

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
Stylesheet Version v1.2

EPAS ID: PAT7925264

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
MANDIANT, INC.	10/08/2021
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	FIREEYE SECURITY HOLDINGS US LLC
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<b>City:</b>	MILPITAS
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<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
Application Number:	18165171
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<b>ATTORNEY DOCKET NUMBER:</b>	P01-2055.03
<b>NAME OF SUBMITTER:</b>	EILEEN LYSAUGHT
<b>SIGNATURE:</b>	/EILEEN LYSAUGHT/
<b>DATE SIGNED:</b>	04/27/2023
<b>Total Attachments: 24</b>	
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**PATENT ASSIGNMENT**

THIS PATENT ASSIGNMENT (this “**Assignment**”), dated as of October 8, 2021 (“**Effective Date**”), is entered into by and between Mandiant, Inc. (f/k/a FireEye, Inc.), a Delaware corporation (“**Assignor**”), and FireEye Security Holdings US LLC, a Delaware limited liability company and wholly owned subsidiary of Magenta Buyer LLC (“**Assignee**”).

**RECITALS**

A. Assignor is the sole owner of the patents and patent applications set forth on **Schedule A** attached hereto (the “**Listed Patents**”); and

B. Assignor and Assignee, as assignee of Polaris Buyer LLC, have entered into an Asset Purchase Agreement, dated as of May 29, 2021 (the “**Purchase Agreement**”), pursuant to which Assignor has agreed to assign, sell and transfer the Transferred Patents (as defined in the Purchase Agreement), including but not limited to each of the Listed Patents unto Assignee.

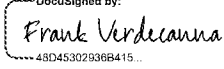
NOW, THEREFORE, for good and valuable consideration, the receipt, sufficiency and adequacy of which are hereby acknowledged, subject to the terms of the Purchase Agreement, Assignor does hereby assign, sell and transfer unto Assignee, Assignor’s ownership of the Transferred Patents, including but not limited to the Listed Patents, including, without limitation, (i) any United States, international and foreign counterparts or equivalents of any of the foregoing, applications or certificates of invention based upon or covering any portion of any of the foregoing, (ii) any reissues, divisionals, renewals, extensions, provisionals, continuations, continuations-in-part, reexaminations, substitutions or revisions of any of the foregoing, (iii) any other patents, applications or extensions that claim priority to or through any of the foregoing, and (iv) the rights to enforce, and recover and retain any damages or obtain equitable relief for or collect license fees and/or royalties, for the past, ongoing, or future infringement, misappropriation, or use of any of the foregoing. Assignor does further consent to the recordation of this Assignment with any governmental agency.

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**IN WITNESS WHEREOF**, this Assignment has been duly executed and delivered by a duly authorized representative of each of the parties as of the Effective Date.

**ASSIGNOR**

**MANDIANT, INC.**

By:  \_\_\_\_\_  
48D453029368415...


Name: Frank Verdecanna

Title: EVP and Chief Financial Officer

[Signature Page to Patent Assignment]

ASSIGNEE

FIREEYE SECURITY HOLDINGS US LLC

By:   
Name: Marc Bala  
Title: Secretary

## Schedule A

### UNITED STATES

FireEye Docket No.	Title	Filing Date	All Inventors	Prosecution Status	Appl./Pat. #	Google Patents
P01-1001	System and method of detecting computer worms	3/31/2005	Ashar Aziz	ISSUED	8528086	<a href="https://patents.google.com/patent/US8528086">https://patents.google.com/patent/US8528086</a>
P01-1002	System and Method of Containing Computer Worms	6/13/2005	Ashar Aziz	ISSUED	8549638	<a href="https://patents.google.com/patent/US8549638">https://patents.google.com/patent/US8549638</a>
P01-1003	Computer Worm Defense System and Method	6/13/2005	Ashar Aziz	ISSUED	8006305	<a href="https://patents.google.com/patent/US8006305">https://patents.google.com/patent/US8006305</a>
P01-1004	Dynamic Signature Creation and Enforcement	7/28/2006	Ashar Aziz; Jayaraman Manni; Ramesh Radhakrishnan; Wei-Lung Lai	ISSUED	8375444	<a href="https://patents.google.com/patent/US8375444">https://patents.google.com/patent/US8375444</a>
P01-1005	Virtual Machine with Dynamic Data Flow Analysis	6/19/2006	Ashar Aziz; Osman Ismael; Ramesh Radhakrishnan	ISSUED	8584239	<a href="https://patents.google.com/patent/US8584239">https://patents.google.com/patent/US8584239</a>
P01-1006	Heuristic Based Capture with Replay to Virtual Machine	4/20/2006	Adrian Drzewiecki; Ashar Aziz; Jayaraman Manni; Muhammad Amin; Ramesh Radhakrishnan	ISSUED	8171553	<a href="https://patents.google.com/patent/US8171553">https://patents.google.com/patent/US8171553</a>
P01-1007	Malware Containment on Connection	3/12/2007	Ashar Aziz; Jayaraman Manni; Wei-Lung Lai	ISSUED	8566946	<a href="https://patents.google.com/patent/US8566946">https://patents.google.com/patent/US8566946</a>
P01-1008	Malware Containment and Security Analysis on Connection	3/12/2007	Ashar Aziz; Jayaraman Manni; Wei-Lung Lai	ISSUED	8539582	<a href="https://patents.google.com/patent/US8539582">https://patents.google.com/patent/US8539582</a>
P01-1009	Systems and Methods for Malware Attack Prevention	3/12/2007	Ashar Aziz; Jayaraman Manni; Wei-Lung Lai	ISSUED	8898788	<a href="https://patents.google.com/patent/US8898788">https://patents.google.com/patent/US8898788</a>
P01-1010	Systems and Methods for Malware Attack Detection and Identification	3/12/2007	Ashar Aziz; Jayaraman Manni; Wei-Lung Lai	ISSUED	8881282	<a href="https://patents.google.com/patent/US8881282">https://patents.google.com/patent/US8881282</a>
P01-1011	Systems and Methods for Detecting Encrypted Bot Command & Control Communication Channels	11/30/2007	Ashar Aziz; Jayaraman Manni; Wei-Lung Lai	ISSUED	8204984	<a href="https://patents.google.com/patent/US8204984">https://patents.google.com/patent/US8204984</a>
P01-1012	Systems and Methods for Detecting Communication Channels of Bots	11/30/2007	Ashar Aziz; Jayaraman Manni; Wei-Lung Lai	ISSUED	8561177	<a href="https://patents.google.com/patent/US8561177">https://patents.google.com/patent/US8561177</a>
P01-1013	Prospective Client Identification Using Malware Attack Detection	2/21/2007	Ashar Aziz	ISSUED	9027135	<a href="https://patents.google.com/patent/US9027135">https://patents.google.com/patent/US9027135</a>
P01-1014	Systems and Methods for Detecting Malicious Network Content	11/3/2008	Ashar Aziz; Stuart Gresley Staniford	ISSUED	8850571	<a href="https://patents.google.com/patent/US8850571">https://patents.google.com/patent/US8850571</a>
P01-1015	Detecting Malicious Network Content Using Virtual Environment Components	1/23/2009	Bahman Mahbod; Jayaraman Manni; Muhammad Amin; Osman Ismael; Samuel Yie	ISSUED	8793787	<a href="https://patents.google.com/patent/US8793787">https://patents.google.com/patent/US8793787</a>
P01-1016	Network-Based Binary File Extraction and Analysis for Malware Detection	9/30/2009	Ashar Aziz; Fengmin Gong; Jayaraman Manni; Muhammad Amin; Upendran Loganathan	ISSUED	8832829	<a href="https://patents.google.com/patent/US8832829">https://patents.google.com/patent/US8832829</a>
P01-1017	Electronic Message Analysis for Malware Detection	4/18/2011	Ashar Aziz; Henry Uyeno; Jayaraman Manni; Muhammad Amin; Stuart Gresley Staniford	ISSUED	9106694	<a href="https://patents.google.com/patent/US9106694">https://patents.google.com/patent/US9106694</a>

FireEye Docket No.	Title	Filing Date	All Inventors	Prosecution Status	Appl./Pat. #	Google Patents
P01-1018	Systems and Methods for Detecting Malicious PDF Network Content	1/21/2011	Ashar Aziz; Stuart Gresley Staniford	ISSUED	8997219	<a href="https://patents.google.com/patent/US8997219">https://patents.google.com/patent/US8997219</a>
P01-1019	Detecting Malicious Network Content	2/24/2012	Ashar Aziz; Stuart Gresley Staniford; Muhammad Amin; Henry Uyeno; Samuel Yie	ISSUED	9519782	<a href="https://patents.google.com/patent/US9519782">https://patents.google.com/patent/US9519782</a>
P01-1020	Policy Based Capture with Replay to Virtual Machine	3/16/2012	Ashar Aziz; Stuart Gresley Staniford; Ramesh Radhakrishnan; Muhammad Amin; Adrian Drzewiecki	ISSUED	8291499	<a href="https://patents.google.com/patent/US8291499">https://patents.google.com/patent/US8291499</a>
P01-1021	Network-based binary file extraction and analysis for malware detection	1/13/2012	Ashar Aziz; Fengmin Gong; Jayaraman Manni; Muhammad Amin; Upendran Loganathan	ISSUED	8935779	<a href="https://patents.google.com/patent/US8935779">https://patents.google.com/patent/US8935779</a>
P01-1022	Systems and Methods for Detecting Malicious PDF Network Content	5/10/2012	Stuart Gresley Staniford; Ashar Aziz	ISSUED	9118715	<a href="https://patents.google.com/patent/US9118715">https://patents.google.com/patent/US9118715</a>
P01-1023	Malware Defense System and Method	9/27/2012	Ashar Aziz	ISSUED	8689333	<a href="https://patents.google.com/patent/US8689333">https://patents.google.com/patent/US8689333</a>
P01-1024	Systems and Methods for Computer Worm Defense	10/12/2012	Ashar Aziz	ISSUED	8516593	<a href="https://patents.google.com/patent/US8516593">https://patents.google.com/patent/US8516593</a>
P01-1025	Systems and methods for automatically detecting backdoors	2/23/2013	Abhishek Singh; Jayaraman Manni	ISSUED	8990944	<a href="https://patents.google.com/patent/US8990944">https://patents.google.com/patent/US8990944</a>
P01-1031	System and Method for Detecting Exfiltration Content	3/13/2013	Darien Kindlund; James Bennett; Julia Wolf	ISSUED	9565202	<a href="https://patents.google.com/patent/US9565202">https://patents.google.com/patent/US9565202</a>
P01-1033	Detecting bootkits resident on compromised computers	3/15/2013	Abhishek Singh; Michael Vincent; Muhammad Amin; Zheng Bu	ISSUED	9251343	<a href="https://patents.google.com/patent/US9251343">https://patents.google.com/patent/US9251343</a>
P01-1035	Optimized Resource Allocation for Virtual Machines Within a Malware Content Detection System	5/10/2013	Osman Ismael	ISSUED	9495180	<a href="https://patents.google.com/patent/US9495180">https://patents.google.com/patent/US9495180</a>
P01-1036	Systems, Apparatus and Method for Using Malware Analysis Results to Drive Adaptive Instrumentation of Virtual Machines to Improve Exploit Detection	9/30/2013	Osman Ismael	ISSUED	9736179	<a href="https://patents.google.com/patent/US9736179">https://patents.google.com/patent/US9736179</a>
P01-1038.02	Injection of Content Processing Delay in an Endpoint	11/2/2015	Ashar Aziz; Osman Ismael	ISSUED	9912681	<a href="https://patents.google.com/patent/US9912681">https://patents.google.com/patent/US9912681</a>
P01-1039.02	System and method for IPS and VM-based detection of suspicious objects	3/27/2014	Ashar Aziz; Muhammad Amin; Zheng Bu	ISSUED	9756074	<a href="https://patents.google.com/patent/US9756074">https://patents.google.com/patent/US9756074</a>
P01-1043	Framework for multi-phase analysis of mobile applications	2/23/2013	Ashar Aziz; Osman Ismael	ISSUED	9009822	<a href="https://patents.google.com/patent/US9009822">https://patents.google.com/patent/US9009822</a>
P01-1044	Framework For Efficient Security Coverage Of Mobile Software Applications	2/23/2013	Ashar Aziz; Osman Ismael; Hui Xue; Dawn Song; Noah Johnson; Prashanth Mohan	ISSUED	9176843	<a href="https://patents.google.com/patent/US9176843">https://patents.google.com/patent/US9176843</a>
P01-1045	Framework For Efficient Security Coverage Of Mobile Software Applications Installed On Mobile Devices	2/23/2013	Osman Ismael; Dawn Song	ISSUED	9009823	<a href="https://patents.google.com/patent/US9009823">https://patents.google.com/patent/US9009823</a>

