

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT4997256

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	SECURITY INTEREST

CONVEYING PARTY DATA

Name	Execution Date
NETRONOME SYSTEMS, INC.	06/05/2018

RECEIVING PARTY DATA

Name:	KREOS CAPITAL V (UK) LIMITED
Street Address:	25 OLD BURLINGTON STREET
City:	LONDON
State/Country:	UNITED KINGDOM
Postal Code:	W1S 3AN

PROPERTY NUMBERS Total: 153

Property Type	Number
Patent Number:	9990307
Patent Number:	9971720
Patent Number:	9940097
Patent Number:	9935879
Patent Number:	9929933
Patent Number:	9912591
Patent Number:	9912533
Patent Number:	9900090
Patent Number:	9899996
Patent Number:	9891985
Patent Number:	9891898
Patent Number:	9887918
Patent Number:	9866480
Patent Number:	9854072
Patent Number:	9846662
Patent Number:	9830153
Patent Number:	9819585
Patent Number:	9807006
Patent Number:	9804976
Patent Number:	9804959

PATENT

Property Type	Number
Patent Number:	9756152
Patent Number:	9755983
Patent Number:	9755948
Patent Number:	9755911
Patent Number:	9755910
Patent Number:	9753883
Patent Number:	9753725
Patent Number:	9753710
Patent Number:	9729442
Patent Number:	9729353
Patent Number:	9727673
Patent Number:	9727513
Patent Number:	9727512
Patent Number:	9727499
Patent Number:	9705811
Patent Number:	9703739
Patent Number:	9699107
Patent Number:	9699084
Patent Number:	9678891
Patent Number:	9678866
Patent Number:	9678738
Patent Number:	9665519
Patent Number:	9641466
Patent Number:	9641448
Patent Number:	9641436
Patent Number:	9632959
Patent Number:	9626306
Patent Number:	9621481
Patent Number:	9619418
Patent Number:	9612981
Patent Number:	9612841
Patent Number:	9594706
Patent Number:	9594702
Patent Number:	9590926
Patent Number:	9588928
Patent Number:	9584637
Patent Number:	9577832
Patent Number:	9559988

Property Type	Number
Patent Number:	9558224
Patent Number:	9548947
Patent Number:	9537801
Patent Number:	9535851
Patent Number:	9519484
Patent Number:	9519482
Patent Number:	9515946
Patent Number:	9515929
Patent Number:	9503372
Patent Number:	9495158
Patent Number:	9489337
Patent Number:	9489202
Patent Number:	9485195
Patent Number:	9483439
Patent Number:	9467378
Patent Number:	9465651
Patent Number:	9450890
Patent Number:	9417916
Patent Number:	9417844
Patent Number:	9417656
Patent Number:	9413665
Patent Number:	9405713
Patent Number:	9401880
Patent Number:	9389908
Patent Number:	9385957
Patent Number:	9348778
Patent Number:	9344384
Patent Number:	9342313
Patent Number:	9331906
Patent Number:	9330041
Patent Number:	9319333
Patent Number:	9311004
Patent Number:	9304706
Patent Number:	9299434
Patent Number:	9298495
Patent Number:	9282051
Patent Number:	9280297
Patent Number:	9270488

Property Type	Number
Patent Number:	9268600
Patent Number:	9264256
Patent Number:	9262136
Patent Number:	9258256
Patent Number:	9237095
Patent Number:	9223555
Patent Number:	9208844
Patent Number:	9176905
Patent Number:	9164794
Patent Number:	9164730
Patent Number:	9154468
Patent Number:	9152452
Patent Number:	9146920
Patent Number:	9124644
Patent Number:	9100212
Patent Number:	9098373
Patent Number:	9098353
Patent Number:	9098264
Patent Number:	9092284
Patent Number:	9071545
Patent Number:	9069649
Patent Number:	9069603
Patent Number:	9069602
Patent Number:	9069558
Patent Number:	9042252
Patent Number:	8972668
Patent Number:	8972630
Patent Number:	8972623
Patent Number:	8930872
Patent Number:	8930675
Patent Number:	8930639
Patent Number:	8929376
Patent Number:	8929374
Patent Number:	8918868
Patent Number:	8908693
Patent Number:	8902902
Patent Number:	8793438
Patent Number:	8775686

Property Type	Number
Patent Number:	8559436
Application Number:	15688937
Application Number:	15463857
Application Number:	12064560
Application Number:	14492013
Application Number:	14267342
Application Number:	14267329
Application Number:	14267298
Application Number:	14267362
Application Number:	14231028
Application Number:	14172851
Application Number:	14172862
Application Number:	14151699
Application Number:	14074606
Application Number:	14264003
Application Number:	14263999
Application Number:	13552537
Application Number:	13361559
Application Number:	12064585

