UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION

WEBROOT, INC. and OPEN TEXT, INC., Plaintiffs v. FORCEPOINT LLC, Defendant.	CIVIL ACTION NO. 6:22-CV-00342 **JURY TRIAL DEMANDED**
FORCEPOINT LLC, Counterclaim Plaintiff, v. WEBROOT, INC., OPEN TEXT, INC., and OPEN TEXT CORPORATION Counterclaim- Defendants.	

DEFENDANT FORCEPOINT LLC'S
PRELIMINARY INVALIDITY CONTENTIONS

I. INTRODUCTION

Pursuant to the Court's Standing Order Governing Proceedings (OGP 4.1) – Patent Cases, Dkt. No. 13 (the "Order") and the Scheduling Order in this case, Defendant Forcepoint LLC ("Meta" or "Defendant") hereby provides the following Preliminary Invalidity Contentions ("Contentions") to Plaintiffs and Counterclaim Defendants Webroot Inc. ("Webroot"), Open Text, Inc. ("OTI"), and Open Text Corp. ("OTC") (collectively, "Plaintiffs") for asserted U.S. Patent Nos. 10,025,928 (the "'928 Patent"), 8,438,386 (the "'386 Patent"), 10,599,844 (the "'844

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Open Text Inc. EX-2012

Patent"), 8,726,389 (the "'389 Patent"), and 9,413,721 (the "'721 Patent") (collectively, the "Asserted Patents").[1] Defendant reserves the right to supplement or modify these Contentions, consistent with the Order.

Discovery is ongoing, and accordingly, Defendant reserves the right to revise or supplement these Contentions in light of party and third-party discovery. Defendant's Contentions are based in whole or in part on its present understanding of Plaintiffs' contentions concerning the scope and construction of the claims in their Infringement Contentions and Defendant's own understanding of the scope and construction of those claims. Defendant has conducted the invalidity analysis herein without having proposed claim terms for construction and before disclosure of Plaintiffs' apparent interpretation of the Asserted Claims of the Asserted Patents. Plaintiffs' Infringement Contentions are deficient at least insofar as they fail to articulate how any single accused product or the use of any single accused product infringes any claim, and Defendant reserves the right to further amend its Contentions in response to any further supplementation or amendment of Plaintiffs' Infringement Contentions or in response to Plaintiffs' proposed claim constructions. Defendant takes no position on any matter of claim construction in these Contentions. Any statement herein describing or tending to describe any claim element is provided

[1] On Friday, September 9, a mere two business days prior to the scheduled due date for Invalidity Contentions, Plaintiffs belatedly asserted newly alleged priority dates for the '721 Patent—59 days after the Court's deadline. *See* Plaintiffs' September 9, 2022 First Supplemental Disclosure of Asserted Claims and Preliminary Infringement Contentions. Due to the prejudice inflicted upon the Defendant by this eleventh-hour amendment, Defendant and the fact that the Court has not had a chance to address this issue, the Preliminary Contentions are hereby included with the express reservation of the right to supplement or modify Defendant's Invalidity Contentions. Likewise, Forcepoint is investigating the recently served supplemental contentions and reserves all rights with respect to any other new contentions, including but not limited to newly asserted claims, and new infringement theories advancing new or different claim interpretations or claim scope, for which Forcepoint reserves the right to identify and chart additional art and assert additional invalidity grounds under §§ 101, 102, 103, and/or 112.

solely for the purpose of understanding the relevant prior art. Defendant further reserves the right to amend these Contentions based on any claim construction order by the Court.

Defendant further reserves the right to interpret these terms differently over the course of the litigation, and does not adopt any interpretations impliedly or expressly put forth in these Contentions. Accordingly, Defendant's Contentions, including the attached claim charts, may reflect alternative positions as to claim construction and scope. Nothing in this document or the attached claim charts, however, should be construed as an admission that Defendant agrees with Plaintiffs' contentions or that any claim, whether asserted or not, of the Asserted Patents is valid, enforceable, or infringed.

Accompanying claim charts contain specific examples of prior art references, patents, knowledge, inventions, uses, sales, methods, and/or systems that included and/or disclosed, either expressly or inherently, each limitation of certain claims and/or examples of prior art references and systems in view of which a person of ordinary skill in the art would have considered each limitation and the claimed combination of such limitations obvious. Defendant has endeavored to identify relevant portions and/or features of the identified prior art. The identified prior art, however, may contain additional descriptions of or alternative support for the claim limitations. Defendant may rely upon un-cited portions or features of the identified prior art, other documents, and expert testimony to provide context or to aid them in understanding the identified prior art. Where Defendant cites to a particular figure in a reference, the citation should be understood to encompass the caption and description of the figure and any text relating to the figure. Similarly, where Defendant cites to particular text referring to a figure, the citation should be understood to include the figure and caption as well.

Defendant reserves the right to further amend these disclosures should Plaintiffs later provide any information that they failed to provide in their disclosures under Section II, Paragraph 2 of the Order or should Plaintiffs further amend their disclosures under Section II, Paragraph 2 of the Order in any way. Moreover, Defendant reserves the right to revise their ultimate Contentions concerning the invalidity of the Asserted Claims, which may change in response to the Court's construction of the Asserted Claims, additional information obtained during the discovery period, any findings as to the priority date of the Asserted Claims, and/or positions that Defendant or any expert witnesses may take concerning claim construction, infringement, and/or invalidity issues. Defendant hereby provides disclosures and related documents pertaining only to the Asserted Claims as identified by Plaintiffs in their Preliminary Infringement Contentions, served July 12, 2022. Defendant reserves the right to modify, amend, or supplement these Contentions to address any additional claims that the Court may allow Plaintiffs to later assert.

Defendant further intends to rely upon inventor admissions concerning the scope of the Asserted Claims, and prior art relevant to the Asserted Claims, found in: the Asserted Patents, the patent prosecution histories for the Asserted Patents, and related patents and/or patent applications; any deposition testimony of any inventor of the Asserted Patents; any previous trial testimony of any inventor of the Asserted Patents; and any papers filed or any evidence produced or submitted by Plaintiffs or their affiliates in connection with this litigation, or any previous litigation, related to any of the Asserted Patents. In particular, Defendant reserves the right to contend that the Asserted Claims are invalid in view of admitted prior art, or under pre-AIA 35 U.S.C. § 102(f) in the event Defendant obtains evidence that inventors named in the Asserted Patents did not invent (either alone or in conjunction with others) the subject matter claimed in the Asserted Patents.

Should Defendant obtain such evidence, they will provide the name of the person(s) from whom and the circumstances under which the claimed invention or any part thereof was derived.

Prior art not included in these Contentions, whether known or not known to Defendant, may become relevant. Defendant is currently unaware of the extent, if any, to which Plaintiffs will contend that limitations of the Asserted Claims are not disclosed in the prior art identified by Defendant. Defendant reserves the right to identify additional references that would render obvious the allegedly missing limitation(s) of the disclosed device or method. Discovery is ongoing, and Defendant has not yet completed their search for and analysis of relevant prior art. Thus, Defendant reserves the right to revise, amend, and/or supplement the information provided herein, including identifying, charting, and relying on additional references, should Defendant's further search and analysis yield additional information or references, consistent with the Order and the Federal Rules of Civil Procedure.

Prior art patents or publications included in these Contentions may be related (*e.g.*, as a divisional, continuation, continuation-in-part, parent, child, or other relation or claim of priority) to earlier or later filed patents or publications, may have counterparts filed in other jurisdictions, or may incorporate (or be incorporated by) other patents or publications by reference. The listed patents or publications are intended to be representative of these other patents or publications, to the extent they exist. Accordingly, Defendant reserves the right to modify, amend, and/or supplement these Contentions with these related patents or publications, as well as other prior art references, upon further investigation.

Additionally, because third-party discovery is not yet complete, Defendant reserves the right to present additional items of prior art under 35 U.S.C. §§ 102(a), (b), (e), and/or (g), and/or § 103 located during the course of such discovery or further investigation, and to assert contentions

of invalidity under 35 U.S.C. §§ 102(c), (d), or (f) to the extent that such discovery or investigation yields information forming the basis for such contentions of invalidity.[2] For example, Defendant may issue subpoenas in the course of discovery to third parties believed to have knowledge, documentation, and/or corroborating evidence concerning some of the prior art listed below and/or additional prior art. These third parties may include, without limitation, the authors, inventors, developers, designers, or assignees of the references and systems listed in these disclosures.

In those instances where Defendant asserts that the claims are invalid under 35 U.S.C. § 112 (*e.g.*, no written description, not enabled, and/or indefinite), Defendant has applied the prior art, in part, in accordance with Defendant's assumptions that Plaintiffs: (1) contend those claims are definite; (2) find written description support for those claims; and (3) contend that those claims are enabled. However, Defendant's prior art and Invalidity Contentions do not necessarily represent Defendant's agreement or view as to the meaning, definiteness, written description support for, or enablement of any claim contained therein. In fact, Defendant notes numerous grounds for invalidity on such bases below.

II. BACKGROUND

A. The Asserted Claims

Plaintiffs are asserting the following claims of the Asserted Patents:

Patent	Asserted Claims
'389 Patent	1-14, 30 ("Asserted '389 Patent Claims")
'844 Patent	1-3, 6-12, and 15-20 ("Asserted '844 Patent Claim")
'721 Patent	1, 8, 9, 14, and 15 ("Asserted '721 Patent Claims")

[2] Throughout these Contentions, Forcepoint applies post-AIA sections to the '844 Patent based on its filing date and the equivalent pre-AIA sections to the other four Asserted Patents based on their filing date. All references to 35 U.S.C. throughout these Contentions should be understood to apply the appropriate pre-AIA or post-AIA sections accordingly.

Patent	Asserted Claims
’386 Patent	1-13, 15, 16, and 18 (“Asserted ’386 Patent Claims”)
’928 Patent	1-20 (“Asserted ’928 Patent Claims”)

B. Priority Dates of the Asserted Claims

The ’389 Patent

Plaintiffs purport that the ’389 Patent is entitled to a priority date of June 30, 2005 based on the filing of foreign patent application GB 01513375.6. But, as a preliminary matter, GB 01513375.6 and U.S. Patent Application No. 11/477,807 (the first U.S. Patent application filed relating to the ’389 Patent) do not share a common applicant or inventor as required by 35 U.S.C. § 119(a) to claim priority to a foreign application. Therefore, Defendant contends that no Asserted Claim of the ’389 Patent is entitled to a priority date earlier than June 30, 2006, though Defendant does not concede that the ’389 Patent is necessarily even entitled to that priority date.

The ’844 Patent

Defendant contends that no Asserted Claim of the ’844 Patent is entitled to a priority date earlier than May 12, 2015, though Defendant does not concede that the ’844 Patent is necessarily even entitled to that priority date.

The ’721 Patent

On September 9, 2022, a mere two business days prior to the scheduled due date for Invalidity Contentions, Plaintiffs modified the priority date for the ’721 Patent. *See* Plaintiffs’ September 9, 2022 First Supplemental Disclosure of Asserted Claims and Preliminary Infringement Contentions.[3] Defendant contends that no Asserted Claim of the ’721 Patent is

[3] Plaintiffs belatedly asserted newly alleged priority date for the ’721 Patent on September 9, 2022, 59 days after the Court’s deadline. Given the late assertion of the purported priority date, Defendant has not had a chance to ascertain the merit of veracity of the newly asserted priority dates or the purported evidence regarding the newly asserted priority dates (also belatedly served on September 9, 2022). Moreover, Plaintiffs have not yet explained

entitled to a priority date earlier than February 15, 2011, though Defendant does not concede that the ’721 Patent is necessarily even entitled to that priority date.

The ’386 Patent

Defendant contends that no Asserted Claim of the ’386 Patent is entitled to a priority date earlier than April 21, 2009, though Defendant does not concede that the ’386 Patent is necessarily even entitled to that priority date.

The ’928 Patent

Defendant contends that no Asserted Claim of the ’928 Patent is entitled to a priority date earlier than October 3, 2011, though Defendant does not concede that the ’928 Patent is necessarily even entitled to that priority date.

III. INVALIDITY CONTENTIONS FOR THE ’389 PATENT

A. General State of the Art at the Time of the Alleged Inventions

The prior art references identified in these Invalidity Contentions, and the “References Cited” on the face of the ’389 Patent, may provide background and context pertinent to the teachings in, and interpretation of, the prior art referenced by the attached claim charts. Defendant may rely upon that prior art, including the “References Cited” on the face of the ’389 Patent, to demonstrate the general state of the art at the time of the alleged inventions and what one of ordinary skill in the art would have understood at a time prior to the date of the alleged invention of the Asserted Claims. This prior art is exemplary only and is not in any way intended to limit the scope of what one of ordinary skill in the art would have understood at the times of the alleged inventions. Defendant reserves the right to rely upon additional prior art, information, and/or

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the basis for thir priority assertions. As a result, Defendant reserves its objections to Plaintiffs’ belated assertion of the new priority date and expressly reserves all rights to challenge this alleged new priority date.

knowledge to demonstrate what one of ordinary skill would have understood at any time prior to the date of alleged invention of the Asserted Claims.

B. Claim Charts

Pursuant to Section II, Paragraph 4 of the Order, the claim charts attached in Appendix A as Exhibits A-1 through A-20 identify where each limitation of the Asserted Claims of the '389 Patent is found in the prior art.

C. Identification of the Prior Art

Based on Plaintiffs' July 12, 2022 Preliminary Infringement Contentions, Defendant identifies prior art below and in Appendix A as Exhibits A-1 through A-20, which contains charts disclosing the identity of each item of prior art that anticipates each claim and/or renders it obvious. As shown in Appendix A as Exhibits A-1 through A-20 and below, Defendant has identified each prior art reference by its number, country of origin, author, and date of issue (where applicable). Defendant notes that it has applied the prior art in accordance with Plaintiffs' improper assertions of infringement and improper applications of the claims. Defendant does not agree with Plaintiffs' application of the claims and denies infringement.

Defendant further contends that all claims that are anticipated by a particular reference are also rendered obvious by that same reference alone, in combination with the other references, and/or in combination with the knowledge of a person of ordinary skill in the art. Defendant reserves the right to rely upon any combination of the charted prior art under 35 U.S.C. § 103, yet Defendant has also identified exemplary obviousness combination in Section III.E, *infra*.

'389 Patent Prior Art Patents/Patent Applications				
Ex. No.	**Patent / Publication No.**	**Country of Origin**	**Filing Date**	**Date of Issue / Publication**
Ex. A-1	U.S. Patent No. 7,865,956 ("Cambridge 956")	U.S.	Jun. 10, 2005	Jan. 4, 2011

’389 Patent Prior Art Patents/Patent Applications				
Ex. No.	**Patent / Publication No.**	**Country of Origin**	**Filing Date**	**Date of Issue / Publication**
Ex. A-2	U.S. Patent No. 7,603,711 (“Scheidell”)	U.S.	Oct. 30, 2003	Oct. 13, 2009
Ex. A-3	U.S. Patent No. 8,516,583 (“Thomas”)	U.S.	Mar. 31, 2005	Aug. 20, 2013
Ex. A-4	U.S. Patent No. 9,104,871 (“Tuvell 871”)	U.S.	Apr. 6, 2007	Aug. 11, 2015
Ex. A-5	U.S. Patent No. 6,973,577 (“Kouznetsov”)	U.S.	May 26, 2000	Dec. 6, 2005
Ex. A-6	U.S. Patent No. 7,080,000 (“Cambridge 000”)	U.S.	Jul. 23, 2001	Jul. 18, 2006
Ex. A-7	U.S. Patent No. 7,093,239 (“van der Made”)	U.S.	Aug. 18, 2000	Aug. 15, 2006
Ex. A-8	U.S. Patent No. 7,152,164 (“Loukas”)	U.S.	Nov. 26, 2001	Dec. 19, 2006
Ex. A-9	U.S. Patent No. 7,356,843 (“Kingsford”)	U.S.	Oct. 1, 2003	Apr. 8, 2008
Ex. A-10	U.S. Patent No. 7,694,150 (“Kirby”)	U.S.	Jun. 22, 2004	Apr. 6, 2010
Ex. A-11	U.S. Patent No. 7,934,103 (“Kidron”)	U.S.	Apr. 15, 2003	Apr. 26, 2011
Ex. A-12	U.S. Patent No. 7,434,261 (“Costea”)	U.S.	Sep. 27, 2004	Oct. 7, 2008
Ex. A-13	U.S. Patent Publication No. 2002/0078381 A1 (“Farley 381”)	U.S.	Jun. 6, 2001	Feb. 26, 2004
Ex. A-14	U.S. Patent Publication No. 2004/0039968 A1 (“Hatonen”)	U.S.	Jun. 6, 2001	Feb. 26, 2004
Ex. A-15	U.S. Patent Publication No. 2004/0143753 (“Hernacki”)	U.S.	Jan. 21, 2003	Jul. 22, 2004
Ex. A-16	U.S. Patent Publication No. 2004/0111632 A1 (“Halperin”)	U.S.	May 5, 2003	Jun. 10, 2004
Ex. A-17	U.S. Patent Publication No. 2005/0210035 (“Kester 035”)	U.S.	May 19, 2005	Sep. 22, 2005
Ex. A-18	U.S. Patent Publication No. 2005/0132205 A1 (“Palliyil”)	U.S.	Dec. 12, 2004	Jun. 16, 2005

’389 Patent Prior Art Patents/Patent Applications				
Ex. No.	**Patent / Publication No.**	**Country of Origin**	**Filing Date**	**Date of Issue / Publication**
Ex. A-19	U.S. Patent Publication No. 2005/0038818 A1 (“Hooks”)	U.S.	Aug. 11, 2004	Feb. 17, 2005

’389 Patent Prior Art Publications				
Ex. No.	**Title**	**Date of Publication**	**Author**	**Publisher**
Ex. A-20	Inoue, H., Forrest, S., Anomaly Intrusion Detection in Dynamic Execution Environments, In: Proc. of the 2002 Workshop on New Security Paradigms (NSPW), pp. 52–60 (2002) (“Inoue”)		Haijme Inoue & Stephanie Forrest	University of New Mexico

’389 Patent Additional Prior Art/Background Art
U.S. Patent No. 5,440,723 (“Arnold 723”)
U.S. Patent No. 6,195,587 (“Hruska”)
U.S. Patent No. 6,842,861 (“Cox”)
U.S. Patent No. 6,880,110 (“Largman”)
U.S. Patent No. 7,089,428 (“Farley 428”)
U.S. Patent No. 7,263,616 (“Brackett”)
U.S. Patent No. 7,424,609 (“Kwan”)
U.S. Patent No. 7,565,550 (“Liang”)
U.S. Patent No. 7,594,272 (“Kennedy”)
U.S. Patent No. 7,627,898 (“Beck”)
U.S. Patent No. 7,634,806 (“Zinda”)
U.S. Patent No. 7,900,194 (“Mankins”)
U.S. Patent No. 7,913,303 (“Rouland”)
U.S. Patent No. 8,458,797 (“Yu 797”)
U.S. Patent Application Publication No. US 2003/0172166 (“Judge”)
U.S. Patent Application Publication No. US 2004/0123145 (“Baffes”)

’389 Patent Additional Prior Art/Background Art
U.S. Patent Application Publication No. US 2006/0101520 (“Schumaker”)
U.S. Patent Application Publication No. US 2006/0293777 (“Breitgand”)
U.S. Patent Application Publication No. US 2007/0294768 (“Moskovitch 768”)
Australian Patent Publication No. AU 2001/262958 A1 (“Brass”)
Barry Nance, *Server-Based Java Security Products Help Guard Your Enterprise Flank*, NETWORK COMPUTING, Dec. 1, 1998, at 86. (“Nance”)
Andrew Conry-Murray, *Behavior-Blocking Stops Unknown Malicious Code*, NETWORK MAGAZINE, Jun. 5, 2002. (“Conry-Murray”)
SandBox Security’s Secure4U, http://www.sandboxsecurity.com/Products/index.htm (last visited Sep. 11, 2022). (“Sandbox Security”)
Stacy Bolton, *Global Information Assurance Certification Paper*, SANS INSTITUTE, Aug. 1, 2002. (“Bolton”)
PR Newswire, *Finjan Software and F-Secure to Deliver Proactive Content Security For Corporate PCs in New Era of Malicious Code*, PR NEWSWIRE ASSOCIATION LLC, Oct. 30, 2000. (“Finjan”)
Kelly Jackson Higgins, *Sandbox the Hackers*, INTERNETWEEK, http://www.internetweek.com/indepth01/indepth041701.htm. (“Higgins”)
SurfinGuard Pro 5.7, http://www.finjan.com/Products/HomeUsersSurfinGuardPro/default.asp (last visited September 11, 2022). (“SurfinGuard”)
Vincent Berk et al., *Designing a Framework for Active Worm Detection on Global Networks*, IEEE, Mar. 24, 2003. (“Berk”)
Okena StormWatch, *A New Approach To Intrusion Detection: Intrusion Prevention*, INTRUSION PREVENTION WHITE PAPER, 2002. (“Okena StormWatch”)
David Dagon et al., *HoneyStat: Local Worm Detection Using Honeypots*, RECENT ADANCES IN INTRUSION DETECTION, 2004. (“Dagon”)
Anton Chuvakin, *Security Event Analysis through Correlation*, 13, INFORMATION SYSTEMS SECURITY, 13, 2004. (“Chuvakin”)
Min Cai et al., *Collaborative Internet Worm Containment*, 3, IEEE, June 13, 2005 at 25. (“Cai”)
Christopher M. King, *Security Management: Making Sense Of Events*, BUSINESS COMMUNICATIONS REVIEW, Sep. 2001 at 32. (“King”)
Linda Leung, *Advanced Technologies Aim to Protect Network Asset*, PROFILING CYBERCRIME: NETWORK THREATS AND DEFENSE STRATEGIES, Nov. 29, 2004 at 56. (“Leung”)

’389 Patent Additional Prior Art/Background Art
neuSecure 3.0, www.guarded.net:80/neusecure3.0.html (last visited Sep. 11, 2022). (“neuSecure”)
Open Systems Security Threat Manager, www.open.com:80/products/products.shtml (last visited Sep. 11, 2022) (“Open”)

Furthermore, with respect to the ’389 Patent, under pre-AIA 35 U.S.C. § 102(f), Defendant identifies the activities of entities involved in computer security as referenced in foreign patent application GB 01513375.6, to which Plaintiffs claim priority. *See, e.g.*, GB 01513375.6 at 1-3.

Furthermore, with respect to the ’389 Patent, under pre-AIA 35 U.S.C. §§ 102(a), (b), and (g)(2), Defendant reserves the right to identify prior art systems developed prior to June 30, 2006. *See, e.g.*, *Intell. Ventures II LLC v. FedEx Corp.*, No. 2:16-CV-00980-JRG, 2019 WL 1434656, at *8-11 (E.D. Tex. Mar. 29, 2019). Discovery is ongoing, and Defendant reserves the right to amend the Invalidity Contentions herein based on third-party discovery obtained.

D. Anticipation

At least under Plaintiffs’ apparent infringement theory, the Asserted Claims of the ’389 Patent are anticipated, either expressly or inherently as understood by a person having ordinary skill in the art, by the references as set forth in the attached claim charts. At least under Plaintiffs’ apparent infringement theory, Asserted Claims 1-7 and 30 of the ’389 Patent are anticipated, either expressly or inherently as understood by a person having ordinary skill in the art, by Scheidell as set forth in the attached claim chart. At least under Plaintiffs’ apparent infringement theory, Asserted Claims 1-6 of the ’389 Patent are anticipated, either expressly or inherently as understood by a person having ordinary skill in the art, by Cambridge 956 as set forth in the attached claim chart. At least under Plaintiffs’ apparent infringement theory, Asserted Claims 1-5 and 8 of the ’389 Patent are anticipated, either expressly or inherently as understood by a person having

ordinary skill in the art, by Thomas as set forth in the attached claim chart. At least under Plaintiffs' apparent infringement theory, Asserted Claims 1-5, 9-14, and 30 of the '389 Patent are anticipated, either expressly or inherently as understood by a person having ordinary skill in the art, by Tuvell 871 as set forth in the attached claim chart. At least under Plaintiffs' apparent infringement theory, Asserted Claims 1-7, 9, 11, 14, and 30 of the '389 Patent are anticipated, either expressly or inherently as understood by a person having ordinary skill in the art, by Halperin and Kirby as set forth in the attached claim chart. At least under Plaintiffs' apparent infringement theory, Asserted Claims 1-7, 9, 11-14, and 30 of the '389 Patent are anticipated, either expressly or inherently as understood by a person having ordinary skill in the art, by Hernacki as set forth in the attached claim chart. At least under Plaintiffs' apparent infringement theory, Asserted Claims 1-7, 9-11, 13-14, and 30 of the '389 Patent are anticipated, either expressly or inherently as understood by a person having ordinary skill in the art, by Loukas as set forth in the attached claim chart. At least under Plaintiffs' apparent infringement theory, Asserted Claims 1, 14, and 30 of the '389 Patent are anticipated, either expressly or inherently as understood by a person having ordinary skill in the art, by van der Made as set forth in the attached claim chart. At least under Plaintiffs' apparent infringement theory, Asserted Claims 1-2 and 4-6 of the '389 Patent are anticipated, either expressly or inherently as understood by a person having ordinary skill in the art, by Farley 381 as set forth in the attached claim chart. At least under Plaintiffs' apparent infringement theory, Asserted Claims 1-3, 5-7, 9, 11, 14, and 30 of the '389 Patent are anticipated, either expressly or inherently as understood by a person having ordinary skill in the art, by Palliyil as set forth in the attached claim chart. At least under Plaintiffs' apparent infringement theory, Asserted Claims 1-2, 6, 9, 11, 14, and 30 of the '389 Patent are anticipated, either expressly or inherently as understood by a person having ordinary skill in the art, by Inoue as set forth in the attached claim chart. At

least under Plaintiffs' apparent infringement theory, Asserted Claims 1-3, 6-7, and 9-11 of the '389 Patent are anticipated, either expressly or inherently as understood by a person having ordinary skill in the art, by Kingsford as set forth in the attached claim chart.

