IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT
OF TEXAS AUSTIN DIVISION

CARBYNE BIOMETRICS, LLC, Plaintiff, v. APPLE INC., Defendant.	Civil Action No. 1:23-cv-00324 JURY TRIAL DEMANDED

DEFENDANT APPLE'S OPENING CLAIM CONSTRUCTION BRIEF

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Ex.	Description	Abbreviation
A	U.S. Patent No. 9,972,010 (’010 patent)	’010 patent
B	U.S. Patent No. 10,713,656 (’656 patent)	’656 patent
C	U.S. Patent No. 11,526,886 (’886 patent)	’886 patent
D	U.S. Patent No. 10,929,512 (’512 patent)	’512 patent
E	U.S. Patent No. 11,475,105 (’105 patent)	’105 patent
F	U.S. Patent No. 11,514,138 (’138 patent)	’138 patent
G	U.S. Patent Application No. 16/893,237 File Wrapper	’886 File History
H	Webster’s New World Dictionary® of Computer Terms (5th Ed. 1994)	
I	Jargon an Informal Dictionary of Computer Terms (1993)	
J	Dictionary of Computer and Internet Terms (8th Ed. 2003)	

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I. INTRODUCTION

Defendant Apple Inc. ("Apple") respectfully submits this Opening Claim Construction brief supporting its proposed constructions for four disputed terms. In contrast, Carbyne contends that zero terms require construction. The terms requiring construction are from the following six asserted patents (collectively, the "Asserted Patents"), which fall into two patent families below.

Family	U.S. Patent No.	Asserted Claims
The Fraud Reduction Patents[1]	9,972,010 ('010 patent)	1, 5-6, 9, 13-14, 17, 21-22
	10,713,656 ('656 patent)	1, 4, 7-10, 13, 16-19
	11,526,886 ('886 patent)	1-2, 4-7, 9-11, 12, 14, 18, 20
The Authentication Patents[2]	10,929,512 ('512 patent)	1-6, 10-16, 20-21
	11,475,105 ('105 patent)	1, 9, 11, 14, 18, 28, 30, 33, 35
	11,514,138 ('138 patent)	1, 3, 7-8, 10-13, 15, 19, 22-25

Apple's constructions comport with the claim language, specification, and file history, and reflect how a person of ordinary skill in the art would have understood the terms (if at all). Apple's constructions are especially important because the parties' meet-and-confers uncovered substantive disagreement about the meaning of these claim terms—rendering Carbyne's "plain and ordinary meaning" constructions insufficient. Accordingly, Apple asks the Court to adopt its constructions.

[1] The '886 patent is a continuation of the '656 which is a continuation of the '010. All three patents share the same specification.
[2] The '105 patent is a continuation-in-part of application No. 17/027,481, which is a continuation of the '512 patent. The '138 patent is a continuation of the '512 patent and shares the same specification.

II. APPLICABLE LEGAL PRINCIPLES

Claim construction is a matter of law. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed. Cir. 1995). The purpose of claim construction is to resolve the meaning and technical scope of claim terms. *U.S. Surgical Corp. v. Ethicon, Inc.*, 103 F.3d 1554, 1568 (Fed. Cir. 1997).

The Court examines a patent's intrinsic evidence to define the patented invention's scope. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313-14 (Fed. Cir. 2005). Intrinsic evidence includes the claims, the rest of the specification, and the prosecution history. *Id*. at 1312-13.[3] The Court gives claim terms their plain and customary meaning as understood by one of ordinary skill in the art at the time of the invention. *Id*.; *Alloc, Inc. v. ITC*, 342 F.3d 1361, 1368 (Fed. Cir. 2003). "[W]hen a patentee uses a claim term throughout the entire patent specification, in a manner consistent with only a single meaning, he has defined that term 'by implication.'" *Homeland Housewares, LLC v. Whirlpool Corp.*, 865 F.3d 1372, 1377 (Fed. Cir. 2017) (quoting *Bell Atl. Network Servs., Inc. v. Covad Commc'ns Grp., Inc.*, 262 F.3d 1258, 1271 (Fed. Cir. 2001)), *cert. denied*, 138 S. Ct. 2602 (2018). That a feature "is 'repeatedly and consistently' used to characterize the invention strongly suggests that it should be read as part of the claim." *VirnetX, Inc. v. Cisco Sys*., 767 F.3d 1308, 1318 (Fed. Cir. 2014) (citing *Eon-Net LP v. Flagstar Bancorp*., 653 F.3d 1314, 1321-23 (Fed. Cir. 2011)).