CORRESPONDENCE DATA

Fax Number: (415)693-2222
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: 4156932000
Email: crhem@cooley.com
Correspondent Name: COOLEY LLP
Address Line 1: 101 CALIFORNIA STREET, 5TH FLOOR
Address Line 4: SAN FRANCISCO, CALIFORNIA 94111

ATTORNEY DOCKET NUMBER:	327135-213
NAME OF SUBMITTER:	C. RHEM
SIGNATURE:	/CR/
DATE SIGNED:	06/07/2018

Total Attachments: 20

- source=Netronome - Patent Security Agreement - EXECUTED 6-5-18#page1.tif
- source=Netronome - Patent Security Agreement - EXECUTED 6-5-18#page2.tif
- source=Netronome - Patent Security Agreement - EXECUTED 6-5-18#page3.tif
- source=Netronome - Patent Security Agreement - EXECUTED 6-5-18#page4.tif
- source=Netronome - Patent Security Agreement - EXECUTED 6-5-18#page5.tif
- source=Netronome - Patent Security Agreement - EXECUTED 6-5-18#page6.tif

source=Netronome - Patent Security Agreement - EXECUTED 6-5-18#page7.tif
source=Netronome - Patent Security Agreement - EXECUTED 6-5-18#page8.tif
source=Netronome - Patent Security Agreement - EXECUTED 6-5-18#page9.tif
source=Netronome - Patent Security Agreement - EXECUTED 6-5-18#page10.tif
source=Netronome - Patent Security Agreement - EXECUTED 6-5-18#page11.tif
source=Netronome - Patent Security Agreement - EXECUTED 6-5-18#page12.tif
source=Netronome - Patent Security Agreement - EXECUTED 6-5-18#page13.tif
source=Netronome - Patent Security Agreement - EXECUTED 6-5-18#page14.tif
source=Netronome - Patent Security Agreement - EXECUTED 6-5-18#page15.tif
source=Netronome - Patent Security Agreement - EXECUTED 6-5-18#page16.tif
source=Netronome - Patent Security Agreement - EXECUTED 6-5-18#page17.tif
source=Netronome - Patent Security Agreement - EXECUTED 6-5-18#page18.tif
source=Netronome - Patent Security Agreement - EXECUTED 6-5-18#page19.tif
source=Netronome - Patent Security Agreement - EXECUTED 6-5-18#page20.tif

PATENT SECURITY AGREEMENT

PATENT SECURITY AGREEMENT (as amended, restated, supplemented, waived or otherwise modified from time to time) (this "Agreement"), dated as of June 5, 2018, between Netronome Systems, Inc., a Delaware corporation (the "Borrower") and Kreos Capital V (UK) Limited, as lender (the "Lender").

Reference is made to the Loan and Security Agreement, dated as of June 5, 2018 (as amended, restated, supplemented, waived or otherwise modified from time to time, the "Loan and Security Agreement") between the Borrower, each other Person party thereto from time to time, and the Lender.

The Lender has agreed to extend credit to the Borrower subject to the terms and conditions set forth in the Loan and Security Agreement. The obligations of the Lender to extend such credit are conditioned upon, among other things, the execution and delivery of this Agreement.

Accordingly the parties hereto agree as follows:

SECTION 1. Terms. Capitalized terms used in this Agreement and not otherwise defined herein shall have the meanings specified in the Loan and Security Agreement. The rules of construction specified in Section 12.16 of the Loan and Security Agreement also apply to this Agreement.

SECTION 2. Grant of Security Interest. As security for the payment or performance, as the case may be, in full of the Obligations, Borrower, pursuant to the Loan and Security Agreement, did and hereby does grant to the Lender, its successors and its assigns, a security interest in all right, title or interest in or to any and all of the following Intellectual Property now owned or at any time hereafter acquired by Borrower or in which Borrower now has or at any time in the future may acquire any right, title or interest (collectively, the "Patent Collateral"):

(a) all patents, patent applications and like protections including without limitation improvements, divisions, continuations, renewals, reissues, extensions and continuations-in-part of the same and all rights therein provided by international treaties or conventions, now existing or hereafter adopted or acquired, including those listed on Schedule I;

(b) all claims for, and rights to sue for, past or future infringements of any of the foregoing; and

(c) all income, royalties, damages and payments now or hereafter due and payable with respect to any of the foregoing, including damages and payments for past or future infringement thereof.