FireEye Docket No.	Title	Filing Date	All Inventors	Prosecution Status	Appl./Pat. #	Google Patents
P01-1047	Framework for Computer Application Analysis of Sensitive Information Tracking	2/23/2013	Osman Ismael; Dawn Song; Phung-Te Ha; Peter Gilbert; Hui Xue	ISSUED	9159035	<a href="https://patents.google.com/patent/US9159035">https://patents.google.com/patent/US9159035</a>
P01-1048	Framework For Efficient Security Coverage Of Mobile Software Applications Using Symbolic Execution To Reach Regions of Interest Within an Application	2/23/2013	Ashar Aziz; Osman Ismael; Dawn Song; Hui Xue	ISSUED	9367681	<a href="https://patents.google.com/patent/US9367681">https://patents.google.com/patent/US9367681</a>
P01-1049	Framework For Efficient Security Coverage Of Mobile Software Applications That Is Usable To Harden In The Field Code	2/23/2013	Ashar Aziz; Osman Ismael	ISSUED	9824209	<a href="https://patents.google.com/patent/US9824209">https://patents.google.com/patent/US9824209</a>
P01-1055	Malicious Content Analysis Using Simulated User Interaction Without User Involvement	3/13/2013	Alex Pilipenko; Darien Kindlund; Emmanuel Thioux; Michael Vincent; Muhammad Amin	ISSUED	9104867	<a href="https://patents.google.com/patent/US9104867">https://patents.google.com/patent/US9104867</a>
P01-1056	File Extraction from Memory Dump for Malicious Content Analysis	3/13/2013	Emmanuel Thioux; Muhammad Amin; Osman Ismael	ISSUED	9355247	<a href="https://patents.google.com/patent/US9355247">https://patents.google.com/patent/US9355247</a>
P01-1061	Distributed Systems and Methods for Automatically Detecting Unknown Bot and Botnets	3/14/2013	Ali Islam; Ashar Aziz; Atif Mushtaq; Todd Rosenberry	ISSUED	9430646	<a href="https://patents.google.com/patent/US9430646">https://patents.google.com/patent/US9430646</a>
P01-1063	Correlation and Consolidation of Analytic Data for Holistic View of a Malware Attack	3/14/2013	Jayaraman Manni; Michael Berrow; Philip Eun	ISSUED	9311479	<a href="https://patents.google.com/patent/US9311479">https://patents.google.com/patent/US9311479</a>
P01-1065	Malicious Content Analysis with Multi-Version Application Support within Single Operating Environment	3/13/2013	Emily Jing; Muhammad Amin; Yasir Khalid; Muhammad Rizwan	ISSUED	9626509	<a href="https://patents.google.com/patent/US9626509">https://patents.google.com/patent/US9626509</a>
P01-1066.03	Detecting Delayed Activation Malware Using a Run-time monitoring Agent and Time-Dilation Logic	6/29/2016	Michael Vincent	ISSUED	10817606	<a href="https://patents.google.com/patent/US10817606">https://patents.google.com/patent/US10817606</a>
P01-1067	User Interface with Real-Time Visual Playback Along with Synchronous Textual Analysis Log Display and Event/Time Index for Anomalous Behavior Detection in Applications	2/23/2013	Adrian Mettler; Ashar Aziz; Harnish Goradia; Noah Johnson; Osman Ismael	ISSUED	9195829	<a href="https://patents.google.com/patent/US9195829">https://patents.google.com/patent/US9195829</a>
P01-1069	Page Replacement Code Injection	9/30/2013	Osman Ismael; Phung-Te Ha; Seva Tonkonoh	ISSUED	10089461	<a href="https://patents.google.com/patent/US10089461">https://patents.google.com/patent/US10089461</a>
P01-1070.02	System and Method for Detecting Malicious Links in Electronic Messages	7/18/2013	Henry Uyeno; Vinay Pidathala	ISSUED	9300686	<a href="https://patents.google.com/patent/US9300686">https://patents.google.com/patent/US9300686</a>
P01-1071	System and Method for Network Behavior Detection	3/20/2014	James Bennett; Zheng Bu	ISSUED	9241010	<a href="https://patents.google.com/patent/US9241010">https://patents.google.com/patent/US9241010</a>
P01-1076	Zero-Day Discovery System	6/24/2013	Yichong Lin; Zheng Bu	ISSUED	10133863	<a href="https://patents.google.com/patent/US10133863">https://patents.google.com/patent/US10133863</a>
P01-1080	System and Method for Detecting Phishing Using Password Prediction	6/28/2013	Angshuman Mukherjee; Henry Uyeno; Mohan Samuelraj; Muhammad Amin	ISSUED	9888016	<a href="https://patents.google.com/patent/US9888016">https://patents.google.com/patent/US9888016</a>
P01-1086	System and Method for Detecting Time-Bomb Malware	6/24/2013	Darien Kindlund; Michael Vincent; Sai Vashisht; Sushant Paithane	ISSUED	9536091	<a href="https://patents.google.com/patent/US9536091">https://patents.google.com/patent/US9536091</a>
P01-1087	Classifying Sets of Malicious Indicators for Detecting Command and Control	5/13/2013	Ali Islam; Zheng Bu	ISSUED	9635039	<a href="https://patents.google.com/patent/US9635039">https://patents.google.com/patent/US9635039</a>



FireEye Docket No.	Title	Filing Date	All Inventors	Prosecution Status	Appl./Pat. #	Google Patents
	Communications Associated with Malware					
P01-1088	Fuzzy Hash of Behavioral Results	9/30/2013	Ali Mesdaq; Paul Westin	ISSUED	9294501	<a href="https://patents.google.com/patent/US9294501">https://patents.google.com/patent/US9294501</a>
P01-1089	Dynamically Adaptive Framework and Method for Classifying Malware Using Intelligent Static, Emulation and Dynamic Analyses	9/30/2013	Michael Vincent; Ali Mesdaq; Emmanuel Thioux; Abhishek Singh; Sai Vashisht	ISSUED	9171160	<a href="https://patents.google.com/patent/US9171160">https://patents.google.com/patent/US9171160</a>
P01-1091	Systems and methods for scheduling analysis of network content for malware	6/24/2013	Ashar Aziz; Stuart Gresley Staniford	ISSUED	8990939	<a href="https://patents.google.com/patent/US8990939">https://patents.google.com/patent/US8990939</a>
P01-1092	System and Method of Detecting Time-Delayed Malicious Traffic	6/28/2013	Ashar Aziz	ISSUED	8635696	<a href="https://patents.google.com/patent/US8635696">https://patents.google.com/patent/US8635696</a>
P01-1093	System and Method for Detecting Malicious Traffic Using a Virtual Machine Configured with a Select Software Environment	6/28/2013	Ashar Aziz	ISSUED	9356944	<a href="https://patents.google.com/patent/US9356944">https://patents.google.com/patent/US9356944</a>
P01-1096	Threat-Aware Microvisor	3/28/2014	Ashar Aziz; Osman Ismael	ISSUED	9740857	<a href="https://patents.google.com/patent/US9740857">https://patents.google.com/patent/US9740857</a>
P01-1097	Micro-Virtualization Architecture for Threat-Aware Microvisor Deployment in a Node of a Network Environment	3/28/2014	Ashar Aziz; Osman Ismael	ISSUED	9292686	<a href="https://patents.google.com/patent/US9292686">https://patents.google.com/patent/US9292686</a>
P01-1099	Secure Communications Between Peers Using a Verified Virtual Trusted Platform Module	9/9/2016	Osman Ismael; Hendrik Tews	ISSUED	10592678	<a href="https://patents.google.com/patent/US10592678">https://patents.google.com/patent/US10592678</a>
P01-1100.02	Technique for Verifying Exploit/Malware at Malware Detection Appliance Through Correlation with Endpoints	9/7/2016	Ashar Aziz; Osman Ismael	ISSUED	10826933	<a href="https://patents.google.com/patent/US10826933">https://patents.google.com/patent/US10826933</a>
P01-1102	System and Method for Detecting Malicious Traffic while Reducing False Positives	8/28/2013	Ashar Aziz	ISSUED	8776229	<a href="https://patents.google.com/patent/US8776229">https://patents.google.com/patent/US8776229</a>
P01-1105	System, Apparatus and Method For Classifying a File as Malicious Using Static Scanning	9/30/2013	Abhishek Singh; Angshuman Mukherjee; Muhammad Amin; Yichong Lin; Zheng Bu	ISSUED	10192052	<a href="https://patents.google.com/patent/US10192052">https://patents.google.com/patent/US10192052</a>
P01-1107	Advanced Persistent Threat (APT) Detection Center	9/30/2013	Thoufique Haq; Vinay Pidathala; Jinjian Zhai	ISSUED	9628507	<a href="https://patents.google.com/patent/US9628507">https://patents.google.com/patent/US9628507</a>
P01-1110.02	System and Method for Run-time Object Classification	3/27/2014	Ashar Aziz; Vinay Pidathala; Zheng Bu	ISSUED	9747446	<a href="https://patents.google.com/patent/US9747446">https://patents.google.com/patent/US9747446</a>
P01-1111	Multistage System and Method for Analyzing Obfuscated Content for Malware	7/1/2014	Abhishek Singh; Amit Malik; Shivani Deshpande; Wei Zheng	ISSUED	9690936	<a href="https://patents.google.com/patent/US9690936">https://patents.google.com/patent/US9690936</a>
P01-1112	Detection efficacy of virtual machine-based analysis with application specific events	2/5/2014	Sai Vashisht; Sushant Paithane	ISSUED	9262635	<a href="https://patents.google.com/patent/US9262635">https://patents.google.com/patent/US9262635</a>
P01-1113	Dynamically Remote Tuning of a Malware Content Detection System	3/31/2014	Darien Kindlund; Emmanuel Thioux; Michael Vincent; Sai Vashisht	ISSUED	9223972	<a href="https://patents.google.com/patent/US9223972">https://patents.google.com/patent/US9223972</a>
P01-1115	Infection Vector and Malware Tracking with an Interactive User Display	6/26/2014	Harnish Goradia	ISSUED	10805340	<a href="https://patents.google.com/patent/US10805340">https://patents.google.com/patent/US10805340</a>

