

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,
Petitioner

v.

CARBYNE BIOMETRICS, LLC,
Patent Owner

Case: IPR2024-00332
U.S. Patent No. 10,929,512

PATENT OWNER'S PRELIMINARY RESPONSE

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Exhibit	Description
2001	<i>Carbyne Biometrics, LLC v. Apple Inc.</i> , Case No. 1:23-cv-00324, Dkt 14 (Defendant’s Rule 12(b)(6) Motion to Dismiss the Complaint for Failure to State a Claim Under 35 U.S.C. §101) (W.D. Tex. May 24, 2023)
2002	<i>Carbyne Biometrics, LLC v. Apple Inc.</i> , Case No. 1:23-cv-00324, Dkt 30 (Plaintiff’s Response to Defendant’s Rule 12(b)(6) Motion to Dismiss the Complaint for Failure to State a Claim Under 35 U.S.C. §101) (W.D. Tex. June 1, 2023)
2003	<i>Carbyne Biometrics, LLC v. Apple Inc.</i> , Case No. 1:23-cv-00324, Dkt 31 (Defendant’s Reply Brief In Support of Motion to Dismiss for Failure to State Claim Under 35 U.S.C. §101) (W.D. Tex. June 28, 2023).
2004	<i>Carbyne Biometrics, LLC v. Apple Inc.</i> , Case No. 1:23-cv-00324, Dkt 64 (Defendant’s Opposed Motion to Stay Pending Transfer) (W.D. Tex. November 28, 2023)
2005	<i>Carbyne Biometrics, LLC v. Apple Inc.</i> , Case No. 1:23-cv-00324, Dkt 37 (Defendant’s Opposed Motion to Transfer (redacted)) (W.D. Tex. July 26, 2023)
2006	<i>Carbyne Biometrics, LLC v. Apple Inc.</i> , Case No. 1:23-cv-00324, Dkt 66 (Carbyne’s Response to Motion to Stay Pending Transfer) (W.D. Tex. December 5, 2023)
2007	<i>Carbyne Biometrics, LLC v. Apple Inc.</i> , Case No. 1:23-cv-00324, Dkt 50(Carbyne’s Response to Motion to Transfer Venue) (W.D. Tex. October 27, 2023)
2008	<i>Carbyne Biometrics, LLC v. Apple Inc.</i> , Case No. 1:23-cv-00324, Dkt 55 (Apple’s Reply In Support of Its Motion to Transfer Venue) (W.D. Tex. November 10, 2023)
2009	<i>Carbyne Biometrics, LLC v. Apple Inc.</i> , Case No. 1:23-cv-00324, Dkt 60 (Carbyne’s Surreply in Response to Motion to Transfer

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2010	<i>Carbyne Biometrics, LLC v. Apple Inc.</i> , Case No. 1:23-cv-00324, Dkt 42 (Apple’s Opening Claim Construction Brief) (W.D. Tex. October 4, 2023)
2011	<i>Carbyne Biometrics, LLC v. Apple Inc.</i> , Case No. 1:23-cv-00324, Dkt 49 (Carbyne’s Response to Apple’s Proposed Claim Construction) (W.D. Tex. October 25, 2023)
2012	<i>Carbyne Biometrics, LLC v. Apple Inc.</i> , Case No. 1:23-cv-00324, Dkt 54 (Apple’s Reply Claim Construction Brief) (W.D. Tex. November 8, 2023)
2013	<i>Carbyne Biometrics, LLC v. Apple Inc.</i> , Case No. 1:23-cv-00324, Dkt 62 (Carbyne’s Sur-Reply to Apple’s Claim Construction Brief) (W.D. Tex. November 22, 2023)
2014	<i>Carbyne Biometrics, LLC v. Apple Inc.</i> , Case No. 1:23-cv-00324, Dkt 69 (Minute Entry re Markman Hearing and Motion to Transfer Venue) (W.D. Tex. December 12, 2023)
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2018	<i>In Re Apple</i> , Case No. 2024-111, Dkt 2 (Apple’s Petition for Writ of Mandamus) (Fed. Cir. February 1, 2024)
2019	<i>In Re Apple</i> , Case No. 2024-111, Dkt. 13 (Carbyne’s Response to Writ of Mandamus) (Fed. Cir. February 20, 2024)
2020	<i>In Re Apple Inc.</i> , Case No. 2024-111, Dkt 15 (Apple’s Reply In Support of Petition for Writ of Mandamus) (Fed. Cir. February 27,

	2024)
2021	<i>In Re Apple Inc.</i> , Case No. 2024-111, Dkt 18 (Order Denying Writ of Mandamus) (Fed. Cir., March 18, 2024)
2022	United States Patent and Trademark Office Memorandum Dated June 21, 2022 re: Interim Procedure for Discretionary Denials in AIA post-grant proceedings with Parallel District Court Litigation
2023	<i>Cloud of change, LLC v. Lightspeed POS Inc.</i> , Case NO. 6:21-cv-0102 Order Denying Lightspeed POS Inc’s Opposed Motion to Stay Pending Resolution of <i>Inter Partes</i> Review (W.D. Tex. Dated May 15, 2023)
2024	<i>Sonrai Memory Limited v. LG Electronics, Inc.</i> 2022 WL 2307475 (W.D. Tex. June 27, 2022)
2025	<i>Carbyne Biometrics, LLC v. Apple Inc.</i> , Case No. 1:23-cv-00324, Apple’s Amended Preliminary Invalidity Contentions (W.D. Tex. October 6, 2023) (excerpts)
2026	U.S. Patent No. 11,514,138
2027	U.S. Patent No. 11,841,929
2028	U.S. Patent No. 11,475,105
2029	U.S. Patent No. 11,556,617
2030	U.S. Patent Application 2011/0138450 (“Kesanupalli ’450”)
2031	U.S. Patent No. 7,780,080 (“Owen”)
2032	<i>Intentionally Omitted</i>
2033	<i>Intentionally Omitted</i>
2034	<i>Intentionally Omitted</i>
2035	Email Correspondence From Counsel Of Petitioner To Counsel of Patent Owner re <i>Sotera</i> Stipulations and <i>Carbyne Biometrics, LLC v. Apple Inc.</i> , 1:23-cv-0032 (W.D. Tex.)

2036	Email Correspondence From Counsel Of Petitioner To The Board re <i>Sotera</i> Stipulations for IPRs IPR2024-00329, -00330, -00331, -00332, -00333, -00334 and-00507
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I. INTRODUCTION

The Board should deny institution in its discretion under 35 U.S.C. § 314(a) for at least any one of the following reasons:

Procedurally, the Petition should be denied under *Advanced Bionics*. Despite Petitioner describing the '512 Patent as “well-known at the time of the claimed invention” (Pet. 5), Petitioner relies on art that is “well-known” to the Board, to the Patent Office, and to Patent Owner. Indeed, the Board, the Patent Office, and Patent Owner have done this dance at least *five times* now with the Kesanupalli family of references and each time the Board or Patent Office have found the Kesanupalli family lacking. And while Petitioner now attempts to point to “other references” as distinguishing this Petition, these other references describe nothing more than “a well-known Trusted Platform Module (TPM)” (Pet. 13), which too has been asserted time and time again against the '512 Patent. The *Advanced Bionics* decision describes a “commitment to defer to previous Office evaluations” and this Board should adhere to that commitment.

With respect to *Fintiv*, Petitioner, Patent Owner, the District Court, and the Federal Circuit have spent a tremendous amount of time, energy, and resources on the underlying district court litigation. This is not a typical district court case where a defendant files an IPR prior to any briefing occurring and is able to claim with a

straight face that district court case is in its “early stages.” To the contrary, as of writing this Response, the parties have briefed: (1) Petitioner’s Motion to Dismiss (Exs. 2001, 2002, 2003); (2) Petitioner’s First Motion to Stay based on its transfer motion (Ex. 2004, 2006); (3) Petitioner’s Motion to Transfer Venue Under 28 U.S.C. § 14014(a) (Exs. 2005, 2007, 2008, 2009); (4) Claim Construction (Exs. 2010, 2011, 2012, 2013, 2014); (5) Petitioner’s Second Motion to Stay based on its transfer motion (Exs. 2015, 2016, 2017); and (6) Petitioner’s Writ of Mandamus to the Federal Circuit (Exs. 2018, 2019, 2020). In addition to this briefing, the parties have exchanged numerous discovery requests, thousands of documents, and Carbyne’s source code reviewers have spent hundreds of hours reviewing source code—just to name a handful of discovery related activities that have already taken place.

By the time the institution decisions issue for all seven Petitions¹ (July 31 – August 7, 2024), the Parties will have completed claim construction, completed fact discovery, served final infringement and invalidity contentions, and served opening expert reports. And by the time the final written decisions issue (if any) between July 31 and August 7, 2025, the district court trial will have been completed for roughly *eight months*. Instituting the seven Petitions in light of these facts goes against the

¹ IPR2024-00329, IPR2024-00330, IPR2024-00331, IPR2024-00332 (this IPR), IPR2024-00333, IPR2024-00334, and IPR2024-00507.

very core of the American Invents Act and will not limit unnecessary and counterproductive litigation costs.

Substantively, like each challenge that has come before against the '512 Patent, Petitioner has failed to identify art that a POSITA would have been motivated to combine to achieve the novel two processor architecture of the claimed invention. This is very same reason the previous IPR failed and the reason that future IPRs will fail.

II. BACKGROUND

A. The '512 Patent

The '512 Patent concerns systems and methods for authentication translation. As the Patent explains, previous authentication techniques made “[p]roviding credentials to a service, whether via a mobile or other device . . . a tedious experience for a user.” Ex. 1001 ('512 Patent) at 1:35-37. Because the experience was so tedious, users would “often engage in practices such as password re-use, and/or the selection of poor-quality passwords, which render their credentials less secure against attacks.” *Id.* at 1:38-40. Thus, “improvements in authentication techniques [were] desirable.” *Id.* at 1:40-42.

The '512 Patent addresses these shortcomings by disclosing novel authentication systems and methods where “users need not type such usernames and passwords into their devices whenever required by a service. Instead, users can

authenticate themselves to an ‘authentication translator’ via an appropriate technique, and the authentication translator will provide the appropriate credentials to the implicated service on the user’s behalf.” *Id.* at 2:63-3:1. By doing this, the system promotes better user security practices by making it easier for a user to use complex passwords.

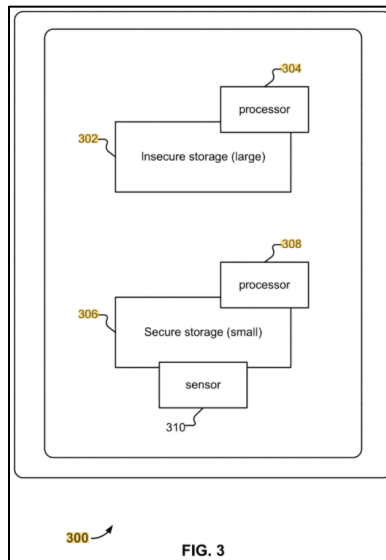
As the ’512 patent discloses, the process begins “when a request to access a resource is received, as is an authentication input.” *Id.* at 6:20-21. For example, suppose “[the user] wishes to sign into social networking website.” *Id.* at 6:22-23. “[The user] directs [their] web browser . . . to the social networking website.” *Id.* at 6:23-25. The “Authentication translator module **132** recognizes, from the context of [the user’s] actions (e.g., that [the user] is attempting to access site **120** with [their] browser) that [the user] would like to access a particular resource.” *Id.* at 6:25-28 (emphasis in original). The authentication translator module may then prompt “[the user] (e.g., by a popup message or via a sound) to provide biometric information (e.g., to use the integrated fingerprint reader on [the user’s device]).” *Id.* at 6:28-31.

Once a biometric has been supplied by the user, the supplied biometric data is compared “to the templates stored on [the user’s device].” *Id.* at 6:39-40. “If a suitable match is found . . . the username and password for the website, as stored in a vault, such as vault **220**, are retrieved from the vault” and provided to the resource. *Id.* at 6:40-46 (emphasis in original). In the ’512 Patent specification, biometrics

include but are not limited to fingerprints, “facial recognition, voiceprints, or retina scan technology.” *Id.* at 3:28-29, 3:18-19.

