

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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MICROSOFT CORPORATION  
Petitioner,

v.

EDGE NETWORKING SYSTEMS, LLC,  
Patent Owner.

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Case No. IPR2025-00618  
Patent No. 11,695,823

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**PETITIONER'S OPPOSITION TO PATENT OWNER'S REQUEST  
FOR DISCRETIONARY DENIAL OF INSTITUTION**

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**PETITIONER’S EXHIBIT LIST**

<b><i>Exhibit #</i></b>	<b><i>Description</i></b>
<b>1001</b>	U.S. Patent No. 11,695,823 (the “’823 Patent”).
<b>1002</b>	Prosecution history of the ’823 Patent (“’823 File History”).
<b>1003</b>	Declaration of Petitioner’s Expert Dr. Erez Zadok (“Zadok”).
<b>1004</b>	U.S. Patent No. 6,496,575 to Vasell (“Vasell Patent”).
<b>1005</b>	File history of the parent patent to the ’823 Patent, U.S. Patent No. 9,843,624 (the “’624 Patent”).
<b>1006</b>	File history of the patent from which the ’823 Patent was filed as a continuation application, U.S. Patent No. 10,893,095 (the “’095 Patent”).
<b>1007</b>	File history of the other patent from which the ’823 Patent claims priority in a chain of continuation applications, U.S. Patent No. 10,686,871 (the “’871 Patent”).
<b>1008</b>	Excerpts from A. de Castro Alves, “OSGi in Depth”, Manning Publications Company, 2012 (“Alves”).
<b>1009</b>	Excerpts from R. Hall, et al., “OSGi in Action - Creating Modular Applications in Java”, Manning Publications Company, April 2011 (“Hall”).
<b>1010</b>	J. E. Kim, et al., “Seamless Integration of Heterogeneous Devices and Access Control in Smart Homes,” 2012 Eighth International Conference on Intelligent Environments, Guanajuato, Mexico, June 26-29, 2012, pp. 206-213 (“Kim”).
<b>1011</b>	J. S. Rellermeyer and S. Bagchi, “Dependability as a cloud service - a modular approach,” IEEE/IFIP International Conference on Dependable Systems and Networks Workshops (DSN 2012), Boston, MA, USA, 2012, pp. 1-6 (“Rellermeyer”).
<b>1012</b>	S. Kächele, et al., “Component-based scalability for cloud applications”, Proceedings of the 3 <sup>rd</sup> International Workshop on Cloud Data and Platforms (CloudDP ‘13), April 14, 2013, Prague, Czech Republic, 19–24 (“Kächele”).

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<b><i>Exhibit #</i></b>	<b><i>Description</i></b>
<b>1013</b>	OSGi Alliance, “About the OSGi Service Platform”, Technical Whitepaper, Revision 4.1, November 11, 2005, archived on November 30, 2005 at Internet Archive’s Wayback Machine at <a href="https://web.archive.org/web/20051130032628/http://www.osgi.org/documents/collateral/TechnicalWhitePaper2005osgi-spooverview.pdf">https://web.archive.org/web/20051130032628/http://www.osgi.org/documents/collateral/TechnicalWhitePaper2005osgi-spooverview.pdf</a> (“OSGi 2005 Whitepaper”).
<b>1014</b>	Declaration of June A. Munford.
<b>1015</b>	U.S. Provisional Patent Application No. 60/088,437, filed on June 8, 1998, claimed as a priority application in, and incorporated by reference into, EX1004 (“1 <sup>st</sup> Vasell Provisional”) (collectively, with EX1004 and EX1016, “Vasell”).
<b>1016</b>	U.S. Provisional Patent Application No. 60/123,971, filed on March 12, 1999, claimed as a priority application in, and incorporated by reference into, EX1004 (“2 <sup>nd</sup> Vasell Provisional”) (collectively, with EX1004 and EX1015, “Vasell”), which includes a copy of the article published as Idermark, T., Lilliestråle, M., & Vasell, J., “Ericsson’s e-box system—An electronic services enabler”, Ericsson Review, (1), 1999, 38-44, as confirmed by Ericsson’s website archived, for example, on March 3, 2000 at Internet Archive’s Wayback Machine at <a href="https://web.archive.org/web/20000303195310/http://www.ericsson.se/review/issues.taf">https://web.archive.org/web/20000303195310/http://www.ericsson.se/review/issues.taf</a> and, for example, on February 16, 2003 and November 27, 2004 at Internet Archive’s Wayback Machine at <a href="https://web.archive.org/web/20030216191220/http://www.ericsson.com/about/publications/review/1999_01/23.shtml">https://web.archive.org/web/20030216191220/http://www.ericsson.com/about/publications/review/1999_01/23.shtml</a> and <a href="https://web.archive.org/web/20041127035720/http://www.ericsson.com/about/publications/review/1999_01/files/1999015.pdf">https://web.archive.org/web/20041127035720/http://www.ericsson.com/about/publications/review/1999_01/files/1999015.pdf</a> respectively.
<b>1017</b>	“About Gatespace”, Gatespace AB website, archived on January 6, 2000 at Internet Archive’s Wayback Machine at <a href="https://web.archive.org/web/20000106145021/http://www.gatespace.com/">https://web.archive.org/web/20000106145021/http://www.gatespace.com/</a> (“About Gatespace 2000”).
<b>1018</b>	“Carlstedt Research & Technology Forms New Company for Developing Software for ‘The Intelligent Home’ in Cooperation with Ericsson”, September 30, 1999, Gatespace AB website, archived on February 12, 2001 at Internet Archive’s Wayback Machine at <a href="https://web.archive.org/web/20010212054449/http://www.gatespace.com/news/archive/19990930_en_v3.shtml">https://web.archive.org/web/20010212054449/http://www.gatespace.com/news/archive/19990930_en_v3.shtml</a> (“Gatespace Formation Press Release”).

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<b><i>Exhibit #</i></b>	<b><i>Description</i></b>
<b>1019</b>	“Ericsson e-services is a part of the Open Services Gateway Initiative (OSGI)”, Ericsson e-services website, archived on February 29, 2000 at Internet Archive’s Wayback Machine at <a href="https://web.archive.org/web/20000229111550/http://www.ericsson.com:80/wireless/products/ebox/links/osgi.shtml">https://web.archive.org/web/20000229111550/http://www.ericsson.com:80/wireless/products/ebox/links/osgi.shtml</a> (“Ericsson E-Services WebPage”).
<b>1020</b>	“Fifteen industry leaders to create standard for bringing Internet-based services to the networked home”, March 1, 1999, Ericsson e-services website, archived on May 28, 2000 at Internet Archive’s Wayback Machine at <a href="https://web.archive.org/web/20000528223608/http://www.ericsson.com/wireless/products/ebox/news/990301.shtml">https://web.archive.org/web/20000528223608/http://www.ericsson.com/wireless/products/ebox/news/990301.shtml</a> (“OSGi Announcement on Ericsson E-Services WebPage”).
<b>1021</b>	“People”, Carlstedt Research & Technology AB website, archived on January 6, 2000 at Internet Archive’s Wayback Machine at <a href="https://web.archive.org/web/20000106204945/http://www.crt.se/about/people.en.html">https://web.archive.org/web/20000106204945/http://www.crt.se/about/people.en.html</a> (“CR&T People 2000”).
<b>1022</b>	“Open Services Gateway Initiative: Charter”, OSGi website, archived on April 19, 2000 at Internet Archive’s Wayback Machine at <a href="https://web.archive.org/web/20000419181219/http://www.osgi.org/about/charter.html">https://web.archive.org/web/20000419181219/http://www.osgi.org/about/charter.html</a> (“OSGi Charter 2000”).
<b>1023</b>	“Open Services Gateway Initiative: Officers”, OSGi website, archived on April 14, 2000 at Internet Archive’s Wayback Machine at <a href="https://web.archive.org/web/20000414133426/http://www.osgi.org/about/officers.html">https://web.archive.org/web/20000414133426/http://www.osgi.org/about/officers.html</a> (“OSGi Officers 2000”).
<b>1024</b>	“Open Services Gateway Initiative Elects New Leadership”, Home Toys Inc. website, May 23, 2001, archived on July 8, 2001 at Internet Archive’s Wayback Machine at <a href="https://web.archive.org/web/20010708123711/http://www.hometoys.com/releases/jun01/osgi01.htm">https://web.archive.org/web/20010708123711/http://www.hometoys.com/releases/jun01/osgi01.htm</a> (“OSGi Leadership 2001”).
<b>1025</b>	“Management Team”, Gatespace AB website, archived on February 8, 2002 at Internet Archive’s Wayback Machine at <a href="https://web.archive.org/web/20020208031748/http://www.gatespace.com/company/management.shtml">https://web.archive.org/web/20020208031748/http://www.gatespace.com/company/management.shtml</a> (“Gatespace Management 2002”).

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<b><i>Exhibit #</i></b>	<b><i>Description</i></b>
<b>1026</b>	“About Us: Background”, Gatespace AB website, archived on February 6, 2002 at Internet Archive’s Wayback Machine at <a href="https://web.archive.org/web/20020206205742/http://www.gatespace.com/company/">https://web.archive.org/web/20020206205742/http://www.gatespace.com/company/</a> (“About Gatespace 2002”).
<b>1027</b>	“About Makewave: History in Making”, Makewave AB website, archived on August 16, 2007 at Internet Archive’s Wayback Machine at <a href="https://web.archive.org/web/20070816163615/http://www.makewave.com/site.en/about/history.shtml">https://web.archive.org/web/20070816163615/http://www.makewave.com/site.en/about/history.shtml</a> (“About Makewave 2007”).
<b>1028</b>	The OSGi Alliance, “OSGi Service Platform Enterprise Specification”, Release 4, Version 4.2, March 2010 (“OSGi Enterprise Specification”).
<b>1029</b>	T. Forst, “Cisco Application eXtension Platform – OSGi Add-on as universal Middleware for Your Applications”, May 2008, AutomatedBuildings.com, archived on May 17, 2008 at Internet Archive’s Wayback Machine at <a href="https://web.archive.org/web/20080517111602/www.automatedbuildings.com/news/may08/articles/prosyst/080427034829prosyst.htm">https://web.archive.org/web/20080517111602/www.automatedbuildings.com/news/may08/articles/prosyst/080427034829prosyst.htm</a> (“Forst”).
<b>1030</b>	U.S. Patent Publication No. 2013/0086147 to Kashyap, filed October 3, 2011, published April 4, 2013 (“Kashyap”).
<b>1031</b>	Excerpts from A.S. Tanenbaum, “Modern Operating Systems”, Prentice Hall, 3 <sup>rd</sup> edition, 2008 (“Tanenbaum 2008”).
<b>1032</b>	Excerpts from A.S. Tanenbaum, “Computer Networks”, Prentice Hall, 3 <sup>rd</sup> edition, 1996 (“Tanenbaum 1996”).
<b>1033</b>	Excerpts from D. Downing, et al., “Dictionary of Computer and Internet Terms”, Barron’s Educational Series, Inc., 11 <sup>th</sup> edition, 2013 (“Downing”).
<b>1034</b>	Excerpts from E. Cole, et al., “Network Security Bible”, Wiley Publishing, Inc., 2 <sup>nd</sup> edition, 2009 (“Cole”).
<b>1035</b>	Curriculum Vitae (CV) of Petitioner’s Expert Dr. Erez Zadok.
<b>1036</b>	S. Soltesz, et al., “Container-based Operating System Virtualization: A Scalable, High Performance Alternative to Hypervisors”, In Proceedings of the 2 <sup>nd</sup> ACM SIGOPS/EuroSys European Conference on Computer Systems (EuroSys ‘07), March 21-23, 2007, Lisbon, Portugal, pp. 275-287, 2007 (“Soltesz”).