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P01-1116	Dynamic Guest Image Creation and Rollback	3/21/2014	Harnish Goradia	ISSUED	10242185	<a href="https://patents.google.com/patent/US10242185">https://patents.google.com/patent/US10242185</a>
P01-1117	System, Apparatus and Method for Conducting on-the-fly Decryption of Encrypted Objects for Malware Detection	11/21/2013	Ali Islam	ISSUED	9189627	<a href="https://patents.google.com/patent/US9189627">https://patents.google.com/patent/US9189627</a>
P01-1118.02	System and Method for Enhanced Security of Storage Devices	11/7/2014	Eric Chan; Gregory J. Snyder; Osman Ismael	ISSUED	9921978	<a href="https://patents.google.com/patent/US9921978">https://patents.google.com/patent/US9921978</a>
P01-1119	System, Apparatus and method for Detecting a Malicious Attack Based on Static Analysis of a Multiflow Object	3/31/2014	Muhammad Amin; Shivani Deshpande; Yasir Khalid	ISSUED	9432389	<a href="https://patents.google.com/patent/US9432389">https://patents.google.com/patent/US9432389</a>
P01-1120	Methods and Systems for Unauthorized Activity Defense	8/19/2013	Ashar Aziz	ISSUED	9306960	<a href="https://patents.google.com/patent/US9306960">https://patents.google.com/patent/US9306960</a>
P01-1121	System and method of detecting malicious content	9/30/2013	Ashar Aziz	ISSUED	9838416	<a href="https://patents.google.com/patent/US9838416">https://patents.google.com/patent/US9838416</a>
P01-1132	System and method for analyzing suspicious network data	11/12/2013	Ashar Aziz; Osman Ismael; Ramesh Radhakrishnan	ISSUED	8984638	<a href="https://patents.google.com/patent/US8984638">https://patents.google.com/patent/US8984638</a>
P01-1133	System and Method for Malware Containment	10/21/2013	Ashar Aziz; Jayaraman Manni; Wei-Lung Lai	ISSUED	9071638	<a href="https://patents.google.com/patent/US9071638">https://patents.google.com/patent/US9071638</a>
P01-1134	System and Method for Bot Detection	10/11/2013	Ashar Aziz; Jayaraman Manni; Wei-Lung Lai	ISSUED	9628498	<a href="https://patents.google.com/patent/US9628498">https://patents.google.com/patent/US9628498</a>
P01-1135.02	Trusted Threat-Aware Microvisor	1/21/2015	Ashar Aziz; Osman Ismael	ISSUED	9680862	<a href="https://patents.google.com/patent/US9680862">https://patents.google.com/patent/US9680862</a>
P01-1136.02	Exploit Detection System with Threat-Aware Microvisor	3/28/2014	Ashar Aziz; Osman Ismael	ISSUED	9507935	<a href="https://patents.google.com/patent/US9507935">https://patents.google.com/patent/US9507935</a>
P01-1137	System and Method for Offloading Packet Processing and Static Analysis Operations	3/28/2014	Madhusudan Challa; Masood Mehmood; Muhammad Amin; Ramaswamy Ramaswamy; Shrikishna Karandikar	ISSUED	9591015	<a href="https://patents.google.com/patent/US9591015">https://patents.google.com/patent/US9591015</a>
P01-1150	Intrusion Prevention and Remedy System	6/24/2014	Hatem Eyada	ISSUED	10084813	<a href="https://patents.google.com/patent/US10084813">https://patents.google.com/patent/US10084813</a>
P01-1151	System and Method for Malware Analysis Using Thread-Level Event Monitoring	9/22/2014	Michael Vincent; Sai Vashisht; Sushant Patihane	ISSUED	10671726	<a href="https://patents.google.com/patent/US10671726">https://patents.google.com/patent/US10671726</a>
P01-1167.02	Returned Oriented Programming Detection	6/20/2014	Emmanuel Thioux; Michael Vincent	ISSUED	9594912	<a href="https://patents.google.com/patent/US9594912">https://patents.google.com/patent/US9594912</a>
P01-1168.02	Computer Exploit Detection Using Heap Spray Pattern Matching	6/20/2014	Emmanuel Thioux; Michael Vincent	ISSUED	9438623	<a href="https://patents.google.com/patent/US9438623">https://patents.google.com/patent/US9438623</a>
P01-1169.02	Shellcode Validation	6/20/2014	Emmanuel Thioux	ISSUED	9973531	<a href="https://patents.google.com/patent/US9973531">https://patents.google.com/patent/US9973531</a>
P01-1170.02	Verification of Trusted Threat-Aware Microvisor	2/6/2015	Hendrik Tews; Osman Ismael	ISSUED	10002252	<a href="https://patents.google.com/patent/US10002252">https://patents.google.com/patent/US10002252</a>
P01-1172	Interactive Infection Visualization for Improved Exploit Detection and Signature Generation for Malware and Malware Families	9/29/2014	Anil Gupta; Hirendra Rathor; Kaushal Dalal	ISSUED	10027689	<a href="https://patents.google.com/patent/US10027689">https://patents.google.com/patent/US10027689</a>

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P01-1176	System, Device and Method for Detecting a Malicious Attack Based on Direct Communications Between Remotely Hosted Virtual Machines and Malicious Web Servers	6/26/2014	Shrivani Karandikar; Muhammad Amin; Shivani Deshpande; Yasir Khalid	ISSUED	9398028	<a href="https://patents.google.com/patent/US9398028">https://patents.google.com/patent/US9398028</a>
P01-1177.02	Distributed Aggregation Technique for Detecting Lateral Movement of Stealthy Cyber-Attacks	3/31/2016	Ashar Aziz	FILED	15/087,476	
P01-1178	Determining Duplicate Objects for Malware Using Environmental/Context Information	9/30/2014	Arsen Movsesyan; Alexander Otvagin	ISSUED	9781144	<a href="https://patents.google.com/patent/US9781144">https://patents.google.com/patent/US9781144</a>
P01-1179	Modularized Database Architecture Using Vertical Partitioning for a State Machine	12/23/2014	Arsen Movsesyan; Vineet Kumar; Alexander Otvagin	ISSUED	9467460	<a href="https://patents.google.com/patent/US9467460">https://patents.google.com/patent/US9467460</a>
P01-1182	Selective System Call Monitoring	3/25/2015	Phung-Te Ha; Wei Xu	ISSUED	9690606	<a href="https://patents.google.com/patent/US9690606">https://patents.google.com/patent/US9690606</a>
P01-1183	System and Method of Detecting Delivery of Malware Using Cross-Customer Data	8/22/2014	Alex Rivlin; Divyesh Mehra; Henry Uyeno; Vinay Pidathala	ISSUED	9363280	<a href="https://patents.google.com/patent/US9363280">https://patents.google.com/patent/US9363280</a>
P01-1189.02	Storing network bidirectional flow data and metadata with efficient processing technique	8/19/2014	Christopher Hayes Fauerbach; Dennis Lee Edwards; Randy Caldejon	ISSUED	9426071	<a href="https://patents.google.com/patent/US9426071">https://patents.google.com/patent/US9426071</a>
P01-1190.02	Efficient Access to Sparse Packets in Large Repositories of Stored Network Traffic	2/5/2015	Christopher Hayes Fauerbach; Dennis Lee Edwards	ISSUED	9537972	<a href="https://patents.google.com/patent/US9537972">https://patents.google.com/patent/US9537972</a>
P01-1191	Intelligent Context Aware User Interaction for Malware Detection	12/30/2014	Sai Vashisht; Sushant Paithane; Yasir Khalid	ISSUED	9838417	<a href="https://patents.google.com/patent/US9838417">https://patents.google.com/patent/US9838417</a>
P01-1193	System and method for analyzing packets	6/30/2014	Ashar Aziz; Ramesh Radhakrishnan; Osman Ismael	ISSUED	9282109	<a href="https://patents.google.com/patent/US9282109">https://patents.google.com/patent/US9282109</a>
P01-1196	Framework For Iterative Analysis of Mobile Software Applications	9/24/2014	Ashar Aziz; Dawn Song; Osman Ismael	ISSUED	9225740	<a href="https://patents.google.com/patent/US9225740">https://patents.google.com/patent/US9225740</a>
P01-1198	Verification of Complex Software Code Using Modularized Components	9/9/2016	Osman Ismael; Hendrik Tews; Ashar Aziz	ISSUED	10025691	<a href="https://patents.google.com/patent/US10025691">https://patents.google.com/patent/US10025691</a>
P01-1201	System and Method for Determining Data Entropy to Identify Malware	1/25/2007	Chad McMillan; Jason Garman	ISSUED	8069484	<a href="https://patents.google.com/patent/US8069484">https://patents.google.com/patent/US8069484</a>
P01-1202	System and Method for Data Preservation and Retrieval	2/1/2008	David Merkel; Jason Shiffer; Kevin Mandia; Lois Cozzi; Matthew Frazier	ISSUED	7937387	<a href="https://patents.google.com/patent/US7937387">https://patents.google.com/patent/US7937387</a>
P01-1203	Method and System for Collaboration During an Event	2/1/2008	David Merkel; Jason Shiffer; Kevin Mandia; Lois Cozzi; Matthew Frazier; Matthew Pepe	ISSUED	9106630	<a href="https://patents.google.com/patent/US9106630">https://patents.google.com/patent/US9106630</a>
P01-1204	Method and system for collecting and organizing data corresponding to an event	2/1/2008	Eric Helvey; James Butler; Jason Shiffer; Matthew Frazier; Peter Villadsen; Scott Hogsten; Sean Cunningham	ISSUED	8949257	<a href="https://patents.google.com/patent/US8949257">https://patents.google.com/patent/US8949257</a>
P01-1205	Method and System for Analyzing Data Related to an Event	2/1/2008	Eric Helvey; James Butler; Jason Shiffer; Matthew Frazier; Scott Hogsten; Sean Cunningham; Theodore Wilson	ISSUED	8566476	<a href="https://patents.google.com/patent/US8566476">https://patents.google.com/patent/US8566476</a>

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P01-1206	System and method for forensic identification of elements within a computer system	8/1/2008	James Butler	ISSUED	8881271	<a href="https://patents.google.com/patent/US8881271">https://patents.google.com/patent/US8881271</a>
P01-1208	System and Method for Data Preservation and Retrieval	3/28/2011	David Merkel; Jason Shiffer; Kevin Mandia; Matthew Frazier; Matthew Pepe	ISSUED	8793278	<a href="https://patents.google.com/patent/US8793278">https://patents.google.com/patent/US8793278</a>
P01-1209	System to Bypass a Compromised Mass Storage Device Driver Stack and Methods Thereof	3/15/2012	Aaron LeMasters	ISSUED	9275229	<a href="https://patents.google.com/patent/US9275229">https://patents.google.com/patent/US9275229</a>
P01-1210	Physical Memory Forensics System and Method	7/27/2012	James Butler	ISSUED	9268936	<a href="https://patents.google.com/patent/US9268936">https://patents.google.com/patent/US9268936</a>
P01-1211.02	System and Method to Create a Number of Breakpoints in a Virtual Machine via Virtual Machine Trapping Events	4/24/2013	Antony Saba; Robert Jung	ISSUED	10572665	<a href="https://patents.google.com/patent/US10572665">https://patents.google.com/patent/US10572665</a>
P01-1212.02	Identification of Obfuscated Computer Items Using Visual Algorithms	8/19/2013	David Ross; Jason Shiffer	ISSUED	9690935	<a href="https://patents.google.com/patent/US9690935">https://patents.google.com/patent/US9690935</a>
P01-1213.02	Timeline Wrinkling System and Method	9/24/2013	David Ross	ISSUED	9633134	<a href="https://patents.google.com/patent/US9633134">https://patents.google.com/patent/US9633134</a>
P01-1214.02	System and Method for the Programmatic Runtime Deobfuscation of Obfuscated Software Utilizing Virtual Machine Introspection and Manipulation of Virtual Machine Guest Memory Permissions	5/13/2013	Antony Saba; Robert Jung	ISSUED	9459901	<a href="https://patents.google.com/patent/US9459901">https://patents.google.com/patent/US9459901</a>
P01-1215.02	System and Method to Visualize User Sessions	9/16/2013	Theodore Wilson	ISSUED	9824211	<a href="https://patents.google.com/patent/US9824211">https://patents.google.com/patent/US9824211</a>
P01-1217.02	System and Method Employing Structured Intelligence to Verify and Contain Threats at Endpoints	3/17/2014	Joseph Faber; Joseph Nardone; Kevin Arunski; Robert Dana; Sean Cunningham	ISSUED	9413781	<a href="https://patents.google.com/patent/US9413781">https://patents.google.com/patent/US9413781</a>
P01-1219	System and method to communicate sensitive information via one or more untrusted intermediate nodes with resilience to disconnected network topology	8/5/2014	Sean Cunningham	ISSUED	9912644	<a href="https://patents.google.com/patent/US9912644">https://patents.google.com/patent/US9912644</a>
P01-1221	Method and System for Collecting and Organizing Data Corresponding to an Event	8/2/2013	Eric Helvey; James Butler; Jason Shiffer; Matthew Frazier; Peter Villadsen; Scott Hogsten; Sean Cunningham	FILED	13/957,695	
P01-1222	Method and System for Collecting and Organizing Data Corresponding to an Event	8/2/2013	Eric Helvey; James Butler; Jason Shiffer; Matthew Frazier; Peter Villadsen; Scott Hogsten; Sean Cunningham	ISSUED	10146810	<a href="https://patents.google.com/patent/US10146810">https://patents.google.com/patent/US10146810</a>
P01-1245	Analytics-Based Security Monitoring System and Method	4/13/2015	Justin Neumann	ISSUED	9654485	<a href="https://patents.google.com/patent/US9654485">https://patents.google.com/patent/US9654485</a>
P01-1274	System and Method for Virtual Analysis of Network Data	6/30/2014	Ashar Aziz; Osman Ismael; Ramesh Radhakrishnan	ISSUED	9912684	<a href="https://patents.google.com/patent/US9912684">https://patents.google.com/patent/US9912684</a>
P01-1275	System and Method for Detecting Malicious Network Content Using Virtual Environment Components	7/28/2014	Bahman Mahbod; Jayaraman Manni; Muhammad Amin; Osman Ismael; Samuel Yie	FILED	14/444,943	