To keep the user’s biometrics secure, the ’512 Patent discloses a device with “a large and insecure storage **302** attached to a fast processor **304**, and a smaller but secure storage **306** attached to a dedicated processor **308** and a sensor **310** (e.g., a camera or a fingerprint reader).” *Id.* at 3:67-4:4 (emphasis in original); *see also id.* at Fig. 3 (reproduced below). The “[u]sers (and applications) can read from and write to the insecure storage area.” *Id.* at 4:4-5. Data such as authentication information and biometrics can be stored in the secure storage. *Id.* at 3:63-65. “However, users cannot access the secure storage area, and the fast processor can only communicate with the dedicated processor/sensor via a restricted API.” *Id.* at 4:5-8.

Figure 3 of the ’512 Patent, which depicts a device with large and insecure storage attached to a fast processor, and a smaller but secure storage attached to a dedicated processor and a sensor in accordance with an embodiment of the inventions, is reproduced below.



Id. at Fig. 3.

Further enhancing the user authentication experience and promoting better security practices across multiple devices, the '512 Patent also discloses uploading a secure back up of the records stored in the secure storage to a cloud storage service. *Id.* at 7:55-8:8. “The cloud storage service **140** is configured to accept backups from multiple devices associated with a single account, and synchronize the updates so that all devices get automatically refreshed.” *Id.* at 7:56-59 (emphasis in original). This allows a user to access and synchronize authentication information across multiple devices, *id.* at 7:59-62, further reducing the tedious experience of using complex passwords.

B. The Prior Art

1. The Kesanupalli family of references has been repeatedly considered by the Board and the Patent Office.

a) The Board has already recognized the novelty of the '512 Patent over the Kesanupalli family of references.

The Board has previously affirmed the novelty of the '512 Patent in the IPR setting. *See Samsung Electronics Co., Ltd. et al v. RightQuestion, LLC*, IPR2022-00251, Paper 17 (PTAB June 9, 2022) (herein the “Samsung IPR”) (institution denial on the merits). In that proceeding, the Petitioner (Samsung) failed to demonstrate that a Kesanupalli family reference disclosed multiple claim limitations related to the two-processor architecture of the '512 Patent. *See id.* at 23-26 (discussing that the art failed to show a restricted interface between the first and second processor); *id.* at 36-40 (discussing the how the Petition failed to demonstrate that the art showed a second processor performing a secure backup). The Kesanupalli family reference in the Samsung IPR has no material differences from the Kesanupalli reference in this IPR Petition. *See* Section III.B, *infra*. The same issues regarding the two-processor architecture doom this Petition. *See id.*

b) The Patent Office Examiners have already recognized the novelty of the '512 Patent over the Kesanupalli family of references *four* different times.

The '512 Patent has four continuation patents that have issued from it:

- 11,514,138 (Ex. 2026);

- 11,841,929 (Ex. 2027);
- 11,475,105 (Ex. 2028); and,
- 11,556,617 (Ex. 2029).

As part of the prosecution of each continuation, the proceedings from the Samsung IPR, including the Samsung IPR petition and art, were submitted for review and are now cited under the “References Cited” heading on the face of the continuation patents:

US 11,514,138 B1			
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Related U.S. Application Data			
Feb. 12, 2016, now Pat. No. 10,360,351, which is a continuation of application No. 13/706,254, filed on Dec. 5, 2012, now Pat. No. 9,294,452.			
(60)	Provisional application No. 61/587,387, filed on Jan. 17, 2012, provisional application No. 61/569,112, filed on Dec. 9, 2011.	2009/0191846 A1 *	7/2009 Shi H04L 63/0861 455:411
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2009/0100269 A1	4/2009 Nacache		
			* cited by examiner

Ex. 2026 ('138 Patent) at 2.

US 11,841,929 B2		
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Related U.S. Application Data		
continuation of application No. 16/773,767, filed on Jan. 27, 2020, now Pat. No. 10,929,512, which is a continuation of application No. 16/563,715, filed on Sep. 6, 2019, now Pat. No. 10,824,696, which is a continuation of application No. 16/273,797, filed on Feb. 12, 2019, now Pat. No. 10,521,568, which is a continuation of application No. 15/042,636, filed on Feb. 12, 2016, now Pat. No. 10,360,351, which is a continuation of application No. 13/706,254, filed on Dec. 5, 2012, now Pat. No. 9,294,452.		
(60)	Provisional application No. 61/587,387, filed on Jan. 17, 2012, provisional application No. 61/569,112, filed on Dec. 9, 2011.	
(51)	Int. Cl. <i>G06F 21/44</i> (2013.01) <i>G06F 21/12</i> (2013.01)	
(52)	U.S. Cl. CPC <i>H04L 63/10</i> (2013.01); <i>H04L 63/02</i> (2013.01); <i>H04L 63/0869</i> (2013.01)	
(56)	References Cited U.S. PATENT DOCUMENTS 6,016,476 A 1/2000 Maes 6,691,232 B1 2/2004 Wood 7,512,965 B1 3/2009 Amdur 7,697,729 B2 4/2010 Howell 7,780,080 B2* 8/2010 Owen G06Q 20/3674 235/382 7,950,051 B1 5/2011 Spitz 8,145,916 B2 3/2012 Hosbra 8,549,300 B1 10/2013 Kumar 8,577,813 B2 11/2013 Weiss 8,776,214 B1* 7/2014 Johansson H04L 63/08 726/19 8,856,539 B2 10/2014 Weiss 8,984,596 B2 3/2015 Griffin 9,100,826 B2 8/2015 Weiss 10,872,152 B1 12/2020 Martel 2004/0107170 A1 6/2004 Labrou 2004/0236632 A1 11/2004 Maritzen	2004/0236632 A1 11/2004 Maritzen 2005/0198348 A1 9/2005 Yeates 2006/0085844 A1 4/2006 Buer 2007/0257104 A1 11/2007 Owen 2007/0266256 A1 11/2007 Shah 2008/0059804 A1 3/2008 Shah 2009/0100269 A1 4/2009 Naccache 2009/0191846 A1* 7/2009 Shi H04L 63/0861 455/411 2010/0242102 A1 9/2010 Cross 2011/0078771 A1 3/2011 Griffin 2011/0138450 A1 6/2011 Kesavapalli 2011/0259516 A1 8/2011 Al-Azem 2011/0231651 A1* 9/2011 Bolloy H04L 9/0844 713/153 2012/0110341 A1* 5/2012 Beigi H04W 12/069 713/186 2012/0117348 A1 5/2012 Triantafillou 2012/0167193 A1 6/2012 Gargaro 2014/0250079 A1 9/2014 Gardner 2017/0230179 A1 8/2017 Mannan OTHER PUBLICATIONS Brands et al. Distance-Bounding Protocols. Jan. 28, 1994. https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.51.6437&rep=rep1&type=pdf . Hammer-Lahav, Ed. "The OAuth 1.0 Protocol", from https://tools.ietf.org/html/rfc5849 , Apr. 2010. Jakobsson et al. Proving Without Knowing: On Oblivious, Agnostic and Blindfolded Provers. Jul. 24, 1996. http://markus-jakobsson.com/papers/jakobsson-crypto96.pdf . Monrose et al. Using Voice to Generate Cryptographic Keys. May 13, 2001. https://www.cs.unc.edu/~fabian/papers/odyssey.pdf . Seshadri et al. Pioneer: Verifying Code Integrity and Enforcing Untampered Code Execution on Legacy Systems. Oct. 23, 2005. https://netsec.ethz.ch/publications/papers/pioneer.pdf . IPR2022-00244 Claim Mapping Table for the '696 Patent. Nov. 30, 2021. IPR2022-00244 Petition for Inter Partes Review of U.S. Pat. No. 10,824,696. Nov. 30, 2021. IPR2022-00251 Claim Mapping Table for the '512 Patent. Dec. 1, 2021. IPR2022-00251 Petition for Inter Partes Review of U.S. Pat. No. 10,929,512. Dec. 1, 2021. * cited by examiner

Ex. 2027 ('929 Patent) at 2.

US 11,475,105 B2		
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Related U.S. Application Data		
application No. 16/773,767, filed on Jan. 27, 2020, now Pat. No. 10,929,512, which is a continuation of application No. 16/563,715, filed on Sep. 6, 2019, now Pat. No. 10,824,696, which is a continuation of application No. 16/273,797, filed on Feb. 12, 2019, now Pat. No. 10,521,568, which is a continuation of application No. 15/042,636, filed on Feb. 12, 2016, now Pat. No. 10,360,351, which is a continuation of application No. 13/706,254, filed on Dec. 5, 2012, now Pat. No. 9,294,452.		
(60)	Provisional application No. 61/587,387, filed on Jan. 17, 2012, provisional application No. 61/569,112, filed on Dec. 9, 2011.	
(51)	Int. Cl. <i>H04L 9/40</i> (2022.01) <i>G06F 21/31</i> (2013.01) <i>G06F 21/32</i> (2013.01) <i>G06F 21/44</i> (2013.01) <i>G06F 21/12</i> (2013.01)	
(56)	References Cited U.S. PATENT DOCUMENTS 6,016,476 A 1/2000 Maes 6,691,232 B1 2/2004 Wood 7,512,965 B1 3/2009 Amdur 7,697,729 B2 4/2010 Howell 7,780,080 B2 8/2010 Owen 7,950,051 B1 5/2011 Spitz 8,145,916 B2 3/2012 Hosbra 8,549,300 B1 10/2013 Kumar 8,577,813 B2 11/2013 Weiss 8,776,214 B1* 7/2014 Johansson H04L 63/1433 726/18 8,856,539 B2 10/2014 Weiss 8,984,596 B2 3/2015 Griffin 9,100,826 B2 8/2015 Weiss 10,872,152 B1 12/2020 Martel 2004/0107170 A1 6/2004 Labrou 2004/0236632 A1 11/2004 Maritzen	2005/0198348 A1 9/2005 Yeates 2006/0085844 A1 4/2006 Buer 2007/0257104 A1* 11/2007 Owen G06Q 20/4014 235/380 2007/0266256 A1 11/2007 Shah 2008/0059804 A1* 3/2008 Shah G06F 21/41 713/186 2009/0100269 A1 4/2009 Naccache 2009/0191846 A1 7/2009 Shi 2010/0242102 A1 9/2010 Cross 2011/0078771 A1 3/2011 Griffin 2011/0138450 A1 6/2011 Kesavapalli 2011/0259516 A1 8/2011 Al-Azem 2011/0231651 A1 9/2011 Bolloy 2012/0110341 A1 5/2012 Beigi 2012/0167193 A1 6/2012 Gargaro 2014/0250079 A1* 9/2014 Gardner G06F 11/1453 707/646 2017/0230179 A1 8/2017 Mannan OTHER PUBLICATIONS IPR2022-00244 Petition for Inter Partes Review of U.S. Pat. No. 10,824,696. Nov. 30, 2021. IPR2022-00251 Claim Mapping Table for the '512 Patent. Dec. 1, 2021. IPR2022-00251 Petition for Inter Partes Review of U.S. Pat. No. 10,929,512. Dec. 1, 2021. "Managing Authorization and Access Control", Author: unknown. Published Nov. 3, 2005, pp. 1-12. URL: http://technet.microsoft.com/en-us/library/bb437115.aspx . Brands et al. Distance-Bounding Protocols. Jan. 28, 1994. https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.51.6437&rep=rep1&type=pdf . Hammer-Lahav, Ed. "The OAuth 1.0 Protocol", from https://tools.ietf.org/html/rfc5849 , Apr. 2010. Jakobsson et al. Proving Without Knowing: On Oblivious, Agnostic and Blindfolded Provers. Jul. 24, 1996. http://markus-jakobsson.com/papers/jakobsson-crypto96.pdf . Monrose et al. Using Voice to Generate Cryptographic Keys. May 13, 2001. https://www.cs.unc.edu/~fabian/papers/odyssey.pdf . Seshadri et al. Pioneer: Verifying Code Integrity and Enforcing Untampered Code Execution on Legacy Systems. Oct. 23, 2005. https://netsec.ethz.ch/publications/papers/pioneer.pdf . * cited by examiner

Ex. 2028 ('105 Patent) at 2.