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<b><i>Exhibit #</i></b>	<b><i>Description</i></b>
<b>1037</b>	<i>Intentionally Left Blank</i>
<b>1038</b>	<i>Intentionally Left Blank</i>
<b>1039</b>	Li, et al., “ExpoNet: A Flexible Platform for Concurrent Experiments on Programmable Infrastructure”, 2011 IEEE Global Telecommunications Conference - GLOBECOM 2011, Houston, TX, USA, 2011, pp. 1-5 (“Li”).
<b>1040</b>	<i>Intentionally Left Blank</i>
<b>1041</b>	P. Kriens, “The Bundle Repository”, OSGi Alliance Blog, April 7, 2006, archived on May 4, 2006 at Internet Archive’s Wayback Machine at <a href="https://web.archive.org/web/20060504203641/http://www.osgi.org/blog/2006/04/bundle-repository.html">https://web.archive.org/web/20060504203641/http://www.osgi.org/blog/2006/04/bundle-repository.html</a> (“Kriens OSGi Blog”).
<b>1042</b>	“Knoplerfish Pro Premium” and “Knoplerfish Pro Enterprise” Data Sheets, Makewave AB, 2010, respectively archived on February 20, 2011 at Internet Archive’s Wayback Machine at <a href="https://web.archive.org/web/20110220123804/http://www.makewave.com:80/resources/docs/datasheets/MD-042-A1-knoplerfish_pro_premium_osgi.pdf">https://web.archive.org/web/20110220123804/http://www.makewave.com:80/resources/docs/datasheets/MD-042-A1-knoplerfish_pro_premium_osgi.pdf</a> and <a href="https://web.archive.org/web/20110220123819/http://www.makewave.com:80/resources/docs/datasheets/MD-047-A1-knoplerfish_pro_enterprise_osgi.pdf">https://web.archive.org/web/20110220123819/http://www.makewave.com:80/resources/docs/datasheets/MD-047-A1-knoplerfish_pro_enterprise_osgi.pdf</a> (“Knoplerfish”).
<b>1043</b>	R. Kawashima, “vNFC: A Virtual Networking Function Container for SDN-enabled Virtual Networks”, 2012 Second Symposium on Network Cloud Computing and Applications, London, UK, 2012, pp. 124-129 (“Kawashima”).
<b>1044</b>	Excerpts from A.S. Tanenbaum, “Modern Operating Systems”, Prentice Hall, 2 <sup>nd</sup> edition, 2001 (“Tanenbaum 2001”).
<b>1045</b>	Excerpts from S. Garfinkel, et al., “Web Security & Commerce”, O’Reilly & Associates, 1997 (“Garfinkel”).

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<b><i>Exhibit #</i></b>	<b><i>Description</i></b>
<b>1046</b>	Oasis Standard Specification, “Web Services Security: SOAP Message Security 1.1 (WS-Security 2004), February 1, 2006, archived on February 6, 2007 at Internet Archive’s Wayback Machine at <a href="https://web.archive.org/web/20070206143722/http://www.oasis-open.org/committees/download.php/16790/wss-v1.1-spec-os-soapmessagesecurity.pdf">https://web.archive.org/web/20070206143722/http://www.oasis-open.org/committees/download.php/16790/wss-v1.1-spec-os-soapmessagesecurity.pdf</a> , and accessible from OASIS Web Services Security (WSS) Technical Committee web page, as archived on December 5, 2006 at Internet Archive’s Wayback Machine at <a href="https://web.archive.org/web/20061205032600/http://oasis-open.org/committees/tc_home.php?wg_abbrev=wss#technical">https://web.archive.org/web/20061205032600/http://oasis-open.org/committees/tc_home.php?wg_abbrev=wss#technical</a> (“Oasis - SOAP Security”).
<b>1047</b>	“Web Service Security Cheat Sheet”, The Open Web Application Security Project (OWASP), archived on June 12, 2012 at Internet Archive’s Wayback Machine at <a href="https://web.archive.org/web/20120612205800/https://www.owasp.org/index.php/Web_Service_Security_Cheat_Sheet">https://web.archive.org/web/20120612205800/https://www.owasp.org/index.php/Web_Service_Security_Cheat_Sheet</a> , and accessible from OWASP’s (the free and open software security community) web pages, as archived on June 10, 2012 at Internet Archive’s Wayback Machine at <a href="https://web.archive.org/web/20120610001928/https://www.owasp.org/index.php/Main_Page">https://web.archive.org/web/20120610001928/https://www.owasp.org/index.php/Main_Page</a> , and as archived on June 10, 2012 at Internet Archive’s Wayback Machine at <a href="https://web.archive.org/web/20120610091415/https://www.owasp.org/index.php/Cheat_Sheets">https://web.archive.org/web/20120610091415/https://www.owasp.org/index.php/Cheat_Sheets</a> (“OWASP - WSS Security”).
<b>1048</b>	“REST Security Cheat Sheet”, The Open Web Application Security Project (OWASP), archived on January 15, 2013 at Internet Archive’s Wayback Machine at <a href="https://web.archive.org/web/20130115190935/https://www.owasp.org/index.php/REST_Security_Cheat_Sheet">https://web.archive.org/web/20130115190935/https://www.owasp.org/index.php/REST_Security_Cheat_Sheet</a> , and accessible from OWASP’s (the free and open software security community) web pages, as archived on January 4, 2013 at Internet Archive’s Wayback Machine at <a href="https://web.archive.org/web/20130104230717/https://www.owasp.org/index.php/Main_Page">https://web.archive.org/web/20130104230717/https://www.owasp.org/index.php/Main_Page</a> , and as archived on January 15, 2013 at Internet Archive’s Wayback Machine at <a href="https://web.archive.org/web/20130115215253/https://www.owasp.org/index.php/Cheat_Sheets">https://web.archive.org/web/20130115215253/https://www.owasp.org/index.php/Cheat_Sheets</a> (“OWASP – REST Security”).

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<b><i>Exhibit #</i></b>	<b><i>Description</i></b>
<b>1049</b>	<i>Intentionally Left Blank</i>
<b>1050</b>	The Open Services Gateway Initiative, “Specification Overview”, Version 1.0, January 2000, archived on August 31, 2000 at Internet Archive’s Wayback Machine at <a href="https://web.archive.org/web/20000831061202/http://www.osgi.org/about/specoverview.pdf">https://web.archive.org/web/20000831061202/http://www.osgi.org/about/specoverview.pdf</a> (“OSGi 2000 Overview”).
<b>1051</b>	R. Hall, “Oscar Bundle Repository”, archived on June 30, 2004 at Internet Archive’s Wayback Machine at <a href="https://web.archive.org/web/20040630163519/http://oscar-osgi.sourceforge.net:80/">https://web.archive.org/web/20040630163519/http://oscar-osgi.sourceforge.net:80/</a> (“OBR 2004”).
<b>1052</b>	Excerpts from B. Sosinsky, “Cloud Computing Bible”, Wiley Publishing, Inc., 2011 (“Sosinsky”).
<b>1053</b>	“Java Secure Socket Extension (JSSE) Reference Guide for Java Platform Standard Edition 7”, Oracle Java SE Documentation, archived on November 25, 2011 at Internet Archive’s Wayback Machine at <a href="https://web.archive.org/web/20111125044243/http://docs.oracle.com/javase/7/docs/technotes/guides/security/jsse/JSSERefGuide.html">https://web.archive.org/web/20111125044243/http://docs.oracle.com/javase/7/docs/technotes/guides/security/jsse/JSSERefGuide.html</a> (“JSSE Guide”).
<b>1054</b>	“Java™ Remote Method Invocation API (Java RMI)”, Oracle Java SE Documentation, archived on November 27, 2011 at Internet Archive’s Wayback Machine at <a href="https://web.archive.org/web/20111127072151/http://docs.oracle.com/javase/7/docs/technotes/guides/rmi/index.html">https://web.archive.org/web/20111127072151/http://docs.oracle.com/javase/7/docs/technotes/guides/rmi/index.html</a> (“Java RMI Overview”).
<b>1055</b>	“Using Custom Socket Factories with Java RMI”, Oracle Java SE Documentation, archived on April 3, 2012 at Internet Archive’s Wayback Machine at <a href="https://web.archive.org/web/20120403095031/https://docs.oracle.com/javase/7/docs/technotes/guides/rmi/socketfactory/index.html">https://web.archive.org/web/20120403095031/https://docs.oracle.com/javase/7/docs/technotes/guides/rmi/socketfactory/index.html</a> (“Java RMI Socket Overview”).
<b>1056</b>	“Using Java™ RMI with SSL”, Oracle Java SE Documentation, archived on July 3, 2012 at Internet Archive’s Wayback Machine at <a href="https://web.archive.org/web/20120703221253/https://docs.oracle.com/javase/7/docs/technotes/guides/rmi/socketfactory/SSLInfo.html">https://web.archive.org/web/20120703221253/https://docs.oracle.com/javase/7/docs/technotes/guides/rmi/socketfactory/SSLInfo.html</a> (“Java RMI SSL Overview”).
<b>1057</b>	Microsoft Computer Dictionary, 3rd ed., 1997, excerpts (“Microsoft Computer Dictionary”).

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<b>Exhibit #</b>	<b>Description</b>
<b>1058</b>	Usenix Jails in FreeBSD for Fun and Profit, Paco Hope, USENIX ;login: The Magazine of Usenix & Sage, vol. 27, number 3, June 2002 (“Hope”), archived on March 16, 2003 at Internet Archive’s Wayback Machine at <a href="https://web.archive.org/web/20030316225604/http://www.usenix.org/publications/login/2002-06/pdfs/hope.pdf">https://web.archive.org/web/20030316225604/http://www.usenix.org/publications/login/2002-06/pdfs/hope.pdf</a> .
<b>1059</b>	Excerpts from Silberschatz et al., Operating System Concepts (8 <sup>th</sup> Ed. 2009) (“Silberschatz 2009”).
<b>1060</b>	Excerpts from Silberschatz et al., Operating System Concepts (9 <sup>th</sup> Ed. 2012) (“Silberschatz 2012”).
<b>1061</b>	Excerpts from McKusick and Neville-Neil, “The Design and Implementation of the FreeBSD Operating System” (2005) (“McKusick”).
<b>1062</b>	Excerpts from Benevenuti, “Understanding Linux Network Internals” (2006) (“Benevenuti”).
<b>1063</b>	Excerpts from Stallings, “Operating Systems Internals and Design Principles” (7 <sup>th</sup> ed. 2012) (“Stallings”).
<b>1064</b>	“apache_1.3.19.tar.gz.md5” Hash File, Apache Software Foundation, archived on June 28, 2001 at Internet Archive’s Wayback Machine at <a href="https://web.archive.org/web/20010628043950/http://www.apache.org/dist/httpd/apache_1.3.19.tar.gz.md5">https://web.archive.org/web/20010628043950/http://www.apache.org/dist/httpd/apache_1.3.19.tar.gz.md5</a> .
<b>1065</b>	“apache_1.3.19.tar.gz.asc” Signature File, Apache Software Foundation, archived on June 28, 2001 at Internet Archive’s Wayback Machine at <a href="https://web.archive.org/web/20010628043146/apache.org/dist/httpd/apache_1.3.19.tar.gz.asc">https://web.archive.org/web/20010628043146/apache.org/dist/httpd/apache_1.3.19.tar.gz.asc</a> .
<b>1066</b>	“Apache Archive Distribution Directory”, Apache Software Foundation, available at <a href="https://archive.apache.org/dist/httpd">https://archive.apache.org/dist/httpd</a> (“Apache Archive”).
<b>1067</b>	U.S. Department of Commerce, FIPS PUB 186-2, Digital Signature Standard (DSS) (January 27, 2000) (“DSS FIPS PUB”).
<b>1068</b>	J. Preshing, “Hash Collision Probabilities”, Preshing on Programming, May 4, 2011, archived on September 27, 2011 at Internet Archive’s Wayback Machine at <a href="https://web.archive.org/web/20110927200414/preshing.com/20110504/hash-collision-probabilities">https://web.archive.org/web/20110927200414/preshing.com/20110504/hash-collision-probabilities</a> (“Preshing Hash Collision Probabilities”).