SECTION 3. Security Agreement. The security interests granted to Lender herein are granted in furtherance, and not in limitation of, the security interests granted to the Lender pursuant to the Loan and Security Agreement. Borrower hereby acknowledges and affirms that the rights and remedies of the Lender with respect to the Patent Collateral are more fully set forth in the Loan and Security Agreement, the terms and provisions of which are hereby incorporated herein by reference as if fully set forth herein. In the event of any conflict between the terms of this Agreement and the Loan and Security Agreement, the terms of the Loan and Security Agreement shall govern.

SECTION 4. Choice of Law. THIS AGREEMENT SHALL BE CONSTRUED IN ACCORDANCE WITH AND GOVERNED BY THE LAWS OF THE STATE OF CALIFORNIA.

IN WITNESS WHEREOF, Borrower and the Lender have caused this Agreement to be duly executed and delivered as of the date first written above,

NETRONOME SYSTEMS, INC.

By: 

Name: Perry Grace

Title: Chief Financial Officer

[Signature Page to the Patent Security Agreement]

IN WITNESS WHEREOF, Borrower and the Lender have caused this Agreement to be duly executed and delivered as of the date first written above.

KREOS CAPITAL V (UK) LIMITED

By: 
Name: Ross Ahlgren
Title: Director

[Signature Page to the Patent Security Agreement]

SCHEDULE I

Patents and Patent Applications

Owner	Patent / Patent Application	Patent No. / Application No.	Issue Date / Application Date
Netronome Systems, Inc.	Split packet transmission DMA engine	9,990,307	6/5/2018
Netronome Systems, Inc.	Distributed credit FIFO link of a configurable mesh data bus	9,971,720	5/15/2018
Netronome Systems, Inc.	Registered FIFO	9,940,097	4/10/2018
Netronome Systems, Inc.	Efficient intercept of connection-based transport layer connections	9,935,879	4/3/2018
Netronome Systems, Inc.	Loading a flow table with neural network determined information	9,929,933	3/27/2018
Netronome Systems, Inc.	Flow switch IC that uses flow IDs and an exact-match flow table	9,912,591	3/6/2018
Netronome Systems, Inc.	Serdes channel optimization	9,912,533	3/6/2018
Netronome Systems, Inc.	Inter-packet interval prediction learning algorithm	9,900,090	2/20/2018
Netronome Systems, Inc.	Recursive lookup with a hardware trie structure that has no sequential logic elements	9,899,996	2/20/2018
Netronome Systems, Inc.	256-bit parallel parser and checksum circuit with 1-hot state information bus	9,891,985	2/13/2018
Netronome Systems, Inc.	Low-level programming language plugin to augment high-level programming language setup of an SDN switch	9,891,898	2/13/2018
Netronome Systems, Inc.	Intelligent packet data register file that stalls picoengine and retrieves data from a larger buffer	9,887,918	2/6/2018
Netronome Systems, Inc.	Hash range lookup command	9,866,480	1/9/2018

Owner	Patent / Patent Application	Patent No. / Application No.	Issue Date / Application Date
Netronome Systems, Inc.	Script-controlled egress packet modifier	9,854,072	12/26/2017
Netronome Systems, Inc.	Chained CPP command	9,846,662	12/19/2017
Netronome Systems, Inc.	Skip instruction to skip a number of instructions on a predicate	9,830,153	11/28/2017
Netronome Systems, Inc.	Making a flow ID for an exact-match flow table using a programmable reduce table circuit	9,819,585	11/14/2017
Netronome Systems, Inc.	Crossbar and an egress packet modifier in an exact-match flow switch	9,807,006	10/31/2017
Netronome Systems, Inc.	Transactional memory that performs an atomic look-up, add and lock operation	9,804,976	10/31/2017
Netronome Systems, Inc.	In-flight packet processing	9,804,959	10/31/2017
Netronome Systems, Inc.	Making a flow ID for an exact-match flow table using a byte-wide multiplexer circuit	9,756,152	9/5/2017
Netronome Systems, Inc.	Minipacket flow control	9,755,983	9/5/2017
Netronome Systems, Inc.	Controlling an optical bypass switch in a data center based on a neural network output result	9,755,948	9/5/2017
Netronome Systems, Inc.	On-demand generation of system entry packet counts	9,755,911	9/5/2017
Netronome Systems, Inc.	Maintaining bypass packet count values	9,755,910	9/5/2017
Netronome Systems, Inc.	Network interface device that maps host bus writes of configuration information for virtual NIDs into a small transactional memory	9,753,883	9/5/2017
Netronome Systems, Inc.	Picoengine having a hash generator with remainder input S-box nonlinearizing	9,753,725	9/5/2017
Netronome Systems, Inc.	Resource allocation with hierarchical scope	9,753,710	9/5/2017