Courts are also authorized to consider extrinsic evidence, including "expert and inventor

[3] The Federal Circuit has explained that the prosecution history includes "the complete record of the proceedings before the [United States Patent and Trademark Office ("PTO")] and includes the prior art cited during the examination of the patent." *Phillips*, 415 F.3d at 1317 (citations omitted). The prosecution history also includes proceedings before the Patent Trial and Appeal Board (the "PTAB"), such as *inter partes* review. *See Aylus Networks, Inc. v. Apple Inc.*, 856 F.3d 1353, 1362 (Fed. Cir. 2017) (holding that a patent holder's statements made before the PTAB during *inter partes* review "can be considered for claim construction," and finding prosecution disclaimer based on those statements).

testimony, dictionaries, and learned treatises." *Phillips*, 415 F.3d at 1317 (citations omitted). Such extrinsic evidence is particularly appropriate where it helps the court "'to better understand the underlying technology' and the way in which one of skill in the art might use the claim terms." *Id*. at 1318 (citing *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1584 n.6 (Fed. Cir. 1996).

A claim is indefinite under § 112(2) if it mixes two statutory classes, such as an apparatus and a method for using that apparatus. *IPXL Holdings, L.L.C. v. Amazon.com, Inc.*, 430 F.3d 1377, 1384 (Fed. Cir. 2005) (finding that a claim that covered a system with "an input means" simultaneously required a user to use the input means). To determine whether two statutory subject matters are improperly commingled, courts look to whether the apparatus claim includes method elements directed to "user actions, not system capabilities." *In re Katz Interactive Call Processing Patent Litig.*, 639 F.3d 1303, 1318 (Fed. Cir. 2011); *see also H-W Tech., L.C. v. Overstock.com, Inc.*, 758 F.3d 1329, 1335-36 (Fed. Cir. 2014). A method step need not be explicitly recited in the apparatus claim and may, instead, be presumed from the context of the claim. *See, E-Watch Inc. v. Apple, Inc.*, No. 2:13-cv-1061, 2015 WL 1387947, at *5 (E.D. Tex. Mar. 25, 2015).

"When the parties present a fundamental dispute regarding the scope of a claim term, it is the court's duty to resolve it." *O2 Micro Int'l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1362 (Fed. Cir. 2008); *see also Gechter v. Davidson*, 116 F.3d 1454, 1460 (Fed. Cir. 1997) ("Claim construction must also be explicit, at least as to any construction disputed by parties . . . ."). "This duty resides with the court because, of course, 'the ultimate question of construction [is] a legal question.'" *Eon Corp. IP Holdings*, 815 F.3d at 1318 (alteration in original) (quoting *Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 574 U.S. 318, 333 (2015)).

III. LEVEL OF ORDINARY SKILL IN THE ART

A person of ordinary skill in the art ("POSITA") at the time of the alleged invention of the Fraud Reduction Patents would have had a bachelor's degree in electrical engineering, computer engineering, computer science, or a related field, and at least two years of experience in the research, design, development, and/or testing of biometric authentication techniques, and related firmware and software, or the equivalent, with additional education substituting for experience and vice versa.

A POSITA at the time of the alleged invention of the Authentication Patents would have had a bachelor's degree in electrical engineering, computer engineering, computer science, or a related field, and at least two years of experience in the research, design, development, and/or testing of authentication techniques, and related firmware and software, or the equivalent, with additional education substituting for experience and vice versa. This is consistent with the formulation the Board used in IPR proceedings concerning the '512 patent. *See e.g.*, *Samsung Elec. Co., LTD. v. RightQuestion, LLC*, IPR2022-00251, Pap. 17 (P.T.A.B. June 9, 2022) ("'512 IPR Decision") at 12.