US 11,556,617 B2	
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Related U.S. Application Data application No. 17/027,481, filed on Sep. 21, 2020, which is a continuation of application No. 16/773,767, filed on Jan. 27, 2020, now Pat. No. 10,929,512, which is a continuation of application No. 16/563,715, filed on Sep. 6, 2019, now Pat. No. 10,824,696, which is a continuation of application No. 16/273,797, filed on Feb. 12, 2019, now Pat. No. 10,521,568, which is a continuation of application No. 15/042,636, filed on Feb. 12, 2016, now Pat. No. 10,360,351, which is a continuation of application No. 13/706,254, filed on Dec. 5, 2012, now Pat. No. 9,294,452. (60) Provisional application No. 61/587,387, filed on Jan. 17, 2012, provisional application No. 61/569,112, filed on Dec. 9, 2011. (51) Int. Cl. G06F 21/44 (2013.01) G06F 21/12 (2013.01) (52) U.S. Cl. CPC H04L 63/10 (2013.01); H04L 63/20 (2013.01); H04L 63/0281 (2013.01); H04L 63/0869 (2013.01) (56) References Cited U.S. PATENT DOCUMENTS 6,016,476 A 1/2000 Maes 6,691,232 B1 2/2004 Wood 7,512,965 B1 3/2009 Amdur 7,697,729 B2 4/2010 Howell 7,780,080 B2 8/2010 Owen 7,950,051 B1 5/2011 Spitz 8,145,916 B2 3/2012 Boshu 8,549,300 B1 10/2013 Kumar 8,577,813 B2 11/2013 Weiss 8,776,214 B1 * 7/2014 Johansson H04L 63/08 726/19 8,856,539 B2 10/2014 Weiss 8,984,596 B2 3/2015 Griffin 9,100,826 B2 8/2015 Weiss 10,872,152 B1 12/2020 Martel 2004/0107170 A1 6/2004 Labrou 2004/0236632 A1 11/2004 Martzen 2005/0198348 A1 9/2005 Yentes 2006/0085844 A1 4/2006 Doer 2007/0257104 A1 * 11/2007 Owen G06Q 20/4014 235/382 2007/0266256 A1 11/2007 Shah 2008/0059804 A1 * 3/2008 Shah H04L 63/0815 726/8 2009/0100289 A1 4/2009 Naccache 2009/0191846 A1 7/2009 Shi 2010/0242102 A1 9/2010 Cross 2011/0078771 A1 3/2011 Griffin 2011/0138450 A1 6/2011 Kesampalli 2011/0205916 A1 8/2011 Al-Azem 2011/0231651 A1 9/2011 Bolloy 2012/0110341 A1 5/2012 Beigi 2012/0167193 A1 6/2012 Gangaro 2014/0250079 A1 * 9/2014 Gardner G06F 11/1453 707/646 2017/0230179 A1 8/2017 Mannan OTHER PUBLICATIONS Brands et al. Distance-Bounding Protocols. Jan. 28, 1994. https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.51.6437&rep=rep1&type=pdf. Hammer-Lahav, Ed. "The OAuth 1.0 Protocol", from https://tools.ietf.org/html/rfc5849, Apr. 2010. IPR2022-00244 Claim Mapping Table for the '696 Patent. Nov. 30, 2021. IPR2022-00244 Petition for Inter Partes Review of U.S. Pat. No. 10,824,696. Nov. 30, 2021. IPR2022-00251 Claim Mapping Table for the '512 Patent. Dec. 1, 2021. IPR2022-00251 Petition for Inter Partes Review of U.S. Pat. No. 10,929,512. Dec. 1, 2021. Jakobsson et al. Proving Without Knowing: On Oblivious, Agnostic and Blindfolded Provers. Jul. 24, 1996. http://markus-jakobsson.com/papers/jakobsson-crypto96.pdf. Menezes et al. Using Vices to Generate Cryptographic Keys. May 13, 2001. https://www.cs.unc.edu/~fabian/papers/odyssey.pdf. Seshadri et al. Pioneer: Verifying Code Integrity and Enforcing Untampered Code Execution on Legacy Systems. Oct. 23, 2005. https://netsec.cfr.ch/publications/papers/pioneer.pdf. * cited by examiner	

Ex. 2029 ('617 Patent) at 2.

2. Petitioner relies on Challenger for its disclosure of “well-known” TPM prior art.

According to Petitioner, Challenger (Ex. 1007) is a reference that discloses a “well-known” TPM system. Pet. 13 (“In particular, Challenger *describes* system implementations in *accord with a well-known Trusted Platform Module* (TPM) specification promulgated by a standards organization, the Trusted Computing Group (TCG)”) (emphasis added). Petitioner adds that not only does Challenger describe a typical TPM system, but that TPM architecture was well known and widely deployed. Pet. 24 (“TPM-based architecture, as TPMs were well-known, standard and widely-deployed”). Petitioner relies on Challenger and its TPM teachings to help illustrate the “second processor” and the “restricted interface”

limitations of the '512 Patent. *See* Pet. 21 (“Continuing the discussion above, POSITA would have been motivated to apply Challenger’s teachings of a TPM-type security architecture to Kesanupalli’s techniques to provide a security processor (*a second processor* as discussed below) in a secure portion communicating with a general processor (a first processor as discussed below) in a standard portion with *API-mediated interfaces* of the second processor in between.”) (emphasis added).

C. POSITA

Patent Owner has applied Petitioner’s POSITA for the sake of this Response. Pet. 6. This Response does not depend on this skill level. *See* Section III.B, *infra*. Patent Owner reserves the right to argue in favor of different level of skill should this Petition be instituted.

D. Claim Construction

Petitioner takes a position on the plain and ordinary meaning of “restricted interface.” *See* Pet. 7-8. This Response does not depend on this definition so Patent Owner does not address this position. *See* Section III.B, *infra*. Patent Owner reserves the right to address this position should this Petition be instituted.

E. Claim Table

For the sake of this analysis, Patent Owner will use Petitioner’s limitation labels reproduced below:

[1.0]	A system, comprising
[1.1A]	a first processor of a first device, wherein the first processor is configured to:
[1.1B]	based at least in part on a request associated with a user to access an external resource, establish a secure connection with the external resource;
[1.1C]	And communicate with a second processor using a restricted interface,
[1.2]	wherein the second processor is configured to: receive a biometric input from a sensor, wherein the biometric input corresponds to at least one of a fingerprint, a feature usable for facial recognition,
[1.3]	access a record stored in a secure storage, wherein the record is associated at least with the external resource;
[1.4]	retrieve, from the record, at least one of a password, a cookie, or a cryptographic key;
[1.5]	perform a cryptographic operation;
[1.6A]	in response to determining that there is a match between the biometric input and a stored biometric template accessed by the second processor,
[1.6B]	facilitate a login of the user to the external resource at least in part by transmitting, via the established connection, output based at least in part

	on the at least one of the password, the cryptographic key, or the cookie retrieved from the record, and wherein the user is logged in to the external resource based at least in part on the output; and
[1.7A]	perform a secure backup of the record to a storage service,
[1.7B]	wherein a second device associated with the user is registered with the storage service, and
[1.7C]	wherein the record is downloaded from the storage service by the second device; and
[1.8]	a memory coupled to the first processor and configured to provide the first

III. ARGUMENT

A. The Petition Should Be Denied Under *Fintiv* As The Issues Presented By This Petition And Petitioner's Six Other Petitions Will Be Resolved First In The Underlying District Court Case.

Petitioner has taken a single district court litigation and sought to turn it into seven proceedings before this Board, which would issue final written decisions (if any) roughly *eight months after the scheduled trial*. Far from simplifying matters, Petitioner and its seven IPR petitions needlessly complicate the dispute between the parties. The Board should use its discretion to deny institution of Petitioner's seven IPR petitions because the district court will resolve all issues raised in the Petitions.

As Director Vidal has pointed out, "Congress designed the America Invents

Act (AIA) post-grant proceedings ‘to establish a more efficient and streamlined patent system that will improve patent quality and limit unnecessary and counterproductive litigation costs.’” Ex. 2022 at 1 (citing H.R. Rep. No. 112- 98, pt. 1, at 40 (2011), 2011 U.S.C.C.A.N. 67, 69; *see* S. Rep. No. 110- 259, at 20 (2008)). Instituting Petitioner’s seven IPR petitions is directly contrary to this goal. This is because “[p]arallel district court and AIA proceedings involving the same parties and invalidity challenges *can increase, rather than limit*, litigation costs.” Ex. 2022 at 1 (emphasis added).

Here, instituting the seven IPR petitions, which will have the same outcome as the *single* district court case (upholding the validity or invalidating the patents), will dramatically increase the litigation costs of the parties over a district court case that has already been expensive for the parties, the district court, and the Federal Circuit. Notably, the district court case is considering the exact same references and will also consider more invalidity grounds, such as system references that allegedly could not have been raised and other invalidity grounds such as 35 U.S.C. §§101 and 112. It is a fallacy to consider Petitioner’s seven petitions as streamlining the dispute between the parties. The Board should thus use its discretion to deny institution.

Under 35 U.S.C § 314(a), the Board has discretion to deny a petition based on the status of a related litigation. The Board considers six factors to determine whether efficiency, fairness, and the merits support denial:

Factor 1: whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted;

Factor 2: proximity of the court's trial date to the Board's projected statutory deadline for a final written decision;

Factor 3: investment in the parallel proceeding by the court and the parties;

Factor 4: overlap between issues raised in the petition and the parallel proceeding;

Factor 5: whether the petitioner and the defendant in the parallel proceeding are the same parties; and

Factor 6: other circumstances that impact the Board's exercise of discretion, including the merits.

Apple v. Fintiv, IPR2020-00019, Paper 11 at 5-6 (PTAB March 20, 2020) (precedential). As discussed below, each of the six *Fintiv* factors supports the Board denying institution. The current advanced state of the parallel district court case, as well as district court's mooted of Petitioner's previous stay motions, favors denial of the Petition. By the time the Board will issue an institution decision across all seven IPR petitions (expected July 31-August 7), claim construction will have been briefed and argued to the district court, fact discovery will have closed, and opening

expert reports will have been exchanged. Moreover, the parties will already have completed venue discovery, venue briefing, venue mandamus briefing, motion to dismiss briefing, and briefing on multiple stay motions. The district court trial is scheduled for December 2024, roughly *eight months before* the earliest of the Final Written Decisions (if any) for the seven IPR petitions would be issued. *See* Ex. 1028 (WDTX Scheduling Order). As explained below, the district court is unlikely to stay a trial that is already scheduled to be complete well before a final written decision on any petition would be issued by the Board.

There is no argument that can be offered that supports instituting seven IPRs—that would issue narrow invalidity rulings under 35 U.S.C. §§ 102 and 103 months after the district court trial—rather than letting the parties resolve all these issues in a single, quicker district court case that is already scheduled to be complete in December of this year. Accordingly, the Board should deny institution to maintain the goals of efficiency and efficacy. *See General Plastic Industrial Co., Ltd. v. Canon Kabushiki Kaisha*, IPR2016-01357, Paper 19 at 16-17 (PTAB Sept. 6, 2017).

Factor 1: Judge Albright has not granted Petitioner’s multiple stay requests and he will not grant a stay under these circumstances. Petitioner states that this factor is neutral. Pet. 73. However, Petitioner has failed to consider the totality of the evidence. This Board has previously held that “[i]n the absence of specific evidence, we will not attempt to predict how the district court in the related district

court litigation will proceed because the court may determine whether or not to stay any individual case.” *Sand Revolution II, LLC v. Continental Intermodal Group – Trucking LLC*, IPR2019-01393, Paper 24 at 7 (PTAB June 16, 2020) (informative) (emphasis added). Not only does Petitioner provide no evidence, as Patent Owner demonstrates below, all the evidence points to a stay not being entered by Judge Albright even if all seven petitions are instituted.

Petitioner has filed multiple motions to stay the district court litigation and **none** of them have been granted. See Exs. 2004 and 2015. Moreover, even if instituted, the timing and advanced stage of litigation indicates that Judge Albright is highly likely to deny a motion to stay where trial will be done more than eight months before a final written decision. As just one example, in *Cloud of Change* Judge Albright denied a stay where **all** of the asserted claims in the district court case were instituted, and a final decision was set to issue one month after the trial date. See Ex 2023 (*Cloud of Change, LLC v. Lightspeed POS Inc.*, Case No. 6-21-cv-01102, Dkt. 80 at 1-3 (W.D. Tex. May 15, 2023) (Albright, J.) (The Board instituted IPRs on all claims in the underlying district court case and Judge Albright denied the motion to stay when the trial was set for September 2023 and the final written decisions were set to issue in November 2023). And in *Sonrai*, Judge Albright denied a motion to stay where “[t]he Court expects to reach a verdict in this Action by the end of February 2023 . . . while the PTAB is expected to issue its final

written decision . . . IPR by March 4, 202[3].” Ex. 2024 (*Sonrai Memory Ltd. v. LG Elecs. Inc.*, No. 6:21-CV-00168-ADA, 2022 WL 2307475, at *1 (W.D. Tex. June 27, 2022) (Albright, J.).