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P01-1276	Network-Based Binary File Extraction and Analysis for Malware Detection	9/9/2014	Ashar Aziz; Fengmin Gong; Jayaraman Manni; Muhammad Amin; Upendran Loganathan	FILED	14/481,801	
P01-1277	System and Method for Signature Generation	2/25/2014	Ashar Aziz	ISSUED	9591020	<a href="https://patents.google.com/patent/US9591020">https://patents.google.com/patent/US9591020</a>
P01-1278	Improved Exploit Detection of Malware and Malware Families	9/29/2014	Hirendra Rathor; Kaushal Dalal	ISSUED	9773112	<a href="https://patents.google.com/patent/US9773112">https://patents.google.com/patent/US9773112</a>
P01-1281.02	Microvisor-Based Malware Detection Appliance Architecture	12/8/2015	Osman Ismael	ISSUED	9934376	<a href="https://patents.google.com/patent/US9934376">https://patents.google.com/patent/US9934376</a>
P01-1283	Framework for Classifying an Object as Malicious with Machine Learning for Deploying Updated Predictive Models	12/22/2014	Abhishek Singh; Ali Mesdaq; Anirban Das; Varun Jain	ISSUED	9690933	<a href="https://patents.google.com/patent/US9690933">https://patents.google.com/patent/US9690933</a>
P01-1285.02	Zero-day Rotating Guest Image Profile	6/30/2015	Asim Zafar; Eirij Qureshi; Darien Kindlund	ISSUED	10075455	<a href="https://patents.google.com/patent/US10075455">https://patents.google.com/patent/US10075455</a>
P01-1299.02	System and Method for Protecting a Software Component Running in a Virtual Machine Using a Virtualization Layer	6/30/2016	Udo Steinberg	ISSUED	10642753	<a href="https://patents.google.com/patent/US10642753">https://patents.google.com/patent/US10642753</a>
P01-1304	System And Method For Threat Detection And Identification	10/31/2014	Ashar Aziz; Jayaraman Manni; Wei-Lung Lai	ISSUED	10284574	<a href="https://patents.google.com/patent/US10284574">https://patents.google.com/patent/US10284574</a>
P01-1306.02	Late Load Technique for Deploying a Virtualization Layer Underneath a Running Operating System	8/5/2016	Neeraj Kulkarni; Udo Steinberg	ISSUED	10108446	<a href="https://patents.google.com/patent/US10108446">https://patents.google.com/patent/US10108446</a>
P01-1310.02	Technique for Establishing Secure Communication Between Host and Guest Processes of a Virtualization Architecture	8/15/2016	Udo Steinberg	ISSUED	10846117	<a href="https://patents.google.com/patent/US10846117">https://patents.google.com/patent/US10846117</a>
P01-1312.02	System and Method of Threat Detection Under Hypervisor Control	6/29/2016	Atul Kabra; Julian Stecklina; Hirendra Rathor; Udo Steinberg	ISSUED	10033759	<a href="https://patents.google.com/patent/US10033759">https://patents.google.com/patent/US10033759</a>
P01-1313.02	Method to Detect Forgery and Exploits Using Last Branch Recording Registers	6/29/2016	Jonas Pfoh; Phung-Te Ha	ISSUED	10621338	<a href="https://patents.google.com/patent/US10621338">https://patents.google.com/patent/US10621338</a>
P01-1314.02	Technique for Protecting Guest Processes Using a Layered Virtualization Architecture	8/5/2016	Udo Steinberg	ISSUED	10447728	<a href="https://patents.google.com/patent/US10447728">https://patents.google.com/patent/US10447728</a>
P01-1324.02	Exploit Detection System	6/15/2015	Anil Gupta; Harinath Ramchetty; Japneet Singh	ISSUED	10148693	<a href="https://patents.google.com/patent/US10148693">https://patents.google.com/patent/US10148693</a>
P01-1334.02	Virtual System and Method for Securing External Network Connectivity	6/30/2016	Udo Steinberg	ISSUED	11113086	<a href="https://patents.google.com/patent/US11113086">https://patents.google.com/patent/US11113086</a>
P01-1348.02	Code Injection for Remediation of Content Processing in an Endpoint	10/23/2015	Osman Ismael	ISSUED	10474813	<a href="https://patents.google.com/patent/US10474813">https://patents.google.com/patent/US10474813</a>
P01-1351	Dynamic Content Activation for Automated Analysis of Embedded Objects	3/30/2015	Sai Vashisht; Sushant Paithane	ISSUED	9438613	<a href="https://patents.google.com/patent/US9438613">https://patents.google.com/patent/US9438613</a>
P01-1353	Methods of Identifying Heap Spray Attacks Using Memory Anomaly Detection	9/7/2016	Sushant Paithane; Sai Vashisht	ISSUED	10430586	<a href="https://patents.google.com/patent/US10430586">https://patents.google.com/patent/US10430586</a>

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P01-1354	Methods for Detecting File Altering Malware in VM Based Analysis	3/31/2015	Raymond Yang; Sai Vashisht; Sushant Paithane; Yasir Khalid	ISSUED	9483644	<a href="https://patents.google.com/patent/US9483644">https://patents.google.com/patent/US9483644</a>
P01-1355.02	Selective Virtualization for Security Threat Detection	3/25/2016	Michael Vincent; Sushant Paithane	ISSUED	10417031	<a href="https://patents.google.com/patent/US10417031">https://patents.google.com/patent/US10417031</a>
P01-1356	Detecting Malware Based on Reflection	4/23/2015	Abhishek Singh; Varun Jain	ISSUED	9594904	<a href="https://patents.google.com/patent/US9594904">https://patents.google.com/patent/US9594904</a>
P01-1358	System and Method for Malware Containment	2/11/2015	Ashar Aziz; Jayaraman Manni; Wei-Lung Lai	ISSUED	9197664	<a href="https://patents.google.com/patent/US9197664">https://patents.google.com/patent/US9197664</a>
P01-1360	System, Apparatus and Method for Automatically Verifying Exploits Within Suspect Objects and Highlighting the Display Information Associated with the Verified Exploits	2/11/2015	Ashar Aziz; Muhammad Amin; Osman Ismael; Zheng Bu	ISSUED	9306974	<a href="https://patents.google.com/patent/US9306974">https://patents.google.com/patent/US9306974</a>
P01-1361.02	Centralized Aggregation Technique for Detecting Lateral Movement of Advanced Persistent Threat Attacks in a Network	3/31/2016	Ashar Aziz	ISSUED	10454950	<a href="https://patents.google.com/patent/US10454950">https://patents.google.com/patent/US10454950</a>
P01-1362.02	Leveraging Behavior-based Rules for Malware Family Classification	12/11/2015	Abdul Salam; Farrukh Shahzad; Fahim Abbassi	ISSUED	10176321	<a href="https://patents.google.com/patent/US10176321">https://patents.google.com/patent/US10176321</a>
P01-1378	System and Method for Detecting Interpreter-based Exploit Attacks	9/29/2015	Sushant Paithane; Sai Vashisht	ISSUED	10033747	<a href="https://patents.google.com/patent/US10033747">https://patents.google.com/patent/US10033747</a>
P01-1379	Systems and Methods for Analyzing Malicious PDF Network Content	3/30/2015	Ashar Aziz; Stuart Gresley Staniford	ISSUED	9438622	<a href="https://patents.google.com/patent/US9438622">https://patents.google.com/patent/US9438622</a>
P01-1380	Systems and Methods for Malware Attack Prevention	11/24/2014	Jayaraman Manni; Wei-Lung Lai; Ashar Aziz	ISSUED	10165000	<a href="https://patents.google.com/patent/US10165000">https://patents.google.com/patent/US10165000</a>
P01-1381.02	Virtual System and Method with Threat Protection	6/30/2016	Udo Steinberg	ISSUED	10,395,029	<a href="https://patents.google.com/patent/US10395029">https://patents.google.com/patent/US10395029</a>
P01-1383	Cyber Attack Early Warning System	9/30/2015	Divyesh Mehra; Abhishek Singh	ISSUED	9825989	<a href="https://patents.google.com/patent/US9825989">https://patents.google.com/patent/US9825989</a>
P01-1386.02	System and Method for Protecting a Software Component Running in a Virtual Machine Through Virtual Interrupts by the Virtualization Layer	6/30/2016	Udo Steinberg	ISSUED	10726127	<a href="https://patents.google.com/patent/US10726127">https://patents.google.com/patent/US10726127</a>
P01-1387.02	System and Method for Protecting Memory Pages Associated with a Process Using a Virtualization Layer	6/30/2016	Udo Steinberg	ISSUED	10216927	<a href="https://patents.google.com/patent/US10216927">https://patents.google.com/patent/US10216927</a>
P01-1390	Electronic Message Analysis for Malware Detection	6/22/2015	Ashar Aziz; Henry Uyeno; Jayaraman Manni; Muhammad Amin; Stuart Gresley Staniford	ISSUED	10027690	<a href="https://patents.google.com/patent/US10027690">https://patents.google.com/patent/US10027690</a>
P01-1391	Malicious Content Analysis Using Simulated User Interaction Without User Involvement	7/20/2015	Emmanuel Thioux	ISSUED	9912698	<a href="https://patents.google.com/patent/US9912698">https://patents.google.com/patent/US9912698</a>
P01-1392	Detection and Classification of Exploit Kits	9/30/2015	Josh Gomez; Abhishek Singh	ISSUED	9825976	<a href="https://patents.google.com/patent/US9825976">https://patents.google.com/patent/US9825976</a>
P01-1393.02	Mobile Application Risk Analysis	6/30/2016	Raymond Wei; Zhang Lei Wang	ISSUED	10715542	<a href="https://patents.google.com/patent/US10715542">https://patents.google.com/patent/US10715542</a>

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P01-1400	System and Method for Multi-Application, Multi-Plugin Analysis for Use in Detecting a Malicious Attack	11/10/2015	Sushant Paithane; Sai Vashisht; Yasir Khalid; Alex Pilipenko; Muhammad Rizwan	ISSUED	10284575	<a href="https://patents.google.com/patent/US10284575">https://patents.google.com/patent/US10284575</a>
P01-1401	Malware analysis in accordance with an analysis plan	10/23/2015	Ali Mesdaq; Michael Vincent; Emmanuel Thioux; Abhishek Singh; Sai Vashisht	ISSUED	9910988	<a href="https://patents.google.com/patent/US9910988">https://patents.google.com/patent/US9910988</a>
P01-1402	System and Method for Classifying Malware Within Content Created During Analysis of a Specimen	10/23/2015	Michael Vincent; Ali Mesdaq; Emmanuel Thioux; Abhishek Singh; Sai Vashisht	ISSUED	10515214	<a href="https://patents.google.com/patent/US10515214">https://patents.google.com/patent/US10515214</a>
P01-1403	Detection of Credential Spearphishing Attacks Using Email Analysis	9/30/2015	Ali Mesdaq; Abhishek Singh; Varun Jain	ISSUED	10601865	<a href="https://patents.google.com/patent/US10601865">https://patents.google.com/patent/US10601865</a>
P01-1405	Method to Detect Application Execution Hijacking Using Memory Protection	9/30/2015	Amit Malik; Raghav Pande; Aakash Jain	ISSUED	10,210,329	<a href="https://patents.google.com/patent/US10210329">https://patents.google.com/patent/US10210329</a>
P01-1411.02	Exploit of Privileges Detection Framework	6/29/2016	Michael Vincent; Sai Vashisht; Jonas Pfoh	ISSUED	10565378	<a href="https://patents.google.com/patent/US10565378">https://patents.google.com/patent/US10565378</a>
P01-1413	Malicious Message Analysis System	12/30/2015	Abhishek Singh	ISSUED	10050998	<a href="https://patents.google.com/patent/US10050998">https://patents.google.com/patent/US10050998</a>
P01-1418.02	Cyber-Security Framework for Application of Virtual Features	6/29/2016	Shivani Deshpande; Yasir Khalid; Gregory Templeman	FILED	15/197,653	
P01-1424	Susceptible Environment Detection System	12/31/2015	Yasir Khalid; Shivani Deshpande	ISSUED	9824216	<a href="https://patents.google.com/patent/US9824216">https://patents.google.com/patent/US9824216</a>
P01-1425	Malware Detection System with Contextual Analysis	12/31/2015	Yasir Khalid; Alexander Otvagin; Sai Vashisht	ISSUED	10581874	<a href="https://patents.google.com/patent/US10581874">https://patents.google.com/patent/US10581874</a>
P01-1437	System and Method for Triggering Analysis of an Object for Malware in Response to Modification of that Object	12/30/2015	Vineet Kumar; Alexander Otvagin; Nikita Borodulin	ISSUED	10133866	<a href="https://patents.google.com/patent/US10133866">https://patents.google.com/patent/US10133866</a>
P01-1442	Detecting Delayed Activation Malware Using a Primary Controller and Plural Time Controllers	6/29/2016	Michael Vincent	ISSUED	10706149	<a href="https://patents.google.com/patent/US10706149">https://patents.google.com/patent/US10706149</a>
P01-1449	Technique for Implementing Memory Views Using a Layered Virtualization Architecture	9/6/2016	Osman Ismael; Udo Steinberg	ISSUED	10191861	<a href="https://patents.google.com/patent/US10191861">https://patents.google.com/patent/US10191861</a>
P01-1453	System and Method for Malware Containment	11/23/2015	Ashar Aziz; Jayaraman Manni; Wei-Lung Lai	ISSUED	10,068,091	<a href="https://patents.google.com/patent/US10068091">https://patents.google.com/patent/US10068091</a>
P01-1455.02	Enhanced Malware Detection for Generated Object	6/19/2017	Sushant Paithane; Sai Vashisht	ISSUED	10581879	<a href="https://patents.google.com/patent/US10581879">https://patents.google.com/patent/US10581879</a>
P01-1461	User Interface with Real-time Visual Playback Along with Synchronous Textual Analysis Log Display and Event/Time Index for Anomalous Behavior Detection in Applications	11/23/2015	Adrian Mettler; Ashar Aziz; Harnish Goradia; Noah Johnson; Osman Ismael	ISSUED	10019338	<a href="https://patents.google.com/patent/US10019338">https://patents.google.com/patent/US10019338</a>
P01-1462	Framework For Efficient Security Coverage Of Mobile Software Applications Using Machine Learning	10/12/2015	Osman Ismael; Dawn Song; Phung-Te Ha; Peter Gilbert; Hui Xue	ISSUED	9594905	<a href="https://patents.google.com/patent/US9594905">https://patents.google.com/patent/US9594905</a>