Owner	Patent / Patent Application	Patent No. / Application No.	Issue Date / Application Date
Netronome Systems, Inc.	Method of detecting large flows within a switch fabric of an SDN switch	9,729,442	8/8/2017
Netronome Systems, Inc.	Command-driven NFA hardware engine that encodes multiple automata	9,729,353	8/8/2017
Netronome Systems, Inc.	Simultaneous simulation of multiple blocks using efficient packet communication to emulate inter-block buses	9,727,673	8/8/2017
Netronome Systems, Inc.	Unicast packet ready command	9,727,513	8/8/2017
Netronome Systems, Inc.	Identical packet multicast packet ready command	9,727,512	8/8/2017
Netronome Systems, Inc.	Hardware first come first serve arbiter using multiple request buckets	9,727,499	8/8/2017
Netronome Systems, Inc.	Simultaneous queue random early detection dropping and global random early detection dropping system	9,705,811	7/11/2017
Netronome Systems, Inc.	Return available PPI credits command	9,703,739	7/11/2017
Netronome Systems, Inc.	Packet engine that uses PPI addressing	9,699,107	7/4/2017
Netronome Systems, Inc.	Forwarding messages within a switch fabric of an SDN switch	9,699,084	7/4/2017
Netronome Systems, Inc.	Efficient search key controller with standard bus interface, external memory interface, and interlaken lookaside interface	9,678,891	6/13/2017
Netronome Systems, Inc.	Transactional memory that supports put and get ring commands	9,678,866	6/13/2017
Netronome Systems, Inc.	Software update methodology	9,678,738	6/13/2017

Owner	Patent / Patent Application	Patent No. / Application No.	Issue Date / Application Date
Netronome Systems, Inc.	Using a credits available value in determining whether to issue a PPI allocation request to a packet engine	9,665,519	5/30/2017
Netronome Systems, Inc.	Packet storage distribution based on available memory	9,641,466	5/2/2017
Netronome Systems, Inc.	Packet ordering system using an atomic ticket release command of a transactional memory	9,641,448	5/2/2017
Netronome Systems, Inc.	Generating a flow ID by passing packet data serially through two CCT circuits	9,641,436	5/2/2017
Netronome Systems, Inc.	Efficient search key processing method	9,632,959	4/25/2017
Netronome Systems, Inc.	Global event chain in an island-based network flow processor	9,626,306	4/18/2017
Netronome Systems, Inc.	Configurable mesh control bus in an island-based network flow processor	9,621,481	4/11/2017
Netronome Systems, Inc.	Local event ring in an island-based network flow processor	9,619,418	4/11/2017
Netronome Systems, Inc.	Configurable mesh data bus in an island-based network flow processor	9,612,981	4/4/2017
Netronome Systems, Inc.	Slice-based intelligent packet data register file	9,612,841	4/4/2017
Netronome Systems, Inc.	Island-based network flow processor with efficient search key processing	9,594,706	3/14/2017
Netronome Systems, Inc.	Multi-processor with efficient search key processing	9,594,702	3/14/2017
Netronome Systems, Inc.	Global random early detection packet dropping based on available memory	9,590,926	3/7/2017
Netronome Systems, Inc.	Unique packet multicast packet ready command	9,588,928	3/7/2017
Netronome Systems, Inc.	Guaranteed in-order packet delivery	9,584,637	2/28/2017

Owner	Patent / Patent Application	Patent No. / Application No.	Issue Date / Application Date
Netronome Systems, Inc.	Generating a hash using S-box nonlinearizing of a remainder input	9,577,832	2/21/2017
Netronome Systems, Inc.	PPI allocation request and response for accessing a memory system	9,559,988	1/31/2017
Netronome Systems, Inc.	Automaton hardware engine employing memory-efficient transition table indexing	9,558,224	1/31/2017
Netronome Systems, Inc.	PPI de-allocate CPP bus command	9,548,947	1/17/2017
Netronome Systems, Inc.	Distributed packet ordering system having separate worker and output processors	9,537,801	1/3/2017
Netronome Systems, Inc.	Transactional memory that performs a programmable address translation if a DAT bit in a transactional memory write command is set	9,535,851	1/3/2017
Netronome Systems, Inc.	Picoengine instruction that controls an intelligent packet data register file prefetch function	9,519,484	12/13/2016
Netronome Systems, Inc.	Efficient conditional instruction having companion load predicate bits instruction	9,519,482	12/13/2016
Netronome Systems, Inc.	High-speed dequeuing of buffer IDS in frame storing system	9,515,946	12/6/2016
Netronome Systems, Inc.	Traffic data pre-filtering	9,515,929	12/6/2016
Netronome Systems, Inc.	SDN protocol message handling within a modular and partitioned SDN switch	9,503,372	11/22/2016
Netronome Systems, Inc.	Multi-processor system having tripwire data merging and collision detection	9,495,158	11/15/2016

