PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

EPAS ID: PAT5904635

SUBMISSION TYPE:	CORRECTIVE ASSIGNMENT
NATURE OF CONVEYANCE:	Corrective Assignment to correct the PROPERTY NUMBERS IN ORDER TO REMOVE NO. 15438637 previously recorded on Reel 042273 Frame 0813. Assignor(s) hereby confirms the SECURITY INTEREST.

CONVEYING PARTY DATA

Name	Execution Date
AVALANCHE TECHNOLOGY, INC.	04/13/2017

RECEIVING PARTY DATA

Name:	STRUCTURED ALPHA LP
Street Address:	65 QUEEN STREET WEST
Internal Address:	SUITE 2400
City:	TORONTO, ONTARIO
State/Country:	CANADA
Postal Code:	M5H 2M8

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	15438637

CORRESPONDENCE DATA

Fax Number: (212)355-3333

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

Phone: 2128138800
Email: NY-TM-Admin@goodwinprocter.com
Correspondent Name: GOODWIN PROCTER LLP/JANIS NICI
Address Line 1:   620 EIGHTH AVENUE
Address Line 4:   NEW YORK, NEW YORK 10018

ATTORNEY DOCKET NUMBER:	131507234301
NAME OF SUBMITTER:	JANIS NICI
SIGNATURE:	/janis nici/
DATE SIGNED:	01/10/2020

Total Attachments: 33
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PATENT ASSIGNMENT COVER SHEET

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	SECURITY INTEREST

CONVEYING PARTY DATA

Name	Execution Date
AVALANCHE TECHNOLOGY, INC.	04/13/2017

RECEIVING PARTY DATA

Name:	STRUCTURED ALPHA LP
Street Address:	65 QUEEN STREET WEST
Internal Address:	SUITE 2400
City:	TORONTO, ONTARIO
State/Country:	CANADA
Postal Code:	M5H 2M8

PROPERTY NUMBERS Total: 256

Property Type	Number
Patent Number:	8477530
Patent Number:	8389301
Patent Number:	8084835
Patent Number:	8724413
Patent Number:	9047968
Patent Number:	8391054
Patent Number:	8058696
Patent Number:	8493777
Patent Number:	8405174
Patent Number:	8310020
Patent Number:	8183652
Patent Number:	8399942
Patent Number:	8399943
Patent Number:	8493778
Patent Number:	8493779
Patent Number:	8498148
Patent Number:	8488376
Patent Number:	8493780
Patent Number:	8498149

Property Type	Number
Patent Number:	8498150
Patent Number:	8063459
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Patent Number:	8542524
Patent Number:	8477529
Patent Number:	8730716
Patent Number:	8634234
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Patent Number:	8593862
Patent Number:	8982616
Patent Number:	9025371

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Property Type	Number
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Application Number:	14930523
Application Number:	15132278
Application Number:	15417135
Application Number:	14091318
Application Number:	15094844
Application Number:	15080208
Application Number:	14256192
Application Number:	14797458
Application Number:	14831546
Application Number:	15141726
Application Number:	13737897
Application Number:	13235294
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Application Number:	15221505

Property Type	Number
Application Number:	15011344
Application Number:	62274626
Application Number:	15383899
Application Number:	15411913
Application Number:	15157607
Application Number:	15264847
Application Number:	15265774
Application Number:	15438637
Application Number:	15434966

CORRESPONDENCE DATA

Fax Number: (617)523-1231

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

Phone: (617) 570-1000

Email: AFeeney@Goodwinlaw.com

Correspondent Name: GOODWIN PROCTER LLP C/O ALAN F. FEENEY

Address Line 1: 100 NORTHERN AVENUE

Address Line 4: BOSTON, MASSACHUSETTS 02210

ATTORNEY DOCKET NUMBER:	131507-234301
NAME OF SUBMITTER:	ALAN F FEENEY, ESQ
SIGNATURE:	/alan f feeney/
DATE SIGNED:	04/18/2017

Total Attachments: 24

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INTELLECTUAL PROPERTY SECURITY AGREEMENT

This Intellectual Property Security Agreement ("Agreement") is entered into as of the April 13, 2017 by and between STRUCTURED ALPHA LP ("Secured Party") and AVALANCHE TECHNOLOGY, INC. ("Grantor").