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P01-1463	Framework For Efficient Security Coverage Of Mobile Software Applications	11/2/2015	Ashar Aziz; Dawn Song; Osman Ismael; Noah Johnson; Prashanth Mohan; Hui Xue	ISSUED	9792196	<a href="https://patents.google.com/patent/US9792196">https://patents.google.com/patent/US9792196</a>
P01-1464	System, Apparatus and Method for Conducting on-the-fly Decryption of Encrypted Objects for Malware Detection	11/16/2015	Ali Islam	ISSUED	9560059	<a href="https://patents.google.com/patent/US9560059">https://patents.google.com/patent/US9560059</a>
P01-1465	Dynamically Remote Tuning of a Malware Content Detection System	12/28/2015	Darien Kindlund; Emmanuel Thioux; Michael Vincent; Sai Vashisht	ISSUED	10341363	<a href="https://patents.google.com/patent/US10341363">https://patents.google.com/patent/US10341363</a>
P01-1475	Micro-Virtualization Architecture for Threat-Aware Microvisor Deployment in a Node of a Network Environment	1/28/2016	Ashar Aziz; Osman Ismael	ISSUED	9946568	<a href="https://patents.google.com/patent/US9946568">https://patents.google.com/patent/US9946568</a>
P01-1476	System and Method for Network Behavior Detection	1/15/2016	James Bennett; Zheng Bu	ISSUED	10432649	<a href="https://patents.google.com/patent/US10432649">https://patents.google.com/patent/US10432649</a>
P01-1485	System and Methods for Advanced Malware Detection Placement of Transition Events	6/22/2016	Alex Pilipenko; Phung-Te Ha	ISSUED	10169585	<a href="https://patents.google.com/patent/US10169585">https://patents.google.com/patent/US10169585</a>
P01-1487.02	Ransomware Detection and Mitigation	7/24/2017	Anil Gupta; Japneet Singh	ISSUED	10503904	<a href="https://patents.google.com/patent/US10503904">https://patents.google.com/patent/US10503904</a>
P01-1490.02	Malware Detection Verification and Enhancement Using Detection Systems Located at the Network Periphery and Endpoint Devices	3/29/2017	Ashar Aziz; Osman Ismael	ISSUED	10893059	<a href="https://patents.google.com/patent/US10893059">https://patents.google.com/patent/US10893059</a>
P01-1491.02	Malware Detection Verification and Enhancement By Coordinating Endpoint and Malware Detection Systems	6/26/2017	Ashar Aziz; Osman Ismael	ISSUED	10462173	<a href="https://patents.google.com/patent/US10462173">https://patents.google.com/patent/US10462173</a>
P01-1502.02	Dynamic Adaptive Defense for Cyber-security Threats	4/1/2016	Fred Brott; Paul Smith; Thomas Bernard; David Scott	ISSUED	10129290	<a href="https://patents.google.com/patent/US10129290">https://patents.google.com/patent/US10129290</a>
P01-1520	Improving Detection Efficacy of Virtual Machine-Based Analysis With Application Specific Events	2/12/2016	Sai Vashisht; Sushant Paithane	ISSUED	9916440	<a href="https://patents.google.com/patent/US9916440">https://patents.google.com/patent/US9916440</a>
P01-1522	Fuzzy hash of behavioral results	3/21/2016	Ali Mesdaq; Paul Westin	ISSUED	9912691	<a href="https://patents.google.com/patent/US9912691">https://patents.google.com/patent/US9912691</a>
P01-1523	System, Apparatus and Method for Automatically Verifying Exploits Within Suspect Objects and Highlighting the Display Information Associated with the Verified Exploits	10/19/2016	Zheng Bu; Muhammad Amin; Ashar Aziz	ISSUED	10476909	<a href="https://patents.google.com/patent/US10476909">https://patents.google.com/patent/US10476909</a>
P01-1524	Hypervisor-based Selective Virtualization for Security Threat Detection	9/16/2019	Sushant Paithane; Michael Vincent	FILED	16/572537	
P01-1525	System and Method for Detecting Malicious Links in Electronic Messages	3/28/2016	Vinay Pidathala; Henry Uyeno	ISSUED	9888019	<a href="https://patents.google.com/patent/US9888019">https://patents.google.com/patent/US9888019</a>
P01-1528	Systems and methods for computer worm defense	4/4/2016	Ashar Aziz	ISSUED	9516057	<a href="https://patents.google.com/patent/US9516057">https://patents.google.com/patent/US9516057</a>
P01-1529	Electronic Device for Aggregation, Correlation and Consolidation of Analysis Attributes	4/11/2016	Jayaraman Manni; Michael Berrow; Philip Eun	ISSUED	9641546	<a href="https://patents.google.com/patent/US9641546">https://patents.google.com/patent/US9641546</a>



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P01-1530	System and Method to Detect Premium Attacks on Electronic Networks and Electronic Devices	6/28/2016	Alex Rivlin; Naveed Alam; Vinoth Duraisamy	ISSUED	10121000	<a href="https://patents.google.com/patent/US10121000">https://patents.google.com/patent/US10121000</a>
P01-1542	Advanced Malware Detection Using Similarity Analysis	9/29/2016	Jimmy Su	ISSUED	10491627	<a href="https://patents.google.com/patent/US10491627">https://patents.google.com/patent/US10491627</a>
P01-1543	System and Method for Detecting Malicious Traffic Using a Virtual Machine Environment	5/27/2016	Ashar Aziz	ISSUED	9661018	<a href="https://patents.google.com/patent/US9661018">https://patents.google.com/patent/US9661018</a>
P01-1544	File Extraction from Memory Dump for Malicious Content Analysis	5/27/2016	Osman Ismael; Muhammad Amin; Emmanuel Thieux	ISSUED	10198574	<a href="https://patents.google.com/patent/US10198574">https://patents.google.com/patent/US10198574</a>
P01-1546	Arrangement for Efficient Search and Retrieval of Indexes Used to Locate Captured Packets	7/20/2016	Randy Caldejon; Dennis Lee Edwards; Christopher Hayes Fauerbach	ISSUED	9876701	<a href="https://patents.google.com/patent/US9876701">https://patents.google.com/patent/US9876701</a>
P01-1571	System and Method for Managing Formation and Modification of a Cluster within a Malware Detection System	9/30/2016	Mumtaz Siddiqui	ISSUED	10,476,906	<a href="https://patents.google.com/patent/US10476906">https://patents.google.com/patent/US10476906</a>
P01-1572	System and Method for Managing Sensor Enrollment	9/30/2016	Mumtaz Siddiqui	ISSUED	10601863	<a href="https://patents.google.com/patent/US10601863">https://patents.google.com/patent/US10601863</a>
P01-1573	Cluster Configuration within a Scalable Malware Detection System	9/30/2016	Alexander Otvagin; Sakthi Subramanian; Kristis Krilovs; Diptesh Chatterjee; Prakhyath Rajanna	ISSUED	10785255	<a href="https://patents.google.com/patent/US10785255">https://patents.google.com/patent/US10785255</a>
P01-1574.02	Timeout Management Services in Scalable Malware Detection System	12/27/2016	Alexander Otvagin; Mumtaz Siddiqui	ISSUED	10671721	<a href="https://patents.google.com/patent/US10671721">https://patents.google.com/patent/US10671721</a>
P01-1575	Distributed Malware Detection System and Submission Workflow Thereof	9/30/2016	Alexander Otvagin	ISSUED	10616266	<a href="https://patents.google.com/patent/US10616266">https://patents.google.com/patent/US10616266</a>
P01-1590	System and Method of Detecting Delivery of Malware Based on Indicators of Compromise from Different Sources	6/6/2016	Alex Rivlin; Divyesh Mehra; Henry Uyeno; Vinay Pidathala	ISSUED	9609007	<a href="https://patents.google.com/patent/US9609007">https://patents.google.com/patent/US9609007</a>
P01-1591	Methods and System for Hiding Transition Events for Malware Detection	6/30/2016	Phung-Te Ha	ISSUED	10341365	<a href="https://patents.google.com/patent/US10341365">https://patents.google.com/patent/US10341365</a>
P01-1595.02	Methods and Apparatus for Graphical User Interface Environment for Creating Threat Response Courses of Action for Computer Networks	6/22/2016	Christopher Nelson Bailey; Bernd Constant; Juan Manuel Vela	ISSUED	10536484	<a href="https://patents.google.com/patent/US10536484">https://patents.google.com/patent/US10536484</a>
P01-1605	Cyber-Security System and Method for Weak Indicator Detection and Correlation to Generate Strong Indicators	6/29/2017	Sundar Jeyaraman; Ramu Ramaswamy	ISSUED	10601848	<a href="https://patents.google.com/patent/US10601848">https://patents.google.com/patent/US10601848</a>
P01-1606	Multi-Vector Detection and Analysis	12/27/2016	Sakthi Subramanian	ISSUED	10,523,609	<a href="https://patents.google.com/patent/US10523609">https://patents.google.com/patent/US10523609</a>
P01-1607.02	Enterprise Search	11/3/2017	Steven Ross; Ai Duong; Larry King; Jack Young	ISSUED	10795991	<a href="https://patents.google.com/patent/US10795991">https://patents.google.com/patent/US10795991</a>
P01-1608	Network Based Malware Detection	7/18/2016	Shrikishna Karandikar; Muhammad Amin; Shivani Deshpande; Yasir Khalid	ISSUED	9661009	<a href="https://patents.google.com/patent/US9661009">https://patents.google.com/patent/US9661009</a>

