

## PATENT ASSIGNMENT COVER SHEET

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<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT	
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT	
<b>CONVEYING PARTY DATA</b>		
	<b>Name</b>	<b>Execution Date</b>
	EXEGY INCORPORATED	05/09/2013
<b>RECEIVING PARTY DATA</b>		
<b>Name:</b>	IP RESERVOIR, LLC	
<b>Street Address:</b>	10425 OLD OLIVE STREET ROAD, SUITE 201	
<b>City:</b>	ST. LOUIS	
<b>State/Country:</b>	MISSOURI	
<b>Postal Code:</b>	63141	
<b>PROPERTY NUMBERS Total: 1</b>		
<b>Property Type</b>	<b>Number</b>	
<b>Application Number:</b>	15404794	
<b>CORRESPONDENCE DATA</b>		
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<b>ATTORNEY DOCKET NUMBER:</b>	57451-163309	
<b>NAME OF SUBMITTER:</b>	BENJAMIN L. VOLK, JR.	
<b>SIGNATURE:</b>	/Benjamin L. Volk, Jr./	
<b>DATE SIGNED:</b>	01/12/2017	
<b>Total Attachments: 7</b>		
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**PATENT**

**ASSIGNMENT**

WHEREAS, **Exegy Incorporated**, a corporation of the State of Delaware, having its principal place of business at 349 Marshall Ave., Suite 100, St. Louis, MO 63119 (hereinafter "Exegy"), owns the patents and patent applications identified on Schedule A attached hereto and the inventions disclosed therein (hereinafter, collectively, the "Patent Rights"); and

WHEREAS, **IP Reservoir, LLC**, a limited liability company of the State of Delaware, having its principal place of business at 349 Marshall Ave., Suite 100, St. Louis, MO 63119 (hereinafter "IPR"), is desirous of acquiring the entire right, title and interest in and to said Patent Rights.

NOW THEREFORE, in consideration of the sum of One Dollar (\$1.00) to it in hand paid, and other good and valuable consideration, the receipt and adequacy of all of which are hereby acknowledged, Exegy has sold, assigned and transferred and does hereby sell, assign and transfer unto IPR, its successors or assigns, its entire right, title and interest in and to said Patent Rights and improvements as the same are disclosed in said Patent Rights, in and to any and all letters patent and applications filed therefor, including provisionals, non-provisionals, divisionals, continuations, reissues, reexaminations and extensions to be obtained therefor in the United States and all foreign countries, and the right to sue and collect damages for any past infringement of the Patent Rights; and it further agrees to cooperate with IPR in the obtaining and sustaining of any and all such letters patent of the Patent Rights as the assignee may desire to apply for.

The Commissioner of Patents or other proper official is hereby authorized and requested to issue said Patent Rights to IPR in accordance with this Assignment.

Exegy hereby authorizes and requests the attorneys of record in said Patent Rights to insert in this Assignment the serial number, filing date, and date of execution of any items of said Patent Rights for the purposes of recording this Assignment.

For said considerations, Exegy hereby agrees, upon the request of IPR, to execute any provisional, non-provisional, divisional, continuation, continuation-in-part or substitute application for said Patent Rights, and any oath or affidavit relating thereto, and any application for the reissue or extension of any letters patent that may be granted upon said Patent Rights, and, in the event of any application or letters patent of the Patent Rights becoming involved in an interference, to cooperate to the best of its ability in the matters of preparing and executing the preliminary statement and giving and producing evidence in support thereof. Exegy agrees to perform, upon request, any affirmative acts to obtain letters patent from the Patent Rights and vest in IPR all rights therein, whereby said Patent Rights will be held and enjoyed by IPR, to the full end of the term for which said Patent Rights may be granted as fully and entirely as the same would have been held and enjoyed by Exegy if this Assignment had not been made.

And for said consideration, Exegy hereby assigns to IPR the entire right, title and interest in said Patent Rights for all foreign countries, including all priority rights, and agrees to execute, at the request of IPR, all documents in connection with any application for foreign letters patent within the Patent Rights.

IN WITNESS WHEREOF, I have hereunto set my hand the 9th day of May, 2013.