Owner	Patent / Patent Application	Patent No. / Application No.	Issue Date / Application Date
Netronome Systems, Inc.	Picoengine multi-processor with task assignment	9,489,337	11/8/2016
Netronome Systems, Inc.	Processor having a tripwire bus port and executing a tripwire instruction	9,489,202	11/8/2016
Netronome Systems, Inc.	Instantaneous random early detection packet dropping with drop precedence	9,485,195	11/1/2016
Netronome Systems, Inc.	Picoengine multi-processor with power control management	9,483,439	11/1/2016
Netronome Systems, Inc.	Method of generating subflow entries in an SDN switch	9,467,378	10/11/2016
Netronome Systems, Inc.	Transactional memory having local CAM and NFA resources	9,465,651	10/11/2016
Netronome Systems, Inc.	Pipelined egress packet modifier	9,450,890	9/20/2016
Netronome Systems, Inc.	Intelligent packet data register file that prefetches data for future instruction execution	9,417,916	8/16/2016
Netronome Systems, Inc.	Storing an entropy signal from a self-timed logic bit stream generator in an entropy storage ring	9,417,844	8/16/2016
Netronome Systems, Inc.	NFA byte detector	9,417,656	8/16/2016
Netronome Systems, Inc.	CPP bus transaction value having a PAM/LAM selection code field	9,413,665	8/9/2016
Netronome Systems, Inc.	Commonality of memory island interface and structure	9,405,713	8/2/2016
Netronome Systems, Inc.	Flow control using a local event ring in an island-based network flow processor	9,401,880	7/26/2016
Netronome Systems, Inc.	Transactional memory that performs a TCAM 32-bit lookup operation	9,389,908	7/12/2016

Owner	Patent / Patent Application	Patent No. / Application No.	Issue Date / Application Date
Netronome Systems, Inc.	Flow key lookup involving multiple simultaneous cam operations to identify hash values in a hash bucket	9,385,957	7/5/2016
Netronome Systems, Inc.	Transactional memory that performs an ALUT 32-bit lookup operation	9,348,778	5/24/2016
Netronome Systems, Inc.	Inter-packet interval prediction operating algorithm	9,344,384	5/17/2016
Netronome Systems, Inc.	Transactional memory that supports a get from one of a set of rings command	9,342,313	5/17/2016
Netronome Systems, Inc.	Compartmentalization of the user network interface to a device	9,331,906	5/3/2016
Netronome Systems, Inc.	Staggered island structure in an island-based network flow processor	9,330,041	5/3/2016
Netronome Systems, Inc.	Instantaneous random early detection packet dropping	9,319,333	4/19/2016
Netronome Systems, Inc.	Transactional memory that performs a PMM 32-bit lookup operation	9,311,004	4/12/2016
Netronome Systems, Inc.	Efficient complex network traffic management in a non-uniform memory system	9,304,706	4/5/2016
Netronome Systems, Inc.	Dedicated egress fast path for non-matching packets in an OpenFlow switch	9,299,434	3/29/2016
Netronome Systems, Inc.	Transactional memory that performs an atomic metering command	9,298,495	3/29/2016
Netronome Systems, Inc.	Credit-based resource allocator circuit	9,282,051	3/8/2016
Netronome Systems, Inc.	Transactional memory that supports a put with low priority ring command	9,280,297	3/8/2016
Netronome Systems, Inc.	Reordering PCP flows as they are assigned to virtual channels	9,270,488	2/23/2016