E. Obviousness

At least under Plaintiffs' apparent infringement theory, the Asserted Claims of the '389 Patent are rendered obvious by the references identified in the attached claim charts, either alone or in the combinations with other prior art references as identified below. Defendant contends that one of ordinary skill in the art, at the time of the alleged invention of the Asserted '389 Patent Claims, would have been motivated to combine the references disclosed herein in such a way to reach the alleged inventions. In certain instances, the suggested obviousness combinations are provided in the alternative to Defendant's anticipation contentions, which shall not be construed to suggest that any reference included in the combinations is not by itself anticipatory. The combinations evidencing teachings, suggestions, and/or motivations to combine the prior-art references in a way that renders the Asserted Claims obvious are merely exemplary.

Primary Reference	In Combination With
Halperin	Cambridge 000
Halperin	Cambridge 956
Halperin	Costea
Halperin	Farley 381
Halperin	Hatonen
Halperin	Hooks
Halperin	Hernacki
Halperin	Inoue

Primary Reference	In Combination With
Halperin	Kirby
Halperin	Kester 035
Halperin	Kouznetsov
Halperin	Kingsford
Halperin	Kidron
Halperin	Loukas
Halperin	Palliyil
Halperin	Scheidell
Halperin	Thomas
Halperin	Tuvell 871
Halperin	van der Made
Kester 035	Cambridge 956
Kester 035	Cambridge 000
Kester 035	Costea
Kester 035	Farley 381
Kester 035	Halperin
Kester 035	Hatonen
Kester 035	Hooks
Kester 035	Inoue
Kester 035	Kirby
Kester 035	Kouznetsov
Kester 035	Kingsford
Kester 035	Kidron

Primary Reference	In Combination With
Kester 035	Loukas
Kester 035	Palliyil
Kester 035	Scheidell
Kester 035	Thomas
Kester 035	Tuvell 871
Kester 035	van der Made
Hernacki	Cambridge 000
Hernacki	Cambridge 956
Hernacki	Costea
Hernacki	Farley 381
Hernacki	Halperin
Hernacki	Hatonen
Hernacki	Hooks
Hernacki	Inoue
Hernacki	Kirby
Hernacki	Kester 035
Hernacki	Kingsford
Hernacki	Kidron
Hernacki	Loukas
Hernacki	Palliyil
Hernacki	Scheidell
Hernacki	Thomas
Hernacki	Tuvell 871

Primary Reference	In Combination With
Hernacki	van der Made
Palliyil	Cambridge 956
Palliyil	Cambridge 000
Palliyil	Costea
Palliyil	Farley 381
Palliyil	Halperin
Palliyil	Hatonen
Palliyil	Hooks
Palliyil	Hernacki
Palliyil	Inoue
Palliyil	Kirby
Palliyil	Kester 035
Palliyil	Kouznetsov
Palliyil	Kingsford
Palliyil	Kidron
Palliyil	Loukas
Palliyil	Scheidell
Palliyil	Thomas
Palliyil	Tuvell 871
Palliyil	van der Made
Thomas	Cambridge 000
Thomas	Cambridge 956
Thomas	Costea

Primary Reference	In Combination With
Thomas	Farley 381
Thomas	Halperin
Thomas	Hatonen
Thomas	Hooks
Thomas	Hernacki
Thomas	Inoue
Thomas	Kirby
Thomas	Kester 035
Thomas	Kouznetsov
Thomas	Kingsford
Thomas	Kidron
Thomas	Loukas
Thomas	Palliyil
Thomas	Scheidell
Thomas	Tuvell 871
Thomas	van der Made
Kirby	Cambridge 000
Kirby	Cambridge 956
Kirby	Costea
Kirby	Farley 381
Kirby	Halperin
Kirby	Hatonen
Kirby	Hooks

Primary Reference	In Combination With
Kirby	Hernacki
Kirby	Inoue
Kirby	Kester 035
Kirby	Kouznetsov
Kirby	Kingsford
Kirby	Kidron
Kirby	Loukas
Kirby	Palliyil
Kirby	Scheidell
Kirby	Thomas
Kirby	Tuvell 871
Kirby	van der Made
Loukas	Cambridge 956
Loukas	Cambridge 000
Loukas	Costea
Loukas	Farley 381
Loukas	Halperin
Loukas	Hatonen
Loukas	Hooks
Loukas	Hernacki
Loukas	Inoue
Loukas	Kirby
Loukas	Kester 035

Primary Reference	In Combination With
Loukas	Kouznetsov
Loukas	Kingsford
Loukas	Kidron
Loukas	Palliyil
Loukas	Scheidell
Loukas	Thomas
Loukas	Tuvell 871
Loukas	van der Made
Farley 381	Cambridge 956
Farley 381	Cambridge 000
Farley 381	Costea
Farley 381	Halperin
Farley 381	Hatonen
Farley 381	Hooks
Farley 381	Hernacki
Farley 381	Inoue
Farley 381	Kirby
Farley 381	Kester 035
Farley 381	Kouznetsov
Farley 381	Kingsford
Farley 381	Kidron
Farley 381	Loukas
Farley 381	Palliyil

Primary Reference	In Combination With
Farley 381	Scheidell
Farley 381	Thomas
Farley 381	Tuvell 871
Farley 381	van der Made
Kidron	Cambridge 956
Kidron	Cambridge 000
Kidron	Costea
Kidron	Farley 381
Kidron	Halperin
Kidron	Hatonen
Kidron	Hooks
Kidron	Hernacki
Kidron	Inoue
Kidron	Kirby
Kidron	Kester 035
Kidron	Kouznetsov
Kidron	Kingsford
Kidron	Loukas
Kidron	Palliyil
Kidron	Scheidell
Kidron	Thomas
Kidron	Tuvell 871
Kidron	van der Made

Primary Reference	In Combination With
Hooks	Cambridge 956
Hooks	Cambridge 000
Hooks	Costea
Hooks	Farley 381
Hooks	Halperin
Hooks	Hatonen
Hooks	Hernacki
Hooks	Inoue
Hooks	Kirby
Hooks	Kester 035
Hooks	Kouznetsov
Hooks	Kingsford
Hooks	Kidron
Hooks	Loukas
Hooks	Palliyil
Hooks	Scheidell
Hooks	Thomas
Hooks	Tuvell 871
Hooks	van der Made
Scheidell	Cambridge 956
Scheidell	Cambridge 000
Scheidell	Costea
Scheidell	Farley 381

Primary Reference	In Combination With
Scheidell	Halperin
Scheidell	Hatonen
Scheidell	Hooks
Scheidell	Hernacki
Scheidell	Inoue
Scheidell	Kirby
Scheidell	Kester 035
Scheidell	Kouznetsov
Scheidell	Kingsford
Scheidell	Kidron
Scheidell	Loukas
Scheidell	Palliyil
Scheidell	Thomas
Scheidell	Tuvell 871
Scheidell	van der Made
Cambridge 956	Cambridge 000
Cambridge 956	Costea
Cambridge 956	Farley 381
Cambridge 956	Halperin
Cambridge 956	Hatonen
Cambridge 956	Hooks
Cambridge 956	Hernacki
Cambridge 956	Inoue

Primary Reference	In Combination With
Cambridge 956	Kirby
Cambridge 956	Kester 035
Cambridge 956	Kouznetsov
Cambridge 956	Kingsford
Cambridge 956	Kidron
Cambridge 956	Loukas
Cambridge 956	Palliyil
Cambridge 956	Scheidell
Cambridge 956	Thomas
Cambridge 956	Tuvell 871
Cambridge 956	van der Made
Tuvell 871	Cambridge 000
Tuvell 871	Cambridge 956
Tuvell 871	Costea
Tuvell 871	Farley 381
Tuvell 871	Halperin
Tuvell 871	Hatonen
Tuvell 871	Hooks
Tuvell 871	Hernacki
Tuvell 871	Inoue
Tuvell 871	Kirby
Tuvell 871	Kester 035
Tuvell 871	Kouznetsov

Primary Reference	In Combination With
Tuvell 871	Kingsford
Tuvell 871	Kidron
Tuvell 871	Loukas
Tuvell 871	Palliyil
Tuvell 871	Scheidell
Tuvell 871	Thomas
Tuvell 871	van der Made
van der Made	Cambridge 000
van der Made	Cambridge 956
van der Made	Costea
van der Made	Farley 381
van der Made	Halperin
van der Made	Hatonen
van der Made	Hooks
van der Made	Hernacki
van der Made	Inoue
van der Made	Kirby
van der Made	Kester 035
van der Made	Kouznetsov
van der Made	Kingsford
van der Made	Kidron
van der Made	Loukas
van der Made	Palliyil

Primary Reference	In Combination With
van der Made	Scheidell
van der Made	Thomas
van der Made	Tuvell 871
Inoue	Cambridge 956
Inoue	Cambridge 000
Inoue	Costea
Inoue	Farley 381
Inoue	Halperin
Inoue	Hatonen
Inoue	Hooks
Inoue	Hernacki
Inoue	Kirby
Inoue	Kester 035
Inoue	Kouznetsov
Inoue	Kingsford
Inoue	Kidron
Inoue	Loukas
Inoue	Palliyil
Inoue	Scheidell
Inoue	Thomas
Inoue	Tuvell 871
Inoue	van der Made
Kingsford	Cambridge 956

Primary Reference	In Combination With
Kingsford	Cambridge 000
Kingsford	Costea
Kingsford	Farley 381
Kingsford	Halperin
Kingsford	Hatonen
Kingsford	Hooks
Kingsford	Hernacki
Kingsford	Inoue
Kingsford	Kirby
Kingsford	Kester 035
Kingsford	Kouznetsov
Kingsford	Kidron
Kingsford	Loukas
Kingsford	Palliyil
Kingsford	Scheidell
Kingsford	Thomas
Kingsford	Tuvell 871
Kingsford	van der Made
Halperin	Scheidell + Hooks
Halperin	Scheidell + Palliyil
Halperin	Scheidell + Kidron
Halperin	Scheidell + Kirby
Halperin	Scheidell + Cambridge 956

Primary Reference	In Combination With
Halperin	Scheidell + Thomas
Halperin	Scheidell + Tuvell 871
Halperin	Scheidell + Kester 035
Halperin	Scheidell + Hernacki
Halperin	Scheidell + Loukas
Halperin	Scheidell + van der Made
Halperin	Scheidell + Hatonen
Halperin	Scheidell + Cambridge 000
Halperin	Cambridge 956 + Tuvell 871
Halperin	Cambridge 956 + Kester 035
Halperin	Cambridge 956 + Hernacki
Halperin	Cambridge 956 + Loukas
Halperin	Cambridge 956 + van der Made
Halperin	Cambridge 956 + Hooks
Halperin	Cambridge 956 + Kouznetsov
Halperin	Cambridge 956 + Farley 381
Halperin	Cambridge 956 + Cambridge 000
Halperin	Cambridge 956 + Thomas
Halperin	Thomas + Hernacki
Halperin	Thomas + Tuvell 871
Halperin	Thomas + Loukas
Halperin	Thomas + Kester 035
Halperin	Tuvell 871 + Loukas

Primary Reference	In Combination With
Halperin	Tuvell 871 + Kester 035
Halperin	Tuvell 871 + van der Made
Halperin	Tuvell 871 + Hernacki
Halperin	Tuvell 871 + Hooks
Halperin	Tuvell 871 + Kouznetsov
Halperin	Tuvell 871 + Farley 381
Halperin	Tuvell 871 + Cambridge 000
Halperin	Tuvell 871 + Hatonen
Halperin	Kester 035 + Hernacki
Halperin	Kester 035 + Loukas
Halperin	Kester 035 + van der Made
Halperin	Kester 035 + Hooks
Halperin	Kester 035 + Kouznetsov
Halperin	Kester 035 + Cambridge 000
Halperin	Hernacki + Loukas
Halperin	Hernacki + van der Made
Halperin	Hernacki + Hooks
Halperin	Hernacki + Kouznetsov
Halperin	Hernacki + Loukas
Halperin	Kirby + van der Made
Halperin	Kirby + Hatonen
Halperin	Kirby + Kouznetsov
Halperin	Kirby + Inoue

Primary Reference	In Combination With
Halperin	Loukas + van der Made
Halperin	Loukas + Hooks
Halperin	Loukas + Kouznetsov
Halperin	Loukas + Farley 381
Halperin	Loukas + Cambridge 000
Halperin	Loukas + Kingsford
Halperin	Loukas + Hatonen
Halperin	van der Made + Hooks
Halperin	van der Made + Kouznetsov
Halperin	van der Made + Hatonen
Halperin	van der Made + Inoue
Halperin	van der Made + Cambridge 000
Halperin	Hooks + Palliyil
Halperin	Hooks + Kidron
Halperin	Hooks + Kouznetsov
Halperin	Farley 381 + Cambridge 000
Halperin	Palliyil + Kidron
Halperin	Hatonen + Cambridge 000
Halperin	Hatonen + Inoue
Halperin	Hatonen + Kouznetsov
Halperin	Kouznetsov + Inoue
Kester 035	Cambridge 956 + Thomas
Kester 035	Cambridge 956 + Hernacki

Primary Reference	In Combination With
Kester 035	Cambridge 956 + Hooks
Kester 035	Cambridge 956 + Tuvell 871
Kester 035	Cambridge 956 + Kirby
Kester 035	Cambridge 956 + van der Made
Kester 035	Cambridge 956 + Hatonen
Kester 035	Kirby + van der Made
Kester 035	Kirby + Hatonen
Kester 035	Kirby + Kouznetsov
Kester 035	Kirby + Inoue
Kester 035	Kirby + Hooks
Kester 035	van der Made + Hatonen
Kester 035	van der Made + Kouznetsov
Kester 035	van der Made + Inoue
Kester 035	Hatonen + Kouznetsov
Kester 035	Hatonen + Inoue
Kester 035	Kouznetsov + Inoue
Kester 035	Loukas + Hooks
Kester 035	Loukas + Kingsford
Kester 035	Loukas + Tuvell 871
Kester 035	Loukas + Scheidell
Kester 035	Tuvell 871 + Hooks
Kester 035	Tuvell 871 + Hernacki
Kester 035	Tuvell 871 + Thomas

Primary Reference	In Combination With
Kester 035	Scheidell + Kirby
Kester 035	Scheidell + Hooks
Kester 035	Scheidell + Halperin
Kester 035	Scheidell + Hernacki
Kester 035	Scheidell + Palliyil
Kester 035	Scheidell + Inoue
Kester 035	Scheidell + Kidron
Kester 035	Scheidell + Cambridge 000
Kester 035	Scheidell + Costea
Kester 035	Scheidell + Thomas
Kester 035	Scheidell + Farley 381
Kester 035	Halperin + Hernacki
Kester 035	Halperin + Kirby
Kester 035	Halperin + Loukas
Kester 035	Halperin + Farley 381
Kester 035	Halperin + Palliyil
Kester 035	Halperin + Kidron
Kester 035	Halperin + Kingsford
Kester 035	Halperin + Costea
Kester 035	Halperin + Inoue
Kester 035	Halperin + Cambridge 000
Kester 035	Halperin + Hooks
Kester 035	Hernacki + Kirby

Primary Reference	In Combination With
Kester 035	Hernacki + Loukas
Kester 035	Hernacki + Farley
Kester 035	Hernacki + Palliyil
Kester 035	Hernacki + Kidron
Kester 035	Hernacki + Kingsford
Kester 035	Hernacki + Costea
Kester 035	Kirby + Loukas
Kester 035	Kirby + Farley 381
Kester 035	Kirby + Palliyil
Kester 035	Kirby + Kidron
Kester 035	Kirby + Kingsford
Kester 035	Kirby + Costea
Kester 035	Loukas + Farley 381
Kester 035	Loukas + Palliyil
Kester 035	Loukas + Kidron
Kester 035	Loukas + Inoue
Kester 035	Loukas + Costea
Kester 035	Loukas + Cambridge 000
Kester 035	Farley 381 + Palliyil
Kester 035	Farley 381 + Kidron
Kester 035	Farley 381 + Kingsford
Kester 035	Farley 381 + Costea
Kester 035	Palliyil + Kidron

Primary Reference	In Combination With
Kester 035	Palliyil + Kingsford
Kester 035	Palliyil + Costea
Kester 035	Palliyil + Inoue
Kester 035	Palliyil + Cambridge 000
Kester 035	Kidron + Kingsford
Kester 035	Kidron + Costea
Kester 035	Kidron + Cambridge 000
Kester 035	Kingsford + Costea
Kester 035	Hooks + Palliyil
Kester 035	Hooks + Kidron
Kester 035	Hooks + Palliyil
Kester 035	Hooks + Cambridge 000
Kester 035	Hooks + Costea
Kester 035	Hooks + Inoue
Kester 035	Hooks + Loukas
Thomas	Halperin + Kirby
Thomas	Halperin + Hooks
Thomas	Hernacki + Kirby
Thomas	Hernacki + Hooks
Thomas	Tuvell 871 + Cambridge 956
Thomas	Loukas + Hernacki
Thomas	Loukas + Hooks
Thomas	Hooks + Tuvell 871

Primary Reference	In Combination With
Thomas	Hooks + Cambridge 956
Thomas	Tuvell 871 + Halperin
Thomas	Tuvell 871 + Kester 035
Thomas	Tuvell 871 + Hernacki
Thomas	Tuvell 871 + Loukas
Thomas	Tuvell 871 + Palliyil
Thomas	Tuvell 871 + Kidron
Thomas	Halperin + Kester 035
Thomas	Halperin + Hernacki
Thomas	Halperin + Loukas
Thomas	Halperin + Palliyil
Thomas	Halperin + Kidron
Thomas	Kester 035 + Hernacki
Thomas	Kester 035 + Loukas
Thomas	Kester 035 + Hooks
Thomas	Kester 035 + Palliyil
Thomas	Kester 035 + Kidron
Thomas	Hernacki + Palliyil
Thomas	Hernacki + Kidron
Thomas	Loukas + Palliyil
Thomas	Loukas + Kidron
Thomas	Hooks + Kidron
Thomas	Hooks + Palliyil

Primary Reference	In Combination With
Thomas	Palliyil + Kidron
Hernacki	Kidron + Kirby
Hernacki	Halperin + Kirby
Hernacki	Halperin + Kidron
Hernacki	Kidron + Palliyil
Hernacki	Tuvell 871 + Cambridge 956
Hernacki	Tuvell 871 + Thomas
Hernacki	Thomas + Cambridge 956
Hernacki	Loukas + Thomas
Hernacki	Loukas + Hooks
Hernacki	Hooks + Tuvell 871
Hernacki	Hooks + Thomas
Hernacki	Hooks + Cambridge 956
Kirby	Thomas + Loukas
Kirby	Cambridge 956 + Loukas
Kirby	Loukas + Inoue
Kirby	Loukas + Kouznetsov
Kirby	van der Made + Inoue
Kirby	Thomas + Kingsford
Kirby	Cambridge 956 + Kingsford
Kirby	Kingsford + Inoue
Kirby	Kingsford + Kouznetsov
Kirby	Scheidell + Costea

Primary Reference	In Combination With
Kirby	Tuvell 871 + Cambridge 956
Kirby	Tuvell 871 + Thomas
Kirby	Thomas + Cambridge 956
Kirby	Loukas + Hernacki
Kirby	Loukas + Hooks
Kirby	Hooks + Tuvell 871
Kirby	Hooks + Thomas
Kirby	Hooks + Cambridge 956
Hooks	Tuvell 871 + Cambridge 956
Hooks	Tuvell 871 + Thomas
Hooks	Thomas + Cambridge 956
Hooks	Loukas + Hernacki
Hooks	Loukas + Thomas
Hooks	Kester 035 + Hernacki
Hooks	Kester 035 + Kirby
Hooks	Kester 035 + Loukas
Hooks	Kester 035 + Farley 381
Hooks	Kester 035 + Palliyil
Hooks	Kester 035 + Kidron
Hooks	Kester 035 + Kingsford
Hooks	Kester 035 + Costea
Hooks	Farley 381 + Halperin
Hooks	Farley 381 + Hernacki

Primary Reference	In Combination With
Hooks	Farley 381 + Kirby
Hooks	Farley 381 + Loukas
Hooks	Farley 381 + Palliyil
Hooks	Palliyil + Cambridge 956
Hooks	Hernacki + Palliyil
Hooks	Palliyil + Kidron
Hooks	Palliyil + Hatonen
Hooks	Palliyil + Thomas
Hooks	Hatonen + Loukas
Hooks	Hatonen + Kirby
Hooks	Hatonen + Hernacki
Hooks	Hatonen + Halperin
Hooks	Hatonen + Kingsford
Hooks	Hatonen + Costea
Hooks	Inoue + Cambridge 000
Hooks	Inoue + Loukas
Hooks	Inoue + Kirby
Hooks	Inoue + Hernacki
Hooks	Inoue + Halperin
Hooks	Inoue + Kester 035
Hooks	Kidron + Scheidell
Hooks	Kidron + Thomas
Hooks	Kidron + Tuvell 871

Primary Reference	In Combination With
Hooks	Kidron + Hernacki
Hooks	Kidron + Kirby
Hooks	Kidron + Loukas
Hooks	Kidron + Cambridge 000
Hooks	Kidron + Kingsford
Farley 381	Tuvell 871 + Cambridge 956
Farley 381	Tuvell 871 + Thomas
Farley 381	Thomas + Cambridge 956
Farley 381	Loukas + Hernacki
Farley 381	Loukas + Hooks
Farley 381	Loukas + Thomas
Farley 381	Hooks + Tuvell 871
Farley 381	Hooks + Thomas
Farley 381	Hooks + Cambridge 956
Farley 381	Thomas + Kester 035
Farley 381	Thomas + Hernacki
Farley 381	Thomas + Inoue
Farley 381	Thomas + Cambridge 000
Farley 381	Thomas + Costea
Farley 381	Hernacki + Scheidell
Farley 381	Hernacki + Tuvell 871
Farley 381	Hernacki + Halperin
Farley 381	Hernacki + Kirby

Primary Reference	In Combination With
Farley 381	Hernacki + van der Made
Farley 381	Hernacki + Palliyil
Farley 381	Hernacki + Inoue
Farley 381	Hernacki + Kidron
Farley 381	Hernacki + Costea
Farley 381	Kingsford + Scheidell
Farley 381	Kingsford + Thomas
Farley 381	Kingsford + Tuvell 871
Farley 381	Kingsford + Halperin
Farley 381	Kingsford + Kirby
Farley 381	Kingsford + Loukas
Farley 381	Kingsford + van der Made
Farley 381	Kingsford + Inoue
Farley 381	Kingsford + Palliyil
Farley 381	Kingsford + Kidron
Farley 381	Kingsford + Costea
Farley 381	Inoue + Cambridge 956
Farley 381	Inoue + Palliyil
Farley 381	Tuvell 871 + Halperin
Farley 381	Tuvell 871 + Kester 035
Farley 381	Tuvell 871 + Palliyil
Farley 381	Tuvell 871 + Kidron
Farley 381	Halperin + Hooks

Primary Reference	In Combination With
Farley 381	Halperin + Loukas
Farley 381	Halperin + Kester 035
Farley 381	Halperin + Palliyil
Farley 381	Halperin + Kidron
Farley 381	Kester 035 + Hernacki
Farley 381	Kester 035 + Loukas
Farley 381	Kester 035 + Hooks
Farley 381	Kester 035 + Palliyil
Farley 381	Kester 035 + Kidron
Farley 381	Hernacki + Hooks
Farley 381	Loukas + Palliyil
Farley 381	Loukas + Kidron
Farley 381	Kidron + Palliyil
Palliyil	Tuvell 871 + Cambridge 956
Palliyil	Tuvell 871 + Thomas
Palliyil	Thomas + Cambridge 956
Palliyil	Loukas + Hernacki
Palliyil	Loukas + Hooks
Palliyil	Loukas + Thomas
Palliyil	Hooks + Tuvell 871
Palliyil	Hooks + Thomas
Palliyil	Hooks + Cambridge 956
Palliyil	Cambridge 956+ Loukas

Primary Reference	In Combination With
Palliyil	Cambridge 956 + Kouznetsov
Palliyil	Tuvell 871 + Halperin
Palliyil	Tuvell 871 + Kester 035
Palliyil	Tuvell 871 + Hernacki
Palliyil	Tuvell 871 + Loukas
Palliyil	Tuvell 871 + Kidron
Palliyil	Halperin + Kester 035
Palliyil	Halperin + Hernacki
Palliyil	Halperin + Loukas
Palliyil	Halperin + Hooks
Palliyil	Halperin + Kidron
Palliyil	Kester 035 + Hernacki
Palliyil	Kester 035 + Loukas
Palliyil	Kester 035 + Hooks
Palliyil	Kester 035 + Kidron
Palliyil	Hernacki + Hooks
Palliyil	Hernacki + Kidron
Palliyil	Loukas + Kidron
Palliyil	Hooks + Kidron
Kidron	Thomas + Halperin
Kidron	Thomas + Kester 035
Kidron	Thomas + Hernacki
Kidron	Thomas + Kirby

Primary Reference	In Combination With
Kidron	Thomas + Loukas
Kidron	Thomas + Scheidell
Kidron	Hooks + Thomas
Kidron	Palliyil + Thomas
Kidron	Inoue + Thomas
Kidron	Thomas + Cambridge 956
Kidron	Kingsford + Thomas
Kidron	Thomas + Costea
Kidron	Kester 035 + Farley 381
Kidron	Kester 035 + Palliyil
Kidron	Tuvell 871 + Cambridge 956
Kidron	Tuvell 871 + Thomas
Kidron	Loukas + Hernacki
Kidron	Loukas + Hooks
Kidron	Hooks + Tuvell 871
Kidron	Hooks + Cambridge 956
Kidron	Tuvell 871 + Halperin
Kidron	Tuvell 871 + Kester 035
Kidron	Tuvell 871 + Hernacki
Kidron	Tuvell 871 + Loukas
Kidron	Tuvell 871 + Palliyil
Kidron	Halperin + Kester 035
Kidron	Halperin + Hernacki

Primary Reference	In Combination With
Kidron	Halperin + Loukas
Kidron	Halperin + Hooks
Kidron	Halperin + Palliyil
Kidron	Kester 035 + Hernacki
Kidron	Kester 035 + Loukas
Kidron	Kester 035 + Hooks
Kidron	Loukas + Palliyil
Kidron	Hooks + Palliyil

One of ordinary skill in the art would be motivated to combine these references in the above combinations for at least the following reasons. One of ordinary skill in the art would have understood that each of these references are in the same field of endeavor, namely methods and devices relating to computer security. *See, e.g.*, Cambridge 956 at Abstract; Scheidell at Abstract; Thomas at Abstract; Tuvell 871 at Abstract; van der Made at Abstract; Loukas at 1:42-62; Kirby at 2:21-42; Kester 035 at [0003]; Hernacki at [Abstract]; Halperin at Abstract; Cambridge 000 at 5:22-24; Costea at 8:15-26; Hooks at [0094]; Farley 381 at [0016]; Palliyil at [0009]; Hatonen at [0012]; Kouznetsov at 2:32-41; Inoue at [Page 52; Abstract]; Kidron at 1:16-19; and Kingsford at 2:8-11.

