

PATENT ASSIGNMENT

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SUBMISSION TYPE:	NEW ASSIGNMENT										
NATURE OF CONVEYANCE:	ASSIGNMENT										
CONVEYING PARTY DATA											
<table border="1"> <thead> <tr> <th>Name</th> <th>Execution Date</th> </tr> </thead> <tbody> <tr> <td>Ara Patapoutian</td> <td>02/19/2013</td> </tr> <tr> <td>Ryan James Goss</td> <td>02/19/2013</td> </tr> <tr> <td>Antoine Khoueir</td> <td>02/25/2013</td> </tr> </tbody> </table>		Name	Execution Date	Ara Patapoutian	02/19/2013	Ryan James Goss	02/19/2013	Antoine Khoueir	02/25/2013		
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<table border="1"> <tr> <td>Name:</td> <td>Seagate Technology LLC</td> </tr> <tr> <td>Street Address:</td> <td>10200 South De Anza Boulevard</td> </tr> <tr> <td>City:</td> <td>Cupertino</td> </tr> <tr> <td>State/Country:</td> <td>CALIFORNIA</td> </tr> <tr> <td>Postal Code:</td> <td>95014</td> </tr> </table>		Name:	Seagate Technology LLC	Street Address:	10200 South De Anza Boulevard	City:	Cupertino	State/Country:	CALIFORNIA	Postal Code:	95014
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PROPERTY NUMBERS Total: 1											
<table border="1"> <thead> <tr> <th>Property Type</th> <th>Number</th> </tr> </thead> <tbody> <tr> <td>Application Number:</td> <td>13776886</td> </tr> </tbody> </table>		Property Type	Number	Application Number:	13776886						
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CORRESPONDENCE DATA											
Fax Number: 9528542722 <i>Correspondence will be sent via US Mail when the fax attempt is unsuccessful.</i> Phone: 952 854 2700 Email: tdotter@hdpattlaw.com Correspondent Name: Hollingsworth Davis Address Line 1: 8500 Normandale Lake Blvd Address Line 2: Suite 320 Address Line 4: Minneapolis, MINNESOTA 55437											
ATTORNEY DOCKET NUMBER:	STX.085.A1										
NAME OF SUBMITTER:	William B. Ashley										
	This document serves as an Oath/Declaration (37 CFR 1.63).										

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Total Attachments: 4

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PATENT

REEL: 029874 FRAME: 0616

ASSIGNMENT

WHEREAS, Ara Patapoutian of 5 Lyford Road, Hopkinton, MA 01748, Ryan James Goss of 5088 Pondsedge Lane, Prior Lake, MN 55372, and Antoine Khoeir of 15578 Dwellers Way, Apple Valley, MN 55124 are the inventors of an invention entitled METHODS AND APPARATUSES USING A TRANSFER FUNCTION TO PREDICT RESISTANCE SHIFTS AND/OR NOISE OF RESISTANCE-BASED MEMORY that is the subject matter of: (check all that apply)

- ☐ a provisional application for Letters Patent which is identifiable in the United States Patent and Trademark Office by Application No. _____ filed on _____;
- ☒ an application for Letters Patent which is identifiable in the United States Patent and Trademark Office by Application No. _____ filed on _____ and/or executed on even date herewith: and
- ☐ an international application for Letters Patent filed pursuant to the Patent Cooperation Treaty which is identifiable in the United States Receiving Office by Application No. _____ filed on _____; and/or executed on even date herewith:

WHEREAS, Seagate Technology LLC, a limited liability company organized and existing under the laws of the State of Delaware and the United States of America, and having offices at 10200 S. De Anza Blvd, Cupertino, CA 95014 USA, ("Assignee") is desirous of acquiring the entire right, title and interest in and to the invention, the applications, and any and all Letters Patent or similar foreign or domestic legal protection;

NOW, THEREFORE, for good and valuable consideration, the receipt and adequacy of which is hereby acknowledged, I transfer to Assignee, its successors and assigns, my entire right, title and interest in and to the invention, the above-identified applications, all provisional applications from which any of the above-identified applications claim priority, corresponding domestic and foreign applications, any continuation, division, renewal, or substitute for the applications, all Letters Patent, any reissue, re-examination, or similar legal protection issuing related to the Letters Patent, and all rights and benefits under any applicable treaty or convention; and I authorize the Director of the United States Patent and Trademark Office or foreign equivalent to issue the Letters Patent or similar legal protection to the Assignee.

I authorize the Assignee, its successors and assigns, to insert in this instrument the filing date(s) and application numbers when ascertained. I further authorize the Assignee, its successors and assigns, or anyone it may properly designate, to apply for Letters Patent or similar legal protection, in its own name if desired, in any and all foreign countries and appoint Assignee the common representative in the above identified international application and any international application for the invention.

I represent to the Assignee, its successors and assigns, that I have not and shall not execute any writing or do any act whatsoever conflicting with this Assignment. I, my executors or administrators, will at any time upon request, without additional consideration, but at the expense of the Assignee, its successors and assigns, execute and deliver to Assignee or its legal representatives such additional writings and do such additional acts as the Assignee, its successors and assigns, may deem desirable to perfect its enjoyment of this grant, and render all assistance in making application for and obtaining, maintaining, and enforcing the Letters Patent or similar legal protection on the invention in any and all countries, including without limitation providing testimony in any related interference, litigation or proceeding.

The above-identified application was made or authorized to be made by me. I believe that I am the original inventor or an original joint inventor of a claimed invention in the application. I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both. I hereby state that I have reviewed and understand the contents of the above identified application, including the claims, as amended by any amendment specifically referred to above. I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

Ara Patapoutian
Ara Patapoutian (Inventor)

2/19/2013
Date

State of Massachusetts)

County of Worcester)

On 2-19-2013 before me, Carrie Golden, Notary Public
(insert name and title of the officer)

personally appeared Ara Patapoutian (Inventor), who proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of Minnesota that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature Carrie Golden (Seal)
Signature of Notary Public



Ryan James Goss
Ryan James Goss (Inventor)

Date

State of Minnesota)

County of)

On before me,
(insert name and title of the officer)

personally appeared Ryan James Goss (Inventor), who proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

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WITNESS my hand and official seal.

Signature (Seal)
Signature of Notary Public

Ara Patapoutian (Inventor)

Date

State of Massachusetts)

County of _____)

On _____ before me, _____
(insert name and title of the officer)

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WITNESS my hand and official seal.

Signature _____ (Seal)
Signature of Notary Public

[Signature]

Ryan James Goss (Inventor)

2/19/13
Date

State of Minnesota)

County of Scott)

On 2-19-13 before me, Rhonda Carl
(insert name and title of the officer)

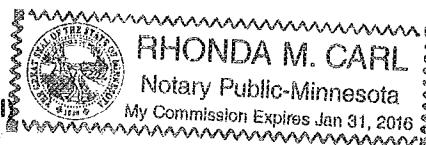
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I certify under PENALTY OF PERJURY under the laws of the State of Minnesota that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature Rhonda Carl
Signature of Notary Public

(Seal)




Antoine Khoeir (Inventor)

02/23/2013
Date

State of Minnesota)

County of Scott)

On 2-25-13 before me, Rhonda Carl
(insert name and title of the officer)

personally appeared Antoine Khoeir (Inventor), who proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

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