

<b>PATENT ASSIGNMENT COVER SHEET</b>
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Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT5979352

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	SECURITY INTEREST

**CONVEYING PARTY DATA**

Name	Execution Date
PICO QUANTITATIVE TRADING LLC	02/07/2020
SPRYWARE, LLC	02/07/2020
CORVIL LIMITED	02/07/2020
CORVIL, INC.	02/07/2020

**RECEIVING PARTY DATA**

<b>Name:</b>	WESTERN ALLIANCE BANK
<b>Street Address:</b>	55 ALMADEN BOULEVARD, SUITE 100
<b>City:</b>	SAN JOSE
<b>State/Country:</b>	CALIFORNIA
<b>Postal Code:</b>	95113

**PROPERTY NUMBERS Total: 9**

Property Type	Number
Patent Number:	6580691
Patent Number:	6771607
Patent Number:	7342923
Patent Number:	7388867
Patent Number:	7020167
Patent Number:	7787438
Patent Number:	7839861
Patent Number:	8493875
Patent Number:	10263873

**CORRESPONDENCE DATA**

**Fax Number:** (858)550-6420

*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:** 858-550-6433

**Email:** jmfitzpatrick@cooley.com

**Correspondent Name:** JENNIFER FITZPATRICK

**Address Line 1:** C/O COOLEY LLP

**Address Line 2:** 4401 EASTGATE MALL

**PATENT**

<b>Address Line 4:</b>	SAN DIEGO, CALIFORNIA 92121
<b>ATTORNEY DOCKET NUMBER:</b>	305983-1142
<b>NAME OF SUBMITTER:</b>	JENNIFER FITZPATRICK
<b>SIGNATURE:</b>	/JENNIFER FITZPATRICK/
<b>DATE SIGNED:</b>	02/24/2020
<b>Total Attachments: 7</b> source=IPSA - Pico (02.07.20)#page1.tif source=IPSA - Pico (02.07.20)#page2.tif source=IPSA - Pico (02.07.20)#page3.tif source=IPSA - Pico (02.07.20)#page4.tif source=IPSA - Pico (02.07.20)#page5.tif source=IPSA - Pico (02.07.20)#page6.tif source=IPSA - Pico (02.07.20)#page7.tif	

## INTELLECTUAL PROPERTY SECURITY AGREEMENT

This Intellectual Property Security Agreement, dated as of February 7, 2020 (the "Agreement") between **WESTERN ALLIANCE BANK**, an Arizona corporation ("Lender"), and **PICO QUANTITATIVE TRADING LLC**, a New York limited liability company ("PQT"), **SPRYWARE, LLC**, an Illinois limited liability company ("Spryware"), **CORVIL LIMITED**, a private company limited by shares organized and existing under the laws of the Republic of Ireland ("Corvil"), and **CORVIL, INC.**, a Delaware corporation ("Corvil US" and together with PQT, Spryware, and Corvil, collectively, "Grantors" or "Grantor", as the context may require, and each, individually, a "Grantor") is made with reference to the Loan and Security Agreement, dated as of even date herewith (as amended from time to time, the "Loan Agreement"), between Lender, Grantors, and the other parties thereto. Terms defined in the Loan Agreement have the same meaning when used in this Agreement.

For good and valuable consideration, receipt of which is hereby acknowledged, each Grantor hereby covenants and agrees as follows:

To secure the Obligations under the Loan Agreement, each Grantor grants to Lender a security interest in all right, title, and interest of such Grantor in any of the following, whether now existing or hereafter acquired or created in any and all of the following property (collectively, the "Intellectual Property Collateral"):

(a) 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 (collectively, the "Copyrights"), including the Copyrights described in Exhibit A;

(b) 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 each Grantor connected with and symbolized by such trademarks (collectively, the "Trademarks"), including the Trademarks described in Exhibit B;

(c) patents, patent applications and like protections including without limitation improvements, divisions, continuations, renewals, reissues, extensions and continuations-in-part of the same (collectively, the "Patents"), including the Patents described in Exhibit C;

(g) claims for damages by way of past, present and future infringement 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) licenses or other rights to use any of the Intellectual Property Collateral, and all license fees and royalties arising from such use to the extent permitted by such license or rights;

(i) amendments, renewals and extensions of any of the Intellectual Property Collateral; and

(j) 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.

