
| FILED | 10/873,661 (069001) | US | Computer-Aided Parallelizing Of Computation Graphs |
| FILED | (069001) | EU | Computer-Aided Parallelizing Of Computation Graphs |
| FILED | (069001) | JP | Computer-Aided Parallelizing Of Computation Graphs |
| FILED | (069001) | CA | Computer-Aided Parallelizing Of Computation Graphs |

| STATUS (filing date) | PATENT NO./SERIAL NO. (F&R Docket No.) | COUNTRY | TITLE |
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| | | CN | |
| | | IN | |
| FILED | | HK | |
| FILED | 10/941,402 (070001) | US | Data Profiling |
| FILED | (070001) | EP | Data Profiling |
| | (070001) | JP | Data Profiling |
| | (070001) | CA | Data Profiling |
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| FILED | (070001) | CN | Data Profiling |
| FILED | (070001) | AU | Data Profiling |
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| FILED | 10/941,373 (070002) | US | Joint Field Profiling |
| FILED | 11/467,724 (070003) | US | Functional Dependency Data Profiling |
| FILED | 10/795,374 (071001) | US | Dependency Graph Parameter Scoping |
| | | JP | Dependency Graph Parameter Scoping |
| FILED | (071001) | CN | Dependency Graph Parameter Scoping |
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| FILED | 10/796,612 (072001) | US | Controlling Task Execution |
| FILED | (072001) | EU | Controlling Task Execution |
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| FILED | 11/169,073 (084001) | US | Aggregating Data With Complex Operations |

| STATUS (filing date) | PATENT NO./SERIAL NO. (F&R Docket No.) | COUNTRY | TITLE |
|---|---|---|---|
| FILED | PCT/US2006/024280 (084001) | PCT | Aggregating Data With Complex Operations |
| FILED | (084001) | KR | Aggregating Data With Complex Operations |
| FILED | (084001) | JP | Aggregating Data With Complex Operations |
| FILED | (084001) | CA | Aggregating Data With Complex Operations |
| FILED | 200020110 (084001) | AU | Aggregating Data With Complex Operations |
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| FILED | 11/169,074 (085001) | US | Managing Message Queues |
| FILED | PCT/US2006/024233 (085001) | PCT | Managing Message Queues |
| FILED | 06773729.7 (085001) | EP | Managing Message Queues |
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| FILED | 11/169,246 (086001) | US | Managing Memory Pages |
| FILED | PCT/US2006/024291 (086001) | PCT | Managing Memory Pages |
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| FILED | PCT/US2006/024943 (087001) | PCT | Translating Expressions In A Computing Environment |
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| FILED | (087001) | JP | Translating Expressions In A Computing Environment |
| FILED | (087001) | CA | Translating Expressions In A Computing Environment |
| FILED | (087001) | AU | Translating Expressions In A Computing Environment |

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|---|---|---|---|
| FILED | 10-2007-7030320 (087001) | KR | Translating Expressions In A Computing Environment |
| FILED | 200680023468.8 (087001) | CN | Translating Expressions In A Computing Environment |
| FILED | 4944/DELNP/2007 (087001) | IN | Translating Expressions In A Computing Environment |
| FILED | 11/169,014 (088001) | US | Managing Parameters For Graph-Based Computations |
| FILED | PCT/US2006/024057 (088001) | PCT | Managing Parameters For Graph-Based Computations |
| FILED | 06773963.0 (088001) | EP | Managing Parameters For Graph-Based Computations |
| FILED | (088001) | JP | Managing Parameters For Graph-Based Computations |
| FILED | (088001) | CA | Managing Parameters For Graph-Based Computations |
| FILED | 2006261768 (088001) | AU | Managing Parameters For Graph-Based Computations |
| FILED | 10-2007-7030521 (088001) | KR | Managing Parameters For Graph-Based Computations |
| FILED | 4948/DELNP/2007 (088001) | IN | Managing Parameters For Graph-Based Computations |
| FILED | 200680023478.1 (088001) | CN | Managing Parameters For Graph-Based Computations |
| FILED | 11/167,902 (089001) | US | Managing Metadata For Graph-Based Computations |
| FILED | PCT/US2006/024033 (089001) | PCT | Managing Metadata For Graph-Based Computations |
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| FILED | 2610084 (089001) | CA | Managing Metadata For Graph-Based Computations |
| FILED | 2006261746 (089001) | AU | Managing Metadata For Graph-Based Computations |
| FILED | 200680023172.1 (089001) | CN | Managing Metadata For Graph-Based Computations |
| FILED | 4011/DELNP/2007 (089001) | IN | Managing Metadata For Graph-Based Computations |
| FILED | 10-2007-7030500 (089001) | KR | Managing Metadata For Graph-Based Computations |
| FILED | 10/979,742 (090001) | US | Managing Related Data Objects |
| FILED | PCT/ (090001) | PCT | Managing Related Data Objects |
| FILED | 05805989.9 (090001) | EP | Managing Related Data Objects |
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| FILED | 2584926 (090001) | CA | Managing Related Data Objects |
| FILED | 2005302270 (090001) | AU | Managing Related Data Objects |
| FILED | 200580037482.1 (090001) | CN | Managing Related Data Objects |
| FILED | 3031/DELNP/2007 (090001) | IN | Managing Related Data Objects |
| FILED | 11/733,434 (091001) | US | Business Rules Editor |
| FILED | 11/434,623 (095001) | US | Managing Computing Resources In Graph-Based Computations |
| FILED | PCT/US2007/068946 (095001) | PCT | Managing Computing Resources In Graph-Based Computations |

| STATUS (filing date) | PATENT NO./SERIAL NO. (F&R Docket No.) | COUNTRY | TITLE |
|---|---|---|---|
| FILED | 11/836,349 (117001) | US | Distributing Services In Graph-Based Computations |
| FILED | (117001) | | |
| FILED | 11/555,458 (119001) | US | Managing Storage Of Individually Accessible Data Units |
| FILED | (119001) | PCT | Managing Storage Of Individually Accessible Data Units |
| FILED | 60/952,075 (128PO1) | US | Transaction Graph-Based Computation With Error Handling |
| FILED | 60/973,979 (131PO1) | US | Managing Data Flows In Graph-Based Computations |
| FILED | 12/015,085 (130001) | US | Managing An Archive For Approximate String Matching |

**PATENT**
**REEL: 025649 FRAME: 0060**