Owner	Patent / Patent Application	Patent No. / Application No.	Issue Date / Application Date
Netronome Systems, Inc.	Picoengine pool transactional memory architecture	9,268,600	2/23/2016
Netronome Systems, Inc.	Merging PCP flows as they are assigned to a single virtual channel	9,264,256	2/16/2016
Netronome Systems, Inc.	Allocate instruction and API call that contain a sybmol for a non-memory resource	9,262,136	2/16/2016
Netronome Systems, Inc.	Inverse PCP flow remapping for PFC pause frame generation	9,258,256	2/9/2016
Netronome Systems, Inc.	Island-based network flow processor integrated circuit	9,237,095	1/12/2016
Netronome Systems, Inc.	Hierarchical resource pools in a linker	9,223,555	12/29/2015
Netronome Systems, Inc.	DDR retiming circuit	9,208,844	12/8/2015
Netronome Systems, Inc.	Recursive use of multiple hardware lookup structures in a transactional memory	9,176,905	11/3/2015
Netronome Systems, Inc.	Hardware prefix reduction circuit	9,164,794	10/20/2015
Netronome Systems, Inc.	Self-timed logic bit stream generator with command to run for a number of state transitions	9,164,730	10/20/2015
Netronome Systems, Inc.	Efficient forwarding of encrypted TCP retransmissions	9,154,468	10/6/2015
Netronome Systems, Inc.	Transactional memory that performs a CAMR 32-bit lookup operation	9,152,452	10/6/2015
Netronome Systems, Inc.	Transactional memory that performs an atomic look-up, add and lock operation	9,146,920	9/29/2015
Netronome Systems, Inc.	Script-controlled egress packet modifier	9,124,644	9/1/2015
Netronome Systems, Inc.	Transactional memory that performs a direct 32-bit lookup operation	9,100,212	8/4/2015
Netronome Systems, Inc.	Software update methodology	9,098,373	8/4/2015

Owner	Patent / Patent Application	Patent No. / Application No.	Issue Date / Application Date
Netronome Systems, Inc.	Transactional memory that performs a split 32-bit lookup operation	9,098,353	8/4/2015
Netronome Systems, Inc.	Transactional memory that performs a direct 24-BIT lookup operation	9,098,264	8/4/2015
Netronome Systems, Inc.	Entropy storage ring having stages with feedback inputs	9,092,284	7/28/2015
Netronome Systems, Inc.	Network appliance that determines what processor to send a future packet to based on a predicted future arrival time	9,071,545	6/30/2015
Netronome Systems, Inc.	Distributed credit FIFO link of a configurable mesh data bus	9,069,649	6/30/2015
Netronome Systems, Inc.	Transactional memory that performs an atomic metering command	9,069,603	6/30/2015
Netronome Systems, Inc.	Transactional memory that supports put and get ring commands	9,069,602	6/30/2016
Netronome Systems, Inc.	Recursive use of multiple hardware lookup structures in a transactional memory	9,069,558	6/30/2015
Netronome Systems, Inc.	Inter-packet interval prediction learning algorithm	9,042,252	5/26/2015
Netronome Systems, Inc.	Transactional memory that performs an ALUT 32-bit lookup operation	8,972,668	3/3/2015
Netronome Systems, Inc.	Transactional memory that supports a put with low priority ring command	8,972,630	3/3/2015
Netronome Systems, Inc.	Efficient complex network traffic management in a non-uniform memory system	8,972,623	3/3/2015
Netronome Systems, Inc.	Staggered island structure in an island-based network flow processor	8,930,872	1/6/2015

Owner	Patent / Patent Application	Patent No. / Application No.	Issue Date / Application Date
Netronome Systems, Inc.	Transactional memory that performs a TCAM 32-bit lookup operation	8,930,675	1/6/2015
Netronome Systems, Inc.	Transactional memory that performs a PPM 32-bit lookup operation	8,930,639	1/6/2015
Netronome Systems, Inc.	Flow control using a local event ring in an island-based network flow processor	8,929,376	1/6/2015
Netronome Systems, Inc.	System and method for processing and forwarding transmitted information	8,929,374	1/6/2015
Netronome Systems, Inc.	Compartmentalization of the user network interface to a device	8,918,868	12/23/2014
Netronome Systems, Inc.	Flow key lookup involving multiple simultaneous cam operations to identify hash values in a hash bucket	8,908,693	12/9/2014
Netronome Systems, Inc.	Recursive lookup with a hardware trie structure that has no sequential logic elements	8,902,902	12/2/2014
Netronome Systems, Inc.	Atomic compare and write memory	8,793,438	7/29/2014
Netronome Systems, Inc.	Transactional memory that performs an atomic metering command	8,775,686	7/8/2014
Netronome Systems, Inc.	Processing resource management in an island-based network flow processor	8,559,436	10/15/2013
Netronome Systems, Inc.	Transactional Memory that is Programmable to Output an Alert if a Predetermined Memory Write Occurs	15/688,937	8/29/2017
Netronome Systems, Inc.	Configurable Mesh Data Bus In An Island-Based Network Flow Processor	15/463,857	3/20/2017
Netronome Systems, Inc.	Picoengine multi-processor with task assignment	14/251,592	4/12/2014