The Board has previously rejected arguments similar to Patent Owner’s on the grounds that it will not “speculate.” *See, e.g., Samsung Electronics Co., Ltd. v. Mojo Mobility Inc.*, IPR2023-01091, Paper 11 at 11 (PTAB Jan. 8, 2024) (denying institution). However, at this point given Petitioner’s prior multiple stay requests and the precedent set by Judge Albright even when IPRs are instituted, there is no speculation based on the facts in this case and Judge Albright’s history. And Petitioner has presented no evidence to the contrary. The underlying district court trial will occur *roughly eight months prior to any final written decision*, and even if all seven Petitions are instituted, Judge Albright won’t stay the underlying case. Factor 1 thus favors denial.

Factor 2: the single district court case will resolve all of the issues presented in the seven petitions (and more) roughly eight months before any final written decision. The Board generally denies institution when the trial date is months before the projected statutory deadline of the Board’s final written decision (FWD). *Fintiv*, IPR2020-00019, Paper 11 at 9) (“If the court’s trial date is earlier than the projected statutory deadline, the Board generally has weighed this fact in favor of exercising authority to deny institution.”). Trial is set for December 4, 2024, which would be

roughly eight months before the earliest expected date of a FWD (July 30-August 7, 2025). This factor weighs heavily in favor of denial.

The Board regularly finds a period of time less than eight months between the expected date of the FWD and trial supports denial. *See, e.g., id.* (5-6 months based on the time-to-trial evidence); *Samsung Electronics Co., Ltd. v. Mojo Mobility Inc.*, IPR2023-01094, Paper 11 at 8 (PTAB Feb. 9, 2024) (“As the Texas Litigation is scheduled to go to trial in August 2024, approximately six months before a final written decision would be entered, we determine that Factor 2 weighs in favor discretionary denial.”); *NHK Spring Co. v. Intri-Plex Techs., Inc.*, No. IPR2018-00752, Paper 8 at 20 (PTAB Sept. 12, 2018) (precedential) (denying a petition 35 U.S.C. § 314(a) where institution would have led to a final written decision approximately six months after a scheduled trial in a pending civil action involving the same patent); *Satco Products, Inc. v. The Regents of the University of California*, IPR2021-00794, Paper 14 at 19 (PTAB Nov. 10, 2021) (five months); *Maxlite, Inc. v. Jiaxing Super Lighting Electric Appliance Co., Ltd.*, IPR2020-00208, Paper 32 at 5 (PTAB Oct. 12, 2021) (four months); *Stanley Black & Decker, Inc., et al. v. Zircon Corp.*, IPR2020-01572, Paper 10 at 12 (PTAB April 19, 2021) (three months); *Next Caller, Inc. v. TrustID, Inc.*, IPR2019-00961, Paper 10 at 14-15 (PTAB Oct. 16, 2019) (three months); *E-One, Inc. v. Oshkosh Corp.*, IPR2019-00161, Paper 16 at 6 (PTAB May 15, 2019) (one month). Thus, Factor 2 favors denial.

Factor 3: there has and continues to be significant investment by the parties in the district court litigation. The Board has used its discretion to deny institution when, as here, there is significant investment in the parallel district court proceeding. Petitioner would have this Board believe the district court case is in its “early stages” and that only preliminary contentions have been exchanged and a *Markman* hearing held. Pet. 73. Petitioner’s framing of the case downplays the sheer amount of time, energy, and resources spent by the parties, the district court, *and the Federal Circuit*.

As alluded to in the opening paragraphs of this Response, the underlying district court case is not a typical patent litigation. The Parties have already:

1. completed briefing on Petitioner’s motion to dismiss;
2. completed briefing Petitioner’s motion to transfer;
3. completed venue discovery related to Petitioner’s motion to transfer;
4. prepared and exchanged initial infringement and invalidity contentions;
5. prepared and exchanged final infringement and invalidity contentions;
6. completed roughly six months of fact discovery (with fact discovery set to close on July 3, 2024) (*see* Ex. 1028 at 3);
7. completed briefing and argued claim construction;
8. completed briefing on Petitioner’s first motion to stay;
9. completed briefing on Petitioner’s second motion to stay; and

10. completed briefing on Petitioner’s writ of mandamus to the Federal Circuit on its motion to transfer.²

The Board consistently finds this factor favors denial where the underlying litigation is much less advanced. *See, e.g., Samsung Electronics Co., Ltd. v. Mojo Mobility Inc.*, IPR2023-01094, Paper 11 at 9 (PTAB Feb. 9, 2024) (“Although there is still much work to be done on the Texas Litigation” including claim construction briefing and a *Markman* hearing “we find that this factor favors exercising our discretion to deny institution”). This case is anything but in its “early stages.” Accordingly, the Board should find that Factor 3 weighs in favor of denial.

Factor 4: there is significant overlap between issues raised in the petition and in the parallel proceeding. “[I]f the petition includes the same or substantially the same claims, grounds, arguments, and evidence as presented in the parallel proceeding, th[at] fact has favored denial.” *Fintiv*, IPR2020-00019, Paper 11 at 12. Petitioner challenges the same claims in its Petition—and across the six Petitions—that it does in its invalidity contentions at the district court. *See* Ex. 2025 In fact, Petitioner relies on the same principal references in the Petition as it does in the parallel litigation. *See generally* Ex. 2025 at 2. Thus, the Petition includes substantial overlap with the claims and evidence asserted in the parallel litigation.

² *See, e.g.,* Exs. 2018, 2019, 2020.

In addition, Petitioner’s stipulation does not mitigate the overlap between the district court and the Petition. Pet. 73-74; *see also* 2035 at 4. Petitioner originally offered a stipulation that fell well short of the *Sotera* standard. *See* Pet. 73-74. Following the “denial, on March 19, 2024, of Apple’s petition for writ of *mandamus* to direct U.S. District Court for the Western District of Texas to transfer Patent Owner’s infringement case against Apple to the U.S. District Court for the Northern District of California” (Ex. 2035 at 4) Petitioner moved the Board to add a new *Sotera* style stipulation. Ex. 2036 at 1-2. Petitioner’s *Sotera* stipulation is thus not being added to simplify the proceedings but in a last gasp effort to have these proceedings instituted prior to the upcoming Western District of Texas trial scheduled for December 2024 that Petitioner was not expecting when it filed its original stipulations.

Petitioner’s attempts to simplify the proceedings now ring hollow especially given that Petitioner failed to respond to multiple requests for clarification on the scope of the stipulation. Given that the district court case will likely go to trial in December 2024, regardless of whether the seven IPR petitions are instituted, Patent Owner requested clarification *several* times on whether Petitioner’s stipulation would preclude it from raising the prior art in the petition in the district court case (assuming that the petitions are instituted and the district court case is not stayed). *See* Ex. 2034 at 2 (“In the meantime, can you please let us know if Apple’s

stipulations will prevent it from raising the prior art in the petitions in the district court litigation if the IPRs are instituted and the district court litigation is not stayed?”), *id.* at 1 (“This response does not answer the question which is material to our response”); *id.* (“Patent Owner opposes Petitioner’s stipulations. In the correspondence leading up to this Petitioner’s request, Petitioner would not confirm that it would not raise the prior art in the Petitions in the district court litigation if the Petitions are instituted and the district court litigation is not stayed. Without that confirmation, it is unclear what the new stipulations would accomplish.”). Each time, Petitioner ignored the request and still has not taking a clear position on whether it will be precluded from raising this art in the district court.

Regardless of Petitioner’s actions, Petitioner’s stipulation does not in fact guarantee the reduction of *any* duplicate effort. Petitioner has already positioned itself to combine the petitioned art with art that Petitioner will argue it “could ***not*** have reasonably been raised” in the IPR petitions, such as system art, in the district court in order to avoid the consequences of its stipulation. For example, Petitioner could allege in the district court a combination of a system art reference such as the “UPEK system” in combination with the exact the grounds—Kesanupalli, Challener, and Cheng—in this Petition.

Prior Art Combinations for the '512 Patent	
'512 Primary References	Alone and/or with one or more of the following (collectively "'512 Secondary References"):
UPEK System (<i>see</i> Ex. A-01) ¹	UPEK System
Sahara Slate Tablet (<i>see</i> Ex. A-02) ²	Sahara Slate Tablet
Aegis Bio (<i>see</i> Ex. A-03) ³	Aegis Bio
Johansson (<i>see</i> Ex. A-04) ⁴	Johansson
Buer (<i>see</i> A-05) ⁵	Buer
Kesanupalli (<i>see</i> A-06) ⁶	Kesanupalli
Digital Persona Pro (<i>see</i> Ex. A-07) ⁷	Digital Persona Pro
Jazayeri (<i>see</i> Ex. A-08) ⁸	Jazayeri
	Shin ⁹
	Sharma ¹⁰
	Dropbox ¹¹
	LastPass ¹²
	Keeper ¹³
	KeePass ¹⁴
	Pearson ¹⁵
	Robinson ¹⁶
	Shi ¹⁷
	Brown ¹⁸
	Challener ¹⁹
	Cheng ²⁰

Ex. 2025 at 2 (red annotations added).

There is no reason to believe Petitioner will not try to make an end-around its stipulation. Petitioner's district court invalidity contentions make clear that there is no limit to combinations of art ("alone and/or with one or more of the following") and Petitioner's failure to clarify the extent of its stipulation despite multiple requests from Patent Owner, demonstrate that Petitioner does not want to have to address the issue in writing.

Accordingly, Petitioner's statements that its *Sotera* stipulation is dispositive of the *Fintiv* analysis are misplaced and misleading. Without further clarification

from Petitioner, it cannot be said that Petitioner's stipulation will guarantee that there is no duplication of efforts between the district court case and the IPR proceedings. Petitioner is using its late "stipulation" to game the *Fintiv* process and get two bites at the invalidity apple. Thus, this factor weighs in favor of denying the Petition.

Factor 5: the petitioner and the defendant in the parallel proceeding are the same party. Factor 5 weighs in favor of denial because both Parties to this proceeding are the same parties in the related district court litigation. *Fintiv*, IPR2020-00019, Paper 11 at 15 ("Because the petitioner and the defendant in the parallel proceeding are the same party, this factor weighs in favor of discretionary denial."). This is not a controversial factor; however, Petitioner attempts to fold this into the Factor 2 analysis. *See* Pet. 73. Patent Owner is unaware of any authority from this Board, and Petitioner does not cite any, that supports analyzing Factor 2 and Factor 5 together.

Factor 6: the merits of the Petition are weak. The final factor weighs in favor of denial because there is no "compelling challenge" of invalidity on the merits of the Petition. Interim Procedure, 4 ("compelling, meritorious challenges will be allowed to proceed at the PTAB even where district court litigation is proceeding in parallel"). As shown in the following sections, Petitioner's arguments on the merits do not meet the high standard required of an invalidity challenge. *Id.* ("Compelling, meritorious challenges are those in which the evidence, if unrebutted in trial, would

plainly lead to a conclusion that one or more claims are unpatentable by a preponderance of the evidence.”); *see also Vector Flow, Inc. v. HID Glob. Corp.*, IPR2023-00353, Paper 8 at 23-24 (PTAB July 27, 2023) (same).

B. The Petition Should Be Denied Under *Advanced Bionics* Because Cumulative References Have Been Repeatedly Argued to The Board and Patent Office and Petitioner Has Not Demonstrated Either Body Erred.

Patent Owner has defended the ’512 Patent and its continuations against the Kesanupalli family of references at *least five times* now via the Samsung IPR and the prosecution of the four continuation patents. *See* Section II.B.1, *supra*. Patent Owner has also defended the ’512 Patent and the continuations against a number of different TPM references (similar to Challenger), which Petitioner admits it only asserts because of its basic disclosures of a TPM and nothing unique to Challenger. *See* Section II.B.2, *supra*. The Board should defer to its previous decisions and re-confirm that Kesanupalli family of references in combination with a TPM reference does not invalidate the ’512 Patent’s specific two processor architecture. Otherwise, the very same cumulative art and arguments will continue to be asserted against the ’512 Patent and its progeny.

Under § 325(d), the Board uses a two-part analysis, considering: (1) whether the same or substantially the same art or arguments were presented to the PTO during original prosecution; and (2) whether the petitioner has demonstrated that the PTO erred in a manner material to the patentability of challenged claims. *Advanced*

Bionics, LLC v. Med-El Elektromedizinische Geräte GMBH, IPR2019-01469, Paper 8 at 10 (PTAB Feb. 13, 2020) (“*Advanced Bionics*”) (precedential).