One of ordinary skill in the art would have recognized that these references are directed to addressing the same problem, in particular, improving computer security. *See, e.g.*, Cambridge 956 at Abstract; Scheidell at Abstract; Thomas at 3:44-49; Tuvell 871 at 4:29-37; van der Made at 1:15-18; Loukas at 1:42-62; Kirby at 2:56-3:6; Kester 035 at [0003]; Hernacki at [0051]; Halperin at Abstract; Cambridge 000 at 5:22-24; Costea at 8:15-26; Hooks at [0094]; Farley 381 at [0016];

Palliyil at [0009]; Hatonen at [0012]; Kouznetsov at 2:32-41; Inoue at [Page 52; Abstract]; Kidron at 1:16-19; and Kingsford at 2:8-11.

Further, the Asserted Claims of the '389 Patent contain merely a duplication of concepts known in the prior art and have no patentable significance given that no unexpected results occur—*i.e.* the patentee merely combines known prior art elements according to known methods to yield predictable results. For example, the prior art references describe a "method of classifying a computer object as malware" *See, e.g.*, Cambridge 956 at Abstract; Scheidell at Abstract; Thomas at Abstract; Tuvell 871 at Abstract; van der Made at Abstract; Loukas at 1:42-62; Kirby at 2:21-42; Kester 035 at [0003]; Hernacki at [Abstract]; Halperin at Abstract; Cambridge 000 at 5:22-24; Costea at 8:15-26; Hooks at [0094]; Farley 381 at [0016]; Palliyil at [0009]; Hatonen at [0012]; Kouznetsov at 2:32-41; Inoue at [Page 52; Abstract]; Kidron at 1:16-19; and Kingsford at 2:8-11.

The prior art references further describe "at a base computer, receiving data about a computer object from a first remote computer on which the computer object or similar computer objects are stored, wherein said data includes information about events initiated or involving the computer object when the computer object is created, configured or runs on the first remote computer, said information including at least an identity of an object initiating the event, the event type, and an identity of an object or other entity on which the event is being performed." *See, e.g.*, Cambridge 956 at 11:45-55; Scheidell at 4:64-5:13; Thomas at 7:36-51; Tuvell 871 at 34:65-35:20; van der Made at 5:16-26; Loukas at Claim 1; Kirby at 9:37-53; Kester 035 at [0076]; Hernacki at [0003]; Halperin at [0061]; Cambridge 000 at 4:4-14; Costea at 3:8-14; Hooks at [0017]; Farley 381 at [0066]; Palliyil at [0013]; Hatonen at [0043]; Kouznetsov at 2:32-41; Inoue at [Page 58; Paragraph 6]; Kidron at 3:27-40; and Kingsford at 2:42-45.

The prior art references further describe "at the base computer, receiving data about the computer object from a second remote computer on which the computer object or similar computer objects are stored, wherein said data includes information about events initiated or involving the computer object when the computer object is created, configured, or runs on the second remote computer, said information including at least an identity of an object initiating the event, the event type, and an identity of an object or other entity on which the event is being performed." *See, e.g.*, Cambridge 956 at 11:45-55; Scheidell at 4:64-5:13; Thomas at 7:36-51; Tuvell 871 at 34:65-35:20; van der Made at 5:16-26; Loukas at Claim 1; Kirby at 9:37-53; Kester 035 at [0076]; Hernacki at [0003]; Halperin at [0061]; Cambridge 000 at 4:4-14; Costea at 3:8-14; Hooks at [0017]; Farley 381 at [0066]; Palliyil at [0013]; Hatonen at [0043]; Kouznetsov at 2:32-41; Inoue at [Page 58; Paragraph 6]; Kidron at 3:27-40; and Kingsford at 2:42-45.

The prior art references further describe "storing, at the base computer, said data received from the first and second remote computers." *See, e.g.*, Cambridge 956 at 6:28-38; Scheidell at 4:64-5:13; Thomas at 9:62-10:7; Tuvell 871 at 15:19-31; van der Made at 3:61-4:3; Loukas at 8:49-61; Kirby at 9:54-10:12; Kester 035 at [0076]; Hernacki at [0003]; Halperin at [0088]; Cambridge 000 at 3:60-67; Costea at 5:52-59; Hooks at [0085]; Farley 381 at [0066]; Palliyil at [0013]; Hatonen at [0043]; Kouznetsov at 4:59-5:3; Inoue at [Page 54; Paragraph 13 – Page 55; Paragraph 1]; Kidron at 8:35-42; and Kingsford at 2:32-41.

The prior art references further describe "correlating, by the base computer, at least a portion of the data about the computer object received from the first remote computer to at least a portion of the data about the computer object received from the second remote computer." *See, e.g.*, Cambridge 956 at 8:7-8:15; Scheidell 4:3-18; Thomas at 8:46-9:4; Tuvell 871 at 2:64-3:12; van der Made at 3:54-4:7; Loukas at 6:54-61; Kirby at 7:45-62; Kester 035 at [0070]; Hernacki at

[0025]; Halperin at [0047]; Cambridge 000 at 8:1-4; Costea at 8:15-26; Hooks at [0134]; Farley 381 at [0019]; Palliyil at [0046]; Hatonen at [0043]; Kouznetsov at 2:32-41; Inoue at [Page 56; Paragraph 6]; Kidron at 3:27-40; and Kingsford at 2:53-60.

The prior art references further describe "comparing, by the base computer, the correlated data about the computer object received from the first and second remote computers to other objects or entities to identify relationships between the correlated data and the other objects or entities." *See, e.g.*, Cambridge 956 at 8:7-8:15; Scheidell 4:3-18; Thomas at 8:46-9:4; Tuvell 871 at 2:64-3:12; van der Made at 3:54-4:7; Loukas at 6:54-61; Kirby at 7:45-62; Kester 035 at [0070]; Hernacki at [0025]; Halperin at [0047]; Cambridge 000 at 3:60-67; Costea at 5:11-14; Hooks at [0093]; Farley 381 at [0155]; Palliyil at [0009]; Hatonen at [0043]; Kouznetsov at 2:32-41; Inoue at [Page 56; Paragraph 6]; Kidron at 3:27-40; and Kingsford at 3:19-22..

The prior art references further describe "classifying, by the base computer, the computer object as malware on the basis of said comparison." *See, e.g.*, Cambridge 956 at 9:22-32; Scheidell 4:3-18; Thomas at 8:46-9:4; Tuvell 871 at 2:64-3:12; van der Made at 3:54-4:7; Loukas at 6:54-61; Kirby at 4:17-34; Kester 035 at [0076]; Hernacki at [0021]; Halperin at [0037]; Cambridge 000 at 5:22-24; Costea at 6:47-64; Hooks at [0094]; Farley 381 at [0126]; Palliyil at [0013]; Hatonen at [0043]; Kouznetsov at 2:32-41; Inoue at [Page 54; Paragraph 1]; Kidron at 8:5-15; and Kingsford at 3:30-31.

Other examples of these concepts are cited in the attached charts for the above references. *See* Exs. A-1–A-20. It would have been known and simple to take a prior art for malware detection by comparison with similar objects, and it would have been obvious to a POSITA to try this. *Id.* It would have also yielded predictable results in the context of improving computer security. *Id.*

Defendant is not aware of any secondary considerations supporting non-obviousness of the ’389 Patent claims. To the extent Plaintiffs seek to introduce any alleged secondary considerations in the future, Defendant reserves the right to respond at that time.

Defendant is not aware of any secondary considerations supporting non-obviousness of the ’389 Patent claims. To the extent Plaintiffs seek to introduce any alleged secondary considerations in the future, Defendant reserves the right to respond at that time.

F. Invalidity Under Section 112

Pursuant to Section II, Paragraph 4 of the Order, Defendant provides an identification of the limitations of the ’389 Patent that are invalid based on indefiniteness under pre-AIA 35 U.S.C. § 112 ¶ 2, or enablement or written description under pre-AIA 35 U.S.C. § 112 ¶ 1. These Contentions are preliminary, as they are being proffered without the benefit of expert disclosure or discovery.

Asserted Claims 1-5, 7-9, 12, 14 of the ’389 Patent (and all claims which depend from these claims) are indefinite, and thus invalid. “[A] patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014). For example, as applied in Plaintiffs’ Infringement Contentions, the terms “correlating, by the base computer, at least a portion of the data about the computer object received from the first remote computer to at least a portion of the data about the computer object received from the second remote computer”; “comparing, by the base computer, the correlated data about the computer object received from the first and second remote computers to other objects or entities”; “other entity” / “entities”; “relationships between the correlated data and the other objects or entities”; “on the basis of said comparison”; “similar object” / “similar computer objects”; “Correlating” / “correlated”; “at least a portion”; “the

relationship is between objects related directly, or between objects related via other objects"; "monitoring those related objects as a homogenous entity"; "common object"; "monitoring"; "homogenous entity"; "deducing an object to be malware"; "classed as malware"; "process-related objects"; "other objects includes other objects"; "data about the computer object that is sent from the respective remote computer to the base computer and that is used in the comparison"; "the data"; "said data about said computer object"; "operation"; "monitoring an operation of the computer object on at least one of the first and second remote computers"; "the actual monitored behaviour" / "the monitored behaviour"; "reclassifying the computer object as malware"; "initially classifying a computer object as not malware"; and "acceptable behaviour" are indefinite because each of these phrases not only is subjective but also does not have a meaning that can be clearly determined from the patent, and thus fails to put the public on notice of what is and is not covered by these claims.

Asserted Claims 1-3, 7-8, 10-11, and 13-14 of the '389 Patent are invalid under § 112 ¶ 1, because the specification as filed does not contain a sufficient written description supporting those claims. For example, the patent disclosure would not lead a person of ordinary skill in the art to understand that the named inventor had possession of the purported inventions as claimed and in view of Plaintiffs' contentions. For example, Asserted Claims 1-3, 7-8, 10-11, and 13-14 (and all claims that depend from these claims) fail to satisfy the requirements of 35 U.S.C. § 112 for at least the following reasons: the '389 Patent fails to provide an adequate written description of the phrases "correlating, by the base computer, at least a portion of the data about the computer object received from the first remote computer to at least a portion of the data about the computer object received from the second remote computer"; "comparing, by the base computer, the correlated data about the computer object received from the first and second remote computers to other

objects or entities"; "other entity" / "entities"; "relationships between the correlated data and the other objects or entities"; "on the basis of said comparison"; "similar object" / "similar computer objects"; "events initiated or involving"; "at least a portion"; "the relationship is between objects related directly, or between objects related via other objects"; "homogenous entity"; "process-related objects"; "data about the computer object that is sent from the respective remote computer to the base computer and that is used in the comparison"; "operation"; "monitoring an operation of the computer object on at least one of the first and second remote computers"; "the actual monitored behaviour" / "the monitored behaviour"; "reclassifying the computer object as malware"; and "acceptable behaviour" as applied in Plaintiffs' Infringement Contentions.

The aforementioned claims are invalid because they are not enabled or described by the specification of the '389 Patent. The subject matter of these claims, as described above, are not sufficiently shown in the specification of the '389 Patent. The subject matter of these claims, as described above, are not sufficiently enabled because they do not teach one skilled in the art how to make and use the alleged invention from the specification of the '389 Patent. For example, the '389 Patent fails to enable the following and thus, Asserted Claims 1-3, 7-8, 10-11, and 13-14 of the '389 Patent are invalid: "correlating, by the base computer, at least a portion of the data about the computer object received from the first remote computer to at least a portion of the data about the computer object received from the second remote computer"; "comparing, by the base computer, the correlated data about the computer object received from the first and second remote computers to other objects or entities"; "other entity" / "entities"; "relationships between the correlated data and the other objects or entities"; "on the basis of said comparison"; "similar object" / "similar computer objects"; "events initiated or involving"; "at least a portion"; "the relationship is between objects related directly, or between objects related via other objects";

"homogenous entity"; "process-related objects"; "data about the computer object that is sent from the respective remote computer to the base computer and that is used in the comparison"; "operation"; "monitoring an operation of the computer object on at least one of the first and second remote computers"; "the actual monitored behaviour" / "the monitored behaviour"; "reclassifying the computer object as malware"; and "acceptable behaviour." The foregoing phrases are not described in such a way that one of ordinary skill in the art could implement it to achieve the results sought by the individual named on the face of the '389 Patent as the inventor. The foregoing phrases are not described in such a way that a person having ordinary skill in the art at the time of the alleged invention would have understood that the individual named as the inventor on the face of the '389 Patent was in possession of the claimed subject matter. The Asserted Claims of the '389 Patent also do not comply with § 112 because they do not set forth what the applicant regards is the invention.

A more detailed basis for the above indefiniteness, written description, and enablement defenses may be set forth in any expert report(s) on invalidity to be served on Plaintiffs in accordance with the Court's Scheduling Order.

G. Invalidity Under Section 101

Pursuant to Section II, Paragraph 4 of the Order, Defendant provides an identification of the claims of the '389 Patent they contend are directed to ineligible subject matter under pre-AIA 35 U.S.C. § 101. These Contentions are being proffered without expert disclosure or discovery.

Each Asserted Claim of the '389 Patent is directed to ineligible subject matter under 35 U.S.C. § 101. First, the Asserted Patent Claims of the '389 Patent are directed to the abstract idea of data classification based on reference data points, which amounts to receiving information, analyzing information, and outputting a result. *See, e.g.*, '389 Patent, claim 1 ("receiving data about a computer object from a first remote computer . . . wherein said data includes information

about events initiated or involving the computer object when the computer object is created, configured or runs on the first remote computer," "receiving data about the computer object from a second remote computer . . . wherein said data includes information about events initiated or involving the computer object when the computer object is created, configured, or runs on the second remote computer," "correlating . . . at least a portion of the data about the computer object received from the first remote computer to at least a portion of the data about the computer object received from the second remote computer," "comparing . . . the correlated data . . . to other objects or entities to identify relationships," "classifying . . . the computer object as malware on the basis of said comparison"). The specification of the '389 confirms that the Asserted Claims are directed to basic concepts of receiving information, analyzing information, and outputting a result. *See, e.g.*, *id.*, 1:1—17 ("In one aspect, the present invention relates to a method and apparatus for classifying a computer object as malware. . . . In another aspect, the present invention relates to a method and apparatus for classifying a computer object as malware or as safe."); 3:4–13 ("According to a first aspect of the present invention, there is provided a method of classifying a computer object as malware, the method comprising: at a base computer, receiving data about a computer object from each of plural remote computers on which the object or similar objects are stored; comparing in the base computer the data about the computer object received from the plural computers; and, classifying the computer object as malware on the basis of said comparison."); 3:14–19 ("Compared to the prior art that relies solely on signature matching, this aspect allows a comparison to be made between the objects and/or their effects on the different remote computers to determine whether or not a particular object should be classed as good or as malware."); 3:18–19 ("Sophisticated pattern analysis can be carried out."); *see also* 2:13–19 ("Such analysis is typically carried out manually or "semi-manually" by subjecting the file to detailed analysis, for

example by emulation or interpretation, which can still take days given the human involvement that is typically required. There is therefore still a considerable period of time before a new file is classified as safe or as malware."); 2:27–33 ("[S]ome limited audit information about the prevalence of the file on other local computers can be sent to a human system administrator associated with the local computer that is seeking permission to run the file. The human system administrator can therefore make a better informed though still "manual" decision as to whether or not the file is safe to run.").

Second, the Asserted Claims of the '389 Patent do not contain any inventive concept as they combine standard, generic, and well-known components in a conventional way to arrive at the claimed invention. The '389 Patent describes performing data classification based on reference data points (receiving information, analyzing information, and outputting a result) using conventional computing devices, computer programs, computer objects, storage media, and networks well-known in the prior art. *See, e.g.*, *id.*, 7:29–45 ("Although the embodiments of the invention described with reference to the drawings comprise computer processes performed in computer apparatus and computer apparatus itself, the invention also extends to computer programs, particularly computer programs on or in a carrier, adapted for putting the invention into practice. The program may be in the form of source code, object code, a code intermediate source and object code such as in partially compiled form, or in any other form suitable for use in the implementation of the processes according to the invention. The carrier be any entity or device capable of carrying the program. For example, the carrier may comprise a storage medium, such as a ROM, for example a CD ROM or a semiconductor ROM, or a magnetic recording medium, for example a floppy disk or hard disk. Further, the carrier may be a transmissible carrier such as an electrical or optical signal which may be conveyed via electrical or optical cable or by radio or

other means."); 7:59–62 ("Referring to FIG. 1, a computer network is generally shown as being based around a distributed network such as the Internet 1. The present invention may however be implemented across or use other types of network, such as a LAN."); 7:64–8:1 ("The computers 2 may each be variously a personal computer, a server of any type, a PDA, mobile phone, an interactive television, or any other device capable of loading and operating computer objects."); 8:1–4 ("An object in this sense may be a computer file, part of a file or a sub-program, macro, web page or any other piece of code to be operated by or on the computer, or any other event whether executed, emulated, simulated or interpreted."). Considered individually or as an ordered combination, the claim limitations recite nothing more than the abstract idea of receiving information, analyzing information, and outputting a result. Simply identifying an overarching desirable outcome (such as "rapid determination of the nature of the object") without specifying any technical improvements over the prior art to achieve that outcome does not rise to the level of an inventive and, thus, patent-eligible concept. *See Intell. Ventures I LLC v. Erie Indem. Co.*, 850 F.3d 1315, 1330–32 (Fed. Cir. 2017) ("The recited use of a mobile interface and pointers to retrieve user information evidences nothing more than a 'generic computer implementation' of the abstract idea that is insufficient to transform a patent-ineligible abstract idea into a patent-eligible invention."); *Intellectual Ventures I LLC v. Capital One Bank (USA)*, 792 F.3d 1363, 1367–68 (Fed. Cir. 2015) (claims directed to internet-based communications recite generic computer components and do not claim inventive concepts). Moreover, the prior art cited throughout Defendant's Contentions, as well as the patents themselves and the prior art cited therein, demonstrate that each claim element in every Asserted Claim is directed to well-understood, routine, and conventional computer security components and techniques. The remaining Asserted Claims merely apply those conventional and generic computer components and techniques in a

selected physical or technical environment—an environment where they had already long been used by those of ordinary skill as the prior art referenced herein reflects. Thus, the Asserted Claims of the ’389 Patent fail to add anything to the underlying abstract idea sufficient to transform them into patent-eligible subject matter.

Furthermore, at least under Plaintiffs’ apparent infringement theory, as set forth in their Infringement Contentions, the Asserted Claims of the ’389 Patent are ineligible because they would preempt the entire field of data classification based on reference data points, that is, receiving information, analyzing information, and outputting a result.

This ineligibility contention is based in whole or in part on Defendant’s present understanding of the Asserted Claims of the ’389 Patent, their current construction of the claims, and/or Plaintiffs’ apparent construction of the claims in their current Infringement Contentions. Defendant is not adopting Plaintiffs’ apparent claim construction, nor admitting to the accuracy of any particular claim construction. To the extent that Plaintiffs’ apparent claim construction or applications thereof are reflected in this Contention, nothing herein should be construed as an admission that Defendant agrees with Plaintiffs’ apparent claim construction or Plaintiffs’ application of that claim construction in Plaintiffs’ current Infringement Contentions. Further, claim construction is not necessary to determine that the Asserted Claims of the ’389 Patent are ineligible.

Defendant’s Contentions regarding ineligibility under 35 U.S.C. § 101 may be based on Plaintiffs’ allegations of infringement. Defendant does not necessarily agree with the interpretations set forth in Plaintiffs’ Infringement Contentions and thus this ineligibility contention is not an admission that the accused products meet any particular claim element or infringe the Asserted Claim. In addition, nothing in this ineligibility contention should be

interpreted as a position about whether any portion of the Asserted Claims are limiting or not. Further, by submitting this ineligibility contention, Defendant does not waive and hereby expressly reserves its right to raise invalidity defenses including, but not limited, to defenses under 35 U.S.C. §§ 102, 103, and/or 112.

Discovery in this case is ongoing and, accordingly, this ineligibility contention is not to be considered final. Defendant reserves all rights to revise, amend, or supplement this ineligibility claim at a later date as discovery progresses, after the Court issues its claim construction ruling, or if Plaintiffs amend their Infringement Contentions.

IV. INVALIDITY CONTENTIONS FOR THE '844 PATENT

A. General State of the Art at the Time of the Alleged Inventions

The prior art references identified in these Invalidity Contentions, and the "References Cited" on the face of the '844 Patent, may provide background and context pertinent to the teachings in, and interpretation of, the prior art referenced by the attached claim charts. Defendant may rely upon that prior art, including the "References Cited" on the face of the '844 Patent, to demonstrate the general state of the art at the time of the alleged inventions and what one of ordinary skill in the art would have understood at a time prior to the date of the alleged invention of the Asserted Claims. This prior art is exemplary only and is not in any way intended to limit the scope of what one of ordinary skill in the art would have understood at the times of the alleged inventions. Defendant reserves the right to rely upon additional prior art, information, and/or knowledge to demonstrate what one of ordinary skill would have understood at any time prior to the date of alleged invention of the Asserted Claims.

B. Claim Charts

Pursuant to Section II, Paragraph 4 of the Order, the claim charts attached in Appendix A as Exhibits B-1 through B-29 identify where each limitation of the Asserted Claims of the '844 Patent is found in the prior art.

C. Identification of the Prior Art

Based on Plaintiffs' July 12, 2022 Preliminary Infringement Contentions, Defendant identifies prior art below and in Appendix A as Exhibits B-1 through B-29, which contains charts disclosing the identity of each item of prior art that anticipates each claim and/or renders it obvious. As shown in Appendix A as Exhibits B-1 through B-29 and below, Defendant has identified each prior art reference by its number, country of origin, author, and date of issue (where applicable). Defendant notes that it has applied the prior art in accordance with Plaintiffs' improper assertions of infringement and improper applications of the claims. Defendant does not agree with Plaintiffs' application of the claims and denies infringement.

Defendant further contends that all claims that are anticipated by a particular reference are also rendered obvious by that same reference alone, in combination with the other references, and/or in combination with the knowledge of a person of ordinary skill in the art. Defendant reserves the right to rely upon any combination of the charted prior art under 35 U.S.C. § 103, yet Defendant has also identified exemplary obviousness combination in Section IV.E, *infra*.