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<b><i>Exhibit #</i></b>	<b><i>Description</i></b>
<b>1069</b>	“Avalanche Effect”, Wikipedia, archived on April 30, 2010 at Internet Archive’s Wayback Machine at <a href="https://web.archive.org/web/20100430122132/https://en.wikipedia.org/wiki/Avalanche_effect">https://web.archive.org/web/20100430122132/https://en.wikipedia.org/wiki/Avalanche_effect</a> (“Wikipedia Avalanche Effect”).
<b>1070</b>	Plaintiff Edge Networking Systems, LLC’s Opening Claim Construction Brief, filed as Document No. 31, on December 17, 2024, in Case No. 1:24-cv-00215-DAE, captioned as <i>Edge Networking Systems, LLC v. Microsoft Corporation</i> (W.D. Texas).
<b>1071</b>	Defendant Microsoft Corporation’s Responsive Claim Construction Brief, filed as Document No. 32, on January 17, 2025, in Case No. 1:24-cv-00215-DAE, captioned as <i>Edge Networking Systems, LLC v. Microsoft Corporation</i> (W.D. Texas).
<b>1072</b>	Scheduling Order, filed as Document No. 27, on September 4, 2024, in Case No. 1:24-cv-00215-DAE, captioned as <i>Edge Networking Systems, LLC v. Microsoft Corporation</i> (W.D. Texas).
<b>1073</b>	U.S. Patent Publication No. 2014/0241158 (“Anthony”).
<b>1074</b>	Excerpt from Zenious et al., BIODESIGN; THE PROCESS OF INNOVATING MEDICAL TECHNOLOGIES (EX2010 in <i>iRhythm Technologies Inc. v. Welch Allyn Inc.</i> , IPR2025-00363).
<b>1075</b>	March 26, 2025 Email from Petitioner’s Counsel to Patent Owner’s Counsel Containing <i>Sotera</i> Stipulation
<b>1076</b>	April 2025 Emails Between Petitioner’s Counsel and the Board Regarding Petitioner’s Request to File the <i>Sotera</i> Stipulation in the IPRs
<b>1077</b>	Order Setting <i>Markman</i> Hearing for October 7, 2025, filed as Document No. 41, on June 11, 2025, in Case No. 1:24-cv-00215-DAE, captioned as <i>Edge Networking Systems, LLC v. Microsoft Corporation</i> (W.D. Texas).
<b>1078</b>	Amended Scheduling Order, filed as Document No. 43, on June 27, 2025, in Case No. 1:24-cv-00215-DAE, captioned as <i>Edge Networking Systems, LLC v. Microsoft Corporation</i> (W.D. Texas).
<b>1079</b>	Patent Owner’s Certificate of Formation dated March 27, 2023
<b>1080</b>	Inventor Assignment to Patent Owner, dated April 20, 2023, of the Parent ’624 Patent, the ’871 Patent, the child ’095 Patent, and the child application that eventually issues as the child ’823 Patent.
<b>1081</b>	U.S. Patent Publication No. 2012/0300615 (“Kempf”).
<b>1082</b>	U.S. Patent Publication No. 20090276771 (“Nickolov”).

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<i>Exhibit #</i>	<i>Description</i>
<b>1083</b>	McKeown et al, "Open Flow: Enabling Innovation in Campus Networks" March 14, 2008 (cited by Patent Owner as EX2002 in IPR2025-00619) (" <i>OpenFlow</i> ").

## **I. INTRODUCTION**

Petitioner Microsoft Corporation (“Petitioner”) hereby opposes Patent Owner Edge Networking System LLC’s (“PO” or “Patent Owner”) request for discretionary denial of institution of the Petition for *inter partes* review (“IPR”) of the ’823 Patent<sup>1</sup>. PO’s Request is primarily based on its assertion that the Petition presents to the Office “the same or substantially the same art or arguments previously presented to the Office” under 35 U.S.C. § 325(d). Req., 2-25. The Request fails because it completely ignores the grandparent ’624 Prosecution History (in which a different Examiner rejected a **virtually identical** claim to the version of ’823 claim 1 that Patent Owner relies upon in its Request over different prior art, and the Applicant amended the claim without objecting to this rejection), and relies on Patent Owner’s mischaracterization of the ’823 Prosecution History, the disclosure of the *Vasell* IPR prior art, and the Petition.

At the threshold, in making its argument that *Advanced Bionics* prong one is satisfied, Patent Owner concedes – as it must – that **every** prior art reference in the grounds of the Petition – *Vasell*, *Alves*, *Hall*, and *Rellermeyer* – **was completely**

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<sup>1</sup> IPR2025-00618, Paper 9 (June 15, 2025), hereinafter “Request” (abbreviated “Req.”).

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**absent** from the prosecution history of the '823 Patent (the "'823 Prosecution History, the prosecution history of the grandparent '624 Patent (the "'624 Prosecution History"), and the prosecution history of the parent patents of the '823 Patent, including the '871 Patent and the '095 Patent<sup>2</sup>. *Vasell, Alves, Hall, and Rellermeyer* were **not** disclosed in an IDS, **nor** cited by an Examiner, during the '823 Prosecution History, nor during the respective prosecutions that led to any family member patent of the '823 Patent, including the grandparent '624 Patent, and the parent '871 and '095 Patents. *Cf. Ecto World, LLC v. RAI Strategic Holdings, Inc.*, IPR2024-01280, Paper 13 (May 19, 2025) (designated §A precedential: May 19, 2025). And, nothing in the '823 Prosecution History, nor in the grandparent '624 Prosecution History, nor in the prosecution history of any family member of the '823 Patent, involved the Examiner discussing, applying, or otherwise meaningfully addressing *Vasell's* disclosure, *Alves'* disclosure, *Hall's*

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<sup>2</sup> The '871 Patent and the '095 Patent are the other two Patent Owner patents that Petitioner has challenged in IPR2025-00619 and IPR2025-00617, proceedings in which Patent Owner concurrently filed Requests for discretionary denial of institution of those Petitions.

disclosure, nor *Rellermeyer's* disclosure, and none of the arguments set forth in the Petition Grounds were before the Examiner during prosecution.

The Request contends that the first prong of the *Advanced Bionics* framework is satisfied based on Patent Owner's assertion that "[w]ith respect to the claim limitation requiring "unified capabilities that enable a plurality of upper layer APIs" to perform a programming function -- which was critical to patentability -- the Petition relies on the Vasell reference which is, at best, cumulative of the Van der Merwe reference applied during prosecution." *See, e.g.,* Req., 1 (original emphasis). However, the Examiner's actual application of *Van der Merwe* during the '823 Prosecution History affirmatively confirms that Petitioner does not rely on *Vasell* in the Petition in substantially the same manner as the Examiner relied on *Van Der Merwe*. Moreover, in the same Office Action that the Examiner issued a "statement of reasons for allowance", the Examiner (i) did **not** explain why he found that the prior art of record – which, at this time, encompassed 45 prior art references that were either cited by the Applicant in IDSs or cited by the Examiner – did not teach the "... unified capabilities that enable a plurality of upper layer APIs..." limitation, and (ii) found that **the '823 Patent specification** likewise did **not** teach the same limitation. Furthermore, it is also unclear from the '823 Prosecution History how much influence the Applicant's inaccurate statement that "new claims 19-38 ... **are not coextensive in scope** with

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the prior applications of this family” in the immediately preceding Amendment had on the Examiner’s findings in these same “statement of reasons for allowance.” Therefore, PO’s argument that, as applied in the Petition, *Vasell* is cumulative to *Van Der Merwe*, as applied during prosecution, is without factual support.

Related to the second prong of the *Advanced Bionics* framework, there was material error in the ’823 Prosecution History because none of the IPR prior art, and none of their highly relevant teachings (which disclose each limitation recited in the Challenged Claims), were considered by the Office, and because, (i) in a July 2022 Amendment, the Applicant added claims 19-38 to the application that led to the ’823 Patent and inaccurately stated that “new claims 19-38 ... **are not coextensive in scope** with the prior applications of this family”; (ii) five years earlier, in an October 2016 Amendment during examination of the grandparent ’624 Patent, the Applicant presented **virtually identical** claims to the July 2022 claims 19-38 to the Office; (iii) in a December 2016 office action, the examiner of the grandparent ’624 Patent rejected these **virtually identical** claims over prior art; (iii) in this rejection, and in three subsequent rejections, the examiner of the grandparent ’624 Patent specifically found that the **virtually identical** claim element including the “...unified capabilities that enable a plurality of upper layer APIs...” limitation (which PO relies on in the Request) was disclosed in the prior art of record; (iv) the Applicant did **not** object to any of these prior art rejections

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nor argue that the cited prior art did not disclose the "...unified capabilities that enable a plurality of upper layer APIs..." limitation, but rather amended the claims to a narrower and narrower scope and argued for patentability based on newly added limitations; (v) in September 2022, without knowledge that the Applicant's July 2022 statement was inaccurate and without knowledge of the detailed, contradictory findings of the grandparent '624 Prosecution Examiner on **virtually identical** claims, the '823 Prosecution Examiner, without issuing a single prior art rejection of claims 19-36, generically identified such claims as being allowable over the prior art of record, and identified the claim element including the "...unified capabilities that enable a plurality of upper layer APIs..." limitation in a "statement of reasons for allowance."

Outside of the inapplicability of § 325(d) to the facts here, the Director should not exercise discretion under other relevant factors. Outside of PO's faulty assertion for the "...unified capabilities that enable a plurality of upper layer APIs..." limitation, the Request is silent on the Petition's merits, which are particularly strong in this case, and instead resorts to criticizing the form of the Petition's grounds. Specifically, PO alleges an overuse of expert testimony related to the "...unified capabilities that enable a plurality of upper layer APIs..." limitation, but these allegations are based on PO's mischaracterizations of *Vasell's* disclosure and the Petition for this limitation; indeed, as confirmed by the Petition,

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*Vasell's* disclosure – and not Petitioner's expert testimony – is what Petitioner maps this limitation onto. PO's "gamesmanship" allegations related to "sandboxing operating system" (Req. 1-2, 25-26), are without merit because they are based on the same faulty assertion underlying PO's § 325(d) arguments, and based on PO's mischaracterizations of *Vasell's* disclosure and the Petition. PO's allegation that Petitioner "attempts to pass off a fabricated version Figure 2 of *Vasell*" (Req. 2, 27-28) is belied by the fact that "Annotated FIG. 2" (as it is referred to in the Petition) is annotated accurately to *Vasell's* disclosure, and annotated accurately to the particular disclosed embodiments of *Vasell* that are quoted, cited and relied on in the Petition.

Finally, although PO does not raise settled expectations in its Request, Petitioner submits that PO's recent formation as a company (March 27, 2023), the fact that the '823 Patent was recently acquired by PO (April 20, 2023), the fact that the '823 Patent has "not been in force for a significant period of time" (having issued July 4, 2023 after the PO's acquisition), PO's filing of a non-publication request during prosecution of the '823 Patent, and APA considerations, confirm that Patent Owner "has not developed strong settled expectations that favor discretionary denial" here.

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Accordingly, Petitioner hereby respectfully requests that the Director deny PO's Request and grant the Petition to institute *inter partes* review of the '823 Patent.

**II. STIPULATION**

Petitioner entered a *Sotera* stipulation by an email sent to PO on March 26, 2025 ("the *Sotera* Stipulation," EX1075). Petitioner's stipulation reads, *inter alia*:

if the PTAB institutes these IPRs (IPR2025-00617, -00618, -00619), Microsoft will not pursue in this district court litigation the specific invalidity grounds that it raised in these IPR petitions, nor any other invalidity ground that Microsoft raised or could have reasonably raised in these IPR petitions under §§ 102 or 103, against the asserted claims of the patents-in-suit. *Sotera Wireless, Inc. v. Masimo Corp.*, Case IPR2020-01019, Paper 12 (PTAB Dec. 1, 2020) (precedential).

EX1075.