Exegy:

By: [Signature]

Printed Name: J. J. Stepp

Title: CEO

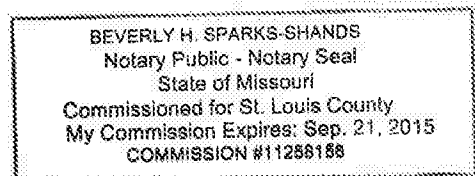
STATE OF Missouri :  
COUNTY OF St. Louis : SS

On this 9th day of MAY, 2013 before me, a Notary Public, within and for the County of St. Louis, State of Missouri, personally appeared the signer identified above, to me known to be the person described in and who executed the foregoing assignment on behalf of Exegy and acknowledged that he executed same as his free act and deed.

IN TESTIMONY WHEREOF, I have hereunto set my hand and seal the date and year last above written.

Beverly H Sparks-Shands  
Notary Public

My Commission Expires: Sept 21 2015



WITNESS:

By: Melanie Bath

Printed Name: Melanie Bath

WITNESS:

By: [Signature]

Printed Name: Brandi McWhorter

# **SCHEDULE A**

Jurisdiction	Patent No.	Application No.	Title	Status	FC Reference Number
USA	7,638,793	11/381,214	Method and Apparatus for Approximate Pattern Matching	Issued	44826-79522
PCT	N/A	PC17/US2607/067319	Method and Apparatus for Approximate Pattern Matching	Expired	44826-68356
CA	N/A	2650871	Method and Apparatus for Approximate Pattern Matching	Pending	44826-79499
JP	N/A	077612/09	Method and Apparatus for Approximate Pattern Matching	Pending	44826-79501
EP	N/A	11174040	Method and Apparatus for Approximate Pattern Matching	Pending	44826-97153
JP	N/A	2009-309972	Method and Apparatus for Approximate Pattern Matching	Allowed	44826-79302
USA	7,702,629	11/293,619	Method and Device for High Performance Regular Expression Pattern Matching	Issued	44826-79149
USA	7,945,528	12/793,380	Method and Device for High Performance Regular Expression Pattern Matching	Issued	44826-88116
PCT	N/A	PC17/US2016/045853	Method and Device for High Performance Regular Expression Pattern Matching	Expired	44826-74930
AU	2006320649	2006320643	Method and Device for High Performance Regular Expression Pattern Matching	Issued	44826-75332
CA	N/A	2039618	Method and Device for High Performance Regular Expression Pattern Matching	Allowed	44826-75333
EP	N/A	06838554.1	Method and Device for High Performance Regular Expression Pattern Matching	Pending	44826-75334
JP	N/A	2008-543412	Method and Device for High Performance Regular Expression Pattern Matching	Allowed	44826-75335
USA	N/A	60/785,821	Method and System for High Throughput Blockwise Independent Encryption/Decryption	Expired	44826-67955
USA	8,179,841	11/690,034	Method and System for High Throughput Blockwise Independent Encryption/Decryption	Issued	44826-67649
USA	N/A	13/759,227	Method and System for High Throughput Blockwise Independent Encryption/Decryption	Pending	44826-111076
PCT	N/A	PCT/US2007/064712	Method and System for High Throughput Blockwise Independent Encryption/Decryption	Expired	44826-67650
USA	N/A	60/814,796	High Speed Processing of Financial Information Using FPGAs Devices	Expired	44826-62207
USA	7,521,048	11/765,306	High Speed Processing of Financial Information Using FPGAs Devices	Issued	44826-69254
USA	8,407,122	13/070,906	High Speed Processing of Financial Information Using FPGAs Devices	Issued	44826-95688
USA	N/A	13/070,929	High Speed Processing of Financial Information Using FPGAs Devices	Pending	44826-95689
USA	N/A	13/070,951	High Speed Processing of Financial Information Using FPGAs Devices	Pending	44826-95686
USA	N/A	13/070,968	High Speed Processing of Financial Information Using FPGAs Devices	Pending	44826-94610