IV. OVERVIEW OF THE ASSERTED PATENTS

A. The Fraud Reduction Patents ('010, '656 , and '886 patents)

The '010 patent (Ex. A), '656 patent (Ex. B), and '886 patent (Ex. C) are directed to reducing fraud in electronic transactions by attempting to increase the guilt felt by, or otherwise deterring, potential fraudsters. '010, Abstract, 1:24-29, 4:41-48; '656, Abstract, 1:27-32, 4:48-55; '886, Abstract, 1:34-39, 4:53-59. The purported invention involves displaying on a device an image of the face or a hand of an account owner (e.g., the holder of electronic funds) and capturing biometric information (e.g., fingerprint or photograph) and/or location information of the user of that device in connection with an electronic transaction. '010, Abstract, 6:39-45;

10:10-12; ’656, Abstract, 6:45-51, 10:15-17; ’886, Abstract, 6:50-56, 10:22-24. The Fraud Reduction Patents explain that by displaying the image of the account holder, “[f]eelings of guilt for engaging in fraudulent transactions can be increased both by making a given transaction more concrete, and by emphasizing the victim’s identity.” ’010, 5:16-18; ’656, 5:23-25; ’886, 5:27-29. The patents also explain that capturing the device user’s biometrics may increase the “likelihood that fraudulent transactions will be detected, and for causing a fraudster to believe that his or her fraudulent transactions will be detected.” ’010, 7:44-48; ’656, 7:50-54; ’886, 7:55-59. The patents purport to use biometrics to detect fraud by analyzing the user’s photograph “as part of the transaction” and “confirming that the object being photographed is alive (e.g., by taking multiple photographs in rapid succession).” ’010, 8:54-60; ’656, 8:60-66; ’886, 8:65-9:4.

B. The Authentication Patents (’512 , ’105, and ’138 patents)

The ’512 patent (Ex. D), ’105 patent (Ex. E), and ’138 patent (Ex. F) are directed to “authentication techniques” used to provide credentials to a service to prevent “practices such as password reuse, and/or the selection of poor-quality passwords, which render their credentials less secure against attacks.” ’512, 1:35-44; ’105, 1:43-50; ’138, 1:37-42. When using the techniques described, “users need not type [] usernames and passwords into their devices whenever required by a service.” ’512, 2:62-65; ’105, 3:20-23; ’138, 2:65-3:1. Users may instead “authenticate themselves to an ‘authentication translator,’” which “will provide the appropriate credentials to the implicated service on the user’s behalf.” ’512, 2:65-3:1; ’105, 3:23-26; ’138, 3:1-4.

V. DISPUTED TERMS FOR CONSTRUCTION

A. "configured to" ('010 claim 1; '656 claim 1; '886 claim 1; '512 claims 1, 6, 11, 15, 21; '105 claims 1, 9; '138 claim 1)

Apple's Proposed Construction	Carbyne's Proposed Construction
Plain & Ordinary Meaning, which requires not merely being capable of being configured but rather actually being configured	P&O: No construction necessary

Apple's construction is consistent with the claim language and the governing law concerning the term "configured." And although both parties contend that this term should be accorded its plain meaning, the parties' meet-and-confers revealed that the parties dispute what the plain meaning is, and therefore express construction is needed. *See O2 Micro Int'l*, 521 F.3d at 1360; *Gechter*, 116 F.3d at 1460.

Federal Circuit case law recognizes a distinction between claims directed to a device "configured to" perform a function and a device merely "capable of" performing that function. *See, e.g.*, *Parkervision, Inc. v. Qualcomm Inc.*, 903 F.3d 1354, 1361 (Fed. Cir. 2018) ("[O]ur cases distinguish between claims with language that recites capability, and those that recite configuration."); *see also In re Giannelli*, 739 F.3d 1375, 1379-80 (Fed. Cir. 2014) (construing "adapted to" as having the narrower meaning of "configured to" as opposed to the broader meaning of "capable of" or "suitable for"); *In re Man Machine Interface Techs. LLC*, 822 F.3d 1282, 1286 (Fed. Cir. 2016) (same); *Aspex Eyewear, Inc. v. Marchon Eyewear, Inc.*, 672 F.3d 1335, 1349 (Fed. Cir. 2012) (same).