'844 Patent Prior Art Patents/Patent Applications				
Ex. No.	**Patent / Publication No.**	**Country of Origin**	**Filing Date**	**Date of Issue / Publication**
Ex. B-1	U.S. Patent No. 9,940,459 ("Saxe")	U.S.	May 19, 2015	Apr. 10, 2018
Ex. B-2	U.S. Patent Publication No. US 2006/0037080 ("Maloof")	U.S.	Aug. 12, 2005	Feb. 16, 2006

’844 Patent Prior Art Patents/Patent Applications				
Ex. No.	**Patent / Publication No.**	**Country of Origin**	**Filing Date**	**Date of Issue / Publication**
Ex. B-3	U.S. Patent Publication No. 2013/0198841 (“Poulson”)	U.S.	Jan. 30, 2012	Aug. 1, 2013
Ex. B-4	U.S. Patent Publication No. 2017/0098074 (“Okano 074”)	U.S.	Jun. 8, 2015	Apr. 6, 2017
Ex. B-5	European Patent Application EP2182458 (“Moskovitch 458”)	Germany	Jan. 10, 2009	May 5, 2010
Ex. B-6	U.S. Patent Publication No. 2014/0090061 (“Avasarala”)	U.S.	Sep. 26, 2013	Mar. 27, 2014
Ex. B-7	U.S. Patent Application Publication No. US 2015/0213376 (“Ideses”)	U.S.	Jan. 29, 2015	Jul. 30, 2015
Ex. B-8	U.S. Patent No. 8,023,974 (“Diao 974”)	U.S.	Feb. 15, 2007	Sep. 20, 2011
Ex. B-9	U.S. Patent No. 7,949,771 (“Chen 771”)	U.S.	Sep. 5, 2007	May 24, 2011
Ex. B-10	U.S. Patent No. 7,756,535 (“Diao 535”)	U.S.	Jul. 7, 2006	Jul. 13, 2010
Ex. B-11	U.S. Patent No. 7,689,531 (“Diao 531”)	U.S.	Sep. 28, 2005	Mar. 30, 2010
Ex. B-12	U.S. Patent Application Publication No. US 2015/0096024 (“Haq”)	U.S.	Sep. 30, 2013	Apr. 2, 2015
Ex. B-13	U.S. Patent Application Publication No. US 2009/0254992 (“Schultz 992”)	U.S.	Dec. 18, 2008	Oct. 8, 2009
Ex. B-14	U.S. Patent No. 10,666,676 (“Hsu”)	U.S.	Aug. 18, 2014	May 26, 2020
Ex. B-15	U.S. Patent No. 8,935,788 (“Diao 788”)	U.S.	Oct. 15, 2008	Jan. 13, 2015
Ex. B-16	U.S. Patent No. 8,838,992 (“Zhu”)	U.S.	Apr. 28, 2011	Sep. 16, 2014
Ex. B-17	U.S. Patent No. 8,850,570 (“Ramzan”)	U.S.	Jun. 30, 2008	Sep. 30, 2014
Ex. B-18	U.S. Patent No. 8,495,144 (“Cheng”)	U.S.	Oct. 6, 2004	Jul. 23, 2013

’844 Patent Prior Art Patents/Patent Applications				
Ex. No.	**Patent / Publication No.**	**Country of Origin**	**Filing Date**	**Date of Issue / Publication**
Ex. B-19	U.S. Patent No. 8,161,548 (“Wan”)	U.S.	Aug. 15, 2005	Apr. 17, 2012
Ex. B-20	U.S. Patent No. 8,505,094 (“Xuewen”)	U.S.	Jan. 13, 2012	Aug. 6, 2013
Ex. B-21	U.S. Patent No. 8,560,466 (“Diao 466”)	U.S.	Feb. 26, 2010	Oct. 15, 2013
Ex. B-22	U.S. Patent Application Publication No. US 2003/0065926 (“Schultz 926”)	U.S.	Jul. 30, 2002	Apr. 3, 2003
Ex. B-29	U.S. Patent Application Publication No. US 2006/0026675 (“Cai 675”)	U.S.	Jul. 28, 2004	Apr. 14, 2009

’844 Patent Prior Art Publications				
Ex. No.	**Title**	**Date of Publication**	**Author**	**Publisher**
Ex. B-23	A Static Malware Detection System Using Data Mining Methods (“Baldangombo”)	Jul. 4, 2013	Baldangombo et al.	National University of Mongolia & University of Science and Technology, Taipei, Taiwan
Ex. B-24	Classification of Malware Based on Integrated Static Dynamic Features (“Islam 2012”)	Nov. 2, 2012	Islam et al.	Journal of Network and Computer Applications
Ex. B-25	Classification of Malware Based on String and Function Feature Selection (“Islam 2010”)	Jul. 20, 2010	Islam et al.	IEEE
Ex. B-26	Data Mining Tools for Malware Detection (“Masud”)	2011	Masud et al.	CRC Press

’844 Patent Prior Art Publications				
Ex. No.	**Title**	**Date of Publication**	**Author**	**Publisher**
Ex. B-27	Mal-ID: Automatic Malware Detection Using Common Segment Analysis and Meta-Features (“Tahan”)	Apr. 2012	Tahan et al.	Journal of Machine Learning
Ex. B-28	Improving Malware Detection by Applying Multi-Inducer Ensemble (“Menahem”)	Feb. 2009	Menahem et al.	Computational Statistics & Data Analysis

’844 Patent Additional Prior Art/Background Art
U.S. Patent No. 7,711,673 (“Diao 673”)
U.S. Patent No. 8,375,450 (“Oliver”)
U.S. Patent No. 8,554,907 (“Chen 907”)
U.S. Patent No. 8,584,241 (“Jenks”)
U.S. Patent No. 9,189,750 (“Narsky”)
U.S. Patent No. 10,268,820 (“Okano 820”)
JP 2012-27710 A (“Mori”)
U.S. Patent Application Publication No. US 2007/0240220 (“Tuvell 220”)
U.S. Patent Application Publication No. US 2010/0150448 (“Lecerf”)
U.S. Patent Application Publication No. US 2011/0145920 (“Mahaffey”)
U.S. Patent Application Publication No. US 2014/0090064 (“Pistoia”)
U.S. Patent Application Publication No. US 2016/0277423 (“Apostolescu”)
International Patent Application Publication No. WO 2014/107439 (“Fawaz”)
Tony Abou-Assaleh, *N-gram-based Detection of New Malicious Code*, IEEE, Sep. 30, 2004. (“Abou-Assaleh”)
William Arnold & Gerald Tesauro, *Automatically Generated Win32 Heuristic Virus Detection*, VIRUS BULLETIN CONFERENCE, Sep. 2000 at 52. (“Arnold 2000”)

’844 Patent Additional Prior Art/Background Art
A.M. Aswini & P. Vinod, *Towards the Detection of Android Malware using Ensemble Features*, Aswini, 9, JOURNAL OF INFORMATION ASSURANCE AND SECURITY, 2014 at 375. (“Aswini”)
Zane Markel & Michael Bilzor, *Building a Machine Learning Classifier for Malware Detection*, IEEE, Oct. 23, 2014. (“Markel”)
Corinna Cortes & Vladimir Vapnik, *Support-Vector Networks*, 20, MACHINE LEARNING, Sep. 1995 at 273. (“Cortes”)
Konstantinos Demertzis & Lazardos Illiadis, *Evolving Computational Intelligence System for Malware Detection*, 178, LNBIP, Jun. 20, 2014 at 322. (“Demertzis”)
Ivan Firdausi et al., *Analysis of Machine Learning Techniques Used in Behavior-Based Malware Detection*, IEEE, Dec. 3, 2010 at 201. (“Firdausi”)
Qingshan Jiang et al.*, A Feature Selection Method for Malware Detection*, IEEE, Jun. 8, 2011 at 890. (“Jiang”)
Feliz Leder et al., *Classification and Detection of Metamorphic Malware using Value Set Analysis*, IEEE, Oct. 14 2009 at 39. (“Leder”)
Chatchai Liangboonprakong & Ohm Sornil, *Classification of Malware Families Based on N-grams Sequential Pattern Features*, IEEE, Jun. 21, 2013 at 777. (“Liangboonprakong”)
Karthik Raman, *Selecting Features to Classify Malware*, ADOBE SYSTEMs, INC., 2012. (“Raman”)
Ronghua Tian, An Integrated Malware Detection and Classification System (Feb. 27, 2012) (P.h.D. thesis, Deakin University) (on file with the Deakin University Library system). (“Tian”)

Furthermore, with respect to the ’844 Patent, under 35 U.S.C. §§ 102(a) and (b), Defendant reserves the right to identify prior art systems developed prior to May 12, 2015. *See, e.g.*, *Intell. Ventures II LLC v. FedEx Corp.*, No. 2:16-CV-00980-JRG, 2019 WL 1434656, at *8-11 (E.D. Tex. Mar. 29, 2019). Discovery is ongoing, and Defendant reserves the right to amend the Invalidity Contentions herein based on third-party discovery.

D. Anticipation

At least under Plaintiffs' apparent infringement theory, the Asserted Claims of the '844 Patent are anticipated, either expressly or inherently as understood by a person having ordinary skill in the art, by the references as set forth in the attached claim charts. At least under Plaintiffs' apparent infringement theory, Asserted Claims 1-3, 6-12, 15-20 of the '844 Patent are anticipated, either expressly or inherently as understood by a person having ordinary skill in the art, by Diao 535, Tahan, Cai 675, Hsu, Diao 788, Zhu, Ramzan, Cheng, Wan, Diao 466, Ideses, Masud, Schultz 926, and Avasarala as set forth in the attached claim chart. At least under Plaintiffs' apparent infringement theory, Asserted Claims 17-20 of the '844 Patent are anticipated, either expressly or inherently as understood by a person having ordinary skill in the art, by Haq and Schultz 992 as set forth in the attached claim chart. At least under Plaintiffs' apparent infringement theory, Asserted Claims 1-3, 6-7, 9-12, 17, and 19 of the '844 Patent are anticipated, either expressly or inherently as understood by a person having ordinary skill in the art, by Maloof and Okano 074 as set forth in the attached claim chart. At least under Plaintiffs' apparent infringement theory, Asserted Claims 1-3, 6-7, 9-12, and 15-20 of the '844 Patent are anticipated, either expressly or inherently as understood by a person having ordinary skill in the art, by Moskovitch 458 as set forth in the attached claim chart. At least under Plaintiffs' apparent infringement theory, Asserted Claims 1-3, 6-12, and 15-16 of the '844 Patent are anticipated, either expressly or inherently as understood by a person having ordinary skill in the art, by Diao 974 as set forth in the attached claim chart. At least under Plaintiffs' apparent infringement theory, Asserted Claims 1-3, 6, 8-12, 15, 17, and 19 of the '844 Patent are anticipated, either expressly or inherently as understood by a person having ordinary skill in the art, by Chen 771 as set forth in the attached claim chart. At least under Plaintiffs' apparent infringement theory, Asserted Claims 1-3, 6, 8-12, 15, 17, and 19-20 of the '844 Patent are anticipated, either expressly or inherently as understood by a person having

ordinary skill in the art, by Diao 531 as set forth in the attached claim chart. At least under Plaintiffs' apparent infringement theory, Asserted Claims 1-3, 8-12, and 17-20 of the '844 Patent are anticipated, either expressly or inherently as understood by a person having ordinary skill in the art, by Menahem as set forth in the attached claim chart. At least under Plaintiffs' apparent infringement theory, Asserted Claims 1-3, 9-12, 17, and 19 of the '844 Patent are anticipated, either expressly or inherently as understood by a person having ordinary skill in the art, by Xuewen as set forth in the attached claim chart.

E. Obviousness

At least under Plaintiffs' apparent infringement theory, the Asserted Claims of the '844 Patent are rendered obvious by the references identified in the attached claim charts, either alone or in the combinations with other prior art references as identified below. Defendant contends that one of ordinary skill in the art, at the time of the alleged invention of the Asserted '844 Patent Claims, would have been motivated to combine the references disclosed herein in such a way to reach the alleged inventions. In certain instances, the suggested obviousness combinations are provided in the alternative to Defendant's anticipation contentions, which shall not be construed to suggest that any reference included in the combinations is not by itself anticipatory. The combinations evidencing teachings, suggestions, and/or motivations to combine the prior-art references in a way that renders the Asserted Claims obvious are merely exemplary.

Primary Reference	In Combination With
Maloof	Chen 771
Maloof	Diao 974
Maloof	Tahan
Maloof	Okano 074

Primary Reference	In Combination With
Maloof	Moskovitch 458
Maloof	Haq
Maloof	Schultz 992
Maloof	Ramzan
Maloof	Cheng
Maloof	Masud
Maloof	Menahem
Maloof	Cai 675
Maloof	Hsu
Maloof	Ramzan
Maloof	Cheng
Maloof	Diao 486
Maloof	Schultz 926
Maloof	Avasarala
Maloof	Haq
Maloof	Xuewen
Maloof	Zhu
Maloof	Islam 2010
Maloof	Islam 2012
Maloof	Baldangombo
Maloof	Diao 535
Maloof	Diao 531
Maloof	Tahan + Haq

Primary Reference	In Combination With
Maloof	Tahan + Schultz 926
Maloof	Tahan + Ramzan
Maloof	Tahan + Cheng
Maloof	Tahan + Masud
Okano 074	Chen 771
Okano 074	Diao 974
Okano 074	Menahem
Okano 074	Schultz 992
Okano 074	Cai 675
Okano 074	Diao 486
Okano 074	Haq
Okano 074	Zhu
Okano 074	Moskovitch 458
Okano 074	Diao 535
Moskovitch 458	Chen 771
Moskovitch 458	Diao 974
Moskovitch 458	Tahan
Moskovitch 458	Menahem
Moskovitch 458	Schultz 992
Moskovitch 458	Cai 675
Moskovitch 458	Hsu
Moskovitch 458	Ramzan
Moskovitch 458	Cheng

Primary Reference	In Combination With
Moskovitch 458	Diao 486
Moskovitch 458	Schultz 926
Moskovitch 458	Avasarala
Moskovitch 458	Zhu
Moskovitch 458	Haq
Moskovitch 458	Xuewen
Moskovitch 458	Tahan + Haq
Moskovitch 458	Tahan + Schultz 926
Moskovitch 458	Tahan + Ramzan
Moskovitch 458	Tahan + Cheng
Moskovitch 458	Tahan + Masud
Baldangombo	Chen 771
Baldangombo	Tahan
Baldangombo	Menahem
Baldangombo	Schultz 992
Baldangombo	Hsu
Baldangombo	Ramzan
Baldangombo	Haq
Baldangombo	Diao 486
Baldangombo	Schultz 926
Baldangombo	Avasarala
Baldangombo	Xuewen
Baldangombo	Moskovitch 458

Primary Reference	In Combination With
Baldangombo	Islam 2010
Baldangombo	Islam 2012
Baldangombo	Tahan + Haq
Baldangombo	Tahan + Schultz 926
Baldangombo	Tahan + Ramzan
Baldangombo	Tahan + Cheng
Baldangombo	Tahan + Masud
Islam 2010	Chen 771
Islam 2010	Tahan
Islam 2010	Menahem
Islam 2010	Schultz 992
Islam 2010	Ramzan
Islam 2010	Cheng
Islam 2010	Avasarala
Islam 2010	Haq
Islam 2010	Diao 531
Islam 2010	Tahan + Haq
Islam 2010	Tahan + Schultz 926
Islam 2010	Tahan + Ramzan
Islam 2010	Tahan + Cheng
Islam 2010	Tahan + Masud
Tahan	Chen 771
Tahan	Ramzan

Primary Reference	In Combination With
Tahan	Cheng
Tahan	Schultz 926
Tahan	Moskovitch 458
Tahan	Diao 535
Tahan	Diao 531
Tahan	Diao 974
Menahem	Tahan
Menahem	Schultz 992
Menahem	Ramzan
Menahem	Cheng
Menahem	Diao 486
Menahem	Moskovitch 458
Menahem	Diao 535
Menahem	Diao 531
Menahem	Tahan + Haq
Menahem	Tahan + Schultz 926
Menahem	Tahan + Ramzan
Menahem	Tahan + Cheng
Menahem	Tahan + Masud
Menahem	Haq
Menahem	Diao 974
Haq	Tahan
Haq	Menahem

Primary Reference	In Combination With
Haq	Schultz 992
Haq	Ramzan
Haq	Moskovitch 458
Haq	Diao 535
Haq	Diao 531
Haq	Tahan + Haq
Haq	Tahan + Schultz 926
Haq	Tahan + Ramzan
Haq	Tahan + Cheng
Haq	Tahan + Masud
Haq	Okano 074
Haq	Islam 2010
Haq	Islam 2012
Haq	Diao 974
Schultz 992	Haq
Schultz 992	Zhu
Schultz 992	Tahan
Schultz 992	Menahem
Schultz 992	Cai 675
Schultz 992	Hsu
Schultz 992	Ramzan
Schultz 992	Cheng 771
Schultz 992	Diao 486

Primary Reference	In Combination With
Schultz 992	Schultz 926
Schultz 992	Avasarala
Schultz 992	Xuewen
Schultz 992	Moskovitch 458
Schultz 992	Diao 535
Schultz 992	Diao 531
Schultz 992	Tahan + Haq
Schultz 992	Tahan + Schultz 926
Schultz 992	Tahan + Ramzan
Schultz 992	Tahan + Cheng
Schultz 992	Tahan + Masud
Schultz 992	Okano 074
Schultz 992	Maloof
Schultz 992	Islam 2010
Schultz 992	Islam 2012
Schultz 992	Diao 974
Cai 675	Tahan
Cai 675	Menahem
Cai 675	Ramzan
Cai 675	Cheng
Cai 675	Diao 486
Cai 675	Moskovitch 458
Cai 675	Diao 535

Primary Reference	In Combination With
Cai 675	Diao 531
Cai 675	Tahan + Haq
Cai 675	Tahan + Schultz 926
Cai 675	Tahan + Ramzan
Cai 675	Tahan + Cheng
Cai 675	Tahan + Masud
Cai 675	Diao 974
Zhu	Schultz 992
Zhu	Haq
Zhu	Tahan
Zhu	Ramzan
Zhu	Cheng
Zhu	Schultz 926
Zhu	Xuewen
Zhu	Moskovitch 458
Zhu	Diao 535
Zhu	Diao 531
Zhu	Tahan + Haq
Zhu	Tahan + Schultz 926
Zhu	Tahan + Ramzan
Zhu	Tahan + Cheng
Zhu	Tahan + Masud
Ramzan	Hsu

Primary Reference	In Combination With
Ramzan	Tahan
Ramzan	Menahem
Ramzan	Xuewen
Ramzan	Moskovitch 458
Ramzan	Diao 531
Ramzan	Tahan + Haq
Ramzan	Tahan + Schultz 926
Ramzan	Tahan + Ramzan
Ramzan	Tahan + Masud

Defendant reserves the right to amend these Contentions and prior art combinations in light of new information that may arise from third parties related to additional malware detection and containment systems. The following list of references are also evidence of the knowledge of POSITA at the time of the alleged invention: Fawaz, Apostolescu, Pistoia, Mahaffey, Lecerf, Tuvell, Mori, Okano 820, Jenks, Chen 907, Oliver, Diao 673, Abou-Assaleh, Arnold 2000, Aswini, Markel, Cortes, Demertzis, Firdausi, Lai, Leder, Raman, Liangboonprakong, and Tian.

One of ordinary skill in the art would be motivated to combine these references in the above combinations for at least the following reasons. One of ordinary skill in the art would have understood that each of these references are in the same field of endeavor, namely methods and devices relating to malware detection and containment. *See, e.g.*, Saxe at Abstract; Maloof at Abstract; Poulson at Abstract; Okano 074 at Abstract; Moskovitch 458 at 57; Avasarala at Abstract; Ideses at [0063]; Diao 974 at 2:21-33, 3:21-26; Chen 771 at 2:30-45; Diao 535 at 3:14-39; Diao 531 at 3:6-23; Haq at [0042]; Schultz 992 at [0021]; Hsu at 2:22-39, 3:30-42; Diao 788

at 7:33-38; Zhu at 3:44-4:7, 5:1-7; Ramzan at 2:56-65, Fig. 1; Cheng at 2:19-31; Wan at Fig. 1, 4:34-40; Xuewen at 9:42-10:43; Diao 466 at 2:34-36; Schultz 926 at Abstract; Baldangombo at Abstract; Islam 2012 at Abstract; Islam 2010 at 2; Masud at 114, 211; Tahan at 949-962; Menahem at 1483-1487; Cai 675 at [0012].

One of ordinary skill in the art would have recognized that these references are directed to addressing the same problem, in particular, improving malware detection and containment. *See, e.g.*, Saxe at Abstract; Maloof at Abstract; Poulson at Abstract; Okano 074 at Abstract; Moskovitch 458 at 57; Avasarala at Abstract; Ideses at [0063]; Diao 974 at 2:21-33, 3:21-26; Chen 771 at 2:30-45; Diao 535 at 3:14-39; Diao 531 at 3:6-23; Haq at [0042]; Schultz 992 at [0021]; Hsu at 2:22-39, 3:30-42; Diao 788 at 7:33-38; Zhu at 3:44-4:7, 5:1-7; Ramzan at 2:56-65, Fig. 1; Cheng at 2:19-31; Wan at Fig. 1, 4:34-40; Xuewen at 9:42-10:43; Diao 466 at 2:34-36; Schultz 926 at Abstract; Baldangombo at Abstract; Islam 2012 at Abstract; Islam 2010 at 2; Masud at 114, 211; Tahan at 949-962; Menahem at 1483-1487; Cai 675 at [0012].

Further, the Asserted Claims of the '844 Patent contain merely a duplication of concepts known in the prior art and have no patentable significance given that no unexpected results occur—*i.e.* the patentee merely combines known prior art elements according to known methods to yield predictable results. For example, the prior art references describe "computer implemented method comprising extracting a plurality of static data points from an executable file." *See, e.g.*, Saxe at Abstract; Maloof at Abstract; Poulson at Abstract; Okano 074 at Abstract; Moskovitch 458 at 57; Avasarala at Abstract; Ideses at [0063]; Diao 974 at 2:21-33, 3:21-26; Chen 771 at 2:30-45; Diao 535 at 3:14-39; Diao 531 at 3:6-23; Haq at [0042]; Schultz 992 at [0021]; Hsu at 2:22-39, 3:30-42; Diao 788 at 7:33-38; Zhu at 3:44-4:7, 5:1-7; Ramzan at 2:56-65, Fig. 1; Cheng at 2:19-31; Wan at Fig. 1, 4:34-40; Xuewen at 9:42-10:43; Diao 466 at 2:34-36; Schultz 926 at Abstract;

Baldangombo at Abstract; Islam 2012 at Abstract; Islam 2010 at 2; Masud at 114, 211; Tahan at 949-962; Menahem at 1483-1487; Cai 675 at [0012]. The prior art references further describe "generating a feature vector from the plurality of static data points using a classifier trained to classify the plurality of static data points based on a collection of data comprising known malicious executable files, known benign executable files, and known unwanted executable files." *See, e.g.*, Saxe at 5:20-44; Maloof at [0054]-[0055]; Poulson at [0024]; Okano 074 at [0090]-[0091]; Moskovitch 458 at [0021]; Avasarala at [0050]; Ideses at [0044]; Diao 974 at 4:8-14; Chen 771 at 3:31-43; Diao 535 at 3:14-39; Diao 531 at 4:1-24; Haq at [0086]; Schultz 992 at [0042]; Hsu at 3:30-42, 3:30-42; Diao 788 at 9:33-37; Zhu at 4:24-48; Ramzan at 9:25-30; Cheng at 4:60-5:6; Wan at 5:27-45; Xuewen at 5:15-19; Diao 466 at 4:44-54; Schultz 926 at [0039]; Baldangombo at 11-12; Islam 2012 at Abstract; Islam 2010 at 6-7; Masud at 206; Tahan at 951; Menahem at 1483; Cai 675 at [0018]. The prior art references further describe "wherein the collection of data comprises at least a portion of the plurality of static data points". *See, e.g.,* Saxe at 10:4-16; Maloof at [0040]; Poulson at [0043]-[0047]; Okano 074 at [0092]-[0094]; Moskovitch 458 at [0043]; Avasarala at [0050]; Ideses at [0080]-[0085]; Diao 974 at 4:8-14; Chen 771 at 3:31-43; Diao 535 at 4:34-41; Diao 531 at 3:24-34; Haq at [0024]; Schultz 992 at [0020]; Hsu at 3:30-42; Diao 788 at 5:26-35; Zhu at 5:1-7; Ramzan at 9:25-30; Cheng at 3:45-67; Wan at 4:34-40; Xuewen at 5:49-65; Diao 466 at 6:22-24; Schultz 926 at [0042]; Baldangombo at 5; Islam 2012 at Abstract; Islam 2010 at 4-5; Masud at 206; Tahan at 955; Menahem at 1484; Cai 675 at [0012].

Other examples of these concepts are cited in the attached charts for the above references. *See* Exs. B-1–B-29. It would have been known and simple to take a prior art for malware detection and neutralization by analyzing feature vectors to determine whether a file is harmful, and it would

have been obvious to a POSITA to try this. *Id.* It would have also yielded predictable results in the context of improving malware detection and containment. *Id.*

Defendant is not aware of any secondary considerations supporting non-obviousness of the '844 Patent claims. To the extent Plaintiffs seek to introduce any alleged secondary considerations in the future, Defendant reserves the right to respond at that time.

F. Invalidity Under Section 112

Pursuant to Section II, Paragraph 4 of the Order, Defendant provides an identification of the limitations of the '844 Patent that are invalid based on indefiniteness under 35 U.S.C. § 112(b), or enablement or written description under 35 U.S.C. § 112(a). These Contentions are preliminary, as they are being proffered without the benefit of expert disclosure or discovery.

Asserted Claims 1-3, 6-12, and 15-20 of the '844 Patent (and all claims which depend from these claims) are indefinite, and thus invalid. "[A] patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention." *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014). For example, as applied in Plaintiffs' Infringement Contentions, the terms "at least a portion of the plurality"; "features . . . selectively turned on or off"; "support vector processing"; "type of data"; "encoding the extracted static data points" / "encoding the extracted plurality of predefined character strings"; "selectively setting features of the classifier"; "determined probability value" / "probability value"; "predetermined false positive range data"; "exceeds a threshold value"; "generating a feature vector from the plurality of static data points using a classifier trained to classify the plurality of static data points based on a collection of data comprising known malicious executable files, known benign executable files[,] and known unwanted executable files" / "generating a feature vector from the plurality of predefined character strings using a classifier trained to classify the plurality of

predefined character strings based on a collection of data comprising known malicious executable files, known benign executable files and known unwanted executable files"; "classifier" / "classifier trained to classify the plurality of static data points based on a collection of data comprising known malicious executable files, known benign executable files[,] and known unwanted executable files" / "classifier trained to classify the plurality of predefined character strings based on a collection of data comprising known malicious executable files, known benign executable files and known unwanted executable files"; "one or more features of the feature vector are selectively turned on or off based on whether a value of one or more static data points from the plurality of extracted static data points is within a predetermined range"; "static data points" which "represent predefined character strings in the executable file"; "harmful"; "threshold value"; "predetermined false positive range"; "machine learning technique"; "plurality of static data points is extracted using a machine learning technique"; and "at least one processor operatively connected with the memory and configured to perform operation of: extracting a plurality of predefined character strings from an executable file without decrypting or unpacking the executable file; generating a feature vector from the plurality of predefined character strings using a classifier trained to classify the plurality of predefined character strings based on a collection of data comprising known malicious executable files, known benign executable files and known unwanted executable files, wherein the collection of data comprises at least a portion of one or more of the plurality of predefined character strings, and wherein one or more features of the feature vector are selectively turned on or off based on whether a value of one or more predefined character strings from the plurality of predefined character strings is within a predetermined range; and evaluating the feature vector using support vector processing to determine whether the executable file is harmful" are indefinite because each of these phrases not only is subjective but also does

not have a meaning that can be clearly determined from the patent, and thus fails to put the public on notice of what is and is not covered by these claims.