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P01-1610	Technique for Malware Detection Capability Comparison of Network Security Devices	11/22/2016	Yasir Khalid; Nadeem Shahbaz	ISSUED	10587647	<a href="https://patents.google.com/patent/US10587647">https://patents.google.com/patent/US10587647</a>
P01-1615	System and Method for Detecting Malicious Traffic Using a Virtual Machine Configured with a Select Software Environment	8/1/2016	Ashar Aziz	ISSUED	10567405	<a href="https://patents.google.com/patent/US10567405">https://patents.google.com/patent/US10567405</a>
P01-1616	Correlation and Consolidation of Analytic Data for Holistic View of a Malware Attack	8/2/2016	Sean Cunningham; Robert Dana; Joseph Nardone; Joseph Faber; Kevin Arunski	ISSUED	10033748	<a href="https://patents.google.com/patent/US10033748">https://patents.google.com/patent/US10033748</a>
P01-1632	Distributed Systems and Methods for Automatically Detecting Unknown Bot and Botnets	8/29/2016	Ali Islam; Todd Rosenberry; Atif Mushtaq; Ashar Aziz	ISSUED	10200384	<a href="https://patents.google.com/patent/US10200384">https://patents.google.com/patent/US10200384</a>
P01-1633	Modular architecture for analysis database	9/1/2016	Arsen Movsesyan; Vineet Kumar; Alexander Otvagin	ISSUED	9787706	<a href="https://patents.google.com/patent/US9787706">https://patents.google.com/patent/US9787706</a>
P01-1634	Detection of Phishing Attacks Using Similarity Analysis	3/24/2017	Rundong Liu	ISSUED	10904286	<a href="https://patents.google.com/patent/US10904286">https://patents.google.com/patent/US10904286</a>
P01-1635	Systems and methods for analyzing PDF documents	9/2/2016	Ashar Aziz; Stuart Gresley Staniford	ISSUED	9954890	<a href="https://patents.google.com/patent/US9954890">https://patents.google.com/patent/US9954890</a>
P01-1637.02	Cyber-Security System And Method For Detecting Escalation Of Privileges Within An Access Token	3/14/2019	Atul Kabra; Japneet Singh; Ratnesh Pandey	FILED	16/353984	
P01-1638	System and Method for the Programmatic Runtime Deobfuscation of Obfuscated Software Utilizing Virtual Machine Introspection and Manipulation of Virtual Machine Guest Memory Permissions	10/3/2016	Antony Saba; Robert Jung	ISSUED	10380343	<a href="https://patents.google.com/patent/US10380343">https://patents.google.com/patent/US10380343</a>
P01-1640.02	Ransomware File Modification Prevention Technique	6/29/2018	Yasir Khalid; Nadeem Shahbaz; Raghunath Konda	ISSUED	10893068	<a href="https://patents.google.com/patent/US10893068">https://patents.google.com/patent/US10893068</a>
P01-1641	System and method for detecting file altering behaviors pertaining to a malicious attack	10/31/2016	Raymond Yang; Sai Vashisht; Sushant Paithane; Yasir Khalid	ISSUED	9846776	<a href="https://patents.google.com/patent/US9846776">https://patents.google.com/patent/US9846776</a>
P01-1644.02	Adaptive Virtual machine Snapshot Update Framework for Malware Behavioral Analysis	6/19/2017	Sai Vashisht; Phung-Te Ha; Sushant Paithane; Sumer Deshpande	ISSUED	10552610	<a href="https://patents.google.com/patent/US10552610">https://patents.google.com/patent/US10552610</a>
P01-1645	Optimized Resource Allocation for Virtual Machines Within a Malware Content Detection System	11/14/2016	Osman Ismael	ISSUED	10469512	<a href="https://patents.google.com/patent/US10469512">https://patents.google.com/patent/US10469512</a>
P01-1651.02	Subscription-Based Malware Detection Architecture	3/29/2018	Mumtaz Siddiqui; Manju Radhakrishnan; Deepak Agarwal	FILED	15/940,352	
P01-1652	Efficient Access to Sparse Packets in Large Repositories of Stored Network Traffic	12/2/2016	Christopher Hayes Fauerbach; Dennis Lee Edwards	ISSUED	9674298	<a href="https://patents.google.com/patent/US9674298">https://patents.google.com/patent/US9674298</a>
P01-1653	Subscriber Based Protection System	12/5/2016	Ashar Aziz	ISSUED	9838411	<a href="https://patents.google.com/patent/US9838411">https://patents.google.com/patent/US9838411</a>
P01-1654	System and Method for Predicting and Mitigating Cybersecurity System Misconfigurations	3/29/2018	Wei Quan; Raghunath Konda	ISSUED	10826931	<a href="https://patents.google.com/patent/US10826931">https://patents.google.com/patent/US10826931</a>

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P01-1655	Method for Detecting Malware Within Network Content	12/12/2016	Ashar Aziz; Stuart Gresley Staniford; Muhammad Amin; Henry Uyeno; Samuel Yie	ISSUED	10282548	<a href="https://patents.google.com/patent/US10282548">https://patents.google.com/patent/US10282548</a>
P01-1656.02	Data Extraction System for Malware Analysis	6/19/2017	Sai Vashisht; Phung-Te Ha; Durvesh Ashok Raut; Sushant Patihane	ISSUED	10902119	<a href="https://patents.google.com/patent/US10902119">https://patents.google.com/patent/US10902119</a>
P01-1657	System and Method for Detecting Time-Bomb Malware	12/29/2016	PAITHANE SUSHANT; VINCENT MICHAEL; VASHISHT SAI; KINDLUND DARIEN	ISSUED	10083302	<a href="https://patents.google.com/patent/US10083302">https://patents.google.com/patent/US10083302</a>
P01-1658	System and Method for Bot Detection	4/17/2017	Ashar Aziz; Wei-Lung Lai; Jayaraman Manni	ISSUED	10587636	<a href="https://patents.google.com/patent/US10587636">https://patents.google.com/patent/US10587636</a>
P01-1661	System and method for detecting malicious activity based on at least one environmental property	2/6/2017	Darien Kindlund; Julia Wolf; James Bennett	ISSUED	9934381	<a href="https://patents.google.com/patent/US9934381">https://patents.google.com/patent/US9934381</a>
P01-1662	System and method for offloading packet processing and static analysis operations	3/6/2017	Madhusudan Challa; Masood Mehmood; Muhammad Amin; Ramaswamy Ramaswamy; Shrikrishna Karandikar	ISSUED	9787700	<a href="https://patents.google.com/patent/US9787700">https://patents.google.com/patent/US9787700</a>
P01-1663	System and Method for Signature Generation	3/6/2017	Ashar Aziz	ISSUED	10511614	<a href="https://patents.google.com/patent/US10511614">https://patents.google.com/patent/US10511614</a>
P01-1664	System and Method of Detecting Delivery of Malware Using Cross-Customer Data	3/27/2017	Alex Rivlin; Divyesh Mehra; Henry Uyeno; Vinay Pidathala	ISSUED	10027696	<a href="https://patents.google.com/patent/US10027696">https://patents.google.com/patent/US10027696</a>
P01-1665	System and Method for Preventing Malware Evasion	9/27/2017	Phung-Te Ha; Min Li	ISSUED	10747872	<a href="https://patents.google.com/patent/US10747872">https://patents.google.com/patent/US10747872</a>
P01-1667	Phishing Attack Detection	10/1/2017	Pavan Chitturi; Surya Rao	ISSUED	10805346	<a href="https://patents.google.com/patent/US10805346">https://patents.google.com/patent/US10805346</a>
P01-1669	Advanced Persistent Threat (APT) Detection Center	4/17/2017	Thoufique Haq; Jinjian Zhai; Vinay Pidathala	ISSUED	10735458	<a href="https://patents.google.com/patent/US10735458">https://patents.google.com/patent/US10735458</a>
P01-1670	Malicious Content Analysis with Multi-Version Application Support Within Single Operating Environment	4/17/2017	Yasir Khalid; Muhammad Amin; Emily Jing	ISSUED	10025927	<a href="https://patents.google.com/patent/US10025927">https://patents.google.com/patent/US10025927</a>
P01-1679	Classifying Sets of Malicious Indicators for Detecting Command and Control Communications Associated with Malware	4/24/2017	Ali Islam; Zheng Bu	ISSUED	10033753	<a href="https://patents.google.com/patent/US10033753">https://patents.google.com/patent/US10033753</a>
P01-1681	Correlation and Consolidation of Analytic Data for Holistic View of a Malware Attack	5/1/2017	Jayaraman Manni; Michael Berrow; Philip Eun	ISSUED	10122746	<a href="https://patents.google.com/patent/US10122746">https://patents.google.com/patent/US10122746</a>
P01-1683	Analytics-Based Security Monitoring System and Method	5/12/2017	Justin Neumann	ISSUED	10104102	<a href="https://patents.google.com/patent/US10104102">https://patents.google.com/patent/US10104102</a>
P01-1690	System, Device and Method for Detecting a Malicious Attack Based on Direct Communications Between Remotely Hosted Virtual Machines and Malicious Web Servers	5/19/2017	Shrikrishna Karandikar; Muhammad Amin; Shivani Deshpande; Yasir Khalid	ISSUED	9838408	<a href="https://patents.google.com/patent/US9838408">https://patents.google.com/patent/US9838408</a>
P01-1692.02	Subscription-Based Malware Detection	3/29/2018	Mumtaz Siddiqui; Manju Radhakrishnan	ISSUED	10791138	<a href="https://patents.google.com/patent/US10791138">https://patents.google.com/patent/US10791138</a>
P01-1693.02	Attribute-Controlled Malware Detection	3/29/2018	Mumtaz Siddiqui; Manju Radhakrishnan; Deepak Agarwal	ISSUED	10798112	<a href="https://patents.google.com/patent/US10798112">https://patents.google.com/patent/US10798112</a>

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P01-1696	Multistage System and Method for Analyzing Obfuscated Content for Malware	6/26/2017	Amit Malik; Shivani Deshpande; Wei Zheng; Abhishek Singh	ISSUED	10657251	<a href="https://patents.google.com/patent/US10657251">https://patents.google.com/patent/US10657251</a>
P01-1699	Framework for Classifying an Object as Malicious with Machine Learning for Deploying Updated Predictive Models	6/26/2017	Abhishek Singh; Ali Mesdaq; Anirban Das; Varun Jain	ISSUED	10366231	<a href="https://patents.google.com/patent/US10366231">https://patents.google.com/patent/US10366231</a>
P01-1701	Dynamic Adaptive Defense for Cyber-security Threats	4/28/2017	Fred Brott; Paul Smith; Thomas Bernard; David Scott	ISSUED	10505972	<a href="https://patents.google.com/patent/US10505972">https://patents.google.com/patent/US10505972</a>
P01-1703.02	Platform and Method for Enhanced Cyber-Attack Detection and Response Employing a Global Data Store	12/17/2018	Sai Vashisht; Alexander Otvagin	FILED	16/222194	
P01-1707	Systems, Apparatus and Method for Reconfiguring Virtual Machines	8/14/2017	Osman Ismael	ISSUED	11075945	<a href="https://patents.google.com/patent/US11075945">https://patents.google.com/patent/US11075945</a>
P01-1710	System and Method for Run-time Object Classification	8/28/2017	Zheng Bu; Vinay Pidathala; Ashar Aziz	ISSUED	10467411	<a href="https://patents.google.com/patent/US10467411">https://patents.google.com/patent/US10467411</a>
P01-1711	Multi-level Control for Enhanced Resource Management and Object Evaluation Management	9/29/2017	Manju Radhakrishnan; Alexander Otvagin; Mumtaz Siddiqui	ISSUED	10554507	<a href="https://patents.google.com/patent/US10554507">https://patents.google.com/patent/US10554507</a>
P01-1712	System and Method for Enforcing Compliance with Subscription Requirements for Cyber-Attack Detection Service	9/29/2017	Manju Radhakrishnan; Mumtaz Siddiqui	ISSUED	10848397	<a href="https://patents.google.com/patent/US10848397">https://patents.google.com/patent/US10848397</a>
P01-1720	System and Method for Offloading Packet Processing and Static Analysis Operations	10/9/2017	Madhusudan Challa; Masood Mehmood; Muhammad Amin; Ramaswamy Ramaswamy; Shrikishna Karandikar	ISSUED	10454953	<a href="https://patents.google.com/patent/US10454953">https://patents.google.com/patent/US10454953</a>
P01-1721.02	Phishing Website Detection using Deep Convolutional Neural Network	6/8/2018	Bala Rajagopalan; Rahul Mohandas; Santhosh Ramachandran; Vamshi Kumar Kurva	ISSUED	10834128	<a href="https://patents.google.com/patent/US10834128">https://patents.google.com/patent/US10834128</a>
P01-1725	Security Cloud Service Framework for Hardening in the Field Code of Mobile Software Applications	11/17/2017	Ashar Aziz; Osman Ismael	ISSUED	10,181,029	<a href="https://patents.google.com/patent/US10181029">https://patents.google.com/patent/US10181029</a>
P01-1726	Intelligent Context Aware User Interaction for Malware Detection	12/4/2017	Sai Vashisht; Sushant Paithane; Yasir Khalid	ISSUED	10798121	<a href="https://patents.google.com/patent/US10798121">https://patents.google.com/patent/US10798121</a>
P01-1727	Cyber Attack Early Warning System	11/17/2017	Divyesh Mehra; Abhishek Singh	ISSUED	10873597	<a href="https://patents.google.com/patent/US10873597">https://patents.google.com/patent/US10873597</a>
P01-1728	Susceptible Environment Detection System	11/17/2017	Yasir Khalid; Shivani Deshpande	ISSUED	10445502	<a href="https://patents.google.com/patent/US10445502">https://patents.google.com/patent/US10445502</a>
P01-1729	Framework For Efficient Security Coverage Of Mobile Software Applications	10/16/2017	Ashar Aziz; Osman Ismael; Hui Xue; Dawn Song; Noah Johnson; Prashanth Mohan	ISSUED	10296437	<a href="https://patents.google.com/patent/US10296437">https://patents.google.com/patent/US10296437</a>
P01-1733	System and Methods for Computer Worm Defense	12/4/2017	Ashar Aziz	ISSUED	10097573	<a href="https://patents.google.com/patent/US10097573">https://patents.google.com/patent/US10097573</a>
P01-1735.02	Platform and Method for Performing Cybersecurity Analyses Employing an Intelligence Hub with a Modular Architecture	12/17/2018	Sai Vashisht; Alexander Otvagin	FILED	16/223107	
P01-1736.02	Platform and Method for Retroactive Reclassification	12/17/2018	Alexander Otvagin; Sai Vashisht	FILED	16/222,501	