Once the Board determines that the same or substantially the same art or arguments were previously presented to the PTO, it then considers whether the petitioner has demonstrated error. *Advanced Bionics* at 8-10. “If a condition in the first part of the framework is satisfied and the petitioner fails to make a showing of material error, the Director generally will exercise discretion not to institute *inter partes* review. If reasonable minds can disagree regarding the purported treatment of the art or arguments, it cannot be said that the Office erred in a manner material to patentability. At bottom, this framework reflects a commitment to defer to previous Office evaluations of the evidence of record unless material error is shown.” *Id.*

Here, Petitioner has asserted a Kesanupalli reference (Patent 8,799,666) (Kesanupalli ’666) (Ex. 1006) that is largely the same as the Kesanupalli reference (US Patent Publication 2011/0138450) (Kesanupalli ’450) (Ex. 2030) used against the ’512 Patent in the Samsung IPR and which has been cited in prosecution against the four continuation patents. Petitioner relies on figures and disclosures from Kesanupalli ’666 that are nearly identical to ones previously presented from Kesanupalli ’450. Further, Petitioner identifies no material differences between the two Kesanupalli references to its analysis.

Seeking to deflect, Petitioner points to Challenger and Cheng as demonstrating the Board did not consider substantially the same arguments and that the Board materially erred in its previous conclusions. Petitioner is incorrect on each ground.

With respect to Challenger, Petitioner does not hide why it relies on Challenger; rather, according to Petitioner, Challenger is a typical “well-known” TPM reference. Pet. 13 (“In particular, Challenger describes system implementations in accord *with a well-known Trusted Platform Module (TPM)*”). Indeed, Petitioner does not point to anything in Challenger that appears to be a unique TPM implementation. TPM references are nothing new to Patent Owner, the Board, or the Patent Office and have been used as the basis for challenging the claims of the ’512 Patent numerous times. Challenger is nothing more than cumulative of these references.

And Petitioner’s attempt to point to Cheng is simply misplaced. Petitioner states that the Board has never considered a backup method such as the one disclosed by Cheng, but even if that were the case, it wouldn’t matter. The same underlying references for the first and second processor architecture of the ’512 Patent have been argued and rejected. Whether Cheng discloses the “secure backup” is irrelevant to this analysis as the other claim elements cannot be met by the same cumulative references.

1. Petitioner uses substantially the same art that has repeatedly been before the Board and PTO.

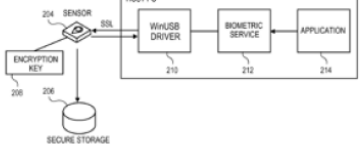
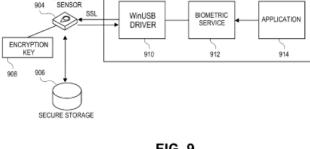
Petitioner takes the same arguments that have been made time and time again against the '512 Patent and its progeny and repackages them using a cumulative Kesanupalli reference and cumulative secondary TPM reference. *Advanced Bionics*, 8–10. The Board should find these references are substantially the same as the references this Board and the Patent Office has previously considered and found lacking. *See e.g., Evapco Dry Cooling, Inc., v. SPG Dry Cooling USA*, IPR2021-00687, Paper 11 at 24-25 (P.T.A.B. Sep. 24, 2021) (finding a newly asserted reference not cited during prosecution as being substantially the same as the references that were before the Examiner during prosecution); *see Gardner Denver v. Utex Industries, Inc.*, IPR2020-00333, Paper 12 at 13-14 (P.T.A.B. Aug. 5, 2020) (denying institution upon finding that newly asserted references Kalsi and Kohl are no more relevant than references that were presented during prosecution); *Roku, Inc. v. Universal Elecs., Inc.*, IPR2019-01619, Paper 11, 16-17 (P.T.A.B. April 2, 2020) (denying institution upon finding that newly applied Zetts was cumulative to previously presented Kim, even though Kim was not considered for the same limitation in reexamination).

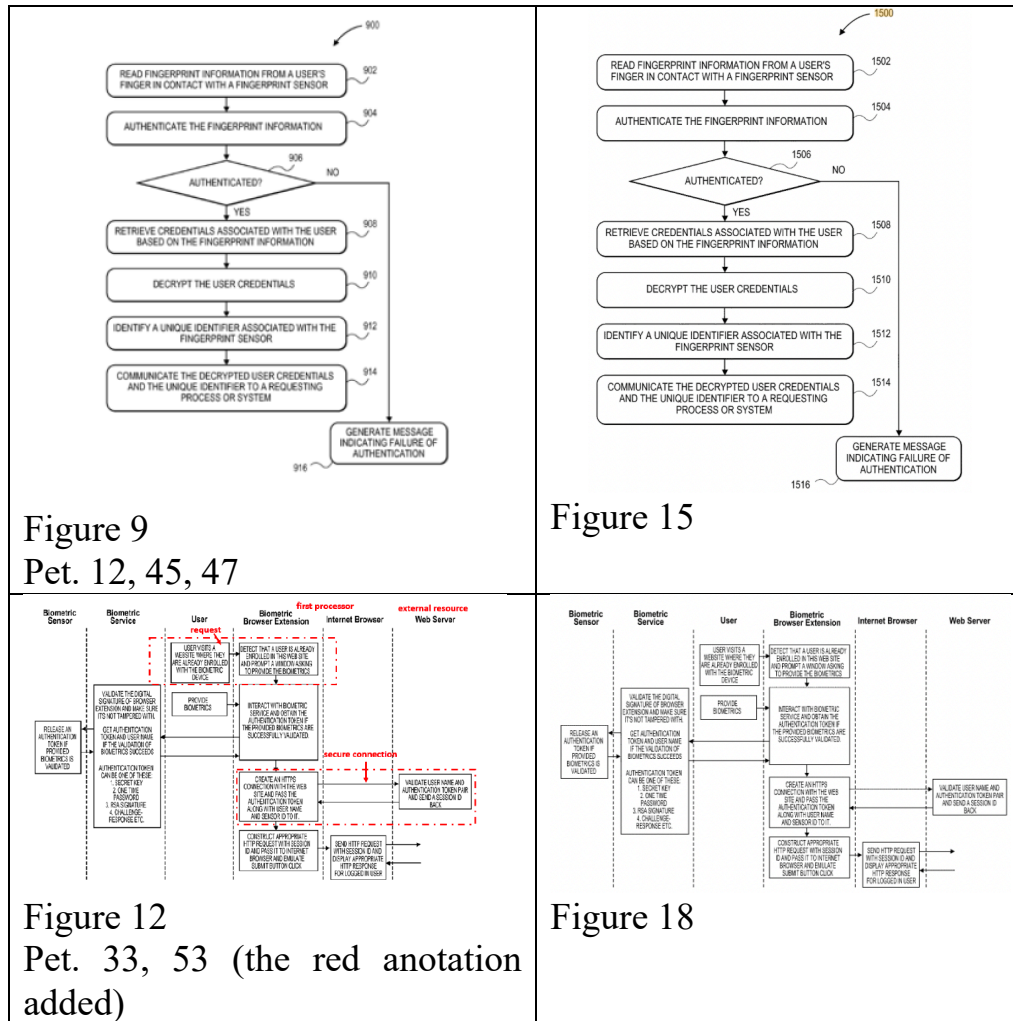
a) Kesanupalli

Petitioner states the following:

Petitioner acknowledges that *another* Kesanupalli reference was “previously presented to the Office.” More specifically, the Samsung IPR alleged obviousness based on Johansson in view of U.S. Patent Pub. 2011/0138450, naming Kesanupalli. *See Samsung*, IPR2022-00251, Paper 17, 10. The Kesanupalli ’666 patent relied upon herein is not the Kesanupalli ’450 publication (or counterpart thereof), although there is overlapping disclosure.

Pet. 76-77. “Although there is overlapping disclosure” is an understatement. Patent Owner is not aware of relevant disclosures in the Kesanupalli ’666 reference that are in different from the Kesanupalli ’450 reference in material ways related to this Petition. In fact, as shown below, the very figures that Petitioner relies on throughout the Petition (*see* Pet. 12, 20, 33, 28, 29, 33, 45, 47, 53) are the same figures found in the ’450 publication and are some of the same figures relied on by the Petitioner in the Samsung IPR. *See Samsung Electronics Co., Ltd. v. RightQuestion, LLC*, IPR2022-00251, Paper 1 at 20, 23 (using Fig. 9 from the Kesanupalli ’450).

'666 Patent (this Petition)	'450 Publication
 Figure 6 Pet. 12, 20, 28, 29	 FIG. 9 Figure 9 Samsung IPR Pet. 20, 23



This is not even “overlapping disclosure” as even Petitioner admits-this is the same disclosure in both Kesanupalli references relied upon by Samsung in its failed IPR petitions and by Petitioner in this IPR Petition. Acknowledging the similarities, Petitioner doesn’t event attempt to differentiate the disclosures of the Kesanupalli references because it literally cannot. *See generally* Pet. 76-77.³

³ After stating that the system and methods disclosed by the ’512 Patent “were well-known at the time of the claimed invention,” (Pet. 5) it is surprising that Petitioner was unable to identify any other prior art references besides references that are from the same author and that are nearly identical to ones previously considered.

- b) Challenger is a typical TPM reference just like references used in the previous IPRs and PTO prosecution.**

Despite claiming at the onset of the Petition that “Challenger describes system *implementations in accord* with a well-known Trusted Platform Module (TPM)” (Pet. 13) (emphasis added), Petitioner later claims that Challenger is not similar let alone cumulative of “*any reference that was before the Board.*” (Pet. 77) (emphasis added). Petitioner does not explain these conflicting statements because it cannot; TPM references are well known and have been in front of this Board and the Patent office.

For example, in the Samsung IPR proceeding, the Shah reference disclosed a TPM and was used by Samsung in nearly an identical manner to attempt to teach the second processor and restricted interface limitations. *See, e.g.*, IPR2022-00251, Paper 17, 1 (“Shah discloses that its first processor (i.e., processor executing WAA 820) communicates with a second processor (i.e., of TPM/TSS 815 and/or SASO proxy unit 810, residing in the USIM), which both are configured to access at least one record in a secure storage, using a restricted interface.”) (internal citations omitted). The Board previously denied institution based on Shah.

Notably, the continuations have been prosecuted in light of Shah and the Samsung IPR. *See* Section II.B.2, *supra*. The PTO has considered Shah and rejected the continuation applications in light of Shah’s teachings. For example, the ’105

Patent was rejected in light of Shah. Patent Owner has been able to distinguish Shah time and time again.

Claims 1-3, 7-9, 11-14, and 17-22 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Shah et al., (US 20080059804 A1) **hereinafter referred to as Shah** in view of Johansson (US 8776214 B1) **hereinafter referred to as Johansson**.

Ex. 2031 ('105 Patent Jan. 28, 2022 non-final office action) at 5.

Petitioner does not distinguish the TPM disclosures in Challenger from the TPM disclosures in Shah and nor can it because as Petitioner has established a TPM is a chipset “promulgated by a standards organization.” Pet. 13. In other words, one TPM should work like another TPM. Petitioner alludes to this when discussing Challenger: “Challenger describes system implementations in *accord* with a well-known Trusted Platform Module (TPM) specification.” *Id.* Petitioner’s conclusory remark that the Board and the PTO has not considered a TPM reference or a reference cumulative of Challenger is simply misplaced.

2. Petitioner fails to demonstrate that the Board has erred *five* times on the Kesanupalli family and on the TPM references.

Advanced Bionics instructs that “[i]f the ‘same or substantially the same prior art or arguments previously were presented to the Office,’ then the Board’s decisions generally have required a showing that the Office erred in evaluating the art or

arguments.” *Advanced Bionics*, at 8. It further instructs that “[i]f the petitioner fails to show that the Office erred, the Director may exercise his discretion not to institute *inter partes* review.” *Id.* Petitioner’s few sentences do not meet this burden. Pet. 78.

The Board has considered a nearly identical Kesanupalli reference in the Samsung IPR and rejected the notion that it discloses limitations in the ’512 Patent. *See* Section II.B.1 and II.B.1, *supra*; *see also Samsung Electronics Co., Ltd. et al v. RightQuestion, LLC*, IPR2022-00251, Paper 17 (PTAB June 9, 2022). Petitioner attempts to argue that “the Board never reached (and therefore substantively overlooked) any disclosure of Kesanupalli” because the “Board denied institution after finding that the prior petition failed to adequately support its contention.” Pet. 77. Petitioner’s argument appears to be that because the Board found the last Petition lacking, this Petitioner should be able to address what was lacking. But that is simply not the case. Petitioner in the Samsung IPR presented its best case based on the same cumulative art. Patent Owner made its defenses and the PTAB evaluated the art and the arguments. Petitioner also makes no attempt to discuss any of the continuation Patents that have been allowed over Kesanupalli ’450, TPM references (Shah), and the IPR petitions. Because “reasonable minds can disagree regarding the purported treatment of the art or arguments, it cannot be said that the Office erred in a manner material to patentability.” *Advanced Bionics* at 8-10.