Asserted Claims 1-3, 6-12, and 15-20 of the '844 Patent are invalid under § 112(a), because the specification as filed does not contain a sufficient written description supporting those claims. In particular, the patent disclosure would not lead a person of ordinary skill in the art to understand that the named inventor had possession of the purported inventions as claimed and in view of Plaintiffs' contentions. For example, Asserted Claims 1-3, 6-12, and 15-20 (and all claims that depend from these claims) fail to satisfy the requirements of 35 U.S.C. § 112 for at least the following reasons: the '844 Patent fails to provide an adequate written description of the phrases "extracting a plurality"; "at least a portion of the plurality"; "features . . . selectively turned on or off"; "predetermined range" / "predetermined false positive range"; "support vector processing"; "selectively setting features of the classifier"; "determined probability value" / "probability value"; "predetermined false positive range data"; "extracting a plurality of static data points" where "the plurality of static data points represent predefined character strings in the executable file"; "predefined character strings"; "generating a feature vector from the plurality of static data points using a classifier trained to classify the plurality of static data points based on a collection of data comprising known malicious executable files, known benign executable files[,] and known unwanted executable files" / "generating a feature vector from the plurality of predefined character strings using a classifier trained to classify the plurality of predefined character strings based on a collection of data comprising known malicious executable files, known benign executable files and known unwanted executable files"; "classifier" / "classifier trained to classify the plurality of static data points based on a collection of data comprising known malicious executable files, known benign executable files[,] and known unwanted executable files" / "classifier trained to

classify the plurality of predefined character strings based on a collection of data comprising known malicious executable files, known benign executable files and known unwanted executable files"; "one or more features of the feature vector are selectively turned on or off based on whether a value of one or more static data points from the plurality of extracted static data points is within a predetermined range"; "determine[ing] whether the executable file is harmful" or "a determination of whether the executable file is harmful"; "encoding the extracted static data points for the classifier based on the classification"; "wherein the plurality of static data points is extracted using a machine learning technique"; "plurality of static data points is extracted using a machine learning technique"; and "at least one processor operatively connected with the memory and configured to perform operation of: extracting a plurality of predefined character strings from an executable file without decrypting or unpacking the executable file; generating a feature vector from the plurality of predefined character strings using a classifier trained to classify the plurality of predefined character strings based on a collection of data comprising known malicious executable files, known benign executable files and known unwanted executable files, wherein the collection of data comprises at least a portion of one or more of the plurality of predefined character strings, and wherein one or more features of the feature vector are selectively turned on or off based on whether a value of one or more predefined character strings from the plurality of predefined character strings is within a predetermined range; and evaluating the feature vector using support vector processing to determine whether the executable file is harmful" as applied in Plaintiffs' Infringement Contentions.

The aforementioned claims are invalid because they are not enabled or described by the specification of the '844 Patent. The subject matter of these claims, as described above, are not sufficiently shown in the specification of the '844 Patent. The subject matter of these claims, as

described above, are not sufficiently enabled because they do not teach one skilled in the art how to make and use the alleged invention from the specification of the ’844 Patent. For example, the ’844 Patent fails to enable the following and thus, Asserted Claims 1-3, 6-12, and 15-20 of the ’844 Patent are invalid: “extracting a plurality”; “at least a portion of the plurality”; “features . . . selectively turned on or off”; “predetermined range” / “predetermined false positive range”; “support vector processing”; “selectively setting features of the classifier”; “determined probability value” / “probability value”; “predetermined false positive range data”; “extracting a plurality of static data points” where “the plurality of static data points represent predefined character strings in the executable file”; “predefined character strings”; “generating a feature vector from the plurality of static data points using a classifier trained to classify the plurality of static data points based on a collection of data comprising known malicious executable files, known benign executable files[,] and known unwanted executable files” / “generating a feature vector from the plurality of predefined character strings using a classifier trained to classify the plurality of predefined character strings based on a collection of data comprising known malicious executable files, known benign executable files and known unwanted executable files”; “classifier” / “classifier trained to classify the plurality of static data points based on a collection of data comprising known malicious executable files, known benign executable files[,] and known unwanted executable files” / “classifier trained to classify the plurality of predefined character strings based on a collection of data comprising known malicious executable files, known benign executable files and known unwanted executable files”; “one or more features of the feature vector are selectively turned on or off based on whether a value of one or more static data points from the plurality of extracted static data points is within a predetermined range”; “determine[ing] whether the executable file is harmful” or “a determination of whether the executable file is harmful”;

"encoding the extracted static data points for the classifier based on the classification"; "wherein the plurality of static data points is extracted using a machine learning technique"; "plurality of static data points is extracted using a machine learning technique"; and "at least one processor operatively connected with the memory and configured to perform operation of: extracting a plurality of predefined character strings from an executable file without decrypting or unpacking the executable file; generating a feature vector from the plurality of predefined character strings using a classifier trained to classify the plurality of predefined character strings based on a collection of data comprising known malicious executable files, known benign executable files and known unwanted executable files, wherein the collection of data comprises at least a portion of one or more of the plurality of predefined character strings, and wherein one or more features of the feature vector are selectively turned on or off based on whether a value of one or more predefined character strings from the plurality of predefined character strings is within a predetermined range; and evaluating the feature vector using support vector processing to determine whether the executable file is harmful." The foregoing phrases are not described in such a way that one of ordinary skill in the art could implement it to achieve the results sought by the individual named on the face of the '844 Patent as the inventor. The foregoing phrases are not described in such a way that a person having ordinary skill in the art at the time of the alleged invention would have understood that the individual named as the inventor on the face of the '844 Patent was in possession of the claimed subject matter. The Asserted Claims of the '844 Patent also do not comply with § 112 because they do not set forth what the applicant regards is the invention.

A more detailed basis for the above indefiniteness, written description, and enablement defenses may be set forth in any expert report(s) on invalidity to be served on Plaintiffs in accordance with the Court's Scheduling Order.

G. Invalidity Under Section 101

Pursuant to Section II, Paragraph 4 of the Order, Defendant provides an identification of the claims of the '844 Patent they contend are directed to ineligible subject matter under 35 U.S.C. § 101. These Contentions are being proffered without expert disclosure or discovery.

Each Asserted Claim of the '844 Patent is directed to ineligible subject matter under 35 U.S.C. § 101. First, the Asserted Patent Claims of the '844 Patent are directed to the abstract idea of mathematical classification using machine learning. *See, e.g.*, '844 Patent, claim 1 ("generating a feature vector from the plurality of static data points using a classifier trained to classify the plurality of static data points based on a collection of data comprising known malicious executable files, known benign executable files, and known unwanted executable files," "features of the feature vector are selectively turned on or off based on whether a value of one or more static data points . . . is within a predetermined range," "evaluating the feature vector using support vector processing to determine whether the executable file is harmful"); claim 10 ("generating a feature vector from the plurality of static data points using a classifier trained to classify the plurality of static data points based on a collection of data comprising known malicious executable files, known benign executable files and known unwanted executable files," "features of the feature vector are selectively turned on or off based on whether one or more values of one or more static data points . . . is within a predetermined range," "evaluating the feature vector using support vector processing to determine whether the executable file is harmful"); claim 17 ("generating a feature vector from the plurality of predefined character strings using a classifier trained to classify the plurality of predefined character strings based on a collection of data comprising known

malicious executable files, known benign executable files and known unwanted executable files," "features of the feature vector are selectively turned on or off based on whether a value of one or more predefined character strings . . . is within a predetermined range," "evaluating the feature vector using support vector processing to determine whether the executable file is harmful"). The specification of the '844 confirms that the Asserted Claims are directed to basic concepts of mathematical classification using machine learning. *See, e.g.*, *id.*, 1:20–34 ("Aspects of the present disclosure relate to threat detection of executable files. . . . Analyzing of the executable file comprises applying a classifier to the plurality of static data points extracted from the executable file. The classifier is trained from data comprising known malicious executable files, known benign executable files and potentially unwanted executable files. Based upon the analysis of the executable file, a determination is made as to whether the executable file is harmful. In some examples, execution of the executable file is prevented when a determined probability value that the executable file is harmful exceeds a threshold value."); 2:4–14 ("The present disclosure is able to detect whether an executable file is harmful or benign before the executable file is actually executed on a processing device. In examples, machine learning processing applies a classifier to evaluate an executable file based on static points data collected from the executable file. The classifier is trained from a collection of data comprising known malicious files, potentially unwanted files and benign files. The classifier is designed and trained such that it can handle encrypted and/or compressed files without decrypting and/or decompressing the files."); 2:28–45 ("The determination of unknown files is achieved by evaluating static data points extracted from an executable file using a trained classification system that is able to identify potential threats without analyzing executable behavior of a file. The present disclosure also provides for the creation of a training set that adaptively learns what static data points may indicate the existence

of malicious code using training data that contains a statistically significant number of both encrypted and non-encrypted examples of malicious or unwanted executable files, among other information. By collecting a large set of training examples as they appear as publicly available and distributed over network connection (e.g., "in the wild"), the present disclosure ensures that its adaptive learning processing is robust enough to comprise sufficient representation of features (and distributions) from files that may be encrypted, not-encrypted, compressed, and uncompressed, among other examples."); 2:51-52 ("ability to adapt over time").

Second, the Asserted Claims of the '844 Patent do not contain any inventive concept as they combine standard, generic, and well-known components in a conventional way to arrive at the claimed invention. The '844 Patent describes performing mathematical classification using machine learning using conventional hardware and software components, computing devices, servers, storage components, and networks. *See, e.g.*, *id.*, 2:58–3:3 ("Components of the systems may be hardware components or software implemented on and/or executed by hardware components of the systems. In examples, system 100 may include any of hardware components (e.g., used to execute/run operating system (OS)), and software components (e.g., applications, application programming interfaces, modules, virtual machines, runtime libraries, etc.) running on hardware."); 3:9–14 ("For instance, threat detection operations (e.g., application, instructions, modules, etc.) may be run on a processing device such as a computer, a client device (e.g., mobile processing device, laptop, smartphone/phone, tablet, etc.) and/or any other electronic devices, where the components of the system may be executed on the processing device."); 3:15–22 ("[F]iles to be evaluated may be present on a client device and information may be processed or accessed from other devices in a network such as, for example, one or more server devices that may be used to perform threat detection processing and/or evaluation a file before execution of the

file by the client device."); 3:46–52 ("Knowledge component 102 described herein may collect data for use in building, training and/or re-training a learning classifier to evaluate executable files. The knowledge component 102 is one or more storages, memories, and/or modules that continuously collects and manages data that may be used to detect threats in files such as executable files."); 14:1–13 ("FIG. 4 illustrates one example of a suitable operating environment 400 in which one or more of the present embodiments may be implemented. This is only one example of a suitable operating environment and is not intended to suggest any limitation as to the scope of use or functionality. Other well-known computing systems, environments, and/or configurations that may be suitable for use include, but are not limited to, personal computers, server computers, hand-held or laptop devices, multiprocessor systems, microprocessor-based systems, programmable consumer electronics such as smart phones, network PCs, minicomputers, mainframe computers, distributed computing environments that include any of the above systems or devices, and the like."). Considered individually or as an ordered combination, the claim limitations recite nothing more than the abstract idea of mathematical classification using machine learning. Simply identifying an overarching desirable outcome (such as "high and accurate classification rates" or "enhanced security protection") without specifying any technical improvements over the prior art to achieve that outcome does not rise to the level of an inventive and, thus, patent-eligible concept. *See Intell. Ventures I LLC v. Erie Indem. Co.*, 850 F.3d 1315, 1330–32 (Fed. Cir. 2017) ("The recited use of a mobile interface and pointers to retrieve user information evidences nothing more than a 'generic computer implementation' of the abstract idea that is insufficient to transform a patent-ineligible abstract idea into a patent-eligible invention."); *Intellectual Ventures I LLC v. Capital One Bank (USA)*, 792 F.3d 1363, 1367–68 (Fed. Cir. 2015) (claims directed to internet-based communications recite generic computer components and do not

claim inventive concepts). Moreover, the prior art cited throughout Defendant's Contentions, as well as the patents themselves and the prior art cited therein, demonstrate that each claim element in every Asserted Claim is directed to well-understood, routine, and conventional computer security components and techniques. The remaining Asserted Claims merely apply those conventional and generic computer components and techniques in a selected physical or technical environment—an environment where they had already long been used by those of ordinary skill as the prior art referenced herein reflects. Thus, the Asserted Claims of the '844 Patent fail to add anything to the underlying abstract idea sufficient to transform them into patent-eligible subject matter.

Furthermore, at least under Plaintiffs' apparent infringement theory, as set forth in their Infringement Contentions, the Asserted Claims of the '844 Patent are ineligible because they would preempt the entire field of mathematical classification using machine learning.

This ineligibility contention is based in whole or in part on Defendant's present understanding of the Asserted Claims of the '844 Patent, their current construction of the claims, and/or Plaintiffs' apparent construction of the claims in their current Infringement Contentions. Defendant is not adopting Plaintiffs' apparent claim construction, nor admitting to the accuracy of any particular claim construction. To the extent that Plaintiffs' apparent claim construction or applications thereof are reflected in this Contention, nothing herein should be construed as an admission that Defendant agrees with Plaintiffs' apparent claim construction or Plaintiffs' application of that claim construction in Plaintiffs' current Infringement Contentions. Further, claim construction is not necessary to determine that the Asserted Claims of the '844 Patent are ineligible.

Defendant's Contentions regarding ineligibility under 35 U.S.C. § 101 may be based on Plaintiffs' allegations of infringement. Defendant does not necessarily agree with the interpretations set forth in Plaintiffs' Infringement Contentions and thus this ineligibility contention is not an admission that the accused products meet any particular claim element or infringe the Asserted Claim. In addition, nothing in this ineligibility contention should be interpreted as a position about whether any portion of the Asserted Claims are limiting or not. Further, by submitting this ineligibility contention, Defendant does not waive and hereby expressly reserves its right to raise invalidity defenses including, but not limited, to defenses under 35 U.S.C. §§ 102, 103, and/or 112.

Discovery in this case is ongoing and, accordingly, this ineligibility contention is not to be considered final. Defendant reserves all rights to revise, amend, or supplement this ineligibility claim at a later date as discovery progresses, after the Court issues its claim construction ruling, or if Plaintiffs amend their Infringement Contentions.

V. INVALIDITY CONTENTIONS FOR THE '721 PATENT

A. General State of the Art at the Time of the Alleged Inventions

The prior art references identified in these Invalidity Contentions, and the "References Cited" on the face of the '721 Patent, may provide background and context pertinent to the teachings in, and interpretation of, the prior art referenced by the attached claim charts. Defendant may rely upon that prior art, including the "References Cited" on the face of the '721 Patent, to demonstrate the general state of the art at the time of the alleged inventions and what one of ordinary skill in the art would have understood at a time prior to the date of the alleged invention of the Asserted Claims. This prior art is exemplary only and is not in any way intended to limit the scope of what one of ordinary skill in the art would have understood at the times of the alleged inventions. Defendant reserves the right to rely upon additional prior art, information, and/or

knowledge to demonstrate what one of ordinary skill would have understood at any time prior to the date of alleged invention of the Asserted Claims.

B. Claim Charts

Pursuant to Section II, Paragraph 4 of the Order, the claim charts attached in Appendix A as Exhibits C-1 through C-17 identify where each limitation of the Asserted Claims of the '721 Patent is found in the prior art.

C. Identification of the Prior Art

Based on Plaintiffs' July 12, 2022 Preliminary Infringement Contentions, Defendant identifies prior art below and in Appendix A as Exhibits C-1 through C-17, which contains charts disclosing the identity of each item of prior art that anticipates each claim and/or renders it obvious. As shown in Appendix A as Exhibits C-1 through C-17 and below, Defendant has identified each prior art reference by its number, country of origin, author, and date of issue (where applicable). Defendant notes that it has applied the prior art in accordance with Plaintiffs' improper assertions of infringement and improper applications of the claims. Defendant does not agree with Plaintiffs' application of the claims and denies infringement.

Defendant further contends that all claims that are anticipated by a particular reference are also rendered obvious by that same reference alone, in combination with the other references, and/or in combination with the knowledge of a person of ordinary skill in the art. Defendant reserves the right to rely upon any combination of the charted prior art under 35 U.S.C. § 103, yet Defendant has also identified exemplary obviousness combination in Section V.E, *infra*.

'721 Patent Prior Art Patents/Patent Applications				
Ex. No.	**Patent / Publication No.**	**Country of Origin**	**Filing Date**	**Date of Issue / Publication**
Ex. C-1	U.S. Patent No. 6,772,346 ("Chess")	U.S.	Jul. 16, 1999	Aug. 3, 2004

’721 Patent Prior Art Patents/Patent Applications				
Ex. No.	**Patent / Publication No.**	**Country of Origin**	**Filing Date**	**Date of Issue / Publication**
Ex. C-2	U.S. Patent No. 7,055,008 (“Niles”)	U.S.	Jan. 22, 2003	May 30, 2006
Ex. C-3	U.S. Patent No. 8,286,239 (“Sutton”)	U.S.	Jul. 24, 2008	Oct. 9, 2012
Ex. C-4	U.S. Patent No. 8,607,066 (“Kailash 066”)	U.S.	Aug. 4, 2008	Dec. 10, 2013
Ex. C-5	U.S. Patent No. 9,152,789 (“Natarajan”)	U.S.	Mar. 26, 2014	Oct. 6, 2015
Ex. C-6	U.S. Patent No. 10,262,136 (“Kailash 136”)	U.S.	Aug. 4, 2008	Apr. 16, 2019
Ex. C-7	U.S. Patent No. 8,881,283 (“Tuvell 283”)	U.S.	Oct. 9, 2007	Apr. 10, 2008
Ex. C-8	U.S. Patent Publication No. 2007/0022315 (“Comegys”)	U.S.	Jun. 22, 2006	Jan. 25, 2007
Ex. C-9	U.S. Patent Publication No. 2005/0262560 (“Gassoway”)	U.S.	May 5, 2004	Nov. 24, 2005
Ex. C-10	U.S. Patent Publication No. 2008/0010368 (“Hubbard 368”)	U.S.	July 10, 2006	Jan. 10, 2008
Ex. C-11	U.S. Patent Publication No. 2005/0223001 (“Kester 001”)	U.S.	Jun. 1, 2005	Oct. 5, 2005
Ex. C-12	U.S. Patent Publication No. 2006/0075504 (“Liu”)	U.S.	Sept. 22, 2005	Apr. 6, 2006
Ex. C-13	U.S. Patent Publication No. 2013/0091570 (“McCorkendale”)	U.S.	Sept. 15, 2009	Apr. 10, 2013
Ex. C-14	U.S. Patent No. 8,429,180 (“Sobel”)	U.S.	Mar. 31, 2008	Apr. 23, 2013
Ex. C-15	U.S. Patent No. 8,650,648 (“Fraser”)	U.S.	Mar. 26, 2008	Feb. 11, 2014
Ex. C-16	U.S. Patent No. 7,774,845 (“Shipman”)	U.S.	Nov. 6, 2002	Aug. 10, 2010
Ex. C-17	U.S. Patent No. 8,365,286 (“Poston”)	U.S.	Mar. 30, 2009	Jan. 29, 2013

’721 Patent Additional Prior Art/Background Art
U.S. Patent No. 6,944,772 B2 (“Dozortsev”)
U.S. Patent No. 7,093,239 B1 (“van der Made”)
U.S. Patent No. 7,310,817 B2 (“Hinchliffe”)

’721 Patent Additional Prior Art/Background Art
U.S. Patent No. 7,694,150 B1 (“Kirby”)
U.S. Patent No. 7,899,849 B2 (“Chaudhry”)
U.S. Patent No. 8,220,050 B2 (“Sarathy”)
U.S. Patent No. 8,230,506 B1 (“Forristal”)
U.S. Patent No. 8,468,602 B2 (“McDougal”)
U.S. Patent No. 8,549,581 B1 (“Kailash 581”)
U.S. Patent No. 8,584,240 B1 (“Yang”)
U.S. Patent No. 8,645,340 B2 (“Kester 340”)
U.S. Patent No. 8,646,038 B2 (“Blumfield”)
U.S. Patent No. 8,925,101 B2 (“Bhargava”)
U.S. Patent Publication No. 2004/0083384 A1 (“Hypponen”)
U.S. Patent Publication No. 2010/0169972 A1 (“Kuo”)
U.S. Patent Publication No. 2010/0031361 A1 (“Shukla”)
AU Patent No. 701,007 B2 (“Ferrand”)
WO 2007/015266 A2 (“Madhok 266 A2”)
WO 2007/015266 A3 (“Madhok 266 A3”)
WO 2007/104988 A1 (“Curnyn”)
Nick Del Grosso, *It’s Time to Rethink your Corporate Malware Strategy*, SANS INSTITUTE, Feb. 24, 2002. (“Del Grosso”)
Ajith Abraham et al., *D-SCIDS: Distributed soft computing intrusion detection system*, 30, JOURNAL OF NETWORK AND COMPUTER APPLICATIONS, 2007 at 81. (“Abraham”)
Joel Scanlan et al., *Intrusion Detection by Intelligent analysis of data across multiple gateways in real-time*, School of Computing, University of Tasmania. (“Scanlan”)
Xiao Jiang et al,, *A Malware Sample Capturing and Tracking System*, IEEE, Dec. 19, 2010 at 69. (“Jiang”)
Brijesh Kumar & Constantine Katsinis, *A Network Based Approach to Malware Detection in Large IT Infrastructures*, IEEE, Jul. 17, 2010 at 188. (“Kumar”)
Shuaifu Dai et al., *Behavior-Based Malware Detection on Mobile Phone*, IEEE, Sep. 25, 2010 at 1. (“Dai”)

Furthermore, with respect to the ’721 Patent, under pre-AIA 35 U.S.C. § 102(f), Defendant identifies the activities of entities involved in computer security as referenced in Provisional Application No. 61/443,095, to which Plaintiffs claim priority. *See, e.g.*, Provisional Application No. 61/443,095 at [0002]-[0006].

Furthermore, with respect to the '721 Patent, under pre-AIA 35 U.S.C. §§ 102(a), (b), and (g)(2), Defendant reserves the right to identify prior art systems developed prior to February 15, 2011. *See, e.g.*, *Intell. Ventures II LLC v. FedEx Corp.*, No. 2:16-CV-00980-JRG, 2019 WL 1434656, at *8-11 (E.D. Tex. Mar. 29, 2019). Discovery is ongoing, and Defendant reserves the right to amend the Invalidity Contentions herein based on third-party discovery.

D. Anticipation

At least under Plaintiffs' apparent infringement theory, the Asserted Claims of the '721 Patent are anticipated, either expressly or inherently as understood by a person having ordinary skill in the art, by the references as set forth in the attached claim charts. At least under Plaintiffs' apparent infringement theory, Asserted Claims 1, 8, 9, 14, and 15 of the '721 Patent are anticipated, either expressly or inherently as understood by a person having ordinary skill in the art, by Niles, Sutton, Kailash 066, and Natarajan as set forth in the attached claim chart. At least under Plaintiffs' apparent infringement theory, Asserted Claims 1, 9, 14, and 15 of the '721 Patent are anticipated, either expressly or inherently as understood by a person having ordinary skill in the art, by Gassoway as set forth in the attached claim chart. At least under Plaintiffs' apparent infringement theory, Asserted Claims 1, 8, and 9 of the '721 Patent are anticipated, either expressly or inherently as understood by a person having ordinary skill in the art, by Kester 001 and Shipman as set forth in the attached claim chart.

E. Obviousness

At least under Plaintiffs' apparent infringement theory, the Asserted Claims of the '721 Patent are rendered obvious by the references identified in the attached claim charts, either alone or in the combinations with other prior art references as identified below. Defendant contends that one of ordinary skill in the art, at the time of the alleged invention of the Asserted '721 Patent Claims, would have been motivated to combine the references disclosed herein in such a way to

reach the alleged inventions. In certain instances, the suggested obviousness combinations are provided in the alternative to Defendant's anticipation contentions, which shall not be construed to suggest that any reference included in the combinations is not by itself anticipatory. The combinations evidencing teachings, suggestions, and/or motivations to combine the prior-art references in a way that renders the Asserted Claims obvious are merely exemplary.