On March 31, 2025, after conferring with PO's counsel, Petitioner requested leave from the Board to file the *Sotera* Stipulation. EX1076, 2. On April 3, 2025,

the Board replied that “[t]hese cases have not yet been assigned to panels. Once they have been, your request will be forwarded to the panels.” EX1076, 1-2.<sup>3</sup>

**III. THE DIRECTOR SHOULD NOT DENY INSTITUTION UNDER 35 U.S.C. § 325(D)**

When determining whether to exercise discretion under § 325(d), “the Board uses the following two-part framework: (1) whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office; and (2) if either condition of first part of the framework is satisfied, whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of the challenged claims.” *Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6 at 8 (Feb. 13, 2020) (designated precedential: March 24, 2020). “[T]he *Becton, Dickinson* factors provide useful insight into how to apply the [*Advanced Bionics* two-part] framework under 35 U.S.C. § 325(d).” *Id.* at Paper 6 at 9-10. “If, after review of [*Becton, Dickinson*] factors (a), (b), and (d), it is determined that the same or substantially the same art

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<sup>3</sup> PO did not raise *Fintiv* in the Request, and Petitioner’s *Sotera* Stipulation and the continued lack of trial date in the related litigation (*see* EX1078) are further reasons that discretionary denial is not warranted in this case.

or arguments previously were presented to the Office, then factors (c), (e), and (f) relate to whether the petitioner has demonstrated a material error by the Office.”

*Id.*

**A. None of the Four (4) References in the IPR Grounds Were Previously Presented to the Office**

Patent Owner concedes that every reference in the grounds of the Petition – *Vasell, Alves, Hall, and Rellermeyer* – was **completely absent** from the ’823 Prosecution History, **completely absent** from the grandparent ’624 Prosecution History, and **completely absent** from the prosecution history of the parent patents of the ’823 Patent, including of the ’871 Patent and the ’095 Patent.

These facts alone distinguish the particular facts of this IPR from the facts in every decision cited by the PO and every decision that the Board has designated precedential under 35 U.S.C. § 325(d). *See Ecto World*, IPR2024-01280, Paper 13 at 2-4 (“the Petition relies exclusively on prior art references that were submitted to the Office in an ...IDS ... during the prosecution of [the Challenged Patent].”); *Advanced Bionics*, IPR2019-01469, Paper 6 at 6, 13-19 (“it is undisputed that Zimmerling was evaluated during prosecution of the [Challenged Patent], [and] Petitioner extensively relies on Zimmerling in both of the asserted grounds of unpatentability”); *Oticon*, IPR2019-00975, Paper 15 at 5, 9-10 (at least the primary reference in every IPR ground – “Westerkull ’794” – was “expressly considered

during prosecution of the [Challenged Patent] and [the parent application of the Challenged Patent].”); *Becton Dickinson*, IPR2017-01586, Paper 8 at 6, 16-28 (for IPR Ground 1 – the only IPR ground for which § 325(d) was evaluated – “Woehr, relied upon by Petitioner as the base reference here, was also the base reference in the Examiner’s Woehr/Rogers obviousness rejection during examination.”; notably, the Board did **not** evaluate § 325(d) for the other three (3) IPR grounds.).

**B. *Vasell* as Applied in the Petition is Not Cumulative of *Van Der Merwe* as Applied During Prosecution of the '823 Patent**

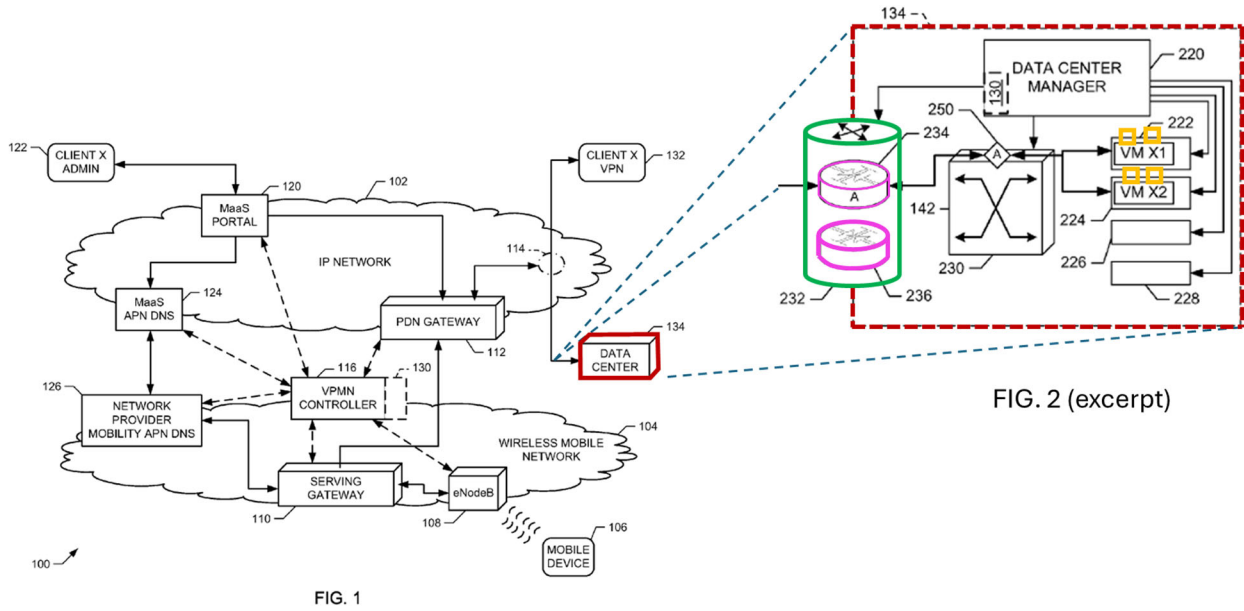
Patent Owner contends that prong 1 of the *Advanced Bionics* framework is satisfied, and *Becton Dickinson* factors (a)-(d) weigh in favor of the Board exercising discretion under § 325(d), asserting that the *Vasell* reference is cumulative of the *Van Der Merwe* reference as applied during prosecution of the '823 Patent. Specifically, Patent Owner asserts that “[w]ith respect to the claim limitation requiring “*unified capabilities that enable a plurality of upper layer APIs*” to perform a programming function -- which was critical to patentability -- the Petition relies on the *Vasell* reference which is, at best, cumulative of the *Van der Merwe* reference applied during prosecution.” *See, e.g.*, Req., 1 (original emphasis), 19-22. Patent Owner’s argument fails for numerous reasons.

First, the Examiner’s mapping of claims 37 and 38 onto *Van der Merwe* in the September 2022 Office Action demonstrates that *Vasell* as applied in the

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Petition is not cumulative of *Van Der Merwe* as applied during prosecution of the '823 Patent. While the Request relies on this same September 2022 Office Action and the Examiner's rejection of claims 37 and 38 based on *Van der Merwe*, it is notably silent regarding **how** the Examiner maps claims 37 and 38 onto *Van der Merwe*. See Req. 8, 10-12. In this September 2022 Office Action, and as illustrated in the below annotated version of Figure 1 (and excerpt of Figure 2) below, the Examiner mapped: (i) the claimed "system comprising a plurality of network elements" onto *Van der Merwe*'s disclosed "Fig[s]. 1-2"; (ii) the claimed "programmable **cloud device**" onto *Van der Merwe*'s disclosed "**cloud computing data center** comprising virtual machines, see ¶0025"; (iii) the claimed "**first network applications**" onto *Van der Merwe*'s disclosed "**hosting enterprise applications**, see ¶0083"; (iv) the claimed "programmable **network device**" onto *Van der Merwe*'s disclosed "**edge router**, see abstract and Fig. 2, ref 232"; (v) the claimed "**second network applications**" onto *Van der Merwe*'s disclosed "operating as a **logical router**, see ¶0062"; and (vi) the claimed "distributed application" onto *Van der Merwe*'s disclosed "'virtualized platform' see ¶0002, and/or 'overlay network', see ¶0019":

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EX1005, 98-100 (original italicized emphasis); EX2001, FIG. 1 (reproduced and annotated above), FIG. 2 (excerpt of “cloud computing data center 134”, including “edge router ... 232”, reproduced and annotated above), Abstract, ¶¶ [0002], [0019], [0025], [0062]-[0063], [0083], [0105] (*cited* in EX1005, 98-100). In other words, as applied by the Examiner in the ’823 Prosecution History, *Van Der Merwe’s* “**first**” (“enterprise application”) and “**second**” (“logical router”) network applications were **not** components of the same single software application, and were **not** providing the same service, and *Van Der Merwe’s* “distributed application” (“virtualized platform” and/or “overlay network”) was yet another different application that provided a different, unrelated service.. *Id.* Yet, the Examiner found that this disclosure in *Van Der Merwe* met the limitations of Claims 37 and 38, including the limitation that “the first and second network

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applications are in secure communication to form a distributed application.” *Id.*; *cf.* Req. 8-12, 13-14.

In sharp contrast to *Van Der Merwe’s* disclosure, as the Examiner actually applied it during the ’823 Prosecution History – detailed above –, *Vasell’s* disclosed “distributed” software applications, as applied in the Petition, are each called a “service application”, and *Vasell* discloses that each “service application” implements a “service” for end users, where each service application has (i) a component (“portion”) installed on a service platform server, and (ii) a component (“portion”) installed on a network operator server and/or service provider equipment – *i.e.*, these distributed components are of the same single software application (the distributed service application) and operate to provide the same service to end users. *See, e.g.*, Petition, 50-52 (*citing* EX1004, 8:53-9:24, 2:64-3:1, 24:49-51, 11:47-48, 12:27-29, 11:13-46; EX1016, 4, 7-9).

Thus, contrary to Patent Owner’s assertion in the Request, Petitioner does not rely on *Vasell* in the Petition in substantially the same manner as the Examiner relied on *Van Der Merwe* during prosecution of the ’823 Patent. Therefore, for at least this reason, prong 1 of the *Advanced Bionics* framework is **not** satisfied, and *Becton Dickinson* factors (a)-(d) do **not** weigh in favor of the Board exercising discretion under § 325(d).

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Second, contrary to intimations in the Request, the Examiner did not, in this same September 2022 Office Action, explain why he found that the prior art of record – which, at this time, encompassed 45 prior art references (one of which was *Van Der Merwe*) that were either cited by the Applicant in IDSs or cited by the Examiner – “does not teach or render obvious to [a POSITA] ... the features of: ‘... wherein the programmable network device and programmable cloud device *form unified capabilities enabling a plurality of upper layer application programming interfaces (APIs) that allow for simultaneous programming of the programmable network device and programmable cloud device independent of network device hardware and cloud device hardware.*’” EX1002, 100 (original emphasis); *see also id.* at 96-102, 103 (“Notice of References Cited” in September 2022 Office Action identifying 3 references including *Van Der Merwe*). In fact, in this same September 2022 Office Action and in the subsequent December 2022 Office Action, the Examiner found that the ’823 Patent specification itself did not disclose this same claim limitation, including after September 2022 claim amendments by the Applicant. EX1002, 97 (“Applicant’s specification is completely silent as to the steps or processes for the ‘*simultaneous programming of the programmable network device and programmable cloud device independent of network device hardware and cloud device hardware*’.”) (original emphasis), 87-90 (showing Applicant’s September 2022 claim amendments), 59-60 (“Applicant's

specification does not appear to describe specific steps for programming the network device applications and plurality of cloud applications by the plurality of upper layer application programming interfaces (API). Thus, mentioning that steps of the invention can broadly be performed ‘*simultaneously*’, as in ¶[0030], is insufficient to support the specific limitations of: ‘*enabling a plurality of upper layer application programming interfaces (APIs) to simultaneously program the network device applications and plurality of cloud applications independent of network device hardware and cloud device hardware*.’”) (original emphasis).