Petitioner also fails to explain why TPM's can be so "well-known" and commonplace yet the disclosures and application of Challenger are in some way unique from the TPM disclosures the Board and Patent Office have previously examined. At bottom, Petitioner has not shown the art is not cumulative of the previously asserted art and that Board and Patent Office erred in any way. And in any event, "[i]f reasonable minds can disagree regarding the purported treatment of the art or arguments, it cannot be said that the Office erred in a manner material to patentability. At bottom, this framework reflects a commitment to defer to previous Office evaluations of the evidence of record unless material error is shown." *Advanced Bionics*, at 9. The Board should defer to its previous Office evaluations and deny institution.

C. Petitioner has not demonstrated that a POSITA would have been motivated to combine the references or have had a reasonable expectation of success in doing so.

Pertinent to Petitioner's presentation and its arguments for combining the various references is the Supreme Court's warning against "slipping into use of hindsight." *KSR Intern Co., v. Teleflex Inc.*, 550 U.S. 398, 421 (S Ct. 2007) (quoting *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 36 (S. Ct. 1996)). In this regard, the Federal Circuit has said that "combinations that change the basic principles under which the [prior art] was designed to operate, . . . may fail to support a conclusion of obviousness." *Plas-Pak Indus., Inc. v. Sulzer Mixpac AG*, 600 Fed.

Appx. 755, 758 (Fed. Cir. 2015) (quoting *In re Ratti*, 46 CCPA 976, 270 F.2d 810, 813 (1959), *In re Gordon*, 733 F.2d 900, 902 (Fed. Cir. 1984)) (internal quotation marks and cites omitted) (alterations in original).

As stated, for the reasons given below, Petitioner has not presented a compelling reason to combine the references and has not explained why a POSITA would have believed the combination would have been successful. Petitioner's expert declaration is little more than a copy of the Petition and should be given little weight. Without its expert, Petitioner is left with no factual support for its motivation to combine and many questions or an explanation as to why a POSITA would have had a reasonable expectation of success in combining the references.

1. Petitioner's expert's declaration should be given no weight as to the motivation to combine and reasonable expectation of success analysis.

The Board has previously denied institution in part because the Petitioner's expert declaration was given no probative weight. For example, in *Kinetic Technologies*, the Board denied institution, in part because the petitioner's expert declaration was given "no probative weight" because it contained arguments that were identical to arguments set forth in the petition and merely added the phrase "it is my opinion that," and the Board found that "merely repeating an argument from the Petition in the declaration of a proposed expert does not give that argument enhanced probative value." *See Kinetic Technologies, Inc. v. Skyworks Solutions*,

Inc., IPR2014-00529, Paper 8 at 14-15 (PTAB Sep. 23, 2014). In *Volkswagen*, the Board denied institution, in part because the petitioner’s expert declaration “provide[d] little additional probative value” because it contained arguments that were identical to arguments set forth in the petition. *Volkswagen Group of America, Inc. v. StratosAudio, Inc.*, IPR2021-00717, Paper 12 at 36-38 (PTAB Nov. 12, 2021); *see also Facebook, Inc. v. Voxer IP LLC*, IPR2021-00399, Paper 8 at 22 (PTAB July 21, 2021) (“Petitioner cites [Expert’s] declaration to support is arguments. . . [Expert’s] arguments, however, mirror the arguments set forth in the Petition and do not provide further support for Petitioner’s position that Munje discloses or suggests ‘[a]n embeddable communications software module that allows a software application to access a communications system.’ Thus, Petitioner fails to show how Munje discloses or suggests this limitation”).

Here, Petitioner’s expert’s (Ex. 1003) analysis of the motivation to combine and the reasonable expectation of success is nearly identical to the analysis in the Petition. *Compare* Pet. 22-27 with Ex. 1003 at ¶¶81-91 (the first and last paragraphs are reproduced below). In fact, most of the differences appear to be that the Petition cites to the declaration (Ex. 1003).

Petition 22-27	Ex. 1003 (Expert Declaration)
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First, Challenger, Kesanupalli and the '512 patent are analogous art and are all in the same field of endeavor—namely, information security, and more particularly, security arrangements for protecting computers, components thereof, programs or data against unauthorized activity. APPL-1003, ¶¶81-82; APPL-1006, 2:30-38 (“[S]ystems and methods described herein relate to biometric authentication of users[,]...biometric information provides an additional level of security when used in systems and procedures related to authentication of a user.”), 2:48-50 (“client device, such as a computer, cellular phone, and so forth”); APPL-1007, 1:7-9 (“The present invention relates to securely	¶ 81. First, Challenger, Kesanupalli and the '512 patent are analogous art and are all in the same field of endeavor—namely, information security, and more particularly, security arrangements for protecting computers, components thereof, programs or data against unauthorized activity. See, e.g., (Kesanupalli) APPL-1006, 2:30-38 (“[S]ystems and methods described herein relate to biometric authentication of users. ... biometric information provides an additional level of security when used in systems and procedures related to authentication of a user.”), 2:48-50 (“client device, such as a computer, cellular phone, and so forth”); (Challener) APPL-1007, 1:7-9 (“The present invention relates to
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protecting computer data, and more particularly to security processors provided in computer systems to implement security features.”), 3:52-56 (“Trusted Platform Module (TPM)...for securing data and functions of the system [] from unauthorized access and manipulation.”); APPL-1001, 1:35-44 (“Providing credentials to a service, whether via a mobile or other device, is often a tedious experience for a user...[U]sers will often engage in practices...which render their credentials less secure against attacks. Accordingly, improvements in authentication techniques would be desirable.”), FIG. 1 (showing client devices of notebook computer 102, smartphone 104, tablet 106).	securely protecting computer data, and more particularly to security processors provided in computer systems to implement security features.”), 3:52-56 (“Trusted Platform Module (TPM) ... for securing data and functions of the system [] from unauthorized access and manipulation.”); (’512 patent) APPL-1001, 1:35-44 (“Providing credentials to a service, whether via a mobile or other device, is often a tedious experience for a user. ... users will often engage in practices ... which render their credentials less secure against attacks. Accordingly, improvements in authentication techniques would be desirable.”), FIG. 1 (showing client devices of notebook
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	computer 102, smartphone 104, tablet 106).
Finally, POSITA would have had reasonable expectations of success in adding backup feature such as taught by Cheng in a biometric authentication system such as taught by Kesanupalli in view of Challener as all are similarly directed to handling of personal information including biometric authentication information in a secure manner. APPL-1003, ¶91. Adding a backup feature would merely have been applying a known technique to a known device (method, or product) ready for improvement to yield predictable results. Indeed, the backup feature is implemented by routine software executed on generic processing	¶ 91. Finally, there would have been a reasonable expectations of success in adding backup feature such as taught by Cheng in a biometric authentication system such as taught by Kesanupalli in view of Challener are all are similarly directed to handling of personal information including biometric authentication information in a secure manner. Adding a backup feature would merely have been applying a known technique to a known device (method, or product) that ready for improvement to yield predictable results. Indeed, the backup feature is implemented by routine software executed on generic processing

components, which would have been a predictable application relative to Kesanupalli and Challener's systems and devices. <i>Id.</i>	components, which would have been a predictable application relative to Kesanupalli and Challener's systems and devices.
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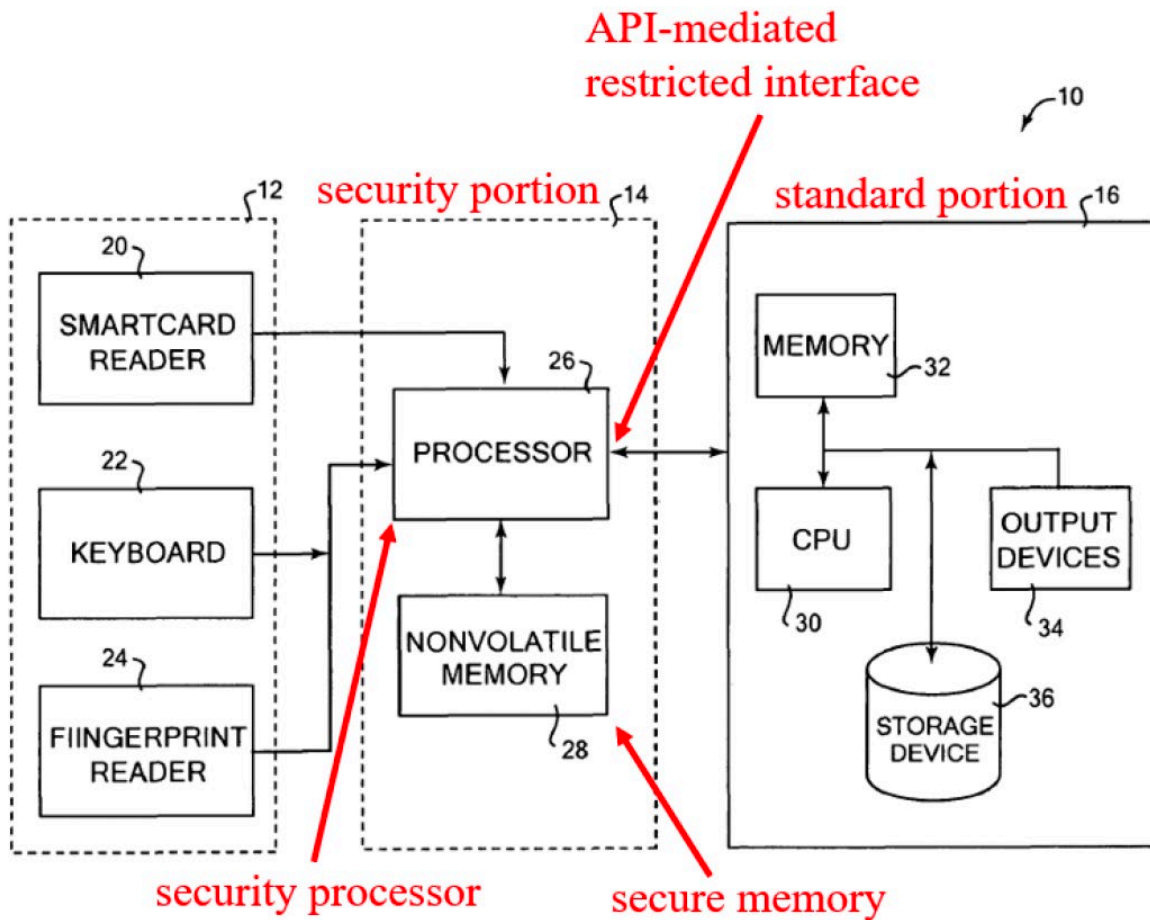
This Board has previously held in situations like this when an expert adds nothing beyond what is already found in the Petition, that the expert testimony should be given little to no weight. *Samsung Electronics Co., Ltd. et al v. RightQuestion, LLC*, IPR2022-0025, Paper 17 at 24 (PTAB June 9, 2022) (“Petitioner’s declarant also makes this same statement verbatim, without more, and with no further explanation or additional citations to evidence. . . We give such conclusory, unsupported assertions by Petitioner’s expert little or no weight.”); *see also In re Am. Acad. of Sci. Tech Ctr.*, 367 F.3d 1359, 1368 (Fed. Cir. 2004) (“[T]he Board is entitled to weigh the declarations and conclude that the lack of factual corroboration warrants discounting the opinions expressed in the declarations.”); *Rohm and HaasCo. v. Brotech Corp.*, 127 F.3d 1089, 1092 (Fed. Cir. 1997) (noting that a fact finder is not required to “credit the unsupported assertions of an expert witness”); 37 C.F.R. § 42.65(a) (“Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight.”). Accordingly, Petitioner’s expert’s support for its motivation to combine and reasonable

expectation of success analysis should be given no weight and the Board should consider each of the following arguments in that light.

2. Petitioner has not established that a POSITA would have combined Kesanupalli and Challenger given Kesanupalli's exposure of the user's biometrics to the non-secure portion of the device during enrollment, which directly contradicts the teachings of Challenger [Limitations 1.2-1.7].