Owner	Patent / Patent Application	Patent No. / Application No.	Issue Date / Application Date
Netronome Systems, Inc.	Picoengine multi-processor with power control management	14/251,599	4/12/2014
Netronome Systems, Inc.	Instantaneous random early detection packet dropping	14/205,824	3/12/2014
Netronome Systems, Inc.	Guaranteed in-order packet delivery	14/184,455	2/19/2014
Netronome Systems, Inc.	Network interface device that maps host bus writes of configuration information for virtual NIDS into a small transactional memory	14/172,844	2/4/2014
Netronome Systems, Inc.	Transactional memory that performs a programmable address translation if a dat bit in a transactional memory write command is set	14/172,856	2/4/2014
Netronome Systems, Inc.	Dedicated egress fast path for non-matching packets in an openflow switch	14/151,730	1/9/2014
Netronome Systems, Inc.	Command-driven NFA hardware engine that encodes multiple automaton	14/151,666	1/9/2014
Netronome Systems, Inc.	Automaton hardware engine employing memory-efficient transition table indexing	14/151,643	1/9/2014
Netronome Systems, Inc.	NFA byte detector	14/151,688	1/9/2014
Netronome Systems, Inc.	Transactional memory having local CAM and NFA resources	14/151,677	1/9/2014
Netronome Systems, Inc.	Resource allocation with hierarchical scope	14/074,632	11/7/2013
Netronome Systems, Inc.	Hierarchical resource pools in a linker	14/074,623	11/7/2013
Netronome Systems, Inc.	Allocate instruction and api call that contain a sybmol for a non-memory resource	14/074,640	11/7/2013

Owner	Patent / Patent Application	Patent No. / Application No.	Issue Date / Application Date
Netronome Systems, Inc.	Hardware first come first serve arbiter using multiple request buckets	14/074,469	11/7/2013
Netronome Systems, Inc.	Entropy storage ring having stages with feedback inputs	14/037,319	9/25/2013
Netronome Systems, Inc.	Transactional memory that supports a get from one of a set of rings command	14/037,239	9/25/2013
Netronome Systems, Inc.	Transactional memory that supports a put with low priority ring command	14/037,226	9/25/2013
Netronome Systems, Inc.	Transactional memory that supports put and get ring commands	14/037,214	9/25/2013
Netronome Systems, Inc.	Storing an entropy signal from a self-timed logic bit stream generator in an entropy storage ring	14/037,312	9/25/2013
Netronome Systems, Inc.	Self-timed logic bit stream generator with command to run for a number of state transitions	14/037,303	9/25/2013
Netronome Systems, Inc.	Pico engine pool transactional memory architecture	13/970,601	8/20/2013
Netronome Systems, Inc.	Hardware prefix reduction circuit	13/970,599	8/20/2013
Netronome Systems, Inc.	Traffic Data Pre-Filtering	13/929,809	6/28/2013
Netronome Systems, Inc.	Efficient complex network traffic management in a non-uniform memory system	13/875,968	5/2/2013
Netronome Systems, Inc.	Transactional memory that performs an atomic metering command	14/287,012	5/24/2014
Netronome Systems, Inc.	Compartmentalization of the user network interface to a device	13/742,311	1/15/2013
Netronome Systems, Inc.	Software update methodology	13/741,310	1/14/2013

Owner	Patent / Patent Application	Patent No. / Application No.	Issue Date / Application Date
Netronome Systems, Inc.	Efficient forwarding of encrypted TCP retransmissions	13/737,907	1/9/2013
Netronome Systems, Inc.	Efficient intercept of connection-based transport layer connections	13/730,985	12/29/2012
Netronome Systems, Inc.	Flow key lookup involving multiple simultaneous cam operations to identify hash values in a hash bucket	13/690,195	11/30/2012
Netronome Systems, Inc.	Transactional memory that performs a split 32-bit lookup operation	13/675,259	11/13/2012
Netronome Systems, Inc.	Transactional memory that performs a TCAM 32-bit lookup operation	13/675,353	11/13/2012
Netronome Systems, Inc.	Transactional memory that performs an ALUT 32-bit lookup operation	13/675,309	11/13/2012
Netronome Systems, Inc.	Transactional memory that performs a PMM 32-bit lookup operation	13/675,394	11/13/2012
Netronome Systems, Inc.	Inter-packet interval prediction operating algorithm	13/675,453	11/13/2012
Netronome Systems, Inc.	Inter-packet interval prediction learning algorithm	13/675,620	11/13/2012
Netronome Systems, Inc.	Network appliance that determines what processor to send a future packet to based on a predicted future arrival time	13/668,251	11/3/2012
Netronome Systems, Inc.	Transactional memory that performs an atomic look-up, add and lock operation	13/609,039	9/10/2012
Netronome Systems, Inc.	Transactional memory that performs a CAMR 32-bit lookup operation	13/598,448	8/29/2012
Netronome Systems, Inc.	Transactional memory that performs an atomic metering command	13/598,533	8/29/2012