RECITALS

A. Secured Party has agreed to purchase a certain promissory note (the "Note") from and to extend certain financial accommodation to Grantor in the amounts and manner set forth in that certain Note and Warrant Purchase Agreement by and between Secured Party and Grantor dated as of the date hereof (as the same may be amended, modified or supplemented from time to time, the "Purchase Agreement"; capitalized terms used herein are used as defined in the Purchase Agreement or the Security Agreement (as defined in the Purchase Agreement), as applicable). Secured Party is willing to purchase the Note from Grantor, but only upon the condition, among others, that Grantor shall grant to Secured Party a security interest in certain Copyrights, Trademarks, Patents, and Mask Works (as each term is described below) to secure the obligations of Grantor under the Purchase Agreement, Note and other Transaction Documents.

B. Pursuant to the terms of the Security Agreement, Grantor has granted to Secured Party a security interest in all of Grantor's right, title and interest, whether presently existing or hereafter acquired, in, to and under all of the Collateral.

NOW, THEREFORE, for good and valuable consideration, receipt of which is hereby acknowledged, and intending to be legally bound, as collateral security for the prompt and complete payment when due of its obligations under the Purchase Agreement, Grantor hereby represents, warrants, covenants and agrees as follows:

AGREEMENT

1. **Grant of Security Interest.** To secure its obligations under the Purchase Agreement, including, without limitation, the Obligations, Grantor grants and pledges to Secured Party a security interest in all of Grantor's right, title and interest in, to and under its intellectual property (all of which shall collectively be called the "Intellectual Property Collateral"), including, without limitation, the following:

(a) Any and all copyright rights, copyright applications, copyright registrations and like protections in each work or authorship and derivative work thereof, whether published or unpublished and whether or not the same also constitutes a trade secret, now or hereafter existing, created, acquired or held, including without limitation those set forth on Exhibit A attached hereto (collectively, the "Copyrights");

(b) Any and all trade secrets, and any and all intellectual property rights in computer software and computer software products now or hereafter existing, created, acquired or held;

(c) Any and all design rights that may be available to Grantor now or hereafter existing, created, acquired or held;

(d) All patents, patent applications and like protections including, without limitation, improvements, divisions, continuations, renewals, reissues, extensions and continuations-in-part of the same, including without limitation the patents and patent applications set forth on Exhibit B attached hereto (collectively, the "Patents");

(e)   Any trademark and servicemark rights, whether registered or not, applications to register and registrations of the same and like protections, and the entire goodwill of the business of Grantor connected with and symbolized by such trademarks, including without limitation those set forth on Exhibit C attached hereto, but excluding any intent-to-use trademarks at all times prior to the first use thereof, whether by the actual use thereof in commerce, the recording of a statement of use with the United States Patent and Trademark Office or otherwise (collectively, the "Trademarks");

(f)   All mask works or similar rights available for the protection of semiconductor chips, now owned or hereafter acquired, including, without limitation those set forth on Exhibit D attached hereto (collectively, the "Mask Works");

(g)   Any and all claims for damages by way of past, present and future infringements of any of the rights included above, with the right, but not the obligation, to sue for and collect such damages for said use or infringement of the intellectual property rights identified above;

(h)   All licenses or other rights to use any of the Copyrights, Patents, Trademarks, or Mask Works (other than licenses or other rights to use any of the Copyrights, Patents, Trademarks, or Mask Works granted in the ordinary course of Grantor's business);

(i)   All license fees and royalties arising from the use of any of the Copyrights, Patents, Trademarks, or Mask Works to the extent permitted by such license or rights;

(j)   All amendments, extensions, renewals and extensions of any of the Copyrights, Trademarks, Patents, or Mask Works; and

(k)   All proceeds and products of the foregoing, including without limitation all payments under insurance or any indemnity or warranty payable in respect of any of the foregoing.