Consistent with that law, courts, including this one, have construed the plain meaning of "configured to" as requiring actual configuration, and not mere capability—just as Apple proposes here. For example, in *Q Techs. Inc. v. Neutron Holdings, Inc.*, the Court construed "configured to" as "plain and ordinary meaning which requires not merely being capable of

being configured but rather actually being configured." No. W-21-CV-00321-ADA, slip op. at 3 (W.D. Tex. May 24, 2022) ECF No. 39. This is the construction Apple proposes. That decision aligns with other decisions from courts both in Texas and elsewhere construing "configured to" as requiring more than mere capability. *See, e.g., Sipco, LLC v. Abb, Inc.*, No. 11-CV-0048-LED-JDL, 2012 WL 3112302, at *11 (E.D. Tex. July 30, 2012) ("Interpreting 'configured to' as requiring only mere capability would eliminate any meaningful limits to the claims."); *WAPP Tech Ltd. v. Bank of Am.*, No. 4:21-CV-670, 2022 WL 2463569, at *4 (E.D. Tex. July 6, 2022) (construing "configured to" as "actually programmed to"); *accord Radware, Ltd. v. A10 Networks, Inc.*, No. C-13-02024-RMW, 2014 WL 1572644, at *12 (N.D. Cal. Apr. 18, 2014) ("[C]ourts have generally interpreted 'configured to' more narrowly than simply 'capable of.'") (collecting cases). Accordingly, to the extent that Carbyne contends that the plain meaning of "configured to" extends to mere capability, that position would lack any merit.

The intrinsic evidence confirms that "configured to" is used in each of the Asserted Patents in a manner consistent with the foregoing legal precedent. Each of the Asserted Patents' specifications states, expressly, that "a component such as a processor or a memory described as being configured to perform a task may be implemented as a general component that ***is temporarily configured*** to perform the task at a given time or a specific component that ***is manufactured to perform*** the task. '010, 2:6-10; '656, 2:9-14; '886, 2:14-20; '512, 2:12-17; '105, 2:38-42; '138, 2:16-20. As the specifications make clear, actual configuration, whether that be temporary or permanent, is required by the phrase "configured to" when used in these patents. Construing "configured to" as encompassing mere capability would not only violate the applicable legal authority cited above, it also would contradict these intrinsic record statements. Moreover, if "configured to" were interpreted as requiring mere capability of being configured to

perform the claimed functions, the asserted claims—which are directed to one or more processors "configured to" perform a set of functions, and a memory "configured to" provide the processor(s) with instructions ('010, 13:56-14:25 (claim 1);'656 , 13:64-14:31 (claim 1); '886 , 14:2-27 (claim 1); '512, 10:62-11:31 (claim 1), 11:63-12:30 (claim 11), 12:61-13:29 (claim 21); '105, 24:47-25:14 (claim 1); '138, 11:17-57 (claim 1))—arguably would be met by any off-the-shelf general purpose processor paired with bare memory, since a processor and memory are capable of being configured in many different ways.

Because "configured to" has an established meaning in the case law; because that established meaning is consistent with how the Asserted Patents use the term; because that established meaning is likely unfamiliar to a jury; and because the parties appear to dispute the plain meaning of "configured to," express construction is appropriate. For these reasons, the Court should adopt Apple's proposed construction of "configured to" and reject Carbyne's attempt to avoid the term's established plain meaning.

B. "wherein the virtual likeness of the face was selected by the account holder as part of an enrollment" ('886 claims 1, 11)

Apple's Proposed Construction	Carbyne's Proposed Construction
Indefinite as a mixed system/method claim	P&O: No construction necessary

In the seminal opinion in *IPXL*, the Federal Circuit established that a claim is indefinite under § 112(2) if it mixes the statutory classes of an apparatus and of a method for using that apparatus. 430 F.3d at 1384 (finding that a claim that covered a system with "an input means" simultaneously required a user to use the input means). This indefiniteness bar is rooted in the failure of mixed apparatus and method claims to clearly convey to a person of ordinary skill when infringement occurs—i.e., does infringement occur when the system or apparatus is created or when the method step is performed? *See, e.g.*, *IPXL*, 430 F.3d at 1384.