Therefore, contrary to the Request’s intimations, it is unclear from the ’823 Prosecution History whether the limitation’s inclusion of the word “simultaneously” – which the limitation included until Applicant deleted this word in April 2023 – was the reason for the Examiner’s finding in the September 2022 “statement of reasons for allowance”, or whether it was for some other reason. EX1002, 41, 55, 86, 97-100, 125; *cf.* Req. 1, 11, 13-14, 19-21. Moreover, as discussed in § III.C below, it is also unclear from the ’823 Prosecution History how much influence the Applicant’s July 2022 inaccurate statement that “new claims 19-38 ... are not coextensive in scope with the prior applications of this family” had on the Examiner’s finding in the September 2022 “statement of reasons for allowance.” EX1002, 130, 100. Accordingly, because, during the ’823 Prosecution History, the Examiner did **not** assert that *Van der Merwe* discloses the

“... unified capabilities enabling a plurality of upper layer application programming interfaces (APIs)...” limitation-at-issue (nor did the Applicant make arguments distinguishing this limitation from *Van der Merwe’s* disclosure), there is no factual support for Patent Owner’s argument that *Vasell* as applied in the Petition is cumulative of *Van der Merwe* as applied in the ’823 Prosecution History.

Third, even if the Examiner’s September 2022 mapping of claims 37 and 38 (or the concurrent “statement of reasons for allowance”) included a mapping, or distinguishing, of *Van der Merwe’s* disclosure that Patent Owner relies on in the Request – which it clearly does not –, in this disclosure (reproduced by PO, with emphasis added, at Req. 13), *Van der Merwe* only discloses an “API interface 708” that “enables client administrators to develop, deploy, and/or modify **enterprise applications**”, *i.e.*, what the Examiner mapped onto the claimed “**second**” network applications. Req. 13 (*citing* EX2001, ¶¶[0119]-[0120]); EX1002, 98-100. In other words, *Van Der Merwe’s* disclosed “API Gateway” is **wholly unrelated** to the Examiner-mapped “**first**” (“logical router”) network applications, and to the Examiner-mapped “distributed application” (“virtualized platform” and/or “overlay network”). *Id.*

Thus, in view of the Examiner’s mapping of claims 37 and 38 onto *Van Der Merwe’s* disclosure, *Vasell’s* disclosure as applied in the Petition is not cumulative

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to *Van Der Merwe's* disclosure identified in the Request. See Petition, 54-57. As for *Vasell's* disclosure as applied in the Petition, at the threshold, contrary to intimations in the Request (Req. 14-18 (*citing* EX1016, 4, 8)), the Petition does **not** merely rely on two pages of the '971 Provisional Application for the "... unified capabilities enabling a plurality of upper layer application programming interfaces (APIs)..." limitation-at-issue, and *Vasell* does not merely disclose "common (or standard APIs) [being] used for developing multiple applications on a given platform." See Petition, 54-57. Indeed, as detailed in the Petition, a POSITA understood this limitation to be disclosed by *Vasell* because, in addition to *Vasell's* non-cumulative disclosure of "distributed" "service applications", where each service application has (i) a component ("portion") installed on a network device, and (ii) a component ("portion") installed on a cloud device, which operate (and securely communicate) to provide the same service to end users, *Vasell* also includes non-cumulative disclosure that (i) standard Java APIs are used for development of these distributed" "service applications" (and of their underlying components), (ii) "flexible", "transparent", and standards-compatible interfaces are used for the lifecycle management of these distributed" "service applications" (and of their underlying components) in the service gateway system; and (iii) these standard development and management APIs are usable regardless of the network

device and cloud device hardware. See, e.g., Petition, 56-57 (citing EX1016, 4, 6, 8-9; EX1004, 2:60-3:1, 5:15-35, 22:35-37, 20:52-53, 16:59-60, FIG. 6).

Accordingly, because the *Vasell* reference, as applied in the Petition, is **not** cumulative of the *Van Der Merwe* reference as applied during prosecution of the '823 Patent, prong 1 of the *Advanced Bionics* framework is **not** satisfied, and *Becton Dickinson* factors (a)-(d) do **not** weigh in favor of the Board exercising discretion under § 325(d).

**C. The Examiner Materially Erred in Prosecuting the '823 Patent**

As explained in the precedential *Advanced Bionics* decision, the § 325(d) analysis proceeds to prong two of the framework “**if** either condition of first part of the framework is satisfied”, *i.e.*, **if** “the same or substantially the same art previously was presented to the Office or [**if**] the same or substantially the same arguments previously were presented to the Office.” *Advanced Bionics*, IPR2019-01469, Paper 8 at 8-9. Here, as explained in § III.B above, prong 1 of the *Advanced Bionics* framework is **not** satisfied, and analysis under prong 2 is **not** warranted, because the *Vasell* reference, as applied in the Petition, is **not** cumulative of the *Van Der Merwe* reference as applied during the prosecution of the '823 Patent.

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However, for completeness, Petitioner further demonstrates that the examiner materially erred in prosecuting the '823 Patent. As explained in *Advanced Bionics*:

If, after review of [*Becton Dickinson*] factors (a), (b), and (d), it is determined that the same or substantially the same art or arguments previously were presented to the Office, then [*Becton Dickinson*] factors (c), (e), and (f) relate to whether the petitioner has demonstrated a material error by the Office. Factor (c) focuses on the record developed by the Office in previously reviewing the art or arguments. It informs, therefore, the petitioner's showing under factors (e) and (f), which focus on the petitioner's evidence of previous Office error regardless of the context in which the same or substantially the same art or arguments were previously presented. For example, if the record of the Office's previous consideration of the art is not well developed or silent, then a petitioner may show the Office erred by overlooking something persuasive under factors (e) and (f).

*Advanced Bionics*, IPR2019-01469, Paper 8 at 10-11.

Here, under *Advanced Bionics* prong 2, and *Becton Dickinson* factors (c), (e) and (f), there was material error in the prosecution leading to the issuance of the '823 Patent, which is established by the grandparent '624 Prosecution History, the '823 Prosecution History and the Petition.

As discussed above, for its § 325(d) arguments, the Request relies on the '823 Prosecution Examiner's statements in a September 2022 Office Action

following the Applicant's July 2022 amendment adding new claims 19-38 into the application that eventually led to the '823 Patent. Req. 3-5, 8-23 (*citing, inter alia*, EX1002, 124-129, 94-100). It appears that this Examiner was not aware that one of the Applicant's statements, in the same July 2022 Amendment, was inaccurate, namely that "added new claims 19-38 ... **are not coextensive with the prior applications of this family.**" EX1002, 130 (emphasis added); *see also id.* at 124-129. It appears that this Examiner was also not aware of the reason for this statement's inaccuracy, namely that, during the grandparent '624 Prosecution History, the original Examiner of the applications in this patent family<sup>4</sup> rejected **virtually identical** claims to those Applicant added in July 2022 over prior art.

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<sup>4</sup> The original Examiner of the patent applications in this family was the examiner for the entirety of the grandparent '624 Prosecution History (during which he issued 4 separate prior art rejections of the '624 claims), and the examiner for part of the parent '871 Prosecution History (during which he issued the only prior art rejection of the '871 claims). The subsequent Examiner of the patent applications in this family was the examiner for the remainder of the '871 Prosecution History, and the entirety of the '095 and '823 Prosecution Histories, during which, outside of double-patenting rejections to the earlier issued patents in the family, he issued a

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That this July 2022 statement was inaccurate, and that the Examiner was unaware of the reason for its inaccuracy, can be shown by comparing the July 2022 '823 Patent Application claims 19-38 to the **virtually identical** October 2016 grandparent '624 Patent application claims in the following order: 1-3, 6, 4-5 and 7-20. *Compare* EX1002, 125-129 *with* EX1005, 225-229. For example, Petitioner reproduces the October 2016 version of claim 1 from the '624 Prosecution History (below left) and the July 2022 version of claim 19 from the '823 Prosecution History (below right), and adds yellow highlighting to show the minor differences between these two claims:

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total of **1** prior art rejection of **2** claims (the September 2022 rejection of '823 claims 37 and 38) across the three patents.

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<b>Claim 1 from ’624 Pros. History (October 2016) Examiner: R. Krishnan</b>	<b>Claim 19 from ’823 Pros. History (July 2022) Examiner: B. Higa</b>
<p>1. (Currently Amended) A plurality of network elements in a packet system said network elements comprising:</p> <ul style="list-style-type: none"> <li>a flexible network device adapted to process data flows in the packet system having at least one fxDeviceApp;</li> <li>a flexible cloud platform having at least one fxCloudApp, wherein the at least one fxDeviceApp and at least one fxCloudApp are in secure communication to form a distributed application; and</li> <li>an application management portal which manages life cycle of the distributed applications</li> </ul> <p>A system comprising a plurality of network elements, said network elements comprising:</p> <ul style="list-style-type: none"> <li>a programmable network device adapted to host a plurality of first network applications;</li> <li>a programmable cloud device adapted to host a plurality of second network applications, wherein the plurality of first network applications in the network device and the plurality of second network applications in the cloud device are in secure communication with each other to form distributed applications; and</li> <li>the programmable network device and programmable cloud device forming unified capabilities enabling a plurality of upper layer application programming interfaces (APIs) that allow for simultaneous programming of the programmable network device and programmable cloud device independent of network device hardware and cloud device hardware.</li> </ul>	<p>19. (New) A system comprising a plurality of network elements, said network elements comprising:</p> <ul style="list-style-type: none"> <li>a programmable network device adapted to host a plurality of first network applications;</li> <li>a programmable cloud device adapted to host a plurality of second network applications, wherein the plurality of first network applications in the programmable network device and the plurality of second network applications in the programmable cloud device are in secure communication with each other to form distributed applications; and</li> <li>wherein the programmable network device and programmable cloud device form unified capabilities enabling a plurality of upper layer application programming interfaces (APIs) that allow for simultaneous programming of the programmable network device and programmable cloud device independent of network device hardware and cloud device hardware.</li> </ul>

EX1005, 225; EX1002, 125. Indeed, as shown above, the only differences between these two claims is that the July 2022 ’823 claim 19 adds the word “wherein”, and uses “form” instead of “forming” (the word used in the October 2016 ’624 claim 1). *Id.*<sup>5</sup>

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<sup>5</sup> Although it is meaningless from an examination standpoint, Petitioner also identifies and shows in the chart above that, in presenting these virtually identical claims to the Office in October 2016 and July 2022 respectively, the Applicant presented ’624 claim 1 in October 2016 as an amendment (and showed the deleted text of prior claim 1) and presented ’823 claim 19 in July 2022 as a new claim (and did not show the deleted text of prior claim 1). *Id.*

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It is unclear from the '823 Prosecution History how much influence the Applicant's July 2022 inaccurate statement had on the Examiner's September 2022 "statement of reasons for allowance." EX1002, 100, 130. However, the '823 Prosecution Examiner was unaware that, during the grandparent '624 Prosecution History, in a December 2016 Office Action, the original Examiner of the patent applications in this family rejected **all** of these virtually identical claims over prior art, including rejecting '624 claim 1 –*the virtually identical claim to the July 2022 version of '823 claim 19 that the Patent Owner relies upon in its Request (Req. 8-12) – as being obvious over Anthony in view of Kempf in view of Nickolov.*<sup>6</sup> EX1005, 250-254. In these prior art rejections, the '624 Prosecution Examiner found that **the identical limitation on which Patent Owner's Request hinges** (Req. 1, 3-5, 8-12, 15, 20-23) was taught by the prior art of record in that: **(1) Anthony in view of Kempf ("Anthony-Kempf") disclosed the programmable network device [eNodeB device hosting a component of a MIOP-service distributed application] and programmable cloud device [cloud-based core MME,**

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<sup>6</sup> *Anthony* is U.S. Patent Publication No. 2014/0241158 (EX1073), *Kempf* is U.S. Patent Publication No. 2012/0300615 (EX1077), and *Nickolov* is U.S. Patent Publication No. 20090276771 (EX1078). EX2005, 250.

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*SGW, PGW device hosting another component of the same MIOP-service distributed application] “forming unified capabilities (MIOP@eNodeB and MIOP@GW form a distributed application that provides the MIOP service (i.e., the eNodeB and GW [application] components provide unified capabilities of the MIOP service) [0060]-[0061])” (EX1005, 250-253 (original emphasis);*

**(2)** “*Nickolov* discloses implementing SOAP and REST APIs that allow for programming the network and cloud devices that host the virtualized components of the distributed applications in a hardware-independent manner” (*id.* at 253-254); and **(3)** “it would have been obvious to a [POSITA] to modify *Anthony-Kempf* to include ‘enabling a plurality of upper layer application programming interfaces APIs that allow for simultaneous programming of the programmable network device and programmable cloud device independent of network device hardware and cloud device hardware’ as taught by *Nickolov* in order to provide the ability to create different customized virtual components of a distributed application [Nickolov 1771]” (*id.* at 253-254).