2.   Recordation. Grantor authorizes the Commissioner for Patents, the Commissioner for Trademarks and the Register of Copyrights and any other government officials to record and register this Agreement with the United States Patent and Trademark Office, the United States Copyright Office or any other governmental agency or office providing for the registering or perfection of security interests in any Intellectual Property Collateral, as applicable, upon request by Secured Party.

3.   Authorization. Grantor hereby authorizes Secured Party to (a) modify this Agreement unilaterally by amending the exhibits to this Agreement to include any Intellectual Property Collateral which Grantor obtains subsequent to the date of this Agreement, and (b) file a duplicate original of this Agreement containing amended exhibits reflecting such new Intellectual Property Collateral.

4.   Transaction Documents. This Agreement has been entered into pursuant to and in conjunction with the Purchase Agreement and the Security Agreement, which are hereby incorporated by reference. The provisions of the Purchase Agreement and the Security Agreement shall supersede and control over any conflicting or inconsistent provision herein. The rights and remedies of Security Party with respect to the Intellectual Property Collateral are as provided by the Purchase Agreement, the Security Agreement and related documents, and nothing in this Agreement shall be deemed to limit such rights and remedies.

5.   Execution in Counterparts. This Agreement may be executed in counterparts (and by different parties hereto in different counterparts), each of which shall constitute an original, but all of which when taken together shall constitute a single contract. Delivery of an executed counterpart of a

2

signature page to this Agreement by facsimile or in electronic (i.e., "pdf" or "tif" format) shall be effective as delivery of a manually executed counterpart of this Agreement. The words "execution," "signed," "signature" and words of like import herein shall be deemed to include electronic signatures or the keeping of records in electronic form, each of which shall be of the same legal effect, validity and enforceability as a manually executed signature or the use of a paper-based recordkeeping systems, as the case may be, to the extent and as provided for in any applicable law, including, without limitation, any state law based on the Uniform Electronic Transactions Act.
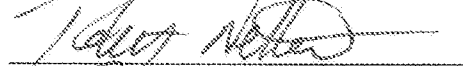
   6. Successors and Assigns. This Agreement will be binding on and shall inure to the benefit of the parties hereto and their respective successors and assigns.

   7. Governing Law. This Agreement and any claim, controversy, dispute or cause of action (whether in contract or tort or otherwise) based upon, arising out of or relating to this Agreement and the transactions contemplated hereby and thereby shall be governed by, and construed in accordance with, the laws of the United States and the State of California, without giving effect to any choice or conflict of law provision or rule (whether of the State of California or any other jurisdiction).

IN WITNESS WHEREOF, the parties have caused this Intellectual Property Security Agreement to be duly executed by its officers thereunto duly authorized as of the first date written above.

GRANTOR:

AVALANCHE TECHNOLOGY, INC.

By: _Robert NEHER_

Title: _CFO_

SECURED PARTY:

STRUCTURED ALPHA LP

By: Thornvest Asset Management Inc.,
its General Partner

By: Stefan V. Clulow
Title: Managing Director and Chief Investment Officer

IN WITNESS WHEREOF, the parties have caused this Intellectual Property Security Agreement to be duly executed by its officers thereunto duly authorized as of the first date written above.
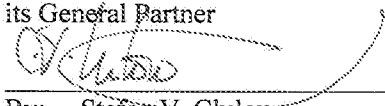
GRANTOR:

AVALANCHE TECHNOLOGY, INC.