Courts look to whether the purported apparatus claim includes method elements directed to "user actions, not system capabilities" to determine whether two statutory subject matters are improperly commingled. *In re Katz*, 639 F.3d at 1318; *see also H-W Tech.*, 758 F.3d at 1335-36. A method step need not be explicitly recited in the purported apparatus claim and may, instead, be presumed from the context of the claim. *See, e.g., E-Watch I*, 2015 WL 1387947, at *5 (holding a claim indefinite under IPXL that recited the phrases "operation of the input device by the user" and "movement by the user of the portable housing commonly . . . .").

Here, both independent claims 1 and 11 of the '886 present classic examples of mixed apparatus and method claims—where the claims purport to be directed to an apparatus ("device" or "computer program product") but also recite steps that a ***user*** must perform. In particular, both claims require rendering in an interface a virtual likeness of a face "wherein the virtual likeness of the face ***was selected by the account holder*** as part of an enrollment." '886 , 14:4-7 (claim 1), 15:9-12 (claim 11). As the plain language of the claims makes clear, this clause does not recite a mere capability of the claimed apparatus, but instead requires an "account holder" to perform the step of selecting a "virtual likeness." The case law also makes that understanding clear. Where, as here, a "wherein" clause includes an action to be performed, the Federal Circuit and district courts have found that such clauses recite a method step. *See, e.g., H-W Tech.*, 753 F.3d at 1335-36 (holding that purported system claims reciting "wherein said user selects . . ." are indefinite); *Desenberg v. Google, Inc.*, 392 F. App'x 868, 871 (Fed. Cir. 2010) (holding that clause reciting "wherein a service is performed by the user or the provider as a result of the transmission of the lead" contained a method step to be performed by the user); *see also, e.g., Acceleration Bay LLC v. Elec. Arts Inc.*, No. 1:16-CV-00454-RGA, 2019 WL 1376036, at *5 (D. Del. Mar. 27, 2019); IPXL, 430 F.3d at 1384.

In *H-W Tech.*, the Federal Circuit held that the "wherein said user selects . . ." limitation "is nearly identical to the disputed language in [*IPXL* and *In re Katz*]" and found the claim indefinite. 758 F.3d at 1336. The relevant claims here present nearly identical language. Accordingly, as in *H-W Tech.*, *In re Katz*, and *IPXL*, both claims 1 and 11 of the '886 patent are indefinite because they purport to be apparatus claims, yet explicitly require user action. *See, e.g.*, *id.*; *In re Katz*, 639 F.3d at 1318; *IPXL*, 430 F.3d at 1384.

For this reason, the Court should find this limitation, which mixes apparatus and method requirements, indefinite.

C. "captur[e/ing] a set of biometric information, wherein capturing the set of biometric information comprises capturing, using a camera, a set of images" ('886 claims 1, 6, 11)

Apple's Proposed Construction	Carbyne's Proposed Construction
"captur[e/ing] a set of biometric information, wherein capturing the set of biometric information comprises capturing, using a camera, a set of photographs"	P&O: No construction necessary

All asserted independent claims of the '886 patent recite "captur[e/ing] a set of biometric information, wherein capturing the set of biometric information comprises capturing, using a camera, a set of images." The claims further recite using that set of images captured by the camera to perform fraud detection: "facilitate a fraud detection analysis … based at least in part on … a determination of whether the user is alive based at least in part on an analysis of the set of images captured using the camera." As such, the camera-captured "set of images" is needed to determine whether the user is alive. According to the specification, capturing the user's biometric information helps "increas[e] the likelihood (either real or as perceived by the fraudster) that the fraudulent act will be detected." '886, 4:57-59, 7:55-59.