USA	N/A	13/076,982	High Speed Processing of Financial Information Using FPGA Devices	Pending	44826-95685
USA	N/A	13/077,036	High Speed Processing of Financial Information Using FPGA Devices	Allowed	44826-94011
USA	N/A	13/077,224	High Speed Processing of Financial Information Using FPGA Devices	Allowed	44826-95687
USA	N/A	13/077,294	High Speed Processing of Financial Information Using FPGA Devices	Pending	44826-95684
PCT	N/A	PCT/US2008/066929	High Speed Processing of Financial Information Using FPGA Devices	Expired	44826-75562
CA	N/A	2091229	High Speed Processing of Financial Information Using FPGA Devices	Pending	44826-86682
EP	N/A	08771627.3	High Speed Processing of Financial Information Using FPGA Devices	Pending	44826-86685
JP	N/A	2010-513545	High Speed Processing of Financial Information Using FPGA Devices	Pending	44826-86684
USA	7,840,462	11/760,211	Method and System for High Speed Options Pricing	Issued	44826-64381
USA	N/A	126912,154	Method and System for High Speed Options Pricing	Pending	44826-92186
PCT	N/A	PCT/US2008/065955	Method and System for High Speed Options Pricing	Expired	44826-76319
CA	N/A	2698502	Method and System for High Speed Options Pricing	Pending	44826-86247
EP	N/A	08756714.3	Method and System for High Speed Options Pricing	Pending	44826-86246
JP	N/A	2010-511331	Method and System for High Speed Options Pricing	Pending	44826-86248
USA	N/A	00865,629	Method and System for High Performance Processing of Structured and Unstructured Enterprise Data Using FPGA Devices	Expired	44826-64582
USA	7,660,293	11/738,709	Method and System for High Performance Integration, Processing and Searching of Structured and Unstructured Data Using Coprocessors	Issued	44826-72335
USA	8,136,101	12/640,921	Method and System for High Performance Integration, Processing and Searching of Structured and Unstructured Data Using Coprocessors	Issued	44826-86209
USA	N/A	13/442,442	Method and System for High Performance Integration, Processing and Searching of Structured and Unstructured Data Using Coprocessors	Pending	44826-102519
PCT	N/A	PCT/US2007/084466	Method and System for High Performance Integration, Processing and Searching of Structured and Unstructured Data Using Coprocessors	Expired	44826-72534
EP	N/A	07645066.5	Method and System for High Performance Integration, Processing and Searching of Structured and Unstructured Data Using Coprocessors	Pending	44826-82943
JP	N/A	2008-516536	Method and System for High Performance Integration, Processing and Searching of Structured and Unstructured Data Using Coprocessors	Pending	44826-82942
USA	8,326,519	11/938,732	Method and System for High Performance Data Metadata and Data Indexing Using Coprocessors	Issued	44826-65792
USA	N/A	13/687,139	Method and System for High Performance Pattern Indexing	Pending	44826-108515
PCT	N/A	PCT/US2007/084464	Method and System for High Performance Data Metadata and Data Indexing Using Coprocessors	Expired	44826-72692

EP	N/A	07845064.0	Method and System for High Performance Data Metatagging and Data Indexing Using Coprocessors	Pending	44826-82943
JP	N/A	2005-536535	Method and System for High Performance Data Metatagging and Data Indexing Using Coprocessors	Pending	44826-82944
USA	N/A	60/969,384	Method and Apparatus for Hardware-Accelerated Encryption with Integrated Key Management	Expired	44826-70268
USA	N/A	12/201,259	Method and Apparatus for Hardware-Accelerated Encryption/Decryption	Pending	44826-77928
PCT	N/A	PCT/US2008/074862	Method and Apparatus for Hardware-Accelerated Encryption/Decryption	Expired	44826-78092
EP	N/A	08758892.7	Method and Apparatus for Hardware-Accelerated Encryption/Decryption	Pending	44826-87861
USA	N/A	12/011,912	Method and System for Low Latency Basket Calculation	Pending	44826-72354
PCT	N/A	PCT/US2009/030623	Method and System for Low Latency Basket Calculation	Expired	44826-80028
CA	N/A	2707044	Method and System for Low Latency Basket Calculation	Pending	44826-90080
EP	N/A	09700513.4	Method and System for Low Latency Basket Calculation	Pending	44826-90087
JP	N/A	2010-542380	Method and System for Low Latency Basket Calculation	Pending	44826-90089
USA	8,374,985	12/121,473	Method and System for Accelerated Stream Processing	Issued	44826-72730
USA	N/A	13/759,430	Method and Apparatus for Accelerated Data Quality Checking	Pending	44826-110621
PCT	N/A	PCT/US2009/043759	Method and System for Accelerated Stream Processing	Expired	44826-82590
UK	N/A	1019513.4	Method and System for Accelerated Stream Processing	Allowed	44826-91508
USA	N/A	13/132,675	Method and Apparatus for High Speed Processing of Financial Market Depth Data	Expired	44826-89462
PCT	N/A	PCT/US2009/067955	Method and Apparatus for High Speed Processing of Financial Market Depth Data	Expired	44826-89878
USA	N/A	13/132,406	Method and Apparatus for High Speed Processing of Financial Market Depth Data	Pending	44826-96819
USA	N/A	13/154,804	Method and Apparatus for High Speed Processing of Financial Market Depth Data	Pending	44826-97231
USA	N/A	13/154,824	Method and Apparatus for High Speed Processing of Financial Market Depth Data	Pending	44826-97232
CA	N/A	2744746	Method and Apparatus for High Speed Processing of Financial Market Depth Data	Pending	44826-96836
EP	N/A	09856816.0	Method and Apparatus for High Speed Processing of Financial Market Depth Data	Pending	44826-96835
JP	N/A	2011-240927	Method and Apparatus for High Speed Processing of Financial Market Depth Data	Pending	44826-96837
USA	N/A	81/421,545	Method and Apparatus for Managing Orders in Financial Markets	Expired	44826-24012