By: _____
Title: _____

SECURED PARTY:

STRUCTURED ALPHA LP

By: Thomvest Asset Management Inc.,
its General Partner

By: Stefan V. Clulow
Title: Managing Director and Chief Investment Officer

<u>EXHIBIT A</u>

Copyrights

<u>Description</u>	<u>Registration/ Application Number</u>	<u>Registration/ Application Date</u>

None.

EXHIBIT B

Patents

Patent Applications

	Title	Application #
1	Spin-Transfer Torque Magnetic Random Access Memory (STTMRAM) With Enhanced Write Current	14524848
2	PERPENDICULAR MAGNETIC TUNNEL JUNCTION (pMTJ) WITH IN-PLANE MAGNETO-STATIC SWITCHING-ENHANCING LAYER	14930523
3	MAGNETIC RANDOM ACCESS MEMORY WITH DYNAMIC RANDOM ACCESS MEMORY (DRAM)-LIKE INTERFACE	15132278
4	Fast Programming of Magnetic Random Access Memory (MRAM)	15417135
5	METHOD OF IMPLEMENTING MAGNETIC RANDOM ACCESS MEMORY (MRAM) FOR SYSTEM BOOT	14091 318
6	MANAGEMENT OF MEMORY ARRAY WITH MAGNETIC RANDOM ACCESS MEMORY (MRAM)	15094 844
7	MAGNETIC RANDOM ACCESS MEMORY HAVING PERPENDICULAR ENHANCEMENT LAYER AND THIN REFERENCE LAYER	15080 208
8	MAGNETIC RANDOM ACCESS MEMORY WITH PERPENDICULAR ENHANCEMENT LAYER	14256192
9	MAGNETIC RANDOM ACCESS MEMORY WITH PERPENDICULAR ENHANCEMENT LAYER	14797458
10	SPIN-ORBITRONICS DEVICE AND APPLICATIONS THEREOF	14831546
11	Three Dimensional Memory Arrays and stitching there of	15141726
12	MEMORY SYSTEM HAVING THERMALLY STABLE PERPENDICULAR MAGNETO TUNNEL JUNCTION (MTJ) AND A METHOD OF MANUFACTURING SAME	13737897
13	MAGNETIC RANDOM ACCESS MEMORY WITH BURST ACCESS	13235294
14	STORAGE SYSTEM EMPLOYING MRAM AND ARRAY OF SOLID STATE DISKS WITH INTEGRATED SWITCH	13831921
15	STORAGE SYSTEM EMPLOYING MRAM AND ARRAY OF SOLID STATE DISKS WITH INTEGRATED SWITCH	14688996

16	A SHARED PERIPHERAL COMPONENT INTERCONNECT EXPRESS (PCIE) END POINT SYSTEM WITH A PCIe SWITCH AND METHOD FOR INITIALIZING THE SAME	14948187
17	LANDING PAD IN PERIPHERAL CIRCUIT FOR MAGNETIC RANDOM ACCESS MEMORY (MRAM)	15158 872
18	STORAGE PROCESSOR MANAGING SOLID STATE DISK ARRAY	14595 170
19	STORAGE SYSTEM REDUNDANT ARRAY OF SOLID STATE DISK ARRAY	14678 777
20	A METHOD AND APPARATUS FOR DE-DUPLICATION FOR SOLID STATE DISKs (SSDs)	14722038
21	STORAGE PROCESSOR MANAGING NVME LOGICALLY ADDRESSED SOLID STATE DISK ARRAY	14629404
22	PERPENDICULAR STTMRAM DEVICE WITH BALANCED REFERENCE LAYER	14661253
23	MAGNETIC RANDOM ACCESS MEMORY WITH PERPENDICULAR ENHANCEMENT LAYER	15 440 948
24	MAGNETIC RANDOM ACCESS MEMORY WITH PERPENDICULAR ENHANCEMENT LAYER	15 365 371
25	A METHOD OF LUN MANAGEMENT IN A SOLID STATE DISK ARRAY	14617868
26	SOFTWARE-DEFINED SSD AND SYSTEM USING THE SAME	14679 956
27	A STORAGE SYSTEM CONTROLLING ADDRESSING OF SOLID STORAGE DISKS (SSD)	14679823
28	A METHOD AND APPARATUS TO REDUCE POWER CONSUMPTION OF MOBILE AND PORTABLE DEVICES WITH NON-VOLATILE MEMORIES	14269049
29	A multi-level scalable switch architecture for Storage Applicance	14842804
30	MAGNETIC RANDOM ACCESS MEMORY WITH ULTRATHIN REFERENCE LAYER	14730073
31	MAGNETIC RANDOM ACCESS MEMORY WITH ULTRATHIN REFERENCE LAYER	14263046
32	Reduction of Area and Power for sense amplifier in memory	15276318
33	MAGNETIC RANDOM ACCESS MEMORY WITH MULTILAYERED SEED STRUCTURE	15295002
34	Memory Device Incorporating selector element with mulitple thresholds	15221505
35	Memory Device for Emulating Dynamic Random Access	15011344