Owner	Patent / Patent Application	Patent No. / Application No.	Issue Date / Application Date
Netronome Systems, Inc.	Transactional Memory that Performs a Direct 24-BIT Lookup Operation	13/552,627	7/18/2012
Netronome Systems, Inc.	Recursive Use of Multiple Hardware Lookup Structures in a Transactional Memory	13/552,619	7/18/2012
Netronome Systems, Inc.	Transactional Memory that Performs a Direct 32-bit Lookup Operation	13/552,605	7/18/2012
Netronome Systems, Inc.	Recursive Lookup with a Hardware Trie Structure that has no Sequential Logic Elements	13/552,555	7/18/2012
Netronome Systems, Inc.	Configurable Mesh Data Bus In An Island-Based Network Flow Processor	13/399,324	2/17/2012
Netronome Systems, Inc.	Local Event Ring In An Island-Based Network Flow Processor	13/399,678	2/17/2012
Netronome Systems, Inc.	Staggered Island Structure In An Island-Based Network Flow Processor	13/399,433	2/17/2012
Netronome Systems, Inc.	Commonality of Memory Island Interface and Structure	13/399,915	2/17/2012
Netronome Systems, Inc.	Global Event Chain In An Island-Based Network Flow Processor	13/399,983	2/17/2012
Netronome Systems, Inc.	Island-Based Network Flow Processor Integrated Circuit	13/399,888	2/17/2012
Netronome Systems, Inc.	Flow Control Using a Local Event Ring In An Island-Based Network Flow Processor	13/400,008	2/17/2012
Netronome Systems, Inc.	Distributed Credit FIFO Link of a Configurable Mesh Data Bus	13/399,846	2/17/2012
Netronome Systems, Inc.	Processing Resource Management In An Island-Based Network Flow Processor	13/399,958	2/17/2012

Owner	Patent / Patent Application	Patent No. / Application No.	Issue Date / Application Date
Netronome Systems, Inc.	Configurable Mesh Control Bus In An Island-Based Network Flow Processor	13/399,613	2/17/2012
Netronome Systems, Inc.	System and Method for Processing and Forwarding Transmitted Information	13/337,184	12/26/2011
Netronome Systems, Inc.	Atomic Compare And Write Memory	12/579,649	10/15/2009
Netronome Systems, Inc.	System and Method for Processing Secure Transmissions	12/064,560	8/23/2006
Netronome Systems, Inc.	Addressless Merge Command with Data Item Identifier	14/492,013	9/20/2014
Netronome Systems, Inc.	Table Fetch Processor Instruction Using Table Number To Base Address Translation	14/267,342	5/1/2014
Netronome Systems, Inc.	Kick-Started Run-To-Completion Processing Method That Does Not Involve an Instruction Counter	14/267,329	5/1/2014
Netronome Systems, Inc.	Kick-Started Run-To-Completion Processor Having No Instruction Counter	14/267,298	5/1/2014
Netronome Systems, Inc.	Pop Stack Absolute Instruction	14/267,362	5/1/2014
Netronome Systems, Inc.	Chained-Instruction Dispatcher	14/231,028	3/31/2014
Netronome Systems, Inc.	Network Interface Device that alerts a Monitoring Processor if Configuration of a Virtual NID is Changed	14/172,851	2/4/2014
Netronome Systems, Inc.	Transactional Memory that is Programmable to Output an Alert if a Predetermined Memory Write Occurs	14/172,862	2/4/2014
Netronome Systems, Inc.	NFA Completion notification	14/151,699	1/9/2014

Owner	Patent / Patent Application	Patent No. / Application No.	Issue Date / Application Date
Netronome Systems, Inc.	Linker that Statically Allocates Non-Memory Resources at Link Time	14/074,606	11/7/2013
Netronome Systems, Inc.	Packet Prediction in a Multi-Protocol Label Switching Network Using Operation, Administration, And Maintenance (OAM) Messaging	14/264,003	4/28/2014
Netronome Systems, Inc.	Packet Prediction in a Muti-Protocol Lable Switching Network Using Openflow Messaging	14/263,999	4/28/2014
Netronome Systems, Inc.	Transactional Memory that Performs a Statistics Add-and-Update Operation	13/552,537	7/18/2012
Netronome Systems, Inc.	System and Method for Processing Secure Transmissions	13/361,559	1/30/2012
Netronome Systems, Inc.	System and Method for Processing and Forwarding Transmitted Information	12/064,585	8/23/2006