The prosecution history compels Apple's construction, which requires that the captured

set of biometric information for determination of whether the user is alive be photographs. During prosecution of U.S. Application No. 16/893,237, which led to the asserted '886 patent, the Examiner rejected as-filed dependent claims 4 and 12 for lacking sufficient written description because they claimed forms of biometric information other than photographs, when the claims from which they depended (as-filed independent claims 2 and 10) "explain that his biometric information is used in the determination of whether the user is alive." Ex. G ('886 File History) at 19-20 (9/2/21 Office Action pp. 4-5). Those dependent claims were unsupported, the Examiner explained, because "the specification teaches only that 'taking multiple ***photographs*** in rapid succession' is used for confirming that the object being photographed is alive." *Id*. Similarly, the Examiner rejected as-filed dependent claims 6 and 14, which recited biometric information including voice samples, because "the aliveness check as recited in the specification is constrained to 'taking multiple ***photographs*** in rapid succession.'" *Id.* Applicant never disputed the Examiner's characterization of the specification. Moreover, as the specification explains, fraud detection "make[s] sure that the fraudster isn't using [the] camera [] to photograph a printed picture of the legitimate user" by "confirming that ***the object being photographed*** is alive." '886, 8:65-9:4. The only way the specification discloses confirming the object is alive is by "taking ***multiple photographs*** in rapid succession."[4] *Id.* The '886 patent also explains that the purchaser is "asked to photograph himself" and then an "analysis of the photograph is performed." '886, 8:62-67. The prosecution history thus compels the conclusion that, where the claims recite a camera capturing "images" that are used to determine

[4] The '886 patent separately discloses capturing images and biometric information during enrollment. '886, 5:39-45, 6:50-55, 7:9-13. These disclosures, however, are unrelated to the term at issue, where images are captured not during enrollment, but "subsequent to an interaction by a user" and used to determine "whether the user is alive." '886, 14:8-25, 14:44-61, 15:14-31.

whether a user is alive, those images must be photographs.

The Examiner also rejected the pending claims under § 101. Through a series of amendments, the Applicant also overcame those § 101 rejections by adding "in elements … directed toward the concept of fraud detection on the images to determine if the user is alive." Ex. G at 28 (11/30/21 Interview Summary). Specifically, Applicant's amendments included: (1) clarifying that the captured set of biometric information "comprises capturing, using a camera, a set of information," (2) requiring that the determination of whether the user is alive be "based at least in part on an analysis of the set of images captured using the camera," and (3) that the determination is part of "facilitat[ing] a fraud detection analysis." *Id.* at 62-65, 68-70 (6/4/20 Amendment pp. 2-5, 8-10), 77-82 (8/22/22 Examiner's Amendment pp. 2-7). These amendments were made against the backdrop of the Examiner's accurate—and undisputed—characterization of the specification as setting forth one, and only one, method of determining whether a user is alive—through taking "photographs."

Indeed, "taking multiple photographs" is the only way that the specification discloses of using a camera to capture a set of biometric information for the purpose of determining whether the user is alive. '886, 8:67-9:1. Apple's proposed construction—"captur[e/ing] a set of biometric information, wherein capturing the set of biometric information comprises capturing, using a camera, a set of ***photographs***"—is consistent with the disclosure of the patent's purported invention, and should be adopted. As in *Groove Digit., Inc. v. United Bank*, because every pertinent embodiment (here, there is only one) for determining whether the user is alive requires "taking multiple photographs," the claimed capturing, using a camera, of a set of images for subsequent determination of whether the user is alive, requires a set of photographs. 825 F. App'x 852, 857 (Fed. Cir. 2020) (construing "applet" term to require geotargeting because "in

every pertinent embodiment disclosed in the specification, applets are served based on geotargeted specifications").

Because the "set of images" captured by the recited camera is used in performing the recited determination of whether the user is alive, and because the specification describes that aliveness check—a core feature of the claims—as being done only via photographs, a POSITA, reading the claims in light of the specification and prosecution history, would have understood that the camera-captured "set of images" to refer to a "set of photographs."

For the reasons above, Apple's construction should be adopted and Carbyne's should be rejected.