The grandparent ’624 Prosecution Examiner then reiterated its prior art rejections of these virtually identical claims – including the October 2016 ’624 claim 1 that is, as shown in the chart above, virtually identical to the July 2022 ’823 claim 19 that the Patent Owner relies upon in its Request (Req. 8-12) – in a March 22, 2017 interview with Applicant and its counsel. EX1005, 284. In

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response to the Examiner's prior art rejections of the virtually identical '624 claims, in a March 28, 2017 Amendment filed with an RCE, the Applicant did not object to these prior art rejections, and amended the claims (including grandparent '624 claim 1 that is virtually identical to July 2022 '823 claim 19) to add an “infrastructure market place” limitation and an “application management portal” limitation, and argued that it was these two newly added limitations, and **not** the “unified capabilities that enable a plurality of upper layer APIs” claim limitation, that distinguish the prior art of record in the grandparent '624 Prosecution History. EX1005, 302-308, 312-314, 323.

The grandparent '624 Prosecution Examiner rejected the Applicant's March 2017 amended claims and arguments, and subsequent August 2017 amended claims and arguments, over prior art, with each prior art rejection including a finding by the Examiner that the “... unified capabilities that enable a plurality of upper layer APIs...” claim limitation **was taught by the prior art of record**, and with each Applicant amendment providing further evidence of Applicant's agreement with these prior art rejections. *Id.*; EX1005, 327-329, 332 (rejecting

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this limitation as taught by *Li* in view of *OpenFlow*<sup>7</sup>), 424-431, 435-437, 449 (reiterating its rejection of this limitation as taught by *Li* in view of *OpenFlow*), 451-452 (same). Finally, pursuant to a September 2017 Examiner's Amendment that the Applicant approved (and which deleted the fourfold-rejected "unified capabilities that enable a plurality of upper layer APIs" claim limitation from '624 claim 19 and other independent claims), the grandparent '624 Prosecution Examiner allowed the '624 Patent claims in October 2017, which were – as a result of this detailed prosecution – significantly narrower than Applicant's presentation of these claims in October 2016. EX1005, 452-463, 469; *cf. id.* at 225-229; EX1002, 125-129.

Accordingly, whether influenced by Applicant's inaccurate statement in July 2022 or not, the '823 Prosecution Examiner was unaware of the detailed, contradictory findings of the grandparent '624 Prosecution Examiner on **virtually identical** claims when he, in September 2022 and without issuing a single prior art rejection of claims 19-36, generically identified such claims as being allowable over the prior art of record, and identified the claim element including the "unified

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<sup>7</sup> *Li* is EX1005, 371-376 and *OpenFlow* is EX1079 (and EX2002 in IPR2025-00619).

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capabilities that enable a plurality of upper layer APIs” limitation in a “statement of reasons for allowance.” EX1002, 125-129, 98-102. Accordingly, the grandparent ’624 Prosecution History alone confirms that it was a material error for the ’823 Prosecution Examiner to identify the July 2022 version of claims 19-36 as being allowable over the prior art of record when, almost five years earlier, the Office determined that virtually identical claims were invalid over prior art. EX1005, 225-232, 250-274, 302-314, 320-347, 423-438, 445-471; *Ecto World*, IPR2024-01280, Paper 13 at 5-7; *Oticon*, IPR2019-00975, Paper 15 at 19-20. And, it was likewise a material error for the ’823 Prosecution Examiner to identify the claim element including the “...unified capabilities that enable a plurality of upper layer APIs...” limitation in a “statement of reasons for allowance” when this limitation was four-fold rejected as being disclosed in the prior art of record by the grandparent ’624 Prosecution Examiner, and when the Applicant did not object to any of these rejections nor argue that the cited prior art did not disclose the “...unified capabilities that enable a plurality of upper layer APIs...” limitation, but rather amended the claims to a narrower and narrower scope and argued for patentability based on newly added limitations. *Id.*

Furthermore, under *Advanced Bionics* prong 2, and *Becton Dickinson* factors (c), (e) and (f), there was also material error in the prosecution leading to the issuance of the ’823 Patent because none of the IPR prior art was considered by the

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Office and because, as detailed in the Petition and herein, the merits of the Petition, which applies the Challenged Claims to the combined teachings of these overlooked IPR references, is particularly strong. Indeed, through commission of these errors, the '823 Prosecution Examiner was not aware of the teachings of *Vasell, Alves, Hall, and Rellermeyer*.

As detailed in the Petition and herein, *Vasell* (EX1004/EX1015/EX1016), like the '823 Patent, discloses a system having devices spread across the Internet, called a "service gateway system." Petition, 43-45. *Vasell* discloses a "network device" called a "service platform server," and a "cloud device," called "service provider equipment" or a "network operator server", where, on each device, "sandboxing" is achieved including through an operating system ("OS") that "must have fairly strong resource-control and protection mechanisms to ensure application integrity" **and** a JVM hosted thereon. Petition, 44-50. *Vasell* also discloses a plurality of distributed software applications, called "service applications", each distributed service application having a component ("portion") installed on a network device and a component ("portion") installed on a cloud device, and where the components of each service application operate (and securely communicate) to provide the same service to end users. Petition, 45-48, 50-54. *Vasell* further discloses a management service having an external interface to download, install and uninstall the lifecycle of the distributed service

applications and manage upgrades of the components of the distributed applications. Petition, 64-65, 68-69, 74. And, *Vasell* discloses, as detailed in the Petition and in § III.B above, that (i) standard Java APIs are used for development of the distributed” “service applications” (and of their underlying components), (ii) “flexible”, “transparent”, and standards-compatible interfaces are used for the lifecycle management of the distributed” “service applications” (and of their underlying components) in the service gateway system; and (iii) these standard development and management APIs are usable regardless of the network device and cloud device hardware. *See, e.g.*, Petition, 55-57.

As further detailed in the Petition, technical implementation details that were intended to implement *Vasell*’s teachings were described in each of the published references cited in the IPR Grounds – *Alves* (EX1008) (*e.g.*, cloud implementations, cloud-based application repository access), *Rellermeyer* (EX1011) (*e.g.*, management software monitoring and controlling load expansion/contraction across multiple cloud servers), and *Hall* (EX1009) (*e.g.*, using standardized digital signatures to improve security of distributed application components) – and, accordingly, a POSITA would naturally combine the teachings in these references together, and their combined teachings disclose each limitation recited in the Challenged Claims. Petition, 36-43, 49-50, 54, 66-67, 67-68, 72-73, 75-76. Accordingly, under *Advanced Bionics* prong 2, and *Becton Dickinson*

factors (c), (e) and (f), there was material error in the prosecution leading to the issuance of the '823 Patent including because none of this IPR prior art, and their respective, highly relevant teachings, was considered by the Office.

For at least the above reasons, the Director should readily dispense with Patent Owner's § 325(d) arguments, and take up the merits of the *Vasell*, *Alves*, *Hall*, and *Rellermeyer* prior art by instituting this IPR.

#### **IV. THE DIRECTOR SHOULD NOT EXERCISE DISCRETION UNDER OTHER RELEVANT FACTORS**

##### **A. The Petition is Particularly Strong**

Outside of its faulty assertions for the "...unified capabilities that enable a plurality of upper layer APIs..." limitation and regarding "sandboxing operating system", Patent Owner's Request is silent on the Petition's merits. For that reason alone, this factor should weigh against discretionary denial. *Samsung Electronics Co., Ltd. v. Clear Imaging Research, LLC*, IPR2020-01401, Paper 12 at 23 (PTAB Feb. 17, 2021) (encouraging parties to "point out, as part of the factor-based analysis, particular 'strengths or weaknesses' to aid the Board in deciding whether the merits tip the balance one way or another."). But considering the Petition's merits, the Director will see that this factor strongly weighs against discretionary denial. In particular, Petitioner is likely to prevail because *Vasell's* architecture and methods are foundational concepts that were eventually standardized under

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OSGi, and technical details that were intended to implement *Vasell's* foundational teachings are described in each of the published references cited in the IPR Grounds – *Alves* (EX1008), *Hall* (EX1009) and *Rellermeyer* (EX1011).

As detailed in the Petition, *Vasell* (EX1004/EX1015/EX1016), like the '823 Patent, discloses a system having devices spread across the Internet, called a “service gateway system.” Petition, 43-45. *Vasell* discloses a “network device” called a “service platform server,” and a “cloud device,” called “service provider equipment” or a “network operator server”, where, on each device, “sandboxing” is achieved including through an operating system (“OS”) that “must have fairly strong resource-control and protection mechanisms to ensure application integrity” **and** a JVM hosted thereon. Petition, 44-50. *Vasell* also discloses a plurality of distributed software applications, called “service applications”, each distributed service application having a component (“portion”) installed on a network device and a component (“portion”) installed on a cloud device, and where the components of each service application operate (and securely communicate) to provide the same service to end users. Petition, 45-48, 50-54. *Vasell* further discloses a management service having an external interface to download, install and uninstall the lifecycle of the distributed service applications and manage upgrades of the components of the distributed applications. Petition, 64-65, 68-69, 74. And, *Vasell* discloses, as detailed in the Petition and in § III.B above, that (i)

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standard Java APIs are used for development of the distributed” “service applications” (and of their underlying components), (ii) “flexible”, “transparent”, and standards-compatible interfaces are used for the lifecycle management of the distributed” “service applications” (and of their underlying components) in the service gateway system; and (iii) these standard development and management APIs are usable regardless of the network device and cloud device hardware. *See, e.g.,* Petition, 55-57.

As further detailed in the Petition, because technical details that were intended to implement *Vasell’s* teachings were described in each of the published references cited in the IPR Grounds – *Alves* (EX1008) (*e.g.*, cloud implementations, cloud-based application repository access), *Rellermeyer* (EX1011) (*e.g.*, management software monitoring and controlling load expansion/contraction across multiple cloud servers), and *Hall* (EX1009) (*e.g.*, using standardized digital signatures to improve security of distributed application components) – the motivation for a POSITA to modify *Vasell’s* teachings, to include the features described in these references for their intended purpose and to achieve predictable benefits with a reasonable expectation of success is demonstrated by the references themselves. Petition, 36-43, 49-50, 54, 66-67, 67-68, 72-73, 75-76. As detailed in the Petition, the naturally combined teachings of

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*Vasell, Alves, Hall and Rellermeyer* disclose each limitation recited in the Challenged Claims. *Id.*

Patent Owner's allegation that Petitioner "attempts to pass off a fabricated version Figure 2 of Vasell" (Req. 2, 27-28) is belied by the fact that "Annotated FIG. 2" (as it is referred to in the Petition ) is annotated accurately to *Vasell's* disclosure, and annotated accurately to the particular disclosed embodiments of *Vasell* that are quoted, cited and relied on in the Petition, and before and after the annotated figure in the Petition's summary of *Vasell's* disclosure and detailed element-by element application of the claims onto *Vasell's* disclosure. *See, e.g.,* Petition, 23-24, 44-45 (*citing, e.g.,* EX1004 (Vasell Patent), 6:62-7:6; EX1016 (Vasell 2<sup>nd</sup> Provisional) at FIG. 2 (illustrating the same "via Internet" connections disclosed in words in the Vasell Patent and annotated in the Petition as part of Annotated FIG. 2).