Primary Reference	In Combination With
Niles	Sutton
Niles	Kailash 066
Niles	Tuvell 283
Niles	Natarajan
Niles	Comegys
Niles	Kailash 136
Niles	Jiang
Niles	Del Grosso
Niles	Scanlan
Niles	Kumar
Niles	Gassoway
Niles	Hubbard 368
Niles	Kester 001
Niles	Liu
Niles	McCorkendale
Niles	Sobel
Niles	Poston
Niles	Shipman

Primary Reference	In Combination With
Niles	Fraser
Sutton	Chess
Sutton	Niles
Sutton	Kailash 066
Sutton	Tuvell 283
Sutton	Natarajan
Sutton	Kailash 136
Sutton	Comegys
Sutton	Jiang
Sutton	Del Grosso
Sutton	Scanlan
Sutton	Kumar
Sutton	Gassoway
Sutton	Hubbard 368
Sutton	Kester 001
Sutton	Liu
Sutton	McCorkendale
Sutton	Sobel
Sutton	Shipman
Sutton	Fraser
Sutton	Poston
Kailash 066	Chess
Kailash 066	Niles

Primary Reference	In Combination With
Kailash 066	Sutton
Kailash 066	Tuvell 283
Kailash 066	Natarajan
Kailash 066	Kailash 136
Kailash 066	Comegys
Kailash 066	Jiang
Kailash 066	Scanlan
Kailash 066	Kumar
Kailash 066	Gassoway
Kailash 066	Hubbard 368
Kailash 066	Kester 001
Kailash 066	Liu
Kailash 066	McCorkendale
Kailash 066	Sobel
Kailash 066	Shipman
Kailash 066	Fraser
Kailash 066	Poston
Chess	Kailash 066
Chess	Natarajan
Chess	Niles
Chess	Sutton
Chess	Tuvell 283
Chess	Kailash 136

Primary Reference	In Combination With
Chess	Comegys
Chess	Jiang
Chess	Kumar
Chess	Scanlan
Chess	Del Grosso
Chess	Gassoway
Chess	Hubbard 368
Chess	Kester 001
Chess	Liu
Chess	McCorkendale
Chess	Sobel
Chess	Shipman
Chess	Fraser
Chess	Poston
Kester 001	Chess
Kester 001	Niles
Kester 001	Sutton
Kester 001	Kailash 066
Kester 001	Tuvell 283
Kester 001	Natarajan
Kester 001	Kailash 136
Kester 001	Comegys
Kester 001	Jiang

Primary Reference	In Combination With
Kester 001	Kumar
Kester 001	Scanlan
Kester 001	Del Gross
Kester 001	Gassoway
Kester 001	Hubbard 368
Kester 001	Liu
Kester 001	McCorkendale
Kester 001	Sobel
Kester 001	Shipman
Kester 001	Fraser
Kester 001	Poston
Liu	Chess
Liu	Niles
Liu	Sutton
Liu	Kailash 066
Liu	Tuvell 283
Liu	Natarajan
Liu	Kailash 136
Liu	Comegys
Liu	Jiang
Liu	Kumar
Liu	Scanlan
Liu	Del Grosso

Primary Reference	In Combination With
Liu	Gassoway
Liu	Kester 001
Liu	Hubbard 368
Liu	McCorkendale
Liu	Sobel
Liu	Shipman
Liu	Fraser
Liu	Poston
Sobel	Chess
Sobel	Niles
Sobel	Sutton
Sobel	Kailash 066
Sobel	Tuvell 283
Sobel	Natarajan
Sobel	Kailash 136
Sobel	Comegys
Sobel	Jiang
Sobel	Kumar
Sobel	Scanlan
Sobel	Del Gross
Sobel	Gassoway
Sobel	Hubbard 368
Sobel	Liu

Primary Reference	In Combination With
Sobel	McCorkendale
Sobel	Kester 001
Sobel	Poston
Sobel	Shipman
Sobel	Fraser
Shipman	Chess
Shipman	Niles
Shipman	Sutton
Shipman	Kailash 066
Shipman	Tuvell 283
Shipman	Natarajan
Shipman	Kailash 136
Shipman	Comegys
Shipman	Jiang
Shipman	Kumar
Shipman	Scanlan
Shipman	Del Gross
Shipman	Gassoway
Shipman	Hubbard 368
Shipman	Kester 001
Shipman	Liu
Shipman	McCorkendale
Shipman	Sobel

Primary Reference	In Combination With
Shipman	Poston
Shipman	Fraser
Liu	Hubbard 368 + Kester 001
Liu	Gassoway + Kailash 066
Liu	Gassoway + Natarajan
Liu	Gassoway + Sutton
Liu	Gassoway + Niles
Liu	Gassoway + Chess
Liu	Kailash 066 + Scanlan
Liu	Natarajan + Scanlan
Liu	Sutton + Scanlan
Liu	Niles + Scanlan
Liu	Chess + Scanlan
Liu	Natarajan + Comegys
Liu	Comegys + Kailash 066
Liu	Comegys + Sutton
Liu	Comegys + Niles
Liu	Comegys + Chess
Liu	Kailash 066 + Sutton
Liu	Sutton + Niles
Liu	Niles + Kailash 066
Liu	Kailash 066 + Jiang
Liu	Sobel + Scanlan

Primary Reference	In Combination With
Liu	Sobel + Kumar
Liu	Tuvell 283 + Hubbard 368
Liu	Tuvell 283 + McCorkendale
Liu	Tuvell 238 + Sobel
Liu	Tuvell 283 + Natarajan
Liu	Tuvell 283 + Kailash 066
Liu	Tuvell 283 + Niles
Liu	Tuvell 283 + Sutton
Liu	Shipman + Poston
Liu	Fraser + McCorkendale
Liu	Fraser + Tuvell 283
Liu	Fraser + Gassoway
Liu	Fraser + Comegys
Liu	Fraser + Shipman
Liu	Poston + Niles
Liu	Poston + Comegys
Kester 001	Chess + Sobel
Kester 001	Chess + Gassoway
Kester 001	Chess + Kumar
Kester 001	Sutton + Sobel
Kester 001	Sutton + Gassoway
Kester 001	Sutton + Kumar
Kester 001	Kailash 066 + Sobel

Primary Reference	In Combination With
Kester 001	Kailash 066 + Gassoway
Kester 001	Kailash 066 + Kumar
Kester 001	Niles + Kumar
Kester 001	Niles + Gassoway
Kester 001	Niles + Scanlan
Kester 001	Sobel + Gassoway
Kester 001	Sobel + McCorkendale
Kester 001	Sobel+ Kumar
Kester 001	Sobel + Scanlan
Kester 001	Sobel +Niles
Kester 001	Shipman + Chess
Kester 001	Poston + Niles
Kester 001	Shipman + Sutton
Kester 001	Fraser + Sutton
Kester 001	Fraser + Chess
Kester 001	Fraser + Kailash 066
Sobel	Hubbard 368 + Scanlan
Sobel	Hubbard 368 + Comegys
Sobel	Hubbard 368 + Tuvell 283
Sobel	Hubbard 368 + Niles
Sobel	Hubbard 368 + Kailash 066
Sobel	Hubbard 368 + Sutton
Sobel	Natarajan + Scanlan

Primary Reference	In Combination With
Sobel	Natarajan + Comegys
Sobel	Natarajan + Kailash 066
Sobel	Natarajan + Sutton
Sobel	Natarajan + Tuvell 283
Sobel	Natarajan + Niles
Sobel	Kailash 066 + Scanlan
Sobel	Kailash 066 + Comegys
Sobel	Kailash 066 + Tuvell 283
Sobel	Kailash 066 + Niles
Sobel	Kailash 066 + Sutton
Sobel	Sutton + Scanlan
Sobel	Sutton + Comegys
Sobel	Sutton + Tuvell 283
Sobel	Sutton + Niles
Sobel	Liu + Scanlan
Sobel	Liu + Comegys
Sobel	Liu + Tuvell 283
Sobel	Liu + Niles
Sobel	Liu + Kailash 066
Sobel	Liu + Sutton
Sobel	Kester 001 + Liu
Sobel	Kester 001 + Chess
Sobel	Kester 001 + Niles

Primary Reference	In Combination With
Sobel	Kester 001 + Sutton
Sobel	Kester 001 + Natarajan
Sobel	Kester 001 + Kailash 136
Sobel	Chess + Scanlan
Sobel	Chess + Comegys
Sobel	Chess + Tuvell 283
Sobel	Niles + Scanlan
Sobel	Niles + Comegys
Sobel	Niles + Tuvell 283
Sobel	Kailash 136 + Scanlan
Sobel	Kailash 136 + Comegys
Sobel	Kailash + Tuvell 283
Sobel	Poston + Fraser
Sobel	Fraser + Scanlan
Sobel	Fraser + Comegys
Sobel	Fraser + Tuvell 283
Sobel	Fraser + Sutton
Sobel	Fraser + Kailash 066
Sutton	Kailash 066 + Niles
Sutton	Kailash 066 + Tuvell 283
Sutton	Kailash 066 + Natarajan
Sutton	Kailash 066 + Comegys
Sutton	Kailash 066 + Chess

Primary Reference	In Combination With
Sutton	Chess + Comegys
Sutton	Chess + Tuvell 283
Sutton	Tuvell 283 + Comegys
Sutton	Niles + Tuvell 283
Sutton	Niles + Comegys
Sutton	Niles + Natarajan
Sutton	Shipman + Poston
Sutton	Shipman + Gassoway
Sutton	Shipman + Natarajan
Sutton	Shipman + Kailash 066
Sutton	Poston + Tuvell 283
Sutton	Fraser + Tuvell 283
Sutton	Shipman + Scanlan
Sutton	Shipman + Chess
Sutton	Niles + Poston
Chess	Niles + Tuvell 283
Chess	Niles + Natarajan
Chess	Niles + Comegys
Chess	Niles + Sutton
Chess	Niles + Kailash 066
Chess	Sutton + Kailash 066
Chess	Sutton + Natarajan
Chess	Sutton + Tuvell 283

Primary Reference	In Combination With
Chess	Sutton + Comegys
Chess	Kailash 066 + Tuvell 283
Chess	Kailash 066 + Comegys
Chess	Kailash 066 + Natarajan
Chess	Tuvell 283 + Comegys
Chess	Shipman + Poston
Chess	Shipman + Kailash 136
Chess	Poston + Comegys
Chess	Poston + Tuvell 283
Chess	Poston + Niles
Chess	Shipman + Kester 001
Chess	Shipman + Fraser
Chess	Fraser + Kailash 066
Chess	Fraser + Jiang
Chess	Shipman + Jiang
Chess	Shipman + Scanlan
Chess	Shipman + Niles
Kailash 066	Sutton + Niles
Kailash 066	Sutton + Chess
Kailash 066	Sutton + Tuvell 283
Kailash 066	Sutton + Comegys
Kailash 066	Sutton + Natarajan
Kailash 066	Chess + Tuvell 283

Primary Reference	In Combination With
Kailash 066	Chess + Comegys
Kailash 066	Chess + Natarajan
Kailash 066	Niles + Comegys
Kailash 066	Niles + Tuvell 283
Kailash 066	Niles + Natarajan
Kailash 066	Fraser + Niles
Kailash 066	Fraser + Sutton
Kailash 066	Shipman + Scanlan
Kailash 066	Shipman + Niles
Kailash 066	Shipman + Sutton
Kailash 066	Shipman + Liu
Kailash 066	Poston + Niles
Niles	Sutton + Kailash 066
Niles	Sutton + Tuvell 283
Niles	Sutton + Natarajan
Niles	Sutton + Comegys
Niles	Chess + Sutton
Niles	Chess + Kailash 066
Niles	Chess + Tuvell 283
Niles	Chess + Comegys
Niles	Kailash 066 + Comegys
Niles	Kailash 066 + Tuvell 283
Niles	Tuvell 283 + Comegys

Primary Reference	In Combination With
Niles	Fraser + Gassoway
Niles	Fraser + Tuvell 283
Niles	Shipman + Fraser
Shipman	Poston + Sobel
Shipman	Poston + Niles
Shipman	Sobel + Gassoway
Shipman	Sobel + Scanlan
Shipman	Sobel + Kumar
Shipman	Sobel + Niles
Shipman	Chess + Scanlan
Shipman	Chess + Kester 001
Shipman	Poston + Liu
Shipman	Poston + McCorkendale
Shipman	Poston + Comegys
Shipman	Poston + Kailash 136
Shipman	Poston + Natarajan
Shipman	Poston + Sutton
Shipman	Chess + Natarajan
Shipman	Chess + Sutton
Shipman	Chess + Sobel
Shipman	Chess + Gassoway
Shipman	Chess + Kailash 066
Shipman	Niles + Natarajan

Primary Reference	In Combination With
Shipman	Niles + Sutton
Shipman	Niles + Gassoway
Shipman	Niles + Kailash 066
Shipman	Liu + Natarajan
Shipman	Liu + Sutton
Shipman	Liu + Sobel
Shipman	Liu + Gassoway
Shipman	Liu + Kailash 066
Shipman	Comegys + Natarajan
Shipman	Comegys + Sutton
Shipman	Comegys + Sobel
Shipman	Comegys + Gassoway
Shipman	Comegys + Kailash 066
Shipman	Kailash 136 + Kailash 066
Shipman	Kailash 136 + Gassoway
Shipman	Kailash 136 + Sobel
Shipman	Kailash 136 + Sutton
Shipman	Kailash 136 + Natarajan
Shipman	Tuvell 283 + Natarajan
Shipman	Tuvell 283 + Chess
Shipman	Tuvell 283 + Sutton
Shipman	Tuvell 283 + Kailash 066
Shipman	Natarajan + Kumar

Primary Reference	In Combination With
Shipman	Natarajan + Hubbard 368
Shipman	Natarajan + Del Grosso
Shipman	Chess + Kumar
Shipman	Chess + Hubbard 368
Shipman	Chess + Del Grosso
Shipman	Sutton + Kumar
Shipman	Sutton + Del Grosso
Shipman	Sutton + Hubbard 368
Shipman	Kailash 066 + Kumar
Shipman	Kailash 066 + Hubbard 368
Shipman	Kailash 066 + Del Grosso
Shipman	Gassoway + Sutton
Shipman	Gassoway + Natarajan
Shipman	Gassoway + Kailash 066

Defendant reserves the right to amend these Contentions and prior art combinations in light of new information that may arise from third parties related to additional computer security systems. The following list of references are also evidence of the knowledge of POSITA at the time of the alleged invention: Dozortsey, van der Made, Hinchliffe, Kirby, Chaudhry, Sarathy, Forristal, McDougal, Kailash 581, Yang, Kester 340, Blumfield, Bhargava, Hypponen, Kuo, Shukla, Ferrand, Madhok 266 A2, Madhok 266 A3, Curnyn, Del Gross, Abraham, Scanlan, Jiang, Kumar, and Dai.

One of ordinary skill in the art would be motivated to combine these references in the above combinations for at least the following reasons. One of ordinary skill in the art would have

understood that each of these references are in the same field of endeavor, namely methods and devices relating to computer security. *See, e.g.*, Chess at 5:57-62; Comegys at [0008]; Kailash 066 at 2:32-38; Kailash 136 at 10:61-64; Natarajan at 3:26-29; Niles at 3:56-4:11; Sutton at 1:46-49; Tuvell 283 at 2:27-32; Gassoway at Abstract; Hubbard 368 at Abstract; Kester 001 at Claim 1; Liu at Abstract; McCorkendale at [0002]; Sobel at 1:6-10; Shipman at Abstract; Fraser at 6:17-46; and Poston at 2:40-44.

One of ordinary skill in the art would have recognized that these references are directed to addressing the same problem, in particular, improving computer security. *See, e.g.*, Chess at 5:57-62; Comegys at [0008]; Kailash 066 at 2:32-38; Kailash 136 at 10:61-64; Natarajan at 3:26-29; Niles at 3:56-4:11; Sutton at 1:46-49; Tuvell 283 at 2:27-32; Gassoway at Abstract; Hubbard 368 at Abstract; Kester 001 at Claim 1; Liu at Abstract; McCorkendale at Abstract; Sobel at Abstract, Shipman at Abstract; Fraser at 6:17-46; and Poston at 2:40-44.

Further, the Asserted Claims of the '721 Patent contain merely a duplication of concepts known in the prior art and have no patentable significance given that no unexpected results occur—*i.e.* the patentee merely combines known prior art elements according to known methods to yield predictable results. For example, the prior art references describe a "method of classifying a computer object as malware." *See, e.g.*, Chess at 5:57-62; Comegys at [0008]; Kailash 066 at 2:54-56; Kailash 136 at 10:61-64; Natarajan at 3:26-29; Niles at 3:56-4:11; Sutton at claim 12; Tuvell 283 at 2:27-32; Gassoway at Abstract; Hubbard 368 at Abstract; Kester 001 at Claim 1; Liu at Abstract; McCorkendale at Abstract; Sobel at Abstract; Shipman at Abstract; Fraser at 6:17-46; and Poston at 8:24-29.

The prior art references further describe a "system for classifying a computer object as malware." *See, e.g.*, Chess at 5:57-62; Comegys at [0008]; Kailash 066 at 2:32-38; Kailash 136

at 10:61-64; Natarajan at 3:26-29; Niles at 9:23-38; Sutton at 1:22-28; Tuvell 283 at 2:27-32; Gassoway at Abstract; Hubbard 368 at Abstract; Kester 001 at Claim 1; Liu at Abstract; McCorkendale at Abstract; Sobel at Abstract; Shipman at Abstract; Fraser at 6:17-46; and Poston at 2:40-44.

The prior art references further describe "receiving, at a first threat server, details of a first computer object from a first remote computer, wherein the details of the first computer object include data uniquely identifying the first computer object." *See, e.g.*, Chess at 4:66-5:17; Comegys at [0029]; Kailash 066 at 15:37-46; Kailash 136 at 3:45-51; Natarajan at 5:44-48; Niles at 5:30-42; Sutton at 3:12-21; Tuvell 283 at 5:56-62; Gassoway at [0030]; Hubbard 368 at [0037]; Kester 001 at [0048]-[0049]; Liu at [0083]; McCorkendale at [0025]; Sobel at 4:4-21; Shipman at 6:41-61; Fraser at 11:47-12:10; and Poston at 4:55-5:9.

The prior art references further describe "a first threat server arranged to receive details of a computer object from a first remote computer, wherein the details of the first computer object include data uniquely identifying the first computer object." *See, e.g.*, Chess at 4:66-5:17; Comegys at [0029]; Kailash 066 at 15:37-46; Kailash 136 at 3:45-51; Natarajan at 5:44-48; Niles at 5:30-42; Sutton at 3:12-21; Tuvell 283 at 5:56-62; Gassoway at [0030]; Hubbard 368 at [0037]; Kester 001 at [0048]-[0049]; Liu at [0083]; McCorkendale at [0025]; Sobel at 4:4-21; Shipman at 6:41-61; Fraser at 11:47-12:10; and Poston at 4:55-5:9.

The prior art references further describe "determining, by the first threat server, whether the first computer object has been previously seen by comparing the data uniquely identifying the first computer object to a plurality of data uniquely identifying plural computer objects in a first database associated with the first threat server." *See, e.g.*, Chess at claim 20; Comegys at [0041]-[0043]; Kailash 066 at 6:23-39; Kailash 136 at 4:55-64; Natarajan at 16:52-67; Niles at 2:55-59;

Sutton at 6:50-54; Tuvell 283 at 16:5-8; Gassoway at [0045]-[0046]; Hubbard 368 at [0052]-[0053]; Kester 001 at [0048]-[0050]; Liu at [0073]; McCorkendale at [0036]-[0037]; Sobel at 6:26-7:8; Shipman at 8:31-45; Fraser at 11:47-12:10; and Poston at 5:63-6:6.

The prior art references further describe "the first threat server is further arranged to receive the details of the computer object from the first remote computer and determine whether the first computer object has been previously seen by comparing the data uniquely identifying the first computer object to a plurality of data uniquely identifying plural computer objects in a first database associate with the first threat server." *See, e.g.*, Chess at claim 20; Comegys at [0041]-[0043]; Kailash 066 at 6:23-39; Kailash 136 at 4:55-64; Natarajan at 16:52-67; Niles at 2:55-59; Sutton at 6:50-54; Tuvell 283 at 16:5-8; Gassoway at [0045]-[0046]; Hubbard 368 at [0052]-[0053]; Kester 001 at [0048]-[0050]; Liu at [0073]; McCorkendale at [0036]-[0037]; Sobel at 6:26-7:8; Shipman at 8:31-45; Fraser at 11:47-12:10; and Poston at 5:63-6:6.

The prior art references further describe "receiving additional information about the first computer object from the first remote computer when the first computer object has not been previously seen." *See, e.g.*, Chess at 6:29-34; Comegys at [0051]; Kailash 066 at 6:23-39; Kailash 136 at 3:66-4:2; Natarajan at 10:6-15; Niles at 8:55-58; Sutton at 6:45-49; Tuvell 283 at 11:44-57; Gassoway at [0045]-[0046]; Hubbard 368 at [0074]-[0075]; Kester 001 at [0042]-[0045]; Liu at [0084]-[0086]; McCorkendale at [0036]-[0037]; Sobel at 6:26-49; Shipman at 8:50-62; Fraser at 21:21-22:27; and Poston at 6:7-47.

The prior art references further describe a "first threat server [] further arranged to receive additional information about the first computer object from the first remote computer when the first computer object has not been previously seen." *See, e.g.*, Chess at 6:29-34; Comegys at [0051]; Kailash 066 at 6:23-39; Kailash 136 at 3:66-4:2; Natarajan at 10:6-15; Niles at 8:55-58;

Sutton at 6:45-49; Tuvell 283 at 11:44-57; Gassoway at [0045]-[0046]; Hubbard 368 at [0074]-[0075]; Kester 001 at [0042]-[0045]; Liu at [0084]-[0086]; McCorkendale at [0036]-[0037]; Sobel at 6:26-49; Shipman at 8:50-62; Fraser at 21:21-22:27; and Poston at 6:7-47.

The prior art references further describe "stor[ing] the details of the first computer object and the received additional information about the first computer object in a second database associated with the first threat server when the first computer object has not been previously seen." *See, e.g.*, Chess at 6:57-7; Comegys at [0026]; Kailash 066 at 6:41-62; Kailash 136 at 4:42-54; Natarajan at 17:18-23; Niles at 2:59-3:6; Sutton at 9:21-32; Gassoway at [0048]-[0049]; Hubbard 368 at [0074]-[0075]; Kester 001 at [0052]; Liu at [0086]; McCorkendale at [0036]-[0038]; Sobel at 5:53-6:4; Shipman at 9:1-42; Fraser at 21:21-21:39; and Poston at 6:48-7:5.

The prior art references further describe "provid[ing] contents of the second database to at least one database associated with a central server, wherein the contents comprise a signature of the first computer object, behavior information about the first computer object, and information about the first remote computer." *See, e.g.*, Comegys at FIG. 5; Comegys at [0077]; Kailash 066 at 6:41-62; Kailash 136 at 6:46-53; Natarajan at 16:52-67; Niles at 6:56-61; Sutton at 21:48-22:5; Gassoway at [0051]; Hubbard 368 at [0074]-[0075]; Kester 001 at [0054]; Liu at [0086]; McCorkendale at [0045]-[0046]; Sobel at 7:9-17; Shipman at 9:1-42; Fraser at 9:52-10:14; and Poston at 6:48-7:5.

The prior art references further describe "increas[ing] a count associated with a number of times that the first computer object has been seen, and providing the increased count associated with the number of times that the first computer object has been seen to the central server." *See, e.g.*, Comegys at [0055]; Kailash 066 at 16:18-27; Niles at 7:18-27; Sutton at 13:15-21; Tuvell 283 at 16:38-40; Gassoway at [0051]; Hubbard 368 at [0070]-[0072]; Kester 001 at[0060]-[0061]; Liu

at [0086]; McCorkendale at [0045]-[0046]; Sobel at 7:56-8:23; Shipman at 9:1-46; Fraser at 9:14-28; and Poston at 16:1-29.

The prior art references further describe "the central server arranged to receive the increased count associated with the number of times that the first computer object has been seen." *See, e.g.*, Comegys at [0055]; Kailash 066 at 16:18-27; Niles at 7:18-27; Sutton at 13:15-21; Tuvell 283 at 16:38-40; Gassoway at [0051]; Hubbard 368 at [0070]-[0072]; Kester 001 at[0060]-[0061]; Liu at [0086]; McCorkendale at [0045]-[0046]; Sobel at 7:56-8:23; Shipman at 9:1-46; Fraser at 9:14-28; and Poston at 16:1-29.

The prior art references further describe "receiv[ing], at a second threat server, at least a portion of the contents of the at least one database associated with the central server, wherein the at least a portion of the contents of the at least one database associated with the central server include a subset of the details of the first computer object stored in the second database." *See, e.g.*, Chess at 8:33-41; Kailash 066 at 6:41-62; Kailash 136 at 6:46-53; Natarajan at 10:15-26; Niles at 3:17-29; Sutton at 9:21-32; Tuvell 283 at FIG. 11; Gassoway at [0042]-[0043]; Hubbard 368 at [0054]-[0056]; Kester 001 at [0069]-[0070]; Liu at [0086]; McCorkendale at [0050]-[0051]; Sobel at 7:56-8:23; Shipman at 9:62-10:10; Fraser at 9:52-10:14; and Poston at 12:5-24.

Other examples of these concepts are cited in the attached charts for the above references. *See* Exs. C-1–C-17. It would have been known and simple to take a prior art for malware detection by comparison with similar objects, and it would have been obvious to a POSITA to try this. *Id.* It would have also yielded predictable results in the context of improving computer security. *Id.*

Defendant is not aware of any secondary considerations supporting non-obviousness of the '721 Patent claims. To the extent Plaintiffs seek to introduce any alleged secondary considerations in the future, Defendant reserves the right to respond at that time.

F. Invalidity Under Section 101

Pursuant to Section II, Paragraph 4 of the Order, Defendant provides an identification of the claims of the ’721 Patent they contend are directed to ineligible subject matter under pre-AIA 35 U.S.C. § 101. These Contentions are being proffered without expert disclosure or discovery.