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	Employing a Cybersecurity-Based Global Data Store					
P01-1737	System and Method for Automatically Generating Malware Detection Rule Recommendations	3/30/2018	Victor Fang; Wei Quan; Richard Lai; Robert Venal; Benjamin Chang	ISSUED	11003773	<a href="https://patents.google.com/patent/US11003773">https://patents.google.com/patent/US11003773</a>
P01-1739.02	System and Method for Automatically Prioritizing Rules for Cyber-Threat Detection and Mitigation	3/14/2019	Chinmoy Dey; Christopher Glyer; Paul Schottland	FILED	16/353988	
P01-1741.02	Multi-vector Malware Detection Data Sharing System for Improved Detection	3/14/2019	Sai Vashisht; Sushant Paithane	FILED	16/353982	
P01-1747.02	Methods and Apparatus for Cyberattack Detection via Endpoint Source Key Exchange	9/23/2019	Christopher Glyer; Andrew Davis; Seth Summersett	FILED	16/578,986	
P01-1749	System And Method For Distributed Cluster Configuration Monitoring And Management	6/28/2018	Alexey Yakymovych; Alexander Otvagin	FILED	16/022644	
P01-1750	Intelligent System for Mitigating Cybersecurity Risk by Analyzing Domain Name System Traffic	9/28/2018	Ralph Casey; Ken Bagnall; John Jensen	FILED	16/146,211	
P01-1791	System And Method For Detecting Repetitive Cybersecurity Attacks Constituting An Email Campaign	6/27/2018	Jijo Xavier; Robert Venal	ISSUED	11075930	<a href="https://patents.google.com/patent/US11075930">https://patents.google.com/patent/US11075930</a>
P01-1796	Post-intrusion detection of Cyber-Attacks During Lateral Movement Within Enterprise Networks	6/29/2018	Sundar Jeyaraman; Ramu Ramaswamy	ISSUED	10855700	<a href="https://patents.google.com/patent/US10855700">https://patents.google.com/patent/US10855700</a>
P01-1798.02	System and Method for Improved End-to-End Cyber-security Machine Learning and Deployment	7/30/2018	Sai Vashisht; Victor Fang; Rahul Khul	FILED	16/049,687	
P01-1799	System and Method for Mitigating Cyberattacks Against Processor Operability by a Guest Process	9/13/2018	Min Li; Phung-Te Ha	FILED	16/130,944	
P01-1802	System and Method for Virtual Analysis of Network Data	3/5/2018	Ashar Aziz; Osman Ismael; Ramesh Radhakrishnan	ISSUED	10623434	<a href="https://patents.google.com/patent/US10623434">https://patents.google.com/patent/US10623434</a>
P01-1804	Malicious Content Analysis Using Simulated User Interaction Without User Involvement	3/5/2018	Emmanuel Thioux	ISSUED	10848521	<a href="https://patents.google.com/patent/US10848521">https://patents.google.com/patent/US10848521</a>
P01-1805	System and Method for Detecting Malicious Links in Electronic Messages	2/5/2018	Vinay Pidathala; Henry Uyeno	ISSUED	10505956	<a href="https://patents.google.com/patent/US10505956">https://patents.google.com/patent/US10505956</a>
P01-1806	Dynamically Adaptive Framework and Method for Classifying Malware Using Intelligent Static, Emulation and Dynamic Analyses	3/5/2018	Ali Mesdaq; Michael Vincent; Emmanuel Thioux; Abhishek Singh; Sai Vashisht	ISSUED	10713362	<a href="https://patents.google.com/patent/US10713362">https://patents.google.com/patent/US10713362</a>
P01-1807	Fuzzy Hash of Behavioral Results	3/5/2018	Ali Mesdaq; Paul Westin	ISSUED	10218740	<a href="https://patents.google.com/patent/US10218740">https://patents.google.com/patent/US10218740</a>
P01-1808	Improving Detection Efficacy of Virtual Machine-Based Analysis With Application Specific Events	3/12/2018	Sai Vashisht; Sushant Paithane	ISSUED	10534906	<a href="https://patents.google.com/patent/US10534906">https://patents.google.com/patent/US10534906</a>

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P01-1809	Verification of Trusted Threat-Aware Microvisor	6/18/2018	Hendrik Tews; Osman Ismael	FILED	16/011,495	
P01-1812	System and Method for Selectively Processing Content After Identification and Removal of Malicious Content	12/21/2018	Zain Gardezi	FILED	16/231089	
P01-1816.02	System and Method for Detecting Cyberattacks Impersonating Legitimate Sources	12/23/2019	Zain Gardezi; Mohsin Saeed; Hassan Ahmad; Fahim Abbassi; Farrukh Shahzad	FILED	16/725674	
P01-1845	System and method for detecting malicious activity based on at least one environmental property	4/2/2018	Darien Kindlund; Julia Wolf; James Bennett	ISSUED	10467414	<a href="https://patents.google.com/patent/US10467414">https://patents.google.com/patent/US10467414</a>
P01-1848	Micro-Virtualization Architecture for Threat-Aware Microvisor Deployment in a Node of a Network Environment	4/16/2018	Ashar Aziz; Osman Ismael	ISSUED	10740456	<a href="https://patents.google.com/patent/US10740456">https://patents.google.com/patent/US10740456</a>
P01-1849	Microvisor-Based Malware Detection Appliance Architecture	4/2/2018	Osman Ismael	ISSUED	10528726	<a href="https://patents.google.com/patent/US10528726">https://patents.google.com/patent/US10528726</a>
P01-1854	Electronic Message Analysis for Malware Detection	7/16/2018	Ashar Aziz; Henry Uyeno; Jayaraman Manni; Muhammad Amin; Stuart Gresley Staniford	ISSUED	10757120	<a href="https://patents.google.com/patent/US10757120">https://patents.google.com/patent/US10757120</a>
P01-1855	Malicious Content Analysis with Multi-Version Application Support Within Single Operating Environment	7/16/2018	Yasir Khalid; Muhammad Amin; Emily Jing	FILED	16/036,873	
P01-1856	Interactive Infection Visualization for Improved Exploit Detection and Signature Generation for Malware and Malware Families	7/16/2018	Anil Gupta; Hirendra Rathor; Kaushal Dalal	ISSUED	10868818	<a href="https://patents.google.com/patent/US10868818">https://patents.google.com/patent/US10868818</a>
P01-1857	System and Method of Detecting Delivery of Malware Using Cross-Customer Data	7/16/2018	Alex Rivlin; Divyesh Mehra; Henry Uyeno; Vinay Pidathala	ISSUED	10404725	<a href="https://patents.google.com/patent/US10404725">https://patents.google.com/patent/US10404725</a>
P01-1859	System and Method for Bootkit Detection	9/27/2018	Andrew Davis; Fred House; Ryan Fisher	FILED	16/144,781	
P01-1864	Malicious Message Analysis System	8/13/2018	Abhishek Singh	ISSUED	10581898	<a href="https://patents.google.com/patent/US10581898">https://patents.google.com/patent/US10581898</a>
P01-1868	System and Method for Scanning Remote Services to Locate Stored Objects with Malware	12/21/2018	Sai Vashisht	FILED	16/231074	
P01-1869.02	System and Method for Retrieval and Analysis of Operational Data From Customer, Cloud-Hosted Virtual Resources	8/30/2019	Sai Vashisht; Rahul Khul; Sumer Deshpande; Sushant Patthane	FILED	16/557512	
P01-1870.02	Automated System for Triage of Customer Issues	12/24/2019	Sai Vashisht; Rahul Khul	FILED	16/726723	
P01-1880	System and Method for Detecting Time-Bomb Malware	9/24/2018	Sushant Patthane; Michael Vincent; Sai Vashisht; Darien Kindlund	ISSUED	10335738	<a href="https://patents.google.com/patent/US10335738">https://patents.google.com/patent/US10335738</a>
P01-1881	Intrusion Prevention and Remedy System	9/24/2018	Hatem Eyada	ISSUED	10757134	<a href="https://patents.google.com/patent/US10757134">https://patents.google.com/patent/US10757134</a>
P01-1883	User Interface with Real-Time Visual Playback Along with Synchronous Textual Analysis Log Display and Event/Time	7/9/2018	Adrian Mettler; Ashar Aziz; Harnish Goradia; Noah Johnson; Osman Ismael	ISSUED	10929266	<a href="https://patents.google.com/patent/US10929266">https://patents.google.com/patent/US10929266</a>

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	Index for Anomalous Behavior Detection in Applications					
P01-1886	Classifying Sets of Malicious Indicators for Detecting Command and Control Communications Associated with Malware	7/23/2018	Ali Islam; Zheng Bu	ISSUED	10637880	<a href="https://patents.google.com/patent/US10637880">https://patents.google.com/patent/US10637880</a>
P01-1887	System and Method for Detecting Interpreter-based Exploit Attacks	7/23/2018	Sushant Paithane; Sai Vashisht	ISSUED	10887328	<a href="https://patents.google.com/patent/US10887328">https://patents.google.com/patent/US10887328</a>
P01-1888	System and method for verifying a cyberthreat	7/23/2018	Sean Cunningham; Robert Dana; Joseph Nardone; Joseph Faber; Kevin Arunski	ISSUED	10701091	<a href="https://patents.google.com/patent/US10701091">https://patents.google.com/patent/US10701091</a>
P01-1900	Correlation and Consolidation of Analytic Data for Holistic View of a Malware Attack	11/5/2018	Jayaraman Manni; Michael Berrow; Philip Eun	ISSUED	10812513	<a href="https://patents.google.com/patent/US10812513">https://patents.google.com/patent/US10812513</a>
P01-1901	Dynamic Adaptive Defense for Cyber-security Threats	11/9/2018	Fred Brott; Paul Smith; Thomas Bernard; David Scott	ISSUED	10616265	<a href="https://patents.google.com/patent/US10616265">https://patents.google.com/patent/US10616265</a>
P01-1908	System and Method for Supporting Cross-Platform Data Verification	6/28/2019	Robert Beard; Robin Caron	FILED	16/457573	
P01-1909.02	Seamless Endpoint Rule Update Mechanism	2/20/2020	Robin Caron; Robert Beard; Neeraj Kulkarni	FILED	16/796541	
P01-1910.02	System to Detect and Protect Against Cybersecurity Attacks on Servers	8/30/2019	Sai Vashisht; Ishan Sharma	FILED	16/557483	
P01-1920	System and Method for Triggering Analysis of an Object for Malware in Response to Modification of that Object	11/16/2018	Vineet Kumar; Alexander Otvagin; Nikita Borodulin	ISSUED	10872151	<a href="https://patents.google.com/patent/US10872151">https://patents.google.com/patent/US10872151</a>
P01-1921	Analytics-Based Security Monitoring System and Method	10/15/2018	Justin Neumann	ISSUED	10728263	<a href="https://patents.google.com/patent/US10728263">https://patents.google.com/patent/US10728263</a>
P01-1922	Late Load Technique for Deploying a Virtualization Layer Underneath a Running Operating System	10/15/2018	Neeraj Kulkarni; Udo Steinberg	FILED	16/160,923	
P01-1926	Exploit Detection System	12/3/2018	Anil Gupta; Harinath Ramchetty; Japneet Singh	ISSUED	10666686	<a href="https://patents.google.com/patent/US10666686">https://patents.google.com/patent/US10666686</a>
P01-1931.02	Method, Apparatus, and Computer-Readable Medium for Encoding Repetition and Definition Level Values for Semi-Structured Data	5/25/2016	Sattam Alsubaiee; Vinayak Borkar	ISSUED	10,866,940	<a href="https://patents.google.com/patent/US10866940">https://patents.google.com/patent/US10866940</a>
P01-1943	Dynamic Guest Image Creation and Rollback	3/25/2019	Harnish Goradia	ISSUED	11,068,587	<a href="https://patents.google.com/patent/US11068587">https://patents.google.com/patent/US11068587</a>
P01-1947	Method to Detect Application Execution Hijacking Using Memory Protection	2/15/2019	Amit Malik; Raghav Pande; Aakash Jain	FILED	16/277907	
P01-1949	System and Method for Identifying and Mitigating Cyberattacks through Malicious Position-Independent Code Execution	9/27/2019	Steve Davis	FILED	16/586794	
P01-1951.02	System and Method for Enhanced Malware Analysis of Electronic	9/29/2020	Sai Vashisht; Alexander Otvagin	FILED	17/037544	