D. "restricted interface" ('512 claims 1, 6, 11, 15, 21; '105 claims 9, 11, 28, 30; '138 claims 11, 23)

Apple's Proposed Construction	Carbyne's Proposed Construction
"a physical or software interface with limited accessibility"	P&O: No construction necessary

While Carbyne argues here that no construction is necessary, its predecessor took the opposite position in prior litigation. In *Samsung Elec. Co., LTD. v. RightQuestion, LLC*, IPR2022-00251 (P.T.A.B.) (in which Samsung challenged the claims of the '512 patent), this term was central to the parties' dispute. *See* '512 IPR Decision at 23-26; *compare* IPR2022-00251, Dkt. 1 ("'512 IPR Petition") at 28 *with* IPR2022-00251, Dkt. 11 ("'512 IPR Preliminary Response") at 38. Specifically, Petitioner alleged that the prior art disclosed a "restricted interface" by way of "a local interface, data bus, or another network" ('512 IPR Petition at 28), while Patent Owner argued that none of those are "restricted interfaces" and rebuked Petitioner's expert for "not opine[ing] on whether a POSITA would have viewed a local interface, data bus, or another network as a restricted interface" ('512 IPR Preliminary Response at 1-2, 23, 38-40). *See* '512 IPR Decision at 23-26. The Board ultimately found that Petitioner had failed to explain

how the prior arts' teachings disclosed a "restricted interface" in part because "neither Petitioner nor its expert provide[d] any express construction for what a 'restricted interface' is in the context of the '512 patent." *See* '512 IPR Decision at 23, 25. This background provides a compelling reason why a construction here is not just appropriate, but necessary, particularly because it appears that the parties dispute the term's scope. *See O2 Micro*, 521 F.3d at 1360.

According to its plain and ordinary meaning, the term "restricted interface" means "a physical or software interface with limited accessibility." This understanding is consistent with the plain meaning of "interface" from before the earliest claimed priority of the '512, '138, and '105 patents. *See, e.g.*, Ex. H (Webster's New World Dictionary® of Computer Terms (5th ed. 1994)) at 306-307 (explaining that an "interface … [m]ay be physical, involving a connector, or logical, involving software"); Ex. I (Jargon an Informal Dictionary of Computer Terms (1993)) at 278-279 (explaining that an "interface" "may apply to the 'hardware interface,' referring to the connectors, cards, plugs, etc., that allow the computer to work with other parts" or it "may apply to the 'software interface," referring to the programming that enables an application to work in a particular *operating system*"); Ex. J (Dictionary of Computer and Internet Terms (8th ed. 2003)) at 259 (providing both hardware and software examples of an "interface"). Accordingly, the interface of a "restricted interface" may be physical (e.g., a "bus" or "physical … connector") or software (e.g., "programming that enables an application to work in a particular operating system" such as an API (application programming interface)).

While the term "restricted interface" does not appear in the specifications of the '512 and '138 patents, Apple's proposed construction is also consistent with the added description in the later-filed '105 patent, which explains that:

> In some embodiments, secure storage can only be accessed using a restricted interface. One example of such ***a restricted interface is a dedicated physical***

> ***connection from a processor permitted to access the secure storage***. For example, ***this may be a bus; alternatively, the secure storage may be integrated with the processor allowed to access it*** (e.g., the storage includes non-volatile registers of the processor, or an alternative type of memory that can be accessed from the permitted processor). ***The secure storage and the processor permitted to access it may also be integrated on a SoC (System on a Chip). Alternatively, the restricted interface may be an API (Application Programming Interface) that is only accessible from a secure mode of operation of a processor.*** In one embodiment, access to the API is only granted from selected processes or applications; in another embodiment, the API is only accessible using a secure operating mode of the processor.

'105, 18:45-61. Common to each of the exemplary "restricted" interfaces disclosed by the '105 patent (between processor and secure storge), is that access to the secure storage is limited (e.g., to permitted processors or processors using permitted "operating mode[s]"). '105, 18:45-61.

Accordingly, Apple's construction should be adopted.

VI. CONCLUSION

For the foregoing reasons, Apple respectfully requests that the Court adopt its proposed constructions.

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that, on October 4, 2023, a true-and-correct copy of the foregoing document was served with the Court's CM/ECF system on all counsel of record.

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