Each Asserted Claim of the ’721 Patent is directed to ineligible subject matter under 35 U.S.C. § 101. First, the Asserted Patent Claims of the ’721 Patent are directed to the abstract idea of, for example, receiving, analyzing, and storing information. *See, e.g.*, ’721 Patent at claim 1 (“receiving . . . details of a first computer object,” “determining . . . whether the first computer object has been previously seen,” “comparing the data uniquely identifying the first computer object to a plurality of data uniquely identifying plural computer objects,” “receiving additional information about the first computer object,” “storing the details of the first computer object and the received additional information,” “providing contents of the second database to at least one database associated with a central server,” “increasing a count,” and “receiving . . . at least a portion of the contents of the at least one database”); claim 8 (“receiving . . . details of a second computer object,” “determining . . . whether the second computer object has been previously seen,” “comparing the data uniquely identifying the second computer object to a plurality of data uniquely identifying plural computer objects,” “determining that the second computer object has been seen before,” “increasing a count associated with a number of times that the second computer object has been seen,” and “receiving . . . a count associated with the number of times that the second computer object has been seen”); claim 9 (“receive details of a computer object,” “receive the details of the computer object from the first remote computer,” “determine whether the first computer object has been previously seen,” “comparing the data uniquely identifying the first computer object to a plurality of data uniquely identifying plural computer objects,” “receive additional information about the first computer object,” “store the details of the first computer

object and the received additional information about the first computer object," "provide contents of the second database to at least one database associated with a central server," "increase a count associated with a number of times that the first computer object has been seen," "receive the increased count," and "receive at least a portion of the contents of the at least one database associated with the central server"); claim 14 ("storing object signatures and metadata about objects," "storing object behavior information," and "storing information about what objects are present on what remote computers"). The specification of the '721 confirms that the Asserted Claims are directed to basic concepts of receiving, analyzing, and storing information. *See, e.g.*, *id.*, 2:19–28 ("[V]arious new and advantageous cloud-based strategies for fighting malware are disclosed. In particular a cloud-based approach is outlined where the central server receives information about objects and their behaviour on remote computers throughout the community and builds a picture of objects and their behaviour seen throughout the community. This information is used to make comparisons with this data across the community in developing and applying various heuristics and or rules to determine whether a newly seen object is malevolent or not."); 2:29–31 ("This approach to fighting malware involves communicating, storing and managing vast amounts of data at the central server . . . ."); 2:36–38 ("It is also desirable to improve the processes for analysing the data to make the best use of the time and specialised skills of the human malware analysts."); 2:46–3:16; *see also* 1:56–62 ("More recently, so-called 'cloud' based techniques have been developed for fighting malware/viruses. In these techniques, protection is provided by signatures that are stored in the cloud, i.e. in a central server to which the remote computers are connected. Thus, a remote computer can be given protection as soon as a new malware object is spotted and its signature stored in the central server . . . .)); 1:65–2:7 ("This technique can also give the advantage of moving the processing burden from the remote

computer to the central server. However, this technique is limited by sending only signature information or very basic information about an object to the central server. Therefore, in order to analyse whether or not an unknown object is malware, a copy of that object is normally sent to the central server where it is investigated by a human analyst. This is a time consuming and laborious task introducing considerable delay in classifying malware as safe or unsafe."); 2:7–10 ("Also, given the considerable volume of new objects that can be seen daily across a community, it is unrealistic to have a skilled human analyst investigate each new object thoroughly.").

Second, the Asserted Claims of the '721 Patent do not contain any inventive concept as they combine standard, generic, and well-known components in a conventional way to arrive at the claimed invention. The '721 Patent describes receiving, analyzing, and storing information using, for example, networks, computing devices, and storage components well-known in the prior art, including the Internet, a LAN, personal computers, servers "of any type," PDAs, mobile phones, televisions, or "any other device capable of loading and operating computer objects." *See, e.g.*, *id.*, 2:59–3:1. In addition, the '721 Patent makes clear that its use of "computer objects" is well-known and conventional: "[a]n object in this sense may be a computer file, part of a file or a sub-program, macro, web page or any other piece of code to be operated by or on the computer, or any other event whether executed, emulated, simulated or interpreted." *Id.*, 4:2–5. The '721 Patent also describes using well-known storage methods and components, including computer RAM, hard disk drives, removable storage such as a USB pen drive, an email attachment, etc. *See, e.g.*, *id.*, 4:8–11. Considered individually or as an ordered combination, the claim limitations recite nothing more than the abstract idea of receiving, analyzing, and storing information. Simply identifying an overarching desirable outcome (such as "more accurately and more efficiently detecting malware" or "improv[ing] the processes for analysing the data to make the best use of

the time and specialised skills of the human malware analysts") without specifying any technical improvements over the prior art to achieve that outcome does not rise to the level of an inventive and, thus, patent-eligible concept. *See Intell. Ventures I LLC v. Erie Indem. Co.*, 850 F.3d 1315, 1330–32 (Fed. Cir. 2017) ("The recited use of a mobile interface and pointers to retrieve user information evidences nothing more than a 'generic computer implementation' of the abstract idea that is insufficient to transform a patent-ineligible abstract idea into a patent-eligible invention."); *Intellectual Ventures I LLC v. Capital One Bank (USA)*, 792 F.3d 1363, 1367–68 (Fed. Cir. 2015) (claims directed to internet-based communications recite generic computer components and do not claim inventive concepts). Moreover, the prior art cited throughout Defendant's Contentions, as well as the patents themselves and the prior art cited therein, demonstrate that each claim element in every Asserted Claim is directed to well-understood, routine, and conventional computer security components and techniques. The remaining Asserted Claims merely apply those conventional and generic computer components and techniques in a selected physical or technical environment—an environment where they had already long been used by those of ordinary skill as the prior art referenced herein reflects. Thus, the Asserted Claims of the '721 Patent fail to add anything to the underlying abstract idea sufficient to transform them into patent-eligible subject matter.

Furthermore, at least under Plaintiffs' apparent infringement theory, as set forth in their Infringement Contentions, the Asserted Claims of the '721 Patent are ineligible because they would preempt the entire field of receiving, analyzing, and storing information.

This ineligibility contention is based in whole or in part on Defendant's present understanding of the Asserted Claims of the '721 Patent, their current construction of the claims, and/or Plaintiffs' apparent construction of the claims in their current Infringement Contentions.

Defendant is not adopting Plaintiffs' apparent claim construction, nor admitting to the accuracy of any particular claim construction. To the extent that Plaintiffs' apparent claim construction or applications thereof are reflected in this Contention, nothing herein should be construed as an admission that Defendant agrees with Plaintiffs' apparent claim construction or Plaintiffs' application of that claim construction in Plaintiffs' current Infringement Contentions. Further, claim construction is not necessary to determine that the Asserted Claims of the '721 Patent are ineligible.

Defendant's Contentions regarding ineligibility under 35 U.S.C. § 101 may be based on Plaintiffs' allegations of infringement. Defendant does not necessarily agree with the interpretations set forth in Plaintiffs' Infringement Contentions and thus this ineligibility contention is not an admission that the accused products meet any particular claim element or infringe the Asserted Claim. In addition, nothing in this ineligibility contention should be interpreted as a position about whether any portion of the Asserted Claims are limiting or not. Further, by submitting this ineligibility contention, Defendant does not waive and hereby expressly reserves its right to raise invalidity defenses including, but not limited, to defenses under 35 U.S.C. §§ 102, 103, and/or 112.

Discovery in this case is ongoing and, accordingly, this ineligibility contention is not to be considered final. Defendant reserves all rights to revise, amend, or supplement this ineligibility claim at a later date as discovery progresses, after the Court issues its claim construction ruling, or if Plaintiffs amend their Infringement Contentions.

VI. INVALIDITY CONTENTIONS FOR THE '386 PATENT

A. General State of the Art at the Time of the Alleged Inventions

The prior art references identified in these Invalidity Contentions, and the "References Cited" on the face of the '386 Patent, may provide background and context pertinent to the

teachings in, and interpretation of, the prior art referenced by the attached claim charts. Defendant may rely upon that prior art, including the "References Cited" on the face of the '386 Patent, to demonstrate the general state of the art at the time of the alleged inventions and what one of ordinary skill in the art would have understood at a time prior to the date of the alleged invention of the Asserted Claims. This prior art is exemplary only and is not in any way intended to limit the scope of what one of ordinary skill in the art would have understood at the times of the alleged inventions. Defendant reserves the right to rely upon additional prior art, information, and/or knowledge to demonstrate what one of ordinary skill would have understood at any time prior to the date of alleged invention of the Asserted Claims.

B. Claim Charts

Pursuant to Section II, Paragraph 4 of the Order, the claim charts attached in Appendix A as Exhibits D-1 through D-5 identify where each limitation of the Asserted Claims of the '386 Patent is found in the prior art.

C. Identification of the Prior Art

Based on Plaintiffs' July 12, 2022 Preliminary Infringement Contentions, Defendant identifies prior art below and in Appendix A as Exhibits D-1 through D-5, which contains charts disclosing the identity of each item of prior art that anticipates each claim and/or renders it obvious. As shown in Appendix A as Exhibits D-1 through D-5 and below, Defendant has identified each prior art reference by its number, country of origin, author, and date of issue (where applicable). Defendant notes that it has applied the prior art in accordance with Plaintiffs' improper assertions of infringement and improper applications of the claims. Defendant does not agree with Plaintiffs' application of the claims and denies infringement.

Defendant further contends that all claims that are anticipated by a particular reference are also rendered obvious by that same reference alone, in combination with the other references,

and/or in combination with the knowledge of a person of ordinary skill in the art. Defendant reserves the right to rely upon any combination of the charted prior art under 35 U.S.C. § 103, yet Defendant has also identified exemplary obviousness combination in Section VI.E, *infra*.

'386 Patent Prior Art Patents/Patent Applications				
Ex. No.	**Patent / Publication No.**	**Country of Origin**	**Filing Date**	**Date of Issue / Publication**
Ex. D-1	U.S. Patent No. 9,654,495 ("Hubbard 495")	U.S.	Feb. 28, 2007	May 16, 2017
Ex. D-2	U.S. Patent Publication No. 2008/0175266 ("Alperovitch")	U.S.	Jan. 24, 2007	July 24, 2008
Ex. D-3	U.S. Patent No. 8,561,182 ("Lee")	U.S.	Jan. 29, 2009	Oct. 15, 2013
Ex. D-4	U.S. Patent Publication No. 2008/0028100 ("Adelman 2008")	U.S.	Oct. 3, 2007	Jan. 31, 2008
Ex. D-5	U.S. Patent No. 7,809,796 ("Bloch 2007")	U.S.	Apr. 5, 2007	Oct. 5, 2010

'386 Patent Additional Prior Art/Background Art
U.S. Patent No. 8,069,213 ("Bloch 2010")
U.S. Patent Publication No. 2009/0248623 ("Adelman 2009")
U.S. Patent Publication No. 2010/0256977 ("Yu 977")
Building Reputations for Internet Clients, Wei et al., Electronic Notes in Theoretical Computer Science 179 (2007) 17–30 ("Wei")
Generative Prior Knowledge for Discriminative Classification, Epshteyn et al., Journal of Artificial Intelligence Research 27 (2006) 25-53 ("Epshteyn")
A Small World Overlay P2P Transfer System with Role-Based and Reputation-Based Access Control Policies, Xia et al., 2008 International Conference on Internet Computing in Science and Engineering ("Xia")
A Multilevel Reputation System for Peer-to-Peer Networks, Xu et al., Sixth International Conference on Grid and Cooperative Computing (GCC 2007) ("Xu")

Furthermore, with respect to the '386 Patent, under pre-AIA 35 U.S.C. § 102(f), Defendant identifies the activities of entities involved in computer security as referenced in Provisional

Application Nos. 61/171,264 and 61/241,389, to which Plaintiffs claim priority. *See, e.g.*, Provisional Application No. 61/171,264 at [0002]-[0035]; Provisional Application No. 61/241,389 at [0002]-[0035].

Furthermore, with respect to the '386 Patent, under pre-AIA 35 U.S.C. §§ 102(a), (b), and (g)(2), Defendant reserves the right to identify prior art systems developed prior to April 21, 2009. *See, e.g.*, *Intell. Ventures II LLC v. FedEx Corp.*, No. 2:16-CV-00980-JRG, 2019 WL 1434656, at *8-11 (E.D. Tex. Mar. 29, 2019). Discovery is ongoing, and Defendant reserves the right to amend the Invalidity Contentions herein based on third-party discovery obtained.

D. Anticipation

At least under Plaintiffs' apparent infringement theory, the Asserted Claims of the '386 Patent are anticipated, either expressly or inherently as understood by a person having ordinary skill in the art, by the references as set forth in the attached claim charts. At least under Plaintiffs' apparent infringement theory, Asserted Claims 1-13, 15, 16, and 18 of the '386 Patent are anticipated, either expressly or inherently as understood by a person having ordinary skill in the art, by Hubbard 495 and Alperovitch as set forth in the attached claim chart.

E. Obviousness

At least under Plaintiffs' apparent infringement theory, the Asserted Claims of the '386 Patent are rendered obvious by the references identified in the attached claim charts, either alone or in the combinations with other prior art references as identified below. Defendant contends that one of ordinary skill in the art, at the time of the alleged invention of the Asserted '386 Patent Claims, would have been motivated to combine the references disclosed herein in such a way to reach the alleged inventions. In certain instances, the suggested obviousness combinations are provided in the alternative to Defendant's anticipation contentions, which shall not be construed to suggest that any reference included in the combinations is not by itself anticipatory. The

combinations evidencing teachings, suggestions, and/or motivations to combine the prior-art references in a way that renders the Asserted Claims obvious are merely exemplary.

Primary Reference	In Combination With
Hubbard 495	Alperovitch
Hubbard 495	Lee
Hubbard 495	Adelman 2008
Hubbard 495	Bloch 2007
Alperovitch	Lee
Alperovitch	Adelman 2008
Alperovitch	Bloch 2007
Lee	Adelman 2008
Lee	Bloch 2007
Adelman 2008	Bloch 2007
Hubbard 495	Alperovitch + Lee
Hubbard 495	Alperovitch + Adelman 2008
Hubbard 495	Alperovitch + Bloch 2007
Hubbard 495	Lee + Adelman 2008
Hubbard 495	Lee + Bloch 2007
Hubbard 495	Adelman 2008 + Bloch 2007
Alperovitch	Lee + Adelman 2008
Alperovitch	Lee + Bloch 2007
Alperovitch	Adelman 2008 + Bloch 2007

Defendant reserves the right to amend these Contentions and prior art combinations in light of new information that may arise from third parties related to additional computer security

systems. The following list of references are also evidence of the knowledge of POSITA at the time of the alleged invention: U.S. Patent No. 8,069,213 ("Bloch 2010"); U.S. Patent Publication No. 2009/0248623 ("Adelman 2009"); U.S. Patent Publication No. 2010/0256977 ("Yu 977"); Building Reputations for Internet Clients ("Wei"); Generative Prior Knowledge for Discriminative Classification ("Epshteyn"); A Small World Overlay P2P Transfer System with Role-Based and Reputation-Based Access Control Policies ("Xia"); A Multilevel Reputation System for Peer-to-Peer Networks ("Xu"). *See also* Section VI.C., '386 Patent Additional Prior Art/Background Art Table, *supra*.

One of ordinary skill in the art would be motivated to combine these references in the above combinations for at least the following reasons. One of ordinary skill in the art would have understood that each of these references are in the same field of endeavor, namely methods and devices relating to computer security. *See, e.g.*, Hubbard 495 at 5:35-57, 6:53-7:7, 20:65-21:10; Alperovitch at [0034], [0071], [0072]; Lee at Abstract, 2:6-24, 2:60-3:17; Adelman 2008 at [0082], [0085], [0086]; Bloch 2007 at 3:52-4:3, 4:39-49, 10:40-61.

One of ordinary skill in the art would have recognized that these references are directed to addressing the same problem, in particular, improving computer security. *See, e.g.*, Hubbard 495 at 6:60-63 ("For example, the gateway server module 120 may be configured to disallow URL requests that are categorized as being 'Malicious' or 'Spyware.'"); Alperovitch at [0034] ("Examples include the process of filtering malicious communications in an email, instant messaging, VoIP, SMS or other communication protocol system using analysis of the reputation of sender and content."); Lee at 2:64-67 ("For example, if the resource is a website, then the system may send the URL to a trusted URL reputation service and receive a response that indicates a reputation score for the resource."); Adelman 2008 at [0085] ("Based on the domain name related

reputation data the Requester decides (determines) whether the Requester should visit the URL (Step 430)."); Bloch 2007 at 10:56-61 ("Alternatively, if a URL is not found in sender database 530 at step 607, then HTTP proxy 120 can consult other information sources, such as a URL whitelist, URL blacklist, or other information about the trustworthiness or "reputation" of the Web site associated with the URL.").

Further, the Asserted Claims of the '386 Patent contain merely a duplication of concepts known in the prior art and have no patentable significance given that no unexpected results occur—*i.e.* the patentee merely combines known prior art elements according to known methods to yield predictable results. For example, the prior art references describe "determining if a reputation index for the Internet resource is at or above a threshold value established for the local area network." *See, e.g.*, Hubbard 495 at 10:64-11:2, 11:26-40, 18:53-19:22; Alperovitch at [0045], [0058]; Lee at 2:48-59, 2:60-3:17, 3:66-4:7; Adelman 2008 at [0057], [0058], [0086]; Bloch 2007 at 1:41-48, 3:52-4:3, 6:35-51.

The prior art references further describe "the reputation vector comprising a plurality of factors for the Internet resource." *See, e.g.*, Hubbard 495 at 10:19-26, 18:53-19:22, 20:4-41; Alperovitch at [0038], [0048], [0094]; Lee at 3:66-4:23, 4:49-64; Adelman 2008 at Abstract, [0051], [0058], [0059]; Bloch 2007 at 9:3-21, 9:44-61, 10:28-38. The prior art references further describe "a security appliance, the security appliance controlling access to the Internet." *See, e.g.*, Hubbard 495 at 6:53-7:7, 9:25-33; Alperovitch at [0030], [0050], [0073]; Lee at 2:60-3:17, 7:1-13; Adelman 2008 at [0082], [0085], [0086]; Bloch 2007 at 10:9-18, 11:39-58. The prior art references further describe "storing the reputation index for the Internet resource at the data collection site." *See, e.g.*, Hubbard 495 at 9:43-65, 11:41-12:3, 13:59-14:17; Alperovitch at

[0009], [0060]; Lee at 5:28-38, 7:1-13, 7:27-38; Adelman 2008 at [0057], [0090]; Bloch 2007 at 6:52-63, 10:62-67, 11:39-51.

Other examples of these concepts are cited in the attached charts for the above references. *See* Exs. D-1–D-5. It would have been known and simple to take a prior art for improving computer security by controlling access to requested web content based on its "reputation" and arrive at the alleged invention, and it would have been obvious to a POSITA to try this. *Id.* It would have also yielded predictable results in the context of improving computer security. *Id.*

Defendant is not aware of any secondary considerations supporting non-obviousness of the '386 Patent claims. To the extent Plaintiffs seek to introduce any alleged secondary considerations in the future, Defendant reserves the right to respond at that time.

F. Invalidity Under Section 112

Pursuant to Section II, Paragraph 4 of the Order, Defendant provides an identification of the limitations of the '386 Patent that are invalid based on indefiniteness under pre-AIA 35 U.S.C. § 112 ¶ 2, or enablement or written description under pre-AIA 35 U.S.C. § 112 ¶ 1. These Contentions are preliminary, as they are being proffered without the benefit of expert disclosure or discovery.

Asserted Claims 1, 3, 6-7, 9, 11, 13, 15, and 16 of the '386 Patent (and all claims which depend from these claims) are indefinite, and thus invalid. "[A] patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention." *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014). Furthermore, as applied in Plaintiffs' Infringement Contentions, "threshold value"; "behavior" / "behaviors"; "associations"; "popularity rank"; "decision transmission"; "remote reputation generating site"; "service engine"; "collecting a plurality of factors" / "obtaining the plurality of factors"; "populate a reputation

vector"; "perform reputation analysis"; "reputation classifier"; "two or more of age of: a domain registration, popularity rank . . ." and "linked Internet resources" are indefinite because each of these phrases not only is subjective but also does not have a meaning that can be clearly determined from the patent, and thus fails to put the public on notice of what is and is not covered by these claims.

Asserted Claims 1-7, 9, 11-13, 15-16, and 18 of the '386 Patent are invalid under § 112 ¶ 1, because the specification as filed does not contain a sufficient written description supporting those claims. In particular, the patent disclosure would not lead a person of ordinary skill in the art to understand that the named inventor had possession of the purported inventions as claimed and in view of Plaintiffs' contentions. Asserted Claims 1-7, 9, 11-13, 15-16, and 18 (and all claims that depend from these claims) fail to satisfy the requirements of 35 U.S.C. § 112 for at least the following reasons: the '386 Patent fails to provide an adequate written description of the phrases "reputation index"; "threshold value"; "popularity rank"; "remote reputation generating site"; "service engine"; "collecting a plurality of factors" / "obtaining the plurality of factors"; "populate a reputation vector"; "perform reputation analysis"; and "linked Internet resources" as applied in Plaintiffs' Infringement Contentions.

The aforementioned claims are invalid because they are not enabled or described by the specification of the '386 Patent. The subject matter of these claims, as described above, are not sufficiently shown in the specification of the '386 Patent. The subject matter of these claims, as described above, are not sufficiently enabled because they do not teach one skilled in the art how to make and use the alleged invention from the specification of the '386 Patent. For example, the '386 Patent fails to enable the following and thus, Asserted Claims 1-7, 9, 11-13, 15-16, and 18 of the '386 Patent are invalid: "reputation index"; "threshold value"; "popularity rank"; "remote

reputation generating site"; "service engine"; "collecting a plurality of factors" / "obtaining the plurality of factors"; "populate a reputation vector"; "perform reputation analysis"; and "linked Internet resources." The foregoing phrases are not described in such a way that one of ordinary skill in the art could implement it to achieve the results sought by the individual named on the face of the '386 Patent as the inventor. The foregoing phrases are not described in such a way that a person having ordinary skill in the art at the time of the alleged invention would have understood that the individual named as the inventor on the face of the '386 Patent was in possession of the claimed subject matter. The Asserted Claims of the '386 Patent also do not comply with § 112 because they do not set forth what the applicant regards is the invention.

A more detailed basis for the above indefiniteness, written description, and enablement defenses may be set forth in any expert report(s) on invalidity to be served on Plaintiffs in accordance with the Court's Scheduling Order.

G. Invalidity Under Section 101

Pursuant to Section II, Paragraph 4 of the Order, Defendant provides an identification of the claims of the '386 Patent they contend are directed to ineligible subject matter under pre-AIA 35 U.S.C. § 101. These Contentions are being proffered without expert disclosure or discovery.

Each Asserted Claim of the '386 Patent is directed to ineligible subject matter under 35 U.S.C. § 101. First, the Asserted Patent Claims of the '386 Patent are directed to the abstract idea of reputation and risk assessment. *See, e.g.*, '386 Patent, claim 1 ("determining if a reputation index for the Internet resource is at or above a threshold value established for the local area network," "the reputation index generated from a reputation vector for the Internet resource, the reputation vector comprising a plurality of factors for the Internet resource comprising security history, legitimacy, behavior, associations and location," "transmitting a decision transmission to the Internet-enabled client application of the client-side device, the decision transmission allowing

or denying access to the Internet resource"); claim 7 ("analyzing a reputation vector for the Web site and generating a reputation index for the Web site from the reputation vector," "the reputation vector comprising a plurality of factors for the Internet resource comprising security history, legitimacy, behavior, associations and location," "wherein access to the Internet resource by any of the plurality of client-side devices is determined based on the reputation index exceeding a threshold value established for the local area network"); claim 11 ("accessing a reputation index for the Internet resource, the reputation index based on a reputation vector for the Internet resource comprising security history, legitimacy, behavior, associations and location," "determining if the reputation index for the Internet resource is at or above a threshold value established for the local area network," "transmitting a decision transmission to the Web browser of the client-side device, the decision transmission allowing or denying access to the Internet resource"); claim 13 ("A method for building a reputation database for Internet resources, the method comprising:," "collecting a plurality of factors for an Internet resource site to populate a reputation vector for the Internet resource to perform reputation analysis of the Internet resource," "constructing a reputation vector for the Internet resource at the data collection site, the reputation vector comprising a plurality of factors for the Internet resource comprising security history, legitimacy, behavior, associations and location," "analyzing the reputation vector to generate a reputation index for the Internet resource based on the analysis of the plurality of factors and the reputation classifier"). The specification of the '386 confirms that the Asserted Claims are directed to basic concepts of reputation and risk assessment. *See, e.g.*, *id.*, 1:23–28 ("The present invention is related to assessing risk profiles of Internet resources. More specifically, the present invention is related to a system and method for developing a risk profile for an Internet resource by generating a reputation index, based on attributes of the resource collectively referred to as the reputation

vector of the resource."); 1:51–58 ("A possible analogy to the reputation of an Internet resource is the credit score of an individual. A Web user would want to be informed of the reputation of a Web site before visiting it, just as a lender would want to know the reputation, the financial reputation at least, of a borrower of the lender's money. A credit score is based on a variety of fairly tightly related factors, such as existing debt, available credit lines, on-time payments, existing credit balances, etc."); 1:65–2:3 ("There are different methods of calculating credit scores. The best known one, FICO, is a credit score developed by the Fair Isaac Corporation. FICO is used by many mortgage lenders that use a risk-based system to determine the possibility that the borrower may default on financial obligations to the mortgage lender."); 2:8-14 ("That FICO® score is calculated by a mathematical equation that evaluates many types of information from the borrower's credit report at that agency. In order for a FICO® score to be calculated on the borrower's credit report, the report must contain sufficient information—and sufficient recent information—on which to base a score."); 2:19–21 ("FICO scores provide a reliable guide to future risk based solely on credit report data. FICO® scores have a 300-850® score range. The higher the score, the lower the risk."); 2:26–29 ("Although FICO won't reveal exactly how it determines a credit score, it considers the following factors: payment history (35%); outstanding debt (30%); length of credit history (15%); types of credit (10%); and new credit (10%)."); 2:30–34 ("Returning to Internet resources, attackers have been using the Internet to attack the computers and other devices of users of the Internet. Attackers continue to take advantage of flaws in traditional security measures and bypass reputation-based systems to increase attack effectiveness."); 4:36–48 ("The present invention focuses on the reputation of a Web site, or any Internet-based service or resource. The reputation incorporates many factors that are relevant to the overall safety of visiting a site. The reputation assesses the over-time track record of the site

and the provider that operates the web site, the current characteristics of the pages and related files composing the site, and reputations of sites linked to the site and of referrers to the site. The overall assessment is expressed as a score, not unlike a FICO score, that predicts the potential risk of visiting the site which can be used to protect users from inadvertently visiting or utilizing higher-risk sites or services within the Internet."); 4:49–53 ("There are many components of reputation available within the Internet. Much like other scoring mechanisms, such as credit scoring, the factors to be considered must be decided upon, and the weight that each factor will have in the overall 'score' must be determined."); 4:54–55 ("The present invention provides a system and method for defining a reputation of an Internet service such as a Web site."); 4:60–5:3 ("Preferred steps of the invention are: evaluation of the important features to be included in the collection of reputation-relevant features referred to as the reputation vector; collection of the reputation vectors for a large sample of Internet resource; training of a classifier based on training sets of known high and low reputation services/sites; testing of a model against a wide variety of random samples; run-time evaluation of requests for the Internet resource using the developed classifier and responding to reputation index information requests from clients which enforce network security policy."); 13:28–32 ("This embodiment is preferred since classifying a large percentage of existing Web sites into reputation risk assessments quickly and efficiently requires an automated process because the number of humans required is too large to be practical or economical.").