For example, contrary to Patent Owner's allegations, on pages 23-24 of the Petition and again on pages 43-44 of the Petition (reproduced below with relevant aspects highlighted), Petitioner specifically identified that "Annotated FIG. 2" included annotations for the particular disclosed embodiments of *Vasell* that are quoted, cited and relied on in the Petition, including annotations for *Vasell's* disclosure that "service platform server 22 may be connected to the network operator server 24 via the Internet" and that "the network operator server 24 will

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be connected to at least one service provider equipment 34 via ... Internet 26"

(EX1004, 6:62-7:6; EX1016, FIG. 2):

Internet" (system). The service gateway system is shown in Vasell's Annotated Figure 2 (below), which includes hardware: (1) a "service platform server 22" "connected to the local area network 10" and connected to (2) a "network operator server 24 via the Internet", which is connected to (3) a plurality of service provider equipment 34 "via... Internet 26":

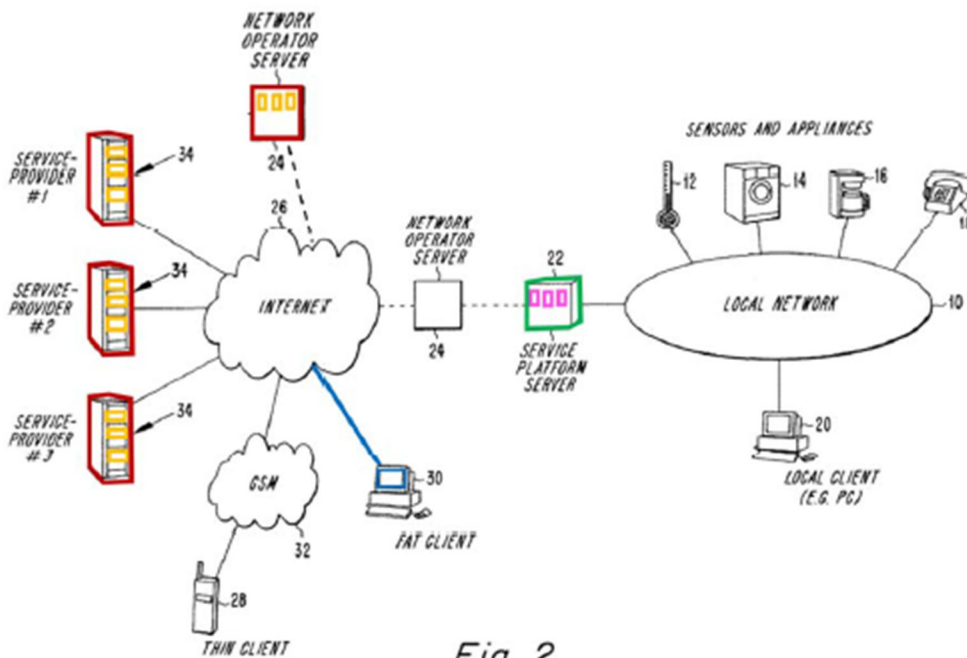


Fig. 2

EX1004, 4:31-47, 5:61-6:20, 6:62-7:6, 7:12-18; EX1016, 4, 6-9, FIGS. 2, 5;

EX1003, ¶¶397-398.

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See, e.g., Petition, § VII.A.1 (pp. 23-24), § VII.B (pp. 43-44) (reproduced and highlighted above)<sup>8</sup>. Additionally, for example, on pages 24-25 of the Petition and again on pages 44-45 of the Petition, Petitioner specifically identified that “Annotated FIG. 2” also included annotations for *Vasell’s* disclosure of “a plurality of **service applications** (each including a plurality of **distributed** software components)” and where “each component of a **service application** is respectively hosted on a JVM running on the respective OS of the **service platform server**, the **network operator server(s)**, and the **service provider equipment**.” Petition, 24-25, 44-45 (EX1004 and EX1016 citations omitted).

Accordingly, Petitioner’s Annotated FIG. 2, which is annotated accurately to the particular disclosed embodiments of *Vasell* that are quoted, cited and relied on in the Petition (including before and after the annotated figure in the Petition), does not provide a basis for discretionary denial.

Additionally, Patent Owner’s allegation that “Petitioner has abandoned” its “district court ... position that ... the presence of a ‘sandboxing operating system’

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<sup>8</sup> Petitioner acknowledges that, in the same way that it did on pages 4-5, 23-24 and 43-44 of the Petition, it would have been clearer if Petitioner had again referred to the annotated figure as “Annotated FIG. 2” on pages 16-18 of the Petition.

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(which, in turn, requires a 'kernel') [is required] in the 'programmable network device" is belied by the fact that the Petition expressly identifies, and relies on, Vasell's disclosure that its network devices and its cloud devices "must" include "system software" that was well-known to constitute a "sandboxing operating system", namely "sandboxing" achieved through, on each server, an operating system ("OS") that "must have fairly strong resource-control and protection mechanisms to ensure application integrity" such that "errors in software developed by different service providers" cannot result in the "applications... interfer[ing] with one another" **and** a JVM hosted thereon. *See* Petition, 44-45, 53-57.

Indeed, the fact that *Vasell's* disclosure maps onto both Petitioner's, and Patent Owner's, respective constructions of "sandboxing operating system" from the related litigation is self-evident from the Petition and from the Petition-cited claim construction briefs. Petition, 10-11, 44-45, 53-54; *cf.* Req. 1-2, 25-27. As explained therein, the *Vasell*-disclosed "operating system" that "must have fairly strong resource-control and protection mechanisms to ensure application integrity" – which the Petition identifies as part of *Vasell's* disclosed "sandboxing operating system" (*see, e.g.*, Petition, 44-45, 53-57) – by definition would be understood by a POSITA to include a kernel (as its "central" or "core" component). *Id.*; EX1071, 7-8 (Petitioner: "Edge's proposed construction does not help clarify for the

factfinder what an 'operating system' is ... [n]umerous technical dictionaries define a kernel as the 'central' or 'core' part of an operating system ... [t]hus a POSITA would understand that a sandboxing operating system includes a kernel"); EX1070, 5-6 (Patent Owner: "'operating system' is a commonly used term and nothing in the specification or prosecution history ... justif[ies] Microsoft's unneeded construction.'). Patent Owner's argument in related litigation (EX1070, 6) that the word kernel is "unneeded" in Petitioner's construction because it is already well-understood to be part of an "operating system" belies its argument in its Request (Req. 1-2, 25-27) that somehow Petitioner had to include this "unneeded" word in the Petition or that *Vasell* had to include this "unneeded" word in its disclosure.

Accordingly, Patent Owner's allegations that Petitioner abandoned its district court claim construction positions in this IPR proceeding (Req. 1-2, 25-27) are meritless.

**B. Patent Owner's Allegations of Overuse of Expert Testimony are Based on Its Mischaracterizations of *Vasell's* Disclosure and the IPR Petition**

Patent Owner's allegations of overuse of expert testimony are based on Patent Owner's mischaracterization of *Vasell's* disclosure and its ignorance of the Petition's mapping of the "... unified capabilities enabling a plurality of upper

layer application programming interfaces (APIs)...” limitation onto such disclosure. Req. 1-2, 28-29.

Patent Owner’s allegation that the Petition “relies on expert testimony to fill gaps in the prior art” – which is based on the same faulty assertion that “the Petition relies on the Vasell reference which is, at best, cumulative of the Van der Merwe reference applied during prosecution” – is meritless. *Id.* Moreover, as confirmed by the Petition, *Vasell’s* disclosure – and not Petitioner’s expert testimony – is what Petitioner maps the “... unified capabilities enabling a plurality of upper layer application programming interfaces (APIs)...” term onto. *See* Petition, 55-57 *citing Vasell* (EX1004, 2:60-3:1, 3:10-19, 5:15-35, 10:18-23, 13:37-43, 22:35-37, 20:52-53, 16:59-60, FIG. 6; EX1016, 4, 6, 8-9) and EX1003 (expert) at ¶¶ 454-458, 460-463 (which, outside of identifying factual support for his statement that “a POSITA would have understood the importance of well-defined APIs and the benefits of standardizing them”, only cite to, and include excerpts from, the identical citations in *Vasell* as the Petition); *cf. Xerox Corp. v. Bytemark, Inc.*, IPR2022-00624, Paper 9 at 14-17 (Aug. 24, 2022) (designated precedential: February 10, 2023); *Cisco Sys., Inc. v. C-Cation Techs., LLC*, IPR2014-00454, Paper 12 at 7-10 (August 29, 2014) (designated informative).

Obviousness grounds are evaluated from the perspective of a POSITA. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007) (“If *a person of ordinary skill*

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can implement a predictable variation, §103 likely bars its patentability.”), 418 (“[I]t can be important to identify a reason that would have prompted *a person of ordinary skill* in the relevant field to combine the elements in the way the claimed new invention does.”). Here, again in accordance with Federal Circuit precedent, Petitioner’s expert provides his perspective on the obviousness of certain features claimed by the ’823 Patent and the obviousness of the combination of certain references, with testimony supported by the required disclosure of references in accordance with 37 CFR § 42.65(a) and *Xerox Corp. v. Bytemark, Inc.*, IPR2022-00624, Paper 9 (Aug. 24, 2022) (precedential). *See, e.g.*, Petition, 55-57; EX1003, Section IX.B.1 (element [1.4] (including the “... unified capabilities enabling a plurality of upper layer application programming interfaces (APIs)...” limitation), ¶¶454-458, 460-463 (*cited in* Petition, 55-57).

Moreover, the Federal Circuit has made it clear that attorney argument is not evidence. *Icon Health & Fitness, Inc. v. Strava, Inc.*, 849 F.3d 1034, 1043 (Fed. Cir. 2017) (“Attorney argument is not evidence.”) (citing *Gemtron Corp. v. Saint-Gobain Corp.*, 572 F.3d 1371, 1380 (Fed. Cir. 2009) (“[U]nsworn attorney argument . . . is not evidence and cannot rebut . . . other admitted evidence . . .”). *See also* *Elbit Sys. Of Am., LLC, v. Thales Visionix, Inc.*, 881 F.3d 1354, 1359 (Fed. Cir. 2018) (“Elbit fails to present any evidence supporting this contention beyond attorney argument . . . and ‘[a]ttorney argument is not evidence’ and cannot

rebut other admitted evidence.”). The Board recently confirmed this: “It is well settled that mere attorney argument unsupported by factual evidence is entitled no probative value.” *PLR Worldwide Sales LTD. v. Flip Phone Games, Inc.*, IPR2024-00209, Paper 28 at 32 (April 24, 2025). Because attorney argument is not evidence, expert testimony, such as Petitioner’s expert’s declaration with citations to underlying factual support underlying the opinions therein, is essential to properly support IPR claim construction and obviousness positions. His declaration is appropriately utilized to explain complicated subject matter and provide detail regarding how a POSITA would have understood the technical disclosures of the ’823 Patent and the prior art references.

Thus, the Petition is properly supported by expert testimony, and both the Petition and the Expert Declaration cite the underlying factual support.

### **C. Settled Expectations**

For completeness, and although PO does not make any arguments related to the “settled expectations” factor in the Request<sup>9</sup>, Petitioner submits that this

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<sup>9</sup> PO did make arguments related to the “settled expectations” factor in concurrently filed requests for discretionary denial in IPR2025-00617 and IPR2025-00619.

consideration weighs against discretionary denial because, if any party has settled expectations as to the '823 Patent, Petitioner's settled expectations are greater than those of PO.

**1. Patent Owner Concedes that it Has Not Developed Settled Expectations as to the '823 Patent**

Although PO does not make any arguments related to the “settled expectations” factor in the Request in this IPR, in concurrently-filed requests for discretionary denial in IPR2025-00617 and IPR2025-00619 (in which Petitioner has challenged claims of the parent '095 and '871 Patents respectively), PO relied on the listing of the grandparent '624 Patent on the face of a U.S. patent that issued in December 2019 and is owned by Petitioner, and on a Notice of References cited accompanying an April 2019 Office Action during prosecution of this U.S. Patent, and argued that the recent decision in *iRhythm* supports discretionary denial. *See, e.g.*, IPR2025-00617, Paper 8 at 44-46 (*citing* EX2006, EX2007); IPR2025-00619, Paper 8 at 44-46 (*citing* EX2006, EX2007). Here, although the '823 Patent claims priority to the same grandparent '624 Patent, has the same chain of title, is owned by the same PO, and was asserted by PO against Petitioner at the same time and in the same related litigation, as the parent patents-at-issue in IPR2025-00617 and IPR2025-00619, by not raising this issue in this request, PO concedes that these

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shared facts across these three patents do not give rise to any settled expectations of the PO as to the non-invalidity of the '823 Patent.