Memory (DRAM)

Registered Patents

	Patent Title	Patent #
1	Non-Uniform Switching Based Non-Volatile Magnetic Based Memory	8477530
2	Non-Uniform Switching Based Non-Volatile Magnetic Based Memory	8389301
3	Non-Uniform Switching Based Non-Volatile Magnetic Based Memory	8084835
4	A HIGH CAPACITY LOW COST MULTI-STATE MAGNETIC MEMORY	8724413
5	A HIGH CAPACITY LOW COST MULTI-STATE MAGNETIC MEMORY	9047968
6	A HIGH CAPACITY LOW COST MULTI-STATE MAGNETIC MEMORY	8391054
7	A HIGH CAPACITY LOW COST MULTI-STATE MAGNETIC MEMORY	8058696
8	NON-VOLATILE MAGNETIC MEMORY WITH LOW SWITCHING CURRENT AND HIGH THERMAL STABILITY	8493777
9	NON-VOLATILE MAGNETIC MEMORY WITH LOW SWITCHING CURRENT AND HIGH THERMAL STABILITY	8405174
10	NON-VOLATILE MAGNETIC MEMORY WITH LOW SWITCHING CURRENT AND HIGH THERMAL STABILITY	8310020
11	NON-VOLATILE MAGNETIC MEMORY WITH LOW SWITCHING CURRENT AND HIGH THERMAL STABILITY	8183652
12	Non-Volatile Magnetic Memory Element with Graded Layer	8399942
13	Non-Volatile Magnetic Memory Element with Graded Layer	8399943
14	Non-Volatile Magnetic Memory Element with Graded Layer	8493778
15	Non-Volatile Magnetic Memory Element with Graded Layer	8493779
16	Non-Volatile Magnetic Memory Element with Graded Layer	8498148

17	Non-Volatile Magnetic Memory Element with Graded Layer	8488376

18	Non-Volatile Magnetic Memory Element with Graded Layer	8493780
19	Non-Volatile Magnetic Memory Element with Graded Layer	8498149
20	Non-Volatile Magnetic Memory Element with Graded Layer	8498150
21	Non-Volatile Magnetic Memory Element with Graded Layer	8063459
22	HIGH CAPACITY LOW COST MULTI-STACKED CROSS-LINE MAGNETIC MEMORY	8947919
23	CURRENT-CONFINED EFFECT OF MAGNETIC NANO-CURRENT-CHANNEL (NCC) FOR MAGNETIC RANDOM ACCESS MEMORY (MRAM)	7981697
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<u>EXHIBIT C</u>

Trademarks

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AVALANCHE TECHNOLOGY	4,198,751	8/28/2012
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<u>EXHIBIT D</u>

Mask Works

<u>Description</u>	Registration/ Application <u>Number</u>	Registration/ Application <u>Date</u>
None.		