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	Messages Based on Dynamic Rendering					
P01-1971	System and Method for Multi-Application, Multi-Plugin Analysis for Use in Detecting a Malicious Attack	5/6/2019	Sushant Paithane; Sai Vashisht; Yasir Khalid; Alex Pilipenko; Muhammad Rizwan	ISSUED	10834107	<a href="https://patents.google.com/patent/US10834107">https://patents.google.com/patent/US10834107</a>
P01-1972	System And Method For Threat Detection And Identification	5/6/2019	Ashar Aziz; Jayaraman Manni; Wei-Lung Lai	ISSUED	11082435	<a href="https://patents.google.com/patent/US11082435">https://patents.google.com/patent/US11082435</a>
P01-1976.02	System and Method for Circumventing Evasive Code for Cyberthreat Detection	12/23/2020	Sai Vashisht; Sushant Paithane; Imtiyaz Yunus Pathan	FILED	17/133379	
P01-1978	Framework for Classifying an Object as Malicious with Machine Learning for Deploying Updated Predictive Models	7/29/2019	Abhishek Singh; Ali Mesdaq; Anirban Das; Varun Jain	ISSUED	10902117	<a href="https://patents.google.com/patent/US10902117">https://patents.google.com/patent/US10902117</a>
P01-1979	Dynamically Remote Tuning of a Malware Content Detection System	7/1/2019	Darien Kindlund; Emmanuel Thioux; Michael Vincent; Sai Vashisht	FILED	16/459536	
P01-1980	System and Method of Detecting Delivery of Malware Using Cross-Customer Data	8/30/2019	Alex Rivlin; Divyesh Mehra; Henry Uyeno; Vinay Pidathala	ISSUED	11019081	<a href="https://patents.google.com/patent/US11019081">https://patents.google.com/patent/US11019081</a>
P01-1985.02	Run-Time Configurable Cybersecurity System	12/23/2020	Sai Vashisht; Sagar Khangan	FILED	17/133397	
P01-1991.02	Subscription and Key Management System	12/23/2020	Sai Vashisht; Sumer Deshpande	FILED	17/133411	
P01-2005	Methods and Apparatus for Graphical User Interface Environment for Creating Threat Response Courses of Action for Computer Networks	12/18/2019	Christopher Nelson Bailey; Bernd Constant; Juan Manuel Vela	ISSUED	10986134	<a href="https://patents.google.com/patent/US10986134">https://patents.google.com/patent/US10986134</a>
P01-2006	Methods and Apparatus for Graphical User Interface Environment for Creating Threat Response Courses of Action for Computer Networks	12/18/2019	Christopher Nelson Bailey; Bernd Constant; Juan Manuel Vela	ISSUED	11063985	<a href="https://patents.google.com/patent/US11063985">https://patents.google.com/patent/US11063985</a>
P01-2011	System, Apparatus and Method for Automatically Verifying Exploits Within Suspect Objects and Highlighting the Display Information Associated with the Verified Exploits	11/8/2019	Zheng Bu; Muhammad Amin; Ashar Aziz	ISSUED	11089057	<a href="https://patents.google.com/patent/US11089057">https://patents.google.com/patent/US11089057</a>
P01-2012	System and method for offloading packet processing and static analysis operations	3/6/2017	Madhusudan Challa; Masood Mehmood; Muhammad Amin; Ramaswamy Ramaswamy; Shrikishna Karandikar	ISSUED	11082436	<a href="https://patents.google.com/patent/US11082436">https://patents.google.com/patent/US11082436</a>
P01-2016	Malware Detection Verification and Enhancement By Coordinating Endpoint and Malware Detection Systems	10/28/2019	Ashar Aziz; Osman Ismael	FILED	16/666335	
P01-2023	System and Method for Detecting Malicious Traffic Using a Virtual Machine Configured with a Select Software Environment	2/14/2020	Ashar Aziz	FILED	16/791933	
P01-2025.02	Automated Enforcement of Security Policies in Cloud and Hybrid Infrastructure Environments	1/23/2018	Lisun Kung; Jose Renato Santos; Sarowar Golam Sikder	ISSUED	10721275	<a href="https://patents.google.com/patent/US10721275">https://patents.google.com/patent/US10721275</a>



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P01-2028	Distributed Malware Detection System and Submission Workflow Thereof	4/6/2020	Alexander Otvagin	FILED	16/840,584	
P01-2029	Dynamic Adaptive Defense for Cyber-security Threats	4/6/2020	Fred Brott; Paul Smith; Thomas Bernard; David Scott	FILED	16/841,383	
P01-2055	Automated Enforcement of Security Policies in Cloud and Hybrid Infrastructure Environment	6/22/2020	Lisun Kung; Jose Renato Santos; Sarowar Golam Sikder	FILED	16/908,681	
P01-2059	Technique for Verifying Exploit/Malware at Malware Detection Appliance Through Correlation with Endpoints	11/2/2020	Ashar Aziz; Osman Ismael	FILED	17/087,550	
P01-2062	Detecting Delayed Activation Malware Using a Run-time monitoring Agent and Time-Dilation Logic	10/26/2020	Michael Vincent	FILED	17/080,786	
P01-2063	Enterprise Search	10/5/2020	Steven Ross; Ai Duong; Larry King; Jack Young	FILED	17/063,618	
P01-2066	Subscription-Based Malware Detection	9/28/2020	Mumtaz Siddiqui; Manju Radhakrishnan	FILED	17/035,538	
P01-2067	Attribute-Controlled Malware Detection	3/29/2018	Mumtaz Siddiqui; Manju Radhakrishnan; Deepak Agarwal	FILED	17/063,648	
P01-2072	Malware Detection Verification and Enhancement Using Detection Systems Located at the Network Periphery and Endpoint Devices	1/11/2021	Ashar Aziz; Osman Ismael	FILED	17/146,417	
P01-2073	Detection of Phishing Attacks Using Similarity Analysis	1/25/2021	Rundong Liu	FILED	17/157,968	
P01-2081	System And Method For Detecting Repetitive Cybersecurity Attacks Constituting An Email Campaign	7/26/2021	Jijo Xavier; Robert Venal	FILED	17/385,835	

## INTERNATIONAL

IP Right: IP Right ID	Country Code	Title	Filing Date	All Inventors	Prosecution Status	Appl./Pat. #
P01-1017.03EP	EP	Electronic Message Analysis for Malware Detection	2/23/2012	Ashar Aziz; Henry Uyeno; Jayaraman Manni; Muhammad Amin; Stuart Gresley Staniford	FILED	12774315.1
P01-1017.04JP	JP	Electronic Message Analysis for Malware Detection	2/23/2012	Ashar Aziz; Henry Uyeno; Jayaraman Manni; Stuart Gresley Staniford; Muhammad Amin	ISSUED	6013455
P01-1018.04JP	JP	Systems and Methods for Detecting Malicious PDF Network Content	1/19/2012	Ashar Aziz; Osman Ismael	ISSUED	5878560
P01-1035.03EP	EP	Optimized Resource Allocation for Virtual Machines Within a Malware Content Detection System	11/10/2015	Osman Ismael	FILED	13884161.4
P01-1035.04JP	JP	Optimized Resource Allocation for Virtual Machines Within a Malware Content Detection System	6/28/2013	Osman Ismael	ISSUED	6419787

IP Right: IP Right ID	Country Code	Title	Filing Date	All Inventors	Prosecution Status	App/Pat. #
P01-1039.05JP	JP	System, Apparatus and Method for Automatically Verifying Exploits Within Suspect Objects and Highlighting the Display Information Associated with the Verified Exploits	12/23/2014	Ashar Aziz; Zheng Bu; Muhammad Amin; Osman Ismael	ISSUED	6441957
P01-1086.03	EP	System and Method for Detecting Time-Bomb Malware	6/23/2014	Darien Kindlund; Sushant Paithane; Sai Vashisht; Michael Vincent	ISSUED	3014513
P01-1086.04	DE	System and Method for Detecting Time-Bomb Malware	6/23/2014	Darien Kindlund; Sushant Paithane; Sai Vashisht; Michael Vincent	ISSUED	3014513
P01-1086.05	FR	System and Method for Detecting Time-Bomb Malware	6/23/2014	Darien Kindlund; Sushant Paithane; Sai Vashisht; Michael Vincent	ISSUED	3014513
P01-1086.06	GB	System and Method for Detecting Time-Bomb Malware	6/23/2014	Darien Kindlund; Sushant Paithane; Sai Vashisht; Michael Vincent	ISSUED	3014513
P01-1086.07	IE	System and Method for Detecting Time-Bomb Malware	6/23/2014	Darien Kindlund; Sushant Paithane; Sai Vashisht; Michael Vincent	ISSUED	3014513
P01-1086.08	NL	System and Method for Detecting Time-Bomb Malware	6/23/2014	Darien Kindlund; Sushant Paithane; Sai Vashisht; Michael Vincent	ISSUED	3014513
P01-1086.09	IT	System and Method for Detecting Time-Bomb Malware	6/23/2014	Darien Kindlund; Sushant Paithane; Sai Vashisht; Michael Vincent	ISSUED	3014513
P01-1502.03	EP	Dynamic Adaptive Defense for Cyber-security Threats	10/2/2014	Fred Brott; Paul Smith	FILED	14850557.1
P01-1595.04	EP	Methods and Apparatus for Graphical User Interface Environment for Creating Threat Response Courses of Action for Computer Networks	6/22/2016	BAILEY Christopher Nelson; CONSTANT Bernd; VELA Juan Manuel	ISSUED	3311301
P01-1595.05	DE	Methods and Apparatus for Graphical User Interface Environment for Creating Threat Response Courses of Action for Computer Networks	6/22/2016	BAILEY Christopher Nelson; CONSTANT Bernd; VELA Juan Manuel	ISSUED	3311301
P01-1595.06	FR	Methods and Apparatus for Graphical User Interface Environment for Creating Threat Response Courses of Action for Computer Networks	6/22/2016	BAILEY Christopher Nelson; CONSTANT Bernd; VELA Juan Manuel	ISSUED	3311301
P01-1595.07	GB	Methods and Apparatus for Graphical User Interface Environment for Creating Threat Response Courses of Action for Computer Networks	6/22/2016	BAILEY Christopher Nelson; CONSTANT Bernd; VELA Juan Manuel	ISSUED	3311301
P01-1605.03	EP	Cyber-Security System and Method for Weak Indicator Detection and Correlation to Generate Strong Indicators	6/29/2018	Sundar Jeyaraman; Ramu Ramaswamy	FILED	18750547.4
P01-1882	EP	Electronic Message Analysis for Malware Detection	12/11/2017	Ashar Aziz; Henry Uyeno; Jayaraman Manni; Muhammad Amin; Stuart Gresley Staniford	FILED	17206478.4