The rights and remedies of Lender with respect to the security interests granted hereunder are in addition to those set forth in the Loan Agreement, and those which are now or hereafter available to Lender as a matter of law or equity. Each right, power and remedy of Lender provided for herein or in the Loan Agreement, or now or hereafter existing at law or in equity shall be cumulative and concurrent and shall be in addition to every right, power or remedy provided for herein, and the exercise by Lender of any one or more of such rights, powers or remedies does not preclude the simultaneous or later exercise by Lender of any other rights, powers or remedies. Upon the payment in full of the obligations under the Loan Agreement (other than unasserted contingent indemnification obligations and unasserted expense

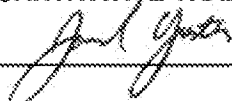
reimbursement obligations) and termination of the Loan Agreement, Lender shall execute, acknowledge, and deliver to the Grantors an instrument in writing in recordable form releasing the lien and security interest in the Intellectual Property Collateral under this Agreement.

[Remainder of page left intentionally blank.]

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first written above.

**GRANTORS:**

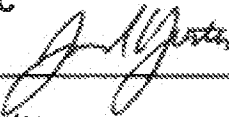
**PICO QUANTITATIVE TRADING LLC**

By: 

Name: Jarrod Yuster

Title: Chief Executive Officer & President

**SPRYWARE, LLC**

By: 

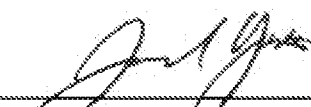
Name: Jarrod Yuster


Title: Chief Executive Officer & President

**GIVEN under the COMMON SEAL**

**of CORVIL LIMITED**

**and delivered as a DEED**

  
Jarrod Yuster **Director**

  
Donal Byrne **Director / Secretary**

**CORVIL, INC.**

By: 

Name: Donal Byrne

Title: President

Address for Notices to any Grantor:  
c/o Pico Quantitative Trading Holdings LLC  
32 Old Slip, Suite 1601  
New York, NY 10005  
Attn: General Counsel  
EMAIL: kristen.keller@picotrading.com

**LENDER:**

WESTERN ALLIANCE BANK, an Arizona  
corporation

By: *Eric Tolipans*

Name: *Eric Tolipans*

Title: *AVP*

Address for Notices:

Attn: 55 Almaden Boulevard, Suite 100  
San Jose, California 95113  
Tel: (408) 556-6501  
Fax: (408) 282-1681

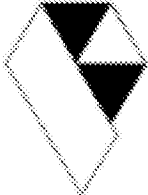

**EXHIBIT A**  
**COPYRIGHTS**

Please Check if No Copyrights Exist


Type of Work:	Title:	International Standard Serial Number (ISSN):	Registration Number:	Filing Date:	Pre - registered ?

**EXHIBIT B**  
**TRADEMARKS**

Please Check if No Trademarks Exist

<b>Trademark</b>	<b>Registration No.</b>	<b>Registration Date</b>	<b>Jurisdiction</b>
SPRYWARE (owned by Spryware, LLC)	3,837,162	August 24, 2010	USPTO
Stylized "P" Image (owned by Pico Quantitative Trading LLC) 	5,390,440	January 30, 2018	USPTO
Composite mark (owned by Pico Quantitative Trading LLC) 	5,523,132	July 24, 2018	USPTO
CORVIL (owned by Corvil Limited)	4381711	August 13, 2013	USPTO
CORVIL (owned by Corvil Limited)	3046230	January 17, 2006	USPTO

**Trademark Applications:**

<b>Trademark</b>	<b>Application Number</b>	<b>Application Date</b>	<b>Owner/Applicant</b>
<i>Design Only</i> 	79273107	November 4, 2019	Corvil Limited



**EXHIBIT C**

**PATENTS**

Please Check if No Patents Exist

<b>Patent No.</b>	<b>Filing Date</b>	<b>Title</b>	<b>Owner</b>
6580691	1999-08-19	Data networks	Corvil Limited
6771607	2000-06-30	Measure And Recording Of Traffic Parameters In Data Transmission Networks	Corvil Limited
7342923	2003-08-28	Method And System For Bandwidth Estimation	Corvil Limited
7388867	2004-06-18	Improvements In And Relating To Data Networks	Corvil Limited
7020167	2004-06-25	Measure And Recording Of Traffic Parameters In Data Transmission Networks	Corvil Limited
7787438	2007-02-09	Delay Measurements In Network Traffic	Corvil Limited
7839861	2007-06-22	Method And Apparatus For Calculating Bandwidth Requirements	Corvil Limited
8493875	2010-03-16	System And Method For Estimation Of Round Trip Times Within A TCP Based Data Network	Corvil Limited
10263873	2016-09-11	Method and system for determining short-timescale traffic rates from time-stamped packet data	Corvil Limited

**Patent Applications:**

None.