Second, the Asserted Claims of the '386 Patent do not contain any inventive concept as they combine standard, generic, and well-known components in a conventional way to arrive at the claimed invention. The '386 Patent describes performing reputation and risk assessment using local area networks, Internet resources, devices, servers, risk scores, and factors well-known in the prior art . *See, e.g.*, *id.*, 1:30–50, 1:51–2:29, 2:30–35, 2:62–64, 2:65–3:32, 3:44–48, 4:6–19, 9:53–

67. Considered individually or as an ordered combination, the claim limitations recite nothing more than the abstract idea of reputation and risk assessment. Simply identifying an overarching desirable outcome (such as "measur[ing] the security risk associated with accessing an Internet resource in a more predictive way") without specifying any technical improvements over the prior art to achieve that outcome does not rise to the level of an inventive and, thus, patent-eligible concept. *See Intell. Ventures I LLC v. Erie Indem. Co.*, 850 F.3d 1315, 1330–32 (Fed. Cir. 2017) ("The recited use of a mobile interface and pointers to retrieve user information evidences nothing more than a 'generic computer implementation' of the abstract idea that is insufficient to transform a patent-ineligible abstract idea into a patent-eligible invention."); *Intellectual Ventures I LLC v. Capital One Bank (USA)*, 792 F.3d 1363, 1367–68 (Fed. Cir. 2015) (claims directed to internet-based communications recite generic computer components and do not claim inventive concepts). Moreover, the prior art cited throughout Defendant's Contentions, as well as the patents themselves and the prior art cited therein, demonstrate that each claim element in every Asserted Claim is directed to well-understood, routine, and conventional computer security components and techniques. The remaining Asserted Claims merely apply those conventional and generic computer components and techniques in a selected physical or technical environment—an environment where they had already long been used by those of ordinary skill as the prior art referenced herein reflects. Thus, the Asserted Claims of the '386 Patent fail to add anything to the underlying abstract idea sufficient to transform them into patent-eligible subject matter.

Furthermore, at least under Plaintiffs' apparent infringement theory, as set forth in their Infringement Contentions, the Asserted Claims of the '386 Patent are ineligible because they would preempt the entire field of reputation and risk assessment.

This ineligibility contention is based in whole or in part on Defendant's present understanding of the Asserted Claims of the '386 Patent, their current construction of the claims, and/or Plaintiffs' apparent construction of the claims in their current Infringement Contentions. Defendant is not adopting Plaintiffs' apparent claim construction, nor admitting to the accuracy of any particular claim construction. To the extent that Plaintiffs' apparent claim construction or applications thereof are reflected in this Contention, nothing herein should be construed as an admission that Defendant agrees with Plaintiffs' apparent claim construction or Plaintiffs' application of that claim construction in Plaintiffs' current Infringement Contentions. Further, claim construction is not necessary to determine that the Asserted Claims of the '386 Patent are ineligible.

Defendant's Contentions regarding ineligibility under 35 U.S.C. § 101 may be based on Plaintiffs' allegations of infringement. Defendant does not necessarily agree with the interpretations set forth in Plaintiffs' Infringement Contentions and thus this ineligibility contention is not an admission that the accused products meet any particular claim element or infringe the Asserted Claim. In addition, nothing in this ineligibility contention should be interpreted as a position about whether any portion of the Asserted Claims are limiting or not. Further, by submitting this ineligibility contention, Defendant does not waive and hereby expressly reserves its right to raise invalidity defenses including, but not limited, to defenses under 35 U.S.C. §§ 102, 103, and/or 112.

Discovery in this case is ongoing and, accordingly, this ineligibility contention is not to be considered final. Defendant reserves all rights to revise, amend, or supplement this ineligibility claim at a later date as discovery progresses, after the Court issues its claim construction ruling, or if Plaintiffs amend their Infringement Contentions.

VII. INVALIDITY CONTENTIONS FOR THE ’928 PATENT

A. General State of the Art at the Time of the Alleged Inventions

The prior art references identified in these Invalidity Contentions, and the “References Cited” on the face of the ’928 Patent, may provide background and context pertinent to the teachings in, and interpretation of, the prior art referenced by the attached claim charts. Defendant may rely upon that prior art, including the “References Cited” on the face of the ’928 Patent, to demonstrate the general state of the art at the time of the alleged inventions and what one of ordinary skill in the art would have understood at a time prior to the date of the alleged invention of the Asserted Claims. This prior art is exemplary only and is not in any way intended to limit the scope of what one of ordinary skill in the art would have understood at the times of the alleged inventions. Defendant reserves the right to rely upon additional prior art, information, and/or knowledge to demonstrate what one of ordinary skill would have understood at any time prior to the date of alleged invention of the Asserted Claims.

B. Claim Charts

Pursuant to Section II, Paragraph 4 of the Order, the claim charts attached in Appendix A as Exhibits E-1 through E-5 identify where each limitation of the Asserted Claims of the ’928 Patent is found in the prior art.

C. Identification of the Prior Art

Based on Plaintiffs’ July 12, 2022 Preliminary Infringement Contentions, Defendant identifies prior art below and in Appendix A as Exhibits E-1 through E-5, which contains charts disclosing the identity of each item of prior art that anticipates each claim and/or renders it obvious. As shown in Appendix A as Exhibits E-1 through E-5 and below, Defendant has identified each prior art reference by its number, country of origin, author, and date of issue (where applicable). Defendant notes that it has applied the prior art in accordance with Plaintiffs’ improper assertions

of infringement and improper applications of the claims. Defendant does not agree with Plaintiffs' application of the claims and denies infringement.

Defendant further contends that all claims that are anticipated by a particular reference are also rendered obvious by that same reference alone, in combination with the other references, and/or in combination with the knowledge of a person of ordinary skill in the art. Defendant reserves the right to rely upon any combination of the charted prior art under 35 U.S.C. § 103, yet Defendant has also identified exemplary obviousness combination in Section VII.E, *infra*.

'928 Patent Prior Art Patents/Patent Applications				
Ex. No.	**Patent / Publication No.**	**Country of Origin**	**Filing Date**	**Date of Issue / Publication**
Ex. E-1	U.S. Patent No. 8,370,938 ("Daswani")	U.S.	Apr. 15, 2010	Feb. 5, 2013
Ex. E-2	U.S. Patent No. 7,621,613 ("McClintock")	U.S.	May 26, 2009	Dec. 31, 2013
Ex. E-3	U.S. Patent Application Publication No. US 2009/0070873 ("McAfee")	U.S.	Sep. 11, 2007	Mar. 12, 2009
Ex. E-4	U.S. Patent Application Publication No. US 2012/0047581 ("Banerjee")	U.S.	Aug. 12, 2011	Feb. 23, 2012
Ex. E-5	U.S. Patent Application Publication No. US 2013/0007870 ("Devarajan")	U.S.	Sep. 29, 2011	Jan 3, 2013

'928 Patent Additional Prior Art/Background Art
Abstracting Application-Level Web Security, Scott (2002) ("Scott")
ADSandbox: Sandboxing JavaScript to fight Malicious Websites, Dewald, University of Mannheim & Technical University of Vienna (2010) ("Dewald")
Identification of Potential Malicious Web Pages, Le, Ninth Australian Information Security Conference (2011) ("Le")

’928 Patent Additional Prior Art/Background Art
Prophiler: A Fast for the Large-Scale Detection of Malicious Web Pages, Canali, WWW Session: Web Security (2011) (“Canali”)
WebPatrol: Automated Collection and Replay of Web-based Malware Scenarios, Chen, ASIACCS (2011) (“Chen 2011”)
Toward automatic discovery of malware signature for anti-virus cloud computing. Yan et. al. International Conference on Complex Sciences. Springer, Berlin, Heidelberg (2009) (“Yan”)
Malware detection based on cloud computing integrating intrusion ontology representation. Martínez et. al. IEEE Latin-American Conference on Communications, IEEE (2010) (“Martinez”)
A Three-Phases Scheduling in a Hierarchical Cloud Computing Network, Wang et. al., 2011 Third International Conference on Communications and Mobile Computing pp. 114-117, (2011) (“Wang”)

Furthermore, with respect to the ’928 Patent, under pre-AIA 35 U.S.C. §§ 102(a), (b), and (g)(2), Defendant reserves the right to identify prior art systems developed prior to October 3, 2011. *See, e.g.*, *Intell. Ventures II LLC v. FedEx Corp.*, No. 2:16-CV-00980-JRG, 2019 WL 1434656, at *8-11 (E.D. Tex. Mar. 29, 2019). Discovery is ongoing, and Defendant reserves the right to amend the Invalidity Contentions herein based on third-party discovery.

D. Anticipation

At least under Plaintiffs’ apparent infringement theory, the Asserted Claims of the ’928 Patent are anticipated, either expressly or inherently as understood by a person having ordinary skill in the art, by the references as set forth in the attached claim charts. At least under Plaintiffs’ apparent infringement theory, Asserted Claims 1-6 and 8-20 of the ’928 Patent are anticipated, either expressly or inherently as understood by a person having ordinary skill in the art, by Daswani and Devarajan as set forth in the attached claim chart. At least under Plaintiffs’ apparent infringement theory, Asserted Claims 1-4, 6, and 8-20 of the ’928 Patent are anticipated, either

expressly or inherently as understood by a person having ordinary skill in the art, by McAfee as set forth in the attached claim chart.

E. Obviousness

At least under Plaintiffs' apparent infringement theory, the Asserted Claims of the '928 Patent are rendered obvious by the references identified in the attached claim charts, either alone or in the combinations with other prior art references as identified below. Defendant contends that one of ordinary skill in the art, at the time of the alleged invention of the Asserted '928 Patent Claims, would have been motivated to combine the references disclosed herein in such a way to reach the alleged inventions. In certain instances, the suggested obviousness combinations are provided in the alternative to Defendant's anticipation contentions, which shall not be construed to suggest that any reference included in the combinations is not by itself anticipatory. The combinations evidencing teachings, suggestions, and/or motivations to combine the prior-art references in a way that renders the Asserted Claims obvious are merely exemplary.

Primary Reference	In Combination With
McClintock	McAfee
McClintock	Daswani
McClintock	Banerjee
McClintock	Devarajan
McAfee	McClintock
McAfee	Daswani
McAfee	Banerjee
McAfee	Devarajan
Daswani	McClintock
Daswani	McAfee

Primary Reference	In Combination With
Daswani	Banerjee
Daswani	Devarajan
Banerjee	McClintock
Banerjee	McAfee
Banerjee	Daswani
Banerjee	Devarajan
Devarajan	McClintock
Devarajan	McAfee
Devarajan	Daswani
Devarajan	Banerjee
McAfee	Daswani + Devarajan
Daswani	McAfee + Devarajan
Devarajan	McAfee + Daswani
McAfee	McClintock + Daswani
McAfee	McClintock + Devarajan
Daswani	McClintock + McAfee
Daswani	McClintock + Devarajan
Devarajan	McClintock + McAfee
Devarajan	McClintock + Daswani
McAfee	Banerjee + Daswani
McAfee	Banerjee + Devarajan
Daswani	Banerjee + McAfee
Daswani	Banerjee + Devarajan

Primary Reference	In Combination With
Devarajan	Banerjee + McAfee
Devarajan	Banerjee + Daswani

Defendant reserves the right to amend these Contentions and prior art combinations in light of new information that may arise from third parties related to additional malware detection and neutralization systems. The following list of references are also evidence of the knowledge of POSITA at the time of the alleged invention: Scott, Dewald, Le, Canali, Yan, Martinez, Wang, and Chen 2011.

One of ordinary skill in the art would be motivated to combine these references in the above combinations for at least the following reasons. One of ordinary skill in the art would have understood that each of these references are in the same field of endeavor, namely methods and devices relating to malware detection and neutralization computer security. *See, e.g.*, Daswani at 3:22-30; McClintock at Abstract; McAfee at Abstract; Banerjee at [0004], and Devarajan at [0001].

One of ordinary skill in the art would have recognized that these references are directed to addressing the same problem, in particular, improving malware detection and neutralization. *See, e.g.*, Daswani at 3:22-30; McClintock at Abstract; McAfee at Abstract; Banerjee at [0004], and Devarajan at [0001].

Further, the Asserted Claims of the ’928 Patent contain merely a duplication of concepts known in the prior art and have no patentable significance given that no unexpected results occur—i.e. the patentee merely combines known prior art elements according to known methods to yield predictable results. For example, the prior art references describe “[a] content analysis and malware prevention method comprising.” *See, e.g.*, Daswani at 3:22-30; McClintock at Abstract;

McAfee at Abstract; Banerjee at [0004], and Devarajan at [0001]. The prior art references further describe "intercepting, by a protection agent, a request from a web browser." *See, e.g.*, Daswani at 4:27-38; McClintock at 4:59-5-3; McAfee at [0070]; Banerjee at [0036], and Devarajan at [0089]. The prior art references further describe "determining, by the protection agent, whether the request is associated with known malicious content." *See, e.g.*, Daswani at 6:37-46; McClintock at 3:34-41; McAfee at [0036]; Banerjee at [0060], and Devarajan at [0111]-[0112]. The prior art references further describe "when the request is associated with known malicious content, blocking, by the protection agent, the request]." *See, e.g.*, Daswani at 9:54-61; McClintock at 6:38-60; McAfee at [0082]; Banerjee at [0066], and Devarajan at [0101].

Other examples of these concepts are cited in the attached charts for the above references. *See* Exs. E-1–E-5. It would have been known and simple to take a prior art for detecting and neutralizing web-based malware by analyzing associations of requested webpages with known malware to arrive at the alleged invention, and it would have been obvious to a POSITA to try this. *Id.* It would have also yielded predictable results in the context of improving malware detection and neutralization. *Id.*

Defendant is not aware of any secondary considerations supporting non-obviousness of the '928 Patent claims. To the extent Plaintiffs seek to introduce any alleged secondary considerations in the future, Defendant reserves the right to respond at that time.

F. Invalidity Under Section 112

Pursuant to Section II, Paragraph 4 of the Order, Defendant provides an identification of the limitations of the '928 Patent that are invalid based on indefiniteness under pre-AIA 35 U.S.C. § 112 ¶ 2, or enablement or written description under pre-AIA 35 U.S.C. § 112 ¶ 1. These Contentions are preliminary, as they are being proffered without the benefit of expert disclosure or discovery.

Asserted Claims 1-3, 5-7, 9-11, 13-14, and 16-20 of the ’928 Patent (and all claims which depend from these claims) are indefinite, and thus invalid. “[A] patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014). Furthermore, as applied in Plaintiffs’ Infringement Contentions, “content analysis”; “associated with known malicious content”; “malware threat”; “supplementing . . . the web content with indicators”; “vulnerability” / “vulnerabilities”; “pre-process data encryption”; “sending the request to one or more web servers comprises iteratively sending a plurality of requests to the one or more web servers”; and “processing the web content prior to identifying the malware threat within the web content” are indefinite because each of these phrases not only is subjective but also does not have a meaning that can be clearly determined from the patent, and thus fails to put the public on notice of what is and is not covered by these claims.

Asserted Claims 1-3, 5-7, 9-11, 13-14, 16-17, and 19 of the ’928 Patent are invalid under § 112 ¶ 1, because the specification as filed does not contain a sufficient written description supporting those claims. In particular, the patent disclosure would not lead a person of ordinary skill in the art to understand that the named inventor had possession of the purported inventions as claimed and in view of Plaintiffs’ contentions. Asserted Claims 1-3, 5-7, 9-11, 13-14, 16-17, and 19 (and all claims that depend from these claims) fail to satisfy the requirements of 35 U.S.C. § 112 for at least the following reasons: the ’928 Patent fails to provide an adequate written description of the phrases “malware threat”; “supplementing . . . the web content with indicators”; “vulnerability” / “vulnerabilities”; “image analysis”; “pre-process data encryption”; “de-

chunking"; and "based on an aggregation of the analyses" as applied in Plaintiffs' Infringement Contentions.

The aforementioned claims are invalid because they are not enabled or described by the specification of the '928 Patent. The subject matter of these claims, as described above, are not sufficiently shown in the specification of the '928 Patent. The subject matter of these claims, as described above, are not sufficiently enabled because they do not teach one skilled in the art how to make and use the alleged invention from the specification of the '928 Patent. For example, the '928 Patent fails to enable the following and thus, Asserted Claims 1-3, 5-7, 9-11, 13-14, 16-17, and 19 of the '928 Patent are invalid: "malware threat"; "supplementing . . . the web content with indicators"; "vulnerability" / "vulnerabilities"; "image analysis"; "pre-process data encryption"; "de-chunking"; and "based on an aggregation of the analyses." The foregoing phrases are not described in such a way that one of ordinary skill in the art could implement it to achieve the results sought by the individual named on the face of the '928 Patent as the inventor. The foregoing phrases are not described in such a way that a person having ordinary skill in the art at the time of the alleged invention would have understood that the individual named as the inventor on the face of the '928 Patent was in possession of the claimed subject matter. The Asserted Claims of the '928 Patent also do not comply with § 112 because they do not set forth what the applicant regards is the invention.

A more detailed basis for the above indefiniteness, written description, and enablement defenses may be set forth in any expert report(s) on invalidity to be served on Plaintiffs in accordance with the Court's Scheduling Order.

G. Invalidity Under Section 101

Pursuant to Section II, Paragraph 4 of the Order, Defendant provides an identification of the claims of the ’928 Patent they contend are directed to ineligible subject matter under pre-AIA 35 U.S.C. § 101. These Contentions are being proffered without expert disclosure or discovery.

Each Asserted Claim of the ’928 Patent is directed to ineligible subject matter under 35 U.S.C. § 101. First, the Asserted Patent Claims of the ’928 Patent are directed to the abstract idea of filtering web content and data by reassembling a web page without malware threats. *See, e.g.*, ’928 Patent, claim 1 (“receiving, at the protection agent on a remote computer, web content from the one or more web servers, wherein web content comprises data for assembling a web page,” “identifying, by the protection agent, a malware threat within the web content,” “in response to identifying the malware threat, modifying, by the protection agent, the web content, wherein modifying the web content comprises modifying the web content at protocol level to remove the malware threat from the web content,” “assembling, by the protection agent, a modified version of the web page, wherein the modified web page is assembled using the modified web content, and wherein the modified version of the web page does not comprise the malware threat”); claim 9 (“receiving web content from one or more web servers, wherein web content comprises data for assembling a web page,” “identifying a malware threat within the web content,” “in response to identifying the malware threat, modifying the web content, wherein modifying the web content comprises modifying the web at protocol level to remove the malware threat from the web content,” “assembling a modified version of the web page, wherein the modified web page is assembled using the modified web content, and wherein the modified version of the web page does not comprise the malware threat”). The specification of the ’928 confirms that the Asserted Claims are directed to basic concepts of filtering web content and data by reassembling a web page without malware threats. *See, e.g.*, *id.*, 1:43–54 (“In accordance with an exemplary aspect, a protection

module operates to analyze threats, at the protocol level (e.g., at the HTML level), by intercepting all requests that a browser engine resident in a computing device sends and receives, and the protection agent completes the requests without the help of the browser engine. And then the protection module analyzes and/or modifies the completed data before the browser engine has access to it, to, for example, display it. After performing all of its processing, removing, and/or adding any code as needed, the protection module provides the HTML content to the browser engine . . . ."); 1:58–63 ("This allows the protection module to have control over what a browser engine "sees," providing means to remove any exploits, malware, and other threats dynamically. This also enables the protection module to add content into the browser stream at the HTML level, before receipt by the browser."); 2:9–19 ("The differences between the disclosed protocol-level analysis approach compared to other prior anti-malware approaches are significant. In the context of search result annotation for example, the data (e.g., a web page of search results) is first analyzed and modified by an analysis engine of the protection module, which has control over every element of a web page before the web page is operated on by the browser engine. This is in contrast to prior approaches that just make high-level modifications to the content after the content has been rendered and displayed through a Browser Helper Object.").

Second, the Asserted Claims of the '928 Patent do not contain any inventive concept as they combine standard, generic, and well-known components in a conventional way to arrive at the claimed invention. The '928 Patent describes filtering web content and data by reassembling a web page without malware threats using conventional hardware and software components, computers, web servers, and networks that are well-known in the prior art. *See, e.g.*, *id.*, 3:4–20; 8:58–10:38. Considered individually or as an ordered combination, the claim limitations recite nothing more than the abstract idea of filtering web content and data by reassembling a web page

without malware threats. Simply identifying an overarching desirable outcome (such as "providing means to remove any exploits, malware, and other threats dynamically") without specifying any technical improvements over the prior art to achieve that outcome does not rise to the level of an inventive and, thus, patent-eligible concept. *See Intell. Ventures I LLC v. Erie Indem. Co.*, 850 F.3d 1315, 1330–32 (Fed. Cir. 2017) ("The recited use of a mobile interface and pointers to retrieve user information evidences nothing more than a 'generic computer implementation' of the abstract idea that is insufficient to transform a patent-ineligible abstract idea into a patent-eligible invention."); *Intellectual Ventures I LLC v. Capital One Bank (USA)*, 792 F.3d 1363, 1367–68 (Fed. Cir. 2015) (claims directed to internet-based communications recite generic computer components and do not claim inventive concepts). Moreover, the prior art cited throughout Defendant's Contentions, as well as the patents themselves and the prior art cited therein, demonstrate that each claim element in every Asserted Claim is directed to well-understood, routine, and conventional computer security components and techniques. The remaining Asserted Claims merely apply those conventional and generic computer components and techniques in a selected physical or technical environment—an environment where they had already long been used by those of ordinary skill as the prior art referenced herein reflects. Thus, the Asserted Claims of the '928 Patent fail to add anything to the underlying abstract idea sufficient to transform them into patent-eligible subject matter.

Furthermore, at least under Plaintiffs' apparent infringement theory, as set forth in their Infringement Contentions, the Asserted Claims of the '928 Patent are ineligible because they would preempt the entire field of filtering web content and data by reassembling a web page without malware threats.

This ineligibility contention is based in whole or in part on Defendant's present understanding of the Asserted Claims of the '928 Patent, their current construction of the claims, and/or Plaintiffs' apparent construction of the claims in their current Infringement Contentions. Defendant is not adopting Plaintiffs' apparent claim construction, nor admitting to the accuracy of any particular claim construction. To the extent that Plaintiffs' apparent claim construction or applications thereof are reflected in this Contention, nothing herein should be construed as an admission that Defendant agrees with Plaintiffs' apparent claim construction or Plaintiffs' application of that claim construction in Plaintiffs' current Infringement Contentions. Further, claim construction is not necessary to determine that the Asserted Claims of the '928 Patent are ineligible.

Defendant's Contentions regarding ineligibility under 35 U.S.C. § 101 may be based on Plaintiffs' allegations of infringement. Defendant does not necessarily agree with the interpretations set forth in Plaintiffs' Infringement Contentions and thus this ineligibility contention is not an admission that the accused products meet any particular claim element or infringe the Asserted Claim. In addition, nothing in this ineligibility contention should be interpreted as a position about whether any portion of the Asserted Claims are limiting or not. Further, by submitting this ineligibility contention, Defendant does not waive and hereby expressly reserves its right to raise invalidity defenses including, but not limited, to defenses under 35 U.S.C. §§ 102, 103, and/or 112.

Discovery in this case is ongoing and, accordingly, this ineligibility contention is not to be considered final. Defendant reserves all rights to revise, amend, or supplement this ineligibility claim at a later date as discovery progresses, after the Court issues its claim construction ruling, or if Plaintiffs amend their Infringement Contentions.

VIII. DOCUMENT PRODUCTION

Pursuant to Section II, Paragraph 4 of the Order, Defendant states that (1) all prior art related to these Contentions and (2) technical documents, excluding source code, within Defendant's possession, sufficient to show the operation of the accused product(s) were produced concurrently with service of these Contentions at FP_WR00006352 - FP_WR00017692. Defendant's will make source code available for inspection in the Austin office of Kirkland & Ellis once a protective order is entered.

Dated: September 13, 2022

Respectfully submitted,

/s/ Kat Li

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CERTIFICATE OF SERVICE

I hereby certify that counsel of record are being served on September 13, 2022, with a copy of this document via email.

/s/ Kat Li
Kat Li