A POSITA would not have been motivated to combine Kesanupalli's system with Challenger's TPM disclosures because Kesanupalli's system would expose a user's biometric data that Challenger would want to keep in the "secure portion" to the "standard portion" (aka the non-secure portion).

As Petitioner points out, "Challenger relates to securely protecting computer data, and more particularly to security processors provided in computer systems to implement security features." Pet. 12 (internal citations omitted). To accomplish this, Challenger discloses a system 10 with a standard portion 16 and a security portion 14. Ex. 1007 (Challenger) at Fig. 1 (Petitioner's annotated copy reproduced below). "Security portion 14 of system 10 is used to *secure the data* and applications of the system for access and use only by authorized users." Ex. 1007 (Challenger) at 4:9-12 (emphasis added). "The standard portion 16 of system 10 is connected to the processor 26, and the input portion 12 is connected to the processor 26, so that input provided to the portion 16 can first be examined by security portion 14 for authentication and security." Ex. 1007 (Challenger) at 5:35-40.



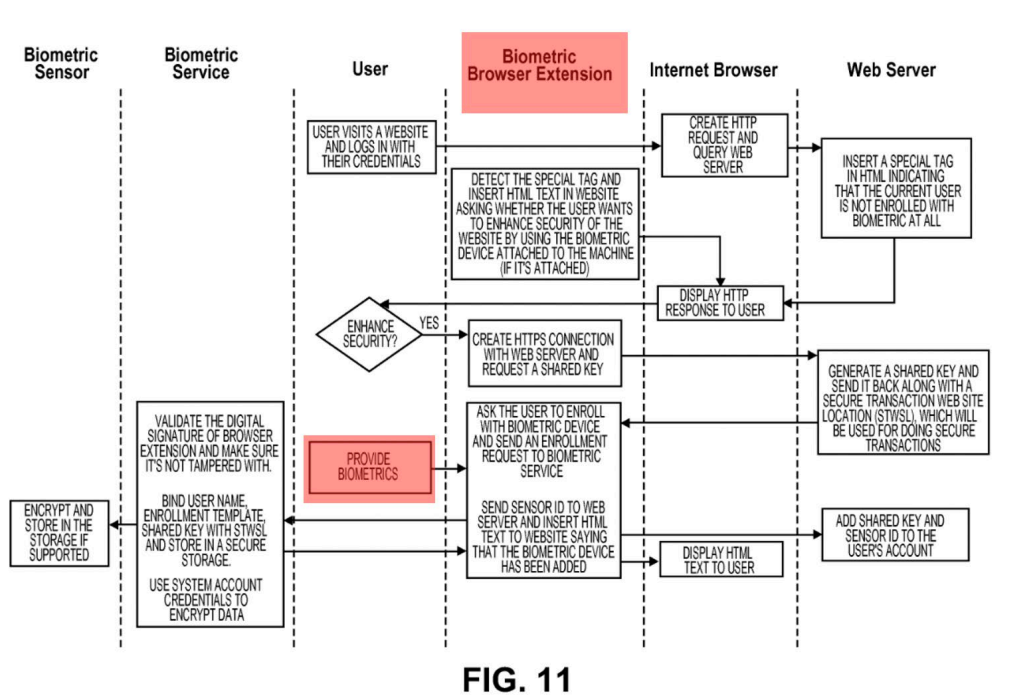
APPL-1007, FIG. 1, annotated

Pet 14 (reproducing Ex. 1007 (Challener) at Fig. 1).

This architecture is then described in certain embodiments. For example, Challener discloses that “applications for implementing or interfacing with a Subscriber Identity Module (SIM) card for cellular phones or secure ID cards, or applications for implementing fingerprint matching of users, may be desired to be installed for use by the processor 26 and its security-enhanced operating system and memory storage. The request can be detected, for example, when an application

write request is sent to the storage device 36 that will store the new application; this write request can be intercepted by a filter driver of the operating system of the processor 26.” Ex. 1007 (Challener) at 11:10-26. As Petitioner understands, Challener has crafted this architecture to avoid disclosing the biometric information, such as the biometric template, to the non-secure portion (i.e., “standard portion 16”). *See, e.g.*, Pet. 38 (“Such restrictions limit access and thereby protect the **functions and data in the security portion of a TPM-based security architecture** (e.g., sensor 204 and the secure storage 206) from being misused by an untrusted or malicious program.”) (emphasis added).

However, the benefit of using this architecture is defeated by Kesanupalli and thus a POSITA would not have been motivated to combine the references. For example, consider Kesanupalli’s enrollment process, which is depicted in figure 11 (reproduced below). Ex. 1006 (Kesanupalli) at 2:2-21 (“FIG. 11 depicts another embodiment of a procedure for enrolling a user of a biometric authentication system.”). Here, the user’s *biometrics* are being provided to the browser extension.

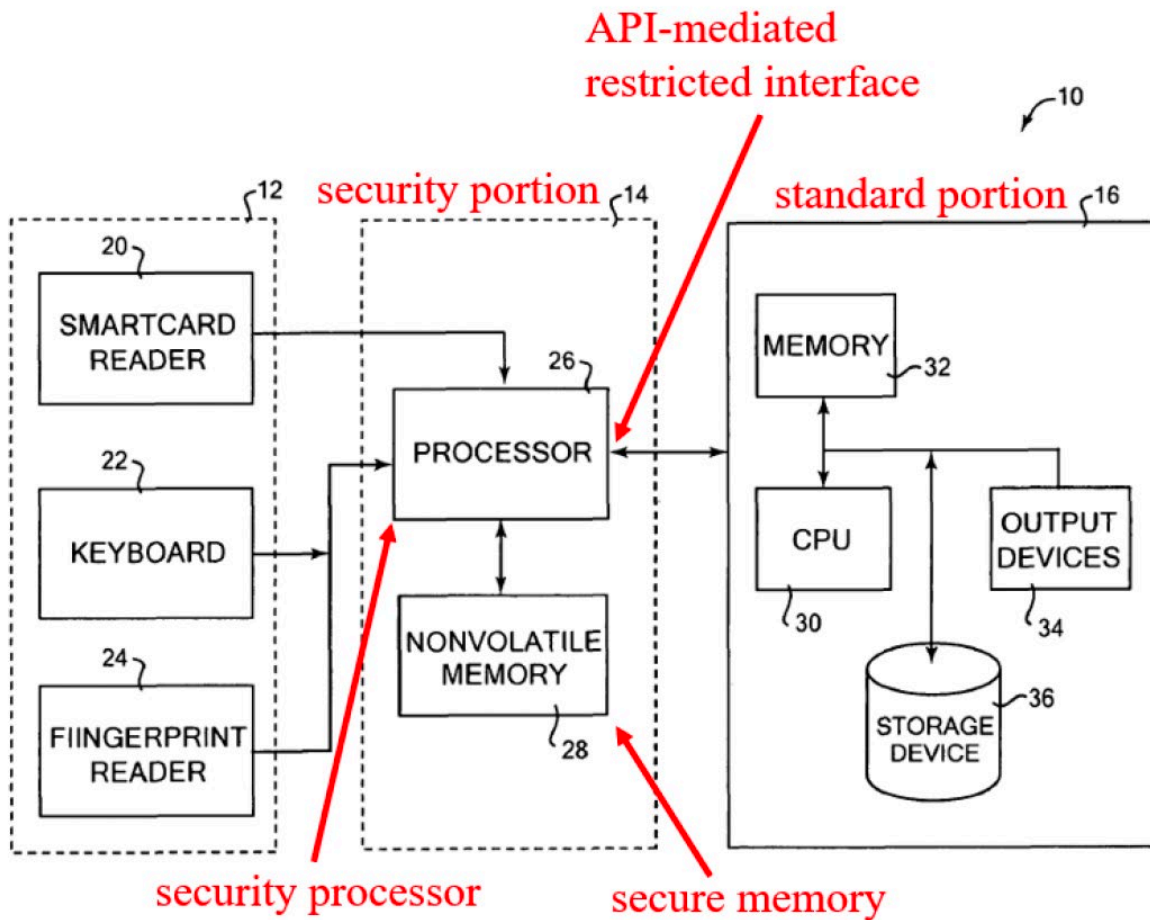


Ex. 1006 (Kesanupalli) at Fig 11; *see also* Fig. 12 (providing the biometrics to the browser extension). And this is where the issue presents itself.

A POSITA would understand that the browser extension of Kesanupalli would have been operating as part of the browser. Ex. 1006 (Kesanupalli) at 7: 33-37 (“System 600 includes a browser application 602 capable of communicating with a web server 604 and a biometric service 608. *Browser application 602 includes a biometric extension 618* that facilitates communication and *handling of biometric-related data.*”) (emphasis added); Fig. 6 (depicting the biometric browser extension/plugin as part of the browser). A POSITA would understand that a browser would operate in the standard portion of Challenger. *See, e.g.*, Ex. 1007 at

5:15-25 (“A standard portion 16 of system 10 is connected to the processor 26 and includes remaining *standard components* of the system. . . The microprocessor can interface with memory devices and other components to control the operation of the system 10, including performing data manipulation, computation, input/output, *and other typical functions.*”) (emphasis added).

Thus, the Kesanupalli browser and browser extension, which are typical functions, would operate standard portion 16 and on the CPU 30 of Challenger. So, when the enrollment process described in Kesanupalli figure 11 above is run, the browser extension running in the standard portion would have access to the user’s biometric templates and information. This is exactly the area that Challenger does not want this sensitive information to be and contrary to Challenger’s purpose of segregating the “secure” and “standard” portions of system 10.



APPL-1007, FIG. 1, annotated

Pet 14 (reproducing Ex. 1007 (Challener) at Fig. 1). A POSITA reading Challener and its segregation of data would not be motivated to add Kesanupalli and its open disclosure of user's biometrics to the standard portion of the device. It completely contradicts what Challener is attempting to do with its secure and standard portion segregation. *See Plas-Pak Indus., Inc.*, 600 Fed. Appx. at 758; *see also In re Ratti*, 270 F.2d at 813.

Moreover, Kesanupalli discloses more than just the biometric information in the non-secure area—it also discloses the credentials. Kesanupalli discloses that the credentials comprise an address to which they will be sent. Ex. 1006 (Kesanupalli) 4:3-11 (“The described systems and method communicate user credentials to a specific address, location, or other recipient identifier. Thus, even if an imposter can gain access to the user credentials, the system will send those user credentials to a predetermined address or location, thereby preventing the imposter from attempting to have the user credentials sent to an alternate address or location. The address or location information is stored within the user credentials and is established as part of the enrollment process.”). However, in order to be able to use that address for routing, the credentials would need to be conveyed to the non-secure environment in some manner.

Challener is clear about its goals of separating the security processing into the secure portion of the device. Kesanupalli’s disclosures are contrary to that purpose and because of that a POSITA would not have combined the references. Petitioner has cherry-picked two references using the claims as a map, but Petitioner failed to consider that a POSITA presented with Challener’s data security goals, would not leave a user’s biometric data and credential data available in the non-secure portion of the device at any point. *See Endo Pharmaceuticals Inc. v. DepoMed, Inc.*, IPR2014-00654, Paper 69 at 27 (PTAB September 21, 2015) (“We agree with Patent

Owner that Petitioner’s obviousness challenge amounts to picking and choosing certain preferred attributes of the various references and combining them to yield the claimed invention.”); *see also In re NTP, Inc.*, 654 F.3d 1279, 1299 (Fed. Cir. 2011) (internal quotations omitted) (“[c]are must be taken to avoid hindsight reconstruction by using the patent in suit as a guide through the maze of prior art references, combining the right references in the right way so as to achieve the result of the claims in suit.”).