Petitioner submits that material differences between the great-grandparent '624 Patent claims and the claims of the '823 Patent, PO's recent formation as a company (March 27, 2023), the fact that the application leading to the '823 Patent was recently acquired by PO (April 20, 2023), the fact that the '823 Patent has "not been in force for a significant period of time" (having issued July 4, 2023 after the PO's acquisition), and PO's filing of a non-publication request during prosecution of the '823 Patent, confirm that PO "has not developed strong settled expectations that favor discretionary denial" here. *See, e.g., Cambridge Industries*, IPR2025-00434, -00436, -00437, Paper 11 at 2-3.

In *iRhythm*, the patent owner established an expectation between the parties with evidence showing that a former engineer and founder of the petitioner was particularly focused on the IP landscape related to petitioner iRhythm's heartrate monitor technology, specifically identifying petitioner iRhythm's IP searches focused on patents and pending applications, detailed review of the prior art including analysis of specific claims, and identifying challenged patents on IDSs filed in its own pending applications. *iRhythm Technologies Inc. v. Welch Allyn Inc.*, IPR2025-00363, Paper 7, at 29-31 (April 18, 2025) *citing* EX1074.

Specifically, in *iRhythm*, the patent owner argued that the petitioner's founder was

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“particularly focused on patent searches.” *iRhythm*, Paper 7 at 30. The petitioner’s founder is quoted as saying, “[T]o figure out if people had done this before[,] we conducted IP searches. Our focus was on patents that had already been issued as well as pending patent applications.” *Id.* (quoting EX1074 at 232). The petitioner’s founder even stated that he “revisited the team’s early IP assessment” and “dived much more deeply in the analysis of specific claims.” *Id.* (quoting EX1074 at 233). The Director discretionarily denied review of the five IPRs because the application that ultimately issued as the oldest patent in the family was cited in an information disclosure statement for one of the petitioner’s patent applications. *iRhythm*, Paper 10 at 3.

*iRhythm* is distinguishable from the facts here because: (1) PO was only recently formed as a company (March 27, 2023) (*see* EX1079); (2) PO did not acquire the ’823 Patent until recently (April 20, 2023), and just three weeks after PO’s corporate formation (*id.*; EX1080) and before the ’823 Patent issued on July 4, 2023; (3) the scope of the grandparent ’624 Patent claims and the ’823 Patent claims are different; (4) PO did not assert, and there is no evidence to suggest, that Petitioner was particularly focused on the patent landscape at the time that the grandparent ’624 Patent was identified by the examiner during examination of a U.S. patent that is owned by Petitioner; and (5) PO has not asserted that it has ever commercialized, asserted, marked, or licensed any of the patents that it acquired.

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In IPR2025-00617 and IPR2025-00619, PO relies solely on the listing of the grandparent '624 Patent on the face of a U.S. patent that issued in December 2019 and is owned by Petitioner, and on a Notice of References cited accompanying an April 2019 Office Action during prosecution of this U.S. Patent. *See* IPR2025-00617, Paper 8 at 44-45 (*citing* EX2006; EX2007). PO provides no evidence that the grandparent '624 Patent was relied upon or discussed by the examiner during prosecution of this U.S. Patent, or that Petitioner had any knowledge whatsoever of any child of the grandparent '624 Patent (including, *e.g.*, the '823 Patent). *Id.* The law is well settled that the mere knowledge of a patent does not confer knowledge of infringement of the patent under the patent statute. *Amsted Industries Inc. v. Buckeye Steel Casting Co.*, 24 F.3d 178, 187 (Fed. Cir. 1994). The mere listing of the grandparent '624 Patent does not confer sufficient knowledge of the grandparent '624 Patent upon Petitioner to seek early review of this patent absent a claim of infringement, and does not confer any knowledge whatsoever of any children or grandchildren of the grandparent '624 Patent upon Petitioner (including of the '823 Patent).

Notably, PO has never alleged that Petitioner infringes the grandparent '624 Patent – the only patent that PO alleges Petitioner had notice of –, and declined to assert the grandparent '624 Patent in the related litigation. Accordingly, even if the mere listing of the grandparent '624 Patent on a patent owned by Petitioner could

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confer knowledge of the grandparent '624 Patent upon Petitioner, the only settled expectations that could have come from such knowledge is that PO would never assert it against Petitioner.

Moreover, PO was not even formed as a company until recently (March 27, 2023), PO acquired ownership of the grandparent '624 Patent three weeks later (on April 20, 2023), the '823 Patent issued on July 4, 2023, and, 7+ months later, PO filed the related litigations against Petitioner. EX1079 (PO's Certificate of Formation dated March 27, 2023); EX1080 at 1 (assignment from inventor Pouya Taaghoh to PO, effective April 20, 2023); EX1001, 1. In these circumstances, PO could not have begun developing any expectations until ***July 2023 at the earliest***. Thus, PO can have no settled expectations as to the non-invalidity of the '823 Patent.

Furthermore, at the time that the grandparent '624 Patent was identified in the Microsoft patent application (April 3, 2019 (*see* IPR2025-00619 at EX2007, 19)), the inventor Pouya Taaghoh was the owner of the grandparent '624 Patent, not PO. EX1083, 1; EX1084, 1 (assignment from inventor Pouya Taaghoh to Big Data Federation, Inc., effective November 7, 2019.) Unlike in *iRhythm*, PO does not

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allege that Microsoft had any particular focus on Mr. Taaghol's patents at the time.<sup>10</sup> Further, the examiner may have identified the grandparent '624 Patent but did not apply or discuss the grandparent '624 Patent. *See* IPR2025-00619 at EX2007, 17; *see id. generally*. And, ownership of the grandparent '624 Patent changed three (3) times after the grandparent '624 Patent was identified in the Microsoft patent application on April 3, 2019.<sup>11</sup>

Still further, PO's actions during prosecution of the grandparent '624 Patent, parent '871 and '095 Patents, and the '823 Patent here, including its filing of non-

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<sup>10</sup> Mr. Taaghol is one of the inventors of the grandparent '624 Patent, and the PO has not asserted that Mr. Taaghol commercialized, asserted, marked, or licensed the grandparent '624 Patent (or any of its child patents). Nor has PO asserted that Mr. Taaghol has any ownership interest in PO (*i.e.*, Edge Networking Systems).

<sup>11</sup> The grandparent '624 Patent was assigned from inventor Pouya Taaghol to Big Data Federation, Inc. ("BDF") on November 7, 2019, then back to Mr. Taaghol on March 16, 2023, and then from Mr. Taaghol to the PO on April 20, 2023. *See* IPR2025-00619 at EX1081, EX1082, EX1080. The PO has not asserted that BDF commercialized, asserted, marked, or licensed the grandparent '624 Patent (or any of its child patents).

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publication requests when it filed the respective applications that led to each of the later-issued child patents of the grandparent '624 Patent (including the '871 Patent, '095 Patent and '823 Patent), and which prevented any member of the public from having any knowledge of any such child applications until – at the absolute earliest – the respective issue dates of each such child patent (which is July 4, 2023 for the '871 Patent), are further evidence that even Patent Owner “has not developed strong settled expectations that favor discretionary denial.” EX1002, 6, 104 ('823 Patent); EX1006, 88, 110 ('095 Patent); EX1007, 178, 269 ('871 Patent); *Cambridge Industries*, IPR2025-00434, -00436, -00437, Paper 11 at 2-3 (Director finding that “Patent Owner has not developed strong settled expectations that favor discretionary denial as to ... patents” that “have not been in force for a significant period of time (issued in 2020, 2019, 2019).”).

Given the significant difference between the underlying factual basis supporting the Director's conclusion in *iRhythm* and the circumstances alleged by PO in IPR2025-00617 and IPR2025-00619 for the parent '871 and '095 Patents, the decision by the Director in *iRhythm* does not support a contention by PO that any knowledge by Petitioner of the grandparent '624 Patent conveyed any knowledge whatsoever of any children or grandchildren of the grandparent '624 Patent (including the '823 Patent) prior to Patent Owner filing the complaint in the related litigation against Petitioner (asserting the child '871 Patent, '095 Patent,

and '823 Patent) and such that there was a settled expectation between the parties as to the non-invalidity of the '823 Patent.

Here, PO has provided no evidence to establish that Petitioner had any knowledge of the '823 Patent until PO filed the related litigation, and has provided no evidence of a settled expectation among the parties that the '823 Patent was not invalid. To the contrary, the settled expectation among the parties was that Petitioner was not infringing any of the patents in this family by selling the accused products free from any claims of infringement until PO filed the related litigation against Petitioner (less than 10 months after acquiring the patents in this family and 7+ months after the '823 Patent issued) in which PO asserted claims of the child '871, '095 and '823 Patent that are materially different than the grandparent '624 Patent claims.

**2. If any Party Has Settled Expectations as to the '823 Patent, it would be Petitioner**

To the extent that any party had settled expectations as to the '823 Patent, it would be Petitioner. Indeed, despite PO acquiring this family of patents almost 3 months before the '823 Patent issued on July 4, 2021, PO did not file the related litigation until 7+ later, and the patent statute permits IPRs to be filed any number of years after a patent issues, as long as the IPR is filed before 1 year following service of a complaint for infringement.

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PO has not asserted nor provided any evidence that the grandparent ’624 Patent, the parent ’871 and ’095 Patents, nor the ’823 Patent, have ever been commercialized, asserted, marked, or licensed by itself (or by any prior owner) before the related litigation. The Director recently clarified that these are “considerations that weigh against a patent owner’s claim of settled expectations and bears on the Director’s discretion.” *Intel Corporation v. Proxense LLC*, IPR2025-00327, Paper 12 at 2-3 (PTAB June 26, 2025).

Also, it is a plain fact that the AIA does not restrict IPRs to “newer” patents; any patent over the age of nine months may be challenged. 35 U.S.C. § 311; *see also NHK Spring Co., Ltd. v. Intri-Plex Techs., Inc.*, No. IPR2018-00752, Paper 8 at 19 (PTAB Sept. 12, 2018) (precedential) (“Patent Owner argues that Petitioner knew about the ’841 patent for more than 10 years, yet provides no explanation for why it waited so long to file the Petition. ... We are not persuaded that this lapse in time favors denying review.”). Petitioners thus have settled expectations that IPRs can be brought in accordance with the AIA, and PO can have no expectation of avoiding an IPR during the lifetime of the grandparent ’624 Patent (and beyond).

**D. APA Considerations**

Notwithstanding the foregoing, the Workload Memo (dated March 26, 2025) should not apply to the present Petition (filed February 17, 2025) because that would violate the Administrative Procedure Act (“APA”). 5 U.S.C. §§ 551–559.

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First, the Director lacks authority to “promulgate retroactive rules.” *Tafas v. Dudas*, 511 F. Supp. 2d 652, 666 (E.D. Va. 2007). Second, “general statements of policy” can only be applied prospectively. *Lincoln v. Vigil*, 508 U.S. 182, 197 (1993); 5 U.S.C. § 552(a)(2)(D)(ii). Third, the APA requires agencies to inform parties of the matters of “law asserted.” 5 U.S.C. § 554(b)(3). These violations are merely some examples that the Director should consider. Petitioners reserve the right to challenge the Workload Memo on other grounds including because it was adopted without notice-and-comment rulemaking.

**V. CONCLUSION**

The Director should deny Patent Owner's request for discretionary denial of institution.

Respectfully submitted,

DUANE MORRIS LLP

/Christopher J. Tyson/

Christopher J. Tyson, Reg. No. 63,850

901 New York Avenue, N.W.

Suite 700 East

Washington, D.C. 20001-4795

P: (202) 776-7851

F: (202) 478-2620

[CJTyson@duanemorris.com](mailto:CJTyson@duanemorris.com)

*ATTORNEY FOR PETITIONER*

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