USA	N/A	13/116,312	Method and Apparatus for Managing Orders in Financial Markets	Pending	44826-104985
PCT	N/A	PCT/US2011/064629	Method and Apparatus for Managing Orders in Financial Markets	Pending	44826-104988
USA	N/A	61/571,870	Method and Apparatus for Low Latency Data Distribution	Expired	44826-93272
USA	N/A	13/440,118	Method and Apparatus for Low Latency Data Distribution	Pending	44826-93273
PCT	N/A	PCT/US2012/69142	Method and Apparatus for Low Latency Data Distribution	Pending	44826-108589
USA	N/A	61/616,181	Offload Processing of Data Packets Containing Financial Information	Expired	44826-102914
USA	N/A	13/830,898	Offload Processing of Data Packets Containing Financial Information	Pending	44826-112414
USA	N/A	61/790,254	Offload Processing of Data Packets	Pending	44826-112496
PCT	N/A	PCT/US2013/33889	Offload Processing of Data Packets	Pending	44826-112537
USA	N/A	10/550,326	Intelligent Data Storage and Processing Using FPGA Devices	Abandoned	73047-57363
USA	N/A	13/165,153	Intelligent Data Storage and Processing Using FPGA Devices	Allowed	73047-97426
PCT	N/A	PCT/US2014/014021	Intelligent Data Storage and Processing Using FPGA Devices	Expired	73047-48386
AU	N/A	2004373496	Intelligent Data Storage and Processing Using FPGA Devices	Abandoned	73047-57368
CA	N/A	2522862	Intelligent Data Storage and Processing Using FPGA Devices	Abandoned	73047-57368
CA	N/A	2753064	Intelligent Data Storage and Processing Using FPGA Devices	Pending	73047-100065
EP	N/A	04752243.3	Intelligent Data Storage and Processing Using FPGA Devices	Pending	73047-57367
EP	N/A	12165819.9	Intelligent Data Storage and Processing Using FPGA Devices	Pending	73047-103889
JP	N/A	2406-514912	Intelligent Data Storage and Processing Using FPGA Devices	Abandoned	73047-57366
USA	7/354,114	11/839,892	Firmware Socket Module for FPGA-Based Pipeline Processing	Issued	44826-59323
PCT	N/A	PCT/US2007/060835	Firmware Socket Module for FPGA-Based Pipeline Processing	Expired	44826-65332
AU	N/A	2607208128	Firmware Socket Module for FPGA-Based Pipeline Processing	Abandoned	44826-75663
CA	N/A	2640440	Firmware Socket Module for FPGA-Based Pipeline Processing	Pending	44826-75664
EP	1,394,474 B1	07762449.2	Firmware Socket Module for FPGA-Based Pipeline Processing †	Issued	44826-75661
JP	N/A	2008-352518	Firmware Socket Module for FPGA-Based Pipeline Processing	Pending	44826-75660

† Validated in DE, FR, GB