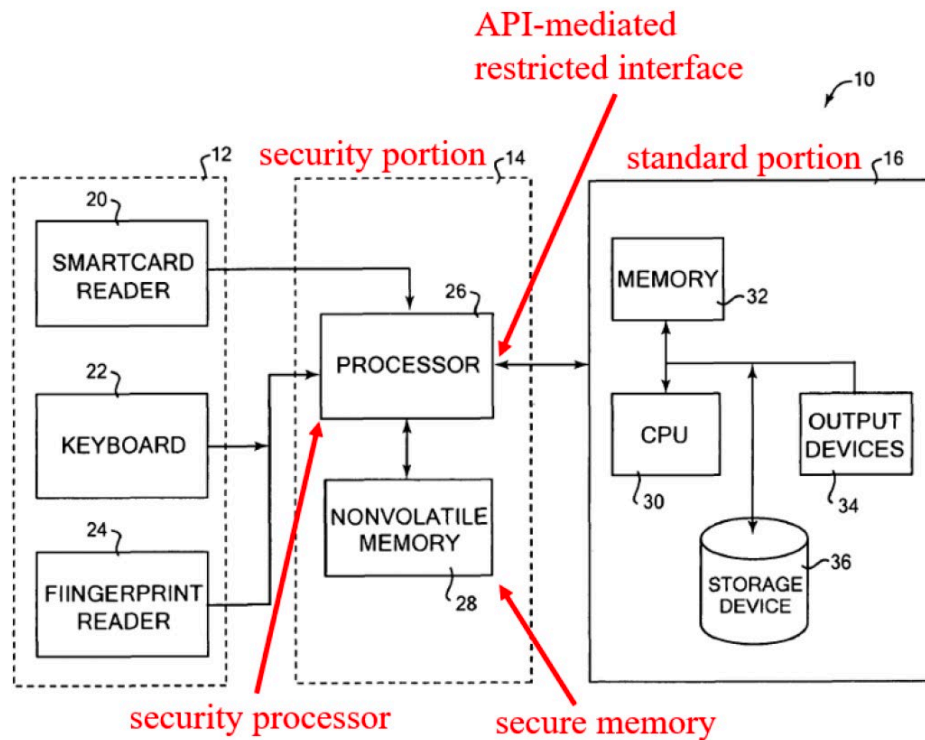
The premise and goal of Challener’s system—segregating the storage and processing of sensitive data into the secure portion of the device—is defeated by adding Kesanupalli’s enrollment method and thus a POSITA would not have combined the references.

3. Petitioner has not established that POSITA would combine Challener and Cheng given that Cheng discloses that biometrics do not need to be securely protected [Limitations 1.7A-1.7C].

Petitioner has not shown that a POSITA would have combined Cheng with Challener. Pet. 24-26. As was the case with the disclosures of Kesanupalli and Challener, Petitioner has not considered the actual disclosures of Challener and Cheng. With respect to combining Challener and Cheng to achieve the secure backup limitations [1.7A-1.7C], Petitioner has failed to consider that Cheng (which comes years before Challener) and Challener fundamentally handle biometric data

in different ways and a POSITA would not have combined them due to these differences.

As Petitioner points out, “Challenger relates to securely protecting computer data, and more particularly to security processors provided in computer systems to implement security features.” Pet. 12 (internal citations omitted). That is its very goal. To accomplish this, Challenger discloses a system 10 with a standard portion 16 and a security portion 14. Ex. 1007 (Challenger) at Fig. 1 (Petitioner’s annotated copy reproduced below). “Security portion 14 of system 10 is used to secure the data and applications of the system for access and use only by authorized users.” Ex. 1007 (Challenger) at 4:9-12. “The standard portion 16 of system 10 is connected to the processor 26, and the input portion 12 is connected to the processor 26, so that input provided to the portion 16 can first be examined by security portion 14 for authentication and security.” Ex. 1007 (Challenger) at 5:35-40.



APPL-1007, FIG. 1, annotated

Pet 14 (reproducing Ex. 1007 (Challener) at Fig. 1).

This architecture is then described in certain embodiments. For example, Challener discloses that “applications for implementing or interfacing with a Subscriber Identity Module (SIM) card for cellular phones or secure ID cards, or applications for implementing fingerprint matching of users, may be desired to be installed for use by the processor 26 and its security-enhanced operating system and memory storage. The request can be detected, for example, when an application write request is sent to the storage device 36 that will store the new application; this write request can be intercepted by a filter driver of the operating system of

the processor 26.” Ex. 1007 (Challener) at 11:10-26. As Petitioner understands, Challener has crafted this architecture to avoid disclosing the biometric information, such as the biometric template, to the non-secure portion (i.e., “standard portion 16”). *see, e.g.*, Pet. 38 (“Such restrictions limit access and thereby protect the functions and data in the security portion of a TPM-based security architecture (e.g., sensor 204 and the secure storage 206) from being misused by an untrusted or malicious program.”).

Cheng on the other hand teaches a completely different understanding of biometric security.⁴ Rather than put the biometric templates in a secure processing area that is cordoned off from the standard portion, Cheng openly admits there is no need to restrict what can access a user’s biometrics because biometrics are “substantially difficult if not impossible to replicate.” Ex. 1008 (Cheng) at [0046] (“since it is substantially difficult if not impossible to replicate the user’s biometrics information due to the nature of each individual’s uniqueness.”). In fact, Cheng states that a user doesn’t even need to report their old device stolen or lost due to this uniqueness. *Id.*

⁴ This might be due to the fact that Cheng is from 2003 and is relatively early in time compared to the other references in the Petition.

Petitioner disregards the actual teachings of the references and instead uses the claims as a map to achieve its desired result. Petitioner claims that a POSITA would have been motivated to combine Cheng with the other references because it would “produce the obvious, beneficial, and predictable results of reducing the need to recreate the user’s personal data on a new device” (Pet. 24).⁵ This motivation to combine not only fails to consider the disclosures of Cheng and Challenger but it is a conclusory statement devoid of any factual context that must be rejected. *See In re NuVasive, Inc.*, 842 F.3d 1376, 1381–82 (Fed. Cir. 2016) (“combin[ing] references must be thorough and searching, and the need for specificity pervades.”) (internal quotations and citations omitted).

⁵ Petitioner argues that there are two motivations to combine, but the second motivation to combine is just a rephrasing of the first motivation to implement Cheng’s backup. *See, e.g.*, Pet. 26 (“Second, POSITA would have been motivated to employ Cheng’s backup technique in connection with Kesanupalli’s secure user authentication methods as implemented by Challenger’s architecture because Kesanupalli’s stored biometric information and credentials are personal data. . . And Cheng specifically teaches backing-up personal data related to biometric information”).

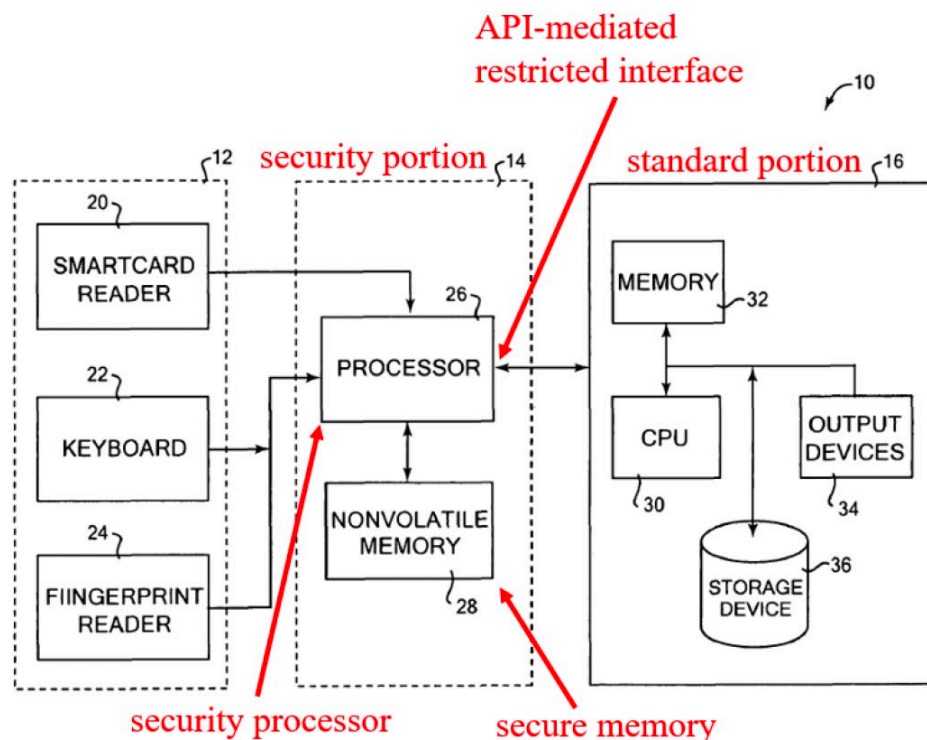
These references come from different points in time and reflect a different understanding of the need to secure a user's biometric data. Without the claims as map, a POSITA would not have even found these references—let alone combined them. Accordingly, Petitioner has failed to show that a POSITA would have been motivated to combine Challener and Cheng.

4. Petitioner has failed to show that a POSITA would have had a reasonable expectation of success adding Cheng to the Kesanupalli/Challener system.

Petitioner has failed to show that a POSITA would have been able to combine Cheng with the system architecture of the Kesanupalli/Challener Frankenstein system. It is Petitioners' burden to "to demonstrate that the skilled artisan would have had a reasonable expectation of success in combining references." *KEYnetik, Inc. v. Samsung Electronics Co., Ltd.*, 841 Fed.Appx. 219, 227-228 (Fed. Cir. 2021) (internal quotations omitted). Petitioners have not met their burden.

In a single paragraph Petitioners allege that a POSITA would have a had a reasonable expectation of success "in adding backup feature such as taught by Cheng in a biometric authentication system such as taught by Kesanupalli in view of Challener." Pet. 26. Petitioner's *single* reason is that "[a]dding a backup feature would merely have been applying a known technique to a known device (method, or product) ready for improvement to yield predictable results." *Id.* But this conclusory single reason fails to consider that the '512 Patent discloses a novel two

processor architecture where different processor are responsible for different things. *See, e.g.*, Ex. 1001 at claim 1. Petitioner conclusory remarks glaze over the fact that the second processor needs to be configured to do limitations associated with Cheng (*see* Pet. 54-59) and that Petitioner has previously mapped second processor to Challenger's security portion below.



APPL-1007, FIG. 1, annotated

Petitioner does not explain why a POSITA would have had a reasonable expectation of success changing the TPM architecture which is a standardized chipset. Further, Petitioner does not explain how a POSITA would make the Kesanupalli/Challener/Cheng system work. How does the “secure portion” of

Challenger back up its data as disclosed in Cheng without exposing it to the standard portion?

At bottom, the Cheng backup cannot simply be added to the two-processor architecture without doing more and Petitioner fails to address this. To maintain the integrity of the data being protected by the security processor, safeguards would need to be put in place so that the data in the secure portion of Challenger would not be exposed to the non-secure portion in the backup process. Neither Petitioner nor its expert explain why a POSITA would reasonably believe the data could get from Challenger's secure portion to the backup location securely. Petitioner's reasonable expectation of success explanation glazes over this as some sort of easy application of old software ideas, when in reality it is anything but.

Accordingly, Petitioner's one sentence explanation has failed to show that a POSITA would have had a reasonable expectation of success combining Cheng with the two-processor architecture of Kesanupalli/Challenger.

IV. CONCLUSION⁶

For any or all of the above-described reasons, Patent Owner respectfully requests that the Board deny institution.

⁶ All of the claims depend on combining Kesanupalli, Challenger, and Cheng.

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Respectfully submitted,

/s/Richard A. Kamprath
Richard A. Kamprath
Reg. No. 65,320
rkamprath@mckoolsmith.com
McKool Smith, P.C.
300 Crescent Court, Suite 1500
Dallas, Texas 75201
Telephone: (214) 978-4000
Facsimile: (214) 978-4044

George Fishback
Reg. No. 76,345
gfishback@mckoolsmith.com
McKool Smith, P.C.
303 Colorado Street, Suite 2100
Austin, Texas 78701
Telephone: (512) 692-8700
Facsimile: (512) 692-8744

Counsel for Patent Owner, Carbyne
Biometrics, LLC

CERTIFICATION OF WORD COUNT

The undersigned hereby certifies that the portions of the above-captioned **PATENT OWNER'S PRELIMINARY RESPONSE** specified in 37 C.F.R. §42.24 have 10,648 words, in compliance with the 14,000 word limit set forth in 37 C.F.R. §42.24(b)(1). This word count was prepared using Microsoft Word 2010.

Dated: April 30, 2024

Respectfully submitted,

/s/Richard A. Kamprath
Richard A. Kamprath
Reg. No. 65,320

Certification of Service

The undersigned hereby certifies that a copy of this **PATENT OWNER'S PRELIMINARY RESPONSE PURSUANT TO 37 C.F.R. § 42.10(b)** has been served on Petitioner via email on the following counsel of record for Petitioner:

David W. O'Brien
David.obrien.ipr@haynesboone.com

Kelly Gehrke Lyle
Kelly.lyle@haynesboone.com

Hong Shi
Hong.shi.ipr@haynesboone.com

Dated: April 30, 2024

Respectfully submitted,

/s/Richard A. Kamprath
Richard A. Kamprath
Reg. No. 65,320